ORDINARY COUNCIL

Wednesday 20 May 2020





Ordinary Council Meeting Wednesday, 20 May 2020

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OWNER: PORT MACQUARIE-HASTINGS COUNCIL

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Leadership and Governance

What we are trying to achieve

A community that works together in decision making that is defined as ethically, socially and environmentally responsible.

What the result will be

We will have:

- A community that has the opportunity to be involved in decision making
- Open, easy, meaningful, regular and diverse communication between the community and decision makers
- Partnerships and collaborative projects, that meet the community's expectations, needs and challenges
- Knowledgeable, skilled and connected community leaders
- Strong corporate management that is transparent

How we will get there

- 1.1 Inform and engage with the community about what Council does using varied communication channels
- 1.2 Maintain strong partnerships between all stakeholders local, state and federal so that they are affective advocates for the community
- 1.3 Demonstrate leadership
- 1.4 Use innovative, efficient and sustainable practices
- 1.5 Ensure strong corporate and financial management that is transparent and accountable



curement Initiatives and	and Recommendations to Sunnort Local Business	port macquarie HASTINGS c o u n c i l
	-	
Initiatives	Recommendations	Timeframes
roach to market		
proach to Market	Implement technology enabled procurement	1 June 2020

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Initiatives	Recommendations	Timeframes
Approach to market		
Approach to Market	Implement technology enabled procurement	1 June 2020
Transparency in assisting local business	siness	
Forward Procurement Planning	Develop and publish on Council's website, its' procurement programme for the next 12 months	1 July 2020
Enhancing the capabilities of Local Business	I Business and Industry	
Hold Supplier Forums	Conduct regular Supplier Forums that covers relevant topics with an aim of developing local business understanding of how to do business with Council	Within 3 months
New RFT and contractual suite	Implement RFT documents and contractual suite that encourage collaborative contracting	Within 6 months
Staff Education		
New Starter" Procurement Training	Local content and benefits to be included as part of "New Starter" Procurement Training	Immediate
Education strategy	Develop and roll out staff education strategy	6-12 months
Local content and benefits assessment in ou	ment in our everyday procurement	
Council's Tender & Contracts webpage	Improve the content and relevant of information on Council's website around procurement activities	Immediate
Establishing a Marketplace	Implement a technology enable procurement to establish a Marketplace for PMHC	1 June 2020
Local content and benefits assessment	Develop local content and benefits assessment to be included in Request for Quotation documentation	6-12 months
Connecting with local businesses		
Local business surveys	Conduct local business surveys to develop an understanding of local businesses' experiences in doing business with Council and recommendations	6-12 months
Strategic Partnerships	Partnering with the local business networks to develop strategic partnerships	6-12 months

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BUDGET VARIATIONS - April 2020										
Section	Project	Project Description	Capital/ Operating	Division	Full Year Original Budget	Full Year Current Budget	Actuals to April 2020	New Yearly Proposed Budget - April 2020	Funding Source	EFFECT ON FUNDING POSITION
Adjustments which impact Council's Budget Position	's Budget Po	sition								
Council has received an additional	\$51,671 in Li	Council has received an additional \$51,671 in Library Operating Grants than budgeted this financial year	inancial year							
Libraries	10590	Library per Capita Subsidy	Operating	Strategy & Growth	-152,000	-152,000	-203,671	-203,671	-51,671 Revenue	- 51,671
Council has received an additional \$83,053 in Diesel Fuel Rebates this	\$83,053 in Di	iesel Fuel Rebates this financial year								
Fleet Management	11300	Fuel Tax Credits Income	Operating	Infrastructure	0	0	-83,503	-83,503	-83,503 Revenue	- 83,503
Council received a Federal Grant al deficit.	llowing the re	Council received a Federal Grant allowing the reallocation of other funding sources on Transport & Traffic projects. This funding reallocation resulted in \$455K in revenue funding being available to decrease the current deficit.	sport & Traffi	c projects. This	funding realloc	ation resulted	in \$455K in re	evenue funding	being available to decrea	se the current
Transport & Traffic	41971	Scrubby Creek Bridge Upgrade	Capital	Infrastructure	0	910,000	77,311	455,000	-455,000 Revenue	- 455,000
A comprehensive review of salaries & wages has been undertaken in	s & wages ha	is been undertaken in Q3. Due to staff vacancies and leave taken, salary budgets will not be fully expended this financial year.	ncies and leav	re taken, salary b	udgets will not	be fully expen	ided this finar	ncial year.		
Building Certification	236	Salaries & Wages	Operating		1,345,547	1,345,547	957,247	1,165,547	-180,000 Revenue	- 180,000
Community Inclusion	407	Salaries & Wages	Operating		323,393	183,393	51,141	123,393	-60,000 Revenue	- 60,000
Organisational Performance	296	Recruitment Advertising	Operating		80,000	80,000	220,220	220,220	140,220 Revenue	140,220
Organisational Performance	296	Salaries & Wages (BIO)	Operating		311,737	311,737	177,012	241,737	-70,000 Revenue	- 70,000
Organisational Performance	10450	Overhead Income - (BIO)	Operating		-436,194	-436,194	-363,350	-395,527	40,667 Revenue	40,667
Governance & Executive	294	Salaries & Wages	Operating	Various	394,342	394,342	273,818	324,342	-70,000 Revenue	- 70,000
Governance & Executive	10990	Overhead Income - Governance & Exec	Operating		-841,234	-841,234	-700,750	-832,968	8,266 Revenue	8,266
Asset Design	340	Salaries & Wages	Operating		161,505	161,505	88,709	111,505	-50,000 Revenue	- 50,000
Organisational Performance	296	Salaries & Wages	Operating		858,021	858,021	519,355	658,021	-200,000 Revenue	- 200,000
Organisational Performance	11000	Overhead Income - (HR)	Operating		-1,492,623	-1,492,623	-1,243,350	-1,485,564	7,059 Revenue	7,059
General Manager	398	Allowance for Vacancies	Operating		-300,000	-100,000	0	0	100,000 Revenue	100,000

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BUDGET VARIATIONS - April 2020										
Section	Project	Project Description	Capital/ Operating	Division	Full Year Original Budget	Full Year Current Budget	Actuals to April 2020	New Yearly Proposed Budget - April 2020	Movement Funding Source	EFFECT ON FUNDING POSITION
Due to a drop in construction activity this financial year, Building Cer	ity this financ	cial year, Building Certification, Subdivision Certification, Development Assessment and Construction Certificate Income are all below budget	Certification,	Development As	sessment and	Construction C	ertificate Inco	ome are all bel	ow budget.	
Development Assessment	10730	Building Certification Revenue	Operating		-1,544,000	-1,544,000	-1,237,294	-1,485,000	59,000 Revenue	59,000
Development Assessment	10790	Development Assessment Income	Operating	Development &	-1,303,600	-1,303,600	-989,106	-1,200,000	103,600 Revenue	103,600
Development Assessment	11130	Construction Certificate Income	Operating	Environment	-390,000	-390,000	-176,533	-215,000	175,000 Revenue	175,000
Development Assessment	11150	Subdivision Certificate Income	Operating		-195,000	-195,000	-104,322	-125,000	70,000 Revenue	70,000
Interest Income is forecast to be be	elow budget o	Interest Income is forecast to be below budget due to a drop in interest rates as well as lower than budgeted funds available for investment in the first half of the year	er than budge	ted funds availat	ole for investme	ent in the first	half of the yea			
General Purpose Revenues	10910	Interest on Investments	Operating	Corporate Performance	-2,980,000	-2,980,000	-2,238,398	-2,852,044	127,956 Revenue	127,956
Rating Income is slightly below budget for the 19/20 financial year	dget for the 1	9/20 financial year								
General Purpose Revenues	10903	Residential General Rates	Operating	Corporate	-35,367,416	-35,367,416	-35,005,159	-35,002,000	365,416 Revenue	365,416
General Purpose Revenues	10900	Business General Rates	Operating	Performance	-3,869,767	-3,869,767	-3,965,933	-3,960,933	-91,166 Revenue	- 91,166
Insurance costs are below budget.	Insurances	Insurance costs are below budget. Insurances went out to tender after the finalisation of the 19/20 financial year budgets.	e 19/20 financ	ial year budgets.		Savings have been realised.				
Insurance & Risk	272	Insurance - Professional Indemnity	Operating		416,100	416,100	251,855	164,245	-251,855 Revenue	- 251,855
Insurance & Risk	272	Insurance - Public Risk	Operating	Corporate Performance	426,200	426,200	260,355	165,845	-260,355 Revenue	- 260,355
Insurance & Risk	10886	Overhead Income	Operating		-646,910	-646,910	-484,992	-586,428	60,482 Revenue	60,482
Total adjustments which impact Council's Budget Position	uncil's Budg	et Position							-565,884	-565,884
Grant Funding										
Council received an additional \$41	6,667 in bush	Council received an additional \$416,667 in bushfire recovery funding from the National Bushfire Recovery Agency	hfire Recover	/ Agency						
Emergency Management	42011	Bushfire Disaster Recovery	Operating	Infracture	0	1,000,000	469,240	1,416,667	-416,667 Grant	0
Emergency Management	19252	Grants - Bushfire Disaster Recovery	Operating		0	-1,000,000	-1,416,667	-1,416,667	416,667 Grant	0

ATTACHMENT

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BUDGET VARIATIONS - April 2020										
Section	Project	Project Description	Capital/ Operating	Division	Full Year Original Budget	Full Year Current Budget	Actuals to April 2020	New Yearly Proposed Budget - April 2020	Movement Funding Source	EFFECT ON FUNDING POSITION
Council has received \$240,000 fro	m the RMS fo.	Council has received \$240,000 from the RMS for the Wauchope Main St Project to Improve pedestrian amenity	oedestrian am	enity						-
Transport & Traffic	41589	Wauchope CBD Pedestrian Facilities	Capital	lof-oct-rise	833,062	833,062	1,209,400	1,073,062	-240,000 Grant	0
Transport & Traffic	19342	Roads to Recovery Grant	Capital	ווווו מאת תכנתוב	-120,000	-120,000	-475,137	-360,000	240,000 Grant	0
Council has received a \$15,000 Aboriginal Cultural Heritage Study Grant	original Cultu	ural Heritage Study Grant								
Community Inclusion	407	Place Facilitators - Programs	Operating	Strategy&	37,247	37,247	14,937	52,247	-15,000 Grant	0
Community Inclusion	19151	Grants - Place Making	Operating	Growth	0	0	-15,000	-15,000	15,000 Grant	0
Council will receive grant funding from Transport for NSW for the 2019	from Transpo	ort for NSW for the 2019 Fire and 2020 Storms & Flood Emergency Responses	s & Flood Em	ergency Respons	ses					
Infrastructure Planning	668	Block Grant Funding	Operating		1,445,800	1,445,800	0	1,033,210	412,590 Grant	0
Infrastructure Planning	42002	October 2019 Fire Emergency Response	Operating		0	0	469,240	477,953	-477,953 Grant	0
Infrastructure Planning	42012	January 2020 Storms & Flood Emergency Response	Operating	Infrastructure	0	0	146,569	146,569	-146,569 Grant	0
Infrastructure Planning	42014	February 2020 Storms & Flood Emergency Response	Operating		0	0	710,920	710,920	-710,920 Grant	0
Infrastructure Planning	19000	Grant Funding	Operating		0	0	0	-922,852	922,852 Grant	0
Total Grant Funding									1,594,519	0
Reserve Movements										
A comprehensive review of salarie	es & wages ha	A comprehensive review of salaries & wages has been undertaken in March. Due to staff vacancies and leave taken, salary budgets will not be fully expended this financial year.	icancies and I	eave taken, sala	y budgets will	not be fully ex	pended this fi	nancial year.		
Water Supply	2004	Salaries & Wages	Operating		1,866,380	1,866,380	1,268,689	1,566,380	300,000 Reserve	0
Water Supply	9200	Transfer to/from Reserve	Operating	Infractructure	-16,426,188	-16,405,162	0	-16,105,162	-300,000 Reserve	0
Sewerage Services	3000	Salaries & Wages	Operating		1,581,419	1,581,419	711,873	931,419	650,000 Reserve	0
Sewerage Services	9300	Transfer to Reserve	Operating		-11,542,695	-11,521,669	0	-10,871,669	-650,000 Reserve	0
Interest Income is forecast to be b	elow budget	Interest Income is forecast to be below budget due to a drop in interest rates as well as lower than budgeted funds available for investment in the first half of the year.	er than budge	ted funds availat	ole for investme	ent in the first	half of the yea			

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BUDGET VARIATIONS - April 2020											
Section	Project	Project Description	Capital/ Operating	Division	Full Year Original Budget	Full Year Current Budget	Actuals to April 2020	New Yearly Proposed Budget - April 2020	Movement	Funding Source	EFFECT ON FUNDING POSITION
Water Supply	11350	Interest on Investments	Operating		-2,740,000	-2,740,000	-1,875,088	-2,618,268	-121,732 Reserve	Reserve	0
Waste	11610	Interest on Investments	Operating		-465,000	-465,000	-324,426	-444,944	-20,056 Reserve	Reserve	0
Sewerage Services	11050	Interest on Investments	Operating	Various	-1,599,000	-1,599,000	-909,895	-1,545,446	-53,554 Reserve	Reserve	0
Corporate	10835	Interest on Investments	Operating		-41,000	-41,000	-26,852	-39,298	-1,702 F	-1,702 Reserve	
Various	0026	Transfer to/from Reserve	Operating		-25,237,838	-24,945,786	0	-25,142,830	197,044 Reserve	Seserve	0
Water Supply Usage Charges are b	below budget	Water Supply Usage Charges are below budget due to water restrictions and the impact of the recent bushfires on tourism resulting in higher holiday vacancy rates across the region	he recent bus	hfires on tourisn	n resulting in h	igher holiday v	acancy rates	across the regi	on		
Water Supply	11405	Water Supply User Charges	Operating	Infraction with the	-19,737,000	-19,737,000	-13,816,276	-19,137,000	-600,000 Reserve	Reserve	0
Water Supply	9200	Transfer to/from Reserve	Operating	וווו מאו תרוחוב	-16,426,188	-16,155,162	0	-16,755,162	600,000 Reserve	Seserve	0
Water Supply Annual Charges are	slightly above	Water Supply Annual Charges are slightly above budget YTD. Budget adjustment taken up this month	his month								
Water Supply	11405	Water Supply Annual Charges	Operating	Infraction of the	-13,122,692	-13,122,692	-13,641,299	-13,620,000	497,308 Reserve	Reserve	0
Water Supply	9200	Transfer to/from Reserve	Operating	וווו מאו תרוחוב	-16,426,188	-16,155,162	0	-15,657,854	-497,308 Reserve	Reserve	0
Waste Annual Charges are slightly	r above budge	Waste Annual Charges are slightly above budget YTD due to the volume of domestic waste charges processed co-inciding with the completion of new homes	charges proce	ssed co-incidin	g with the com	pletion of new	homes				
Waste	11630	Waste Annual Charges	Operating	Infractin internet	-13,289,390	-13,289,390	-13,813,180	-13,820,000	530,610 Reserve	Reserve	0
Waste	9400	Transfer to/from Reserve	Operating	וווו מאו תרוחוב	2,731,045	2,731,045	0	3,261,655	-530,610 Reserve	Seserve	0
Change in funding source for the Small Towns Sewerage Scheme	Small Towns S	Sewerage Scheme									
Sewerage Services	19212	Grants - Capital Sewerage Services	Capital	Infracture.	0	0	-3,135,545	-3,135,545	3,135,545 Grant	Grant	0
Sewerage Services	19219	Transfer from Reserve	Capital		-22,900,000	-18,686,579	0	-15,551,034	-3,135,545 Reserve	Seerve	0
Total Reserve Movements									5,910,507		0

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BUDGET VARIATIONS - April 2020											
Section	Project	Project Description	Capital/ Operating	Division	Full Year Original Budget	Full Year Current Budget	Actuals to April 2020	New Yearly Proposed Budget - April 2020	Funding Movement Fource	Funding Source	EFFECT ON FUNDING POSITION
Movement between Projects											
Gravel Resheeting - transfer of bud	iget between	Gravel Resheeting - transfer of budget between General Ledger Accounts (accounting purposes only - no overspend)	ores only - no	overspend)							
Transport & Traffic	661	Gravel Resheeting	Operating	4	493,400	493,400	759,344	993,400	-500,000 Revenue	Revenue	-500,000
Transport & Traffic	41937	Gravel Resheeting	Operating	Inirastructure	500,000	500,000	0	0	500,000 Revenue	Revenue	500,000
Transfer of Salaries and Wages Bu	dgets under i	Transfer of Salaries and Wages Budgets under the restructure to Infrastructure Operations Management	Management								
Infrastructure Operations	344	Salaries & Wages	Operating		0	0	157,191	215,965	-215,965 Reserve	Reserve	0
Water Supply	2004	Salaries & Wages	Operating	Infrastructure	1,866,380	1,616,380	1,127,494	1,558,204	58,176	58,176 Reserve	0
Sewerage Services	3000	Salaries & Wages	Operating		1,581,419	1,081,419	640,989	923,630	157,789 Reserve	Reserve	0
Consolidation of Stuart Park projects for ease of costing and budget	cts for ease o	of costing and budget tracking									
Recreation, Parks & Buildings	41859	Stuart Park	Capital		1,772,586	2,278,718	1,311,561	3,105,718	-827,000 Reserve	Reserve	0
Recreation, Parks & Buildings	41856	Off leash Dog Parks	Capital		68,688	68,688	0	8,688	60,000	60,000 Reserve	0
Recreation, Parks & Buildings	41981	Stuart Park	Capital	Development & Environment	260,000	260,000	0	0	260,000 Reserve	Seserve	0
Recreation, Parks & Buildings	40879	Stuart Park	Capital		195,000	195,000	0	0	195,000 Reserve	Seserve	0
Recreation, Parks & Buildings	41957	Stuart Park	Capital		312,000	312,000	0	0	312,000 Reserve	Reserve	0
Depreciation budget adjustment to reflect current full year forecast	reflect curre	nt full year forecast									
Various	Various	Depreciation	Operating	Various	49,134,603	49,134,603	42,525,711	50,500,000	-1,365,397 Revenue	Sevenue	-1,365,397
Various	Various	Accumulated Depreciation	Operating		-49,134,603	-49,134,603	-42,525,711	-50,500,000	1,365,397 Revenue	Revenue	1,365,397

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BUDGET VARIATIONS - April 2020											
Section	Project	Project Description	Capital/ Operating	Division	Full Year Original Budget	Full Year Current Budget	Actuals to April 2020	New Yearly Proposed Budget - April 2020	Funding Movement Source		EFFECT ON FUNDING POSITION
Transfer of Salaries and Wages Bu	dgets from N	Transfer of Salaries and Wages Budgets from Noxious Weeds to GIS for bushland mapping and site surveys	and site surve	ska							
Natural Resources	40225	Weed Control on Council Land	Operating		231,402	231,402	34,663	206,402	25,000 Revenue	enue	25,000
GIS	201	Special Projects	Operating	Various	0	0	30,714	25,000	-25,000 Revenue	enue	-25,000
Total Movements between Projects									2,933,362		0
S 7.11/S 64 Contributions											
The receipt of developer contributi	ons has beer	The receipt of developer contributions has been lower than budgeted with a slowing of the property market	property mark	et							
Sewerage Services	11040	Developer Contributions - Sewer	Operating		-3,200,000	-3,200,000	-1,581,577	-2,000,000	-1,200,000 Reserve	erve	0
Sewerage Services	9301	Transfer to/from Reserve	Operating	Inirastructure	3,435,000	3,435,000	0	2,235,000	1,200,000 Reserve	erve	0
Total S7.11/S 64 Contributions					-			-	1,200,000		0
Council Resolutions											
Council resolved at the February 2020 meeting to significantly increase	020 meeting	to significantly increase the frequency and scope of communication, awareness and transparency to inform, educate and engage the community about water and it's usage	cope of comm	nunication, aware	eness and trans	sparency to inf	orm, educate	and engage the	e community abo	ut water and it	's usage.
Water Supply	2012	Advertising	Operating	Infracture true	20,500	20,500	30,327	70,500	-50,000 Reserve	erve	0
Water Supply	9200	Transfer to/from Reserve	Operating		16,405,162	16,405,162	0	16,355,162	50,000 Reserve	erve	0
Total Council Resolutions									50,000		0
Budget Variation Requests - Approved by Executive	wed by Execu	utive									
Budget Variance for the stormwater remedial works at 741 Beechwood	er remedial w	orks at 741 Beechwood Rd, Beechwood									
Drainage	41947	Wauchope Water Treatment Plant Expansion	Capital	la fracta coti uco	44,300	44,300	2,865	95,700	-51,400 Revenue	enue	-51,400
Drainage	569	Stormwater Management	Capital		51,400	51,400	0	0	51,400 Revenue	enne	51,400
Budget Variance for the design and environmental approvals phase of t	d environmer	ntal approvals phase of the Rainbow Beach Sporting Fields	porting Fields	6							
Recreation, Property & Buildings	41950	Rainbow Beach Sporting Fields	Capital	Development &	290,000	290,000	38,851	455,000	-165,000 Reserve	erve	0

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BUDGET VARIATIONS - April 2020											
Section	Project	Project Description	Capital/ Operating	Division	Full Year Original Budget	Full Year Current Budget	Actuals to April 2020	New Yearly Proposed Budget - April 2020	Movement Source	Funding Source	EFFECT ON FUNDING POSITION
Recreation, Property & Buildings	41983	Rainbow Beach Sporting Fields - District Facilities	Capital	Environment	165,000	165,000	0	0	165,000	165,000 Reserve	0
Budget Variance for Wauchope Main St - Improvement of Pedestrian Amenity	iin St - Impro	vement of Pedestrian Amenity									
Transport & Traffic	41589	Wauchope Main St Works	Capital		833,062	833,062	1,209,400	1,086,400	-253,338 Reserve	Reserve	0
Transport & Traffic	41967	Pedestrian Refuge - Horton St	Capital	Infrastructure	160,000	160,000	0	0	160,000	160,000 Reserve	
Transport & Traffic	41921	Bay St - Newport to Ballina	Capital		206,811	206,811	96,800	113,473	93,338	93,338 Reserve	0
Budget Variance for Thompsons Bridge Design & Replacement	ridge Design	& Replacement									
Transport & Traffic	42000	Thompsons Bridge Design & Replacement	Capital		0	0	78,813	342,000	-342,000 Various	Various	0
Transport & Traffic	19342	Grants - Roads & Transport	Capital		0	0	0	-166,000	166,000 Grant	Grant	0
Transport & Traffic	19346	S7.11	Capital	Infrastructure	-2,575,349	-2,575,346	0	-2,695,346	120,000 s7.11	s7.11	0
Transport & Traffic	19349	Working Capital Reserve	Capital		-6,239,833	-6,239,833	0	-6,295,833	56,000	56,000 Various	0
Budget Variance for Thrumster Recycled Interim Reservoir & Connection	cycled Interir	n Reservoir & Connections									
Water Supply	45000	Thrumster Recycled Interim Reservoir & Connections	Capital	Infracture two	0	0	0	200,000	-200,000 Reserve	Reserve	0
Water Supply	19229	Transfer from Reserve	Capital		-5,823,000	-8,527,009	0	-8,727,009	200,000 Reserve	Reserve	0
Budget Variance for Ice Pigging - Planned Maintenance	lanned Main	tenance									
Water Supply	2700	Planned Maintenance	Operating	Infracture.	1,857,599	1,857,599	1,782,666	2,507,599	-650,000 Reserve	Reserve	0
Water Supply	9200	Transfer to/from Reserve	Operating		16,426,188	16,405,162	0	15,755,162	650,000 Reserve	Reserve	0
Total Budget Variations approved by Executive	by Executive								1,661,738		0

ATTACHMENT

ORDINARY COUNCIL 20/05/2020

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BUDGET VARIATIONS - April 2020											
Section	Project	Project Description	Capital/ Operating	Division	Full Year Original Budget	Full Year Current Budget	Actuals to April 2020	New Yearly Proposed Budget - April 2020	Movement Funding Source		EFFECT ON FUNDING POSITION
Works Program Amounts Re-allocated from 19/20 to 20/21	ted from 19/2	20 to 20/21									
Project movements between financial years	ial years										
Transport & Traffic	42000	John Oxley Drive Upgrade	Capital		484,000	380,856	268,481	480,856	-100,000 S7.11	S7.11	0
Water Supply	20155	Wauchope Water Treatment Plant Augmentation	Capital		0	4,000,000	170,711	400,000	3,600,000 Reserve	Reserve	0
Water Supply	29548	Water Supply Security - Emergency Actions Project	Capital		0	500,000	281,691	350,000	150,000	150,000 Reserve	0
Waste	50095	Kingfisher Waste Depot Upgrade	Capital		1,911,585	1,911,585	1,118,843	1,611,585	300,000	300,000 Reserve	0
Transport & Traffic	42001	Lorne Road Upgrade	Capital		0	0	0	80,000	-80,000	-80,000 Various	0
Transport & Traffic	41865	Bago Rd Pavement Rehab	Capital		735,843	735,843	307,334	307,843	428,000 Various	Various	0
Transport & Traffic	41925	Kew Main St Upgrade - Stage 3	Capital	Various	200,000	200,000	1,202	100,000	100,000 Various	Various	0
Transport & Traffic	41971	Scrubby Creek Bridge	Capital		910,000	460,000	77,311	200,000	260,000 Various	Various	0
Transport & Traffic	41972	The Ruins Way Upgrade	Capital		950,000	1,962,618	217,430	550,618	1,412,000 Various	Various	0
Recreation, Property & Buildings	41723	Hastings Regional Sporting Complex	Capital		2,107,598	2,107,598	128,342	607,598	1,500,000 Loans	Loans	0
Recreation, Property & Buildings	41950	Rainbow Beach Sports Fields	Capital		290,000	290,000	55,309	90,000	200,000 S7.11	S7.11	0
Sewerage Services	39614	Sewer DNP3 Roll Out	Capital		250,000	250,000	0	125,000	125,000	125,000 Reserve	0
Fleet Management	40722	Port Macquarie Works Depot	Capital		1,988,969	63,969	395,164	403,969	-340,000 Reserve	Reserve	0
Various	19000	Various	Capital		0	0	0	-5,307,469	-7,555,000 Various	Various	0
Total Carry-over movements									7,555,000		0

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ORDINARY COUNCIL 20/05/2020

BUDGET VARIATIONS - April 2020											
Section	Project	Project Description	Capital/ Operating	Division	Full Year Original Budget	Full Year Current Budget	Actuals to April 2020	New Yearly Proposed Budget - April 2020	Movement Funding Source	Funding Source	EFFECT ON FUNDING POSITION
ORGANISATIC	NAL TOTAL	ORGANISATIONAL TOTAL - THIS REVIEW							20,905,126		-565,884
FORECAST FOR FINA	NCIAL YEAR	FORECAST FOR FINANCIAL YEAR ENDED 30 JUNE 2020						I			
		Original Budget as at 1 July 2019 <u>Plus: Adjustments</u> Into Paniawi			Shortfall	-975,198					
		August Review September Review			Surplus Surplus	125,477 14,783					
		October Review November Review			Balanced Balanced	000					
		Jecember Keview January Review Fobriary Dovinew		, .	Surplus	0 229,245 70,000					
		March Review		0	No review Surdue	10,000 0 565 884					
FORECA	FORECAST FOR 30 JUNE 2020	IUNE 2020		,	Shortfall	30,191					
Notes:	-	The result shown above is the general fund result. All surpluses/deficits in the water, sewerage and waste funds are transferred to/from reserves.	ult. All surplus	es/deficits in the	water, sewerage	and waste fun	ds are transfer	red to/from rese	erves.		
	2	Reserve are internal restrictions that hold funds for a specific purpose, e.g. The airport has its own reserve and all income and expenditure relating to the airport is credited/debited to that reserve.	s for a specific	purpose, e.g. Th	ne airport has its (own reserve ar	nd all income a	nd expenditure	relating to th€	e airport is credit	ed/debited to
	e	Council projects are funded from a variety of funding sources. Below is a definition of the various types of funding that are used to fund projects.	inding sources.	Below is a defir	nition of the variou	is types of fun	ding that are u	sed to fund proj	ects.		
		Revenue - All funds that are generated through rates, annual charges, fees and charges, interest etc. These funds are untied and can be expended on any project that Council considers appropriate.	ı rates, annual	charges, fees an	id charges, intere	st etc. These	funds are untie	ed and can be e	xpended on a	my project that t	ouncil
		Grants - Government grants can either be monetary or otherwise and may be tied or untied. Tied grants are required to be used for a specific purpose such as the construction of a road. Untied grants may be applied for any purpose council considers appropriate.	etary or otherw pose council c	vise and may be onsiders approp	tied or untied. Tit riate.	ed grants are n	equired to be L	ised for a speci	fic purpose su	uch as the const	ruction of a
		Contributions - Contributions are non-reciprocal transfers to Council in the sense that Council is not required to give value in exchange for the contributions directly to the contributor. Examples are contributions given by ratepayers towards capital works in their vicinity.	I transfers to C s towards capit	council in the sen al works in their	se that Council is vicinity.	not required to	o give value in	exchange for th	ie contributio	ns directly to the	contributor.
		Reserves - Reserves are internal restrictions held for a specific purpose, e.g. The airport has its own reserve and all income and expenditure relating to the airport is credited/debited to that reserve.	eld for a specifi	fic purpose, e.g.	The airport has it.	s own reserve	and all income	and expenditu	re relating to t	the airport is cre	dited/debited
		S7.11 and S64 Contributions - Section 7.11 of the NSW Environmental and Planning Act (1979) and section 64 of the Local Government Act (1993) provides NSW local government with a formal legal framework for levying developers for the provision of infrastructure, services and amenities - known as developer contributions.	the NSW Envir pers for the pr	ronmental and Pl	anning Act (1979) ructure, services	and section 6 and amenities	34 of the Local - known as de	Government Ac veloper contribu	t (1993) provi Itions.	ides NSW local	government
	4	Some projects are funded by multiple funding sources, e.g. a capital project may be funded by s7.11 funds, grants and revenue. The effect on capital column will only show the revenue funding adjustment as the other types of funding will have an income line budget adjustment shown in the report.	sources, e.g. a of funding will	capital project m have an income	ay be funded by s line budget adjust	s7.11 funds, gr ment shown ir	rants and rever n the report.	nue. The effect	on capital co	lumn will only st	ow the

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Port Macquarie-Hastings Council	sudget Review for the quarter ended 31 March 2020	& Expenses
Port Macquai	Budget Revie	Income & Expenses

				ANNUAL				ΥEA	YEAR TO DATE		CURRE	CURRENT QUARTER	×
	Original Budget 2019/20	Original Budget including Carry-over 2019/20 (000's)	Approved Changes C Jul-Aug 19 Reviews (000's)	pproved Approved Changes Changes Sep II-Aug 19 Nov 19 Reviews Reviews (000's) (000's)	Dec 19-Feb 20 Reviews (000's)	Revised Budget	Projected year end result 2019/20 (000's)	YTD Actuals (000's)	YTD Budget (000's)	Actuals as a % of Budget	Jan 20 - March 20 Actuals	Jan 20 - March 20 Budget <i>I</i>	Jan 20 - March 20 Actuals as a % of Budget
Income													
Rates and annual charges	100,316	100,316				100,316	100,316	98,937	98,376	100.6%	2,000	1,939	103.2%
User charges and fees	39,804	39,804				39,804	39,804	25,388	26,990	94.1%	9,291	9,870	94.1%
Interest and investment revenue	8,701	8,701				8,701	8,701	6,262	6,378	98.2%	2,088	2,130	98.0%
Other revenues	5,440	5,463	194	(118)	112	5,651	5,651	4,524	3,962	114.2%	1,545	1,233	125.3%
Grants and contributions - operating	15,990	16,445	34	(398)	(207)	15,874	15,874	9,067	9,059	100.1%	3,213	2,126	151.2%
Grants and contributions - capital	31,373	36,241	219	1,330	1,292	39,082	39,082	20,800	22,484	92.5%	7,952	9,124	87.2%
Total income from continuing operations	201,624	206,970	47	814	1,197	209,428	209,428	164,979	167,248	98.6%	26,090	26,421	98.7%
Expenses													
Employee costs	54,004	54,004	(51)	187	(420)	53,720	53,720	36,975	41,666	88.7%	11,361	13,812	82.3%
Borrowing costs	2,465	2,465				2,465	2,465	1,462	1,634	89.5%	209	381	54.9%
Materials and contracts	43,411	46,287	(153)	(15)	43	46,162	46,162	27,515	32,304	85.2%	10,585	11,986	88.3%
Depreciation	49,135	49,135				49,135	49,135	38,307	46,937	81.6%	13,221	22,369	59.1%
Other expenses	14,229	14,269		200		14,969	14,969	10,606	10,840	97.8%	3,803	3,431	110.9%
Net Loss/(Profit) from disposal of assets	3,000	3,000				3,000	3,000	2,732	750	364.3%	1,618	750	0.0%
Total expenses from continuing operations	166,244	169,160	(204)	872	(377)	169,451	169,451	117,598	134,131	87.7%	40,797	52,730	77.4%
Net operating result from continuing operations - Surplus/(Deficit)	35,380	37,810	651	(58)	1,574	39,977	39,977	47,381	33,116	143.1%	(14,708)	(26,309)	55.9%
Net operating result before capital items - Surplus/(Deficit)	4,007	1,569	432	(1,388)	282	895	895	26,581	10,633	250.0%	(22,660)	(35,433)	64.0%

ORDINARY COUNCIL 20/05/2020

Port Macquarie-Hastings Council Budget Review for the quarter ended 31 March 2020 Capital Budget (excluding Commitments)

	Original Budget 2019/20	Carry- over (000's) J	Approved Changes Jul-Aug 19 Reviews (000's)	Approved Changes Sep- Nov 19 Reviews (000's)	Approved Dec 19-Feb nges Sep- 20 Reviews Nov 19 (000's) Reviews (000's)	Revised Budget	Projected year end result 2019/20 (000's)	YTD Actuals (000's)	YTD Budget (00°s)	Actuals as a % of Budget	Jan 20 - March 20 Actuals	Jan 20 - March 20 Budget /	Jan 20 - March 20 Actuals as a % of Budget
Capital Funding													
General fund rates and environmental levy	5,614	3,093	356	(104)	(1,207)	7,752	7,752	2,511	6,681	37.6%	(1,846)	(3,008)	61.4%
Capital grants and contributions	15,164	4,891	244	1,683	(232)	21,750	21,750	7,009	13,256	52.9%	2,653	3,754	70.7%
Internal Restrictions	22,304	5,329	419	835	(8,806)	20,081	20,081	12,184	17,613	69.2%	4,177	2,222	188.0%
External Restrictions	28,622	6,283	662	0	(4,179)	31,388	31,388	17,685	26,202	67.5%	3,937	3,075	128.0%
S7.11/64 funds	18,866	2,298		585	(11,840)	9,909	606'6	2,706	6,905	39.2%	920	120	764.8%
Loans	1,500	0		2,400	(2,150)	1,750	1,750	81	924	8.8%	(114)	598	-19.1%
Total Capital Funding	92,070	21,893	1,681	5,399	(28,414)	92,629	92,629	42,176	71,581	58.9%	9,727	6,761	143.9%
Capital Expenditure													
General fund asset purchases/construction	48,039	14,284	1,105	5, 399	(16,320)	52,507	52,507	21,118	40,615	52.0%	7,080	5,744	123.3%
Waste management asset purchases/construction	273	1,237	793	0	(80)	2,223	2,223	905	2,115	42.8%	581	694	83.7%
Water supply asset purchases/construction	7,963	719	(88)	0	1,700	10,294	10,294	2,829	5,204	54.4%	593	937	63.3%
Sewerage services asset purchases/construction	25,698	5,653	(129)	0	(13,714)	17,508	17,508	10,794	17,124	63.0%	17	(2,138)	-3.6%
Capital Expenditure excluding Loans	81,973	21,893	1,681	5,399	(28,414)	82,532	82,532	35,646	65,058	54.8%	8,331	5,237	159.1%
Loan Repayments (principal)	10,097		0	0	0	10,097	10,097	6,530	6,523	100.1%	1,396	1,524	91.6%
Total Capital Expenditure	92,070	21,893	1,681	5,399	(28,414)	92,629	92,629	42,176	71,581	58.9%	9,727	6,761	143.9%

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ORDINARY COUNCIL 20/05/2020

Port Macquarie-Hastings Council Budget Review for the quarter ended 31 March 2020 Cash & Investments

	Original Budget 2019/20 (000's)	Carry- over (000's)	Approved Changes Jul- Aug 19 Reviews (000's)	Approved Changes Sep-Nov 19 Reviews (000's)	Dec 19- Feb 20 Reviews (000's)	Revised Budget	Projected year end result 2019/20 (000's)	YTD Actuals (000's)
Unrestricted	6,243		127			(835)	(835)	
Externally restricted Developer Contributions (Incl Water & Sewer)	103.447	(2,305)	132	(621)	11,839	112,492	112,492	
Unexpended contributions	99	1-17		()		99	99	
Unexpended grants	5,974					5,974	5,974	
Unexpended loans Water Supply	(2,500) 70,032	(299) (209)	(21)	(2,253)	2,150 (2,495)	(2,902) 67,307	(2,902) 67,307	
Sewerage Services	22,027	(4,278)	(21)		(2,495) 8,403	26,219	26,219	
Employee Leave Entitlements (Restricted)	1,060	(.,=)			-1	1,060	1,060	
Special Rates	1,607	(159)				1,448	1,448	
Domestic Waste Management Stormwater Management	18,011	(1,237)	(823)	(735)	80 298	15,296	15,296	
Deposits & Bonds	(139) 7,395	(313)			230	(154) 7,395	(154) 7,395	
Total externally restricted	227,013	(8,800)	(645)	(3,609)	20,275	234,234	234,234	
Internally restricted								
Operational Reserves	6 350	12 445	/475		1 560	1005	1005	
Committed Works Employee Leave Entitlements	6,259 5,617	(3,145)	(17)		1,568	4,665 5,617	4,665 5,617	
Office Building & Equipment	1,176	(1,600)			1,500	1,076	1,076	
Plant Replacement	5,204	(1,989)		13	1,900	5,128	5,128	
Working Capital	6,719 24,975	(697)	123	13	502 5,470	6,647 23,133	6,647 23,133	0
Quarantined Funds	24,515	(7,431)	100	15	3,470	20,100	23,133	0
Crown Reserves	214	(160)			314	368	368	
Environment Levy	1,056	(800)	(39)	(100)	739	856 667	856 667	
Onsite Effluent Surf Clubs	667 766					766	766	
Tourism & Industry Promotion	494		(140)	(100)		254	254	
Wauchope Heated Indoor Pool	0	0	(170)	(2.00)	4.050	0	0	
Roads & Infrastructure	3,197	(960)	(179)	(200)	1,053	2,911	2,911	0
Asset Revaluation	125	(40)				85	85	
The Glasshouse Ferries Maintenance	457	(292)				457 1,047	457 1,047	
Infrastructure Priorities	514	(232)				484	484	
Lake Road Upgrade	157					157	157	
Major Buildings Renewals Playing Fields	(34) 300	(89)				(123) 300	(123) 300	
PM Town Centre Masterplan	883	(20)			500	1,363	1.363	
Road Environmental Works	55	. ,				55	55	
Regional Road Infrastructure	6,038		63	(400)	c00	6,101	6,101	
Strategic Priorities Reserve Transport Infrastructure Renewal	6,253	(751)		(400)	600 525	6,453 2,101	6,453 2,101	
Works Associated with Developments	150	()				150	150	
Onumeil Business Heits	18,564	(1,222)	63	(400)	1,625	18,630	18,630	0
Council Business Units Airport	3,016	(761)	(500)	(140)	100	1,715	1,715	
Crematorium & Lawn Cemetery	964	(,	()	(1.10)		964	964	
Property Investment	2,438	(154)	(500)	(1.10)	160	2,444	2,444	
Coastal & Estuary Management	6,418	(915)	(500)	(140)	260	5,123	5,123	0
Canal Maintenance	(220)	(12)		(111)		(343)	(343)	
Lake Cathie Dredging	28			. ,		28	28	
Town Beach Sand Nourishment/4WD Access	685	(12)	0	(111)	0	685 370	685 370	0
Other		()		()	•			· · ·
Council Election Cultural Activities	286 85	(80)				286 5	286 5	
HACC Greenmeadows	2	(00)				2	2	
Planning Studies	6	(44)				(38)	(38)	
Street Lighting Town Bands	871					871	871	
Town Bands	1,250	(124)	0	0	0	82 1,208	82 1,208	0
Total internally restricted	54,897	(10,664)	(510)	(838)	8,408	51,375	51,375	
Total restricted	281,910	(19,464)	(1,155)	(4,447)	28,683	285,609	285,609	
Total cash and investments	288,153	(19,464)	(1,028)	(4,447)	28,683	284,774	284,774	320,015
Available cash	6,243	0	127	0	0	(835)	(835)	
				Total Cook 2	Inventore 1		al Palerse	200.015
				Total Cash &		sperthe In Ish at Bank		320,015 (18,044)

Responsible Accounting Officer Statement All restricted funds are invested in accordance with Council's Investment Policy. Council's cash has been reconciled to the bank statement to the 31 March 2020 The YTD Total Cash and Investments have been reconciled with funds invested and Cash at Bank.

T-Corp Ratios					Projected Ju	Projected June 2020 Position		
Ratio	Рцрове	Definition	Benchmark	June 2019 Actual Result	Original 2019/20 Budget	Revised 2019/20 Budget	Internal Target - Short Term (1-2 yrs)	CALCULATION METHOD
Operating Performance	This ratio measures Council's achevement of containing operating expenditure within operating revenue.	(Operating Revenue excluding capital grants and contributions - operating expenses) / (Operating Revenue excluding capital grants and contributions)	Greater than 0	5.12%	4.57%	3 2.96%	%0<	Budget
Own Source Revenue	This ratio measures fiscal flexibility. It is the degree of reliance on external funding sources such as operating grants and contributions. A council's financial flexibility improves the higher the level of its own source revenue.	Operating Revenue excluding all grants and contributions/ Total Revenue including all grants and contributions	Greater than 60% 🥝 65.42%	65.42%	o 76.52%	73.83%	60.00%	Budget
Unrestricted Current Ratio	This ratio is designed to represent Council's ability to meet short term obligations as they fall due.	Current assets less all external restrictions/ current liabilities less specific purpose liabilities	Greater than 1.5	1.74	Q 2.30	1.75	>1.5	Estimate
Debt Service Cover	This ratio measures the availability of operating cash to service debt including interest, principal and lease payments.	(Op results before capital excluding interest & depn, impairment, amortisation) / (Principal repayments + borrowing costs)	Greater than 2	4.32	4.73	3 4.51	~2	Estimate
Rates and Annual Charges Outstanding Percentage	To assess the impact of uncollected Rates and amual charges rates and amual charges on liquidity outstanding/ Rates and amual and the adequacy of recovery efforts. [charges collectible	Rates and annual charges outstanding/ Rates and annual charges collectible	<5% metro and <10% rural	S.01	4.73	5.50	< 5.5%	Estimate
Cash Expenses Cover	This liquidity ratio indicates the number of months a Council can continue paying for its immediate expenses without additional cash flow.	(Current year's cash equivalents + term deposits) (Payments from cash flow of operating and financing activities) x 12	Greater than 3 months	28.42	28.53	Ø 29.85	> 3 months	Estimate
Building and Infrastructure Renewals Ratio	This ratio compares the proportion spent on infrastructure asset renewals and the asser's deterioration measured by its accounting depreciation.	Asset renewals (building, infrastructure and other structures/Depreciation, amortisation and impairment aunotisation and other structures)	100%	S 70.22%	S 60.74%	S 73.83%	>45%	Estimate
Infrastructure Backlog Ratio	This ratio shows what proportion the backlog is against the total value of Council's infrastructure.	Estimated cost to bring assets to a satisfactory condition Total value of infrastructure, building, other structures and depreciable land improvement assets.	Less than 2%	0 6.66%	4.91%	6.50%	~9%	Estimate
Asset Maintenance	This ratio compares actual versus required annual maintenance, as detailed in Special Schedule 7 (of the annual financial statements).	Actual asset maintenance/Required asset maintenance	Greater than 1	1.00	8 0.89	0.85	6:<	Estimate

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Port Macquarie-Hastings Council Budget Review for the quarter ended 31 March 2020 Consultancy and Legal Expenses

	Quarterly expenditure excluding GST	Budgeted Y/N
Expense		
Legal Fees	207,511	Yes
Business Consultant	41,842	Yes
Engineering Consulting	592,808	Yes
Environmental Consulting	105,329	Yes
IT Consulting	5,437	
Property Development	61,160	Yes
Total Expense	1.014.087	

Port Macquarie-Hastings Council Budget Review for the quarter ended 31 March 2020 Contracts entered into during the March quarter.

Division	Contractor	Contract detail & purpose	Contract value	Commencement Date	Duration of Contract Budgeted Y/N	Budgeted Y/N	Explanation as to why not budgeted.
Infrastructure	TCM Civil	T-19-61 Construction og Port Macquarie Sewer Rising Main 71	\$1,364,000	19-Feb-20	Complete on finalisation of project	Yes	Not Applicable
Infrastructure	King & Campbell Pty Ltd	T-19-53 Design of Rainbow Beach Sporting Fields	\$269,000	19-Feb-20	Complete on finalisation of project	Yes	Not Applicable

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Monthly Investment Report

April 2020



Imperium Markets Pty Ltd ABN: 87 616 579 527 Authorised Representative of Libertas Financial Planning Pty Ltd AFSL 429 718 Phone: +61 2 9053 2987 Email: <u>michael.chandra@imperium.markets</u> Level 13, 333 George Street, Sydney NSW 2000

> Item 10.06 Attachment 1



Executive Summary

Compliance

Compliance Measure	Within Policy Limits (Y/N)	Reason if Not Compliant
Term to Maturity	Yes – Compliant	n/a
Counterparty	Yes – Compliant	n/a
Credit Quality	Yes – Compliant	n/a

Performance

As at 30/04/2020	1m (actual)	1m (% p.a.)	FYTD (actual)	FYTD (% p.a.)
AusBond Bank Bill Index	0.05%	0.58%	0.83%	0.99%
Council's Portfolio^	0.21%	2.62%	2.27%	2.72%
Outperformance	0.16%	2.04%	1.44%	1.73%

^Total portfolio performance excludes Council's cash account holdings. Overall returns would be lower if cash was included.

Impact of COVID-19 to Council's Portfolio

COVID-19 has adversely impacted financial markets, which in turn, has also affected Council's investment portfolio. We provide a quick summary in this section.

With regards to financial markets, of importance was the RBA cutting interest rates twice in March 2020, taking the official cash rate down to a record low of 0.25%. Shares (equities) experienced a significant correction, down over -20% in Australian and around -13% globally for the month of March. April saw shares rebound strongly, offsetting some of the losses in March, with equities returning around +9% in Australia and +10% abroad.

With regards to the medium-longer term outlook for financial markets, of importance is the RBA's outlook and stance on the current situation:

- 1. The RBA's official cash rate will remain unchanged at its emergency level of 0.25% until its objectives of full employment and inflation are reached (note, we are unlikely to see the unemployment rate down to 4.5% and inflation within their 2-3% target band any time soon);
- RBA Governor Lowe has commented that he has not been any signs of stress in the financial system from this crisis because unlike the GFC, the banks have cash and are well capitalised;
- 3. The RBA Board expects rates would be low "for a very long period of time".

The biggest impact to Council's investment portfolio is with regards to its largest exposure being assets held in bank term deposits, which accounts for around ~92% of Council's total investment, and cash (~7% of the total investment portfolio). The biggest risk that PMHC faces over the medium-longer term in this environment is not the potential loss of capital (given all the banks are well capitalised and regulated by APRA), but the rapid loss of interest income as interest rates have plummeted.

Monthly Investment Report: April 2020



Council's term deposit portfolio was yielding 2.55% p.a. at month-end, with a weighted average duration of around 541 days or 1½ years. The long average duration will provide some income protection against the low interest rate environment for the next $1 - \frac{1}{2}$ years (short-term). As existing deposits mature however, they will inevitably be reinvested at much lower prevailing rates.

We note the current interest rates in the term deposit market:

- The highest deposit rate from any rated ADI in the market is now 1.80% p.a. for 5 years;
- The highest deposit rates amongst the "AA-" rated ADIs (major banks) is now yielding between 1.05%-1.35% p.a. (depending on term);
- The highest deposit rates amongst the "A" rated ADIs was yielding between 1.20%-1.45% p.a. (depending on term);
- The highest deposit rates amongst the "BBB" and unrated ADIs was yielding between 1.60%-2.00% p.a. (depending on term).

Given official rates have fallen to all-time lows, Council is likely to see a rapid decline in interest income over future financial years. Its budgeted income over the <u>medium-longer term</u> needs to be revised to reflect the low interest rate environment. Returns of 1%-1½% p.a. may potentially be the "norm" over the next few financial years.

Monthly Investment Report: April 2020



Council's Portfolio

Asset Allocation

The portfolio is predominately directed to fixed term deposits (92%). The remainder of the portfolio is directed to the overnight cash account with Westpac (7%) and the single FRN with Bendigo-Adelaide (1%).

With credit securities widening over recent months, we would consider increasing the allocation to liquid senior floating rate notes (FRNs), if there are any remaining attractive securities in the secondary or primary market. This will not only offer additional upside with regards to the portfolio's investment returns, but also provide additional liquidity (FRNs are saleable – generally accessible within 2 business days). FRNs are also dominated by the higher rated ADIs which allows Council to maintain a bias towards the higher rated banks.

With official interest rates now at the RBA's effective zero bound, the priority should be to lock in any attractive medium-longer dated fixed deposits that may still be available to address reinvestment risk.



<u>Term to Maturity</u>

All maturity limits (minimum and maximum) comply with the Investment Policy. Medium-Term (3-5½ years) assets account for around 9% of the total investment portfolio, with capacity of around \$94m at month-end.



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Where there is (counterparty) capacity to invest in attractive 3-5½ year investments, we recommend this be allocated to new any remaining attractive fixed term deposits (refer to respective sections below).

Compliant	Horizon	Invested (\$)	Invested (%)	Min. Limit (%)	Max. Limit (%)	Available (\$)
\checkmark	0 - 365 days	\$103,481,038	34.16%	0%	100%	\$199,470,459
\checkmark	1 - 3 years	\$172,500,000	56.94%	0%	60%	\$9,270,898
\checkmark	3 - 5.5 years	\$26,970,459	8.90%	0%	40%	\$94,210,140
\checkmark	5.5 - 10 years	\$0	0.00%	0%	20%	\$60,590,299
		\$302,951,497	100.00%			

Counterparty

As at the end of April, Council did not have an overweight position to any single ADI. Overall, the portfolio is diversified across the investment grade credit spectrum (rated BBB- or higher), with no exposure to unrated ADIs.

Compliant	lssuer	Rating	Invested (\$)	Invested (%)	Max. Limit (%)	Available (\$)
√	NAB	AA-	\$46,000,000	15.18%	30.00%	\$44,885,449
\checkmark	WBC (St George)	AA-	\$71,981,038	23.76%	30.00%	\$18,904,411
\checkmark	Rabobank	A+	\$13,000,000	4.29%	20.00%	\$47,590,299
\checkmark	ICBC Sydney	А	\$57,500,000	18.98%	20.00%	\$3,090,299
~	ING Bank Aus.	А	\$33,500,000	11.06%	20.00%	\$27,090,299
\checkmark	AMP Bank	BBB+	\$9,000,000	2.97%	10.00%	\$21,295,150
\checkmark	BOQ	BBB+	\$28,000,000	9.24%	10.00%	\$2,295,150
\checkmark	Bendigo	BBB+	\$2,970,459	0.98%	10.00%	\$27,324,691
\checkmark	Auswide	BBB	\$24,000,000	7.92%	10.00%	\$6,295,150
\checkmark	Newcastle PBS	BBB	\$17,000,000	5.61%	10.00%	\$13,295,150
			\$302,951,497	100.00%		

We remain supportive of the regional and unrated ADI sector (and have been even throughout the GFC period). They continue to remain solid, incorporate strong balance sheets, while exhibiting high levels of capital – typically, much higher compared to the higher rated ADIs. Some unrated ADIs have up to 25-40% more capital than the domestic major banks, and well above the Basel III requirements.

APRA's Chairman affirmed that the banks had satisfactorily moved towards an 'unquestionably strong' capital position and that bank's stress testing contingency plans were now far better positioned that was previously the case years ago. **RBA Governor Lowe has recently commented that they have not** seen any signs of stress in the financial system and that unlike during the GFC, the banks now have cash, are well capitalised and are acting as "shock absorbers" in the current crisis.

Overall, the lower rated ADIs (BBB and unrated) are generally now in a better financial position then they have been historically (see the Capital Ratio figure below). We believe that deposit investments with the lower rated ADIs should be continued going forward, particularly when they offer 'above

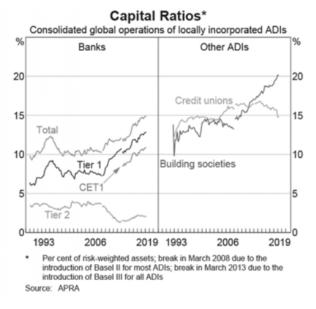
Monthly Investment Report: April 2020



market' specials. Not only would it diversify the investment portfolio and reduce credit risk, it would also improve the portfolio's overall returns.

In the current environment of high regulation and scrutiny, all domestic ADIs continue to carry high levels of capital, particularly amongst the lower ("BBB") and unrated ADIs. There is minimal (if any) probability of any ADI defaulting on their deposits going forward – this was stress tested during the GFC. APRA's mandate is to "protect depositors" and provide "financial stability".

The biggest single risk that depositors face in the current low interest rate environment is not capital or credit risk, but reinvestment risk. Interest rates are now at their effective lower bound of 0.25%.



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Credit Quality

The portfolio remains lightly diversified from a credit ratings perspective. The portfolio is entirely directed to the investment grade ADIs (BBB- or higher), with zero allocation to unrated ADIs. There is high capacity to invest in the higher rated ADIs (A or higher), particularly after the downgrades of BoQ and Bendigo-Adelaide Bank in May 2017, as well as AMP Bank in August 2019, which are all now in the "BBB" rated category.

Conversely, the "BBB" rated ADIs is now close to capacity limits, approximately ~\$9.9m remaining at month-end.

Given the large number of "BBB" rated ADIs issuing deposits currently in the market (and conversely, the low number of "A" or higher rated ADIs), we suggest Council direct new funds into this sector, where attractive and where there is capacity. We note that it is within this category where the most value is currently experienced. The difference in pricing can amount up to 10-30bp on any day.

Should Council continue to exclude investments amongst the unrated ADI sector, we recommend the 10% allocation be directed to the "BBB" rated sector. Council is currently examining the Investment Policy as part of its annual review.

Compliant	Credit Rating	Invested (\$)	Invested (%)	Max. Limit (%)	Available (\$)
~	AA Category	\$117,981,038	38.94%	100%	\$184,970,459
1	A Category	\$104,000,000	34.33%	60%	\$77,770,898
1	BBB Category	\$80,970,459	26.73%	30%	\$9,914,990
1	Unrated ADIs	\$0	0.00%	10%	\$30,295,150
		\$302,951,497	100.00%		

All ratings categories are within the current Policy limits:

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Performance

Council's performance for the month ending 30 April 2020 is summarised as follows:

Performance	1 month	3 months	6 months	FYTD	1 year
Official Cash Rate	0.02%	0.10%	0.29%	0.61%	0.84%
AusBond Bank Bill Index	0.05%	0.22%	0.46%	0.83%	1.12%
Council's T/D Portfolio	0.21%	0.63%	1.31%	2.27%	2.77%
Council's FRN Portfolio	0.13%	0.41%	0.89%	-	-
Council's Portfolio^	0.21%	0.63%	1.30%	2.27%	2.77%
Outperformance	0.17%	0.41%	0.84%	1.44%	1.65%

^Total portfolio performance excludes Council's cash account holdings. Overall returns would be lower if cash was included.

For the month of April, the portfolio (excluding cash) provided a solid return of +0.21% (actual), outperforming the benchmark AusBond Bank Bill Index return by +0.17% (actual). The strong performance continues to be driven by the handful of deposits still yielding above 3% p.a. However, some of these individual deposits are approaching maturity and will be reinvested at much lower prevailing rates.

Over the past 12 months, the portfolio returned +2.77% p.a., outperforming bank bills by 1.65% p.a. and around 3½ times the official cash rate. This has been very strong given deposit rates reached their all-time lows and margins have generally contracted over the past 3 years.

We are pleased that PMHC remains amongst the best performing Councils in the state of NSW where deposits are concerned, earning on average, more than \$1,200,000 in additional interest income compared to its peers (refer to our February 2020 rankings). We have been pro-active in our advice about protecting interest income and addressing reinvestment risk for many years and encouraged to maintain a long duration position. This is now reflected by the high performance of the investment portfolio. Of the 70 individual deposits PMHC held, 25 are still yielding higher than 3.00% p.a. That is, around 36% of outstanding deposits held is earning an interest rate that is twelve times the prevailing cash rate of 0.25%.

Investors using the Imperium Markets platform have reduced the invisible costs associated with brokerage, and thereby lift client portfolio returns as investors are able to deal in deposits directly with the ADIs and execute at the best price possible. Council has experienced this over the past 2 years, receiving on average, 2-4bp higher for every deposit dealt on the platform.

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Council's Term Deposit Portfolio & Recommendation

As at the end of April 2020, Council's deposit portfolio was yielding 2.55% p.a. (up 1bp from the previous month), with an average duration of ~1.48 years. Where possible, we recommend Council extends or at least maintains this average duration. In the low interest rate environment, the biggest collective risk that the local government sector has faced over the post-GFC era has been the dramatic fall in interest rates - from 7% to the historical low levels of 0.25%.

As the past decade has highlighted (post-GFC era), we have seen too many portfolios' roll a high proportion of their deposits between 3-6 months, resulting in their deposits being reinvested at lower prevailing rates. That is, depositors have overpaid for liquidity and generally not insured themselves against the low interest rate environment by diversify their funding across various tenors (out to 5 years) but rather placed all their 'eggs in one basket' and kept all their deposits short. **Reinvestment risk has collectively been and continues to be the biggest detriment to depositors' interest income over the post-GFC period**.

At the time of writing (early May), we see value in:

ADI	LT Credit Rating	Term	T/D Rate
Judo Bank	Unrated ADI	2 years	1.80% p.a.
BoQ	BBB+	5 years	1.80% p.a.
AMP Bank	BBB+	18 months	^1.75% p.a.
BoQ	BBB+	4 years	1.70% p.a.
Auswide Bank	BBB	2-4 years	1.60% p.a.
AMP Bank	BBB+	2 years	^1.60% p.a.
BoQ	BBB+	3 years	1.55% p.a.

^ AMP T/Ds – these are grossed up rates which includes a 0.20% p.a. rebated commission from Imperium Markets

The above deposits are suitable for investors looking to provide some income protection and mitigate reinvestment/rollover risk in the low interest rate environment.

For terms under 12 months, we believe the strongest value is currently being offered by a number of lower and unrated ADIs offering above-market specials (dependent on daily funding requirements):

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ADI	LT Credit Rating	Term	T/D Rate
AMP	BBB+	6, 7 months	^1.85% p.a.
АМР	BBB+	8, 9, 10 months	^1.80% p.a.
BoQ	BBB+	6 months	1.55% p.a.
Auswide Bank	BBB	6-12 months	1.50% p.a.
BoQ	BBB+	5 months	1.50% p.a.
Auswide Bank	BBB	3 months	1.45% p.a.
Gateway Bank	Unrated ADI	3 months	1.45% p.a.
Judo Bank	Unrated ADI	6, 12 months	1.40% p.a.

^ AMP T/Ds – these are grossed up rates which includes a 0.20% p.a. rebated commission from Imperium Markets

Amongst the higher rated ADIs ("A" rated or higher), the following deposits remain attractive for terms under 12 months:

ADI	LT Credit Rating	Term	T/D Rate
Macquarie Bank	A+	12 months	1.44% p.a.
Macquarie Bank	A+	6 months	1.34% p.a.
Macquarie Bank	A+	3 months	1.29% p.a.
NAB	AA-	12 months	1.05% p.a.

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Senior FRNs & Recommendations

Over April, amongst the senior major bank FRNs, physical credit securities rebounded significantly, tightening around 40bp at the long-end of the curve. Liquidity returned to the secondary market and the bid-ask spreads tightened considerably as investors sitting on the sidelines (holding cash) looked to take advantage of any attractive offers available. Those investors that require liquidity with a domestic major bank (highly rated) and can roll down the curve should invest in 5 year terms over 3 year terms (or shorter), given the ability to lock in capital gains in subsequent years.

Any 5 year senior major bank FRNs (primary or secondary market) offered above +90bp appears to be fair value in our view, back to levels experienced in mid-2019. Any secondary market major bank FRNs offered around the same levels (or higher) for 4-5 year terms appear attractive and should be considered. We expect little primary issuance going forward given the RBA's \$90bn term funding facility (TFF) to the ADIs, offering a rate of 0.25% for 3 years. The anticipated lack of supply from new (primary) issuances going forward will favour those investors with the ability to take advantage of the discounted securities that remain in the secondary market.

Amongst the "A" rated sector, credit securities (senior level) were marked around 25-35bp tighter across the 3 and 5 year part of the curve. During the month, Suncorp issued a 5 year Covered FRN (AAA) at +112bp, printing \$750m, which we thought was at an attractive level, given it was priced at around a 15-20bp premium to where senior major bank FRNs (AA-) were marked in the secondary market. It has since tightened to around 100bp in the secondary market.

Meanwhile, amongst the 3 year "BBB" rated senior sector, they were marked around 15bp tighter over the month. There remains little turnover in the secondary market amongst the regional bank sector (turnover dominated by the major banks).

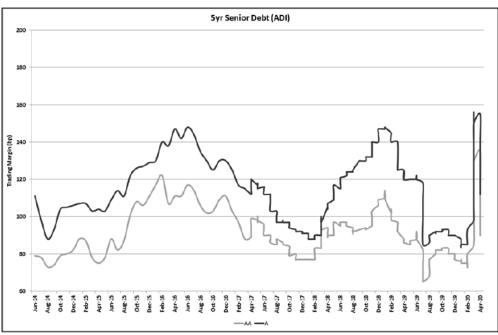
Credit margins remain at relatively attractive levels, although we expect further bouts of volatility. FRNs will continue to play a role in investor's portfolios mainly on the basis of their liquidity and the ability to roll down the curve and gross up returns over ensuing years (in a relatively stable credit environment). *Investors should be ready to take advantage of any discounted securities amongst the senior ranked assets, particularly amongst the domestic major banks*.

Senior FRNs (ADIs)	30/04/2020	31/03/2020
"AA" rated – 5yrs	+90bp	+130bp
"AA" rated – 3yrs	+65bp	+104bp
"A" rated – 5yrs	+112bp	+150bp
"A" rated – 3yrs	+88bp	+116bp
"BBB" rated – 3yrs	+120bp	+135bp

Source: IBS Capital

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Source: IBS Capital

We now generally **recommend switches** ('benchmark' issues only) into new primary issues, out of the following senior FRNs that are maturing:

- > On or before mid-2022 for the "AA" rated ADIs (domestic major banks);
- > On or before early-mid 2021 for the "A" rated ADIs; and
- Within 12 months for the "BBB" rated ADIs (consider case by case).

Investors holding onto the above senior FRNs ('benchmark' issues only) in their last 1-2 years are now generally holding sub-optimal investments and are not maximising returns by foregoing realised capital gains. In the current low interest rate environment, any boost in overall returns should be locked in when it is advantageous to do so.

Should the bid/offer spreads remain wide in the secondary market, investors may be reluctant to sell/switch, although there are signs that the two-way pricing is starting to normalise.

In late August 2019, Council placed a bid of \$3m into the new Bendigo (BBB+) 5 year FRN at +97bp maturing 06/09/2024 This FRN should be viewed as a 4 year holding period, with the ability to 'roll down the curve', realise capital gains which would boost the overall return of the investment portfolio. The security was marked around +122bp (from +133bp the previous month) or a capital price ~\$99.00 at month-end. We recommend Council holds this FRN.

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Economic Commentary

International Market

Financial markets rebounded strongly in April, mainly on the back of fiscal and monetary stimulus provided by government and central banks. There were some early signs that various countries have *"flattened the curve"*, tentatively looking to relax some of their lockdown measures. Late in the month, a positive drug trial in the US that would be an effective treatment against COVID-19 also boosted investor sentiment. This may lead to a quicker rollback of containment measures globally.

In the US, equity markets recovered a significant portion of their losses in March. The S&P 500 Index gained +12.68% (best month since January 1987), while the NASDAQ surged +15.45%. Across the main European markets, Germany's DAX gained +9.32%, UK's FTSE up +4.04% and France's CAC by +4.00%.

US Fed Chair Powell said rates would remain unchanged at their emergency levels until the economy was on track to achieve their targets of maximum employment and price stability.

The Fed announced it was willing to buy not only investment grade credit (as part of its unfolding QE bond buying programme), but also high yield or sub-investment grade paper.

US Q1 GDP contracted at -4.8% annualised, against the -4.0% consensus. The worst is yet to come with expectations that Q2 GDP might fall by around 30-40% annualised.

Jobless claims in the US reached over 30 million over a 6 week period to the end of April. The unemployment rate in the US is anticipated to skyrocket to as high as 20% in April once official figures are released. US retail sales collapsed by a record -8.7% m/m in March, driven by autos.

The Eurozone rescue deal was agreed by EU Finance Ministers totalling €540bn. The Eurozone economy contracted by -3.8% in Q1. The ECB made no changes to its bond buying programme, worth over €1000bn through to the end of the year.

China's trade figures beat expectations, with imports coming in at -0.9% y/y (expectations of -9.8%). Exports also beat consensus at -6.6% y/y against -13.9% expected. However, its economy (Q1 GDP) shrank by -9.8% q/q and -6.8% on an annual basis, the first time since at least 1992.

The IMF downgraded global growth forecasts to -3.0% for 2020, the weakest since the Great **Depression**. It is however projecting a v-shape recovery, forecasting growth at +5.8% in 2021, aided by policy support.

Index	1m	3m	1yr	3yr	5yr	10yr
S&P 500 Index	+12.68%	-9.71%	-1.13%	+6.90%	+6.91%	+9.39%
MSCI World ex-AUS	+10.71%	-12.09%	-5.45%	+3.27%	+3.12%	+5.77%
S&P ASX 200 Accum. Index	+8.78%	-20.32%	-9.06%	+1.92%	+3.46%	+5.96%

The MSCI World ex-Aus Index rebounded by +10.71% for the month of April:

Source: S&P, MSCI

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Domestic Market

The RBA kept its conventional and unconventional monetary policy unchanged at its April meeting. The bank reaffirmed its 0.25% targets for both the cash rate and the 3-year government bond yield.

RBA Governor Lowe forecasted for GDP to fall by -10% over H1 2020, marking the largest fall since the 1930s. **Unemployment is expected rise to around 10% by June** and likely to be above 6% over the next few years. **Annual headline inflation is also expected to turn negative in Q2**, marking the first negative annual inflation print since the early 1960s, reflecting falling oil prices and free childcare. However, core inflation is anticipated to still be positive.

Governor Lowe commented that they were not seeing any signs of stress at all in the financial system and that, unlike during the GFC, banks had cash and were well capitalised.

The IMF forecasts Australia's economy to shrink by -6.7% this year, entering its first recession in 30 years.

Retail sales rose by +0.5% in February, marginally higher than the preliminary estimate of a +0.4% increase. Strength in February was driven by food retailing (+0.8%), department stores (+3.1%) and households goods (+0.7%), reflecting the recent panic buying.

The Federal government passed its wage subsidy scheme ("JobKeeper") programme at a cost of up to \$130bn or 6.5% of GDP, paying a subsidy of \$1,500 per fortnight per employee. This stimulus compares with the two earlier packages totalling \$68bn or 3.4% of GDP.

Rating's agency S&P revised Australia's ratings outlook to negative from stable. The domestic major banks were also placed on negative watch (from stable outlook). Meanwhile, **Fitch Ratings downgraded the domestic major banks (and their NZ subsidiaries) by one notch from AA- to A+**, citing the significant economic shock in the first half of 2020 due to measures taken to halt the spread of COVID-19.

The unemployment rate edged higher to 5.2% in March, against expectations of a coronavirus-driven jump to 5.4%.

PM Morrison hinted strongly that some rolling back is likely to occur by mid-May, laying out three necessary criteria (more testing, robust health system, and a contact tracing system).

The headline CPI rose by +0.3% in Q1, mainly on the back of strong food prices, which more than offset falls in petrol prices and travel costs. The trimmed mean CPI rose by +0.5%, lifting annual inflation to +1.8%, the fastest annual increase since Q4 2018. However, the boost to inflation will be short-lived as the CPI should fall at a rapid rate in Q2.

The AUD surged in April by +6.33%, finishing at US65.66 cents, from US61.75 cents the previous month.

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Credit Market

The main global credit indices tightened significantly over April as risk assets rebounded. Spreads were marked up to 30% tighter across the main indices. The indices now trade at levels last experienced in early 2016:

Index	April 2020	March 2020
CDX North American 5yr CDS	87bp	113bp
iTraxx Europe 5yr CDS	81bp	97bp
iTraxx Australia 5yr CDS	118bp	175bp

Source: Markit

Fixed Interest Review

Benchmark Index Returns

+0.05% -0.07% +0.83%	+0.10% -0.21% -0.93%
+0.83%	-0.93%
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
+0.12%	-1.46%
-0.43%	+0.23%
-0.12%	-5.52%
_	-0.43%

ndex	April 2020	March 2020
RBA Official Cash Rate	0.25%	0.25%
90 Day (3 month) BBSW Rate	0.10%	0.37%
Byr Australian Government Bonds	0.25%	0.25%
10yr Australian Government Bonds	0.89%	0.77%
JS Fed Funds Rate	0.00%-0.25%	0.00%-0.25%
10yr US Treasury Bonds	0.64%	0.70%

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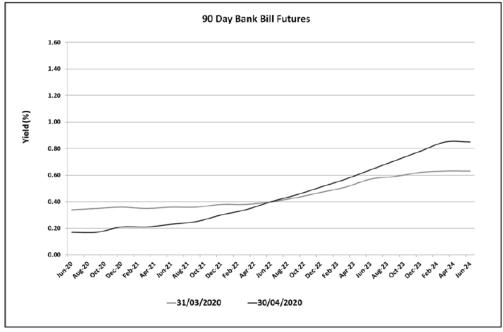
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90 Day Bill Futures

Over April, bill futures fell at the short-end of the curve on a flight to quality, as investors and banks rushed to shore up capital in the dislocated and volatile environment. With the RBA suggesting they will keep rates unchanged for the foreseeable future, bill futures are likely to trade in a relatively narrow range, particularly for terms out to 3 years given the RBA's target to keep the 3 year bond rate at 0.25%.



Source: ASX

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Fixed Interest Outlook

Policymakers continue to provide unprecedented support through various stimulus measures to mitigate the impact of COVID-19 across the global economy. Further stimulus measures may be required to spur global growth once the lockdowns have been relaxed.

After the RBA cut rates to their effective lower bound of 0.25%, their forward guidance is to commit keeping the official cash rate unchanged until there is a sustainable recovery and its economic objectives of full employment (unemployment rate of 4.5%) and target inflation (2-3%) are on track.

The RBA has also provided a set of objectives through some of the unconventional policies implemented, including:

- Setting a 0.25% target for the 3-year bond yield;
- Buying Commonwealth/semi-government bonds to meet this target and across the curve to address market dislocations; and
- Establishing a term funding facility (TFF) for bank loans (\$90bn at 0.25% for 3 years), especially to support new loans to small and medium-sized businesses.

RBA Governor Lowe has commented that unlike during GFC, the banks have cash and are well capitalised, and that he was encouraged as the banks are acting as *"shock absorbers"* during this crisis. Importantly, he also suggested that they are **not seeing any signs of stress in the financial system**.

With official rates at 0.25% and the RBA undertaking quantitative easing (QE), interest rates are not expected to move from their current policy setting, although there is the possibility for the RBA to cut in smaller increments (less than 25bp) or adopting negative rates if the global economy continues to deteriorate (the RBA has reiterated that negative interest rates are not on their agenda).

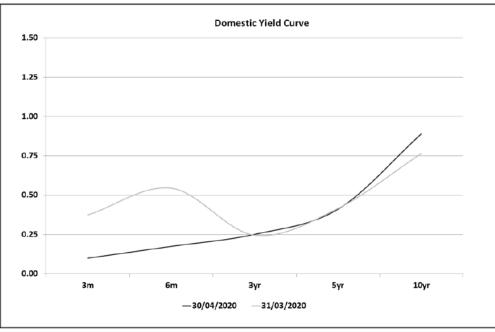
Governor Lowe said rates would be low "for a very long period of time" as the RBA needed to be confident inflation would be back in the 2 - 3% target range before considering lifting official rates.

Over the longer-term, the domestic bond market continues to suggest a depressed period of interest rates. Over the month, yields rose around 13bp at the longer end of the curve, with 10-year government bond yields trading around 0.9%. In contrast, yields fell significantly at the short-end after the RBA cut rates to emergency levels, while injecting liquidity into the market and undertaking quantitative easing.

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Source: AFMA, ASX, RBA

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01/04/2020 to 30/04/2020

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PORT MACQUARIE-HASTINGS

ATTACHMENT

Portfolio Valuation as at 30/04/2020

Issuer	Rating	Type	Alloc	Interest	Purchase	Maturity	Rate	Value	Accrued	Accrued MTD
ВОQ	888+	đ	GENERAL	Annual	19/05/2017	19/05/2020	3.0000	3,000,000.00	85,561.64	7,397.26
ING Direct	A	đ	GENERAL	Annual	22/05/2018	26/05/2020	2.9400	4,000,000.00	111,156.16	9,665.75
ING Direct	A	đ	GENERAL	Annual	29/05/2018	09/06/2020	2.8800	3,000,000.00	80,008.77	7,101.37
Westpac	-AA-	£	GENERAL	Quarterly	06/06/2018	16/06/2020	2.9100	5,000,000.00	22,323.29	11,958.90
NAB	AA-	đ	GENERAL	Annual	03/07/2018	07/07/2020	2.9000	5,000,000.00	120,369.86	11,917.81
NAB	AA-	đ	GENERAL	Annual	11/07/2018	14/07/2020	2.9200	3,000,000.00	70,800.00	7,200.00
ING Direct	A	D	GENERAL	Annual	21/08/2018	25/08/2020	2.8500	4,000,000.00	79,331.51	9,369.86
ING Direct	A	£	GENERAL	Annual	13/09/2018	08/09/2020	2.8700	4,000,000.00	72,654.25	9,435.62
Westpac	AA-	đ	LOCAL BRANCH	Annual	13/09/2017	14/09/2020	3.1700	3,000,000.00	60,186.58	7,816.44
ING Direct	A	đ	GENERAL	Annual	13/09/2018	22/09/2020	2.8700	4,000,000.00	72,654.25	9,435.62
NAB	AA-	đ	GENERAL	Annual	17/10/2018	13/10/2020	2.7800	4,000,000.00	60,017.53	9,139.73
ICBC Sydney Branch	A	Ę	GENERAL	Annual	31/10/2018	27/10/2020	2.9300	6,000,000.00	88,140.82	14,449.32
ICBC Sydney Branch	A	đ	GENERAL	Annual	13/11/2018	10/11/2020	2.9300	5,000,000.00	68,232.88	12,041.10
ICBC Sydney Branch	A	đ	GENERAL	Annual	05/12/2018	08/12/2020	2.8600	2,000,000.00	23,193.42	4,701.37
ICBC Sydney Branch	A	đ	GENERAL	Annual	14/12/2018	15/12/2020	2.8900	6,000,000.00	65,084.38	14,252.05
Westpac	-AA-	D	GENERAL	Quarterly	17/12/2019	17/12/2020	1.4600	6,000,000.00	10,800.00	7,200.00
вод	BBB+	đ	GENERAL	Annual	24/01/2017	25/01/2021	3.6500	2,000,000.00	19,600.00	6,000.00
Westpac	AA-	đ	LOCAL BRANCH	Annual	21/02/2017	22/02/2021	3.3900	2,000,000.00	13,002.74	5,572.60

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								×	43	PORT MACQUARIE-HASTINGS
Issuer	Rating	Type	Alloc	Interest	Purchase	Maturity	Rate	Value	Accrued	Accrued MTD
ICBC Sydney Branch	A	D	GENERAL	Annual	27/02/2020	26/02/2021	1.3900	2,500,000.00	6,093.15	2,856.16
вод	BBB+	D	GENERAL	Annual	10/03/2016	10/03/2021	3.8000	3,000,000.00	16,241.10	9,369.86
ING Direct	A	₽	GENERAL	Annual	20/02/2019	16/03/2021	2.8200	2,000,000.00	10,970.96	4,635.62
Westpac	AA-	01	GENERAL	Quarterly	22/03/2018	23/03/2021	3.0200	4,000,000.00	12,907.40	9,928.77
Westpac	-AA-	£	GENERAL	Quarterly	22/05/2018	25/05/2021	3.1000	4,000,000.00	22,761.64	10,191.78
AMP Bank	BBB+	D	GENERAL	Annual	25/11/2019	25/05/2021	1.6000	5,000,000.00	34,630.14	6,575.34
AMP Bank	BBB+	£	GENERAL	Annual	29/11/2019	27/05/2021	1.6000	4,000,000.00	27,002.74	5,260.27
BOQ	BBB+	91	GENERAL	Annual	29/05/2019	31/05/2021	2.3000	3,000,000.00	63,895.89	5,671.23
Rabobank Australia Branch	A+	Ð	GENERAL	Annual	08/06/2017	07/06/2021	3.0200	5,000,000.00	134,452.05	12,410.96
Westpac	AA-	D	GENERAL	Quarterly	06/06/2018	15/06/2021	3.1000	3,000,000.00	14,268.49	7,643.84
NAB	AA-	đ	GENERAL	Annual	03/07/2018	22/06/2021	3.0000	4,000,000.00	99,616.44	9,863.01
NAB	AA-	D	GENERAL	Annual	03/07/2018	06/07/2021	3.0000	3,000,000.00	74,712.33	7,397.26
Westpac	AA-	TD	GENERAL	Quarterly	17/07/2018	13/07/2021	3.0400	5,000,000.00	5,830.14	5,830.14
NAB	AA-	D	GENERAL	Annual	26/07/2018	20/07/2021	3.0400	4,000,000.00	93,282.19	9,994.52
Westpac	AA-	TD	LOCAL BRANCH	Annual	24/07/2019	23/07/2021	1.7500	4,000,000.00	54,082.19	5,753.42
NAB	AA-	TD	GENERAL	Annual	02/08/2018	03/08/2021	3.0700	5,000,000.00	114,809.59	12,616.44
ICBC Sydney Branch	A	TD	GENERAL	Annual	30/08/2019	30/08/2021	1.6200	5,000,000.00	54,369.86	6,657.53
Westpac	AA-	D	GENERAL	Quarterly	13/09/2018	14/09/2021	2.8800	5,000,000.00	19,331.51	11,835.62
NAB	AA-	TD	GENERAL	Annual	27/09/2018	28/09/2021	3.0500	5,000,000.00	90,664.38	12,534.25
Auswide Bank	BBB	D	GENERAL	Annual	30/09/2019	30/09/2021	1.7500	4,000,000.00	41,041.10	5,753.42
IMPERIUM MARKETS										Page 3 / 5

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ORDINARY COUNCIL 20/05/2020

								*()		PORT MACQUARIE-HASTINGS
lssuer	Rating	Type	Alloc	Interest	Purchase	Maturity	Rate	Value	Accrued	Accrued MTD
Westpac	AA-	TD	GENERAL	Quarterly	13/09/2018	12/10/2021	2.8900	5,000,000.00	19,398.63	11,876.71
Auswide Bank	BBB	TD	GENERAL	Annual	23/10/2019	25/10/2021	1.6500	5,000,000.00	43,171.23	6,780.82
Auswide Bank	888	Ð	GENERAL	At Maturity	25/11/2019	25/11/2021	1.7000	5,000,000.00	36,794.52	6,986.30
ICBC Sydney Branch	A	TD	GENERAL	Annual	05/12/2018	07/12/2021	3.0100	4,000,000.00	48,819.73	9,895.89
ICBC Sydney Branch	A	Ð	GENERAL	Annual	16/12/2019	16/12/2021	1.5700	4,000,000.00	23,571.51	5,161.64
ING Direct	A	D	GENERAL	Annual	30/01/2020	31/01/2022	1.6500	5,000,000.00	20,794.52	6,780.82
Newcastle Permanent	888	đ	GENERAL	Quarterly	07/02/2019	08/02/2022	3.0500	4,000,000.00	28,076.71	10,027.40
Westpac	AA-	D	GENERAL	Annual	21/02/2017	21/02/2022	3.6100	2,000,000.00	13,846.58	5,934.25
NAB	AA-	Ð	GENERAL	Annual	21/02/2017	21/02/2022	3.4600	5,000,000.00	33,178.08	14,219.18
ING Direct	A	TD	GENERAL	Annual	02/03/2020	02/03/2022	1.5000	5,000,000.00	12,328.77	6,164.38
BOQ	BBB+	TD	GENERAL	Annual	15/03/2017	15/03/2022	3.8000	2,000,000.00	9,578.08	6,246.58
Newcastle Permanent	888	TD	GENERAL	Quarterly	12/03/2019	22/03/2022	2.9000	4,000,000.00	15,890.41	9,534.25
Newcastle Permanent	888	TD	GENERAL	Annual	27/03/2019	29/03/2022	2.8000	5,000,000.00	13,424.66	11,506.85
Newcastle Permanent	BBB	TD	GENERAL	Quarterly	18/04/2019	19/04/2022	2.7000	4,000,000.00	3,254.79	3,254.79
BOQ	BBB+	D	GENERAL	Annual	28/05/2019	30/05/2022	2.4000	4,000,000.00	89,161.64	7,890.41
Rabobank Australia Branch	A+	TD	GENERAL	Annual	08/06/2017	07/06/2022	3.2200	5,000,000.00	143,356.16	13,232.88
NAB	AA-	TD	GENERAL	Annual	02/08/2018	02/08/2022	3.2200	4,000,000.00	96,335.34	10,586.30
NAB	AA-	D	GENERAL	Annual	16/08/2018	16/08/2022	3.0500	4,000,000.00	86,569.86	10,027.40
ICBC Sydney Branch	٨	TD	GENERAL	Annual	28/08/2019	29/08/2022	1.6400	5,000,000.00	55,490.41	6,739.73
Auswide Bank	BBB	đ	GENERAL	At Maturity	06/09/2019	06/09/2022	1.8000	3,000,000.00	35,210.96	4,438.36
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Issuer	Rating	Type	Alloc	Interest	Purchase	Maturity	Rate	Value	Accrued	Accrued MTD
Rabobank Australia Branch	A+	đ	GENERAL	Annual	13/09/2017	13/09/2022	3.3800	3,000,000.00	64,173.70	8,334.25
Westpac	AA-	đ	LOCAL BRANCH	Annual	13/09/2017	13/09/2022	3.4100	3,000,000.00	64,743.29	8,408.22
Auswide Bank	BBB	TD	GENERAL	Annual	30/09/2019	30/09/2022	1.7500	4,000,000.00	41,041.10	5,753.42
ICBC Sydney Branch	A	£	GENERAL	Annual	23/10/2019	24/10/2022	1.7000	3,000,000.00	26,687.67	4,191.78
ICBC Sydney Branch	A	TD	GENERAL	Annual	31/10/2019	31/10/2022	1.7300	5,000,000.00	43,368.49	7,109.59
ING Direct	A	TD	GENERAL	Annual	27/02/2020	27/02/2023	1.6000	2,500,000.00	7,013.70	3,287.67
вод	BBB+	D	GENERAL	Annual	28/05/2019	29/05/2023	2.5500	4,000,000.00	94,734.25	8,383.56
вод	BBB+	D	GENERAL	Annual	27/06/2019	27/06/2023	2.2000	5,000,000.00	93,123.29	9,041.10
ICBC Sydney Branch	A	TD	GENERAL	Annual	27/11/2019	27/11/2023	1.7600	6,000,000.00	45,133.15	8,679.45
ICBC Sydney Branch	A	đ	GENERAL	Annual	16/12/2019	18/12/2023	1.8100	4,000,000.00	27,174.79	5,950.68
Auswide Bank	BBB	đ	GENERAL	Annual	02/03/2020	04/03/2024	1.7500	3,000,000.00	8,630.14	4,315.07
Bendigo and Adelaide	BBB+	FRN	GENERAL	Quarterly	06/09/2019	06/09/2024	1.5232	2,970,459.00	7,010.89	3,755.84
вод	BBB+	D	GENERAL	Annual	27/09/2019	27/09/2024	2.0000	2,000,000.00	23,780.82	3,287.67
Westpac	AA-	CASH	GENERAL	Monthly	30/04/2020	30/04/2020	0.9500	20,981,037.50	10,752.58	10,752.58
TOTALS								302,951,496.50	3,499,701.83	585,970.06

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Authorised by: <authority> Authorised date: DD/MM/YYYY Effective date: DD/MM/YYYY Next review date: DD/MM/YYYY File Number:

Council Policy INVESTMENT POLICY

1. INTRODUCTION

The Investment Policy establishes the framework within which Council's cash and investment portfolio will be managed, monitored and reported on. This policy has been established in compliance with section 625 of the Local Government Act 1993 and provides guidance for the investment of Council's funds, with consideration given to the following primary objectives:

- Preservation of capital. Preservation of capital is the principal objective of the investment
 portfolio. Investments are to be placed in a manner that seeks to safeguard Council's cash and
 investments portfolio. This includes managing credit and interest rate risk within identified
 thresholds and parameters;
- Maximise investment returns within Council's risk appetite as outlined within this policy. Investments are expected to achieve a market average rate of return in line with Council's risk tolerance;
- Manage Council's cash resources to ensure sufficient liquidity to meet Council's business
 objectives over the short, medium and long term.

The policy reinforces Council's ongoing commitment to maintain a conservative risk and return portfolio, an important component of its ongoing prudent financial management practices.

2. POLICY STATEMENT AND SCOPE

2.1 Funds for Investment

Investment are maintained to meet specified business needs, including:

- strategic purposes consistent with Council's long term strategic plan;
- holding short-term investments for working capital requirements;
- holding investments that are necessary to carry out Council operations consistent with annual long-term plans.

2.2 Legislative Authority for Investments

All investments are to be made in accordance with:

- Australian Accounting Standards;
- NSW Office of Local Government Investment Circulars;
- NSW Office of Local Government Investment Policy Guidelines;
- Local Government (General) Regulation 2005 Clause 212;
- Local Government Act 1993 (particularly section 625);
- NSW Local Government Code of Accounting Practice & Financial Reporting;
- Minister's Investment Order (gazetted);
- The Trustee Amended (Discretionary Investments) Act 1997 Sections 14A(2), 14C(1) & (2).

2.3 Investment Governance

The following internal control practices are in place to ensure adequate governance and allow transparent

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and clear performance measurement for the management of Council's cash and investment portfolio:

- · financial planning and cash flow management;
- · delegated authorities and investment approval;
- measurement of investment performance;
- performance benchmarks;
- reporting and review;
- audit oversight.

2.4 Delegation of Authority

Authority for the implementation of the Investment Policy is delegated by Council to the General Manager in accordance with the *Local Government Act* 1993.

The General Manager (GM) has delegated the day-to-day management of Council's investment portfolio, including authority to invest surplus funds as follows:

- Director Corporate Performance (DCP);
- Group Manager Financial Services (GMFS);
- Other senior financial officers who have the requisite skills to undertake investment functions (as per the Delegations Register).

Officers with delegated authority are required to acknowledge they have received a copy of this policy and understand their obligations in this role.

2.5 Prudent Person Standard

The investment portfolio will be managed with the care, diligence and skill that a prudent person would exercise. As trustees of public monies, officers are to manage Council's investment portfolio to safeguard the portfolio in accordance with the spirit of this Investment Policy, and not for speculative purposes.

2.6 Ethics and Conflicts of Interest

Officers shall refrain from personal activities that would conflict with the proper execution and management of Council's investment portfolio. Any potential conflicts of interest should be appropriately disclosed in accordance with Council's Code of Conduct.

Independent advisors are also to declare that they have no actual or perceived conflicts of interest and receive no inducements in relation to Council's investments.

2.7 Approved Investments

Current investment regulations require Councils to invest with either the NSW Treasury Corporation (NSW TCorp) or Approved Deposit-taking Institutions (ADI) such as Australian banks or branches of foreign owned banks, credit unions and/or building societies as it acknowledges the additional assurance that arises from their regulation by the Australian Prudential Regulation Authority (APRA).

Investments are limited to those allowed by any current Ministerial Investment Order that has been issued by the NSW Minister for Local Government.

2.8 Prohibited Investments

In accordance with any current Ministerial Investment Order, this investment policy prohibits but is not limited to any investment carried out for speculative purposes, including:

- Derivative based instruments;
- · Principal only investments or securities that provide potentially nil or negative cash flow; and
- Standalone securities issued that have underlying futures, options, forward contracts and swaps of any kind.

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This policy also prohibits the use of leveraging (borrowing to invest) of an investment.

2.9 Investment Advisor

In managing its investments Council may engage the services of an independent investment advisor, licensed by the Australian Securities and Investment Commission for the purpose of achieving the aims of this policy. Independence includes receiving no commissions or other benefits in relation to the investments being recommended or reviewed, except as fully rebated to Council, promptly.

The independent advisor will review and assess the market value of the investment portfolio on a monthly basis.

Council's investment advisor is required to provide written confirmation that they do not have any actual or potential conflicts of interest in relation to the investments they are recommending or reviewing, including that they are not receiving any commissions or other benefits from the product providers in relation to the investments being recommended or reviewed.

2.10 Mandatory Investment Criteria

2.10.1 Scope

Investments must comply with the legislative authorities as described in the **Legislative Authority for Investments** paragraph of this policy.

2.10.2 Currency

Investments must be denominated in Australian Dollars.

2.10.3 Ownership

Investments must be held in Port Macquarie Hastings Council name.

<u>2.10.4 Term / Maturity</u>

The term to maturity of investments may not exceed the periods shown below:

Investment	Maximum term
Fixed Rate Term Deposits	5 years
Floating Rate Notes (FRNs)	5.5 years
Other Investments	10 years

2.10.5 Risk Management Framework

Council's risk profile in relation to investing surplus funds is to be relatively prudent, conservative and risk averse. The profile will be achieved by effectively managing within the investment portfolio:

- the diversity of the investments;
- the creditworthiness of the investments.

Diversity is achieved by placing limits on the maximum exposure Council may have to individual funds or financial institutions and individual credit rating bands.

Creditworthiness of investments is primarily determined using industry standard credit ratings.

Investments are to comply with three key risk management criteria:

- Overall Portfolio Credit Framework: limit overall credit exposure of the portfolio;
- Institutional Credit Framework: limit exposure to individual institutions based on their rating;
- Term to Maturity Framework: limits based on maturity of securities.

Overall Portfolio Credit Framework

To control the credit quality of the entire portfolio, the following credit framework limits the percentage of the total portfolio exposed to particular credit rating categories.

Credit rating agencies apply short-term ratings to investments with 12 months or less to maturity and long-term ratings to those with greater than 12 months to maturity.

Short-term credit rating	Long-term credit rating	Overall portfolio exposure (as a % of Total Portfolio)
A-1+	AAA	100%
A-1	AA	100%
A-2	А	60%
A-3	BBB	35%
Unrated	Unrated	5%
	and TCorpIM Funds (allowable isterial Order)	20%

• Credit ratings apply to both products and institutions. This policy requires the rating applicable to the institution responsible for the product (e.g. guarantor) to be taken as the relevant rating given this represents the underlying risk to Council.

- Credit risk investment parameters are based on credit rating bands as published by the credit rating agencies (e.g. S&P, Moody's, Fitch). If an investment is rated by more than one ratings agency, the credit rating to be used will be based on the order of S&P, Moody's and then Fitch. In the event of disagreement between agencies as to the rating band ("split ratings") Council shall use the higher in assessing compliance with portfolio policy limits, but for conservatism shall apply the lower in assessing new purchases.
- Where the principal amount and accrued interest of any investment with a financial institution are directly guaranteed by the Australian Federal Government for full repayment, the exposure of the total portfolio to credit ratings lower than AAA may be exceeded, provided that the excess amount comprises only guaranteed investments. As a result, investments directly guaranteed by the Australian Federal Government may comprise the total investment portfolio. Management should ensure that any excess of investments over the parameters specified in the table above that is comprised of Australian Federal Government guaranteed investments can be managed back to within the specified parameter levels prior to the expiration of any such guarantee.

Institutional Credit Framework

Council's exposure to an individual institution will be restricted by their credit rating so that single entity exposure is limited.

Where Council has short-term and long-term holdings with the same institution, the limit associated to the institution's short-term rating will be used.

Short-term credit rating	Long-term credit rating	Individual institution exposure (as a % of Total Portfolio)
A-1+	AAA	40%
A-1	AA	30%
A-2	A	20%
A-3	BBB	10%
Unrated	Unrated	5%
	and TCorpIM Funds (allowable iisterial Order)	20%

• Credit ratings apply to both products and institutions. This policy requires the rating applicable to the institution responsible for the product (e.g. guarantor) to be taken as the relevant rating given this represents the underlying risk to Council.

 Credit risk investment parameters are based on credit rating bands as published by the credit rating agencies (e.g. S&P, Moody's, Fitch). If an investment is rated by more than one ratings agency, the credit rating to be used will be based on the order of S&P, Moody's and then Fitch. In the event of disagreement between agencies as to the rating band ("split ratings") Council shall use the higher in assessing compliance with portfolio policy limits, but for conservatism shall apply the lower in assessing new purchases.

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Investment Policy
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• Where the principal amount and accrued interest of any investment with a financial institution are directly guaranteed by the Australian Federal Government for full repayment, the exposure to individual institutions may exceed the stated limits provided that the excess amount comprises only guaranteed investments.

Term to Maturity Framework

The term to maturity framework specifies the maximum amounts or percentages of Council's total investment portfolio that can be held within the various investment maturity bands.

Maximum thresholds are set to control the proportion of the total portfolio that can be invested into longer term investments to ensure that Council has adequate access to short and medium term liquidity to satisfy its business objectives. The maximum thresholds reduce as the maturity horizon extends further into the future.

	< 1 Year	1 to 3 Years	3 to 5.5 Years	> 5.5 Years
Maximum % of Total Portfolio	100%	70%	40%	10%

Minimum thresholds are set to ensure that there will always be an adequate amount of liquidity available for ongoing working capital purposes. Remaining funds are invested across the various investment horizons, seeking the best relative value at the time of investment.

	< 1 Year
Minimum % of Total Portfolio	40%

2.10.6 Breaches of Criteria

This policy imposes limits and thresholds in relation to the acquisition and holding of investments. However, situations may occur where inadvertent breaches of these limitations or thresholds arise, other than from the acquisition of investments. For example:

- amendments to regulatory directives or legislation;
- changes in the total value or amount of Council's investment portfolio which consequently changes any of the threshold limits so that they no longer meet the portfolio liquidity parameters.

If the credit ratings of any of Council's investments are downgraded to an extent that they no longer fall within the investment policy limits, they will be divested as soon as practicable having regard to potential losses resulting from early redemption and subject to minimising any loss of capital that may arise from compliance with this provision.

Then limitations or thresholds are breached due to amendments to regulatory directives or legislation, the investment portfolio must be managed in accordance with the respective amendments. Where the amendments enable retention and grandfathering of existing investments, Council may continue to actively manage those investments within the portfolio in accordance with all other regulations and policies applicable to such investments. This includes a strategy of holding or divesting such investments in accordance with regular investment considerations.

Where limitations or thresholds are breached due to a change in the overall size of the total investment portfolio, the following process will apply:

 an immediate freeze is imposed on the acquisition of new investments in the relevant category until the portfolio can be effectively managed back to accord with the requirements of this policy;

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 the relevant category of investments must be managed back in accord with the policy limits within a period that takes into account any adversity created by market liquidity, current valuations of these investments and the risks of default.

The immediate forced sale of the investments in breach of the limits or thresholds will not be required.

2.11 Environmentally and Socially Responsible Investments

Subject to compliance with legislation and investment policy objectives and parameters, the Council supports investment securities that are environmentally and socially responsible investments (SRI). These include investments with financial institutions that publicly state that they do not invest in or finance the fossil fuel industry. Council's preference is to enter into such investments where:

- the investment is compliant with legislation and Investment Policy objectives and parameters;
- the risk profile is at least equal to comparable investments on offer to Council at the time of investment; and
- the rate of return is at least equal to comparable investments on offer to Council at the time of investment.

Environmentally and Socially Responsible Investments will be assessed on the same basis as other investment opportunities and Council will select the investment that best meets its overall investment selection criteria.

2.12 Measurement of Investment Performance

Investment performance includes both interest returns and any change in the underlying capital value of the investments.

Interim fluctuations of capital value are excluded from the monthly measurement of investment performance on the basis that:

- investments are mainly acquired with the intention of holding them through to maturity, although some liquid assets may be sold prior to maturity should it be to the benefit of Council;
- cash liquidity requirements are structured and managed to ensure that Council is not in a financial position that will require a forced sale of these assets.

Notwithstanding the above, changes in capital value are important and the monthly investment report will therefore provide Council with indicative market valuations of each investment. In the event that the capital value of any investment becomes impaired, or a capital gain or loss is actually realised (through disposal), the gain or loss of value will be recognised within that month's financial accounts.

Investment performance will be measured monthly against the chosen benchmarks in relation to both current month and 12-month rolling returns.

The GMFS will approve the use of independently determined benchmarks. Where Council changes independently determined benchmarks, monthly reports for the month of change and the next five months thereafter shall contain reporting of investment returns against benchmark for both the following:

- the benchmark that is being replaced; and
- the new benchmark, backdated on a twelve-month basis.

Council currently uses two performance benchmarks:

- Bloomberg AusBond Bank Bill Index (formerly known as UBSA Bank Bill Index) the Bank Bill Index represents the performance of a notional rolling parcel of bills averaging 45 days and is the widely used benchmark for local councils and other institutional cash investments;
- 30-day Bank Bill Rate provides a fair indicator of the risk free rate of return so that Council can understand the return that has been earned from diversifying its investment portfolio and accepting conservative levels of risk.

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2.13 Reporting and Review

Council will maintain a separate record of money it has invested under section 625 of the *Local Government Act* 1993, in accordance with the criteria defined by the *Local Government Code* of *Accounting Practice and Financial Reporting*.

All investments are to be appropriately recorded in Council's financial records and reconciled at least on a monthly basis.

Pursuant to the *Local Government (General) Regulation 2005* (clause 212), the GMFS will provide a monthly report to Council on investments. The monthly report to Council will detail the investment portfolio in terms of performance and rate of return on the overall portfolio for the period and will detail the purchase price, face value, current (market) value, credit rating and coupon / yield for each individual investment.

For audit purposes, the GMFS will obtain certificates from the banks or fund managers confirming the amounts of investment held on Council's behalf at 30 June each year.

The Investment Policy will be reviewed at least once a year or as required in the event of legislative changes.

Laws and standards	 Australian Accounting Standards NSW Office of Local Government - Local Government Code of Accounting Practice & Financial Reporting NSW Office of Local Government Investment Circulars Office of Local Government Investment Policy Guidelines Local Government (General) Regulation 2005 Local Government Act 1993 Minister's Investment Order (gazetted) The Trustee Amended (Discretionary Investments) Act 1997 – Sections 14A(2), 14C(1) & (2)
Policies and procedures	 Code of Conduct Disciplinary Policy & Procedures Fraud & Corruption Internal Reporting Policy Investment Strategy

3. REFERENCES

4. DEFINITIONS

Term	Meaning
Total investments	Total investments comprise:
	call accounts
	term deposits
	floating rate notes
	 bonds with an active secondary market with government (including NSW T-Corp) and Authorised Deposit-taking Institutions (ADIs).
	Investments also include grandfathered structured investments with other institutions as defined.
Active investments	Active investments are a part of total investments and comprise:

Investment Policy

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Term	Meaning
	 call accounts term deposits floating rate notes bonds with an active secondary market
Grandfathered investments	 Grandfathered investments are a part of total investments and comprise: investments where new investment activity is prohibited by regulation other investments over which new investment activity is temporarily prohibited due to unintentional breaches of investment thresholds and limitations that arise due to changes in the level of unrelated investments within the portfolio, (the prohibition only remains as long as the breaches remain in place).
Impairment	The impairment of an investment represents the amount of the original cost of the investment that is not expected to be recovered at the investment's maturity date due to current adverse economic or investment conditions that impact on the investment's financial performance.
Approved Deposit-taking Institution (ADI)	An institution that is authorised under the <i>Banking Act</i> 1959 to accept term deposits and conduct banking activities in accordance with that Act and under the prudential supervision of the Australian Prudential Regulation Authority (APRA).
Active secondary market	A market where investors purchase securities or assets from other investors, rather than from issuing companies themselves on an arms length (independent) basis.
Benchmark rates	 Benchmark rates comprise: Bloomberg AusBond Bank Bill Index - The Australian Bloomberg (formally UBSA) Bank Bill index is constructed as a benchmark to represent the performance of a passively managed short-term money market portfolio. It comprises thirteen Bank Bills of equal face value, each with a maturity seven days apart. The average term to maturity is approximately 45 days. A Bank Bill is a non-interest bearing security issued by a bank whereby the bank takes on an obligation to pay an investor a fixed amount (face value) at a fixed future date. It is sold to an investor at a discount to the face value. Bank Bills are short-term money market investments with maturities usually between 30 days and 180 days. 30 Day Bank Bill Index - The Bank Bill Index is designed to measure the performance of the Australian short-term money market and consists of 13 weekly maturities out to varying
	dates. Interest rates applied to these maturities are interpolated from cash and Bank Bill Swap (BBSW) rates. BBSW rates are administered by the Australian Stock Exchange (ASX).
Call funds	Call funds are closely linked with investments but do not constitute investments. Call funds are used to meet immediate operational cash needs and may be retained in Council cheque accounts and call accounts at an ADI. Call funds must be accessible immediately or up to a maximum of 24 hours notice within normal ADI operating hours.

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5. PROCESS OWNER

Group Manager Financial Services

6. AMENDMENTS

Changes that have been made since the last version (ORD 20/02/2019) include:

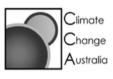
- Portfolio exposure: changed BBB rating to 35% (from 30%) and Unrated rating to 5% (from 10%)
- Maturity: changed 1 to 3 years from 60% to 70%
- Maturity: changed >5.5 years from 20% to 10%
- Addition of section on 'Environmentally and Socially Responsible investments'

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CLIMATE CHANGE AUSTRALIA PO Box 2389 Port Macquarie 2444



22 April 2020

SUBMISSION TO PORT MACQUARIE HASTINGS COUNCIL ON DRAFT INVESTMENT POLICY

Climate Change Australia – Hastings (CCA) is a non-party-political, safe climate and clean energy group. Our charter is to raise community awareness, promote renewable energy and lobby all levels of government to implement genuine measures to address climate change.

Climate Change Australia - Hastings (CCA) has three objections to Council's recent amendment to its Investment Policy in which it added Section 2.11 "Environmentally and Socially Responsible Investments".

Objection 1

The wording of Section 2.11 of the amended Investment Policy posted for "Have Your Say" does not clearly and sufficiently carry the meaning or intent of Resolution 2 of the Audit, Risk & Improvements Committee reported in Item 11 of Council Agenda of 18 March 2020.

Council Agenda Item 11 of 18th March records that the Audit, Risk & Improvements Committee passed the following motion (unanimously):

"That the committee

- 1) Note the information contained in this report.
- Request management give consideration to including the below clause in the Investment Policy:

"Subject to consideration of the Risk Management Guidelines in this Policy, preference is to be given to financial institutions that publicly state that they do not invest in or finance the fossil fuel industry if:

- The investment is compliant with Council's Investment Policy; and
- The investment rate of interest is equivalent to or more favourable to Council relative to other similar investments that may be on offer to Council at the time of the investment."

The minutes continue: "In relation to resolution 2 above, a new section "Environmentally and Socially Responsible Investments" has been included in the revised Investment Policy, which will cover a range of investments, including those which relate to the fossil fuel industry."

The new clause (2.11) in the Draft Investment Policy does not reflect the "preferential" view expressed by the Audit committee concerning financial institutions that "*publicly state that they do not invest in or finance the fossil fuel industry*". No-one reading or implementing this Policy, who had not read this qualifying statement, would be aware of the preference to be given to financial institutions that have publicly stated they do not invest in or finance the fossil fuel of the preference the fossil fuel industry.

Objection 2

Both the Audit committee's resolution and the new Section 2.11 state that preference will only be given if the rate of interest is equivalent or more favourable to Council relative to other similar investments. This means Council is allowing itself the option to invest in the fossil fuel industry if it provides a greater rate of return relative to an alternative investment. CCA finds this to be completely unacceptable on the grounds of risk, and on the grounds that the fossil fuel industry is both demonstrably socially and environmentally irresponsible.

Objection 3

CCA draws attention to Clause 2.1 "Funds for Investment". This clause states that Investments are maintained to meet specified business needs, including (a) strategic purposes consistent with Council"s long term strategic plan; (b) holding short term investments for working capital requirements; and (c) holding investments that are necessary to carry out Council operations consistent with annual long-term plans.

Hence, any investment should support the long-term plans of Council policies and avoid investments that would undermine them; in particular its policies in respect of the mitigation of and adaptation to climate change. CCA objects to the wording of Section 2.11 as it does not sufficiently protect against the impacts that investments in fossil fuels would have on the long-term policies of Council with respect to climate change action.

Recommendation

CCA recommends that the text of resolution 2 of the Audit Risk & Improvements Committee, excluding the second dot point, be added to the Investment Policy.

Discussion

The amendment states that Council "supports investment securities that are environmentally and socially responsible investments. It indicates that its preference is to "enter into such investments where:

(a) the investment is compliant with legislation and Investment Policy objectives and parameters;

(b) the risk profile is at least equal to comparable investments on offer to Council at the time of investment; and

(c) the rate of return is at least equal to comparable investments on offer to Council at the time of investment."

Why would Council place any of its funds in investments that were not environmentally and socially responsible? There is no middle ground here - an investment is either socially / environmentally responsible or it is not.

There is nothing in the existing Policy nor in the amended Policy that prevents investments from being environmentally and socially irresponsible. That is to say, there is nothing to prevent Council from actively investing in securities that are harmful to the environment and / or society. For example, there is nothing to prevent Council from investing in cigarette manufacture, gambling, or corporations that manufacture land bombs or instruments of chemical warfare, and other similar anti-environmental or anti-social activities. CCA expects that Council would wish to unequivocally exclude such investments from its portfolio.

Nevertheless, the Risk Management Framework (2.10.5) focuses only on diversity and creditworthiness. Both of these are, of course, essential for Council, but do not of themselves exclude investments which are known to be environmentally and / or socially irresponsible. However, the Risk Management Framework does not require examination of the vulnerability of certain industries to profitability. If a whole industry is at risk, then surely any investment within that industry becomes a high level of risk. There are innumerable studies available that draw attention to the potential for businesses within the fossil fuel industry to inevitably suffer from financial losses and "stranded assets" and as such, should be considered within the Risk Management processes.

For the last several months, CCA together with Hastings Parents for the Environment have been asking Council to review its agenda items from the point of view of Climate Change. We have pointed out over and over how many issues Council deals with which impact upon, or are impacted upon, by our changing climate. Council's response has been

- 1) the preparation of the Table of PMHC Sustainability Initiatives (11/12/19),
- 2) the Report on Climate Change Information (18/03/20),

- 3) the forthcoming Sustainability Strategy which will form a part of the draft 2020-2021 Operational Plan, and
- 4) the forthcoming report to the April 2020 Council meeting "detailing general climate change information and predicted risks and opportunities....". Of particular interest in this later report is the intention to include information from the Council insurers.

In the context of all of the above, CCA urges Council to join with other Local Councils, Superannuation Funds, Universities, etc in concluding that the entire fossil fuel industry is:

- socially and environmentally irresponsible;
- has a limited and irreversible life span;
- presents itself as an inherently high-risk investment; and

- is inconsistent with Council's long-term plans in respect of its mitigation of and adaptation to climate change.

In support of the statement above, we draw attention to the recent report from Carbon Tracker in the UK. <u>https://carbontracker.org/42-of-global-coal-power-plants-run-at-a-loss-finds-world-first-study/</u> In a detailed study, Carbon Tracker found that in 2018, 42% of coal power plants were running at a loss and by 2040 72% would be running at a loss. New wind and solar were found to be cheaper than 96% of existing coal power by 2030. The report warns that utilities and their shareholders are exposed to stranded asset risk in liberalised markets.

Market Forces in Australia has prepared a report 'Out of Line, Out of Time" which identifies 22 Australian companies undermining climate action.

<u>https://www.marketforces.org.au/campaigns/super/outofline/</u>. For a long time, Market Forces has encouraged major Investors, superannuation funds, etc to either divest from fossil fuel investments, or at least, use their shareholdings to good purpose at Corporate Annual General Meetings.

Any review of existing investments by Council should take into account reports such as these, (and there are, of course, many more) and require a robust explanation for continued investment by Port Macquarie Hastings Council.

It would be a curious phenomenon indeed if the expenditure by Council on climate change adaptation initiatives were to be funded, in part, by the proceeds of investments in the very industry largely responsible for bringing about the change in the climate in the first place.

CCA therefore urges Council to instruct the General Manager, and through him, to instruct the Independent Investment Advisor appointed in accordance with Clause 2.9, to determine whether a banking institution holds investments in the fossil fuel industry, directly or indirectly.

ENDS This submission was written by members of Climate Change Australia (Hastings). The person nominated for contact is – Mick Lyons: (Mob 0438 172 348 Email popslyons@gmail.com)

2 Your Community Life

What we are trying to achieve

A healthy, inclusive and vibrant community.

What the result will be

We will have:

- Community hubs that provide access to services and social connections
- A safe, caring and connected community
- A healthy and active community that is supported by recreational infrastructure
- A strong community that is able to identify and address social issues
- Community participation in events, programs, festivals and activities

How we will get there

- 2.1 Create a community that feels safe
- 2.2 Advocate for social inclusion and fairness
- 2.3 Provide quality programs, community facilities and public spaces, for example, community halls, parks and vibrant town centres
- 2.4 Empower the community through encouraging active involvement in projects, volunteering and events
- 2.5 Promote a creative and culturally rich community





PROJECT BRIEF

DESIGN PROPOSAL FOR

PUBLIC ART – OXLEY HIGHWAY "GATEWAY" DEVIATION

Port Macquarie-Hastings Council, Cnr Lord & Burrawan St, Port Macquarie, NSW 2444 (PO Box 84)

> Item 11.01 Attachment 1

> > Page 57

Revision Control

Rev. No.	Date	Comments	Checked	Approved
0	6/10/10		A.Atkins	C.Toms

Project Services Contract

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1 INTRODUCTION

Port Macquarie Hastings Council in partnership with the Roads & Traffic Authority intends to commission a significant public artwork at the western entry of the Oxley Highway deviation.

A Design Advisory Panel has been established to oversee the design of the artwork. The artist will be required to liaise with the panel as required in this brief.

The intent of introducing art into the highway deviation is to allow Artists to "speak" about potential ideas and creative "making" in public in ways which are especially pertinent to the mission of Council. The role of art in society as intelligent provocation, of exploring the definition of new cultural narratives and myths through interpretation, of examining the exploration of landscape traditions as "shared culture", as exploring public understanding of co-adaptation, environmental sustainability, and the individual's role in shared custodianship in Australia are all at the basis of the commissioning of artists to design a special feature, rather than merely ordering a standard feature.

2 BACKGROUND

Council has been invited by the Roads & Traffic Authority to incorporate public art as part of the Oxley Highway deviation, Pacific Highway to Wrights Road, currently under construction by the NSW Government.

The Oxley Highway deviation has been named the "Gateway" recognising its function as the primary access to Port Macquarie.

This brief will facilitate the development of a design proposal for the public artwork. Council will prepare a separate contract for the detailed design and implementation of the art work.

3 SITE FOR THE COMMISSION

The public art is to be located within the western end of the Oxley Highway deviation road corridor. In this location it will be seen at long and close views by hundreds of road users every day. The roundabout at the intersection of the former Oxley Highway and new deviation has been suggested as a preferred site.

The art offers a unique opportunity to:

- · be a distinctive and special contribution to the built and cultural environment,;
- · contribute to the visual quality road corridor itself,
- provide conceptual content or elements of environmental interpretation which reinforce the purpose and mission of Council, and/or
- provide tactile interest, delight, and intense memory for visitors.

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Item 11.01 Attachment 1

Project Services Contract

Attached to this brief, as PDF documents, are:

- a copy of the Oxley Highway deviation concept road designs
- a copy of the Oxley Highway deviation concept landscape designs
- a copy of Councils current draft Community Strategic Plan 2030

The selected Artists are requested to have read and considered these briefing documents prior to the initial "Design Orientation" for the commission.

4 THE SCOPE OF THE COMMISSION

This Brief covers a design proposal for a public art at a highly visible location/s in the Oxley Highway deviation corridor.

4.1 The Community Strategic Plan 2030

The Community Strategic Plan 2030 is a reference tool for Council, the community, government agencies and other stakeholders. It identifies the community's aspirations for the future and outlines strategies to achieve them. The community owns this plan and it will serve as the primary resource for guiding future councillors on what the community aspires to.

The 2030 vision of the community is that the people of the Hastings will be;

- Living in a harmonious safe and connected community
- Enjoying participatory local democracy
- Accessing quality infrastructure including roads, waste, water and sewerage management
- Benefiting from quality urban design that encourages use of open spaces and provides easy access between our towns and villages
- Enjoying economic prosperity and having access to quality education and training
- Actively participating in inclusive community activities
- Preserving and protecting our natural habitats

Artists should bear this vision in mind when developing their proposals.

4.2 Indigenous Significance

Artists are encouraged to undertake appropriate consultation to ensure the artwork concept is developed with sensitivity to the area and associated heritage issues. Artists are encouraged to meet with Council's Aboriginal Community and Development Officer who can help identify appropriate contacts and a consultation strategy in relation to their specific concept proposals.

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It needs to be recognised that Indigenous people have a historical association with the proposed general location. To date 30 aboriginal archaeological sites have been registered on the DECC Aboriginal Heritage Management System.

4.3 Limitations & Restrictions

The Oxley highway deviation is currently under construction by Contractors BMD on behalf of the Roads & Traffic Authority. The site is controlled by BMD and any site visits are to approved through a safety induction.

All works are to be within the surveyed road corridor and clear of;

- any underground services or utility installations;
- road pavements, concrete kerbs and formations,
- storm water drainage and
- signage

Many established trees are located within the road corridor. Additional newer plantings along the road verges are predominately Australian native species. Existing established trees, indicated on the site plan, cannot be removed or affected by the artwork. If regarded as crucial to the realisation of the artistic concept, there is the potential to discuss the removal of smaller trees; however, this would need to be approved by the RTA. The removal of significant trees will not be possible.

4.4 Specific Site

The site for the proposed artwork within the road corridor will need to be identified by the selected artists commissioned to undertake design proposals, and they need to be aware that further considerations and restrictions may apply to specific sites. The roundabout at the intersection of the Oxley Highway deviation and the former Oxley Highway is to be considered in the site selection. Council and the RTA will approve the final site selection.

Artists will need to discuss any issues relevant to their selected site and proposed artwork with the advisory panel during the design proposal development stage.

4.5 Roads & Traffic Authority Requirements

The Oxley Highway is under the control of the RTA and the public art will need to meet all requirements of the RTA with respect to the design safety standards.

- Artworks need to be designed and located so as not to adversely affect the safety of transport users, including pedestrians, motorists and cyclists. This includes obscuring sight distances and blocking Clear Zones. (See RTA Landscape Guideline on website below, for relevant data.)
- It is preferable that the artwork should be elegant and refined in appearance rather than complex and overly distracting. The RTA recognizes there is a difference between distinctive and distracting.

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- The artworks should be relevant when seen at speed, in passing and when viewed at rest, close up.
- The artwork should be robust and durable with an intended design life of at least 40 years. It must not be able to be easily damaged, vandalised or fragmented.

Any questions relating to these issues should be directed in the first instance to the RTA's Project Manager, Mr Lindsay Nash.

For further reference to some of these matters, it is suggested the RTA's urban design policy 'Beyond the Pavement' available at

(www.rta.nsw.gov.au/constructionmaintenance/urbandesign) is reviewed and considered. In particular 'Principle 9 – achieving integrated and minimal maintenance design'.

4.6 Design Concept

The work will contribute to the overall design of the Oxley Highway Deviation and will provide an enduring signifier of the joint venture partners' commitment to high-quality "Gateway" concept for Port Macquarie.

The artwork will be a prominent and highly visible stand-alone work of high artistic quality and form a welcoming gateway to Port Macquarie from the Oxley Highway.

Council is keen for artists to exercise artistic expression and freedom on this project; however, the work will need to explore and refer to the values documented in the Community Strategic Plan 2030, in particular, the environment, communication, heritage and access.

The artists will need to work within the restrictions and parameters imposed by the site , some of which are detailed in the previous section of this brief. (See: Site for the Commission.) However, artists selected to develop concepts will need to discuss their preliminary ideas with relevant members of the project advisory panel before developing final proposals.

In realising the project, Council looks to deliver maximum benefits to the successful artist. It also regards as highly desirable the involvement of local fabrication and installation industries, where relevant. The public will benefit through the realisation of this high-profile project of cultural significance.

Council considers the public realm should speak of the area's creativity through a diversity of quality public artworks that engage, please or challenge the viewer.

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4.7 Ambience of the Work

The work will:

- reference the development themes and reflect a sense of celebration, however, this is not to say that the work cannot be serious or contemplative
- create a welcoming and distinctive landmark be viewed from a distance and by those driving towards, and past, the site
- be visually appropriate and relevant to the selected site
- be of a scale relevant to the site and in keeping with the other project requirements
- be viewed day and night (lighting is to be included within the project budget).

The work may:

- be located in any appropriate location within the road corridor
- comprise a number of elements as long as it meets other project requirements
- include smaller lead-up interventions to signal the stand-alone work, but the budget implications for the stand-alone component would need to be considered.

4.8 Target Audience

The art will target;

- visitors to and residents of the Hastings area, including school students, residents and visitors
- road users, including regular commuters, local residents and cyclists & pedestrians

4.9 Materials

The work will:

- be made of the most durable, robust, high-quality, low-maintenance materials available
- withstand the potential build up of pollutants
- be easily cleaned to remove dirt and general grime
- meet all relevant safety standards and avoid dangerous protrusions and sharp edges
- require minimal ongoing maintenance.

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4.10 Practical Considerations

The work will:

- comply with all relevant Australian Standards and building codes
- be treated with an anti-graffiti coating, depending on the nature of the material used
- · need to consider long-term maintenance requirements and costs, and
- apply ecologically sustainable development (ESD) principles if it is to rely on power
- be a lasting addition to the significant public art assets within the area.

Depending on the selected site, the artist may choose to consider planting and landscaping as an element of the proposal. The use of new technologies may also be explored.

5 CONSULTATION

Limited consultation has been undertaken in the development of this brief and the views and concerns of the advisory panel are reflected within the requirements of the artwork project and the concept design.

While it is not a specific requirement of this project brief for consultation to be undertaken by the artist, the Advisory Panel wishes to meet with the artists engaged to develop concepts, to provide additional feedback regarding their vision for the project.

Broader consultation will be undertaken to include the community and specific stakeholder groups. Council will co-ordinate all public consultations and provide feedback to the artist.

The artist shall seek Council's approval on specific consultation techniques considered required to provide a quality outcome owned by the community.

6 BUDGET

The total available project budget is \$60,000 (GST exclusive), of which an allowance is to be made for design work. This brief allows for a \$2000 budget for each artist to submit a design proposal.

Additional in-kind support may be negotiated through the RTA and the associated contractors working on the site, the possible extent of which cannot be determined until the specific concept is selected and the nature and timing of the required support known. However, there may be the potential to negotiate assistance for site preparation, electrical cabling and trenching, and with the installation of footings and the artwork itself. Until the concept is selected and the potential for additional in-kind support is negotiated, the artist should assume that the budget of \$60,000 would need to include all costs associated with the design development, fabrication, lighting and

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installation of the work. Such costs may include materials, engineering, lighting, site preparation and restoration, equipment hire, transportation and artist's fees.

Artists are encouraged to speak to Council's Project Manager to determine appropriate items for incorporation within their budget. An additional sum may be allocated through the Council's budget on an annual basis for the ongoing operation and maintenance of the work. Council will provide and pay for a plaque acknowledging the artist, commissioner, project partners and project. This plaque could incorporate interpretive information; alternatively, another plaque featuring this information could be placed with the work, at the expense of Council, and will be developed in negotiation with the Community Services Manager. It should be assumed at this stage that the total available budget is the only allocation available towards the fabrication and realisation of the project.

7 PROJECT ADVISORY PANEL

6.1 Project Advisory Panel

An Advisory Panel has been formed for the project and is represented by;

Director Infrastructure Services – Jeff Sharp Roads & Traffic Authority Project Manager – Lindsay Nash Technical Services Manager – Cliff Toms Glass House Gallery Director – Sharni Lloyd Regional Arts Development Officer – Richard Holloway Aboriginal Community and Development Officer – John heath Tourism Manager – Linda Hall Strategic Planner – Harvey Walsh

6.2 Roles of Parties in the Project

The project advisory panel has been responsible for the development of the project to date. Members will be available to provide advice regarding specific concept design development issues relevant to their expertise.

Other roles are:

- The project advisory panel will select artists to undertake the design proposal stage.
- Members of the panel are aware of the issues relevant to their particular speciality in relation to the installation of a permanent public artwork.
- The project advisory panel will assess the concepts and recommend to the city manager, for endorsement, the successful artist to undertake the art work.
- Council staff will also assess the recommended design proposal in relation to practical issues, such as risk management and public safety
- Council will engage the successful artist, through a contract with Council, to develop and fabricate the recommended design proposal. The contract will

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clearly outline the responsibilities of all parties during the fabrication and installation of the work.

8 COMMISSIONING PROCESS & TIMELINE

8.1 Commissioning process – overview

Advertising and direct mail: artists invited to submit expressions of interest in the project – Completed

Expressions of interest – Artists will be assessed by the project advisory panel. Up to four artists will be shortlisted and invited to submit design proposals – October 2010

Shortlisted artists – site briefing: the four selected artists, or artists' teams will be briefed at the artwork site.

Design proposal preparation: design proposal fees of \$2000 will be paid to each of the selected artists/teams for the preparation of design proposals. Proposals are to be forwarded to Councils contact by 3rd November 2010

Design proposal presentation: the selected artists will be required to present their design proposals to the project advisory panel on 10th November 2010

Design proposal approval: the advisory panel will select a preferred design proposal and recommend to Council for endorsement 24th November 2010.

Design development: once relevant approvals are secured the successful artist will be engaged to develop their detailed design.

8.2 Contact with Council

The Project is to be coordinated by Councils Principal Design Engineer, Andy Atkins

Tel No.	02 6581 8111
Fax No.	02 6581 8620
Email	andy.atkins@pmhc.nsw.gov.au

Postal Address: Port Macquarie Hastings Council P.O. Box 84 Port Macquarie NSW 2444

Design Proposals shall include:

- a written response to the site and the artist's brief
- curriculum vitae (CV)maximum of 10 slides of relevant work
- slide list indicate materials, dimension, location, commissioner, collaborative partners.

Please note that concepts are not being called for at this stage.

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8.3 Design proposal preparation

The four shortlisted artists/teams will be engaged to develop a design proposal. Each team, or artist shortlisted as an individual applicant will be paid a \$2000 fee (4 X \$2000 fees). six weeks will be allocated to the design proposal development. The four artists will be required to present their proposals to the project advisory panel on 10^{th} November 2010.

The design proposal will comprise:

- a model of the proposed work, together with drawings and elevations, as necessary, to convey the concept.
- This work is to be presented in a professional and artistic manner a site plan showing the location of the proposed artwork
- a written concept paper
- design development, fabrication and installation timeline and an indication of who will fabricate the work and an outline of fabrication contractors and supply relationships
- a proposed budget for the design development stage and an indicative project implementation budget, including contingencies, artist's fees, agent's fees, travel and associated expenditure, delivery and installation expenditure
- an indication of the preferred approach to project management should the proposal be commissioned, including the approach to payment and administration of funds
- an indication of any known ongoing maintenance requirements associated with the proposal.

A comprehensive maintenance schedule will be required from the artist commissioned to fabricate the project.

The successful proposal will need to be certified, during the design development stage, by a structural engineer, for material and structural strength. It is necessary that preliminary discussions with qualified engineers take place during the design proposal stage.

All parties need to be satisfied that the proposal is achievable within the budget available.

Concept papers and other relevant support material considered should be provided to all members of the advisory panel at the time of the design proposal presentation.

All work presented is to be of a high professional and artistic quality that clearly conveys the design.

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8.4 Design proposal – assessment criteria

Assessment of the design proposals will consider the aesthetic, conceptual and technical expertise demonstrated in the proposed work.

Consideration will be given to:

- · the artistic merit of the proposed concept
- the way in which the project meets the various requirements of the briefing paper, including its appropriateness in terms of scale and material
- the ability of the artwork to communicate its concept and underpinnings
- the proposed budget and timeline aesthetic response to the site and
- the brief conceptual response to the site and
- the brief response to any stakeholder consultation and feedback
- public safety and risk management issues
- maintenance issues
- robustness and durability.

Artists must be able to undertake the design proposal stage of the project within the timeline specified, and be available to undertake the design development and fabrication of the work once the relevant approvals are secured.

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9 INFORMATION TO BE SUPPLIED BY COUNCIL

In addition to this brief and attachments, the following information will be provided by Port Macquarie-Hastings Council:

- Street Map (Coloured) of the Local Government Area as a series of 'pdf' files
- All relevant information held on Councils Geographic Information System (GIS)
- All relevant information on Oxley Highway deviation environmental assessments and detailed designs

The Street Map can be obtained by directly downloading the required files from Council's web site by using the following link

Port Macquarie-Hastings Council - Hastings Street Directory

The remaining information is supplied in a compressed zip file also available by visiting Council's web site at <u>www.pmhc.nsw.gov.au</u> and clicking on the word 'tenders' and registering online.

All data supplied by Council remains subject to copyright vested in Council or the data supplier who has licensed use of the data to Council. At the completion of the project, no digital copies of the data supplied by Council are to be retained by the contractor without the written consent of Council.

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10 SCHEDULES AND ANNEXURES

The schedules or annexure shown on the following pages and listed below are to be provided with the

- 1 Schedule of Business Details Schedule 1
- 2 Council's Statement of Business Ethics Annexure 1
- 3 Project Locality Annexure 2

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SCHEDULE 1 - SCHEDULE OF BUSINESS DETAILS

	DETAILS	
Company or Trading Name:		
ABN:		
Registered for GST:	Yes√	No
Trade or Business Type:		
Licence No. (Where Applicable):		
Registered Office Address:		
Principal Business Address:		
Postal Address:		
Telephone:		
Facsimile:		
Email:		
Contact Name:		

<u>Please Note</u>: If the Supplier is a Trust or a Trustee of a Trust, then a full copy of the trust deed <u>MUST</u> be submitted with the RFQ documents.

DECLARATION:

The Supplier named above has fully acquainted itself with the conditions and all related matters pertaining to this RFQ and agrees to be bound by the terms and conditions as included in the document. By submitting this RFQ the Supplier warrants and represents that it has made its own enquiries and investigations and has obtained professional advice and all other relevant information so as to inform itself of all risks and contingencies, which may affect its tender price. The Supplier warrants and represents that it has included for all such risks and contingencies in its submitted price.

NAME:

SIGNATURE:

JOB TITLE:

DATE:

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STATEMENT OF BUSINESS ETHICS - ANNEXURE 1

Purpose Of This Document

This Statement of Business Ethics is intended to provide a clear understanding of mutual obligation; it helps set the ethical ground rules for all business dealings between Port Macquarie-Hastings Council and suppliers & business partners. It applies to all business partners and suppliers, including providers of goods and services, contractors, suppliers and suppliers.

It defines Council's ethical standards and establishes Council's expectation that all Suppliers will meet these standards. It also provides businesses dealing with Council with a degree of understanding of what to expect in such dealings.

This Statement aligns to Council's core values, primarily through the value of 'Openness and Accountability'. In keeping with this value, Council will endeavour to behave with integrity, impartiality, transparency and fairness at all times.

This Statement of Business Ethics also explains what the consequences are for Staff, Councillors, suppliers & business partners of not complying with the requirements of this statement.

What Is The Impact Of Business Ethics?

ICAC Advice

It should be noted that the Independent Commission Against Corruption (ICAC) in NSW defines those people employed by Council as suppliers, consultants or contractors to be "public officials". When engaged by Council, consultants & contractors are subject to the jurisdiction of ICAC and are considered to be "public officials" for the purpose of the ICAC act.

In addition, any individual can be found corrupt by the ICAC (even if they are not a public official) if they try to improperly influence a public official or Council's honest or impartial exercise of its official functions.

Further information relating to the ICAC Act is readily available to all Suppliers (including suppliers, contractors and consultants) at the ICAC web site – <u>www.icac.nsw.gov.au</u> and copies of all relevant Council policies are also available at any time.

Impact for Suppliers & Business Partners

By aligning business practices with Council's ethical expectations, suppliers & business partners can expect to:

- · Compete for business on an even playing field;
- Establish practices, which put them in good stead in competing for works with other public sector agencies.

If suppliers & business partners to Council do not comply with this statement, then the consequences may be as follows:

- · Formal investigation for corruption or other offences;
- Possible loss of work;
- Termination of contracts;
- Damage to reputation;
- Loss of rights (such as loss of operating or trade licences etc).

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Impact for Council Staff

If Council Staff do not comply with this statement, then the consequences may be as follows:

- Formal investigation;
- Disciplinary action;
- Dismissal;
- Potential criminal charges.

How to Comply

Council

Council aims to follow processes that are transparent and to act with impartiality, honesty and fairness and to be consistent in all measures. Council expects its entire staff to abide by the law and all relevant policies and procedures.

Fairness means being objective, reasonable and even-handed. It does not mean pleasing everyone. Council will strive to be fair by ensuring that our processes are appropriate and demonstrate this by being open and accountable, wherever practicable. This does not mean that Council will always go to formal tender or that we will call for bids for items of low monetary value. Council will only deal exclusively with parties in exceptional circumstances and where we can demonstrate there are valid reasons for doing so, based on sound probity principles and in line with the Local Government Act 1993 and related regulations.

As a local government body, Port Macquarie-Hastings Council has a commitment to ensure community funds are expended efficiently, effectively and economically and aims to attain "best value for money" in its business dealings with the private sector.

"Best value for money" is determined by considering all the factors, which are relevant to a particular purpose – for example:

- Experience;
- Quality;
- Reliability;
- Timeliness;
- Service:
- Initial & ongoing costs.

It is important to note that "Best value for money" does not automatically mean the "lowest price". It means the offer that is most advantageous to Council after considering the above factors.

Council Staff and Councillors

Code of Conduct

Council has a formally adopted Code of Conduct for its Staff and Councillors. The Code embraces the concept of integrity, ethical conduct and accountability throughout its organisation. Our staff are accountable for their actions and are expected to act in the public interest.

As stated in Councils Code of Conduct:

"Port Macquarie-Hastings Council values its tradition of integrity, responsibility and fair dealing. Our ratepayers need to have confidence that as Councillors and employees we will continue to strive to maintain the highest standards in our dealings with the community we serve. Our Code of Conduct reflects Council's determination to attract the highest level of confidence from our community and we commend it to you." (Page 2, Code of Conduct 2005)

Staff and Councillors are expected to act in accordance with this Code of Conduct and to maintain the highest standards of ethical behaviour consistent with the positions they hold. Equally, suppliers and business partners are expected to demonstrate the equivalent behavioural standards.

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Procurement and Tendering

Staff and Councillors must abide by the law and all its policies, procedures and practices, particularly those related to Procurement and Tendering, including relevant legislation and codes of practice. All Procurement and Tendering actions and decisions will be fully documented to a standard that will withstand scrutiny through an audit process. Please note that all pricing will remain confidential where it is considered that a commercial advantage may be gained/lost through disclosure.

All Council Staff will be accountable for their actions and are required to act in the public interest and to always act with due care, integrity, transparency and fairness.

All Council Staff are also expected to:

- Avoid conflicts of interest;
- Treat all potential providers of goods & services equally;
- Abide by the law;
- Strictly comply with Council's adopted Code of Conduct, particularly in relation to incentives, gifts and benefits;
- Disclose any conflict of interest, including related party employment.

Suppliers & Business Partners

General requirement

Council requires all those with whom it deals in the provision of goods and services, including business partners to observe the following principles:

- Act fairly, ethically and honestly in all dealings with Council;
- Not to disclose confidential Council information;
- Not to exert pressure nor influence on Council Staff or Councillors that may cause them to waiver from Council's Code of Conduct,
- Not to directly or indirectly canvass support from an elected Councillor or staff member of Council during a formal tender period. Doing so will result in disqualification from the process;
- Not to engage in any form of collusive practice;
- To abide by relevant legislative processes and industry codes of practice in all procurement and tendering dealings;
- To have respect for the obligation of Council Staff and Councillors to act in accordance with this Statement of Business Ethics;
- Commit to not offer Council Staff or Councillors inducements or incentives such as money, gifts, benefits, entertainment or employment opportunities;
- Ensure that all sub-contractors and other people engaged by the supplier or business partner are aware of this statement and the consequences of breaching it.

Communication requirement

As a general principle, all communication with suppliers & business partners to Council should be *clear*, *direct* & *accountable*. Suppliers & business partners also have an obligation to ensure that their communication with Council abides by the above three principles, in order to minimise the risk of inappropriate influences being brought to bear on the business relationship.

There will be times where some communication needs to be strictly confidential for commercial-inconfidence or other reasons. This however should not preclude proper accountability and both parties should be able to explain the reasons for instituting specific communication protocols or keeping some communication confidential.

Public perception of inappropriate influence can be extremely damaging to the reputation of both parties, even if nothing has occurred. Therefore it is in the best interests of both parties to ensure that formal communication processes are observed at all times and that all communication supports Council's core values of integrity, impartiality, transparency and fairness.

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Tendering

This Statement of Business Ethics will form part of all formal procurement processes, including requests for quotation, expressions of interest and tenders for Council and all suppliers will be asked to submit a signed declaration stating that they have read and fully understood the contents of this full statement in relation to their dealings with Council.

What happens if I think there is a breach?

If you are concerned about a possible breach of this statement, or about any conduct that could involve fraud, corrupt conduct, maladministration or serious and substantial waste of public funds, please contact Council's General Manager, or one of Council's Directors.

Please be aware that if you do approach a Council Director with such a report, it is a requirement of ICAC that the Director must inform the General Manager immediately.

It should also be noted that once the General Manager is made aware of a possible breach as described above, that it is incumbent upon him or her to report this directly to the ICAC.

For Council staff, please refer to Councils policy titled "Corruption, Maladministration & Serious Substantial Wastage - Reporting Of (C23)" for more information on the processes that you are required to follow in the case of a possible breach of this statement.

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Port Macquarie Hastings	Council
Technical Services Secti	on

STATEMENT OF BUSINESS ETHICS DECLARATION

The Supplier must complete and submit this form with tender. All submitted information will be treated as confidential

I, ______(Print name),

Of _____ (Tendering Organisation),

Do hereby solemnly declare and affirm the following:

- 1. I hold the position of ______, and am duly authorised by the suppliers organisation to lawfully proclaim the following and, after having made due inquiry believe the following to be accurate to the best of my knowledge.
- The Supplier and the Supplier's representatives have read and fully understand the contents and meaning of the Port Macquarie-Hastings Council Statement of Business Ethics as included as part of these Tender documents.
- 3. The Supplier and the Supplier's representatives agree to be bound by the standards of ethical behaviour as detailed in the Port Macquarie-Hastings Council Statement of Business Ethics and will not exert pressure nor influence Council staff that may cause them to waiver from Council's *Code of Conduct*.
- 4. The Supplier agrees not to directly or indirectly canvass support from an elected Councillor or Council staff member during the formal tender period, or be disqualified.
- 5. The Supplier and the Supplier's representatives agree to have respect for the obligation of Council Staff to act in accordance with the Statement of Business Ethics.

I make this solemn declaration as to the matter aforesaid, according to the law in this behalf made, and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Signature of Suppli	er:		
Subscribed and dec	clared at:		
This:	Day of	(Year)	
Before me:			(Print name)
Witness:			
(Signature)			
(Justice of the Peace	e or authorised person)		

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PROJECT LOCALITY - ANNEXURE 2



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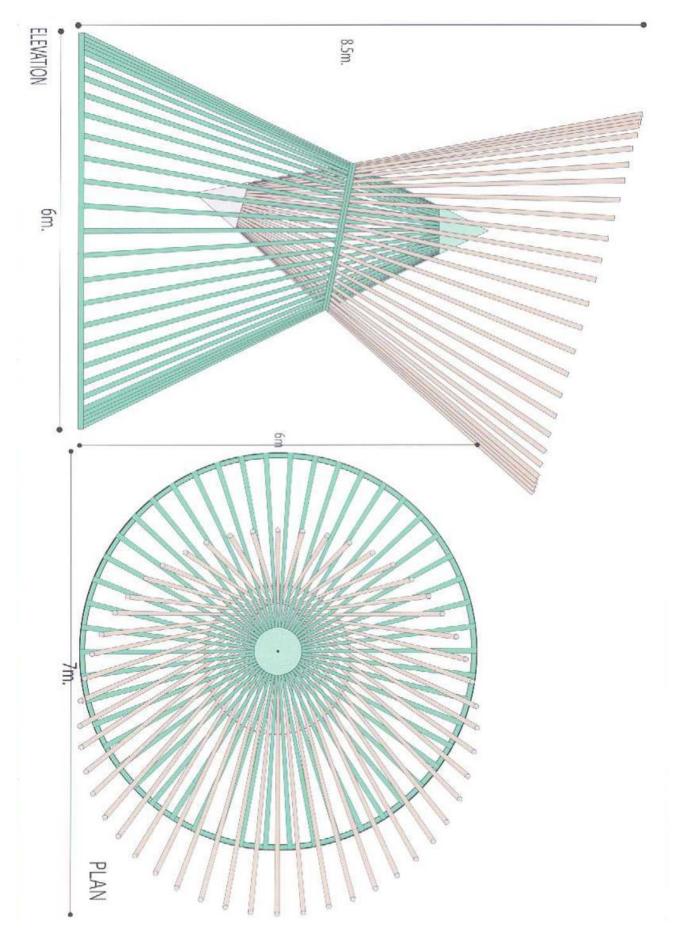
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RICK REYNOLDS GATEWAY PROPOSAL



CONCEPT MODEL

ATTACHMENT



PORT MACQUARIE GATEWAY SCULPTURE CONCEPT.

The sculpture is made up of multiple pieces. There are a hundred poles. They create two distinct forms. One group is standing firmly on the ground, symbolising the domestic space, protective and nurturing. The second is inverted, a congregation of individuals, reaching outward, open to the sky, the world, the 'other', symbolising the 'connected' community, mobile and open. These two forms, by their complimentary interaction create a third diamond like shape, symbolising strength through culture, where the two positive trends in society unite to form the true heart of the community. In this space are art, lifestyle, and participatory democracy.

The round shapes reflect the form of the roundabout, the off kilter set up, a sense of movement. It looks good, it is durable, easy to clean and graffiti proof.

The Gateway Sculpture, will become a signifier of arrival, light and fun, redolent of seaside imaginings and memory for the tourist and a welcome home for the residents.

MATERIAL & CONSTRUCTION METHOD

The sculpture is made of 100 tapered poles, for durability and lightness aluminium is the preferred material. I have sourced a standard 6M flagpole no fittings, from a manufacturer in Sydney, (Goldspar) So have based the design on that format, but any other format could be easily accommodated. Their price for 100 poles, mill finish with spigots for locating in ground is \$22,000-25,000 depending on current metal prices. In addition to the poles there are 3 or 4 components to be fabricated. These are the two caps where the poles meet at the apex. Stainless cones with a plate welded about 25mm inside the base and a ring, to locate the poles, welded to that plate. The poles would be fastened to the cone by riveting or bolting in at least 3 places on the circumference.

The base of the lower pole group would be located on a concrete base by in ground spigots. Or alternatively fastened to a fabricated ring which would be bolted to suitable footings, the advantage of this set up is portability in the event of a change in location preference. Aluminium poles guaranteed for 50 yr life.

A fabricated oval ring fits over the lower pole group and acts as a base support for the upper inverted group. This would need to be engineered and fabricated.

The set up would be to arrange the poles on site, on the base. Join them in the cone at the apex. Fit the ring at the chosen angle and feed the upper pole group individually through the ring into the apex cone set at the designed height and location. Then lock it all into place by bolting.

BUDGET

POLES	\$25,000
ENGINEERING, FABRICATION	\$10,000
SITE SET UP	\$5,000 -
ARTIST FEE	\$10,000

This is an estimate only and successful completion would depend on in kind support or sourcing cheaper material, possibly through RTA sources or more likely from China.

Lighting would enhance the sculpture but is beyond the budget and because the roundabout is already illuminated further lighting would be redundant.

GENERAL COMMENTS

I have made a lot of sapling sculptural installations, the limitation is their biodegradability , their advantages – availability and unique beauty.

The decision to use a durable material to build a sculpture is to expand the range of this body of work to make use of some of the inherent qualities of an open light structure that covers a relatively large area at minimum cost, and contains a big expressive vocabulary.

Abstract form can express whatever you can imagine.

RICK REYNOLDS 2010

SAPLINGS INSTALATIONS **RICK REYNOLDS GOVERNMENT HOUSE BYRON BAY** MANNING REGIONAL GALLERY PORT MACQUARIE SXS TAMARAMA BEACH **GOVERNMENT HOUSE**

Oxley Highway Deviation "Gateway" Public Art Project Stephen King Design Proposal



Artist Brief and Response to the Site

I see this location as the gateway to Port Macquarie signalling the next stage in the growth of this old port town.

As a town founded on the meeting of the ocean with the river I want to reference the sailboats and the settlers' push inland cutting timber to carve out new territory upstream of the river.

The roundabout creates an opportunity to see a structure in the round as well as playing on the idea of whirlpools and fluid motion.

The first element in my initial design is a ten metre high upright twisted plank being climbed by two figures passing from one side of the log through to the other as if climbing a rope ladder up a mast but this is only revealed as you move around the roundabout.

The second element is the boom of a sailboat set above driver's eye level and morticed into both sides of the mast-like structure. The boom will be carved to describe a reefed sail and it will be offset to make it self-supporting and to create visual interest.

STEPHEN KING

Biography

- 1958 Born Bingara, New South Wales, Australia
- 1977-79 Studied at Sydney College of the Arts
- Graduated with Diploma of Visual Arts, Printmaking major.
- 1981 Post-graduate studies at St. Martins School of Arts, London.
- 2009 Living and working in Walcha, NSW, Australia

Solo Exhibitions

1980	Parmenter Gallery, Walcha, NSW
1983	Tamworth City Art Gallery, NSW
	Weswal Gallery, Tamworth, NSW
1985	Coventry, Sydney
1987	Coventry, Sydney
1988	Cintra Gallery, Brisbane
1990	Coventry, Sydney
1992	Coventry, Sydney
1994	Coventry, Sydney
1996	Coventry, Sydney
1998	Coventry, Sydney
2001	BBA Gallery, Sydney
2003	Bryan Hooper Gallery, Sydney
2006	Baroque Niche, Gallery Klatovy, Czech Republic
2009	Gallows Gallery, Perth, WA

	Walcha Gallery of Art, NSW
2010	Moree Plains Gallery, NSW - Sculpture, prints, paintings

Group Exhibitions

1976	NSW HSC Travelling Exhibition
1977	SCA selected works Adelaide Arts Festival
1979	Australian Student Printmakers Travelling Exhibition, Blaxland Gallery, Sydney
1981	"On the open road" London
1982	"New England Regional Artists" -Tamworth City Art Gallery "Regional Artists of New England"-NERAM, Armidale
1984	"Country Artists" Coventry, Sydney
1986	"Artists from North West NSW" - Blaxland Gallery, Sydney "Sydney Printmakers" - Blaxland Gallery, Sydney "Colour 1" - Coventry, Sydney
1987	"Colour 11" - Coventry, Sydney "Australian Works on Paper" - Aion Fine Arts, Dallas USA
	"Five Northern Printmakers" - Weswal Gallery, Tamworth
1988	"New Works from the Studio" - Coventry, Sydney
	"The Packsaddle Show" - NERAM, Armidale
	"Black and White" - Coventry, Sydney
1989	"Griffin, Sahm, Kensell, King" - Tamworth City Art Gallery "15 Shopping Days to Christmas" - Coventry, Sydney
1991	"New Art Five" - Coventry, Sydney
	"The Packsaddle Show" NERAM, Armidale
	"Christmas Show" - Coventry, Sydney
1992	"Works on Paper" - Coventry, Sydney
1993	"On the Other Hand" - S.H. Ervin Gallery, Sydney
	"Northern Artists" - Opening exhibition, Coffin Creek Shed, Mudgee
	"A survey of local contemporary practise" - Tamworth City Gallery
1994	"Roger Griffin, Julia Griffin, Stephen King" - Coffin Creek, Mudgee "Obsession" - Coventry Collection - Campbelltown City Art
	Gallery,Travelling Exhibition
1995	"Australia Felix" - Emu Plains Woolshed, Benalla, VIC
	"Salon des Refuses"- S.H.Ervin Gallery, Sydney
	"Ironsides" - The Powerhouse Museum, Sydney
1996	"Roger Griffin, Julia Griffin, Stephen King" - Coffin Creek, Mudgee,
	NSW
	"Generation stick"- Tuskulam Gallery, Sydney
	"Coventry Diary" - Coventry, Sydney
	"Elevations" - Old School Gallery, Walcha
1997	"Sculpture by the Sea" - Bondi Beach, Sydney
	"Roger Griffin, Julia Griffin, Stephen King" - Coffin Creek, Mudgee,
	NSW
	"The Opening" - Old School Gallery, Walcha
1998	"The Print Show" - Coffin Creek, Mudgee, NSW
	"Sculpture Acquisition Prize" - Lake Macquarie City Art Gallery,
	NSW
	"Work from Coffin Creek Shed Mudgee" - Old School Gallery,
	Walcha
	"Sculpture by the Sea" - Bondi Beach, Sydney
	"Nova anglica" - NERAM, Armidale
	"Etchings" - Coventry, Sydney
1999	"Stephen King - Small Sculptures" - em, Armidale, NSW
	"Willoughby City Art Prize" - Willoughby Civic Centre, Sydney

	"Art in the wild" - Wildwood, Mudgee (Mudgee Wine Festival event) "Festival of the Black Soil Plains" - Moree Plains Gallery, NSW
	"Sculpture by the Sea" - Bondi Beach, Sydney
2000	"Its a Guitar Shaped World 6" - Tamworth City Art Gallery, NSW
	Inaugural Exhibition – BBA Gallery, Sydney
2001	"Sculpture by the Sea" – Bondi Beach, Sydney
2001	"Sculpture from the Sea" – Hazelhurst Regional Gallery, Gymea,
	NSW "Sculpture by the Ser" – Bendi Berch, Sydney
	"Sculpture by the Sea" – Bondi Beach, Sydney "Sculpture in the City" – Martin Place, Sydney
2002	"Sculpture by the Sea" – Bondi Beach, Sydney
2002	"Sculpture Inside" – Bondi Pavilion, Sydney
	Packsaddle Fundraiser, NERAM, Armidale, NSW
2003	"New Sculpture" – BBA Gallery, Sydney
2000	"Walcha – City of Art" – Newcontemporaries, QVB, Sydney
	"Walcha – City of Art" – Old School Gallery, Walcha
	"Bulldust to Bitumen Art Show", Walgett, NSW
	"Sculpture Currents" - Confluence – Four regional sculptors – Tony
	Coleing, Stephen Killick, Stephen King & Rick Reynolds – Port Macquarie Hastings Regional Gallery, NSW
	"Surface Memories" – Tamworth City Art Gallery,NSW
2004	"Sheer Diversity - Sculptors Who Draw" - Trevor Victor Harvey
	Gallery, Seaforth, Sydney
	"Sculpture by the Sea" – Bondi Beach, Sydney
	"Sculpture Inside" – Bondi Pavilion, Sydney
2005	"Sculpture Inside"- Maunsell Wickes @ Barry Stern Galleries,
	Paddington
	"The Land" - Gallery 47, Rylstone, NSW
	"Sculpture by the Sea" – Bondi Beach, Sydney
	"New England Objectives" – NERAM, Armidale
2006	"Sculpture by the Sea" – Cottesloe, Perth, WA
	"Regional Encounters" – Tamworth Regional Gallery,NSW
	"Walcha City of Art – Contemporary Australian Art" – Karlovy Vary Art Gallery, Czech Republic
	"Opening" - SAASS - Tamworth, NSW
	"My Time My Place Myself" – New England Regional Art Museum,
	Armidale
	"Stephen King and Mike Nicholls Linocuts" Galerie F, Klatovy, Czech
	Republic
	6th International Linocut Symposium, White Unicorn Gallery,
	Klatovy/Klenova, Czech Republic
	"Sculpture by the Sea" – Invited Artist – Bondi Beach, Sydney
2007	"Three's Company" – Michael Reid at Elizabeth Bay, Sydney
	The Woollahra Small Sculpture Prize – Redleaf Council Chambers,
	Double Bay
	"Sculpture by the Sea" – Bondi, Sydney
	"Sculpture Inside" – Bondi, Sydney
	Aquasculpture – Port Macquarie Town Green, NSW
	"3D at BP" – Blue Poles Gallery, Byabarra, NSW
2008	"Sculpture by the Sea" – Cottesloe Beach, Perth, WA
	"Sculpture 2008" – Maunsell Wickes at Barry Stern Galleries
2000	"Sculpture by the Sea" – Bondi, Sydney
2009	"Sculpture by the Sea", Cottesloe, Perth, WA Walcha Gallery of Art – Opening Exhibition – Walcha, NSW
	"Sculpture in the Gao!" – Trial Bay, NSW
	"Aquasculpture" – Port Macquarie, NSW
	"Sculpture by the Sea" - Bondi - Invited Distinguished Artist
	Starpture by the Star Donar Invited Distinguished Altist

2010 UWS Acquisitive Sculpture Award, Campbelltown, NSW Artscape, Byron Bay, NSW Retrospect Galleries, Byron Bay, NSW In(two)art – Maitland Regional Art Gallery, NSW "Going Bush – Stephen King and Julia Griffin" - Galerie Am Park, Vienna, Austria "Sculpture by the Sea" – Bondi, NSW

Collections/Awards

Coventry Collection Newcastle Regional Art Gallery Tamworth City Art Gallery Parliament House, Canberra Artbank Festival of the Black Soil Plains – Moree Plains Gallery/Winner 1999 Sculpture by the Sea, Bondi – Sherman Galleries Award 1999. Bulldust to Bitumen, Walgett 2003 – Sculpture Prize Aquasculpture 2007 – Port Macquarie – Joint winner

Commissions

1982 1991	Mural – Imperial Hotel, Tamworth. Sculpture for the Rainforest Display, Dorrigo National Park – NPWS.
1996	"Weather Signs"" – Fountain sculpture, McHatton Park, Walcha
2000	"Petali" entrance sign, Walcha, NSW
	Walcha roads entrance signs – Walcha, NSW.
	Kuringai Municipal Council – Bancroft Park, Roseville.
2002	"Harry's Lookout", Shelley's Beach, Port Macquarie – Hastings Council.
2004	"Harry's Corner", Shelley's Beach, Port Macquarie – Hastings Council
	Judith Wright Memorial Garden, Armidale
	"Waterlily Park", Port Macquarie – Hastings Council
2005	"The Boulevard" Longyard Estate, Tamworth
	"Place where eels swim" mosaic, Walcha
2006	Lynbrook Estate Shopping Centre, South Melbourne, Vic
	Dorothy Topfer Memorial, Ballina School
2008	Sydney Polo Club, Richmond, NSW
2010	Bryce Laut Memorial Sculpture Project – Sea Acres Rainforest Centre, Port Macquarie, NSW

Workshops/Presentations/Symposiums

1990-2004	Printmaking workshops held in own studio for school and TAFE students.
1997	CASP Youth workshop – printmaking.
1998	Aboriginal workshop – colour relief printing.
2001	Walcha Street Furniture Project – Co-ordinator and Technical
	Assistant.
2002	Confluence 2002, Port Macquarie - Presenter
2003	Confluence 2003, Port Macquarie – "Whittle-a-thon" – wood carving
2004	"Sculpture in Public Space" – Sculpture by the Sea Symposium –
	Domain Theatre, Art Gallery of NSW – Presenter

2006	6 th International Linocut Symposium, Klenova, Czech Republic
2007	Aboriginal Sculpture Workshop – Enngonia, NSW
	Inami International Wood Sculpture Camp, Nanto City, Japan -
	Invited Australian representative
	Verandah Post Project, Walcha – Co-ordinator and Technician
2008	"Sculpture in Public Space" – Sculpture by the Sea Cottesloe
	Conference – State Library, WA - Presenter
2010	Bryce Laut Memorial Timber Carving Workshop – own studio.

Selected Bibliography

The Northern Leader, Page 1, April 30, 1983 SMH, April 19, 1985 by Susanna Short SMH, July 31, 1987 by Bronwyn Watson New Art Five, Edited by Neville Drury, 1991 The 7.30 Report, ABC Television, 1993 Sydney Morning Herald, Spectrum by John MacDonald June 1, 1996 Sydney Morning Herald, Page 3 by Peter Cochrane, May 28 1996 Business Review Weekly, by Jane Burton Taylor, October 28 1996 "Artreach" (Regional Arts NSW) Summer 1998, Pages 42-43 "Country Style" December 1998 by Sue Webber and Trevor Creighton "Artreach" February 2001, Page 12 by Rebecca Townsend SMH, Page 6, March 27, 2001, by Andrew Stevenson, Rural reporter SMH Metro Page 27, March 30, 2001, Critics Picks by Courtney Kidd SMH Metropolitan Page 19, April 4, 2001 by Courtney Kidd "Artreach" June 2002, Page 24 by Cath Ovenden Daily Telegraph, Page 13, Nov 11 2002 Sydney Morning Herald, Page 5, June 16, 2003 by Peter Cochrane The Australian, Page 17, June 20, 2003 by Tim Hughes "Artreach" June 2003, Pages 16-17 by Jane Shadbolt and John McDonald The Land, Magazine, Page 1, July 3, 2003 by Melissa Lang The Land, Magazine, Page 6, October 2, 2003 Sunday Telegraph, December 28, 2003 "Walcha City of Art" colour catalogue – edited by John McDonald and published by New Contemporaries, QVB, Sydney "Surface Memories" colour catalogue - published by Tamworth City Art Gallery, December 2003 Armidale Express, Page 2, February 11, 2004 The Newcastle Herald, Weekender, Page 8-9, February 21, 2004 by Darrell Croker The Australian, April 7, 2004 by Tim Hughes The Northern Daily Leader, Page 2, March 31, 2005 by Rebecca Gracie Port Macquarie Express, Hastings Council Community Newsletter April 20, 2005, Page 4 Sydney Morning Herald, Good Weekend, Page 20, January 14, 2006 "Art attacks" by John McDonald Sydney Morning Herald, Spectrum, Page 16, June 3-4, 2006 - "A reality Czech from Walcha" by John McDonald The Land Magazine, Page 36, January 4, 2007 - "Sculpting from Walcha's waste" by Amy Lewer "Big Art" - Landline, ABC Television, December 2, 2007 – Reporter Pip Courtney Armidale Independent, Page 10, April 23, 2008 Daily Telegraph, Weekend Page 39, October 18, 2008 - "art and about for a wondrous event" by Elizabeth Fortescue "Beyond the Bale" published by Australian Wool Innovation, Page 18, Feb/March 2009 "Shaping the Land" by Matthew Cawood

Western Suburbs Weekly, Perth, Page 27, March 10, 2009 - "Farming inspires" by Andrew Ritchie

Insite Magazine, Page 210, Autumn Edition 2009 - "Gallery's Choice" by Nathan Scolaro

Home Beautiful Magazine, Page 72, July 2009 - "Home Grown" by Karen Cotton You Magazine, Page 13, August 2009 - "The Art of Living" by Wendy Spooner Sydney Morning Herald, Arts and Entertainment, Page 12, October 30, 2009 "Thinking of Recession? It's a shore thing" – Adam Fulton The Australian, Arts – November 4, 2009 - "Figures no match for the landscape"

by Christopher Allen

Sydney Morning Herald, Business Day, Page 2, November 6, 2009, CBD by Scott Rochfort

Sydney Morning Herald, Spectrum, Page 18, November 14-15, 2009 - "Good intentions lost at sea" - John McDonald

The Land, Page 60, February 11, 2010 - "Sculpting to the bio-flow" by Matthew Cawood

The Courier Mail, Escape, Page 30, March 13-14, 2010 - "Rustic Renaissance" by Marea Donnelly

Moree Life Magazine, Page 16, April 2010 - "Inspired by the land" by Samantha Stratton

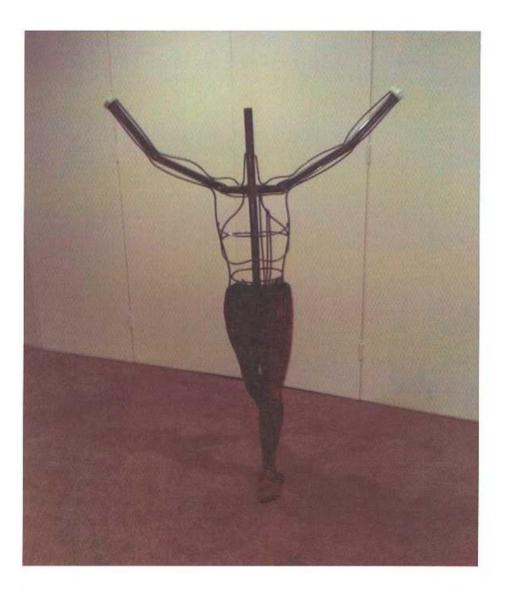
Daily Telegraph, Escape, Page 67, April 15, 2010 - "Beauty cut by hand and nature" by Marea Donnelly

The Weekend Australian Financial Review, Page 36, July 10-11, 2010 - "Breath of Fresh Air" by Sue Williams

Contact

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OXLEY HIGHWAY PUBLIC ART SUBMISSION -PETER ALLISON



Port Macquarie Gateway Project Sculpture Commission.

Peter Allison.

Concept:

This city has for sometime now, become the venue for a landmark event, enabled by the tireless work of the many people who have contributed to making such success a reality.

I refer to the Iron-man competitions which have placed this region as a preferred locality for both participants and spectators. The competitors, their families and supporters have greatly enjoyed the program as well as the environs of the event. This is able to be judged by the encouraging turn-out experienced by local supporters as well as for the hospitality, food and beverage providers.

My concept draws directly from this colossal event and presents the viewer with an iconic image which will provide a memorable and enduring impression.

I offer a 3D figurative image in steel of a winning competitor from this Iron-man event as if bursting through the finish tape.

This image depicts arms raised in jubilation and triumph, chest thrust forward, back arched and legs in running stride to provide a snapshot of the last fraction of a second climax to the event. The aspects of muscle tension, sinew stretch and bone pressure are able to be represented in the sculpture as the material selected is well now suited to this form of figurative expression. The system designed to achieve this outcome has been enabled by my lengthy developmental work into the manipulation of steel.

The medium chosen for construction of this work is ideally capable of depicting such form in the scale needed to claim the site.

Being a figurative work, this image is able to also depict the underlying facial features of a youthful Biripi warrior and be capable of providing an inclusive cultural perspective; -an athlete in motion, a local inhabitant.

The attitude of the sculpture is designed to elicit a welcoming, embracing gesture to oncoming traffic.

The image is scaled to stand approximately six metres tall in order to maintain a strong visual focus regardless of the size of the trucks now using the highway. It is able to define where you are to be going; -Port Macquarie, come this way.

The preferred site for this work is the concrete median divider directly east of the new round-about. This site will define the gateway to Port Macquaric above all else, to the road-user. The driver will be drawn to the road-exit for the city by a welcoming gesture of raised arms and an attitude of jubilation.

The site faces west and will be bathed in a deep golden light in the late afternoon. The time many roadusers, after a full day's drive from distant cities, will be using the exit and will remember the warm glow.

At night, traffic headlights on low beam will sweep the site and create movement of light and darkness over the sculpture, negating the need for any fixed lighting.

Page 2.

Construction:

Welded steel, all new materials. An internal skeletal pipe structure supports the elements which will provide the body contour lines of the finished sculpture. These elements are overlaid with 10mm round steel bar and welded along parallel contact lines.

The structure is supported by a 250mm diameter galvanized pipe contained within its core, through the grounded leg and extending into the concrete foundations. This unit provides both structural integrity and a means to secure the unit to its base. The sculpture, being physically and aesthetically balanced, is able to stand upon one leg and resist calculated wind loads up to 200kph, provided the support pipe is filled with 32mpa concrete to knee level.

The position of the suspended leg is able to be raised to indicate a forward step, or conversely placed to the rear as a trailing step and be grounded as an additional bracing element.

As the material chosen being raw steel, it will develop a surface coating of oxide which will enhance the theme of "Iron-man" with a rich brown patina.

Being sited some ten kilometers from the coast, it will not be appreciably further oxidized as there are no traps for moisture from rain or dew.

It is anticipated the life of the structure will well exceed the forty year durability expectation.

Developmental Outline.

The sculpture is based upon an internal pipe structure which provides initial support for the placement of subsurface developmental lines. The pipework is offset to the central line of the figure to enable a visual imbalance and the perception of an action sequence, while remaining perpendicular to the ground for gravitational balance.

The pipe structure enables the construction of the work to be carried out similarly to a rotisserie held between two centres. The work is configured horizontal for construction purposes and while in this position is able to be accurately profiled from full scale printed drawings. These drawings are then translated into contour lines in steel bar. Accurate drawings are able to be produced in collaboration with Henry Field; a respected local portraiture artist and reproduced in the required scale by McNeil Ellis Architects of Port Macquarie.

As work progresses, the structure is able to be rotated incrementally to enable work accessibility for laying contour lines, welding and eventual grinding.

I have chosen this material, methodology and procedure for construction of the sculpture from previously trialled works using similar criteria. The outcomes have been very successful in past ventures and I have every confidence the same principles will achieve the desired outcome for this project.

Page 3.

Installation Requirements:

The unit is able to be delivered by a standard flat-bed truck having 8 meters of tray length. A crane capable of a 2.5t load-lift to 10m height is required to position the sculpture. The base of the unit is secured within a poured concrete foundation where provision for 250mm pipe has been previously accommodated.

Foundation dimensions: Trench 900mmW x 2500mmL x 1500mmD steel reinforced concrete, comprising 3.5 cubic meters in volume. This mass will provide approximately 7t of ballast to counter the 2.25t of upright sculpture.

Three people will be required on site for the installation which is anticipated to take 2 hours.

Materials:

- 450 lengths round steel bar, 10mm diameter
- 1 length of 250mm diameter line pipe x 6mm wall thickness
- 1 length 100mm diameter pipe x 4mm wall thickness
- 350kg of welding consumables or 25 rolls of wire.
- 12 cylinders of welding gas.

2 boxes of grinding wheels.

Costings:	
Steel bar; 10mm round x 450 lengths x \$8.75/length	\$3938.00
50 lengths x 6mm round x \$5.00/length	250.00
250NB galvanized pipe	580.00
90NB galvanized pipe	164.00
Delivery costs;	66.00
Welding consumables, electrode wire \$800.00, gas \$1200.00	2000.00
Electricity; 3000kWh @ 30c per unit	900.00
Tooling.	1500.00
Modeling fees	150.00
Foundations; site excavation and preparation	500.00
3.5cu.m x 32Mpa concrete @ \$245.00/m3	900.00
Steel reinforcing, 20 lengths x 12mm bar	350.00
Labor: including artist fees, 650hrs @ \$48.00/hr	31200.00
Traince: 150hrs @ S30.41/hr	4561.50
Contingencies: insurance, maintenance, over-runs, equipment failure, hire, etc.	5000.00
Total costs:	\$52,059.50

Total costs:

This budget does not include crane hire as this item is able be accessed through in-kind assistance from Hastings council and the RTA who have already indicated offering such help.

Page 4.

Time-line:

It is anticipated the construction of this proposal would require 600 man/hours for completion, based upon developmental work previously conducted upon the model exhibited and other similar works.

This can be broken down into the components listed below;

Fabrication of handling infrastructure, support stands, mobile scaffolding:	40 hours
Construction of skeletal frame:	40 hours
Laying of steel bars:	120 hours
Welding time:	400 hours
Total construction time	600 hours

Assistance of a trainee will be required for approximately150 hours within the time allocated.

The work is able to be initiated in late February, 2011 and be completed within 16 weeks to be ready for installation in July/August 2011.

Fabricator:

P M Allison, 73 Quarry Road, Wauchope,

Facilities available are ideally suited to large scale work and include 3 phase power, welding machines and overhead cranes as well as cutting and forming equipment. These facilities have been adequately utilized in past years to construct several large works for both myself and other sculptors.

Supply:

Steel: All stock materials are able to be supplied by Bennett Steel of Wauchope who have been very active with their support for the arts for many years. This company is also available to deliver the finished sculpture to the installation site.

Concrete: Boral Concrete Services, Port Macquarie are able to supply pre-mixed concrete to the site according to the specifications required.

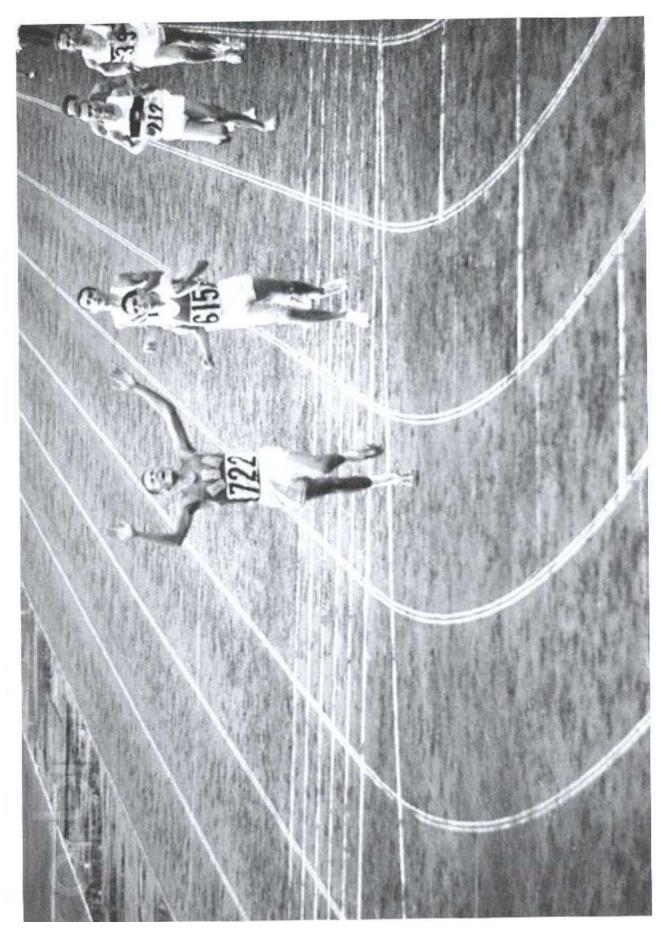
Consumables: All welding, grinding and tooling requirements are able to be supplied locally through Hilbert's Engineering Supplies, Wauchope.

Administration:

I am fully prepared to manage the design, construction and financial requirements for this project as I have done for many similar ventures. Should it be necessary for compliance requirements, Wauchope Community College, an incorporated body with many years experience in such matters, has offered to undertake this role.

My preference for payment would involve a deposit for one third of the budget to initiate work, a second similar installment at completion and the balance due upon a mutually agreeable installation.

Yours Faithfully Peter Allison





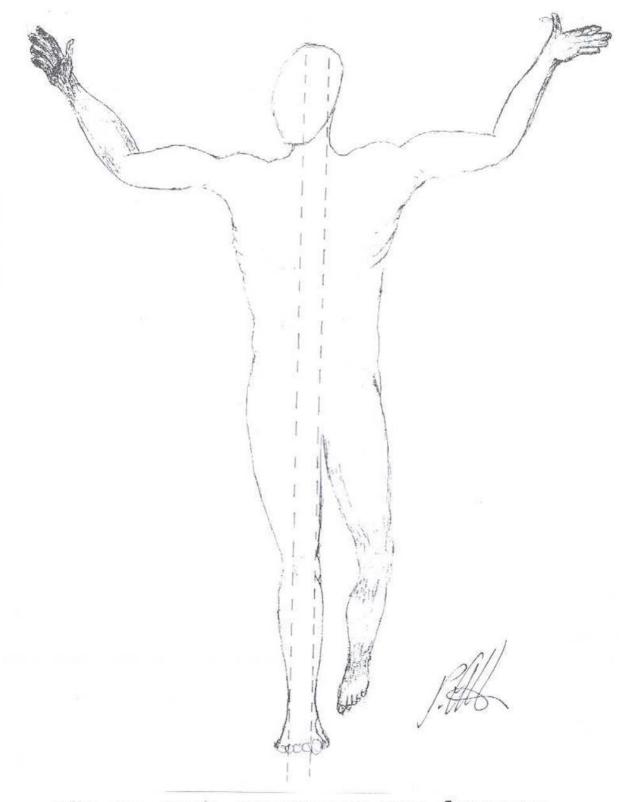
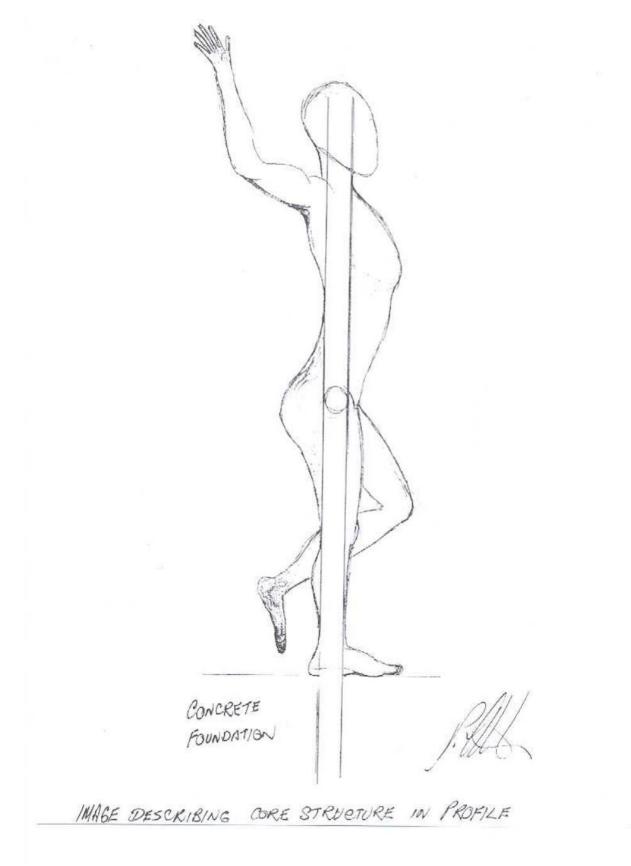
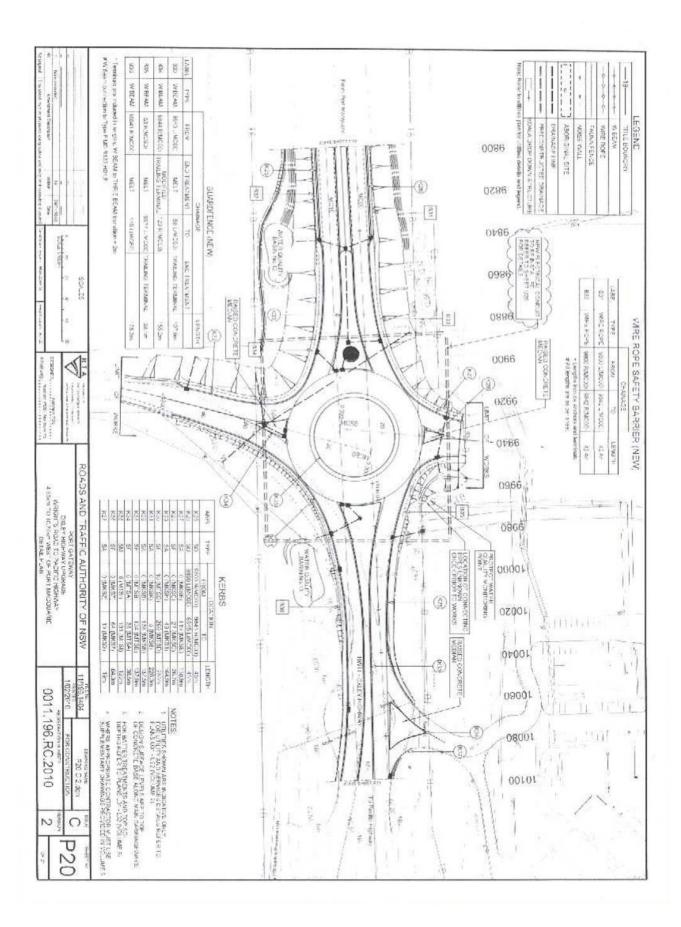
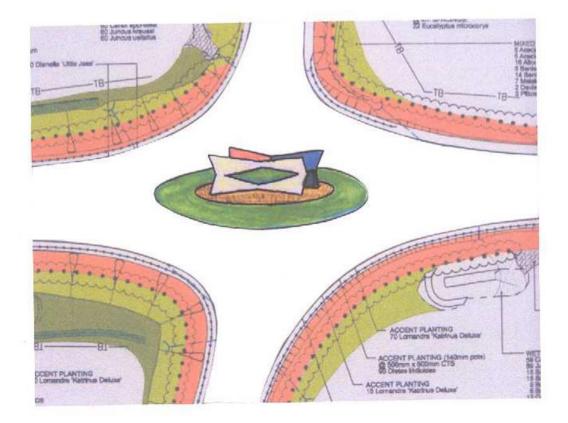


IMAGE DESCRIBING PLACEMENT OF CORE STRUCTURE





DESIGN PROPOSAL FOR PUBLIC ART -OXLEY HIGHWAY "GATEWAY" DEVIATION



STEPHEN KILLICK

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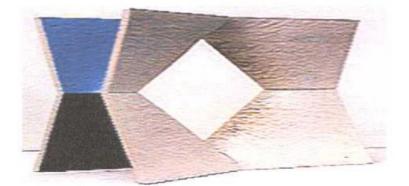
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www.stephenkillick.com.au

Item 11.01 Attachment 1

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DESIGN PROPOSAL FOR PUBLIC ART



STEPHEN KILLICK

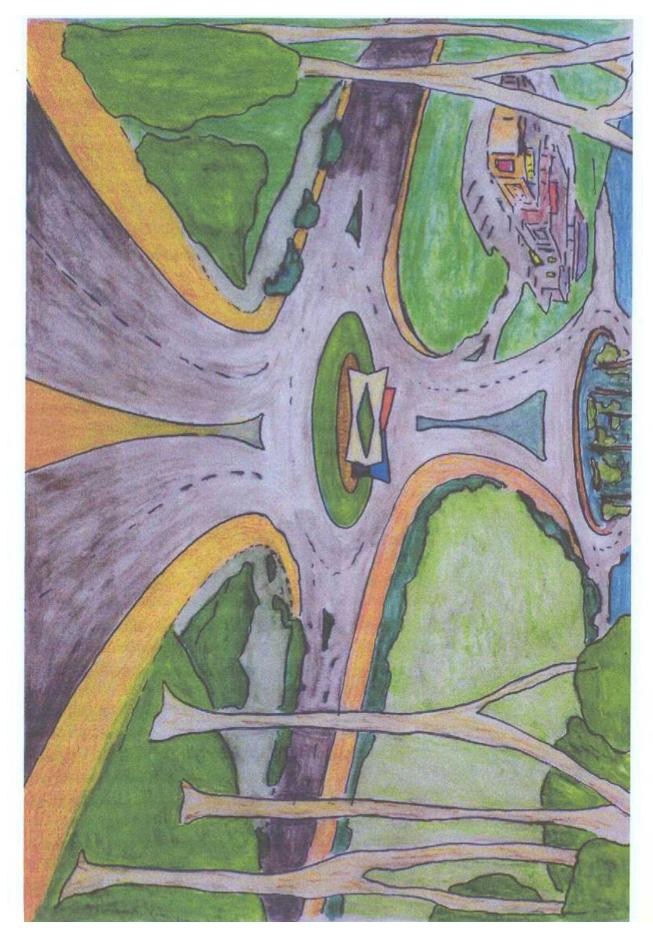
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Item 11.01 Attachment 1

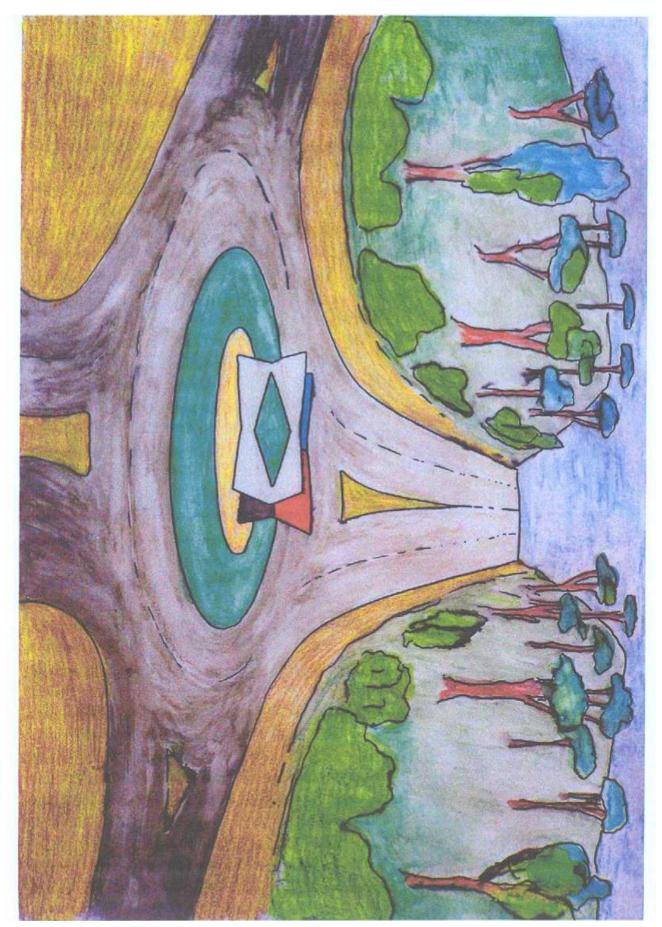
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THE GATEWAY SCULPTURE PROJECT : WRITTEN RESPONSE TO THE SITE AND THE ARTIST"S BRIEF

I have read the the brief , and while I find it overly complex , comments such as " the role of art in society as intelligent provocation , of exploring the definition of new cultural narratives and myths through interpretation , of examining the exploration of landscape tradition and myths as " shared culture" ... are refreshing and enticing . It is a relief to find an approach requiring a vision formulated for 2030 & the acceptance of aboriginal culture is imperative .Under 4.5 in the brief I am drawn to the description of the piece as " elegant and refined " and in terms of the " drive by "experience , it is a little like an un-lazy susan . I appreciate that the the design concept needs to look both forward and back in time , but the sculpture itself will need to expand horizons and allow safe passage to the future . Under the heading of ambience of the work , target audience , materials and practical considerations , I would wish to build something challenging to both the viewer and the artist , as befits the times and hopefully the piece would be profound , memorable and reflect currency in conservation , frugality and community spirit . The site ... is magnificent , it is panoramic , theatrical and inclusive , while asserting a communal intimacy which the " Doh nut " does not afford . I look forward to presenting a design proposal to The Project Advisory Panel on or around the 10th November 2010 .

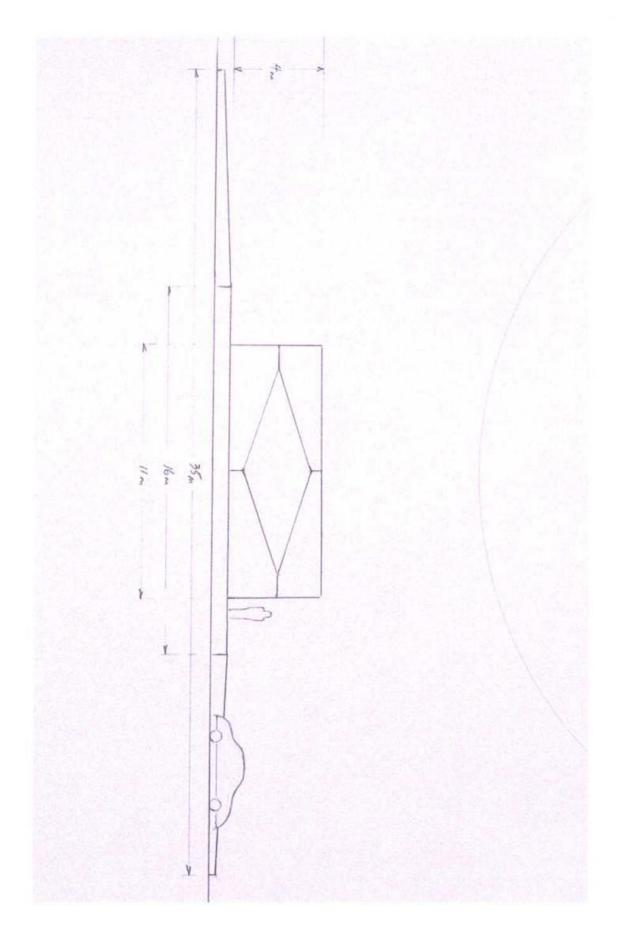
Stephen Killick , 3rd November 2010

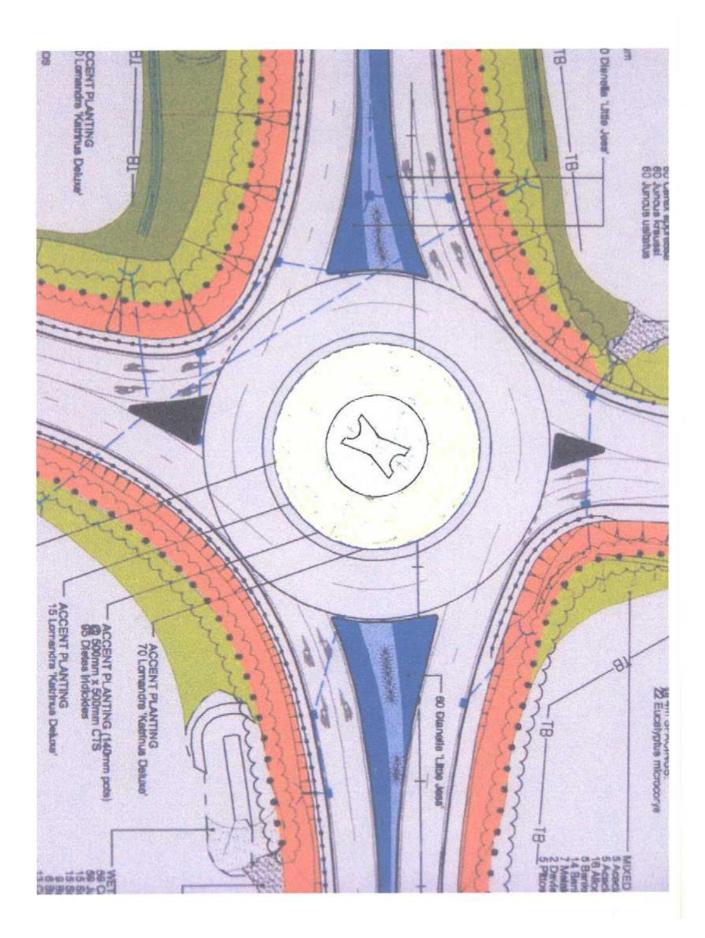


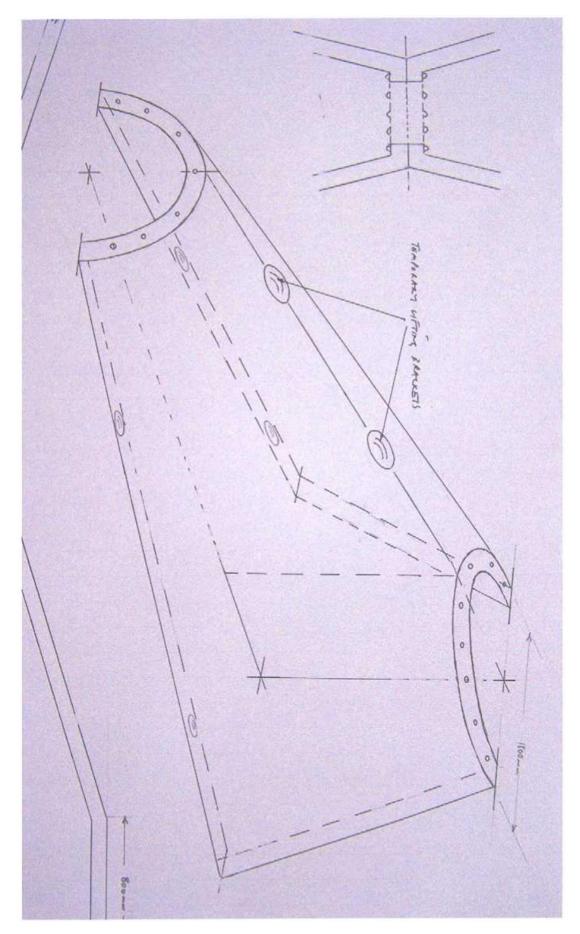
OXLEY HIGHWAY " GATEWAY " DEVIATION : A CONCEPTUAL APPROACH

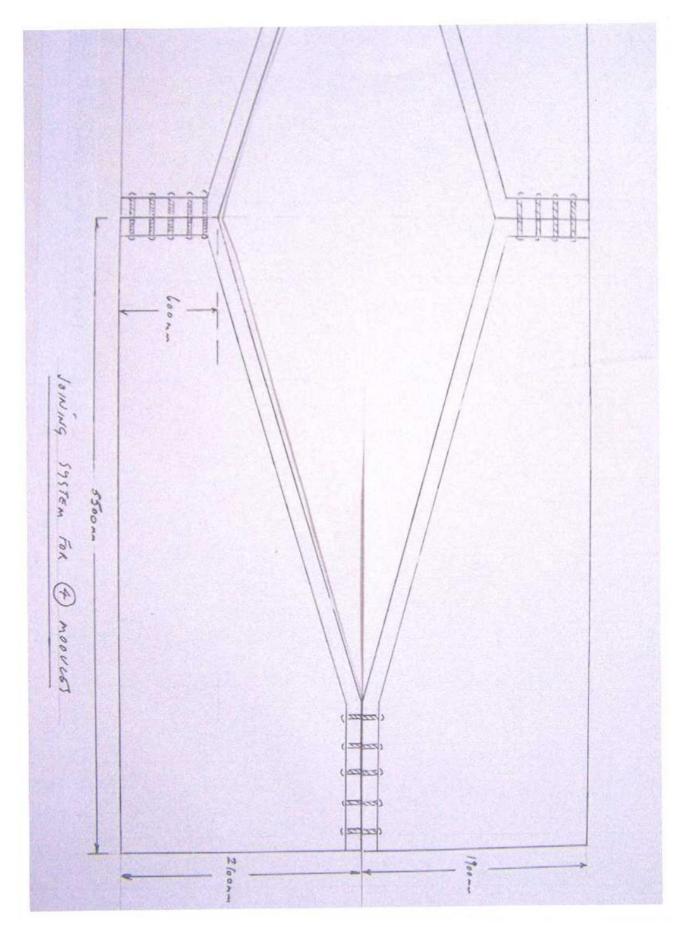
While the Oxley Highway deviation is a literal gateway, the sculptural notion of a " gateway " gives scope to affect residents , tourists & travelers over time and in a broader sense than "passing thru". The gateway concept within the sculpture I am proposing, provides a reading of broadening the vision, embracing the past & future and establishes a calm stable and contemplative presence . I have read the 2030 Council's community strategic plan and I hope the sculpture embodies that vision with a contemporary, challenging sculpture with a variety of readings and meanings embedded in the form. The coloring of the piece is both an acknowledgment of the past, and the local indigenous presence with an earth tone horizon, an optimistic reading of the present with a open blue horizon, and on the outer surface, representing past - present and future a subtle toning of bone, sand shell and light. From the East / West entry points the sculpture provides an external reading, with distant views enhanced - a notional entranceway to the future . From North / South , there is an internal vision, with recognition and memory inherent. As the roadways are negotiated the sculpture is a quiet presence , constantly changing from detailed shell like form, to extrapolated futuristic portal, with two different landscapes connected within the form. The sculpture is intended to provide readings whether circumnavigating or stationary. The sculpture will comprise of four identical cast concrete modules which lock together to form a unique sculptural form which allows multiple external and internal readings. The four modules would be cast from one constructed formwork . and pieced together much like enlarged LEGO pieces . The internal surface would be coated with a durable coloured render in red . blue and ubiquitous landscape grey .The external surface would be covered with 100 x 100 mm tiles which would afford the opportunity to grade the colour in a subtle way, give richness and depth to the surface and allow a slightly pixilated accent to the form. The sculpture is site specific, providing subtle visual stimulus from all directions, changing both meaning and form with rotation and offering a steadfast and uncompromising gateway to the region of Port Macquarie .

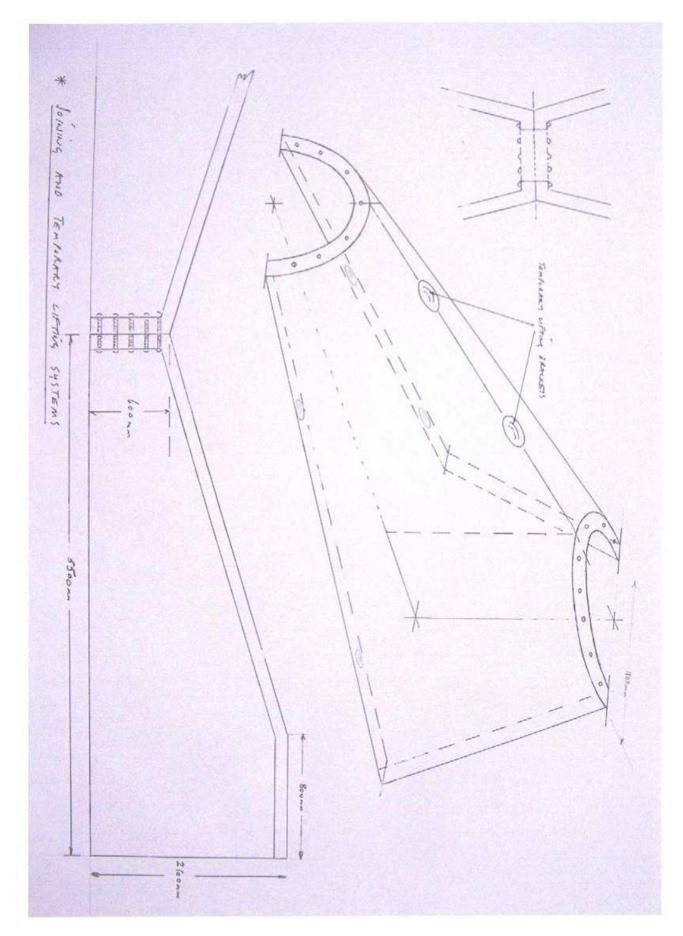
STEPHEN KILLICK - NOVEMBER 2010

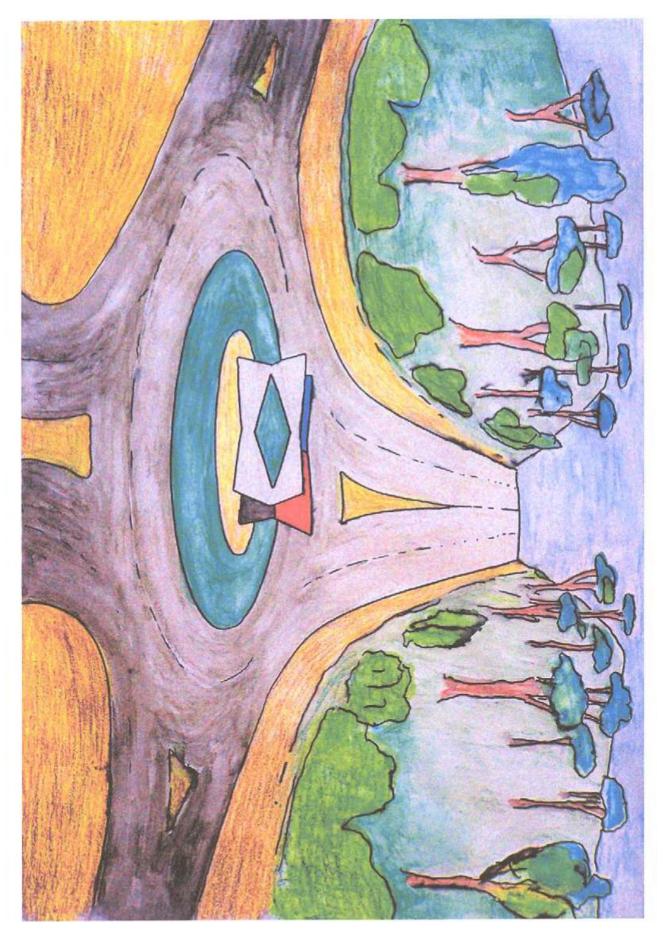












Timeline for design development fabrication and installation

1 Consolidation of design , specification and fabrication details with engineer's certification .

2 Construction of timber formwork to be used as support for 4 modules

The formwork would be constructed from hardwood and marine ply. It would be constructed at my studio at Yarras and transported to a suitable work site near the roundabout for the concrete application. I would allow one month to prepare the mould and prepare the work site in Port Macquarie. Four identical modules would be formed over a wooden mould. The mould itself would be retractable to allow easy removal of each finished piece. The mould would be encased in reinforcing mesh, the concrete sprayed on and the surface suitably smoothed. Lifting hooks embedded in the concrete would facilitate easy movement of the modules. Each module would have a series of stainless steel pipes set into the mould to allow bolting together at the installation stage. The pipes would be attached to a template at either end of the mould.

3 The mould would be overlayed with reo mesh to the engineer's specifications . The lifting hooks and joining systems attached to the reo mesh .

4 Concrete would be pumped onto the formwork to a depth of 100 mm , much like the inverse making of a swimming pool .

The surface finished to an even, smooth surface, in preparation for the application of 100 x 100 mm ceramic tiles .This process would be repeated to produce four modules .The production of these modules with preparation of the mould , pumping and drying , removal from the mould would be 3 weeks each , During the fabrication of these modules, work with site preparation could be proceeding as listed below .

5 The central 16 m diameter circle within the roundabout would require levelling, installation foundation and footings, installation of storm water drainage at its perimeter and paving in terracotta 400 x 400 tiles.

6 Council advice would be sought re the installation of lighting

5 & 6 would be completed during the three months required to construct the modules

7 The four modules would have 100 x 100 mm ceramic tiles on the external face and the internal colours would be sprayed stencil-crete.

While the modules are being fabricated, tiling could begin on the first and proceed through the production cycle. The tiling should be completed one week after the completion of the final module.

8 Installation – The four modules would require craning into place with the final manoeuvre requiring two cranes, the four connection systems then locked on.

9 With heavy machinery out of the way, planting of the 9m perimeter strip and the installation of lighting could proceed.

Allowing a little flexibility in the procedures an estimated five months would be required to fabricate and install the sculpture and the roundabout itself.

BUDGET

Engineers's certification fee	1500
Formwork timber , marine ply, bolts, screws	1200
Steel joining systems	500
Freight of formwork to construction site	150
Reo mesh and bars x 4	4000
Concete pumping and finishing to 10mm thick	X 4 16000
Stencilcrete colour and finishing X 4	3200
Ceramic tiles with tiler	3000
Site preparation : Drainage Advice from council and RTA re the items lis	
Paving under site p	preparation .
Lighting	
Landscaping	
Planting	
Labour	
Trucking, Crane costs: Advice from Council a	nd RTA for in kind support .
Labour hire \$80 hours @ \$45 p/h	3600
Contingency	5000
Artist's fee	10000
Petrol, meals	2000
TOTAL	\$ 50150

Project management

The artist will carry out project management in collaboration with Council & RTA

Payment

Preferred option for payment would be negotiated with Council and RTA upon commission

Administration

The artist will be responsible for the administration of funds, in collaboration with Council & RTA

Maintenance

The highly durable Stencilcrete surfacing is used for paving driveways, footpaths and swimming pools. It should require very little maintenance. The ceramic tiles would be self cleaning and durable .The paved circle would require occasional weeding

However, due to exhaust exposure from its position on a busy roundabout, the sculpture may need to be pressure cleaned every few years



INTERNAL LANDSCAPE 2003 COLLECTION PTMACONARIE HATTIMES REGIONAL GALLERY

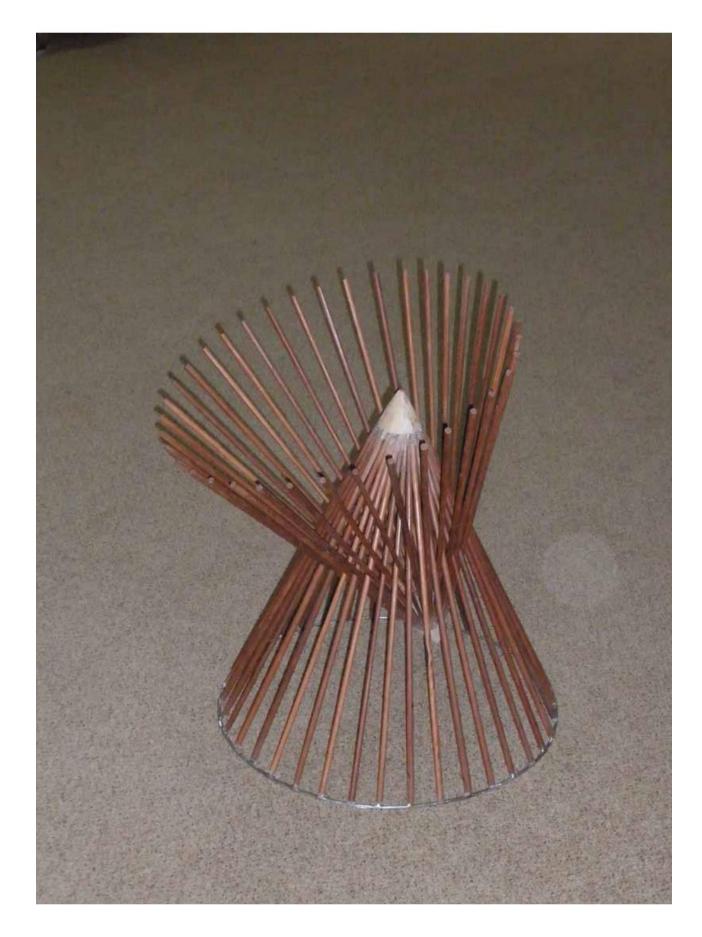


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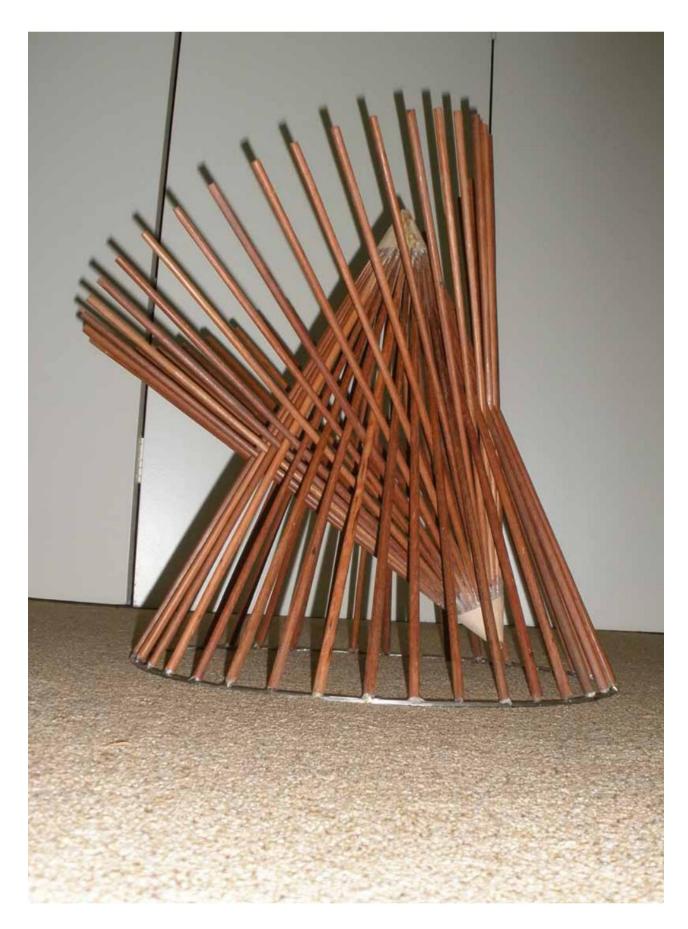




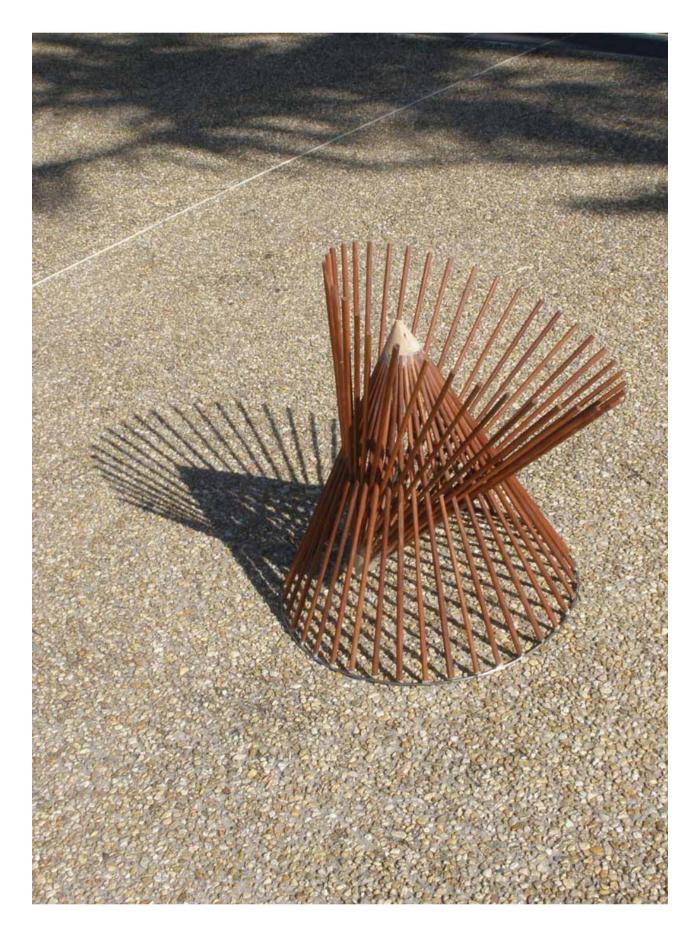














Social Action Created Meeting Date: 15/12/2010 - Social

Item 13 Subject PUBLIC ART - OXLEY HIGHWAY "GATEWAY" Director JEFFREY SHARP (INFRA)

The purpose of this report is to advise Council on a proposed public art to be located within the western approach of the Oxley Highway deviation currently under construction. **RECOMMENDATION**

1. The public art design proposal submitted by Rick Reynolds for the Oxley Highway deviation be endorsed and implemented in accordance with the project brief;

2. The Roads & Traffic Authority be advised on Council's resolution and;

3. Council extend its appreciation to the Roads & Traffic Authority for its support to accommodate a public art in the Oxley Highway deviation project.

4. The public art working model as prepared by Rick Reynolds be displayed in the Art Gallery

Discussion

During the design phase of the Oxley Highway deviation works, an opportunity arose to place a piece of public art within the roundabout at the western junction of the Oxley Highway deviation and John Oxley Drive. The RTA refers to the deviation as the "Gateway", as it is the main entry to Port Macquarie for motor and pedestrian traffic.

In Feburary 2010, the Roads & Traffic Authority offered Council \$50,000 to commission, install and manage the creation of a piece of public art, on the basis that Council manage the project and the art work be installed to fit in with current construction scheduling for the roundabout.

Councils Technical Services Section have project management responsibility for the project. A project working party was formed and a project brief prepared during April 2010 in consultation with the Working Party. The Working Party was comprised of the following representatives;

- Infrastructure Services Director
- Community & Cultural Development Director
- Oxley Highway Project Manager (RTA)
- Manager Technical Services (project Manager)
- Manager Community Development
- Manager Tourism Services
- Regional Art Gallery Director
- Aboriginal Community and Cultural Development Officer
- Strategic Landuse Coordinator

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- Principal Design Engineer
- Regional Arts Development Officer (Arts Mid North Coast)

A copy of the project brief is attached.

OxleyHwyGatewayPublicArtBrief.pdf

The following Artists were short-listed to submit a design proposal in accordance with the project brief;

- 1. Peter Allison
- 2. Stephen Killick
- 3. Stephen King
- 4. Rick Reynolds
- 5. John Van Der Kolk

Proposals were submitted by all Artists except John Van Der Kolk. The project brief required the Artists to present their respective design proposals to the Working Party, which ocurred on 23rd November 2010. It included the presentation of a working model by each Artist. Council received four very different proposals to consider and used a set of criteria to assess each proposal. The criteria included:

- the artistic merit of the proposed concept and aesthetic response to the site,
- the way in which the project met the various requirements of the briefing paper, including its appropriateness in terms of scale and material
- the ability of the artwork to communicate its concept and underpinnings
- the proposed budget and timeline
- the conceptual response to the site
- the response to any stakeholder consultation and feedback
- public safety and risk management issues
- ongoing maintenance issues
- the robustness and durability of the artwork.

Copies of each of the the Artist's proposals are attached, to demonstrate the range of submissions received.



The Working Party considered the proposal by Rick Reynolds best responded to the design proposal assessment criteria outlined in the brief. During the assessment process, the Working Party considered the expected longevity of the artwork, and the demographics and characteristics of Port Macquarie, and noted that whilst we have a considerable older community, Port Macquarie Hastings over the next 30 years will certainly further develop into a modern coastal local government area, and it was felt that Rick Reynold's proposal supported this view of modernity. There was considerable discussion regarding the fact that contemporary public art can almost be seen to mean what the the viewer wants to see or interpret in the art works!

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Photographs of the working model presented by Rick Reynolds are attached. The work is to be made from aluminium tubes with a powder coated rustic finish. More details on the structure and finishes will be provided on completion of the detailed working designs.

POF	
Adube	
OxleyHwyPubArt	Model.pdf

The following comments from some of the Working Party members with respect to Rick Reynolds proposal were made;

"presented a refined design concept with more imagination" - Regional Art Gallery Director

"I believe it has subtle Goori cultural perspectives and hence may not be a point of conjecture within the local community" - Aboriginal Community and Cultural Development Officer

"The work will move in space as you drive around it, and the shadows over the road" -Strategic Landuse Coordinator

"it shouldn't be a memorial type literal sculpture...... but more of an abstract or representative figure" - RTA Urban Design Manager

It is recommended the proposal by Rick Reynolds be supported. Should this recommendation be approved, the next phase will be to engage Mr Reynolds to complete a detailed working design, fabricate then install the art in line with the current RTA Contractor scheduling for the deviation works. The RTA expect completion of the Oxley Highway deviation works to occur in late 2011.

Alignment With Strategic Direction

The public art proposal aligns with Council's Vision for a "high quality of life for all" by turning public spaces into distinctive "living environments" in which people can experience a sense of belonging and inspiration and a strong connection to cultural life within the community.

Consultation

Consultations with Working Party representatives, including the Roads & Traffic Authority, Council's Art Gallery Director and Mid North Coast's Regional Arts Development Officer have occured, and it should be noted that amongst the Working Party there were differing opinions, which is to be expected when considering any artform. Some would argue this aspect of public art enhances its value!

Planning and Policy Impact

Development of the proposal has been considered in accordance with Council's "Art in Public Places Policy". In accordance with the Policy definitions the subject artworks are considered to be "Built in Artworks" and are described in the Policy as;

"permanent artworks designed as an integral part of a capital works project. The focus of these works is on quality urban design and architectural outcomes and the process would involve

an artist as an integral part of the design team from inception to completion. Refers to works such

as street furniture, paving and all artworks that are integrated with the fabric of built or natural

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public environments. Community consultation and participation may also be part of this process."

Financial & Economic Implications

The RTA have offered to fund the project to a total value of \$50,000. Council will fund the design proposals submitted at a total cost of \$8000 (ie \$2000 per artist). Rick Reynolds estimated costs as submitted total \$50,000 including design fees. Final fabrication and installation costs will be confirmed on completion of the detailed working designs.

Options

Council has the option to;

- 1. Endorse the proposal by Rick Reynolds as recommended or;
- 2. Endorse an alternative proposal or
- 3. Resolve to accept none of the proposals and abandon the project.

It is considered the project delivery has followed a robust process thus far involving appropriate expert advice through the Working Party. Having noted this, Public Art is open to interpretation and will certainly attract differing opinions from people.

It is therefore recommended that Option 1 be supported.

COUNCIL RESOLUTION: ADOPTED:

1. The public art design proposal submitted by Rick Reynolds for the Oxley Highway deviation be endorsed and implemented in accordance with the project brief;

2. The Roads & Traffic Authority be advised on Council's resolution and;

3. Council extend its appreciation to the Roads & Traffic Authority for its support to accommodate a public art in the Oxley Highway deviation project.

4. The public art working model as prepared by Rick Reynolds be displayed in the Art Gallery.

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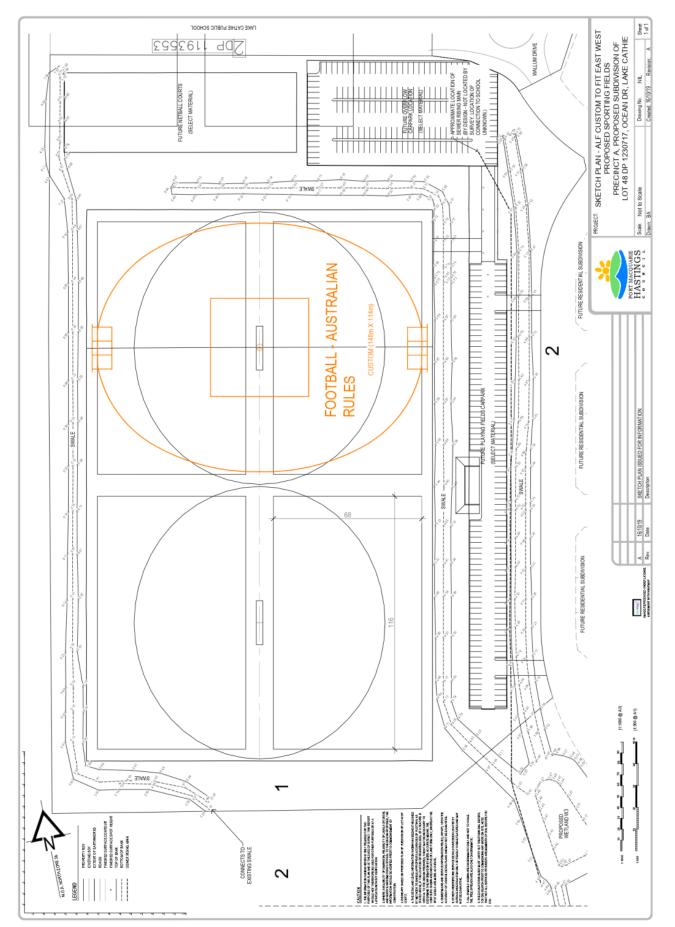
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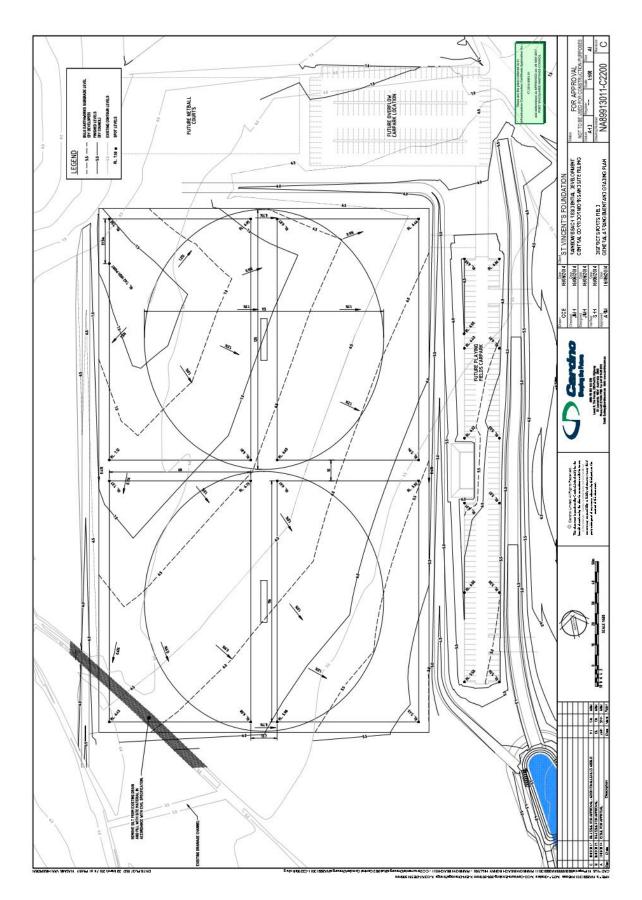
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From:	
Sent:	
To:	
Subject:	

Amanda Hatton Wednesday, 6 May 2020 4:08 PM Amanda Hatton FW: RE: Rainbow Beach Sports Fields

From: Vern Warner Sent: Tuesday, 28 April 2020 10:14 AM To: Amanda Hatton Subject: Re: RE: Rainbow Beach Sports Fields

Hi Amanda

The Lake Cathie Progress Association fully supports the representatives of the various sporting clubs and groups in the lake Cathie / Bonny Hills area in their endeavors for the new sporting fields in Lake Cathie. We support their final majority recommendations for the layout and design on the new Rainbow Beach district sporting fields.

1

regards Vern Warner President LCPA

From:	Amanda Hatton
Sent:	Wednesday, 6 May 2020 4:07 PM
То:	Amanda Hatton
Subject:	FW: Rainbow Beach Sports Fields

From: Peter Briggs Sent: Monday, 16 March 2020 10:45 AM To: Amanda Hatton Cc: 'Lake Cathie Football Club NSW' ; Troy Pemberton

Subject: RE: Rainbow Beach Sports Fields

Hi Amanda

The preferred option for Lake Cathie FC is option number 1.

Looking further ahead, we are also of the view that one of the football fields would be for "match day" only (games) and not used for training. This would ensure that at least one field is given every possible opportunity of staying in a good condition.

1

Regards Pete

From:	Amanda Hatton
Sent:	Wednesday, 6 May 2020 4:06 PM
To:	Amanda Hatton
Subject:	FW: Rainbow Beach Sports Fields
Attachments:	Rainbow Beach Sports Fields_Masterplan Options.pdf; Additional AFL Option - EW to fit.pdf

From: Simon Smyth Sent: Wednesday, 25 March 2020 1:28 PM To: Amanda Hatton Cc: Paul Taylor ; James Moir Subject: FW: Rainbow Beach Sports Fields

Hi Amanda,

Thank you again for the opportunity to provide feedback on the Rainbow Beach Sports Fields Masterplan. On behalf of AFL NSWACT, we are very grateful for the engaged approach that Council has undertaken.

The AFL's preferred option is Option 1. It allows for a north-south orientation (which is preferred), which has direct access to the amenities building, and without the run off onto the baseball field (Option 2). Option 1 also allows for the opportunity down the track, if required, to rotate the AFL ground east-west, to accommodate for senior teams on a larger field.

As a way of additional feedback, our State Infrastructure Manager was extremely positive towards Council's written description of the process taken – great job!

Please feel free to contact me at any time to discuss this feedback. I look forward to hearing from you with regards to next steps.

1

Thanks again.

Simon

Simon Smyth Regional Manager - Northern NSW



From:	Amanda Hatton
Sent:	Wednesday, 6 May 2020 4:08 PM
То:	Amanda Hatton
Subject:	FW: Rainbow Beach Sports Fields

From: Barry Spencer Sent: Sunday, 29 March 2020 11:31 AM To: Amanda Hatton Subject: Re: Rainbow Beach Sports Fields

Hi Amanda

Thanks for this much appreciated and all the best with navigating the world we now live in.

Option 3 is crickets preferred plan with one possible change suggested. I'll outline what I see as good about option 3 and also the change that I think will help

1. Advantages are the play area (which I think is of huge value) and that netball courts are likely to provide greater community utility both in terms off more sport users and also as a space for basketball, handball, scooter riding etc when netball aren't using the courts.

2. The potential issue with option 3 is that the clubhouse is directly behind the cricket pitch. Lots of movement behind the bowlers arm is not ideal for cricket. A sight screen could solve this issue but they are expensive and unfortunately a target for vandals. Could option 3 be adjusted to move the clubhouse further east to a similar position as options 1 and 2? And then use the space behind the bowler for trees, with maintenance storage facilities at the northwestern edge where trees currently are?

3. I have had a chat with Marty re baseball's needs. Having two fields available makes a big difference for them. I've suggested they look at 2 x portable mounds which the facility would have space to accomodate. The big question is how much damage baseball would do to the surface. I think if they could get grants for the portable mounds we could talk to the group about a 1 off trial to see how the surface copes and go from there. They may even be able to find a PMQ location to use portable mounds at too.

I hope that helps. If possible to have a quick chat tomorrow to make sure we are on the same wavelength re possibly moving the clubhouse that would be great.

1

Thanks again for all your help

Barry

3 Your Business and Industry

What we are trying to achieve

A region that is a successful place that has vibrant, diversified and resilient regional economy that provides opportunities for people to live, learn, work, play and invest.

What the result will be

We will have:

- A strong economy that fosters a culture supportive of business and ensures economic development of the region
- Townships, villages and business precincts that are vibrant commercial, cultural, tourism, recreational and/or community hubs
- A region that attracts investment to create jobs
- Partnerships that maximise economic return and create an efficient and effective business environment

How we will get there

- 3.1 Embrace business and a stronger economy
- 3.2 Create vibrant and desirable places
- 3.3 Embrace opportunity and attract investment to support the wealth and growth of the community
- 3.4 Partner for success with key stakeholders in business, industry, government, education and the community



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DISCLAIMER

decisions. It is expected that any specific recommended actions should be analysed and appropriate due diligence undertaken prior to The information contained in this Plan is intended only to inform and should not be relied upon for future business investment or other making any investment decisions.

of assumptions, methodology and information provide from many sources. The authors, and Port Macquarie Hastings Council, accept no responsibility or liability for any errors, omissions or resultant consequences including any loss or damage arising from reliance on the Recommended actions contained in the Greater Port Macquarie Destination Management Plan 2020-2024 have been made on the basis information contained in this Plan.

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ACKNOWLEDGEMENTS

The Greater Port Macquarie Destination Management Plan (DMP) 2020-2024 has been developed by Dr Claire Ellis (Claire Ellis Consulting) and Dr Meredith Wray (Wray Sustainable Tourism Planning and Research). The consultants wish to thank the Project Steering Committee, Liesa Davies and Jane Ellis, for their support and guidance throughout the planning process The DMP has also been developed in consultation with over 90 tourism industry stakeholders across Greater Port Macquarie who made considerable contributions and comments. Their interest and support of the planning process is important and highly appreciated. Thanks are also offered to Port Macquarie Hastings Council staff and Council's Economic Development and Cultural Steering Groups and following stakeholder organisations that provided substantial input and advice:

- Birpai Local Aboriginal Land Council
- Bunyah Local Aboriginal Land Council
- Camden Haven Chamber of Commerce
- Destination New South Wales

Port Macquarie Chamber of Commerce

Wauchope Chamber of Commerce

National Parks and Wildlife Service

Arts Mid North Coast

Forestry Corporation of NSW

- **Destination North Coast**
- Greater Port Macquarie Tourism Association





Jaire Ellis





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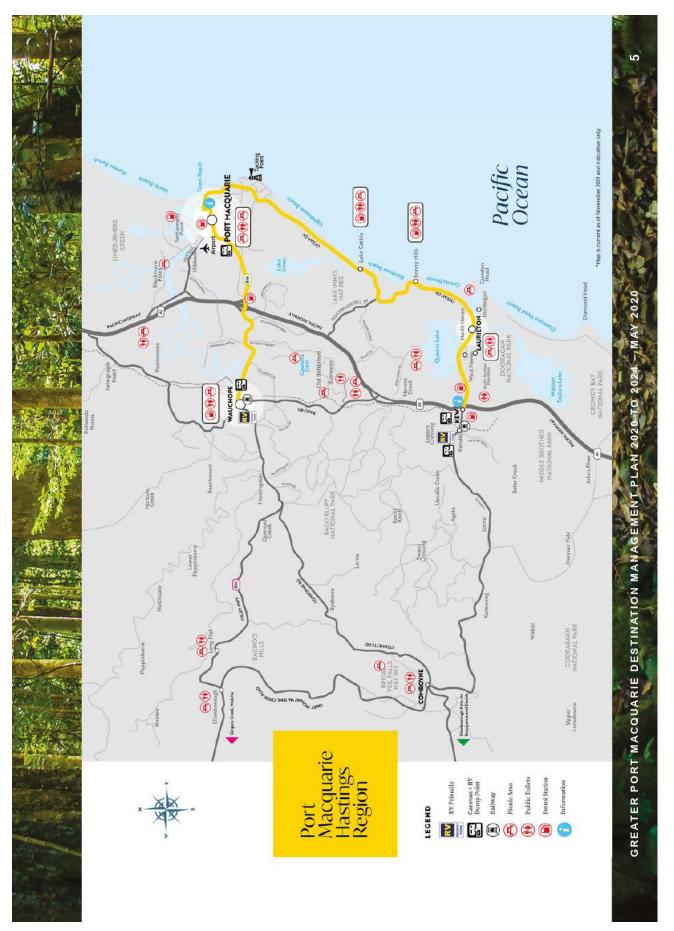
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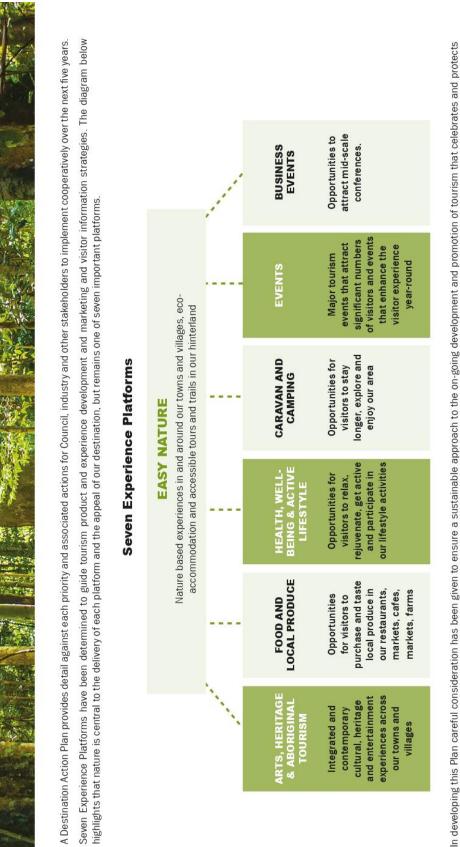


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The implementation of this Plan will require effective leadership and strategic management from Council and its staff that is supported by the cooperation of local tourism industry Greater Port Macquarie natural and cultural assets whilst providing benefits for the local businesses and the community, now and into the future.

leaders and key stakeholders across regional and state levels. Specifically, the local industry has a key role in fostering support from tourism operations in the development. enhancement and promotion of tourism product and experience development opportunities to create distinctive and satisfying visitor experiences.

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GREATER PORT MACQUARIE DESTINATION MANAGI

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CUTIVE SUMMAR

ORDINARY COUNCIL 20/05/2020



Port Macquarie Hastings Council commissioned the development of a new five-year Greater Port Macquarie Destination Management Plan (DMP) to provide a strategic framework to guide the work of Council and industry and community stakeholders to grow and develop the local visitor economy. The new DMP is informed by the considerable research commissioned by Council that includes a Visitor Profile and Satisfaction Survey (2018), the Port Macquarie-Hastings Destination Product Audit and Analysis (2019) and Greater Port Macquarie Tourism Monitor (2019). It also builds on the strategic directions and achievements identified in the Greater Port Macquarie Destination Management Plan 2016 to 2020 and other relevant Council strategies and plans. A comprehensive stakeholder engagement process also underpins the Plan.

Careful consideration has also been given to ensure a sustainable approach to the on-going development and promotion of tourism that celebrates and protects Port Macquarie Hastings natural and cultural assets whilst providing benefits for the local businesses and the community, now and into the future.

The Plan identifies four strategic priority areas to guide the management, development and marketing of tourism across Greater Port Macquarie over the next five years. This Plan includes a Destination Action Plan that prioritises achievable and realistic opportunities and high-level actions to guide the cooperative efforts of Council and industry to manage and grow Greater Port Macquarie's visitor economy. The implementation of this Plan will require effective leadership and strategic management from Council and its staff that is supported by the cooperation of local tourism industry leaders and key stakeholders across regional and state levels. Specifically, the local industry has a key role in fostering support from tourism operations in the development, enhancement and promotion of tourism product and experience development opportunities to create distinctive and satisfying visitor experiences.





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SUSTAINABLE TOURISM PLANNING APPROACH

The Plan has been designed as a living strategic document that has been developed to:

- Position Greater Port Macquarie as a contemporary and appealing tourism destination on the North Coast of NSW
- Respond to important issues and opportunities that were identified in the situational analysis and stakeholder engagement processes undertaken to inform the development of this Plan
- Recognise the role of Port Macquarie Hastings Council to lead and drive a sustainable approach to tourism growth and development as the custodian and manager of key assets and supporting facilities
- Establish a shared vision and direction with government, business and community stakeholders for the future of tourism across Greater Port Macquarie
- Integrate recognised best practice strategies for the sustainable development, management and marketing of Greater Port Macquarie
- Identify the roles and responsibilities of tourism stakeholders in the implementation of the plan to 2024
- Determine important implementation priorities over the next year
- Integrate and leverage the Port Macquarie Hastings Council strategic plans and other relevant tourism stakeholder plans (e.g. DNC, DNSW, NPWS, FCNSW)

- Encourage a productive, and integrated working relationship between industry and government stakeholders, guided by appropriate structures and governance
- Provide the framework and actions to produce sustainable tourism that differentiates Greater Port Macquarie from its competitors in the North Coast tourism marketplace and meets community and visitor expectations
- Enhance and grow the range and quality of tourism product and experiences, including festivals and events, that relate to nature, culture, heritage and Aboriginal culture
- Ensure that tourism is recognised as an important source of economic development by government and the private sector
- Enable the industry across all parts of the region to continue to flourish and contribute positively to the local communities and environment
- Adapt to changing conditions, issues and opportunities as they arise
- Incorporate an annual monitoring and evaluation process



SUSTAINABLE TOURISM PLANNING APPROACH CON

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GREATER PORT MACQUARIE DESTINATION MANAGEMENT PLAN 202

The strategic approach used to develop this Plan is depicted below.

DESTINATION MANAGEMENT FRAMEWORK SUSTAINABLE TOURISM

RESEARCH VALUES

Sustainable tourism development Good governance Good marketing



The pursuit of a type, DEVELOPMENT PLANNING AND MANAGEMENT

style and level of tourism

social, cultural, political

and environmental

that contributes to the

findings of Stages

Two and Three

for an overview of development of the the approach to See Appendix 1

businesses, Council

senior Council staff government departments and

and policies across

state, regional and strategies, plans

local levels

and influence appropriate

visitors

sustainability of a place to live, to work and to visit

The promotion of tourism both within and outside a destination to attract

MARKETING

workshops and survey with local and community DMP.

representatives

Consideration of

Interviews with

Review of research

and relevant

relevant state

Development

DMP

Stakeholder Engagement

Situational Analysis

STAGE THREE

STAGE

STAGE

The strategic tourism planning process involved the following stages:

> sustainable administration and management of the The pursuit of strategies and practices that facilitate balanced, destination

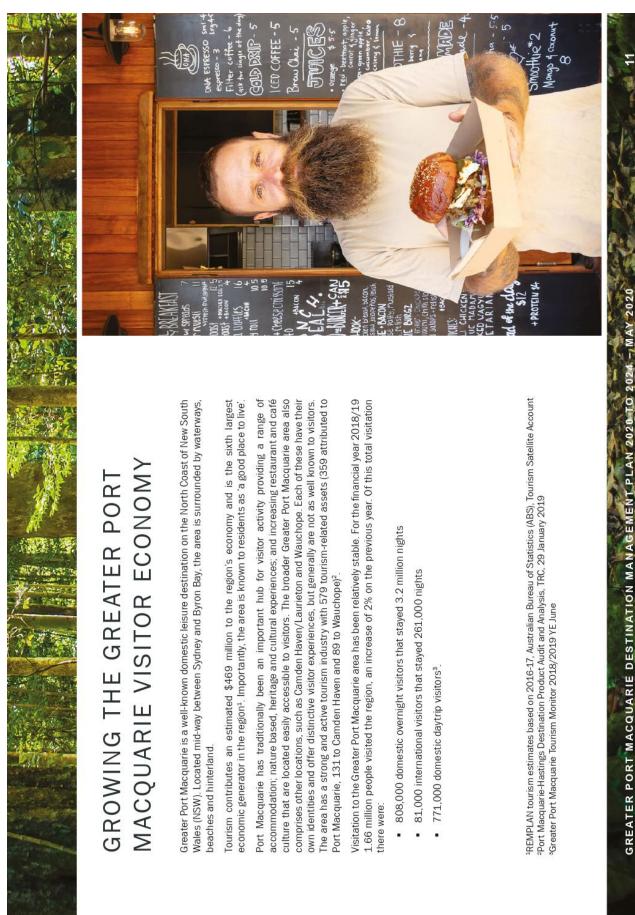
MONITORING AND EVALUATION STRATEGIES AND ACTIONS IMPLEMENTATION **KEY DIRECTIONS**

VISION AND VALUES

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GREATER PORT MACQUARIE DESTINATION MANAGEMENT PLAN 202



VISITATION OVERVIEW

Analysis of most recent Tourism Research Australia research for Greater Port Macquarie shows:

- Visitation has been relatively stable across domestic overnight, domestic daytrip and international visitor markets 2
- Atthough domestic visitor numbers decreased on the previous year (-5%), average length of stay increased from 3.2 nights to 4.1 nights resulting in an increase of 18% of visitor nights for 2018/19
- The main visitor life cycle markets are also relatively stable families with children, older visitors (55+ years) and to a lesser extent. business visitors
- The UK and Europe are still the main source markets for international visitors
- Domestic and international overnight visitors like to do social activities and participate in outdoor/nature activities/active sports (see Table 1)⁴.

	Domestic overnight	International	Domestic day trip	TOTAL
Visitors ('000)	808,000	81,000	771,000	1,660,000
Nights ('000)	3,285,000 🛉	261,000	<	3,546,000 🛉
Av night stay	4.1	4.0	<	
Lifecycle	Families with children (33%) Older people 55+ (25%)	Young people, 20-30yrs (34%) Older people 55+ (26%)	Older retired couples (44%) Families with children (27%)	
Activities	 Social (dining, VFR) Outdoor/nature Active sports 	 Social (dining, sights) Outdoor/nature Local attractions 	 Social (dining, VFR) Outdoor/nature Active sports 	
Source markets	Sydney (39%) Hunter (13%) North Coast (8%) Gold Coast & BNE (8%)		North Coast (82%) Hunter (7%) Sydney (10%) Central Coast (1%)	

See Appendix 2 for further visitation trend analysis over the past years.

⁴Greater Port Macquarie Tourism Monitor 2018/2019 YE June





Primary

 Domestic overnight visitors from Sydney and Regional NSW targeting families and older couples

Secondary

- Domestic overnight visitors from South East Queensland and Victoria targeting families and older couples
- Domestic and international stopover visitors travelling though the North Coast with the intention of converting them to overnight stays
- Visiting Friends and Relatives (VFR)
- Visitor Markets will be further explored through a brand review process (see Strategic Priority 4)



ncluding

- Inclusive (accessible) tourism development and promotion chat may also link to the needs of the local resident population
- Increase appeal of the area to various psychographic visitor markets including 'relaxers', 'special interest tourists', 'road experience seekers based tourists', trippers', 'nature inclusive tourists
- through delivery of better packaged and promoted experiences Visitors from Victoria, particularly from March to September
- Caravan and camping visitors (including those in vans) travelling to and through the North Coast
- Business visitors e.g. mid-week corporate
- Special interest visitor markets e.g. inclusive tourism, health and wellness, motor bike enthusiasts, fishing etc.
- International visitors, including self-drive visitors and coach tours on stopovers, but it was agreed there needs to be a focus on developing more international-ready products and experiences in the area to attract these visitors
- Younger visitors (18 to 35 years) that can be attracted by contemporary food and wine and 'eco off-grid' style experiences.

Although the domestic daytrip market provides some economic return and is recognised as a significant component of the existing market, stakeholders agreed this is not a direct target for future growth except around the capacity to stimulate growth in overnight visitation and visitor vield

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engagement with industry and community stakeholders ort Macquarie Destination Management Plan 2020 to The following mission statement was created from ind will be used to guide the implementation of the Greater 024

strengthen the appeal of the destination by attracting 'To sustainably grow the local visitor economy and overnight visitors to stay longer and spend more'.

Values

This mission is underpinned by the following values:

- Work cooperatively with all stakeholders across Greater Port Macquarie to grow the outcomes of the visitor economy
- Protect and showcase our natural, cultural and heritage assets .
- Respect our Aboriginal, local communities, culture and way of life
- Achieve sustainable tourism best practice.

- - - Your Community Life
- ×.

Port Macquarie Hastings Council Towards 2030 Community Strategic Plan

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GREATER PORT MACQUARIE DESTINATION MANAG



This mission and values align with the Port Macquarie Hastings Community 2030 vision.

Our Vision

A sustainable high quality life for all

Our Mission

- Building the future together people, place, health, education and technology
 - **Our Community themes**
- Leadership and Governance
- Your Business and Industry .
- Your Natural and Built Environment⁵



STRATEGIC PRIORITIES TO 2024

Priorities for the next five years focus on establishing a sound destination management framework to lead and implement the actions of this Plan as well as work that further develops and promotes tourism experiences to sustainably grow the local visitor economy. Four strategic priorities and associated actions have been established to guide work of Council and tourism and community stakeholders over the next five years. These have been organised under the themes of destination management, development and marketing

Strategic Priorities

PRIORITY 1	Destination Management Establish an effective Destination Management Framework for Council and Greater Port Macquarie stakeholder organisations to strength- en their cooperative work to grow the local visitor economy.
PRIORITY 2	Destination Experience Development Create a stronger point of difference through a diversity of contemporary experiences that attract visitors year-round.
PRIORITY 3	Destination Event Development Establish Greater Port Macquarie as a vibrant destination for year-round festivals and events that positively impact the visitor economy across the region.
PRIORITY 4	Destination Marketing Review destination brand and marketing strategies to best position Greater Port Macquarie and its experiences to key visitor markets.

The following Destination Action Plan provides detail against each priority and associated actions for Council, industry and community stakeholders to implement cooperatively over the next five years to 2024. The actions in this Plan have been assigned a priority time frame.

= commencing Year One	= commencing Years Two-Three
SHORT TERM	MEDIUM TERM

LONG TERM = commencing Years Four-Five

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STRATEGIC PRIORITIES TO 2024 CON

ENT PLAN N **GREATER PORT MACQUARIE DESTINATION MANAG**

Continuing to strengthen a collaborative and inclusive destination management structure is necessary to drive the whole destination forward and ensure Council outcomes achieved. values

Establish an effective Destination Management Framework for Council

PRIORITY 1 DESTINATION MANAGEMENT

and Greater Port Macquarie tourism stakeholder organisations to work

cooperatively to grow the local visitor economy.

Council has an important leadership role in strategic destination management across

the Greater Port Macquarie area. This includes funding support and coordination of destination marketing strategies and tourism industry development activities, as well as strategic planning and management of infrastructure and facilities that support

sustainable tourism development.

Council highly values its engagement and cooperative working arrangements with tourism industry stakeholders across local, regional and state levels. Greater Port Macquarie has a strong and active tourism industry comprising around 380 businesses and 579 tourism-related assets (359 attributed to Port Macquarie.

region via road and air, and within the region, (e.g. improved road linkages from the focus for growth. Council also has a critical role in ensuring ongoing improvements around town amenity including park and recreational public spaces and sporting High level outcomes of good destination management include critical areas such as improved access. The Council's role in driving major access improvements to the Pacific Highway through to wheelchair-friendly access) continues to be an important facilities. The need to consider crisis management for tourism as part of the new DMP was also top-of-mind amongst stakeholders given the bushfires in the Greater Port Macquarie area and broader North Coast region as this Plan was developed. Destination North Coast has advised that many LGAs on the North Coast are already effectively planning for potential crises and risks, particularly areas like Lismore and other bushfire affected areas.

The stakeholder engagement process undertaken to inform the development of this

destinations outside Port Macquarie including Camden Haven and Wauchope.

Plan clearly identified a desire to strengthen cooperative arrangements between local tourism associations, business groups and operators across the whole of and support for operators was also considered important to improve the maturity the industry and its capacity to drive opportunities such as tourism product and experience development and packaging, and to address challenges to growth

L31 to Camden Haven and 89 to Wauchope)⁶. The Greater Port Macquarie Tourism Association (GPMTA) provides a long-standing base for industry networking and cooperation and has been working to include tourism associations and operators in the Greater Port Macquarie area. The need for on-going industry development

including overcoming seasonality and improving visitor satisfaction.

of

Improving the evidence base to ensure good management of tourism, and prioritising actions and investments is also critical. This not only includes market research and ndustry analysis but the development of effective long-term social impact monitoring

engagement with industry is representative of tourism and community interests across the area, and that industry stakeholders are also united in their vision and for tourism. This is critical to foster cooperation, trust and equity into the future. From this base, effective programs can be more readily activated and desired

around the visitor economy.

Port Macquarie-Hastings Destination Product Audit and Analysis, TRC, 29 January 2019

ACTIONS		RESPONSIBILITY	TIMELINE
1.1	Council will integrate the DMP 2020 to 2024 into Council's Delivery Program and annual Operational Plans.	Council	Short term
1.2	Consider Council's budget for tourism and events to adequately resource the management, development and marketing actions of the DMP 2020 to 2024.	Council	Short term
1.3	Work cooperatively with relevant Council departments to ensure the priorities and actions of the DMP 2020 to 2024 are communicated and the visitor economy is an important consideration of Council's strategies and plans (see also Strategic Priority 2).	Council	Short term
1.4	Support the GPMTA Board and other tourism stakeholder organisations to review their Strategic Plan, including governance arrangements, to ensure the integration of priorities and actions of the DMP 2020 to 2024.	Council/ GPMTA	Short term
1.5	Facilitate regular meetings between Council and GPMTA, Arts Mid North Coast, Port Macquarie Chamber of Commerce, Wauchope Chamber of Commerce, Hastings Liquor Accord and other key tourism stakeholders to leverage the work across different strategic tourism plans and initiatives and jointly advocate for improved visitor economy outcomes.	Council, GPMTA, CHCC, WCC, PMCC, HLA, AMNC	On-going
1.6	Work with stakeholder partners to improve operator understanding and skills in key areas including digital marketing, sustainable business best practice, story-telling, cross-selling and packaging, and international ready product development.	Council/DNSW/GPMTA/ CSU/ CHCC, WCC, PMCC, HLA, AMNC	On-going
1.7	Meet with Council's Economic Development and Cultural Steering Groups as required to update members on strategic tourism plans and initiatives and leverage cross-Council work.	Council	On-going
1.8	Continue to engage tourism research consultants to provide detailed data for decision-making including tourism visitation, visitation perceptions and satisfaction. Encourage accommodation operators to contribute data to the Australian Accommodation Monitor to provide better evidence-based understanding of occupancy to plan improvements in seasonality and event timing.	Council, GPMTA,CHCC, PCC, WCC	On-going
1.9	Develop an effective long-term approach to review and understand the community desires, social impact of the visitor economy and the 'pinch points' that may require action.	Council	Medium term
1.10	Work with key partners to monitor air access and develop approaches to improve the capacity to increase the frequency, capacity and access to the region as appropriate.	Council	On-going
1.11	Provide input to improve planning around potential risks related to the local visitor economy including natural disasters, threats to natural and economic environments and ensure visitor safety and security is assessed and integrated into current and future Council plans and policies.	Council	On-going
1.12	Evaluate annual implementation of DMP 2020 to 2024.	Council, GPMTA, CHCC, WCC, PMCC, WCC, HLA	On-going
1.13	Work with industry on crisis preparedness including further developing the Emergency Management Communications Toolkit developed during the fires. Provide support and links to information, training and development to assist tourism businesses to plan for, respond to, and recover from crisis events both man-made and natural.	Council, GPMTA, CHCC, WCC, HLA, AMNC	Short term
1.14	Assist the tourism industry to respond/adapt to climate change by providing information, education and links to help businesses adopt more sustainable business practices to save money and reduce environmental impact and emissions. Include awareness and promotion of grant funding and initiatives available for this purpose.	Council, GPMTA, CHCC, WCC, HLA, AMNC	Short term

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STRATEGIC PRIORITIES TO 2024 CONT.

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Macquarie (with some adaptations). These platforms should guide tourism product and experience development for the area and should also be applied to marketing and visitor

The Destination North Coast Destination Management Plan 2018 to 2021 identified seven Experience Platforms for the North Coast that are relevant priorities for Greater Port



STRATEGIC PRIORITIES TO 2024 co

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GREATER PORT MACQUARIE DESTINATION MANAGEMEN



experiences

is a priority to strengthen this drawcard experience. The sub regions, at the same time should be encouraged to further develop the Easy Nature concept to help entice more visitors to come to the area i.e. coastal and country villages that offer appealing nature based experiences to encourage visitors to explore, stay longer and stimulate repeat visitation.

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		STRATE	STRATEGIC PRIORITIES TO	2024 CONT.	
1	YE				
	CO. Kalling				
1	ACTI	CTIONS	RESPONSIBILITY	TIMELINE	
1	2.1	Support the Koala Preservation Society in their major re-development project to become a world class attraction and conservation facility and to leverage significant visitor economy outcomes.	Council, GPMTA, NPWS, NSWFC	Short term	1
	2.2	Ensure Council continues to work with LALCs to support LALC projects to connect visitors to Aboriginal culture and heritage.	Council	Short term	
	2.3	Create better linkages to strategies within the Cultural Plan including enhancing Council facilities, such as the Glasshouse, as hubs for cultural tourism activity (see also Strategic Priority 3).	Council	Short term	
	2.4	Work with National Parks and Wildlife Service and the Koala Preservation Society to develop and promote the Coastal Walk as an integrated experience linking Sea Acres and the Koala Hospital.	Council, NPWS, KPS	Medium term	
	2.5	Support the further development of Sea Acres as a visitor experience, including its capacity to act as an incubator for growing a wide range of indigenous experiences.	Council, NPWS	Medium term	
	2.6	Work with NSW Forestry Commission and National Parks and Wildlife Service to identify new opportunities for nature based tourism product and experience development in State Forests (e.g. eco-accommodation, trails, an enhanced mountain bike hub and event management including motorsports) and to develop appropriate locations enabling commercial operator access to the hinterland sites.	Council, NPWS, NSWFC	Medium term	
	2.7	Support stakeholder organisation' submissions to leverage government grant funding for product and experience development.	Council	On-going	
	2.8	Continue to improve the visual appeal of towns and villages across the Port Macquarie Hastings area through ongoing Council beautification works including the Town Centre Master Plan and improve physical access for visitors, including inclusive tourism.	Council	On-going	
	2.9	Link Council's place based community planning and local tourism work across the visitor sub-regions including Wauchope and Camden Haven and create cross regional collaborative themes and trails to grow regional dispersal.	Council	On-going	
	2.10	Ensure tourism is considered as an important part of Council strategic land use, community and infrastructure planning to attract quality tourism and hospitality investment and provide exceptional experiences for visitors and the community across towns, villages and hinterland.	Council	On-going	
	2.11	Support the heritage sector to collaborate and to enable the growth and development of contemporary and integrated heritage experiences including the proposed development of the Port Macquarie Museum site.	Council, Heritage Stake- holders	Long term	
	2.12	Encourage and support stakeholder initiatives that identify and develop opportunities to protect, enhance and showcase our natural assets, and elevate the importance of our natural environment and sustainability values.	Council, GPMTA, CHCC, WCC, PMCC, HLA, AMNC	On-going	
	GREA	GREATER PORT MACQUARIE DESTINATION MANAGEMENT PLAN 2020-TO 2024 - MAY 2020		22	

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All strength of the local division in

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Streamline Council approval processes for regularly used event spaces and precincts.

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GREATER PORT MACQUARIE DESTINATION MANAGI

scale conferences

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Item 12.01 Attachment 1

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To activate these opportunities a stronger tourism event plan is recommended as a priority action to identify and coordinate an annual program of viable festival and events that includes those hosted by Council, procured and delivered by commercial event organisers and community based events that attract and appeal to key visitor markets.

This plan should include actions to attract and procure new events that align with the experience offerings and consider infrastructure and facilities needed to improve the delivery of events. Consideration of Council resourcing (financial and human) will, however, be important to ensure adequate staffing to manage a vibrant annual event program.



ACTI	ACTIONS	RESPONSIBILITY	TIMELINE
3.1	Review Council's existing Event Plan and resourcing to enhance the strategies and actions to attract, procure and support the delivery of a vibrant and contemporary event calendar that appeal to key visitor markets and align with the seven experience platforms.	Council	Short term
3.2	Build stronger business-to-business links between events and the visitor economy including industry development activities for event and experience packaging.	Council/GPMTA	Short term
3.3	Work with the Destination North Coast business events team to grow and attract mid-scale conferences to Greater Port Macquarie.	Council	On-going
3.4	3.4 Continue to effectively promote and provide information about events to key visitor markets as part of destination marketing strategies.	Council	On-going
3.5	Support events to have strong environmental best practices.	Council	On-going
3.6	Support event owners/organisers and local events developers by providing connections to community, volunteer groups and visitors.	Council, GPMTA, CHCC, WCC, PMCC, HLA	On-going

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Consumer perceptions research has confirmed that potential visitors show remarkably similar characteristics and preferences to current overnight and day visitors (families and older couples) stakeholders to better showcase the area and its experiences to key visitor markets.

suggesting visitors to Greater Port Macquarie are 'typical' of many other coastal holiday travellers in Australia. Their needs are also quite generic matching other Australian domestic travellers seeking beaches, nature, food and relaxation experiences

fourism brand review and marketing strategy development should:

- Engage tourism stakeholder organisations in the process to gain consensus and ownership of proposed strategies .
- Confirm which visitor markets are best targeted to achieve growth
- Align with the seven experiences platforms (see page 20)
- Guide the review of visitor information materials (digital and print) so visitors are aware of the range of experiences on offer pre-arrival (during their planning and booking phase) and once in-destination' (once they arrived)

- over the next five years. This will determine Council and industry's role in marketing
- Continue to grow overnight stays for existing visitor marketing strategies to better appeal to repeat and new visitors, but not to fundamentally alter from and sharpen markets (families, older couples) current visitor market segmentation
- destination' through better promotion of the area's Capitalise on the high awareness of the destination overcome that the area is an 'older visitor character and stand-out active experiences but to potential visitors, perceptions 2(%06)
- 9 experience the area and provide recommendations locals to encourage campaign to their visitors Build a VFR
- Create improved signage to attract visitors off the highway and encourage dispersal across the area
- Connect and cooperate with operators and other LGAs to deliver memorable visitor experiences and itineraries.

Visitor Perceptions & Satisfaction Survey (2018), Destination Research & Development, 7 December 2018

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	TY TIMELINE	Short term	Short term	Short term	On-going	On-going	0n-going	Medium term	Medium term	26
	RESPONSIBILITY	Council	Council	Council	Council	Council	Council	Council	Council	
I PORTI DE LO PORTI DE	ACTIONS	4.1 Evaluate results of marketing campaigns to ensure these provided effective results and to inform future campaign development.	4.2 Engage specialist destination marketing consultants to undertake a brand review that considers consumer perceptions (current and potential visitors), key visitor markets, and tourism stakeholder views to clearly articulate a destination brand identity/ positioning story for the area including creative brand communication messages and imagery.	4.3 Prepare a 3-year Marketing Strategy and Marketing Implementation Plan based on brand review findings to guide Council promo- tional and visitor information initiatives to effectively package and promote drawcard experiences, the experience platforms and ensure 'cut through' to appeal to and attract key domestic and international markets visitor markets.	4.4 Investigate opportunities to partner with Destination North Coast in relevant cooperative marketing campaigns (e.g. the currently proposed North Coast Caravan and Camping campaign).	4.5 Investigate opportunities to partner with Destination New South Wales to leverage State Government marketing programs and initiatives.	4.6 Work cooperatively with North Coast stakeholders in adjoining LGAs on cooperative marketing initiatives that provide good opportunities to generate awareness of Greater Port Macquarie to key domestic and international visitor markets (e.g. cruise tourism opportunities ex South West Rocks, international product ready itinerary development).	4.7 Create a VFR program that highlights key experiences across Greater Port Macquarie to the community and their visitors that aligns with brand review findings.	4.8 Prepare a Tourism Signage Strategy that aligns with findings of the brand review and Marketing Strategy to create distinctive signage to encourage dispersal and promote the diversity of experiences across Greater Port Macquarie.	GREATER PORT MACQUARIE DESTINATION MANAGEMENT PLAN 2020 TO 2024 - MAY 2020
S.	A	4	4.1	4	4.	4	4.	4	4.	GR



IMPLEMENTATION & EVALUATION

Monitoring of the implementation of this Plan's strategies and actions is important to ensure the mission and values are achieved and to provide valuable information that can be used to inform decision-making for tourism over the next five years.

Evaluation and Reporting Process

The following evaluation and reporting process is recommended to monitor the implementation of the Plan:

- Council monitors the implementation of strategies and actions contained in the Plans on an annual basis
- Council prepares an annual report in cooperation with the key stakeholders identified as having responsibilities in the Plan to communicate the progress against priorities and actions and key outcomes achieved to government, industry and community stakeholders. This will showcase performance against management, experience development, events and marketing. An annual review forum or workshop may assist this process.

The evaluation process may involve review of:

- New or emerging opportunities and challenges to the visitor economy
- Destination performance research including:
- Visitor data including annual TRA visitation data covering domestic, daytrip and international visitations including: overall visitor numbers, key visitor markets, number of overnight stays, length of stays, expenditure, visitor demographic profiles, purpose of trip, and visitor activities, findings of research that tracks key competitor regions, findings of research that evaluates visitor perceptions and satisfaction
- Industry performance occupancy, business growth etc and industry development, workforce, seasonality issues etc.
- Event performance visitor attendance, satisfaction, economic outcomes
- Community feedback about tourism.

Stakeholder Roles and Responsibilities

To ensure the effective implementation of this Plan, it is important that the roles and responsibilities of Council, industry and other key stakeholder organisations are clearly understood and communicated

It is recommended that:

- Port Macquarie Hastings Council is positioned as the umbrella authority to oversee the implementation of strategies and actions associated with this Plan over the next five years
- Other key stakeholder organisations and agencies identified in this Plan as having a primary or supporting role provide on-going support to Council over the next five years to implement strategies. This will involve stakeholders further developing actions identified within the Plan including budgets, timelines and establishing performance measures. Importantly, this will help stakeholders to review their own forward planning and activities to align and achieve the agreed directions of this DMP.

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The destination management planning process was initiated in August 2019. A Council Project Committee was established early in the project to contribute their knowledge and insights to inform solutions for tourism over the short, medium and long-term.

The development of the DMP involved three stages:

1. Situational Analysis

Council had previously commissioned considerable research to inform the development of the DMP including a Visitor Profile and Satisfaction Survey (VPSS) (2018) and a Port Macquarie-Hastings Destination Product Audit and Analysis (DPAA) (2019). A Working Paper was prepared to highlight important findings identified from this earlier research for the Greater Port Macquarie region, as well as including findings from other documents including the Greater Port Macquarie Destination Management Plan 2016 to 2020 and other relevant Council strategies, plans and reports. The findings were then used to inform the design and delivery of the stakeholder engagement activities.

2. Stakeholder Engagement

A range of stakeholder engagement activities were undertaken in Port Macquarie during September 2019 to:

- Determine stakeholder perceptions around important issues, challenges and opportunities to sustainably grow tourism in the Greater Port Macquarie region over the next five years
- Clarify the role and responsibilities of Council and industry stakeholders to work collaboratively to implement the new DMP to support the growth of the visitor economy.

The following methods were used to engage various government, business, and community stakeholder individuals, groups and organisations:

- 1. Project Committee Meeting undertaken on September 10 with Port Macquarie Hastings Council representatives responsible for tourism and events. The role of the Committee was to contribute knowledge and insights to inform the development of the DMP and consider solutions for tourism over the next five years. The meeting sought to review the project aims, discuss key findings identified in the Draft Working Paper, and to hear their views on the important challenges and opportunities for tourism for the Greater Port Macquarie region, and further refine planned stakeholder engagement activities.
- 2. Council Staff Meeting facilitated on September 10 with twelve representatives of Council departments and units involved in work and projects relevant to tourism. Participants were provided the Draft Working Paper, and the previous Greater Port Macquarie Destination Management Plan 2016 to 2020, to review in advance of the meeting. Consultants asked staff to identify and explain current and proposed Council plans, projects and initiatives that may help to influence the sustainable growth of tourism over the next five years that should be considered in the development of the DMP. The session was audio-recorded for later analysis.
- 3. Council Steering Committee Meeting facilitated on September 11 with representatives of Council's Economic Development and Cultural Steering Groups. Participants were also provided the Draft Working Paper, and the previous Greater Port Macquarie Destination Management Plan 2016 to 2020, to review in advance of the meeting. Consultants presented an overview of the project aims, destination management planning approach, and current visitation overview. Discussion sought to identify participants' views for tourism over the next five years, and the strategic opportunities and challenges to sustainably grow tourism from their economic and cultural development perspectives.
- 4. Destination Workshops (5) were facilitated from 10 to 12 September with representatives of local tourism industry and stakeholder organisations. groups and individuals with an interest in tourism across Greater Port Macquarie region. Council distributed invitations to their tourism industry database comprising around 440 businesses and individuals across the Port Macquarie Hastings Shire. 87 industry participants attended.

continued next page

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Workshops were held across three days and at different times of the day to encourage wide participation. Workshops were facilitated as follows:

- Destination Workshop #1 representatives of the Greater Port Macquarie Tourism Association Board, Visit Camden Haven, Port Macquarie Chamber of Commerce, Wauchope Chamber of Commerce and Hastings Liquor Accord.
 - Destination Workshop #2 Arts, heritage and cultural tourism
- Destination Workshop #3 Tourism and accommodation businesses
- Destination Workshop #4 Nature based tourism
- Destination Workshop #5 Tourism and accommodation businesses

Participants were presented with an overview of the DMP project aims, destination management planning approach, and current visitation overview. Participants were then asked to consider:

- A vision for tourism for the Greater Port Macquarie region over the next five years (i.e. what do they want tourism to look like in 2024/what would they hope to see achieved to 2024)
- Important opportunities and challenges to sustainably grow tourism over the next five years relating to:
- Destination Development what are the key experiences that will help grow tourism and help to create a point of difference to repeat and new visitors to increase yield, length of stay, overcome seasonality and improve visitor satisfaction?
- Destination Marketing how to best position the area to repeat and new visitors, what visitor markets do they want to attract and grow, what experiences are they seeking and how to enhance visitor perceptions?
- Destination Management how can Council and industry best work together to implement the strategies and actions of the DMP within current resourcing capacity?
- Key priorities areas to be delivered within existing Council and industry resources and extend activities if further finding was available.

A Have Your Say Online Survey was developed as a means for interested stakeholder industry organisations and individuals unable to attend the workshops to express their views, and as a way for workshop participants to provide further input. Invitations to participate in the survey were sent as part of the Destination Workshop invitations and encouraged in the workshops. Despite the promotion of the survey opportunity, only one response was submitted.

- Camden Haven Chamber of Commerce Briefing Meredith Wray (consultant) was invited to speak at the Chamber networking function on Thursday 12 September to provide an overview of the destination management planning project and approach.
- 6. Stakeholder Interviews (12) were undertaken during September 2019 with representatives of stakeholder organisations across state, regional and local levels with considerable knowledge and expertise related to tounism for Greater Port Macquarie or specific knowledge related to an area that had arisen during the course of the workshops. Interviews were largely undertaken by telephone and email with some face to face and were used as a way to gather more detailed information, and validate the key areas that were raised in face-to-face consultation.

Analysis involved collating and synthesising the issues, challenges and opportunities identified in the various stakeholder engagement activities to determine common themes to inform the development of the DMP. A Stakeholder Engagement Report was prepared and presented to the Project Steering Committee for feedback.

3. Preparation of Destination Management Plan

Findings from the Working Paper and Stakeholder Engagement Report were then used to establish a draft Destination Management Plan. The draft was presented to the Project Steering Committee on October 17, 2019 for feedback.

A further workshop was held on November 6, 2019 with representatives that had been previously engaged in Destination Workshop #1 (Greater Port Macquarie Tourism Association, Port Macquarie Chamber of Commerce, Wauchope Chamber of Commerce and Hastings Liquor Accord) to present the DMP recommendations and gain their feedback. From this, a final draft DMP was finalised in November 2019.

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GREATER PORT MACQUARIE DESTINATION MANAGI



The Port Macquarie Tourism Monitor 2018/19 shows that over the past five years there has been:

A gradual increase in domestic visitor nights

- The average expenditure for domestic overnight visitors has increased by 13% from 2016 to \$531 per trip
- Visitors from Sydney continues to climb from 32% in 2017/18 to 39% 2018/19

.⊑

- Interstate visitors represented 18% of domestic overnight visitors (a decrease from 25% from the previous year)
- For 2018/19 visitors from Qld (Brisbane and Gold Coast) decreased to under 10% with little other variation from the other States from the five year average. It should be noted that these markets show variability over time, and may can be impacted by factors including weather events (Cyclone Debbie), highway road construction and other factors
- 47% were on holiday, 34% visiting friends or relatives, 3% in transit, and 2% for other reasons such as education and medical visits (NB: these figures have been relatively static over the last 5 years)
- The increase in business visitors noted last year was again stable at 14% of total
- Previous demographic analysis had shown that visitors over 55 years comprised the largest segment at 40% of all domestic overnight visitors. However, each age 'group of 20 years' is around 30% (after excluding those 75+) i.e. 15-34 years (27%), 35-54 years (34%), 55-74 years (33%)
- 91% travel by car, 6% by air
- 55% stayed in commercial accommodation, 38% in friends and relative homes
- Spend per trip is \$531 (+ 13% from 2016). spend per night is \$163 per night (Regional NSW average is \$158).

A third year of substantial growth in the numbers of international visitors

- International visitor numbers represent 8.1% of overnight market, but have increased by 16% on previous year
- Average length is however decreasing, 3.2 nights in 2018/19 compared to 4.4 in 2016/17
- The main generating countries in 2018/19 are UK (17%) and Germany (15%) and these have maintained their position as the top two generating markets
 - Spend per trip is \$279, spend per night is \$61 slightly down from \$290 per trip and \$69 in 2016
- Note: as in other regional areas, the TRA results on international visitor nights and expenditure are less consistent and should be used with caution.

Domestic day visitor data is quite variable

- An upward trend is noted over the last three years with day visitors for the year 2016/17 exceeding the 5 year average
- The vast majority of domestic day visitors come from within the North Coast region comprising 82% of day visitors (mainly Kempsey and Taree)
- Spend per trip is \$119 (compared to \$112 per trip for Regional NSW)
- The trend line over the last 5 years shows growth from 650,000 in 2014/15 to 771,000 in 2018/19
- Note: the sample size (n=96) for this segment is quite limited, which could also account for the annual increases and decreases.

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GREATER PORT MACQUARIE DESTINATION MANAG

Sub Coa	mission Arts st	Mid North	Issue
1.	Kevin Williams - Arts Mid North Coast		1. Importance of Cultural Tourism The Plan recognises Arts, Heritage and Aboriginal Tourism as one of the seven key experiences platforms important to the future of tourism in the LGA. In this submission unless otherwise stated we have used the term cultural tourism to embrace these matters. This aligns with State and Federal terms and usage. << Summarised version >> Despite the above the Plan does not on page 14 in its description of Visitor Markets identify cultural tourists as a market for Greater Port Macquarie. Strangely however it then goes on to have a number of Actions relating to that market.
	Response/ Comment:	cultural tourist psychographic the re-brandin markets, it will	mary target market identified in the DMP includes s. Potential opportunities identified on page 14 outline c markets that also include Cultural Tourists. Further g process will include a deeper dive into our target identify key assets and how we communicate and tell n story in a compelling way to attract identified
2.	Kevin Williar North Coast	ns - Arts Mid	2. Connecting Opportunities with Strategic Directions The Draft Plan does not in our submission recognise the existing nature and full potential of cultural experiences in its policy framework. In part this is a reflection of differences between the tourism industry and the arts. For arts and cultural events, venues and activities to be integrated into strategic planning and involved in Destination Management Plans they first need to be involved in the industry. << <i>Summarised version</i> >> What really needs to be developed through the Plan is the connections between parties and collaboration and cooperation. It is therefore our submission that the diagram on page 7 of the 7 platforms could better reflect the connections by not only showing links between each platform to Easy Nature (an unusual term that does not come up on Google Search) BUT the connections between each platform. << <i>Summarised version</i> >> The Arts and Cultural Landscape of Port Macquarie Hastings Arts Mid North Coast supports the Destination Experience Development Priority 2 set out on page 19 but as noted above the lack of detail of actions is disappointing.

	Response/ Comment:	Noted. The information on page 7 is consistent with the views expressed throughout the engagement process with a broad cross-section of industry. It is also consistent with the strategic approach endorsed for the North Coast in the Destination North Coast DMP. However, the diagram will be updated for clarity. Strategic Priority 1 clearly identifies and articulates the need for better cooperative arrangements between local tourism associations, business groups and stakeholders across the whole of the Port Macquarie Hastings area. The current work on our Cultural Economy Project will assist with this process.				
3.	Kevin Willian North Coast		 The Glasshouse We make specific comment on the Glasshouse because it is highlighted as significant in both this Plan and the Glasshouse Strategic Plan which is also on exhibition. In our submission on that Plan we note our opinion that the Glasshouse is not reaching its potential and to do so there needs to be more synergy between the two Plans. The basis of our concerns revolves around five matters The statistics for visitor numbers indicate that a major use of the building is its VIC role. Marketing of the Glasshouse focuses on the individual events within it rather than any strategic marketing of the Glasshouse as a whole as a tourism attraction/asset. The Glasshouse has considerable potential to focus on the heritage components of the site as was so important in the design brief and which is reflected for the building and in features within the building The Glasshouse needs to be activated with many spaces underutilised creating a sense of emptiness when people go into the place. It would be the perfect place for a permanent display on the Aboriginal heritage and culture of the region. Such matters should also be a programmed into its exhibition schedule. Such matters would ensure the activation of the whole precinct of Clarence Street which would then be another tourism marketing opportunity as has been the benefits delivered in Geelong with the redevelopment of the Geelong Art Centre and the promotion of its cultural precinct For these reasons it is our view that the development of product and the marketing of that product should be led by the Economic Development team. 			
	Response/ Comment:		asshouse Strategic Plan will consider and respond to evant to the Glasshouse operations.			
4.	Kevin Willian North Coast		4. Other Matters Big & Small			

	c	We note that Arts Mid North Coast is not considered as a partner with responsibility in the Plan's actions.
		We note that at page 3 we are incorrectly lescribed as Mid Coast Arts Council.
	t F C C C C C C C C C C C C C C C C C C	We consider the Plan underestimates the value of he day trip market. It is not listed in the Plan on bage 14 in the areas Primary and Secondary Visitor narkets International stop over visitors are. The 2018 Tourism Research Local Government Area brofile indicates 654,000 daytrip visitors. This compares to 67,000 International visitors. The daytrip market has particular potential for cultural ourism for visitors coming to exhibitions, berformances and events such as Art Walk, especially when connected to Food experiences. With all Pacific Highway upgrades completed travel ime for this market has decreased considerably. We consider the Plan which identifies Inclusive or accessible tourism as an opportunity fails to deliver bolicies or actions to achieve that. We note that Arts Aid North Coast has an Inclusive Tourism Trail which is being further expanded during the SHINE Heritage Festival in April to include an assessment of all Museums in the region. To date it has focused on performance spaces and galleries.
Response/ Comment:	 corrected the The day trip the key Visite Although the return and is existing marl for future gro in overnight The DMP is purpose of th priority areas explore withi identifies a s its first Comr vision, princi socially just, engaged cor community e our inclusive 	included AMNC as a partner where appropriate and e error on page 3. market is identified on page 14 of the plan within or markets segment. This notes: domestic daytrip market provides some economic recognised as a significant component of the ket, stakeholders agreed this is not a direct target owth except around the capacity to stimulate growth visitation and visitor yield. a shared vision for the region into the future. The his document is not only to set specific actions for a but also to identify avenues for stakeholders to n their offering. Strategic Priority Action 2.8 pecific Council action. Further, Council is creating munity Inclusion Plan (CIP) which sets out Council's ples and proposed plan of action to help develop a resilient, connected, inclusive, liveable and munity. The process involved extensive engagement and will provide the foundation to guide activities. The destination website and marketing on detail of accessible businesses and

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5.	5. Kevin Williams - Arts Mid North Coast		Conclusion
			While it is not for us to write detailed policies for the Plan we would in summary note opportunities within the Strategic Priorities of the Plan for reconsideration of the policies reflecting the above and in many cases engagement with Arts Mid North Coast and the cultural sector. These are:
			 Recognising the arts as a sector or appropriate stakeholder
			 Adding Arts Mid North Coast to the list of key regional stakeholders
			 Working with AMNC to identify grants a year that maybe relevant to such packages and partnering as described above.
			 Working with AMNC in workshops we have presented elsewhere linking the arts sector with tourism operators. Working with AMNC not only for its work in cultural tourism under its brand, Mid north Coastthe Creative Coast but digital such as the multi award winning Our Rivers Our History project with the Mid North Coast Chapter of Museums Australia, which features the Hastings River and is of benefit to all tour operators on the river or the new Tourists Paradise which is of benefit to the whole industry. Both but particularly the latter would be perfect for trade shows such as ATE.
	Response/	Noted.	
	Comment:	a stakeholder work with Arts in the context Strategies and	reviously Arts Mid North Coast has been included as where appropriate. We look forward to continuing our Mid North Coast, acknowledging that this also will be of grant opportunities relevant to Council Plans and other identified focus areas, as determined by things al Economy Project and Cultural Plan.
	mission		Issue
Port	Macquarie M	useum	We also understand the importance of having an up
6.	Debbie Sommers - Port Macquarie Museum		We also understand the importance of having an up to date Destination Management Plan and the role of the Plan in securing support and resources to further develop product and experiences, and implement destination marketing and visitor information strategies. The Port Macquarie Museum supports Council's initiative to develop the Port Macquarie Hastings Destination Management Plan 2020-2024. Our support was also evident in our participation in the engagement and development processes. We congratulate Council on the draft Plan and make the following comments and recommendations to further strengthen the Plan, particularly around our key interest area Cultural Tourism

	Response/ Comment:	Noted, thank y	/ou.
7.	Debbie Sommers - Port Macquarie Museum		Cultural Tourism It is pleasing to see Arts, Heritage and Aboriginal Tourism, or as we prefer to call it Cultural Tourism, as one of the seven key experience platforms identified as important to the future of tourism across our LGA. Cultural Tourism is a widely accepted term across the sector in which we operate.
			Cultural Tourists We note that Cultural Tourists have not been identified as a key visitor market for the LGA and we recommend they be included on page 14. We are welcoming an increasing number of cultural tourists to our Museum. They are viewing our collections online through a variety of online initiatives and then planning trips to Port Macquarie with the express purpose of visiting us to view items in our collection in person. Given Port Macquarie's history, and despite underdeveloped heritage products and experiences, cultural tourists are an existing visitor market and there is great potential to build on that, as the Plan does go on to identify in later parts
	Response/ Comment:	esponse/ Noted	
8.	Debbie Sommers - Port Macquarie Museum		Destination Management Action 1.7 refers to engagement with Council's Economic Development and Cultural Steering Groups. Whilst we support this action, it can only be effective if those groups fully represent their respective sectors. We note there is currently no representative on the Cultural Steering Group with a heritage interest, this will be important in the future championing of cultural tourism products and experiences development.
	Response/ Comment:	Noted	
9.	Debbie Sommers - Port Macquarie Museum		Destination Experience Development The analysis under this priority is supported, but we believe needs to be strengthened. Council should not only be considering enhancing Council facilities but also community facilities and infrastructure as

	Response/ Comment:	Council facilitie Creative precis future creative build on the ca assets and the	hubs for cultural tourism activities. Likewise, it should be recognised that improving heritage attractions may need to go beyond improving packaging and presentation to create unique heritage experiences. This will be the case as we embark on developing a new fit for purpose Port Macquarie Regional Museum at our present and important CBD location. << See attachment for full submission>> Action 2.2 needs to be broadened to enhancing not only Council facilities, but also community facilities, as hubs for cultural tourism activity. We would also like to see the Port Macquarie Museum proposed development specifically mentioned either within this action, or preferably as a stand-alone action. We acknowledge that the timing of the draft DMP and the public release of our proposed redevelopment plans have not aligned well, but given the life of the DMP and our Museum redevelopment timeline, it is essential that our redevelopment to assist in securing the necessary infrastructure investment in our new regional cultural attraction.
		follows: Support the he development of	your feedback, Action 2.11 has been expanded as eritage sector to collaborate to enable the growth and of contemporary and integrated heritage experiences proposed redevelopment of the Port Macquarie
10.	Debbie Sommers - Port Macquarie Museum		The focus on 'Easy Nature' as the key experience does not necessarily sit well with us. Our LGA's potential for new and improved nature based tourism products and experiences is recognised. Some of our natural assets will certainly form the basis of unique experiences. The same can be said about some of our heritage assets. There are linkages between Cultural Tourism and many of the other experience platforms. The diagrams on p7 and p20 under-represent or even misrepresent the relationships between all the key experiences. For example, many Cultural Tourism experiences also include Food and Produce experiences as they may take place in a food or beverage venues, they

			· · · · · · · · · · · · · · · · · · ·		
			contribute to Health and Wellbeing through participation and enjoyment and Events of all kinds.		
	Response/	Noted.			
	Comment:	The 'Easy nature' theme was repeatedly expressed throughout the engagement process with a broad cross-section of industry. It is also consistent with the strategic approach endorsed for the North Coast in the Destination North Coast DMP. Current visitor research including the Destination Visitor Profiling and Satisfaction Survey and the Tourism Monitor (NVS and IVS data) identify outdoor and nature experiences in the top 3 key activities. The value of Cultural Tourism is acknowledged and we agree there are many linkages. This will allow us to highlight cultural tourism offerings through the delivery of destination branding and marketing.			
11.	Debbie Sommers - Port Macquarie Museum		Action 2.2 needs to be broadened to enhancing not only Council facilities, but also community facilities, as hubs for cultural tourism activity. We would also like to see the Port Macquarie Museum proposed development specifically mentioned either within this action, or preferably as a stand-alone action. We acknowledge that the timing of the draft DMP and the public release of our proposed redevelopment plans have not aligned well, but given the life of the DMP and our Museum redevelopment timeline, it is essential that our redevelopment be identified as an action during the life of the Destination Management Plan to demonstrate support and to assist in securing the necessary infrastructure investment in our new regional cultural attraction.		
	Beeneneed	Noted.			
	Response/ Noted. Comment: Action 2.3 is designated for delivery by Council and reference Council facilities. The Cultural Plan covers this in Action 1.2 Creative precincts and hubs - investigate, plan and advocate future creative precincts and cultural hubs designed to connerbuild on the capabilities of, and showcase our significant cult assets and the work of our local creative practitioners, with a focus on developing a Port Macquarie CBD cultural precinct PMHC acknowledge the value of this project and the value or recognition within the plan. Wording amended as follows: 2.11 - Support the heritage sector to collaborate to enable th growth and development of contemporary and integrated here experiences including the proposed redevelopment of the Port Macquarie Museum site.				
12.	Debbie Sommers - Port Macquarie Museum		Action 2.10 should also include identification of cultural precincts, as already included in Council's Cultural Plan 2018-21.		
	Response/ Comment:	2.10 - Ensure strategic land	uld be recognised, have amended as follows: tourism is considered as an important part of Council use, community, infrastructure and cultural precinct ract quality tourism and hospitality investment and		

		provide except	tional experiences for visitors and the community
			villages and hinterland.
13.	Debbie Sommers - Port Macquarie Museum		The timeline of commencing Years 4-5 assigned to Action 2.11 is of concern. Many heritage stakeholders already collaborate in an attempt to enable growth and development of experiences. Some initiatives discussed collectively with Council in recent years have not progressed. Some heritage stakeholders may be disheartened by this timeline. It will certainly take time to develop growth and contemporary heritage experiences surely it wouldn't hurt to flag this action as commencing in Years 2-3, recognising that this a long term action.
	Response/ Comment:	Agree. Timing has be	en updated to Medium Term (years 2-3).
Grea	mission ater Port Macc ociation	quarie Tourism	Issue
14.	Janette Hyde - Greater Port Macquarie Tourism Association		General Comments The Greater Port Macquarie Tourism Association strongly endorses the draft Plan and considers it focussed, strategic and evidence based. It provides a good roadmap for the management and development of the destination for tourism, associated industries and the community more broadly. Council and the consultants are commended for their substantial research to inform the DMP and their engagement with stakeholder and industry groups. A strength of the document is that it provides a framework for integrating with other Council strategic documents including the Economic Development Plan, the Cultural Steering Plan, and the Glasshouse Strategic Plan. The Association is keen to work with Council and other stakeholders in realising the vision and strategic direction offered by the document.
	Response/ Comment:	Noted, thank y	
15.	Janette Hyde - Greater Port Macquarie Tourism Association		1. The Association and destination marketing has branded the region 'Greater Port Macquarie'. It is suggested that this branding be reflected in the title and throughout the document
	Response/ Comment:	Noted. Terminology th Port Macquari	
16.	Janette Hyde Port Macqua Association		2. Page 6. "A shared mission statement was created from engagement with industry and community stakeholders to guide the implementation of the Plan: "To sustainably grow the local visitor economy and strengthen the appeal of the destination to

		A	overcome seasonality and attract overnight visitors to stay longer, explore the area and spend more." Suggested amendment for simplicity and clarity. "To sustainably grow the local visitor economy and strengthen the appeal of the destination by attracting overnight visitors that stay longer and spend more."
		Agree. The mission st	atement has been updated to reflect this feedback.
17.	Janette Hyde - Port Macquarie Association		 The Association endorses the four strategic priority areas identified on page 6: Destination Management: Establish an effective Destination Management Framework for Council and Greater Port Macquarie Region stakeholder organisations to strengthen their cooperative work to grow the local visitor economy. Destination Experience Development: Create a stronger point of difference through a diversity of contemporary experiences that attract visitors year round. Destination Event Development: Establish Greater Port Macquarie Region as a vibrant destination for year-round festivals and events that positively impact the visitor economy across the region. Destination Marketing: Review destination brand and marketing strategies to best position Greater Port Macquarie Region and its experiences to Key visitor markets
	Response/ ¹ Comment:	Noted, thank y	ou.
18.	Janette Hyde - Port Macquarie Association	e Tourism	 4. The Association endorses the seven Experience Platforms on page 7: i. Easy Nature ii. Arts, Heritage & & Aboriginal Tourism iii. Food and Local Produce iv. Health, Wellbeing & Active Lifestyle v. Caravan and Camping vi. Events vii. Business Events Specifically the Association endorses the engaging descriptor 'Easy Nature'.
	Response/ Comment:	Noted, thank y	
19.	Janette Hyde - Port Macquarie Association		5. The 'Seven Experience Platform' diagram on page 7 may be confusing to some, however, we note that Easy Nature is the overarching experience platform and that the format is intended to align directly with the overarching North Coast DMP Experience Platform of Nature Based Tourisms. The way it is presented it would appear that points ii to vii above are sub categories of point 'i Easy Nature'. Is the diagram intended to portray points ii to vii as subservient to point 'i Easy Nature'?

	Response/ Comment:	Destination No has close links used as a way our specific as	he diagram is used to show clear alignment with the orth Coast DMP. It is designed to illustrate that nature with the other Six Experience Platforms and can be to differentiate the North Coast, and our region using sets, from other coastal destinations. Council will entary in the document and update numbering to
20.	Janette Hyde - Greater Port Macquarie Tourism Association		 6. Page 7. Arts, "Heritage & Aboriginal Tourism - "Integrated and contemporary cultural, heritage and entertainment experiences across our towns and villages." Presumably in this context 'entertainment experiences' relates primarily to performance based entertainment?
	Response/ Comment:	application. By being provided instance it is s	rtainment was used specifically for its broad y definition entertainment is the action of providing or I with amusement or enjoyment. To clarify, in this pecific to Arts, Heritage & Aboriginal Tourism and we I limit the forms of expression.
21.	Janette Hyde - Greater Port Macquarie Tourism Association		 7. Page 7. "Experience Platform 5. Interesting to note that Caravan & Camping has been singled out from other accommodation styles and categories, say for example 'luxury accommodation".
	Response/ Comment:	Destination No been identified	he diagram is used to show clear alignment with the orth Coast DMP. The Caravan & Camping sector has by Destination North Coast as a growth market for h Coast with potential for campaign activity.
22.	Janette Hyde - Greater Port Macquarie Tourism Association		 8. Page 9. "Establish a shared vision and direction with government, business and community stakeholders for the future of tourism across the Greater Port Macquarie Region." Agree. How and when?
	Response/ Comment:		dressed once the DMP is endorsed by Council and implementation of some of the identified priority
23.	Janette Hyde Port Macqua Association	e - Greater	9. Page 12. Challenges and opportunities identified are well identified and supported.
	Response/ Comment:	Noted, thank y	ou.
24.	Janette Hyde Port Macqua Association	rie Tourism	 10. Page 14. Like the incorporation of the stated values stated below: i. "Work cooperatively with all stakeholders across the Greater Port Macquarie Region to grow the outcomes of the visitor economy ii. Protect and showcase our natural, cultural and heritage assets iii. Respect our Aboriginal, local communities, culture and way of life iv. Achieve sustainable tourism best practice."
	Response/	Noted, thank y	ou.

	Comment:		
25.	Janette Hyde - Greater Port Macquarie Tourism Association		Page 16. Strategic Priorities. The rational of the strategic priorities is somewhat unclear and how it links to the timelines presented in the respective action plans. It would be interesting to better understand which activities can happen concurrently within Councils budgetary constraints and also how these priorities and corresponding action timelines translates within the other priorities of the Economic Development Plan and the Cultural Steering Plan and respective budgets.
	Response/ Comment:	The specific tir	ve reviewed all timings and priorities within the plan. mings and linkages to other plans and priorities will considered by Council as part of the annual budget
26.	Janette Hyde Port Macqua Association		12. Page 17. "The need to consider crisis management for tourism as part of the new DMP".Never more relevant than now with the economic and social impact of the current bushfires.
	Response/ Comment:	Agree, thank y	/ou.
27.	Janette Hyde Port Macqua Association	rie Tourism	 13. Page 19. "Priority 2 Destination Experience Development" Good commentary on the opportunities available, including those relating to cultural tourism below: i. Enhance Council facilities (including the Glasshouse) as hubs for cultural tourism activity by continuing to strengthen their ability to draw visitors, including the VFR market, and providing appealing visitor experiences and activities ii. Improve promotion of cultural trails iii. Improve packaging and presentation of heritage attractions to create a unique heritage experience on the North Coast iv. Work with Aboriginal Land Councils to develop Aboriginal tourism experiences in-line with LALC timeframes and requirements
	Response/ Comment:	Noted, thank y	
28.	Janette Hyde - Greater Port Macquarie Tourism Association		 14. Page 21. "Easy Nature – The strongest growth potential for the area is nature based tourism. The standout opportunity is the unique experience and attraction of the Koala Hospital." Interesting observation.
	Response/ Comment:	Noted.	
29.	Janette Hyde Port Macqua Association		Comments provided by representatives of sub regions Wauchope: 1. Suggest the map of the LGA includes a few more major roads marked to cater for all audiences. Looks a bit naked without some connections to Comboyne, Byabarra etc.

	 The use of the word "sustainable" can be confusing as it can have two meanings. In "sustainable management" I read "able to be continued" or "on-going/long term" management. On the other hand we can have "sustainable tourism", "a sustainable approach", "sustainable tourism", "a sustainable to Council and tourism and other stakeholders" Who or what is "tourism" in this context? The Priority 2, Destination Experience Development, - Suggest there should be more emphasis on encouraging new tourism development, it seems to be more about making what there is better. E.g. mentoring for new businesses, workshopping ideas, etc. Suggest the reference to Caravan and Camping should be extended to all accommodation types where there is a shortfall in visitor needs. The caravan and camping issue needs more support west of the Pacific Highway as there are very few options, Wauchope and Kendall Showgrounds??? Page 9, dot 4 it says "PMHCas the custodian and manager of key assets" isn't PMHC a custodian as are Forestry, NPWS, Land Councils, etc 7. Page 9, second column dot 3, include something like "and encourage new initiatives in these areas". In dot 5, 1 think the words "to continue to" should be added to "flourish and contribute" The industry is already here it is not new it just has to improve and expand. Page 12 last dot point. Suggest that "Rail" could be added to air services as it offers potential to Wauchope and the surrounding	
Response/ Comment:	Noted. 1 The map will be updated to add more detail. 2. Sustainable has been used within this document through the lens of 'sustainable tourism' which is defined on page 9 within the document.	
	 Should read tourism industry - will be updated in the final DMP. Throughout the engagement process the message delivered by industry and stakeholders was the need to further develop and package existing experiences across Port Macquarie-Hastings to provide a diversity of contemporary experiences to attract visitors year-round. 	
	 5. The Caravan & Camping sector has been identified based on a focus taken by Destination North Coast, they recognise this as a growth market for the entire North Coast with potential for campaig activity. As a destination we are keen to show support. 6. This bullet point is about recognising the role of Council. 	

	7. Content an	nended to reflect feedback.
	engagement	nt on this page reflects feedback captured within the process which identified air links as a challenge and grow the visitor economy.
30.	opportunity to Janette Hyde - Greater Port Macquarie Tourism Association	 grow the visitor economy. 1 Comments provided by representatives of sub regions Camden Haven: "Page 11 of the draft DMP, highlights that Tourism is the 6th largest contributor to the region's economy, however, the Regional Development Australia's Economic Data app, identifies "Accommodation and food services" as the 2nd largest employment industry in the Camden Haven sub region. It is therefore understandable that Camden Haven stakeholders elevate the importance of tourism with respect to their future economic viability. Page 8 of the draft DMP also identifies that whilst the subregions have their own identities, they are not as well known. Accordingly, a specific action to assist with increasing awareness of the subregions should also be included in the marketing action plan. For clarity, the term LGA should follow all references to Greater Port Macquarie in the document. All references to "visitcamdenhaven" and TMC should be replaced with Camden Haven Chamber of Commerce. To avoid any potential for sub regions to infer that they are not a priority, suggest that the last sentence of the Easy Nature section on page 21 be replaced with the following; "Whilst it should be a priority to strengthen this drawcard experience, the sub regions should, at the same time, be encouraged and supported to further develop the Nature Based Experience concept to also encourage exploration, longer stays and repeat visitation". It is noted that the Draft DMP highlights (on more than a dozen occasions) the need to protect, enhance, elevate importance of values and apply best practice relating to our natural environmental assets, however, the document fails to provide any specific actions relating to this. In order to address this repeated requirement, and to best position stakeholder initiatives for potential funding support, suggest an additional action numbered 2.12 (page22) as follows;
		environment and sustainability values". Responsible parties should be Council and Stakeholders. Timeline should be ongoing.

Carr Marl Carr		Commerce su ourism rative - hamber of sby - Camden sm Marketing e - Camden nber of	s detailed under the Camden Haven Chamber of bmission following. Issue We would like to acknowledge the time and effort that has gone into development of this document and, overall, believe the resulting draft is a good outcome. Please see below comments and suggestions on the Draft DMP from the Camden Haven Tourism Marketing Co-operative (TMC), a subcommittee of the Camden Haven Chamber of Commerce (CHCC).
	Response/ Comment:	Noted thank y	
32.			The DMP title has changed from 'Greater Port Macquarie DMP' to 'Port Macquarie-Hastings DMP'. We recommend the name be amended to 'Port Macquarie-Hastings LGA DMP' to ensure Camden Haven residents and businesses are reflected in the title.
	Response/ Comment:	being a local fa period reflecte	t Macquarie-Hastings was initially suggested with this acing document. Feedback during the exhibition d a broader desire to use our adopted destination freater Port Macquarie'.
33.			All references to 'Visit Camden Haven' and 'TMC' to be removed and replaced with 'Camden Haven Chamber of Commerce (CHCC)'.
	Response/ Comment:	Noted. This has been	updated throughout the Plan.
34.		nber of	The draft DMP highlights the stakeholders' strong desire to showcase and protect our natural environment and quality of life, and for a sustainable tourism development approach to be taken. There was a suggestion that the mission statement in isolation, while it includes the word "sustainably" does not strongly reflect this stakeholder desire and a definition of sustainable tourism development might be helpful. Actions 1.6 and 1.9 relate to sustainability. Suggest a shorter time frame for 1.9.
	Response/ Comment:	the Plan. Dev sessions and i views and inpu is key to reflect	tourism planning approach is outlined on page 9 of eloped through discussion within engagement representative of broad industry and stakeholder ut. Council has reviewed timeframes and priorities, it tresourcing and capacity available to deliver projects. e for Action 1.9 has been updated to reflect feedback.

35.	35. Anna Battersby - Camden Haven Tourism Marketing Co-operative - Camden Haven Chamber of Commerce		It is noted that the Draft DMP highlights (on more than a dozen occasions) the need to protect, enhance, elevate importance of values and apply best practice relating to our natural environmental assets, however, the document fails to provide any specific actions relating to this. In order to address this repeated requirement, and to best position stakeholder initiatives for potential funding support, suggest an additional action numbered 2.12 (page 22) as follows: "Encourage and support stakeholder initiatives in identifying and developing opportunities to protect, enhance and showcase our natural assets, and elevate the importance of the area's natural environment and sustainability values". Responsible parties should be Council and Stakeholders. Timeline should be ongoing.
	Response/ Comment:		vledge the value of this inclusion and recognition . A new Action 2.12 has be added as suggested.
36.	Anna Battersby - Camden Haven Tourism Marketing Co-operative - Camden Haven Chamber of Commerce		Suggestion that the DMP is not aspirational enough and that we should be striving for more. There are few actions around the "strengthening appeal" part of the mission statement. Such as credentials and smart city technologies to bring the region up to speed and compete with other destinations.
	Response/ Comment:	provide ambiti destination inter response was existing produ drive repeat vi visitors and de	agement sessions, stakeholders were asked to ous ideas and an aspirational vision for the o the future, specifically 2024. Overwhelmingly the the need to focus on 'sharpening' and 'honing' ct and experiences. To increase yield in low season, sitation, grow dispersal. Increase yield, attract new evelop a clear competitive positioning. The Plan has ased on industry input.
37.	Anna Battersby - Camden Haven Tourism Marketing Co-operative - Camden Haven Chamber of Commerce		The mission states a desire to 'sustainably grow' and 'strengthen the appeal of the destination' and 'overcome seasonality', however there are no actions around using gap analysis to identify tourism product gaps or actions around plans on how to attract tourism operators to fill these gaps.
Response/ Comment: The Destination Audit and Arr conducted prior to the develor analysis. Stakeholder engage sharpen the region's points of promote tourism experiences economy. Specifically, the los support from tourism operation and promotion of tourism pro- opportunities to create disting The need for on-going indust operators was also considered the industry and its capacity		conducted price analysis. Stak sharpen the re- promote touris economy. Spe- support from to and promotion opportunities to The need for co- operators was the industry ar	on Audit and Analysis research and report (which was by to the development of the DMP) focused on gap scholder engagement clearly identified the need to agion's points of difference and further develop and an experiences to sustainably grow the local visitor ecifically, the local industry has a key role in fostering ourism operations in the development, enhancement of tourism product and experience development o create distinctive and satisfying visitor experiences. on-going industry development and support for also considered important to improve the maturity of nd its capacity to drive opportunities such as tourism experience development and packaging, and to

		address challenges to growth including overcoming seasonality and improving visitor satisfaction.	
38.	Anna Battersby - Camden Haven Tourism Marketing Co-operative - Camden Haven Chamber of Commerce		Action 1.1 is key to enabling the Council to deliver on the remainder of the actions, therefore suggest this action is reworded: "Council will integrate the DMP 2020 to 2024 into Council's Delivery Program and annual Operational Plans."
	Response/ Comment:	Action updated	d to reflect feedback.
39.		nber of	Action 1.8 needs to be expanded to include an action that reflects the last sentence – i.e. what is the action that will result in a better evidence-based understanding of occupancy?
	Response/ Comment:	consultants to tourism visitati encourage acc Australian Acc based underst improvements The responsib	ted Action 1.8 - Continue to engage tourism research provide detailed data for decision-making including on, visitation perceptions and satisfaction. And commodation operators to contribute data to the commodation Monitor to provide better evidence- anding of occupancy is also required to plan in seasonality and event timing. ility has also been updated to include the following TA, CHCC, PCC and WCC.
40.			 While the draft DMP acknowledges "sub-regions", including the Camden Haven, have unique identities and experiences to offer visitors, it also points out that the sub-regions are not well known and does not specify actions to collect sub-region specific data and develop sub-region specific branding and marketing. 1. We suggest action 1.8 be amended by deleting the last full stop in the first sentence and adding the words " and incorporate sub-region specific data". 2. We suggest action 4.2 be amended to include this phrase after the last word: " that also acknowledges the identities and promotes the sub-regions."
	Response/ Comment:	extensi whole r of sub 2. The ke clearly determ Counci area ar actions	rrent Visitor Profiling and Satisfaction Survey collects ive information on current and potential visitors to the region. This includes where they visited, recognition places and sub-regions. y challenge for the destination moving forward is to articulate its brand identity and story and then ine effective marketing strategies to guide the work of I and industry stakeholders to better showcase the nd its experiences to key visitor markets. These are is in the DMP and will be a consumer facing evidence cess, ultimately determining our identity and its
41.		sby - Camden sm Marketing	In addition, to avoid any potential of inferring that sub-regions are not a priority, suggest that the last

Ha	aven Cham ommerce	- Camden iber of Noted.	sentence of the Easy Nature section on page 21 be replace with the following: "Whilst it should be a priority to strengthen this drawcard experience, the sub-regions should, at the same time, be encouraged and supported to further develop the Nature Based Experience concept to also encourage exploration, longer stays and repeat visitation".
	esponse/ omment:	drawcard expe	was not to infer priority but rather to talk to hero and eriences and the process to encourage dispersal. een updated to reflect submission feedback.
Submis Anonym			Issue
42. Ar	nonymous	Noted. There a	Draft Destination Management Plan - Can you please keep my name confidential. It is far too wordy. If you want people to read it in their own free time, it needs to be more succinct and to the point. For instance in your Visitation and Trend Analysis - you have it all written. put graphs or at the least a table to show comparisons quickly. It does not need to be the longest plan. You are partly right - to attract more visitors you need something to differentiate (The Koala Hospital is the closest to this), but you also need to make sure nothing is missing. There are a lot of items missing in Port that other smaller towns have. ie Sea baths, a more economical way for caravaners/campers to stay -(not at the beaches like before, but somewhere. ie racecourse maybe like other towns do. With a time limit) If visitors do not stay along the coast and in the town centre you pretty much ignore them re footpaths and safe bike paths that actually join different areas. At present these are very piece meal for schools or don't exist. We need a Regional Visitor Centre at the donut. So many people must drive past with no idea what to see here. You need a way to attract more famous performers. ie Elton John went to Newcastle and Coffs, but not to Port, as do so many others. You have mentioned better signs, but you are talking about making the region better known with distinctive signage, when really people just want to know how far it is to say walk to the marina, or wherever from town green etc. There are some but not enough. I know this is included but we really need a way to get a proper airline to have direct Melb flights. So many people, us included drive to Newcastle or Coffs to fly to Melbourne. I wonder if the airlines have ever done reports to check this. It doesn't need to be daily. At least there is a direct Brisbane flight. Can you please keep my name confidential.
	esponse/ omment:		ered in future DMP implementation.

	Submission		Issue
43.	mission on Hill Motor Lodge Annette Zivkovic and Russ Dodson - Aston Hill Motor Lodge		I confirm that we have read through your report and see it as a well constructed and viable destination plan for Port Macquarie. Annette Zivkovic is the Lessee Owner of the Motel and I have remained to assist her in the operation of the motel business. Our motel is a boutique type motel designed for the mid-week corporate person offering high speed proven services and layout expected for this type of guest. Weekends are spasmatic to what is on in the district and we always go with the flow. An informative brochure is being prepared highlighting what Port Macquarie & District has to offer and it will be placed in the Information Centre's brochure rack. Your comprehensive report is much appreciated and we both agree from our experience in the Hospitality Industry and that we cannot add anything extra, except our support. We are both committed to increasing the presence you are aiming for and therefore offer our services at anytime to assist your team in its endeavours.
	Response/ Comment:	Noted, thank y	ou.
	mission et Dawson		Issue
44.	Janet Dawso Macquarie	on - Port	I am impressed by this plan, except for one serious omission. You do not address climate change. The serious bushfires we have experienced in our area over the past several months are exactly what climate scientists have been warning would happen. We have all suffered the health risks of a heavily polluted atmosphere, which is particularly harmful to babies, young children, and the elderly. Note, my husband is a frail 83. Peoples' homes were put at risk. Farmland was put at risk. Bushland was devastated, and our koala breeding stock is heavily compromised. Our economy was threatened through lack of tourist trade. Although we were no were near as badly affected as the south coast, who is to say that this might not happen if bushfires recur? Please, please, please rethink and recalibrate your future planning to seriously take note of the climate crisis we are experiencing.
	<i>Comment:</i> been included well as crisis p relate to assist education to b		feedback, amended and additional actions have that recognise climate change risks and impacts as reparedness (refer 1.11, 1.13, 1.14). These actions ting and supporting industry to access information and etter prepare their business and adopt more actices that will have a range of positive outcomes.

45.	Harry Creamer - Climate Change Hastings	Hello Jane and Kim, Janette and Claire (Cc members of our 'Council' group) – as foreshadowed in my earlier email, I now wish to ask for your agreement in relation to the draft Destination Management Plan ('the Plan'). I had some feedback from others in our Council climate change group, and we would like the opportunity to submit a general statement regarding climate change and tourism, which actually uses the words 'climate change', currently missing from the Plan.
		We acknowledge that the Plan was written before the most dramatic impacts of climate change on our region were experienced in the form of bushfires and smoke air pollution, and major concerns at the time over water security. However, impacts such as these have been known for a long time and any tourism plan for any Australian town needs to have at least some general statement recognising climate change as a significant potential risk factor for the tourism industry. Towns and communities depending on the Great Barrier Reef are the most dramatic example of a tourism industry at risk, but this does not exclude us here in the Hastings region from climate change impacts.
		If agreed, I would word the statement along the lines, 'The Plan recognises that climate change has the potential to impact tourism in major ways (give details). 'The Plan also sees positive brand potential coming from a destination and its council and community recognising climate change as an issue in the twenty-first century and is addressing it in ways such as joining the Cities Power Partnership program run by the Climate Council (which PMHC has done, also see PDF attached), declaring a climate emergency, and incorporating climate perspectives in all relevant decision-making. Visitors 'see' such things in a destination and respond positively.
		I will work up better wording, if given time, i.e. a few days. As you may know, our alliance of groups has been attending Council meetings since last September, talking at the public forum and to specific agenda items, about climate change impacts. One of us (Rachel Sheppard) addressed last week's Council meeting – https://www.portnews.com.au/story/6646306/council- takes-steps-to-acknowledge-changing- climate/?cs=12
		I included something she wrote about the Plan in my last email to you:

	The plan was produced before the climate emergency was brought into sharp relief by the fires and water shortages we are/were facing. The fires had direct and indirect effects on our economy, tourism, residents' health. Through no fault of the authors, by virtue of timing issues, the Destination Management Plan does not address the key risks to business, health and safety we will continue to face because of climate change. It also does not address the destination opportunities that would arise from Port Macquarie taking an active and strategic approach to fostering climate adaptation and climate change mitigation policies and industries. Addressing these risks and opportunities is critical.
	I note that our safe climate and clean energy group was not included in the consultation efforts that went into the Plan. This is a pity since we have been an active and high-profile group in our community since 2007 and climate change has been growing in importance as an issue all that time. Still, we adopt a 'no regrets' approach and would now welcome the chance to be included in the way I outline above. I look forward to hearing from you soon.
Response/ Comment:	In response to feedback, amended and additional actions have been included that recognise climate change risks and impacts as well as crisis preparedness (refer 1.11, 1.13, 1.14). These actions relate to assisting and supporting industry to access information and education to better prepare their business and adopt more sustainable practices that will have a range of positive outcomes.

4 Your Natural and Built Environment

What we are trying to achieve

A connected, sustainable, accessible community and environment that is protected now and into the future.

What the result will be

We will have:

- Effective management and maintenance of essential water, waste and sewer infrastructure
- A community that is prepared for natural events and climate change
- Sustainable and environmentally sensitive development outcomes that consider the impact on the natural environment
- Accessible transport network for our communities
- Infrastructure provision and maintenance that meets community expectations and needs
- Well planned communities that are linked to encourage and manage growth
- Accessible and protected waterways, foreshores, beaches and bushlands
- An environment that is protected and conserved for future generations
- Renewable energy options that are understood and accessible by the community

How we will get there

- 4.1 Provide (appropriate) infrastructure and services including water cycle management, waste management, and sewer management
- 4.2 Aim to minimise the impact of natural events and climate change, for example, floods, bushfires and coastal erosion
- 4.3 Facilitate development that is compatible with the natural and built environment
- 4.4 Plan for integrated transport systems that help people get around and link our communities
- 4.5 Plan for integrated and connected communities across the Port Macquarie-Hastings area
- 4.6 Restore and protect natural areas
- 4.7 Provide leadership in the development of renewable energy opportunities
- 4.8 Increase awareness of issues affecting our environment, including the preservation of flora and fauna



Subject:

Use of recycled water M20/664

From: MOH-EHB Sent: Thursday, 5 March 2020 12:01 PM To: Michael Mowle Subject: use of recycled water M20/664

Dear Mr Mowle

Thank you for your email to the Hon. Melinda Pavey MP, Minister for Water, Housing and Property, about the use of recycled water. As this matter is part of the Hon. Brad Hazzard MP's responsibilities as Minister for Health and Medical Research, your email was forwarded to him. Minister Hazzard has asked me to respond.

I appreciate your concern for the value of water, particularly during drought, and welcome the opportunity to provide information on the role of NSW Health in regulating drinking water.

NSW Health supports the use of recycled water for a range of beneficial purposes, provided that the health risks are adequately managed. Augmentation of a drinking water source with recycled water is technically feasible. However, augmentation would require careful consideration of the treatment of the recycled water taking into account a current assessment of sewage catchment risk including any emerging contaminants, and process reliability and uncertainty. Community acceptance and support is important for successful introduction of drinking water augmentation schemes, and effective community engagement is the best way to ensure such support.

The *Public Health Act* 2010 and the Public Health Regulation 2012 require drinking water suppliers to have and comply with a 'quality assurance program', referred to as a drinking water management system for local council water utilities. These requirements do not prohibit or mandate any specific source of water to be used for drinking.

The drinking water management system must address the Framework for Management of Drinking Water Quality set out in the *Australian Drinking Water Guidelines*. This requires risk assessment of the whole system from catchment to consumer, considering the likely hazards and identification of preventive measures appropriate to the source water risk.

The Australian Guidelines for Water Recycling: Managing Health and Environmental Risks -Augmentation of Drinking Water Supplies set out the preventive risk management approach for safely using recycled water for augmentation of drinking water supplies. These guidelines provide thorough guidance on the identification and management of public health, including microbiological, chemical and radiological hazards, and environmental risks. Comprehensive understanding of each sewage catchment, including

industrial inputs and trade waste, is necessary to inform the detailed human health risk assessment and treatment targets.

NSW Health understands that the Port Macquarie recycled water scheme was assessed and approved by the Department of Planning, Industry and Environment in accordance with the *Australian Guidelines for Water Recycling: Phase 1 Managing Health and Environmental Risks*. Supply of drinking water was not proposed or assessed as an end use for this scheme. The treatment at the Port Macquarie plant does produce recycled water suitable for a wide range of applications. This reduces demand on the potable supply through substitution and supports local industry during water restrictions.

Any proposed scheme using recycled water for drinking would need to be assessed in accordance with both the *Australian Guidelines for Water Recycling: Phase 2 Augmentation of Drinking Water* and the *Australian Drinking Water Guidelines*. Additionally, the construction or modification of water or sewage treatment works requires approval by the Minister for Water, Housing and Property under Section 60 of the *Local Government Act* 1993. The Section 60 approval provides an independent assessment of the proposed works to ensure they are fit for purpose and provide robust, safe, cost-effective and soundly based solutions that meet public health and environmental requirements.

Thank you again for writing to me. If you would like more information, please contact Greg McAvoy, Port Macquarie Public Health Unit on **Control of Control**.

Yours sincerely

Dr Richard Broome

Director | Environmental Health Branch, Health Protection NSW 100 Christie Street, St Leonards, New South Wales 2065 www.health.nsw.gov.au



>>> From: Michael Mowle Sent: Wednesday, 5 February 2020 12:32 PM To: ElectorateOffice Oxley Subject: FW: Reclaimed/Recylced Water

Melinda,

Thank you for your work on the increased use of recycled water and your governments focus on delivering \$5BN of water infrastructure projects over the next 5 years.

However, recent feedback from PMHC indicates that the impediment to full use of recycled water is current NSW Health regulations. See below email trail to Leslies' office.

As you may know the modern high tech water treatment plants can produce virtually pure H20 suitable for drinking and human consumption. For example the relatively new plant at Hindman Street, Port Macquarie is capable of producing 3.7ML of recycled water per day. This is suitable for drinking and human consumption so could be pumped back into the town dam nearby.

On the driest continent on earth, in the midst of the worst drought on record it makes no sense for us to waste such a precious resource. Many other cities/countries around the world successfully utilise recycled water and have done so for decades.

I am writing to you to ask that yourself & the NSW Nationals enable legislation for revised Health Regulations that allow for the full use of recycled water where suitable technology & infrastructure is in place.

Regards

Michael Mowle B. Eng (Civil) Hons U Syd MIEAust Chartered Civil Engineer Managing Director



19 February 2020 Job No. 4671

The General Manager Port Macquarie Hastings Council Corner Lord and Burrawan Street PORT MACQUARIE NSW 2444

Attention: Leanne Fuller

Dear Leanne,

Re: Planning Proposal – Crestwood Drive, Port Macquarie - Site Specific Planning Proposal - B1 Neighbourhood Centre

I refer to Council's latest letter dated 10 December 2020 regarding the Site Specific Planning Proposal for Part Lot 500 DP 1237901, Crestwood Drive, Port Macquarie which proposed rezoning to B2 Local Centre. Thank you for Council's time to meet to discuss the issues.

Council's letter states:

"As discussed at the meeting, Council staff are not supportive of a "commercial/business" zoning of the site generally for the reasons outlined in our letter of 20 November 2019, and having regard to the commercial centres hierarchy in the UGMS.

A pathway for a potential future zoning of the land has been offered in Council's correspondence (E3 Environmental Management), or potentially an RE2 Private Recreation zone as also discussed at the meeting. Please note the significant bushfire issues a commercial zoning of any type would encounter, due to the enabling of residential uses in either a B1 Neighbourhood Centre or B2 Local Centre zone."

We have amended our Planning Proposal request to seek a commercial zoning over the entire site to B1 Neighbourhood Centre.

We have taken on board the discussion and the issues outlined above and am aware of the key principal issue with the previously proposed residential zone, and the current proposed business zone, relates to bushfire. It is clear from the discussions with Council's Bushfire Officer that residential use of the land cannot be achieved due to bushfire constraints. Therefore, allowing a residential land use in the B1 zone such as shop top housing would not be able to be achieved due to bushfire constraints, despite the zoning.

Whilst bushfire would prevent specific land uses at the Development Application stage when a full assessment of a specific land use is known and able to be undertaken, the landowner is proposing to be proactive and place a



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restriction on the title which prohibits residential use of the site. Council would be the responsible authority to control any variation to this restriction, which is not anticipated to occur.

There is local support and community pressure from the local Crestwood community group for commercial / retail uses adjacent to the park. Business use of this land would not only benefit the local resident's of Crestwood but further afield to nearby estates such as Dahlsford, as well as the wider community who are users of the Googik Track. The proposed zoning will improve the liveability of the Crestwood estate and overall health of the residents.

We respectfully note Council's suggestions for E3 Environmental Management or RE2 Private Recreation zones, however they are very restrictive and do not allow for the community demand in this area to be satisfied.

Council also raised a concern regarding the impacts upon the Retail / Commercial hierarchy of the wider area, however we have addressed this within the Initial Business Demand Supply Review, which clearly identifies a gap and that no new centres in this southern Lighthouse / Dahlsford / Emerald portion of Port Macquarie has been developed for some time and is overdue.

The landowner has continuously indicated a desire to create a café and similar commercial or retail uses which have a wider for community benefit. The provision of amenities and drinking water facilities for the park and Googik Track encourage physical and social activities, enhances the park and provides greater interaction of the wider community, in addition to servicing the residents of Crestwood. The B1 zoning will allow for a small commercial / retail community hub, with both local and broader benefits.

As indicated previously to Council, development of this isolated rural parcel of land in accordance with the existing zoning is unlikely to result in an outcome incompatible with the surrounding residential estate and undesirable for the residents. Alternatively, remaining in its current state is also undesirable.

The landowner is also keen to explore opportunities within the commercial use of the land to incorporate clean energy initiatives, for example installation of solar panels to feed power straight into grid, which will have additional community and environmental benefits.

There is an increasing community support from the residents of Crestwood, which is intensifying as the estate is expanding. There has been for many years previous Council officer support (which resulted in the request by Council to lodge the Planning Proposal) and current and previous elected Councillors for a low scale business centre with facilities for the local community to assist with their day-to-day needs, provide a social meeting space through cafes, amenities including drinking fountains and toilets and shade areas.

This parcel of land is residue and has the opportunity to be the central hub of the estate. The rural zoning of the site is unsuitable and there is need for a suitable infill development which has a benefit to the landowner and the community, rather than leaving an overgrown residue piece of land in a prominent location, frequented by not only residents by visitors to the area.



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Whilst the zoning being sought is for business purposes, the commercial businesses that are likely to be provided on this land will comprise uses such as cafes, restaurants, doctors, convenience store and the like. These all contribute to bringing the community together through these land uses and have far wider positive social impacts for the local and broader community.

There is a strong ownership by the community of the playground and this would be extended to the business facilities. It is anticipated this land would benefit the community, as originally anticipated in the development consent for a larger park and drainage. There would be a boost to the local economy, as well as the tourist sector, given the connections to residential areas and the Googik Track, which is promoted wider in the region, as well as state-wide through NPWS and NSW tourism.

The development of the land would be easily translatable into the development assessment process once rezoning to B1 occurs given the extensive bushfire investigations and fill works already undertaken.

We now make a further submission of a Planning Proposal for B1 Neighbourhood Centre and associated Appendices, which address the legislative requirements, the Pre-lodgement meeting minutes, and Council's letter dated 10 December 2020. We welcome the opportunity to discuss further and look forward to the Planning Proposal being reported to Council and proceeding to the Department of Planning for Gateway determination.

Yours faithfully

le Sures

Graham Burns Director – Land Dynamics Australia

Attachments: B1 Planning Proposal & Appendices 1 to 8



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PLANNING PROPOSAL

Rezoning of RU1 Primary Production land to Zone B1 Neighbourhood Centre

Part Lot 500 DP 1237901 Crestwood Drive, Port Macquarie

> On behalf of Tony Richmond

February 2020

ORDINARY COUNCIL 20/05/2020

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Planning Proposal for Rezoning to B1 Neighbourhood Centre Part Lot 500 DP 1237901, Crestwood Drive, Port Macquarie

Prepared for:

Tony Richmond

Prepared By:

Land Dynamics Australia

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	Name	Date
Prepared By	Donna Clarke	19/2/2020
Checked By	Graham Burns	19/2/2020

Disclaimer

This report was prepared in accordance with the scope of works set out in correspondence between the client and Land Dynamics Australia. To the best of Land Dynamics Australia's knowledge, the report presented herein accurately reflects the Client's intentions when the report was printed. However, it is recognised that conditions of approval at time of consent, post development application modification of the proposals design, and the influence of unanticipated future events may modify the outcomes described in this report.

Land Dynamics Australia used information and documentation provided by external persons, companies and authority. Whilst checks were completed by Land Dynamics Australia to ensure that this information and/or documentation was accurate, it has been taken on good faith and has not been independently verified. It is therefore advised that all information and conclusions presented in this report apply to the subject land at the time of assessment, and the subject proposal only.

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PRELIMINARY

This Planning Proposal has been drafted in accordance with Section 3.33 of the Environmental Planning and Assessment Act 1979 and the Department of Planning and Environment's "A Guide to Preparing Planning Proposals" dated August 2016.

This Planning Proposal seeks rezoning of residue land from the Crestwood residential estate from RU1 Primary Production zone use to B1 Neighbourhood Centre zone to develop a variety of business and commercial uses which complement the surround residential land uses. There is an increasing community support from the residents of Crestwood, which is intensifying as the estate is expanding. There has been for many years previous Council officer support (which resulted in the request by Council to lodge the Planning Proposal) and current and previous elected Councillors for rezoning which would include a low scale business centre with facilities for the local community to assist with their day-to-day needs, provide a social meeting space through cafes, amenities including drinking fountains and toilets and shade areas.

This parcel of land is residue and has the opportunity to be the central hub of the estate. The rural zoning of the site is unsuitable and there is need for a suitable infill development which has a benefit to the landowner and the community, rather than leaving an overgrown residue piece of land in a prominent location, frequented by not only residents but also by visitors to the area. Rezoning to residential land uses has been ruled out due to bushfire constraints.

Whilst the zoning being sought is for business purposes, the commercial businesses that are likely to be provided on this land will comprise uses such as cafes, restaurants, doctors, convenience store and the like. These all contribute to bringing the community together through these land uses and have far wider positive social impacts for the local and broader community. There is a strong ownership by the community of the playground and this would be extended to the business facilities. It is anticipated this land would benefit the community, as originally anticipated in the development consent for a larger park and drainage. There would be a boost to the local economy, as well as the tourist sector, given the connections to residential areas and the Googik Track, which is promoted wider in the region, as well as state wide through NPWS and NSW tourism.

The development of the land would be easily translatable into the development assessment process once rezoning to B1 occurs given the extensive bushfire investigations and fill works already undertaken.

BACKGROUND

Council has granted consent to a number of Development Applications for residential subdivision purposes in the 1990s through to 2010 and included a playground over a larger area which included the subject site. Refer to extract below in Figure 2 which indicates the larger area for park approved by Council.

On 15 March 2017, Council resolved to invite a Planning Proposal for a site-specific amendment on the subject site to facilitate a rezoning of 5,390m² of land in the Crestwood Estate and amend the Port Macquarie-Hastings LEP 2011 to R1 General Residential to permit future development. Below in Figure 1 is an extract of the Council report on the matter, noting that the Planning Proposal as lodged was for residential.

Prior to this resolution and invitation from Council, there has been for many years previous Council officer support and current and previous elected Councillors for a low scale business centre with facilities for the local community to assist with their day-to-day needs, provide a social meeting space through cafes, amenities including drinking fountains and toilets and shade areas. This parcel of land is residue from the wider residential subdivision and the rural zoning of the site is unsuitable and there is need for a suitable infill development which has a benefit to the





landowner and the community, rather than leaving an overgrown residue piece of land in a prominent location, frequented by not only residents by visitors to the area.

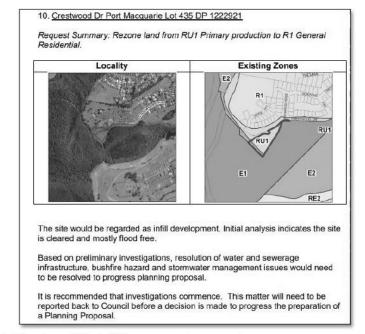


Figure 1 - Extract of Council report 15 March 2017(source: www.pmhc.nsw.gov.au)

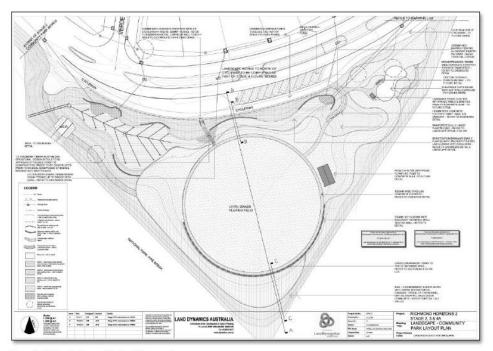


Figure 2 - Extract - Larger Park as Approved

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Walking / cycling tracks have been encouraged throughout the residential areas via on street pathways and shareways, as well as the Googik Track. The proposed rezoning will enhance these facilities and provide facilities at the destination, rather than just a standalone playground. This previous planning for walkability, cycling and public transport will have less impacts upon the local road network, as well as environmental benefits from reducing car expectancy for day to day needs such as milk, bread or to catch up with friends and associated positive address of climate change.

It is anticipated this land would benefit the community, as originally anticipated in the development consent for a larger park and drainage. Council scaled down the size of the park being provided as part of the subdivision, however continued on with pursuing connectivity, social and exercise benefits for the community, and at that time were encouraging the developer to establish community based businesses with discussions around a café/bakery containing NPWS & Council information centres (not manned by staff but posters /stories/fauna /flora info).Further, NPWS at the time had plans for Googik Track extension trails and negotiated with Emerald Downs for access to continue on from Crestwood. It would be a significant loss for the community for all of this planning and foresight to be lost and for the vision not to be realised. This B1 zoning would allow this to be facilitated and address community desires and continue this vision. The strategic vision for the site with respect to the needs of the local population and the wider community needs to be considered in this instance in order to avoid a residue parcel of land remaining in a derelict state.

On 6 June 2017, Council held a pre-lodgement meeting to discuss a planning proposal. Investigations have continued since the pre-lodgement meeting to address the comments discussed at the meeting and prepare this Planning Proposal report.

Following on from the pre-lodgement meeting, on-going discussions, including a site inspection, were held with National Parks & Wildlife Services regarding the previous informal agreements regarding a fire trail on their adjoining land and options for formalizing the trail on title. At the end of the discussions over a period of many months, it was agreed that all bushfire requirements must be contained on site, notwithstanding that the fire trail on the ground on the adjoining land and that it is likely to continue. A formal written agreement could not be reached with NPWS for continued maintenance and formalization of the fire trail.

An onsite meeting was also held with a representative from the Birpai Land Council, who raised no objection to the development of the land.

Since the request in March 2017, the zoning map for this immediate area has changed and the lot has been altered as result of the nearby development and dedication of land to Council for the park, resulting in the portion of land available for rezoning being reduced to approximately 5,027m².

On 14 November 2018, a site-specific Planning Proposal was lodged as invited by Council. The Planning Proposal was for a rezoning of RU1 Primary Production land to R1 General Residential.

Council's response letter of 14 March 2019 advised Council would not support a recommendation to proceed with the preparation of a Planning Proposal to rezone the land for residential purposes, primarily related to bushfire issues. Meetings were held with Council Officers on 16 April 2019 and 18 June 2019 to discuss the issues, identifying the key concern being related to bushfire measures and the ability to accommodate the requirement asset protection zones on site without any reliance on the adjacent Council playground or the National Park reserves. It was clear from the discussions that residential use of the land cannot be achieved due to bushfire constraints. As indicated at the meeting, development of this isolated rural parcel of land in accordance with the existing zoning is unlikely to result in an outcome incompatible with the surrounding residential estate and undesirable for the residents. Alternatively, remaining in its current state is also undesirable.





The issues raised by Council in their letter and discussed at the meeting were taken on board and the Planning Proposal was amended to request to seek a B2 Local Centre commercial zoning over the entire site, given that this form of development does not require bushfire restrictions to the same extent as residential land uses.

Council's latest letter dated 10 December 2019 regarding proposed rezoning to B2 Local Centre states:

"As discussed at the meeting, Council staff are not supportive of a "commercial/business" zoning of the site generally for the reasons outlined in our letter of 20 November 2019, and having regard to the commercial centres hierarchy in the UGMS.

A pathway for a potential future zoning of the land has been offered in Council's correspondence (E3 Environmental Management), or potentially an RE2 Private Recreation zone as also discussed at the meeting. Please note the significant bushfire issues a commercial zoning of any type would encounter, due to the enabling of residential uses in either a B1 Neighbourhood Centre or B2 Local Centre zone."

The Planning Proposal has been amended to request to seek a commercial zoning over the entire site to B1 Neighbourhood Centre. The issues outlined above and subsequent discussions with Council have been taken on board including the key principal issue with the previously proposed residential zone, and the current proposed business zone, relates to bushfire. It is clear from the discussions with Council's Bushfire Officer that residential use of the land cannot be achieved due to bushfire constraints. Therefore, allowing a residential land use in the zone such as shop top housing would not be able to be achieved due to bushfire constraints, despite the zoning. Whilst bushfire would prevent specific land uses at the Development Application stage when a full assessment of a specific land use is known and able to be undertaken, the landowner is proposing to be proactive and place a restriction on the title which prohibits residential use of the site. Council would be the responsible authority to control any variation to this restriction, which is not anticipated to occur.

There is local support and community pressure from the local Crestwood community group for commercial / retail uses adjacent to the park. Business use of this land would not only benefit the local residents of Crestwood but further afield to nearby estates such as Dahlsford estate, as well as the wider community who are users of the Googik Track.

We respectfully note Council's suggestions for E3 Environmental Management or RE2 Private Recreation zones, however they are very restrictive and do not allow for the community demand in this area to be satisfied. Council also raised a concern regarding the impacts upon the Retail / Commercial hierarchy of the wider area, however we have addressed this within the Initial Business Demand Supply Review, which clearly identifies a gap and that no new centres in this southern Lighthouse / Dahlsford / Emerald portion of Port Macquarie has been developed for some time and is overdue.

It is envisaged that once Gateway determination is achieved for the rezoning, detailed design will begin, and a Development Application prepared, which will run concurrently with the rezoning and allow Council to have greater detail.

EXECUTIVE SUMMARY

The proposal seeks to rezone the privately owned land known as Part Lot 500 DP 1237901, Crestwood Drive, Port Macquarie from its current RU1 Primary Production zone use to B1 Neighbourhood Centre zone to develop a variety of commercial uses. Rezoning the land is considered the most suitable and transparent way of achieving the objectives of this proposal.

The purpose of this Planning Proposal is to rezone residue land resulting from the original subdivision to allow for commercial use. This land was surplus to Council's needs for a park and use for commercial purposes is





complimentary with the surrounding residential subdivisions. Further, the rural use of the land is incompatible with the surround residential estate and proposed playground.

The rezoning or addition of a clause to allow commercial uses is also sought, which may include Business premises, Community facilities; Medical centres; Neighbourhood shops and Neighbourhood supermarkets. This will provide for a valuable facility for use by the surrounding residential and wider community.

It is proposed that the height and floor space controls be increased from those surrounding as the site is unique in its shape, not adjoined directly adjoined by residential due to the wide road and detention basin, and in order to accommodate development of the site and incorporate the required commercial bushfire controls on site.

Indicative building envelope plan has been developed to assist in consideration of the Planning Proposal.

PRE-LODGEMENT

As a result of the pre-lodgement meeting held 14 November 2018 and a preliminary staff assessment of the prelodgement information, Council provided information to assist in relation to preparation of this submission. The formal notes accompany this submission and below is a summary of the main points raised at the pre-lodgement meeting and the information that is to be addressed, noting that some components relate to the level of detail required for a Development Application, which is proposed to be lodged concurrently with the rezoning post Gateway determination. The notes indicate "your application should contain enough information to ensure Council support for submission of a planning proposal to the Department of Planning for a Gateway Determination".

- Planning Proposal submission to address North Coast Regional Plan and Port Macquarie-Hastings Urban Growth Management Strategy.
- Bushfire.
- Stormwater and Hydrology.
- Flooding.
- Aboriginal Cultural Assessment.
- Public Open Space interface to park and National Park.
- Services Plan (sewer, water).
- Engineering, access, waste and floor levels for future development.

This Planning Proposal has provided the information where possible, however further detail will accompany the Development Application.

The above documentation and comments at the Pre-lodgement meeting remain applicable for the commercial zoning now proposed. In now considering a commercial zoning of the site, an indicative building, access and car parking layout was developed, providing adequate bushfire setbacks to ensure the site is suitable in size to accommodate a commercial use.





PART 1 – OBJECTIVES OR INTENDED OUTCOMES

This Planning Proposal aims to amend LEP 2011 to permit a Neighbourhood Centre to be located on the eastern portion of the site known as Crestwood Triangle land.

The key objectives of this Planning Proposal is to:

- Achieve business development of the site, complementary to the surrounding area and land uses, whilst
 having regard to the irregular shape and constraints of the site.
- Enable the residue rurally zoned land, which is not required by Council for open space purposes, to be
 developed for commercial purposes, specifically a Neighbourhood Centre to complement the residential
 estate of Crestwood and provide supporting services for the residents such as a café, restaurant, doctor
 and neighbourhood shops.
- To promote the health and wellbeing of the community.

The location of the subject site is shown in Figure 3 indicated by the red star and comprises the southern part of Lot 500. The aerial photograph identifies the site and surrounds.



Figure 3 - Aerial Photograph of the Site (source: www.nearmaps.com)

The site is a residue allotment resulting from an approved staged subdivision known as Crestwood Heights, as shown below. The whole site was to be dedicated to Council as open space, however Council advised the total site was not required. Accordingly, this planning proposal is seeking re-zoning to allow for future commercial development of the remaining portion of land. The existing rural zoning of the land is incompatible with the surround residential estate and proposed playground and as such the proposed rezoning will provide for more appropriate and complimentary land uses. The lot previously had a detention basin through the north-eastern portion, adjacent to Crestwood Drive, which has now been dedicated to Council.





Planning Proposal for Rezoning to B1 Neighbourhood Centre Part Lot 500 DP 1237901, Crestwood Drive, Port Macquarie

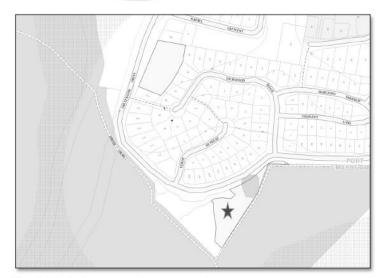


Figure 4 - Site Plan (source: www.sixmaps.nsw.gov.au)

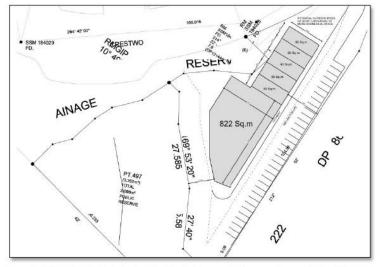


Figure 5- CONCEPT ONLY - Indicative Site Plan for Commercial Purposes (source: Collins W Collins)

The indicative Site Plan shown above in Figure 5 illustrates a building envelope for a potential commercial development and associated parking and that this can be satisfied on the site. It is noted the Planning Proposal for a rezoning is applicable to the entire site, not just the building envelope. This is a concept only and could take many alternate forms in accordance with the B1 zoning.

This parcel of land is residue and has the opportunity to be the central hub of the estate. The rural zoning of the site is unsuitable and there is need for a suitable infill development which has a benefit to the landowner and the community, rather than leaving an overgrown residue piece of land in a prominent location, frequented by not only residents by visitors to the area.

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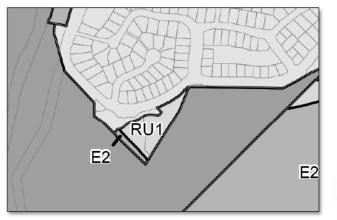
PART 2 - EXPLANATION OF PROVISIONS

To facilitate commercial development on the land, the following amendments to the Port Macquarie Local Environment Plan (LEP) 2011 are proposed with the outcomes to be achieved by:

- Amending the Port Macquarie Hastings Local Environmental Plan 2011 Land Zoning Map 13G on the residue allotment on Part Lot 500 DP 1237901, Crestwood Drive, Port Macquarie in accordance with the proposed zoning map shown in Appendix 1 to B1 Neighbourhood Centre.
- Amending the Port Macquarie Hastings Local Environmental Plan 2011 Floor Space Ratio Map in accordance with the proposed floor space ratio map, to indicate a maximum permissible floor space ratio of 1.5:1.
- Amending the Port Macquarie Hastings Local Environmental Plan 2011 Height of Buildings Map in accordance with the proposed height of buildings map, to indicate a maximum permissible height of 11.5m.

Existing Situation

Under Council's principle planning instrument, *Port Macquarie-Hastings Local Environmental Plan 2011* (LEP 2011), the subject site (Part Lot 500 DP 1237901, Crestwood Drive, Port Macquarie) is zoned RU1 Primary Production with a minimum subdivision lot size of 40 hectares. This zoning reflects the previous rural use of the wider area before residential rezoning and development and is no longer the appropriate zone.



 R1
 General Residential ¶

 E2
 Environmental Conservation

 E3
 Environmental Management ¶

 RU1
 Primary Production ¶

Figure 6 - Existing Zoning Extract from PMHLEP 2011 (source: www.legislation.nsw.gov.au)

The maps accompanying the current LEP also identify the site as being affected by flooding and acid sulphate soils. Note: the flooding affection is questionable given the filling of the site that has occurred on site.

The site currently does not have floor space ratio or height controls applicable. The residential land surrounding has a maximum FSR of 0.65:1 and 8.5m in height.

The site is within the vicinity of an archaeological site to the west, being Lake Innes Ruins Nature Reserve, as detailed on the heritage map.





Proposed Zone Changes

The existing zoning for rural purposes was acceptable when the land was proposed to be dedicated to Council for open spaces purposes. Subsequently Council has advised they do not wish to be burdened with the entire site and as such a residue parcel has resulted and the invitation for the site specific rezoning was forthcoming. The site at the time of the request by Council has an area of 5390m², and now approximately 5027m², which is well below the minimum lot size for the RU1 zone.

Given that this portion of land is surplus to Council's needs, the rezoning to B1 Neighbourhood Centre will allow for services to complement the existing residential area such as Food and Drink premises; Business premises; Community facilities; Medical centres; Neighbourhood shops; Neighbourhood supermarkets.

The relevant portion is highlighted below on the existing zoning map is the section requesting a map change.

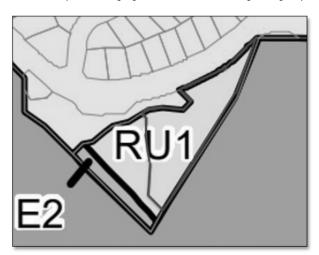


Figure 7 - Part of Lot 500 subject of Planning Proposal Highlighted red

The B1 Neighbourhood Centre zoning table states:

Zone B1 Neighbourhood Centre

1 Objectives of zone

• To provide a range of small-scale retail, business and community uses that serve the needs of people who live or work in the surrounding neighbourhood.

 To ensure that new developments make a positive contribution to the streetscape and contribute to a safe public environment.

· To provide a focal point for the neighbourhood community.

2 Permitted without consent

Home occupations

3 Permitted with consent

Boarding houses; Business premises; Centre-based child care facilities; Community facilities; Medical centres; Neighbourhood shops; Neighbourhood supermarkets; Oyster aquaculture; Respite day care

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centres; Roads; Shop top housing; Tank-based aquaculture; Any other development not specified in item 2 or 4

4 Prohibited

Agriculture; Air transport facilities; Airstrips; Animal boarding or training establishments; Boat building and repair facilities; Camping grounds; Caravan parks; Cemeteries; Correctional centres; Crematoria; Ecotourist facilities; Electricity generating works; Entertainment facilities; Exhibition homes; Exhibition villages; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Garden centres; Hardware and building supplies; Health services facilities; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Landscaping material supplies; Marinas; Mooring pens; Mortuaries; Open cut mining; Plant nurseries; Pond-based aquaculture Port facilities; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Sewerage systems; Sex services premises; Specialised retail premises; Storage premises; Timber yards; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Vehicle sales or hire premises; Warehouse or distribution centres; Waste or resource management facilities; Wharf or boating facilities; Wholesale supplies

It has always been envisaged that a low scale form of retail or commercial premises would support the residential area of Crestwood, as well as the playground, and the users of the Googik Track.

The proposed B1 zoning allows for a variety of land uses which would complement the residential land uses nearby, as has been achieved by way of other local and neighbourhood centres such as Watonga and Waniora Shops.

PART 3 – JUSTIFICATION

The site is currently vacant cleared land. The location of the site is adjacent to a recently constructed park being provided as part of the approved subdivision, road and residential dwellings to the north and existing dense vegetation which forms part of the Lake Innes Ruins Nature Reserve and contains the Googik Track.

Whilst the zoning being sought is for business purposes, the commercial businesses that are likely to be provided on this land will comprise uses such as cafes, restaurants, doctors, convenience store and the like. These all contribute to bringing the community together through these land uses and have far wider positive social impacts for the local and broader community.

To promote the health and wellbeing of a community, it is important to provide and promote walkability, public transport, public open space, housing affordability, employment, and food premises. Liveability is defined as:

'A liveable community is one in which it is easy and comfortable to carry out day-to-day life, for a range of different people. It should be 'safe, attractive, socially cohesive and inclusive, and environmentally sustainable; with affordable and diverse housing linked by convenient public transport, walking and cycling infrastructure to employment, education, public open space, local shops, health and community services, and leisure and cultural opportunities'.

(source: Lowe, M, Whitzman, C, Badland, H, Davern, M, Aye, L & Hes, D 2015, 'Planning healthy, liveable and sustainable cities: How can indicators inform policy?', Urban Policy and Research, vol. 33, no. 2, pp. 131–44)

Creating Liveable Cities in Australia by Centre for Urban Research RMIT University, 2017 states:





'Liveable communities are good for the economy, social inclusion and environmental sustainability, and promote the health and wellbeing of residents. They have affordable housing linked by public transport, walking and cycling paths to workplaces, public open space and all the amenities required for daily living.'

Walking and cycling tracks have been encouraged throughout the residential areas via on street pathways and shareways, as well as the Googik Track. The proposed rezoning will enhance these facilities and provide facilities at the destination, rather than just a standalone playground. This previous planning for walkability, cycling and public transport will have less impacts upon the local road network, as well as environmental benefits from reducing car expectancy for day to day needs such as milk, bread or to catch up with friends and associated positive address of climate change.

There is a strong ownership by the community of the playground and this would be extended to the business facilities. It is anticipated this land would benefit the community, as originally anticipated in the development consent for a larger park and drainage. Council scaled down the size of the park being provided as part of the subdivision, however continued on with pursuing connectivity, social and exercise benefits for the community, and at that time were encouraging the developer to establish community based businesses with discussions around a café/bakery containing NPWS & Council information centres (not manned by staff but posters /stories/fauna /flora info). Further, NPWS at the time had plans for Googik Track extension trails and negotiated with Emerald Downs for access to continue on from Crestwood. It would be a significant loss for the community for all of this planning and foresight to be lost and for the vision not to be realised. This B1 zoning would allow this to be facilitated and address community desires and continue this vision. The strategic vision for the site with respect to the needs of the local population and the wider community needs to be considered in this instance in order to avoid a residue parcel of land remaining in a derelict state.

There would be a boost to the local economy, as well as the tourist sector, given the connections to residential areas and the Googik Track, which is promoted wider in the region, as well as state wide through NPWS and NSW tourism.

The development of the land would be easily translatable into the development assessment process once rezoning to B1 occurs given the extensive bushfire investigations and fill works already undertaken.

The additional reasons to support this request are:

- The site as a whole is not viable as rural land in its own right and is residue portion following the creation of the Crestwood estate. As such, the site is ideal for further rezoning as it will not result in loss of prime agricultural land, but rather allow for business purposes and neighbourhood conveniences and a safer and more logical use of the land.
- The site is a residue portion of land, distinctly separate to the residential and surrounded by a road, park and National Park.
- The land has been filled to above the flood planning level, which will make the land suitable for development and also mitigate acid sulfate soils.
- The potential amenity impacts relate to the residential dwellings constructed (or under construction) to the north, however there is separation by a wide road with a central landscaped median and drainage basin, which assists in reducing potential impacts.
- There will be positive social and economic benefits from the proposed rezoning, by way of a facility
 which is likely to be well utilised and in much need for residents in Crestwood estate, as well as users

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of the Googik Track and playground, with toilets and a café/kiosk likely. The economic boost to the local economy is provided by the commercial precinct and all areas of the community which are involved in construction, selling / leasing and on-going operation of businesses. The commercial site will be desirable being in proximity to the proposed open space, Googik Track and Nature Reserve and the proposed commercial / retail component to service the residential area and users of the playground.

- The immediate area features a range of lot sizes which are characteristic of a residential locality. The intended future Neighbourhood Centre rezoning will create commercial premises.
- The site is located within an established residential area with numerous small sized allotments. The future development of a Neighbourhood Centre would not affect the amenity of surrounding land uses. Moreover, the rezoning would permit a greater diversity on the land.
- The area is an established and well serviced residential location. Demand for commercial land in both Port Macquarie and the LGA is high, hence the identification of this land for rezoning. There is a clearly identified need for local conveniences for residents in Crestwood and other nearby estates.
- The future rezoning is essential for the ongoing management of the subject land, with the rural
 rezoning unviable and the site rendered unusable, noting that a dwelling is currently unable to be
 built on the site. The existing rural zoning of the land is incompatible with the surround residential
 estate and proposed playground and as such the proposed rezoning will provide for more appropriate
 and complimentary land uses.
- No removal of existing vegetation is proposed or necessary in order to facilitate the future rezoning.
- The proposal is complementary to the surrounding zoning.
- The proposed rezoning would offer increased overall viability of the parcel by improving manageability of the land.
- The site has access to permanent water supply and services deeming is suitable for rezoning to commercial.
- The site has been set up for development, with a basin in place and filling already occurred.
- The bushfire constraints for businesses uses can be accommodated on site.
- There will be positive social and economic benefits from the proposed rezoning, by way of small scale commercial and retail component.
- The proposed rezoning is a logical extension of the existing residential, providing orderly development.
- The provision of commercial and retail uses as additional permitted uses would allow for flexibility in
 the design of the built form on the site and provide opportunity for the zone objectives to be satisfied
 by way of other land uses being incorporated that provide facilities or services to meet the day to day
 needs of residents, as well as those visiting the park.
- Promote renewal opportunity that have good accessibility and proximity to social infrastructure.
- Encourage infill development in and around local areas with existing sufficient infrastructure to support growth.

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There is a need to consider community aspirations for commercial versatility, therefore being
responsive to shifts in local markets for infill developments and/or unexpected population growth.
Rezoning this site, considering its location, has the potential to promoting healthy active lifestyles
and sustainable land use. This is additionally a big factor in the proposal which adjoins the National
Park, Googik Track and within proximity to the beach, parkland for use by the new residents.

Section A - Need for the Planning Proposal

3.1 Is the planning proposal a result of an endorsed local strategic planning statement, strategic study or report?

Yes. The Planning Proposal is not the result of a strategic study or report. The Planning Proposal is in response to zoning that is inconsistent with the current and future use of the site. The Planning Proposal seeks to rezone the site from RU1 Primary Production to B1 Neighbourhood Centre to allow commercial and business development on the site.

3.2 Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Yes. The planning proposal is the only legal method of amending LEP 2011 to permit development applications to be submitted, considered and determined for a change of use of the site. The site is constrained by its shape, as well as bushfire requirements, and as such the proposed height and FSR controls are reflective of the need to think outside the square in determining the controls for this site.

Section B - Relationship to strategic planning framework

3.3 Will the planning proposal give effect to the objectives and actions of the applicable regional, or district plan or strategy (including any exhibited draft plans or strategies)?

The North Coast Regional Plan 2036 identifies that the greatest population growth pressure will be experienced around the regional cities like Tweed Heads, Coffs Harbour and Port Macquarie. As such bringing greater opportunities for commercial choice to meet the growing and changing population.

The Regional Plan indicates that new commercial precincts, outside of centres, should be appropriately sized and of scale relative to the area they will be servicing, and demonstrate how they will deliver positive social and economic benefits for the wider community and maintain the strength of the regional economy.

The proposed neighbourhood centre is small in scale, appropriate for the residential estate of Crestwood. These residents have no other neighbour centre within walking distance, or close by. The closest facilities are Lighthouse Coles and specialty shops, which is a larger centre and approx. 2.5km by car. There is a strong demand from the existing and future residents, as well as the users of the playground and Googik Track for this low scale neighbourhood centre.

The site is accessed via existing infrastructure via walking, private vehicle, bus services and bicycles, or a combination. The connectivity of the site cannot be ignored.

An important benefit of the rezoning of the land is that the value of the public realm will be enhanced significantly and the uses will complement the playground and Googik Track, allows for an appropriate interface through design and significantly improves the streetscape and view of the site from the public road, playground and dwellings.





Given the forecasted growth for the region and the increase in population continuing to arrive in Crestwood, there is a clear need to provide additional local commercial or retail services for their day to day needs, as well as providing employment opportunities.

An appropriate supply of employment land will be identified through local growth management strategies in locations that are supported by freight access and protected from encroachment by incompatible development.

The Strategy encourages accommodation of coastal growth whilst protecting coastal values and locating within an existing main settlement. In doing so, the site is considered suitable for residential purposes, with a small component of commercial zoned land to accommodate the information centre, for the following reasons:

- The site can be easily serviced as part of the approved overall subdivision.
- Notwithstanding the zoning, there will be no loss of agricultural land as it is a residue pocket of RU1 land which cannot be utilised for such purpose.
- The adjoining Nature Reserve with high ecological and heritage values is unlikely to be impacted upon
 as all works will be contained within the site.
- The site will not be constrained subject to fill which will mitigate flooding and acid sulfate soils.
- The site is located within the settlement of Port Macquarie, providing good services and facilities for the future residents.
- The small commercial portion of land will complement the residential area and provide a service for locals
 as well as visitors using the Googik Track.

It is considered that the Planning Proposal is consistent with the Regional Plan as it satisfies the Variation Criteria required for development outside the Urban Growth Area and has merit. These criteria form the basis of the strategic merit and site-specific merit assessment for the rezoning review process. Appendix A of the Regional Plan contains the Urban Growth Area Variation Principles, which are stated below in Section 3.4 and a comment provided.

3.4 Will the planning proposal give effect to a council's endorsed local strategic planning statement, or another endorsed local strategy or strategic plan?

The proposal is determined to be consistent with Council's Community Strategic Plan and is also consistent with the Port Macquarie-Hastings Urban Growth Management Strategy 2017-2036. The UGMS identifies areas of growth and investigation, but also makes reference to targeted infill development.

The Urban Growth Area (UGA) maps identified in the North Coast Regional Plan (NCRP) 2036 and within Port Macquarie-Hastings Urban Growth Management Strategy 2017-2036 are broadscale. It appears that the site may be outside of the boundary, which is surprising given it is land which was originally part of an overall subdivision, as was the park. The site does adjoin the residential component of Crestwood which is within the UGA, this site specific rezoning has been invited by Council and is in keeping with the need for identified targeted infill development. Land Dynamics made a submission in 2015 to Urban Growth Strategy – Our Place, Our Future and from that and a further submission with site specific details and request for rezoning as part of Council's administrative amendments, the invitation was then extended to lodge the site specific planning proposal.

This parcel of land is an isolated piece surrounded by development or nature reserve, with no opportunities the rural or agricultural use of the land to continue successfully in its resulting form.

Map extracts from North Coast Regional Plan (NCRP) 2036 and Port Macquarie-Hastings Urban Growth Management Strategy 2017-2036 are shown below with the approximately location of the site circled blue.



P	lanning Proposal for Rezoning to
	B1 Neighbourhood Centre
Part Lot 500 DP 123	7901, Crestwood Drive, Port Macquarie



Urban Growth Area Boundary

Figure 8 - Port Macquarie-Hastings Urban Growth Management Strategy 2017-2036 Extract (source: www.pmhc.nsw.gov.au)



Figure 9 - North Coast Regional Plan 2036 Extract - Figure 24 (source: www.planning.nsw.gov.au)

The request meets the UGA Variation Principles as outlined in the below table.

URBAN GROWTH AREA VARIATION PRINCIPLES		Comment	
Policy	The variation needs to be consistent with the objectives and outcomes in the <i>North Coast Regional Plan 2036</i> and any relevant Section 117 Directions and State Environmental Planning Policies, and should consider the intent of any applicable local growth management strategy.	Consistent.	
Infrastructure	The variation needs to consider the use of committed and planned major transport, water and sewerage infrastructure, and have no cost to government. The variation should only be permitted if adequate and cost-effective infrastructure can be provided to match the expected population.	The site can easily be serviced as part of the recent subdivision. Adequate and cost-effective infrastructure can be provided to match to the site and the expected population. The site is serviced by infrastructure with respect to roads, cycleways, footpaths and existing bus services within Crestwood estate.	
Environmental and farmland protection	The variation should avoid areas: of high environmental or heritage value; and	The area is not identified being of high environmental or heritage value as outlined within this report. The area is not mapped as important farmland but rather other rural land.	

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nd Dynan Austr	 mapped as important farmland, unless consistent with the interim variation criteria prior to finalising the farmland mapping review. 	Planning Proposal for Rezoning to B1 Neighbourhood Centre Part Lot 500 DP 1237901, Crestwood Drive, Port Macquarie
Land use conflict	The variation must be appropriately separated from incompatible land uses, including agricultural activities, sewage treatment plants, waste facilities and productive resource lands.	The site land use is currently considered to be an incompatible land use being rural adjoining a new residential estate. The proposed land use for commercial purposes is considered appropriately separated from incompatible land uses, of agricultural activities, sewage treatment plants, waste facilities and productive resource lands. The commercial use will be compatible with the residential given its small scale and services those residents, as well as the playground users. The interface between the commercial land use and the playground will be addressed through design including landscaping.
Avoiding risk	The variation must avoid physically constrained land identified as: flood prone; bushfire-prone; highly erodible; having a severe slope; and having acid sulfate soils.	Risks are avoided, having regard to the specifics of each constraint. The site is bushfire prone, however is within the mapped buffer area only and there is a fire trail adjoining the site which separates the land from the nature reserve. The site has been filled as per approved construction certificates issued by Council and is considered flood free, non-erodible, level and not containing acid sulfate soils.
Heritage	The variation must protect and manage Aboriginal and non-Aboriginal heritage.	An Aboriginal Cultural Assessment Report has been prepared and accompanies this Planning Proposal, with Recommendations stating, "There are no objections to the development commencing".
Coastal area	Only minor and contiguous variations to urban growth areas in the coastal area will be considered due to its environmental sensitivity and the range of land uses competing for this limited area.	The Rezoning to B1 Neighbourhood Centre is considered minor in nature and is complementary to the adjoining urban growth area and will benefit the residents surrounding the site. The site is a residue parcel of rural zoned land, which is not required by Council for open space purposes. The site is not identified as environmentally sensitive and the potential land use could be considered integral to the contiguous residential estate. It is considered to be orderly development to rezone the residue isolated rural parcel of land being only 5027m ² in size, to a more appropriate zoning. The land continues from the R1 land which contains the residential dwellings and rezoning does not adversely impact upon environmental qualities of the land.

The rezoned land would be considered as a local area centre, at the lower end of the retail hierarchy and is appositely sized with respect to other existing local centres. The UGMS identifies an increase in floor area up to 2036. The proposed rezoning is not at conflict with the identied economic and employment strategies within the UGMS, including the airport business park and health and education precinct. Further, with existing local centres not in close proximity and Port Macquarie Town Centre further afar, there is not envisaged to be an adverse impact upon the existing centres.

It is important to note that this centre will also have a tourist component with the Googik Track well publicised and well utilised by residents and visitors to the area.

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The proposed rezoning will still allow for the primacy of the Port Macquarie CBD to be maintained, as well as the overall retail hierarchy. This proposal addresses a void in local centres in the immediate area.

This site was not identified in the UGMS as an economic priority or opportunity given that the Planning Proposal invited was based on residential purposes, which are no longer being pursued.

3.5 Is the planning proposal consistent with applicable State Environmental Planning Policies?

In assessment against the relevant State Environmental Planning Policies (SEPP) is shown in the following table.

SEPP	Comment
No. 44 – Koala Habitat Protection	This policy encourages the conservation and management of natural vegetation areas that provide habitat for koalas to ensure permanent wild populations will be maintained over their present range.
	The site is completely void of vegetation and is not identified on Council's map as having koala habitat.
State Environmental Planning Policy (Coastal Management) 2018	The aim of this Policy is to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the Coastal Management Act 2016, including the management objectives for each coastal management area, by:
	 (a) managing development in the coastal zone and protecting the environmental assets of the coast, and
	(b) establishing a framework for land use planning to guide decision-making in the coastal zone, and
	(c) mapping the 4 coastal management areas that comprise the NSW coastal zone for the purpose of the definitions in the Coastal Management Act 2016.
	The Planning Proposal does not affect the natural attributes of the NSW coast. The site is cleared and filled therefore the rezoning will not impact upon the adjoining Nature Reserve. The future uses will in fact enhance the cultural and recreational use of the site and the Googik Track.
	Below is an extract of the SEPP mapping which identified a small portion along the boundaries as being affected by wetlands proximity area mapping. Development is not precluded from the proximity area and given the location, it is unlikely to be affected by
	development.

Figure 10 – Extract SEPP Coastal Management) 2018

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LandDynamics AUSTRALIA	2	Planning Proposal for Rezoning to B1 Neighbourhood Centre Part Lot 500 DP 1237901, Crestwood Drive, Port Macquarie
SEPP		Comment
Rural Lands 2008		The aim of this policy is to facilitate the orderly and economic use and development of rural lands for rural and related purposes. The SEPP contains a number of "Rural Planning Principles" that must be considered in preparing any planning proposals affecting rural lands. The purpose of this SEPP is to prevent the loss of rural lands and maintain the rural settlements and lifestyle. The site, whilst zoned RU1, does not form part of a rural settlement or contribute to the rural lifestyle given it is a residue allotment from a previous rezoning and subsequent residential subdivision. The Rural Planning Principles have been considered, however given the location, constraints and history of the site many of the Principles are not applicable. The residue land has resulted from the original residential subdivision. This land was surplus to Council's needs for a park and use for local conveniences is in keeping with the surrounding residential subdivisions. Had it been known at the time that the whole area was not required for a park, this land could have been rezoned with the remainder of the area. Further, considering the minimum Lot Size for RU1 Zone the site is considered too small for rural and agricultural purposes within an urban context and as such the purpose of this planning proposal for rezoning. The site does not contain vegetation and has no unmanageable environmental constraints, therefore maintaining the biodiversity and protection of natural resources is not relevant.
No. 55—Remediation o	f Land	SEPP 55 requires consideration to be given prior to rezoning land, as to whether or not the site is contaminated. Council will confirm where further investigation is required, however this has occurred as part of the overall development Crestwood.

3.6 Is the planning proposal consistent with applicable Ministerial Directions (S9.1 directions)?

The below table is a review of the proposal against the relevant S9.1 Ministerial Directions.

Direction	Comment
1. Employment and Resources	1.1 - Business and Industrial Zones
1.1 Business and Industrial Zones	This proposal includes a small parcel of commercially zoned land (5027m ²) to
1.2 Rural Zones	facilitate the provision of a component of retail/business/commercial, with a café
1.3 Mining, Petroleum Production and	and toilets which provide a rest stop. This facility will be primarily for the users
Extractive Industries	of the Googik Track which adjoins the site, however may also be utilized by
1.4 Oyster Aquaculture	surrounding residents and users of the park. The addition of this small pocket of
1.5 Rural Lands	commercial land will not alter the hierarchy of commercial land within the Port
	Macquarie area, will not impact upon existing employment land and does not
	alter the viability of the identified strategic centres. This facility is smaller than a
	Neighbourhood Centre in Lighthouse and the total potential floor space area for
	employment lands in the area is not expected to be reduced by this proposal.
	There is a strong demand from the existing and future residents, as well as the
	users of the playground and Googik Track for this low scale local centre.
	The objective of this Direction is to encourage growth in suitable locations and
	to protect existing business zones and identified centres. This is met by the
	proposal as there is a clear absence of the local centres which support the needs
	of the residents in this area. This additional local centre will not adversely impact
	on the existing centres.

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Direction	Comment
	1.2 - Rural Zones The proposal is inconsistent with the direction as it rezones land from rural to business purposes. This inconsistency is permitted by the Direction given that it "is of minor significance". The land is a residue parcel of RU1 Land which remained after the rezoning and subdivision for residential purposes on the remainder of the site. This portion of land was to be for open space purposes however the full site is not required by Council and as such the remaining 5027m ² requires a change of zoning to allow it to be utilized. It is not currently being used for rural purposes and is to be surrounded by residential land. Further, the current zoning and minimum lot size renders the site unusable. 1.5 - Rural Lands The purpose of this SEPP (Rural lands) is to prevent the loss of rural lands and maintain the rural settlements and lifestyle. The site, whilst zoned RU1, does not form part of a rural settlement or contribute to the rural lifestyle given it is a residue allotment from a previous rezoning and subsequent residential subdivision. This inconsistency is permitted by the Direction given that it "is of minor significance" and is complies with the objectives of the SEPP.
 Environment and Heritage Environment Protection Zones Coastal Protection Heritage Conservation Heritage Conservation Recreation Vehicle Areas Spplication of E2 and E3 Zones and Environmental Overlays in Far North Coast LEPs 	 2.2 Coastal Protection The Planning Proposal does not affect the natural attributes of the NSW coast. The site is cleared, and the rezoning does not impact upon the adjoining Nature Reserve. The future uses will in fact enhance the residential area, as well as the cultural and recreational use of the site and the Googik Track. 2.3 Heritage Conservation Refer to the accompanying Aboriginal Land Council documentation, identifying no issues of heritage significance.
 Housing, Infrastructure and Urban Development Residential Zones 2 Caravan Parks and Manufactured Home Estates 3 Home Occupations 4 Integrating Land Use and Transport 5 Development Near Licensed Aerodromes 	3.4 Integrating Land Use and Transport As this proposal creates commercial land, this Direction applies. The Crestwood area is serviced by Busways Route 324, which is within walking distance of the site and provides access into the centre of Port Macquarie to the north and Lighthouse Plaza to the south. Further, the Googik Track adjoins the site which provides access to Lake Road and onto St Columba Anglican School and the Innes Lake area.
 4. Hazard and Risk 4.1 Acid Sulfate Soils 4.2 Mine Subsidence and Unstable Land 4.3 Flood Prone Land 4.4 Planning for Bushfire Protection 	 4.1 Acid Sulfate Soils Council will advise as to whether further investigation of Acid Sulfate Soils is required. Given the approved fill on the site it is likely that the change of use is appropriate with respect to acid sulfate soils. 4.3 Flood Prone Land The land has been filled to above the flood planning level with Council approval, which will make the land suitable for commercial development and also mitigate Acid Sulfate Soils. 4.4 Planning for Bushfire Protection A Bushfire report has been prepared and accompanies this Planning Proposal with respect to the bushfire impacts from surrounding land. Appropriate APZ can be adequately be accommodated on site. Further, the site adjoins a fire trail. Whilst not formalized on title, the fire trail has been in existence for many years and is unlikely to be removed. From investigations, it is noted that the required APZ's will be considerable on the site and as such the height limit is reflective of the need to go up to accommodate these requirements.

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LandDynamics AUSTRALIA	Planning Proposal for Rezoning to B1 Neighbourhood Centre Part Lot 500 DP 1237901, Crestwood Drive, Port Macquarie
Direction	Comment
	The site being developed for commercial purposes can achieve adequate bushfire protection measures with adequate buffers to the adjoining Lake Innes Nature Reserve and the playground and dwellings as identified in the Bushfire report. There is not a prescribed APZ (defendable space) width for commercial development. In this regard the BCA fire spread standards used as a guide to determine the defendable space width. The BCA fire spread standards are based upon building class and size. The range of fire spread standards is typically 6m - 10m. The site proposes to use a 10m buffer as the APZ (defendable space) standard. Within this buffer car parking, access, and/or path could be proposed forming part of the defendable space/APZ. An indicate building and parking location was developed (shown in Figure 5 above) which provides certainty that a commercial / tetail / business use could be achieved on the site. Council raised concerns regarding limited residential uses which are permitted in the B1 zoning. The landowner is proposing to be proactive and place a restriction on the title which prohibits residential use of the site. Council's Bushfire Officer that residential use of the land cannot be achieved due to bushfire constraints. Therefore, allowing a residential land use in the zone such as shop top housing would not be able to be achieved due to bushfire constraints, despite the zoning. Planning for <i>Bushfire Protection 2018</i> has been considered for the purposes of this Planning Proposal for a rezoning.
 5. Regional Planning 5.1 Implementation of Regional Strategies (Revoked 17 October 2017) 5.2 Sydney Drinking Water Catchments 5.3 Farmland of State and Regional Significance on the NSW Far North Coast 5.4 Commercial and Retail Development along the Pacific Highway, North Coast 5.5 Development in the vicinity of Ellalong, Paxton and Millfield (Cessnock LGA) (Revoked 18 June 2010) 5.6 Sydney to Canberra Corridor (Revoked 10 July 2008) 5.7 Central Coast (Revoked 10 July 2008) 5.8 Second Sydney Airport: Badgerys Creek 5.9 North West Rail Link Corridor Strategy 5.10 Implementation of Regional Plans 6. Local Plan Making 	 5.10 Implementation of Regional Plans In accordance with North Coast Regional Plan 2036, this site is a prime opportunity to accommodate a local centre without adverse environmental impacts or loss of agricultural land. The small commercial component does not impact upon the strategies. 6.1 Approval and Referral Requirements
6.1 Approval and Referral Requirements 6.2 Reserving Land for Public Purposes	Council will provide guidance.

6.3 Site Specific Provisions

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Section C - Environmental, social and economic impact

3.7 Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

The planning proposal does not impact on threatened species, populations or ecological communities of the habitat. The site does not have ecological value and is cleared. Having regard to the high level of disturbance and absence of biodiversity values identified for the site, it is considered unlikely that any threatened species, populations or ecological communities would be adversely affected because of the proposal.

3.8 Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

Bushfire

The site is identified as being within the buffer on the bushfire maps, as shown in Figure 11 below. The buffer does not preclude development from occurring on the site for commercial purposes. Appropriate asset protection zones can be accommodated within the site and a fire trail adjoins the site.







Figure 11 - Bushfire Map (source: www.planningportal.nsw.gov.au)

As outlined earlier, following on from the pre-lodgement meeting, on-going discussions, including a site inspection, were held with National Parks & Wildlife Services regarding the previous agreements regarding a fire trail on their adjoining land and options for formalizing the trail on title. At the end of the discussions over a period of many months, it was agreed that all bushfire requirements must be contained on site, notwithstanding that the fire trail on the ground on the adjoining land and that it is likely to continue. A formal written agreement could not be reached with NPWS for continued maintenance and formalization of the fire trail.

It is to be noted, the defendable spaces required for business uses will extend considerably into site but can be accommodated in a design for most business uses. However, there is large areas still unable to accommodate the building and therefore a need for increased height. However, this site can accommodate the height due to separation to the adjoining dwellings and unique characteristics.

An initial bushfire assessment has been undertaken and submitted as part of this rezoning request, demonstrating that commercial or business purposes can be accommodated on the site with all necessary bushfire requirements accommodated on site.

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Council raised concerns regarding limited residential uses which are permitted in the B1 zoning. The landowner is proposing to be proactive and place a restriction on the title which prohibits residential use of the site. Council would be the responsible authority to control any variation to this restriction, which is not anticipated to occur. It is clear from the discussions with Council's Bushfire Officer that residential use of the land cannot be achieved due to bushfire constraints. Therefore, allowing a residential land use in the zone such as shop top housing would not be able to be achieved due to bushfire constraints, despite the zoning.

Flooding

Mapping supporting Council's LEP 2011 identifies the site as flood liable land (refer Figure 12).



Figure 12 - Flooding Map (source: www.legilation.nsw.gov.au)

The site has been filled and levelled, as approved by Construction Certificate 2010/0572. The figure below illustrates the current finished levels and total fill volume of 10320m³ for the site after the fill was completed. As the site has been filled to above the flood planning level, the land is suitable for commercial development and also mitigates Acid Sulfate Soils. No additional fill is envisaged to facilitate development.

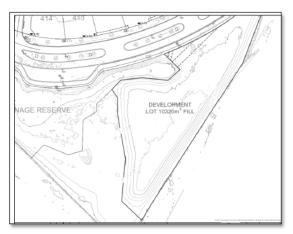


Figure 13 - Development Lot Fill prepared by Land Dynamics

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Residential Amenity

There is unlikely to be a conflict between the small portion of local centre zoned land and the surrounding area. The purpose of the commercial portion is to provide a small component, providing a service for the surrounding residents. This may include a Business premises; Community facilities; Medical centres; Neighbourhood shops; Neighbourhood supermarkets; Respite day care centre; café with toilets and refreshments for users of the Googik Track which passes by the site. It will also service the users of the park and the local community being constructed as part of the approved staged subdivision.

The amenity of the locality is not detrimentally affected by the existing land use. The current zoning does not allow the proposed uses. The planning proposal amends and enables the land to be compatible with the surrounding residential land uses. It is anticipated the local amenity will not be detrimentally affected by the rezoning and redevelopment.

The site contains no land use conflicts as identified in Figure 14, together with no heritage or amenity impacts. Based on the prime location with interfacing to the adjoining proposed park and National Park, the site is considered to have substantial community benefits with providing commercial land use to become available.

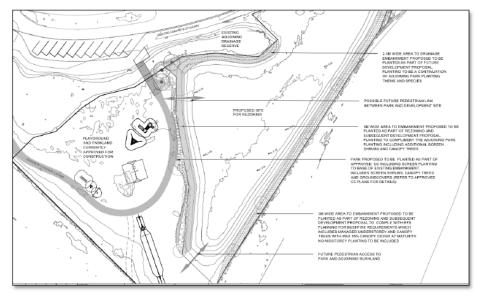


Figure 14 - Indicative Open Space Management Plan prepared by Land Dynamics

There is an opportunity in the detailed design of the built form and landscape design to provide a good interface to the playground and drainage basin, addressing the levels and connectivity. The basis of the land uses being commercial / retail will most likely ensure the site interacts with the playground, via uses such as a café.

The existing residential estate of Crestwood has been completed to a high standard of visual amenity and outstanding streetscape, which would be able to be continued onto this site once rezoned, which is a far superior visual outcome than the existing situation on ground.

Birpai Local Aboriginal Land Council

An Aboriginal Cultural Assessment Report, dated 27 July 2018, has been prepared and accompanies this Planning Proposal, with Recommendations stating:

"There are no objections to the development commencing, but the following recommendations are made:

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- 1. Should any artefacts be turned up or located, Birpai Local Aboriginal Land Council are to be contacted immediately and work on site stopped pending further assessment.
- 2. Signage on the remaining land should be erected identifying that this land belongs to the Birpai people."

These comments are reflective of Council's standard conditions imposed on any future Development Application

3.9 How has the planning proposal adequately addressed any social and economic effects?

The proposal includes potentially positive social and economic benefits through employment generation within the small commercial precinct, as well as through the construction process for both zones.

The provision of a business facilities which could include commercial and retail uses, community facilities, medical centres, Neighbourhood shops; Neighbourhood supermarkets along with food and drink premises, which may also include toilets and refreshments for users of the Googik Track, the playground and surrounding residents will have a positive community benefit with users being more active and enjoying the local facilities. It is not considered that the business component will be a major attractor in its own right due to its small size and will complement the residential and recreational areas surrounding, providing day to day conveniences.

Should the application proceed to Gateway, a detailed Supply and Demand assessment can be prepared. It is noted that the UGMS is heavily focuses on large commercial or industry precincts such as the Health and Education and Airport Precinct in business and economic growth. This form of local centre has been largely ignored and it is clear from a quick review of Crestwood and surrounding existing facilities, that there is a clear need for this form of small scale commercial or retail land use. Refer to the attached document regarding supply and demand, which provides an indication of the nearby business centres and the distance from the site. It clearly demonstrates a need for this form of centre for the residents of Crestwood and also nearby estates.

Section D - State and Commonwealth interests

3.10 Is there adequate public infrastructure for the planning proposal?

Given the small scale of the planning proposal, being infill development within an existing approved staged subdivision, there is not expected to be additional unreasonable demand on the road network, open space, waste facilities or local emergency services. The area is already serviced with all necessary public infrastructure in place.

There is no need to upgrade existing infrastructure, with extension of services easily achieved. Refer to the Stormwater and Services Plan in Figure 15.

The purpose of the B1 zoning was to provide business services which assist the residents, users of the park and the Googik Track. None of these generate significant traffic in their own right and the pathway network in Crestwood allows for walking to the site to be highly utilised.

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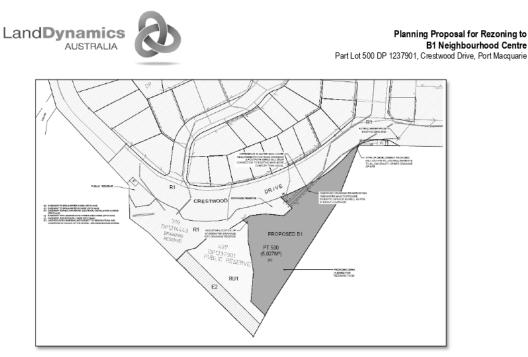


Figure 15 - Stormwater & Services Plan

3.11 What are the views of State and Commonwealth public authorities consulted in accordance with the Gateway determination?

We have consulted with both National Parks and Wildlife Service (NPWS) as the adjoining land owner and the Rural Fire Service (RFS) regarding the bushfire issues relating to the site. There are no other external authorities identified for consultation, which reflects the minor nature of the planning proposal.

A pre-lodgement meeting has been held with Council to discuss the Planning Proposal. Council has advised that the Planning proposal has merit and requested a formal submission to Council for inclusion within Council's Strategic Planning Program.

PART 4 – MAPPING

An Indicative LEP Zoning Map below Figure 16 has been drafted at this stage and will be prepared in consultation with Council.

Additional draft plans will be prepared in consultation with Council including Floor Space Ratio Map and Height of Building Map. It is proposed the Floor Space Ratio be 1.5:1, and proposed building height at 11.5m.

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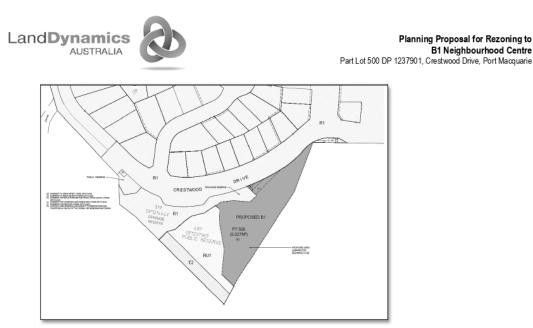


Figure 16 - Indicative LEP Zoning Map

PART 5 - COMMUNITY CONSULTATION

The planning proposal will be placed on public exhibition by Council in accordance with the Department of Planning and Environment's *A Guide to Preparing Local Environmental Plans*. The proposal is considered to be 'low' impact as it is consistent with the pattern of surrounding land use zones and/or land uses, consistent with the strategic planning framework, presents no issues with regard to infrastructure servicing, is not a principal LEP and does not reclassify public land.

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PART 6 – PROJECT TIMELINE

There is desire for this rezoning to occur concurrently with a Development Application being lodged once Gateway determination is received. This will allow the commercial development of the land to occur concurrently or within a reasonable timeframe following completion of the larger approved subdivision and playground. It is ideal for work to be undertaken concurrently with the remainder of the residential subdivision and playground, and to minimise disruption for future users of the park.

Below is an indicative timeframe

April 2019	Anticipated commencement date (date of Gateway determination)
May 2020	Anticipated timeframe for the completion of required technical information
June 2020	Timeframe for government agency consultation (pre and post exhibition as required by Gateway determination)
July 2020	Commencement and completion dates for public exhibition period
August 2020	Timeframe for consideration of submissions
September 2020	Timeframe for the consideration of a proposal post exhibition
October 2020	Date of submission to the Department to finalise the LEP
November 2020	Anticipated date the local plan-making authority will make the plan (if authorised)
December 2020	Anticipated date the local plan-making authority will forward to the PCO for publication

CONCLUSION

Consideration is sought from Council for progression of this Planning Proposal to enable the rezoning to B1 Neighbourhood Centre will allow for complementary business uses for daily conveniences for the residential housing stock for the area, as well as visitors to the park and users of the Googik Track.

The existing zoning for rural purposes was acceptable when the land was being dedicated to Council for open spaces purposes. Subsequently Council has advised that they do not wish to be burdened with the entire site and as such a residue parcel has resulted. The site has an area of 5027m² which is well below the minimum lot size for the RU1 zone and the site is unusable in its current state, with no dwelling entitlement. The existing rural zoning of the land is incompatible with the surround residential estate and proposed playground and as such the proposed rezoning will provide for more appropriate and complimentary land uses.

Given that this portion of land is surplus to Council's needs, the Planning Proposal is considered appropriate and allows a sustainable use of the land and provision of additional housing for the locality.

Progression of this Planning Proposal for Gateway determination is requested.



APPENDICES

- 1. Pre-lodgement Notes
- 2. Proposed Zone Map
- 3. Indicative Open Space Management Plan
- 4. Indicative Stormwater and Services Plan
- 5. Indicative Buffer Plan
- 6. Aboriginal Cultural Heritage Assessment dated 27 July 2018 prepared by Birpai Land Council
- 7. Bushfire Report dated 24 July 2019 prepared by David Pensini
- 8. Indicative Conceptual Site Plan for Commercial Purposes
- 9. Initial Business Supply & Demand Review

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Port Macquarie-Hastings Council PO Box 84 Port Macquarie NSW Australia 2444 DX 7415 e council@pmhc.nsw.gov.au

PORT MACQUARIE HASTINGS C O U N C I L

PIN: 66277

ABN 11 236 901 601

22 June 2017

Land Dynamics Australia 77 Lord St / PO Box 2459 PORT MACQUARIE NSW 2444

Attention: Donna Clarke

Dear Donna

Planning Proposal Pre lodgement Meeting Part Lot 623 DP1228345, Crestwood Drive, Port Macquarie.

Thank you for meeting with myself and other Council staff at the Pre Lodgement held on Tuesday 6 June 2017 to discuss your client's proposal to amend the Port Macquarie Hastings Local Environmental Plan 2011 to permit urban future development.

Attached please find the minutes to the meeting. The information provided in the minutes is the result of preliminary staff assessment of the pre lodgement information you provided. It is intended to assist you in relation to preparation of a submission, including the information necessary to justify further consideration of the proposed change to the current land use zone RU1 Primary Production.

Please do not hesitate to contact me should you have any questions or comments in relation to the meeting or require further information regarding

Yours sincerely

beanifiller

L Fuller Strategic Projects Planner

pmhc.nsw.gov.au

Page 1

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> Item 13.04 Attachment 1



MINUTES Planning Proposal Pre-Lodgement Meeting Held on Tuesday 6 June 2017

Present

Leanne Fuller (Chair) Liam Bulley Nick Houston Caleb Scholes Graham Burns Tony Richmond Donna Clarke

Consideration of Pre-Lodgement Proposal

inent i repecui
Land Dynamics Australia
Rezoning of RU1 land to R1 and B1
2.00pm
Part Lot 623 DP 1228345, Crestwood Drive Port Macquarie
66277
210. 2017. 100

Following is a list of issues that were raised at the meeting that would need to be addressed when lodging a development application.

Strategic Planning

A Planning proposal which is submitted for a Gateway Determination must provide enough information to determine whether there is merit in the proposed amendment proceeding to the next stage of the plan making process. In the case of the proposed expansion of the urban area at Crestwood, your application should contain enough information to ensure Council support for submission of a planning proposal to the Department of Planning for a Gateway Determination, including:

- North Coast Regional Plan The request to prepare a planning proposal should include information considering the consistency of the proposal with the objectives and actions of the regional plan, including the Urban Growth Area Variation Principles.
- 2) Port Macquarie-Hastings Urban Growth Management Strategy the request to prepare the planning proposal should address consistency with the local strategy.
- 3) Bushfire Council's expectation is that the proposed urban area will encompass all APZ's for the proposed commercial and residential development with no encroachment or reliance on adjoining land. A Bushfire Risk Assessment report prepared in accordance with RFS guidelines 'Planning for Bushfire Protection', required. The report should consider the proposed development concept, ensuring all APZ's and or bushfire mitigation measures are able to be addressed within the development footprint.



- Stormwater and Hydrology A stormwater management concept plan and accompanying report is required with the request to rezone.
- 5) Flooding the site is identified in Port Macquarie-Hastings Local Environmental Plan 2011 as being affected by Flood Planning Area and PMF Probable Maximum Flood mapping, therefore triggering consideration of clauses 7.3 Flood planning and 7.4 Floodplain risk management of the LEP.
- 6) Aboriginal Cultural Heritage Assessment an assessment prepared in accordance with OEH guidelines is required to be submitted with the planning proposal.
- 7) Public Open Space The proposal will need to address the interface between the proposed urban area, adjoining national park and proposed public park areas having regard for fill batters, bushfire protection requirements, pedestrian access ways and public parking. Open space management plan is required with the request to rezone.
- 8) Fees There will be fees and charges associated with assessment and completion of a Planning Proposal to change the zoning of the land consistent with Council's *Schedule of Fees and Charges 2017-2018*. Quotations can be provided by Council prior to submission.
- 9) Disclosure of Political Donations Disclosure of Political Donations and Gifts

Section 147 of the Environmental Planning and Assessment Act 1979 broadly requires that a disclosure of a political donation or gift of \$1000 or more within the last 2 years, will need to be made whenever a person or their associate makes a public submission about an LEP amendment or development application. This requirement ceases upon determination of the applications.

a)

- Water
- There is an existing 150mm PVC water main along the northern side of Crestwood Drive. An extension from this main could service the proposed rezone area with a 100mm road crossing being required. This could provide domestic services as well as fire hydrant coverage for individual residential lots or a strata or community title development.
- 2) Note that given the difference in water main cover requirements for road crossing and footpath areas, the connection to the existing water main connection will be more complex than usual.

Sewer

- There is a dead end 150mm PVC sewer line extending across Crestwood Drive to near the western extremity of Lot 623 (about 34 metres west of the national park corner). This main could be extended to the main part of lot 623 to provide a sewer connection point.
- 2) Options for a sewer connection to the north side of Crestwood Drive are less advantageous level wise and apart from the need for a road crossing, the sewer mains and manholes in that location are in private property so landowner permission would be required.



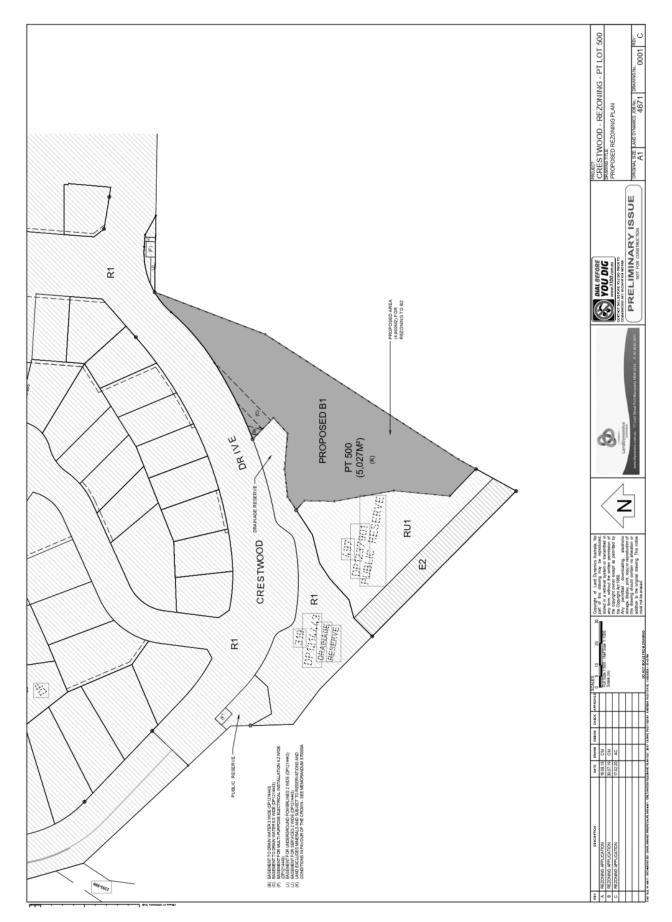
- 3) The type of development proposed will dictate filling requirements to allow gravity sewer drainage of the site. It would appear that some additional filling could be required to allow the possible development indicated on this application. Slightly less filing would be required for individual residential lots.
- 4) A strategy, detailing the sewer arrangements and associated filling will be required with the development application.

Engineering

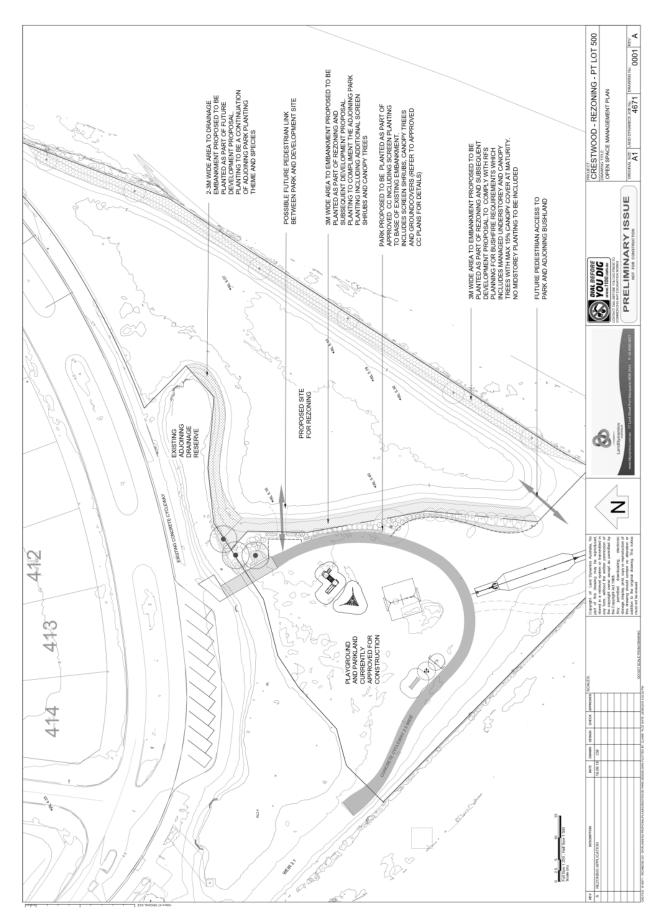
Future development of the site will require:

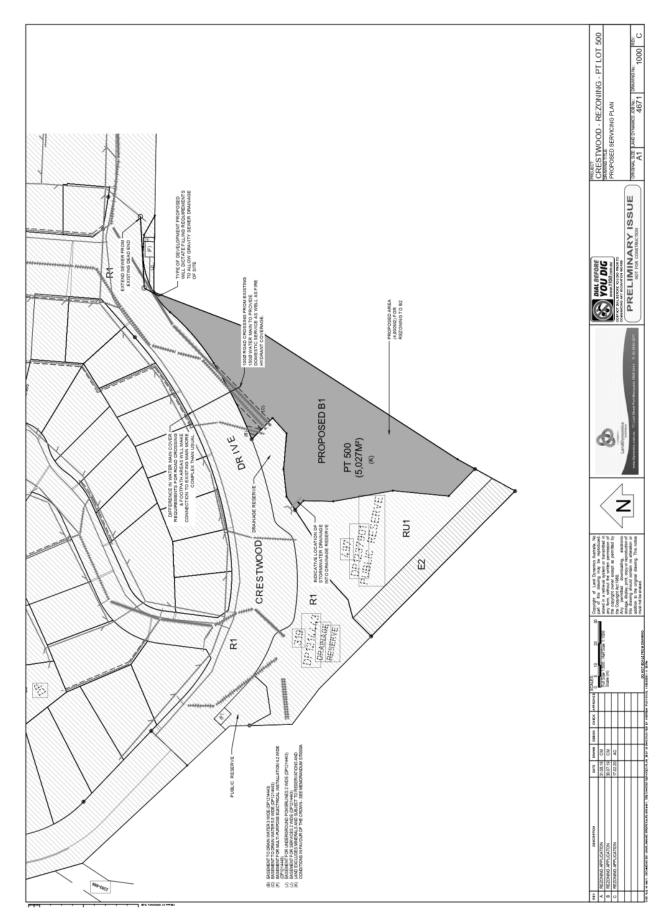
- 1) Minimum floor level requirements to be met (i.e. 3.54m AHD)
- 2) A stormwater management plan prepared in accordance with the requirements of AUS-SPEC D5 and D7 and the requirements of relevant Australian Standards, demonstrating how all stormwater and surface water discharging from the proposed development site, buildings and works will be conveyed to the legal point of discharge by underground pipe drains to the satisfaction of Council.
- Access to the site to be investigated and designed. Median islands, intersecting roads, bus bays, sight distance, stormwater drainage, footpaths etc. must all be considered.
- 4) Internal access aisles and parking bays conformance with AS 2890, and in particular part 1 for cars, part 2 for garbage and delivery trucks, and part 6 for disabled parking (if required by the BCA or other standards).
- 5) Arrangements with a private garbage collection contractor may be required.

ORDINARY COUNCIL 20/05/2020

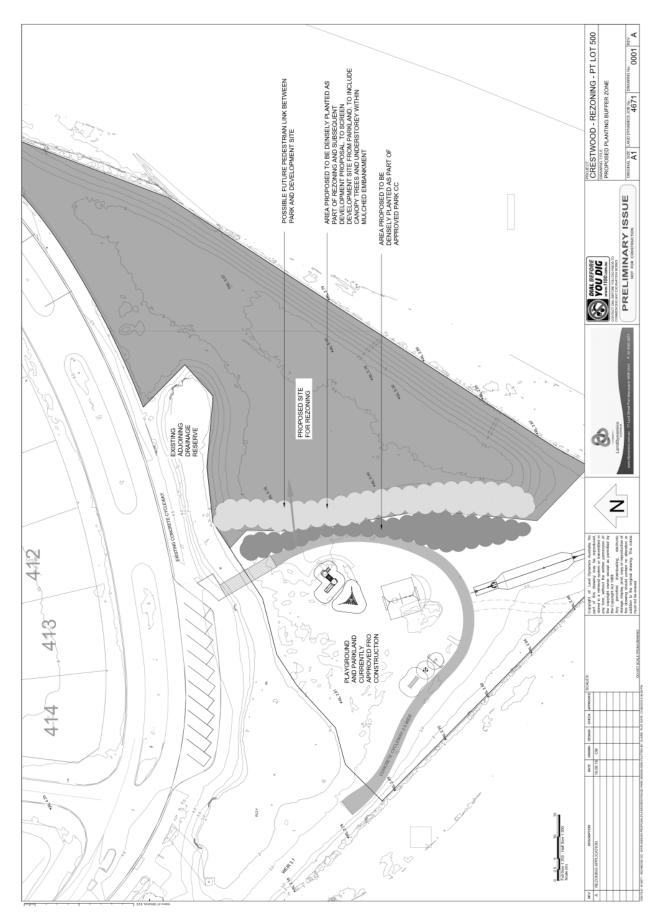


ORDINARY COUNCIL 20/05/2020





ORDINARY COUNCIL 20/05/2020





Birpai Local Aboriginal Land Council

Aboriginal Cultural Heritage Assessment

Part Lot 123 DP 1196827 Crestwood Drive

Port Macquarie

Prepared by

Birpai Local Aboriginal Land Council

In response to a

Rezoning proposal by Land Dynamics

PO Box 876 Port Macquarie NSW 2444

Tel: 02 65849066

Email: birpailalc@midcoast.com.au

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1. Introduction

The subject land is located at Crestwood Drive Port Macquarie (part lot 123 DP 1196827. The land is under 1ha in size and is located approximately 5km southwest of the Port Macquarie CBD. The land is cleared and has been set aside as a Council reserve, but is superfluous to Council's needs so is proposed to be rezoned and included in the residential subdivision.

The objectives of the Cultural Heritage Assessment are:

- To identify whether the subject land contains objects or is a place of importance or a part of the wider cultural landscape pertaining to local aboriginal people and the area.
- To determine if any potential harm on identified Aboriginal Cultural heritage would be likely to occur from the proposed rezoning and future development of the southern fringe of the land for residential uses.
- To determine the significance of potential harm to any identified Aboriginal objects, places or wider cultural heritage that may be associated with the subject land, should that be the case.

This report has been prepared for Land Dynamics for their proposed rezoning. It is not to be used for any other purpose

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2. Investigator and Contributors

The Site Investigations have been undertaken by:

Mr. Jason Holten, Sites Officer of the Birpai Local Aboriginal Land Council

The site investigator has significant local experience in carrying out site survey investigations and regularly undertakes Sites works in the Port Macquarie area. Mr. Holten has a wealth of knowledge of Aboriginal Culture and Heritage in the local area.

3. Previous Archaeological work

Search of the Aboriginal Heritage Information Management System (AHIMS) – Basic search conducted 27 July 2018 using Longitude and Latitude coordinates with a buffer of 50 m.

- Basic search identified no Aboriginal Places and no Aboriginal Site in the vicinity of the 50 m buffer.
- Cultural Heritage records held with Birpai Land Council include:

The Birpai Local Aboriginal Land Council holds no records of any items of cultural significance in the vicinity of the land in question.

Of the above resources, references to this area and the Birpai Aboriginal People were the primary search focus. Information relevant to the site or its immediate surrounds was identified as follows:

There are no known aboriginal cultural heritage sites within the subject land. Especially in the area of the proposed residential land.

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4. Landscape context

General Coastal character & predictive model

The results of reviews of archaeological investigations to date indicate that rocky shore, sandy beach, estuarine and hinterland environments were typically utilised by Aboriginal groups. The densest and most diverse archaeological remains are generally found along the coast where food resources were richer. Reliance on estuarine and adjacent hinterland areas was probably sporadic, possibly using freshwater swamps as a primary resource.

A large proportion of recorded sites indicate they have been found on flat terrain, predominantly in coastal heath, along estuarine stream banks, some woodland and dry sclerophyll eucalypt forest and in subtropical rainforest. Less commonly, sites are also found in undulating to hilly terrain either in dry sclerophyll eucalypt forest. Even less so in steep rugged terrain.

There is a greater likelihood of the existence and discovery of Aboriginal sites into the coastal plain. Particularly the crests and basal slopes of low spurlines that extend into and are situated adjacent to flood prone valley floors.

Stone artefacts may occur as open artefact scatters and isolated finds. Midden deposits may occur subsurface on former beach ridges and other alluvial or colluvial deposits which fringe valley floors. Including the former shoreline of the marine embayment and subsequent estuary which formed following the last sea level rise at around 6000 years BP.

Open artefact scatters (or campsites) are considered more likely to occur on relatively flat terrain, well-drained and not too distant from sources of freshwater or along the crests of low ridgelines.

Scarred trees may occur wherever old-growth trees remain. Potential locations include road reserves, remnant riparian vegetation on farmlands, and isolated trees within the state forests.

Prehistoric burial sites are most likely to be found in locally elevated landforms with a relatively deep profile of soft sediments of in the deposits of midden sites.

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Local Aboriginal History

Before European settlement, Aboriginal people roamed the area and used the land to hunt and gather food. Aboriginal ties to the land can be identified with the significant sites in and around the Port Macquarie area with some sites recorded, including burial sites at the Town Green in the CBD.

Location of the site

The subject land is located approximately 5km southwest of the Port Macquarie CBD. The site is generally surrounded by residential land to the North and East with generally forested land to the South and West.

On site, is predominantly cleared land with no major vegetation.

6 Site Survey & Results

Sampling Strategy

The sampling strategy is to attend the property by vehicle and undertake intensive walking inspection of the part of the site likely to be impacted upon by the proposed rezoning and future residential lots.

In a landscape context, this area is consistent with the landscape unit "crests and basal slopes of low spurlines that extend into and are situated adjacent to flood prone valley floors". In this context intensive walking survey of the area is considered the most appropriate survey strategy.

The site survey was undertaken on 20 June 2018 by Mr Jason Holten, Senior Site Officer of Birpai Local Aboriginal Land Council.

Survey Coverage

On 20 June 2018 exposure and visibility across the site is described as generally good.

No text excavations were considered necessary and were not undertaken.

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7. Results of Survey of 20 June 2018

After walking over the proposed rezoning area the senior site officer, Mr Jason Holten noted that there had been a lot of disturbance over the years, with the removal of trees and stumps from the site and movement of topsoil. Any sign of Aboriginal activity in the area is believed to have been lost or destroyed.

Mr Holten, Senior Sites Officer who attended the property and undertook the survey concluded that no evidence of Aboriginal activity was located on the site areas, being part lot 123 DP 1196827.

Analysis & Discussion

No site recording is required as there are no material traces, evidence or expressed knowledge of Aboriginal land use of the site.

The proposed development is not considered likely to impact upon or have any significance for the local Aboriginal community and their cultural heritage.

The assessing site officer can see no reason why the proposal cannot continue.

Recommendation

There are no objections to the development commencing, but the following recommendations are made:

- 1. Should any artefacts be turned up or located, Birpai Local Aboriginal Land Council are to be contacted immediately and work on site stopped pending further assessment.
- 2. Signage on the remaining land should be erected identifying that this land belongs to the Birpai people.

Signed

11 27/7/18.

Mr David Carroll CEO - Birpai Local Aboriginal Land Council

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DAVID PENSINI Building Certification and Environmental Services

BUSHFIRE PLANNING REPORT

PROPOSED REZONING

PART OF LOT 500 DP 1237901 CRESTWOOD DRIVE, PORT MACQUARIE

> CLIENT: RICHMOND HORIZONS PTY LTD

> > JULY 2019

3 Blair Street, Port Macquarie NSW 2444 – PO Box 5581, Port Macquarie NSW 2444 – Phone 0434 166 150 – Email <u>kdpensini@bigpond.com</u> ABN 55 183 050 741

BUSHFIRE PLANNING REPORT (REZONING) PT LOT 500 CRESTWOOD DRIVE, PORT MACQUARIE

JULY 2019

This report has been prepared by David Pensini – Building Certification and Environmental Services with all reasonable skill, care and diligence for Richmond Horizons Pty Ltd.

The information contained in this report has been gathered from discussions with representatives of Richmond Horizons Pty Ltd, a review of the plans provided on behalf of Richmond Horizons Pty Ltd and experience.

No inspection or assessment has been undertaken on other aspects of the proposed development outside the scope of this report.

This report does not imply, nor should it be implied, that the proposed development will comply fully with relevant legislation.

The report shall not be construed as relieving any other party of their responsibilities or obligations.

David Pensini – Building Certification and Environmental Services disclaims any responsibility Richmond Horizons Pty Ltd and others in respect of any matters outside the scope of this report.

The report is confidential, and the writer accepts no responsibility of whatsoever nature, to third parties who use this report, or part thereof is made known. Any such party relies on this report at their own risk.

For and on behalf of David Pensini – Building Certification and Environmental Services.

Prepared by: David Pensini

Signed: Dated:

24th July 2019

DAVID PENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES

BUSHFIRE PLANNING REPORT (REZONING) PT LOT 500 CRESTWOOD DRIVE, PORT MACQUARIE.

JULY 2019

Version	Date		Information	relating to report		
			Reason for issue			
1.0	22 nd 2019	July		Draft		
2.0	24 th 2019	July		Issued to Client		
				Prepared by	Verified by	Approved by
			Name	David Pensini		David Pensini
			Signature	Deereder		Desectori

DAVID PENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES

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BUSHFIRE PLANNING REPORT (REZONING) PT LOT 500 CRESTWOOD DRIVE, PORT MACQUARIE JULY 2019
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DAVID PENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES

Item 13.04 Attachment 1

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Bl	JSHFIRE F	PLANNING	REPORT (R	REZONING)		
PT	LOT 500	CRESTWO	OD DRIVE	PORT MACO	UARIE	

JULY 2019

1.0 INTRODUCTION

The land which comprises the subject site is known as Part of Lot 500 DP 1237901 Crestwood Drive, Port Macquarie.

It is proposed to rezone portion of the subject site so as to support the future residential development.

This report is based on site assessments carried out on 4th October 2017 and 23rd July 2019.

The purpose of this report is to demonstrate that the bushfire risk is manageable for the proposed rezoning of the subject site and to determine the bushfire protection management measures which are applicable to the future commercial development of the subject site.

The any future commercial development would not be integrated development and would not have a requirement for a Bush Fire Safety Authority under Section 100B of the *Rural Fires Act* 1997.

NOTE

The report has been prepared with all reasonable skill, care and diligence.

The information contained in this report has been gathered from field survey, experience and has been completed in consideration of the following legislation.

- 1. Rural Fires Act 1997.
- 2. Environmental Planning and Assessment Act 1979.
- 3. Building Code of Australia.
- 4. Council Local Environment Plans and Development Control Plans where applicable.
- 5. NSW Rural Fire Services, Planning for Bushfire Protection, 2006.
- 6. NSW Rural Fire Services, Planning for Bushfire Protection, 2018.
- 7. AS 3959 2009 Construction of Buildings in Bushfire Prone Areas.
- 8. AS 3959 2018 Construction of Buildings in Bushfire Prone Areas.

The report recognizes the fact that no property and lives can be guaranteed to survive a bushfire attack. The report examines ways the risk of bushfire attack can be reduced where the site falls within the scope of the legislation.

The report is confidential, and the writer accepts no responsibility of whatsoever nature, to third parties who use this report or part thereof is made known. Any such party relies on this report at their own risk.

This report has been based upon the vegetation characteristics observed at the time of site inspection. No responsibility is taken where the vegetation characteristics of the subject site or surrounding areas is changed or modified beyond that which is presented within this report.

1.1 Objectives

The objectives of this report are to:

- Ensure that the proposed rezoning of the land has measures sufficient to minimize the impact of bushfires; and
- Ensure that any future commercial development of the land has measures sufficient to minimize the impact of bushfires; and
- Reduce the risk to property and the community from bushfire.

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BUSHFIRE PLANNING REPORT (REZONING) PT LOT 500 CRESTWOOD DRIVE, PORT MACQUARIE

JULY 2019

1.2 Legislative Framework

On 1st August 2002, the Environmental Planning and Assessment Act, 1979 and the Rural Fires Act 1997 were both amended to enhance bush fire protection through the development assessment process.

In broad terms, the planning considerations provide two main steps. These involve:

(a) Strategic Planning through;

the mapping of bush fire prone;

• determining suitable bush fire requirements during the preparation of a Local Environmental Plan and/or Development Control Plan; and

• the identification of the extent to which land is bushfire prone.

(b) Development assessment through;

 obtaining a bush fire safety authority for residential or rural-residential subdivision and special fire protection purpose developments in bushfire prone areas from the Rural Fire Service (RFS);

• seeking advice from the RFS in relation to infill and other developments in bushfire prone areas that cannot comply with the requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006; and

• the application of additional requirements of the Building Code of Australia (BCA) in relation to construction standards for Class 1, 2, 3, 4 and some Class 9 buildings in bushfire prone areas.

It is noted that this report focuses upon the strategic planning processes associated with the proposed rezoning of portion of the subject site.

1.2.1 Strategic Planning Considerations

Local Environmental Plans, (LEP's), and Development Control Plans, (DCP's), are the best way of strategically achieving bush fire protection objectives. Inclusion of bush fire planning provisions in an LEP:

• gives weight to bush fire management planning principles, ensuring they are considered at subdivision and construction stages;

• can allow for sufficient space to be incorporated into land use zones for setbacks and adequate access for firefighting and evacuation; and

· controls inappropriate land uses in Bushfire Prone Areas.

LEP amendments that affect Bushfire Prone Areas are required to address the planning principles of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006. Where appropriate the proposed land uses must be considered with respect to bush fire protection, (including appropriate setbacks).

If a proposed amendment to land use zoning or land use affects a designated Bushfire Prone Area, then the Section 117(2) Direction No 19 must be applied, (Section 117 of the Environmental Planning and Assessment Act, 1979) provides for the Minister for Planning to direct a council, in relation to the preparation of a draft LEP, to apply the planning principles specified in that direction. The Section 117 Direction No 19 requires councils to:

• consult with the Commissioner of the Rural Fire Service (RFS) under section 62 of the Environmental Planning and Assessment Act, 1979, and to take into account any comments by the Commissioner, and

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BUSHFIRE PLANNING REPORT (REZONING)	
PT LOT 500 CRESTWOOD DRIVE, PORT MACQUARIE	JULY 2019

 have regard to the relevant planning principles of NSW Rural Fire Service, Planning for Bushfire Protection, 2006.

If a council proceeds with a draft LEP that does not comply with the provisions in the Section 117 Direction, the council must obtain written advice from the Commissioner of the Rural Fire Service to the effect that the RFS does not object to that non-compliance.

The requirement to review LEP's in accordance with the Standard LEP is an opportunity to consider appropriate uses on Bush Fire Prone Land as well as exempt and complying development provisions.

1.2.2 Planning for Bushfire Protection Guideline 2006

It is noted that NSW Rural Fire Service, Planning for Bushfire Protection, 2006is the current reference standard for bushfire threat management for new development in NSW.

NSW Rural Fire Service, Planning for Bushfire Protection, 2006 (PfBP 2006) applies to all "development applications" on land that is classified as "bush fire prone land" (BFPL), identified on a council's BFPL map.

The general principles underlying the document are:

- · protection measures are governed by the degree of threat posed to a development;
- a minimum setback from a hazard is always required, i.e. a defendable space; • the greater the setback from the hazard, the lower the subsequent bush fire
- protection construction standards required;

• the smaller the interface a development has fronting the bush fire threat, the less the opportunity for bush fire to threaten the development;

 bush fire protection measures (BPM's) are contained within the 'overall' development and not on adjoining lands, other than in exceptional circumstances; and

· no development in a bush fire prone area can be guaranteed to be entirely safe from bush fires.

For development on BPL specific controls apply to residential/rural residential subdivision and "Special Fire Protection Purposes" (SFPPs) - those types of development specified in the legislation as requiring particular attention (including mandatory involvement of the Rural Fire Service)

It is also noted that PfBP 2006 also provides guidance on the bushfire threat management requirements which are applicable to other forms of development, (e.g. commercial and industrial)

Objectives for Commercial/Industrial Developments (i)

As set out in NSW Rural Fire Services, Planning for Bushfire Protection, 2006;

for other classes of building, (such as factories, shops and warehouses), bushfire protection measures will only apply at the Development Application stage. Consent will be developed on a case by case basis without the need to refer the development application to the RFS. However, if the council is concerned that the development does not meet the aim and objectives of NSW Rural Fire Services, Planning for Bushfire Protection, 2006, then the matter may be referred to the RFS for advice. The provisions under the Building Code of Australia for fire safety will be accepted for bushfire purposes where the aims and objectives of NSW Rural Fire Services. Planning for Bushfire Protection, 2006 can be met'.

It is noted that all non-residential and non-Special Fire Protection Purpose developments, (including industrial and commercial), within bushfire prone areas are required to meet the general aims and objectives of NSW Rural Fire Services, Planning for Bushfire Protection, 2006 rather than meeting the specific bushfire threat management objectives which are relevant to residential subdivision, Special Fire Protection developments and infill developments.

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The general aims and objectives of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 which are therefore relevant to any future commercial/business development on the subject site are as follows;

(i) afford occupants of any building adequate protection from exposure to a bush fire;
(ii) provide for a defendable space to be located around buildings;
(iii) provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;
(iv) ensure that safe operational access and egress for emergency service personnel and residents is available;
(v) provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ); and

(vi) ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bush firefighting).

1.2.3 Planning for Bushfire Protection Guideline 2018

It is noted that NSW Rural Fire Services, *Planning for Bushfire Protection*, 2018 (PfPB 2018) is set to replace the 2006 Guideline as the bushfire threat management standards which are applicable in NSW. It is however noted that the new guideline has not as yet been formally adopted for implementation with PfBP 2006 remaining the appropriate bushfire threat management standard in NSW.

Notwithstanding this the provisions of PfBP 2018 have been considered in this report as they are likely to apply to the future development of the land once the rezoning process has been finalized.

As with PfBP 2006, Planning for Bush Fire Protection 2018 provides the development standards for designing and building on BFPL in New South Wales (NSW). PfBP 2018 provides standards for:

- strategic land use planning to ensure that new development is not exposed to high bush fire risk;
- specific provisions for creating new residential and rural residential subdivision allotments;
- specific provisions for special fire protection purpose (SFPP) development taking account of occupant vulnerability;
- bush fire protection measures (BPMs) for new buildings;
- guidance in upgrading and maintaining existing development.

PfBP 2018 will be applicable to all development on BFPL in NSW. The general principles underlying this document are that:

- · BPMs are required to reduce the impact of a bush fire;
- protection measures are governed by the degree of threat posed to a development and the vulnerability of occupants;
- reducing the interface of a development to the hazard reduces the bush fire risk to the development;
- good practice in planning, building and management reduces the risk to developments and their occupants and increases their resilience.

This report will also detail the relevant compliance issues associated with NSW Rural Fire Services, *Planning for Bushfire Protection*, 2018 and AS 3959 - 2018 *Construction of Buildings in Bushfire Prone Areas* when legislated in NSW.

(i) Objectives for Commercial/Industrial Developments

Under the building classification system within the National Construction Code (NCC), Class 5 to 8 buildings include offices, shops, factories, warehouses, public car parks and other commercial and industrial facilities. Class 10 includes non-habitable buildings and structures such as garages, carports, swimming pools and fences.

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The NCC does not provide for any bush fire specific performance requirements for these particular classes of building. As such AS 3959 and the NASH Standard are not considered as a set of 'deemed to satisfy' provisions, however compliance with AS 3959 and NASH should be considered when meeting the aims and objectives of PfBP 2018.

Whilst bush fire is not captured in the NCC for Class 5-8 buildings, the following objectives will be applied in relation to access, water and services, and emergency and evacuation planning:

- to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;
- to provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building;
- to provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development; and
- consideration of storage of hazardous materials away from the hazard wherever possible.

The general fire safety construction provisions of the NCC are taken as acceptable solutions however construction requirements for bush fire protection will need to be considered on a case-by-case basis

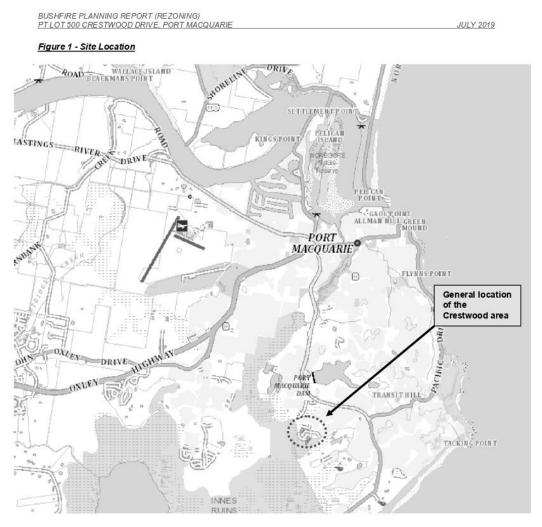
1.3 Location and Site Description

The subject site is known as Part of Lot 500 DP 1237901 Crestwood Drive, Port Macquarie and is situated within the Port Macquarie-Hastings local government area. With a population of approximately 48,000 Port Macquarie serves as the regional centre for the Port Macquarie-Hastings local government area;

The subject site is located approximately 5km southwest of the Port Macquarie CBD, within a geographic area known as Crestwood which is an urban growth area on the southwestern fringes of the developed areas of Port Macquarie. Being located in an urban growth area land use in the locality is a mixture of residential and larger vegetated bushland lots.

It is noted that at present Part of Lot 500 DP 1237901 Crestwood Drive, Port Macquarie comprises two (2) separate areas of land. It is noted that the subject site is the southernmost portion of land; refer **Figure 1** below.

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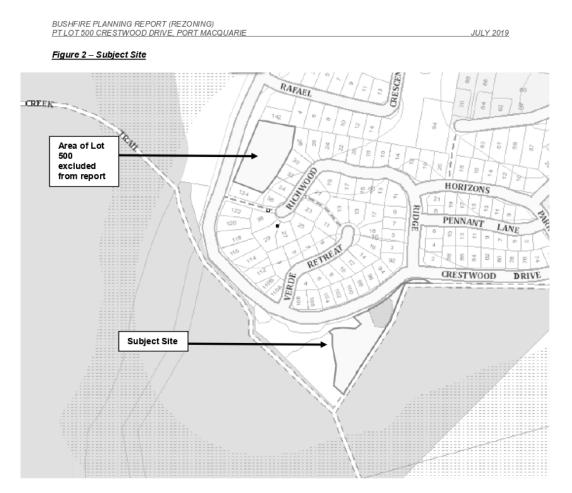


Forming part of the Crestwood urban growth area, (which is located to the southwest of the urbanized area of Port Macquarie), the land within this area has recently and will continue to experience significant urban expansion with residential development expanding into residentially zoned but undeveloped land.

The character of the locality is that of an urban fringe area with residential development expanding into undeveloped parcels of land. The subject site forms part of the final stages of the Crestwood Heights Estate with dwellings having been constructed on residential lots within earlier stages of the estate to the north/northeast with the final stage of the estate being released to the west/northwest of the subject site. It is however noted that the Lake Innes Nature Reserve adjoins the Crestwood Heights Estate area to the south.

The land which is the subject of this report is irregular in shape and occupies the eastern portion of southem Part of Lot 500 DP 1237901 Crestwood Drive, Port Macquarie, refer to **Figure 2** below.

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It is noted that the subject site is vacant of improvements although it is noted that the land has been the subject of filling. Residential lots within the Crestwood Residential Estate extend to the north of the subject site whilst the Lake Innes Nature Reserve adjoins the subject site to the east. An active use public reserve adjoins the subject site to the south and west before a transition to the Lake Innes Nature Reserve.

The subject site is irregular in shape whilst the area of the Part Lot which is the subject of this report is approximately 5390m².

The subject site is located on the southern foot slopes of an east to west ridgeline, the crest of which is roughly defined by the Yaluma Drive road reserve which is located at distance to the north. Consequently, the topography of the subject site and land to the south, (within the Wetland areas of the Lake Innes Nature Reserve), is relatively flat although gentle north to south slopes are present. It is noted the topography of that portion of the subject site which is the subject of this report has been modified via filling which has been undertaken. This filling has created short steep fill batters around the perimeter of the subject site.

Slope conditions on adjoining and adjacent land are similar to that of the subject site however slope conditions become steeper with distance to the north which reflects the presence of the ridgeline side slope conditions which dominate the topography to the north of the subject site.

The subject site contains grassland vegetation which has been established following the filling of the subject site. Forested Wetland and remnant areas of Wet Sclerophyll Forest are located on adjacent land to the south, east and west, (within the Lake Innes Nature Reserve) although managed grassland and landscape vegetation is present to the south and west of the subject site within the public reserve area before a transition into Forested Wetland within the Lake Innes Nature Reserve. Developed residential lots with managed vegetation are present to the north of the subject site.

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BUSHFIRE PLANNING REPORT (REZONING)	
PT LOT 500 CRESTWOOD DRIVE, PORT MACQUARIE	JULY 2019

Access to the subject site is available via Crestwood Drive which adjoins the subject site to the north.

The closest Fire Service is located approximately 4 km to the northwest of the subject site, (Port Macquarie Fire Brigade), with the closest Fire Control Centre being at Wauchope which is 21 kilometres west or 20 minutes by car from Port Macquarie.

1.4 Site History

The subject site is positioned on the southwestern fringe of the urbanized area of Port Macquarie in an area which is known locally as Crestwood. Being on the southwestern fringe of Port Macquarie the area has, over the past 15 - 20 years, experienced significant urban growth.

The character of the locality is that of an urban fringe area with residential development expanding from the north and east into the undeveloped but residentially zoned parcels of land that exist to the west of the already developed areas of the Crestwood residential estate.

The subject site forms part of the westerly extension of the Crestwood residential estate. The Development Consent, (DA830/2002), which the subject site forms part of provides for the staged expansion of the residential estate. It is however noted that the development of the area of land encompassed by DA830/2002 has been completed, refer to **Appendix 1**.

The subject site is irregular in shape and is zoned Rural (RU1) in accordance with Port Macquarie Hastings Local Environmental Plan 2011. The relationship of the subject site with surrounding land use is depicted in **Figure 3** below;

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JULY 2019



As can be seen in **Figure 3** above, land with a residential (General Residential R1) land use zoning is present to the north whilst land immediately to the south and west has a Rural (RU1) zoning. Land to the east and at distance to the south and west is zoned E1 which reflects the presence of the Lake Innes Nature Reserve in these aspects.

Fire has not recently occurred on the subject site or on adjoining and adjacent land.

The environmental and heritage features of the area of the subject site which forms the basis of this report are summarized as follows;

Table 1 – Environmental and Heritage Features

ENVIRONMENTAL/HERITAGE FEATURE	COMMENT	
Riparian Corridors	Corridors The subject site does not contain any identified riparian	
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	apridara	
	corridors.	
SEPP (Coastal Management) 2018	The subject site is identified as being subject to the SEPP as it is affected by the proximity to Coastal Wetland provisions of the SEPP.	
SEPP 44 – Koala Habitat	Given the level of disturbance of the subject site and the absence of any trees over the subject site it is considered that the provisions of SEPP 44 are not applicable in relation to the proposed rezoning.	
Areas of geological interest	The subject site is identified as potentially containing Class 3 Acid Sulphate Soils in accordance with Port Macquarie - Hastings Local Environmental Plan, 2011.	
	Lake Innes NR Innes Ruins	
	Given that the subject site has been filled and the nature of future development, the presence of Acid Sulphate Soils is not expected to be of any significance to the proposed rezoning or future residential development.	
	Based upon previous land use it is expected that no land contamination issues will be relevant to the subject site.	
Environmental Protection Zones	The subject site does not contain any environmental protection land use zones, refer to Figure 3 above.	
	Environmental protection zones are however presence on adjoining and adjacent land to the south, east and west.	
	In this regard, it is noted that the purpose of the proposed rezoning is to change the zoning of portion of the subject site from the Rural (RU1) land use zoning to a commercial/business (B1) land use zone. The rezoning of part of the subject site would allow for the residential development of the land.	
Land slip	Given the gentle topography of the subject site and surrounding areas land slip is not considered to be an issue for the subject site.	

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Flood prone land	The subject site is identified as being flood prone land and as such is affected by the probable maximum flood level. As such the flood planning provisions of Port Macquarie-
	Hastings Councils LEP, 2011 are applicable to the subject site.
	Approximate boundaries of the subject site
	Innes Ruins
	It is however noted that the area of the subject site which would potentially support residential occupation and use has been filled and as such the future commercial/business development on the subject site would be in areas not affected by the probable maximum flood level.
National Park Estate or other Reserves	The subject land does not form part of the National Park Estate or other Reserves.
Threatened species, populations, endangered ecological communities and critical habitat	Given the level of historic disturbance of the subject site no threatened flora or fauna species are expected to be present on the subject site.
Ecologically Endangered Communities (EEC's)	Given the level of historic disturbance of the subject site is unlikely to contain or support EEC's.
OEH Key Habitats and Corridors	The subject site is unlikely to form part of OEH key habitats and corridors.
Aboriginal Heritage	Items of aboriginal heritage are unlikely to be present given the active vegetation modification and management which has occurred on the subject site and the level of site disturbance which is likely to have occurred over the years.

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1.5 Development Proposal

It is proposed to rezone portion of the subject site in order to support commercial/business development. The proposed rezoning reflects the opportunities which exist to provide for a range of commercial/business services in conjunction with the existing residential development within the area.

In this regard, the proposed rezoning would support a Business (B1 or B2) land use zoning over and which is currently zoned Rural (RU1).

A development concept for the subject site is provided in **Appendix 2**. It is noted that the development concept provided in Appendix 2 is considered to be indicative only with the ultimate development of the subject site requiring compliance with the relevant requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 or 2018. The purpose of the development concept is to provide context to the identification of the relevant bushfire threat management requirements which are applicable to the subject site.

In this regard the rezoning of the land is required to demonstrate that there is sufficient land within the subject site in which to accommodate the minimum required bushfire threat management requirements which would be applicable to the future commercial/business development and occupation of the subject site.

Access to subject site will be via the existing Crestwood Drive road reserve which adjoins the subject site to the north.

This report will focus upon identifying the bushfire threat management requirements which will be applicable to any future commercial/business development, (using the development concept in **Appendix 2** for context), so as to allow for an assessment of the subject site's suitability for rezoning.

1.6 Fauna and Flora Issues

A fauna and flora evaluation has not been undertaken in conjunction with this bushfire planning assessment and as such issues pertaining to fauna and flora are outside the scope of this report.

2.0 BUSHFIRE HAZARD ASSESSMENT

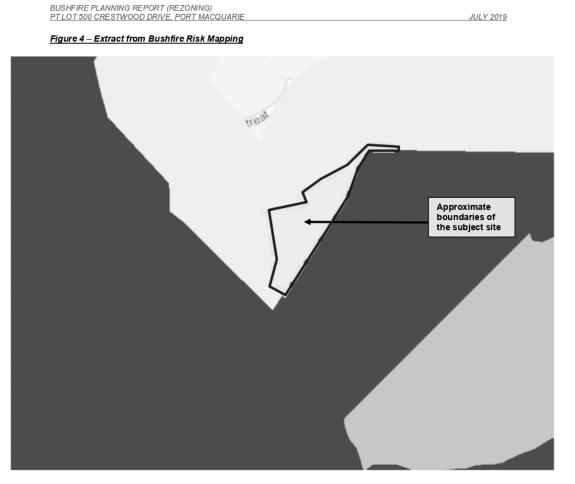
2.1 Procedure

Several factors need to be considered in determining the bushfire hazard for the proposed rezoning being slope, vegetation type, distance from vegetation and access/egress. Each of these factors has been reviewed in determining a bushfire hazard rating for the subject site and proposed rezoning.

2.2 Hazard Vegetation

Bushfire Prone Land Risk Mapping provides that areas of Category 1 bushfire hazard vegetation are located on adjacent land to the south, east and west with the subject site being affected by the 100m buffer zone to the Category 1 vegetation; refer to **Figure 4**.

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2.3 Slope Assessment

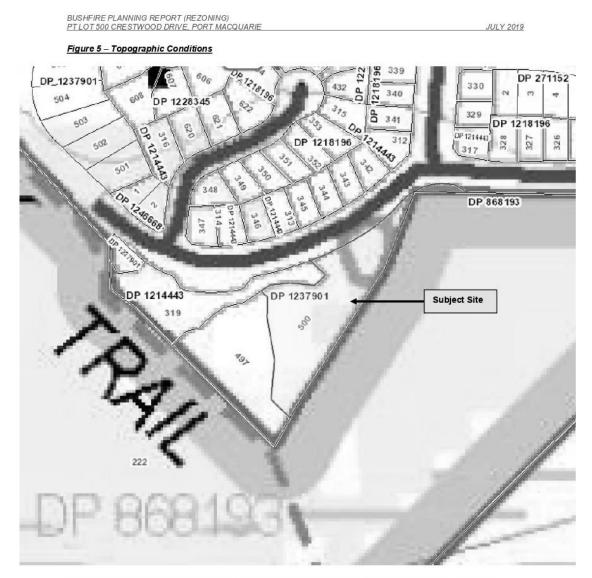
Slope is a major factor to consider when assessing the bushfire risk of any development which is subject to compliance with the requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006. Therefore, the slope of the subject site and surrounding area, (to a distance of 100m), was measured using a Suunto PM-5/360 PC Clinometer.

The subject site is located on the southern foot slopes of an east to west ridgeline, the crest of which is roughly defined by the Yaluma Drive road reserve which is located at distance to the north. Consequently, the topography of the subject site and land to the south, (within the Wetland areas of the Lake Innes Nature Reserve), is relatively flat although gentle north to south slopes are present. It is noted the topography of that portion of the subject site which is the subject of this report has been modified via filling which has been undertaken. This filling has created short steep fill batters around the perimeter of the subject site.

Slope conditions on adjoining and adjacent land are similar to that of the subject site however slope conditions become steeper with distance to the north which reflects the presence of the ridgeline side slope conditions which dominate the topography to the north of the subject site.

The topographic features of the subject site and adjoining and adjacent land can be seen in Figure 5 below;

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The following table indicates the slopes measured within the vegetation affecting the site.

Table 2 - Slope Assessment Results

DIRECTION OF HAZARD	SLOPE degrees)	UPSLOPE/DOWN SLOPE
Northwest	0°	Flat
South	0° - 1°	Down slope
East	0° - 1°	Down slope
West	0° - 1°	Down slope

**Note: In accordance with NSW Rural Fire Services, Planning for Bushfire Protection, 2006 and AS3959 – 2009 all upslope vegetation is considered to be 0°.

The above slopes were considered when assessing the required defendable spaces and indicative Bushfire Attack Levels, (BAL's), for any future development/s.

2.4 Vegetation Assessment

The vegetation on and surrounding the subject site was assessed over a distance of 140m from the proposed development. DAVID PENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES

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The vegetation formations were classified using the system adopted as per Keith (2004) and in accordance with Appendix 3 of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 and Table 2.3 of AS 3959 - 2009.

The following information is provided in relation to the floristic characteristics of the subject site and adjoining and adjacent land. In adopting a conservative approach to bushfire hazard assessment worst case vegetation characteristics have been identified.

2.4.1 Vegetation within Subject Site

The subject site currently contains grasslands which were established following the filling of the subject site.

On the basis of the development of all areas of the subject site no areas of hazard vegetation were assessed as being relevant to the subject site itself.



2.4.2 Vegetation on Adjoining and Adjacent Land to Subject Site

The following vegetation characteristics were identified as being relevant to the proposed rezoning having regard to the vegetation characteristics of adjoining and adjacent land.

Developed residential with managed vegetation are present to the north of the subject site for a distance >140m. Accordingly no areas of bushfire hazard vegetation were assessed as being relevant in this aspect.

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residential lots



It is however noted that a narrow-vegetated stormwater management detention basin/drain is present adjacent to the northern portion of the western property boundary. This infrastructure is 3 – 5m in width and consists of various macrophytes which would be typical of water quality management infrastructure. It is noted that this area of vegetation is bounded by the subject site to the south and Crestwood Drive to the north. Whilst from a fuel loading perspective a managed vegetation classification could be justified as the vegetation could be consistent with landscaping, in adopting a conservative approach to bushfire hazard management a grassland specification has been adopted for the purposes of this report.



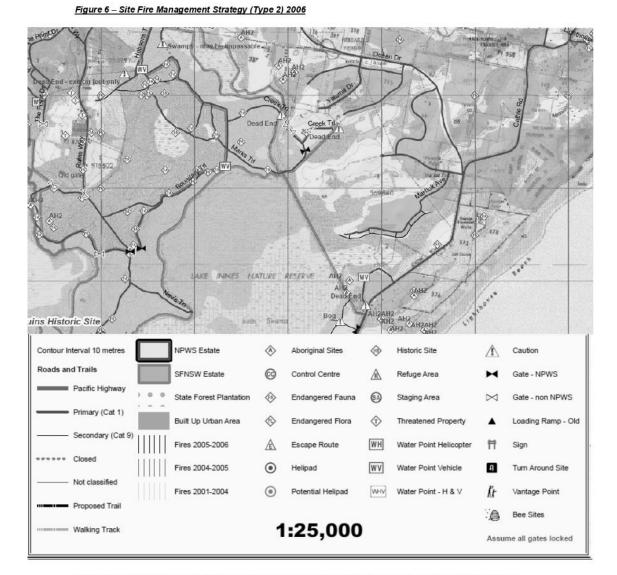
Vegetation within stormwater management infrastructure

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Immediately to the east and south of the subject site is an 8m – 18m wide area of managed grasslands which is present within the Lake Innes Nature Reserve. It is understood that this area is managed by the NSW National Parks and Wildlife Service and is identified as a fire trail in the Lake Innes Nature Reserve and State Conservation Area and Innes Ruins Historic Site Fire Management Strategy (Type 2) 2006, refer to **Figure 6** below.



Beyond the grasslands which are around the perimeter of the Nature Reserve are areas of Forested Wetlands. Whilst the managed nature of the perimeter vegetation could be considered in the determination of the required APZ's for the future development of the subject site in adopting a conservative approach to bushfire hazard assessment a Forested Wetland Classification has been adopted for the eastern aspect.

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Minimum 10m wide fire trail area to the south of the subject site before a transition into

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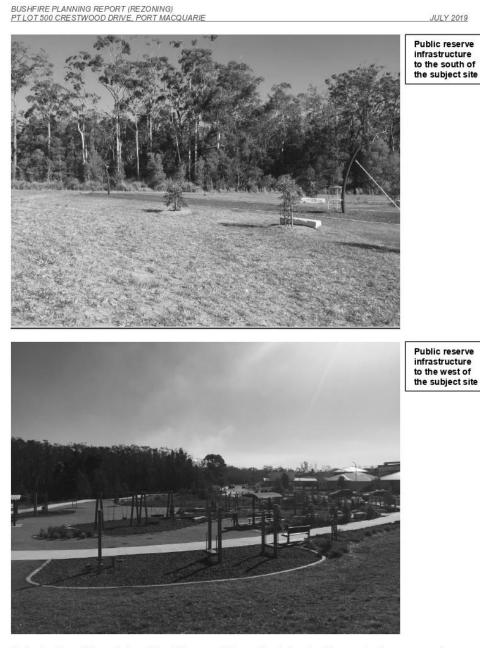
Immediately to the south and west of the subject site is an area which has been development

8m – 18m wide fire trail area to the east of the subject site before a transition into Forested Wetland vegetation

as an active use public reserve, refer to Appendix 1 and Appendix 2. Notwithstanding that the development of immediately adjoining land to the south and west for active public recreation activities has resulted in the establishment and management of vegetation meeting the standards which would be applicable to Asset Protection Zones the bushfire hazard vegetation in the western aspect was assessed as being;

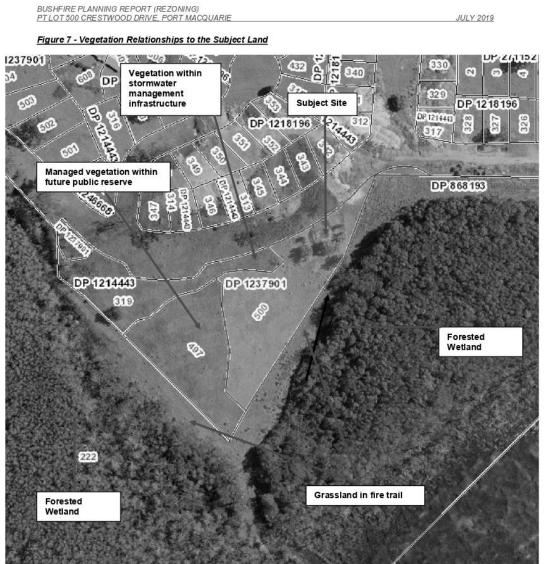
- Grasslands within the active use public reserve; and
- Forested Wetland within the Lake Innes Nature Reserve.

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An indication of the relationship of the vegetation of bushfire significance to the proposed development is presented in **Figure 7** below.

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Note: the above figure does not reflect the further residential subdivision of land to the northwest of the subject site (final stage of the Crestwood Heights Estate development)

The following table summarizes the various vegetation structures which are of bushfire significance to the proposed rezoning of the subject site.

ASPECT	VEGETATION DESCRIPTION	VEGETATION CLASSIFICATION – (Keith, 2004)
Northwest	Macrophytes within stormwater drainage channel	Similar in specification to Grassland
South	Grasslands within active use public reserve	Similar in specification to Grassland
	Forested Wetland within the Lake Innes Nature Reserve beyond the perimeter fire trail	Forested Wetland
East	Forested Wetland within the Lake Innes Nature Reserve beyond the perimeter fire trail	Forested Wetland
West	Grasslands within active use public reserve	Similar in specification to

Table 3 – Summary	of Vegetation	Characteristics
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BUSHFIRE PLANNING REPORT (REZONING) PTLOT 500 CRESTWOOD DRIVE, PORT MACQUARIE JULY 2019 Grassland Forested Wetland within the Lake Innes Nature Reserve beyond the perimeter fire trail

2.5 Fire Danger Index

The fire weather for the site is assumed on the worst-case scenario. In accordance with NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and Table 2.1 of AS 3959 - 2009, the fire weather for the site is based upon the 1:50 year fire weather scenario and has a Fire Danger Index (FDI) of 80.

3.0 BUSHFIRE THREAT REDUCTION MEASURES

3.1 NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and 2018

The following issues and constraints have been identified through considering the requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 as they apply to the rezoning of portion of the subject site and the future development of the subject site.

3.1.1 Defendable Space/Asset Protection Zone

It is noted that the development concept for the proposed rezoning provides for the use of the land for commercial/business purposes.

To ensure that the aims and objectives of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 and 2018 are achieved for the proposed rezoning, a Defendable Space between the asset and the hazard should be provided.

NSW Rural Fire Service, *Planning for Bushfire Protection*, 2018 provides that a defendable space is;

An area adjoining an asset that is managed to reduce combustible elements and is free from constructed impediments. It is a safe working environment in which active firefighting can be undertaken to defend the structure, before and after the passage of a bush fire.

It is noted that the requirements for a defendable space are relevant to any future commercial/business buildings erected on the subject site.

NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 and 2018 do not prescribe acceptable solutions for the provision of a defendable space in relation to commercial/business development with the acceptable solutions provided for by Section 4.1.3 and Section 6 of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 and 2018 respectively applying only to residential and Special Fire Protection Purpose developments. Accordingly, the provision of a defendable space to any future commercial/business development on the subject site must satisfy the general objectives of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 or 2018.

In this regard the following objectives derived from both are NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 and 2018 are considered to be relevant to the provision of a defendable space to any future commercial/business development on the subject site;

- afford occupants of any building adequate protection from exposure to a bush fire;
- provide for a defendable space to be located around buildings;
- provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;
- provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ);

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It is noted that neither NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 or 2018, provides a methodology as to how a performance-based approach to meeting the above objectives is to be determined nor assessed. Accordingly, the identification of a development specific approach to meeting the objectives must have regard to qualifying the bushfire risk posed to future commercial/business buildings utilizing the "Deemed-to-Satisfy' provisions of the National Construction Code as the basis of determining a buildings resistance to the spread of fire. This approach recognizes that both NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 and 2018 provides that the provisions under the Building Code of Australia/NCC are taken as acceptable solutions where the aims and objectives of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and 2018 can be met.

In this regard given the development specific nature of the determination of defendable space requirements for commercial/business development, the determination of the spatial requirements for any future building development on the subject site will be the subject of development specific determination as a combination of bushfire threat management measures could be utilized so as to satisfy the performance objectives of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 or 2018.

Notwithstanding this, reference to the BCA/NCC suggests that a 3m - 10m area between a building and a fire source is acceptable for property protection purposes. Reference to Clause 3.2.2.2 of Australian Standard 2419.1 – 2005, (by virtue of Clause E1.3 of the BCA), provides that a 10m separation distance to a fire source is required for firefighting activities and is generally accepted by the NSW Fire Brigade as being sufficient to allow for firefighting in relation to commercial buildings. Lessor distances are permitted however additional measures are required so as to protect fire fighters from the effects of fire. For example, the use of radiant heat screens/barriers can be used in order to provide additional protection to fire fighters involved in asset protection activities. This maybe specifically relevant to the western aspect of the subject site where the hazard vegetation consists of low fuel loads and as such the impacts of bushfire in this aspect could be reduced which would support a reduced defendable space of 10m for each aspect continues to provide for significant opportunities to accommodate commercial/business development on the subject site.

It is therefore considered that there are opportunities to position future commercial/business buildings on the subject site so as to comply with the relevant requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 or 2018 and accordingly the proposed rezoning of the subject site to allow for future development is appropriate as it will be necessary to demonstrate compliance with the defendable space requirements in relation to any specific future development proposal.

Based upon the size and shape of the subject site it is considered that the intent of the requirement for the provision of Asset Protection Zones and Defendable Spaces as required by NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and 2018 can be satisfied for the future development of the subject site albeit that the location, nature and form of construction of future development must reflect the performance objectives of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006.

3.1.2 Defendable Space/Asset Protection Zone Management

Areas identified as forming part of the minimum Defendable Space requirements for any future commercial/business developments should be created and managed so as to comply with the standards which are applicable to Asset Protection Zones as follows;

(i) Inner Protection Area (IPA)

An IPA should provide a tree canopy cover of less than 15% and should be located greater than 2 metres from any part of the roofline of a building.

Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10m from an exposed window or door.

Trees should have lower limbs removed up to a height of 2 metres above the ground.

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3.1.3 Operational Access and Egress

Access to the subject site will be via the existing Crestwood Drive road reserve which adjoins the subject site to the north.

Crestwood Drive is a tar sealed all weather two-way public through road. In this regard travel is available to and from the subject site in both northerly and easterly directions along Crestwood Drive. Areas, which would be protected from the impact of bushfire, are present to the north, east and west of the subject site. Accordingly, access and egress is considered to be adequate given the developed nature of the area.

The existing public road infrastructure in the immediate area therefore provides for a number of access and egress options to and from areas that would be protected from any bushfire threat. Having regard to the relatively short travel distances involved to areas that would be protected from the effects of fire and the variety in access and egress options to and from the subject site it is considered that adequate access and egress is available.

The development concept for the subject site provides for the existing public road systems to service the proposed commercial/business development/s on the subject site. It is however noted that the development concept for the commercial/business development on the subject site provides for the provision of new internal road infrastructure. It will therefore be necessary to construct all new internal access roads within the subject site associated with any future commercial/business development so as to comply with the relevant performance objectives/acceptable solution requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 or 2018. In this regard, the following compliance requirements are considered to be relevant to the design and construction of new internal road infrastructure;

Table 7 - Acceptable Solutions (Access/Internal Roads) PfBP 2006

Intent of measures: to provide safe access to/from the public road system for fire fighters providing property protection during a bushfire and for occupants faced with evacuation.

Performance Criteria	Acceptable Solutions	Compliance Comment
The intent may be achiev	ed where:	
to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;	At least one alternative property access road is provided for individual dwellings (or groups of dwellings) that are located more than 200 metres from a public through road	N/A
The capacity of road surfaces and bridges is sufficient to carry fully loaded fire fighting vehicles. All weather access is	Bridges clearly indicate load rating and pavements and bridges are capable of carrying a load of 15 tonnes.	To be complied with in relation to the design of future development No bridges are likely to
provided.	Roads do not traverse a wetland or other land potentially subject to periodic inundation (other than a flood or storm surge).	be required. To be complied with in relation to the design of future development

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BUSHFIRE PLANNING REPORT (<u>PT LOT 500 CRESTWOOD DRIVE</u>		JULY 2019
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	vehicles (15 tonnes).	

Table 8 - Acceptable Solutions (Access/Internal Roads) PfBP 2018

Intent of measures: to provide safe operational access for emergency services personnel in suppressing a bush fire, while residents are accessing or egressing an area.		
Performance Criteria	Acceptable Solutions	Compliance Comment
The intent may be achieve	ed where:	1
Firefighting vehicles are provided with safe, all-	SFPP access roads are two-wheel drive, all- weather roads, and	To be complied

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weather access to	accoss is provided to all structures and bazard	with in relation to the		
weather access to structures and hazard vegetation	access is provided to all structures and hazard vegetation	with in relation to the design of future development		
	traffic management devices are constructed to not prohibit access by emergency services vehicles			
	access roads must provide suitable turning areas in accordance with Appendix 3	-		
The capacity of access roads is adequate for firefighting vehicles	the capacity of road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges and causeways are to clearly indicate load	No bridges are required.		
	rating	Roads are to be all weather in design and construction.		
There is appropriate access to water supply	hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression, and	The design and construction of roads is to provide for compliance with the relevant design and		
	hydrants are provided in accordance with AS 2419.1:2005	construction provisions. The design of the internal road system is to provide for a through road configuration.		
	there is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available			
Perimeter access roads are designed to allow safe access and egress for medium rigid firefighting vehicles while occupants are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface	there are two-way sealed roads, and	To be complied		
	8m carriageway width kerb to kerb, and	 with in relation to the design of future development 		
	parking is provided outside of the carriageway width, and].		
	hydrants are to be located clear of parking areas, and			
	there are through roads, and these are linked to the internal road system at an interval of no greater than 500m, and			
	curves of roads have a minimum inner radius of 6m, and			

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	the maximum grade road is 15° and average grade is 10°, and	
	the road crossfall does not exceed 3°, and	
	a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided	
Non-perimeter access roads are designed to allow safe access and egress for medium rigid firefighting vehicles while occupants are evacuating	inimum 5.5m width kerb to kerb, and	To be complied
	parking is provided outside of the carriageway width, and	with in relation to the design of future development
occupants are evacuating	hydrants are located clear of parking areas, and	
	there are through roads, and these are linked to the internal road system at an interval of no greater than 500m, and	
	curves of roads have a minimum inner radius of 6m, and	
	maximum grade road is 15° and average grade is 10°, and	
	the road crossfall does not exceed 3°, and	
	a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	

Given the existing nature of the public road infrastructure and the nature of the proposed future development of the subject site it is considered that access and egress arrangements for the future development of the subject site can be consistent with the relevant performance and acceptable solution requirements of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 or 2018.

3.1.4 Services - Water, Gas and Electricity

As set out in Section 4.1.3 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006, developments in bushfire prone areas must maintain a water supply reserve dedicated to firefighting purposes.

Given that the proposed rezoning provides for commercial/business development, any future buildings will have access to the reticulated water supply, the extension of which will be required by Port Macquarie-Hastings Council to service development within an urban context. It is however noted that the determination of a guaranteed water supply is to be made by the water supply authority where mains water supply is available.

Electricity supply is available and will be accessible to the development of the land.

Reticulated gas services are not available in the locality and are therefore not available to the subject site.

It is noted that neither NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 or 2018 prescribe any specific acceptable solutions with respect to commercial/business DAVID PENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES

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development. In this regard it will be necessary to demonstrate that any future commercial/business development on the subject site is provided with adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.

Given that the subject site is serviced by a reticulated water, has access to the electricity supply which services the area and the flexibility which exists in relation to the location of any gas supplies it will be possible for any future commercial/business development to be provided with services which comply with the relevant requirements of either NSW Rural Fire Services, **Planning for Bushfire Protection**, 2006 or 2018.

3.1.5 Landscaping

Landscaping is a major cause of fire spreading to buildings, and therefore any landscaping proposed in conjunction with the future development of the subject site will need consideration when planning, to produce gardens that do not contribute to the spread of a bushfire.

When planning any future landscaping surrounding any future development on the subject site, consideration should be given to the following:

- The choice of vegetation consideration should be given to the flammability of the plant and the relation of their location to their flammability and ongoing maintenance to remove flammable fuels.
- Trees as windbreaks/firebreaks Trees in the landscaping can be used as windbreaks and also firebreaks by trapping embers and flying debris.
- Vegetation management Maintain a garden that does not contribute to the spread of bushfire.
- Maintenance of property Maintenance of the property is an important factor in the prevention of losses from bushfire.

Appendix 5 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and Appendix 4 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2018 contain standards that are applicable to the provision and maintenance of landscaping.

Any landscaping proposed to be undertaken in conjunction with any future development of the areas which are the subject of this report is to comply with the principles contained in Appendix 5 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 or upon its adoption Appendix 4 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2018.

Compliance with Appendix 5 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 or Appendix 4 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2018 will satisfy the intent of the bush fire protection measures that are applicable to the provision of landscaping.

3.1.6 Construction Requirements

It is noted that neither of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 or 2018 contain any specific construction requirements in relation to commercial/business buildings. In this regard both guidelines provide that the general fire safety construction provisions (of the NCC) are taken as acceptable solutions. As such AS 3959 and the NASH Standard are not considered as a set of 'deemed to satisfy' provisions, however compliance with AS 3959 and NASH should be considered when meeting the aims and objectives of PfBP 2006 or 2018.

Given the flexibility which will exist in relation to future building design and construction it will be possible for future development to comply with the relevant construction requirements of either NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 or 2018.

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3.2 Construction of Buildings in Bushfire Prone Areas

3.2.1 General

In NSW, the bushfire protection provisions of the National Construction Code, (NCC), are applied to Class 1, 2, 3, Class 4 parts of buildings, some Class 10 buildings and Class 9 buildings that are Special Fire Protection Purposes (SFPP's).

It is noted that both NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and 2018 provide that AS3959 is the relevant construction standard for Class 1, 2, 3, Class 4 parts of buildings, some Class 10 buildings and Class 9 with AS 3959 – 2009 being the current construction standard in NSW. The form adoption of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2018 will however result in AS 3959 – 2018 becoming the relevant construction standard in NSW.

It is however noted that both NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and 2018 seek to modify certain provisions of the relevant reference AS 3959 standards.

It is also noted that the NCC does not provide for any bush fire specific construction requirements in relation to other non-residential or SFPP development and as such AS 3959 does not apply as a set of 'deemed to satisfy' provisions for commercial/business buildings. The general fire safety construction provisions of the NCC are taken as acceptable solutions. This would be specifically relevant where commercial/business developments are undertaken on the subject site as a consequence of the proposed rezoning.

4.0 SUMMARY OF FINDINGS

The following recommendations are provided in response to the proposed rezoning of land known as Part of Lot 500 DP 1237901 Crestwood Drive, Port Macquarie having regard to the development concept provided as **Appendix 2**.

- (i) Adopt Landscaping principals in accordance with Section 3.1.4 of this report.
- (ii) Defendable Spaces to any future commercial/business buildings on the subject site are to be the subject of individual assessment in accordance with the general objectives of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006
- (iii) Water and other services are to be provided to the subject site in accordance with the requirements detailed in Section 3.1.3 of this report.
- (iv) The determination of construction standards for any future development of the subject site should be the subject of an individual bushfire hazard assessment conducted in conjunction with the development of the subject site.
- (v) Where internal access road infrastructure is required, its design and construction must comply with the relevant requirements of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 or 2018.

5.0 CONCLUSION

It is considered that the proposed rezoning of land known as Part of Lot 500 DP 1237901 Crestwood Drive, Port Macquarie is at risk of bushfire attack; however, it is in our opinion that with the implementation of the bushfire threat reduction measures and consideration of the recommendations in this report, the bushfire risk is manageable for the proposed rezoning albeit that the design and construction of any future commercial/business development will need to demonstrate compliance with the relevant requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006.

With the implementation of the recommendations it is considered that it will be possible for the future commercial/business development of the subject site to meet the applicable acceptable

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solutions as provided for in NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 or 2018.

This report is however contingent upon the following assumptions and limitations.

Assumptions

- (i) For a satisfactory level of bushfire safety to be achieved regular inspection and testing of proposed measures, building elements and methods of construction, specifically nominated in this report, is essential and is assumed in the conclusion of this assessment.
- (ii) There are no re-vegetation plans in respect to hazard vegetation and therefore the assumed fuel loading will not alter.
- (iii) It is assumed that the building works will comply with the DTS provisions of the BCA.
- (iv) Any future commercial/business developments are constructed and maintained in accordance with the risk reduction strategy in this report.
- (v) The vegetation characteristics of the subject site and surrounding land remains unchanged from that observed at the time of inspection.
- (vi) The information contained in this report is based upon the information provided for review, refer to **Appendix 2.**

No responsibility is accepted for the accuracy of the information contained within the above plans.

Limitations

- (i) The data, methodologies, calculations and conclusions documented within this report specifically relate to the building and must not be used for any other purpose.
- A reassessment will be required to verify consistency with this assessment if there is building alterations and/or additions, change in use, or changes to the risk reduction strategy contained in this report

6.0 REFERENCES

NSW Rural Fire Services, Planning for Bushfire Protection, 2006

AS 3959-2009, Construction of Buildings in Bushfire Prone Areas

Keith David 2004, Ocean *Shores to Desert Dunes, The Native Vegetation of New South Wales and the ACT*, Department of Environment and Conservation

NSW State Government, Rural Fires Act, 1997

Port Macquarie-Hastings Councils, Bushfire Prone Land Mapping

NSW Rural Fire Service, Guideline for Bushfire Prone Land Mapping, 2002

Australian Building Codes Board, *Building Code of Australia*, 2011 NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2002*

Disclaimer

The findings referred to in this report are those which, in the opinion of the author, are required to meet the requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006. It should be DAVID PENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES 33

BUSHFIRE PLANNING REPORT (REZONING)	
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noted that the Local Authority having jurisdiction for the area in which the property is located may, within their statutory powers, require different, additional or alternative works/requirements to be carried out other than those referred to in this report.

This report has been prepared partially on information provided by the client. Information provided by the client in respect of details of construction.

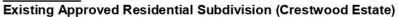
The author denies any legal liability for action taken as a consequence of the following:

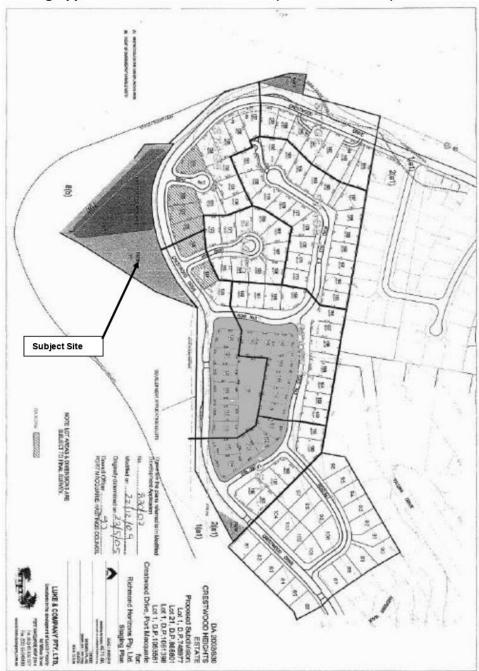
- The Local Authority requiring alternative or additional requirements to those proposed or recommended in this report.
- Incorrect information, or misinformation, provided by the client with regard the proposed development which is in good faith included in the strategies proposed in this report and later found to be false.

DAVID PENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES

JULY 2019

APPENDIX 1

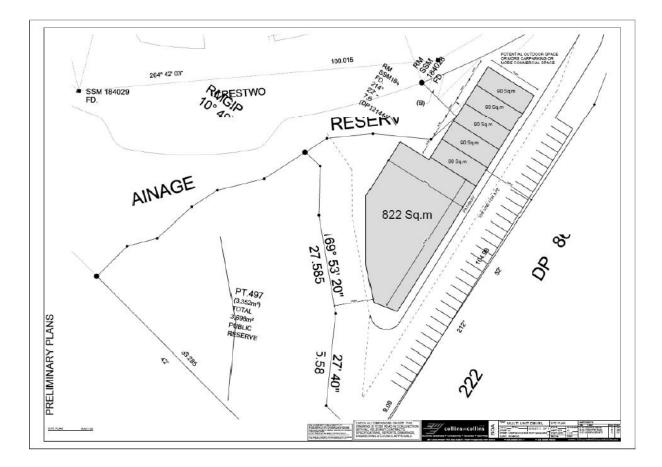




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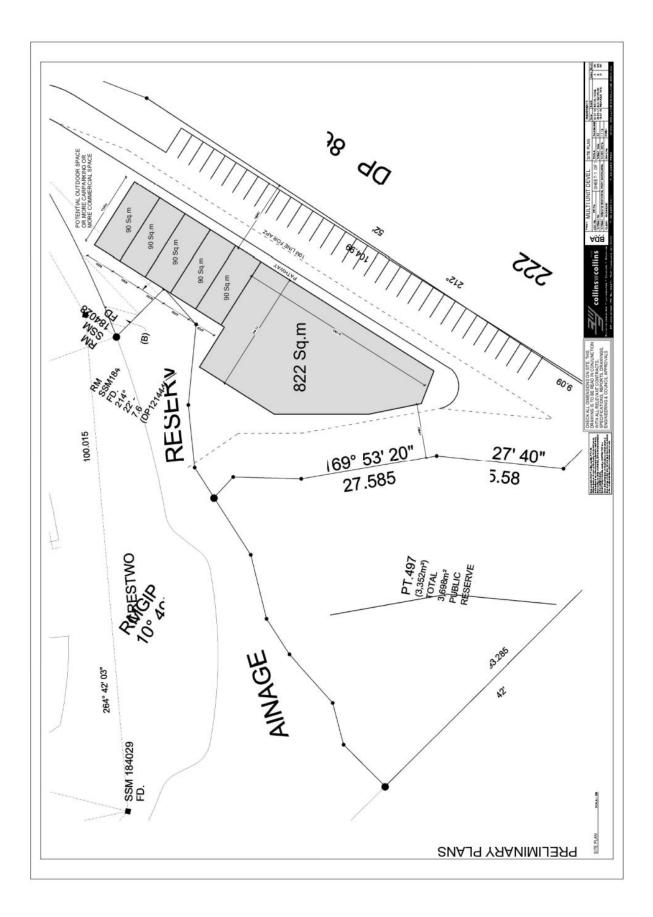
JULY 2019

APPENDIX 2 Indicative Development Concept



DAVID PENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES

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16 February 2020 Job 4671

Initial Business Supply & Demand Review to accompany Site Specific Planning Proposal - Crestwood Drive, Port Macquarie

A. Aim of Planning Proposal

The aim of the Planning Proposal is to facilitate a rezoning of 5,390m² of land in the Crestwood Estate known as Part Lot 500 DP 1237901, Crestwood Drive, Port Macquarie, to B1 Neighbourhood Centre.

In order to determine whether the Site Specific Planning Proposal should proceed to Gateway, an initial review has been undertaken with respect to the demand for additional business land and the potential impact upon the retail hierarchy of Port Macquarie, having regard to the regional and local strategies.

B. Existing Retail Hierarchy & Planning

The Regional Plan indicates that new commercial precincts, outside of centres, should be appropriately sized and of scale relative to the area they will be servicing, and demonstrate how they will deliver positive social and economic benefits for the wider community and maintain the strength of the regional economy.

Council's Urban Growth Management Strategy states:

"Port Macquarie is expected to accommodate about 63% of all new population growth in the local government area to 2036. In total, Port Macquarie's population is expected to grow from 48,870 in 2016 to 66,000 in 2036. Generally, this means between 700 and 800 new residents each year."

Figures 1 and 2 below are extracts from Council's Urban Growth Management Strategy and indicates the existing retail and business hierarchy, noting that Port Macquarie CBD is the main centre.

The subject site is located in the vicinity of the star indicated on the figure.

It is important to note the following with respect to the site distance from these identified existing centres:

- Main Centre Horton St in Port Macquarie's CBD is 8km / 14 minutes' drive by car from the site.
- Town Centre Wauchope is 23km / 25 minutes' drive by car from the site, Thrumster (under construction) is 13km / 15 minutes' drive by car from the site, and Laurieton is 29km / 29 minutes' drive by car from the site.
- Neighbourhood Centre Lighthouse is 3.1km / 5 minutes' drive by car from the site, and Lake Innes is 8.3km / 14 minutes' drive by car from the site.
- Local Convenience Centre Waniora is 5km / 9 minutes' drive by car from the site, Shelly Beach is 4.4km / 7 minutes' drive by car from the site, and Watonga is 4km / 7 minutes' drive by car from the site.

Looking at Figure 1, it is clear that there is un-serviced area with respect to neighbourhood centres in this area west of Ocean Drive, in the southern portion of Port Macquarie.



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Job 4671

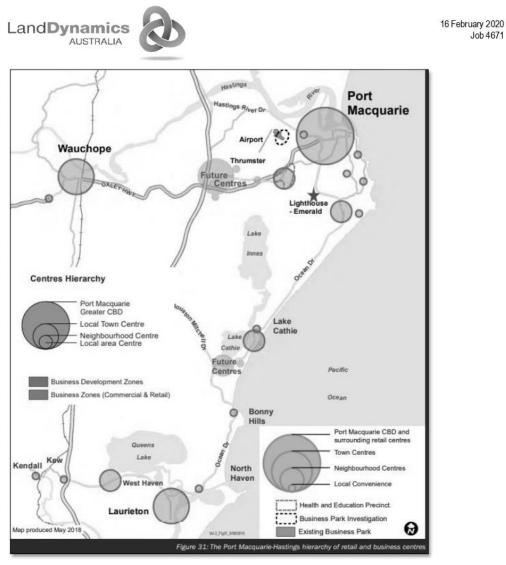


Figure 1 - Extract UGMS Retail Hierarchy and Business Centres Figure 31 (source: www.pmhc.nsw.gov.au)

Regional City			Port Macquarie CBD	Settlement City			
			Gordon Street	Munster/Lord Street			
Bulky Goods Retail			Lake Road	Hastings River Drive			
Town Centres		Wauchope	Laurietor	Thrumster (Sovereign Hills)	Lake innes		
Neighbourhood	Lake Cathle	Rainbow Beach	Lakewood	Thrumster	Innes Lake	Lighthouse Plaza	
Local Area Centres	ake Bonny Sthie Hills Comboyne Iorth	Long Telegraph 1 Flat Point	Timber Kendal Kew	North- haven Creek Lindfield	South Oxioy Waniora	Wetonge Clifton	Flynns Beach
ure 32: The Port Macquarie Hasting	s hierarchy of retail and busine	ss centres					

Figure 2 - Extract UGMS Retail Hierarchy and Business Centres Figure 32 (source: www.pmhc.nsw.gov.au)



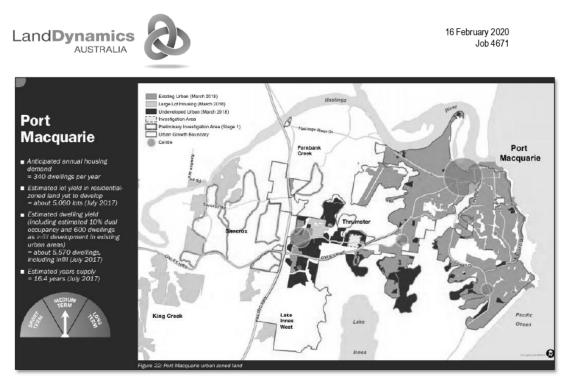


Figure 3 - Extract UGMS Housing Demand Figure 22 (source: www.pmhc.nsw.gov.au)

Figure 3 above identified undeveloped urban areas, with a large amount in this general area being the western side of Ocean Drive.

The LEP map 13G which includes the subject site and surrounding area identifies only commercial zonings for Lighthouse, Watonga, Waniora and Shelly Beach, consistent with above. Therefore, any other businesses operating in this southern area of Port Macquarie in accordance with the limited uses under the residential zoning or existing use rights. The current zoning maps does not allow for any increase in business zoned land, despite the extraordinary level of growth in population in this area over recent years and projected into the future.

It is key to note that the proposed B1 zoning varies from the main centre of Port Macquarie and due to the size, location and likely nature, is not in competition.

Council has been progressing planning of large scale business precincts including the Airport and Health & Education, however these are not directly comparable with this proposal and those proposals have the ability to significantly alter the business hierarchy and economic characteristics and trends for the wider area. This subject rezoning is proposed to fill a gap identified in the existing hierarchy at local / neighbourhood level, to service residential estates which have emerged and grown in recent years.

Having regard to the existing local and neighbourhood centres in the immediate vicinity being Lighthouse, Watonga, Waniora and Shelly Beach, the age of these centres is noted, which reiterates that no new centres in this southern 'Lighthouse – Emerald' portion of Port Macquarie has been developed for some time and is overdue.

C. Likely Users & Need

Figure 1 and the distances indicates above indicates a lack of business, commercial or retail centres for the residents of Crestwood and other nearby estates such as Greenmeadows and Dahlsford.

These residents have no other neighbour centre within walking distance, or close by. The closest facilities are Lighthouse Coles and specialty shops, which is a larger centre and approx. 3.1km / 5 minutes' drive by car from the site.



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There is a strong demand from the existing and future residents, as well as the users of the playground and Googik Track, which are both rapidly growing in popularity, for this low scale neighbourhood centre.

There is opportunity for commercial use of this site to appeal to a range of the sector including primarily:

- Residents of Crestwood and nearby estates
- Users of the adjoining playground
- Users of the Googik Track
- Small businesses who do not need space in the CBD, in a variety of forms including retail, office space, medical centre, café etc.

The site is accessed via existing infrastructure via walking, private vehicle, bus services and bicycles, or a combination. The connectivity of the site cannot be ignored when considering the likely users of this land.

Given the forecasted growth for the region and the increase in population continuing to arrive in Crestwood, there is a clear need to provide additional local commercial or retail services for their day to day needs, as well as providing employment opportunities. The proposed neighbourhood centre is small in scale, appropriate for the residential estate of Crestwood.

There are also clear tourist opportunities, given its location on the Googik Track. Port Macquarie and its key natural features such as the Coastal Walk and beaches, have a long standing relationship with business and commercial opportunities which support visitors, both local and further afar, to utilise these features and also support local businesses such as cafes. This is a good opportunity for a café to be located on the site which would contribute to the tourist economy.

The residents in Crestwood have identified with the developer, that there is a need for a self-storage facility or area for storage of their belongings which do not fit onto a standard residential lot in Crestwood, such as a camper trailer. This demand is real and could be accommodated on the site.

D. Impacts on Business Hierarchy

Given the small scale of the proposed B1 centre with a total land area of 5,390m², a direct conflict with user of the Port Macquarie CBD would not be expected, nor with the established local and neighbourhood centres given their distance from the site and also the size of those facilities being larger and in the instance of Lighthouse, housing a large chain supermarket being Coles.

The opportunities for the development of this site would be expected to respond to the needs of the users identified above and as such it would be expected that small scale retail uses, café, office space, medical centre and the like would be accommodated in a future development. The day to day needs of the residents could be met such as milk and bread, a cup of coffee or as discussed above, storage areas.

E. Population Growth & Economic Development

Population growth is identified in Figure 21 of the UGMS which indicates that this area of Crestwood and surrounds is expected to accommodate 385 additional dwellings by 2036, yet no additional local or neighbourhood commercial centres were identified in this area. Hence, there is a demand for the local business zoned land in the Crestwood area.

Having regard to the identied challenges in the UGMS to accommodate the desired population growth, which includes targeted infill development, the subject site is prime for infill development given its lack of constraints with respect to ecology, heritage or servicing and is located within an existing residential area.



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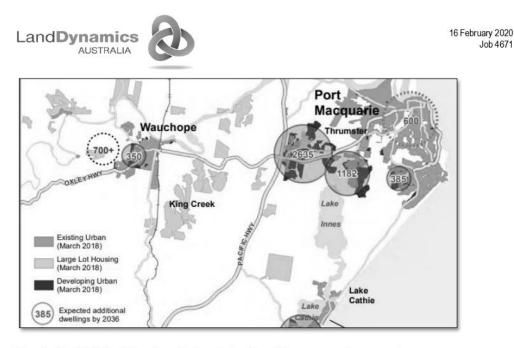


Figure 4 - Extract UGMS Retail Hierarchy and Business Centres Figure 21 (source: www.pmhc.nsw.gov.au)

Part 4 of the UGMS states:

"The goal for Economic Development in this Strategy is:

A prosperous and diversified economy

Our population is forecast to continue to grow at an average rate of around 1,200 additional residents every year to 2036. This will inevitably create opportunities for new jobs to service a growing population."

The UGMS also identified growth in the business sector to respond to the population increase, with growth at all levels of the hierarchy.

The proposed local centre would address a gap in the existing location of centres, whilst meeting the principles and servicing the current and expected continued population increase.

Employment opportunities both on-going and during construction would be an additional benefit, which is important in the Port Macquarie area where employment is often difficult.

Conclusion

In most instances, business zoned land is determined at the time of the overall zoning of a growth area and the population would follow. However, in this instance, there is already a demand established from the recent residential growth of Crestwood and neighbouring estates. The construction of the playground and the Googik Track have also contributed significantly to the need for business in this area to provide for the day to day conveniences of the residents and visitors.

In keeping with the strategies, infill development in this area and completion of the estate, along with the identified continued population growth, further strengthens the need for business land and a local or neighbourhood centre.

The business growth for the southern part of Port Macquarie has considerable need and the subject site is identified as a prime location to accommodate the ever increasing demand.



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Attachment 2. Assessment - State Environmental Planning Policies

SEPP	Consistency	
SEPP No 21—Caravan	Not relevant.	
Parks		
SEPP No 33—	Not relevant.	
Hazardous and		
Offensive		
Development		
	Broadly, the SEPP provides for development of a MHE	
	on any land on which development for the purposes of a	
	caravan park may be carried out. If the land is changed	
	to zone to R1 General Residential, a MHE is permissible	
SEPP No 36—	with consent. Caravan Parks are not permissible in zone	
Manufactured Home	B1 Neighbourhood Centre. MHE's are permissible in	
Estates	RE2 Private recreation. However, this type of	
	development is designated 'special purpose	
	development' under NSW Rural Fire Service	
	requirements, and would be unattainable on the land in questions.	
SEPP No 50—Canal	Not relevant.	
Estate Development		
	The object of this policy is to provide for a standardised	
	State-wide approach to the remediation of contaminated	
	land. The SEPP specifies certain considerations	
	relevant to rezoning land and in determining	
	development applications.	
SEPP No 55—		
Remediation of Land	The land in question is not known to be contaminated,	
	however it has been filled. Council will need to	
	undertake further investigation and geotechnical	
	contamination assessments of the filled landform prior to	
	forwarding any Planning Proposal for the site for a	
	Gateway determination.	
SEPP No 64—	Change of zone will affect permissibility of different	
Advertising and	types of signage.	
Signage SEPP No 65—Design	Not relevant.	
Quality of Residential		
SEPP (Affordable	Not relevant.	
Rental Housing) 2009		
SEPP (Building	Not relevant.	
Sustainability Index:		
BASIX) 2004		
SEPP (Coastal	Clause 11: Development on land in proximity to coastal	
Management) 2018	wetland will apply at the time of any DA for future	
	development of the land	
SEPP (Concurrences	Not relevant.	
and Consents) 2018		
SEPP (Educational	Not relevant.	
Establishments and		
Child Care Facilities)		
2017 SEBB (Exampt and	This Codes SEDD' permits a wide range of	
SEPP (Exempt and	This 'Codes SEPP' permits a wide range of	
Complying	development as exempt (no approval required when	

Planning Proposal Crestwood Drive, Port Macquarie - PP2017 - 4.1

Attachment 2. Assessment - State Environmental Planning Policies

SEPP	Consistency	
Development Codes)	specified requirements are satisfied) or complying	
2008	development (fast track approval based on meeting set criteria, with no merit considerations).	
	The SEPP also anticipates that there will be areas	
	where it is not appropriate to permit development	
	without full development application assessment.	
SEPP (Housing for Seniors or People with a Disability) 2004	Not relevant.	
	The 'Infrastructure SEPP' permits a wide range of	
SEPP (Infrastructure) 2007	infrastructure related development independently of the provisions of the LEP. In addition, it specifies when assessment of development applications requires consultation with the NSW Roads and Maritime Services in relation to the traffic generation implications.	
SEPP (Koala Habitat Protection) 2019	Not relevant. There is no vegetation on site.	
SEPP (Mining, Petroleum Production and Extractive Industries) 2007	Not relevant.	
SEPP (Primary Production and Rural Development) 2019	If rezoned, the SEPP will no longer apply to the area.	
SEPP (State and	Applies irrespective of zoning changes, but only relevant	
Regional	to larger development - unlikely within this release area.	
Development) 2011		
SEPP (Vegetation in Non-Rural Areas) 2017	If rezoned, will apply. The site has been highly modified and substantially filled in association with the adjoining residential subdivision works. There is evidence of grassland planting, and slashing (until recent months) as part of a regular maintenance program by the landholder. The site has not been used for primary production purposes post filling, and due to its size and location adjoining urban housing is currently unsuitable for farming and, or agricultural activities. The SEPP applies in a range of land use Zones including B1 Neighbourhood Centre and RE2 Private Recreation. The SEPP will regulate future clearing of vegetation on the land in question.	

Planning Proposal Crestwood Drive, Port Macquarie - PP2017 - 4.1

Direction	Consistency
1.1 Business and Industrial Zones	The Proponent's Planning Proposal is Inconsistent with the Direction.
The objectives of this direction are to:	
 a) encourage employment growth in suitable locations, b) protect employment land in business and industrial zones, and c) support the viability of identified centres 	A planning proposal may be inconsistent with the direction only if the relevant Authority can satisfy the State government that the provisions of the planning proposal are:
-,	 justified by a strategy or a study which gives consideration to the direction consistent with the relevant regional
	plan - is of minor significance
	Proceeding with a planning proposal on the basis of the proponent request to change the zone to B1 Neighbourhood Centre/B2 Local Centre is inconsistent with the direction.
	Approval for any inconsistency with the direction will be required should Council determine to proceed on the basis of the proponent's proposal, which is not supported by a strategy; the regional plan for the North Coast; and is not of minor significance in terms of Council's Hierarchy of Business Centres.
1.2 Rural Zones	Inconsistent.
The objective of this direction is to protect the agricultural production value of rural land.	The site is not identified in the <i>North Coast Regional Plan 2036</i> for future urban use.
	However, it is considered that the inconsistency is justified as the land is not viable productive rural land.
	Approval for any inconsistency with the Direction will be necessary if the proposal proceeds.
2.2 Coastal Management	Inconsistent.
The objective of this direction is to protect and manage coastal areas of NSW.	A planning proposal must give effect to the direction; the Coastal Management Act 2016; and State Environmental Planning Policy (Coastal Management) 2018.
	A planning proposal must not rezone land which would enable increased development or more intensive land-use on land within a

Planning Proposal 2017 - 4.1

Direction	Consistency
	coastal wetlands and littoral rainforests area (in this case, Coastal Proximity Area - Wetlands) identified by the State Environmental Planning Policy (Coastal Management) 2018.
	A planning proposal may be inconsistent with the direction only if the relevant Authority can satisfy the State government that the provisions of the planning proposal are:
	 justified by a strategy or a study which gives consideration to the direction consistent with the relevant regional plan of minor significance.
	Notwithstanding the above, proceeding with a planning proposal for recreational uses as recommended in the report, is broadly consistent with the <i>North Coast Regional</i> <i>Plan 2036</i> and Council's adopted UGMS.
	Approval for any inconsistency with the Direction will be necessary if the proposal proceeds.
2.6 Remediation of Contaminated Land	Inconsistent.
The objective of this direction is to reduce the risk of harm to human health and the environment by ensuring that contamination and remediation are considered by planning proposal authorities.	This Direction applies when a relevant planning authority prepares a planning proposal that will result in development on land for residential, educational, recreational or childcare purposes, or for the purposes of a hospital – land: (i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and (ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).
	The land in question is not known to be contaminated, however it has been filled.

Planning Proposal 2017 - 4.1

Direction	Consistency
	Council will need to consider a report a contamination assessment in relation to the site <u>prior</u> to forwarding a Planning Proposal to Gateway for a determination on whether to proceed with an amendment to change the zone.
	Approval for any inconsistency with the Direction will be necessary if the proposal proceeds.
4.4 Planning for Bushfire Protection	Inconsistent.
 he objectives of this direction are: (a) to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and (b) to encourage sound management of bush fire prone areas. 	This Direction applies when a relevant planning authority prepares a planning proposal that will affect, or is in proximity to land mapped as bushfire prone land. The site is irregular in shape, has a direct
	interface with the adjoining national park estate, and is designated bushfire prone land, Category 'Buffer'.
Figure 1: Photo overlooking the site and the adjoining National Park.	Investigations by the landholder and assessment by Council has confirmed that future residential development of the site is high risk as APZs cannot be contained onsite. Furthermore, adjoining land owners (National Parks and Council) have confirmed to the landholder that they will not accept any APZ burden for future development, particularly residential forms, on their respective landholdings. The advice is consistent with the NSW RFS guideline <i>Planning for Bushfire Protection 2019.</i>
	Figure 3: Carpark adjoining the site.
	Council will need to consult the RFS to determine their agreement to progression of any planning proposal for site, and satisfy the Dept. of Planning in relation to any inconsistency.

Planning Proposal 2017 - 4.1

Direction	Consistency
Figure 2: The site and adjoining National Park.	
5.10 Implementation of Regional Plans	Inconsistent.
	The Direction requires that planning proposals must be consistent with a regional plan released by the Minister for Planning.
	The proponent's request is broadly inconsistent with the regional plan Goals and Actions for a <i>"thriving, interconnected economy"</i> as discussed in the report.
	Council will need to consult the Department of Planning in relation to the inconsistency.
6.3 Site Specific Provisions	Inconsistent.
	The objective of this direction is to discourage unnecessarily restrictive site specific planning controls.
	The Proponent's suggestion to incorporate restrictions in relation to residential uses in zone B1 Neighbourhood Centre is not lawful as these uses, such as shop top housing, are mandated by the State Government's Standard LEP template.
	Such a change effectively creates a sub- zone in conflict with planning legislation and Ministerial Direction and therefore cannot be supported.

Planning Proposal 2017 - 4.1

ORDINARY COUNCIL 21/11/2018

Our Ref: 810160122:SA Contact: Scott Anson

7 November 2018

Port Macquarie Hastings Council 17 Burrawan Street Port Macquarie NSW 2244

Attention: Sandra Bush (Senior Strategic Planner)

Dear Sandra,

PORT MACQUARIE AIRPORT PRECINCT INVESTIGATION AREA – SITE SELECTION FOR PROPOSED BUSINESS PARK, PRELIMINARY PLANNING PROCESS REVIEW

1 Introduction

Cardno (NSW/ACT) Pty Ltd (Cardno) has been engaged by Port Macquarie Hastings Council (Council) to prepare an independent review of the planning process undertaken by the Council, relating to the preparation of a Planning Proposal for the Port Macquarie Airport Business Park. The investigation area includes land owned by Council.

This report provides an opinion and conclusions based on the observations and work performed. The services provided and work performed were in accordance with Council's letter of engagement and cover the period from 16 March 2016 to the date of this preliminary report, 7 November 2018. This preliminary report is limited to the planning process that has been undertaken and the planning reports and recommendations presented to Council during the specified period. This report considers the relevant NSW planning legislation, processes and guidelines, together with the NSW ICAC Probity Principles. This report is not a merit review of the Council's planning for the Airport Investigation Area. A copy of Council's letter of engagement to Cardno is attached.

Cardno's planning process review team has no prior involvement with the investigation area, land owners or surrounding developments. Cardno is not aware of any conflict of interest that would preclude the Cardno planning team from undertaking this planning process review.

This preliminary planning process review was primarily conducted by Scott Anson, Technical Director – Planning, Cardno Northern NSW. Scott is a Registered Planner (#4156) and is bound by the Planning Institute of Australia (PIA) Code of Professional Conduct (<u>https://www.planning.org.au/documents/item/6014</u>). Scott commenced with Cardno in January 2017 and has over 23 years experience working with NSW legislation including the *Environmental Planning and Assessment Act 1979, NSW Local Government Act 1993* and related legislation and regulations. Scott has no prior engagements working with or on behalf of Council.

Scott has been assisted by Natasha Wells, Senior Planner - Cardno Northern NSW who has over 15 years professional planning experience. Natasha has been involved in this planning process review since March 2016. Between March 2016 and October 2016 the review was conducted by Renae Gifford and Keith Blackmore. Renae and Keith ceased working at Cardno in 2016. Natasha concluded working at Cardno in 2017.

Cardno advises that Cardno engineering staff have been engaged by Council to prepare an engineering design for Boundary Road, Port Macquarie. This planning review is a separate and discrete engagement prepared by the planning team at Cardno Northern NSW. This preliminary report has been peer reviewed by the Cardno Sydney planning team located in St Leonards.

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Cardno (NSW/ACT) Pty Ltd

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Phone +61 2 4965 4555 Fax +61 2 4965 4666



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ORDINARY COUNCIL 21/11/2018

810160122:SA 7 November 2018 2



2 The Planning Proposal

This engagement involves a review of the planning process followed by Council for the preparation of a planning proposal for the investigation area comprising Council and private owned land. Cardno notes that Council has a role as land owner and airport operator. Council is a planning authority under the *Environmental Planning and Assessment Act 1979*. Council is also a roads authority under the *Roads Act 1993*.

The Department of Planning and Environment's *Local Environmental Plans – A guide to preparing local environmental plans* 2016 defines a *planning proposal* as a document that explains the intended effect of the proposed Local Environmental Plan (LEP) and provides the justification for making the plan under the Environmental Planning and Assessment Act 1979, s.3.33(1) [Previously s.55(1)]. The level of detailed required in a Planning Proposal should be proportionate to the complexity of the proposed amendment. The Planning Proposal should contain enough information to identify relevant environmental, social, economic and other site specific considerations. The scope of key issues should be identified in the initial Planning Proposal that is submitted for a Gateway determination. The Gateway determination process assesses the strategic merit of the proposal. The Gateway assessment is undertaken by the Department of Planning and Environment. If the Planning Proposal proceeds, the determination may specify further investigations, public and agency consultation and timing requirements to be met prior to the plan being made. As noted, further detailed investigations may be undertaken and included in the Planning Proposal after the Gateway determination is issued. When preparing and considering a Planning Proposal Council should consider whether they will be seeking an Authorisation to make the plan under delegation or request the Department to be the Responsible Planning Authority (RPA).

3 Purpose of Independent Planning Process Review

The purpose of this preliminary review is to provide an independent assessment of Council's planning process for the Airport Business Park Planning Proposal. This review considers whether the relevant planning processes have been followed and undertaken by the Council, in particular the activities and tasks undertaken by Council's Development and Environment Division (D&E), have been conducted in an unbiased way. The objectives of the review are:

- (a) To review the planning process that has been undertaken to date in relation to the Airport Business Park investigation area
- (b) To review the draft reports to Council in relation to planning proposals for the Council and Missen properties within the Airport Business Park investigation area,
- (c) To prepare independent probity reports regarding the planning process and recommendations and any partiality or bias that may be evident as a result of the probity review,
- (d) In relation to a) to c) above, to answer the question: Has Council fulfilled its role as planning authority in a fair and unbiased manner, notwithstanding the ownership of land by Council within the Airport Business Park Investigation Area?
- (e) To make any necessary recommendations to Council as a consequence of the above review (Port Macquarie Hasting Council Consultancy Brief RFQ 16-20 February 2016).

In respect to point (b) Cardno has considered the planning processes Council has applied to all land situated within the investigation area.

3.1 Preliminary planning process review

This preliminary planning process review covers the period of Cardno's engagement from 16 March 2016 to the date of this report 7 November 2018.

Cardno has undertaken a preliminary planning process review having regard to the provisions of the:

NSW Environmental Planning and Assessment Act 1979, primarily covered under Section 3.33 (Previously Section 55);

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- Planning Proposals A guide to preparing planning proposals 2016; and
- Local Environmental Plans A guide to preparing local environmental plans 2016

These guidelines are issued by the Department of Planning and Environment.

Cardno has also considered the provisions of the NSW Local Government Act 1993 relating to code of conduct of councillors, staff, delegates and administrators as this relates to dealings with affected land owners and the general public (refer Port Macquarie Hastings Code of Conduct and Port Macquarie Hastings Council Code of Meeting Practice). Cardno has been guided by the core principles (where applicable) contained in the NSW Independent Commission Against Corruption publication *Probity Advising - Guidelines for Managing Public Projects* 2005, including:

- Accountability of the participants and transparency of the process;
- · Fairness, impartiality and honesty in carrying out the process;
- Management of actual, potential and perceived conflicts of interest;
- Maintenance of confidentiality and security of documentation and information; and
- Attaining best possible value for money under the prevailing circumstances.

3.2 Work Performed

Cardno undertook the following tasks in order to form a conclusion on the tasks undertaken by Council's Development and Environment Division in relation to the planning process. land owner consultation and consideration of technical studies as part of the preparatory work for the Airport Business Park Planning Proposal. For this preliminary report a sampling approach targeting key issues and/or process milestones was adopted. The relevant records are identified below.

3.2.1 Inception meeting, site inspection and background information

Cardno's Senior Planner Keith Blackmore attended the inception meeting and site inspection with Council's Development and Environment. For the period prior to Cardno's engagement in 16 March 2016, Cardno has relied on the provision of records comprising documents, reports, studies and minutes provided by Council.

3.2.2 Records Management

In respect to the confidentiality of sensitive information and internal file security arrangements, Council's Team Leader Information and Data has attested that only Strategic Land Use Planning staff have permissions to access the relevant Council Planning Proposal file(s). Council's Electronic Document Management System (HP TRIM) came into effect at Council in July 2012. Cardno has requested and received a summary of access controls applied to relevant Council planning proposal files within the Port Macquarie-Hastings Council's HP TRIM systems. On 20 September 2017 Council's Records Manager Team Leader confirmed that 'no access has been provided to the Commercial Business Services group (of which airport staff are a subset) belonging to the Corporate Performance Division". The relevant records include:

- DD032.2015.00000003.001 PP2015 3.1 PMQ Airport Precinct rezoning PMHC land 54723
- DD032.2015.00000003.004 PP2015 3.4 PMQ Airport Precinct Expansion Impact Assessment 2491
- DD032.2015.00000003.005 PP2015 3.5 PMQ Airport Precinct Probity Review 2491

3.2.3 Biocertification issues

Cardno has identified and sighted Council meeting minutes relating to items considering the Biocertification matter. Cardno notes that CIrs Besseling and Cusato declared interests on 16 December 2015, 10 August 2016 and 19 October 2016. The other record identified by Cardno involves the initial consideration by Council of *Tender T-14-09 for the Biodiversity Certification Assessment and Strategy. Port Macquarie Airport* to select the consultant to undertake this work. Cardno notes that this item and resolution involved a Council administrative process and allocation of Council funds only. CIr Besseling participated in the meeting and Cr Sustain was an apology. At time of writing this preliminary report, Cardno notes that Cr Besseling is no longer a Councillor at Port Macquarie Hastings Council.

Cardno has sighted the Council's bio-certification documentation submitted to the NSW Minister for the Environment. This documentation includes two (2) public submissions from Mr John Jeayes and Lewis Land Group for Sovereign Hill Project/GEM Planning. These submissions foreshadow potential probity issues concerning Council as a planning authority and as a land owner. Cardno contacted Mr Jeayes on 21 September 2016 confirming Cardno was undertaking an independent review of the Planning Proposal process undertaken by Council.

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The opportunity to scrutinise these specific issues and concerns and the overall merit of the Planning Proposal will be during the public consultation phase following Gateway determination. The Department of Planning and Environment determines if the planning proposal can proceed to community and agency consultation.

Cardno notes that the planning proposal for the Airport Business Park relies on approval of the bio-certification package by the Minister for the Environment. Cardno notes that conflicts of interest were declared and recorded for this item in the Council meeting minutes on 10 June 2016.

The Minister for the Environment is solely responsible for approving or refusing the bio-certification package submitted by Council. Cardno has sighted:

- The Office of Environment and Heritage (OEH) written advice to Council dated 17 August 2018
- Executed Biocertification documents signed in Port Macquarie and dated 3 September 2018
- Extract from NSW Government Gazette No 87 and Order dated 7 September 2018 pp 5856-5865
 giving effect to the Biocertification arrangements
- Council Report Port Macquarie Airport and surrounding lands Biodiversity Conservation Agreement and Minutes dated 19 September 2018

Cardno notes that is was open to Mr Jeayes, Lewis Land Group and any other stakeholder to make representations direct to the Minister for the Environment on the biocertification matter.

3.2.4 Review planning criteria

Council's D&E provided draft planning criteria on 18 October 2016. Cardno notes that planning criteria were prepared in advance by Council's D&E in the event that the extent of the area to be rezoned needs to be limited in size or staged over time.

Cardno's response dated 3 November 2016 concluded that the Draft Planning Criteria are generally in line with the adopted Urban Growth Management Strategy. Cardno notes from a probity perspective that the criteria is not land owner centric and is generally consistent with adopted reports and strategies from 2007 to present, including the Industrial Lands Strategy, Urban Growth Management Strategy, Midcoast Regional Strategy. North Coast Regional Strategy.

3.2.5 Review meetings

Port Macquarie Airport Business Park – Planning Update Councillor Briefing by Peter Cameron/Duncan Clarke on 30 November 2016

Cardno was not present at the Councillor briefing on 30 November 2016. Council's Group Manager Strategic Land Use Planning verbally advised Cardno that Council staff representatives for the Port Macquarie Airport business enterprise left the room and were not present for the duration of the briefing. Cardno notes that this advice is consistent with Port Macquarie Hastings Council Meeting Code of Practice, Section 8.11.2, relating to matters involving a Council business enterprise.

Cardno has sighted the briefing material provided to Councillors on 30 November 2016. Cardno notes:

- > Indicative area identified for potential rezoning illustrates different options covering part private owners and part Council land.
- > Presentation references Department of Planning advice circa November 2007 outlining key issues to be addressed in a planning proposal
- > Next steps includes D&E meeting with all affected landowners; and
- > Future report to Council on planning proposal noting proposal is subject to bio-certification package.
- 3.2.5.1 Landowner meetings with Council Development & Environment Division

Cardno observed meetings between Council's D&E and land owners conducted on 24 March 2017. This review included sighting the meeting agenda (including meeting purpose) prior to release to landowners. Cardno has sighted meeting minutes issued to participants.

The first meeting involved Council's D&E and representatives of the Port Macquarie Airport (Corporate and Organisational Services [COS] Division as per Port Macquarie Hastings Council organisation structure pre 1 May 2017). The second meeting involved Council's D&E and representatives of the private land owners

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adjoining the airport. Land owner Missen represented by consultant Land Dynamics. Land owners Gilson and Ireland were invited but did not attend.

In the interests of transparency, Cardno directly advised land owners that Cardno is engaged by Council for the engineering design of Boundary Road. This engineering design work is separate to this planning process review and involves different Cardno staff.

Cardno observed that the D&E acted consistently with the meetings terms of reference. No conflicts of interest were raised by each participant at each meeting. Cardno notes that affected land owners had an opportunity to read the key project information and preliminary findings of technical reports and make submissions to D&E. An extension of time was granted to all land owners to make a submission to D&E. Cardno sighted letters submitted by Port Macquarie Airport (COS) and Missen.

No issues where raised by the land owners with Cardno concerning the conduct of the meeting by Council's D&E or the contents of the record of meeting.

3.2.6 Land Economics Assessment

Cardno has reviewed the reports prepared by Hill PDA in 2010, 2016 and supplementary advice provided to Council's D&E Division in 2017 in response to a peer review by Gillespie Economics. Cardno notes the quantum of land identified for rezoning within the Airport Business Park investigation area has been reviewed and increased from around 10 hectares initially to 20 hectares in the current report.

In response to a clarification raised by a landowner concerning amount of land that could be supported to be rezoned on economic impact grounds, Council's D&E circulated the consultant brief to all adjoining landowners in attendance for their information. Cardno observes that the brief outlines study objectives, provides background information and invites the consideration and analysis of different options consistent with sound land economic planning practice. Cardno notes that Council's D&E Division has sought clarification and advice from Hill PDA over an extended timeframe in response to issues raised by the Department of Planning and Environment. The merits and economic justification will be considered as part of the Gateway determination and assessment of the planning proposal by the Department of Planning and Environment.

3.2.7 Council Restructure

Cardno notes the Council organisational restructure combining strategic planning and asset functions within the same Division effective from 1 May 2017. Council's Group Manager Strategic Land Use Planning confirmed in an email dated 29 May 2017 that the Strategic Land Use Planning team will continue to report to the Director Development & Environment on all matters relating to the Airport Business Park planning proposal for the duration of the process.

3.2.8 Road network capacity

A key issue identified early in the Planning Proposal process involved the capacity of the existing local road network. Cardno notes that Council's traffic unit initially identified information deficiencies in the traffic study. Council's traffic unit has recommended that the area to be rezoned is limited in size to reflect the existing traffic capacity. Cardno has reviewed and observed numerous exchanges on the merits of the Planning Proposal on traffic management grounds during the period 16 March 2016 to 7 November 2018. Cardno notes that Council's traffic unit has maintained a consistent position throughout the planning process and this is reflected in a maximum gross developable area of 20.5 ha reflected in the current Council report which aligns with Council's traffic unit's assessment of road infrastructure capacities.

3.2.9 Landowner information request

Council's D&E sought clarification from Cardno on 10 April 2017 concerning a request from Council's airport land owner and operator dated 6 April 2017. The request was to obtain internal Council traffic modelling (SIDRA) information supporting a recommendation to limit the area able to be rezoned based on existing traffic capacity.

The purpose of the land owner request was to enable a peer review of the internal traffic modelling to be conducted. Cardno's response considered internal email communications provided by Council's D&E between 6 April to 10 April 2017. Cardno advised that usual practice is to not release information of this nature, unless Council is compelled to do so, as part of legal proceedings or the *Government Information Public Access Act* (GIPA) *Act 2009*.

Cardno notes that Council's D&E declined to release the requested information and the landowner subsequently obtained an independent peer review of the original traffic report. Cardno also notes that

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Council's traffic unit continues to maintain a limit on the area able to be rezoned based on existing available local road network traffic capacity.

3.2.10 Preliminary Report

This preliminary report considers whether there are any issues of concern in the process leading up to and including the report to Council. This report considers the inception meeting, planning criteria and key interactions and meetings with landowners outlined above. Council provided a draft Council report on 18 August 2017. Cardno and Council's D&E conducted a telephone conference on 25 August 2017 to discuss the report and identify any issues requiring further clarification. On 7 September 2017 Cardno provided a written response to Council's D&E on the draft Council report. Following Biocertification approval being granted by the Minister for the Environment, Council's D&E provided a revised draft Council report to Cardno on 28 September 2018. Council D&E staff provided an information briefing to Councillors on 24 October 2018. Cardno was not present at that briefing. Council's D&E provided an email to Cardno including the presentation provided to Councillors. Cardno is advised that no conflicts of interest were declared by Councillors or Council D&E staff present at the Council or provided a draft council's D&E provided a fitter provided a further revised draft report to Cardno on 26 October 2018. The revised Council report to Sabe provided a further revised draft report to Cardno on 26 October 2018. The revised Council report is proposed for the 21 November 2018 Council meeting. The current Council report proposes:

- a revised target date for a report back to Council on a planning proposal (now February 2019)
- additional text at the end of the Executive Summary to confirm/clarify the proposed net increase in B7 Business Park zone
- a summary of the Preliminary Probity Review key conclusions; and
- Advising land owners within the Airport Precinct Investigation Area of the Council decision

3.2.11 Final Report

The final planning process review report will address whether there are any issues of concern in the exhibition and review process and the final recommendations submitted to Council. The preparation of the final report will consider the requirements and timeframes contained in the Gateway determination issued by the Department of Planning and Environment. The final report will primarily focus on the public exhibition process and Council's response to public submissions.

4 Conclusion – Preliminary Planning Process Review

Cardno have carried out an independent review of Council's management and execution of the planning process for the subject project based on the requirements of:

- NSW Environmental Planning and Assessment Act 1979, primarily covered under Section 3.33 (Previously Section 55);
- Planning Proposals A guide to preparing planning proposals Department of Planning and Environment 2016;
- Local Environmental Plans A guide to preparing local environmental plans Department of Planning and Environment 2016; and
- the NSW Independent Commission Against Corruption publication Probity and Probity Advising -Guidelines for Managing Public Projects 2005

Cardno has not observed or detected evidence of partiality, bias or probity issues of concern in the planning process leading up to the Airport Precinct Investigation Area – Site selection for proposed Business Park report provided to Cardno on 28 September 2018 and settled by Council's D&E on 7 November 2018.

Cardno is satisfied that the planning processes and associated tasks are consistent with the principles and review protocol described in the terms of engagement and outlined in this preliminary report.

No significant issues or unresolved concerns of a probity nature were raised by land owners with Cardno during the period 16 March 2016 to 7 November 2018.

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Cardno has based this conclusion upon the activities described in the Work Performed section above and undertaken between 16 March 2017, the date of engagement and the date of this preliminary report, 7 November 2018.

Cardno is satisfied that Council has satisfactorily responded to initial issues and points of clarifications raised by Cardno in respect to *Airport Precinct Investigation Area* – Site selection for proposed Business Park prepared by Port Macquarie Hastings Council Development & Environment. Cardno makes the following observations:

4.1 General

The purpose of this initial review is to test general understanding and consider the report in the context of general land use planning practice. This review is limited to clarifications only. This review is not a review of the planning merits and does not provide planning advice to the Council.

4.2 Biocertification

Cardno notes that the NSW Minister for the Environment granted biocertification approval for the Airport and Thrumpster lands which took effect on 7 September 2018 pursuant to an Order published in the NSW Government Gazette No 87. Cardno also notes the protracted timeframes associated with the biocertification statutory process leading up to a decision.

4.3 Technical Reports

Cardno has sighted the brief provided by Council to Hill PDA and notes that the brief has been previously circulated to adjoining land owners for information. Cardno notes that land owners have had the opportunity to review the Hill PDA report. Cardno notes that land owners Missen (represented by Land Dynamics), Gilson, Ireland and Port Macquarie Airport (represented by King & Campbell) were provided with the opportunity to review other documents. These documents included the traffic review summary prepared by Council's Transport and Stormwater Network (T&SN) Section study and the planning criteria prepared by Council's Strategic Land Use Planning section as part of the 24 March 2017 land owner meeting agenda

4.4 Quantum of land proposed to be rezoned

Cardno notes that Council D&E has settled on an area of 20.5ha as the recommended area to be rezoned. Council D&E have advised this is based on the capacity of the road network having regard to the report and land economic advice provided to Council's D&E unit prepared by Hill PDA.

4.5 Urban Growth Management Strategy 2011

Council has confirmed that the Urban Growth Management Strategy (UGMS) circa 2011 is the current reference document. Cardno notes that UGMS 2017-2036 was adopted by Council on 20 June 2018 and is pending endorsement by NSW Department of Planning and Environment.

4.6 Relevant Planning Authority

The Council planning proposal report should clearly identify the relevant Planning Authority overseeing this planning proposal.

Cardno notes that the Planning Proposal will be subject to further oversight by the NSW Department of Planning and Environment as part of Gateway determination process under the provisions of the *Environmental Planning and Assessment Act* 1979. The requirements of the Gateway determination process, including public exhibition, will be the focus of the final planning process review report. The following recommendations are presented for Council's consideration.

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5 Recommendations

That Council:

- Note Port Macquarie Airport Precinct Investigation Area Site selection for proposed Business Park, Preliminary Planning Process Review Report prepared by Cardno (NSW/ACT) dated 7 November 2018;
- 2. Demonstrate adequate information has been prepared to proceed to Gateway determination. This is to include a preliminary planning proposal summary statement, generally consistent with the Department of Planning's planning proposal information checklist (DPE 2016) outlining:
 - a. Objectives and intended outcome
 - b. Mapping (including current and proposed zones)
 - c. Community consultation to be undertaken (including agencies to be consulted)
 - d. Explanation of planning provisions
 - Justification and the process for implementation (including compliance assessment against relevant Section 9.1 (Previously Section 117 direction/s);
- Voluntarily include a draft Statement of Council Interest to accompany public exhibition as part of planning proposal Gateway determination consistent with Best Practice Guidelines – LEP's and Council Land 1997 (Note: This guideline, although dated and not mandatory, is still considered a common industry reference);
- 4. Subject to the planning proposal proceeding to public exhibition (post Gateway determination), Council's D&E write to Mr John Jeayes, Lewis Land Group for Sovereign Hills Project (represented by GEM Planning), Land owner Missen (represented by Urban Dynamics) and any other potentially effected land owners and stakeholders, alerting them and inviting them to make a submission on the Planning Proposal as part of the public exhibition process. This will ensure that any actual or perceived overlapping and/or outstanding issues can be considered and addressed prior to the Local Environmental Plan being made, notified and published on the NSW legislation website (www.legislation.nsw.gov.au).; and
- Maintain separate internal reporting on this matter via the Director Development & Environment for the duration of the Planning Proposal process.

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If Council has any questions concerning the content of this preliminary report, please do not hesitate to contact Scott Anson, Technical Director – Planning on 02 4940 5517 or email scott.anson@cardno.com.au

Yours sincerely,

Scott Anson Technical Director for Cardno Direct Line: +61 2 4940 5517 Email: scott.anson@cardno.com.au Enc: 1. NSW ICAC Probity Principles

2. Council brief dated February 2016

cc: Deb Sutherland, Principal & Senior Town Planning Specialist, Cardno Sydney (St Leonards)

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Attachments

1. **NSW ICAC Probity Principles**

Accountability of the participants and transparency of the process

Accountability and Transparency are related concepts. Accountability involves agencies being able to justify the use of public resources to an appropriate authority by allocating and taking responsibility for past and expected performance. This includes aligning the decision-making process with the appropriate delegated authority, and keeping adequate records that will leave an auditable trail. Transparency refers to the preparedness to open a project and its processes to scrutiny and possible criticism. This also involves providing reasons for all decisions that are taken and the provision of appropriate information to relevant stakeholders

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Fairness, impartiality and honesty

Individuals and organisations involved in preparing and submitting proposals are entitled to expect impartial treatment at every stage of the process. If they do not consider the process to be fair, impartial and honest they may withhold valuable ideas or be deterred from bidding in the future. Any form of bias, whether driven by personal interests or not, could jeopardise the integrity of the project. Procedures that include multiple person panels, independent members and observers mitigate this risk.

Management of Conflicts of Interest

A conflict of interest is a conflict between the public duty and private interests of a public official where the public official has private interests which could improperly influence their official duties and responsibilities. The community and potential tenderers have a right to expect that public officials will make decisions that are not influenced by private interests. Similarly, when the private sector is engaged to perform public sector duties, there is an obligation to ensure that conflicts of interest are disclosed and effectively managed. Perceived or potential conflicts of interest can be as damaging as actual conflicts, and procedures should be implemented to mitigate the effect.

Maintenance of confidentiality and ensuring security

Although accountability and transparency are fundamental to the work of public sector organisations and public officials, there is some information that needs to be kept confidential, at least for a specified period of time, in order to protect the integrity of the process and give tenderers the confidence to do business with government. This information can include the content of proposals, intellectual property and tenderers' pricing and profit structures. Importantly, much of the information relating to the project needs to be kept confidential up to the point where a contract is executed with the successful tenderer. However, once this has happened, government guidelines require that certain information be released, consistent with the fundamental principles of public sector accountability and transparency, as discussed above. Procedures must be implemented to ensure that no unauthorised release of confidential information occurs

Attaining value for money

This is demonstrated by the use of an open competitive environment in which the market is tested regularly, and tenderers can make attractive, innovative proposals with the confidence that they will be assessed on their merits. Value-for-Money is not necessarily achieved by accepting the lowest available price. The process should include: the evaluation of non-price criteria (such as the quality of the goods or services offered, the experience and past performance of the providers, the financial strength of the companies, the differing risk factors, the quality of the personnel, etc.); cost-benefit analysis against a target outcome or budget; the assessment of the total cost over the proposed life of the project; and, where appropriate, whether the outcome is best achieved by the Private Sector, using a Public Sector Comparator. Lapses in probity may lead to one or more parties obtaining unreasonable financial gains at the expense of the public interest.

Procedures should include a comparison of the non-price and price criteria on a weighted basis, with both the criteria and the weighting between price and non-price criteria declared in the Information Memorandum.

NSW Independent Commission Against Corruption, Probity and Probity Advising - Guidelines for Managing Public Projects 2005

http://ict-industry-reports.com.au/wp-content/uploads/sites/4/2013/10/2005-Guidelines-for-Probity-in-Public-Sector-Projects-ICAC-Nov-2005.pdf

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Attachments

2. Council brief dated February 2016

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CONSULTANCY BRIEF

RFQ-16-20 Airport Business Park Planning Proposal Probity Review

Proposals due by 4 March 2016

Addressed to: The General Manager Port Macquarie-Hastings Council PO Box 84 PORT MACQUARIE NSW 2444

> Council's ref: PP2015 - 3.1 PP2015 - 3.2

Enquiries: Peter Cameron T: 02 6581 8110 E: peter.cameron@pmhc.nsw.gov.au

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1. INTRODUCTION / BACKGROUND				

The Port Macquarie Airport is owned and operated by Port Macquarie-Hastings Council. The existing operations include a small number of airport related

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businesses in a B7 Business Park zone, which adjoins the Airport fronting Boundary Street. The Airport and business operations are managed by Council's Corporate and Organisational Services Division (COS).

In 2007, Council commissioned the preparation of an Industrial Land Strategy for the Port Macquarie-Hastings local government area by AEC Group. The Strategy identified the need for a "large dedicated site close to the urban area of Port Macquarie to accommodate future local services growth, accommodate any transferred demand from the rezoning of industrial areas to commercial, and to accommodate emerging business technology park style development".

An investigation area was identified by AEC Group for the Airport to expand on the existing business zone. The investigation area, which is shown in Figure 1 below, includes land owned by Council and other parties adjoining Boundary Street. The Council owned land includes the former east west grass runway of the Port Macquarie Airport, which is no longer required for airport operations.

The investigation area was subsequently included in the Mid North Coast Regional Strategy (2009) and in the Port Macquarie-Hastings Urban Growth Management Strategy (UGMS) in 2011. The UGMS identifies the key issues to be addressed during investigations and proposes the preparation of a structure plan for the investigation area.

Investigations had been undertaken by Council's Development & Environment Division ($D_{\&}E$) towards preparation of a Structure Plan, in consultation with the affected landowners. The investigations included an ecological report by Biolink Pty Ltd and internal consultation with Council infrastructure managers.

A Discussion Paper was prepared in 2012 by D_8E , which provided a summary of the key planning issues and identified a number of issues requiring more detailed investigation. Preliminary geotechnical investigations were undertaken for part of the investigation area in 2013 to determine likely landfill requirements. This related to the flood prone parts of the Investigation area, and particularly to the land owned by Missen.

In 2014, investigations were put on hold pending a review of the Port Macquarie Airport Master Plan and further investigation into a north south link road. The Airport Master Plan relates principally to Airport operations such as new CASA Obstacle Limitations Surface (OLS) requirements.

In May 2015, landowners in the investigation area were asked whether they wished to proceed with the preparation of a planning proposal for their land. Two parties (COS and Missen) expressed an interest and indicated that they would commence more detailed investigations.

King & Campbell Pty Ltd has been engaged by COS to coordinate investigations into the proposed Business Park expansion. Detailed investigations have included the preparation of a Biocertification Assessment for the Council owned land surrounding the Airport and nearby at Thrumster, with the aim of providing satisfactory offsets for the loss of vegetation associated with Airport operations (OLS requirements) and the proposed business park expansion.

The draft Biocertification Assessment was reported to Council in December 2015 and has been lodged with the NSW Office of Environment and Heritage prior to proposed public exhibition. The Biocertification does not depend on any zone changes but does allow for expansion of the Airport Business Park, should this be the outcome of Council's planning investigations.

Traffic modelling has been undertaken by TPS Group for COS as well as water, sewer and stormwater concepts, geotechnical assessment and an Aboriginal

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Heritage assessment, to form the basis for a planning proposal.

Land Dynamics has been engaged to coordinate more detailed investigations for the Missen property. A seven part test in relation to the Wallum Froglet has been prepared by Naturecall and submitted by Land Dynamics for Council review. Council's D_&E Division met with Land Dynamics in February 2016 in relation to the preparation of a planning proposal for the Missen property.

Reports in relation to planning proposals for the Council land and Missen land are expected to be presented to Council in 2016, following review of ongoing investigations. Council's $D_{\&}E$ Division will be responsible for the preparation of the planning proposals for the Airport Business Park Investigation Area.

Council has a role as Airport operator, landowner and planning authority in this matter. Given the potential for perceived conflict of interest, it is proposed that Council engage a suitably qualified professional to prepare a probity report.

The purpose of this brief is to describe the proposed probity report, which will focus on the process that has been undertaken and the planning recommendations to Council.

2. STUDY OBJECTIVES

- a) To review the planning process that has been undertaken to date in relation to the Airport Business Park investigation area
- b) To review the draft reports to Council in relation to planning proposals for the Council and Missen properties within the Airport Business Park investigation area,
- c) To prepare independent probity reports regarding the planning process and recommendations and any partiality or bias that may be evident as a result of the probity review,
- d) In relation to a) to c) above, to answer the question: *Has Council fulfilled its role as planning authority in a fair and unbiased manner, notwithstanding the ownership of land by Council within the Airport Business Park Investigation Area?*
- e) To make any necessary recommendations to Council as a consequence of the above review.

3. STUDY SITE

The Airport Business Park Investigation Area is shown in Figure 1 below.

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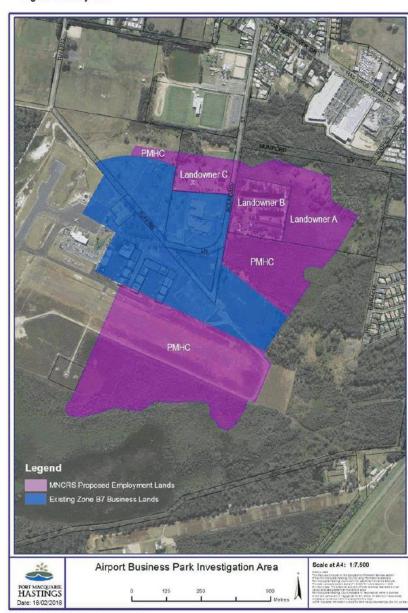


Figure 1: Study Site

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4. SCOPE OF WORK

- a) Inception meeting: An initial site visit and inception meeting with Council's D_8E Division will be held to familiarise the successful consultant with the study area and to provide relevant historical documentation for review by the consultant.
- b) Review planning criteria: Council's D_&E Division will produce draft planning criteria to prioritise areas for rezoning in the event that the extent of development needs to limited or where development needs to be staged or sequenced. It is proposed that the successful consultant will provide an independent review of these draft planning criteria.
- c) Review meetings: It is not expected that the consultant will need to meet with all parties in undertaking the probity review. However, it is possible that an issue may be raised and that the probity consultant may need to take part in a meeting or meetings to address the issue in the probity reports. Where meetings are necessary, they will be organised by the Project Manager.
- d) Preliminary report: A preliminary probity report will be prepared by the successful consultant for inclusion in a report to Council regarding the proposed preparation of planning proposals for the Airport Business Park investigation area. The preliminary probity report will address whether there are any probity issues of concern in the process leading up to and including the report to Council at that time.
- e) Final report: A final probity report will be prepared by the successful consultant for inclusion in a report to Council following exhibition and review of planning proposals for the Airport Business Park investigation area. The final probity report will address whether there are any probity issues of concern in the exhibition and review process and in relation to the final recommendations to Council.

Note: The probity reports are intended to focus on any relevant probity issues and not on the merit of Council's planning for the Airport Investigation Area. For example, it is not intended that the consultant provide a critique of proposed stormwater management systems, even if the consultant believes that the proposed system is not the best approach. However, if there is a significant difference in the standards applied by Council in relation to its own land, then this is potential probity issue for inclusion in the consultant's reports.

It is intended that any planning proposal for Council land will clearly and transparently describe Council's position as landowner in accordance with the Department of Planning & Environment Best Practice Guideline (1997) LEPs and Council Land.

5. ADDITIONAL INFORMATION

Council will provide all relevant planning documents, which may be required as background information for the peer review.

All data supplied by Council remains subject to copyright vested in Council or the data supplier who has licensed use of the data to Council. At the completion of the project, no digital copies of the data supplied by Council are to be retained by the consultant.

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Council will provide authority to enter land, under the *Environmental Planning* and Assessment Act 1979, where necessary for the purposes of this project. The consultant is to comply with Council's Policy, Procedure and written instructions before entering private property for the purposes of gathering information and survey.

6. ADMINISTRATION AND REPORTING

6.1 Administration

The Project Manager is Council's Group Manager Strategic Land Use Planning, Peter Cameron, telephone (02) 65818110, email <u>peter.cameron@pmhc.nsw.gov.au</u>

The Project Director is Council's Director Development and Environment, Matt Rogers, telephone (02) 65818626, <u>matt.rogers@pmhc.nsw.gov.au</u>

6.2 Timing

Proposals are to be submitted to Council by 5pm on 4 March 2016. It is expected that the successful consultant will be notified by 14 March 2016.

It is not possible to predict the timing of the reports to Council as this depends in part on the submission of information by or on behalf of the landowners in the Airport Business Park Investigation Area.

At the time of preparation of this brief it is expected that the preliminary probity report may be required by the end of April 2016 in conjunction with the preparation of a report to Council's ordinary meeting on 18 May 2016.

It is anticipated that the final probity report from the successful consultant may be required for inclusion with a report to Council's ordinary meeting on 20 July 2016.

Council's Project manager will ensure that the successful consult is kept up to date regarding the planning process and any changes to the above timeframes.

6.3 Reports - written

The consultant is required to forward to Council:

- a digital copy of the preliminary report,
- a digital copy of the final report

preferably in an A4 format.

6.4 Reports - mapping

Council's D&E Division will assist with the preparation of any necessary mapping, should the need arise for any mapping associated with the consultant's report.

The mapping is to be included in the digital reports described in 6.3 above.

7. CONSULTANCY PROPOSAL

The proposal to undertake this Study is to include:

- 1. Outline of the consultant's understanding of Council's requirements for this project.
- 2. Description of the approach to the project including methodology

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- 3. Outline of a project plan, covering timetable and milestones,
- Curriculum Vitae of the consultancy team who will be directly involved in this project, and details of similar work undertaken recently.
- 5. Consultancy fee, including:
 - the basis for charges and costs separately identified and estimated; any uncertainty regarding attendance at meetings can be addressed by including a proposed additional lump sum fee for attendance at meetings, including any associated disbursements.
 - b. the total cost for the project as a lump sum, including GST;
- 6. Details of insurance cover;
- 7. ABN number and confirmation that the consultant is registered to collect $\ensuremath{\mathsf{GST}}$

8. CONSULTANT SELECTION CRITERIA

The criteria for the selection of the consultant are:

- 1. The independence of the consultant.
- 2. The quality and depth of the consultant's demonstrated experience in the field, as relevant to the project.
- 3. The proposed approach, methodology and deliverables.
- The consultant's capability and capacity to deliver quality outputs in accordance with the project objectives.
- 5. The project timetable.
- 6. Consultancy costs and value for money.

9. CONDITIONS OF ENGAGEMENT

9.1 General Conditions of Engagement

The tasks as identified in the brief are based on Council's assessment of the project. The consultant may suggest any amendments required to achieve the project objectives during the course of the work.

Council must first endorse any proposed departure from the agreed project tasks before proceeding.

9.2 Termination

The consultants' commission to carry out the Study may be subject to termination due to non-performance or inability to meet set deadlines. Letter of such termination, which will be final and not subject to further correspondence, will inform the consultant.

9.3 Insurance

Certificates of currency from all parties undertaking the work (including sub consultants) for

- Workers Compensation Insurance (where applicable)
- Motor Vehicle Insurance
- Public Liability Insurances
- Professional Indemnity Insurance

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shall be submitted to Council within one week of Council's letter commissioning the consultant to undertake the work, and in any case before commencement of the work.

Public Liability Insurance shall note the interest of Council. The Principal Consultant shall ensure that any sub consultants or other persons engaged by the Principal Consultant to assist in the study carry insurances listed above and on request shall provide certificates of currency to Council.

Where, in the carrying out of the work, access to private property is required, the consultant shall indemnify Council and the owner of the private property against claims by third parties for personal injury or property damage to the extent that the injury or damage is caused by the negligent act or omission of the Consultant its employees or its sub consultants. Such indemnity shall accompany the certificates of currency.

9.4 Confidentiality

Investigations and reports will remain confidential unless, or until released by Port Macquarie-Hastings Council.

Where any matter within the report relates to private property, the consultant shall provide, when requested by a landowner, a copy of the specific information relating only to the particular private property to the landowner and advise Council of any such provision.

Where as a result of carrying out the study, the consultant, or any subconsultant, obtains information regarding any matter not related to the study, the information shall not be used or disseminated elsewhere.

9.5 Ownership and Copyright

Ownership and copyright at all times shall be vested in the Council and any distribution whether for money or otherwise of the project should only be with the authority of the Council. Details of the content and progress of the project shall be confidential and shall not be made available to any third party without the authority of Council.

Council will have complete ownership of the content of the studies and plans and the reproduction and/or distribution of these documents in part or full, is prohibited without Council permission.

Council may permit the consultant to utilise information gained in the course of the project for the purpose of conference or educational papers or other publications provided that these are appropriately acknowledged and that confidentiality is respected.

9.6 Conflict of Interest

The consultant shall inform Council immediately of any matter connected with this project, which could give rise to an actual or potential conflict of interest. This information will be treated as confidential.

9.7 Certification

All final documents prepared by the consultant must be signed by the Project Director nominated in the consulting proposal to certify that they have been prepared by competent professional staff, checked for accuracy and comply with relevant regulations and the requirements of the Brief.

9.8 Corrections

Any error, ambiguity or deficiency, which becomes apparent during the

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course of the project, shall be referred to the consultant for correction or clarification. The consultant shall not be entitled to an additional fee where the correction or clarification arises from a fault of the consultant.

The content of the report is the responsibility of the consultant and may not be amended without the agreement of the consultant.

9.9 Payment and Costs

Upon submission of the draft report, the consultant may lodge a claim for payment for 50% of the total agreed cost, with a further claim for payment totalling 90% of the total agreed cost, being lodged with submission of the final reports. The Council shall not be obligated to make any payment unless it is satisfied that the work satisfies the requirements of the brief.

Council will retain 10% of the total consultancy fee, until acceptance of the final report and a final claim on completion of the whole of the project, as set out in the Scope of Work.

The consultant shall be responsible for all his/her own costs for travel, accommodation and any other expenses.

Council's preference is to do business with consultants who have an Australian Business Number. If the consultant cannot quote an ABN, withholding tax will be deducted.

Council will pay GST in addition to the agreed fees where the consultant supplies an ABN and confirms they are registered for the GST.

9.10 Business Ethics

Council's Statement of Business Ethics is at **Appendix 1**. The Statement outlines the ethical standards of behaviour that Council expects from Council staff, plus all suppliers, contractors and consultants and gives instruction to both Council staff and consultants on how to report any breaches of this Statement of Business Ethics. The consultant will be required to sign a declaration that states that they have read and understand the content and meaning of the Statement of Business Ethics prior to commencement.

9.11 Acceptance of Conditions

Written confirmation of acceptance of the commission for the project, in accordance with the conditions of engagement, is required before work commences.

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ATTACHMENT

10. Appendix 1 – Statement of Business Ethics

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VP45209_suppliers statement of business ethics & declaration - sept 2006.doc



Statement of Business Ethics

Purpose of this document

This Statement of Business Ethics is intended to provide a clear understanding of mutual obligation. It helps set the ethical ground rules for all business dealings between Port Macquarie-Hastings Council and Suppliers. It applies to all Suppliers. Suppliers are deemed as providers of goods and services and include wholesalers, tenderers, contractors and consultants.

The Statement of Business Ethics defines Council's ethical standards and establishes Council's expectation that all Suppliers will meet these standards. It also provides businesses dealing with Council with a degree of understanding of what to expect in such dealings.

This Statement aligns to Council's core values, primarily through the value of 'Openness and Accountability'. In keeping with this value, Council will endeavour to behave with integrity, transparency and fairness at all times.

This Statement of Business Ethics also explains what the consequences are for Staff, Councillors and Suppliers of not complying with the requirements of this statement.

What is the impact of Business Ethics?

ICAC Advice

It should be noted that the Independent Commission Against Corruption (ICAC) in NSW defines those people employed by Council as consultants or contractors to be "public officials". When employed by Council, consultants & contractors are subject to the jurisdiction of ICAC and are considered to be "public officials" for the purpose of the ICAC act.

In addition, any individual can be found corrupt by the ICAC (even if they are not a public official) if they try to improperly influence a public official or Council's honest or impartial exercise of its official functions.

Further information relating to the ICAC Act is readily available to all Suppliers (including Suppliers, contractors and consultants) at the ICAC web site – <u>www.icac.nsw.gov.au</u> and copies of all relevant Council policies are also available at any time.

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Impact for Suppliers

By aligning business practices with Council's ethical expectations, Suppliers can expect to:

Compete for business on an even playing field
Establish practices, which put them in good stead in competing for works with other public sector agencies.

If Suppliers to Council do not comply with this statement, then the consequences may be as follows:

- Formal investigation for corruption or other offences
- Possible loss of work
- Termination of contracts
- Damage to reputation
- Loss of rights (such as loss of operating or trade licences etc).

Impact for Council Staff

If Council Staff do not comply with this statement, then the consequences may be as follows:

- Formal investigation
- Disciplinary action
- Dismissal
- Potential criminal charges.

How to Comply

Suppliers

General requirement

Council requires all those with whom it deals in the provision of goods and services to observe the following principles:

- · Act fairly, ethically and honestly in all dealings with Council
- Not to disclose confidential Council information
- Not to exert pressure nor influence on Council Staff that may cause them to waiver from Council's Code of Conduct
- To abide by relevant legislative processes and industry codes of practice in all procurement dealings
- To have respect for the obligation of Council Staff to act in accordance with this
 Statement of Business Ethics
- Commit to not offer Council Staff inducements or incentives such as money, gifts, benefits, entertainment or employment opportunities
- Ensure that all sub-contractors and other people employed by the supplier are aware of this statement and the consequences of breaching it.

Communication requirement

As a general principle, all communication with Suppliers to Council should be *clear, direct* & *accountable*. Suppliers also have an obligation to ensure that their communication with Council abides by the above three principles, in order to minimise the risk of inappropriate influences being brought to bear on the business relationship.

There will be times where some communication needs to be strictly confidential for commercial-in-confidence or other reasons. This however should not preclude proper accountability and both parties should be able to explain the reasons for instituting specific communication protocols or keeping some communication confidential.

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Public perception of inappropriate influence can be extremely damaging to the reputation of both parties, even if nothing has occurred. Therefore it is in the best interests of both parties to ensure that formal communication processes are observed at all times and that all communication supports Council's core values of integrity, transparency and fairness.

Signed Declaration

This Statement of Business Ethics will form part of any formal tendering and/or contractual process for Council and all Suppliers/Tenderers will be asked to submit a signed declaration stating that they have read and fully understood the contents of this full statement in relation to dealing with Council.

What happens if I think there is a breach?

If you are concerned about a possible breach of this statement, or about any conduct that could involve fraud, corrupt conduct, maladministration or serious and substantial waste of public funds, please contact Council's General Manager, or one of Council's Directors. Please be aware that if you do approach a Council Director with such a report, it is a requirement of ICAC that the Director must inform the General Manager immediately.

It should also be noted that once the General Manager is made aware of a possible breach as described above, that it is incumbent upon him or her to report this directly to the ICAC. For Council staff, please refer to Councils policy titled "Corruption, Maladministration & Serious Substantial Wastage - Reporting Of (C23)" for more information on the processes that you are required to follow in the case of a possible breach of this statement.

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STATUTORY DECLARATION ON STATEMENT OF BUSINESS ETHICS DECLARATION

The Supplier must complete and submit this form with signed contract. All submitted information will be treated as confidential

I,	(Print name),

Of ______(Supplier Organisation),

Do hereby solemnly declare and affirm the following:

- I hold the position of ______, and am duly authorised by the supplier organisation to lawfully proclaim the following and, after having made due inquiry believe the following to be accurate to the best of my knowledge.
- The Supplier and the Supplier's representatives has read and fully understand the contents and meaning of the Port Macquarie-Hastings Council Statement of Business Ethics as included as part of these contractual documents.
- 3. The Supplier and the Supplier's representatives agree to be bound by the standards of ethical behaviour as detailed in the Port Macquarie-Hastings Council Statement of Business Ethics and will not exert pressure nor influence Council staff that may cause them to waiver from Council's Code of Conduct.
- 4. The Supplier and the Supplier's representatives agree to have respect for the obligation of Council Staff to act in accordance with the Statement of Business Ethics.

I make this solemn declaration as to the matter aforesaid, according to the law in this behalf made, and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Signature of Supplie	r:		
Subscribed and decl	ared at:		
This:	Day of	(Year)	
Before me:		(Pri	int name)
Witness:		(S	ignature)

(Justice of the Peace or authorised person)

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Our Ref: 810160122:JO'G Contact John O'Grady

8 May 2020

Port Macquarie Hastings Council 17 Burrawan Street Port Macquarie NSW 2244

Attention: Sandra Bush (Senior Strategic Planner)

Dear Sandra,

AIRPORT BUSINESS PARK PLANNING PROPOSAL – PLANNING PROCESS REVIEW

1 Introduction

Cardno (NSW/ACT) Pty Ltd (Cardno) has been engaged by Port Macquarie Hastings Council (Council) to prepare an independent review of the planning process undertaken by the Council, relating to the preparation of a Planning Proposal for the Port Macquarie Airport Business Park. The investigation area includes land owned by Council.

This report provides an opinion and conclusions based on the observations and work performed. The services provided and work performed were in accordance with Council's Consultancy Brief. This report considers the relevant NSW planning legislation, processes and guidelines, together with the NSW ICAC Probity Principles. This report is not a merit review of the Council's planning for the Airport Investigation Area. A copy of Council's Consultancy Brief is attached.

Cardno's planning process review team has no prior involvement with the investigation area, land owners or surrounding developments. Cardno is not aware of any conflict of interest that would preclude the Cardno planning team from undertaking this planning process review.

This final report has been prepared by John O'Grady, Principal Planner at Cardno. John is a Registered Planner and has more than 30 years experience working with NSW legislation including the *Environmental Planning and Assessment Act 1979, NSW Local Government Act 1993* and related legislation and regulations. John has no prior engagements working with or on behalf of Council.

A preliminary report on Planning Processes was prepared by Cardno and issued to Council on 7 November 2018. That report covered the period from 16 March 2016 to 7 November 2018 and was limited to the planning process that had been undertaken and the planning reports and recommendations presented to Council during the specified period, including review of the planning report presented to the 21 November 2018 Ordinary Council Meeting.

The preliminary planning process review was primarily conducted by Scott Anson, then Technical Director – Planning, Cardno Northern NSW. Scott ceased working at Cardno in 2019.

Between March 2016 and October 2016 the review was conducted by Renae Gifford and Keith Blackmore. Renae and Keith ceased working at Cardno in 2016.

Cardno advises that Cardno engineering staff were engaged by Council to prepare an engineering design for Boundary Street Port Macquarie. This planning review is a separate and discrete engagement prepared by the planning team at Cardno Northern NSW.



Australia - Belgium - Canada - Colombia - Ecuador - Germany - Indonesia - Kenya -Myanmar - New Zealand - Nigeria - Papua New Guinea - Peru - Philippines - Singapore -Timor-Leste - United Kingdom - United States - Operations in over 100 countries Cardno (NSW/ACT) Pty Ltd

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810160122:JO'G 8 May 2020



2 The Planning Proposal

This engagement involves a review of the planning process followed by Council for the preparation of a planning proposal for the investigation area comprising Council and private owned land. Cardno notes that Council has a role as land owner and airport operator. Council is a planning authority under the *Environmental Planning and Assessment Act 1979*. Council is also a roads authority under the *Roads Act 1993*.

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The Department of Planning, Industry and Environment's *Local Environmental Plans – A guide to preparing local environmental plans* 2018 defines a *planning proposal* as a document that explains the intended effect of the proposed Local Environmental Plan (LEP) and provides the justification for preparing and subsequently making the plan under the Environmental Planning and Assessment Act 1979, s.3.33(1) [Previously s.55(1)]. Also of relevance is the Department's *A guide to preparing Planning Proposals, 2018.* These guides indicate the preferred content and structure of Planning Proposals. The level of detail required in a Planning Proposal should be proportionate to the complexity of the proposed amendment. The Planning Proposal should contain enough information to identify relevant environmental, social, economic and other site specific considerations. The scope of key issues should be identified in the initial Planning Proposal that is submitted for a Gateway determination.

The Gateway determination process assesses the strategic merit of the proposal. The Gateway assessment is undertaken by the Department of Planning, Industry and Environment. If the Planning Proposal proceeds, the determination may specify further investigations, public and agency consultation and timing requirements to be met prior to the plan being made. As noted, further detailed investigations may be undertaken and included in the Planning Proposal after the Gateway determination is issued. When preparing and considering a Planning Proposal Council should consider whether they will be seeking an Authorisation to make the plan under delegation or request the Department to be the Responsible Planning Authority (RPA).

3 Purpose of Independent Planning Process Review

The purpose of this review is to provide an independent assessment of Council's planning process for the Airport Business Park Planning Proposal. This review considers whether the relevant planning processes have been followed and undertaken by the Council, in particular the activities and tasks undertaken by Council's Development and Environment Division (D&E), have been conducted in an unbiased way. The objectives of the review are:

- (a) To make any necessary recommendations to Council as a consequence of the above review (Port Macquarie Hasting Council Consultancy Brief RFQ 16-20 February 2016).
- (b) To review the planning process that has been undertaken to date in relation to the Airport Business Park investigation area
- (c) To review the draft reports to Council in relation to planning proposals for the Council and Missen properties within the Airport Business Park investigation area,
- (d) To prepare independent probity reports regarding the planning process and recommendations and any partiality or bias that may be evident as a result of the probity review,
- (e) In relation to b) to d) above, to answer the question: *Has Council fulfilled its role as planning authority in a fair and unbiased manner, notwithstanding the ownership of land by Council within the Airport Business Park Investigation Area?*

In respect to point (b) Cardno has considered the planning processes Council has applied to all land situated within the investigation area.

4 Review process

The planning process review has had regard to the provisions of the:

• NSW Environmental Planning and Assessment Act 1979 (Part 3, Division 3.4);

Port Macquarie Hastings Airport Planning Proposal – Planning Process Review

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- Planning Proposals A guide to preparing planning proposals 2018; and
- Local Environmental Plans A guide to preparing local environmental plans 2018

These guidelines are issued by the Department of Planning, Industry and Environment.

Cardno has also considered the provisions of the *NSW Local Government Act 1993* relating to code of conduct of councillors, staff, delegates and administrators as this relates to dealings with affected land owners and the general public (refer Port Macquarie Hastings Code of Conduct and Port Macquarie Hastings Council Code of Meeting Practice). Cardno has been guided by the core principles (where applicable) contained in the NSW Independent Commission Against Corruption publication *Probity and Probity Advising - Guidelines for Managing Public Projects* 2005, including:

- Accountability of the participants and transparency of the process;
- Fairness, impartiality and honesty in carrying out the process;
- Management of actual, potential and perceived conflicts of interest;
- Maintenance of confidentiality and security of documentation and information; and
- Attaining best possible value for money under the prevailing circumstances.

5 Preliminary planning process review

Cardno's Preliminary Probity Review report covered the period in the lead up to the Business Park site selection process reported to the 21 November 2018 Council meeting. As part of this review, Cardno undertook a range of tasks, including:

- sighting documents, reports, technical studies, consultancy briefs, Councillor briefing material and meeting minutes;
- confirming the confidentiality of sensitive information and internal file security arrangements;
- reviewing Council D&E planning criteria for site assessment; and
- observing meetings between Council D&E and landowners/consultants.

The Preliminary Probity report concluded that Cardno had not observed or detected evidence of partiality, bias or probity issues of concern in the planning process leading up to the presentation of the 21 November 2018 report to Council.

Cardno made the following recommendations to Council in its Preliminary Probity Review:

That Council:

- Note Port Macquarie Airport Precinct Investigation Area Site selection for proposed Business Park, Preliminary Planning Process Review Report prepared by Cardno (NSW/ACT) dated 7 November 2018;
- 2. Demonstrate adequate information has been prepared to proceed to Gateway determination. This is to include a preliminary planning proposal summary statement, generally consistent with the Department of Planning's planning proposal information checklist (DPE 2016) outlining:
 - a. Objectives and intended outcome
 - b. Mapping (including current and proposed zones)
 - c. Community consultation to be undertaken (including agencies to be consulted)
 - d. Explanation of planning provisions
 - e. Justification and the process for implementation (including compliance assessment against relevant Section 9.1 (Previously Section 117 direction/s);
- Voluntarily include a draft Statement of Council Interest to accompany public exhibition as part of planning proposal Gateway determination consistent with Best Practice Guidelines – LEP's and Council Land 1997 (Note: This guideline, although dated and not mandatory, is still considered a common industry reference);
- 4. Subject to the planning proposal proceeding to public exhibition (post Gateway determination), Council's D&E write to Mr John Jeayes, Lewis Land Group for Sovereign Hills Project (represented by GEM Planning), Land owner Missen (represented by Urban Dynamics) and

Port Macquarie Hastings Airport Planning Proposal – Planning Process Review

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any other potentially effected land owners and stakeholders, alerting them and inviting them to make a submission on the Planning Proposal as part of the public exhibition process. This will ensure that any actual or perceived overlapping and/or outstanding issues can be considered and addressed prior to the Local Environmental Plan being made, notified and published on the NSW legislation website (www.legislation.nsw.gov.au).; and

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5. Maintain separate internal reporting on this matter via the Director Development & Environment for the duration of the Planning Proposal process.

6 Final planning process review

The purpose of this Final Probity Review is to review Council's processes for the Business Park Planning Proposal against the recommendations in our Preliminary Report and, specifically, to address whether or not there are any probity issues of concern in relation to the exhibition and assessment processes involved in the Planning Proposal preparation and the final recommendations to Council.

6.1 Work Performed

Cardno undertook the following tasks in order to form a conclusion on the tasks undertaken by Council's Development and Environment Division in relation to the planning process, public exhibition and assessment by Council of the submissions received with respect to the Airport Business Park Planning Proposal.

- Attendance, either in person or via internet link, at meetings between the D&E Division and the PMHC Airport and receipt / review of notes of all such meetings;
- Sighting of copies of all correspondence to/from the Missen landowners and Council's replies, together with all meeting notes involving the Missen landowners and their representatives, since the Nov 2018 meeting;
- · Receipt and review of the Gateway Determination, and the public exhibition material;
- Receipt and review of all submissions received by Council to the exhibition of the Airport Business
 Park Planning Proposal and of the submissions report to Council prepared by the Development &
 Environment Division;
- Receipt and review of the final recommendation submitted to Council for its consideration with respect to whether or not to endorse the Planning Proposal for finalisation by the Department of Planning, Industry & Environment; and
- Assessment of the process against the relevant Instruments and guidelines including:
 - o NSW Environmental Planning and Assessment Act 1979;
 - Planning Proposals A guide to preparing planning proposals Department of Planning and Environment 2018;
 - Local Environmental Plans A guide to preparing local environmental plans Department of Planning and Environment 2018; and
 - The NSW Independent Commission Against Corruption publication *Probity and Probity Advising* - *Guidelines for Managing Public Projects* 2005 (the ICAC Probity Guidelines).

6.2 Outcomes

6.2.1 Meetings between Council's Development & Environment Division and landowners

A series of meetings regarding the Planning Proposal occurred between November 2018 and February 2020. These were either attended by Cardno personnel or notes on proceedings were provided to Cardno for review. Brief descriptions of the meetings and outcomes follow.

19 November 2018 – A meeting was held between staff of the Development & Environment Division
and representatives of landowners of Missen lands, adjoining the proposed Airport Business Park site.
Notes were provided to Cardno for review. No probity or protocol issues were identified.

Port Macquarie Hastings Airport Planning Proposal – Planning Process Review



 16 January 2019 - Cardno's Principal Planner John O'Grady attended a meeting between staff of the Development & Environment Division and consultants representing Port Macquarie Hastings Council (PMHC) Airport. At that meeting, it was determined that the Proponent would prepare a Planning Proposal with regular meetings being held to discuss progress up till issue of a draft Planning Proposal. John O'Grady requested that copies of minutes and / or notes on all consequent meetings be issued to Cardno for review. No probity or protocol issues were identified.

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- 23 January 2019 A further meeting was held between staff of the Development & Environment Division and consultants representing Port Macquarie Hastings Council (PMHC) Airport. Various matters were discussed regarding the progress and content of the PP. Notably, some amendments to the Zone Objectives for the B7 zone to give more certainty for larger footprint developments. Notes on the meeting were emailed to Cardno for review. No probity or protocol issues were identified.
- 13 February 2019 A further meeting was held between staff of the Development & Environment Division and consultants representing Port Macquarie Hastings Council (PMHC) Airport. Various matters were discussed including proposed timing for issue of a draft PP. Notes on the meeting were emailed to Cardno for review. No probity or protocol issues were identified.
- 18 April 2019 A draft Planning Proposal was lodged by the Proponent on 21 March 2019. This
 meeting between staff of the Development & Environment Division and consultants representing Port
 Macquarie Hastings Council (PMHC) Airport was requested by the landowner to discuss preliminary
 issues with respect to the draft Planning Proposal. Tracy Davey, Senior Planner from Cardno
 attended the meeting via Skype in John O'Grady's absence on annual leave. Notes on the meeting
 were emailed to Cardno for review. No probity or protocol issues were identified.
- 21 May 2019 A further meeting was held between staff of the Development & Environment Division
 and consultants representing Port Macquarie Hastings Council (PMHC) Airport. Sundry issues
 regarding Council's review of the draft PP were discussed. Tracy Davey, Senior Planner from
 Cardno attended the meeting via Skype in John O'Grady's absence on annual leave. Notes on the
 meeting were emailed to Cardno for review. No probity or protocol issues were identified.
- 11 February 2020 The meeting was between staff of the Development & Environment Division and representatives of owners of the adjoining Missen lands. Notes on the meeting, including comments in response from the landowners' representatives, were emailed to Cardno for review. Landowners' comments included matters that they believed were not covered in the original meeting notes provided to them. No probity or protocol issues were identified.

6.2.2 Gateway Determination requirements

Following preliminary consideration of the initial Planning Proposal, Department of Planning Industry and Environment (DPIE) issued a request for additional information to Council. The Department required that various matters be addressed and additional information be provided to ensure the adequacy of the Planning Proposal prior to the Department's formal assessment process. The DPIE correspondence also indicated agreement by the Department that Council would not be the Determining Authority for the Planning Proposal.

Following submission of the additional information the DPIE issued a conditional Gateway determination (20/11/19) to allow the Planning Proposal process to proceed to public exhibition.

6.2.3 Draft Planning Proposal Public Exhibition and consultation with public authorities

In accordance with the requirements of the Gateway determination and Council's *Community Participation Plan 2019*, the Planning Proposal and associated documentation were placed on public exhibition for 28 days from 29 January to 26 February 2020. A Statement of Council Interest was included with the exhibition material, consistent with the DPIE's *Best Practice Guideline - LEPs and Council Land 1997* and Cardno's recommendations in our Preliminary Report.

During the public exhibition, consultation also occurred with relevant public authorities in accordance with the DPIE's Gateway determination.

Cardno was provided with copies of all submissions received and the draft D&E Division report summarising and providing responses to the submissions. After review of this package of information, Cardno has

Port Macquarie Hastings Airport Planning Proposal – Planning Process Review

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observed or detected no evidence of partiality, bias or probity issues of concern in the manner in which the public exhibition process or review and reporting on submissions has been conducted.

6.2.4 Planning report recommendations to Council

Cardno has been provided with and has reviewed a draft submissions report prepared by Council's Development and Environment Division. The D&E report to Council of 20 May 2020 makes the following recommendation:

That Council:

- 1. As a result of the consideration of submissions and consultation with public authorities, endorse the forwarding of the Airport Business Park Planning Proposal, as exhibited, to the NSW Department of Planning, Industry and Environment under Section 3.36 of the Environmental Planning and Assessment Act 1979, requesting that the Minister for Planning and Public Spaces draft a Local Environmental Plan to amend the Port Macquarie-Hastings Local Environmental Plan 2011 to give effect to the Planning Proposal.
- Adopt the exhibited Draft Airport Business Park Development Control Plan provisions, incorporating changes as referred to in this report, as an amendment to the Port Macquarie-Hastings Development Control Plan 2013, to commence on notification of the Local Environmental Plan in 1 above, on the NSW Legislation website.
- Within 28 days, publish a public notice of Council's decision to adopt the Airport Business Park Development Control Plan provisions in accordance with Clause 21(2) of the Environmental Planning and Assessment Regulation 2000.
- Request the General Manager to provide a future report on a Draft section 9.11 Airport Business Park Roads Contributions Plan, as described in this report, prior to development of the Business Park.
- 5. Notify all persons who lodged a submission of Council's decision.

This recommendation is consistent with the D&E Division's assessment of the draft Planning Proposal and submissions to its Public Exhibition and follows procedures in the Instruments and guiding documents used by Cardno in its Process Review.

6.3 Assessment against the NSW ICAC Probity Guidelines

Following is Cardno's assessment of the planning process for preparation of the Port Macquarie Hastings Airport Business Park Planning Proposal against each criterion in the ICAC Probity Guidelines.

Accountability of the participants and transparency of the process

Cardno has sighted copies of all correspondence and notes on all meetings conducted by Council during the process of preparation of the Planning Proposal. Council has also provided assurance and material evidence that these documents and all other documentation associated with the preparation of the Planning Proposal are retained in Council's secure internal electronic filing system.

Specifically, Council's Digital technology Department has provided email confirmation that access controls have been applied to all files relevant to the Airport Business Park Planning Proposal and that no access has been provided to the Commercial Business Services group (of which airport staff are a subset) belonging to the Corporate Performance Division of Council.

Cardno is satisfied that the decision-making process in preparation of the Planning Proposal has been made with the appropriate delegated authority and that adequate records have been kept that will leave an auditable trail. The public exhibition of the Planning Proposal has provided appropriate information to relevant stakeholders.

Faimess, impartiality and honesty

Cardno has not Individuals and organisations involved in preparing and submitting proposals are entitled to expect impartial treatment at every stage of the process. If they do not consider the process to be fair, impartial and honest they may withhold valuable ideas or be deterred from bidding in the future. Any form of bias, whether driven by personal interests or not, could jeopardise the integrity of the project. Procedures that include multiple person panels, independent members and observers mitigate this risk.

Management of Conflicts of Interest

To address management of perceived or actual conflicts of interest with respect to the preparation of this Planning Proposal, Council has:

Port Macquarie Hastings Airport Planning Proposal – Planning Process Review



- Maintained a clear separation between internal representatives of the Port Macquarie Hastings Airport (PMHA) and Council's Development Environment Division;
- Engaged external consultants to prepare the Planning Proposal on behalf of the PMHA;

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- Ensured adequate and accurate record keeping, including recording of all parties attending meetings during the process;
- Engaged Cardno as an external consultant to scrutinise the planning process in its entirety; and
- Elected to exclude itself from the determination of the Planning Proposal and have it determined by the Department of Planning, Industry and Environment.

Our opinion in this regards is that potential, perceived or actual conflicts of interest have been adequately managed in the planning process.

Maintenance of confidentiality and ensuring security

Information and correspondence has been stored in Council's secure filing system. Cardno has not seen evidence of any breach of confidentiality or inadequacy in maintaining security with regard to the planning process for this Planning Proposal.

Attaining value for money

Public resources have, in Cardno's opinion, been responsibly utilised in the process of preparation of this Planning Proposal. Cardno is satisfied that the process has been carried out in the public interest in a manner that is consistent with attaining value for money.

6.4 Conclusion – Final Planning Process Review

Cardno's Planning Process Review for the Airport Business Park Planning Proposal has included an independent review of Council's management and execution of the planning process based on the requirements of:

- NSW Environmental Planning and Assessment Act 1979;
- Planning Proposals A guide to preparing planning proposals Department of Planning and Environment 2018;
- Local Environmental Plans A guide to preparing local environmental plans Department of Planning and Environment 2018; and
- The NSW Independent Commission Against Corruption publication Probity and Probity Advising -Guidelines for Managing Public Projects 2005

The Preliminary Review covered the planning process leading up to the Airport Precinct Investigation Area – Site selection for the proposed Business Park report provided to Cardno on 28 September 2018 and presented to the Ordinary Council Meeting held 21 November 2018.

This Final Review has been of processes consequent to that period and has included observation of meetings up till and including the Public Exhibition Period, the conducting of the Public Exhibition, the D&E Division's receipt, review and reporting on submissions and its consequent recommendations to Council.

Council's brief for the Planning Process Review was centred on the following question.

Has Council fulfilled its role as planning authority in a fair and unbiased manner, notwithstanding the ownership of land by Council within the Airport Business Park Investigation Area?

Cardno's observations of the Planning Process is that Council has fulfilled its role in a fair and unbiased manner.

Cardno has not observed or detected evidence of partiality, bias or probity issues of concern in the planning processes and is satisfied that the planning processes and associated tasks are consistent with the principles and review protocol described in the terms of engagement and outlined in the preliminary report.

No significant issues or unresolved concerns of a probity nature were raised by land owners with Cardno during the period 16 March 2016 to 8 May 2020.

Port Macquarie Hastings Airport Planning Proposal – Planning Process Review

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Cardno has based this conclusion on the activities described in the Work Performed section above and undertaken between 16 March 2017, the date of engagement and the date of this final report, 8 May 2020.

Cardno notes that the Planning Proposal will be subject to further oversight in the Department's final decision as the Determining Authority for the Planning Proposal.

If Council has any questions concerning the content of this preliminary report, please do not hesitate to contact John O'Grady, Principal Planner via the details below.

Yours sincerely,

John O'Grady Manager Urban Planning for Cardno Direct Line: +61 2 9496 7761 Email: john.ogrady@cardno.com.au

Enc 1: Port Macquarie Hastings Council Consultancy Brief RFQ-16-20 Airport Business Park Planning Proposal Probity Review, February 2016

Enc 2: NSW ICAC Probity Principles

Port Macquarie Hastings Airport Planning Proposal – Planning Process Review



Attachment 1 – Consultancy Brief

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Port Macquarie Hastings Airport Planning Proposal – Planning Process Review



CONSULTANCY BRIEF

RFQ-16-20 Airport Business Park Planning Proposal Probity Review

Proposals due by 4 March 2016

Addressed to:

The General Manager Port Macquarie-Hastings Council PO Box 84 PORT MACQUARIE NSW 2444

> Council's ref: PP2015 - 3.1 PP2015 - 3.2

Enquiries: Peter Cameron

T: 02 6581 8110

E: peter.cameron@pmhc.nsw.gov.au

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1. INTRODUCTION / BACKGROUND

The Port Macquarie Airport is owned and operated by Port Macquarie-Hastings Council. The existing operations include a small number of airport related

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businesses in a B7 Business Park zone, which adjoins the Airport fronting Boundary Street. The Airport and business operations are managed by Council's Corporate and Organisational Services Division (COS).

In 2007, Council commissioned the preparation of an Industrial Land Strategy for the Port Macquarie-Hastings local government area by AEC Group. The Strategy identified the need for a *"large dedicated site close to the urban area of Port Macquarie to accommodate future local services growth, accommodate any transferred demand from the rezoning of industrial areas to commercial, and to accommodate emerging business technology park style development".*

An investigation area was identified by AEC Group for the Airport to expand on the existing business zone. The investigation area, which is shown in Figure 1 below, includes land owned by Council and other parties adjoining Boundary Street. The Council owned land includes the former east west grass runway of the Port Macquarie Airport, which is no longer required for airport operations.

The investigation area was subsequently included in the Mid North Coast Regional Strategy (2009) and in the Port Macquarie-Hastings Urban Growth Management Strategy (UGMS) in 2011. The UGMS identifies the key issues to be addressed during investigations and proposes the preparation of a structure plan for the investigation area.

Investigations had been undertaken by Council's Development & Environment Division ($D_{\&}E$) towards preparation of a Structure Plan, in consultation with the affected landowners. The investigations included an ecological report by Biolink Pty Ltd and internal consultation with Council infrastructure managers.

A Discussion Paper was prepared in 2012 by $D_{\&}E$, which provided a summary of the key planning issues and identified a number of issues requiring more detailed investigation. Preliminary geotechnical investigations were undertaken for part of the investigation area in 2013 to determine likely landfill requirements. This related to the flood prone parts of the Investigation area, and particularly to the land owned by Missen.

In 2014, investigations were put on hold pending a review of the Port Macquarie Airport Master Plan and further investigation into a north south link road. The Airport Master Plan relates principally to Airport operations such as new CASA Obstacle Limitations Surface (OLS) requirements.

In May 2015, landowners in the investigation area were asked whether they wished to proceed with the preparation of a planning proposal for their land. Two parties (COS and Missen) expressed an interest and indicated that they would commence more detailed investigations.

King & Campbell Pty Ltd has been engaged by COS to coordinate investigations into the proposed Business Park expansion. Detailed investigations have included the preparation of a Biocertification Assessment for the Council owned land surrounding the Airport and nearby at Thrumster, with the aim of providing satisfactory offsets for the loss of vegetation associated with Airport operations (OLS requirements) and the proposed business park expansion.

The draft Biocertification Assessment was reported to Council in December 2015 and has been lodged with the NSW Office of Environment and Heritage prior to proposed public exhibition. The Biocertification does not depend on any zone changes but does allow for expansion of the Airport Business Park, should this be the outcome of Council's planning investigations.

Traffic modelling has been undertaken by TPS Group for COS as well as water, sewer and stormwater concepts, geotechnical assessment and an Aboriginal

Heritage assessment, to form the basis for a planning proposal.

Land Dynamics has been engaged to coordinate more detailed investigations for the Missen property. A seven part test in relation to the Wallum Froglet has been prepared by Naturecall and submitted by Land Dynamics for Council review. Council's $D_{\delta}E$ Division met with Land Dynamics in February 2016 in relation to the preparation of a planning proposal for the Missen property.

Reports in relation to planning proposals for the Council land and Missen land are expected to be presented to Council in 2016, following review of ongoing investigations. Council's $D_{\&}E$ Division will be responsible for the preparation of the planning proposals for the Airport Business Park Investigation Area.

Council has a role as Airport operator, landowner and planning authority in this matter. Given the potential for perceived conflict of interest, it is proposed that Council engage a suitably qualified professional to prepare a probity report.

The purpose of this brief is to describe the proposed probity report, which will focus on the process that has been undertaken and the planning recommendations to Council.

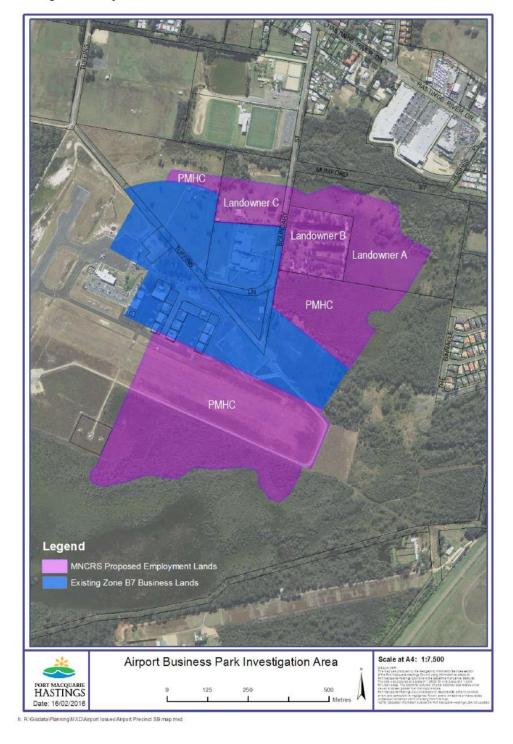
2. STUDY OBJECTIVES

- a) To review the planning process that has been undertaken to date in relation to the Airport Business Park investigation area
- b) To review the draft reports to Council in relation to planning proposals for the Council and Missen properties within the Airport Business Park investigation area,
- c) To prepare independent probity reports regarding the planning process and recommendations and any partiality or bias that may be evident as a result of the probity review,
- d) In relation to a) to c) above, to answer the question: Has Council fulfilled its role as planning authority in a fair and unbiased manner, notwithstanding the ownership of land by Council within the Airport Business Park Investigation Area?
- e) To make any necessary recommendations to Council as a consequence of the above review.

3. STUDY SITE

The Airport Business Park Investigation Area is shown in Figure 1 below.

Figure 1: Study Site



4. SCOPE OF WORK

- a) Inception meeting: An initial site visit and inception meeting with Council's D_&E Division will be held to familiarise the successful consultant with the study area and to provide relevant historical documentation for review by the consultant.
- b) Review planning criteria: Council's D_&E Division will produce draft planning criteria to prioritise areas for rezoning in the event that the extent of development needs to limited or where development needs to be staged or sequenced. It is proposed that the successful consultant will provide an independent review of these draft planning criteria.
- c) Review meetings: It is not expected that the consultant will need to meet with all parties in undertaking the probity review. However, it is possible that an issue may be raised and that the probity consultant may need to take part in a meeting or meetings to address the issue in the probity reports. Where meetings are necessary, they will be organised by the Project Manager.
- d) Preliminary report: A preliminary probity report will be prepared by the successful consultant for inclusion in a report to Council regarding the proposed preparation of planning proposals for the Airport Business Park investigation area. The preliminary probity report will address whether there are any probity issues of concern in the process leading up to and including the report to Council at that time.
- e) Final report: A final probity report will be prepared by the successful consultant for inclusion in a report to Council following exhibition and review of planning proposals for the Airport Business Park investigation area. The final probity report will address whether there are any probity issues of concern in the exhibition and review process and in relation to the final recommendations to Council.

Note: The probity reports are intended to focus on any relevant probity issues and not on the merit of Council's planning for the Airport Investigation Area. For example, it is not intended that the consultant provide a critique of proposed stormwater management systems, even if the consultant believes that the proposed system is not the best approach. However, if there is a significant difference in the standards applied by Council in relation to its own land, then this is potential probity issue for inclusion in the consultant's reports.

It is intended that any planning proposal for Council land will clearly and transparently describe Council's position as landowner in accordance with the Department of Planning & Environment Best Practice Guideline (1997) LEPs and Council Land.

5. ADDITIONAL INFORMATION

Council will provide all relevant planning documents, which may be required as background information for the peer review.

All data supplied by Council remains subject to copyright vested in Council or the data supplier who has licensed use of the data to Council. At the completion of the project, no digital copies of the data supplied by Council are to be retained by the consultant.

Council will provide authority to enter land, under the *Environmental Planning* and Assessment Act 1979, where necessary for the purposes of this project. The consultant is to comply with Council's Policy, Procedure and written instructions before entering private property for the purposes of gathering information and survey.

6. ADMINISTRATION AND REPORTING

6.1 Administration

The Project Manager is Council's Group Manager Strategic Land Use Planning, Peter Cameron, telephone (02) 65818110, email <u>peter.cameron@pmhc.nsw.gov.au</u>

The Project Director is Council's Director Development and Environment, Matt Rogers, telephone (02) 65818626, <u>matt.rogers@pmhc.nsw.gov.au</u>

6.2 Timing

Proposals are to be submitted to Council by 5pm on 4 March 2016. It is expected that the successful consultant will be notified by 14 March 2016.

It is not possible to predict the timing of the reports to Council as this depends in part on the submission of information by or on behalf of the landowners in the Airport Business Park Investigation Area.

At the time of preparation of this brief it is expected that the preliminary probity report may be required by the end of April 2016 in conjunction with the preparation of a report to Council's ordinary meeting on 18 May 2016.

It is anticipated that the final probity report from the successful consultant may be required for inclusion with a report to Council's ordinary meeting on 20 July 2016.

Council's Project manager will ensure that the successful consult is kept up to date regarding the planning process and any changes to the above timeframes.

6.3 Reports - written

The consultant is required to forward to Council:

- a digital copy of the preliminary report,
- a digital copy of the final report
- preferably in an A4 format.

6.4 Reports - mapping

Council's D&E Division will assist with the preparation of any necessary mapping, should the need arise for any mapping associated with the consultant's report.

The mapping is to be included in the digital reports described in 6.3 above.

7. CONSULTANCY PROPOSAL

The proposal to undertake this Study is to include:

- 1. Outline of the consultant's understanding of Council's requirements for this project.
- 2. Description of the approach to the project including methodology

- 3. Outline of a project plan, covering timetable and milestones,
- 4. Curriculum Vitae of the consultancy team who will be directly involved in this project, and details of similar work undertaken recently.
- 5. Consultancy fee, including:
 - a. the basis for charges and costs separately identified and estimated; any uncertainty regarding attendance at meetings can be addressed by including a proposed additional lump sum fee for attendance at meetings, including any associated disbursements.
 - b. the total cost for the project as a lump sum, including GST;
- 6. Details of insurance cover;
- 7. ABN number and confirmation that the consultant is registered to collect GST

8. CONSULTANT SELECTION CRITERIA

The criteria for the selection of the consultant are:

- 1. The independence of the consultant.
- 2. The quality and depth of the consultant's demonstrated experience in the field, as relevant to the project.
- 3. The proposed approach, methodology and deliverables.
- 4. The consultant's capability and capacity to deliver quality outputs in accordance with the project objectives.
- 5. The project timetable.
- 6. Consultancy costs and value for money.

9. CONDITIONS OF ENGAGEMENT

9.1 General Conditions of Engagement

The tasks as identified in the brief are based on Council's assessment of the project. The consultant may suggest any amendments required to achieve the project objectives during the course of the work.

Council must first endorse any proposed departure from the agreed project tasks before proceeding.

9.2 Termination

The consultants' commission to carry out the Study may be subject to termination due to non-performance or inability to meet set deadlines. Letter of such termination, which will be final and not subject to further correspondence, will inform the consultant.

9.3 Insurance

Certificates of currency from all parties undertaking the work (including sub consultants) for

- Workers Compensation Insurance (where applicable)
- Motor Vehicle Insurance
- Public Liability Insurances
- Professional Indemnity Insurance

shall be submitted to Council within one week of Council's letter commissioning the consultant to undertake the work, and in any case before commencement of the work.

Public Liability Insurance shall note the interest of Council. The Principal Consultant shall ensure that any sub consultants or other persons engaged by the Principal Consultant to assist in the study carry insurances listed above and on request shall provide certificates of currency to Council.

Where, in the carrying out of the work, access to private property is required, the consultant shall indemnify Council and the owner of the private property against claims by third parties for personal injury or property damage to the extent that the injury or damage is caused by the negligent act or omission of the Consultant its employees or its sub consultants. Such indemnity shall accompany the certificates of currency.

9.4 Confidentiality

Investigations and reports will remain confidential unless, or until released by Port Macquarie-Hastings Council.

Where any matter within the report relates to private property, the consultant shall provide, when requested by a landowner, a copy of the specific information relating only to the particular private property to the landowner and advise Council of any such provision.

Where as a result of carrying out the study, the consultant, or any subconsultant, obtains information regarding any matter not related to the study, the information shall not be used or disseminated elsewhere.

9.5 Ownership and Copyright

Ownership and copyright at all times shall be vested in the Council and any distribution whether for money or otherwise of the project should only be with the authority of the Council. Details of the content and progress of the project shall be confidential and shall not be made available to any third party without the authority of Council.

Council will have complete ownership of the content of the studies and plans and the reproduction and/or distribution of these documents in part or full, is prohibited without Council permission.

Council may permit the consultant to utilise information gained in the course of the project for the purpose of conference or educational papers or other publications provided that these are appropriately acknowledged and that confidentiality is respected.

9.6 Conflict of Interest

The consultant shall inform Council immediately of any matter connected with this project, which could give rise to an actual or potential conflict of interest. This information will be treated as confidential.

9.7 Certification

All final documents prepared by the consultant must be signed by the Project Director nominated in the consulting proposal to certify that they have been prepared by competent professional staff, checked for accuracy and comply with relevant regulations and the requirements of the Brief.

9.8 Corrections

Any error, ambiguity or deficiency, which becomes apparent during the

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course of the project, shall be referred to the consultant for correction or clarification. The consultant shall not be entitled to an additional fee where the correction or clarification arises from a fault of the consultant.

The content of the report is the responsibility of the consultant and may not be amended without the agreement of the consultant.

9.9 Payment and Costs

Upon submission of the draft report, the consultant may lodge a claim for payment for 50% of the total agreed cost, with a further claim for payment totalling 90% of the total agreed cost, being lodged with submission of the final reports. The Council shall not be obligated to make any payment unless it is satisfied that the work satisfies the requirements of the brief.

Council will retain 10% of the total consultancy fee, until acceptance of the final report and a final claim on completion of the whole of the project, as set out in the Scope of Work.

The consultant shall be responsible for all his/her own costs for travel, accommodation and any other expenses.

Council's preference is to do business with consultants who have an Australian Business Number. If the consultant cannot quote an ABN, withholding tax will be deducted.

Council will pay GST in addition to the agreed fees where the consultant supplies an ABN and confirms they are registered for the GST.

9.10 Business Ethics

Council's Statement of Business Ethics is at **Appendix 1**. The Statement outlines the ethical standards of behaviour that Council expects from Council staff, plus all suppliers, contractors and consultants and gives instruction to both Council staff and consultants on how to report any breaches of this Statement of Business Ethics. The consultant will be required to sign a declaration that states that they have read and understand the content and meaning of the Statement of Business Ethics prior to commencement.

9.11 Acceptance of Conditions

Written confirmation of acceptance of the commission for the project, in accordance with the conditions of engagement, is required before work commences.

10. Appendix 1 - Statement of Business Ethics

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Attachment 2

NSW ICAC Probity Principles

Accountability of the participants and transparency of the process

Accountability and Transparency are related concepts. Accountability involves agencies being able to justify the use of public resources to an appropriate authority by allocating and taking responsibility for past and expected performance. This includes aligning the decision-making process with the appropriate delegated authority, and keeping adequate records that will leave an auditable trail. Transparency refers to the preparedness to open a project and its processes to scrutiny and possible criticism. This also involves providing reasons for all decisions that are taken and the provision of appropriate information to relevant stakeholders.

Fairness, impartiality and honesty

Individuals and organisations involved in preparing and submitting proposals are entitled to expect impartial treatment at every stage of the process. If they do not consider the process to be fair, impartial and honest they may withhold valuable ideas or be deterred from bidding in the future. Any form of bias, whether driven by personal interests or not, could jeopardise the integrity of the project. Procedures that include multiple person panels, independent members and observers mitigate this risk.

Management of Conflicts of Interest

A conflict of interest is a conflict between the public duty and private interests of a public official where the public official has private interests which could improperly influence their official duties and responsibilities. The community and potential tenderers have a right to expect that public officials will make decisions that are not influenced by private interests. Similarly, when the private sector is engaged to perform public sector duties, there is an obligation to ensure that conflicts of interest are disclosed and effectively managed. Perceived or potential conflicts of interest can be as damaging as actual conflicts, and procedures should be implemented to mitigate the effect.

Maintenance of confidentiality and ensuring security

Although accountability and transparency are fundamental to the work of public sector organisations and public officials, there is some information that needs to be kept confidential, at least for a specified period of time, in order to protect the integrity of the process and give tenderers the confidence to do business with government. This information can include the content of proposals, intellectual property and tenderers' pricing and profit structures. Importantly, much of the information relating to the project needs to be kept confidential up to the point where a contract is executed with the successful tenderer. However, once this has happened, government guidelines require that certain information be released, consistent with the fundamental principles of public sector accountability and transparency, as discussed above. Procedures must be implemented to ensure that no unauthorised release of confidential information occurs.

Attaining value for money

This is demonstrated by the use of an open competitive environment in which the market is tested regularly, and tenderers can make attractive, innovative proposals with the confidence that they will be assessed on their merits. Value-for-Money is not necessarily achieved by accepting the lowest available price. The process should include: the evaluation of non-price criteria (such as the quality of the goods or services offered, the experience and past performance of the providers, the financial strength of the companies, the differing risk factors, the quality of the personnel, etc.); cost-benefit analysis against a target outcome or budget; the assessment of the total cost over the proposed life of the project; and, where appropriate, whether the outcome is best achieved by the Private Sector, using a Public Sector Comparator. Lapses in probity may lead to one or more parties obtaining unreasonable financial gains at the expense of the public interest.

Procedures should include a comparison of the non-price and price criteria on a weighted basis, with both the criteria and the weighting between price and non-price criteria declared in the Information Memorandum.

NSW Independent Commission Against Corruption, Probity and Probity Advising - Guidelines for Managing Public Projects 2005

http://ict-industry-reports.com.au/wp-content/uploads/sites/4/2013/10/2005-Guidelines-for-Probity-in-Public-Sector-Projects-ICAC-Nov-2005.pdf Yours sincerely,

Port Macquarie Hastings Airport Planning Proposal – Planning Process Review

PUBLIC EXHIBITION DATES 29 January to 26 February 2020

Planning Proposal -Airport Business Park

Draft Port Macquarie-Hastings LEP 2011 (Amendment No 56)

Ccl ref: PP2015-3.1 DPI&E ref: PP_2019_PORTM_003_00 Date: 20 January 2020 v2: For public exhibition



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Planning Proposal status (for this copy)

Stage		Version Date (blank until achieved)		
Reported to Council - sec 3.33		17 Jul 2019		
Referred to DPI&E for Gateway determination - sec 3.	34(1)	19 Jul 2019		
Gateway Panel determination received - sec 3.34(2)		20 Nov 2019		
Public Exhibition - Schedule 1 clause 4		29 Jan - 26 Feb 2019		
For Council review - sec 3.35(1)				
Local Environmental Plan made by Minister's delegate - sec 3.36				
Council reference:	PP2015-3.1			
	Port Macquarie-Hasting (Amendment No 56)	s LEP 2011		
Department of Planning & Environment reference:	PP_2019_PORTM_003	_00		

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Adoption of the Planning Proposal

1. For initial Gateway determination

This Planning Proposal was endorsed on 18 July 2019 by the undersigned Council delegate:

Signed: Peter Camm

Name: Peter Cameron

Position: Group Manager Strategic Land Use Planning

2. For section 3.35 finalisation

This Planning Proposal was endorsed on by Port Macquarie-Hastings Council, or the undersigned Council delegate (delete one):

Signed

Name

Position

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Planning Proposal - Airport Business Park

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Executive Summary

Planning Proposal

This is a Planning Proposal in relation to a potential Business Park zoning at the Port Macquarie Airport. In addition, it proposes to implement the outcomes of the Port Macquarie Airport and surrounding lands Biodiversity Certification Assessment approved by the NSW Minister for the Environment on 7 September 2018.

What is a Planning Proposal?

The preparation of a Planning Proposal is the first step in making an amendment to the *Port Macquarie-Hastings Local Environmental Plan* (LEP) 2011. A Planning Proposal is a document that explains the intended effect and justification for the proposed amendment. Under the *Environmental Planning and* Assessment Act 1979, Council must prepare and submit a Planning Proposal to the Department of Planning, Industry and Environment for consideration of an amendment to the *Port Macquarie-Hastings LEP* 2011.

This Planning Proposal is set out in the manner required by the State government and it contains information required by the State government when Councils prepare changes to their LEPs.

What is the intent of this Planning Proposal?

The intent of this Planning Proposal is to amend the *Port Macquarie-Hastings LEP 2011* in relation to planning controls for a proposed Business Park zoning on Council-owned land at the Port Macquarie Airport, including zone extent, lot size, height of buildings, floor space ratios and permitted uses.

In addition, the Planning Proposal seeks to implement the Biodiversity Certification Assessment outcomes approved by the NSW Minister on 7 September 2018 for the Environment for the Port Macquarie Airport and surrounding lands.

Any questions, contact:

Sandra Bush on telephone 6581 8025 or email sandra.bush@pmhc.nsw.gov.au

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Background

At the Council Meeting held on 21 November 2018, Council considered a report on a proposed expansion of the existing B7 Business Park zone at Port Macquarie Airport. This initiative is consistent with the *Port Macquarie Urban Growth Management Strategy 2017-2036* and the *North Coast Regional Plan 2036*. The November 2018 Council report and Meeting minutes are at **Appendix A**.

Following Council's resolution, the proponent King and Campbell Pty Ltd, was invited to submit the basis for a Planning Proposal to meet the requirements of the Department of Planning, Industry and Environment's *A Guide to Preparing Planning Proposals 2018*. The proponent's Planning Proposal request (**Appendix B**) was received on 4 June 2019.

At the Council Meeting held on 17 July 2019, Council considered a summary of the proponent's Planning Proposal request, followed by an assessment by Council's Development and Environment Division to inform the content of this Planning Proposal. Council resolved to endorse this Planning Proposal and forward it to the Department of Planning, Industry and Environment (DPIE) for a Gateway Determination. The July 2019 report and Meeting minutes are at **Appendix C**.

The DPIE issued a Gateway Determination on 20 November 2019 (**Appendix D**) to allow the Planning Proposal to proceed subject to conditions and requirements for State government agency and community consultation.

Planning Proposal

This Planning Proposal has been prepared in accordance with the *Environmental Planning and* Assessment Act 1979 and the DPIE's A guide to preparing planning proposals 2018 and A guide to preparing local environmental plans 2018.

It explains the intended effects of a proposed amendment to the Port Macquarie-Hastings Local Environmental Plan 2011 (LEP 2011) to:

- reshape and expand the existing B7 Business Park zone on Council-owned land on the eastern side of Boundary at the Port Macquarie Airport
- rezone the majority of the current B7 Business Park zone on the western side of Boundary Street to SP2 Infrastructure (Air transport facility)
- apply building height and minimum lot size standards to the Newman Senior Technical College, which is within the existing B7 Business Park zone on the western side of Boundary Street
- rezone Council's Airport and adjoining Thrumster lands to reflect the biodiversity certification assessment outcomes for the area approved by the NSW Minister for the Environment on 7 September 2018, and
- identify all land in the Local Government Area that has been biodiversity certified.

The Site

The land proposed for rezoning includes Council's Airport and Thrumster lands (approx 760 hectares) and a small area of Crown Land impacted by the Airport Obstacle Limitation Surface.

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This land falls within a larger area that has undergone a biodiversity certification assessment approved by the Minister for the Environment on 7 September 2018. The total area covered by the biodiversity certification assessment is shown edged white in Figure 1.

Areas within the site referred to in this Planning Proposal as 'Airport Business Park', 'Airport Lands', 'Thrumster Lands' and 'Newman Senior Technical College' are shown on Figure 1 and shaded blue, yellow, red and green, respectively.

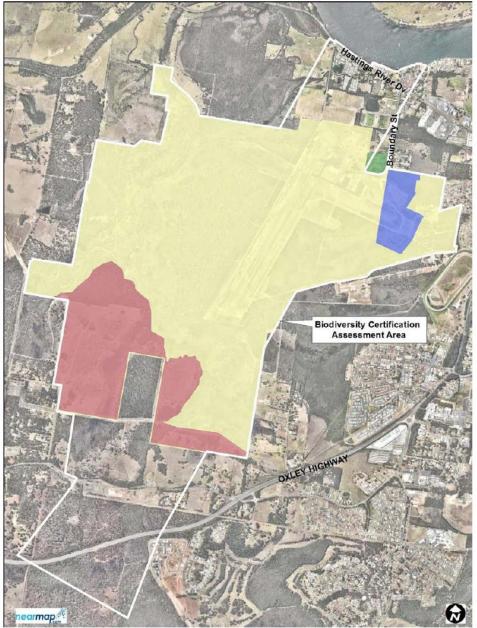


Figure 1: Subject Site

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Council roles & responsibilities

For context and transparency, the roles and responsibilities of Council in relation to this Planning Proposal are as follows:

- PMHC Airport Landowner and proponent seeking a rezoning, represented by King and Campbell Pty Ltd
- Development & Environment Division Provides advice to Council as the 'Planning Proposal Authority' to assess the Planning Proposal and determine the appropriate content of any Planning Proposal and related planning documents
- Elected Council As the 'Planning Proposal Authority' (PPA) Council is responsible for the Planning Proposal, the quality of the information provided in support of the proposal and its referral for Gateway determination.

The PPA is responsible for ensuring that the level of detail in the Planning Proposal document is sufficient to respond to the statutory requirements of the *Environmental Planning and Assessment Act 1979* and related guidelines. The PPA must ensure the information is accurate, current and sufficient for issuing a Gateway Determination and detailed enough for the purposes of consulting with government agencies and the general community.

Probity review

In recognition that Council has a role as Airport operator, landowner and planning proposal authority in this matter, Council's D&E Division has engaged Cardno (NSW/ACT) Pty Ltd to independently review the planning process and provide probity reports and recommendations on the statutory procedures involved in preparing a Planning Proposal for a proposed Airport Business Park rezoning.

The Preliminary Probity report (**Appendix E**) covered the period from 16 March 2016 to 7 November 2018 and concluded that Cardno had not observed or detected evidence of partiality, bias or probity issues of concern in the planning process leading up to the presentation of the 21 November 2018 report to Council.

A Final Probity report will review Council's processes for a Business Park Planning Proposal against the ICAC guideline. In particular, the report will address whether or not there are any probity issues of concern in relation to the exhibition and assessment processes involved in this Planning Proposal and the final recommendations to Council.

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Part 1 - Objectives or Intended Outcomes

The objectives and intended outcomes of this Planning Proposal are:

- To provide for a reconfigured and expanded Business Park area (23.75 ha) east of Boundary Street, as shown in Part 4 Figure 2 of this proposal, to reflect the importance of the Port Macquarie Airport as a regional hub.
- To consolidate existing airport infrastructure with future airside and general aviation land uses generally west of Boundary Street, as shown in Part 4 Figure 2 of this proposal.
- To rezone the Airport Lands and Thrumster Lands to reflect the Biodiversity Certification Assessment and Strategy outcomes for clearing and conservation of native vegetation within the Port Macquarie Airport and adjoining Council-owned Thrumster lands.
- To identify all land in the locality that is subject to the Port Macquarie Airport and surrounding lands Biodiversity Certification Assessment and Strategy.
- To apply lot size and height of buildings controls to the Newman Senior Technical College site, for consistency with the proposed Airport Business Park lands.

All of the proposed land use zone changes and an estimate of the areas affected is as follows:

Land Use Zone	Existing (ha)	Proposed (ha)	Change (ha)
B7 Business Park	25.5	27.6	+2.0
SP2 Infrastructure (Air transport facility)	219.1	160.1	-59.0
E2 Environmental Conservation	360.6	477.4	+116.8
E3 Environmental Management	45.1	22.7	-22.4
RU1 Primary Production	15.2	0.0	-15.2
R1 General Residential	76.3	62.7	-13.6
RE1 Public Recreation	8.6	0.0	-8.6

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Part 2 - Explanation of Provisions

The following Land Zone Map amendments to the Port Macquarie-Hastings LEP 2011 are proposed to achieve the intended outcomes:

- Zone B7 Business Park to 19.1 hectares (ha) of land on the eastern side of Boundary Street, as shown in Part 4 Figure 2 of this proposal. When combined with the existing 4.65 ha of Zone B7 on the eastern side of Boundary Street, the reconfigured Business Park on Council's land will have a total area of 23.75 ha.
- Zone SP2 Infrastructure (Air transport facility) to the Airport Lands:
 - required to be cleared to satisfy Commonwealth Government Civil Aviation Safety Authority (CASA) Code 4C aerodrome standards for the OLS, and
 - generally west of Boundary Street (as shown in Part 4 Figure 2 of this proposal), to incorporate existing airport infrastructure with future airside and general aviation uses. This includes 17 ha of existing Zone B7, of which 8.4 ha is currently occupied by Airport related uses.
- Zone E2 Environmental Conservation to the Biodiversity Certified conservation lands within the Airport and Thrumster Lands (i.e. future Biobank Site). This includes areas identified for clearing and or conservation cropping adjacent to the Airport runway and areas identified for essential infrastructure (i.e. roads, fire trails, services corridors), as permitted by the Biodiversity Certification Assessment approval.
- Zone E3 Environmental Management to the northern extent of the Partridge Creek Residential Precinct in Thrumster to reflect the intended use of this land for Asset Protection Zones and public open space, consistent with existing zoning in the Thrumster Urban Release Area.

The following Land Use Table amendments are also proposed:

- Strengthen the B7 zone objectives to confirm the strategic intent of the proposed Business Park and recognise its place in the retail hierarchy for the region. The proposed changes are shown in red text:
 - 1 Objectives of zone
 - To provide a range of office and light industrial uses, within large scale/format developments.
 - To encourage employment opportunities.
 - To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.
 - To create business park employment opportunities within large scale/format developments that are of a high visual quality and that will respect the natural environment within which they are located.
 - To ensure that development does not conflict with the hierarchy of business and retail centres in the Port Macquarie-Hastings region and the role of the Greater Port Macquarie Central Business District as the focal point for subregional functions and service delivery.
- Revise permitted land uses in the B7 zone to ensure that the proposed Business Park will support a range of land uses that are consistent with the zone objectives, as follows:

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Delete permitted uses:

- Landscaping material supplies
- Plant nurseries
- Takeaway food and drink premises
- Timber yards

Include additional permitted uses:

- + Food and drink premises
- + Self-storage units

Delete prohibited uses:

- Electricity generating works
- Function centres
- Industrial training facilities
- Recreation areas

In addition, the following changes are proposed:

- Amendments to the Lot Size, Floor Space Ratio and Height of Buildings Maps for the proposed B7 zone to permit:
 - A minimum lot size of 2,000sqm to encourage large scale/format developments consistent with the revised Zone B7 objectives
 - A maximum floor space ratio of 0.65:1 to ensure consistency with the traffic studies undertaken in support of the Airport Business Park, and
 - A maximum building height of 11.5m to support the desired outcome for large scale/format developments.
- Amendments to the Lot Size and Height of Buildings Maps applying to the existing zoned B7 Newman Senior Technical College site to permit a minimum lot size of 2,000sqm and maximum building height of 11.5m, for consistency with the proposed B7 Business Park area.
- Amendments to the Lot Size Map applying to the Airport Lands and Thrumster Lands to permit a minimum lot size of 40 ha for the Zone E2 and Zone E3 environmental lands.
- Inclusion of an additional clause to Part 7 'Additional local provisions' and creation of a Biodiversity Certified Land Map to identify all land that is subject to the Port Macquarie Airport and surrounding lands Biodiversity Certification Assessment approved on 7 September 2018.

See Part 4 for proposed map changes.

<u>Note</u>: Consultation will be required with the Department of Planning. Industry and Environment to determine technical mapping requirements for the proposed Biodiversity Certified Land Map.

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Part 3 – Justification

In accordance with the Department of Planning, Industry and Environment's A guide to preparing planning proposals, this Part provides a response to the following matters:

- Section A: Need for the Planning Proposal
- Section B: Relationship to strategic planning framework
- Section C: Environmental, social and economic impact
- Section D: State and Commonwealth interests

Section A – Need for the Planning Proposal

1. Is the Planning Proposal a result of any strategic study or report?

Yes. As discussed in Section B, the proposal is consistent with the *North Coast Regional Plan* 2036 and Council's *Port Macquarie-Hastings Urban Growth Management Strategy* 2017-2036 which has been endorsed by the Department.

With respect to the proposed Business Park, this has resulted in an assessment of all land within the Airport Precinct Investigation area against planning criteria to determine which areas of the precinct should be prioritised for detailed rezoning investigations, as reported to the November 2018 Ordinary Council Meeting.

The precinct investigation area included the existing B7 Business Park zone and adjoining Council land to the south and east together with privately owned land to the north, with frontage to Boundary Street. The proposed Business Park area was selected as the preferred site to provide for an expanded Business Park area at the Airport.

Additionally, the Port Macquarie Airport and surrounding lands Biodiversity Certification Assessment and Strategy, approved on 7 September 2018, provides a strategic approach to ongoing operational, development and biodiversity issues related to the Port Macquarie Airport, particularly the new and more extensive Airport obstacle limitation requirements required by the Civil Aviation Safety Authority. The Assessment and Strategy also includes land owned by private parties to the north and south of the Airport on which vegetation conservation and clearing is required due to Airport operations.

This Planning Proposal has been informed by a rezoning request lodged by King and Campbell Pty Ltd on 4 June 2019 on behalf of the Port Macquarie-Hastings Council Airport. As background to and in support of the request, the proponent submitted a body of information that includes the following:

- Economic Impact Assessments
- Traffic Impact Assessments
- Biodiversity Certification
- Aboriginal Archaeology Assessment
- Geotechnical Assessments
- Sewerage Services Strategy
- Stormwater Management Strategy
- Water Supply Infrastructure Strategy

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The majority of this work was completed to inform the proposed Business Park site selection process, as reported to Council in November 2018.

2. Is the Planning Proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Yes. The area proposed for Business Park is currently zoned part SP2 Infrastructure (Air transport facility) and E2 Environmental Conservation. For the site to be developed for Business Park purposes, it needs to be appropriately zoned.

The proposed rezoning of the remaining Airport Land and Thrumster Land is not essential in ensuring the outcomes of the approved Airport and surrounding lands Biodiversity Certification Assessment. However, rezoning this land as proposed to reflect the Biodiversity Certification is preferred to reflect the future use of this land.

Section B - Relationship to strategic planning framework

3. Is the Planning Proposal consistent with the objectives and actions of the North Coast Regional Plan 2036?

In terms of the proposed Business Park rezoning, the *Regional Plan City Map for Port Macquarie* identifies the existing Airport Business Park as 'Business Centre'. Proposed Business Park zoning outside this area is mapped as 'Investigation Area – Employment Land'.

Action 6.1 of the Regional Plan recommends that in planning for economic growth around airports, Councils consider new infrastructure needs and introduce planning controls that encourage clusters of related activity. Also recommended is the need to promote new job opportunities that complement existing employment nodes around airport precincts, and the need to deliver infrastructure and coordinate the most appropriate staging and sequencing of development (Action 7.1).

The proposed retention of the SP2 zone for Airport related uses west of Boundary Street and consolidation of B7 Business Park uses east of Boundary Street, recognises the close linkage between the existing and proposed Airport lands and the current and future Airport operations.

Direction 6 of the Regional Plan requires that new commercial precincts, outside of centres, be of an appropriate size and scale relative to the area they will be servicing to deliver positive social and economic benefits for the wider community and maintain the strength of the regional economy. This matter is discussed in more detail under Question 4 below in context of the centres hierarchy.

The proposed LEP amendments to reflect the approved Airport and surrounding lands Biodiversity Certification Assessment and Strategy is consistent with Action 2.1 which requires that development focus on areas of least biodiversity sensitivity and implement the 'avoid, minimise, offset' hierarchy to biodiversity, including areas of high environmental value.

4. Is the Planning Proposal consistent with Council's Community Strategic Plan and Urban Growth Management Strategy?

Towards 2030 Community Strategic Plan

The Planning Proposal satisfies the key strategies of this Plan for both 'business and industry' and 'natural and built environment' in that it will:

Provide for employment lands in close proximity to a transport hub

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- Attract investment to a location that is well serviced and connected to the greater Port Macquarie area
- Provide for effective management and maintenance of urban infrastructure and services
- Facilitate development that is compatible with the natural and built environment
- Provide for the effective integration of transport systems, and
- Restore and protect natural areas, consistent with the approved Biodiversity Certification of the Port Macquarie Airport and surrounding lands.

Port Macquarie-Hastings Urban Growth Management Strategy (UGMS) 2017-2036

Planning for the development of an expanded Business Park at the Port Macquarie Airport to create opportunities for technology and airport related businesses, is listed as a priority economic development action in the UGMS (Action 15).

A key aim in the UGMS is to maintain the primacy of the Port Macquarie CBD and the existing hierarchy of centres in the Port Macquarie-Hastings region. Office uses are particularly important to the vibrancy, function and attractiveness of the CBD as a Regional City. Council will also focus on opportunities for office uses associated with the establishment of an expanded Business Park at the Airport and in the proposed Health and Education Precinct.

Consistent with the Regional Plan (Direction 6), new commercial precincts outside of centres are required to be of an appropriate size to maintain the strength of the regional economy. The UGMS requires that Council review detailed economic assessments as part of investigations for proposed Business zones to ensure that a balanced approach to supply and demand is achieved.

In order to assess the appropriate level of opportunity for office space at the Airport, Council's D&E Division commissioned Hill PDA consultants to provide advice on the relationship between a proposed Airport Business Park expansion and the existing hierarchy of business centres in the Port Macquarie-Hastings.

The 2016 Hill PDA report (at **Attachment 1**) is based on a survey of floor space and assessment of employment trends and population forecasts, as well as modelling of low and medium growth scenarios to project business park office space demand and land requirements for the Port Macquarie-Hastings LGA to 2036. In a subsequent 2017 report (at **Attachment 2**) Hill PDA has concluded that from a centres hierarchy perspective, the maximum amount of B7 Business Park land that can be recommended in the expanded Airport Business Park is 20 ha gross developable land.

In addition, the proponent has commissioned Gillespie Economics and Augusta consultants to consider the opportunity for commercial development at the Airport Business Park. Both of these reports (at **Attachments 3 & 4**), together with the Hill PDA assessments, conclude that there are significant commercial development opportunities in the proposed Business Park.

This Planning Proposal seeks to reinforce the unique location and characteristics of the proposed B7 Airport Business Park, while ensuring that potential impacts on the centres hierarchy are mitigated through:

- Amended B7 Business Park zone objectives to place additional emphasis on large-scale floorplate development
- Changes to the land uses permitted with consent in the B7 zone to ensure that the precinct functions as a Business Park, different to a town centre
- A minimum 2,000sqm lot size which is larger than that typically provided in other commercial and industrial zones (i.e. 1,000sqm), and
- A maximum 0.65:1 Floor Space Ratio (FSR) for development of the Business Park lands to ensure that future traffic generation is within the capacity of the road network, noting

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that the proponent's hypothetical development scenario used to inform traffic modelling for the Airport Business Park site selection process is based on a maximum FSR of 0.7:1.

The scale of the Business Park has been considered by Council's D&E Division and having regard to the revised permitted uses, strengthened B7 zone objectives and proposed lot sizes and floor space ratio controls, it is considered that the proposed 23.75 ha of B7 zoning at the Airport is unlikely to result in significant economic impacts on the centres hierarchy.

5. Is the Planning Proposal consistent with applicable State Environmental Planning Policies?

An assessment of consistency with State Environmental Planning Policies (SEPPs) of relevance is provided below.

SEPP	Consistent	Reason for inconsistency or comment
No 44 Koala Habitat Protection	Yes	Encourages the conservation and management of natural vegetation areas that provide habitat for Koalas to ensure permanent free-living populations will be maintained over their present range. Council's cannot approve development in an area affected by the policy without an investigation of core Koala habitat. The Port Macquarie Airport and surrounding lands Biocertification Assessment determined that the Koala was one of five species that will be impacted by the land that is certified. Species credits were determined and the number of species credits generated by the
		proposed conservation measures were found to be deficient for the Koala (323 credits).
		The Biocertification has resulted in a 444.17 ha offset area, which provides for a 301.88 ha of Koala habitat. Council has committed to the purchase of an additional 40 to 50 ha off-site for the retirement of the 323 Koala species credits.
No 55 - Remediation of Land	Yes	Introduces state-wide planning controls for the remediation of contaminated land. The policy states that land must not be developed if it is unsuitable for a proposed use because it is contaminated.
		The proponent's Planning Proposal request advises that all operational lands associated with the Airport will be zoned SP2 Infrastructure. Land areas that are not currently used by the Airport do not have a land use history that would indicate future contamination issues.
		The proposed Business Park site is identified in Council's Contaminated Land Register. Therefore, a preliminary contaminated land investigation and report has been prepared (Attachment 5) to assess all potentially contaminating activities, contamination types and confirm whether the property is suitable for industrial use.
		Per- and poly-fluoroalkyl (PFAS) substances that have historically been used in firefighting foam at airports were not included in the assessment because Council advised the consultant that there was no record of PFAS use on the site. The site soils testing results revealed contaminant concentrations for lead and asbestos at two locations above the guidelines for industrial development.

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SEPP	Consistent	Reason for inconsistency or comment
		The assessment concludes that the proposed business park site satisfies Clause $6(1)(b)$ of SEPP No 55 in that the land is suitable in its contaminated state (or will be suitable after remediation) for its intended use. It is also noted that further detailed contamination work will be considered and addressed at the development application stage.
Infrastructure 2007	Yes	The aim of this Policy is to facilitate the effective delivery of infrastructure across the State.
		This Policy is relevant to the future infrastructure (roads, sewerage systems, stormwater management systems, water supply systems) required for the proposed Airport Business Park, the Airport Lands and the Thrumster Lands.
		Hastings River Drive is a classified road, with access to the Airport Lands and the proposed Airport Business Park via Boundary Street, which is greater than 90m in distance to its connection with Hastings River Drive. Therefore clause 104 of the SEPP will only apply to the future development types listed in Column 2 at Schedule 3 to the SEPP. These development types will require consultation with the NSW Roads and Maritime Services as part of the development approval process.
		The development of sewerage, water and stormwater infrastructure to service the Airport Lands, Thrumster Lands and proposed Airport Business Park Lands is able to be carried out by or on behalf of Council in any zone under SEPP Infrastructure. The site includes a number of existing fire trails and future fire trails, both of which have been included in the biodiversity process as cleared lands.
State and Regional Development	Yes	The aims of this Policy are to identify development that is State significant development, State significant infrastructure and critical State significant infrastructure, and that is regionally significant development.
2011		Development with a capital investment value of more than \$30 million is declared as regionally significant development and required to be determined by the relevant Regional Planning Panel.
		Should this be the case for any future Development Application in relation to the subject land, the proposal will be regionally significant development and will be reported to the Regional Planning Panel for determination.
Coastal Management	Yes	The aim of this Policy is to promote an integrated and coordinated approach to land use planning in the coastal zone.
2018		A large extent of the site is mapped as either Coastal Wetlands or Proximity Area for Coastal Wetlands. Part 2 Division 1 is relevant for any works within this mapped area and with the exception of environmental protection works, all development will be declared designated development for the purposes of the Act.
		Under SEPP (Infrastructure) 2007, Part 1 Clause 8(4) and (5) (relationship to other environmental planning

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SEPP	Consistent	Reason for inconsistency or comment
		instruments) confirms that emergency works or routine maintenance works that can be carried out without consent, or is exempt development, are not declared designated development for the purpose of the Act. Additionally, the maintenance of existing fire trails will not be declared a designated development.
Primary Production and Rural Development 2019	Yes	The aims of the Policy are to facilitate the orderly economic use and development of lands for primary production. Existing RU1 Primary Production zoned lands are proposed to be zoned E2 Environmental Conservation, consistent with the approved Biodiversity Assessment and Strategy.

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Is the Planning Proposal consistent with applicable Ministerial Directions?

An assessment of consistency with Ministerial Directions of relevance is below.

1. Employment and Resources

S9.1 Direction	Consistent	Reason for inconsistency or comment
No 1.1 Business and Industrial Zones	No	The objectives of this direction are to: (a) encourage employment growth in suitable locations, (b) protect employment land in business and industrial zones, and (c) support the viability of identified centres.
		The Planning Proposal is inconsistent with this Direction because it is proposed to alter the location of the existing B7 Business Park lands. In this regard, there is currently 25.54 ha of B7 Business Park zoning at the Port Macquarie Airport, of which 13.3 ha is undeveloped. It is proposed to:
		 rezone 17.04 ha of the existing B7 Business Park on the western side of Boundary Street to SP2 Instructure (Air transport facility). This land is currently occupied by Airport related uses, and rezone 19.1 ha of land on the eastern side of Boundary
		 Street to B7 Business Park. Combined with the existing 4.65 ha of land area on the eastern side of Boundary Street that is currently zoned B7, the overall footprint of the B7 Business Park will be 23.75ha.
		The relationship to other commercial centres has been considered by Hill PDA consultants, as discussed under Section B Q4 of this proposal. The inconsistency of the proposal with this Direction is justified on the basis that planning for an expanded Business Park at the Port Macquarie Airport to create opportunities for technology and airport related business is a key action of the Port Macquarie- Hastings Urban Growth Management Strategy 2017-2036 (Action 15).
No 1.2 - Rural Zones	Yes	The objective of this direction is to protect the agricultural production value of rural land.
		A small area of land is proposed to be rezoned from RU1 to E2. This land area is isolated and through the Biodiversity Certification is included in the Biobank site.
No - 1.5 Rural Lands	No	This direction aims to protect the agricultural production value of rural land and to facilitate the orderly and economic development of rural lands for rural and related purposes.
		As noted above, a small area of existing RU1 zoned land is proposed to be rezoned to E2. This inconsistency is justified on the basis that this land is included as part of the Biobank site identified in the Airport and surrounding lands Biodiversity Certification Assessment and Strategy approved by the NSW Minister for the Environment on 7 September 2018.

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2. Environment and Heritage			
S9.1 Direction	Consistent	Reason for inconsistency or comment	
No 2.1 - Environmental Protection Zones	Yes	The objective of this direction is to protect and conserve environmentally sensitive areas. All lands that are either zoned E2 or are proposed to be zoned E2 under this Planning Proposal have undergone assessment as part of the Airport and surrounding lands Biodiversity Certification Assessment and Strategy.	
No 2.2 - Coastal Management	Yes	The objective of this direction is to protect and manage coastal areas of NSW. The lands proposed to be rezoned in this Planning Proposal include lands that are mapped under this as either Coastal Wetlands or Proximity Area for Coastal Wetlands. Future development within the mapped Coastal Wetlands will be either Designated Development or exempt (existing fire trails).	
No 2.3 - Heritage Conservation	Yes	The objective of this direction is to conserve items, areas, objects and places of environmental heritage significance and indigenous heritage significance. The Proponent has submitted correspondence from the Birapi Local Aboriginal Land Council (Attachment 6) advising that an inspection of the site has been undertaken in relation to the proposed B7 area and no artefacts of significance were found. Consultation on this matter will be undertaken with the Local Aboriginal Land Council and the Biodiversity Conservation Division of DPIE during public exhibition, as required by the Gateway Determination.	

		Determination.
3. Housing, Infrastructure and Urban Development		
S9.1 Direction	Consistent	Reason for inconsistency or comment
No 3.1 - Residential zones	No	The objectives of this direction are: (a) to encourage a variety and choice of housing types to provide for existing and future housing needs, (b) to make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and (c) to minimise the impact of residential development on the environment and resource lands. This Planning Proposal will rezone R1 Residential zoned lands to partly E2 Environmental Conservation and partly E3 Environmental Management. The inconsistency of the proposal with this Direction is justified on the basis that these lands have been included in the Biodiversity Certification Assessment and Strategy.
No 3.5 - Development near Regulated Airports and Defence Airfields	Yes	The objectives of this direction are: (a) to ensure the effective and safe operation of regulated airports and defence airfields; (b) to ensure that their operation is not compromised by development that constitutes an obstruction, hazard or potential hazard to aircraft flying in the vicinity; and

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		 (c) to ensure development, if situated on noise sensitive land, incorporates appropriate mitigation measures so that the development is not adversely affected by aircraft noise. This Planning Proposal supports the airport operator's (PMHC Airport) rationale for undertaking the Biodiversity Certification process, which will ensure an on-going strategic and sustainable approach to the management and offsetting of any environmental impacts associated with the long-term operation and future development of essential infrastructure related to Airport operations, including the proposed the Airport Business Park. The proposed Business Park zone is not expected to conflict with future Airport operations. In accordance with the Gateway Determination, consultation will occur with the Civil Aviation Safety Authority in relation to the proposal.
No 3.6 - Shooting Ranges	Yes	The objectives are: (a) to maintain appropriate levels of public safety and amenity when rezoning land adjacent to an existing shooting range, (b) to reduce land use conflict arising between existing shooting ranges and rezoning of adjacent land, (c) to identify issues that must be addressed when giving consideration to rezoning land adjacent to an existing shooting range.
		The Port Macquarie shooting range adjoins the site to the south and is zoned RE2 Private Recreation. An area of existing E2 zoned lands within the site separates the range from the proposed Airport Business Park.
		An E2 zone buffer will be retained between the range and the proposed Business Park, ensuring that more intensive land uses cannot be approved adjacent the range. This separation distance will also ensure minimal impact from potential noise. Additionally the land uses that will be permitted in the B7 Business Park zone are not considered noise sensitive receivers.
4. Hazard and	Risk	As required by the Gateway Determination, consultation regarding this aspect of the proposal will occur with the NSW Police Firearms Registry as the relevant range licensing body.

S9.1 Direction	Consistent	Reason for inconsistency or comment
No 4.1 - Acid Sulfate Soils	No	The objective of this direction is to avoid significant adverse environmental impacts from the use of land that has a probability of containing acid sulfate soils.
		The proposed Business Park area includes lands mapped as Classes 2, 3 and 5 Acid Sulfate Soils (ASS).
		Groundwater assessments completed on behalf of the proponent by Regional Geotechnical Solutions in October 2015 and November 2017 (at Attachment 7) to inform the development potential of the proposed Business Park land, confirmed the presence of both Actual and Potential ASS. An ASS Management Plan will be

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		required prior to any on-site works where groundwater will be present.
		The proponent's Planning Proposal request also notes that a proposed Low-Pressure Sewerage Scheme will minimise potential issues associated with the Actual and Potential ASS, as deep excavation will not be required.
No 4.3 Flood	No	The objectives of this direction are:
Prone Land		 (a) to ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005, and (b) to ensure that the provisions of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land.
		The Planning Proposal is inconsistent with this Direction because it facilitates an intensification of land use on certain lands within the flood planning area, involves 1800m ³ of filling for a small area of flood prone land in the proposed Business Park, and does not give effect to the NSW Flood Prone Land Policy and the principles of the Flood Plan Development Manual 2005.
		This inconsistency is considered to be of minor significance as the proposal is supported by a flood impact assessment (Attachment 8) which concludes that the magnitude of changes is minor and within the allowable tolerances specified in the <i>Port Macquarie-Hastings Flood Policy 2018</i> .
No 4.4 - Planning for Bushfire Protection	Unsure	The objectives of this direction are to protect life, property and the environment from bush fire hazards by discouraging the establishment of incompatible land uses in bush fire prone areas; and to encourage sound management of bush fire prone areas.
		The existing vegetated areas within the proposed Business Park area are mapped as bushfire prone land. This vegetation has been Biodiversity Certified and will be cleared as development occurs. The proponent's Planning Proposal request notes that future development of the Business Park will need to provide adequate Asset Protection Zones to the Biobank lands (i.e. future E2 zones to the east & south) and to rural land adjoining to the north.
		As required by the Gateway Determination, consultation on this matter will occur with the Commissioner of the NSW Rural Fire Service during public exhibition of the Planning Proposal.
5. Regional Pla	nning	
S9.1 Direction	Consistent	Reason for inconsistency or comment
5.10 - Implementation of Regional	Yes	The objective of this direction is to give legal effect to the vision, land use strategy, goals, directions and actions contained in Regional Plans.
Plans		The proposed Airport Business Park is consistent with the strategic directions of the North Coast Regional Plan 2036 to promote new

The proposed Airport Business Park is consistent with the strategic directions of the *North Coast Regional Plan 2036* to promote new job opportunities that complement airport precincts.

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	The proposal also identifies areas of environmental significance to be zoned for conservation in accordance with the approved Biodiversity Certification Assessment and Strategy.
--	---

6. Local Plan M	laking	
S9.1 Direction	Consistent	Reason for inconsistency or comment
No 6.1 - Approval and Referral Requirements	Yes	The objective of this direction is to ensure that LEP provisions encourage the efficient and appropriate assessment of development. This Planning Proposal will not introduce any additional requirements for concurrence with other Government agencies.
6.2 - Reserving Land for Public Purposes	Yes	The objective of this direction is to discourage unnecessarily restrictive site-specific planning controls. This Planning Proposal will rezone an area zoned RE1 Public Recreation to E2 Environmental Conservation and is therefore inconsistent with this Direction. This land was included in the biodiversity conservation lands (future Biobank site) in the Biodiversity Certification Assessment and Strategy.

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Section C - Environmental, social and economic impact

6. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

Biodiversity impacts associated with the proposed rezoning of the Airport Lands, Thrumster Lands and Business Park Area have been addressed in the Airport and surrounding lands Biodiversity Certification Assessment and Strategy approved by the Minister for the Environment on 7 September 2018.

7. Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?

<u>Stormwater</u>

The proponent's Stormwater Management Plan in support of the proposed Business Park (Attachment 9) recommends a stormwater treatment train approach, primarily using bio-retention basins/swales centrally located within the proposed road network. The concept has been assessed by Council's Transport and Stormwater Network Section and is considered to provide a satisfactory response to stormwater management issues to support a Planning Proposal.

8. How has the Planning Proposal adequately addressed any social and economic effects?

Visual amenity

Due to the significance of the proposed Business Park and its location at an important gateway entry to the Port Macquarie-Hastings, draft development control plan provisions have been prepared in consultation with the proponent, to guide future development of the Airport Business Park with the aim of facilitating higher amenity office and commercial uses.

The draft development controls aim to provide detailed guidance for future development of the business park, including (but not limited to) policy for streetscape and building form, building setbacks, landform, vehicle access, and landscaping, having regard to the operational requirements of the Airport and the gateway status of the site.

The draft development controls are being exhibited together with this Planning Proposal.

Section D - State and Commonwealth interests

9. Is there adequate public infrastructure for the Planning Proposal?

Road Infrastructure Capacity

In the absence of any certainty regarding a future alternative road access, it is assumed that all access to the proposed Business Park will be via Boundary Street.

In the lead up to the site selection process, the proponent commissioned a Traffic Engineering report by TPS Group (June 2016) at **Attachment 10**, to address traffic planning for development of the Airport Precinct Investigation Area for Business Park purposes.

Based on an indicative Hastings River Drive/Boundary Street intersection design prepared by Council's Transport and Stormwater Network (T&SN) Section, TPS Group 'reverse engineered' their traffic modelling to determine the future capacity of the intersection. TPS also estimated the amount of land in the investigation area that could be developed for Business Park, using the existing road network.

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The TPS Group report modelled traffic generation assuming a hypothetical Business Park mix of uses across the total investigation area and concluded that the intersection, with a modified lane arrangement, would be capable of accommodating 100% of the proposed Business Park development traffic in 2030 (i.e. approx. 20,000 vehicles/day).

Council's Transport and Stormwater Network (T&SN) Section reviewed the TPS Group report and concluded that the TPS Group land use scenarios did not meet all of Council's normal Level of Service and Degree of Saturation targets. Council's T&SN modelling concluded that a maximum 50% of the investigation area (i.e. 20.5 ha) could be developed for Business Park, until such time as a secondary access to the Port Macquarie Airport becomes available.

The proponent engaged SLR consultants to peer review the TPS Group report and Council's T&SN review of that report. The SLR review (at **Attachment 11**) agreed with TPS Group's conclusion that the full Business Park development can be catered for at 2030 with a modified lane arrangement for the Hastings River Drive/Boundary Street intersection.

After reviewing the SLR report and noting that the constraining factor is the capacity of the intersection, Council's T&SN restated their earlier conclusion that the proposed upgraded intersection would have capacity to provide for 50% (i.e. 20.5ha) of the investigation area for Business Park development.

The proponent's Planning Proposal request concludes that the proposed rezoning of an expanded Airport Business Park footprint to 23.75 ha is not likely to have unacceptable impacts on the capacity of existing road infrastructure.

King and Campbell, note that the proposed Airport Business Park footprint (23.75 ha) will result in an estimated 16.03 ha of net developable land, which represents 58% of the net developable area modelled by TPS Group. King and Campbell note that this represents a 14% increase in the net developable area that will ultimately be achieved at the Airport Business Park and consider this a minor increase to the footprint and traffic volumes accepted by T&SN for the proposed Airport Business Park.

The Planning Proposal request notes that the proposed maximum Floor Space Ratio of 0.65:1 is less than that assumed for the traffic modelling (i.e. 0.7:1). This represents a 2% reduction in modelled traffic volumes.

Also noted is that the traffic modelling undertaken of the 2030 performance of the Hastings River Drive/Boundary Street intersection is a model of a long-term outcome. There are many parameters in the broader road network (e.g. decisions with respect to other road & intersection upgrades & development rates across the LGA) that will also impact the performance of the intersection and therefore, the results of the future modelling. Various traffic engineering parameters are inputs into the modelling of the future performance of the intersection.

Having regard to the above, Council's T&SN has accepted that on balance, the impact of a 14% increase in the footprint of net developable B7 zone is within the accuracy limits that can be expected to be achieved with the modelling of the future traffic outcomes.

Road infrastructure funding

The TPS Group and SLR reports together with Council's T&SN Section review of these reports recognise that development of the proposed Business Park, together with an assumed doubling of traffic generated by existing land uses in the area, will require upgrading of the Hastings River Drive/Boundary Street intersection and improvements to Boundary Street. These works are currently not listed in Council's future works program.

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The Planning Proposal request acknowledges that in the absence of a local roads contribution plan, it is anticipated that the intersection improvements will be specified as a condition of development consent for the establishment of the Airport Business Park, including details of a proposed trigger for these works. King and Campbell expect that apportionment of the share of the costs of the intersection works between the Business Park and other development would be negotiated through a Works in Kind Agreement at that time.

The D&E Division assessment is that an upgrade of Boundary Street is a fundamental requirement for the proposed Business Park, which will generate a significant proportion of demand for the upgrade. In this case, Council cannot enter into a Planning Agreement to obtain a commitment in relation to road upgrades. Any sale of the Council owned Business Park land could be contingent upon a Planning Agreement to demonstrate to the community, that the development of Council owned land has been treated in the same way as any other proposed development.

In addition, it is proposed that Council's D&E Division prepare a draft Section 9.11 Contributions Plan to enable collection of developer contributions towards road infrastructure required to service the proposed Airport Business Park. The draft Plan will identify the level of developer contributions applicable to road and intersection works to accommodate future development of the proposed Business Park area overtime and can be referenced in any future Planning Agreements. The proposed Contributions Plan will need to be in place prior to development of the Business Park but need not delay the proposed referral of a Planning Proposal to the Department of Planning, Industry and Environment for a Gateway Determination.

Sewerage

The proponent's Planning Proposal request presents two options for sewerage infrastructure (at **Attachment 12**), being a conventional gravity sewerage scheme and a low-pressure sewerage scheme. These options have been assessed by Council's Water and Sewer Section and are considered to adequately demonstrate that it will be possible to service the proposed Business Park land in the future. A decision on which option to progress will be determined at the later Development Application stage.

Water supply

The Port Macquarie Airport and existing developed Business Park lands are currently serviced by reticulated water supply. Based on modelling undertaken by Council's Water and Sewer section and assuming preliminary densities provided by the proponent, the proposed Business Park can be serviced by water supply subject to augmentation of connection from the Oxley Highway ultimately linking to the existing infrastructure in Boundary Street.

10. What are the views of State and Commonwealth public authorities consulted in accordance with the gateway determination?

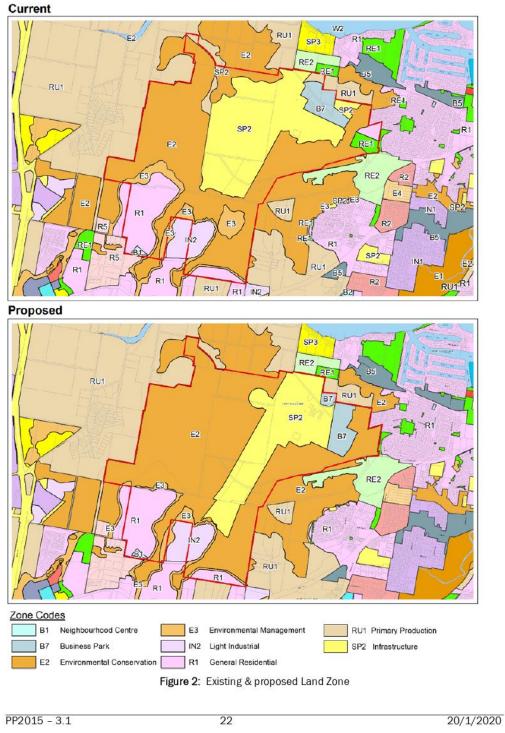
The Department of Planning, Industry and Environment's Gateway Determination will specify requirements for consultation on the Planning Proposal with State and Commonwealth Government agencies. It expected that consultation would occur with NSW Roads and Maritime Services, NSW Rural Fire Service, Office of Environment and Heritage, Birpai Local Aboriginal Land Council, NSW Department of Primary Industries, Crown Lands, Civil Aviation Authority and NSW Police.

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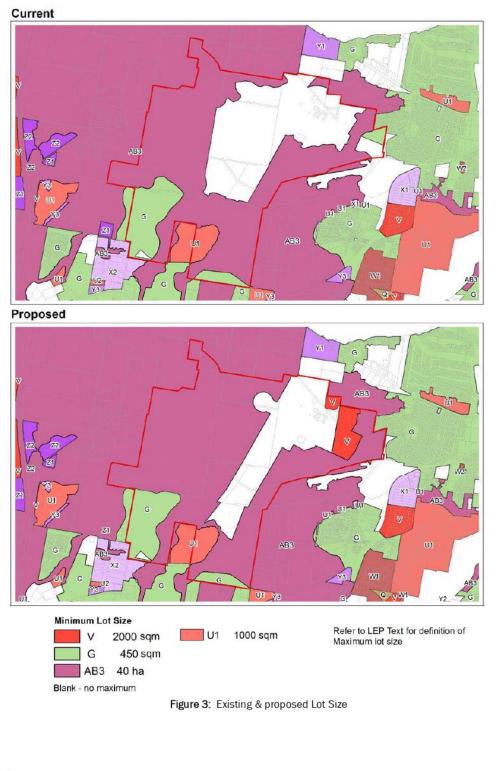
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Part 4 - Mapping

Proposed map amendments, as described in **Part 2** of this Planning Proposal are shown below.

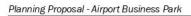


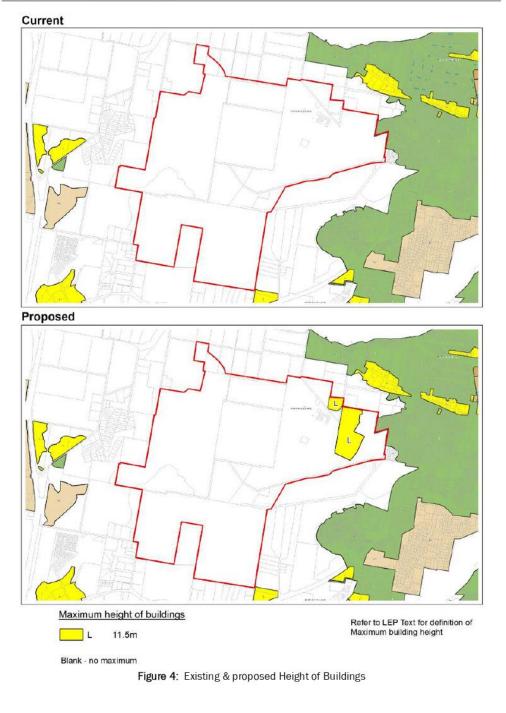




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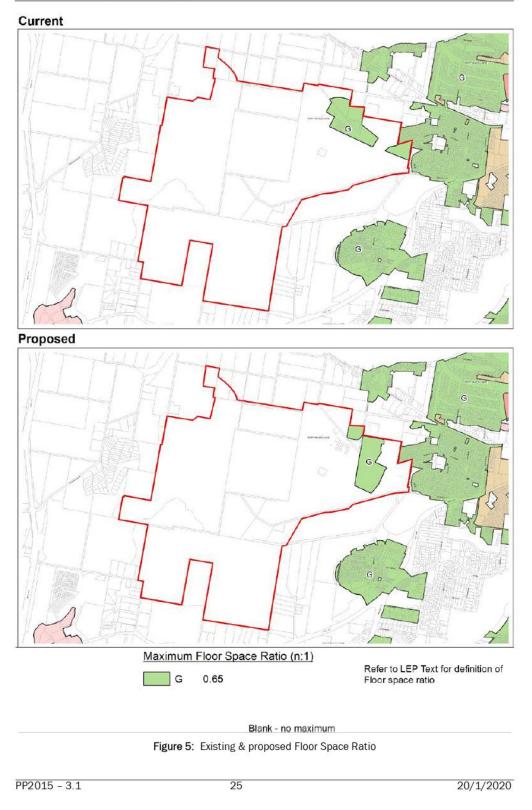
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As noted in Part 2, it is also proposed to prepare a Biodiversity Certified Land Map to identify all land that has been biodiversity certified.

The proposed map will identify all land affected by red and green shading on the map below. Consultation will be required with the Department of Planning, Industry and Environment to determine technical mapping requirements for the proposed Biodiversity Certified Land Map.

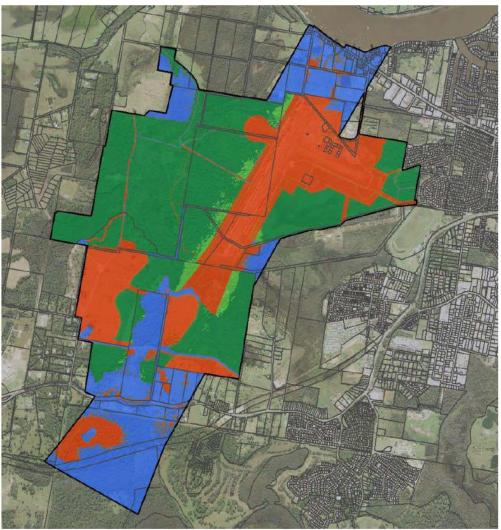


Figure 6: Biodiversity Certification Assessment Area

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Part 5 – Community Consultation

The proposal is not considered to be a low impact proposal and therefore, a 28-day public exhibition period is nominated.

Public consultation will be undertaken in accordance with the Gateway Determination and normal requirements of the *Environmental Planning and Assessment Act* 1979.

The consultation and public exhibition includes notification in locally circulating newspapers, notification on Council's website and written notification to all affected and adjoining landowners. This includes writing to the three adjoining landowners within the Airport Precinct Investigation Area, advising of the Planning Proposal and inviting submissions as part of the public exhibition process.

In addition, during the public exhibition, Council will undertake further engagement with representatives of Newman Senior Technical College regarding the lot size and height of buildings controls proposed for the College site.

In accordance with the recommendations of Cardno's Preliminary Probity Report, Council will also invite submissions from Mr John Jeayes and Lewis Land Group for Sovereign Hills Project (represented by GEM Planning). This will ensure that any actual or perceived overlapping and/or outstanding issues can be considered and addressed prior to a decision being made on the Planning Proposal.

For the purposes of the public exhibition, a Statement of Council Interest will be included in the Planning Proposal, consistent with the Department of Planning Industry and Environment's Best Practice Guideline - LEPs and Council Land 1997.

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Part 6 – Project Timeline

The project timeline below is based on anticipated dates and timeframes, noting that there can be unexpected delays.

Given the direct interest of Council as both the landowner and the proponent in respect of the proposal, Council has not requested delegation from the Department of Planning, Industry and Environment to be the local plan-making authority for the Planning Proposal.

Planning Proposal process outline	Anticipated Timeframe
Commencement (date of Gateway determination)	Nov 2019
Timeframe for completion of required additional information (as required by Gateway Determination)	Jan 2020
Timeframe for government agency consultation (as required by Gateway Determination)	Jan/Feb 2020
Public exhibition period	Jan/Feb 2020
Timeframe for consideration of submissions	Mar 2020
Timeframe for the consideration of a proposal post exhibition	May 2020
Date of submission to the Department to finalise the LEP	May 2020
Date the Department will make the plan	June 2020

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Appendix A – Report to Council & Meeting Minutes 21 November 2018

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Appendix B – Proponent's Planning Proposal Request

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Appendix C – Report to Council & Meeting Minutes 17 July 2019

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Appendix D – Gateway Determination

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Appendix E – Preliminary Probity Review Report

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Attachment 1 - Hill PDA report 2016

20/1/2020

Attachment 2 - Hill PDA report 2017

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Attachment 3 - Gillespie Economics Review 2017

20/1/2020

Attachment 4 - Augusta Report 2017

20/1/2020

Attachment 5 - Land Contamination Report

20/1/2020

Attachment 6 - Birapi Local Aboriginal Land Council Advice

20/1/2020

Attachment 7 - Groundwater Assessment Reports

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20/1/2020

Attachment 8 - Flood Impact Assessment

20/1/2020

Attachment 9 - Concept Stormwater Management Plan

20/1/2020

Attachment 10 - TPS Group Traffic Report 2016

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20/1/2020

Attachment 11 - SLR Peer Review 2017

20/1/2020

Attachment 12 - Concept Sewerage Strategies

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20/1/2020

PUBLIC EXHIBITION DATES 29 January to 26 February 2020

Planning Proposal -Airport Business Park

Draft Port Macquarie-Hastings LEP 2011 (Amendment No 56)

Ccl ref: PP2015-3.1 DPI&E ref: PP_2019_PORTM_003_00 Date: 20 January 2020 v2: For public exhibition



Item 13.05 Attachment 4

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Planning Proposal status (for this copy)

Stage		Version Date (blank until achieved)
Reported to Council - sec 3.33		17 Jul 2019
Referred to DPI&E for Gateway determination - sec 3.34(1)		19 Jul 2019
Gateway Panel determination received - sec 3.34(2)		20 Nov 2019
Public Exhibition - Schedule 1 clause 4		29 Jan - 26 Feb 2019
For Council review - sec 3.35(1)		
Local Environmental Plan made by Minister's delegate - sec 3.36		
Council reference:	PP2015-3.1	
	Port Macquarie-Hastings LEP 2011 (Amendment No 56)	
Department of Planning & Environment reference:	nent reference: PP_2019_PORTM_003_00	

Council Address	Contact Officer
Port Macquarie-Hastings Council	Sandra Bush
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PORT MACQUARIE NSW 2444	Email <u>sandra.bush@pmhc.nsw.gov.au</u>
	Phone 02 6581 8025

Adoption of the Planning Proposal

1. For initial Gateway determination

This Planning Proposal was endorsed on 18 July 2019 by the undersigned Council delegate:

Signed: Peter Camm

Name: Peter Cameron

Position: Group Manager Strategic Land Use Planning

2. For section 3.35 finalisation

This Planning Proposal was endorsed on by Port Macquarie-Hastings Council, or the undersigned Council delegate (delete one):

Signed

Name

Position

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Planning Proposal - Airport Business Park

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Attachment 7 - Groundwater Assessment Reports	
Attachment 8 - Flood Impact Assessment	
Attachment 9 - Concept Stormwater Management Plan	
Attachment 10 - TPS Group Traffic Report 2016	
Attachment 11 - SLR Peer Review 2017	
Attachment 12 - Concept Sewerage Strategies	

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Executive Summary

Planning Proposal

This is a Planning Proposal in relation to a potential Business Park zoning at the Port Macquarie Airport. In addition, it proposes to implement the outcomes of the Port Macquarie Airport and surrounding lands Biodiversity Certification Assessment approved by the NSW Minister for the Environment on 7 September 2018.

What is a Planning Proposal?

The preparation of a Planning Proposal is the first step in making an amendment to the *Port Macquarie-Hastings Local Environmental Plan* (LEP) 2011. A Planning Proposal is a document that explains the intended effect and justification for the proposed amendment. Under the *Environmental Planning and* Assessment Act 1979, Council must prepare and submit a Planning Proposal to the Department of Planning, Industry and Environment for consideration of an amendment to the *Port Macquarie-Hastings LEP* 2011.

This Planning Proposal is set out in the manner required by the State government and it contains information required by the State government when Councils prepare changes to their LEPs.

What is the intent of this Planning Proposal?

The intent of this Planning Proposal is to amend the *Port Macquarie-Hastings LEP 2011* in relation to planning controls for a proposed Business Park zoning on Council-owned land at the Port Macquarie Airport, including zone extent, lot size, height of buildings, floor space ratios and permitted uses.

In addition, the Planning Proposal seeks to implement the Biodiversity Certification Assessment outcomes approved by the NSW Minister on 7 September 2018 for the Environment for the Port Macquarie Airport and surrounding lands.

Any questions, contact:

Sandra Bush on telephone 6581 8025 or email sandra.bush@pmhc.nsw.gov.au

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Background

At the Council Meeting held on 21 November 2018, Council considered a report on a proposed expansion of the existing B7 Business Park zone at Port Macquarie Airport. This initiative is consistent with the *Port Macquarie Urban Growth Management Strategy 2017-2036* and the *North Coast Regional Plan 2036*. The November 2018 Council report and Meeting minutes are at **Appendix A**.

Following Council's resolution, the proponent King and Campbell Pty Ltd, was invited to submit the basis for a Planning Proposal to meet the requirements of the Department of Planning, Industry and Environment's *A Guide to Preparing Planning Proposals 2018*. The proponent's Planning Proposal request (**Appendix B**) was received on 4 June 2019.

At the Council Meeting held on 17 July 2019, Council considered a summary of the proponent's Planning Proposal request, followed by an assessment by Council's Development and Environment Division to inform the content of this Planning Proposal. Council resolved to endorse this Planning Proposal and forward it to the Department of Planning, Industry and Environment (DPIE) for a Gateway Determination. The July 2019 report and Meeting minutes are at **Appendix C**.

The DPIE issued a Gateway Determination on 20 November 2019 (**Appendix D**) to allow the Planning Proposal to proceed subject to conditions and requirements for State government agency and community consultation.

Planning Proposal

This Planning Proposal has been prepared in accordance with the *Environmental Planning and* Assessment Act 1979 and the DPIE's A guide to preparing planning proposals 2018 and A guide to preparing local environmental plans 2018.

It explains the intended effects of a proposed amendment to the Port Macquarie-Hastings Local Environmental Plan 2011 (LEP 2011) to:

- reshape and expand the existing B7 Business Park zone on Council-owned land on the eastern side of Boundary at the Port Macquarie Airport
- rezone the majority of the current B7 Business Park zone on the western side of Boundary Street to SP2 Infrastructure (Air transport facility)
- apply building height and minimum lot size standards to the Newman Senior Technical College, which is within the existing B7 Business Park zone on the western side of Boundary Street
- rezone Council's Airport and adjoining Thrumster lands to reflect the biodiversity certification assessment outcomes for the area approved by the NSW Minister for the Environment on 7 September 2018, and
- identify all land in the Local Government Area that has been biodiversity certified.

The Site

The land proposed for rezoning includes Council's Airport and Thrumster lands (approx 760 hectares) and a small area of Crown Land impacted by the Airport Obstacle Limitation Surface.

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This land falls within a larger area that has undergone a biodiversity certification assessment approved by the Minister for the Environment on 7 September 2018. The total area covered by the biodiversity certification assessment is shown edged white in Figure 1.

Areas within the site referred to in this Planning Proposal as 'Airport Business Park', 'Airport Lands', 'Thrumster Lands' and 'Newman Senior Technical College' are shown on Figure 1 and shaded blue, yellow, red and green, respectively.

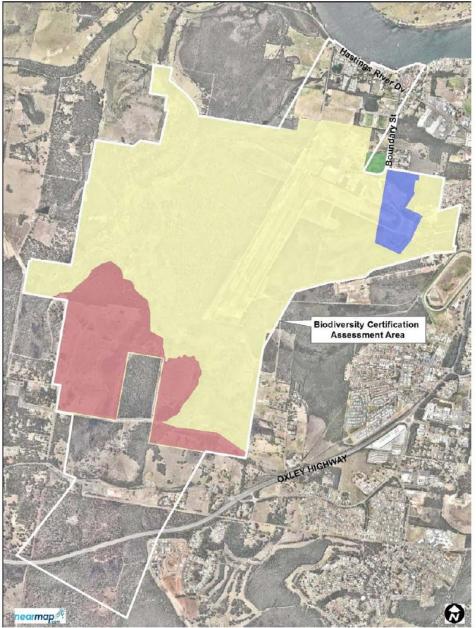


Figure 1: Subject Site

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Council roles & responsibilities

For context and transparency, the roles and responsibilities of Council in relation to this Planning Proposal are as follows:

- PMHC Airport Landowner and proponent seeking a rezoning, represented by King and Campbell Pty Ltd
- Development & Environment Division Provides advice to Council as the 'Planning Proposal Authority' to assess the Planning Proposal and determine the appropriate content of any Planning Proposal and related planning documents
- Elected Council As the 'Planning Proposal Authority' (PPA) Council is responsible for the Planning Proposal, the quality of the information provided in support of the proposal and its referral for Gateway determination.

The PPA is responsible for ensuring that the level of detail in the Planning Proposal document is sufficient to respond to the statutory requirements of the *Environmental Planning and Assessment Act 1979* and related guidelines. The PPA must ensure the information is accurate, current and sufficient for issuing a Gateway Determination and detailed enough for the purposes of consulting with government agencies and the general community.

Probity review

In recognition that Council has a role as Airport operator, landowner and planning proposal authority in this matter, Council's D&E Division has engaged Cardno (NSW/ACT) Pty Ltd to independently review the planning process and provide probity reports and recommendations on the statutory procedures involved in preparing a Planning Proposal for a proposed Airport Business Park rezoning.

The Preliminary Probity report (**Appendix E**) covered the period from 16 March 2016 to 7 November 2018 and concluded that Cardno had not observed or detected evidence of partiality, bias or probity issues of concern in the planning process leading up to the presentation of the 21 November 2018 report to Council.

A Final Probity report will review Council's processes for a Business Park Planning Proposal against the ICAC guideline. In particular, the report will address whether or not there are any probity issues of concern in relation to the exhibition and assessment processes involved in this Planning Proposal and the final recommendations to Council.

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Part 1 - Objectives or Intended Outcomes

The objectives and intended outcomes of this Planning Proposal are:

- To provide for a reconfigured and expanded Business Park area (23.75 ha) east of Boundary Street, as shown in Part 4 Figure 2 of this proposal, to reflect the importance of the Port Macquarie Airport as a regional hub.
- To consolidate existing airport infrastructure with future airside and general aviation land uses generally west of Boundary Street, as shown in Part 4 Figure 2 of this proposal.
- To rezone the Airport Lands and Thrumster Lands to reflect the Biodiversity Certification Assessment and Strategy outcomes for clearing and conservation of native vegetation within the Port Macquarie Airport and adjoining Council-owned Thrumster lands.
- To identify all land in the locality that is subject to the Port Macquarie Airport and surrounding lands Biodiversity Certification Assessment and Strategy.
- To apply lot size and height of buildings controls to the Newman Senior Technical College site, for consistency with the proposed Airport Business Park lands.

All of the proposed land use zone changes and an estimate of the areas affected is as follows:

Land Use Zone	Existing (ha)	Proposed (ha)	Change (ha)
B7 Business Park	25.5	27.6	+2.0
SP2 Infrastructure (Air transport facility)	219.1	160.1	-59.0
E2 Environmental Conservation	360.6	477.4	+116.8
E3 Environmental Management	45.1	22.7	-22.4
RU1 Primary Production	15.2	0.0	-15.2
R1 General Residential	76.3	62.7	-13.6
RE1 Public Recreation	8.6	0.0	-8.6

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Part 2 - Explanation of Provisions

The following Land Zone Map amendments to the Port Macquarie-Hastings LEP 2011 are proposed to achieve the intended outcomes:

- Zone B7 Business Park to 19.1 hectares (ha) of land on the eastern side of Boundary Street, as shown in Part 4 Figure 2 of this proposal. When combined with the existing 4.65 ha of Zone B7 on the eastern side of Boundary Street, the reconfigured Business Park on Council's land will have a total area of 23.75 ha.
- Zone SP2 Infrastructure (Air transport facility) to the Airport Lands:
 - required to be cleared to satisfy Commonwealth Government Civil Aviation Safety Authority (CASA) Code 4C aerodrome standards for the OLS, and
 - generally west of Boundary Street (as shown in Part 4 Figure 2 of this proposal), to incorporate existing airport infrastructure with future airside and general aviation uses. This includes 17 ha of existing Zone B7, of which 8.4 ha is currently occupied by Airport related uses.
- Zone E2 Environmental Conservation to the Biodiversity Certified conservation lands within the Airport and Thrumster Lands (i.e. future Biobank Site). This includes areas identified for clearing and or conservation cropping adjacent to the Airport runway and areas identified for essential infrastructure (i.e. roads, fire trails, services corridors), as permitted by the Biodiversity Certification Assessment approval.
- Zone E3 Environmental Management to the northern extent of the Partridge Creek Residential Precinct in Thrumster to reflect the intended use of this land for Asset Protection Zones and public open space, consistent with existing zoning in the Thrumster Urban Release Area.

The following Land Use Table amendments are also proposed:

- Strengthen the B7 zone objectives to confirm the strategic intent of the proposed Business Park and recognise its place in the retail hierarchy for the region. The proposed changes are shown in red text:
 - 1 Objectives of zone
 - To provide a range of office and light industrial uses, within large scale/format developments.
 - To encourage employment opportunities.
 - To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.
 - To create business park employment opportunities within large scale/format developments that are of a high visual quality and that will respect the natural environment within which they are located.
 - To ensure that development does not conflict with the hierarchy of business and retail centres in the Port Macquarie-Hastings region and the role of the Greater Port Macquarie Central Business District as the focal point for subregional functions and service delivery.
- Revise permitted land uses in the B7 zone to ensure that the proposed Business Park will support a range of land uses that are consistent with the zone objectives, as follows:

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Delete permitted uses:

- Landscaping material supplies
- Plant nurseries
- Takeaway food and drink premises
- Timber yards

Include additional permitted uses:

- + Food and drink premises
- + Self-storage units

Delete prohibited uses:

Electricity generating works

- Function centres
- Industrial training facilities
- Recreation areas

In addition, the following changes are proposed:

- Amendments to the Lot Size, Floor Space Ratio and Height of Buildings Maps for the proposed B7 zone to permit:
 - A minimum lot size of 2,000sqm to encourage large scale/format developments consistent with the revised Zone B7 objectives
 - A maximum floor space ratio of 0.65:1 to ensure consistency with the traffic studies undertaken in support of the Airport Business Park, and
 - A maximum building height of 11.5m to support the desired outcome for large scale/format developments.
- Amendments to the Lot Size and Height of Buildings Maps applying to the existing zoned B7 Newman Senior Technical College site to permit a minimum lot size of 2,000sqm and maximum building height of 11.5m, for consistency with the proposed B7 Business Park area.
- Amendments to the Lot Size Map applying to the Airport Lands and Thrumster Lands to permit a minimum lot size of 40 ha for the Zone E2 and Zone E3 environmental lands.
- Inclusion of an additional clause to Part 7 'Additional local provisions' and creation of a Biodiversity Certified Land Map to identify all land that is subject to the Port Macquarie Airport and surrounding lands Biodiversity Certification Assessment approved on 7 September 2018.

See Part 4 for proposed map changes.

<u>Note</u>: Consultation will be required with the Department of Planning, Industry and Environment to determine technical mapping requirements for the proposed Biodiversity Certified Land Map.

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Part 3 – Justification

In accordance with the Department of Planning, Industry and Environment's A guide to preparing planning proposals, this Part provides a response to the following matters:

- Section A: Need for the Planning Proposal
- Section B: Relationship to strategic planning framework
- Section C: Environmental, social and economic impact
- Section D: State and Commonwealth interests

Section A – Need for the Planning Proposal

1. Is the Planning Proposal a result of any strategic study or report?

Yes. As discussed in Section B, the proposal is consistent with the *North Coast Regional Plan* 2036 and Council's *Port Macquarie-Hastings Urban Growth Management Strategy* 2017-2036 which has been endorsed by the Department.

With respect to the proposed Business Park, this has resulted in an assessment of all land within the Airport Precinct Investigation area against planning criteria to determine which areas of the precinct should be prioritised for detailed rezoning investigations, as reported to the November 2018 Ordinary Council Meeting.

The precinct investigation area included the existing B7 Business Park zone and adjoining Council land to the south and east together with privately owned land to the north, with frontage to Boundary Street. The proposed Business Park area was selected as the preferred site to provide for an expanded Business Park area at the Airport.

Additionally, the Port Macquarie Airport and surrounding lands Biodiversity Certification Assessment and Strategy, approved on 7 September 2018, provides a strategic approach to ongoing operational, development and biodiversity issues related to the Port Macquarie Airport, particularly the new and more extensive Airport obstacle limitation requirements required by the Civil Aviation Safety Authority. The Assessment and Strategy also includes land owned by private parties to the north and south of the Airport on which vegetation conservation and clearing is required due to Airport operations.

This Planning Proposal has been informed by a rezoning request lodged by King and Campbell Pty Ltd on 4 June 2019 on behalf of the Port Macquarie-Hastings Council Airport. As background to and in support of the request, the proponent submitted a body of information that includes the following:

- Economic Impact Assessments
- Traffic Impact Assessments
- Biodiversity Certification
- Aboriginal Archaeology Assessment
- Geotechnical Assessments
- Sewerage Services Strategy
- Stormwater Management Strategy
- Water Supply Infrastructure Strategy

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The majority of this work was completed to inform the proposed Business Park site selection process, as reported to Council in November 2018.

2. Is the Planning Proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Yes. The area proposed for Business Park is currently zoned part SP2 Infrastructure (Air transport facility) and E2 Environmental Conservation. For the site to be developed for Business Park purposes, it needs to be appropriately zoned.

The proposed rezoning of the remaining Airport Land and Thrumster Land is not essential in ensuring the outcomes of the approved Airport and surrounding lands Biodiversity Certification Assessment. However, rezoning this land as proposed to reflect the Biodiversity Certification is preferred to reflect the future use of this land.

Section B - Relationship to strategic planning framework

3. Is the Planning Proposal consistent with the objectives and actions of the North Coast Regional Plan 2036?

In terms of the proposed Business Park rezoning, the *Regional Plan City Map for Port Macquarie* identifies the existing Airport Business Park as 'Business Centre'. Proposed Business Park zoning outside this area is mapped as 'Investigation Area – Employment Land'.

Action 6.1 of the Regional Plan recommends that in planning for economic growth around airports, Councils consider new infrastructure needs and introduce planning controls that encourage clusters of related activity. Also recommended is the need to promote new job opportunities that complement existing employment nodes around airport precincts, and the need to deliver infrastructure and coordinate the most appropriate staging and sequencing of development (Action 7.1).

The proposed retention of the SP2 zone for Airport related uses west of Boundary Street and consolidation of B7 Business Park uses east of Boundary Street, recognises the close linkage between the existing and proposed Airport lands and the current and future Airport operations.

Direction 6 of the Regional Plan requires that new commercial precincts, outside of centres, be of an appropriate size and scale relative to the area they will be servicing to deliver positive social and economic benefits for the wider community and maintain the strength of the regional economy. This matter is discussed in more detail under Question 4 below in context of the centres hierarchy.

The proposed LEP amendments to reflect the approved Airport and surrounding lands Biodiversity Certification Assessment and Strategy is consistent with Action 2.1 which requires that development focus on areas of least biodiversity sensitivity and implement the 'avoid, minimise, offset' hierarchy to biodiversity, including areas of high environmental value.

4. Is the Planning Proposal consistent with Council's Community Strategic Plan and Urban Growth Management Strategy?

Towards 2030 Community Strategic Plan

The Planning Proposal satisfies the key strategies of this Plan for both 'business and industry' and 'natural and built environment' in that it will:

Provide for employment lands in close proximity to a transport hub

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- Attract investment to a location that is well serviced and connected to the greater Port Macquarie area
- Provide for effective management and maintenance of urban infrastructure and services
- Facilitate development that is compatible with the natural and built environment
- Provide for the effective integration of transport systems, and
- Restore and protect natural areas, consistent with the approved Biodiversity Certification of the Port Macquarie Airport and surrounding lands.

Port Macquarie-Hastings Urban Growth Management Strategy (UGMS) 2017-2036

Planning for the development of an expanded Business Park at the Port Macquarie Airport to create opportunities for technology and airport related businesses, is listed as a priority economic development action in the UGMS (Action 15).

A key aim in the UGMS is to maintain the primacy of the Port Macquarie CBD and the existing hierarchy of centres in the Port Macquarie-Hastings region. Office uses are particularly important to the vibrancy, function and attractiveness of the CBD as a Regional City. Council will also focus on opportunities for office uses associated with the establishment of an expanded Business Park at the Airport and in the proposed Health and Education Precinct.

Consistent with the Regional Plan (Direction 6), new commercial precincts outside of centres are required to be of an appropriate size to maintain the strength of the regional economy. The UGMS requires that Council review detailed economic assessments as part of investigations for proposed Business zones to ensure that a balanced approach to supply and demand is achieved.

In order to assess the appropriate level of opportunity for office space at the Airport, Council's D&E Division commissioned Hill PDA consultants to provide advice on the relationship between a proposed Airport Business Park expansion and the existing hierarchy of business centres in the Port Macquarie-Hastings.

The 2016 Hill PDA report (at **Attachment 1**) is based on a survey of floor space and assessment of employment trends and population forecasts, as well as modelling of low and medium growth scenarios to project business park office space demand and land requirements for the Port Macquarie-Hastings LGA to 2036. In a subsequent 2017 report (at **Attachment 2**) Hill PDA has concluded that from a centres hierarchy perspective, the maximum amount of B7 Business Park land that can be recommended in the expanded Airport Business Park is 20 ha gross developable land.

In addition, the proponent has commissioned Gillespie Economics and Augusta consultants to consider the opportunity for commercial development at the Airport Business Park. Both of these reports (at **Attachments 3 & 4**), together with the Hill PDA assessments, conclude that there are significant commercial development opportunities in the proposed Business Park.

This Planning Proposal seeks to reinforce the unique location and characteristics of the proposed B7 Airport Business Park, while ensuring that potential impacts on the centres hierarchy are mitigated through:

- Amended B7 Business Park zone objectives to place additional emphasis on large-scale floorplate development
- Changes to the land uses permitted with consent in the B7 zone to ensure that the precinct functions as a Business Park, different to a town centre
- A minimum 2,000sqm lot size which is larger than that typically provided in other commercial and industrial zones (i.e. 1,000sqm), and
- A maximum 0.65:1 Floor Space Ratio (FSR) for development of the Business Park lands to ensure that future traffic generation is within the capacity of the road network, noting

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that the proponent's hypothetical development scenario used to inform traffic modelling for the Airport Business Park site selection process is based on a maximum FSR of 0.7:1.

The scale of the Business Park has been considered by Council's D&E Division and having regard to the revised permitted uses, strengthened B7 zone objectives and proposed lot sizes and floor space ratio controls, it is considered that the proposed 23.75 ha of B7 zoning at the Airport is unlikely to result in significant economic impacts on the centres hierarchy.

5. Is the Planning Proposal consistent with applicable State Environmental Planning Policies?

An assessment of consistency with State Environmental Planning Policies (SEPPs) of relevance is provided below.

SEPP	Consistent	Reason for inconsistency or comment
No 44 Koala Habitat Protection	Yes	Encourages the conservation and management of natural vegetation areas that provide habitat for Koalas to ensure permanent free-living populations will be maintained over their present range. Council's cannot approve development in an area affected by the policy without an investigation of core Koala habitat. The Port Macquarie Airport and surrounding lands Biocertification
		Assessment determined that the Koala was one of five species that will be impacted by the land that is certified. Species credits were determined and the number of species credits generated by the proposed conservation measures were found to be deficient for the Koala (323 credits).
		The Biocertification has resulted in a 444.17 ha offset area, which provides for a 301.88 ha of Koala habitat. Council has committed to the purchase of an additional 40 to 50 ha off-site for the retirement of the 323 Koala species credits.
No 55 - Remediation of Land	Yes	Introduces state-wide planning controls for the remediation of contaminated land. The policy states that land must not be developed if it is unsuitable for a proposed use because it is contaminated.
		The proponent's Planning Proposal request advises that all operational lands associated with the Airport will be zoned SP2 Infrastructure. Land areas that are not currently used by the Airport do not have a land use history that would indicate future contamination issues.
		The proposed Business Park site is identified in Council's Contaminated Land Register. Therefore, a preliminary contaminated land investigation and report has been prepared (Attachment 5) to assess all potentially contaminating activities, contamination types and confirm whether the property is suitable for industrial use.
		Per- and poly-fluoroalkyl (PFAS) substances that have historically been used in firefighting foam at airports were not included in the assessment because Council advised the consultant that there was no record of PFAS use on the site. The site soils testing results revealed contaminant concentrations for lead and asbestos at two locations above the guidelines for industrial development.

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SEPP	Consistent	Reason for inconsistency or comment
		The assessment concludes that the proposed business park site satisfies Clause $6(1)(b)$ of SEPP No 55 in that the land is suitable in its contaminated state (or will be suitable after remediation) for its intended use. It is also noted that further detailed contamination work will be considered and addressed at the development application stage.
Infrastructure 2007	Yes	The aim of this Policy is to facilitate the effective delivery of infrastructure across the State.
		This Policy is relevant to the future infrastructure (roads, sewerage systems, stormwater management systems, water supply systems) required for the proposed Airport Business Park, the Airport Lands and the Thrumster Lands.
		Hastings River Drive is a classified road, with access to the Airport Lands and the proposed Airport Business Park via Boundary Street, which is greater than 90m in distance to its connection with Hastings River Drive. Therefore clause 104 of the SEPP will only apply to the future development types listed in Column 2 at Schedule 3 to the SEPP. These development types will require consultation with the NSW Roads and Maritime Services as part of the development approval process.
		The development of sewerage, water and stormwater infrastructure to service the Airport Lands, Thrumster Lands and proposed Airport Business Park Lands is able to be carried out by or on behalf of Council in any zone under SEPP Infrastructure. The site includes a number of existing fire trails and future fire trails, both of which have been included in the biodiversity process as cleared lands.
State and Regional Development	Yes	The aims of this Policy are to identify development that is State significant development, State significant infrastructure and critical State significant infrastructure, and that is regionally significant development.
2011		Development with a capital investment value of more than \$30 million is declared as regionally significant development and required to be determined by the relevant Regional Planning Panel.
		Should this be the case for any future Development Application in relation to the subject land, the proposal will be regionally significant development and will be reported to the Regional Planning Panel for determination.
Coastal Management	Yes	The aim of this Policy is to promote an integrated and coordinated approach to land use planning in the coastal zone.
2018		A large extent of the site is mapped as either Coastal Wetlands or Proximity Area for Coastal Wetlands. Part 2 Division 1 is relevant for any works within this mapped area and with the exception of environmental protection works, all development will be declared designated development for the purposes of the Act.
		Under SEPP (Infrastructure) 2007, Part 1 Clause 8(4) and (5) (relationship to other environmental planning

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SEPP	Consistent	Reason for inconsistency or comment
		instruments) confirms that emergency works or routine maintenance works that can be carried out without consent, or is exempt development, are not declared designated development for the purpose of the Act. Additionally, the maintenance of existing fire trails will not be declared a designated development.
Primary Production and Rural Development 2019	Yes	The aims of the Policy are to facilitate the orderly economic use and development of lands for primary production. Existing RU1 Primary Production zoned lands are proposed to be zoned E2 Environmental Conservation, consistent with the approved Biodiversity Assessment and Strategy.

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Is the Planning Proposal consistent with applicable Ministerial Directions?

An assessment of consistency with Ministerial Directions of relevance is below.

1. Employment and Resources

S9.1 Direction	Consistent	Reason for inconsistency or comment
No 1.1 Business and Industrial Zones	No	The objectives of this direction are to: (a) encourage employment growth in suitable locations, (b) protect employment land in business and industrial zones, and (c) support the viability of identified centres.
		The Planning Proposal is inconsistent with this Direction because it is proposed to alter the location of the existing B7 Business Park lands. In this regard, there is currently 25.54 ha of B7 Business Park zoning at the Port Macquarie Airport, of which 13.3 ha is undeveloped. It is proposed to:
		 rezone 17.04 ha of the existing B7 Business Park on the western side of Boundary Street to SP2 Instructure (Air transport facility). This land is currently occupied by Airport related uses, and rezone 19.1 ha of land on the eastern side of Boundary
		 Street to B7 Business Park. Combined with the existing 4.65 ha of land area on the eastern side of Boundary Street that is currently zoned B7, the overall footprint of the B7 Business Park will be 23.75ha.
		The relationship to other commercial centres has been considered by Hill PDA consultants, as discussed under Section B Q4 of this proposal. The inconsistency of the proposal with this Direction is justified on the basis that planning for an expanded Business Park at the Port Macquarie Airport to create opportunities for technology and airport related business is a key action of the Port Macquarie- Hastings Urban Growth Management Strategy 2017-2036 (Action 15).
No 1.2 - Rural Zones	Yes	The objective of this direction is to protect the agricultural production value of rural land.
		A small area of land is proposed to be rezoned from RU1 to E2. This land area is isolated and through the Biodiversity Certification is included in the Biobank site.
No - 1.5 Rural Lands	No	This direction aims to protect the agricultural production value of rural land and to facilitate the orderly and economic development of rural lands for rural and related purposes.
		As noted above, a small area of existing RU1 zoned land is proposed to be rezoned to E2. This inconsistency is justified on the basis that this land is included as part of the Biobank site identified in the Airport and surrounding lands Biodiversity Certification Assessment and Strategy approved by the NSW Minister for the Environment on 7 September 2018.

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2. Environment and Heritage		
S9.1 Direction	Consistent	Reason for inconsistency or comment
No 2.1 - Environmental Protection Zones	Yes	The objective of this direction is to protect and conserve environmentally sensitive areas. All lands that are either zoned E2 or are proposed to be zoned E2 under this Planning Proposal have undergone assessment as part of the Airport and surrounding lands Biodiversity Certification Assessment and Strategy.
No 2.2 - Coastal Management	Yes	The objective of this direction is to protect and manage coastal areas of NSW. The lands proposed to be rezoned in this Planning Proposal include lands that are mapped under this as either Coastal Wetlands or Proximity Area for Coastal Wetlands. Future development within the mapped Coastal Wetlands will be either Designated Development or exempt (existing fire trails).
No 2.3 - Heritage Conservation	Yes	The objective of this direction is to conserve items, areas, objects and places of environmental heritage significance and indigenous heritage significance. The Proponent has submitted correspondence from the Birapi Local Aboriginal Land Council (Attachment 6) advising that an inspection of the site has been undertaken in relation to the proposed B7 area and no artefacts of significance were found. Consultation on this matter will be undertaken with the Local Aboriginal Land Council and the Biodiversity Conservation Division of DPIE during public exhibition, as required by the Gateway Determination.

3. Housing, Inf	rastructure ar	d Urban Development
S9.1 Direction	Consistent	Reason for inconsistency or comment
No 3.1 - Residential zones	No	The objectives of this direction are: (a) to encourage a variety and choice of housing types to provide for existing and future housing needs, (b) to make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and (c) to minimise the impact of residential development on the environment and resource lands. This Planning Proposal will rezone R1 Residential zoned lands to partly E2 Environmental Conservation and partly E3 Environmental Management. The inconsistency of the proposal with this Direction is justified on the basis that these lands have been included in the Biodiversity Certification Assessment and Strategy.
No 3.5 - Development near Regulated Airports and Defence Airfields	Yes	The objectives of this direction are: (a) to ensure the effective and safe operation of regulated airports and defence airfields; (b) to ensure that their operation is not compromised by development that constitutes an obstruction, hazard or potential hazard to aircraft flying in the vicinity; and

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		(c) to ensure development, if situated on noise sensitive land, incorporates appropriate mitigation measures so that the development is not adversely affected by aircraft noise.
		This Planning Proposal supports the airport operator's (PMHC Airport) rationale for undertaking the Biodiversity Certification process, which will ensure an on-going strategic and sustainable approach to the management and offsetting of any environmental impacts associated with the long-term operation and future development of essential infrastructure related to Airport operations, including the proposed the Airport Business Park.
		The proposed Business Park zone is not expected to conflict with future Airport operations.
		In accordance with the Gateway Determination, consultation will occur with the Civil Aviation Safety Authority in relation to the proposal.
No 3.6 -	Yes	The objectives are:
Shooting Ranges		 (a) to maintain appropriate levels of public safety and amenity when rezoning land adjacent to an existing shooting range, (b) to reduce land use conflict arising between existing shooting ranges and rezoning of adjacent land, (c) to identify issues that must be addressed when giving consideration to rezoning land adjacent to an existing shooting range.
		The Port Macquarie shooting range adjoins the site to the south and is zoned RE2 Private Recreation. An area of existing E2 zoned lands within the site separates the range from the proposed Airport Business Park.
		An E2 zone buffer will be retained between the range and the proposed Business Park, ensuring that more intensive land uses cannot be approved adjacent the range. This separation distance will also ensure minimal impact from potential noise. Additionally the land uses that will be permitted in the B7 Business Park zone are not considered noise sensitive receivers.
		As required by the Gateway Determination, consultation regarding this aspect of the proposal will occur with the NSW Police Firearms Registry as the relevant range licensing body.
4. Hazard and Risk		

S9.1 Direction	Consistent	Reason for inconsistency or comment
No 4.1 - Acid Sulfate Soils	No	The objective of this direction is to avoid significant adverse environmental impacts from the use of land that has a probability of containing acid sulfate soils.
		The proposed Business Park area includes lands mapped as Classes 2, 3 and 5 Acid Sulfate Soils (ASS).
		Groundwater assessments completed on behalf of the proponent by Regional Geotechnical Solutions in October 2015 and November 2017 (at Attachment 7) to inform the development potential of the proposed Business Park land, confirmed the presence of both Actual and Potential ASS. An ASS Management Plan will be

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		required prior to any on-site works where groundwater will be present.
		The proponent's Planning Proposal request also notes that a proposed Low-Pressure Sewerage Scheme will minimise potential issues associated with the Actual and Potential ASS, as deep excavation will not be required.
No 4.3 Flood	No	The objectives of this direction are:
Prone Land		 (a) to ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005, and (b) to ensure that the provisions of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land.
		The Planning Proposal is inconsistent with this Direction because it facilitates an intensification of land use on certain lands within the flood planning area, involves 1800m ³ of filling for a small area of flood prone land in the proposed Business Park, and does not give effect to the NSW Flood Prone Land Policy and the principles of the Flood Plan Development Manual 2005.
		This inconsistency is considered to be of minor significance as the proposal is supported by a flood impact assessment (Attachment 8) which concludes that the magnitude of changes is minor and within the allowable tolerances specified in the <i>Port Macquarie-Hastings Flood Policy 2018</i> .
No 4.4 - Planning for Bushfire Protection	Unsure	The objectives of this direction are to protect life, property and the environment from bush fire hazards by discouraging the establishment of incompatible land uses in bush fire prone areas; and to encourage sound management of bush fire prone areas.
		The existing vegetated areas within the proposed Business Park area are mapped as bushfire prone land. This vegetation has been Biodiversity Certified and will be cleared as development occurs. The proponent's Planning Proposal request notes that future development of the Business Park will need to provide adequate Asset Protection Zones to the Biobank lands (i.e. future E2 zones to the east & south) and to rural land adjoining to the north.
		As required by the Gateway Determination, consultation on this matter will occur with the Commissioner of the NSW Rural Fire Service during public exhibition of the Planning Proposal.
5. Regional Pla	anning	
S9.1 Direction	Consistent	Reason for inconsistency or comment
5.10 - Implementation of Regional Plans	Yes	The objective of this direction is to give legal effect to the vision, land use strategy, goals, directions and actions contained in Regional Plans. The proposed Airport Business Park is consistent with the strategic
FIGHS		directions of the North Coast Regional Plan 2036 to promote new

The proposed Airport Business Park is consistent with the strategic directions of the North Coast Regional Plan 2036 to promote new job opportunities that complement airport precincts.

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	The proposal also identifies areas of environmental significance to be zoned for conservation in accordance with the approved Biodiversity Certification Assessment and Strategy.
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6. Local Plan Making			
S9.1 Direction	Consistent	Reason for inconsistency or comment	
No 6.1 - Approval and Referral Requirements	Yes	The objective of this direction is to ensure that LEP provisions encourage the efficient and appropriate assessment of development. This Planning Proposal will not introduce any additional requirements for concurrence with other Government agencies.	
6.2 - Reserving Land for Public Purposes	Yes	The objective of this direction is to discourage unnecessarily restrictive site-specific planning controls. This Planning Proposal will rezone an area zoned RE1 Public Recreation to E2 Environmental Conservation and is therefore inconsistent with this Direction. This land was included in the biodiversity conservation lands (future Biobank site) in the Biodiversity Certification Assessment and Strategy.	

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Section C - Environmental, social and economic impact

6. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

Biodiversity impacts associated with the proposed rezoning of the Airport Lands, Thrumster Lands and Business Park Area have been addressed in the Airport and surrounding lands Biodiversity Certification Assessment and Strategy approved by the Minister for the Environment on 7 September 2018.

7. Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?

<u>Stormwater</u>

The proponent's Stormwater Management Plan in support of the proposed Business Park (Attachment 9) recommends a stormwater treatment train approach, primarily using bio-retention basins/swales centrally located within the proposed road network. The concept has been assessed by Council's Transport and Stormwater Network Section and is considered to provide a satisfactory response to stormwater management issues to support a Planning Proposal.

8. How has the Planning Proposal adequately addressed any social and economic effects?

Visual amenity

Due to the significance of the proposed Business Park and its location at an important gateway entry to the Port Macquarie-Hastings, draft development control plan provisions have been prepared in consultation with the proponent, to guide future development of the Airport Business Park with the aim of facilitating higher amenity office and commercial uses.

The draft development controls aim to provide detailed guidance for future development of the business park, including (but not limited to) policy for streetscape and building form, building setbacks, landform, vehicle access, and landscaping, having regard to the operational requirements of the Airport and the gateway status of the site.

The draft development controls are being exhibited together with this Planning Proposal.

Section D - State and Commonwealth interests

9. Is there adequate public infrastructure for the Planning Proposal?

Road Infrastructure Capacity

In the absence of any certainty regarding a future alternative road access, it is assumed that all access to the proposed Business Park will be via Boundary Street.

In the lead up to the site selection process, the proponent commissioned a Traffic Engineering report by TPS Group (June 2016) at **Attachment 10**, to address traffic planning for development of the Airport Precinct Investigation Area for Business Park purposes.

Based on an indicative Hastings River Drive/Boundary Street intersection design prepared by Council's Transport and Stormwater Network (T&SN) Section, TPS Group 'reverse engineered' their traffic modelling to determine the future capacity of the intersection. TPS also estimated the amount of land in the investigation area that could be developed for Business Park, using the existing road network.

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The TPS Group report modelled traffic generation assuming a hypothetical Business Park mix of uses across the total investigation area and concluded that the intersection, with a modified lane arrangement, would be capable of accommodating 100% of the proposed Business Park development traffic in 2030 (i.e. approx. 20,000 vehicles/day).

Council's Transport and Stormwater Network (T&SN) Section reviewed the TPS Group report and concluded that the TPS Group land use scenarios did not meet all of Council's normal Level of Service and Degree of Saturation targets. Council's T&SN modelling concluded that a maximum 50% of the investigation area (i.e. 20.5 ha) could be developed for Business Park, until such time as a secondary access to the Port Macquarie Airport becomes available.

The proponent engaged SLR consultants to peer review the TPS Group report and Council's T&SN review of that report. The SLR review (at **Attachment 11**) agreed with TPS Group's conclusion that the full Business Park development can be catered for at 2030 with a modified lane arrangement for the Hastings River Drive/Boundary Street intersection.

After reviewing the SLR report and noting that the constraining factor is the capacity of the intersection, Council's T&SN restated their earlier conclusion that the proposed upgraded intersection would have capacity to provide for 50% (i.e. 20.5ha) of the investigation area for Business Park development.

The proponent's Planning Proposal request concludes that the proposed rezoning of an expanded Airport Business Park footprint to 23.75 ha is not likely to have unacceptable impacts on the capacity of existing road infrastructure.

King and Campbell, note that the proposed Airport Business Park footprint (23.75 ha) will result in an estimated 16.03 ha of net developable land, which represents 58% of the net developable area modelled by TPS Group. King and Campbell note that this represents a 14% increase in the net developable area that will ultimately be achieved at the Airport Business Park and consider this a minor increase to the footprint and traffic volumes accepted by T&SN for the proposed Airport Business Park.

The Planning Proposal request notes that the proposed maximum Floor Space Ratio of 0.65:1 is less than that assumed for the traffic modelling (i.e. 0.7:1). This represents a 2% reduction in modelled traffic volumes.

Also noted is that the traffic modelling undertaken of the 2030 performance of the Hastings River Drive/Boundary Street intersection is a model of a long-term outcome. There are many parameters in the broader road network (e.g. decisions with respect to other road & intersection upgrades & development rates across the LGA) that will also impact the performance of the intersection and therefore, the results of the future modelling. Various traffic engineering parameters are inputs into the modelling of the future performance of the intersection.

Having regard to the above, Council's T&SN has accepted that on balance, the impact of a 14% increase in the footprint of net developable B7 zone is within the accuracy limits that can be expected to be achieved with the modelling of the future traffic outcomes.

Road infrastructure funding

The TPS Group and SLR reports together with Council's T&SN Section review of these reports recognise that development of the proposed Business Park, together with an assumed doubling of traffic generated by existing land uses in the area, will require upgrading of the Hastings River Drive/Boundary Street intersection and improvements to Boundary Street. These works are currently not listed in Council's future works program.

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The Planning Proposal request acknowledges that in the absence of a local roads contribution plan, it is anticipated that the intersection improvements will be specified as a condition of development consent for the establishment of the Airport Business Park, including details of a proposed trigger for these works. King and Campbell expect that apportionment of the share of the costs of the intersection works between the Business Park and other development would be negotiated through a Works in Kind Agreement at that time.

The D&E Division assessment is that an upgrade of Boundary Street is a fundamental requirement for the proposed Business Park, which will generate a significant proportion of demand for the upgrade. In this case, Council cannot enter into a Planning Agreement to obtain a commitment in relation to road upgrades. Any sale of the Council owned Business Park land could be contingent upon a Planning Agreement to demonstrate to the community, that the development of Council owned land has been treated in the same way as any other proposed development.

In addition, it is proposed that Council's D&E Division prepare a draft Section 9.11 Contributions Plan to enable collection of developer contributions towards road infrastructure required to service the proposed Airport Business Park. The draft Plan will identify the level of developer contributions applicable to road and intersection works to accommodate future development of the proposed Business Park area overtime and can be referenced in any future Planning Agreements. The proposed Contributions Plan will need to be in place prior to development of the Business Park but need not delay the proposed referral of a Planning Proposal to the Department of Planning, Industry and Environment for a Gateway Determination.

Sewerage

The proponent's Planning Proposal request presents two options for sewerage infrastructure (at **Attachment 12**), being a conventional gravity sewerage scheme and a low-pressure sewerage scheme. These options have been assessed by Council's Water and Sewer Section and are considered to adequately demonstrate that it will be possible to service the proposed Business Park land in the future. A decision on which option to progress will be determined at the later Development Application stage.

Water supply

The Port Macquarie Airport and existing developed Business Park lands are currently serviced by reticulated water supply. Based on modelling undertaken by Council's Water and Sewer section and assuming preliminary densities provided by the proponent, the proposed Business Park can be serviced by water supply subject to augmentation of connection from the Oxley Highway ultimately linking to the existing infrastructure in Boundary Street.

10. What are the views of State and Commonwealth public authorities consulted in accordance with the gateway determination?

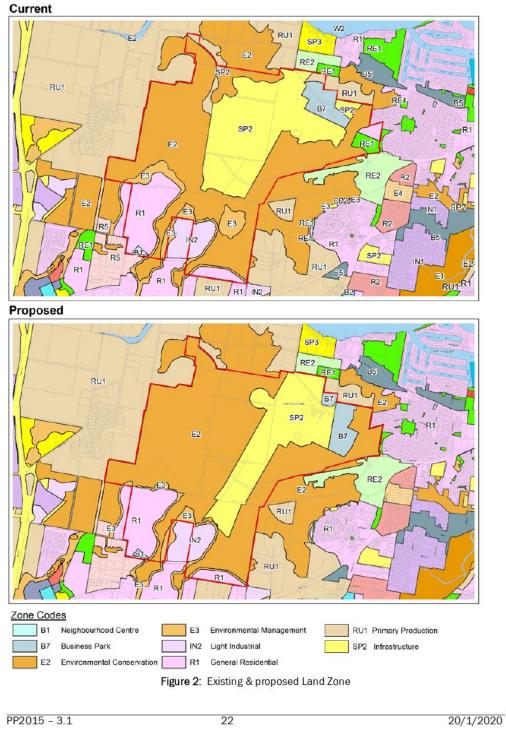
The Department of Planning, Industry and Environment's Gateway Determination will specify requirements for consultation on the Planning Proposal with State and Commonwealth Government agencies. It expected that consultation would occur with NSW Roads and Maritime Services, NSW Rural Fire Service, Office of Environment and Heritage, Birpai Local Aboriginal Land Council, NSW Department of Primary Industries, Crown Lands, Civil Aviation Authority and NSW Police.

PP2015 - 3.1

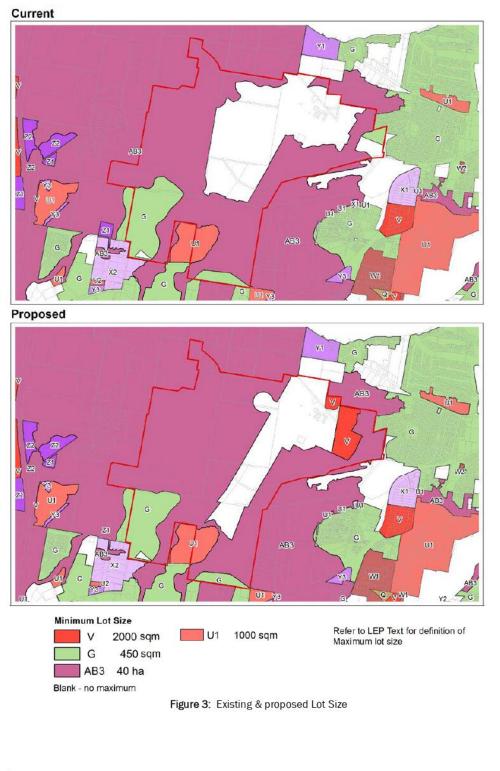
21

Part 4 – Mapping

Proposed map amendments, as described in **Part 2** of this Planning Proposal are shown below.

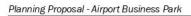


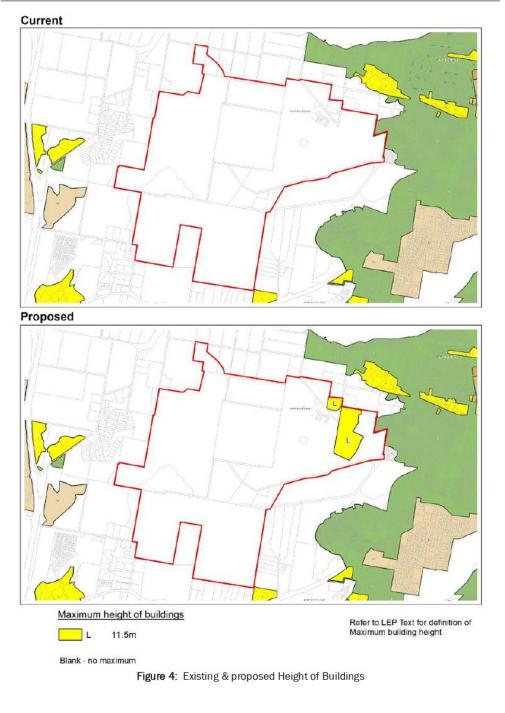




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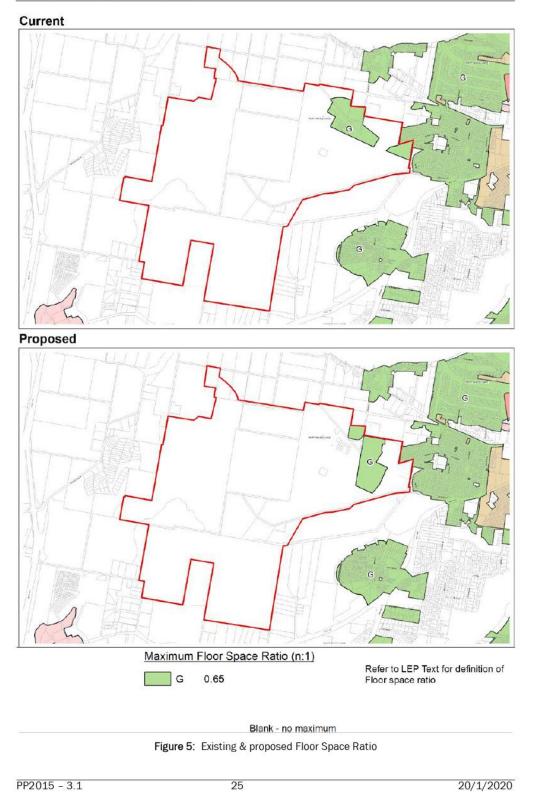
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As noted in Part 2, it is also proposed to prepare a Biodiversity Certified Land Map to identify all land that has been biodiversity certified.

The proposed map will identify all land affected by red and green shading on the map below. Consultation will be required with the Department of Planning, Industry and Environment to determine technical mapping requirements for the proposed Biodiversity Certified Land Map.

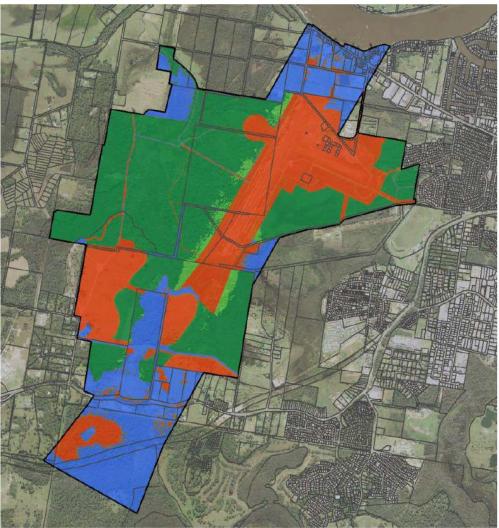


Figure 6: Biodiversity Certification Assessment Area

PP2015 - 3.1

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Part 5 – Community Consultation

The proposal is not considered to be a low impact proposal and therefore, a 28-day public exhibition period is nominated.

Public consultation will be undertaken in accordance with the Gateway Determination and normal requirements of the *Environmental Planning and Assessment Act* 1979.

The consultation and public exhibition includes notification in locally circulating newspapers, notification on Council's website and written notification to all affected and adjoining landowners. This includes writing to the three adjoining landowners within the Airport Precinct Investigation Area, advising of the Planning Proposal and inviting submissions as part of the public exhibition process.

In addition, during the public exhibition, Council will undertake further engagement with representatives of Newman Senior Technical College regarding the lot size and height of buildings controls proposed for the College site.

In accordance with the recommendations of Cardno's Preliminary Probity Report, Council will also invite submissions from Mr John Jeayes and Lewis Land Group for Sovereign Hills Project (represented by GEM Planning). This will ensure that any actual or perceived overlapping and/or outstanding issues can be considered and addressed prior to a decision being made on the Planning Proposal.

For the purposes of the public exhibition, a Statement of Council Interest will be included in the Planning Proposal, consistent with the Department of Planning Industry and Environment's Best Practice Guideline - LEPs and Council Land 1997.

PP2015 - 3.1

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Part 6 – Project Timeline

The project timeline below is based on anticipated dates and timeframes, noting that there can be unexpected delays.

Given the direct interest of Council as both the landowner and the proponent in respect of the proposal, Council has not requested delegation from the Department of Planning, Industry and Environment to be the local plan-making authority for the Planning Proposal.

Planning Proposal process outline	Anticipated Timeframe
Commencement (date of Gateway determination)	Nov 2019
Timeframe for completion of required additional information (as required by Gateway Determination)	Jan 2020
Timeframe for government agency consultation (as required by Gateway Determination)	Jan/Feb 2020
Public exhibition period	Jan/Feb 2020
Timeframe for consideration of submissions	Mar 2020
Timeframe for the consideration of a proposal post exhibition	May 2020
Date of submission to the Department to finalise the LEP	May 2020
Date the Department will make the plan	June 2020

PP2015 - 3.1

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Appendix A – Report to Council & Meeting Minutes 21 November 2018

PP2015 - 3.1

20/1/2020

Appendix B – Proponent's Planning Proposal Request

20/1/2020

Appendix C – Report to Council & Meeting Minutes 17 July 2019

20/1/2020

Appendix D – Gateway Determination

PP2015 - 3.1

20/1/2020

Appendix E – Preliminary Probity Review Report

20/1/2020

Attachment 1 - Hill PDA report 2016

PP2015 - 3.1

20/1/2020

Attachment 2 - Hill PDA report 2017

PP2015 - 3.1

20/1/2020

Attachment 3 - Gillespie Economics Review 2017

20/1/2020

Attachment 4 - Augusta Report 2017

20/1/2020

Attachment 5 - Land Contamination Report

20/1/2020

Attachment 6 - Birapi Local Aboriginal Land Council Advice

20/1/2020

Attachment 7 - Groundwater Assessment Reports

PP2015 - 3.1

20/1/2020

Attachment 8 - Flood Impact Assessment

20/1/2020

Attachment 9 - Concept Stormwater Management Plan

PP2015 - 3.1

20/1/2020

Attachment 10 - TPS Group Traffic Report 2016

PP2015 - 3.1

20/1/2020

Attachment 11 - SLR Peer Review 2017

20/1/2020

Attachment 12 - Concept Sewerage Strategies

PP2015 - 3.1

20/1/2020

Final Draft Development Control Plan 2013 - Amendment

Airport Business Park

1. Land to which this section applies

This section applies to the land shown in Figure 1 below.

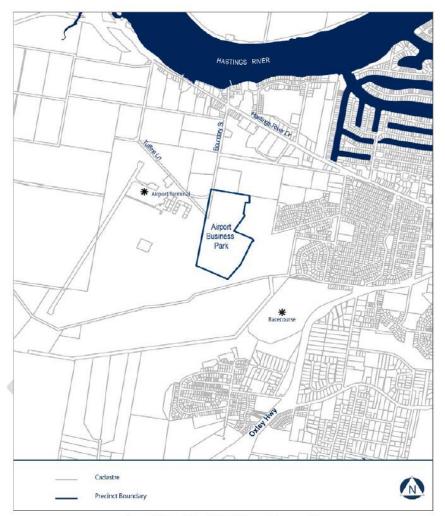


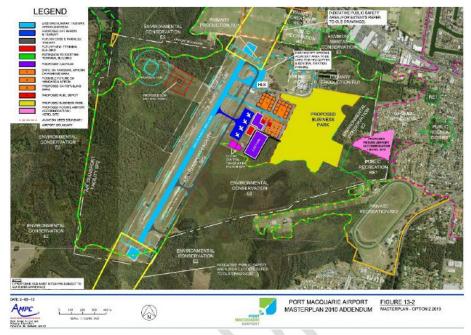
Figure 1: Land to which this section applies

2. Strategic Context

Planning for the development of an expanded Business Park at the Port Macquarie Airport to create opportunities for business technology, airport related businesses and service industry is listed as a priority economic development action in the *Port*

Final Draft Airport Business Park DCP

Page 1



Macquarie-Hastings Urban Growth Management Strategy 2017-2036, consistent with the Port Macquarie Airport Masterplan 2010 and Addendum Report 2013 (Figure 2).

Figure 2: Airport Masterplan Concept

Airport Business Park Vision

The Airport Business Park evolves into a highly successful and attractive employment precinct that provides a range of job opportunities to support the local economy. Strategically located, the Business Park operates as an important employment precinct that builds on the role of the Airport as a regional hub and significant Gateway to Port Macquarie.

Desired Future Character

The desired future character of the Airport Business Park is a distinctive and prestigious hi-tech Gateway to Port Macquarie, with strong and seamless links to the Health and Education Precinct and Central Business District.

The Precinct will contain a mix of aviation-related, high technology and campus style business park development supported by new infrastructure including, new roads, accessible public transport, pedestrian and cycleway connections, open space, and high-speed telecommunications.

A pleasant and safe work environment is envisaged through the provision of pedestrianfriendly streets, good landscape design and open spaces, with access to passive recreational opportunities adjoining Conservation Lands, as well as encouraging highquality built form based on sustainable design principles.

Final Draft Airport Business Park DCP

Page 2

This draft DCP proposes that the Airport Business Park contain four development subprecincts (see **Figure 3**) as follows:

 <u>The Boulevard</u> - will accommodate up to three storey 'A-grade' commercial/light industrial buildings that benefit from high visibility and accessibility. This area will be vibrant and pedestrian friendly, focused along the major roads with key active frontages and communal open space at the northern Gateway entry for the enjoyment of workers and visitors. Cafes and restaurants will be encouraged to provide areas for social interaction.

The high-quality design of the buildings and streetscape within The Boulevard will reflect the importance of the major transport connection to Hastings River Drive and future potential access to the Oxley Highway, the Health and Education Precinct, and the Port Macquarie Central Business District.

The Boulevard road reserve will provide for future growth in traffic volumes without compromising the quality of landscaping and the provision of infrastructure for cyclists and pedestrians. The importance of the existing entry to the Port Macquarie Airport will be announced through a combination of urban/building design Gateway controls and treatments.

- Business Park North will comprise a range of aviation-related, technology, service and business uses, with a component of warehousing, and in some cases a component of research, such as but not limited to, information and communication technology, modern warehousing and distribution industries, advanced manufacturing industries and high-technology uses. Focused along the perimeter of the precinct and internal street network, this area will be activated by display/showrooms and small-scale ancillary convenience uses.
- Business Park South will feature a diversity of business and industry employment opportunities, including but not limited to, professional services, service trades, technology development and manufacturing, and community facilities, such as child care centres, gymnasiums/indoor recreation facilities.
- 4. <u>Recreation</u> the periphery of the precinct will provide opportunities for passive recreational open space adjacent to Conservation Lands.

Airport Biodiversity Certification

In accordance with the Order Conferring Biodiversity Certification-Port Macquarie Airport and Surrounding Land, published in the NSW Government Gazette on 7 September 2018, all of the land within the Airport Business Park is certified, meaning that development can occur without the need for further assessment under the Biodiversity Conservation Act 2016.



Figure 3: Airport Business Park development sub-precincts

Final Draft Airport Business Park DCP

3. Purpose

The purpose of this section is to guide coordinated development outcomes across the Airport Business Park in a way that will enhance the function, amenity and overall integration of future development. The specific aims are:

- To facilitate future business and technology park development that delivers high-value jobs to the local economy and builds on the role of the Port Macquarie Airport as a regional hub and transport Gateway.
- To ensure the precinct will be characterised by a high quality and well-designed built form and streetscape that reflects the Gateway importance of the Airport Business Park and promotes a sense of prestige, arrival and identity.
- To create a network of new streets to provide vehicular, pedestrian and cycle efficiency, safety and permeability that maximises cross connections within the precinct and to surrounding areas.
- To facilitate a high quality environment/amenity for workers and visitors to the precinct.
- To ensure that development does not interfere with the continued and expanded operation of the Port Macquarie Airport.
- To ensure that development minimises potential environmental impacts and is consistent with the biodiversity outcomes of the Order Conferring Biodiversity Certification-Port Macquarie Airport and Surrounding Land, published in the NSW Government Gazette on 7 September 2018.
- To provide for new road infrastructure, stormwater drainage, water supply, sewerage, electrical and telecommunications utilities to service future development.

These provisions supplement the General and the Development Specific Provisions of the Port Macquarie-Hastings DCP 2013. Where there is inconsistency between these Area Based Provisions and the provisions in Parts 2 or 3, for the extent of the inconsistency, these Area Based Provisions prevail.

In addition, where any inconsistency exists between these Area Based Provisions and the figures in this section, for the extent of the inconsistency, the Area Based Provisions prevail.

Final Draft Airport Business Park DCP

4. Development Guide

Access Network

Objectives

- Create a road network that enables connectivity to the existing/future surrounding road network and provides a safe and efficient access for all users.
- Accommodate capacity in the road network for future traffic growth.
- Encourage the use of efficient alternate transport including walking, cycling and bus public transport.
- Manage the potential environmental impacts associated with the development interface with adjoining Conservation Lands.
- Minimise the impact of vehicle access points on the quality of the public domain and pedestrian safety.

Controls

- 1. Provide new public streets, pedestrian connections and shared pedestrian/cycle pathways generally in accordance with **Figure 4**.
- 2. The first Development Application for subdivision of the land shall include Concept design details and a staging and sequencing plan for the following:
 - Connectivity to Boundary Street and potential road linkages to the south and south-east.
 - Streets (particularly those providing existing and future access to Port Macquarie Airport and adjoining urban areas) including consideration to future traffic growth, and details of footpath and carriageway widths, bus stops and off-street shared cycle and pedestrian pathways, consistent with the current AUSPEC requirements and generally as indicatively shown on Figures 4 to 6.
 - Integration of streetscape/landscape/stormwater drainage treatment components of streets to create a high-quality urban outcome (see Figures 4 - 7).
 - Provision for cyclists, on-street car parking and pedestrians (see Figures 4 6, 8 & 9).

<u>Note</u>: The Concept designs in Figures 4 to 9 are indicative only and subject to stormwater design confirmation as part of the DA, and confirmation of carriageway widths as part of the finalisation of the Airport Flood Free Secondary Access.

- Perimeter streets are to be designed to manage the interface between future development, proposed shareways and adjoining Conservation Lands (see Figures 4 & 6). All earthworks, services, end of line stormwater drainage infrastructure, recreational facilities and bushfire Asset Protection Zones are to be located within the B7 Business Park zoned land.
- 4. Where trees are proposed within the road reserve, details relating to services provisions and location of future driveway access points are to accompany the Development Application.
- 5. Bus shelters are to be provided at key bus stops and installed at the subdivision construction stage by the developer. This infrastructure may be provided either within the development site or, subject to consultation with Council, within the adjoining public domain area.

Final Draft Airport Business Park DCP

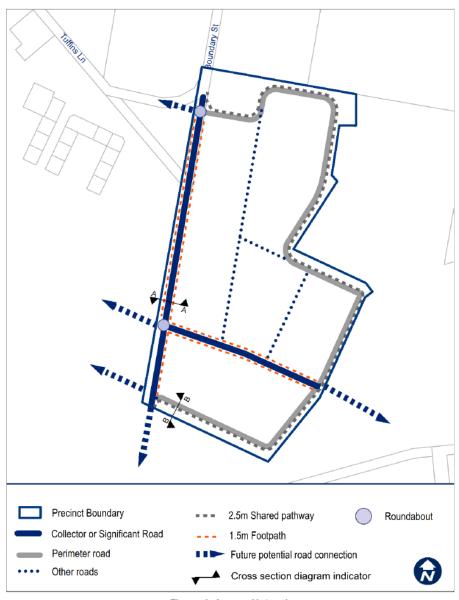


Figure 4: Access Network

<u>Note</u>: The locations for required pedestrian connections are flexible, subject to Council agreement. Connections should run street to street or connect key points of interest.

Final Draft Airport Business Park DCP

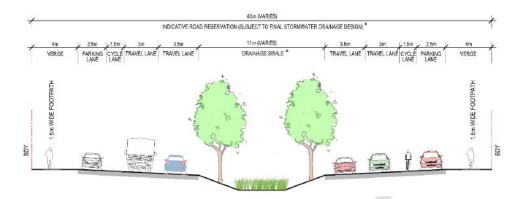


Figure 5: Concept Section A - Boundary Street extension

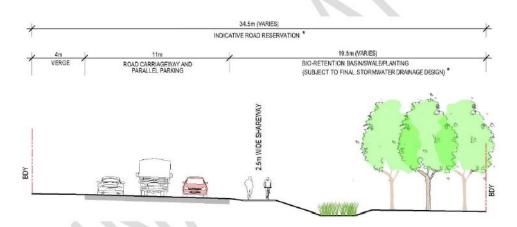


Figure 6: Concept Section B - Perimeter Road

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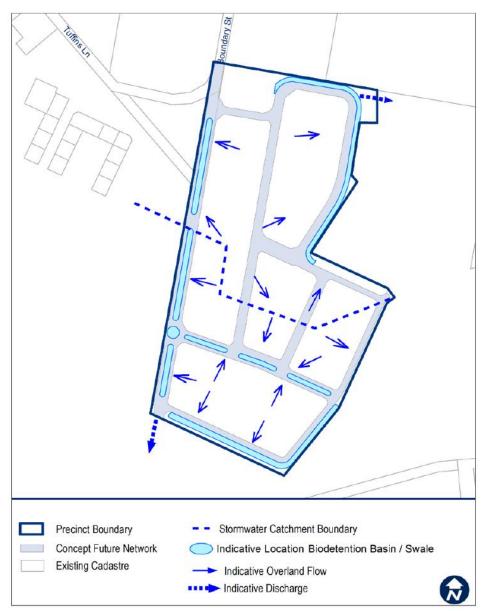


Figure 7: Concept Stormwater Management Plan

Lot Design

Objectives

- Provide opportunities for lots of varying sizes to satisfy market demand and the needs of the development industry.
- Ensure lots are oriented so buildings appropriately address the street.

Final Draft Airport Business Park DCP

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Controls

- 1. Lots are to be regular in shape to meet a range of land uses. Battle-axe lots will not be supported.
- 2. Lots are to have a minimum 40m width to the street frontage (see **Figure 8 & 9**) and be orientated and aligned so that buildings can face the street and avoid streetscapes with loading docks and long blank walls.

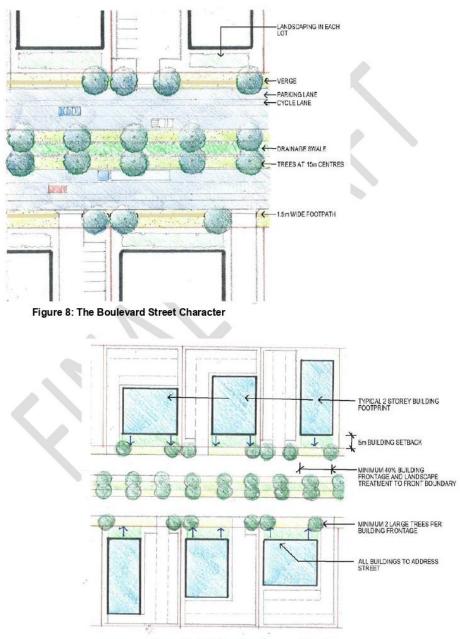


Figure 9: Building Development Controls

Final Draft Airport Business Park DCP

Car parking

Objectives

 Ensure that development provides parking that is adequate for the land use, without compromising streetscape appearance or traffic safety and function.

Controls

- 1. All parking areas for developments are to be provided either on-site or in centralised off-road locations.
- 2. Parking areas must not be located forward of the building.
- 3. Parking areas are to be located to minimise visual impacts from the street, public domain and communal open space areas, using site planning and appropriate screen planting or structures.
- 4. Potential pedestrian/vehicle conflict is to be minimised by limiting the width and number of vehicle access points, ensuring clear site lines at pedestrian and vehicle crossings, using traffic calming devices, separating and clearly distinguishing between pedestrian and vehicle accessways.
- 5. Entries to carparks on Gateway corner sites are to be from the secondary road frontage.

Bicycle facilities

Objective

 Encourage bicycle use by providing sufficient number of secure and accessible bicycle parking spaces with new developments.

Controls

- 1. For commercial developments providing employment for 20 people or more, bicycle parking is to be in secure and accessible locations, and provided with weather protection.
- 2. The following associated facilities are also to be provided:
 - change and shower facilities for cyclists conveniently located close to the bicycle storage areas; and
 - where the building is to be strata-titled, the bicycle storage facilities and shower/change facilities are to be located on common property.

Landscape Design

Objectives

- Achieve a high-quality landscaped streetscape that provides aesthetic and general amenity benefits such as shade.
- Ensure that landscaping offsets the bulk and scale of the large buildings and the visual impact of paved areas.
- Minimise the visual impact of at grade car parking areas.
- Ensure landscape design is compatible with the ongoing operation of the Port Macquarie Airport.
- Contribute to water and stormwater efficiency by integrating landscape design with water and stormwater management.

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Controls

- Development must include the supply, installation and establishment of at least one advanced clear-trunk tree for every 20 metres of street frontage (see Figures 8 & 9).
- 2. Planting centres within median areas as illustrated in **Figures 8 and 9** to be generally 15m.
- 3. All trees installed must be advanced stock of at least 100L container size and capable of achieving mature heights in the range of 10 to 15m.
- 4. All trees installed must be established and maintained for a minimum period of 24 months. Any failed trees must be replaced immediately.
- 5. All tree planting is to consider the location of structures, services and footpaths during the design of the landscape and in the selection of plant material, to reduce potential future damage to these features.
- 6. Street tree planting should be implemented at the subdivision stage to ensure plantings are visually consistent in height, spread and form across the precinct.
- 7. Landscape design is to demonstrate integration with building, car parking and fencing design.
- Front setback areas to public roads are to be landscaped and maintained as open areas only, so as to enhance the streetscape appearance. No storage of any kind is to occur in landscaped setback areas.
- Landscape treatments are to be simple in form and layout and incorporate planting with low-water requirements. Endemic and native plant species preferred.
- 10. Landscape design is to demonstrate integration with on-site water quality treatment areas and devices.
- 11. Deep Soil Zones, retained as areas of natural ground, free of artificial structures and with a relatively unmodified soil profile are to be provided within lots. Deep Soil Zones are to comprise 10 per cent of the site area and have minimum dimensions of 3m x 3m in order to permit the establishment and growth of large trees, and to promote rainwater infiltration.
- 12. Development must include supply, installation and maintenance of at least one advance clear trunked broad-canopy tree for every nine at-grade car parking spaces (maximum internals of 25m).
- Landscaping is to be designed to minimise wildlife hazards to the operation of the Port Macquarie Airport through reference to Australian Airports Association Airport Wildlife Hazard Management at Airports and Managing Bird Strike Practice Notes 6 and 9.

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Open Space Network

Objectives

- Meet the recreation needs of workers and visitors to the Airport Business Park.
- Provide additional open space within a network of well-connected green streets.
- Provide well-used pubic space that accommodates a range of passive recreational uses.
- Maximise the accessibility of public open space and to contribute to the pedestrian and cycle network.

Controls

- 1. The location of public open space is to be integrated with the street network to maximise pedestrian access opportunities.
- 2. The Boulevard sub-precinct is to provide a high-quality communal public open space/plaza area for enjoyment by workers and visitors.
- Pedestrian and cycle shareways, fitness trails and other passive recreational activities shall be located within the Recreation sub-precinct. Details shall be submitted with the first Development Application for subdivision of the land.
- 4. Site landscaping in public open space areas shall comprise trees, shrubs and groundcovers. Endemic species are preferred. Alternate species may be considered within open space areas to achieve seasonable landscape features where appropriate.

Stormwater Management

Objectives

- Control and manage all stormwater drainage generated as a result of development.
- Ensure that development incorporates stormwater drainage quality controls to achieve the stormwater quality outcomes required by AUSPEC D7 and protection of the adjoining Conservation Lands.
- Encourage incorporation of Water Sensitive Urban Design techniques within subdivision, site and building design.

Controls

- 1. Development applications for subdivision shall be accompanied by stormwater drainage designs consisting of the provision of bio-retention systems with submerged zones located within or adjoining road corridors or on individual lots generally in accordance with the principles established in the *Concept Stormwater Management Plan*, King & Campbell Pty Ltd, Jan 2019 (see **Figures 5 to 7**).
- 2. Unless onsite bio-retention systems are approved by Council, the designs for the end of line stormwater quality infrastructure referred to above shall be designed to cater for the entire developed contributing catchment as defined in the *Concept Stormwater Management Plan*, King & Campbell Pty Ltd, Jan 2019. All end of line infrastructure is to be located within the B7 zoned lands and shall consider the following design elements:
 - Maintenance of groundwater levels in the precinct road corridor widths
 - Provision of appropriate measures/controls to prevent accidental vehicular and pedestrian entry into swales.

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- Vegetation specification to minimise maintenance requirements, tolerance of saturated soils and periodic exposure to brackish water during flood events within the Hastings River. Local endemic species should be utilised wherever possible.
- Pavement design for the adjoining roads to ensure sufficient vertical separation is provided between the saturated zone and pavement layers. The long-term pavement viability is to be maximized using subsoil drainage and potentially drainage blankets.
- Vegetated stormwater drainage assets shall be located clear of any land specified as a bushfire Asset Protection Zone.
- Development within each Business Park lot shall include site-specific stormwater quality management systems designed to achieve or better the Suspended Solids, Gross Pollutant, Oil and Grease pollutant load targets and nutrient loadings (unless these have been managed by end of line facilities).
- 4. Each Business Park lot shall include rainwater usage facilities, consisting of a minimum 10kL rainwater tank, plumbed for internal usage in toilets, and site landscape irrigation.

Infrastructure and services

Objectives

- Ensure that adequate services are available to facilitate development.
- Ensure the co-location of services where possible.

Controls

- 1. Development applications for subdivision are to include:
 - A Water Supply Strategy that considers the capacity required for existing and future development within the Precinct
 - A reticulated sewerage services strategy. The strategy should have regard to the Concept Sewer Strategy in Figure 10.
- 2. Electricity and telecommunications mains are to be placed underground and services co-located where this is technically feasible.
- 3. Electricity substations are to be located on private land.
- 4. State of the art telecommunications infrastructure is to be provided to enable companies to access broadband services using high speed, high reliability telecommunications.

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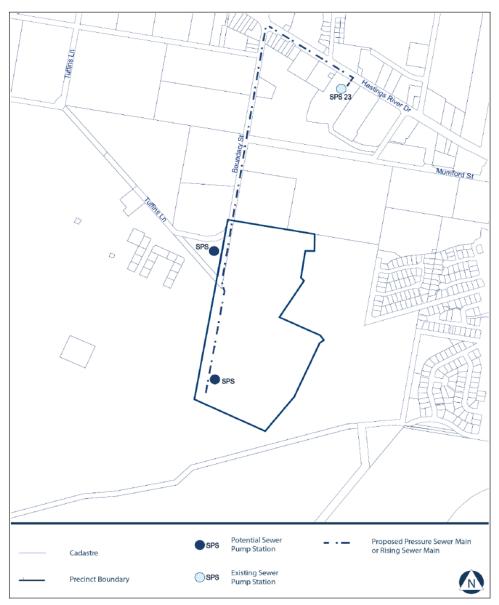


Figure 10: Concept Sewer Strategy (either conventional or low pressure scheme)

Built form design

Objectives

- Encourage creative and innovative building design of a high architectural standard that reflects the Gateway importance of the Airport Business Park.
- Establish varied and articulated frontages facing or visible from the public domain

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- Minimise perceived scale and mass and prevent monotonous building forms resulting from poor design of walls or rooflines
- Ensure that new development contributes to the creation of a visually cohesive urban environment.
- Encourage energy efficiency in design of buildings.

Controls

- 1. Prominent elevations, such as those with a frontage to the street or public reserves or those that are visible from public areas, must present a building form of significant architectural and design merit. The construction of large, blank wall surfaces is not permitted.
- 2. Large unrelieved expanses of wall or building mass will not be supported, and should be broken up by the use of suitable building articulation, fenestration or alternative architectural enhancements.
- 3. The use of large, uninterrupted areas of metal cladding or untreated concrete surfaces for wall construction is not supported. Applicants shall vary materials or finishes for external walls (e.g. brick, glass, precast exposed aggregates, off-form concrete panels or similar) to provide attractive streetscapes and quality building designs. Council may limit the use of a single construction material to 50% of a wall surface area.
- 4. Materials used for side and rear walls shall be compatible with materials used for front walls. Zincalume and colourbond external walls will not be supported.
- 5. All loading areas should be located towards the rear of lots. Where possible, loading areas should be screened from the view of main road frontages through physical and/or vegetation screening.
- 6. External materials should be selected such that reflectivity is minimised and will not adversely affect adjacent development, vehicular traffic and public domain areas.
- 7. Energy efficient design principles should be employed in all building designs.
- 8. Part of the cross-section of buildings shall be projected to reduce apparent height and scale of external walls, including:
 - Awnings,
 - Roofs with eaves that project beyond external walls,
 - Colonnades.
- 9. Architectural features consistent with the overall design of the building should highlight entrances to buildings.
- 10. Particular care should be taken in designing roof elements and locating plant and mechanical equipment including exhausts, so as to reduce their visual impact from elevated locations and any public areas.
- 11. Fencing should be designed to be integrated with the building and hard and soft landscaping measures. Pre-painted solid metal fencing and other solid fencing will not be supported, nor will wire mesh for front fences.

Final Draft Airport Business Park DCP

12. All signage on buildings should be integrated with the design of the building façade. Above awning or parapet signage design will not be permitted.

Images in **Figure 11** provide examples of the types of buildings envisaged for the Airport Business Park.



Figure 11: Examples of building types envisaged for the Airport Business Park

Setbacks

Objectives

- Achieve attractive streetscapes
- Ensure buildings present an acceptable scale and bulk when viewed from the street and public domain areas.

Controls

- 1. Front setbacks are to be 5m and the building shall be built on the setback for a minimum length of 40 per cent of the frontage of the lot.
- 2. Awnings, canopies, balconies, sun shading and screening elements can project forward of the front setback.

Gateway Sites

Objective

• The northern entry point into the Airport Business Park is designed to function as a Gateway location that announces entry into the Precinct.

Controls

1. In consultation with Council, develop an appropriate response to the existing entry point to the Port Macquarie Airport that could include specific landscape planting and/or a public art element.

Final Draft Airport Business Park DCP

2. Buildings adjacent to this entry point shall be designed to create a distinctive and recognisable Gateway entry to the Precinct.

Port Macquarie Airport Controls

Objective

• Ensure that development does not interfere with the continued operation and growth of the Port Macquarie Airport.

Controls

- 1. Lighting details shall be provided as part of any Development Application and should address the principles of *The National Airports Safeguarding Framework Guideline E: Managing the Risk of Distractions to pilots from Lighting in the Vicinity of Airports*.
- 2. Development Applications are to demonstrate regard to potential wildlife and bird strike hazards by reference to *The National Airports Safeguarding Framework Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports*.

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Our Ref. DOC20/170643 Contact officer: John Schmidt 02 6561 4975

Mr Craig Swift-McNair General Manager Port Macquarie-Hastings Council PO Box 84 PORT MACQUARIE NSW 2444

Attention: Jesse Dick

Dear Mr Swift-McNair

Subject: Application for funding under the 2019-20 Coastal And Estuary Planning Program Lake Innes acid sulfate soil management options study Grant reference no. 2019-20-CEMP-0001

I refer to Port Macquarie-Hastings Council's application requesting financial assistance under the 2019-20 Coastal and Estuary Planning Program for the above project.

The application has been assessed and approved for placement on the reserve list. This list may be activated at any time up until the opening of the 2020-21 funding round, if funding is available under the program. For this grant to be considered eligible for activation, Council needs to meet the following condition:

1. Port Macquarie-Hasting Council must complete the required scoping study, prior to this project being activated.

Council will be contacted by the Grants Branch once we have received advice that the scoping study has been completed to a satisfactory standard. Council should consider reapplying if the grant has not been activated from the reserve list at the opening of the 2020-21 funding round.

If Council no longer wishes to proceed with the project or does not want to remain on the reserve list for 2019-20, please advise me as soon as possible.

The Grants Branch would like to thank Council for their interest in the Coastal And Estuary Planning Program.

If Council has any queries regarding this letter, please contact me on 02 9895 6494 or at coastalestuary.floodgrants@environment.nsw.gov.au.

Yours sincerely

alganderer 27/03/2020

Alexandra Gardiner A/Manager Contestable Grants - Coast, Estuary and Flood Grants Branch, Environment, Energy and Science

Level 4, 10 Valentine Avenue Parramatta NSW 2150 | PO Box 644 Parramatta NSW 2124 | dpie.nsw.gov.au | 1



10.08 BORROWING FOR PROJECTS

Ms Kate Aston, Revive Lake Cathie Inc., addressed Council in support of the recommendation.

Mr Blair Maxwell addressed Council in support of the recommendation.

MOTION

MOVED: Levido/Intemann

That Council:

- 1. Note the importance of the following projects and prioritise them for planning and design:
 - a) Upgrade of Boundary Street, Port Macquarie from its intersection with Hastings River Drive to the Port Macquarie Airport entry based on current investigations and planning in an amount of \$15,000,000.00 for the complete project.
 - b) Carry out upgrade works to Bril Bril Road, Rollands Plains based on prior discussions and investigations with the local community in an amount of \$6,000,000.00 for the complete project.
 - c) Carry out further works with respect to the "Schools to Schools" project from Kendall Public School, Kendall to Laurieton Public School, Laurieton, with reference to the existing Strategic Alignment Study and the high priority sections identified in consultation with the School to School local committee.
 - d) Carry out further works with respect to the "Beach 2 Beach" project from North Haven to Dunbogan, with reference to the proposed Strategic Alignment Study and in consultation with the Beach 2 Beach local committee.
 - e) Carry out investigations and planning with respect to undertaking tidal improvements to that part of the Lake Innes and Lake Cathie Estuarine System from the Ocean Drive bridge in a westerly direction.
- 2. Add to the 2019-2020 Operational Plan the components of planning and design for the projects listed above so as to substantially progress each, using internal and/or contracted resources so as to not prevent completion of other existing projects in the 2019-2020 operational plan.
- 3. Request the General Manager to add the remaining planning and design work for the projects listed above, plus substantial further work on each project, to

Port Macquarie-Hastings Council

Page 5



the draft 2020-2021 Operational Plan.

- 4. Request the General Manager to fund the nominated planning and design work specified in point 2, above, with loan borrowings raised immediately to the amount of \$2,400,000.00.
- 5. Request the General Manager to consider (in the current 2019-2020 operational plan, the draft 2020-2021 operational plan and in the review of the long term financial plan) the appropriate mitigation factors to offset the cashflow requirements (and operating performance impacts) of repaying the interest and principal associated with the above borrowings.
- 6. Request the General Manager to consider additional borrowings up to \$25,000,000.00 in total to fund the balance of the projects listed 1a) and 1b) above and progressing the projects listed 1c), 1d) and 1e) above (in the draft 2020-2021 operational plan and in the review of the long term financial plan), together with the appropriate mitigation factors to offset the cash flow requirements (and operating performance impacts) of repaying the interest and principal associated with the additional borrowings.

AMENDMENT

MOVED: Pinson/Griffiths

That Item 10.08 be deferred and given consideration by the entire elected body due to the significance of the borrowing of \$25,000,000.00 and further discussions on how to consult with our community can be undertaken.

THE AMENDMENT WAS PUT AND WAS LOST

MOVED: Pinson/Griffiths

That Item 10.08 be deferred and given consideration by the entire elected body due to the significance of the borrowing of \$25,000,000.00 and further discussions on how to consult with our community can be undertaken.

LOST: 2/6 FOR: Griffiths and Pinson AGAINST: Alley, Dixon, Hawkins, Intemann, Levido and Turner

AMENDMENT

MOVED: Pinson/Griffiths

That Council:

1.

- Request the General Manager to investigate the sourcing of \$2.4,M to fund the nominated planning and design work for the projects specified below from the unrestricted reserves fund:
 - Upgrade of Boundary Street, Port Macquarie from its intersection with Hastings River Drive to the Port Macquarie Airport entry based on current investigations and planning in an amount of \$15,000,000.00 for the complete project.
 - b) Carry out upgrade works to Bril Bril Road, Rollands Plains based on prior discussions and investigations with the local community in an amount of \$6,000,000.00 for the complete project.
 - c) Carry out further works with respect to the "Schools to Schools" project

Port Macquarie-Hastings Council



from Kendall Public School, Kendall to Laurieton Public School, Laurieton, with reference to the existing Strategic Alignment Study and the high priority sections identified in consultation with the School to School local committee.

- Carry out further works with respect to the "Beach 2 Beach" project from North Haven to Dunbogan, with reference to the proposed Strategic Alignment Study and in consultation with the Beach 2 Beach local committee.
- e) Carry out investigations and planning with respect to undertaking tidal improvements to that part of the Lake Innes and Lake Cathie Estuarine System from the Ocean Drive bridge in a westerly direction.
- 2. Request the General Manager bring a report back to Council at the December 2019 Council Meeting for further consideration.

THE AMENDMENT WAS PUT AND WAS LOST

MOVED: Pinson/Griffiths

That Council:

- 1. Request the General Manager to investigate the sourcing of \$2.4,M to fund the nominated planning and design work for the projects specified below from the unrestricted reserves fund:
 - a) Upgrade of Boundary Street, Port Macquarie from its intersection with Hastings River Drive to the Port Macquarie Airport entry based on current investigations and planning in an amount of \$15,000,000.00 for the complete project.
 - b) Carry out upgrade works to Bril Bril Road, Rollands Plains based on prior discussions and investigations with the local community in an amount of \$6,000,000.00 for the complete project.
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 - d) Carry out further works with respect to the "Beach 2 Beach" project from North Haven to Dunbogan, with reference to the proposed Strategic Alignment Study and in consultation with the Beach 2 Beach local committee.
 - e) Carry out investigations and planning with respect to undertaking tidal improvements to that part of the Lake Innes and Lake Cathie Estuarine System from the Ocean Drive bridge in a westerly direction.
- 2. Request the General Manager bring a report back to Council at the December 2019 Council Meeting for further consideration.

LOST: 3/5

FOR: Dixon, Griffiths and Pinson AGAINST: Alley, Hawkins, Intemann, Levido and Turner

THE MOTION WAS PUT

RESOLVED: Levido/Intemann

That Council:

Port Macquarie-Hastings Council



- 1. Note the importance of the following projects and prioritise them for planning and design:
 - a) Upgrade of Boundary Street, Port Macquarie from its intersection with Hastings River Drive to the Port Macquarie Airport entry based on current investigations and planning in an amount of \$15,000,000.00 for the complete project.
 - b) Carry out upgrade works to Bril Bril Road, Rollands Plains based on prior discussions and investigations with the local community in an amount of \$6,000,000.00 for the complete project.
 - c) Carry out further works with respect to the "Schools to Schools" project from Kendall Public School, Kendall to Laurieton Public School, Laurieton, with reference to the existing Strategic Alignment Study and the high priority sections identified in consultation with the School to School local committee.
 - Carry out further works with respect to the "Beach 2 Beach" project from North Haven to Dunbogan, with reference to the proposed Strategic Alignment Study and in consultation with the Beach 2 Beach local committee.
 - e) Carry out investigations and planning with respect to undertaking tidal improvements to that part of the Lake Innes and Lake Cathie Estuarine System from the Ocean Drive bridge in a westerly direction.
- Add to the 2019-2020 Operational Plan the components of planning and design for the projects listed above so as to substantially progress each, using internal and/or contracted resources so as to not prevent completion of other existing projects in the 2019-2020 operational plan.
- 3. Request the General Manager to add the remaining planning and design work for the projects listed above, plus substantial further work on each project, to the draft 2020-2021 Operational Plan.
- 4. Request the General Manager to fund the nominated planning and design work specified in point 2, above, with loan borrowings raised immediately to the amount of \$2,400,000.00.
- 5. Request the General Manager to consider (in the current 2019-2020 operational plan, the draft 2020-2021 operational plan and in the review of the long term financial plan) the appropriate mitigation factors to offset the cashflow requirements (and operating performance impacts) of repaying the interest and principal associated with the above borrowings.
- 6. Request the General Manager to consider additional borrowings up to \$25,000,000.00 in total to fund the balance of the projects listed 1a) and 1b) above and progressing the projects listed 1c), 1d) and 1e) above (in the draft 2020-2021 operational plan and in the review of the long term financial plan), together with the appropriate mitigation factors to offset the cash flow requirements (and operating performance impacts) of repaying the interest and principal associated with the additional borrowings.

CARRIED: 6/2 FOR: Alley, Dixon, Hawkins, Intemann, Levido and Turner AGAINST: Griffiths and Pinson

Port Macquarie-Hastings Council



PORT MACQUARIE-HASTINGS

Coastal Management Program Stage 1 - Scoping Study



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GLOSSARY AND ABBREVIATIONS

TERM	DEFINITION	TERM	DEFINITION
ASS	Acid Sulphate Soils	ICOLL	Intermittently Clo
CBA	Cost-Benefit Analysis	IP&R	Integrated Plannir
CEA	Coastal Environment Area	KSC	Kempsey Shire Cr
CEFA	Coast, Estuary & Hoodplain Advisory Sub-Committee	LEP	Local Environmen
CM Act	Coastal Management Act 2016	LGA	Local Governmen
CM SEPP	State Erwironmental Planning Policy (Coastal Management) 2018	Manual	NSW Coastal Mar
CMP	Coastal Management Program	MCC	Mid Coast Cound
CP Act	Coastal Protection Act 1979	NPWS	National Parks an
CSP	Community Strategic Plan	NSW CP	NSW Coastal Poli
CUA	Coastal Use Area	NSW EP	NSW Rivers and E
CVA	Coastal Vulnerability Area	PMHC	Port Macquarie-H
CWLRA	Coastal Wetlands and Littoral Rainforest Area	SEPP 14	State Environmen No. 14
CZMP	Coastal Zone Management Plan	SEPP 26	State Environmen Rainforests No. 2
DPI	Department of Primary Industries	SEPP 71	State Environmen No. 71
DPIE	Department of Planning, Industry and Environment	SES	State Emergency
EMP	Estuary Management Plan	TfNSW	Transport for NSV
ESD	Ecologically Sustainable Development	UGMS	Urban Growth Ma

	TERM	DEFINITION
	ICOLL	Intermittently Closed and Open Lakes and Lagoons
	IP&R	Integrated Planning and Reporting Framework
	KSC	Kempsey Shire Council
ttee	LEP	Local Environmental Plan 2011
	LGA	Local Government Area
	Manual	NSW Coastal Management Manual
	MCC	Mid Coast Council
	NPWS	National Parks and Wildlife Service
	NSW CP	NSW Coastal Policy 1997
	NSW EP	NSW Rivers and Estuaries Policy
	PMHC	Port Macquarie-Hastings Council
	SEPP 14	State Environmental Planning Policy Coastal Wetlands No. 14
	SEPP 26	State Environmental Planning Policy Littoral Rainforests No. 26
	SEPP 71	State Environmental Planning Policy Coastal Protection No. 71
ţ	SES	State Emergency Services
	TfNSW	Transport for NSW
	UGMS	Urban Growth Management Strategy

ORDINARY COUNCIL 20/05/2020

COASTAL MANAGEMENT PROGRAM STAGE

Item 13.07 Attachment 1

2

PORT MACQUARIE-HASTINGS COUNCIL

public and private asset owners, and the extended In NSW, coastal management is quickly becoming a high-profile area of concern for coastal councils, community. Port Macquarie-Hastings Council (PMHC) recognises coastal floodplains, coastal lakes and lagoons. It It is a diverse, complex and dynamic environment rocky headlands, cliffs, rock platforms, estuaries, landscapes and cultural significance that support that the coastline is one of our greatest assets. has a range of unique values, natural and urban made up of sandy open-coast beaches, dunes, our vibrant, healthy and prosperous lifestyle.

Point Plomer in the north to Diamond Head in the south is characterised by its natural beauty, clear The Port Macquarie-Hastings Coastal Zone, from water and numerous inviting sandy beaches. An ever-increasing number of residents and tourists are attracted to the natural, cultural, social and economic values that our coastline offers.

The coastal zone is highly vulnerable to changes over time due to escalating environmental and socio-economic pressures. These pressures in environmental conditions present unique combined with social sensitivities to shifts challenges to coastal zone managers. The NSW Government is delivering a new legislative environment. Local councils and public authorities of the coast and sustainably manage the coastal and regulatory framework to better equip coastal and activities in accordance with relevant state communities to respond to the dynamic nature are required to manage their coastal areas legislation, policies and plans.

Council, state agencies and other key stakeholders be implemented through the coordination between the Coastal Management Act 2016 (CM Act) and local objectives. This management program will managing the coastal zone in accordance with Management Program (CMP). A CMP aims to provide a long term, coordinated strategy for PMHC has resolved to prepare a Coastal

In accordance with the NSW Coastal Management

undertake a Scoping Study. The scoping study aims and outline the proposed pathway for the following to consolidate information gathered both during Stage 1 and from previous management plans Framework, Stage 1 of preparing a CMP is to stages of the CMP

Key components of the scoping study include:

- Strategic context for coastal management.
- CMP scope issues and areas, including maps Purpose, vision and objectives of the CMP
- Review of current management practices and of relevant CMAs
 - arrangements.
- including other councils and relevant public Identification of roles and responsibilities authorities.
- First-pass risk assessment to identify where action is required, including studies to be completed in Stage 2.
- Stakeholder and community engagement strategy.
- Preliminary business case.
- preparation. Include a timeframe for steps in the preparation of a planning proposal if changes to Plan for future stages and timetable for CMP

the LEP are proposed.

understanding, addressing and contributing to The CMP will focus on and be guided by solutions around the following topics:

- How do we use our coastal zone?
- How do we balance environmental values with these uses?
- What do want our coastal zones to look like in the future?
- How do we adapt to the increasing challenges of living on the coast?
 - Who is responsible for management of the coastal zone?

guided by existing legislation, such as the CM Act, the NSW Coastal Management Manual and by the The methods used to develop the CMP will be /alues and desires of our community.

1.1 COASTAL MANAGEMENT PROGRAM FRAMEWORK

develop long-term strategies for the management of cultural and economic wellbeing of the residents In 2016, the NSW Government introduced a new in an ecologically sustainable way for the social framework, the Coastal Management Act 2016, framework to manage the coastal environment contains provisions that should be followed to and visitors of NSW. The cornerstone of this the coastal zone.

coordinated management of the coastal zone. It will The process to write a CMP is prescriptive so that it achieve the purpose and objectives of the CM Act. The CMP will set the long-term strategy for the provides consistency across the NSW.

outlined in the NSW Coastal Management Manual [Each CMP follows a five-stage program that is [see Figure 1].



of preparing a CMP It will assist councils to identify (areas) to ensure site-specific detail to enable best The scoping study is the first stage in the process the CMP will be divided into four 'chapters' based the scoping study is completed, the remainder of on geographic areas, to better manage localised establish roles, responsibilities and governance issues. Each of the stages 2, 3, 4 and 5 will be an engagement strategy, determine the context across the Local Government Area (LGA). After the community and stakeholders and prepare arrangements to deliver management actions done repetitiously for the four below chapters of coastal management in the local area and management of the on-ground issues.

The chapters include:

- Lake Cathle/Lake Innes & Bonny Hills Estuary & Coastline - incorporating the open coastline Grants Head at Bonny Hills (referred to in this from the 4 x 4 access track adjacent to Dirah Street, Lake Cathie to the southern side of document as the Lake Cathie/Bonny Hills chapter for simplicity).
 - 2. Hastings River Estuary
 - 3. Camden Haven River
- 4. Port Macquarle-HastIngs Open Coastline (excluding the open coastline that is covered in the Lake Cathie/Bonny Hills area

Areas for further information on the proposed CMP Refer to Section 13.6 Coastal Management Plan areas.

and integrated way. Each chapter will contain detail Each chapter will identify management issues and the actions, specific to the local area, which are required to address these issues in a strategic regarding:

- How and when those actions are to be Who is responsible for each action?
- implemented?
- Costs and proposed cost-sharing arrangements for each action.

COASTAL MANAGEMENT PROGRAM STAGE

ATTACHMENT

2.1 LIMITATIONS

Much like all LGA's, PMHC faces limitations to the scale and extent of coastal zone management it can feasibly amongst the desires of all ratepayers in the LGA. The majority of income derived for projects is from ratepayers priorities and the legislative complexities that take time to complete. A hurdle in all LGA's is finding a balance achieve. Limitations include land tenure, funding resources, the complexity of stakeholder engagement which requires a balance between multiple government agencies and community needs with possible competing and must be divided into various priority areas and competing needs and desires. These priorities include roads, water availability, sewer, recreation, and arts and culture to name a few.

The CMP aims to provide a framework for management of the coastal zone, which acknowledges and reflects the various desires/mandates of other stakeholders. Opportunities for funding will be sought often and the needs of the coastal area but balances this with the reality of the competing needs of the LGA and communication and engagement will be top priority

2.2 SCOPING STUDY PURPOSE

a review of existing Coastal Zone Management Plans (CZMP) and Estuary Management Plans (EMP) to identify any gaps in knowledge and determine if any further management actions are required in light of the objectives consider if further investigations or changes to management actions are required. This assessment includes The purpose of preparing this scoping study is to identify how the coastal zone is currently managed and to of the new Coastal Management Act 2016.

Stage 1 is designed to assist councils to:

- Review the strategic context for coastal management in the local area.
- Determine the purpose of the CMP and the key outcomes that it is intended to deliver.
- Identify the appropriate scope for the CMP consider the area and range of issues to be dealt with and identify which organisations and communities need to be involved.
- Determine the adequacy of available information and management actions and identify subsequent stages in the preparation of the CMP including the possibility of fast-tracking.



In accordance with the Coastal Management Manual:

The scoping study will guide the direction of stages 2, 3, 4 and 5 of the coastal management program. PMHC shared understanding of the current situation and identify any changes to coastal values so that will engage both the community and relevant stakeholders throughout the process to develop a they are integrated into the planning process.

2.3 VISION



This vision aligns with PMHC's overarching vision of "A sustainable high-quality of life for all". (Source: Towards 2030 Community Strategic Plan - Port Macquarie-Hastings Council)

* It is envisioned that the CMP vision will be refined during further community and stakeholder engagement.

2.4 OBJECTIVES

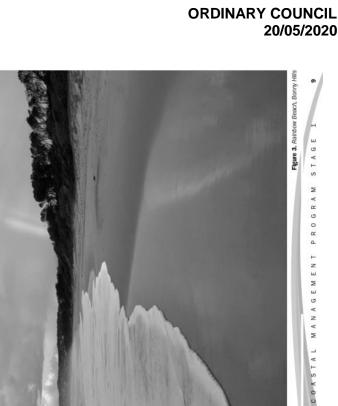
consistently reflecting local issues and conditions. The CMP will also identify who is responsible for delivery of objectives will be refined during Stage 2 in consultation with stakeholders and the community so that they are integrated management of priority coastal hazards, issues and risks to the Port Macquarie-Hastings Coastal Zone, in line with the community's needs, NSW state objectives and legislation. The successful development The purpose of the Coastal Management Program is to provide a framework for the long-term strategic and and implementation of a robust CMP will provide a range of short, medium and long-term outcomes. These key management actions.

The CMP covers a large geographic area in the PMHC LGA and lays over various land zones. Within Council's governance structure, the action or manner of governing, there are multiple land managers including the Natural Resources, Recreation and Building, Strategic Planning, and Infrastructure Planning sections that may all need to be consulted before works may be undertaken, in addition to internal consultation, numerous state agencies including Department of Planning, Industry and Environment, Department of Primary Industries Flsheries, National Parks and Wildlife Services, NSW Office of Water, Roads and Maritime, and Crown Lands also own and manage land with in the coastal zone and must be consulted with before works can occur. These departments have governance decisions over their land on which Council must seek permission and licensing from before works can ductraken. Other key stakeholders are the Local Aboriginal Land Councils, witch must be consulted and give permission for works on land that is owned and managed by the traditional owners of this land.

When discussing governance, it is also important to remember to be a good neighbour and as such when undertaking works near the LGA boundaries of Kempsey and MidCoast Councils, further discussions need to occur to manage the risks of shared estuaries and sediment boundaries. Consultation will always be a key factor in governance. One way to ensure Council is making sound management decisions is PMHC's internal Coast, Estuary and Floodplain Advisory (CEFA) Sub-Committee that is used for regular review and consultation of policies, projects and studies. Members of this committee consist of representatives from PMHC Councillors, waterways users, community members, development industry, oyster industry, Council and SES.

> Item 13.07 Attachment 1

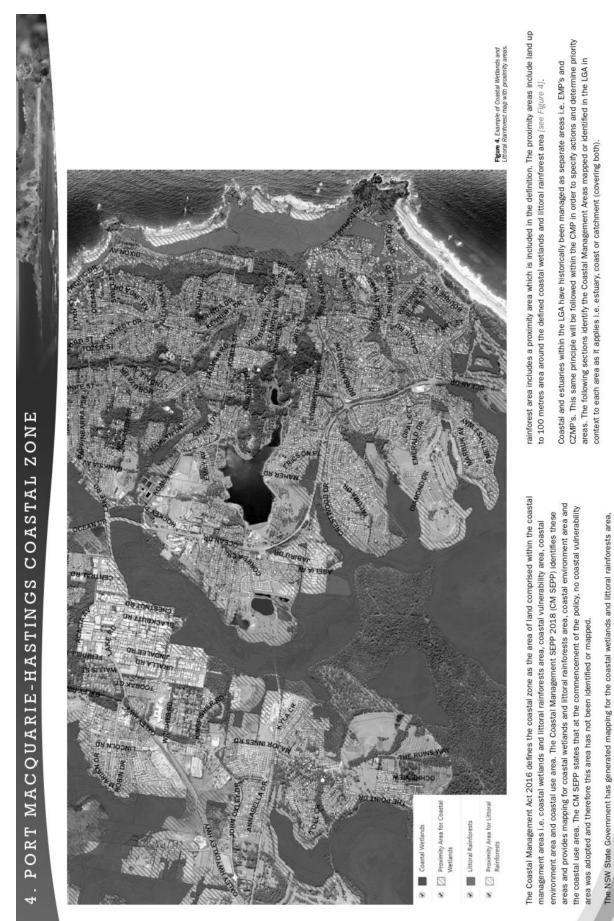
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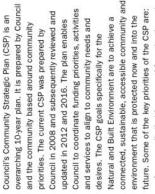


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COASTAL MANAGEMENT PROGRAM STAGE



coastal environment area and the coastal use area. The mapping for the coastal wetlands and littoral **10** PORT MACQUARE. HASTINGS COUNCIL



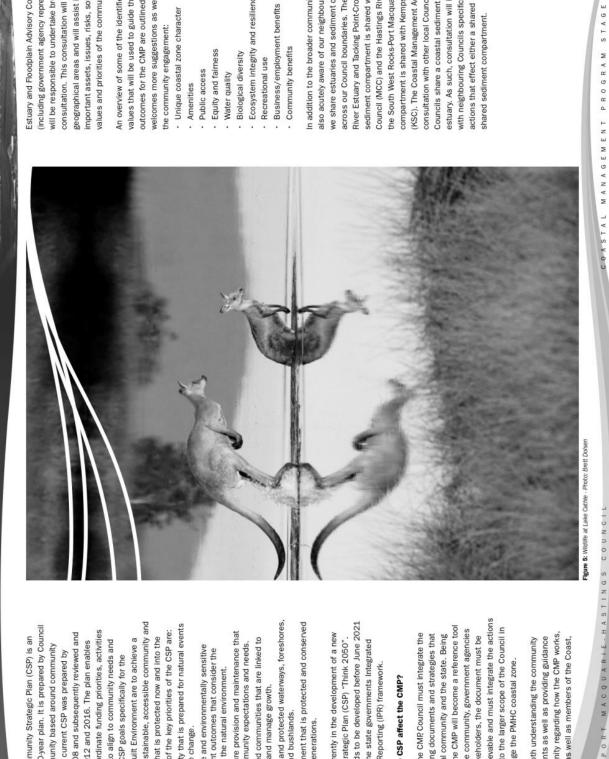
- A community that is prepared for natural events and climate change.
 - Sustainable and environmentally sensitive development outcomes that consider the impacts on the natural environment.
- Infrastructure provision and maintenance that meets community expectations and needs.
 - Well planned communities that are linked to encourage and manage growth.
- Accessible and protected waterways, foreshores, beaches and bushlands.
 - An environment that is protected and conserved for future generations.

This plan needs to be developed before June 2021 Council is currently in the development of a new to align with the state governments Integrated Community Strategic Plan (CSP) "Think 2050" Planning and Reporting (IPR) framework

How does the CSP affect the CMP?

practical, achievable and must integrate the actions mindful that the CMP will become a reference tool of the CMP into the larger scope of the Council in for Council, the community, government agencies In preparing the CMP Council must integrate the various planning documents and strategies that affect the local community and the state. Being and other stakeholders, the document must be order to manage the PMHC coastal zone.

to the community regarding how the CMP works, needs and wants as well as providing guidance Council staff as well as members of the Coast, As a way of both understanding the community



consultation. This consultation will focus on specific will be responsible to undertake broad community important assets, issues, risks, solutions and the geographical areas and will assist in identifying (including government agency representatives) Estuary and Floodplain Advisory Committee values and priorities of the community.

outcomes for the CMP are outlined below, Council welcomes more suggestions as we work through An overview of some of the identified community values that will be used to guide the long-term the community engagement:

- Unique coastal zone character
 - Amenities
- Public access
- Equity and faimess
 - **Biological diversity** Water quality
- Ecosystem integrity and resilience
- Business/employment benefits Recreational use
 - Community benefits

Councils share a coastal sediment compartment or (KSC). The Coastal Management Act 2016 requires compartment is shared with Kempsey Shire Counci also acutely aware of our neighbouring Councils as across our Council boundaries. The Camden Haver consultation with other local Councils where those Council (MCC) and the Hastings River Estuary and estuary. As such, consultation will be undertaken we share estuaries and sediment compartments sediment compartment is shared with Mid Coast the South West Rocks-Port Macquarie sediment with neighbouring Councils specifically for those In addition to the broader community, Council is actions that effect either a shared estuary or a River Estuary and Tacking Point-Crowdy Head shared sediment compartment.

13

12

6.1 BACKGORUND

NSW & Local Government have historically managed coasts and estuaries in accordance with the following legislation:

- Coastal Protection Act 1979 (CP Act)
- NSW Coastal Policy 1997 (NSW CP)
- State Environmental Planning Policy Coastal
- Wetlands No. 14 (SEPP 14) • State Environmental Planning Policy Littoral
 - State Environmental Planning Policy Littoral Rainforests No. 26 (SEPP 26)
 - State Environmental Planning Policy Coastal Protection No. 71 (SEPP 71) NSW Rivers and Estuaries Policy (NSW EP)

The NSW State Government undertook coastal reforms in 2016. These reforms repealed the CP Act and replaced it with the Coastal Management Act 2016 (CM Act).

The new framework for managing the NSW coast primarily consists of:

- Coastal Management Act 2016 (CM Act)
- State Environmental Planning Policy (Coastal Management) 2018 (CM SEPP)
- NSW Coastal Management Manual (Manual).
 - Coastal Management Programs (CMPs)
 NSW Coastal Council

A CMP is being developed which will provide integrated management of defined coastal areas within the Port Macquarie-Hastings Local Government Area and will replace existing Coastal Zone Management Plans (CZMP) and Estuary Management Plans (EMP) once implemented.

The Manual provides guidance on the development of CMPs and divides the development into five (5) stages, with Stage 1 being a scoping study (see section 1.1).

6.2 HISTORICAL COASTAL MANAGEMENT FRAMEWORK

The coastal zone has historically been managed in accordance with the following legislation.

- Coastal Protection Act 1979 (CM Act 1979): Required Council's to develop CZMPs.
- NSW Coastal Policy 1997 (CP 1997): This policy provided overarching direction for Council in its preparation and implementation of its CZMP
- State Environmental Planning Policy Coastal Wetlands No. 14 (SEPP 14): This policy provided restriction for development on certain types of land to ensure the protection of coastal wetlands. This SEPP is now repealed and has been replaced with the Coastal Management SEPP.
 - State Environmental Planning Policy Littoral Rainforests No. 26 (SEPP 26): This policy provided restriction for development on certain types of land to ensure the protection of littoral rainforests. This SEPP is now repealed and has been replaced with the Coastal Management SEPP.
- State Environmental Planning Policy Coastal Protection No. 71 (SEPP 71): This policy provided considerations and development conditions on coastal land to ensure developments are suitable and do not impact on the land. This SEPP is now repealed and has been replaced with the Coastal Management SEPP
 - Environmental Planning and Assessment Act 1979 (FPA Act): This Act required Council to consider the suitability of the site in assessing proposed development including considering the risks of coastal hazards. It also requires the consideration of the principles of ecologically ustainable development, being an object to the EPA Act. A further section regulating the management of coastal hazards was s149 of the EPA Act, which assisted those applying for a s149 certificate to understand what policies affected the land, restricting development, also values and an an advected the land by restricting development, and and an advected the land by restricting development, and an advected the land.
- Environmental Planning and Assessment Regulation 2000: Clause 92 of this Regulation required Council
 to consider the provisions of the CP 1997 when determining development applications within a coastal
 zone.
- NSW Rivers and Estuarles Policy (NSW EP): This policy encompassed a suite of component policies each focussing on the protection or management of ecosystem processes and associated values. It also provided for clear management objectives and principles to reflect the State's commitment to resource sustainability.
 Local Government Act 1993 (LG Act): This Act requires Council to properly manage, develop, protect,

PORT MACQUARIE-HASTINGS COUNCIL

restore, enhance and conserve the environment of the area for which it is responsible, in a manner that is consistent with and promotes the principles of ecologically sustainable development (ESD). The Council's local government area extends to the beach foreshore, being the area between the high watermark and the low watermark. Therefore, Council is required to manage risk in the coastal zone such as foreshore erosion, noting that it should be done so in accordance with ESD and in collaboration with other managing agencies, i.e. Crown Land.

6.3 EXISTING & FORMER MANAGEMENT PLANS

6.3.1. COASTAL ZONE MANAGEMENT PLANS

The Coastal Protection Act 1979 & Coastal Policy suggested that Councils develop and implement Coastal Zone Management Plans (CZMPs) to manage their coastilines. CZMPs were intended to provide management guidance for coastal zones including understanding coastal processes and how the coastal zones were used. For detailed information on existing CZMPs and EMPs refer to Chapter 16 of this scoping study.

The following CZMPs were developed:

- Town Beach Coastal Zone Management Plan (2006). NB. This CZMP was not gazetted as it was not certified by the NSW state government.
 - Lake Cathie Coastal Zone Management Plan (2016). NB: This CZMP was gazetted on 27 January 2017.

6.3.2. ESTUARY MANAGEMENT PLANS

The NSW Rivers and Estuaries Policy required Councils to develop EMPs in order to achieve integrated, balanced, responsible and ecologically sustainable use of estuaries which formed a key part of coastal catchments.

The following EMPs were developed:

- Lake Cathie-Lake Innes Estuary Management Plan (1994)
 - Hastings River Estuary Management Plan (2001)
- Camden Haven River Estuary Management Plan (2002)
- Saltwater Creek Management Plan (2005)

6.3.3. FLOODPLAIN MANAGEMENT PLANS

Councils also have a role managing floodplain risk. Although these plans coincide with the same geographical area as the coastal zone at times, these management plans are still in effect. No changes in legislation or policy have altered these plans.

The following floodplain risk management plans have been developed and are still in effect:

- Camden Haven Floodplain Risk Management Plan, Bewsher Consulting Pty Ltd, 2004
 - \cdot Hastings Floodplain Risk Management Plan, Worley Parsons Services Pty Ltd, 2014

6.3.4. OTHER MANAGEMENT PLANS

There are a large number of reserves located in the coastal zone that PMHC manages using Masterplans and Plans of Management. [See the Other Plans and Reports section of this document for further information].

7.1 COASTAL MANAGEMENT ACT 2016

The CM Act establishes the framework and overarching objects for coastal management in New South Wales.

The purpose of the CM Act is to manage the use and development of the coastal environment in an ecologically sustainable way, for the social, cultural and economic well-being of the people of New South Wales.

The CM Act also supports the aims of the Marine Estate Management Act 2014, as the coastal zone forms part of the marine estate.

The CM Act defines the coastal zone, comprising four (4) coastal management areas:

- Coastal wetlands and littoral rainforests: areas which display the characteristics of coastal wetlands or littoral rainforests that were previously protected by SEPP 14 and SEPP 26.
- Coastal vulnerability area: areas subject to coastal hazards such as coastal erosion and tidal inundation.
 Coastal environment area: areas that are characterised by natural coastal features such as beaches, rock platforms, coastal lakes and lagoons and undeveloped headlands. Marine and estuarine waters are also
- included.
 Coastal use area: land adjacent to coastal waters, estuaries and coastal lakes and lagoons.

The CM Act establishes management objectives specific to each of these coastal management areas.

reflecting their different values to coastal communities. Different management objectives exist across the four coastal management areas. New maps defining

Different management objectives exist across the four coastal management areas. New maps defining the coastal management areas were released with the commencement of the Coastal Management SEPP if multiple areas apply to a single parcel of land, the CM Act imposes a hierarchy as to which coastal management objectives apply. A Coastal Management Manual has been developed as part of the reform package. The manual contains the mandatory requirements which must be imposed when developing Coastal Management Programs (CMPs).

The Act has abolished the NSW Coastal Panel, and established a new NSW Coastal Council.

TRANSITION FROM OLD TO NEW

The Act has introduced CMP's to replace the Coastal Zone Management Plans (CZMPs) that were implemented under the Coastal Protection Act 1979. Council's must have new CMPs in place and adopted before works can qualify for grant funding. As part of the legislation change no transition arrangements were provided meaning all existing Council adopted Estuary Management Plans are now no longer capable of receiving grant funding.

Hence until a CMP is adopted, no estuary management works will be funded by the NSW State Government. Coastal management works that are contained within a certified CZMP are still eligible for funding, but only until December 2021.

Estuary management works have not been capable of receiving NSW state government grant funding since April 2018 which has significantly impacted on Council's ability to undertake estuary management works.

7.2 STATE ENVIRONMENTAL PLANNING POLICY(COASTAL MANAGEMENT) 2018

The State Environmental Planning Policy (Coastal Management) 2018 (CM SEPP) identifies and maps the coastal zone according to definitions in the CM Act and aims to streamline coastal development assessment requirements. The CM SEPP identifies development controls for consent authorities to apply to each coastal management area to achieve the objectives of the CM Act. And as such, the CM SEPP establishes the approval pathway for coastal protection works.

Statewide mapping is available for:

- Coastal wetlands and littoral rainforest area
- Coastal environment area
 Coastal use area

At the commencement of the CM SEPP, no Coastal Vulnerability Area Maps were adopted and therefore no coastal vulnerability areas are identified in this policy.

7.3 COASTAL MANAGEMENT PROGRAMS

CMPs will set the long-term strategy for coordinated management of the coast with a focus on achieving the objects of the CM Act. Local Councils in consultation with their communities and relevant public authorities prepare them. Councils are not required to develop a CMP if they choose not to.

If a CMP is proposed, it must:

- Identify the coastal management issues affecting the areas to which the program is to apply or Identify the options provided to addeese these constal menodement issues is an interfected and so or identify.
- Identify the actions required to address those coastal management issues in an integrated and strategic manner
 - 3. Identify how and when those actions are to be implemented
- Identify the costs of those actions and proposed cost-sharing arrangements and other viable funding mechanisms for those actions
- Include a coastal zone emergency action sub-plan if the local Council's LGA contains land within the coastal vulnerability area and beach erosion, coastal inundation or cliff instability is occurring on that land.

A CMP may also include other matters as may be authorised or permitted by the Manual

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7.4 NSW COASTAL MANAGEMENT MANUAL

The Manual provides mandatory requirements and guidance for the preparation, development, adoption, implementation, amendment and review of CMPs It provides systematic guidance on how to prepare a CMP and integrate coastal management actions with Councils other strategic and land-use planning processes.

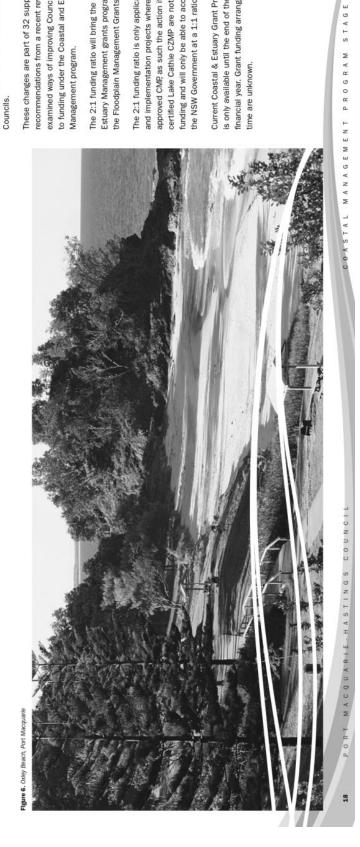
The Manual is comprised of three parts:

PART A	PART B	PART C
Outlines the mandatory	Describes in detail the process	Provides a technical toolkit v
requirements in the CM Act,	for preparing a CMP.	advice on a range of topics.
and the essential elements that		
councils are required to follow.		

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7.5 NSW COASTAL COUNCIL

The NSW Coastal Council is appointed by the NSW Government to provide independent advice to the Minister on coastal issues. The NSW Coastal Council replaces the NSW Coastal Panel and the Coastal Expert Panel.



7.6 COASTAL AND ESTUARY GRANTS PROGRAM

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provided for planning and implementation works at a ratio of 1:1, meaning for every one-dollar Council The Coastal and Estuary Grants program provides funding assistance to help Councils prepare and implement CMPs. Funding has historically been commits, the NSW government will provide a matching one-dollar.

In April 2020 the NSW Government announced that It was increasing financial assistance to Councils to help mitigate coastal erosion risks and restore degraded coastal habitats.

contribute two-dollars to every one-dollar put in by Minister for Local Government Shelley Hancock said the funding ratio for eligible projects under approved Coastal Management Programs will increase to 2:1 meaning the State will now Councils.

examined ways of improving Councils access recommendations from a recent review that to funding under the Coastal and Estuary These changes are part of 32 supported Management program.

Estuary Management grants program in line with The 2:1 funding ratio will bring the Coastal & the Floodplain Management Grants Program.

funding and will only be able to access funding from The 2:1 funding ratio is only applicable to planning certified Lake Cathie CZMP are not eligible for 2:1 and implementation projects where they are in an approved CMP as such the action items from the the NSW Government at a 1:1 ratio.

financial year. Grant funding arrangements after this Current Coastal & Estuary Grant Program funding is only available until the end of the 2020/2021 time are unknown.

8.1 STRATEGIC PLANS

PMHC is guided by a number of key strategies and plans which will assist with integrating the aspects of population growth, land use, community values and expectations into the CMP These strategies and plans are summarised below.

NORTH COAST REGIONAL PLAN 2036

community's aspirations and opportunities for the north coast of NSW until 2036. The North Coast Regional Plan 2036 is a broad strategic plan that reflects the

MID NORTH COAST REGIONAL STRATEGY 2006 - 2031

projected housing and employment needs of the region's population over the next 25 years. is to ensure that adequate land is available and appropriately located to accommodate Department of Planning in March 2009. The primary purpose of the regional strategy The Mid North Coast Regional Strategy 2006 - 2031 was released by NSW

- In summary the aims of the strategy are to:
- Protect high value environments and habitat corridors, cultural and Aboriginal heritage and scenic landscapes.
- suitable mix of housing will be encouraged, including more multi-unit style dwellings. increase of 91,000. With smaller households and an ageing population, a more Provide up to 58,400 new homes by 2031 to cater for a forecast population
- Ensure an adequate supply of land is available to support economic growth and an additional 47,000 jobs.
 - Encourage the growth and redevelopment of the Region's four major regional centres (Grafton, Coffs Harbour, Port Macquarie and Taree) and six major towns (Maclean, Woolgoolga, Bellingen, Macksville, Kempsey and Forster-Tuncurry) through urban design and renewal strategies.
- maps. Development in places constrained by coastal processes, flooding, wetlands, important farmland and landscapes of high scenic and conservation value will be Protect the coast by focusing new settlement in areas identified on local strategy imited.

PMHC URBAN GROWTH MANAGEMENT STRATEGY (UGMS) 2017-2036

towns and villages where urban growth is expected to take place over the next development and housing that will meet the needs of the growing community. The Community Vision for the Port Macquarie-Hastings is "A sustainable high quality of life for all". The strategy focuses on the coastal area and major The PMHC UGMS aims to identify opportunities for new economic 20 years.

INTEGRATED PLANNING AND REPORTING FRAMEWORK (IP&R)

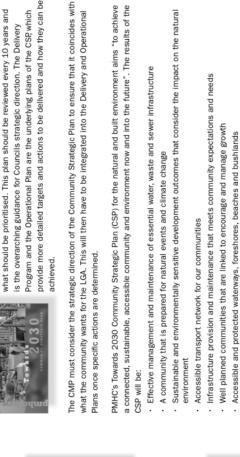
determines Councils 'way forward' by establishing the Community Strategic Plan (CSP). The IP&R Framework is set out in the Local Government Act 1993. This framework

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The CSP identifies what the community wants for the future of the LGA and

TOWARDS 2030 COMMUNITY STRATEGIC PLAN 2017



- Sustainable and environmentally sensitive development outcomes that consider the impact on the natural
- Infrastructure provision and maintenance that meets community expectations and needs
- An environment that is protected and conserved for future generations
- Renewable energy options that are understood and accessible by the community

PMHC continues to look to the future and therefore has already begun preparing the "Think 2050 CSP" which will supersede the current CSP when completed.

THINK 2050 COMMUNITY STRATEGIC PLAN

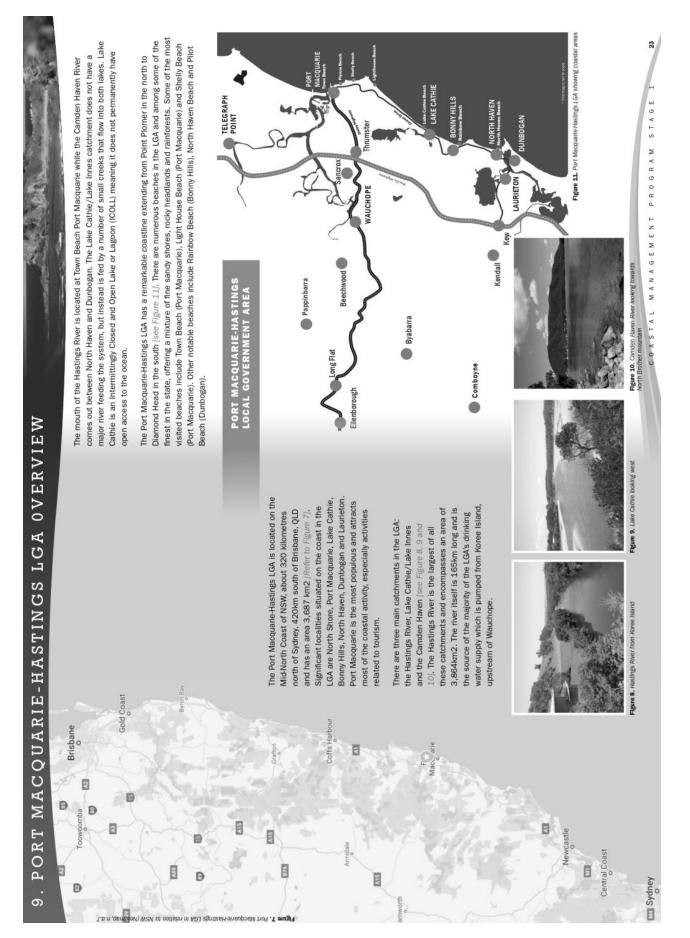
Port Macquarie-Hastings Council launched the Think 2050 Community Strategic Plan and commenced community engagement on 4 December 2019.

that live, work, study, attend school or do business, as well as those that shop or visit Think 2050 is centered on engaging with everyone in our community including those our beautiful region.

future needs of the region. These findings will be incorporated into the CMP as they Throughout the first half of 2020 Council will be engaging with community members and asking for ideas, suggestions, and feedback to help plan for the ongoing and develop.







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10.1 CLIMATE

The PMH LGA is located in the subtropical region of Australia where it experiences a warm temperate climate Summers are moderately warm and humid with coastal storms often occurring in the evening during the later summer months. Winters are generally mild with frosts often occurring in the inland areas. Weather data sampled at the Port Macquarie Airport shows the mean maximum temperature is 23.8° C and the mean minimum temperature is 12.7° Celsius. The mean annual rainfall for the LGA varies depending on proximity to the coast and the higher peaks inland. Generally speaking, the mean annual rainfall for the LGA is approximately 1500mm.

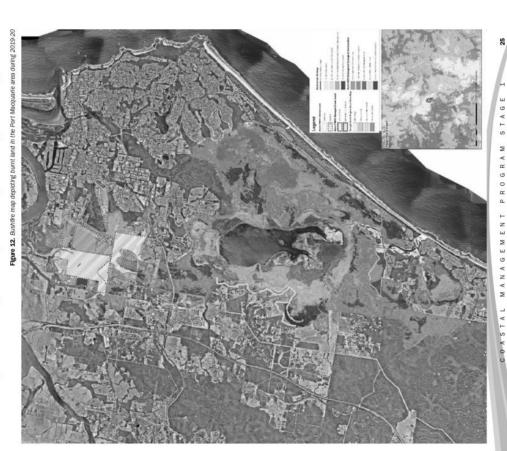
As is the rest of NSW and Australia, PMHC is prone to experiencing prolonged droughts with significantly less than average rainfall occurring throughout the region at times. This leads to lower river levels and increased bushfilre intensity and frequency.

10.2 SIGNIFICANT CLIMATIC EVENTS

PMHC experiences a number of coastal storm events with the latest significant event being the East Coast Low of June 2016. This event included strong north-easterly winds (gusts up to 120km/h) with the highest individual wave recorded on the NSW coast of 17.7m at Eden (BOM, Manly Hydraulics Laboratory and OEH, 2016). This event occurred at the same time as the winter solstice spring tide and significant rainfall which both compounded the erosive damage and storm debris to PMHC's coast. PMHC has experienced some major flood events (1963 and 1968) as well as more frequent relatively minor events (1978, 1995 and 2013). The 1963 flood was the worst in the lower catchments (Hastings & Camder Haven) due to high ocean conditions. This was estimated to be a "1 in 100year" event and anecdotally the worst Wrights Creek flood recorded. The 1968 flood was also estimated to be a "1 in 100year" event and mostly affected the upper catchments due to high rainfall. The 1978, 1995 and 2013 Hastings River floods were all approximately "1 in 20 year" events. Drought has affected most of New South Wales since early 2017 and in 2019 the PMH LGA experienced its lowest recorded amount of annual rainfall (514mm) since 1870. The rainfall deficiencies contributed to the stoppage of water flow in the Hastings River which meant that PMHC and private landholders were unable to extract water for domestic and irrigation purposes from the system. This also led to heavy water restrictions being placed on the local community by PMHC. The Lake Cathie/Innes estuarine system was also adversely affected by the ongoing drought conditions. Council last artificially opened the lake entrance in July 2018 as the lake reached 1.6m AHD and began affecting properties that are susceptible to nuisance flooding. Post opening, a lack of rainfall and small depositional waves naturally closed the entrance and with high temperatures and high evaporation rates following the closure, the lake dropped to very low levels. The lowerd water levels within the system exposed extensive foreshone areas comprising ASS, caused elevated water temperatures, low dissolved oxygen levels, hypersalinity and fish kills. During the extraordinarily damaging bushfire season of 2019-20 approximately 140,000 Ha of land was burned within the PMH LGA. This included 3.572 Ha around the Lake innes Nature Reserve south to Lake Cathie and around the Queens Lake Conservation Area [*Relet to Figure 12*]. There has been considerable debate regarding the underlying cause of the intensity and scale of the recent fires, including the role of fire management practices and climate change. Burshfires however, are not new to the area, major bushfire events being experienced in the past. Since 2000 there have been significant fires in Limeburners National Park (2002 &

2010), Christmas Bells Plains (2002), Bonny Hills (early 2000's) Dunbogan (2005) and Pappinbarra (2017 & 2019).

Bushfires can have various impacts on waterways both during and post fires. The key contaminants of concern for managers include increased suspended solids and turbidity, increased nutrients, increased risk of toxic aligal blooms and increased metal concentrations. Fire also increases the potential for runoff and erosion as well as unburnt organic matter washing into waterways and reducing dissolved oxygen as it decomposes.



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Agure 18. Lake Cathle East Coast Low Event June 2016 - during eveni ooking south along fillaroo Road.

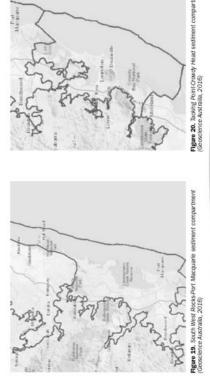
10.4 SEDIMENT COMPARTMENTS

Rgure 17. Lake Cathle East Coast Low Event Ame 2016 - during early phases of event, looking south along lillaroo Road.

Coastal sediment compartments are defined areas that have similar coastal processes and are based on sediment flows and landforms. The Australian Government initiated the Coastal Compartments Project which aimed to establish a consistent being mapped along Australia's entire coastline. These sediment compartments are divided into three levels: approach in managing Australia's coastline (Thom, N.D.). This project resulted in sediment compartments

- · Primary level defined by large landforms e.g. headlands and rivers
- Secondary level defined by sediment movement within and between beaches
- Tertiary level where sediment moves in the nearshore area e.g. individual beaches

with KSC and the Tacking Point-Crowdy Head sediment compartment [see Figure 20] is shared with MCC. These PMHC shares two coastal sediment compartments with neighbouring Councils that are defined as secondary level compartments. The South West Rocks-Port Macquarie sediment compartment [see Figure 19] is shared sediment compartments are identified in Schedule 1 of the CM Act.



taken 8th September 2015 and right photo was taken 26th Cract hin Fact Figure 16. Lake





coast beaches and rocky headlands with significant

The open coastline is made up of sandy open-

Wetland and Littoral Rainforest Area (CWLRA), and

portions of the coastline made up of the Coastal

National Parks. Parts of the coast are susceptible

to coastal erosion, in particular, Town Beach and

Lake Cathie Beach (Lighthouse Beach).

Figure 14. During



erosion of the sand dune happens often after storm

typical unconsolidated beach sand. Despite this,

rock) which is more resistant to erosion than

houses and public assets to the shoreline means

beach in the LGA. While there are not residential

properties under threat, there are a number of

events and the close proximity of privately owned it requires management. Town Beach is the main

underlying consolidated or indurated sands (coffee

Lighthouse Beach at Lake Cathie is comprised of

Figure 15. And after looking east towards Kiosi



Beach (Corilla Estate) and Dunbogan Beach. These

assets such as roads and park infrastructure that

erosion has been identified, though not studied,

are exposed to this risk. Other beaches where

are Rainbow Beach, Shelly Beach, North Shore

are areas where investigations may be considered

during the CMP process.





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large event was recorded in June 2016 [pictured in

Figures 13 to 18 to the right].

coastal erosion and washing up of debris. One

and southerly winds throughout the cooler winter months. East Coast Lows have occurred causing northeast winds throughout the summer months

The open coastline experiences predominantly

10.3 PHYSICAL FEATURES AND

COASTAL PROCESSES

climate with the predominant swell wave direction significant wave height is measured at 1.6m with

The coastline is subject to a high energy wave

being south-south-east. The average deep-water

the average wave period being 10 seconds as

recorded at Crowdy Head (SMEC, 2008).

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	reduce bank erosion, encourage regeneration of native vegetation, accumulation of woody debris and to increase riparian width, continuity and connectivity to larger tracts of remnant vegetation. • Native riparian plantings: to replace exotic dominants, site rehabilitation and native regeneration assistance, increased riparian width, continuity and connectivity to larger tracts of remnant vegetation.	 LAKE CATHIE AND LAKE INNES CATCHMENT Weed monitoring for the movement and spread of weed species. Weed control for the removal of various noxious and environmental weed species. 	 Maintaining adequate riparian width - supports ecological function by buffering against exotic species and environmental impacts while allowing for the accumulation of woody and non-woody debris, which through the provision of niche habitats supports native woody regeneration and native animal species. Investigate subcatchment nonpoint sources of TN, TP and NOx to the estuarine lagoons. 	All other sites/sub-catchments investigated produced similar management actions seen in the following table: Sites Weed Native Fending Weed Work Mantain Autor High mutient montoning control plantings Prevels debis Ripartain quality concentrations
	Water quality was moderate across both Hastings and Camden Haven catchments and had declined from 2011 to 2015, driven largely by high nutrient concentrations more activity of and hand its content	oxygen - all of which we directly linked to very low flows experienced during the study. Aquatic macroinvertebrate condition was moderate across the catchments with a small decline	between the two assessments in abundance and richness. Again this was the result of low flows and macroinvertebrate condition did improve in the latter stages of the assessment when stream	flows increased, indicating a resilience to extreme low flows. It is noted though that this resilience is reliant on good habitat quality which is linked to good riparian condition.
8	ESTUARY CATCHMENTS AND RIVER CONDITION Estuaries in the PMHC LGA are the Hastings River estuary, Camden Haven River estuary and Lake	Cathie-Lake Innes estuary. PMHC shares two estuaries with neighbouring Councils. The Camden Haven River Estuary is shared with MCC and the Hastings River Estuary is shared with KSC.	Consultation with other local councils on the draft CMP is required by s16 (1) (b) (i) and (ii) of the CM Act where those councils share a coastal sediment	compartment or escary as specimen in screecure 1 of the CM Act. Consultation will occur with each Council in developing management actions for these shared areas

ECOHEALTH MONITORING

Ecohealth reports determine the health of estuaries and rivers in the LGA based on effects from diffuse plankton) and are provided with a score. Ecohealth sources. They are assessed based on Ecohealth geomorphic condition, macroinvertebrates and indicators (water quality, riparian vegetation, Reports were prepared in 2012 & 2017.

good condition. The Camden Haven catchment was were the dominance of invasive weeds, vegetation clearing that has reduced riparian connectivity and while the Hastings River catchment was moderate Hastings River main stem. Main issues identified decline in geomorphic condition which highlights lagoons where it was assessed as being in very assessed as having moderate riparian condition Camden Haven catchments there was a typical the Hastings River catchment declined and the Camden Haven River catchment had no change (Darren Ryder, 2017). Across the Hastings and in the freshwater reaches, but was poor in the Cathie catchment slightly declined from 2011, the importance of maintaining healthy riparian vegetation to promote bank stability. The best riparian condition was surrounding the coastal 2017) gave the LGA an overall score of "C" which is rated as fair. The Lake Innes/Lake The 2017 Ecohealth report (Darren Ryder, damage from livestock.

The management priorities identified in the Ecohealth report (freshwater and estuarine reaches) included:

HASTINGS RIVER CATCHMENT

- Weed monitoring for the movement and spread
- Weed control for the removal of various noxious of weed species.
 - and environmental weed species.
- Native riparian plantings for site rehabilitation, riparian width, continuity and connectivity to native regeneration assistance, increased
- Riparian fencing to reduce livestock impact and larger tracts of remnant vegetation.
- debris and to increase riparian width, continuity reduce bank erosion, encourage regeneration of native vegetation, accumulation of woody and connectivity to larger tracts of remnant vegetation.
- Investigate subcatchment sources of TN, TP, NOX and SRP to the river.

CAMDEN HAVEN CATCHMENT

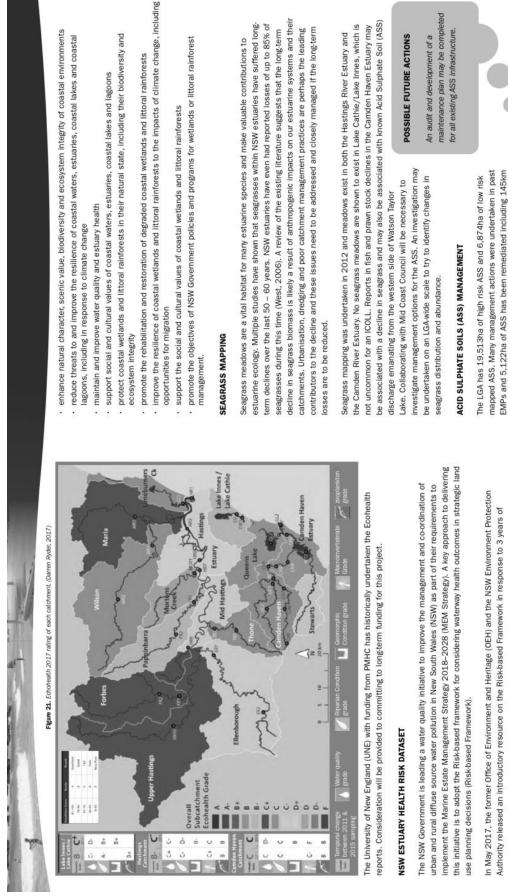
- Weed monitoring for the movement and spread of weed species.
- Weed control for the removal of various noxious
 - and environmental weed species.
- Investigate subcatchment nonpoint sources of TN and NOx to the river.
- Phase out exotic dominants planting of native canopy species to replace strategic removal of
- Riparian fencing to reduce livestock impact and

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exotic canopy and midstory species.

	8	control	plantings		phase-out	2	width	quairty	concentrations
Black Creek (BC1)	γ	Y	Y	Υ	Υ		Y	Poor	TN, NOX
Camden Haven (CH2)	٢	Y	٢				٨	Moderate	TN, NOX
Camden Haven (CH4)	γ	Y					٢	Poor	TN, NOX
Camden Haven (CH5)	γ	Υ			γ		Y	Very poor	TN, NOX
Camden Haven (CH6)	Y	٢					٨	Moderate	TN, NOX
Camden Haven (CH7)	γ	Y		Υ	Y		Y	Poor	TN, NOX
Camden Haven (CH8)	γ	٢		Υ			Y	Moderate	TN, NOX
Camden Haven (CH9)	٢	٨					٨	Poor	TN, NOX
Lake Cathie (CW1)	٢	٢					٨	Poor	TN, TP, NOX
Ellenborough River (ER1)	٢	٢	٢	γ			٨	Moderate	TN, TP, NOX
Ellenborough River (ER3)	Y	Y		Υ			Y	Poor	TN, TP, NOX
Forbes River (FR1)	٨	٨	٢	Υ	٢		Y	Good	TN, NOX
Forbes River (FR3)	٨	٨		٢			Y	Moderate	TN, NOX
Gogleys Lagoon (GL1)	٨	٢					Y	Moderate	TN, NOX, TP, SRP
Hastings River (HR1)	٨	٨			γ	٨	Y	Moderate	TN, NOX, SRP
Hastings River (HR3)	٨	٨	٢	٢		٨	×	Moderate	TN, NOX, SRP
Hastings River (HR6)	γ	γ	Y	Υ	Y		Y	Poor	TN, NOX, SRP
Hastings River (HR7)	٢	٢	٢	γ	٢		٨	Poor	TN, NOX, SRP
Hastings River (HR8)	γ	Y	Υ	γ			٢	Moderate	TN, TP, NOX
Hastings River (HR10)	γ	γ	Y	Υ			Y	Poor	TN, TP, NOX
Limeburners Creek (LC1)	Υ	γ					٢	Moderate	TN, NOX, SRP
Lake Innes (LL1)	Υ	Y					Y	Poor	TN, TP, NOX
Mortons Creek (MOR1)	γ	Y		Υ	Υ		Y	Moderate	TN, NOX
Maria River (MR1)	Υ	Y		Υ			٢	Very poor	TN, NOX
Pappinbarra River (PR1)	γ	Y		Υ	Υ		Y	Moderate	NOX
Pappinbarra River (PR2)	Υ	Y		Υ			Y	Good	NOX during low flows
Queens Lake (QL2)	٨	٨					٨	Poor	TN, NOX, TP, SRP
Thone River (TR1)	γ	Y	Y	γ			Y	Moderate	TN, TP, NOX
Thone River (TR2)	٢	٢	٢	Υ			٨	Moderate	TN, TP, NOX
Upsalls Creek (UC1)	γ	Y		Υ	Υ		Y	Moderate	TN, NOX
Upsalls Creek (UC2)	٢	Y					٢	Moderate	TN, NOX
Watson Taylors Lake (WT2)	Υ						٢	Poor	TN, NOX, TP, SRP
Wilson River (WR1)	Υ	Y	Y	Υ	Υ		Y	Poor	TN, NOX
Wilson River (WR3)	Υ	Y	Υ	Υ	Υ		Y	Moderate	TN, NOX
tal	34								N/A

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Authority released an introductory resource on the Risk-based Framework in response to 3 years of consultation on urban planning and wider catchment management. The former OEH applied the first two steps of the Risk-based Framework and produced the NSW Estuary Health Risk Dataset to help inform Stage 1 scoping studies during the preparation of coastal management programs where further studies and/or management actions in a catchment would help achieve outcomes for coastal environment areas and coastal wetlands and littoral rainforests areas specified in the Coastal Management under the NSW Coastal Management Manual (2018). The dataset can be used to map (spatially prioritise)

protect and enhance the coastal environmental values and natural processes of coastal waters, estuaries, Act 2016. These outcomes are specifically to: coastal lakes and coastal lagoons

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Estuaries and rivers in the LGA are under an ever-growing threat of encroaching development. Managing development and its impacts is a key management action for the CMP

these are on private land. Works may involve a joint venture with Kempsey Shire and with Mid Coast Council to There are multiple solutions for managing ASS issues. These may include engineered weir structures such as what was installed in partnership with Partridge Creek landholders or to fill the drains completely but many of

of excavated drains and channels.

achieve management actions for Watson Taylor Lake, Stewarts River and surrounding lands

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COASTAL MANAGEMENT PROGRAM STAGE



10.5 HABITAT CONDITION

includes specific areas of biological importance. Limeburners Creek contained a 'nationally significant population' (as defined by Federal areas in NSW. Lake Innes Nature Reserve has been considered the engine room' for Koala populations in the LGA and has historically range of both terrestrial and aquatic plants and animals. The area Nature Reserve for example, is one of only two coastal wilderness The PMHC LGA is an area rich in biodiversity supporting a diverse council land are some of the largest remaining patches of littoral Government criteria). Sea Acres Nature Reserve and adjoining rainforest, particularly outside far northern Queensland.

The estuaries and foreshores of the Camden Haven and Hastings Rivers are of immense importance for migratory shorebirds listed under international conventions and agreements. The PMHC LGA has, until recently, been identified as an area that held the largest remaining coastal population of koalas. A lot of significant increase in development over a number of years and work has been done, and continues to be done, in maintaining these populations which continues to be challenging given the ncreased bushfire severity and intensity.

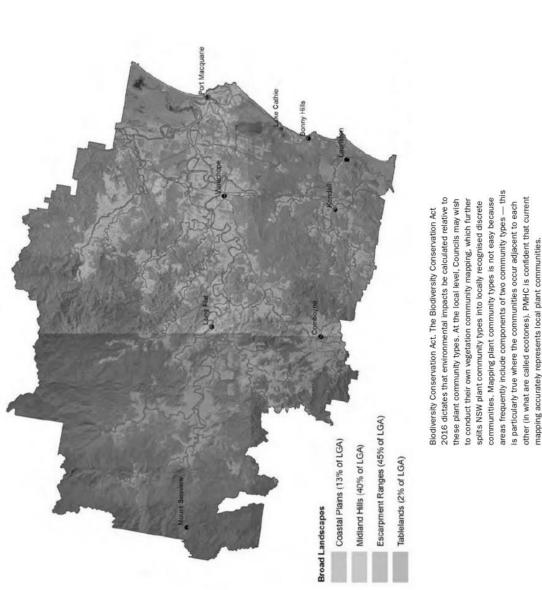
NATIVE VEGETATION

The PMHC LGA can be broadly divided into four landscapes: Coastal Figure 22]. Each of these different landscape units has different supports a different assemblage, or mix, of plants and animals. Plains, Midland Hills, Escarpment Ranges and Tablelands [see biophysical factors (e.g. geology and climate) and therefore

Broadly speaking, PMHC has a good coverage of remaining native vegetation however the Coastal Plains Landscape has undergone the most extensive development and has the lowest percentage (56%) of remaining vegetation.

approximations only given the dynamic nature of these lists and PMHC has completed detailed vegetation mapping which shows are 83 vegetation communities that have been mapped. There animal species recorded in the PMHC LGA. Of these, there are and 9 threatened ecological communities. These numbers are are approximately 1,890 native plant species and 621 native approximately 140 threatened animals, 50 threatened plants all remnants outside state forests and national parks. There limited knowledge.

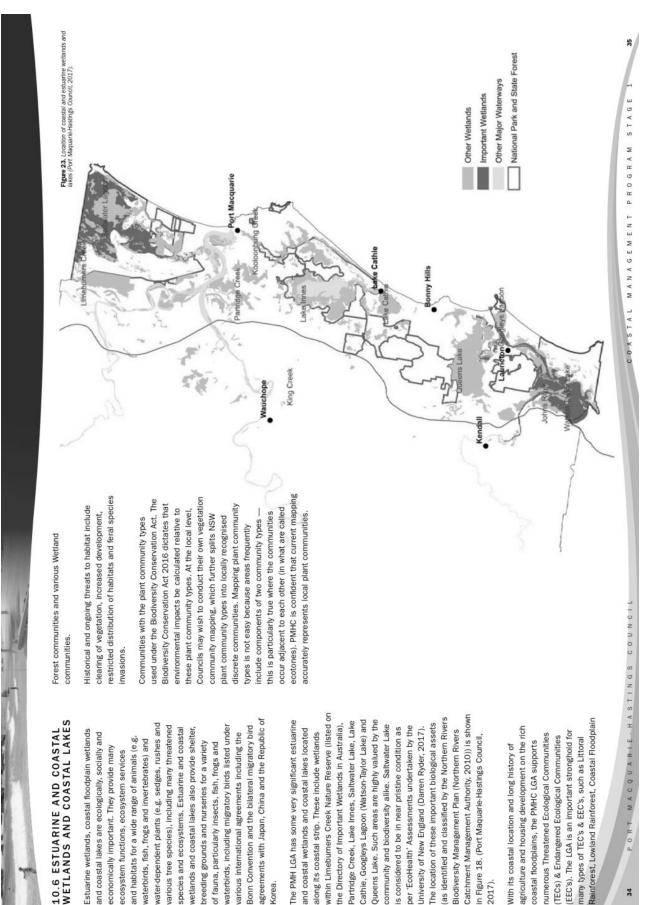
Communities with the plant community types used under the PMHC is attempting to align the Port Macquarie Vegetation



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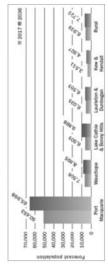
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11.1 COMMUNITY DEMOGRAPHICS AND POPULATION

approximately 104,000 by 2036 [as shown in Table 2]. This growth is expected to be concentrated in the major town and villages, particularly in Port Macquarie which is comprised of many significant coastal areas. This The PMH LGA has an estimated population of 84,525 as of 30 June 2019 (Australian Bueeau of Statistics, ERP 2019) with a population density of 0.23 persons per hectare. The population is expected to grow to population increase will create demand for approximately 10,000 more dwellings by 2036.

Port Macquarle-Hastings Council area			Forecast year		
	2016	2021	2026	2031	2036
Population	79,905	86,183	92,240	98,123	103,993
(5yrs)		6,278	6,057	5,884	5,870
Average annual change	ţ.	152%	137%	1.24%	1.17%
Households	34,097	36,646	39,185	41,649	44,077
Average household size	2.31	2.31	2.31	2.31	2.31
Population in non-private dwellings	1,277	1,639	1,899	2,019	2,229
Dwellings	37,024	39,626	42,273	44,899	47,496
Dweiling occupancy rate	92.09	92.48	92.70	92.76	92.80

Table 2. Forecast population, households and dwellings (.id, 2017)



centres in PMHC LGA to 2036, Growth for key Figure 24. Forecast Population UGMS. PMHC, 2018. PMHC has developed an Urban Growth Management Strategy to ensure that land use and population growth for current and future generations. A "balanced way" means that social, economic and ecological objectives are balanced with each other (Urban Growth Management Strategy - Port Macquarie-Hastings Council). This will be managed to maintain and enhance quality of life for all persons in the community in a balanced way strategy is closely integrated with PMHCs Towards 2030 Community Strategic Plan

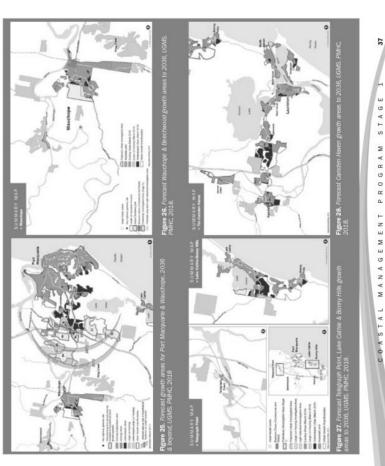
2018). The majority of existing developed land is within close proximity to the coast and needs to be managed westward of Port Macquarie due to several constraints including national parks and flood-prone lands. (PMHC, The UGMS has identified that the main areas planned for new residential development are located in Port Macquarie, Lake Cathie/Bonny Hills and near Kew in the Camden Haven. Future growth is being directed for any risks accordingly.

Bonny Hills. Coastal areas are used extensively throughout these periods, especially beaches and foreshore Macquarie is the most affected by this influx along with other key coastal centres such as Lake Cathie and The PMHC LGA experiences a large influx of tourists during the summer months and school holidays. Port eserves, which places pressure on PMHC to ensure that these areas are not adversely affected.

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Port Macquarie-Hastings Council area Total persons (usual residence)		2016			2011		Change
	Number	ж	Regional NSW %	Number	ж	Regional NSW %	2011 to 2016
Bables and pre-schoolers (0 to 4)	3,820	4.9	5.8	3,985	5,5	6.3	-165
Primary schoolers (5 to 11)	6,473	8.2	8.9	6,165	8.5	9.0	+308
Secondary schoolers (12 to 17)	5,694	7.2	7.3	5,715	7.9	8.2	-21
Tertiary education and Independence (18 to 24)	4,637	5.9	7.9	4,338	6.0	8.1	+299
Young workforce (25 to 34)	6,634	8.4	11.0	5,706	7.8	10.4	+928
Parents and homebuilders (35 to 49)	13,023	16.6	18.0	13,322	18.3	19.5	-299
Older workers and pre-retirees (50 to 59)	10,903	13.9	13.8	10,156	14.0	13.9	+747
Empty nesters and retirees (60 to 69)	11,852	15.1	13.1	10,549	14.5	119	+1,303
Seniors (70 to 84)	12,523	15.9	11.4	10,315	14.2	10.3	+2,208
Elderly aged (85 and over)	2,981	3.8	2.7	2,446	3.4	2.3	+535
Total	78,540	100.0	100.0	72,697	100.0	100.0	+5,843

Table 3. PMHC's age structure from the 2011 and 2016 Census compared with Regional NSW. PMHC generally has a higher proportion of older age groups.(Ad. 2017)



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	Plan Reference	Hastings River EMP • Statianably maintain the estuary's ecological quality evolution that convict timber cutters • Hastings River EMP • Statianably maintain the estuary's ecological quality evolution to the supply of hardwood • Evolution that and error fusitives, intersyste and recreation estuartion a value mic of tuariness. • Evolution to the supply of hardwood • Evolution that and error fusitives poles. The North Coast Railway reached • Evolution that and error fusitives • Evolution that and error fusitives • Evolution that and error fusitives	Canden Haven EMP Visual aestricts such as North Brocher backdrop or commerce. In the early part of gs, Marta, Wilson and Canden Areas of other waterways Areas of other waterways gs, Marta, Wilson and Canden Areas of other waterways Areas of other waterways transportation began in earnest Areas of other waterways transportation began in earnest Areas of other waterways framework Areas of other waterways framework Areas of other waterways
6	11.2 CULTURE AND HERITAGE	has driven the area's of the hinterland in th eepers and electricity	Wauchope in 1915. The extensive local river systems provided highways for commerce. In the early part of the 1900's log dumps dotted the banks of the Hastings, Maria, Wilson and Canden Haven Rivers only to be rendered obsolete when road transportation began in earnest following World War II.

The area around the Hastings River has been home to the Birpai Aboriginal peoples for tens of thousands of years. Surveyor-General John Oxley changed traditional Birpai life with the mapping and naming of this area in 1818. In 1821 Port Macquarie was established as a place of secondary punishment under the Governorship of Lachlan Macquarie. In 1830 Port Macquarie was proclaimed open to free settlement. The LGA has four Aboriginal representative bodies under the Aboriginal Land Rights Act 1983: The Birpai Local Aboriginal Land Council, Burnyah Local Aboriginal Land Council, Kempsey Local Aboriginal Land Council and Taree-Purfleet Local Aboriginal Land Council. An LGA-wide Aboriginal heritage study is planned to be undertaken in the near future. The LGA boasts a significant amount of heritage locations located in the coastal zone, particularly with Port Macquarie being settled in the early 19th century. The Municipality of Hastings Heritage Study was completed in July 1991 to identify heritage items related to European settlement and does not include issues related to Aboriginal or natural heritage.

The PMHC LEP lists known European heritage items in the PMHC LGA and limits development where these items are located. These locations are mapped in PMHC's GIS system.

11.3 COMMUNITY VALUES AND USES

Previous community consultation has been undertaken for CZMPs and EMPs. The values that were identified in these consultations [as shown in Table 4].

The findings exemplify that the community values the unique natural beauty of the LGA, access and facilities for recreational activities and the rich biodiversity. It is intended that additional community and stakeholder engagement sessions will be undertaken in Stage 2 of the CMP process to further build on this information.

Hastings River EMP	 Sustainably maintain the estuary's ecological quality Protecting the maine environment Maintain a value from of business, lifestyle and recreation Maintain autoreness Exposite for future generations
Canden Haven EMP	Wisual aesthetics such as North Brother backdrop Wisual aesthetics such as North Brother backdrop Areas of privaterways Recreational coulting Recreational insting Recreational insting Inque utan environment Thiseman estimate Shortman vegetation Shortman Sucha
Lake Cathe EMP	Recreational Values (Swirmming, wading & pick-ricking) Recreational Values (Swirming, wading & pick-ricking) Recreational Values (Shiring & grawning Nature observation (canoeing, waking birdwatching) Surissan Nexual mentify
Lake Cathle CZMP	• National environment: Coen, breach, estuatory and lake, littorial rainforest, climate and natural beaufy. <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i> <i>Litexylas:</i>
Town Beach CZMP	Environmentat Environmentat Provide Sector Provide Se
Table 4. Community values and uses identified from CZMP's and EMP's.	m cZMPs and EMPs.

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COASTAL MANAGEMENT PROGRAM STAGE

Approximately 29,000 people work within the PMH LGA with over 2,500 of those jobs supported by tourism. The largest employer by industry is Retail Trade (3,295), Construction (2,995) and Education and Training the Health Care and Social Assistance sector (5,419) followed by the (2,755) [see Figure 30].

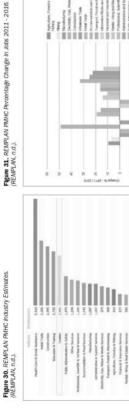
rourism

stand-up paddle boarding, surfing lessons, cafés and restaurants, deepcoastal walks with Port Macquarie the main destination. An increasing visitors will inevitably put more pressure on the coastal environment. predominantly tourist activities such as tour boats, whale watching, Many businesses rely on the continued use of the coastal zone for Tourists are generally drawn to the scenic beaches and accessible local population combined with abundant and frequent tourist sea fishing and scuba diving.

important to maintain the naturalness and environmental attributes Promoting Port Macquarie-Hastings as a tourist destination is a significant contributor to the local economy, but in doing so it is that keep visitors coming to the area.



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AGRICULTURE, FORESTRY AND FISHING SECTOR

extending from Gogleys Lagoon at the entrance into Watsons Taylor and Queens Lake. Oyster production in the The Agriculture, Forestry and Fishing sector makes up approximately 818 jobs in the LGA. Commercial fishing, River extending to Munns Channel, Blackmans Point and Limeburners Creek, and in the Camden Haven River Hastings River peaked in 1987/88 producing 433.9 tonnes and in the Camden Haven River the peak was in prawning and oyster farming are still active throughout the LGA. Oyster leases are prevalent in the Hastings 1977/78 producing 285.6 tonnes. Since then, there has been a steady decline with the Hastings River and

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Camden Haven River producing 176.5 tonnes and 285.6 tonnes respectively. In comparison to the surrounding have remained commercially viable [see Table 5]. Oyster production in NSW has declined since the mid 1970's estuaries of the Manning and the Macleay River, The Hastings River and the Camden Haven River appear to which has been attributed to many factors such as oyster disease, the effects of Pacific Oyster introduction and the degradation of water quality in many coastal rivers, lakes and estuaries.

In 2018, Fishing, Hunting and Trapping and Aquaculture contributed \$46.971 million to the total PMH LGA revenue [see Table 6]. (NSW DPI, 2016).

(12

Estuary	Historic Peak (tonnes)	2014/2015 (tonne
Macleay River	367.6 (1974/75)	19.8
Hastings River	433.9 (1987/88)	176.5
Camden Haven	229.5 (1977/78)	285.6
Manning River	428.4 (1960/61)	70.5

and Table 5. Oyster Production in the Macleay, Hastings, Camden Haven a Manning Rivers from historic peaks to 2015/2015. (NSW DPI, 2016).

Industry Sector	5M	,	3M	% 9M
Fishing, Hunting & Trapping	\$16,199	0.2%	\$4,352	0.1%
Aquaculture	\$30,772	9.3.8	\$32.886	0.5%
sub-Total	\$40.971	0.5%	\$31.237	0.6%

Table 6. 2012 - 2018 Revenue for Fishing, Hunting & Trapping and Aquaculture. (REMPLAN, n.d.).

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COASTAL MANAGEMENT PROGRAM STAGE

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LOCAL ENVIRONMENT PLAN 2011 NSTRUMENTS

13.1 LAND-USE PLANNING

The Port Macquarie-Hastings Local Environment

provides development restrictions and provisions in and conserve the environment in the LGA. The LEP Plan 2011 (LEP) contains provisions to protect certain lands as defined in the LEP

For the protection of PMHC's coastline, it has the

- Development consent is required for works on following restrictions or provisions: ė
 - land identified in the Acid Sulphate Soils Map. Management Plan in accordance with the Acid The types of allowable works vary depending works on ASS require an Acid Sulphate Soils depth and adjacency to higher classes. Any Sulphate Soils Manual.
- development above the mean high-water mark of and cultural significance and high biodiversity values. Development consent is required for any lake, the Coastal Wetland and Littoral Rainforest significance, land within 100m of the previously including coastal waters of the State, a coastal Exempt or complying development cannot be carried out in environmentally sensitive areas Area (CWLRA), an aquatic reserve or marine park, land within a wetland of international mentioned, as well as areas of aboriginal tidal waters. ġ.
 - 5 are located require an assessment in order Land on which aboriginal or heritage items preserve the cultural significance. 0
- defined in the Flood Planning Area and cannot be granted if detrimental increases are identified to Development consent is required for land other properties or environmental factors. ö
 - Development consent is required for any land mapped as having a coastal erosion risk and cannot be granted unless impacts from the hazards are not increased and the risk is managed appropriately.

DEVELOPMENT CONTROL PLAN 2013

At present, there are two development control plans Hastings Development Control Plan 2011 (DCP in force: 2011 and 2013. The Port Macquarie-2011) applies to specific areas within the LGA

development control plan and is the key supporting Control Plan 2013 (DCP 2013) has conditions that area-specific parts. The DCP 2013 is the primary apply to all land within the LGA as well as some while the Port Macquarie-Hastings Development guidance on design considerations and general document to the LEP and provides detailed standards.

relating to protection of the coastal zone including: The DCP makes provision for various aspects

- Protection Endangered Ecological Communities
- Compliance with Council's Flood Policy
- Stormwater controls (Council's AUSPEC Design
 - Specifications)

(CWLRA) is land that displays the hydrological and littoral rainforest communities and lands adjoining The Coastal Wetland and Littoral Rainforest Area floristic characteristics of coastal wetlands and those features (OEH, 2018). Coastal wetland and littoral rainforest communities very sensitive to certain types of development and have high biodiversity values and are of regional and state significance. These communities are

COASTAL WETLANDS

and Limeburners Creek area. Locations adjacent to some tributaries to the Hastings River such as King Creek, Sarahs Creek and Stoney Creek are mapped along the banks of the Maria River, Wilsons River areas throughout the LGA. In the Hastings River the floodplains along the Hastings River in close proximity to the airport, extending to the north patches mapped in the upper catchment near catchment, they run along Koolonbung Creek, as Coastal Wetlands. There are also isolated Rollands Plains and Upper Rollands Plains. Coastal Wetlands are identified in low-lying

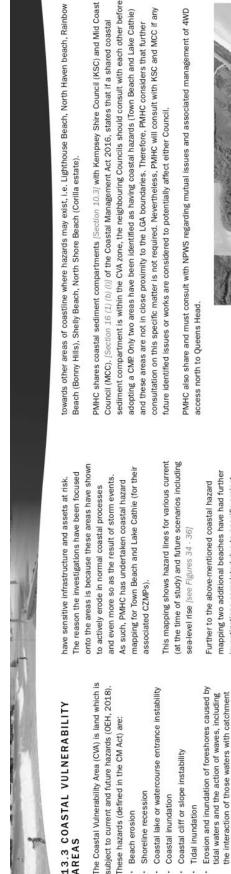
In the Lake Cathie/Bonny Hills area, Lake Cathie

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COASTAL MANAGEMENT PROGRAM STAGE



Coastal Vulnerability Areas as is defined in the CM risks and impacts of the abovementioned hazards No state-wide mapping has yet been adopted for Various controls are put in place to manage the SEPP

floodwaters

wide Exposure Assessment (OEH, 2017) identified assessment is limited to beach erosion on open The Coastal Erosion in New South Wales State-This assessment includes the PMHC LGA. The a broad overview of coastal erosion potential coast beaches. It uses three methodologies: impacts on assets along the NSW coastline.

- sandy shorelines and proximity buffer distances 1. Proximity analysis (First Pass): This identifies to potentially exposed assets.
- differ from local government hazard lines used in of potential coastal erosion. These hazard lines probabilistic framework to estimate the volume a sediment compartment-based approach and 2. Regional Analysis (Second Pass): This uses the Third Pass.
 - considers hazard lines produced after 2008 due undertaken in an LGA using the Zone of Slope Adjustment as the hazard lines. This pass only Local government hazard lines (Third Pass): This is the result of coastal hazard studies to SLR projection differences.

erosion, with and without storm events and which Council has focused its attention on areas that have had recorded events of significant coastal

Bonny Hills via a coastal hazard study (under a Part 3A approval) and the investigation of Flynns Beach mapping two additional beaches have had further needs. These beaches include Rainbow Beach at during the Flynns Beach Seawall Detailed Design investigations completed due to specific project Report.

mapping for Lake Cathie into the LEP. The mapping now outdated and therefore PMHC will not seek to map this in the LEP Considering that the erosion issues at Town Beach are known and reasonably undertake further hazard studies on this area in the near future. Instead efforts may be directed completed for Town Beach, while still useful, is well defined, PMHC does not see the need to PMHC has incorporated the coastal hazard



Figure 35. Lake Cathie Coastal Hazard Mapping (north) (Lake Cathie CZMP, Port Macquarie-Hastings Council, 2016)



Igure 34. Town Beach Coastal Hazard Mapping (Town Beach CZMP, Port Macquarie-Hastings Council, 2010)



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BMT WBM was commissioned by Port Macquarie-Hastings Council (PHMC) in 2013 to undertake an estuary and coastline inundation mapping study to assist in the assessment of areas at risk from sea level rise The aim of the study is to determine the estuarine and coastal inundation extent for a range of design ocean events including:

- spring tide;
- king tide;
- 1 year Average Recurrence Interval (ARI);
 - 50 year ARI, and;
- 100 year ARI.

The three epochs and associated mean sea levels (MSL) included in the study are: Current (MSL = 0.0 m AHD), 2050 (MSL = 0.4 m AHD), and 2100 (MSL = 0.9 m AHD).

(SLR) the mapping in this study shows the impact of 0, 0.4 and 0.9 m of SLR but does not specify the timing of these changes to mean sea level. The best available estimates of sea level rise projections indicate that in sea level (relative to the 1990 mean sea level) of 0.4 metres by 2050 and 0.9 metres by 2100 (DECCW, 2009). It is important to note that due to the inherent difficulty in forecasting actual rates of sea level rise These levels are based on the previous NSW Government planning benchmarks which are a projected rise these increases in mean sea level will occur by the year 2050 and 2100 as presented in the former NSW Planning Guidelines and adopted by Council (along with many other coastal Councils in NSW).

The study uses three numerical models of the major estuaries in the LGA including:

- Hastings;
- Lake Cathie/Lake Innes, and;
- Camden Haven.

High quality mapping of the inundation extents for the estuaries and coastal areas was undertaken using LIDAR ground elevation data collected for Council in October 2005 [see Figure 37].

studies in order to evaluate potential risks associated with future events. The areas identified below are based from tidal inundation due to SLR. This "first-pass" assessment may be used by Council to undertake further A discussion of changes to predicted tidal inundation extents due to sea level rise for each of the three (3) areas that are susceptible to tidal inundation which will be exacerbated by rising sea levels. It is important to note that the purpose of the study is to produce a "first-pass" assessment of areas that may be at risk on interpretation of the mapped inundation extents provided in the report and are meant as a broad-scale estuaries and the coastline is presented in the report. In particular an attempt was made to highlight key (locality) assessment only.

Hastings River Lake Cathie Catchment: Catchment: • North Shore • Kenwood	Lake Cathie/Innes		
ore		Camden Haven River	Bonny Hills:
	ment:	Catchment:	 Duchess Creek
	 Kenwood Drive 	Dunbogan	
Riverside Idk	Lakeside Way	North Haven	
 Hibbard/Hastings River Drive 		Laurieton	
 Settlement Point 			
CBD/Short Street			
The Hatch			
Blackmans Point			



Figure 37. PMHC LGA Sea Level Rise Mapping (BMT WBM, 2014)

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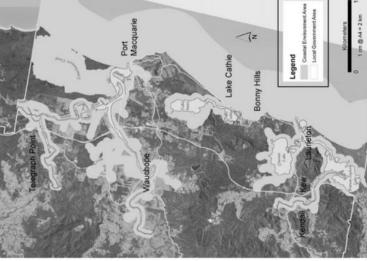
COASTAL MANAGEMENT PROGRAM STAGE

13.4 COASTAL ENVIRONMENT AREAS

Coastal Environment Areas (CEA) are made up of environmental features such as state waters, estuaries, coastal lakes and lagoons. It also includes land adjoining those features such as headlands and rock platforms. (OEH, 2018) [see Figure 38]. Section 16(1) (b)(i) of the Coastal Management Act 2016 states that if two or more Councils share an estuary then consultation with each other is required before adopting a CMP PMHC shares estuaries with KSC (Hastings River

estuaries with KSC (Hastings River Estuary) and MCC (Camden Haven River Estuary). As such, Council will be working in consultation with these neighbouring LGA's before any works are undertaken.

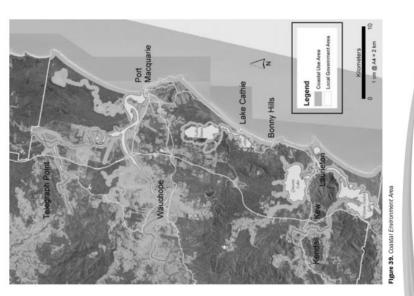
The CM SEPP identifies sensitive coastal lakes where development constraints are needed to limit adverse impacts on water quality. The Port Macquarie Hastings LGA contains a sensitive coastal lake listed in the CM SEPP This being Saltwater Lake in the Limeburners Creek Nature Reserve.



13.5 COASTAL USE AREAS

Coastal Use Areas (CUA) are lands adjacent to coastal waters, estuaries, costal lakes and lagoons, where impacts of development on the use and enjoyment of the beaches, foreshores, dunes, estuaries, coastal lakes and lagoons, and the coean, need to be considered (OEH, 2018) [see Figure 39]. The CM SEPP restricts development in these areas to ensure that adverse impacts on access, overshadowing, visual amenity, Aboniginal heritage and built environment heritage.

be considered during the design and This includes ensuring that there is underlying Plans of Management or themes are addressed through the sufficient beach access, car parks, coastal recreational areas and will ensuring access, use and amenity Community Strategic Plan and the for the community's input into the Masterplans associated with site specific areas. These plans allow design of foreshore reserves and is maintained for the community. boat launching ramps, reserves, signage, etc. Fortunately, these Management of CUAs involves development of the CMP



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COASTAL MANAGEMENT PROGRAM STAGE

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gure 38. Coastal Envi

13.6 COASTAL MANAGEMENT PLAN AREAS

A CMP applies to all, or part thereof, land within the coastal zone as defined by the Coastal Management Act 2016. A Council must decide whether to include all land mapped as the coastal management areas in the CMP

The historical legislative framework has divided management of estuaries and open coasts as separate management areas. PMHC will maintain this approach when developing the CMP

PMHC are proposing to develop one CMP comprised of the following four chapters:

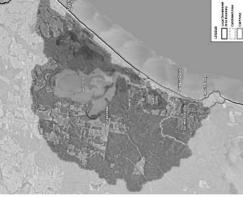
- Lake Cathle/Lake Innes & Bonny Hills Estuary & Coastline incorporating the open coastline from the 4 x 4
 access track adjacent to Dirah Street to the southern side of Grants Head (referred to in this document as
 the Lake Cathle/Bonny Hills chapter for simplicity).
- 2. Hastings River Estuary
- 3. Camden Haven River
- Port Macquarie-Hastings Open Coastline (excluding the open coastline that is covered in the Lake Cathie/ Bonny Hills 4

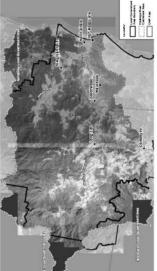
Risk Assessment for Threats/Issues [Table 16] and the pending Stage 2 studies [Table 20], Lake Cathie/Bonny environmental issues and the opening of the lake. Given this increasing focus, along with the results of the Lake Cathie has experienced an ever-growing amount of community concern regarding the management of Hills chapter of the CMP will be prioritised over other chapters

The spatial extent and management actions of the CMP will cover:

1. Lake Cathle/Bonny Hills chapter

Head. This will ensure that the existing CZMP is entrance and its management in times of flood included as it directly interacts with the lagoon coastline from the 4 x 4 access track adjacent to Dirah Street to the southern side of Grants This chapter will cover the Lake Cathie/Lake Innes estuarine system as well as the open mitigation. It will also cover Bonny Hills. Figure 40: Coastal Management Program Study Area - Lake Cathle / Borny Hills





entrance at the Town Beach

to the tidal limits of the

Hastings River. Further

This chapter will cover the

Hastings River Estuary

extending from the

2. Hastings River Estuary

chapter

will be explored during this

chapter's development.

upper catchment extent

distance and amount of

investigations into the

ATTACHMENT

at Program Study Area - Hastings River Catch Figure 41: Coastal Manag



Estuary extending from the

entrance between North

to the tidal limits of the

Haven and Dunbogan Camden Haven River.

the Camden Haven River

This chapter will cover **Camden Haven River**

chapter e,

Further investigations into of upper catchment extent will be explored during this

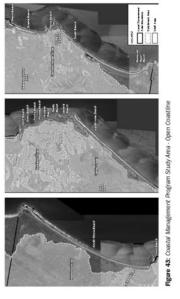
the distance and amount

chapter's development.

Haven River Figure 42: Coastal Management Program Study Area - Camden

4. Port Macquarie-Hastings This chapter will cover all

Open Coastline chapter



of the open coastline within the PMHC LGA with a focus on areas identified as being Flynns Beach, Shelly Beach open coastline from the 4 x Grants Head is not included as it is covered in the Lake Beach, North Shore Beach, 4 access track adjacent to Cathie/Bonny Hills chapter. These areas include Town Dirah Street (Lake Cathie) prone to coastal hazards. North Haven Beach. The to the southern side of Lighthouse Beach and

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large amounts of funding and dedicated resources will have to be a priority. These programs have proven to be ASS project officer, resulting in many benefits to waterway health and sustainable land management practices. Funding, legislation, land ownership and management responsibilities are predominantly the main barriers for undertaking management actions. Broadly speaking, previous management actions undertaken under EMP's funding required. An exception to this is the ASS remediation works that were successfully carried out in the 2000's and early 2010's. Those actions identified in the EMP provided means to seek the employment of an have not had a significant impact on estuary health due to the scale of the actions and the large amount of significant funding and landowner buy-in. In order to continue large scale projects, such as the ASS program, This work which brought about large-scale benefits relied heavily upon dedicated PMHC staff members, and will continue to have the greatest effects in improving and maintaining estuarine health.

programs. However, in reviewing existing management plans there is a good opportunity to renew relationships invaluable opportunity. At times, differing opinions, perspectives and desires can conflict. Financial burdens, ongoing maintenance requirements and legislative hurdles can place challenges in the way of successful Working with landowners and various government stakeholders can be a potential barrier as well as an and continue to work towards better environmental outcomes.

time that has lapsed, any previous arrangements may have ceased, been forgotten or have unknowingly been dismissed by new landholders through ownership transfers. PMHC views working with the community as an For landholders, it has been over 15 years since they have been specifically consulted with and given the essential and valuable component of the CMP process.

For NSW government agencies they may have competing responsibilities and priorities they need to address and manage on the land and in the waterways, which may not align with Council and local community expectations.

including National Parks and Nature Reserves, waterways, Crown Lands and the like. Council must work closely DPIE which includes NPWS, Fisheries, Crown Land, LLS and others, are key stakeholders in the management of the coastal area. These stakeholders have ownership and primary control over much of the coastal land. with these departments since nature knows no land tenure boundaries.

on-ground solutions to difficult problems. It may also assist in leveraging funds or resource sharing to assist organisation. It allows the manifestation of partnerships and collaborative work relationships which achieve Although there are barriers and challenges to this work there are also immense opportunities. Working with government stakeholders in DPIE, environmental organisations, landowners and the Indigenous community and knowledge allow well rounded management decisions to achieve the triple bottom line of environment, in the financial burden and can result in a more rigorous review of an action, giving a better environmental provides Council with a rich tapestry of information and perspective from which to draw. This perspective economy and social needs. It ensures that decisions are made collectively rather than by an individual outcome.

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CMP THE ΟF SCOPE . 2

This includes two CZMP's (one of which has been gazetted), three, EMP's, vegetation mapping, sea-level rise PMHC has already completed an extensive number of plans and studies in relation to coastal management. mapping, and floodplain mapping. The scope of the CMP should build upon existing knowledge of environmental, economic and social issues and the effectiveness of any management plans currently in place.

The Manual indicates that CMP's should consider the following factors when determining the scope:

- · Local management issues, challenges and opportunities identified for each coastal management area, including the spatial extent
- Effectiveness of existing management approaches and land use planning instruments to address current and future challenges
- Responsibilities and capacities of Council, public authorities, communities and other stakeholders to address coastal management issues
- Future population growth and development pressures
- Risks and liabilities associated with coastal hazards and threats to coastal environments
- Vulnerability of coastal assets, environments and social and economic systems
- Potential opportunities to adapt to change and thereby enhance the resilience of natural features and coastal communities.

management of land within the coastal zone with a focus on achieving the objects of the Act'. The Manual also The purpose of a CMP, as defined by the CM Act is 'to set the long-term strategy for the co-ordinated imposes mandatory requirements as per the CM Act.

PMHC intends creating a CMP that is representative of community values and can sustainably manage issues affecting the present time and future.



16.1 COASTAL ZONE MANAGEMENT PLANS

16.1.1 TOWN BEACH CZMP

under most offshore swell wave directions and that it is this increase in wave energy that has resulted in the wave direction. The investigations and wave refraction modelling carried out show that, while there has been a change in offshore bathymetry, there is an increased wave energy reaching the northern end of the beach of north-easterly swell to Town Beach and a subsequent realignment of the beach to reflect this change in appraisal suggested that changes to the offshore entrance bar have resulted in an increased penetration PMHC commissioned a preliminary appraisal of Town Beach coastal hazards in 2001. The preliminary erosion. (SMEC, 2005).

recession at Town Beach and estimated the beach recession that would be caused by climate change induced transformation modelling and storm bite determination. The study quantified the observed long-term beach Study in 2005. This was a detailed hazard definition study which included photogrammetric analysis, wave Following the preliminary findings, PMHC engaged SMEC to undertake the Town Beach Hazard Definition sea-level rise.

realisation of the recreational and economic potential of Town Beach Port Macquarie-Hastings Council, Definition Study. The Town Beach management of long-term coastal and associated coastal reserves the findings of the 2005 Hazard a strategy to integrate effective CZMP was developed to create finalised in 2010 and built on The Town Beach CZMP was processes with the further



2010) [see Figure 45]. **CZMP Key Issues** Key issues were identified in the CZMP following input from the community, Council and other government

Ongoing management of coastal hazards, particularly coastal erosion and overtopping of the back beach agency officers. These issues include:

- area at the northern end of the beach;
- High levels of usage of the beach and adjacent reserves, often with competing interests in the use of the area;
- Pressure to improve lookouts, reserves and facilities; and
- Management and maintenance of beach access points, amenities and facilities.

eroded from the beach, causing recession of the back-beach escarpment and undermining part of the southern resulting in larger waves reaching the shore than would have done so previously. Consequently, sand is being Indications are that the construction of the northern break wall at the entrance to the Hastings River at Port Macquarie has altered the near shore wave climate along the beach. This lowered the offshore ocean bar, break wall as shown in Figure 35. Analysis shows that the back-beach escarpment at the northern end of the beach is now approximately 30 metres landward of its 1980 position. In addition, the low back beach The northern section of Town Beach has been subject to ongoing erosion since approximately the 1980s.

PORT MACQUARIE-HASTINGS COUNCI

Figure 46: Town beach depicting break walls, back-beach escarpment and offshore ocean bar



escarpment is occasionally overtopped by storm wave run-up, inundating the reserve lands behind the beach refer to Figure 46].

The photogrammetric analysis (1971 to 2003) completed by SMEC in 2005 as a part of the Town Beach Hazard Definition Study identified that Town Beach has:

- Built up by approximately 15 to 25 metres at the southern end
 - Remained reasonably constant where the klosk is located
- · Undergone approximately 15 to 20 metres of recession north of Gaol Rock
- Undergone approximately 30 metres of recession for approximately 50m south of the southern break wall.

rock protection works undertaken in the 2006, however continues to be affected by wave overtopping and tidal The northern break wall was built in 1979 and the greatest period of recorded change in the beach was in the 10 years following. The northern section of the beach is presently not subject to active erosion as a result of surges and remains to be an 'at risk' area

Modelling was done to assess the risk of inundation and hazards from wave run-up in a 1 in 100 year Average Recurrence Interval (ARI) storm event. This modelling indicated that:

- The kiosk at the time of modelling is landward of the average and 2% wave run-up levels but some
- The car parking area at the southern section of the beach average would not be inundated. inundation would be expected at maximum wave run-up levels.
 - A section of road around the base of Gaol Point would be inundated at average wave run-up levels
- The northern end of the beach and adjoining foreshore will be subject to wave overtopping and subsequent
- inundation.

COASTAL MANAGEMENT PROGRAM STAGE

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Management Actions

- Several management recommendations were included in the report. The highest priority actions were:
 - Control of erosion and coastal hazards at the northern section of beach 2. Redevelopment of the kiosk in the southern section

 - 3. Actions to upgrade various amenities.
- Works completed since the report was commissioned include:
- 1. Extension of the southern break wall approximately 100m further south to alleviate the erosion of the foreshore reserve.
 - 2. Reconstruction of the northern dune in 2006 to protect the foreshore reserve from significant wave overtopping.

Durating design (or upgrade of Durahogian advartant) is currently being completed. The design includes some improvement of parking areas through current budget improvement of parking ingrovements is not known at this only. A timeline for parking ingrovements is not known at this only.

Commenced - Footpath surfaces to be determined as part of detailed design for upgrades having regard for access requirements and asset durability. Commenced - GPT installed adjacent to klosk

Completed mapping. Refer to report.

Prepare a 'Significant Bushland Overlay' for Council's GIS based on the mapping of priority conservation areas within the Vegetation Management Plan.

Upgrade parking facilities at Dunbogan Boat Launching Ramp

Gaol Point GPT subject to review.

Design and install stormwater gross poliutant traps in car park at southern klosk and car parks east and north of Gaol Point

Maintain relatively natural pathway surfaces around southem headland (Flagstaff Hill)

Coastal Management Coastal Management

Coast/Estu

Management Action Require

Other Management Actions

Status Commer

Commenced - Stairs on southern face complete. Northern yet to be scheduled.

Buloguc Ongoing

Install additional seating, tables and lighting in the northern reserve, in the same general style as that in the southern

Provide formalised stairway access from Gaol Point to the back beach area, on north and south faces of Gaol Point

Coastal Management Coastal Management Commenced. Facilities installed in northern part of the reserve. Future works proposed for southern portion in future Commenced. Facilities installed in northern part of the reserve. Future works proposed for southern portion in future

Install shade structures in the back beach reserve at the southern end of Town Beach, to complement planting of shade

Upgrade pathways in Rotary Park and enhance landscaping to improve connectivity between the park, beach and adjacent

Coastal Management Coastal Management Coasta/ Management Coasta/ Management Coastal Management Coastal Management Coastal Management

Continue to use local flowering small trees for shade and to provide local habitat for foraging native speckes

Commenced and onspiring Furth Manquale Coastai Walk master planning phase complete, public consultation under have. Initial construction works completed on various stages: damin funning vecken for millar porsioution stages. Project IS emig noiled out over numerous years.

Herefore the second of the second of the second of the second and the second and

Coastal Managemen

Ongoing Ongoing Ongoing

Ongoing

Maintain Southern Breakwall of the Hastings River entrance, to replace disloged rock and protect the wall core and raise crest height to 4.6 mAHD

nove displaced rock from the surf zone to reduce safety Continue to remove weeds from coastal bluff grassland vegetation communities, replacing weeds with local coastal shrub and ground cover species

hazards to swimmers and surfers

Ongoing maintenance of Southern Breakwall

Yet to be scheduled fet to be scheduled

Construct a rotunda adjacent to the children's playground area

Prepare Traffic Management Plan that includes investigation of the closure of the southern end of Stewart Street and

Coastal Managen

of traffic calming devices to minimise potentia

ond does not detract

Ensure that any further development of facilities in the voodland areas at Flagstaff Hill and beyond does not de from the natural landscape character of this area

Ongoing Ongoing

Review safety of all pathways, stairways, elevated walkways and lookout fencing around Fagstaff Hill.

such as whale watching

Coasta/ Management Coasta/ Management Coastal Management Yet to be scheduled Yet to be scheduled Yet to be scheduled

Improve lighting along all pathways, using efficient lighting fixtures

Implement Traffic Management Plan

Coastal Management Coastal Management

flicts with pedestrians

Wherever possible, introduce shade trees into car parking

Coastal Management

- 3. In partnership with Crown Land, PMHC have periodically accepted the dredged material from the Hastings River, which provides sand nourishment to the beach. This has historically occurred sporadically, and the sand has only been accepted on Town Beach when the beach needs nourishing
 - 4. The Town Beach Kiosk was upgraded in 2016 with the provision of new public toilets and upgraded sea rescue facilities.
- 5. A new Skate Park was constructed in 2012
- 6. A new Kiosk was built on the northern end of Town Beach in 2016. Both the kiosk and the skate park are within areas which are at significant risk of inundation in storm events.

response to coastal hazards. This plan focuses on the evacuation of at-risk areas in significant storm events and beach closure. While PMHC has closed the beach to the public in storm events, evacuation procedures In addition to the works completed an Emergency Action Plan was developed for the Town Beach area in have not yet proven to be necessary.



Figure 47: Town beach depicting break walls, backbeach escarpment and offshore ocean bar.

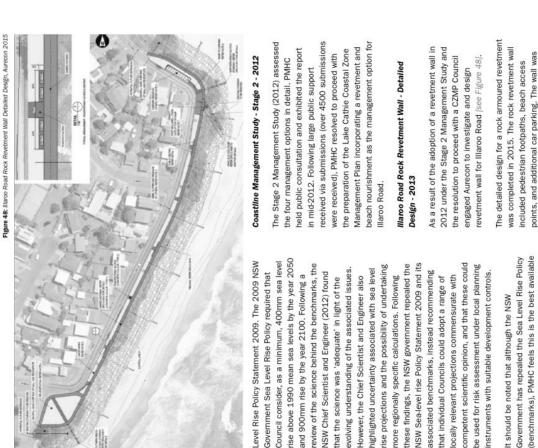
PORT MACQUARIE-HASTINGS COUNCIL

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COASTAL MANAGEMENT PROGRAM STAGE

Table 7. Other management actions for Town Beach CZMP



PORT MACQUARIE-HASTINGS COUNCIL

3. 400m Revetment Wall for Illaroo Road

Coastal Hazard Study - 2010

SMEC were engaged again in 2010 to revise the planning benchmarks contained in the NSW Sea hazards to take into account the sea level rise

(benchmarks), PMHC feels this is the best available information and all work has been undertaken on It should be noted that although the NSW this basis.

Coastal Hazard Study - 2008 studies.

Guidelines for Preparing Coastal Zone Management

NSW Sea Level Rise Policy 2009 and the 2010 Plans 2010 and was overseen by the CE&F sub-

with the former CP Act, NSW Coastal Policy,

committee. The study area for this CZMP is shown

in Figure 22. Goals

The Lake Cathie CZMP was prepared in accordance

These were addressed through the following Soil/sand stability at stormwater outlets

Council began to have a more detailed review of the

Erosion and erosion control

following two issues:

development along Illaroo Road and by Johnathon

Lighthouse Beach (adjacent to Lake Cathie) is approximately 2 km long. The beach south of the estuary entrance is backed by residential Dixon Reserve which is seaward of development

along Chepana Street (Port Macquarie-Hastings

Council and SMEC. 2016).

Upon completion of the general list of issues

Detailed review of issues

This was the priority since it dealt with the highest issues of risk, that being risk to life and property. This first study undertaken was to work on ways to solve the erosion and erosion control issues.

SMEC in 2008 to complete the Lake Cathie Coastal In order to understand these issues of erosion more comprehensively Council commissioned Hazard Study.

The Lake Cathie CZMP was proposed and written in

Coastline Management Study - Stage 1 - 2009

Provide community access and opportunities to

Protect and restore natural areas through

order to achieve the following goals:

stormwater and foreshore management

enjoy our natural environment through reserve

improvements, continuing public access and Plan and take action to minimise the impact

beach nourishment.

period of public exhibition and consultation (where about their values and opinions on how the Lake management option were assessed and after a management options were endorsed for further Management Study was undertaken. The Lake Cathie Coastline Management Study - Stage 1 was completed by SMEC in 2009 and focused 344 submissions were received), four primary Following the 2008 Hazard Study, a two stage Cathie coastline was used. Thirteen potential on obtaining information from the community investigation.

further investigations, contingency measures and

of natural events and climate change through construction of a revetment to protect private the impact on the natural environment through

Manage development outcomes to minimise

development and Illaroo Road.

The shortlisted options from stage 1 were: Planned Retreat (services relocation,

A broad list of issues identified in consultation with

General Issues Identified development controls.

NSW state agencies and a review of the literature

community members, discussions with various

and information at hand yielded the following list:

Erosion and erosion control

Safe beach access

- development controls, voluntary purchase and property acquisition)
 - 2. Beach Nourishment
- 4. Groyne

Soil/sand stability at stormwater outlets

Revegetation/weeds

Increased tourism Property values

Maintaining recreational amenity

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ORDINARY COUNCIL 20/05/2020

estimate was heavily dependent on the availability

of hard, durable rock from nearby quarries.

COASTAL MANAGEMENT PROGRAM STAGE

estimated to cost \$8.1M in 2015, however this

Lake Cathle Coastal Zone Management Plan - 2013

 Managing risks to public safety and built assets, Beach being designated a coastal erosion hotspot. Council prepared Coastal Zone Management Plan The purpose of a CZMP is to describe proposed (CZMP) for Lake Cathie due to the Lake Cathie actions to be implemented to address priority management issues including:

- Pressure on coastal ecosystems, and
 - Community uses of the coastal zone.

management option referred to in the current CZMP Study (Stage 2) in July 2012. This is the preferred to mitigate coastal erosion risks at Illaroo Road, Council adopted the Coastal Zone Management support for a revetment with sand nourishment the CZMP On the basis of considerable public abovementioned studies in preparation for and forms the focus of this document. Council has previously undertaken the

revetment wall construction would be provided by both the NSW and Commonwealth Governments. The CZMP was adopted by Council in 2013 on the basis that funding for the total cost of the

number of actions be undertaken before the CZMP March 2015 the Minister for Planning requested a Government was requested in March 2014. In Certification of the CZMP by the NSW State would be certified.

- include updated costs for the construction of the Of particular note, Council was requested to:
- incorporate the results of a Cost Benefit Analysis revetment wall which was based on Aurecon's (CBA) that was being prepared by OEH on detailed design,
- stormwater to minimise the direct outflow of stormwater onto the beach. consider reviewing the management of Council's behalf, and

Hazard Study Review - 2014

targeting indurated sands "coffee rock" within the such action related to geotechnical investigation study area. The main issue being the uncertainty formations on long term shoreline recession and The Lake Cathie Coastal Zone Management Plan relating to the influence of regional coffee rock included actions for further investigation. One storm erosion demand at the study site.

This review included:

Producing a conceptual sediment transport sand (coffee rock) strength and extent.

A geotechnical investigation of the indurated

- Undertaking photogrammetric analysis of the model for the site.
 - exposed coffee rock over time.

Results of the review showed that there was no justification to change the previously adopted hazard lines from the 2008 and 2010 SMEC reports.

Lake Cathle Coastal Zone Management Plan - 2016

Council revised the CZMP to incorporate the actions requested by the minister. The plan was adopted by Council in April 2016 and ministerial certification vas subsequently requested.

Ministerial certification of the Lake Cathie Coastal Zone Management Plan 2016 was provided in November 2016 and was Gazetted in January 2017.

provisions of the new Coastal Management Manual. The certification again came with a list of actions development of a workable funding model based on a distributional analysis that accords with the which were required to implement the plan. The letter advised that the next critical step was the

The CZMP is the final document of the coastal zone management process and as such is a summarising document containing important information gathered from the three previous studies.

implementation of CZMP Actions as at March 2020

with a socio-economic profile of Lake Cathie. The the greatest net social benefit for the community, analysis concluded that beach nourishment had Analysis (CBA) of management options along As mentioned above, at the direction of the Minister, OEH (now DPIE) engaged Balmoral closely followed by the option of building a Group in 2015 to undertake a Cost-Benefit a. 440m Revetment Wall for Illaroo Road revetment wall. Following the direction from the Minister in 2016 with the modelling were uncovered. Accordingly, Council engaged Marsden Jacob & Associated a new CBA and Funding Model needed to be to prepare a funding model which would rely on the results of the 2015 Balmoral Group CBA. However, upon review of the Balmoral modelling a number of fundamental issues completed.

The revised CBA & funding model:

- components based on the results of the Cost Benefit Analysis and associated engineering synthesized and accurately reported cost studies.
- assessment focuses on current opportunities limitations of alternative funding models. The identified and evaluated the strengths and neutral outcome for the Council or identify and alternative management options and long-term alternative sustainable funding. strategies that could result in a budget
 - described the public and private beneficiaries beneficiary associated with the preferred and the extent of the benefits to each option.
- that could support the development of the Council's statutory ability to levy fees and charges under relevant state government revetment and that are founded on the identified funding options and models
- developing this model, we note that we would need to consider the capacity of beneficiaries recommend a preferred funding model. In

At this time, a preferred funding model has been the revetment wall). Community engagement is planned to be undertaken in order to inform the large of the outcome. This project has not been can be made on their willingness and capacity directly impacted residents and community at finalised or adopted by Council at the time of recommended, but further consultation with residents is required before an assessment to pay for coastal protection measures (i.e. writing this Scoping Study.

Short-term beach management ġ.

events, continuing interim development controls, monitoring the beach for erosion following storm continuing beach nourishment with sand from management and construction of Illaroo Road dredging activities in Lake Cathie, foreshore Short-term beach management includes stormwater realignment.

Illaroo Road Stormwater realignment ن ن

stormwater and discharge the water into a single stormwater away from two outlets that currently The stormwater realignment is currently on-hold Illaroo Road. The project aims to capture this to undertake construction works to redirect discharge water directly onto the beach at Council successfully sought grant funding outlet in Bundella Avenue.

due to dumped asbestos (building waste) and Aboriginal archaeological findings at the site which are undergoing further investigation.

Emergency Action Plan

ъ

public safety in the event of a coastal erosion mplement any of these response actions to which identifies actions to manage risks to A plan has been developed under this plan emergency. It has not been necessary to late.

- legislation.
 - to pay apportioned costs.

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Other Management Actions

Key Issues	Management Action Required	Status Comment
Stormwater Management	Recirect lilaroo Rd stormwater to minimise the direct outflow of stormwater onto the basch. Ilaroo Read only included as a contrigency pending confirmation of the finning of the construction of the Reventment.	Commenced - Detailed design plans completed. Grant application for construction has been submitted. Awaiting outcome.
Stormwater Management	Continue to upgrade the stommater outlets to the beach e.g. placement of rock at outlets to reduce beach soour.	Commenced & orgónig - numerous beach outlets upgraded within past 10 yeans. Grant trunding application successful no Madia Rock & Chepana Street outlet works. Construction works were completed on 2x outlets in 2019.
Ongoing Beach Nourishment	Any sand dredged/ excavated from the Lake Cathle entrance to be placed on the beach adjacent to Itiano Road.	Ongoing
Foreshore Management	Batter back any storm enosion escarpment that forms at Poneshore Reserve (or in other locations) to ensure public safety and maintain park amenity.	ongoing
Public Access	Continue to monitor and rehabilitate informal beach access tracks	Ongoing
Public Access	Reduce erosion escarpments at the base of beach accessways and carry out any necessary repairs following storm erosion	Ongoing
Foreshore Management	Continue to control/ remove bitou bush along with regeneration/ revegetation with locally indigenous vegetation species.	Orgoing, subject to funding availability.
Reserve Improvements	Prepare masterpain for foreshore reserves //qua Reserve, inceptor Reserve and Johnahon Noxon Reserve, incorporating the intoloning immovements: a dottomal (gitta et Johnahon Noxon Reserve, incorporating of the Foreshore National Reserve to antique Tessine on Foreshore Reserve by providing shade, shelter and play areas.	Competed for Aqua Reserve and Foreshore Reserve Foreshore reserve managering developed by Fourschart masterplan for Diration Dison Reserve is yet to prepared. Ongoing implementation will be undertaken over coming years.
	Upgrades should allow for revetment end effects.	
Development Controls	Review area subject to controls following construction of the revenues and when the hazard lines are reviewed. Note that the 50 year impact line would more over line due to shoreline conscion innot possibly affect additional properties. e.g. along Chepana Sheel).	Net to be scheduled
Revetment	Call tenders and construct revetment.	Yet to be scheduled
Revetment	Finalise private/ public cost-sharing arrangements including private payment plans.	Orgoing - consultant engaged and project is underway. Council is working closely with DPE to finalise project.
Revetment	Carry out poststorm assessments to identify revertment maintenance requirements and actions to address evacerbated erosion in front of, and at the ends of, the revertment.	Yet to be scheduled
Contingency Measures	Develop a Servicing Strategy in consultation with other service providers in the event that access and services to illaroo Road properties are threatened by coastal ension, prior to construction of a reveitment.	Yet to be scheduled
Contingency Measures	Designate Aqua Crescent/ Bundella Arenue and Illaroo as a one- any oby na Locad Near Tardin Amagément Fann in the event that damage to the road reserve occurs as a result of ension reents are access, prior to the constitution of a meetiment.	Net to be scheduled

able 8. Other management actions for Lake Cathie

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16.2 ESTUARY MANAGEMENT PLANS

former Catchment Management Act 1989. The Estuary Management Policy was introduced in order to achieve Management Plans was in accordance with the NSW Estuary Manual which saw the establishment of coast an integrated, balanced, responsible and ecologically sustainable use of estuaries. Preparation of Estuary The NSW Government introduced the Estuary Management Policy in 1992 which was consistent with the and estuary management committees.

16.2.1 HASTINGS ESTUARY MANAGEMENT PLAN

Committee (now Port Macquarie-Hastings Council Coast, Estuary and Floodplain Advisory Sub-Committee) in 2001 by Umwelt (Australia) Pty Limited. The EMP was developed in accordance with the NSW Estuary The Hastings EMP was prepared for PMHC and overseen by the Hastings Council Estuary Management Management Manual 1992.

information about system processes and current conditions and designing management actions to address The Hastings EMP was created to provide integrated management of the estuarine system by obtaining any issues identified.

The Hastings Estuary Management Plan covered the following areas:

- The waterways of the Hastings estuary and its tributaries (e.g. the Maria River, Limeburners Creek and Kooloonbung Creek), up to the limit of tidal influence.
- The foreshore and other lands adjacent to the estuary, including all wetlands and floodplain areas that are functionally related to the estuary; and
- the estuarine environment. The interaction of the catchment and estuary as parts of a single system is a The catchment areas of the estuarine waterways, in relation to the impacts of catchment processes on fundamental concept for sustainable estuary management.

Key Issues

- Key issues that affected the Hastings Estuary were identified as:
- Estuary form and processes
- Aquatic primary production
 - Floodplain production · Dredging
 - Bank erosion

Acid sulphate soils

- Riparian vegetation and conservation values
- Water quality
- Population growth and age structure Tourist and recreational use
- Community views about the value of the estuary

Management Actions

Scenic value

- Numerous actions were adopted under this plan with many being completed. Some notable actions include:
 - The appointment of an Acid Sulphate Soils Officer
- Development of a Hydrodynamic Model
 - Rocks Ferry upgrade
- Completion of the Partridge Creek Management Strategy and subsequent remediation of the Partridge Creek Acid Sulphate Soil hotspot.

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Ongoing

Ongoing

assets

Continue working on Blodiversity Strategy to highlight key environmental. (Including wetlands and riparian) recessary for protection. Determine significant sediment sources and educate where appropriate. Initiate regulatory and enforcement action to unlawful ASS management activities

Significance/Protected Area Mapping

Fish Stock Monitoring

Estuary Sedimentation

Acid Sulphate soils

Ongoing

Ongoing Ongoing

Council and DUAP to Monitor and enforce compliance with SEPP 14 & SEPP 26

Provide opportunities for direct community participation in review of the plan

Sustainable Urban Growth and

waterway use

Habitat rehabilitation & Riparian Zone Management Habitat rehabilitation & Riparian Zone Management Habitat rehabilitation & Riparian Zone Management

Council to Ensure compliance with development consent conditions for habitat

Prepare plans for strategic retreat of anciliary buildings and infrastructure

Habitat rehabilitation & Riparian Zone Management

Habitat rehabilitation & Riparian Zone Management

Maintain existing rock wall protection

Council to Monitor and enforce compliance with tree preservation policy

Review management plans for foreshore reserves

Ongoing Ongoing

Ongoing

Eradicate Salvinia from upper Maria River and Connection Creek and undertaken annual inspections of target farm dams

Salvinia control in Upper Maria River

Control Upper estuary vine

Control invasive vines weeds in the upper Hastings estuary

Seek opportunities to develop fish stock monitoring.

Ongoing Ongoing Ongoing Ongoing

Ongoing Ongoing

Ongoing

Ongoing

Ongoing

Support Landcare groups or landowners to carry out riparian zone rehabilitation

Council, DLWC, NSW Fisheries and EPA use regulatory powers strateglically to enhance environmental outcomes

Establish and maintain tourism databases

lable Urban Growth and

way use

Sedimentary Processes and Dredging Management

Habitat rehabilitation & Riparian Zone Management

way use

Audit Planning decisions to ensure consistent response to issues affecting the health of the estuary

nable Urban Growth and able Urban Growth and

Sustainable Urban Growth and

waterway use valerway use

Habitat rehabilitation & Riparian Zone Management

Stormwater management for Kooloonbung Creek

Monitoring and enforcement of soil and water management and habitat protection provisions of development consent

Ongoing Ongoing Ongoing

Ongoing

Continue to negotiate landholder agreements for drain operation, maintenance, restoration of high conservation land

Prepare statutory documentation for urgent navigation dredging (REF) and confirm funding options

Scenic Amenity and conservation plan

Sustainable Urban Growth and

waterway use

Sedimentary Processes and Dredging Management

Implement urban stormwater measures, Wauchope and lower priority areas of Port Macquarie

Mapping completed as part of Blodiversity Strategy. Protection of high value conversation undertaken as part of any individual rezoning process.

Commenced - planning and environme approvals obtained and certain works

Enhance foreshore habitat of Kooloonbung Creek between Gordon and William streets

gement Action Rec

Other Management Actions

Habitat rehabilitation & Riparian Zone Management

Habitat rehabilitation & Ribarian Zone Managem

areas

Strategic planning to protect high value conservation

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Ongoing - component of landuse and open space planning

Ongoing - SoE process Ongoing - SoE process

quality etc

Ongoing - RMS

Maintain and enforce no wash zones in narrow channel areas (Maria River and

ers Creek

Manage Interactions of Recreational Users

Acid Sulphate soils

Collate Information on performance indicators such as fish kills, water

Establish monitoring programs for core indicators of estuary health

Sustainable Urban Growth and waterway use

Ongoing - as part of specific proposals

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Habitat rehabilitation & Establish assessment and monitoring protocol for riparian vegetation to be Riparian Zone Management reported in SoE	Sustainable Lirban Growth and Report on core suite of sustainability indicators waterway use	
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Sustainable Urban Growth and waterway use	Maintain Integrate socio-economic databases with environmental databases	Ongoing - SoE process
Sustainable Urban Growth and waterway use	Maintain 3 yearly ecological and sediment monitoring of Kooloonbung Creek	Ongoing - SoE process
Acid Sulphate soils	Initiate ecological monitoring program	Ongoing - SoE process
Sedimentary Processes and Dredging Management	Extend river Styles assessment to the estuary	Ongoing - SoE process
Habitat rehabilitation & Riparian Zone Management	Conduct community surveys on usage/ satisfaction with foreshore park facilities	Ongoing - through existing community engagement processes
Sustainable Urban Growth and waterway use	Provide direct and well publicised Council contact on environmental matters via estuary education	Ongoing (NRO) position
Sustainable Urban Growth and waterway use	Maumise opportunities for sustainable reuse of sewage effluent	Ongoing and fully funded through the delivery of recycled waste water (purple plipe) for new developments such as Area 13.
Sustainable Urban Growth and waterway use	Continue to promote and fund Urban Landcare	Ongoing and funded through Environmental Levy
Sedimentary Processes and Dredging Management	Establish an ongoing program of channel survey to monitor rates of shoaling at key locations, bed form and refine maintenance dredging program	Ongoing Dept of Lands
Habitat rehabilitation & Riparian Zone Management	Focus riparian vegetation protection measures in Maria River and Limeburners Creek	Ongoing requires landholder willingness
Sustainable Urban Growth and waterway use	Septic safe program - Onsite sewerage management plan	Ongoing through provision of rural village sewer programme and OSMS inspections
Sustainable Urban Growth and waterway use	invoive local aboriginal community in ongoing estuary management activities	Ongoing through representation on the Committee and other estuary related matters
	Ongoing monitoring and reporting of sustainability indicators for the estuary	Ongoing through the Regional State of the Environment reporting
Habitat rehabilitation & Riparian Zone Management	Establish voluntary conservation agreements with landholders	Ongoing where suitable
Manage Interactions of Recreational Users	Provide baseline data on recreational fishing effort and catches	Fisheries advice required
	Provide additional boat ramp to Wauchope area	Complete - Additional Josta and Watting Mortin Identified as a priority in the Mid North Coast Regional Boating Plan as adopted by the Miss in 2023. A florading portion in as being instanted at Rocks Ferry Reserve to mispove facilities for recreational boaters in this area.
Manage Interactions of Recreational Users	Provide clear information and Guidance to visitors and residents on issues such as recreational boating, swimming areas, water conservation etc	Yet to commence
Manage Interactions of Recreational Users	Implement ongoing projects under HIMS-T system	Yet to commence
Habitat rehabilitation & Riparian Zone Management	Fund Blackmans Point Landcare to continue installation of log walls	Yet to commence

Table 9. Other management actions for Town Beach CZMP

16.2.2 CAMDEN HAVEN ESTUARY MANAGEMENT PLAN

ATTACHMENT

The Camden Haven EMP was developed in 2002 for PMHC, overseen by Camden Haven Estuary Committee (now merged into the CE&F committee).

The plan involved significant community consultation and stakeholder engagement throughout the process.

Key Issues

Key issues that affected the Camden Haven Estuary were identified as:

- Development and Human Impacts growing pressures from urban growth adjacent to the estuary. Clearing and drainage of land has resulted in oxidation of acid sulphate soils.
- Water Quality stormwater and acid runoff can deteriorate water quality even during minor rainfall and flood events. The poor flushed parts of the estuary such as Mirror Bay and Gogleys Lagoon are most susceptible to these impacts.
 - · Bank Erosion continued erosion of shoreline, in particular along Stingray Creek at Henry Kendall Reserve
 - · Estuary Sedimentation infilling of the estuary, particularly at locations where navigation is important such
 - as the Camden Haven River entrance to Watsons Taylor Lake
 - · Fishery Decline in fish stocks and effects to oyster farming
- · Preservation of Wetlands, Mangroves, Saltmarsh and Seagrass
- Maintenance of the aesthetic attributes the close proximity of tall mountains (the "Three Brothers") to the estuary is a unique feature.

Management Actions

The plan incorporated both long-term and short-term strategies for managing the estuary. Long term strategies focused on regional issues such as reversing larger scale human impacts whilst short term strategies related to work or measures that could be implemented as soon as funding became available. Several strategies were created ranging from Priority 1 Actions (initiated over the next 2 years) to Priority 3 Actions (initiated over the next 5-10 years).

These actions included

- Implementing water quality monitoring programs.
- Community education relating to estuarine processes and responsible stormwater runoff management.
 - Design and construction of pollution control devices.
 - Development controls.
- Bank stabilisation for erosion control
- Further studies/reviews relating to vegetation mapping, priority conservation areas, acid generation, biological assessment of seagrass beds, significant wetlands and reported reduction in fish stocks.
 - Estuarine/lakeside linkages project aimed at reducing feral pests and invasive weeds.

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Other Management Actions

	Management Action Kequired	20000
WATER QUALITY	Develop Stormwater Catchment Action Plans for all urban and rural exercitor process and animing directly to the estuary (in accordance with the Hastings Stormwater Management Plan).	Commenced - 1 sub catchment completed
WATER QUALITY	Maintain existing foreshore vegetation around Queens Lake	Completed - weed and vertetrate pest control works undertaken under the Lakesbell Linkages Project which ran from 2017-2019, Works were undertaken in partnership with Queens Lake Landcare Group.
ENVIRONMENTAL MANAGEMENT	Prepare a "Significant Bushland Overlay" for Council's GIS based on the magating of priority conservation areas within the Vegelation Management Plan.	Completed mapping.
RECREATION	Upgrade parking facilities at Durbogan Boat Launching Ramp	Detailed design for upgrade of Dunbogan Boatramp is currently being competent. The design burboes some provement of parking areas threading and portion instantion allocation is for boatramp widening and portion instantion only. A timeline for parking improvements is not known at this time.
RECREATION	Upgrade the boat launching ramp within Henry Kendali Reserve.	Upgrade of this facility is not prioritistical in Draft Camban Haven More Recention Banking Study, Instead, upgrading of Bruce Porter Reserve and Dunologin Afserve boarding lacitize have been norminated. Upgrading of these inclutes is yet to be scheduled.
WATER QUALITY	Determine and adopt target values for water quality parameters for different reaches of the estuary consistent with the interim Environmental Objectives of the NSW Water Reforms.	2nd round of Ecoheatth Montoring is currently being finalised and has been developed. Further specific targets to be developed by UNE
RECREATION	Support local Landcare Groups to retain or reinstate riparian vegetation along river and creek corridors to provide a 30 metre wide strip along each bank.	Ongoing
WATER QUALITY	Identify and map derelict cyster leases and those that are not in production	Ongoing
WATER QUALITY	Identify, prioritise, design and construct stormwater management mechanisms (e.g., dross publicant Taps and constructed webanks) at key locations within the drainage system so that better control of catchment runoff to the estuary can be effected.	Ongoing - as stormwater upgrade works proceed
WATER QUALITY	Undertake specific actions to prevent future threats to estuary water quality	Ongoing - managed through the rezoing and development assessment processes
WATER QUALITY	Establish an estuary wide water quality monitoring program	Ongoing - SoE process
WATER QUALITY	Undertake water quality monitoring program	Ongoing - SoE process
WATER QUALITY	Monitor seagrass growth throughout the estuary	Ongoing - SoE process
WATER QUALITY	Establish a stormwater quality monitoring program.	Ongoing - SoE process
WATER QUALITY	Pursue gains for the environment through negotiated conditions on any new developments.	Ongoing and supported through DA process.
BANK EROSION	Identify areas where stook access should be restricted on Individual properties to ethins: a prototic thesecork access to creeks by fencing, with watering afforded by pumpription of channel farm dams; or to, b, control livestcork access so that watering only occurs at selected and rotated watering points.	
BANK EROSION	Develop vegetated buffer strips along major creek lines such as Stingray Creek, Stewarts River and the upper reaches of the Camden Haven River.	Ongoing - Council opportunistically engages with landholders who show a willingness to co-operate.
RECREATION	Troughout the rural indextand lee, Yeen, Hendal, encode Cores atothment, encourage conservation of valued terrestrait registration through valuatizers conservation of valued terrestrait registration vegetority, angles are strough ordered of valued terrestrait apartian - and adjoing the teatism perimeter of Queens Lake - extensive forested areas and existing ripation registration around Hendra's creek Hendra's creek Magnatizer teact of undisturbed old growth forest adjacent to Dooragan National Park	Origoling - Council opportunistically englages with landholders who show a willinginess to cooperate.
ENVIRONMENTAL MANAGEMENT	Encourage the establishment of native vegetation on private property by providing tube stock to foreshore property owners.	Ongoing - Council opportunistically engages with landholders who show a willingness to co-operate.
WATER QUALITY	Enforce erosion and sediment controls for development and activities which have the potential to impact on the estuary.	Ongoing through the DA process
FISHERY	Promote use of existing boat effluent pump out facilities.	Ongoing through Waterways

RECREATION	Re-establish vegetation along the cleared parts of the Queens Lake foreshore	Ongoing. Part of the Camden Haven Estuarine Lake Linkages project
WATER QUALITY	Develop a community education program for responsible stomwater runoff management within the urban areas adjacent to the estuary.	Yet to commence
ENVIRONMENTAL MANAGEMENT	Justify and recommend that wetland areas identified as regionally significant be rezoned to "Environmental Protection" under Hastings LEP 2000, or be incorporated within SEPP 14.	Orgoing through individual rezoning application phase.
ENVIRONMENTAL MANAGEMENT	Assity and support the reconcing of schemomentar Protoction" of the moleoning within load that dranks to the estuary. A Protocing 1 and 2 status vegatation identified and mapped in the ordat Historings Vegatation Management ream that fail within a 500 metre wide build that is parelist is and others around the partnets of a build bu	Orgoing through individual rezoning application phase.
	Ernergency Management Measures	Commenced - Camden Haven Flood Plan Complete - New Hastings LGA SES Flood Plan completed in 2015.
	Improved Flood Access	Stagles 1A, 1B & 1C of the Dunbogan Flood Access Road upgrade are complete.
	Smail Levee in Lakewood Village	Project is considered a low priority. Numerous unsuccessful project is applications have impacted the delivery of this project. Due to the two cost/demetification this project is unlikely to be completed without grant functing.
	Voluntary House Raising	Yet to commence - Audit undertake in 2007 showed project of the cost and mixed interest from owners. Plot scheme was suggested to gauge fleety issues. The plot has not commenced at this time.

management actions for Camden Haven Estuary Table 10. Other 69

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16.2.3 LAKE CATHIE/LAKE INNES ESTUARY MANAGEMENT PLAN

The Lake Cathle/Lake Innes EMP was created in 1994 in collaboration with NSW Public Works (now Public Norks Advisory) and the National Parks and Wildlife Service (NPWS).

Key Issues

issues that were identified were discussed with the Lake Cathie-Bonny Hills Estuary Management Committee along with the community and environmental groups to determine and prioritise management actions.

The key issues identified are listed below:

- Entrance opening increased salinity when lake is closed, waterbirds nesting and seasonal feeding, organic staining of waters when lake is closed, recreational activities, fish and prawn migration, deoxygenation of waters and pollution build up.
- Shoaling in the lower estuary the construction of the Ocean Drive and Kenwood Drive bridge have changed the shoaling patters and tidal and flood flows and sand infeed from the ocean entrance
- Closing of Lake Innes based on Lake Innes historically being freshwater system and may impact fisheries. salt marsh populations, flood and tidal hydrodynamics, water quality, biology and lake opening/closing frequencies
- Water quality surrounding residential development results in increased stormwater runoff impacting on gross pollutants, nutrients, bacteria and particulate matter.
 - Flooding several properties are flood prone particularly in relation to the lake opening frequency
 - Waterway uses recreational, commercial, access
- Sedimentation limited volumes for fine suspended sediments (clays and silts) enter the estuarine system with surrounding wetlands acting as barriers

Management Actions

EMP management actions included:

- Implement combined entrance opening strategy and modified entrance opening procedure
- Potential reversion of Lake Innes into a freshwater system by installing a levee
- Establish run-off quality guidelines
 - Adoption of flood policy changes
- Water quality monitoring and establish nutrient budgets Facility and access upgrades
 - Dredging of lower estuary
- Further studies have been completed to understand the complex processes in the estuarine system, some of which are listed below:
 - Nutrients in the Lake Cathie / Lake Innes Lagoonal System, Port Macquarie (Southern Cross University, 1994
- Cathie Creek Maintenance Dredging Environmental Review, (Webb, McKeown & Associates, November 1994)
- Lake Cathie/Lake Innes Water Quality Study, (Department of Public Works and Services, Manly Hydraulic Laboratory, November 1995)
 - Lake Cathie/Lake Innes Entrance Opening Strategy Environmental Review, (Webb, McKeown & Associates, May 1995)
 - Lake Cathie/Lake Innes Waterway Users Study, (Webb, McKeown & Associates, July 1998) Lake Innes Nature Reserve Plan of Management, (NPWS, November 1999)

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- A Tale of Two Lakes Managing Lake Innes and Lake Cathie for Improved Ecological and Community Outcomes - Issues and Options, (Umwelt, February 2004)
 - Maintenance Dredging of Lake Cathie Review of Environmental Factors, (GHD, September 2004)
- Port Macquarie-Hastings Council Dredging Strategy, (Port Macquarie-Hastings Council, September 2007)
- Lake Cathie Lake Innes Estuary Hydrodynamic Model Development & Investigation (BMT WBM, May 2011)
 - Lake Cathie and Lake Innes Acid Sulfate Soil Risk Assessment, (Soil Conservation Services, July 2019)

Water quality monitoring

PMHC undertakes water quality monitoring at Lake Cathie typically monthly and primarily from the Ocean Drive Bridge. As of June 2019, PMHC is also undertaking monitoring at three separate locations in the estuarine system. Water quality is broadly considered within acceptable limits although there have been some recent occurrences of high salinity. Water level data is recorded by the NSW Government from automatic recording equipment, managed by Manly Hydraulics Laboratory.

Connection of Lake Innes to Lake Cathle

Lake Cathie and Lake Innes are a connected system however this has not always been so. Before 1933, Lake Innes to create farmland, this resulted in Lake Innes being converted to an estuarine system with permanent Innes was a stand-alone freshwater lake. A channel was dug between both lakes in an attempt to drain Lake connection to Lake Cathie.

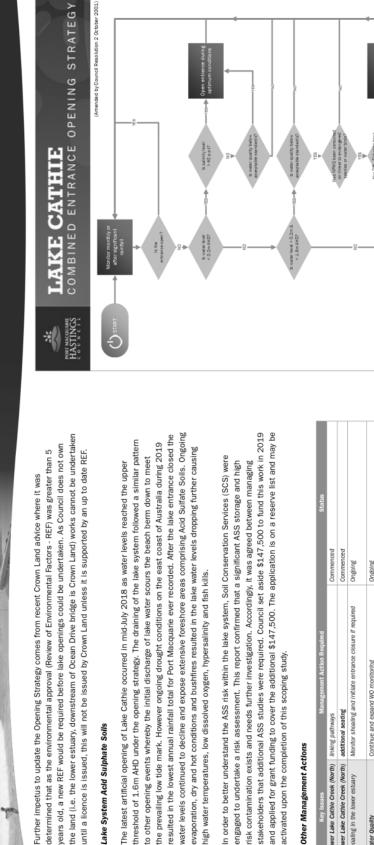
Opening of Lake Cathie

The Intermittently Closed and Open Lake or Lagoon (ICOLL), from which the town of Lake Cathie takes its name, is part of a wider system that includes Cathie Creek and Lake Innes to the north. PMHC (and its earlier counterpart i.e. Hastings Shire Council) has been artificially opening Lake Cathie since the 1960s. This is typically done by excavating a small starter channel through the beach dune when water evels exceed 1.6m AHD, however this level has formerly been 1.5m AHD and 1.8m AHD. PMHC in consultation with the community established the Lake Cathie Opening Strategy in 1995. The strategy visitors with opportunities for recreational activities. The former Opening Strategy flowchart is shown in Figure minimise build-up of sand in the lake entrance, and reduce impacts of flooding, while providing residents and average once every 12 months. The Strategy aimed to minimise adverse effects on the ecology of the area, was reviewed in 2001, 2004/2005 and 2011. Artificial openings, to alleviate flooding have occurred on 39.

A hydrodynamic model was developed by BMT WBM in 2011 to assist in management of the Lake Cathie ICOLL. This report did not recommend any changes be made to the opening strategy.

Considering this community interest and the length of time since the latest review, (2011) a review the existing perspective of the community and erwironmental groups. The health of the estuary is guestioned constantly Lake Cathie continues to be a contentious area in regard to its existing and ongoing management from the ast two years however there appears to be an ever-growing demand for a change in management strategy. with community members guite often requesting that PMHC open the lake regardless of whether opening triggers have been met or not. Extensive consultation and education work have been undertaken in the Opening Strategy will be prioritised in the Lake Cathie/Bonny Hills chapter.

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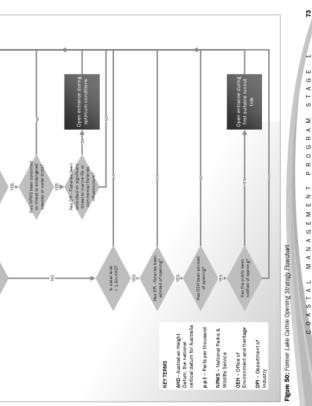
Other Management Actions

Key Issues	Management Action Required	Status
Lower Lake Cathle Creek (North) linking pathways	linking pathways	Commenced
Lower Lake Cathle Creek (North)	additional seating	Commenced
Shoaling in the lower estuary	Monitor shoaling and initiate entrance closure if required	Ongoing
Water Quality	Continue and expand WQ monitoring	Ongoing
Lower Lake Cathie Creek (North)	water quality monitoring	Ongoing
Lake Innes and Lake Cathle	vehicle and blke barriers	Ongoing
Water Quality	Construct water quality control structures	Ongoing - as stormwater upgrade works proceed
Shoaling in the lower estuary	Undertake EIS and dredge lower estuary	Ongoing, EFE completed in 2017 to suppresent SOEE Completed in 2013. These approvals cover repeated at dreaging anotas and allow placement of sami spoul at fillaroo Roud or on Foreshore Heaver, Recent dreaging works give. were completed with 1.1 funding treehed from 75% give.
Mater Quality	Investigate pollution impacts and establish nutrient budgets	Ongoing - incorporated in Ecohealth Programme
Sedimentation	Construct sediment control structures	Ongoing as necessary
Lake Cathle Entrance Opening	Implement combined entrance opening strategy (when to open)	Ongoing
Upper Cathie Creek	creek pathway	National Parks and Wildlife Service advice required
Lake Innes and Lake Cathle	linking pathways	National Parks and Wildlife Service advice required
Mater Quality	Undertake community education program	No longer considered necessary
Flooding	Prepare Floodplain management Plan	No longer considered necessary
Table 11 Other management ac	Table 11 Other management actions for Lake Cathle/Lake Innes Estuary	

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16.2.4 SALTWATER CREEK MANAGEMENT PLAN

Saltwater Creek is a small creek that flows through the northern section of Bonny Hills and drains a catchment of 2.5km2. The creek flows intermittently into the ocean at Rainbow beach immediately north of the Bonny Hills Surf Life Saving Club.

The Management Plan was developed in 2005 to identify issues associated with Saltwater Creek and its catchment, and proposes a strategy and action plan to address these issues. The impetus of the plan came from the local community and the former Hastings Coast and Estuaries Committee who highlighted the deteriorating visual and environmental aspects of the creek and its surrounds. Saltwater Creek had not received formal management or maintenance for some years prior to this management plan. One of the reasons for this has been multiple ownerships (i.e. private landowners, Crown Lands and PMHC).

Key Issues

Key issues explored and addressed by the plan are:

- · Aesthetics
- Flooding
- Creek Water Quality
 - Stormwater Quality
- Maintenance of Stormwater Infrastructure and derelict structures
- Sedimentation
- Debris Build up and rubbish dumping
 - Erosion
 - Vegetation Management

Management Actions

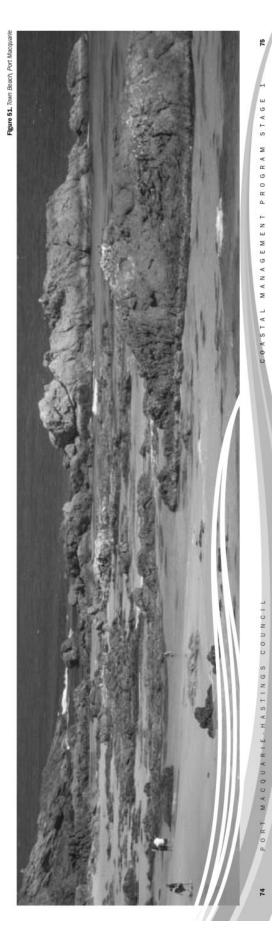
The management plan identified issues and prioritised them according to their environmental impacts and importance placed by community. A range of strategies and actions were then recommended to manage specific issues.

Management actions contained in the plan will be reviewed and if appropriate, included in the CMP

16.2.5 OTHER PLANS AND REPORTS

There are many other documents that fall within all coastal management areas and are managed by different Council sections, other government agencies and some in partnership with community groups. Some of these documents are listed below:

- Hastings Regional Crown Reserve Precinct A Plan of Management, December 2014
- Westport Park Plan of Management, January 2012
- Bonny Hills Reserves Master Plan 2012
- Lake Cathie Foreshore Master Plan 2018
 - Bruce Porter Reserve Master Plan 2011
 - Oraft) Hynns Beach Master Plan 2019
 - Town Beach Master Plan 2013
- Coastal Walk Master Plan 2017
- Port Macquarie Foreshore Walkway Master Plan (Concept) 2019



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ACTION IS REOUIRED WHERE 17.

17.1 KEY ISSUES AND THREATS

CZMPs. These threats have been reviewed and most are considered to still be relevant [see Table 12 below]. Key issues/threats to Coastal Management Areas have been previously determined through the EMPs and

Threats/Issues	Coastal Wetlands and Littoral Rainforest Area (CWLRA)	Coastal Wulnerability Area (CVA)	Coastal Environmental Area (CEA)	Coastal Use Area (CUA)
Access and Amenities Impacts	٢	٢	Y	٢
Acid Sulphate Solls	Y		٢	٢
Coastal Erosion	Y	Y	Y	٢
Development and Land-use Planning Impacts	٢		٢	٢
Fish/Prawn/Oyster Stock Changes	Y		Y	٢
Flooding	Y	٢	٢	٢
Invasive Weeds	Y		Y	Y
Land Ownership/Management/Responsibilities Uncertainties	٢		Y	٢
Navigation Obstructions	٢		Y	٢
Ocean Bath/Tidal Pool		Y	Y	Y
Recreational Users Impacts	Y		Y	٢
Seagrass Changes	٢		Y	٢
Riparian Zone Impacts	Y		Y	٢
River Bank Erosion	٢		Y	٢
Sea-level Rise/Tidal Inundation	٢	٢	Y	٢
Sedimentation/Shoaiing	Y		Y	٢
Urban and Rural Stormwater Runoff	٢		٢	٢
Vertebrate pests	٢		Y	٢
Water Quality Changes	٢	Y	Y	٢
Coastal Lake or Watercourse Entrance Instability	٢	٢	Y	٢
ICOLL Entrance Opening	Y	Y	Y	٢
Coastal Cliff Instability	Y	٢	٢	٢

Table 12 Other management actions for Lake Cathle/Lake Innes Estuary

17.2 FIRST-PASS RISK ASSESSMENT

assessment was done in order to prioritise issues to determine when and where action needs to be taken A first-pass risk assessment was undertaken based on the issues identified in [Section 16]. This risk

consequence scale and $[Table \ 14]$ shows the likelihood scale and $[Table \ 15]$ shows the risk assessment matrix. The success criteria in the consequence scale was chosen based on what was most applicable to each The risk assessment methodology was sourced from the Manual Part B: Stage 1. [Table 13] shows the issue.

Each issue was assessed based on the likelihood of it occurring and the consequence of it occurring. This assessment was done for each catchment as issues vary in significance across the LGA [see Table 16]. Issues identified as high risk and above are considered to be priority risks and should be considered in Stage 2 of the CMP. Low or moderate risks will still be considered, however timeframes for completion may be longer than high priority issues. [Table 17] shows the priority risks (threats/issues), current management practices, any knowledge gaps and any investigations required in Stage 2.

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Table 13: Consequence scale. Sourced from NSW Coastal Management Manual Part B: Stage 1 (OEH, 2018) and adapted from Climate Change Risk Management. A guide for business and government (AGO, 2006).

administration

Public

Region would be seen as very unattractive, moribund and

of serious injuries or loss of lives Large numbers

Major and

Regional decline

sustainability Environment

Community and lifestyle

Local economy and growth

Public safety

Rating

Public

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Rare	Never reported for this situation, but still plausible within the timeframe (< 5%).
Unlikely	Uncommon, but has been known to occur clscwhere. Expected to occur here only in specific circumstances within the timeframe (5.30%).
Possible	There is clear evidence to suggest this is possible in this situation within the timetrame (30 50%).
Likely	Expected to occur in this situation within the timeframe. There is a history of frequent occurrence (50-90%).
Almost certain	Very likely. A very large certainly that this will occur in this situation within the timeframe; a history of regular occurrence (>90%).

18) and adapted from	
1 (OEH, 20	
art B: Stage	
it Manual Pe	
Managemer	
SW Coastal	
Sourced from N	1EMA, 2017).
kellhood scale.	Estate TARA (MEMA
Table 14: U	NSW Marine

		CONSEQENCE	SENCE		
Likelihood	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	Medium	Hgh	нĝн	Extreme	Extreme
likely	Medium	Medium	Hgh	Нgн	Extreme
ossible	Low	Medium	Hgh	Нg	Hgh
Unlikely	Low	Low	Medium	Medium	нßн
are	Low	Low	Medium	Medium	нgн

Table 15: Fisk assessment matrix. Sourced from Sourced from NSW Coastal Management Marrual Part B. Stage 1 (OEH, 2018) and adapted from Climate Change Risk Management: A guide for business and Bivernment (AGA 2006).

Threat /Issue		Hastings		Lake Cath (incl s	Lake Cathle/Lake Innes/Bonny Hills (incl surrounding Coastline)	nny Hills line)		Camden Haven		Open Ct	Open Coastline (Excl LC/LI/BH)	(HBH)
	Likelihood	Consequence	Risk	Likelihood	Consequence	Risk	Likelihood	Consequence	Risk	Likelihood	Consequence	Risk
Access and Amenity Impacts	Likely	Moderate	High	Likely	Moderate	High	Likely	Moderate	High	Likely	Major	High
Acid Sulphate Soils	Likely	Major	High	Almost Certain	Major	Extreme	Likely	Major	High	N/A	N/A	N/A
Coastal Erosion	N/A	N/A	N/A	Almost Certain	Major	Extreme	N/A	N/A	N/A	Almost Certain	Moderate	High
Development and Land-use Planning Impacts	Likely	Major	High	Possible	Minor	Medium	Possible	Minor	Medium	Possible	Minor	Medium
Fish/Prawn/Oyster Stock Changes	Possible	Major	High	Likely	Major	High	Possible	Major	High	Possible	Moderate	High
Flooding	Possible	Major	High	Possible	Moderate	High	Possible	Major	High	N/A	N/A	N/A
Invasive Weeds	Likely	Moderate	High	Likely	Moderate	High	Likely	Moderate	High	Likely	Moderate	High
Land Ownership/Management/ Responsibilities Uncertainties	Likely	Moderate	High	Likely	Major	High	Likely	Moderate	High	Likely	Moderate	High
Navigation Obstructions	Possible	Minor	Medium	Unlikely	Minor	Low	Possible	Minor	Medium	Possible	Minor	Medium
Ocean Bath/Tidal Pool	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Possible	Major	High
Recreational Users Impacts	Likely	Moderate	High	Likely	Moderate	High	Likely	Moderate	High	Likely	Moderate	High
Seagrass Changes	Possible	Moderate	High	Unlikely	Minor	Low	Possible	Moderate	High	N/A	N/A	N/A
Riparian Zone Impacts	Likely	Moderate	High	Unlikely	Moderate	Medium	Likely	Moderate	High	N/A	N/A	N/A
River Bank Erosion	Likely	Moderate	High	Unlikely	Minor	Low	Likely	Moderate	High	N/A	N/A	N/A
Sea-level Rise/Tidal Inundation	Almost Certain	Major	Extreme	Almost Certain	Moderate	High	Almost Certain	Major	Extreme	Almost Certain	Moderate	High
Sedimentation/Shoaling	Possible	Minor	Medium	Likely	Moderate	High	Possible	Minor	Medium	N/A	N/A	N/A
Urban and Rural Stormwater Runoff	Possible	Moderate	High	Possible	Moderate	High	Possible	Moderate	High	N/A	N/A	N/A
Vertebrate Pests	Likely	Moderate	High	Likely	Moderate	High	Likely	Moderate	High	Likely	Minor	Medium
Water Quality Changes	Possible	Moderate	High	Possible	Moderate	High	Possible	Moderate	High	Possible	Moderate	High
Coastal Lake or Watercourse Entrance Instability	Unlikely	Moderate	Medium	Possible	Major	High	Unlikely	Moderate	Medium	N/A	N/A	N/A
ICOLL Entrance Opening	N/A	N/A	N/A	Almost Certain	Major	Extreme	N/A	N/A	N/A	N/A	N/A	N/A
Coastal Cliff Instability	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Likely	Minor	Medium

Table 16: Risk Assessment for Threats/Issues, compiled using the MEMA TAPA model 2017

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Priority Threat/Issue	Amenities Reduced or Impacted			Solls urphate		Coastal Erosion		Devekopment & Land-use Planning Impacts	Fish/Prawn/ Oyster Stock Changes	Flooding
CMP Area	ŧ			All		Lake Cathle //Lake Innes/ Borny Hills, Open Coastline			All	AII
	 Upgraung joresrive accessings Upgrade Westport Park Foreshore upgrade works Town Green & Kooloonbung Creek 	upgrades (ongoing) - Coastar Waik upgrade - Beach to Beach & Creek to Creek works (ongoing) - Lake Carthe freeshore masternian				2. Startler CLAM for Lake Cahle on the sector of CLAM for Cahle Cahle Flynweer not completed Flynns Beach Seawal Investigation Constat Hazard Assessment constat Hazard Assessment complete scalar Hazard Assessment complete complete beach moniforment and protection works as require as required and Penetment Wall onglong Read Reventment Wall onglong	 Illaroo Road Stormwater Redirection project ongoing 	 Existing land zonings prone to multiple threats incoding, bushfler, coastal erosion, tidal inundation etc) Urban spraw into productive farmiand and encroachment into sensitive environmential areas 	DPI Fisheries responsible	Hood Studies complete for the Healings Rher, Hibbard Pecifict, Carnifer Haven Rher and Wrights Careka: Haven Rher and Wrights Careka: Haven Star Foodplain Risk Management Paris (FRMP) Risk Management Paris (FRMP) Carnder Haven Rhers.
Knowledge gaps	 roupatis munication at care carbie when lake full, need survey heights AHD of public and private assets around lake foreshore at risk to 1.6m AHD. 	 Small section of Tallong Drive impacted when lake full. 	truction condition ed out ed out the clamade clamade clamade clamade clamade clamade			Orasal Hazara Studies have only been done for Lake calling have been identified as potential areas of interest: Ratione Basch, Streng, Basch, Confla Estate (North Streng, North Haren Basch, Streng, North Haren Basch, Streng, North Haren Basch, Streng, North Haren Basch, Streng, North Haren Basch, Streng Gaverment coastal erolsin distaset.		 No policy on how to manage existing developments where subject to significant risis Review long term painning documents to limit urban spawi and instead consolidate existing sullable developed areas 	 PMHC has little knowledge of Fish/Oyster/Prawn stock changes 	cander Heyer THAT is cultated and key action ferms have been compared update request. Not PHKS or table for Wayls Creek, Hobard Precind. Not PHKS for Lake Cathing Lake Innes System. Lake Cathie Bood study update is required.
	 Unoer lake uceaned survey of impacted infrastructure (footpaths, open space, sewer and stomwater infrastructure etc) around 	Lake Cathle to Investigate options to mitigate flood risk to public and private assets to lake water level of 1 fm AHD	2. Investigate options to raise small section of Tallong Drive near intersection with Glerugie Street.	 Underfake ASS Information of ASS Information of ASS Information of ASS Suby for Lake Contine, Suby Transcomprising A Review 2013 Reversion 8 Review 2013 Reversion 6 Chapter onglong water sampling within System 	 Containting Containting Containting Containting Community condition Community condition within Lake Innes Review of entrance opening strategy to mitigate the impact of ASS. 	T Request access to NSW hazard mapping to inform whether further investigation is required for areas of open coastline custisfic of Town Beach, Lake Cathle & Phrims Beach,		 Develop a climate change policy Review DCP to Improve capacity to achieve urban influ Biodiversity strategy Koala Plan of Management 	 Request access to DPP Fisheries catch records to determine whether further investigation is required. 	 Nil as these studies come under the Floophain Management Program.
Responst- bility				PHHC SWRU DPIC		PMH-C Cown Lands		PWHC	DPI Fisheries	PMHC
Invasive weeds	Recreational Users impacts	Urescreation and Urescreation and Seargrass Changless Changless Changless Manuelschoy/ Manuelsch		Urcertainties	Ocean Bath/ Tidal Pool	Ripartan Zone Impacts	River Bank Erosion		Sea-level Rise / Tidal Inundation	
s All	All	Hastings, Camden Haven	All		Open Coastiine	Hastings, Camden Haven	Hastings, Camden	Haven	All	
 Invasive weeds are managed in accordance with Biosecurity Act 2015 and controls are effective. 	 Management of foreshore lands and access to beaches and rivers is ongoing as per various EMP actions. 	 PMHC has seagrass mapping incorporated into GIS software. No other management 	 Management responsibilities are presently uncertain as a result of recent changes to multiple pieces of hegislation. 	Provious EMPs are no longer receptiske ordinary seek funding has ordinarily seek funding has crown Land literising Crown Land Literi	 New tidal pool/ ocean bath is desired by commenter by the point inner provided for investigations. The ocean bath located at North Heven requires ongoing maintenance 	• •	 Riverbank erosion has historically been undertaken by PMHC at 	various locations PMH/C strategically maintains existing foreshore/ripartain vegization value or control and native plantings as per EMP PMH/C maintains existing rock wall protection as per EMP addrons.	 LGA wide SLR inundation mapping complete for 0.4m (2050 Horizon) and 0.9m (2100 Horizon) SLR scenarios 	The Carter Large Carter Tase Scale Large Carter Tase Scale Carter Carter Tage 2015 Indure SL A Scenarios for 2050 and 2100
 Consultation with LLS ongoing 	 Audit access, condition and any pressures. 	 Seagrass extent is poorly understood, as is the extent of impact on other aspects of the aquatic environment. 	 Management Responsibility is unclear between PMHC, Crown Lands and other government agencies Lake Cathle is the most 	arras, location as a resur or mis Issue.	 The interactions of these proposals with coastal processes is unknown 		Current waterway bank erosion condition and the status of priority	sites for restoration to reduce sedimentation and water quality impacts.	The effect of SLR and tidal Inundation on Coastal Management Areas, vegetation communities and other assets is	 The impact on intrastructure and seases is releasely unknown. The impact on intrastructure and on current policy patient to pinity magneting SLR. SLR is piolographical seasoning proor Pauloy, however not all more advortative crantiner (this wave
 No action in Stage 2. Continue to liaise with LLS to implement controls. 	1. Review audit processes.	 Lobby Fisheries to update seagrass mapping in the PHMC LGA 	 Management Agreements to be considered and roles clearly defined. 		 No action in Stage 2. To be considered in CMP once feasibility studies are completed. 	1. No action in Stage 2.	1. No action in Stage 2.		 Assess impact of SLR and tidal Inundation on other mapped assets and Coastal Management 	Areas. 2. Inflate steps to complete LGA wide SLR and Tidal Infundation policy (possibly via cumate change policy).
PMHC LLS DPI	PMHC Crown Lands TinSW		PMHC Crown Lands NPWS	DPIE Fisheries DPI DPI	PMHC	PMHC Private landholders community groups LLS	PMHC Crown	TfNSW	PMHC	

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PAMHC DPIE FISheries NSW Health	PMHC Crown DPIE DPIE Risheries NPWS	PMHC
1. No action in Stage 2. Anorage funding for Ecohean monitoring 2. Prepare LGA wide water quality monitoring to ensure and reporting stategy. 3. Judit all water quality monitoring currently monitoring currently monit	Understein erwierund asserts Ingaacted by flooding (open reserves, footpaths, severa infrastructure, roads/a sersituary and and and a consider Paod Study to inform whether lake operflags required to alevalate kenwood Drive flooding inpacts.	 High level geotechnical sessenment could inform management strategles for existing and proposed assets located on coastal headiands.
 Include of commany is the commany pering to the commany and stateholders on what the montaring means. Lack of LA wride water quality strategy during the objectives and values of waterways that the montaring strategy seeks to report on. 	Hindigation of projections studies (i.e., Hindiogramic Mactel) into new opening strategis, mousely and insummer strategis, mousely of taken system throwingle of taken system and Lakeside Wood's estate Drive and Lakeside Vood's estate Drive and Drive and Drive and Drive and Drive and Drive Drive and Drive and Drive and Drive and Drive Drive and Drive and Driv	 Gaps in knowledge of susceptibility of coastal headlands to enoson.
c) Softmatter management as outlined antier for choinstain trough a performed for PMHC by the University of New England (UNE) throughout the LGA PMHCS abordrough or design and for a some same water quarty testing at facilities and in some submiss. Creek & Kooloonbung Creek.	 Lake entrance strategy requires review 	 Audit of structures located on variant headinates and cliffs Losatian headinates and cliffs Losatian headinates where assets assessment to determine ensuity of coastal headings where assets are located.
IN	Lake Cathle/ Lake Innes,	Open Coastline & Lake Cathle/ Bonny Hills/ Lake Innes
Water Quality Changes	Docul Entrance Opening	Coastal Cliff Instability

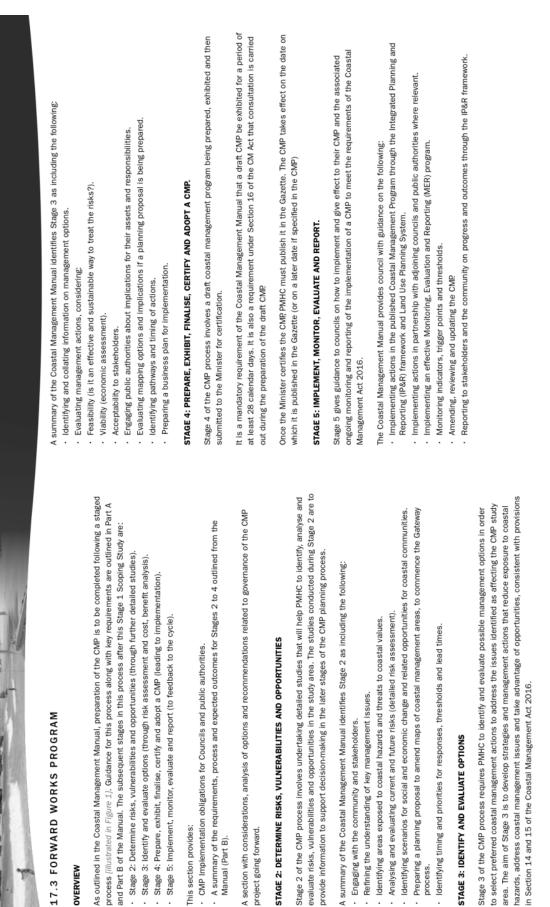
PMHC DPIE Crown Land	PMHC LLS DPI	PMHC Crown Lands	PMHC
 Assess impacts of SLR on entrance opening and berm. Consider management Options to minimise ension of foreshore Reserve 	1 No action in Stage 2 Contrinue to Vitales with LLS to implement controls.	1. Update Dredging Strategy Investigate samt stroating Within Lake Cathle/Lake Minnes	T Review compliance with assimilation of the second second paras and subsects and second second second second and second second second second second second second and second second and second second and secon
 Entrance listality ould occur as a result of storms overtopping berm Climate change may change berm ofmanus and behaviour Foreshore reserve susceptible to ension from tidal flows and ocean swells. 	The full extend of freat deer population in the LOA is unknown and needs to be established.	Scientific investigation into scientific investigation and changes in san's inolarigh has changes in san's inolarigh has observe dreeging of main channel system system system and Fahrman to access Marina and Exheman to access Marina and Exheman to access Marina and Exheman to access Marina and Exheman to access for a channel of a channel in any update to the Dredging Strategy.	nangement gans and ALSFEC considered in stormweller ins considered to impacting antro- ins believed to impacting antro- mark of the second or impacting antimative store devices for minimal water quark grant provisions. Internet and any devices for existing water quark grant devices minimative stere are electoped and/or compared to can reviewe and/or compared to can reviewe based on industry best practice based on industry and and based on industry best practice based on industry based practice based on the practice and industry based on industry based practice based on the practice and industry based based based based based based industry based based based based based based based based based industry based based industry based
 Lake mouth subject to impacts from storms, climate charge and flooding 	Abore culting encetations of fear deer (Largey minifective) in accordance with the Heatings Wild encodente Standy (LLS). Previously had a vertebraite peaks othere employed however this has ceased	Changes In sand shoals is an issue of concentry. Cablie Communy. Cablie Communy. The Perging strategies and EMPs maintain maigradie waterways maintain maigradie waterways maintain maigradie waterways maintaine for commercial silpway precidentia of channel near Lady Presion What Undertaken on a precide channel near Lady Presion What Undertaken on a precide channel near Lady of the reveating of channel near precide channel near Lady for reveating of channel near the near concest of the near the near concest of the near and marks is maintained.	currows to achieve principle controws to achieve principle objectives Site spoentic stormwater anangement pains .e.g. for large developments Gross Poutant Traps (SPT) are cross Poutant Traps (SPT) are cross Poutant Poort South Operational Poort Operational Poort O
Lake Cathle/ Lake Innes,	Hastings, Lake Cathie/ Bonny Hills/ Lake Innes, Camden Haven	Hastings River, Camden Riven River, Lake Cathle/ Hills/ Lake Lake Innes	All .
Coastal Lake or Watercourse Entrance Instability	Vertebrate	/ Shoaling	Urban and Runel Stormwater Runoff

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Manual (Part B).

OVERVIEW

process.

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CMP STRUCTURE AND PROJECT GOVERNANCE

The NSW Coastal Management Framework provides flexibility around the scope, structure and governance arrangements of a CMP

A CMP provides a unique opportunity for Council, state government agencies and their

communities to achieve a strategic and coordinated approach to manage coastal risks and improve coastal habitats and environments, for both environmental and social (community) benefit within the PMH LGA.

proposals (if required) and development control plans under the Environmental Planning and Assessment Act to which Part 2 of Chapter 13 of the Local Government Act 1993 applies, and the preparation of planning preparation, development and review of, and the contents of, the plans, strategies, programs and reports PMHC will manage the CMP development, implementation and reporting processes. This includes the 1979.

Potential governance and management arrangement for the CMP are outlined in [Table 18].

Entity	Responsibility
Port Macquarle-Hastings Council	Lead agency, coordination and implementation.
State Agencies. Department of Planning Industry and Environment Department of Industry - Crown Lunds and Water Department of Industry Industries - Fisheries National Plans and Water Services National Plans And Water Services National Plans Martime Services - Transport for NSW	Sign off on CMP, collaboration, action(s) and Implementation (as defined).
Coast Estuary & Floodplain Adrisory Sub-Committee - Port Maquainf-Hastility Scouncil - State Agencies - Industry Representatives - Community Representatives	Councell adopted Sub-Committee, to assist Councel In undertaining management and planning. To assist revelwing studies, pains and policies and to provide and receive feedback from the community.

Table 18: Potential CMP Governance and Management

CMP CHAPTERS AND TIMELINES

CMP Stage	Lake Cathle/ Bonny Hills	Hastings	Camden Haven	Open coastline
2	2020-2021	2021-2022	2022-2023	2022-2023
3	2021-2022	2022-2023	2023-2023	2023-2023
4	2021-2022	2022-2023	2023-2024	2023-2024
5	2023	2024	2025	2025
Table 19: Order of CMP Chapters and approximate timelines	and approximate tim∈	klines		

Lake Cathle/ Bonny Hills Priortty	Priority	Details	Cost
Stage 2	Extreme	Digestion model of the Acid Sulphate Soli (ASS) study.	\$185,000
Stage 2	Extreme	Review of the Lake innes Environmental Assessment (2013) (Lake Innes reversion study).	\$50,000
Stage 2	Extreme	Extreme Ecological condition assessment of the saltmarsh community within Lake innes.	\$10,000
Stage 2	Extreme	Extreme Review of possible ASS containment works.	\$50,000
Table 20: Initial Stage 2 studies for Lake Cathle/Bonny Hills	es for Lake Cat	hie/Bonny Hills	

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17.4 PRELIMINARY BUSINESS CASE

OVERVIEW

with a CMP for the four main areas in the LGA: The Hastings River, Lake Cathie/Bonny Hills (including adjoining A preliminary business case is provided herein to outline the benefits of and recommendation for, progressing open coastline), Camden Haven River as well as the coastline from Point Plomer to Diamond Head (excluding coastline around Lake Cathie township).

to build on the existing coastal management work considering lessons learnt, and improved engagement and Reforms to the NSW coastal management legislative and regulatory framework present a unique opportunity collaboration with relevant stakeholders and agencies, preparing a holistic, inclusive CMP. This business case demonstrates the benefit of preparing a CMP to the economic, social and ecological values risk based approach to coastal management, which can be facilitated through the preparation of a CMP. There of the Port Macquarie-Hastings region. The business case aims to demonstrate the need to take a long-term, is a wealth of existing information and suitable management actions in former EMP's and CZMP's, and the CMP will provide an opportunity to build on these past studies and planning.

Considerations and context for collaboration and cost sharing arrangements are also provided. A preliminary business case is a requirement of the Stage 1 CMP Scoping Study.

2021. Additionally, the grants funding package which accompanied the coastal management reforms in NSW entire coastal zone. The current timeframe for transitioning older style plans to CMPs is the 31st December will only extend to the 2020-21 financial year. State government funding under the Coast & Estuary Grants Under the Coastal Management Act, Council may prepare a Coastal Management Program that covers its program is not confirmed nor guaranteed after this time. The CMP for the Port Macquarie-Hastings will cover the entire coastal zone and the three estuaries and the coastline.

ECONOMIC, ENVIRONMENTAL AND SOCIAL BASIS

valued by the community. The biological and natural assets contribute to the cultural, lifestyle, aesthetic and The Port Macquarie-Hastings area is a wonderfully biodiverse region and its natural environment is highly recreational identity of the area. The natural environment is also locally enriched by a long history and ongoing connection of Aboriginal people with the coast, post-European settlement heritage and a wide range of passive and recreational activities.

The waterways and coastline in the study area are highly utilised by the public for swimming, fishing, surfing and a variety of other recreational activities. The area also supports valuable aquaculture and commercial fishing industries.

As such the coastline supports many significant and important environmental, economic, sociocultural values and community benefits. These values and benefits are threatened by increasing pressures including coastal hazards, climate change, sea level rise, population and tourism growth and coastal development.

A CMP will provide a comprehensive strategic vision and action plan that is locally contextualised and enabled through a government supported process, for managing the priority issues affecting the study area

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PROGRAM RISKS AND RESPONSIBILITIES

Some key risks and challenges associated with the development of a CMP are:

Resourcing

 Ongoing allocation of resources. The preparation of a CMP could potentially result in conflict within Council and with other contributing stakeholders, in terms of competing needs for scarce resources (including but not limited to funding and staff).

Responsibility

 Co-ordination, ongoing involvement and meaningful commitment of multiple agencies during both the development and implementation of the CMP.

Funding

- Grant funding is only available for existing CZMP's, developing a CMP or for action items contained within CMP's. For existing CZMP's only 1:1 funding is available. For development of CMPs' only 1:1 funding is available. For adopted items on CMP's 2:1 funding is available.
- Council has limited funding, therefore its ability to development and implement actions for management of the coastline and estuaries is limited.
- · Coastal & Estuary grant funding applications are not always successful.
- Coastal and Estuary grant program funding is not guaranteed after 20-21 FY.
- For projects with significant costs they need to be accompanied by a CBA (it should be noted that the role
 - For projects wird significant costs they need to be accompanied by a Cost (it should be invied that the for CBAs play and how they are used is currently under review by the NSW Government).

Expectations

- Expectations of key stakeholders (agencies, authorities and community) not aligning with priorities. Preparation of the CMP is likely to create (or exacerbate) community expectations for the implementation of actions for coastal management. An inherent risk exists if the CMP process fails to deliver the actions, or if these actions fail to achieve the vision and objectives of the CMP.
- Negative community opinion of "yet another plan".
- Outcomes of coastal hazard assessment not being palatable to some members of the community (insurance and a perceived decline in property values).
- Expectation that the NSW Government will not change the program again and result the CMP process being redundant.

EXISTING MANAGEMENT ARRANGEMENTS

The estuaries have been the subject of previous management investigations and as such, each had an EMP prepared under the former NSW planning frameworks. The existing plans vary in age and in the extent to which management actions have been implemented. Similarly, certain areas of the coastline (Town Beach, Lake Cathie) were the subject of previous investigations with Lake Cathie still having an active CZMP. However this plan will lapse in December 2021 unless the actions from this plan are incorporated in a new CMP.

COMMUNITY AND STAKEHOLDER ENGAGEMENT STRATEGY

Impacts of COVID-19 on this Strategy: At the time of developing this Strategy, governmental guidance and policies regarding the COVID-19 pandemic are likely to present significant challenges and limitations with regards to in-person community and stakeholder engagement tasks. The situation is complex and dynamic, and timing and duration of state and federal government policies cannot be reasonably predicted over the life of the project (at least at this stage). Therefore, the Strategy will need to consider the possibility that social distancing restrictions may affect the engagement activities throughout the project. If this comes to bear, then the engagement strategy may need to be updated and reviewed at the beginning of each CMP Stage in order to

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adequately align with the current circumstances and government advice.

The likely impact will be the replacement of "in-person" engagement tasks with online and remote engagement methods. Some advice and guidance regarding such methods has been provided by IAP2 and the World Health Organisation (WHO). At the time of developing this strategy, some relevant resources include: • World Health Organisation (WHO) advice on Hww to manade COVID-19 rick when organising meetings &

- World Health Organisation (WHO) advice on How to manage COVID-19 risk when organising meetings & events (WHO, 2020a)
 - WHO technical guidance on Getting your workplace ready for COVID-19 (WHO, 2020b)
- WHO Report: COVID-19: How to include marginalized and vulnerable people in risk communication and
- community engagement (WHO, 2020c)
- IAP2: 5 Keys to Digital Engagement (IAP2, 2020)
- Based on this, some remote engagement methods that may be suited to this strategy include:

 The use of "Virtual Town Hall Meetings" through live streaming. This can include broadcasting important events and public consultations, showcasing experts, panels, and live interactive Q&A sessions with stakeholders.
- The use of pre-recorded video "webinars" which can communicate project objectives, methods and/or
 outcomes. These can be integrated into the Have Your Say project web page.
- Interactive online data sharing methods, including use of web-based mapping portals for "drop-pinning" areas of importance and "photo-sharing". Many of these can be accessed through Engagement & Public Participation Software such as "Bang the Table" that can be easily integrated into the Have Your Say project web page.
- The increased use of online community surveys.

The appropriateness of these engagement methods should be assessed at the commencement of each CMP Stage, based on state and federal government advice and policy. There are a broad spectrum of stakeholders involved in the CMP process given the complex and diverse nature of coastal management. These stakeholders range from State Government agencies to community groups. Table 11 below identifies known stakeholders. It is intended that the number of stakeholders will increase as well as the detail around their interests as the CMP process progresses. The exact timeframe of stakeholder has not yet been determined however it is likely to comprise of information sessions, surveys and meetings.

PMHC's community and stakeholder Engagement plan involves consulting with both internal Council staff and key external stakeholders including the general community, and the Coast, Estuary & Floodplain Advisory Sub-Committee. For this Stage 1 scoping study, relevant community interests and aspirations were drawn from previous community engagement and in addition to this, PMHC is conducting a live Q&A session on the 26th May 2020 with expert NSW Government speakers to communicate to the community wity PMHC is developing a CMP and how it will be utilized to manage our coastline and estuarine systems. PMHC understands that extensive engagement is required in order to capture the vast array of values held by people across the LGA and to incorporate the knowledge from cross-disciplinary interactions.

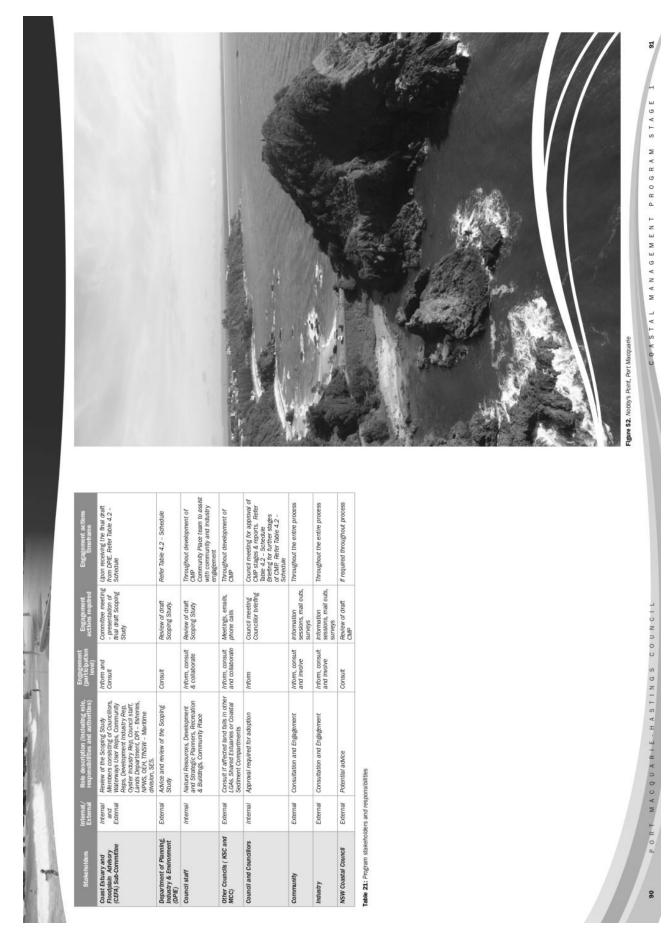
Throughout the following stages of the CMP the engagement plan will evolve along with the objectives according to the CMP Framework. 89

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ATTACHMENT

A.1 HILL STREET, PORT MAQUARIE

Mean maximum temperature (Degrees C) for years 1907 to 2003 25.7 Highest temperature (Degrees C) for years 1910 to 2003 21.2 Date of Highest temperature (Dry years 1910 to 2003 26.10 Date of Highest temperature (Dry years 1910 to 2003 11.2 Date of Highest temperature (Dry years 1910 to 2003 18.11 Date of Lowest maximum temperature for years 1910 to 2003 18.18 Date of Lowest maximum temperature (Degrees C) for years 1910 to 2003 1.30.15 Declie J maximum temperature (Degrees C) for years 1910 to 2003 23.55 Declie J maximum temperature (Degrees C) for years 1910 to 2003 23.78 Mean number of diax y= 35 Dedrees C for years 1910 to 2003 27.8	25.9		23.2	20.7	18.5	170		Ì						İ	
	33.5					E'JT	18.8	20.4	21.8	23.2	24.7	22.2	97	1907	2003
		35	33.3	30.1	26.7	28	29.4	34.4	38.3	42.3	41	42.3	58	1910	2003
	4 20-Feb-98	38 13-Mar-13	3 8.Apr-66	2-May-91	16-Jun-02	18-Jui-74	27-Aug-70	27-Sep-65	22-0ct-88	19-Nov-68	2-Dec-79	19-Nov-68	N/A	1910	2003
	19.4	-	-	13.9	10.3	10.1	11.5	13.9	14.4	16.7	18	10.1	28	1910	2003
	8 15-Feb-18	L8 2-Mar-87	7 22-Apr-17	25-May-16	9-Jun-13	14-Jul-20	14-Aug-76	1-Sep-12	23-0ct-18	10-Nov-93	21-Dec-75	14-M-20	N/A	1910	2003
	23.9	22.8	20.8	18.2	16.1	15.6	16.7	17.8	19.2	20.6	22.2		58	1910	2003
	28	27.2	25.7	23.3	21.1	20.5	21.7	23.5	24.5	26	27.2		58	1910	2003
	0.2	0.2	0.1	0	0	0	0	0.1	0.4	0.6	0.7	2.9	58	1910	2003
	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.4	58	1910	2003
Mean number of days >= 40 Degrees C for years 1910 to 2003 0	0	0	0	0	0	0	0	0	0	0	0	0	58	1910	2003
Mean minimum temperature (Degrees C) for years 1907 to 2003 18.3	18.4	17.1	14.1	10.9	8.5	7.2	7.7	9.9	12.8	15.2	17.1	13.1	97	1907	2003
Lowest temperature (Degrees C) for years 1910 to 2003	11.7	8.2	7.2	1.4	0	-0.6	0.6	2.2	3.6	5.1	9.8	-0.6	28	1910	2003
Date of Lowest temperature for years 1910 to 2003 25-Jan-61	1 10-Feb-96	96 14-Mar-13	3 17-Apr-61	31-May-11	6-Jun-20	13-Jul-18	18-Aug-70	9-Sep-19	11-0ct-10	6-Nov-13	28-Dec-93	13-M-18	N/A	1910	2003
Highest minimum temperature (Degrees C) for years 1910 to 2003 23.7	24.5	23	21.5	20.5	16.7	19.1	16.7	18.5	21.7	22.5	23.1	24.5	58	1910	2003
Date of Highest minimum temperature for years 1910 to 2003 27-Jan-87	(7 17-Feb-81	31 3-Mar-81	11-Apr-74	5-May-96	14-Jun-67	1-301-20	25-Aug-69	13-Sep-73	30-0ct-88	26-Nov-67	31-Dec-95	17-Feb-81	N/A	1910	2003
Declie 1 minimum temperature (Degrees C) for years 1910 to 2003 15.8	16.1		11.2	7.2	2	3.9	4.6	6.7	9.4	11.7	14		58	1910	2003
Decile 9 minimum temperature (Degrees C) for years 1910 to 2003 21.2	21.4	20	17.9	15.1	12.7	11.2	11.6	14.4	16.8	18.7	20.3		58	1910	2003
Mean number of days <= 2 Degrees C for years 1910 to 2003	0	0	0	0	0.3	0.5	0.2	0	0	0	0	1	58	1910	2003
Mean number of days <= 0 Degrees C for years 1910 to 2003	0	0	0	0	0	0.1	0	0	0	0	0	0.1	58	1910	2003
Mean rainfall (mm) for years 1840 to 2010 152.3	178.1	175.2	167.3	144.3	133.2	97.6	81.3	81.4	94	104.1	126.5	1515.2	140	1840	2010
Highest rainfall (mm) for years 1840 to 2010 1387.6	844.5	678	619.2	916.4	651.5	774.2	775.5	355.8	419.5	462	636.7	3204.4	150	1840	2010
Date of Highest rainfall for years 1840 to 2010 1848	1929	1974	1963	1852	1930	1950	1899	1954	1914	1887	1873	1950	N/A	1840	2010
Lowest rainfall (mm) for years 1840 to 2010 5.7	1.8	9.8	7.2	6.9	3.3	0.5	0	0	9.4	1.6	8.1	734	150	1840	2010
Date of Lowest rainfail for years 1840 to 2010 1882	1939	1965	1996	2004	1904	1910	1991	2003	1843	1926	1847	1915	N/A	1840	2010
Decile 1 monthly rainfall (mm) for years 1840 to 2010 35.3	51.3	60.2	40	22.6	16.5	10.7	8.1	14.1	23.1	28.3	29.6	1034.7	149	1840	2010
Decile 5 (median) monthly rainfall (mm) for years 1840 to 2010 112.4	158.8	156.6	131	112.8	104.6	73.3	53.1	63.7	72.6	87.8	109.9	1424.5	149	1840	2010
Decile 9 monthly rainfall (mm) for years 1840 to 2010 259.2	324.9	306.7	346.5	284.3	285.2	207.6	189.5	186.2	191.8	195.2	235	2116.5	149	1840	2010
Highest daily rainfall (mm) for years 1841 to 2010 274.6	212.2	259.6	298.2	180.1	189.2	140.7	142.2	149.4	150.6	273.3	205.2	298.2	142	1841	2010
Date of Highest daily rainfall for years 1841 to 2010 8-bn-62	2 6-Feb-02	2 12-Mar-74	4 28-Apr-63	1-May-55	19-Jun-30	20-Jul-50	31-Aug-35	23 Sep 1881	18-0ct-14	09 Nov 1887	05 Dec 1873	28-Apr-63	N/A	1841	2010
Mean number of days of rain for years 1840 to 2010	13.2	14.1	12.6	113	10	9.1	8.5	8.8	10.5	11	11.2	132.7	149	1840	2010
Mean number of days of rain >= 1 mm for years 1841 to 2010 8.6	9.4	10.4	6	7.9	7.1	6.1	5.6	9	7.2	7.4	7.9	92.6	142	1841	2010
Mean number of days of rain >= 10 mm for years 1841 to 2010 3.3	3.7	4	3.7	3.1	e	2.2	17	1.8	2.2	2.6	2.8	34.1	142	1841	2010
Mean number of days of rain >= 25 mm for years 1841 to 2010 1.3	1.7	1.6	1.6	13	13	0.9	0.7	0.7	0.7	0.8	1.2	13.8	142	1841	2010
Mean dally solar exposure (MJ/(m*m)) for years 1990 to 2020 24.2	21.4	18.2	15.2	11.5	9.8	11	14.6	18.5	20.8	22.3	23.8	17.6	30	1990	2020
Mean number of clear days for years 1957 to 2003	5.9	8.3	9.4	9.8	10.7	13.2	14.5	12.9	10	7.8	8.5	118.9	47	1957	2003
Mean number of cloudy days for years 1957 to 2003 11.2	11.5	10.8	9.3	10.1	9.6	2.6	6.9	6.1	9.4	10.6	10.6	113.7	47	1957	2003
Mean 9am temperature (Degrees C) for years 1907 to 2003 23.1	22.8		19	15.6	12.8	11.7	13.3	16.5	19.2	20.8	22.4	18.2	86	1907	2003
Mean 9am wet bulb temperature (Degrees C) for years 1907 to 2003 20.5	20.6	19.6	16.8	13.7	11.1	9.8	10.9	13.5	16.1	17.9	19.5	15.8	85	1907	2003
Mean 9am dew point temperature (Degrees C) for years 1957 to 2003 18.8	19.1	17.9	15.2	118	9.2	7.3	80	10.2	13.1	15.4	17.4	13.6	46	1957	2003
33	81	81	79	80	80	22	73	70	11	74	76	22	85	1907	2003
Mean 9am cloud cover (okas) for years 1907 to 2003 4.2	4,4	4.1	3.7	3.6	3.6	3.1	2.8	2.9	3.6	4	4	3.7	78	1907	2003
Mean 9am wind speed (km/h) for years 1957 to 2003 14.4	13.7	13.3	13.4	13.3	13.8	13.5	13.5	14.5	15.2	15.1	14.3	14	46	1957	2003
Mean 3pm temperature (Degrees C) for years 1909 to 2003 24.4	24.6	23.9	22	19.7	17.6	17	17.7	19.1	20.3	21.8	23.2	20.9	84	1909	2003
Mean 3pm wet bulb temperature (Degrees C) for years 1909 to 2003 21.4	21.6	20.8	18.5	16.1	14.1	13.2	13.7	15.4	17.1	18.7	20.3	17.6	83	1909	2003
Mean 3pm dew point temperature (Degrees C) for years 1957 to 2003 19.4	19.6	18.5	16	12.9	10.3	8.7	9.3	11.7	14.3	16.2	18.1	14.6	46	1957	2003
Mean 3pm relative humidity (%) for years 1909 to 2003 75	75	74	70	68	66	63	62	99	11	73	75	20	83	1909	2003
Mean 3pm cloud cover (oktas) for years 1921 to 2003 4.2	4,4		4.1	4	3.9	3.4	3.3	3.4	3.9	4.2	4.3	3.9	75	1921	2003
Mean 3pm wind speed (km/h) for years 1957 to 2003 21.4	20.7	19.6	18.5	16.8	17.3	18.1	20.1	22.7	22.8	22.5	21	20.1	46	1957	2003

Item 13.07 Attachment 1

ORDINARY COUNCIL 20/05/2020

93

COASTAL MANAGEMENT PROGRAM STAGE

92

PORT MACQUARIE-HASTINGS COUNCIL

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Image: contrant interacting barrier of the contran	Statistic Element	January	February	March	April	May	June	үт	August	September	October	November	December	Annual	Number of Years	Start Year	End Year
(10) (10) <th< th=""><th>Mean maximum temperature (Degrees C) for years 1995 to 2020</th><th>28</th><th>27.7</th><th>26.5</th><th>24.4</th><th>21.7</th><th>19.5</th><th>19</th><th>20.3</th><th>22.7</th><th>24.1</th><th>25.4</th><th>26.9</th><th>23.8</th><th>25</th><th>1995</th><th>2020</th></th<>	Mean maximum temperature (Degrees C) for years 1995 to 2020	28	27.7	26.5	24.4	21.7	19.5	19	20.3	22.7	24.1	25.4	26.9	23.8	25	1995	2020
Handi Checki Checki </th <th>Highest temperature (Degrees C) for years 1995 to 2020</th> <th>41.9</th> <th>46.6</th> <th>34.5</th> <th>33.5</th> <th>30.1</th> <th>26.8</th> <th>27.1</th> <th>34.6</th> <th>38.2</th> <th>39.4</th> <th>38.6</th> <th>43.3</th> <th>46.6</th> <th>25</th> <th>1995</th> <th>2020</th>	Highest temperature (Degrees C) for years 1995 to 2020	41.9	46.6	34.5	33.5	30.1	26.8	27.1	34.6	38.2	39.4	38.6	43.3	46.6	25	1995	2020
19. 10. <th>Date of Highest temperature for years 1995 to 2020</th> <th>18-Jan-17</th> <th>12-Feb-17</th> <th>9-Mar-04</th> <th>9-Apr-19</th> <th>4-May-07</th> <th>16-Jun-02</th> <th>31-Jul-17</th> <th>24-Aug-09</th> <th>24-Sep-17</th> <th>20-0ct-12</th> <th>29-Nov-06</th> <th>24-Dec-05</th> <th>12-Feb-17</th> <th>N/A</th> <th>1995</th> <th>2020</th>	Date of Highest temperature for years 1995 to 2020	18-Jan-17	12-Feb-17	9-Mar-04	9-Apr-19	4-May-07	16-Jun-02	31-Jul-17	24-Aug-09	24-Sep-17	20-0ct-12	29-Nov-06	24-Dec-05	12-Feb-17	N/A	1995	2020
11 10<	Lowest maximum temperature (Degrees C) for years 1995 to 2020	19.5	20.1	19.8	15.6	14	113	12.4	12.4	14.7	14.4	16.6	19.1	11.3	25	1995	2020
306 303 203 204 203 <th>Date of Lowest maximum temperature for years 1995 to 2020</th> <th>15-Jan-16</th> <th>16-Feb-96</th> <th>30-Mar-02</th> <th>22-Apr-08</th> <th>30-May-11</th> <th>30-Jun-98</th> <th>18-Jui-04</th> <th>11-Aug-03</th> <th>5-Sep-95</th> <th>2-0ct-11</th> <th>23-Nov-96</th> <th>1-Dec-11</th> <th>30-Jun-98</th> <th>N/A</th> <th>1995</th> <th>2020</th>	Date of Lowest maximum temperature for years 1995 to 2020	15-Jan-16	16-Feb-96	30-Mar-02	22-Apr-08	30-May-11	30-Jun-98	18-Jui-04	11-Aug-03	5-Sep-95	2-0ct-11	23-Nov-96	1-Dec-11	30-Jun-98	N/A	1995	2020
313 303 304 <th>Declie 1 maximum temperature (Degrees C) for years 1995 to 2020</th> <th>24.6</th> <th>24.8</th> <th>23.8</th> <th>21.5</th> <th>19</th> <th>16.9</th> <th>16.3</th> <th>17.3</th> <th>19</th> <th>20.1</th> <th>21.3</th> <th>23.5</th> <th></th> <th>24</th> <th>1995</th> <th>2020</th>	Declie 1 maximum temperature (Degrees C) for years 1995 to 2020	24.6	24.8	23.8	21.5	19	16.9	16.3	17.3	19	20.1	21.3	23.5		24	1995	2020
64 45 61 02 02 0 02 </th <th>Decile 9 maximum temperature (Degrees C) for years 1995 to 2020</th> <th>31.3</th> <th>30.3</th> <th>29.1</th> <th>27</th> <th>24.5</th> <th>22.1</th> <th>21.7</th> <th>23.8</th> <th>27</th> <th>28.2</th> <th>29.5</th> <th>30.5</th> <th></th> <th>24</th> <th>1995</th> <th>2020</th>	Decile 9 maximum temperature (Degrees C) for years 1995 to 2020	31.3	30.3	29.1	27	24.5	22.1	21.7	23.8	27	28.2	29.5	30.5		24	1995	2020
01 01<	Mean number of days >= 30 Degrees C for years 1995 to 2020	6.4	4.5	1.9	0.2	0	0	0	0.1	1	1.5	2.5	4	22.1	25	1995	2020
01 01<	Mean number of days >= 35 Degrees C for years 1995 to 2020	0.5	0.4	0	0	0	0	0	0	0.2	0.2	0.4	0.3	2	25	1995	2020
155 154 171 133 333 33 <t< th=""><th>Mean number of days >= 40 Degrees C for years 1995 to 2020</th><th>0.1</th><th>0.1</th><th>0</th><th>0</th><th>0</th><th>0</th><th>0</th><th>0</th><th>0</th><th>0</th><th>0</th><th>0.1</th><th>0.3</th><th>25</th><th>1995</th><th>2020</th></t<>	Mean number of days >= 40 Degrees C for years 1995 to 2020	0.1	0.1	0	0	0	0	0	0	0	0	0	0.1	0.3	25	1995	2020
1 1 1 2 3	Mean minimum temperature (Degrees C) for years 1995 to 2020	18.5	18.4	17.1	13.9	10.3	8.3	6.3	6.6	9.3	12.1	15.1	16.9	12.7	25	1995	2020
1 1	Lowest temperature (Degrees C) for years 1995 to 2020	9.5	10.6	6'2	5	-3.5	-2.9	ņ	-2.4	0.6	2	4.2	7.5	3.5	25	1995	2020
223 224 213 218 518 518 519 <th>Date of Lowest temperature for years 1995 to 2020</th> <th>1-Jan-05</th> <th>10-Feb-96</th> <th>31-Mar-19</th> <th>7-Apr-06</th> <th>31-May-19</th> <th>16-Jun-06</th> <th>1-301-04</th> <th>21-Aug-18</th> <th>15-Sep-17</th> <th>17-0ct-10</th> <th>10-Nov-19</th> <th>3-Dec-19</th> <th>31-May-19</th> <th>N/A</th> <th>1995</th> <th>2020</th>	Date of Lowest temperature for years 1995 to 2020	1-Jan-05	10-Feb-96	31-Mar-19	7-Apr-06	31-May-19	16-Jun-06	1-301-04	21-Aug-18	15-Sep-17	17-0ct-10	10-Nov-19	3-Dec-19	31-May-19	N/A	1995	2020
Z-Mm00 (Find) Z-Mm03 S-Mm040 S-Mm040 S-Mm040 S-Mm040 S-Mm040 N/M S-Mm040 <th>Highest minimum temperature (Degrees C) for years 1995 to 2020</th> <th>24.2</th> <th>23.8</th> <th>22.4</th> <th>21.3</th> <th>19.8</th> <th>16.6</th> <th>16</th> <th>16</th> <th>18.6</th> <th>20.8</th> <th>22.5</th> <th>23.8</th> <th>24.2</th> <th>25</th> <th>1995</th> <th>2020</th>	Highest minimum temperature (Degrees C) for years 1995 to 2020	24.2	23.8	22.4	21.3	19.8	16.6	16	16	18.6	20.8	22.5	23.8	24.2	25	1995	2020
143 141 108 53 141 108 53 141 108 53 141 108 53 141 153 143 153 143 153 143 153	Date of Highest minimum temperature for years 1995 to 2020	24-Jan-20	4-Feb-17	26-Mar-19	13.Apr-98	5-May-96	8-Jun-02	14-301-10	27-Aug-99	29-Sep-04	29-0ct-03	7-Nov-18	31-Dec-05	24-Jan-20	N/A	1995	2020
22 21 20 17 146 125 11 113 130 103 0 <	Declie 1 minimum temperature (Degrees C) for years 1995 to 2020	14.9	15.3	14.1	10.8	5.9	3.4	1.9	2.2	4.9	7.7	11.3	12.8		25	1995	2020
0 0	Decile 9 minimum temperature (Degrees C) for years 1995 to 2020	22	21	20	17	14.6	12.5	11	11.3	13.9	16.3	19	20.4		25	1995	2020
0 0	Mean number of days <= 2 Degrees C for years 1995 to 2020	0	0	0	0	0.5	1.4	3.7	2.9	0.4	0	0	0	8.9	25	1995	2020
1427 1676 1711 1437 1646 1646 1646 1646 1646 1646 1646 1646 1647 1647 1647 1646 <th< th=""><th>Mean number of days <= 0 Degrees C for years 1995 to 2020</th><th>0</th><th>0</th><th>0</th><th>0</th><th>0.3</th><th>0.4</th><th>0.7</th><th>0.8</th><th>0</th><th>0</th><th>0</th><th>0</th><th>2.2</th><th>25</th><th>1995</th><th>2020</th></th<>	Mean number of days <= 0 Degrees C for years 1995 to 2020	0	0	0	0	0.3	0.4	0.7	0.8	0	0	0	0	2.2	25	1995	2020
418 424 5336 4314 326 3274 2714 2364 2364 236 3024 2364 236 1364 265 1366 2064 256 1366 2064 265 2064 265 2064 2065 2014 2014 2614 265 2014 266 2014 <th>Mean rainfall (mm) for years 1995 to 2020</th> <th>142.7</th> <th>167.6</th> <th>179.1</th> <th>134.2</th> <th>106.7</th> <th>138.1</th> <th>61.6</th> <th>61.7</th> <th>59.2</th> <th>75.4</th> <th>144.7</th> <th>109.1</th> <th>13713</th> <th>22</th> <th>1995</th> <th>2020</th>	Mean rainfall (mm) for years 1995 to 2020	142.7	167.6	179.1	134.2	106.7	138.1	61.6	61.7	59.2	75.4	144.7	109.1	13713	22	1995	2020
2015 2000 2017 2016 2016 2017 2017 2017 2017 2017 2014 104 105 <	Highest rainfail (mm) for years 1995 to 2020	418.8	424	533.6	431.4	328	342.4	227.4	234.6	233.6	275.1	330.4	261.6	2009.4	25	1995	2020
84 482 776 466 12 0 3 1 146 614 514 <	Date of Highest rainfall for years 1995 to 2020	2015	2020	2017	2009	3996	2009	2006	2007	1998	2004	2007	2017	2011	N/A	1995	2020
2019 2016 2016 2006 2001 1995 2013 <th< th=""><th>Lowest rainfall (mm) for years 1995 to 2020</th><th>8.4</th><th>48.2</th><th>27.8</th><th>7.6</th><th>4.6</th><th>1.2</th><th>0</th><th>m</th><th>1</th><th>14.6</th><th>9.8</th><th>20.4</th><th>514</th><th>25</th><th>1995</th><th>2020</th></th<>	Lowest rainfall (mm) for years 1995 to 2020	8.4	48.2	27.8	7.6	4.6	1.2	0	m	1	14.6	9.8	20.4	514	25	1995	2020
352 62 623 287 964 231 115 124 577 518 10709 255 1965	Date of Lowest rainfall for years 1995 to 2020	2019	2019	2016	2006	2006	2001	1995	2018	2003	2001	2019	2013	2019	N/A	1995	2020
114 145.7 156.2 03.3 64.7 138 64.8 33.4 41.6 59.6 135.2 25.6 199.5 25.6 199.5 25.6 199.5 25.6 199.5 25.6 199.5 25.6 199.5 25.6 199.5 25.6 199.5 25.6 24.0	Decile 1 monthly rainfall (mm) for years 1995 to 2020	35.2	62	62.3	29.7	9.6	23.1	11.5	4.2	7	31.4	57.7	51.8	1070.9	25	1995	2020
2727 335 2866 2873 246 2084 1074 1814 1261 1730 1731 257 1791 2192 2092 <th>Decile 5 (median) monthly rainfall (mm) for years 1995 to 2020</th> <th>114</th> <th>145.7</th> <th>156.2</th> <th>103.3</th> <th>64.7</th> <th>138</th> <th>64.8</th> <th>33.4</th> <th>41.6</th> <th>59</th> <th>132.6</th> <th>95.8</th> <th>1355.2</th> <th>25</th> <th>1995</th> <th>2020</th>	Decile 5 (median) monthly rainfall (mm) for years 1995 to 2020	114	145.7	156.2	103.3	64.7	138	64.8	33.4	41.6	59	132.6	95.8	1355.2	25	1995	2020
1668 1662 169 1548 95 110 100<	Decile 9 monthly rainfall (mm) for years 1995 to 2020	272.7	335	289.6	287.3	246	269.8	107.4	181.4	126.1	130.5	263.5	176.2	1739.1	25	1995	2020
ZYAMTG SFF00d IAMMTI ZIAMTO IAMMUI ZIAMTO IAMMUI ZIAMTO ZIAMTO <thziamto<< th=""><th>Highest daily rainfail (mm) for years 1995 to 2020</th><th>165.8</th><th>165</th><th>166.2</th><th>119</th><th>154.8</th><th>95</th><th>110</th><th>109</th><th>92</th><th>80</th><th>175</th><th>202</th><th>202</th><th>24</th><th>1995</th><th>2020</th></thziamto<<>	Highest daily rainfail (mm) for years 1995 to 2020	165.8	165	166.2	119	154.8	95	110	109	92	80	175	202	202	24	1995	2020
11.7 13.6 15.2 13.6 12.6 12.4 10 7.9 7.8 12.4 10.6 11.4 13.5 12.3 12.4 10.6 10.6 11.5 9.2 7.7 7.8 12.6 10.6 11.2 12.3 12.4 19.95 <th>Date of Highest dally rainfall for years 1995 to 2020</th> <th>27-Jan-15</th> <th>25-Feb-04</th> <th>16-Mar-17</th> <th>21-Apr-09</th> <th>24-May-13</th> <th>18-Jun-09</th> <th>28-Jui-96</th> <th>21-Aug-07</th> <th>12-Sep-98</th> <th>19-0ct-04</th> <th>9-Nov-04</th> <th>27-Dec-17</th> <th>27-Dec-17</th> <th>N/A</th> <th>1995</th> <th>2020</th>	Date of Highest dally rainfall for years 1995 to 2020	27-Jan-15	25-Feb-04	16-Mar-17	21-Apr-09	24-May-13	18-Jun-09	28-Jui-96	21-Aug-07	12-Sep-98	19-0ct-04	9-Nov-04	27-Dec-17	27-Dec-17	N/A	1995	2020
86 10.6 11.5 9.2 7.7 7.8 6.2 5.3 5.6 7.6 10.2 9.3 2.4 1995 37 4 5 3.8 2.8 3.8 1.9 1.8 1.9	Mean number of days of rain for years 1995 to 2020	11.7	13.6	15.2	13.6	12.6	12.4	10	7.9	6	10.4	13.5	12.3	142.2	25	1995	2020
37 4 5 38 28 19 16 16 25 37 32 378 24 1995 15 21 12 16 11 18 16 11 18 16 11 18 16 11 18 16 11	Mean number of days of rain >= 1 mm for years 1995 to 2020	8.6	10.6	11.5	9.2	7.7	7.8	6.2	5.3	5.6	7.6	10.2	6	99.3	24	1995	2020
	Mean number of days of rain >= 10 mm for years 1995 to 2020	3.7	4	5	3.8	2.8	3.8	1.9	1.8	1.6	2.5	3.7	3.2	37.8	24	1995	2020
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Mean number of days of rain >= 25 mm for years 1995 to 2020	1.5	2.1	2.4	1.6	1.1	1.8	0.3	0.6	0.5	0.7	1.6	1.2	15.4	24	1995	2020
233 226 208 195 161 133 123 124 177 201 207 226 186 15 1995 20.4 20.4 17.7 11.4 10.1 11.1 14.7 17.7 12.6 186 15 1995 76 82 11.6 11.7 11.6 12.7 12.6 17.7 12.6 1955 76 82 76 76 78 75 68 61 72 12.6 15.6 1995 13 12.6 11.6 11.6 11.6 11.6 12.6 18.7 12.6 12.6 1995 201 22.6 201 18.1 11.9 12.6 13.7 12.6 13.6 15.7 1995 214 216 22.6 12.7 12.7 12.7 12.6 12.6 1995 214 21.6 <t< th=""><th>Mean dally solar exposure (MJ/(m*m)) for years 1990 to 2020</th><th>23.8</th><th>21</th><th>18</th><th>15</th><th>116</th><th>9.9</th><th>11</th><th>14.5</th><th>18.3</th><th>20.6</th><th>22</th><th>23.3</th><th>17.4</th><th>30</th><th>1990</th><th>2020</th></t<>	Mean dally solar exposure (MJ/(m*m)) for years 1990 to 2020	23.8	21	18	15	116	9.9	11	14.5	18.3	20.6	22	23.3	17.4	30	1990	2020
	Mean 9am temperature (Degrees C) for years 1995 to 2010	23.3	22.6	20.8	19.5	16.1	13.3	12.3	14	17.7	20.1	20.7	22.6	18.6	15	1995	2010
50000 187 191 177 149 116 9.3 7.6 7.8 10.5 12.5 15.4 17.1 13.5 15 1965 1965 76 82 73 75 68 64 64 73 72 74 15 1995 1995 71 123 115 123 115 114 126 136 137 147 14 156 1995 61 061 126 115 119 126 136 137 147 14 136 157 1995 100200 214 215 118 117 133 154 157 1995 10201 214 118 117 133 154 156 1395 157 1395 10201 187 187 205 135 136 137 136 137 136 1395 1395 10201 187 189	Mean 9am wet bulb temperature (Degrees C) for years 1995 to 2010	20.4	20.4	18.9	16.9	13.7	11.4	10.1	11.1	14	16	17.7	19.3	15.8	15	1995	2010
76 82 83 76 78 75 68 64 64 73 72 74 15 1995 13 13 123 115 123 125 115 119 126 136 147 14 136 128 195 1995 261 261 213 115 119 126 136 147 14 136 128 1995 40010 187 216 187 205 187 205 219 231 249 225 1995 60010 187 189 72 183 153 154 1995 60010 187 189 177 133 154 169 157 1935 1995 60010 187 189 157 153 156 157 157 156 1595 61 65 64 61 60 52 56 56 56	Mean 9am dew point temperature (Degrees C) for years 1995 to 2010	18.7	19.1	17.7	14.9	116	9.3	7.6	7.8	10.5	12.5	15.4	17.1	13.5	15	1995	2010
	Mean 9am relative humidity (%) for years 1995 to 2010	76	82	83	76	76	78	75	68	64	64	73	72	74	15	1995	2010
261 26 249 225 201 18.2 17.5 18.7 20.5 21.9 23.1 24.9 22 1965 1965 10 2010 21.4 21.5 20.4 18.1 15.6 13.9 12.7 13.3 15.4 16.9 22 17.3 1965 5 10 2010 21.4 21.5 13.9 12.7 13.3 15.4 16.9 17.3 15 1995 5 10 201 21.4 11.9 12.7 13.3 15.4 16.9 17.3 15 1995 5 10 201 21.4 51 27.5 10.3 15.4 16.9 17.3 15.7 1995 5 10 5 66 67 61 60 55 52 56 93 66 17.2 195 1995 6 20 66 67 61 61 60 55 52 52 52 136 195 1955 7 20 216	Mean 9am wind speed (km/h) for years 1995 to 2010	13	12.3	11.5	12.3	12.5	11.5	11.9	12.6	13.6	14.7	14	13.6	12.8	15	1995	2010
995 be 2010 21.4 21.5 20.4 18.1 15.6 13.3 15.4 16.9 18.7 20.2 17.3 15 1995 1995 to 2010 18.7 18.9 17.6 18.7 16.9 18.7 20.2 17.3 15 1995 1995 1995 to 2010 18.7 18.9 17.6 17.8 17 18.7 20.2 17.3 15 1995 1995 1995 to 2010 18.7 18.9 17.6 17.2 13.6 15 1995 1995 1995 to 2010 18.7 18.9 17.6 17.6 17.6 17.7 136 15 1995 1995 to 201 17.4 17.8 17.9 16.9 17.6 17.6 17.6 17.6 1395 1995 22.4 22.6 20.6 59 50 50.7 52.7 22.3 196 15 1995	Mean 3pm temperature (Degrees C) for years 1995 to 2010	26.1	26	24.9	22.5	20.1	18.2	17.5	18.7	20.5	21.9	23.1	24.9	22	15	1995	2010
1995 to 2010 18.7 18.9 17.6 14.9 11.8 9.7 7.6 7.8 10.0 13 13.6 13.6 13.6 13 13.6 13 13.6 13 13.6 13 13.6 13.6 13.6 13 13.6 </th <th>Mean 3pm wet bulb temperature (Degrees C) for years 1995 to 2010</th> <th>21.4</th> <th>21.5</th> <th>20.4</th> <th>18.1</th> <th>15.6</th> <th>13.9</th> <th>12.7</th> <th>13.3</th> <th>15.4</th> <th>16.9</th> <th>18.7</th> <th>20.2</th> <th>17.3</th> <th>15</th> <th>1995</th> <th>2010</th>	Mean 3pm wet bulb temperature (Degrees C) for years 1995 to 2010	21.4	21.5	20.4	18.1	15.6	13.9	12.7	13.3	15.4	16.9	18.7	20.2	17.3	15	1995	2010
65 66 65 64 61 60 55 52 56 59 65 64 61 15 1995 22.4 21.6 20.1 17.3 15.3 14.9 16 19 21 22.2 22.5 22.3 196 15 1995	Mean 3pm dew point temperature (Degrees C) for years 1995 to 2010	18.7	18.9	17.6	14.9	118	9.7	7.6	7.8	10.8	13	15.6	17.2	13.6	15	1995	2010
224 216 20.1 17.3 15.3 14.9 16 19 21 22.2 22.3 19.6 15 1995	Mean 3pm relative humidity (%) for years 1995 to 2010	65	99	65	64	61	60	55	52	56	59	65	64	61	15	1995	2010
	Mean 3pm wind speed (km/h) for years 1995 to 2010	22.4	21.6	20.1	17.3	15.3	14.9	16	19	21	22.2	22.5	22.3	19.6	15	1995	2010

le 23: Monthly Climate Statistics - Port Macquarle Airport - 1995 to 2019 Bureau of Meteorology (Bi

Item 13.07 Attachment 1

ORDINARY COUNCIL 20/05/2020

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PORT MACQUARIE-HASTINGS COUNCIL

REFERENCES

- .id. (2017, November). Port Macquarie-Hastings Council area. Retrieved from .id the population experts: <u>forecast.id.com.au/port-macquarie-hastings</u>
- ABS. (2016). Census of Population and Housing. Australian Bureau of Statistics.
- AGO. (2006). Climate Change Impacts and Risk management: A guide for business and government. Broadleef Internation a& MArsden Jacobs Associates for the Australian Greenhouse Office, Canberra.
- BMT WBM. (2014). Port Macquarie-Hastings Council Sea Level Rise Mapping Project. BMT WBM Pty Ltd.
- BOM. (2019). Retrieved July 3, 2019, from Australian Government Bureau of Meterology: <u>bom.gov.au/jsp/ncc/climate_averages/rainfall/index.jsp?period=an&area=ns</u>
- BOM, Manly Hydraulics Laboratory and OEH. (2016). NSW East Coast Low Event 3 to 7 June 2016 Wether, Wave and Water Level Matters. Retrieved November 2019, from <u>new.</u> <u>mhl.nsw.gov.au/data/realtime/wave/docs/2016NSWCoastalConferenceLouisCourieletal_</u> <u>Final.pdf</u>
- Darren Ryder, S. M. (2017). Hastings Camden Haven Ecohealth Project 2015: Assessment of River and Estuarine Condition. Final Technical Report, University of New England, Aquatic Ecoloy and Restoration Reseach Group, Armidale.
- Geoscience Australia. (2016). Australian Coastal Sediment Compartments.
- Maddocks. (2015, March 13). Important changes to management of coastal hazards in New South Wales. Retrieved from Maddocks: <u>maddocks.com.au/important-changes-</u> management-coastal-hazards-new-south-wales/
- MEMA. (2017). NSW Marine Estate TARA.
- Nearmap. (n.d.). Nearmap. Retrieved from nearmap.com.au
- Northern Rivers Catchment Management Authority. (2010). Northern Rivers Biodiversity
 Management Plan. Department of Environment, Climate Change & Water.
- **NSW DPI. (2016).** NSW Oyster Industry Sustainable Aquaculture Strategy Third Edition 2016. Published by the NSW Department of Primary Industries.
- **OEH. (2017).** Coastal Erosion in New South Wales Statewise Exposure Assessment. Sydney: Office of Environment and Heritage.
- **OEH. (2018).** NSW Coastal Management Manual Part A. Office and Environment and Heritage.
- OEH. (2018). NSW Coastal Management Manual Part B: Stage 1.
- PMHC Urban Growth Management Strategy (2016). Port Macquarie-Hastings Council.
- **Port Macquarie-Hastings Council. (2010).** Coastal Zone Management Plan for the Town Beach Coastline. PMHC.
- Port Macquarie-Hastings Council and SMEC. (2016). Lake Cathie CZMP. Port Macquarie-Hastings Council.
- Port Maquarie-Hastings Council. (2017). Biodiversity Strategy 2017-2030.
- **REMPLAN. (n.d.).** Tourism estimates based on ABS 2016/207 Tourism Satelite Account. Retrieved from <u>economyprofile.com.au/portmacquariehastings/industries#bar-chart</u>
- SMEC. (2005). Town Beach Hazard Definition Study. SMEC.
- SMEC. (2008). Lake Cathie Coastal Hazard Study. North Sydney: SMEC Australia.
- Thom, B. (N.D.). COASTAL COMPARTMENTS PROJECT. Retrieved from Department of the Environment and Energy: <u>environment.gov.au/system/files/resources/4f288459-423f-43bb-8c20-87f91adc3e8e/files/coastal-compartments-project.pdf</u>
- Umwelt (Australia) Pty Ltd. (2001). Hastings Estuary Management Plan. Port Macquarie-Hastings Council.
- Webb, Mckeown & Associates. (1994). Lake Cathie/Lake Innes Estuary Management Plan.
- Webb, Mckeown & Associates. (1995). Lake Cathie/Lake Innes Entrance Opening Strategy Environmental Review.



STATUTORY REQUIREMENTS

DA No: 2019/309.1	PN: 29160
Proposal Description: Proposed five (5) lot residential subdiv	vision.
Property: Part Lot 302 DP754434. Emily Avenue, Port Macq	uarie.
Section 4.15 Considerations: Having regard for the heads of Section 4.15 of the Environmental Planning and Assessmen assessment is provided.	

The provisions (where applicable) of:

(a)(i) Any environmental planning instrument

State Environmental Planning Policy No. 44 - Koala Habitat Protection

The subject land has an area greater than 1 hectare and therefore the provisions of SEPP 44 must be considered.

The Department of Planning and Infrastructure's Circular No. B35, Section 1.5 states that "In relation to affected development applications it is the intention of the policy that investigations for 'potential' and 'core' koala habitats be limited to those areas in which it is proposed to disturb habitat".

An Ecological Assessment in accordance with SEPP 44 was undertaken by Biodiversity Australia with regard to the proposed development and lodged with the DA. The assessment concluded that the trees on the overall site comprise greater than 20% Koala feed trees, and therefore the site is considered Potential Koala Habitat (PKH). The assessment concluded that the site is not likely to comprise Core Koala habitat given:

- the majority of the Koala feed trees are immature,
- no Koalas were observed on site,
- no Koala scratches were observed on any trees within the site; and
- no records reviewed in the literature search identified records of Koalas observed on the site or adjoining properties.

Koala scats were recorded on the site however not within the developable portion of the lot.

The site is identified in the Link Road Koala Plan of Management (Link Road KPoM) as an offset planting site. It is noted that some of the immature Koala feed trees within the lot were provided as offset plantings associated with the Link Road KPoM. These trees have been planted over the last five years and may provide higher quality habitat as they mature.

It is also noted that noted that no Koala feed trees are to be removed as part of the proposed development. As a result, the assessment concluded a Koala Plan of Management (KPoM) is not necessary.

The application has demonstrated that the site does not qualify as critical habitat and no habitat will be removed or modified, therefore no further investigations are required.

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DA 2019/309.1	
Proposed Five (5) Lot Residential Subdivision	

State Environmental Planning Policy No. 55 – Remediation of Land

A Stage 1 Site Contamination Assessment was prepared by Regional Geotechnical Solutions with regard to the proposed residential subdivision and submitted to Council with the DA.

The Stage 1 concluded that the site is likely to be suitable for residential land use despite the presence of soil contamination at the site provided the recommendations and advice within the report are adopted, and site preparation works are undertaken in accordance with appropriate site management protocols and legislative requirements.

The contamination assessment report recommended a Stage 2 Contamination Assessment be undertaken for parts of the site where contamination was identified and that a Remediation Action Plan be developed for the site for remediation works.

An appropriate draft condition has been included with the development consent with regard to site contamination, reflecting the recommendations of the Stage 1 Site Contamination Assessment (Regional Geotechnical Solutions, 2019).

State Environmental Planning Policy (Coastal Management) 2018

The site is located within a coastal use area / coastal environment area.

In accordance with clause 7, this SEPP prevails over the Port Macquarie-Hastings LEP 2011 in the event of any inconsistency.

Having regard to clauses 13 and 14 of the SEPP the proposed development is not considered likely to result in any of the following:

- a) any adverse impact on integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment;
- b) any adverse impacts coastal environmental values and natural coastal processes;
- c) any adverse impact on marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms;
- d) any adverse impact on Aboriginal cultural heritage, practices and places;
- e) any adverse impacts on the cultural and built environment heritage;
- f) any adverse impacts the use of the surf zone;
- any adverse impact on the visual amenity and scenic qualities of the coast, including coastal headlands;
- overshadowing, wind funnelling and the loss of views from public places to foreshores;
- any adverse impacts on existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability;

In accordance with clause 15, the proposal will not cause increased risk of coastal hazards on that land or other land.

The scale and size of the proposed subdivision is compatible with the surrounding coastal and built environment. The site is located within an area zoned for residential purposes.

State Environmental Planning Policy (Infrastructure) 2007

Not relevant. It is noted that Rosendahl Reservoir (Zone SP2) is located in close proximity to the proposed development (to the south).

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DA 2019/309.1	
Proposed Five (5) Lot Residential Subdivision	

Port Macquarie-Hastings Local Environmental Plan 2011

The proposal is consistent with the LEP having regard to the following:

Clause 2.2 – the northern section of the subject site is zoned RE1 – Public Recreation and the southern section is zoned R1 – General Residential. The proposed residential subdivision relates only to that part of the lot that is zoned R1 – General Residential.

In accordance with clause 2.3(1) and the R1 – General Residential zone land use table, the proposed five (5) lot subdivision for residential development is a permissible land use with consent.

The objectives of the R1 - General Residential zone are as follows:

- To provide for the housing needs of the community.
- To provide for a variety of housing types and densities.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

In accordance with Clause 2.3(2), the proposal is consistent with the zone objectives having regard to the following:

- the proposal is a permissible land use;
- it will assist in providing for the housing needs of the community.
- Clause 2.6 Subdivision of the land is permissible with consent.
- Clause 4.1 The lot sizes within the proposed subdivision range from 744m² to 2,995m². The minimum lot size control applicable to the site is 450m². All proposed lots comply with the minimum lot sizes identified in the Lot Size Map relating to the site.
- Clause 4.3 The site is identified with a maximum building height of 8.5m. No buildings are proposed as a part of the application.
- Clause 4.4 The site is identified with a maximum FSR of 0.65:1. No buildings are
 proposed as a part of the application.
- •
- Clause 5.10 The site does not contain or adjoin any known heritage items or sites of significance.
- Clause 7.1 the site is not mapped as containing acid sulfate soils.
- Clause 7.5 The above SEPP 44 assessment concludes the proposed development is consistent with the relevant provisions of the Link Road Koala Plan of Management (Link Road KPoM).

In accordance with this clause the Subdivision Layout Plan prepared by King and Campbell (Rev D dated 27.11.2019) nominates building envelopes of a sufficient size to enable future development on the proposed lots.

 Clause 7.13 - Satisfactory arrangements are in place for provision of essential services including water supply, electricity supply, sewer infrastructure, stormwater drainage and suitable road access to service the development. Provision of

Section 4.15 Considerations	Page 4 of 22
DA 2019/309.1	
Proposed Five (5) Lot Residential Subdivision	

electricity will be subject to obtaining satisfactory arrangements certification prior to the issue of a Subdivision Certificate as recommended by a condition of consent.

(a)(ii) Any proposed instrument that is or has been placed on exhibition

No draft instruments apply to the site.

(a)(iii) Any DCP in force

Port Macquarie-Hastings Development Control Plan 2013:

DCP 2013	3: General Provisions		
DCP Objective	Development Provision	Proposed	Complies
2.3.3.1	Cut and fill 1.0m max. 1m outside the perimeter of the external building walls	The maximum cut and fill proposed is less than 1 metre.	Yes
2.3.3.2	1m max. height retaining walls along road frontage Any retaining wall >1.0 in height to be certified by structure engineer	The application seeks a 1m high retaining wall within the north-western corner of proposed lot 4 and 5. A 1.5m high retaining wall is proposed along the south-western edge of the realigned Emily Avenue turning head. The wall will remain within the Emily Avenue road reserve. A consent condition requiring detailed design of the 1.5m retaining wall and certification by a structural engineer is imposed.	Yes
	Combination of retaining wall and front fence height max 1.8m, max length 6.0m or 30% of frontage, fence component 25% transparent, and splay at corners and adjacent to driveway	No front fencing and retaining wall combination proposed.	N/A
	Significant land reforming proposals where >10% gross site area or >1.0ha is to have surface levels	Approx. 5,000m ³ of earthworks are proposed to reshape and reform the proposed building envelopes.	Yes

Section 4 DA 2019/	.15 Considerations		Page 5 of 2
	l Five (5) Lot Residential Su	bdivision	
	changed by more than	_	
	5m or where earthworks exceed an average of 10,000m3 per ha.	Two retaining walls are proposed, one to the north of lot 4 and 5 to retain the newly created batters (concept design 1 metre	
	Subdivision should be designed to fit the topography	contours) and one to the south of the newly formed Emily Ave cul-de-sac (approx. 1.5 metres high).	
2.3.3.8	Removal of hollow bearing trees	The ecological assessment submitted with the application concludes the site does not contain any hollow bearing trees.	Yes
2.4.3	Bushfire risk, Acid sulphate soils, Flooding, Contamination, Airspace protection, Noise and Stormwater	Refer to main body of report.	Yes
2.5.3.2	New accesses not permitted from arterial or distributor roads	No new access to arterial or distributor road proposed. Emily Avenue is an access place.	Yes
2.5.3.14	Sealed driveway surfaces unless justified	The shared driveway is proposed to be sealed.	Yes
2.5.3.15 and 2.5.3.16	Driveway grades first 6m or 'parking area' shall be 5% grade with transitions of 2m length	Driveway grade capable of compliance. Details to be illustrated on section 138 Roads Act application.	Yes
2.5.3.17	Parking areas to be designed to avoid concentrations of water runoff on the surface.	Refer to main body of the report.	
2.6.3.1	Tree removal (3m or higher with 100mm diameter trunk at 1m above ground level and 3m from external wall of existing dwelling)	The development proposes the removal of 4 trees. These trees are listed as Koala browse species, as such the DCP requires replacement planting at a ratio of 2:1.	Yes.
		A condition of consent provides for the replacement planting of eight(8) Koala feed trees.	

Section 4 DA 2019/	.15 Considerations		Page 6 of 22
	l Five (5) Lot Residential Su	bdivision	
2.7.2.2	Design addresses generic principles of Crime Prevention Through Environmental Design guideline	The proposed development will be unlikely to create any concealment/entrapment areas or crime spots that would result in any identifiable loss of safety or reduction of security in the immediate area.	Yes
	3: Chapter 3.6 – Subdivisio		
DCP Objective	Development Provision	Proposed	Complies
3.6.3.1	A site analysis is required for all development and shall illustrate: • microclimate; • lot dimensions; • north point; • existing contours and levels to AHD; • flood affected areas; • overland flow patterns, drainage and services; • any contaminated soils or filled areas, or areas of unstable land; • easements and/or connections for drainage and utility services; • identification of any existing trees and other significant vegetation; • any existing buildings and other structures, including their setback distances; • heritage and archaeological features; • fences; • existing and proposed road network, including connectivity and access for all adjoining land parcels; pedestrian and vehicle access; • views to and from the site;	Site plan and details provided adequate.	Yes

Section 4 DA 2019	1.15 Considerations /309 1		Page 7 of 2
	d Five (5) Lot Residential Su	bdivision	
3.6.3.2	overshadowing by neighbouring structures; and any other notable features or characteristics of the site. Torrens title lots minimum width of 15m	The proposed subdivision	Numerical
	minimum width of 15m when measured at a distance of 5.5m from front property boundary. Minimum width of 7m when boundaries are extended to kerb line	 includes access via a culde-sac head and private shared driveway to 3 battle-axe lots. The battle-axe handles accessing lots 3, 4 and 5 and the street frontage of Lot 2 do not numerically comply with the minimum lot width, however it is considered the proposed lots achieve the relevant objectives of the clause being: To provide a range of lot sizes to suit a variety of dwelling and household types To ensure the lot layout plan reflects the site's opportunities and constraints. All proposed lots are of a suitable size, illustrate a suitable size, illustrate a suitable size, illustrate a features. The proposed lots have a minimum width of 18.01 metres (width presenting to the shared driveway) and it is considered they achieve the intent of this clause. 	variation proposed Complies with the intent of the clause.
	Minimum depth of 25m.	The following depths are proposed: Lot 1: 33.65m	Yes
		Lot 2: 37.8m Lot 3: 44.17m Lot 4: 49.92m	

DA 2019			Page 8 of 22
Proposed	d Five (5) Lot Residential Su	Daivision	
		Lot 5: 55.68m	
	For lots where average slope of the site is equal to, or exceeds 16%, indicative road and driveway grades are required demonstrating satisfactory access.	The average slope of each proposed lot does not exceed 16%. Access and driveway grades are capable of complying.	Yes
3.6.3.3	Battleaxe lots discouraged in greenfield development. Council may consider permitting Torrens Title battleaxe allotments for "infill" development where it is demonstrated that: • A Torrens Title lot, that is not a battleaxe lot, cannot be achieved; and • the number of crossovers do not reduce the amenity of the street or on street parking; and	 Two (2) of the proposed lots have direct access to local road Emily Avenue. Three (3) of the proposed lots are battleaxe lots, with frontage to and access via the proposed shared driveway. The proposal is consistent with the considerations for battle-axe lots for the following reasons: The proposal is for infill development, The proposed crossovers do not reduce the amenity of the street of one street parking, Privacy between lots can be 	Yes

the impact of noise, achieved, dust and headlights on There is sufficient . the land owners space for garbage adjoining the driveway collection. is addressed by the construction of an An acoustic fence along the acoustic fence for the full length of the driveway is full length of the not considered necessary, driveway; and in this case, as the lots present to the shared addresses privacy driveway, as if it were a between the rear lot street frontage and future and the rear open dwellings can be space of the front lot by sufficiently set back to the provision of ensure there will be no adequate screening, noise, dust or headlight

impacts.

larger lot size and

setbacks; and

Section 4 DA 2019/	.15 Considerations 309.1		Page 9 of 22
Proposed Five (5) Lot Residential Subdivision			
	 extends utilities to the end of the axe handle; and There is sufficient space for garbage collection on the frontage. 		
3.6.3.4	Lots are to be designed to allow the construction of a dwelling, which does not involve more than 1m cut, or fill, measured from natural ground level, outside the dwellings external walls	Minimal cut and fill, less than 1m. Lots are designed with a concept design 1 metre contours.	Yes
	Lot sizes increased for sloping sites in accordance with Table 3.6.1.	The proposed building envelopes have a slope less than 0-10% and 11- 15%. All lots comply with the minimum 600m ² lot area and 18 metre lot width.	Yes
	Additional information provided for slope categories in accordance with Table 3.6.2	 Category A (0-10%) details required: Details of any retaining walls (including height, location and extent of cut and/or fill) required to permit construction of a dwelling. 	Yes
		Category B (11-15%) details required: • Matters required under Category A • Identification of a building footprint. • Vehicular access details and accommodation for 2 cars. • Retaining wall heights.	Condition: For lots with a slope of 11%-15% details of vehicular access and accommodation for 2 cars to be provided.
3.6.3.5	Wherever possible orientate streets to maximise the number of east, west and south facing lots and to	The street layout is already established and each of the lots has a north-south orientation.	Yes

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DA 2019 Proposed	/309.1 d Five (5) Lot Residential Su	bdivision	
	minimise the number of narrow north facing lots. Residential street blocks should preferably be orientated north-south with dimensions generally limited to 60- 80m by 120- 150m as illustrated in Figure 3.6- 2.		
	Lot size and shape are to reflect orientation to ensure future dwelling construction has optimal opportunity for passive solar design	Sufficient solar access is achievable for future dwellings on the proposed lot.	Yes
3.6.3.6	Kerb and guttering, associated street drainage, pavement construction and foot paving across the street frontages should be constructed as part of the subdivision works where these do not exist (may be varied subject to criteria in this clause)	Refer to main body of the report.	Yes
3.6.3.7	Subdivisions close to urban centres or along arterial roads serviced by public transport achieve yield of >35 dwellings per hectare.	The subdivision will achieve a higher residential yield within the existing residential estate.	Yes
3.6.3.8	All new roads are to be dedicated to Council designed in accordance the Council's adopted AUSPEC design specification documents. All applications to subdivide land should include a road layout plan that meets the Council's design requirements including providing connectivity and access for all land parcels consistent with Council's road hierarchy.	The extension to Emily Avenue, including the new 9.0m radius cul-de-sac to be dedicated to Council.	Yes

	45.0		
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	Five (5) Lot Residential Su	bdivision	
3.6.3.16	An application for subdivision should be accompanied by an Integrated Water Cycle Management Strategy prepared by a certified practicing engineer and in accordance with Council's adopted design specification	Refer to main body of the report.	Yes
3.6.3.17	documents.	Defer to main body of the	Yes
3.6.3.19	An application for subdivision should be accompanied by a Stormwater Management Strategy prepared by a certified practicing engineer and in accordance with Council's adopted Aus- Spec design specification documents. The finished floor level of buildings should be above the 100 year ARI flood level (plus freeboard) and in accordance with the council's current flood policy.	Refer to main body of the report.	
3.6.3.20	Water supply to meet Council's design specifications.	Refer to main body of the report.	Yes
3.6.3.21 - 3.6.3.22	All lots connected to reclaimed water if available.	Reclaimed water supply is not available.	N/A
3.6.3.24	Separate sewer junction provided for each lot.	Separate sewer can be provided to each lot.	Yes
3.6.3.25	Extension of sewer infrastructure at cost of developer.	Noted.	Yes
3.6.3.26	Erosion and sediment	Standard condition applied.	Yes
-	control plan to be		
3.6.3.27 3.6.3.34	provided. All service infrastructure should be underground unless otherwise approved by Council.	Services are existing and capable of extension to provide underground services to each lot.	Yes
	All service infrastructure should	Services are existing and underground and capable	Yes

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DA 2019/309.1 Proposed Five (5) Lot Residential Su	bdivision	
be installed in a	of extension to each lot in a	
common trench.	common trench.	
Conduits for the main	Services are existing and	Yes
technology network	capable of extension to	
system should be	provide underground	
provided in all streets.	services to each lot.	
Conduits are to be	Services are existing and	Yes
installed in accordance	capable of extension to	
with the National	provide underground	
Broadband Network	services to each lot.	
Company Limited's		
'Guidelines for Fibre to		
the Premises		
Underground		
Deployment'.		
Access pits are to be	Services are existing and	Yes
installed at appropriate	capable of extension to	
intervals along all	provide underground	
streets.	services to each lot.	

Based on the above assessment, the development is consistent with provisions of the DCP. Variations proposed are considered acceptable and the relevant objectives have been satisfied. Cumulatively, the variations do not amount to an adverse impact or a significance that would justify refusal of the application.

(a)(iii)(a) Any planning agreement or draft planning agreement

No planning agreement has been offered or entered into relating to the site.

(a)(iv) The regulations

No matters prescribed by the regulations apply.

(b) The likely impacts of that development, including environmental impacts on both the natural and built environments and the social and economic impacts in the locality

Context and Setting

- The south eastern corner of the site contains the cul-de-sac head of Emily Avenue.
- Adjoining the site to the north is Wayne Richards Park sporting fields and a Council Depot.
- Adjoining the site to the north east is Wayne Richards Park with residential areas to the south east.
- Adjoining the site to the south is Rosendahl Reserve and associated Rosendahl Reservoir.
- Adjoining the site to the south west is residential land while land to the north west is outdoor areas and sporting fields of Mackillop College.
- The proposal will not have any significant adverse impacts to existing adjoining properties and satisfactorily addresses the public domain.
- The proposal is considered to be consistent with other residential development in the locality and adequately addresses planning controls for the area.
- The proposal does not have a significant adverse impact on existing view sharing.
- The proposal does not have significant adverse lighting impacts.

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Proposed Five (5) Lot Residential Subdivision		

- There are no significant adverse privacy impacts. Adequate building separation is likely to be achieved for any future residential dwellings.
- There are no significant adverse overshadowing impacts. The proposal does not
 prevent adjoining properties from receiving 3 hours of sunlight to private open
 space and primary living areas on 21 June between the hours of 9am and 3pm.

Roads

The site has road frontage to Emily Avenue. Adjacent to the site, Emily Avenue is a sealed public road under the care and control of Council. Emily Avenue is an Access Place with a carriageway width of 6m within a 19m wide road reserve. The street has SE kerb and gutter and some traffic calming in the form of road narrowing. The road narrowing occurs approximately 125m from the site, with the carriageway width reduced to 4.5m.

Traffic and Transport

The site is currently vacant land, approved for residential zoning. With the inclusion of 5 new dwellings, this development proposes to generate approximately 45 daily trips. The addition in traffic associated with the development is unlikely to have any adverse impacts to the existing road network within the immediate locality.

Site Frontage & Access

Vehicle access to the site is proposed through individual driveways for lots 1 & 2, which have direct road frontage. A shared 5.5m wide concrete driveway is proposed for lots 3, 4 & 5 with a 10.5m wide right of carriageway across its length. Access shall comply with Council AUSPEC and Australian Standards, and conditions have been imposed to reflect these requirements.

Due to the type and size of development, additional works are required to include:

- An extension to Emily Avenue, with the construction of a new 9.0m radius cul-desac to be dedicated to Council
- kerb and gutter along the full road frontage
- construction of a concrete access path (minimum 4.0m wide) from Emily Avenue to Wayne Richards Park
- provision for a retaining wall (approximately 1.5m high) at no cost to Council

Water Supply Connection

Council records indicate existing 100mm PVC water main on the northern side of Emily avenue will need to be extended to provide main frontage to each proposed lot at no cost to Council. Each proposed lot is to be provided with a sealed water service, final water service sizing will need to be determined by a hydraulic consultant to suit the domestic and commercial components of the development, as well as fire service and backflow protection requirements in accordance with AS3500.

Detailed engineering plans are required to be submitted to Water and Sewer Section.

Refer to relevant conditions of consent.

Sewer Connection

Council records indicate that the development site is not currently connected to Sewer. Existing sewer infrastructure must be extended to provide each proposed lot with an individual connection to sewer. Detailed engineering plans are required to be submitted to Water and Sewer Section.

Refer to relevant conditions of consent.

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Stormwater

The site naturally grades towards the rear and into the adjoining Wayne Richards Park reserve. There is some existing under capacity stormwater drainage infrastructure at this location, consisting of an inlet, downstream pit/pipe network and an informal vegetated stormwater basin, which Council's Parks and Reserves staff have reported to be a source of ongoing stormwater related issues as a result of the basin and inlet overtopping, becoming blocked and / or holding water for lengths of time and impacting the ability of the Council to maintain the adjacent playing fields.

This existing adjoining basin is defined as the legal point of discharge for the development, as it is the location where the site naturally drains. A direct connection to Council's downstream basin will be required via extension of the drainage system servicing the site to this basin.

This is consistent with the concept presented on the stormwater management plan submitted in support of the development application, however, the location of the pipeline discharging to the existing 'basin' as shown should be relocated to the north so that it is located beneath the invert of the existing swale drain to assist in draining that area. The change of direction/inlet pit can also then function to capture runoff from the upstream swale to the west.

Furthermore, in reference to the existing issues with the function of the basin highlighted above, the following additional works are required to be undertaken as a means of improving downstream amenity, lessening the maintenance burden, and mitigating any impacts resulting from increased stormwater discharge:

- The condition of the basin is to be restored to maximise its capacity and effectiveness. Weeds, debris and excess silt shall be removed to the satisfaction of Council.
- A low earthen berm is to be constructed along the northern side of the existing basin to ensure all stormwater from the development and surrounds can be confined to the basin (basin currently overtops) and prevented from inundating the adjacent sports fields. A cut/fill plan is to be submitted prior to approval of the Construction Certificate.

Refer to relevant conditions of consent.

Other Utilities

Telecommunication and electricity services are available to the site.

Refer to relevant conditions of consent.

Heritage

Following a site inspection and a search of Council/AHIMS records, no known items of Aboriginal or European heritage significance exist on the property.

The site is considered to be disturbed land, however as a precaution, a condition of consent is included that works are to cease in the unexpected event heritage items are found. Works can only recommence when appropriate approvals are obtained for management and/or removal of the heritage item.

Other land resources

The site is within an established urban context and will not sterilise any significant mineral or agricultural resource.

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Proposed Five (5) Lot Residential Subdivision	

Water cycle

The proposed development will not have any significant adverse impacts on water resources and the water cycle.

Soils

The proposed development will not have any significant adverse impacts on soils in terms of quality, erosion, stability and/or productivity subject to a standard condition requiring erosion and sediment controls to be in place prior to and during construction.

Air and microclimate

The construction and/or operations of the proposed development will not result in any significant adverse impacts on the existing air quality or result in any pollution. Standard precautionary site management conditions are imposed.

Flora and fauna

The Ecological Assessment prepared by Biodiversity Australia concludes that the proposed development would not result in a significant impact on threatened species or ecological communities and therefore a BDAR is not required.

As described above the proposed development will require the removal of 4 Blackbutt trees. These trees are listed as Koala browse species, as such replacement planting of eight (8) Koala feed trees is conditioned to the consent.

Refer to relevant conditions of consent.

Waste

Satisfactory arrangements are in place for proposed storage and collection of waste and recyclables. No adverse impacts anticipated. Standard precautionary site management conditions are imposed.

Energy

Not relevant - the proposed development is for subdivision only.

Noise and vibration

No adverse impacts. Standard construction hours condition imposed.

Bushfire

The site is identified as being bushfire prone. The applicant has submitted a bushfire assessment report prepared by a Certified Consultant. The assessment of bushfire risk having regard for section 4.3.5 of Planning for Bushfire Protection 2006 concludes that a Bushfire Attack Level 29 applies to the site.

In accordance with Section 100B - *Rural Fires Act* 1997 - the application proposes subdivision of bush fire prone land that could lawfully be used for residential purposes. The application and bushfire assessment was forwarded to the NSW Rural Fire Service who have since issued a Bushfire Safety Authority, which is incorporated into the consent conditions.

Refer to relevant conditions of consent.

Safety, security and crime prevention

The proposed development will be unlikely to create any concealment/entrapment areas or crime spots that would result in any identifiable loss of safety or reduction of security in

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the immediate area. The increase in housing density will improve natural surveillance within the locality and openings from each dwelling overlook common and private areas.

Social impacts in the locality

Given the nature of the proposed development and its location the proposal is not considered to have any significant adverse social impacts.

Economic impact in the locality

The proposal is not considered to have any significant adverse economic impacts on the locality. A likely positive impact is that the development will create employment in the construction industry, which will lead to flow impacts such as expenditure in the area.

Site design and internal design

The proposed development design satisfactorily responds to the site attributes and will fit into the locality.

Construction

Construction impacts are considered capable of being managed, standard construction and site management conditions have been imposed.

Cumulative impacts

The proposed development is not considered to have any significant adverse cumulative impacts on the natural or built environment or the social and economic attributes of the locality.

(c) The suitability of the site for the development

The proposal will fit into the locality and the site attributes are conducive to the proposed development.

Site constraints of bushfire hazard, stormwater management and access to the proposed lots have been adequately addressed and appropriate conditions of consent recommended.

(d) Any submissions made in accordance with this Act or the regulations

Following exhibition of the application in accordance with DCP 2013. Three (3) submissions were received. The following matters were raised in the submissions.

Issue Raised	Comment
Incorrect APZ measurements for proposed	Review of APZ in the Bushfire Assessment
Lot 2.	are appropriate. No issues raised by the
	RFS with the proposed APZ for any lot.
Crime and security concerns with regard	The proposed walkway between Lot 1 and
to the proposed sealed access track	the existing lot to the east will provide a
between proposed Lot 1 and the existing	pedestrian link between Emily Avenue and
lot to the east.	Wayne Richards Park. The dwellings on
	the adjacent lots will provide passive
	surveillance of this walkway and it is not
	considered to result in any concerns with
	regard to crime or security.

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Proposed Five (5) Lot Residential Subdivision		
Overshadowing/ solar access impacts of neighbouring dwelling and private open space.	Any future dwellings on the proposed lots will be required to comply with relevant planning controls with regard to height limits, setbacks, floor space ratio's as well as overshadowing. Therefore, it is not considered likely that the proposal will result in unacceptable overshadowing of existing dwellings.	
Dust generation during construction.	A standard condition with regard to dust suppression is included in the draft conditions.	
Inaccurate traffic movements predicted in Traffic Impact Assessment.	The Traffic Impact Assessment has been reviewed by PMHC Development Engineers and no issues with the predicted traffic movements were identified. The predicted traffic movements in the TIA are considered reasonable.	
Concern over multi-dwelling housing development on the proposed lots and associated traffic impacts.	All future DA's for development on the proposed lots will be subject to assessment by Council. The potential traffic impacts of any multi-dwelling housing proposal would be assessed at the DA stage.	
Traffic study required for Emily Avenue as currently exiting the street in the mornings is difficult.	A TIA was provided with the DA which was reviewed by PMHC Development Engineers did not raise concerns regarding the potential additional traffic resulting from the proposed subdivision.	
No alternative access road if an accident occurs at the Emily Avenue/ Koala Street intersection.	This is accurate as the street is a cul-de- sac however, it is considered acceptable given the limited number of dwellings the street services and is the same for all other cul-de-sac streets.	
Potential impacts to the wildlife corridor across the site used by Koalas.	An Ecological Assessment was submitted with the DA that concluded the proposed subdivision will not result in impacts to any Koala's that may use the site.	
Impacts to of increased traffic to children's safety when playing on the street.	Not relevant. The proposal is for only 5 additional lots and is not considered to have significant adverse impacts on the safety of Emily Avenue.	

(e) The public interest

The proposed development will be in the wider public interest in that it will provide additional residential lots, on land zoned for residential use. The proposed development

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Proposed Five (5) Lot Residential Subdivision	

satisfies relevant planning controls and will not have any significant adverse impacts on the wider public interest.

Ecologically Sustainable Development and Precautionary Principle

Ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes.

The four principles of ecologically sustainable development are:

- the precautionary principle,
- intergenerational equity,
- conservation of biological diversity and ecological integrity,
- improved valuation, pricing and incentive mechanisms.

The principles of ESD requires the effective integration of economic, environmental, social and equity considerations in decision-making processes. ESD aims to provide for the needs of present generations without compromising the ability of future generations to meet their own needs.

Based on the assessment provided in the report and with recommended conditions of consent, it is considered the proposal is in accordance with the principles of ESD.

Climate change

The proposal is not considered to be vulnerable to any risks associated with climate change.

Section 7.11 Contributions

- Development contributions will be required in accordance with Section 7.11 of the Environmental Planning and Assessment Act 1979 towards roads, open space, community cultural services, emergency services and administration buildings.
- A copy of the contributions estimate is included as Attachment 3

Section 7.12 Contributions

No - The development does not contain any commercial/industrial component.

Section 64 Water and Sewer Contributions

- Development contributions will be required towards augmentation of town water supply and sewerage system head works under Section 64 of the Local Government Act 1993.
- A copy of the contributions estimate is included as Attachment 3

Additional Comments

Site inspection date: 16 August 2019

CONCLUSION AND STATEMENT OF REASON

The application has been assessed in accordance with Section 4.15 of the Environmental Planning and Assessment Act 1979.

Issues raised during assessment and public exhibition of the application have been considered in the assessment of the application. Where relevant, conditions have been recommended to manage the impacts attributed to these issues.

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Proposed Five (5) Lot Residential Subdivision		

The site is considered suitable for the proposed development and the proposal adequately addresses relevant planning controls. The development is not considered to be contrary to the public's interest and will not result a significant adverse social, environmental or economic impact. It is recommended that the application be approved, subject to the recommended conditions of consent provided in the attachment section of this report.

Attachments

- 1. DA2019 309.1 Recommended Conditions
- 2. DA2019 309.1 Plans
- 3. DA2019 309.1 Contributions Quote
- 4. DA2019 309.1 Statement of Environmental Effects
- 5. DA2019 309.1 NSW RFS Bushfire Safety Authority

CONDITIONS - Refer to attachment 1

RECOMMENDATION – That consent be granted pursuant to delegated authority of Development Assessment Planner / Group Manager Development Assessment.

Signed:

Assessing Officer: Naomi Lyons Town Planner

Date: 11/03/2020

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Item: 05

Subject: DA2019 - 309.1 RESIDENTIAL SUBDIVISION AT LOT 302 DP 754434 EMILY AVENUE, PORT MACQUARIE

Report Author: Development Assessment Planner, Benjamin Roberts

Applicant:	King and Campbell Pty Ltd
Owner:	Port Macquarie-Hastings Council
Estimated Cost:	\$212,000
Parcel no:	29160

Alignment with Delivery Program

4.3.1 Undertake transparent and efficient development assessment in accordance with relevant legislation.

RECOMMENDATION

That it be recommended to Council that DA2019 - 307 for a residential subdivision at Lot 302, DP 754434, Emily Avenue, Port Macquarie, be determined by granting consent subject to the recommended conditions.

Executive Summary

This report considers a development application for a five (5) lot residential subdivision at the subject site and provides an assessment of the application in accordance with the Environmental Planning and Assessment Act 1979.

Following exhibition of the application, three (3) submissions were received.

The site is located on Council owned land. Council's Conflict of Interest -Development Applications Policy applies. The conflict of interest policy requires that all development applications on Council land where objections have been received be referred to Council for determination. In accordance with this policy the General Manager also determined that an external consultant be engaged to report on the application. Kempsey Council were engaged to undertake an independent assessment of the application and provide a recommendation. The assessment and recommendation is provided as **Attachment 1**.

This report recommends that the development application be recommended to Council for approval subject to the conditions included as **Attachment 2**.

1. BACKGROUND

Existing Sites Features and Surrounding Development

The site has an area of 5.61 hectares.



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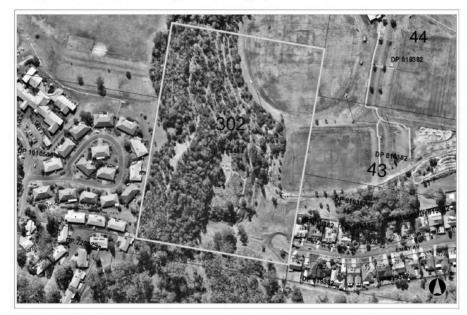
> Item 13.08 Attachment 2

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

The site is zoned R1 General Residential and partly RE1 Public Recreation in accordance with the Port Macquarie-Hastings Local Environmental Plan 2011, as shown in the following zoning plan:



The existing subdivision pattern and location of existing development within the locality is shown in the following aerial photograph:





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> Item 13.08 Attachment 2

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

2. DESCRIPTION OF DEVELOPMENT

Key aspects of the proposal include the following:

• Five (5) lot residential subdivision and associated infrastructure.

Refer to Attachment 4 for plans of the proposed development.

3. STATUTORY ASSESSMENT

Refer to Attachment 1.

4. DEVELOPMENT CONTRIBUTIONS

Section 7.11 Contributions

- Development contributions will be required in accordance with Section 7.11 of the Environmental Planning and Assessment Act 1979 towards roads, open space, community cultural services, emergency services and administration buildings.
- A copy of the contributions estimate is included as Attachment 3.

Section 7.12 Contributions

No - The development does not contain any commercial/industrial component.

Section 64 Water and Sewer Contributions

- Development contributions will be required towards augmentation of town water supply and sewerage system head works under Section 64 of the Local Government Act 1993.
- A copy of the contributions estimate is included as Attachment 3.

5. CONCLUSION AND STATEMENT OF REASON

The application has been assessed in accordance with Section 4.15 of the Environmental Planning and Assessment Act 1979.

Issues raised during assessment and public exhibition of the application have been considered in the assessment of the application. Where relevant, conditions have been recommended to manage the impacts attributed to these issues.

The site is considered suitable for the proposed development and the proposal adequately addresses relevant planning controls. The development is not considered to be contrary to the public's interest and will not result a significant adverse social, environmental or economic impact. It is recommended that the application be approved, subject to the recommended conditions of consent provided in the attachment section of this report.



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> Item 13.08 Attachment 2

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Attachments

- DA2019 309.1 4.15 Assessment Report by Kempsey Council 1.
- DA2019 309.1 Recommended Conditions by Kempsey Council 2.
- 3. DA2019 - 309.1 Development Contributions Estimate
- DA2019 309.1 Plans 4.
- 5. DA2019 - 309.1 SOEE
- 6. DA2019 - 309.1 Phase 1 Contamination Assessment
- DA2019 309.1 Bushfire Hazard Assessment 7.
- DA2019 309.1 Bushfire Safety Authority conditions NSW RFS 8.
- DA2019 309.1 Ecological Impact Assessment. 9.
- 10. DA2019 309.1 Traffic Impact Assessment



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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

STATUTORY REQUIREMENTS

DA No: 2019/309.1	PN: 29160	
Proposal Description: Proposed five (5) lot residential subdivision. Property: Part Lot 302 DP754434. Emily Avenue, Port Macquarie.		

The provisions (where applicable) of:

(a)(i) Any environmental planning instrument

State Environmental Planning Policy No. 44 - Koala Habitat Protection

The subject land has an area greater than 1 hectare and therefore the provisions of SEPP 44 must be considered.

The Department of Planning and Infrastructure's Circular No. B35, Section 1.5 states that "In relation to affected development applications it is the intention of the policy that investigations for 'potential' and 'core' koala habitats be limited to those areas in which it is proposed to disturb habitat".

An Ecological Assessment in accordance with SEPP 44 was undertaken by Biodiversity Australia with regard to the proposed development and lodged with the DA. The assessment concluded that the trees on the overall site comprise greater than 20% Koala feed trees, and therefore the site is considered Potential Koala Habitat (PKH). The assessment concluded that the site is not likely to comprise Core Koala habitat given:

- · the majority of the Koala feed trees are immature,
- no Koalas were observed on site,
- no Koala scratches were observed on any trees within the site; and
- no records reviewed in the literature search identified records of Koalas observed on the site or adjoining properties.

Koala scats were recorded on the site however not within the developable portion of the lot.

The site is identified in the Link Road Koala Plan of Management (Link Road KPoM) as an offset planting site. It is noted that some of the immature Koala feed trees within the lot were provided as offset plantings associated with the Link Road KPoM. These trees have been planted over the last five years and may provide higher quality habitat as they mature.

It is also noted that noted that no Koala feed trees are to be removed as part of the proposed development. As a result, the assessment concluded a Koala Plan of Management (KPOM) is not necessary.

The application has demonstrated that the site does not qualify as critical habitat and no habitat will be removed or modified, therefore no further investigations are required.

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 DA 2019/309.1
 Proposed Five (5) Lot Residential Subdivision

State Environmental Planning Policy No. 55 - Remediation of Land

A Stage 1 Site Contamination Assessment was prepared by Regional Geotechnical Solutions with regard to the proposed residential subdivision and submitted to Council with the DA.

The Stage 1 concluded that the site is likely to be suitable for residential land use despite the presence of soil contamination at the site provided the recommendations and advice within the report are adopted, and site preparation works are undertaken in accordance with appropriate site management protocols and legislative requirements.

The contamination assessment report recommended a Stage 2 Contamination Assessment be undertaken for parts of the site where contamination was identified and that a Remediation Action Plan be developed for the site for remediation works.

An appropriate draft condition has been included with the development consent with regard to site contamination, reflecting the recommendations of the Stage 1 Site Contamination Assessment (Regional Geotechnical Solutions, 2019).

State Environmental Planning Policy (Coastal Management) 2018

The site is located within a coastal use area / coastal environment area.

In accordance with clause 7, this SEPP prevails over the Port Macquarie-Hastings LEP 2011 in the event of any inconsistency.

Having regard to clauses 13 and 14 of the SEPP the proposed development is not considered likely to result in any of the following:

- any adverse impact on integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment;
- b) any adverse impacts coastal environmental values and natural coastal processes;
 c) any adverse impact on marine vegetation, native vegetation and fauna and their
- habitats, undeveloped headlands and rock platforms;
- d) any adverse impact on Aboriginal cultural heritage, practices and places;
- e) any adverse impacts on the cultural and built environment heritage;
- f) any adverse impacts the use of the surf zone;
- any adverse impact on the visual amenity and scenic qualities of the coast, including coastal headlands;
- h) overshadowing, wind funnelling and the loss of views from public places to foreshores;
- any adverse impacts on existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability;

In accordance with clause 15, the proposal will not cause increased risk of coastal hazards on that land or other land.

The scale and size of the proposed subdivision is compatible with the surrounding coastal and built environment. The site is located within an area zoned for residential purposes.

State Environmental Planning Policy (Infrastructure) 2007

Not relevant. It is noted that Rosendahl Reservoir (Zone SP2) is located in close proximity to the proposed development (to the south).

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> Item 13.08 Attachment 2

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

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Proposed Five (5) Lot Residential Subdivision	

Port Macquarie-Hastings Local Environmental Plan 2011

The proposal is consistent with the LEP having regard to the following:

Clause 2.2 – the northern section of the subject site is zoned RE1 – Public Recreation and the southern section is zoned R1 – General Residential. The proposed residential subdivision relates only to that part of the lot that is zoned R1 – General Residential.

In accordance with clause 2.3(1) and the R1 – General Residential zone land use table, the proposed five (5) lot subdivision for residential development is a permissible land use with consent.

The objectives of the R1 - General Residential zone are as follows:

- To provide for the housing needs of the community.
- To provide for a variety of housing types and densities.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

In accordance with Clause 2.3(2), the proposal is consistent with the zone objectives having regard to the following:

- · the proposal is a permissible land use
- · it will assist in providing for the housing needs of the community.
- Clause 2.6 Subdivision of the land is permissible with consent.
- Clause 4.1 The lot sizes within the proposed subdivision range from 744m² to 2.995m². The minimum lot size control applicable to the site is 450m². All proposed lots comply with the minimum lot sizes identified in the Lot Size Map relating to the site.
- Clause 4.3 The site is identified with a maximum building height of 8.5m. No buildings are proposed as a part of the application.
- Clause 4.4 The site is identified with a maximum FSR of 0.65:1. No buildings are proposed as a part of the application.
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- Clause 5.10 The site does not contain or adjoin any known heritage items or sites of significance.
- Clause 7.1 the site is not mapped as containing acid sulfate soils.
- Clause 7.5 The above SEPP 44 assessment concludes the proposed development is consistent with the relevant provisions of the Link Road Koala Plan of Management (Link Road KPoM).

In accordance with this clause the Subdivision Layout Plan prepared by King and Campbell (Rev D dated 27.11.2019) nominates building envelopes of a sufficient size to enable future development on the proposed lots.

Clause 7.13 - Satisfactory arrangements are in place for provision of essential services including water supply, electricity supply, sewer infrastructure, stormwater drainage and suitable road access to service the development. Provision of

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electricity will be subject to obtaining satisfactory arrangements certification prior to the issue of a Subdivision Certificate as recommended by a condition of consent.

(a)(ii) Any proposed instrument that is or has been placed on exhibition

No draft instruments apply to the site.

(a)(iii) Any DCP in force

Port Macquarie-Hastings Development Control Plan 2013:

DCP 2013: General Provisions

DCP Objective	Development Provision	Proposed	Complies
2.3.3.1	Cut and fill 1.0m max. 1m outside the perimeter of the external building walls	The maximum cut and fill proposed is less than 1 metre.	Yes
2.3.3.2	1m max, height retaining walls along road frontage Any retaining wall >1.0 in height to be certified by structure engineer	The application seeks a 1m high retaining wall within the north-western corner of proposed lot 4 and 5. A 1.5m high retaining wall is proposed along the south-western edge of the realigned Emily Avenue turning head. The wall will remain within the Emily Avenue road reserve. A consent condition requiring detailed design of the 1.5m retaining wall and certification by a structural engineer is imposed.	Yes
	Combination of retaining wall and front fence height max 1.8m, max length 6.0m or 30% of frontage, fence component 25% transparent, and splay at corners and adjacent to driveway	No front fencing and retaining wall combination proposed.	N/A
	Significant land reforming proposals where >10% gross site area or >1.0ha is to have surface levels	Approx. 5,000m ³ of earthworks are proposed to reshape and reform the proposed building envelopes.	Yes

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	changed by more than 5m or where earthworks exceed an average of 10,000m3 per ha. Subdivision should be designed to fit the topography	Two retaining walls are proposed, one to the north of lot 4 and 5 to retain the newly created batters (concept design 1 metre contours) and one to the south of the newly formed Emily Ave cul-de-sac (approx. 1.5 metres high).	
2.3.3.8	Removal of hollow bearing trees	The ecological assessment submitted with the application concludes the site does not contain any hollow bearing trees.	Yes
2.4.3	Bushfire risk, Acid sulphate soils, Flooding, Contamination, Airspace protection, Noise and Stormwater	Refer to main body of report.	Yes
2.5.3.2	New accesses not permitted from arterial or distributor roads	No new access to arterial or distributor road proposed. Emily Avenue is an access place.	Yes
2.5.3.14	Sealed driveway surfaces unless justified	The shared driveway is proposed to be sealed.	Yes
2.5.3.15 and 2.5.3.16	Driveway grades first 6m or 'parking area' shall be 5% grade with transitions of 2m length	Driveway grade capable of compliance. Details to be illustrated on section 138 Roads Act application.	Yes
2.5.3.17	Parking areas to be designed to avoid concentrations of water runoff on the surface.	Refer to main body of the report.	
2.6.3.1	Tree removal (3m or higher with 100mm diameter trunk at 1m above ground level and 3m from external wall of existing dwelling)	The development proposes the removal of 4 trees. These trees are listed as Koala browse species, as such the DCP requires replacement planting at a ratio of 2.1. A condition of consent provides for the replacement planting of eight(8) Koala feed trees.	Yes.

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2.7.2.2	Design addresses generic principles of Crime Prevention Through Environmental Design guideline	The proposed development will be unlikely to create any concealment/entrapment areas or crime spots that would result in any identifiable loss of safety or reduction of security in the immediate area.	Yes
DCP 2013	: Chapter 3.6 - Subdivisio	n	
DCP Objective	Development Provision	Proposed	Complies
3.6.3.1	A site analysis is required for all development and shall illustrate: • microclimate; • lot dimensions; • north point; • existing contours and levels to AHD; • flood affected areas; • overland flow patterns, drainage and services; • any contaminated soils or filled areas, or areas of unstable land; • easements and/or connections for drainage and utility services; • identification of any existing trees and other significant vegetation; • any existing buildings and other structures, including their setback distances; • heritage and archaeological features; • fences; • existing and proposed road network, including connectivity and access for all adjoining land parcels; pedestrian and vehicle access; • views to and from the site:	Site plan and details provided adequate.	Yes

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	overshadowing by neighbouring structures; and any other notable features or characteristics of the site.		
3.6.3.2	Torrens title lots minimum width of 15m when measured at a distance of 5.5m from front property boundary. Minimum width of 7m when boundaries are extended to kerb line	 The proposed subdivision includes access via a culde-sac head and private shared driveway to 3 battle-axe lots. The battle-axe handles accessing lots 3, 4 and 5 and the street frontage of Lot 2 do not numerically comply with the minimum lot width, however it is considered the proposed lots achieve the relevant objectives of the clause being: To provide a range of lot sizes to suit a variety of dwelling and household types To ensure the lot layout plan reflects the site's opportunities and constraints. All proposed lots are of a suitable size, illustrate a suitable building envelope and account for the unique site features. The proposed lots have a minimum width of 18.01 metres (width presenting to the shared driveway) and it is considered they achieve the intent of this clause. 	Numerical variation proposed Complies with the intent of the clause.
	Minimum depth of 25m.	The following depths are proposed: Lot 1: 33.65m Lot 2: 37.8m Lot 3: 44.17m Lot 4: 49.92m	Yes

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		Lot 5: 55.68m	
	For lots where average slope of the site is equal to, or exceeds 16%, indicative road and driveway grades are required demonstrating satisfactory access.	The average slope of each proposed lot does not exceed 16%. Access and driveway grades are capable of complying.	Yes
3.6.3.3	 Battleaxe lots discouraged in greenfield development. Council may consider permitting Torrens Title battleaxe allotments for "infill" development where it is demonstrated that: A Torrens Title lot, that is not a battleaxe lot, cannot be achieved; and the number of crossovers do not reduce the amenity of the street or on street parking; and the impact of noise, dust and headlights on the land owners adjoining the driveway is addressed by the construction of an acoustic fence for the full length of the driveway; and addresses privacy between the rear lot and the rear open space of the front lot by the provision of adequate screening, larger lot size and setbacks: and 	Two (2) of the proposed lots have direct access to local road Emily Avenue. Three (3) of the proposed lots are battleaxe lots, with frontage to and access via the proposed shared driveway. The proposal is consistent with the considerations for battle-axe lots for the following reasons: • The proposal is for infill development, • The proposed crossovers do not reduce the amenity of the street of one street parking. • Privacy between lots can be achieved, • There is sufficient space for garbage collection. An acoustic fence along the full length of the driveway is not considered necessary, in this case, as the lots present to the shared driveway, as if it were a street frontage and future dwellings can be sufficiently set back to ensure there will be no noise, dust or headlight impacts.	Yes

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	 extends utilities to the end of the axe handle; and There is sufficient space for garbage collection on the frontage. 		
3.6.3.4	Lots are to be designed to allow the construction of a dwelling, which does not involve more than 1m cut, or fill, measured from natural ground level, outside the dwellings external walls	Minimal cut and fill, less than 1m. Lots are designed with a concept design 1 metre contours.	Yes
	Lot sizes increased for sloping sites in accordance with Table 3.6.1.	The proposed building envelopes have a slope less than 0-10% and 11- 15%. All lots comply with the minimum 600m ² lot area and 18 metre lot width.	Yes
	Additional information provided for slope categories in accordance with Table 3.6.2	 Category A (0-10%) details required: Details of any retaining walls (including height, location and extent of cut and/or fill) required to permit construction of a dwelling. 	Yes
		Category B (11-15%) details required: • Matters required under Category A • Identification of a building footprint. • <u>Vehicular access</u> <u>details and</u> <u>accommodation for 2</u> <u>cars.</u> • Retaining wall heights.	Condition: For lots with a slope of 11%-15% details of vehicular access and accommodation for 2 cars to be provided.
3.6.3.5	Wherever possible orientate streets to maximise the number of east, west and south facing lots and to	The street layout is already established and each of the lots has a north-south orientation.	Yes

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	minimise the number of narrow north facing lots. Residential street blocks should preferably be orientated north-south with dimensions generally limited to 60- 80m by 120-150m as illustrated in Figure 3.6- 2		
	Lot size and shape are to reflect orientation to ensure future dwelling construction has optimal opportunity for passive solar design	Sufficient solar access is achievable for future dwellings on the proposed lot.	Yes
3.6.3.6	Kerb and guttering, associated street drainage, pavement construction and foot paving across the street frontages should be constructed as part of the subdivision works where these do not exist (may be varied subject to criteria in this clause)	Refer to main body of the report.	Yes
3.6.3.7	Subdivisions close to urban centres or along arterial roads serviced by public transport achieve yield of >35 dwellings per hectare.	The subdivision will achieve a higher residential yield within the existing residential estate.	Yes
3.6.3.8	All new roads are to be dedicated to Council designed in accordance the Council's adopted AUSPEC design specification documents. All applications to subdivide land should include a road layout plan that meets the Council's design requirements including providing connectivity and access for all land parcels consistent with Council's road hierarchy.	The extension to Emily Avenue, including the new 9.0m radius cul-de-sac to be dedicated to Council.	Yes

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3.6.3.16	An application for subdivision should be accompanied by an Integrated Water Cycle Management Strategy prepared by a certified practicing engineer and in accordance with Council's adopted design specification documents.	Refer to main body of the report.	Yes
3.6.3.17 - 3.6.3.19	An application for subdivision should be accompanied by a Stormwater Management Strategy prepared by a certified practicing engineer and in accordance with Council's adopted Aus- Spec design specification documents. The finished floor level of buildings should be above the 100 year ARI flood level (plus freeboard) and in accordance with the council's current flood policy.	Refer to main body of the report.	Yes
3.6.3.20	Water supply to meet Council's design specifications.	Refer to main body of the report.	Yes
3.6.3.21 - 3.6.3.22	All lots connected to reclaimed water if available.	Reclaimed water supply is not available.	N/A
3.6.3.24	Separate sewer junction provided for each lot.	Separate sewer can be provided to each lot.	Yes
3.6.3.25	Extension of sewer infrastructure at cost of developer.	Noted.	Yes
3.6.3.26 - 3.6.3.27	Erosion and sediment control plan to be provided.	Standard condition applied.	Yes
3.6.3.34	All service infrastructure should be underground unless otherwise approved by Council.	Services are existing and capable of extension to provide underground services to each lot.	Yes
	All service infrastructure should	Services are existing and underground and capable	Yes

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		I
be installed in a	of extension to each lot in a	
common trench.	common trench.	
Conduits for the main	Services are existing and	Yes
technology network	capable of extension to	
system should be	provide underground	
provided in all streets.	services to each lot.	
Conduits are to be	Services are existing and	Yes
installed in accordance	capable of extension to	
with the National	provide underground	
Broadband Network	services to each lot.	
Company Limited's		
Guidelines for Fibre to		
the Premises		
Underground		
Deployment'.		
Access pits are to be	Services are existing and	Yes
installed at appropriate	capable of extension to	
intervals along all	provide underground	
streets.	services to each lot.	

Based on the above assessment, the development is consistent with provisions of the DCP. Variations proposed are considered acceptable and the relevant objectives have been satisfied. Cumulatively, the variations do not amount to an adverse impact or a significance that would justify refusal of the application.

(a)(iii)(a) Any planning agreement or draft planning agreement

No planning agreement has been offered or entered into relating to the site.

(a)(iv) The regulations

No matters prescribed by the regulations apply.

(b) The likely impacts of that development, including environmental impacts on both the natural and built environments and the social and economic impacts in the locality

Context and Setting

- The south eastern corner of the site contains the cul-de-sac head of Emily Avenue.
- Adjoining the site to the north is Wayne Richards Park sporting fields and a Council Depot.
- Adjoining the site to the north east is Wayne Richards Park with residential areas to the south east.
- Adjoining the site to the south is Rosendahl Reserve and associated Rosendahl Reservoir.
- Adjoining the site to the south west is residential land while land to the north west is outdoor areas and sporting fields of Mackillop College.
- The proposal will not have any significant adverse impacts to existing adjoining properties and satisfactorily addresses the public domain.
- The proposal is considered to be consistent with other residential development in the locality and adequately addresses planning controls for the area.
- · The proposal does not have a significant adverse impact on existing view sharing.
- The proposal does not have significant adverse lighting impacts.

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- There are no significant adverse privacy impacts. Adequate building separation is likely to be achieved for any future residential dwellings.
- There are no significant adverse overshadowing impacts. The proposal does not
 prevent adjoining properties from receiving 3 hours of sunlight to private open
 space and primary living areas on 21 June between the hours of 9am and 3pm.

Roads

The site has road frontage to Emily Avenue. Adjacent to the site, Emily Avenue is a sealed public road under the care and control of Council. Emily Avenue is an Access Place with a carriageway width of 6m within a 19m wide road reserve. The street has SE kerb and gutter and some traffic calming in the form of road narrowing. The road narrowing occurs approximately 125m from the site, with the carriageway width reduced to 4.5m.

Traffic and Transport

The site is currently vacant land, approved for residential zoning. With the inclusion of 5 new dwellings, this development proposes to generate approximately 45 daily trips. The addition in traffic associated with the development is unlikely to have any adverse impacts to the existing road network within the immediate locality.

Site Frontage & Access

Vehicle access to the site is proposed through individual driveways for lots 1 & 2, which have direct road frontage. A shared 5.5m wide concrete driveway is proposed for lots 3, 4 & 5 with a 10.5m wide right of carriageway across its length. Access shall comply with Council AUSPEC and Australian Standards, and conditions have been imposed to reflect these requirements.

Due to the type and size of development, additional works are required to include:

- An extension to Emily Avenue, with the construction of a new 9.0m radius cul-desac to be dedicated to Council
- kerb and gutter along the full road frontage
- construction of a concrete access path (minimum 4.0m wide) from Emily Avenue to Wayne Richards Park
- provision for a retaining wall (approximately 1.5m high) at no cost to Council

Water Supply Connection

Council records indicate existing 100mm PVC water main on the northern side of Emily avenue will need to be extended to provide main frontage to each proposed lot at no cost to Council. Each proposed lot is to be provided with a sealed water service, final water service sizing will need to be determined by a hydraulic consultant to suit the domestic and commercial components of the development, as well as fire service and backflow protection requirements in accordance with AS3500.

Detailed engineering plans are required to be submitted to Water and Sewer Section.

Refer to relevant conditions of consent.

Sewer Connection

Council records indicate that the development site is not currently connected to Sewer. Existing sewer infrastructure must be extended to provide each proposed lot with an individual connection to sewer. Detailed engineering plans are required to be submitted to Water and Sewer Section.

Refer to relevant conditions of consent.

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Stormwater

The site naturally grades towards the rear and into the adjoining Wayne Richards Park reserve. There is some existing under capacity stormwater drainage infrastructure at this location, consisting of an inlet, downstream pit/pipe network and an informal vegetated stormwater basin, which Council's Parks and Reserves staff have reported to be a source of ongoing stormwater related issues as a result of the basin and inlet overtopping, becoming blocked and / or holding water for lengths of time and impacting the ability of the Council to maintain the adjacent playing fields.

This existing adjoining basin is defined as the legal point of discharge for the development, as it is the location where the site naturally drains. A direct connection to Council's downstream basin will be required via extension of the drainage system servicing the site to this basin.

This is consistent with the concept presented on the stormwater management plan submitted in support of the development application, however, the location of the pipeline discharging to the existing 'basin' as shown should be relocated to the north so that it is located beneath the invert of the existing swale drain to assist in draining that area. The change of direction/inlet pit can also then function to capture runoff from the upstream swale to the west.

Furthermore, in reference to the existing issues with the function of the basin highlighted above, the following additional works are required to be undertaken as a means of improving downstream amenity, lessening the maintenance burden, and mitigating any impacts resulting from increased stormwater discharge:

- The condition of the basin is to be restored to maximise its capacity and effectiveness. Weeds, debris and excess silt shall be removed to the satisfaction of Council.
- A low earthen berm is to be constructed along the northern side of the existing basin to ensure all stormwater from the development and surrounds can be confined to the basin (basin currently overtops) and prevented from inundating the adjacent sports fields. A cut/fill plan is to be submitted prior to approval of the Construction Certificate.

Refer to relevant conditions of consent.

Other Utilities

Telecommunication and electricity services are available to the site.

Refer to relevant conditions of consent.

Heritage

Following a site inspection and a search of Council/AHIMS records, no known items of Aboriginal or European heritage significance exist on the property.

The site is considered to be disturbed land, however as a precaution, a condition of consent is included that works are to cease in the unexpected event heritage items are found. Works can only recommence when appropriate approvals are obtained for management and/or removal of the heritage item.

Other land resources

The site is within an established urban context and will not sterilise any significant mineral or agricultural resource.

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Water cycle

The proposed development will not have any significant adverse impacts on water resources and the water cycle.

Soils

The proposed development will not have any significant adverse impacts on soils in terms of quality, erosion, stability and/or productivity subject to a standard condition requiring erosion and sediment controls to be in place prior to and during construction.

Air and microclimate

The construction and/or operations of the proposed development will not result in any significant adverse impacts on the existing air quality or result in any pollution. Standard precautionary site management conditions are imposed.

Flora and fauna

The Ecological Assessment prepared by Biodiversity Australia concludes that the proposed development would not result in a significant impact on threatened species or ecological communities and therefore a BDAR is not required.

As described above the proposed development will require the removal of 4 Blackbutt trees. These trees are listed as Koala browse species, as such replacement planting of eight (8) Koala feed trees is conditioned to the consent.

Refer to relevant conditions of consent.

Waste

Satisfactory arrangements are in place for proposed storage and collection of waste and recyclables. No adverse impacts anticipated. Standard precautionary site management conditions are imposed.

Energy

Not relevant - the proposed development is for subdivision only.

Noise and vibration

No adverse impacts. Standard construction hours condition imposed.

Bushfire

The site is identified as being bushfire prone. The applicant has submitted a bushfire assessment report prepared by a Certified Consultant. The assessment of bushfire risk having regard for section 4.3.5 of Planning for Bushfire Protection 2006 concludes that a Bushfire Attack Level 29 applies to the site.

In accordance with Section 100B - *Rural Fires Act* 1997 - the application proposes subdivision of bush fire prone land that could lawfully be used for residential purposes. The application and bushfire assessment was forwarded to the NSW Rural Fire Service who have since issued a Bushfire Safety Authority, which is incorporated into the consent conditions.

Refer to relevant conditions of consent.

Safety, security and crime prevention

The proposed development will be unlikely to create any concealment/entrapment areas or crime spots that would result in any identifiable loss of safety or reduction of security in

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the immediate area. The increase in housing density will improve natural surveillance within the locality and openings from each dwelling overlook common and private areas.

Social impacts in the locality

Given the nature of the proposed development and its location the proposal is not considered to have any significant adverse social impacts.

Economic impact in the locality

The proposal is not considered to have any significant adverse economic impacts on the locality. A likely positive impact is that the development will create employment in the construction industry, which will lead to flow impacts such as expenditure in the area.

Site design and internal design

The proposed development design satisfactorily responds to the site attributes and will fit into the locality.

Construction

Construction impacts are considered capable of being managed, standard construction and site management conditions have been imposed.

Cumulative impacts

The proposed development is not considered to have any significant adverse cumulative impacts on the natural or built environment or the social and economic attributes of the locality.

(c) The suitability of the site for the development

The proposal will fit into the locality and the site attributes are conducive to the proposed development.

Site constraints of bushfire hazard, stormwater management and access to the proposed lots have been adequately addressed and appropriate conditions of consent recommended.

(d) Any submissions made in accordance with this Act or the regulations

Following exhibition of the application in accordance with DCP 2013. Three (3) submissions were received. The following matters were raised in the submissions.

Issue Raised	Comment
Incorrect APZ measurements for proposed Lot 2.	Review of APZ in the Bushfire Assessment are appropriate. No issues raised by the RFS with the proposed APZ for any lot.
Crime and security concerns with regard to the proposed sealed access track between proposed Lot 1 and the existing lot to the east.	The proposed walkway between Lot 1 and the existing lot to the east will provide a pedestrian link between Emily Avenue and Wayne Richards Park. The dwellings on the adjacent lots will provide passive surveillance of this walkway and it is not considered to result in any concerns with regard to crime or security.

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Overshadowing/ solar access impacts of neighbouring dwelling and private open space.	Any future dwellings on the proposed lots will be required to comply with relevant planning controls with regard to height limits, setbacks, floor space ratio's as wel as overshadowing. Therefore, it is not considered likely that the proposal will result in unacceptable overshadowing of existing dwellings.
Dust generation during construction.	A standard condition with regard to dust suppression is included in the draft conditions.
Inaccurate traffic movements predicted in Traffic Impact Assessment	The Traffic Impact Assessment has been reviewed by PMHC Development Engineers and no issues with the predicted traffic movements were identified. The predicted traffic movements in the TIA are considered reasonable.
Concern over multi-dwelling housing development on the proposed lots and associated traffic impacts.	All future DA's for development on the proposed lots will be subject to assessment by Council. The potential traffic impacts of any multi-dwelling housing proposal would be assessed at the DA stage.
Traffic study required for Emily Avenue as currently exiting the street in the mornings is difficult.	A TIA was provided with the DA which was reviewed by PMHC Development Engineers did not raise concerns regarding the potential additional traffic resulting from the proposed subdivision.
No alternative access road if an accident occurs at the Emily Avenue/ Koala Street intersection.	This is accurate as the street is a cul-de- sac however, it is considered acceptable given the limited number of dwellings the street services and is the same for all other cul-de-sac streets.
Potential impacts to the wildlife corridor across the site used by Koalas.	An Ecological Assessment was submitted with the DA that concluded the proposed subdivision will not result in impacts to any Koala's that may use the site.
Impacts to of increased traffic to children's safety when playing on the street.	Not relevant. The proposal is for only 5 additional lots and is not considered to have significant adverse impacts on the safety of Emily Avenue.

(e) The public interest

The proposed development will be in the wider public interest in that it will provide additional residential lots, on land zoned for residential use. The proposed development

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satisfies relevant planning controls and will not have any significant adverse impacts on the wider public interest.

Ecologically Sustainable Development and Precautionary Principle

Ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes.

The four principles of ecologically sustainable development are: • the precautionary principle,

- intergenerational equity,
- conservation of biological diversity and ecological integrity,
- improved valuation, pricing and incentive mechanisms.

The principles of ESD requires the effective integration of economic, environmental, social and equity considerations in decision-making processes. ESD aims to provide for the needs of present generations without compromising the ability of future generations to meet their own needs.

Based on the assessment provided in the report and with recommended conditions of consent, it is considered the proposal is in accordance with the principles of ESD.

Climate change

•

The proposal is not considered to be vulnerable to any risks associated with climate change.

Section 7.11 Contributions

- Development contributions will be required in accordance with Section 7.11 of the Environmental Planning and Assessment Act 1979 towards roads, open space, community cultural services, emergency services and administration buildings.
- A copy of the contributions estimate is included as Attachment 3

Section 7.12 Contributions

No - The development does not contain any commercial/industrial component.

Section 64 Water and Sewer Contributions

- Development contributions will be required towards augmentation of town water supply and sewerage system head works under Section 64 of the Local Government Act 1993.
- A copy of the contributions estimate is included as Attachment 3

Additional Comments

Site inspection date: 16 August 2019

CONCLUSION AND STATEMENT OF REASON

The application has been assessed in accordance with Section 4.15 of the Environmental Planning and Assessment Act 1979.

Issues raised during assessment and public exhibition of the application have been considered in the assessment of the application. Where relevant, conditions have been recommended to manage the impacts attributed to these issues.

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The site is considered suitable for the proposed development and the proposal adequately addresses relevant planning controls. The development is not considered to be contrary to the public's interest and will not result a significant adverse social, environmental or economic impact. It is recommended that the application be approved, subject to the recommended conditions of consent provided in the attachment section of this report.

Attachments

- 1. DA2019 309.1 Recommended Conditions 2. DA2019 309.1 Plans
- 3. DA2019 309.1 Contributions Quote
- 4. DA2019 309.1 Statement of Environmental Effects
- 5. DA2019 309.1 NSW RFS Bushfire Safety Authority

CONDITIONS - Refer to attachment 1

RECOMMENDATION - That consent be granted pursuant to delegated authority of Development Assessment Planner / Group Manager Development Assessment.

Signed:

Assessing Officer: Naomi Lyons Town Planner

Date: 11/03/2020

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NOTE: THESE ARE DRAFT ONLY

DA NO: 2019/309

DATE: 11/03/2020

PRESCRIBED CONDITIONS

The development is to be undertaken in accordance with the prescribed conditions of Part 6 -Division 8A of the *Environmental Planning & Assessment Regulations* 2000

A - GENERAL MATTERS

(1) (A001) The development is to be carried out in accordance with the plans and supporting documents set out in the following table, as stamped and returned with this consent, except where modified by any conditions of this consent.

Plan/ Supporting Document	Reference	Prepared By	Date
Statement of Environmental Effects as amended	Job: 5328	King + Campbell Pty Ltd	April 2019
Subdivision Layout	Project: 5328 Exhibit 03A Sheet 3 Revision D	King + Campbell Pty Ltd	27 November 2019
Tree Removal and Offset Planting Plan	Project: 5328 Exhibit 03B Sheet 4 Revision A	King + Campbell Pty Ltd	27 November 2019
Preliminary Water and Sewer Plan	Project: 5328 Exhibit 04 Sheet 5 Revision C	King + Campbell Pty Ltd	27 November 2019
Preliminary Stormwater Management Plan	Project: 5328 Exhibit 05 Sheet 6 Revision C	King + Campbell Pty Ltd	27 November 2019
Stage 1 Contamination Assessment	RGS20789.1-AB	Regional Geotechnical Solutions	16 April 2019
Ecological Assessment	Project Number: EC3309 Document Reference: EC3309-BEC- REP- EmilyAve_EA- rev1.0	Biodiversity Australia	April 2019
Bushfire Hazard Assessment	Version 2.0	David Pensini Building	17 April 2019

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		Certification and Environmental Services	
Traffic Impact Assessment	0:\5328_EmilyA venue\01_Coun cil\5328_106_Tr affic.dox.	King + Campbell Pty Ltd	March 2019

In the event of any inconsistency between conditions of this development consent and the plans/supporting documents referred to above, the conditions of this development consent prevail.

- (2) (A002) No subdivision work shall commence until a Subdivision Works Certificate has been issued and the applicant has notified Council of:
 - a. the appointment of a Principal Certifying Authority; and
 - b. the date on which work will commence.

Such notice shall include details of the Principal Certifying Authority and must be submitted to Council at least two (2) days before work commences.

- (3) (A004) An application for a Subdivision Works Certificate will be required to be lodged with Council prior to undertaking subdivision works and a Subdivision Certificate is required to be lodged with Council on completion of works.
- (4) (A008) Any necessary alterations to, or relocations of, public utility services to be carried out at no cost to council and in accordance with the requirements of the relevant authority including the provision of easements over existing and proposed public infrastructure.
- (5) (A009) The development site is to be managed for the entirety of work in the following manner:
 - Erosion and sediment controls are to be implemented to prevent sediment from leaving the site. The controls are to be maintained until the development is complete and the site stabilised with permanent vegetation;
 - 2. Appropriate dust control measures;
 - Building equipment and materials shall be contained wholly within the site unless approval to use the road reserve has been obtained. Where work adjoins the public domain, fencing is to be in place so as to prevent public access to the site;
 - Building waste is to be managed via appropriate receptacles into separate waste steams;
 - 5. Toilet facilities are to be provided on the work site at the rate of one toilet for every 20 persons or part of 20 persons employed at the site.
 - Building work being limited to the following hours, unless otherwise permitted by Council;
 - Monday to Saturday from 7.00am to 6.00pm
 - No work to be carried out on Sunday or public holidays
 - The builder to be responsible to instruct and control his sub-contractors regarding the hours of work.
- (6) (A011) The design and construction of all public infrastructure works shall be in accordance with Council's adopted AUSPEC Specifications.

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- (7) (A013) The general terms of approval from the following authorities, as referred to in section 4.50 of the Environmental Planning and Assessment Act 1979, and referenced below, are attached and form part of the consent conditions for this approval.
 - NSW Rural Fire Service The General Terms of Approval, Reference DA-2019-01630-CL55-1 and dated 7 January 2020, are attached and form part of this consent.
- (8) (A032) The developer is responsible for any costs relating to minor alterations and extensions to ensure satisfactory transitions of existing roads, drainage and Council services for the purposes of the development.
- (9) (A033) The applicant shall provide security to the Council for the payment of the cost of the following:
 - a. making good any damage caused to any property of the Council as a consequence of doing anything to which the consent relates,
 - b. completing any public work (such as road work, kerbing and guttering, footway construction, utility services, stormwater drainage and environmental controls) required in connection with the consent,
 - c. remedying any defects in any such public work that arise within twelve (12) months after the work is completed.

Such security is to be provided to Council prior to the issue of the Subdivision Certificate/Construction Certificate or Section 138 of the Roads Act, 1993.

The security is to be for such reasonable amount as is determined by the consent authority, being an amount that is 10% of the contracted works for Torrens Title subdivision development/the estimated cost plus 30% for building development of public works or \$5000, whichever is the greater of carrying out the development by way of:

- i. deposit with the Council, or
- ii. an unconditional bank guarantee in favour of the Council.

The security may be used to meet any costs referred to above and on application being made to the Council by the person who provided the security any balance remaining is to be refunded to, or at the direction of, that person. Should Council have to call up the bond and the repair costs exceed the bond amount, a separate invoice will be issued. If no application is made to the Council for a refund of any balance remaining of the security within 6 years after the work to which the security relates has been completed the Council may pay the balance to the Chief Commissioner of State Revenue under the Unclaimed Money Act 1995.

(10) A Stage 2 Contamination Assessment is to be carried out and Remedial Action Plan prepared in accordance with the Stage 1 Contamination Assessment, RGS20789.1-AB 2 prepared by Regional Geotechnical Solutions, dated 16 April 2019, pages 9-11.

Should any fill material require removal off-site, it will require assessment for a Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 in accordance with the Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 – the Excavated Natural Material (ENM) Order 2014.

(11) The recommendations detailed in Section 11, pages 55-56 of the Ecological Assessment prepared by Biodiversity Australia dated April 2019, form part of this

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consent and shall be implemented at the respective stages throughout the development.

B - PRIOR TO ISSUE OF SUBDIVISION WORKS CERTIFICATE

- (1) (B001) Prior to release of the Subdivision Works Certificate, approval pursuant to Section 68 of the Local Government Act, 1993 to carry out water supply, stormwater and sewerage works is to be obtained from Port Macquarie-Hastings Council. The following is to be clearly illustrated on the site plan to accompany the application for Section 68 approval:
 - · Position and depth of the sewer (including junction)
 - Stormwater drainage termination point
 - Easements
 - Water main
 - Proposed water meter location
- (2) (B003) Submission to the Principal Certifying Authority prior to the issue of a Subdivision Works Certificate detailed design plans for the following works associated with the developments. Public infrastructure works shall be constructed in accordance with Port Macquarie-Hastings Council's current AUSPEC specifications and design plans are to be accompanied by AUSPEC DQS:

1. Road works along the frontage of the development including extension of Emily Avenue to 'Access Place' standard (AUSPEC D1.5) joining smoothly with the existing section of road with a minimum carriage way width of six (6) metres ending in a temporary sealed nine (9) metre radii cul-de-sac with reflectorised posts.

2. Earthworks, including filling of the land for flood protection.

3. Sewerage reticulation. Existing sewer infrastructure must be extended to provide each proposed lot with an individual connection to Council's sewer main. Any abandoned sewer junctions are to be capped off at Council's sewer main and Council notified to carry out an inspection prior to backfilling of this work.

4. Water supply reticulation. The existing 100mm PVC water main on the northern side of Emily avenue will need to be extended to provide main frontage to each proposed lot. Each proposed lot is to be provided with a sealed water service, final water service sizing will need to be determined by a hydraulic consultant to suit the domestic and commercial components of the development, as well as fire service and backflow protection requirements in accordance with AS3500.

- Retaining walls.
- 6. Stormwater systems.
- 7. Erosion & Sedimentation controls.
- Location of all existing and proposed utility services including:

 Conduits for electricity supply and communication services (including fibre optic cable).
 - b. Water supply
 - c. Sewerage
 - d. Stormwater
- 9. Detailed driveway profile in accordance with Australian Standard 2890, AUSPEC
- D1, and ASD 201, Port Macquarie-Hastings Council current version.

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10. Detailed design of pedestrian access way a minimum of 4m wide, from Emily Avenue to Wayne Richards Park; such access ways to include a concrete pathway 4m wide, including kerb ramps where necessary and gates or bollards to prevent the unauthorised vehicular access to Wayne Richards Park.

11. Detailed design of landscaping and batters in the cul-de-sac road reserve in accordance with NSW Rural Fire Service - The General Terms of Approval, Reference DA-2019-01630-CL55-1 and dated 7 January 2020, are attached and form part of this consent.

12. Detailed design of vehicular access and accommodation for 2 cars for any lots with a slope of 11%-15%.

(3) (B006) An application pursuant to Section 138 of the Roads Act, 1993 to carry out works required by the Development Consent on or within public road is to be submitted to and obtained from Port Macquarie-Hastings Council prior to release of the Subdivision Works Certificate.

Such works include, but not be limited to:

- Civil works
- Traffic management
- Work zone areas
- Hoardings
- Concrete foot paving (width)
- Footway and gutter crossing
- Functional vehicular access
- (4) (B030) Prior to issue of Subdivision Works Certificate, a pavement design report shall be prepared by a suitably qualified geotechnical or civil engineer and submitted to Council, including soil test results and in-situ CBR values (NATA certified). Council's minimum pavement compaction testing criteria are as follows:
 - a. 98% (modified) base layers Maximum Modified Dry Density test in accordance with AS1289.5.2.1
 - b. 95% (modified) sub-base layers Maximum Modified Dry Density test in accordance with AS1289.5.2.1
 - c. 100% (standard) subgrade/select layers Maximum Standard Dry Density test in accordance with AS1289.5.1.1 (or for in-situ subgrade soils only, wet density testing may be used)
- (5) (B038) Footings and/or concrete slabs of buildings adjacent to sewer lines or stormwater easements are to be designed so that no loads are imposed on the infrastructure. Detailed drawings and specifications prepared by a practising chartered professional civil and/or structural engineer are to be submitted to the Principal Certifying Authority with the application for the Subdivision Works Certificate.
- (6) (B039) Detailed drawings and specifications prepared by a professional engineer for all retaining walls supporting:

i. earthworks that are more than 600mm above or below ground level (existing); or

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ii. located within 1m of the property boundaries; or

iii. earthworks that are more than 1m above or below ground level (existing) in any other location;

are to be submitted to the Principal Certifying Authority with the application for the Subdivision Works Certificate.

- (7) (B054) A driveway longitudinal section shall accompany the section 138 application pursuant to section 138 of the Roads Act, 1993. The section shall demonstrate compliance with Council's adopted AUSPEC Design and Construction Guidelines.
- (8) (B057) The existing sewer including junction and/or stormwater drainage shall be located on the site and the position and depth indicated on the plans which accompany the application for the Subdivision Works Certificate.
- (9) (B085) The location of electricity substations are to be clearly illustrated on the Subdivision Works Certificate plans. All substations are to remain on private property unless otherwise agreed to by Port Macquarie-Hastings Council.
- (10) (B197) A stormwater drainage design is to be submitted and approved by Council prior to the issue of a Subdivision Works Certificate. The design must be prepared in accordance with Council's AUSPEC Specifications, Australian Rainfall and Runoff 2019, the requirements of Relevant Australian Standards and shall make provision for the following:

a) The legal point of discharge for the proposed development is defined as the existing downstream informal vegetated stormwater basin. In this regard, a suitably sized piped drainage system (minimum 375mm diameter) shall be extended from the basin to the site. The pipeline must be designed to have capacity to convey flows that would be collected within the development as generated by a 5% AEP storm event.

Furthermore, in difference to the concept pipeline alignment illustrated on the Stormwater Management Plan prepared by King and Campbell, Drawing No, 5328P_Exhibits Sheet 6 Revision C and dated 27-11-19, the location of the pipeline discharging to the existing 'basin' should be relocated to the north so that is located beneath the invert of the existing swale drain to assist in draining that area. The change of direction/inlet pit can also then function to capture runoff from the upstream swale to the west.

b) All allotments must be provided with a direct point of connection to the public piped drainage system. Kerb outlets are not permitted.

c) The design requires the provision of interallotment drainage in accordance with AUSPEC D5.

d) Where works are staged, a plan is to be provided which demonstrates which treatment measure/s is/are are to be constructed with which civil works stage. Separate plans are required for any temporary treatment (where applicable e.g. for building phase when a staged construction methodology is adopted) and ultimate design.

e) The design is to make provision for the natural flow of stormwater runoff from uphill/upstream properties/lands. The design must include the collection of such waters and discharge to the Council drainage system.

f) In addition to the works to drain the development site to the existing downstream vegetated informal stormwater basin, the following additional works shall be undertaken as a means of improving downstream amenity, lessening the maintenance burden, and mitigating any impacts resulting from increased stormwater discharge:

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- a. The condition of the basin is to be restored to maximise its capacity and effectiveness. Weeds, debris and excess silt shall be removed to the satisfaction of Council.
- b. A low earthen berm is to be constructed along the northern side of the existing basin to ensure all stormwater from the development and surrounds can be confined to the basin (basin currently overtops) and prevented from inundating the adjacent sports fields. A cut/fill plan is to be submitted prior to approval of the Subdivision Works Certificate.
- (11) (B198) The access shaft to proposed lots 3, 4 and 5 shall be constructed to AUSPEC standard (with a 5.5 metre wide concrete or approved surface) over the full length of the shaft commencing from the edge of the public road pavement. Provision for water supply, sewerage, telephone and electricity shall be provided as necessary, in conduits laid for the full length of the shaft, prior to concrete construction. Details shall be provided with the application for Subdivision Works Certificate and constructed prior to release of Subdivision Certificate.
- (12) Prior to the issue of the Subdivision Works Certificate an offset tree planting plan shall be approved by Council's Natural Resource staff. The plan shall provide for eight (8) compensatory tree plantings on land determined to be suitable by Council's Natural Resource staff and clearly illustrate the specific location, species and size of trees. The plan shall have regard to location of existing services, access arrangements, maintenance and asset protection zone obligations.

C - PRIOR TO ANY WORK COMMENCING ON SITE

- (1) (C001) A minimum of one (1) week's notice in writing of the intention to commence works on public land is required to be given to Council together with the name of the principal contractor and any major sub-contractors engaged to carry out works. Works shall only be carried out by a contractor accredited with Council.
- (2) (C004) Prior to works commencing an application being made to the electricity and telecommunications service providers. Services are required to be underground.
- (3) (C008) No access through the adjoining Wayne Richards Park reserve shall be allowed without first obtaining written approval from Council's Parks and Gardens Manager. No clearing or damage to any vegetation on the reserve is permitted. No spoil, fill, waste liquids or solid materials shall be stockpiled on or allowed to move beyond the fence line for any period on the adjoining reserve during or after the development. In the event of accidental damage, the site must be revegetated to the satisfaction of Council. Such approval would need to be undertaken in accordance with Council Policy.
- (4) (C013) Where a sewer manhole and Vertical Inspection Shaft exists within a property, access to the manhole/VIS shall be made available at all times. Before during and after construction, the sewer manhole/VIS must not be buried, damaged or act as a stormwater collection pit. No structures, including retaining walls, shall be erected within 1.0 metre of the sewer manhole or located so as to prevent access to the manhole.

D – DURING WORK

(1) (D001) Development works on public property or works to be accepted by Council as an infrastructure asset are not to proceed past the following hold points without inspection and approval by Council. Notice of required inspection must be given 24 hours prior to inspection, by contacting Council's Customer Service Centre

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on (02) 6581 8111. You must quote your Subdivision Works Certificate number and property description to ensure your inspection is confirmed:

a. prior to commencement of site clearing and installation of erosion control facilities;

b. at the commencement of earthworks;

c. before commencement of any filling works;

d. when the sub-grade is exposed and prior to placing of pavement materials;

e. when trenches are open, stormwater/water/sewer pipes and conduits jointed and prior to backfilling;

f. at the completion of each pavement (sub base/base) layer;

g. before pouring of kerb and gutter;

h. prior to the pouring of concrete for sewerage works and/or works on public property;

i. on completion of road gravelling or pavement;

j. during construction of sewer infrastructure;

k. during construction of water infrastructure;

I. prior to sealing and laying of pavement surface course. All works at each hold point shall be certified as compliant in accordance with the requirements of AUSPEC Specifications for Provision of Public Infrastructure and any other Council approval, prior to proceeding to the next hold point.

- (2) (D033) Should any Aboriginal objects be discovered in any areas of the site then all excavation or disturbance to the area is to stop immediately and the National Parks and Wildlife Service, Department of Environment and Conservation is to be informed in accordance with Section 91 of the National Parks and Wildlife Act 1974. Subject to an assessment of the extent, integrity and significance of any exposed objects, applications under either Section 87 or Section 90 of the National Parks and Wildlife Act 1974 may be required before work resumes.
- (3) (4)
- (D051) Prior to commencement of any pavement works a material quality report from the proposed supplier shall be submitted to Council. The pavement materials shall meet Council's current specifications at the time of construction.
- (5) (D052) Prior to laying of Asphaltic Concrete (AC) or wearing surface course, submission to Council of pavement and soil test results prepared by a NATA registered person for all road pavement construction, including:
 - a. CBR test results, and
 - b. Subgrade / select fill, sub-base and base pavement compaction reports in accordance with AS1289.5.1.1 & AS1289.5.2.1 as applicable.

E – PRIOR TO THE ISSUE OF A SUBDIVISION CERTIFICATE

(1) (E005) Prior to the release of any bond securities held by Council for infrastructure works associated with developments, a formal written application is to be submitted to Council specifying detail of works and bond amount.

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- (2) (E006) Completion of engineering and environmental works for any land (other than proposed public roads) to be transferred to Council, in accordance with the approved Subdivision Works Certificate.
- (3) (E008) Payment to Council, prior to occupation or the issue of the Subdivision Certificate of the Section 7.11 contributions set out in the "Notice of Payment – Developer Charges" schedule attached to this consent unless deferral of payment of contributions has been approved by Council. The contributions are levied, pursuant to the Environmental Planning and Assessment Act 1979 as amended, and in accordance with the provisions of the following plans:
 - Port Macquarie-Hastings Administration Building Contributions Plan 2007
 - Hastings S94 Administration Levy Contributions Plan
 - Port Macquarie-Hastings Open Space Contributions Plan 2018
 - Hastings S94 Major Roads Contributions Plan
 - Port Macquarie-Hastings Community Cultural and Emergency Services Contributions Plan 2005

The plans may be viewed during office hours at the Council Chambers located on the corner of Burrawan and Lord Streets, Port Macquarie, 9 Laurie Street, Laurieton, and High Street, Wauchope.

The attached "Notice of Payment" is valid for the period specified on the Notice only. The contribution amounts shown on the Notice are subject to adjustment in accordance with CPI increases adjusted quarterly and the provisions of the relevant plans. Payments can only be made using a current "Notice of Payment" form. Where a new Notice of Payment form is required, an application in writing together with the current Notice of Payment application fee is to be submitted to Council.

- (4) (E009) As part of Notice of Requirements by Port Macquarie-Hastings Council as the Water Authority under Section 306 of the Water Management Act 2000, the payment of a cash contribution, prior to occupation or the issue of a Subdivision Certificate of the Section 64 contributions, as set out in the "Notice of Payment – Developer Charges" schedule attached to this consent unless deferral of payment of contributions has been approved by Council. The contributions are levied in accordance with the provisions of the relevant Section 64 Development Servicing Plan towards the following:
 - augmentation of the town water supply headworks
 - augmentation of the town sewerage system headworks
- (5) (E010) Driveways, access aisles and parking areas shall be provided with a concrete surface. Such a surface shall be on a suitable pavement, constructed and maintained in accordance with Council's Development, Design and Construction Manuals (as amended).
- (6) (E011) Submission prior to the issue of a Subdivision Certificate of a plan prepared by a Registered Surveyor showing location of existing road formation relative to reserved and dedicated roads to enable determination of any road widening necessary. Any road widening is to be at no cost to Council.
- (7) (E012) Dedication as public road to Council, the area required for road widening along the frontage of the development at no cost to Council. Details are to be incorporated in the plan of subdivision.
- (8) (E015) Prior to release of the Subdivision Certificate details from a suitably qualified bushfire professional (recognised by the RFS) shall be provided to the satisfaction of the certifying authority confirming compliance with the issued bushfire safety authority conditions and Planning for Bushfire Protection Guidelines, 2006.

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- (9) (E034) Prior to the issuing of the Subdivision Certificate, provision to the Principal Certifying Authority, of documentation from Port Macquarie-Hastings Council being the local roads authority certifying that all matters required by the approval issued pursuant to Section 138 of the Roads Act have been satisfactorily completed.
- (10) (E038) Interallotment drainage shall be piped and centrally located within an interallotment drainage easement, installed in accordance with Council's current AUSPEC standards (minimum 225mm pipe diameter within a minimum 1.5m easement). Details shall be provided:
 - As part of a Local Government Act (s68) application with evidence of registration of the easement with the Land Titles Office provided to Council prior to issue of the s68 Certificate of Completion; or
 - As part of a Subdivision Works Certificate application for subdivision works with dedication of the easement as part of any Subdivision Certificate associated with interallotment drainage.
- (11) (E039) An appropriately qualified and practising consultant is required to certify the following:
 - a. all drainage lines have been located within the respective easements, and
 - b. any other drainage structures are located in accordance with the Construction Certificate.
 - c. all stormwater has been directed to a Council approved drainage system
 - all conditions of consent/ construction certificate approval have been complied with.
 - e. Any on site detention system (if applicable) will function hydraulically in accordance with the approved Construction Certificate.
- (12) (E050) Prior to Council accepting new stormwater infrastructure, a CCTV inspection of all new and modified stormwater assets must be undertaken in accordance with the Conduit Inspection Reporting Code of Australia WSA 05.

A copy of the CCTV inspection footage and inspection report prepared and certified by a suitably qualified person shall be provided to Council prior to the acceptance of works into the nominated 'into maintenance period'.

- (13) (E051) Prior to the issuing of the Subdivision Certificate a section 68 Certificate of Completion shall be obtained from Port Macquarie-Hastings Council.
- (14) (E053) All works relating to public infrastructure shall be certified by a practicing Civil Engineer or Registered Surveyor as compliant with the requirements of AUSPEC prior to issue of Occupation/Subdivision Certificate or release of the security bond, whichever is to occur first.
- (15) (E056) A Certificate of Compliance under the provisions of Section 307 of the Water Management Act must be obtained prior to the issue of any occupation or subdivision certificate.
- (16) (E066) Ancillary works shall be undertaken at no cost to Council to make the engineering works required by this Consent effective to the satisfaction of Director of Council's Infrastructure Division. Such works shall include, but are not limited to the following:
 - a. The relocation of underground services where required by civil works being carried out.
 - b. The relocation of above ground power and telephone services
 - c. The relocation of street lighting

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- d. The matching of new infrastructure into existing or future design infrastructure
- (17) (E068) Prior to the issue of a Subdivision Certificate, evidence to the satisfaction of the Certifying Authority from the electricity and telecommunications providers that satisfactory services arrangements have been made to the lots (including street lighting and fibre optic cabling where required).
- (18) (E072) Lodgement of a security deposit with Council upon practical completion of the subdivision works.
- (19) (E079) Submission to the Principal Certifying Authority of certification by a Registered Surveyor prior to the issue of a Subdivision Certificate that all services and domestic drainage lines are wholly contained within the respective lots and easements.
- (20) (E080) The applicant is required to make provision in the application for a Subdivision Certificate:
 - a. dedication as public road of the area required for road widening,
 - b. registration of a reciprocal right of carriageway and easement for services and maintenance over those parts of the lots common to both.
- (21) (E081) The applicant will be required to submit prior to the issue of the Subdivision Certificate, a geotechnical report certifying construction of all earthworks as controlled fill in accordance with Council AUS-SPEC Standard and AS 3798. Such report to provide details of:
 - a. The surface levels of the allotments created, filled or reshaped as part of the development.
 - b. Compaction testing carried out to Controlled Fill Standard as per AS 3798.
 - c. Standard penetration tests and calculated N values.
 - d. Bore logs
 - Site classification of all allotments in accordance with AS2870.2011 Residential Slabs and Footings.
- (22) (E082) Submission of a compliance certificate accompanying Works as Executed plans with detail included as required by Council's current AUSPEC Specifications. The information is to be submitted in electronic format in accordance with Council's "CADCHECK" requirements detailing all infrastructure for Council to bring in to account its assets under the provisions of AAS27. This information is to be approved by Council prior to issue of the Subdivision Certificate. The copyright for all information supplied, shall be assigned to Council.
- (23) Prior to release of the Subdivision Certificate endorsement from Port Macquarie-Hasting Council's Natural Resource staff confirming the successful establishment of the offset tree plantings shall be provided to the certifying authority.

F - OCCUPATION OF THE SITE

Nil

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Developer Charges - Estimate

Applicants Name: King and Campbell Pty Ltd Property Address: Emily Avenue, Port Macquare Lot & Do: Lof(s):20,20 Pty:754434 Development: Residential Subdivision		PORT MACQUARIE HASTINGS
Water and Severage Headworks Levies are levied under 564 of the Other contributions are levied under Section 7.11 of the Environmental Pla		
Levy Area	Units Cost	Estimate
1 Water Supply	5.2 \$10,296.00 Per ET	\$53,539.20
2 Sewerage Scheme Port Macquarie	5 \$3,906.00 Per ET	\$19,530.00
3 Since 1.7.04 - Major Roads - Port Macquarie - Per ET	5 \$7,718.00 Per ET	\$38,590.00
Since 31.7.18 - Open Space - Port Macquarie - Por ET	5 \$5,686.00 Per ET	\$28,430.00
Commenced 3 April 2006 - Com, Cul 5 and Em Services CP - Port Macquarie	5 \$4,669.00 PerET	\$23,345.00
6 Com 1 3.07 - Administration Building - All areas	5 \$919.00 Per ET	\$4,595.00
7 N/A		
8 N/A		
9 N/A		
10 N/A		
11 N/A		
12 N/A	- Purp	oses
12 N/A 13 N/A 14 N/A 14 N/A		
15 Admin General Levy - Applicable to Consents approved after 11/2/03	2.2% S94 Contribution	\$2,089.10
16		
17		
18		
Total Amount of Estimate (Not for Payment Purposes)		\$170,118.30
NOTES: These contribution rates apply to new development and should be used as a g Controlutions will be determined in conjunction with a Development Application (DA) or DAs will be subject to the contributions plane in force at the time of issue of the Consent Contribution Rates are adjusted quarterly in line with the CPI.	Complying Development Application (CDA)	
DATE OF ESTIMATE:	5-Mar-2020	
	Estimate Prepared By	Ben Roberts

This is an ESTIMATE ONLY - NOT for Payment Purposes

id Campbell Pty Ltd, Emily Avenue, Port Macquarie, 5-Mar-2020.xls

PORT MACQUARIE-HASTINGS COUNCIL

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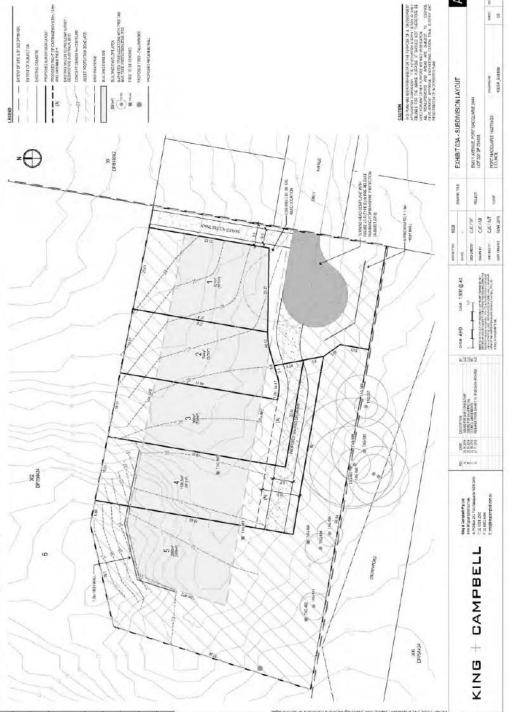
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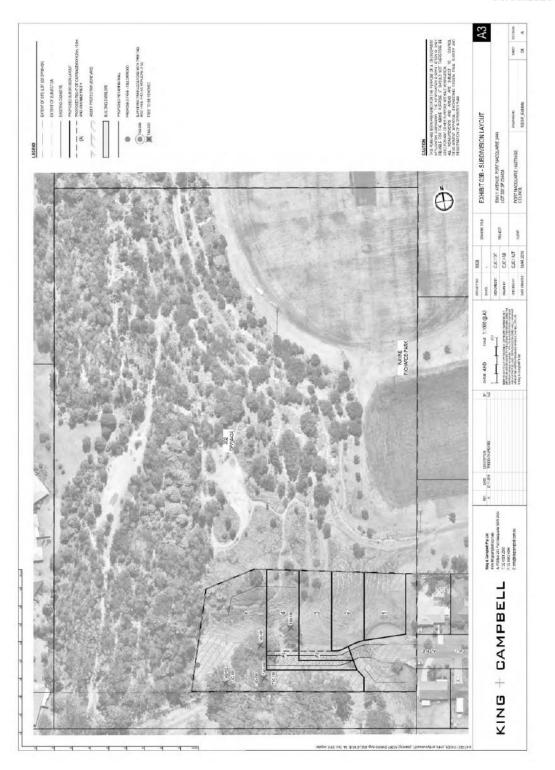
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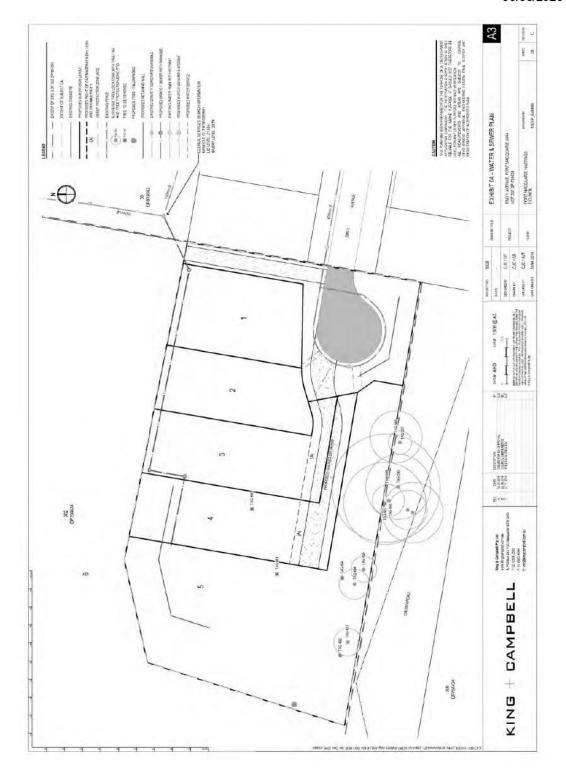




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ATTACHMENT



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ATTACHMENT

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A3 invision C 1 EXHIBIT 05 - STORM/VATER MANAGEMENT PLAN SUMPLE EAL 12 E BGEND EMLY AVENUE, PORTI LOT 332 DP 754434 POST MACQUARIE H ×⊕ DRAVING TOLE TIDADT SLEW. CJC/AB CJC/AB CJC/AJT MARZOIS 10.0 8779 11000 @ A3 Titke 1 DHA WING 6.885 DECONTRACTOR DAVIDUCAL INVESTIGATION DAVIDUCAL DISCONTRACTOR peau + CAMPBELL KING

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KING + CAMPBELL

Torrens Title Residential Subdivision (1 Lot into 6) Lot 302 DP 754434, Emily Avenue, Port Macquarie

draft

Prepared for:

Port Macquarie Hastings Council

Prepared by:

King & Campbell Pty Ltd

1* Floor, Colonial Arcade 25-27 Hay Street Port Macquarie PO Box 243 Port Macquarie 2444 Ph: (02) 6586 2555 Fax: (02) 6583 4064 info@kingcampbell.com.au

Job: 5328 Date: April, 2019 K&C: KM/TS/AJT

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-
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List of Exhibits

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List of Appendices

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Appendix B - PMHC Pre-lodgement Minutes (ref: 210.2018.161)
Appendix C – Ecological Assessment, Biodiversity Australia
Appendix D – Bushfire Hazard Assessment, D Pensini
Appendix E– Traffic Impact Assessment, King and Campbell
Appendix F - Link Road Koala Plan of Management 2014
Appendix G – Phase 1 Contamination Assessment, RGS

SURVEYING C ARCHITECTURE PLANNING CIVILENGINEERING URBAN DESIGN

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King & Campbell Pty Ltd

Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

Section 1 Introduction

1.1 Introduction

This Statement of Environmental Effects has been prepared in support of a Development Application for the Torrens Title residential subdivision of the south-eastern. residentially zoned portion of Lot 302 DP 754434 to create a total of five (5) residential lots. The residentially zoned portion of Lot 302 has a development footprint of approximately 0.78 ha and is accessed from Emily Avenue.

Lot 302 is a rectangular shaped allotment with a total site area of 5.61ha. Lot 302 is partly zoned R1 General Residential and partly RE1 Public Recreation. The R1 portion of the land includes the cul-de-sac head of Emily Avenue with the RE1 zoned portion having the sporting fields, parking, amenities and mountain bike trails associated with Wayne Richards Park.

Lot 302 also includes the Koala offset area required by the Link Road Koala Plan of Management 2014. All of the offset area will remain within the residue Lot 6 which will include the remaining 4.83ha of land area.

For the purposes of this submission the site, being the developable portion of Lot 302, has an area of 0.78 ha, is zoned R1 General Residential and excludes the Koala offset area.

This Statement provides all relevant information necessary for Council to assess and determine the proposal. The legislation and policy reviewed in the preparation of this submission includes:

- Section 4.15 of the Environmental Planning and Assessment Act, 1979;
- Biodiversity Conservation Act 2017
- SEPP (Infrastructure) 2007;
- SEPP No. 44 Koala Habitat Protection;
- SEPP No.55 Remediation of Land; and
- Port Macquarie-Hastings Local Environmental Plan 2011;
- · Port Macquarie-Hastings Development Control Plan 2011; and
- The Link Road Koala Plan of Management 2014.

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King & Campbell Pty Ltd

Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

1.2 The Site, Zoning and Permissibility

Lot 302 DP 754434, Emily Avenue, Port Macquarie is rectangular in shape, has a total site area of 5.61ha and contains no built structures.

A copy of DP 754434 is attached at Appendix A and the site context is shown below in Figure 1 as well as Exhibit 1.

Existing development within Lot 302 includes the cul-de-sac head of Emily Avenue and sporting fields, parking, amenities and mountain bike trails associated with Wayne Richards Park. Lot 302 also includes the Koala offset area required by the Link Road Koala Plan of Management 2014.

Lot 302 is partly zoned R1 General Residential and partly RE1 Public Recreation. Refer to **Figure 2** and **Exhibit 1**. Subdivision is permissible with consent in the R1 General Residential zone.

The R1 General Residential area of the site is identified as containing a minimum allotment size of 450m² as set out on Lot Size Map LSZ_013G. All proposed residential allotments comply with this standard. The RE1 zoned portion of the site is not mapped as having a minimum lot size.



Figure 1: Aerial image of the subject site, bound red and highlighted yellow, and surrounding lands (Near Map image of Lot 302 DP 754434)

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King & Campbell Pty Ltd Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

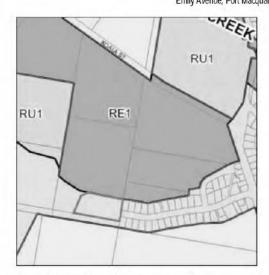


Figure 2: Zoning of the subject site, centre, and developable portion , bound red, (Extract from PMH LEP Land Zoning Map – sheet LZN_013G).

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King & Campbell Pty Ltd

Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

1.3 Development Application Pre Lodgement Meeting

A preliminary proposal comprising two options for the residential subdivision of the site was presented to Council's Development Application Pre-Lodgement Panel Meeting on 4 December 2018 (reference 210.2018.161).

A copy of the minutes are included at $\mbox{Appendix }\mbox{B}$ and addressed below in the following table:

	Council minutes	Outcome
Pla	nning	1
1)	State Environmental Planning Policy No 44 Koala Habitat Protection applies. Application to address relevant provisions of this policy. The site is also subject to offset plantings identified in the Link Road Koala Plan of Management. Application to demonstrate consistency with this approved plan.	No disturbance to any offset plantings undertaken under the Link Road Koala Plan of Management is proposed. Biodiversity Australia have carried out an assessmer pursuant to the provisions of SEPP 44. Refer to Section 3.3 and Appendix C. This assessment included consideration of the Link Road KPoM.
2)	State Environmental Planning Policy No 55 Remediation of Land applies. Application to address relevant provisions of this policy.	Regional Geotechnical Solutions carried out a Stage 1 Contamination Assessment of the developable portion of the site. The assessment was undertaken in accordance with the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites.
		The assessment determined that the site is likely to be suitable for the proposed residential land use. However, based on the soil contamination found RGS tecommends the preparation of a Stage 2 Contamination Assessment and Remedial Action Plan prior to development works being carried out.
3)	State Environmental Planning Policy (State and Regional Development) 2011. The trigger for regionally significant development for Council related development is a capital investment value of more than \$5 million.	The estimated cost of works is \$212,000. The economic trigger of \$5m will therefore not be triggered by the proposed subdivision.
	The site is zoned R1 General Residential and RE1 Public Recreation under Port Macquarie-Hastings Local Environmental Plan (LEP) 2011. Subdivision and multi dwelling housing is permissible with consent. The development footprint, including any ancillary components like bushfire protection measures (i.e. APZs and fire trails), stormwater basins and access tracks would need to be contained to the R1 zone. It is noted that flexible zone provisions do not apply to RE1 zoned land.	The proposed subdivision, including fire trails and asset protection zones, are wholly contained within the R1 General Residential zoned portion of the site. The residue lot will remain partly zoned R1 General Residential and partly RE1 Public Recreation.
5)	In accordance with clause 4.1 of the LEP, the proposed lots are to meet the minimum lot size provision of 450m ² applicable to the site.	Each of the proposed allotments exceeds the minimum lot size provision of 450m?. Refer to Section 2.2 and Exhibit 3 for the proposed lot areas
6)	Application to address general provisions and relevant specific provisions of Development Control Plan (DCP) 2013.	Refer Section 3.1.4

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	Emily Avenue, Port Macquarie
Council minutes	Outcome
Any variations to be adequately justified against the relevant objectives.	
7) Site is mapped as bushine openetions. 7) Site is mapped as bushine prone land triggering integrated development provisions. Bushfire assessment report required and referral to NSW Rural Fire Service will be undertaken as part of the assessment process. S320 cheque made payable to NSW Rural Fire Service and \$140 referral fee payable to Council.	A bushfire hazard assessment has been prepared b Building Certification & Environmental Services. The assessment is included in full at Appendix D and summarised in Section 3.4.
8) Details of the type and extent of vegetation to be removed and retained (inclusive of any required bushfire Asset protection Zones and infrastructure) clearly illustrated on plans. Given the likely extent and nature of vegetation to be removed an ecological assessment addressing Part 5 of the Act and the relevant provisions of DCP 2013 shall support the application.	The proposal has been designed to minimise vegetation removal by siting the development ervelopes and road within the cleared portions of th site. The proposal seeks to remove a total of 7 trees being: - Six Blackbutt; and - One Sydney Golden Wattle. Biodiversity Australia considered the proposed vegetation removal in detail as a part of their Ecological Assessment. A copy of their assessment is incluring in full at Amendity C and summarised in
9) Details of any staging to be clearly	is included in full at Appendix C and summarised in Section 3.3. The development is proposed to be carried out in or
ouilined. 10) Crown land owners consent would be required for any application that involved the crown road.	single stage. The proposal does not seek to undertake any works within the Crown Road Reserve. Crown owner's consent is therefore not required.
T1) Consideration be given to the proximity to sporting facilities and the associated acoustic impacts.	The proposed residerital lots are located to the south-west of Field 3 and are similarly separated from the fields as those residential lots currently located within Emily Avenue (approximately 40m). The sporting fields, particularly Field 3, are typically utilised most week days through winter, to typically 8pm. No Public Announcement system is utilised during training.
	Football (soccer) matches are typically played on a Friday night between 5pm and 9:30pm with some representative matches being played on weekends between 9am and 4pm.
	Wayne Richards Park includes a PA system located upon the existing club house. This club house is located approximately 275m from the developable portion of the site and is not utilised for game calling rather only for emergency and public service announcements.
	This PA system, the field locations and their use we assessed as a part of the original design of Wayne Richards Park. Emily Avenue existed at the time of the sporting fields construction and it is understood that the potential acoustic impacts of the sporting fields were considered acceptable at this time.

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mpbell Pty Ltd	Statement of Environmental Effects Tomens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie
Council minutes	Outcome
	In light of the above, it is considered that the proposed residential lots are suitably separated from the sporting fields. To minimise any potential acousti impacts, future dwellings should be suitably designe
12) Development contributions will apply. An estimate may be obtained from Council's Development Contribution team, contact Steve Ford.	Noted.
 The application would be processed in accordance with the Development Applications – Conflict of Interest Policy. 	Noted.
Water	providence and a second s
 A storage dam is located to the south of the proposed development, no stormwater runoff is to flow into this location. 	Noted. No stormwater is proposed to enter the existing storage dam.
 Any costs associated with relocation of the fence segregating the storage dam, are not to be borne by Coundi's Sewer and Water Section. 	The existing fence is located within the unformed Crown Road reserve. No works are proposed within the Crown road reserve and the fence is not considered to require relocation as a part of the development works.
3) Each proposed lot is to be provided with a sealed water service, final water service sizing will need to be determined by a hydraulic consultant to suit the domestic and commercial components of the development, as well as fire service and backflow protection requirements in accordance with AS3500.	Noted, Each of the proposed lots is sought to be provided with a sealed water service.
Sewer	
 Provision to each lot of a separate sewer line to Council's main. 	The application seeks to extend Council's existing sewer line along the northern boundary of the proposed residential lots. Refer to Exhibit 4 and Section 2.2.3.
Engineering	
 Consolidation of the allotments, or provision of a legal right of carriageway or easement for services, may be required if the proposed development will rely on adjacent lots for access, facilities or services (Crown road reserve). 	The proposed design has been modified from that submitted with the pre-lodgement package. The revised design now provides road frontage to each individual lot and easements and rights of carriageways are not considered necessary.
2) New roads to be dedicated to Council will need to meet the provisions of AUS-SPEC Table D1.5 based on the potential lot yield (including future subdivision potential). As such, I may be beneficial to increase the proposed lot yield to minimise future infill subdivision proposals.	The proposal seeks to reconstruct the existing Emily Avenue cul-de-sac head and provide a new shareway (extension of Emily Avenue) to service the proposed 5 residential allotments. These works hav been designed to comply with AUS-PEC D1.5 and are detailed within Exhibit 3.
 A Traffic Impact Assessment (TIA) will be required. The traffic study shall evaluate the capacity, safety and operational development impacts to the road network. At a minimum the TIA shall: a) Be prepared by a qualified and/or experienced traffic consultant. b) Be prepared in accordance with guidelines contained in the Roads and Maritime Services 	A traffic impact assessment accompanies this submission and is included in full at Appendix E . Intersection performance was assessed using the software package SIDRA 8.0 to obtain the capacity the traffic movements for the proposed developmer and in accordance with the assumptions made by GHD (GHD PMH LGA Traffic Study 2018). The TIA confirms that the proposed residential development (5 Lots) can be adequately served by

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Outcome the existing intersection configuration of Emily Avenue with Koala Street. This Assessment also confirms that the retention of the existing intersection will not adversely affect the wider road network within Port Macquarie, with queueing lengths being of acceptable length.
Avenue with Koala Street. This Assessment also confirms that the retention of the existing intersection will not adversely affect the wider road network within Port Macquarie, with queueing lengths being of

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

mpbe	il Pty Ltd	Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie
	Council minutes	Outcome
	series.	noting that no footpath currently exists within Emily Avenue. A 4-metre-wide sealed fire trail (pathway/emergency access) is proposed along the eastern boundary of proposed Lot 1 connecting Emily Avenue to the Wayne Richards Sporting Park. This work is considered suitable in lieu of a pedestrian footpath within the cul-de-sac of Emily Avenue.
(Second Second	mwater	
	A stormwater management plan must be prepared in accordance with the requirements of AUSPEC D5 and D7 and the requirements of relevant Australian Standards, demonstrating how all stormwater and surface water discharging from the proposed development site, buildings and works will be conveyed to the legal point of discharge by underground pipe drains to the satisfaction of Council.	A stormwater management plan has been prepared in support of the proposed subdivision. Refer Exhibi 5 and Section 2.2.4.
	The legal point of discharge for the proposed development is defined as Councils piped drainage system which currently terminates in Council owned land to the north east in Lot 35 DP0819382 (note planning comments above with respect to potential permissibility issues with this infrastructure). In this regard, Council's piped drainage system shall be extended by an appropriately sized pipeline for the proposed development stomwater (i.e. inter-allotmert systems, access way/road drainage), to allow direct piped connection from the development ste into the public drainage system. The pipeline must be designed to have the capacity to convey flows that would be collected from the proposed development as generated by a 5% AEP storm event. Overflow path locations for major storm discharge shall be determined in consultation with Councils Parks and Recreation section, which shall be compliant with requirements of AUSPEC D5. Appropriate easements must be created, with written consent from the land owner, for drainage extension from proposed development to the existing legal point of connection.	Noted.
	In addition, the stormwater management plan submitted with the development application must address the following specific issues at a minimum:	Noted. The proposed stormwater management measures are detailed in Section 2.2.4 and Exhibit 5.

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ampbell Pty Ltd	Statement of Environmental EF Torrens title Residential Subdivision (1 Lot in Emily Avenue, Port Macq
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Council minutes a. On-site stormwater detertion facilities (or similar) must be incorporated into the design to ensure that the post development site stormwater discharge rate does not exceed the pre development discharge rate for all storm events up to 1% AEP. b. The plan must include any existing components of the drainage system that are to be retained and show how runoff from the proposed/new components of the development will be integrated into the existing system. c. The stormwater management plan must be prepared and cartified by a qualified practicing Civit Engineer or Registered Surveyor.	Outcome
4) An easement plan must be submitted showing the proposed easement locations, proximity to adjacent buildings and structures and a longitudinal section of the proposed stormwater pipeline. The plan must also demonstrate that the inter- allotment drainage system has been sized in accordance with the requirements of USPEC D5 to accept all runoff from each allotment for flow rates having a 5% AEP storm design.	The inter-allotment stomwater drainage line sho on the stormwater management plan (Exhibit 5, require an easement for stormwater drainage.
A maximum of six (6) allotments shall be served by the inter-allotment drainage system. Written agreement to the creation of any proposed drainage easement(s) must be obtained from the affected property owner(s) and submitted with the development application. The easement must be registered with the Land and Property Information NSW prior to the issue of an Occupation Certificate.	
Other	1
 Please make reference to these pre- lodgement comments within the DA submission/planning report. 	Noted
 Any comments in this Pre-Lodgement advice are based on the information provided. The comments do not predicate the outcome of a full assessment of any forthcoming development application regarding this proposal. Any subsequent change to legislation may also affect the accuracy of this advice. 	Noted

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King & Campbell Pty Ltd

Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

Section 2 Staged Residential Subdivision

2.1 Site Analysis

The attached **Exhibit 02** - **Site Analysis Plan** identifies the following constraints and opportunities for the proposed residential subdivision of the site:

- Lot 302 DP 754434 is zoned part R1 General Residential and part RE1 Public Recreation pursuant to the PMH LEP 2011;
- Lot 302 DP 754434 has a total land area of 5.61 ha;
- Existing development within Lot 302 DP 754434 includes the culde-sac head of Emily Avenue and sporting fields, parking, amenities and mountain bike trails associated with Wayne Richards Park;
- Lot 302 also includes part of the Koala offset area required by the Link Road Koala Plan of Management 2014 (see Appendix F). The majority of the offset area within Lot 302 occurs on the lands that are also used for mountain bike trails;
- The site for the purposes of this submission is the developable portion of Lot 302, which is zoned R1 General Residential and excludes the Koala offset area;
- The site has a total area of 0.78 ha;
- The site is bound by existing residential development in Emily Avenue to the east, a Crown Road (undeveloped) to the south, with the Port Macquarie Water reservoir to the south of the Crown Road and facilities associated with Wayne Richards Park to the west and north (noting that the mountain bike area is also identified as part of the Koala offset area for the KPoM 2014);
- Emily Avenue has an existing length of approximately 400m, from the cul-de-sac centre to its intersection with Koala Street;
- The site is mapped as part Category 1, part Category 2 and part vegetation buffer on the Bushfire Prone Land Mapping;
- Future development of the site must ensure that the westernmost hydrant on any water main extension is no higher than RL 36m AHD; and
- The site is partially cleared with evidence of previous disturbances as a result of re-shaping works associated with Wayne Richards Park.

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King & Campbell Pty Ltd

Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

2.2 Proposed Residential Subdivision

It is proposed to subdivide the site, being the developable residentially zoned portion of Lot 302 with an area of 0.78 ha, to provide a total of five (5) residential allotments and one residue lot. All proposed lots will be provided with a north-south orientation, with views across Wayne Richards Park to the north. This submission seeks the removal of all existing vegetation (7 trees) within the site.

The proposed lots area described below:

- Proposed Lot 1: will have direct vehicular access from the repositioned cul-de-sac head of Emily Avenue and a total site area of 821m². A 10m wide bushfire APZ is required to be provided to the northern boundary, resulting in a building envelope of approximately 591m².
- Proposed Lot 2: will also have direct vehicular access from the proposed Shareway and a total site area of 744m². A 10m wide bushfire APZ is required to be provided to the southern boundary with a 4.5m APZ to the northern boundary, resulting in a building envelope of approximately 525m².
- Proposed Lot 3: will also have direct vehicular access from the proposed Shareway and a total site area of 799m². A 10m and 4.5m wide bushfire APZ is required to be provided to the northern and southern boundaries respectively, resulting in a building envelope of approximately 538m².
- Proposed Lot 4: will also have direct vehicular access from the proposed Shareway and a total site area of 808m². A 10m and 4.5m wide bushfire APZ is required to be provided to the northern and southern boundaries respectively, resulting in a building envelope of approximately 547m².
- Proposed Lot 5: will have direct vehicular access from the western end of the 5.5m wide Shareway and a total site area of 2,995m². A 10m, 15m and 27m wide bushfire APZ is required to be provided to the northern, western and southern boundaries respectively, resulting in a building envelope of approximately 589m². Proposed Lot 5 contains the bushfire APZ on the southern side of the Shareway. A positive covenant will be placed on the title of proposed Lot 5 to ensure maintenance of the APZ in accordance with the requirements of Planning for Bushfire Protection 2006.
- Proposed Lot 6 (Residue): will continue to have access from Wayne Richards Park as well as the proposed sealed fire trail to the east of Proposed Lot 1. This residue Lot will contain the vegetated residentially zoned land, sporting fields, as well as all land zoned RE1 Public Recreation and a total site area of 4.83ha.

The proposed subdivision layout is detailed in the plan at Exhibit 03.

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King & Campbell Pty Ltd

Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

2.2.1 Staging

The subdivision is proposed to be constructed in a single stage.

2.2.2 Vehicular Access and Traffic

It is proposed to re-position the existing cul-de-sac head of Emily Avenue to improve the proposed alignment of Emily Avenue as well as improve the developable portion of Proposed Lot 1.

The cul-de-sac head will retain the existing size and turning area design parameters of that existing. The positioning of the cul-de-sac and the new shareway will also enable a 'T' turning area that is consistent with the provisions of Planning for Bushfire Protection 2006.

A new water hydrant is proposed at the western end of the turning head as well as the western end of the proposed shareway. This is considered to improve the fire service coverage within the area as well as the proposed allotments. The water hydrant to be provided at the western end of the realigned turning head is considered to provide fire service coverage for all proposed building envelopes.

The proposed works will also retain the existing 400m length of Emily Avenue whilst providing for a 4m wide (within a 6m wide reserve) sealed (all weather) emergency access track from the cul-de-sac head to the existing playing fields of Wayne Richards Park.

Access to Proposed Lots 2-5 inclusive is to be provided via a Shareway extension of Emily Avenue. The design of the Shareway is consistent with the requirements of AUS-PEC D1.5.

2.2.3 Sewer and Water Supply Services

Each lot is provided with a separate gravity sewer line connection. The gravity sewer reticulation connects to Council's main at manhole ID PMTWS009MH.

The existing 100mm diameter water main on the northern side of Emily Avenue is proposed to be extended to the west to service the proposed 5 residential lots. Final water service sizing will be determined by a hydraulic consultant to suit the domestic and commercial components of the development, as well as fire service and backflow protection requirements in accordance with AS 3500.

The proposed servicing strategy is shown on the plan at **Exhibit 04** (2 sheets).

2.2.4 Stormwater Management Plan

The development is proposed to discharge into Council's pipe drainage system to the north-east of the site (with lot 35 DP819382).

Stormwater easements are proposed to be provided along the northern side of the proposed residential lots, subject to detailed design positioning and sizing of the pipe network. A detailed long section is expected to be

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Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

required at the detailed design stage once the network location is confirmed.

Two options have been investigated to provide the required on site stormwater detention.

Option 1

Detention to be provided within the existing vegetated area to the north east of the site (see **Exhibit 05**). Site inspections have confirmed the suitability of this option, in which the existing northern lots of Emily Avenue currently discharge into. The existing stormwater pit in this area could not be located due to excessive vegetation growth. It is proposed to remediate this pit and ensure it is constructed at the correct level to provide sufficient detention for the area. Detailed survey and design would be required to determine the detention required.

Option 2

Detention facility not required, but installation of a long grassed swale to the south of the site is required to delay the peak flow during design storms (if Option 1 were to be adopted, a smaller swale would still be required to direct the overland flows around proposed lot 5).

Modelling of Option 2 was conducted using DRAINS to ensure that the post development site stormwater discharge rate does not exceed the pre development discharge rate for all storm events up to 1% AEP. The 1% AEP results are illustrated below. For modelling purposes the layout shown in the pre development DRAINS is the same as the post development, but the correct varying times of concentration and percentage impervious have been applied.

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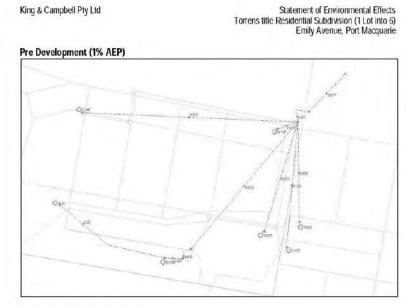
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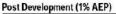
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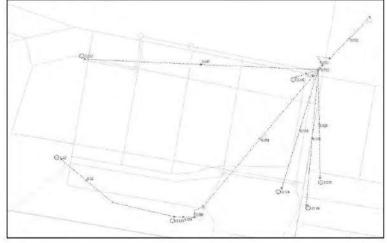
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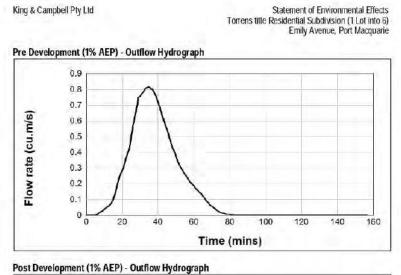
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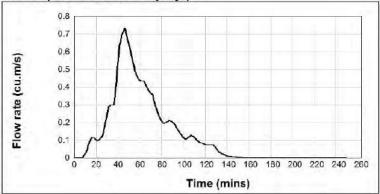
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The proposed stormwater strategy is shown on the plan at Exhibit 05.

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King & Campbell Pty Ltd

Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

Section 3 Key Issues

3.1 Relevant Legislation and Policy

3.1.1 Biodiversity Conservation Act 2016

Biodiversity Australia (BA) undertook a review of the proposal with respect to the Biodiversity Conservation Act 2016 as a part of their Ecological Assessment. Refer to **Appendix C**.

The assessment confirmed that a Biodiversity Development Assessment Report (BDAR) is not required as the development will not affect an area mapped in the NSW Biodiversity Values Map and will only remove 0.2ha of native vegetation.

In addition, the site does not contain any Endangered Ecological Communities (EEC's) and the removed vegetation comprises a handful of trees from a modified open forest community not containing hollow bearing trees or habitat features such as habitat logs or aquatic habitats.

Ultimately, BA's assessment (test of significance) concluded that the proposal would not result in a significant impact on threatened species or ecological communities.

3.1.2 SEPP No. 44 - Koala Habitat Protection

The site has an area greater than 1ha and therefore the provisions of this Policy apply.

Biodiversity Australia (BA) undertook an assessment in accordance with the provisions of this Policy as a part of their Ecological Assessment. Refer to **Appendix C**.

BA's assessment noted that the site contains a number of Koala food trees, comprising mostly of Swamp Mahogany with Tallowwood, Forest Red Gum and Scribbly Gum being present. These trees are Koala food trees and constitute greater than 20% of the tree component. Lot 302 therefore qualifies as Potential Koala Habitat (PKH).

None of the existing Koala food trees are proposed to be removed as part of the works associated with the residential subdivision.

Most of the trees within Lot 302 are however, immature and have likely been planted over the past 5 years as a part of the Link Road KPoM.

As a part of their assessment BA undertook four SAT surveys. Despite the PKH, BA did not observe any koalas. Scats were recorded within Lot 302 but, not within the developable portion. No Koala scratches were observed on any trees within Lot 302.

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BA also undertook a literature review, which failed to determine any historical records of Koalas on Lot 302 or adjoining properties.

As a result of the above, BA stated that the property is unlikely to comprise any significant foraging area for Koalas at present. Over time, as the planted KFT's mature, it may provide higher quality habitat and foraging values for Koalas. Lot 302 does not qualify as Core koala habitat and hence no KPoM is considered necessary to support the proposed development.

3.1.2 SEPP No. 55 - Remediation of Land

A Phase 1 Contamination Assessment has been prepared by Regional Geotechnical Solutions and is included in full at **Appendix G**.

Comments with respect to the assessment are included within Section 3.5.

3.1.3 PM-H Local Environmental Plan 2011

Relevant Clauses	Comment	Complies
2.3 Zone Objectives and Land Use Table	 The following objectives are relevant: R1 General Residential To provide for the housing needs of the community. To provide for a variety of housing types and densities. To enable other land uses that provide facilities or services to meet the day to day needs of residents. The proposed subdivision is consistent with the above zone objectives, as set out below: The proposed subdivision will create 5 Torrens title alforments that will be subable for a variety of housing styles; The subdivision will enable the development of residentially zoned lands that are in close proximity to existing services and facilities; and The works will retain and improve existing vegetated areas outside of the development to resident areas 	Yes
2.6 Subdivision	This application seeks consent for the Torrens title subdivision of the site.	Yes
4.1 Minimum subdivision lot size	The residential area of the site is identified as containing a minimum allotment size of 450 m ² as set out on Lot Size Map LSZ_013G. All proposed residential allotments comply with this standard.	Yes
5.3 Development near zone boundaries	This clause does not apply to land zoned RE1 Public Recreation. This clause is therefore not considered relevant to the proposed subdivision.	N/A
5.10 Heritage Conservation	The site is not mapped as containing items of heritage significance. An AHIMS search was carried out over Lot 302 and revealed that no Aboriginal items or places are identified as occurring within the site or 50 metres surrounding.	Yes
7.5 Koala Habitat	The site is not mapped as containing Koala habitat. No existing SEPP 44 Koala browse species are proposed to be removed as a part of the works associated with the proposed subdivision.	Yes
7.13 Essential Services	All required public utility services and infrastructure is available, or can be readily augmented. See servicing plan at Exhibits 4 & 5.	Yes

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3.1.4 PM-H DCP 2013 - Part 2 General Provisions

Development Guidelines (only where applicable)	Comment
Cut and fill regrading - Objectives 2.3.3.1 to 2.3.3.3	
a) Development shall not exceed a maximum cut of 1.0m and fill of 1.0m measured vertically above the ground level (existing) at a distance of 1.0m outside the perimeter of the external walls of the building (This does not apply to buildings where such cut and fill is fully retained within or by the external walls of the building).	Removal of existing 5m high stockpile locate in the north-western corner of Proposed Lot 5. The material is proposed be used on-site to fill the building envelopes, pending the outcomes of the Stage 2 Contamination Assessment.
 a) The maximum height of a retaining wall along all road frontages is 1.0m. b) Any retaining wall greater than 1.0m must be certified by a certified practising structural engineer. c) Where a combination of a fence and a wall is proposed to be greater than 1.2m high: be a maximum combined height of 1.8m above existing property boundary level; be constructed up to the front boundary for a maximum length of 6.0m or 30% of the street frontage, whichever is less; the fence component have openings which make it not less than 25% transparent; and provide a 3m x 3m splay for corner sites, and provide a 900mm x 900mm splay for vehicle driveway entrances. 	The application seeks consent for a maximum 1m high retaining wall within the noth-western corner of Proposed Lot's 4 and 5. A retaining wall of approximately 1.5m is proposed along the south-western edge of the realigned Emily Avenue turning head. This wall will remain within the Emily Avenue toad reserve and will be designed by a structural engineer.
 a) Significant land reforming proposals where >10% gross sile area or >1.0ha is to have surface levels changed by more than 5m or where earthworks exceed an average of 10.000m3 per ha shall: identify the impact of the proposed land reforming on the environment, landscape, visual character and amenity, natural watercourses, riparian vegetation, topographical features of the environment and public infrastructure; demonstrate compliance with the provisions of Council's Aus-Spee design specification; assess the impacts and benefits of the proposal to all impacted persons and the general public; provide measures to compensate for and minimise any net adverse impacts. b) The use of high earthworks batters should be avoided. c) Preliminary plans indicating the final landform are required to be submitted with any master plan or subdivision application. 	An existing 6m high stockpile is currently located in the north western corner of the Proposed Lot 5. The depth of this stockpile and the quality of the material of which it consists is not currently known. If this existing stockpile consists of suitable material it is proposed to be utilised for the filling of the proposed building envelopes. The existing stockpile is not considered to form part of the natural surface levels. It is estimated that the proposed subdivision will result in approximately 5,000m ³ of earthworks. The application also seeks to provide retaining walls to minimise batter slopes. Refer to the comments above. The proposed landform contours are detailed in the subdivision pian included in Exhibit 3.
d) The subdivision should be designed to fit the topography rather than altering the topography to fit the subdivision.	The proposed subdivision has been designed to accommodate the existing topography. This includes the provision of Lots larger than the minimum allotment size and building envelopes which are considered to provide- areas sufficient for the design of a typical residential dwelling.

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Development Guidelines (only where applicable)	Comment
Koala Habitat - Objective 2.3.3.7	
a) For koala habitat refer to clause 7.5 of the Port Macquarie-Hastings LEP 2011.	The site is not mapped as containing Koala habitat.
Hollow Bearing Trees - Objectives 2.3.3.8 to 2.3.3.9	
 a) All holiow bearing trees within the development area are to be accurately located by survey and assessed by an appropriately qualified ecologist in accordance with Council's Hollow-bearing tree assessment (HBT) protocol, 	The developable area does not contain any hollow bearing trees and no hollow bearing trees are proposed to be removed as a part of this application.
b) Any tree that scores less than 8 using the HBT assessment protocol may be considered for removal subject to compensatory measures specified below.	
c) Any tree that scores 8-12 using the HBT assessment protocol may be considered for removal if management measures are "impractical to allow retention"	
d) Any tree that scores more than 12 using the HBT assessment protocol the assessment must be retained and afforded a development exclusion buffer or located within environmental lands.	
e) Where a development exclusion buffer is proposed it shall have a radius of 1.25 times the height of the tree measured from its base.	
 a) A strategy for tree removal (timing and methodology) that minimises impacts on native wildlife shall accompany any development that proposes the removal of HBTs. 	The application seeks consent to remove a total of 7 trees including six Blackbutts and one Sydney Golden Wattle. The application does not seek to remove any hollow bearin trees.
b) The removal of HBTs is to be offset by the retention of recruitment trees. Compensatory recruitment trees shall be provided at the rate of two for one for trees that scored 8-12, and at the rate of one for one for these that scored less than 8. A tree can be considered to be a compensatory	
recruitment tree under the following criteria: 1. Does not have any major structural defects or is suffering from disease that would lead to premature death; and 2. Is from the same vegetation community and same	
genus; and 3. Are to be located within environmental lands and managed in accordance with a VIMP; and 4. Have a DBH of 50cm or greater and do not possess hollows. For Blackbutt Eucalyptus pilularis a DBH of 100cm or greater applies.	
c) The removal of HBTs are to be offset by the installation of nesting boxes of similar number and size is those to be removed.	
d) Nesting boxes are to be installed like for like (both type and number, and host tree to genus level) and must be located within proposed open space or environmental lands.	

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Campbell Pty Ltd Statement of Environmental Torrens title Residential Subdivision (1 Lot Emily Avenue, Port Mac	
Development Guidelines (only where applicable) Nesting Boxes are to be installed and maintained within environmental lands in accordance with a V/MP. Nesting Boxes to be inspected and maintained by a	Comment
qualified ecologist. e) Any HBT that will not afford protection via an exclusion buffer or within environmental lands will attract the same offsetting requirements as if it was to be removed.	
Bushfire Hazard management - Objective 2.4.3.4	
 a) Asset Protection Zones are to be located outside of environmental protection zones and wholly provided within private land. Note perimeter roads provided as part of a residential subdivision are classified as being part of the subdivision and not a separate permissible land use within environment protection zones. b) Perimeter roads are to be provided to all urban areas adjoining environmental management areas and their buffers. 	All proposed asset protection zones are wholly located within the R1 General Residential zoned portion of the site and within the proposed allotments. A positive covenant is proposed to be created on th APZ located within Proposed Lot 5 on the south side of the proposed Shareway.
Stormwater – Objective 2.4.3.6	
a) All stormwater infrastructure is designed in accordance with the Council's Auspec Design Specification Documents	All stormwater has been designed to com with AUS-PEC.
Road Hierarchy - Objectives 2.5.3.1 and 2.5.3.2	
 a) In new areas (as distinct from established areas with a pre-existing road pattern) each class of route should reflect its role in the road hierarchy by its visual appearance and related physical design standards, including varying levels of vehicle and pedestrian access. b) Routes should differ in alignment and design standard 	The proposal seeks to re-locate the existi Emily Avenue turning head and provide a new Shareway to service the proposed allotments. The proposed road design ha been based on the existing alignment of Emily Avenue, the slope of the land as w as the bushfire setback provisions require
according to the volume and type of traffic they are intended to carry, the desirable traffic speed, and other factors.	The new Shareway has been designed to comply with AUS-PEC D1.5.
c) All new roads are designed in accordance with	
Council's Aus-Spec design specification documents. a) New direct accesses from a development to arterial and distributor roads is not permitted. Routes should differ in alignment and design standard according to the volume and type of traffic they are intended to carry, the desirable traffic speed, and other factors.	Emily Avenue is a local road.
b) Existing direct accesses from a development to arterial and distributor roads are rationalised or removed where practical.	
c) Vehicle driveway crossings are minimal in number and width (while being adequate for the nature of the development), and positioned: • to avoid driveways near intersections and road bends, and	
 to minimise streetscapes dominated by driveways and garage doors, and to maximise on-street parking. 	

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King & Campbell Pty Ltd

Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

3.1.5 PMH DCP 2013 - Part 3.6 - Subdivision

Development Provisions (where applicable)	Comment
Site Analysis- Objective 3.6.3.1	
 a) A site analysis is required for all development and should illustrate: microclimate including the movement of the sun and prevailing winds; tot dimensions; noth point; existing contours and levels to AHD; flood affected areas; overland flow patterns, drainage and services; any contaminated soils or filled areas, or areas of unstable land; easting contours and levels to AHD; flood affected areas; overland flow patterns, drainage and services; any contaminated soils or filled areas, or areas of unstable land; easements and/or connections for drainage and utility services; identification of any existing trees and other significant vegetation; any existing buildings and other structures, including their setback distances; hertiage and archaeological features; fences, boundaries and easements; existing and proposed road network, including connectivity and access for all actioning land parcels; pedestrian and vehicle access; views to and from the site; overshadowing by neighbouring structures; and any other notable features or characteristics of the site. 	A site analysis plan is included as Exhibit 2.
of Layout – Objectives 3.6.3.2 to 3.6.3.7	
 a) Any residential allotments created by Torrens title subdivision should satisfy the following standards: A minimum width of 15 metres when measured at a distance of 5.5 metres from the front property boundary; A minimum width of 7 metres measured when side boundaries are extended to the kerb line; A minimum depth of 25 metres; For lots where the average slope of the development site is equal to, or exceeds 16%, indicative road and driveway grades are required demonstrating satisfactory access. 	Each of the proposed lots exceed the listed standards.
a) Battleaxe all otments are discouraged in greenfield development.	The application does not seek consent for any battle-axe allotments.
a) Lots are to be designed to allow the construction of a dwelling, which does not involve more than 1m cut, or fill, measured from natural ground level, outside the dwellings external walls.	Each of the proposed allotments are provided with a building envelope exceeding 520m ² . Earthworks is proposed as a part of the subdivision to minimise the amount of cut and fill required as a part of the construction of future dwellings. The proposed landform is illustrated in the subdivision plan included as Exhibit 3.
a) Wherever possible orientate streets to maximise the number of east, west and south facing lots and to minimise the number of narrow north facing lots. Residential street blocks should preferably be orientated north-south with dimensions generally limited to 60- 80m by 120-150m as illustrated in Figure 3.6-2.	Each of the proposed lots is provided with a north-south orientation with north to the rear yard. This is considered to provide suitable opportunity for future dwellings to comply with

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Development Provisions (where applicable)	Comment
b) Lot size and shape are to reflect orientation to ensure future dwelling construction has optimal opportunity for passive solar design.	the required energy efficiency and passive solar design requirements.
 a) The site analysis, including the lot orientation, layout, and natural topography should inform and aid the design of the street pattern. b) The street plan should provide: Street network, including those existing (adjacent or opposite); Cycleways and pathway network: Indicative gradients and cross sections of roads, cycle ways and pathways, particularly those with steep slopes that may present access and mobility constraints. Provide notional road batters for steep areas; General intersection traffic dampening, related landscape features and constriction points; Notional drainage pattern and works where affected by road works; Car parking; Consideration of existing and proposed street trees; Existing and proposed fire traits. Street and Service Plans should need to show how the proposal should integrate with the existing system. c) Kerb and guttering, associated street drainage, pavement construction and foot paving across the street frontages should be constructed as part of the subdivision works where these do not exist, unless: It is technically impractical to construct kerb and guttering due to uncertainty as to the appropriate levels to be adopted or an isolated section should present a hazard to road traific safety; or The street drainage necessary to provide kerb and guttering is an unreasonable imposition on the development; or An alternative treatment is preferred by Council having regard to Water Sensitive Urban Design (WSUD) principles; or Kerb and guttering is not the most suitable streetscape treatment for the area on the basis of existing and anticipated development. In these cases, an alternative treatment to kerb and gutter such as mountable kerb, concrete dish drain, cemented paving stones or other treatment should be required with the exact type based upon the characteristics of the site. 	The existing alignment of Emily Avenue, landform topography an bushfire setback provisions have aided in the proposed subdivision layout and road design. It is note that a number of options were presented to Council as a part of the initial pre-lodgement meeting and based on the feedback provided from Council and the specialist sub-consultants the submitted design is considered to be the most appropriate for the site consideration the existing constraints.
Road Design and Construction – Objectives 3.6.3.8 to 3,6.3,12	
a) All new roads are to be dedicated to Council designed in accordance the Council's adopted AUSPEC design specification documents. All applications to subdivide land should include a road layout plan that meets the Council's design requirements including providing connectivity and access for all land parcels consistent with Council's road hierarchy.	The realigned Emily Avenue turning head and new Shareway are intended to be dedicated to Council. Both of these roads have been designed to comply with AUS-PEC.
 a) The design of roads identified for bus routes should comply with the AUSTROADS standards, including the design of bus bays and stops. b) Development should provide the bus stops, including bus bays and shelters not more than 600m apart. 	Emily Avenue is a dead-end street and is not currently utilised as a bus route. The proposed subdivision is not considered likely to alter this and no bus stops are therefore considered relevant.
 a) The design of roads should aspire to achieve standards illustrated in Figure 3.6-3 to Figure 3.6-11. 	The proposed roads are considered compliant with the

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I oriens due k	esidential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie
Development Provisions (where applicable)	Comment
 b) At a minimum all new roads should include: street trees at a rate of 1 per 20m along the street frontage and in accordance with Council's Indigenous Street and Open Space Planting List; underground utilities; formed kerb and guttering; 1.2metrics pedestrian path. 	listed provisions. No street trees are proposed within the new Shareway due to the width of the road reserve.
 a) Perimeter roads adjoining bushland should be designed in accordance with Figure 3.6-8 and may be considered part of the APZ requirements for the adjoining land. 	The application does not seek consent for a perimeter road.
a) Perimeter roads should be designed in accordance with Figure 3.6-8	The application does not seek consent for a perimeter road.
Pedestrians and Cycleways - Objectives 3.6.3.13 to 3.6.3.15	Consent for a perimeter road.
 a) Development for the subdivision for land or major residential development should provide footpaths on both sides of all collector and arterial roads. 	The proposed subdivision seeks to provide a Shareway and in accordance with Table D1.5 a footpath is not required.
b) Footpaths should be provided on one side of the street for access places and local streets in accordance with Council's adopted AUSPEC design specification documents.	It is noted that the proposal seeks to provide a sealed fire trail along the eastern edge of Proposed Lo
c) Off street share-ways and on road cycle ways should be provided. d) Footpaths and cycleway are to have regard for Crime Prevention Through Environmental Design (CPTED) principles.	1 which is considered suitable to provide pedestrian connectivity between the residential lots and Emity Avenue and the adjoining. Wayne Richards sporting fields
e) The choice of direction and possible routes should be maximised, with streets and footpaths substantially capable of surveillance by residents.	and associated facilities.
 a) Local roads are to be designed for a maximum vehicle speed of 50kph. 	The proposed Shareway has been designed to comply with AUS-PEC.
b) Traffic management schemes may be appropriate to discourage speeding in long stretches of local roads or to discourage 'rat- running'.	
c) On street parking should be discouraged along local roads.	
d) Signage should be provided illustrating links from local roads to the regional networks.	
 a) Cycling infrastructure should be provided in accordance with the Council's Cycling Plan. 	The application does not seek to provide any cycling infrastructure
b) Where physical infrastructure or land dedication cannot be provided or Is not identified, a contribution in accordance with the Councils' contribution plar/s.	
Water Cycle Management – Objective 3.6.3.16	
 a) An application for subdivision should be accompanied by an Integrated Water Cycle Management Strategy prepared by a certified practicing engineer and in accordance with Council's adopted design specification documents. 	
Stomwater Management - Objectives 3.6.3.17 to 3.6.3.19	dama and and and
a) An application for subdivision should be accompanied by a Stomwater Management Strategy prepared by a certified practicing engineer and in accordance with Council's adopted Aus-Spec design specification documents.	A stormwater management strategy has been prepared in support of the proposed subdivision, refer to Exhibit 5 an Section 2.2.4.
The Designer should adopt the 'major/minor' approach to urban	JCCU011 2.2.4.

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Torrens title Residential Subdivision (1 Le Emily Avenue, Port M			
Development Provisions (where applicable) drainage systems as outlined in Australian Rainfall and Runolf. The Minor'system generally refers to the underground system but also	Comment		
applies to surface structures. The minor system is designed to an Average Recurrence Interval (ARI) as shown in Council's Aus-Spec design specification documents.			
The 'Major' system refers to overland flow paths that are to be designed to convey the major storm flows when the capacity of the minor system is exceeded. The major drainage system is designed to handle flows resulting from rare storm events up to and including a 100-year ARI.			
These flows should follow a designated overland flow path, which should be: • A road if the catchment area is small; and/or			
 A drainage reserve if it is impractical for unsafe for a road to carry the excess flows. 			
The finished floor level of buildings should be above the 100 year ARI flood level (plus freeboard) and in accordance with the council's current flood policy.			
a) An application for subdivision should be accompanied by a Stomwater Management Strategy prepared by a certified practicing engineer and in accordance with Council's adopted Aus-Spec design specification documents.	Refer comments above		
The Designer should adopt the 'major/minor' approach to urban drainage systems as outlined in Australian Rainfall and Runoff. The 'Minor' system generally refers to the underground system but also applies to surface structures. The minor system is designed to an Average Recurrence Interval (ARI) as shown in Council's Aus-Spec design specification documents.			
The 'Major' system refers to overland flow paths that are to be designed to convey the major storm flows when the capacity of the minor system is exceeded. The major drainage system is designed to handle flows resulting from rare storm events up to and including a 100-year ARI.			
These flows should follow a designated overland flow path, which should be: • A road if the catchment area is small; and/or • A drainage reserve if it is impractical for unsafe for a road to carry the excess flows.			
The finished floor level of buildings should be above the 100 year ARI flood level (plus freeboard) and in accordance with the council's current flood policy.			
a) An application for subdivision should be accompanied by a Stomwater Management Strategy prepared by a certified practicing engineer and in accordance with Council's adopted Aus-Spec design specification documents.	Refer comments above		
The Designer should adopt the 'major/minor' approach to urban drainage systems as outlined in Australian Rainfall and Runoff. The			

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Development Dravisions Jubate applicable)	Comment
Development Provisions (where applicable) applies to surface structures. The minor system is designed to an Average Recurrence Interval (ARI) as shown in Council's Aus-Spec design specification documents.	Comment
The 'Major' system refers to overland flow paths that are to be designed to convey the major storm flows when the capacity of the minor system is exceeded. The major drainage system is designed to handle flows resulting from rare storm events up to and including a 100-year ARI.	
These flows should follow a designated overland flow path, which should be: • A road if the catchment area is small; and/or • A drainage reserve if it is impractical for unsafe for a road to carry the excess flows.	
The finished floor level of buildings should be above the 100 year ARI flood level (plus freeboard) and in accordance with the council's current flood policy.	
Water Supply – Objectives 3.6.3.20 to 3.6.3.23	······································
 a) A reticulated water supply should be required for all subdivisions except rural zoned areas greater than 40 hectares or where deemed financial unviable by the Manager Water Supply Services or equivalent. 	A reticulated water supply is proposed to be provided to eac of the proposed lots. Refer to Section 2.2.3 and Exhibit 4.
b) A water supply strategy should be required where there are more than 20 lots and may be required for sub-divisions of less than 20 lots as directed by the Manager Water Supply Services or equivalent	
c) All water supply systems should be designed to meet Council's design specification documents for infrastructure external to the property.	
d) All water supply systems should be designed to meet the NSW Code of Practice Plumbing & Drainage 2006 and Australian Standard AS3500 and related standards for infrastructure within property boundaries.	
 a) A reclaimed water supply should be constructed in accordance with Council's strategy for the provision of reclaimed water supply. 	
b) Where a reclaimed water reticulation system is available to the site, connection to that system should be provided and a reclaimed reticulation system within the site should be provided.	1.86
c) Where a reclaimed water reticulation system is planned to be available to the site a reclaimed reticulation system should be provided within the site.	
d) Where a reclaimed water reticulation system is not currently planned for the site consideration of providing a reclaimed reticulation system within the site is not required.	
e) Public areas such as parks created by the subdivision, are to be connected to a reclaimed water reticulation system.	
 Any amenities provided in public areas, such as tollets, should maximise the utilisation of reclaimed water where appropriate. 	

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Development Provisions (where applicable)	Comment
 a) Where a reclaimed water reticulation system is available or planned to be available to the site, reclaimed water should be used for: Garden watering/irrigation; Toilet flushing; Hot water systems; Washing machine cold water tap; Other non-potable uses as permitted. Where a reclaimed water reticulation system is available or planned to be available to the site, potable water should be used for: Kitchen, bathroom and laundry tub cold water taps; Pool filling; Fire-fighting. b) Ensure infrastructure is designed to minimise the risk of cross-connection of potable and non-potable systems, for both public and 	The application does not seek to provide a reclaimed water reticulation system given there i no reticulated reclaimed water in Emily Avenue.
private infrastructure. a) Proponents should be required to extend and meet full cost of water reticulation. b) Any water supply assets required prior to the timing in Council's Corporate Plan are to be funded by the developer.	Noted. All costs associated with the extension of the reticulated water supply will be borne by the applicant.
Severage – Objectives 3.6.3.24 to 3.6.3.25 a) Severage systems should be designed in accordance with Councils adopted design specification documents and the Severage Code of Australia (WSA02-1999). b) A severage strategy should be provided for an application for subdivision of 20 or more lots. c) The strategy should include the proposed method of servicing and any staging proposed. d) Severage systems should be planned to provide for anticipated future requirements over a period of at least twenty (20) years. e) Each lot is to have a separate sever junction and connection to Council's main.	Reticulated sewer is proposed to be provided to each of the proposed lots, Refer to Section 2.2.3 and Exhibit 4.
a) Proponents should be required to extend and meet full cost of sewerage systems. b) Any sewerage system required prior to the timing in Council's Corporate Plan is to be funded by the developer. Soil Management – Objectives 3.6.3.26 to 3.6.3.28	Noted. All costs associated with the extension of the reticulated sewer will be borne by the applicant.
a) An erosion and sediment control plan should be provided for a development application to subdivide land in accordance with Council's adopted Aus-Spec design specification documents.	A sediment and erosion control plan will be provided as a part o the detailed design phase. It is anticipated that a sediment and erosion control fence will be provided along the northern boundary of the development footprint.
a) An erosion and sediment control plan should be provided for a development application to subdivide land in accordance with Council's adopted design specification documents. b) Land identified on the acid sulfate soils map are subject to the provisions under clause 7.1 the LEP.	Refer comment above.

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ampbell Pty Ltd Tone	Statement of Environmental Effect Torrens title Residential Subdivision (1 Lot into 6 Emily Avenue, Port Macquari			
Development Provisions (where applicable)	Comment			
 a) Saving and re-using top soil and the incorporation of additi Improve existing soils is preferred to the importation of soils for landscaping. 				
Service Infrastructure and Information Technology - Objective	e 3.6.3.34			
 a) All service infrastructure should be underground unless off approved by Council. b) All service infrastructure should be installed in a common till c) Conduits for the main technology network system should be provided in all streets. d) Conduits are to be installed in accordance with the National Broadband Network Company Limited's 'Guidelines for Fibre Premises Underground Deployment'. e) Access pits are to be installed at appropriate intervals along 	All service infrastructure is proposed to be provided underground. e al to the			
streets.				
Waste Management - Objective 3.6.3.35	W.A. Transformer W. K.			
a) All new roads are to be designed in accordance the Counc Spec design specification documents. All applications to subdivide land should include a road layou that meets the Council's design requirements.	vehicles from utilising the			

3.2 Traffic impact Assessment

A Traffic Impact Assessment is included at Appendix E.

Intersection performance has been assessed using the software package SIDRA 8.0 to obtain the capacity of the traffic movements for the proposed development and in accordance with the assumptions made by GHD (GHD PMH LGA Traffic Study 2018).

The TIA confirms that the proposed residential development (5 Lots) can be adequately served by the existing intersection configuration of Emily Avenue with Koala Street. This Assessment also confirms that the retention of the existing intersection will not adversely affect the wider road network within Port Macquarie, with queueing lengths being of acceptable length.

3.3 Ecology

An Ecological Assessment has been prepared by Biodiversity Australia (BA) in support of the proposed development. The assessment is included in full at Appendix C.

The assessment was prepared in accordance with the requirements of the NSW Biodiversity Conservation act 2016, Biodiversity Regulation 2017 and the Commonwealth Environment & Protection and Biodiversity Conservation Act (EPBCA) Act 1999 – Matters of National Environmental Significance. An assessment of the relevant provisions

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King & Campbell Pty Ltd

Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

for Koala food trees under the Port Macquarie-Hastings Council Development Control Plan 2013 was also undertaken.

BA carried out site surveys in March and April 2019 and noted the following key points:

- No threatened flora were recorded and the site vegetation does not qualify as an Endangered Ecological Community (EEC);
- Five threatened fauna species were recorded within the property at the time of the survey and a total of 13 threated fauna species were found to have at least a low potential to occur within the study area;
- Seven trees within the developable portion of the site will require removal to establish the subdivision, these trees do not contain hollows and are not preferred Koala food trees (six Blackbutt and one Sydney Golden Wattle);
- Indirect impacts associated with the proposal will be minor due to the scale of the development, context of the site and the existing level of disturbance in the area;
- No littoral rainforest or coastal wetlands are mapped within the study area;
- The property contains Potential Koala Habitat however, due to the absence of Koala's during surveys and the lack of historical records on the property, is not considered to contain Core Koala habitat; and
- The proposed development will not trigger the requirement for a Biodiversity Development Assessment Report (BDAR) as the amount of vegetation removal required will not exceed the prescribed threshold and the site is not mapped on the Biodiversity Value Map.

In summary, BA provide the following recommendations:

- General Clearing Measures including:
 - The extent of the development footprint to be clearly marked (e.g. via pegging/fencing/flagging) before clearing in order to prevent and inadvertent clearance beyond what is required and has been assessed and to avoid encroachment into the root zone of retained trees;
 - Site induction is to specify that no clearing is to occur beyond the marked area. All vehicles are only to be parked in designated areas;
 - Clearing and earthworks is to avoid damage to root zones of the retained trees on adjoining land;
 - Weeds are not to be mulched with native vegetation and

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should be taken to a licenced land fill facility;

- · Animal Welfare Considerations including:
 - The area of the clearing work is to be inspected for Koalas and other fauna by an ecologist immediately prior to commencement of any vegetation removal involving machinery and/or tree felling. Pre-clearing checks will include searches of habitat e.g. lifting and destruction of logs, searches for bird nests, and raking of leaf litter. Other than Koalas, any detected fauna is to be relocated off-site. Any bird nest considered active is to be removed in a manner that allows retrieval off eggs/young, and these are to be taken into care by FAWNA;
 - If a Koala is present in the proposed clearing area, works are to be suspended until the Koala moves along on its own volition. If the Koala is located in a position that a 50m buffer may be established, works may proceed outside this buffer.
- Tree Replacement including:
 - Offset plantings at a ratio of 2:1 within existing canopy gaps (total of 12 koala food trees comprising Tallowwood and/or Swamp Mahogany);
 - Trees should be regularly maintained (e.g. watering, weeding, mulching) until they are at least 2m tall and any losses are to be replaced.
- Koala Ladders:
 - A Koala ladder is recommended to be installed to the south-west of the development area.

3.4 Bushfire

A Bushfire Hazard Assessment Report has been prepared by David Pensini of Building Certification and Environmental Services to accompany this submission. A copy of this assessment is included at **Appendix D**.

The assessment considers that, subject to the implementation of the following bushfire threat reduction measures that the proposed development is manageable:

 Asset Protection Zones (APZ's) provided in accordance with the below Table:

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Table 4 - APZ Requirements for Residential Subdivision Developments (29kW/m²)

ASPECT VE	VEGETATION SLOP		TOTAL REQUIRED APZ			MINIMUM	COMPLIANCE WITH MINIMUM
			IPA	OPA	APZ	AVAILABLE COMPLIANT APZ	APZ REQUIREMENTS
North	Grasslands	5'- 6' Down slope	10m	•	10m	>10m	~
Northeast	Similar in specification to Rainforest	5'- 6' Down slope	15m	•	15m	>25m	~
South	Wet Sclerophyll Forest	3'-4' Down slope	15m	12m	27m	>27m	61
West	Tall Coastal Heath	7'- 15" (0') Upslope	15m	•	15m	>15m	land

- Water and other services are to be provided to the proposed Torrens title lots in accordance with the requirements detailed in Section 3.1.4;
- Future dwellings constructed to comply with bushfire attack level (BAL) 29 (to be confirmed prior to construction);
- Adoption of the landscaping principles outlined within Section 3.2.1 of this report.

3.5 Contamination

A Stage 1 Contamination Assessment has been prepared by Regional Geotechnical Solutions (RGS) to accompany this submission. A copy of this assessment is included at **Appendix G**.

The assessment included identification of areas of environmental concern based on site observations and past land use, and a limited amount of sampling in the identified areas. A large area of uncontrolled fill was identified in the north of the site, however, the extent and depth of fill was not defined. In addition, a shallow area of hydrocarbon and lead impacted soil contamination was identified in the north east corner of the site in the vicinity of a former shed that appears to have been previously part of the Council depot.

A Stage 2 Contamination Assessment is therefore recommended to define the extent of uncontrolled fill and the extent of the identified contamination followed by the preparation of a Remedial Action Plan (RAP). However, the findings of this assessment indicate that it is likely that the site can be remediated to a standard appropriate for residential development from a site contamination perspective provided the recommendations and advice of this report are adopted.

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King & Campbell Pty Ltd

Statement of Environmental Effects Torrens title Residential Subdivision (1 Lot into 6) Emily Avenue, Port Macquarie

Section 4 Conclusion

This development proposal has been prepared having regard to the provisions of Port Macquarie-Hastings Local Environmental Plan 2011 and s.4.15 of the Environmental Planning and Assessment Act 1979. The granting of consent to the proposal is consistent with the aims and objectives of these documents for the following reasons:

- The proposed subdivision satisfies the development standards as set out by Port Macquarie-Hastings LEP 2011;
- The proposed subdivision is consistent with the zone objectives;
- The proposed subdivision will provide a logical extension of Emily Avenue and make best use of the existing residentially zoned land;
- The proposed subdivision can be adequately served by the existing intersection configuration of Emily Avenue and Koala Street;
- Appropriate land and water management devices and techniques will be employed thereby minimizing any likely environmental impacts;
- · The proposal will not impact any EEC's or threatened species;
- The proposal will not remove any Hollow Bearing Trees or any Primary Koala food trees and no works are proposed within the Link Road KPoM offset area;
- The proposal will mitigate potential impacts on water quality through a comprehensive stormwater management system; and
- The proposed subdivision will enable the orderly and efficient development of the subject site in a manner consistent with the objectives and provisions of the relevant environmental planning instruments.

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Port Macquarie Hastings Council

Stage 1 Contamination Assessment

Proposed Residential Subdivision

Lot 302 DP754434, Emily Avenue, Port Macquarie

Report No. RGS20789.1-AB 16 April 2019



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Manning-Great Lakes

Port Matguarie

Coffs Harbour



RGS20789.1-AB

16 April 2019

Port Macquarie Hastings Council c-/ King & Compbell Ply Ltd PO Box 243 PORT MACQUARIE NSW 2444

Attention: Jason Doyle

Dear Jason,

RE: Proposed Residential Subdivision – Lot 302 DP754434, Emily Avenue, Port Macquarie Stage 1 Contamination Assessment

As requested, Regional Geotechnical Solutions Pty Ltd (RGS) has undertaken a Stage 1 Contamination Assessment for the proposed five lot residential subdivision in the southern portion of Lot 302, DP754434, Emily Avenue, Port Macquarie.

The assessment included identification of areas of environmental concern based on site observations and past landuse, and a limited amount of sampling in the identified areas. A large area of uncontrolled fill was identified in the north of the site, however, the extent and depth of fill was not defined. In addition, a shallow area of hydrocarbon and lead impacted soil contamination was identified in the north east corner of the site in the vicinity of a former shed that appears to have been previously part of the Council depot.

A Stage 2 Contamination Assessment is therefore recommended to define the extent of uncontrolled fill and the extent of the identified contamination followed by the preparation of a Remedial Action Plan (RAP). However, the findings of this assessment indicate that it is likely that the site can be remediated to a standard appropriate for residential development from a site contamination perspective provided the recommendations and advice of this report are adopted.

For and on behalf of

Regional Geotechnical Solutions Pty Ltd

Im

Tim Morris

Associate Engineering Geologist

Regianal Geolechnical Solitions Ply ()a ABN 51141848820 5D/23 Clarence Street Port Macquarie NSW 2444 Ph. (02) 6553 5641 Email <u>tim.mori/s@regionalgeotech.com.au</u> Web:<u>www.regionalgeotech.com.au</u>

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1 INTRODUCTION

As requested, Regional Geotechnical Solutions Pfy Lfd (RGS) has undertaken a Stage 1 Contamination Assessment for the proposed five lot residential subdivision in the southern partion of Lot 302, DP754434, Emily Avenue, Port Macquarie.

The proposed residential development site is partially cleared and located in an area of gently to moderately undulating topography that has been modified by historical earthworks including placement of a large spoil mound. The site is now used as part of a mountain blke track course.

The purpose of the work described herein was to assess the suitability of the site for residential development with respect to the presence of potential site contamination resulting from past land use and activities.

The work was commissioned by Jason Dayle on behalf of Port Macquarie Hastings Council and was undertaken in accordance with proposal number RG\$20789.1-AA dated 19 December 2018.

2 GUIDELINES AND ASSESSMENT CRITERIA

The assessment was aimed at fulfilling the requirements of a Phase 1 Contaminated Site Assessment in accordance with NSW EPA Guidelines for Consultants Reporting on Contaminated Sites (2011).

To evaluate results and for guidance on assessment requirements, the assessment adopted the guidelines provided in the National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013). The NEPM document provides a range of guidelines for assessment of contaminants for various land use scenarios. The proposed landuse is residential and as such comparison with the NEPM guideline values for Residential A landuse was considered appropriate. In accordance with the NEPM guideline the following criteria were adopted for this assessment:

- Health Investigation Levels (HILs) for Residential land use were used to assess the potential human health impact of heavy metals and PAH;
- Health Screening Levels (HSLs) for coarse textured (sand) or fine textured (silt and clay) soils
 on a Residential site were adopted as appropriate for the soils encountered to assess the
 potential human health impact of petroleum hydrocarbons and BTEX compounds;
- Ecological Investigation Levels (ELs) for Residential land use were used for evaluation of the
 potential ecological / environmental impact of heavy metals and PAH;
- Ecological Screening Levels (ESLs) for coarse textured (sand) soils or fine textured (silt and clay) soils on a Residential land use site were adopted as appropriate for the soils encountered, to assess the potential ecological / environmental impact of petroleum hydrocarbons and BTEX compounds.

In accordance with NEPM 2013, exceedance of the criteria does not necessarily deem that remediation is required, but is a trigger for further assessment of the extent of contamination and associated risks. The adopted criteria are presented in the results summary table in Appendix C.

3 METHODOLOGY

In accordance with the relevant sections of the National Environmental Protection (Assessment of Site Contamination) Measure 1999 (Amended 2013), the assessment involved the following process:

 A brief study of site history, with the aim of identifying past activities on or near the site that might have the potential to cause contamination;

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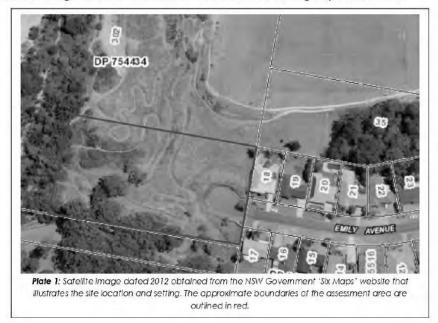
- A search of NSW EPA records, or contaminated land notifications on the site;
- Government records of groundwater bores in the area;
- Land title search of the respective lots available from the Land Titles Office; and
- Using the above information, characterise the site into Areas of Environmental Concern, in
 which the potential for contamination has been identified, and nominate Chemicals of
 Concern that might be associated with those activities.

4 SITE SETTING AND HISTORY

4.1 Site Description

The site is located to the west of Emily Avenue in an area of gently to moderately undulating topography where it is situated on the east facing middle to lower slopes of a low hill as shown in Figure 1.

A satellite image that shows the location of the site and the site setting is reproduced below.



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4.2 Historical Aerial Photography

Aerial photographs of the site were purchased from the NSW Land and Property Management Authority and reviewed to assist in identifying past land uses that may contribute to site contamination. The results of the review are summarised in Table 1.

Table 1 - Aerial Photograph Summary

Year	Site (Lat 302 DP754434)	Surrounding Land		
1956	The lot is masily cleared and is probably used for grazing purposes.	Surrounding land mostly cleared with patches of thick vegetation present to the north east and south of the site.		
1979	No significant change	Council depot present to the north near Koala Street. To the west of the site there is large quary present that appears to be centred on the crest of a hill, where St Pete Oval and St Agnes Village are now locate		
i 983	Minor excavation appears to have taken place in west of subject area.	No significant change		
1997	The site appears to have been Incorporated into the rear of the Council depot site and is disturbed by earthworks with various tracks and stockplies present. A structure [shed?] is located in the east of the site. The downslope side of the Emily Avenue cul- de-sac is constructed on a raised fill embankment	ted into the rear of the Council e and is disturbed by ks with various tracks and spresent. A structure (shed?) is in the east of the site. The be side of the Emily Avenue cul- constructed on a raised fill		
2009 (Google Earth)	The site has been partially regraded and is thickly vegetated with grass and some tree regrowth.	Sporting fields have been constructed to the north.		
2019 (Google Earth)	No significant change. A mountain blke track traverses across the site,	No significant change		

4.3 Site Observations

Fieldwork was undertaken on 11 March 2019. Observations made during the site visit are summarised below:

 A large stockpile of fill material is located in the north west of the site and is approximately 60m x 30m in length and 5m in height; and

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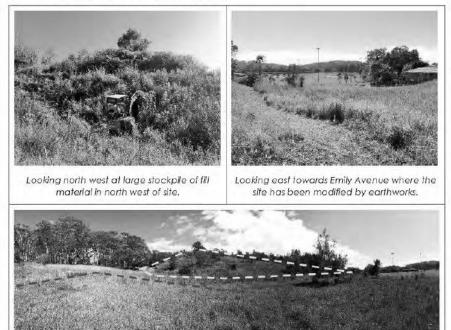
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The north eastern corner of the site has been modified by filling works including construction
of a fill embankment around the Emily Avenue cul-de-sac.

A selection of images of the site is presented below.



Looking west across site. An uneven fill profile is located in the foreground and is outlined in red. A stockpile of fill material is located in the background, outlined in yellow. Natural slopes to the south (left of image) are vegetated with large trees.

4.4 NSW EPA Records

A check with the NSW EPA website (<u>www.epa.nsw.aov.au</u>) revealed that no notices have been issued on the site under the Contaminated Land Management Act (1997].

4.5 Land Title Search

A list of past registered proprietors and lessors of the site was obtained from the Land Titles Office. A summary of the title details is included in Appendix A.

The title history search revealed the following:

Prior – 1950: Crown Land;

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- 1950 1950: Joseph Edward Campbell, grantee;
 - 1950 1951: Alma Beryl McKenna, widow;
 - 1951 1954: Charles Max Buchanan, farmer;
 - 1954 1957: Sidney George Johnson, farmer;
 - 1957 1958: Olive May Johnson, widow Clyde George Johnson, farmer;
 - 1958 1964: Vernie William Flanagan, former;
 - 1964 1969: Charles Francis James, station hand Marjory Evelyn James, his wife;
- 1969 1973: Miriam Sarah James, spinster; and
- 1973 to date: The Council of the Municipality of Port Macquarie.

4.6 Geology

The site is situated in an area of red krasnozem clay soils overlying deeply weathered geological units of the Part Macquarie Block which includes slate, basalt, serpentinite and dolerite.

4.7 Groundwater

A groundwater bore search on the Water NSW website indicates that there are no licensed groundwater bores within 200m of the site boundary. Regional groundwater flow direction typically follows topographic slopes, which for this site would be towards the north.

4.8 Site History Summary

Based on available data the chronological development of the subject site within Lot 302 DP754434 was undertaken as summarised below:

- Prior to 1950 the site was Crown Land;
- The site was owned by various people between 1950 and 1973 when it is likely that the site
 was cleared and used for farming activities;
- Lot 302 DP754434 was purchased by The Council of the Municipality of Port Macquarie in 1973;
- Aerial photographs indicate that a Council Depot facility was present near Koala Street in 1979 and that by 1997 if had expanded to the south and incorporated the subject site;
- The subject site appears to have been disturbed by earthworks and quarrying operations (?) in 1997 and there was a shed located in the north east corner of the site. The purpose of the shed is not known;
- Aerial photographs indicate that there was a large quarry located to the west of the site from before 1979 and it ceased operations prior to 1997;
- The Emily Avenue residential subdivision on the eastern boundary of the site was constructed between 1983 and 1997; and

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In 2009 the site had been partially regraded and the shed structure was no longer visible. A
mountain bike track was constructed across the undulating site slopes in 2011.

5 SITE CONTAMINATION ASSESSMENT

5.1 Conceptual Site Model

Based on the site observations and knowledge obtained about site activities as outlined above, potential Areas of Concern and Chemicals of Concern were identified for the assessment as outlined in Table 2.

Area of Concern	Mode of Potential Contamination	Chemicals of Concern	Targeted Sampling Location
AEC 1: Soils in vicinify of previous shed	Leakage of fuels/oils from parked vehicles, Demolition of shed.	Heavy Metals, TPH, BTEX, PAH, asbestos	TP1
AEC2: Hill material		Heavy Motals, TPH, BTEX, PAH, OC/OPP, asbestos	TP1, TP2, TP5, TP6, TP7, TP8, TP10
BTEX - Benzene, Taluene TPH - Total Petroleum H PAH – Polycyclic Aroma		Mercury, Nickel and Zinc	

Table 2	: Conce	ptual Site	e Model
TOTO L		prout on	- mourer

5.2 Field Work

Field work for the assessment was undertaken on 12 March 2019 and included:

- Site walkover to assess visible surface conditions and identify any evidence of contamination, or past activities that may cause contamination; and
- Ten test pits undertaken by a 3.5T mini excavator, logged and sampled by an Engineering Geologist.

Engineering logs of the test pits are presented in Appendix B. The locations of the test pits are shown on Figure 1. They were obtained on site by measurement relative to existing site features

Soil samples were taken from selected depths using disposable gloves and hand tools which were decontaminated between sampling points using Decon90 detergent and deionised water. The samples were collected in acid-rinsed 250mL glass jars and placed in an ice-chilled cooler box.

5.3 Subsurface Profile

The test pits encountered a variable profile including mixed fill materials as summarised in Table 3.

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Test Pit	Depth to Base of Material Layer (m)					
lest Pit	Topsoil/Fill	Mixed Clay Fill	Topsoil	Residual Soil		
TP1	0.25	0.7	-	≥2.0		
TP2	0.25	0.6	-	≥2.0		
TP3	-	÷.	0.25	≥2.0		
TP4	-	Ċ	0.25	≥2,0		
TP5	0.3	3.0	~	≥3.5		
TP6	0.2	≥2.0	é (-		
TP7	0.2	≥2.0	1	-		
TP8	0.2	0.9	~	≥1.2		
TP9	-		0.1	≥0.5		
TP10	0.2	0.4	-0	≥2.0		

Table 1: Summary of Subsurface Profiles

Images of some excavated profiles are presented below.



5.4 Laboratory Testing

Samples were transported under chain-of-custody conditions to a NATA accredited specialist chemical testing laboratory, to be tested for the following suite of contaminants:

• Polycyclic Aromatic Hydrocarbons (PAH)

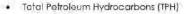
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- Benzene, Toluene, Ethyl-benzene, Xylenes (BTEX)
- Organochlorine Pesticides (OC/OPs)
- Heavy metals (arsenic, cadmium, chromium, cobalt, copper, lead, mercury, and zinc)
- Chromium speciation
- Presence of asbestos in accordance with AS4964

The results are presented in Appendix C.

5.5 Quality Control

Samples were obtained using industry accepted protocols for sample treatment, preservation, and equipment decontamination. A duplicate of TP3(0 - 0.2m) was submitted to the laboratory for analysis as TP3A (0 - 0.2m). Results of the duplicate analysis indicated heavy metal concentrations correlated well between the samples.

In addition to the field QC-procedures, the laboratory conducted internal quality control testing including surrogates, blanks, and laboratory duplicate samples. The results are presented with the laboratory test results in Appendix B.

On the basis of the results of the field and laboratory quality control procedures and testing the data is considered to reasonably represent the concentrations of contaminants in the soils at the sample locations at the time of sampling and the results can be adopted for this assessment.

6 SITE CONTAMINATION ASSESSMENT - RESULTS

An appraisal of the laboratory test results presented in Appendix C is provided below with reference to the adopted soil investigation and screening levels discussed in Section 4.1.

- Concentrations of lead in samples TP1 (0 0.2m) and TP1 (0.35 0.45m) exceeded the health investigation criteria for a residential site;
- Elevated concentrations of Total Chromium were present in most samples. Speciation
 analysis of the sample with the highest total chromium concentration revealed Chromium III
 only and Chromium VI concentrations were below laboratory detection limit. There is no
 Health Investigation Level for Chromium III;
- The Port Macquarie area is underlain by the Port Macquarie Serpentinite which is an intrusive ultramatic rock that contains elevated concentrations of heavy metals. Subsequent soil development over the metal-rich bedrock has further concentrated the heavy metals present. Studies (Lottermoser, 1997) have shown that elevated background concentrations of chromium occur in Port Macquarie over an area of 10km². The elevated concentrations of Chromium III are therefore considered to be due to natural processes rather than anthropogenic sources;
- Concentrations of the remaining heavy metals were above laboratory detection limit, but were below adopted health investigation criteria for a residential site;
- Asbestos fibres were not detected in the soil samples submitted for analysis;

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- Concentrations of Total Recoverable Hydrocarbon (TRH) and Polycyclic Aromatic Hydrocarbons (PAH) were detected in one sample (TP1, 0.35-0.45m) with PAH (b-a-p) exceeding the adopted residential Health Screening Levels; and
- Concentrations of herbicide/pesticide contaminants were below the laboratory detection limit.

7 ASSESSMENT AND CONCLUSIONS REGARDING SITE CONTAMINATION

A Stage 1 Site Contamination Assessment was required to assess all past and present potentially contaminating activities and contamination types and assess whether the site is suitable for residential development.

7.1 Summary

Based on the results outlined in this report the following points and recommendations are made:

- The property was purchased by the Port Macquarie Hastings Council in 1973 and the site appears to have formed part of the Council depot in 1997 when a shed structure was visible in the north east corner of the site;
- The site is currently being used as a mountain bike course;
- A large stockpile of uncontrolled clay fill is located in the west of the site as shown in Figure
 1.1 contains mixed clay fill with trace foreign materials including brick and plastic fragments
 and was >3m deep. The extent of the fill has not been clearly defined;
- Mixed clay fill is present in the north east of the site near Emily Avenue;
- A thin layer of black bituminous material, possibly comprising surplus material from an old tar
 patching truck operating from the former Council depot was present at 0.3m in TP1 in the
 mixed clay fill. Hydrocarbon and metal impacted soils at TP1exceeded the adapted health
 investigation criteria for a Residential Type A site and will require remediation if residential
 development is proposed. The extent of the bituminous material has not been defined;
- It is noted that the elevated concentrations of PAH (b-a-p) also exceed health investigation
 guidelines for a Recreational C land use as per NEPM 2013 (Recreational C includes public
 open space such as parks, playgrounds, playing fields (e.g. ovals), second ary schools and
 unpaved footpaths) and that remediation would therefore be recommended of the PAH
 impacted soils even if the site is not developed for recreational purposes;
- A Stage 2 Contamination Assessment is recommended as detailed in Section 7.2;
- A Remedial Action Plan will be required for remediation works as detailed in Section 7.3;
- Should any fill material require removal off-site, it will require assessment for a Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 in accordance with the Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 – the Excavated Natural Material (ENM) Order 2014.

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7.2 Stage 2 Contamination Assessment

The sile contained a number of Areas of Concern and Chemicals of Concern and there are some areas that will require a Stage 2 Contamination assessment and localised remediation. A Stage 2 Contamination assessment is therefore recommended for the following Areas of Concern Identified , within the site:

- AEC I Layer of bituminous material encountered in TPI in the vicinity of a former shed requires further assessment to determine the extent of the contamination, and likely waste classification of the material that should be removed and disposed of offsite to an appropriately licensed landfill;
- AEC 2 The extent of the filled areas in the north site have not been clearly defined. A detail
 site survey is recommended to assist delineate areas that have been modified by
 eatthworks. Further investigation of the fill areas is then recommended using a medium size
 excavator to assess extent, depth and properties of the existing fill. It is noted that this may
 also be of benefit to future geotechnical assessments of the site.

7.3 Remedial Action Plan (RAP)

A Remedial Action Plan (RAP) will need to be developed for the site for remediation works. The RAP will outline the methodology required for necessary remedial works including the localised removal of sails effected by heavy metal and hydrocarbon contaminants. The NSW OEH (2011) Guidelines for Consultants Reporting on Contaminated Sites provides requirements that are to be considered in the preparation of RAPs which should address the following:

- Remediation goals;
- Discussion of the extent of remediation required;
- Discussion of possible remediation options;
- Rationale for selecting the preferred remediat option;
- Proposed validation testing;
- Contingency plans for unexpected findings; and
- Health, Safety, Security and Environmental (HSSE) requirements

A Validation Report will be required following the remedial works, summarising the results of the soil remediation and validation of the site. The report should be prepared in accordance with relevant sections of the NSW OEH (2011) Guidelines for Consultants Reporting on Contaminated Sites.

Remediation is likely to comprise the identification of the heavy metal and hydrocarbon impacted fill located at TP1. The fill is then likely to require excavation to a depth of approximately 0.5m below surface to remove the impacted material.

The excavated material will require temporary stockpiling on site and waste classification prior to disposal at a licensed landfill facility in accordance with NSW EPA requirements. Results of testing to date indicate the sails present are likely to meet the requirements for General Salid Waste.

The excavations should then be validated by a suitably qualified person to assess the efficacy of the remediation work in removing the contaminated material from the area. The results of the validation sampling should be presented in a Validation Report with a statement regarding the site's suitability for the proposed development from a contamination viewpoint.

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7.4 Conclusion

Based on the results obtained in this investigation the site is likely to be suitable for the proposed residential land use with regard to the presence of soil contamination provided the recommendations and advice of this report are adopted, and site preparation works are conducted in accordance with appropriate site management protocols and legislative requirements.

8 LIMITATIONS

The findings presented in the report and used as the basis for recommendations presented herein were obtained using normal, industry accepted environmental design practises and standards. To our knowledge, they represent a reasonable interpretation of the general condition of the site. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points.

If site conditions encountered during construction vary from those discussed in this report, or, if potentially contaminated soils that contain foreign materials, or, soils with strong odours are encountered during future works then Regional Geotechnical Solutions Pty Ltd should be contacted for further advice.

This report alone should not be used by contractors as the basis for preparation of tender documents or project estimates. Contractors using this report as a basis for preparation of tender documents should avail themselves of all relevant background information regarding the site before deciding on selection of construction materials and equipment.

If you have any questions regarding this project, or require any additional consultations, please contact the undersigned.

For and on behalf of Regional Gentechnical Solutions Fly Ud

Prepared by

Tim Morris Associate Engineering Geologist

Reviewed by

Indre 140 1

Andrew Hills Senior Environmental Engineer

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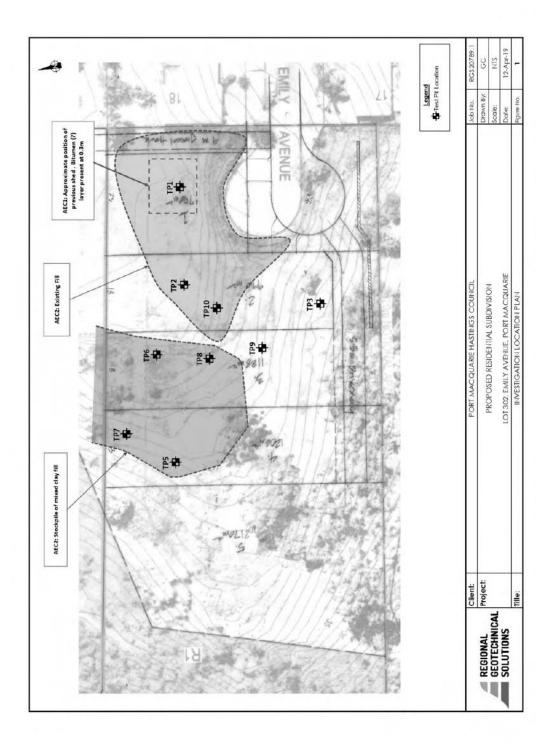
Figures

Regional Geotechnical Solutions RGS20789,1-AB 16 April 2019

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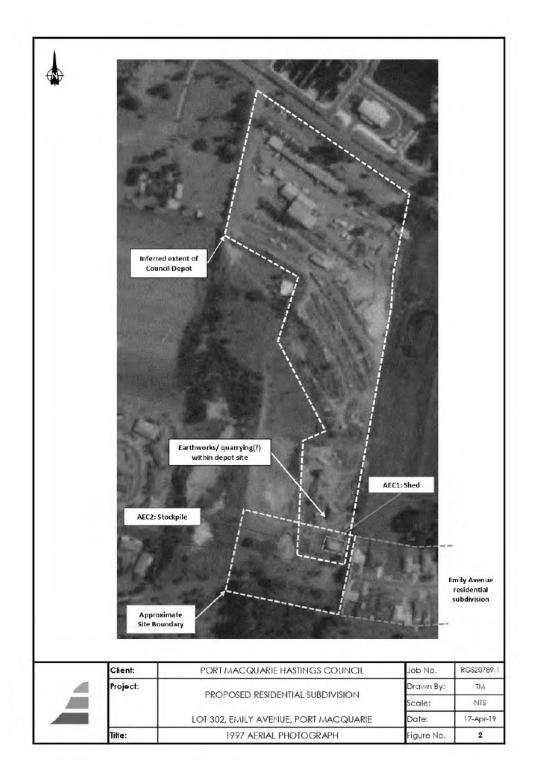
> > Item 13.08 Attachment 2

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Appendix A

Site History Documentation

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ADVANCE LEGAL SEARCHERS PTY LTD (ACN 147 943 842)

ABN 82 147 943 842

18/36 Osborne Road, Manly NSW 2095
 Telephone:
 +612
 9977
 6713

 Mobile:
 0412
 169
 809

 Email:
 search@alsearchers.com.au

01st March 2019

REGIONAL GEOTECHNICAL SOLUTIONS PTY LTD 5D / 23 Clarence Street, PORT MACQUARIE, NSW, 2444

Attention: Tim Morris

RE:

Emily Avenue, Port Macquarie RGS20789,1

Current Search

Auto Consol 12271-82 (title attached) Lots 227 & 302 DP 754434 Crown Plan 2254-666 (plan attached) Dated 01st March 2019 Registered Proprietor: THE COUNCIL OF THE MUNICIPALITY OF PORT MACQUARIE

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-2-

Title Tree Lots 227 & 302 DP 754434

Auto Consol 12271-82

Certificate of Title Volume 12271 Folio 82

Certificate of Title Volume 6297 Folio 156

Certificate of Title Volume 6162 Folio 149

Crown Land

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-3-

Summary of proprietor(s) Lots 227 & 302 DP 754434

Year	Pr opr ietor (s)
	(Lots 227 & 302 DP 754434 – A/C12271-82)
1988 - todate	The Council of the Municipality of Port Macquarie
	(Portions 227 & 302 Parish Macquarie – CTVol 12271 Fol 82)
1973 - 1988	The Council of the Municipality of Port Macquarie
1973 - 1973	Miriam Sarah James, spinster
	(Portions 227 & 302 Parish Macquarie – Area 23 Acres 3 Roods 37
	Perches – CTVol 6297 Fol 156)
1969 - 1973	Miriam Sarah James, spinster
1964 - 1969	Charles Francis James, station hand
	Marjory Evelyn James, his wife
1958 - 1964	Vernie William Flanagan, farmer
1957 - 1958	Olive May Johnson, widow
	Clyde George Johnson, farmer
1954 - 1957	Sidney George Johnson, farmer
1951 - 1954	Charles Max Buchanan, farmer
	(Portions 302 & 303 Parish Macquarie – Area 13 Acres 3 Roods 17
	Perches & 14 Acres 1 Rood 24 Perches – CTVol 6162 Fol 149)
1950 - 1951	Alma Beryl McKenna, widow
1950 - 1950	Joseph Edward Campbell, grantee
	(Portion 302 Parish Macquarie – Area 13 Acres 3 Roods 17 Perches)
Prior - 1950	Crown Land
(1906 – 1950)	(Conditional Purchase 1906-6 Grafton to Joseph Edward Campbell)

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Page 1 of 3 724998 1.20 tent. Ref: NOUSER 0 10203040 Metres 3 GRACE CL toquasr This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps 44 5 819382 EMILYAVE DP 754431 dd 2 DP 819382 -R County : MACQUARIE Parish : MACQUARIE -10 5 91998 di 5 DP 8 9383 R 12 Cadastral Records Enguiry Report : Lot 302 DP 754434 Locality : PORT MACDUARIE DP 754434 302 306 LOCHINUAR PL LGA : PORT MACQUARIE-HASTINGS DP 599240 DP 720829 DP 1010506 四一四日前近(PORT Rept Generated 5:203 AM, 1 March. 2019 Copyright & Crown in right of New South Wales, 2017 2 LOCHINNAR PI LAND REGISTRY SERVICES 3 MSW OCEAN DR

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NSW LAND REGISTRY SERVICES	Locality : PORT MACQUAR LGA : PORT MACQUARIE-H		Parish : MACQUARIE County : MACQUARIE			
•						
	Status	Surv/Comp	Purpose			
271189						
t(s): 1, 4, 5, 6, 7	LISTODICAL	CURVEN	OUDDINACION			
但 DP609064	HISTORICAL	SURVEY	SUBDIVISION			
2825844						
ot(s): 16	REGISTERED	SURVEY	COMMUNITY PL	A1)		
P1010506	REGISTERED	SURVE	GOMMONTTE	A .M		
it(s): 3						
DP609064	HISTORICAL	SURVEY	SUBDIVISION			
P1011951	The rondone.	conney	eccerticity.			
ot(s): 53, 54						
DP819382	HISTORICAL	SURVEY	SUBDIVISION			
P1035627	and the second second		a subsection of the section of			
ot(s): 55, 56						
DP819382	HISTORICAL	SURVEY	SUBDIVISION			
@ DP1011951	HISTORICAL	SURVEY	SUBDIVISION			
I DP1029982	HISTORICAL	SURVEY	SUBDIVISION			
P1095319						
ot(s): 1						
넬 DP865939	HISTORICAL	SURVEY	SUBDIVISION			
@ DP1129710	REGISTERED	SURVEY	EASEMENT			
DP1134465	REGISTERED	SURVEY	EASEMENT			
P1119462						
ot(s): 4						
I DP1129710	REGISTERED	SURVEY	EASEMENT			
I DP1134465	REGISTERED	SURVEY	EASEMENT			
2 DP1186143	REGISTERED	COMPILATION	CONSOLIDATIO	N		
ot(s): 4, 5						
@ DP865939	HISTORICAL	SURVEY	SUBDIVISION			
P1095319	HISTORICAL	COMPILATION	RESUMPTION C	RACQUISITION		
ot(s): 5						
🖳 DP47389	HISTORICAL	SURVEY	ROADS ACT, 19	93		
P1145235						
ot(s): 1, 2						
@ DP819382	HISTORICAL	SURVEY	SUBDIVISION			
迴 DP1011951	HISTORICAL	SURVEY	SUBDIVISION			
P1029982	HISTORICAL	SURVEY	SUBDIVISION			
P1243426						
ot(s): 1						
NSW GAZ	08-06-2	018	Folio 3675			
	426 SEE AN458953					
oad	A20 SEE 101400000					
olygon Id(s): 166724991	3					
NSW GAZ	21-10-2	011	Folio : 6167			
	UBLIC ROAD	271	1000.0101			
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NSW REGISTRY	Locality : PORT MACQUARIE	Parish : MACQUARIE
SERVICES	LGA: PORT MACQUARIE-HASTINGS	County : MACQUARIE
Plan	Surv/Comp	Purpose
DP271189	SURVEY	COMMUNITY PLAN
DP571740	COMPILATION	DEPARTMENTAL
DP599240	SURVEY	SUBDIVISION
DP622546	SURVEY	SUBDIVISION
DP720829	COMPILATION	CROWN FOLIO CREATION
DP734497	SURVEY	SUBDIVISION
DP754434	COMPILATION	CROWN ADMIN NO
DP819382	SURVEY	SUBDIVISION
DP825844	SURVEY	SUBDIVISION
DP828014	SURVEY	RESUMPTION OR ACQUISITION
DP841449	SURVEY	SUBDIVISION
DP846238	SURVEY	SUBDIVISION
)P855949	SURVEY	SUBDIVISION
)P883636	SURVEY	SUBDIVISION
DP1010506	COMPILATION	SUBDIVISION
DP1011951	SURVEY	SUBDIVISION
DP1035627	SURVEY	SUBDIVISION
DP1095319	COMPILATION	RESUMPTION OR ACQUISITION
DP1119462	SURVEY	RESUMPTION OR ACQUISITION
DP1145235	SURVEY	SUBDIVISION
DP1243426	SURVEY	ROADS ACT, 1993
SP60232 SP85516	COMPILATION	STRATA PLAN STRATA PLAN

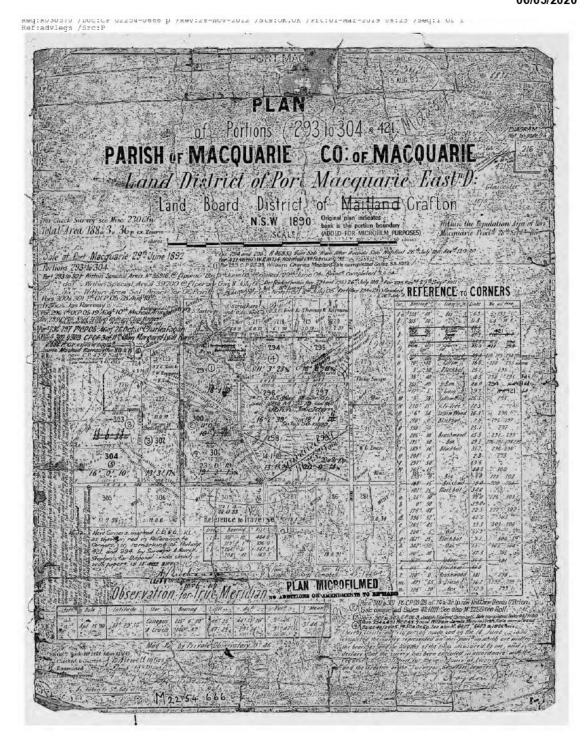
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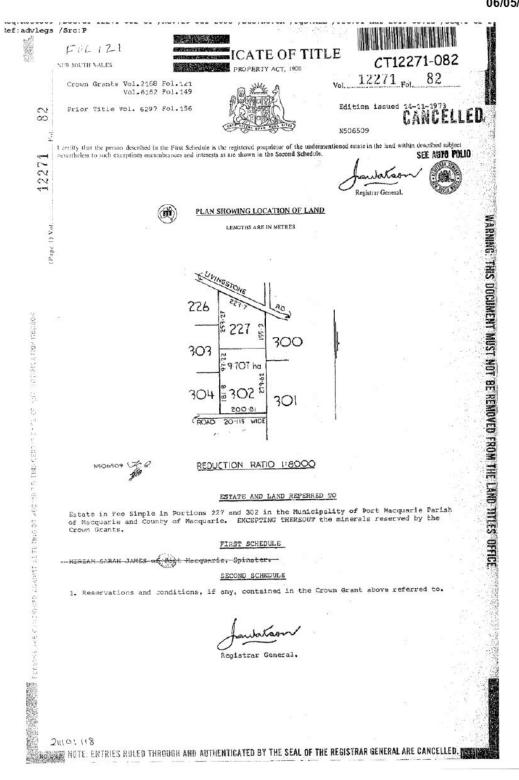
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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

ATTACHMENT



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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

tef:advlegs /Src:P: 40074 00 12271 Fol. 82 Vol. 「「「「「 (Page 2 of 2 pages) The 1000 NATURE Council ŝ the Municipality of Port Macquarie. NOTE. ENTRIES BULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED DATE REGISTERED PROPRIETOR PARTICULARS CANCELLED SEE ATTR POLIO SECOND SCHEDULE (continued) FIRST SCHEDULE (continued) ENTERED Transfer Regi Signature of legistrar Conerd NUMBER OF STREET 1479989 11-9-1973 CANCELLATION 19-12-1973 ENTERED A. Statute Registrar General L'entre-A The South

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ATTACHMENT





NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: AUTO CONSOL 12271-82

SEARCH DATE	TIME	EDITION NO	DATE
1/3/2019	8:22 AM	-	-

VOL 12271 FOL 82 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LAND DESCRIBED IN SCHEDULE OF PARCELS LOCAL GOVERNMENT AREA FORT MACQUARIE-HASTINGS PARISH OF MACQUARIE COUNTY OF MACQUARIE TITLE DIAGRAM SEE SCHEDULE OF PARCELS

FIRST SCHEDULE

THE COUNCIL OF THE MUNICIPALITY OF PORT MACQUARIE (T N479989)

SECOND SCHEDULE (1 NOTIFICATION)

LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)

NOTATIONS

UNREGISTERED DEALINGS: NIL

SCHEDULE OF PARCELS LOT 227 IN DP754434 LOT 302 IN DP754434

*** END OF SEARCH ***

TITLE DIAGRAM CROWN PLAN 1852,666 CROWN PLAN 2254,666,

advlegs

FRINTED ON 1/3/2019

Obtained from NSW LRS on 01 March 2019 07:22 AM AEST

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register.
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Appendix **B**

Results of Field Investigations

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	1	REGION GEOTE SOLUT	CHNI	CAL C P S	ROJEC	T NA	IEERING LOG - TEST PIT Port Macquarie Hastings Council T NAME: Proposed Residential Subdivision CATION: Emily Avenue, Port Macquarie XCATION: Refer to figure 1					PIT 2 NO: SED 1	1 pt 1 RGS20789 1
2000		ENT TYPE		Mini E 2.0 m		X IDTH:	EASTING: 0.4 m NORTHING:	490745		DATU		RL:	AHD
	-	ing and Sar					Material description and profile information				-	d Tost	1
METHOD	WATER	SAMPLES	RL (m)	DEPTH (73)	GRAPHIC LOG	CLASSIFICATION SVMBOL	MÁTERIAL DESCRIPTION: Soil type, plasticity pharacianistics, colour, minor components	/perticle i	MOISTURE	VTINSISTEMCY	Test Type	Resut	Structure and additiona observations
BUCKET	Not Encountered	E 0.20m				CH	FILL: Sandy CLAY, low to medium plasticity Sand fine to coarse grained, some grass too Smm, traces of concrete, traces of Gravel, fi coarse, subangular0	its up to	$M \in W_{\rm r}$	FD			FILL/TOPSOIL
300mm TOOTHED	NotEl	0.35m E 0.45m /		0.5		СH	TAR FILL: Sandy CLAY, medium plasticity, brow traces of plinkyelow, Sand fine to medium g traces of Gravel, fine to coarse, subangular	n, rained,	M < W_				TAR FILL
3003				1.0		CH	37001 Sandy CLAY: Maclum to high plasticity; ora Sand fine to medium grained, some Otavet, t subrounded	ingA/red, fine,					RESIDUAL SOIL
-	-		-	20	9713	-	z.com Hole Terminated at 2.00 m	_		-		-	
				3.0									
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-	- D	radational dr Insitional stra sfiniliys or dis rata change	ta	PID DCP(x-y) HP	Photo Dynan	nic pene	n betector reading (ppm) trometer (est (jest depth interval shown) motar toat (UCS kPa)				3068	Dens	Density Index 15 - 35%

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

		REGIO GEOTE SOLUT	CHNIC	AL C P S	ENGINEERING LOG - TEST PIT CLIENT; Port Macquarie Hastings Council PROJECT NAME: Proposed Residential Subdivision SITE LOCATION: Emily Avenue, Port Macquarie TEST LOCATION: Refer to figure 1							PIT E NO: GED E	1 of 1 RGS20789 1
2000		ENT TYP		Mini E 2.0 m		x IDTH:	EASTING: 0.4 m NORTHING:	490723 6519620		DATU		RL:	AHD
	DTB	ling and San	noling		1		Material description and profile information		_		Fiel	d Tost	1.1.
METHOD	WATER	SAMPLES	RL (m)	DEPTH (711)	GRAPHIC LOG	CLASSIFICATION SVMBOL	MATERIAL-DESCRIPTION: Soil type, plasticit characteristics, colour, minor component	y/particle Is	MOISTURE	CONSISTENCY	Test Type	Result	Structure and additiona observectors
BUCKET	Encountered	E 0.20m				СН	FILL: Sondy CLAY, medium plasticity, bro- fine to coarse grained, traces of grass rocks from, traces of Gravel, fine to coarse, suba	supto	$\mathbf{h}^j \in \mathbf{w}_{\mathbf{r}}$	Fb			FILL/TOPSOIL
300mm FOOTHED BUCKET	Not Eno			0.5		СН	FILL: Sandy CLAY, medium plasticity, brow Sand fine to coarse grained, traces of Grav medium, subangular	an/grey. el fine ta		Fb / VSt	HP	350	FILL
300 prot				10 10		СН	Bon Sandy CLAY: Medium to high plasticity, or Sand fine to coarse grained, traces of Grav autrounded	angalred, el, fhé,		Fb / H	֮	600	RESIDUAL SOIL
-	_		-	2.0	<u>ann</u>		zoom Hole Terminated at 2.00 m			-	-	-	
				2.5 3.0 3.5									
Wate	Wal (Dal Wal I Wal <u>ta Cha</u> G	radational or	nown) /	Notes, Ser UL BBR E 4SS B Field Test	50mm Bulk s Enviro Acid S Bulk S	Diarmel ample fi nimenta Suffate S Sample	ér tubé sample or CBR Bashing sample oi Sample oi Sample n Bélestor reading (ppm)	S S F S VS H H	ery Soft off off off ery Stiff and fable V	V	25 50 20 20 20 20 20	CS (MP) 25 5 - 50 0 - 100 00 - 200 100 - 200 100	D Dry W Motst W Wet W Plastic Limit W Liquid Limit Density Index <15%
_	- D	instional stra sfnillys or dia rata change		(PID DCP(x-y) HP	Dynar	nic pene	n celector reading (ppm) trometer (est (lest depth inte val shown) meter test (UCS kPa)			D N	oose Iedium ense ery De	n Dens ense	Density Index 15 - 35% e Density Index 35 - 65% Density Index 65 - 65% Density Index 85 - 100%

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	1	REGIOI GEOTE SOLUT	CHNIC	CAL C P S	LIENT ROJE	CT NA	RING LOG - TEST PIT Port Macquarie Hastings Council ME: Proposed Residential Subdivision DN: Emily Avenue, Port Macquarie ON: Refer to figure 1			P J L	AGE	NO: GED E	1 pf 1 RGS20789 1
		ENT TYPE		Mini E 2.0 m		or IDTH:	EASTING: 0.4 m NORTHING	490701		SURF		RL:	AHD
		ing and San		1.0 11			Material description and profile information					d Tost	1012
METHOD	WATER	SAMPLES	RL (m)	CIEPTH (73)	GRAPHIC	CLASSIFICATION SVMBOL	MATERIAL DESCRIPTION: Soil type, plastic characteristics, colour, minor component	ty/particle n/s	MOISTURE CONDITION	VTISNED PONSISTEMCY	Test Type	Result	Structure and additional observations
BUCKET	Intered	E 0.20m		-		CL	TOPSOIL: Sandy GLAY, low plasticity, da Sand fine to coarse grained, some tree an roots	nk grey d grass	W = W	Fb		1-1	TOPSOIL
300mm FOOTHED BU	Not Encountere	0.2011		05		СН	2280 1005 Sandy CLAY: Medium to high plashicity, o Sand fine to coarse grained, traces of Gra subangular	irange, vel, fine,		F6/н			RESIDUAL SOIL HP = >500kPa
				1.0		СН	n com Sandy Silty CLAY: Medium plasticky, pa prange with pale brown mottling, traces of	le redýpale Rock fabric					EXTREMELY WEATHERE CHERT
				20			zoom Hole Terminated at 200 m						
				30									
Wate	Wal (Dal Wal Wal ta Cha		nown)	Notes, Ser U., CBR E ASS B	50mm Bulls Eovin Acid Bulls	n Diarne sample f	er tube sample or CBR basting xample oil Sample	S S F F St S VSt V H F	/ery Soft Soft Soft Soft And Hard Stable	ľ	25 50 20 20	CS (MP) 25 5 - 50 1 - 100 10 - 200 10 - 400 100	D Dry M Moisi W Wet W Plastic Limit
-	- D	radational dr Insitional stra sfinijilys or dis rata change	ta	Field Test PID DCP(x-y) HP	Photo Dyna	nic pene	n belector reading (ppm) stometer (est (lest depih interval sinown) mellar teat (UCS kPa)	Density			ery Lo sose edun ense ery Dr	n Dens	Density Index 15 - 35%

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

	1	REGIO GEOTE SOLUT	CHNI	CAL C P S	CLIENT: Port Macquarie Hastings Council PAG PROJECT NAME: Proposed Residential Subdivision JOB SITE LOCATION: Ennily Avenue, Port Macquarie LOG TEST LOCATION: Refer to figure 1 DAT							NO: GED E	1 of 1 RGS20789 1
		ENT TYPE		Mini E 2.0 m		or IDTH:	EASTING: 0.4 m NORTHING:	490639 6519578		DATU		RL:	AHD
	DTB	ing and San	naling		1		Material description and profile information		_	_	Fiel	d Tost	Les
METHOD	WATER	SAMPLES	RL (m)	DEPTH (73)	GRAPHIC LOG	CLASSIFICATION SVMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics, colour, minor components	/particle s	MOISTURE CONDITION	VTISNED DENSITY	Test Type	Result	Structure and additional observations
NCKET	Encountered		-			CL	TOPSOIL: Sandy GLAY, low plasticity, dark pale grey, Sand fine to medium grained, son and grass (cols		$W \in W_{\mu}$	Fb			TOPSOIL
300mm FOOTHED BUCKET	Not End	0.30m E 0.40m		05 10		СН	Crown Sandy CLAY: Medium to high plasticity, or Sand the to coarse grained, fraces of Grave subangular	angevreti, 4 fine,		FD/H			RESIDUAL SOIL HP = >600kPa
				3.5		СН	2000 Sandy Sitty CLAY: Medium plasticity, pale oranga with pale brown motting, traces of R 2000 Hole Terminated at 200 m.	rec/pale lock tabric					EXTREMELY WEATHERE CHERT HP = >600kPa
				3.5									
Wate	Wal (Dal Wal I Wal I Wal I Chu G	er Level e and time sil er riflow er Outflow motorial dr institucial dr institucial dra finiliye or da rata drange	sown) ta	Notes, Ser Us CBR E ASS B Field Test PID DCP(X+y) HP	50mm Built : Eovic Acid : Built : Built : Photo Dyna	n Diarmet sample fi nomental Surfate S Sample Nonisatio nic pene	er tube sample or CBR bashing sample of Sample of Sample of Sample of Sample of Sample of Sample of Sample of Sample samp	S S F S VSt V H H	ICX ery Soft oft imm art rable V L MIL D	N C	25 50 20 20 20 20 20 20 20 20 20 20 20 20 20	5 - 50 0 - 100 00 - 200 00 - 400 100	D Dry M Morst W Wet W, Plastic Lmit W, Liquid Lmit Density Index <15% Density Index 15. 35%

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

	1	REGION GEOTE SOLUT	CHNI	CAL C P S	ROJEC	T NA				P J L	AGE	NO: GED E	1 pt 1 RGS20789 1
200		ENT TYPE		Mini E 2.0 m	ixcavato W	a IDTH:	EASTING: 0.4 m NORTHING:	490662				RL:	AHD
		ling and San					Material description and profile information				Fiel	d Tost	1
METHOD	WATER	SAMPLES	RL (m)	CIEPTH (711)	GRAPHIC LOG	CLASSIFICATION SVMBOL	MATERIAL DESCRIPTION: Soil type, plastici characteristics, colour, minor componen	ty/particle vis	MOISTURE CONDITION	VDMSISTEMCY	Test Type	Result	Structure and additiona observations
SOOmm FOOTHED BUCKET	Not Encountered	E 0.2011 1.00m 1.00m		2 <u>0</u> 1 <u>0</u> 2 <u>5</u> 3 <u>0</u>		CH CH	FILL: Sandy CLAY, medium plasticity, grange/brow/grey, Sand The to corrise its some Gravel The to Corrise, Subanguiér, to Cobbies up to 200mm FILL: Sandy CLAY, medium plasticity, two traces of white/or appelliow motifing. San coarse graned, traces of Gravel, the to co subangular, traces of Cobbies up to 200m Sand from the competition of the same set of the same subangular, traces of Cobbies up to 200m Sand from the competition of the same set of the subangular.	ace of Mn, zi the to acse, m	(y) < a'	F0/H			FILE RESIDUAL SOIL: HP = +800kPa
Wate	Wal (Dal Wat	ter Level te and time st ter triflow ter Ottflow	10MP)	Notes Sa UL EBR E ASS B	50mm Bulk s Enviro Acid S	Diamet ample fi nmenta	Hole Terminated at 3.50 m ei tubesample or OBR testing sample oi Sample	S S F S VSt V	hex /ery Soft /ery Soft /ery Stiff /ery Stiff		25 50 10 20	CS (MPa 25 5 - 50 0 - 100 50 - 200 30 - 400 400	D Dry M Morsi W Wet W, Plastic Limit
	G G		ta	Field Test PID DCP(x-y) HP	a Photo Dynar	ionisatio nic pene	n betestor reading (ppm) tromster test (test depth interval shown) metartaat (UCS kPa)		V L ME D		ery Lo pose Iedium ense ery De	n Densa	Density Index <15% Density Index 15 - 35% Density Index 35 - 65% Density Index 65 - 65% Density Index 65 - 100%

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

-	REGIO GEOTE SOLUT	CHNIC	CAL C P S	ROJEC	T NA	RING LOG - TEST PIT Port Macquarie Hastings Council ME: Proposed Residential Subdivision DN: Emily Avenue, Port Macquarie ON: Refer to figure 1			P J L	AGE	NO: SED B	1 of 1 RGS20789 1
	MENT TYP		Mini E 2.0 m	icavato w	x IDTH:	EASTING: 0.4 m NORTHING:	490702		DATU		RL:	AHD
	nilling and Sar		4.0 (1)			Material description and profile information	00 10 02 1				d Tost	1.10
WATER	SAMPLES	RL (m)	CIEPTH (711)	GRAPHIC LOG	CLASSIFICATION SVMBOL	MATERIAL DESCRIPTION: Soil type, plasticity pharacteristics, colour, minor component	/particle s	MOISTURE CONDITION	VTISMED VTISMED	Test Type	Resut	Structure and additiona observations
300mm FOOTHED BUCKET	0.20m 1.50m teory		1.0		CL CH	FIL1: Sandy CLAY, brownidalk brown. San medium to coarse grained, traces of grass r 2000 Smith FIL1: Sandy CLAY, meetium plasticity, brow traces of white/sellow/paie brown motiling. S to coarse grained, invest of Gravel, first to c subargular, bricks, plastic, straw.	oots up to vri, Sand fine	(A) = W,	Fb			FILUTOPSOIL
(L W	Vater Level Date and time s Vater Infibw Vater Outflow	nown)	2.5 3.0 3.5 3.5 4 SCBR B B Elaki Tasa B B	Somm Built s Built s Built s Built s Built s Built s Built s	Diamel ample fo nmentai luffate S ample	el tubé sample sí GBR bašng sample ol Samolo n petedor reading (ppn)	5 F झ झ म 9 F झ झ म	iety ery Soft aff and and Nable V L	v	25 50 10 20	5 - 50 0 - 100 00 - 200 00 - 400 100	D Dry M Moist W Wet W Plastic Limit

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

	1	REGION GEOTE SOLUT	CHNIC	AL C F	ROJEC	T NAJ				P. Ji	AGE	NO: SED B	1 of 1 RGS20789 1
		ENT TYPE		Mini E 2.0 m	xcavato W	TH:	EASTING: 0.4 m NORTHING:	490666				RL:	AHD
-		ing and San	1.0				Material description and profile information					d Tost	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (711)	GRAPHIC LOG	CLASSIFICATION SVMBOL	MATERIAL DESCRIPTION: Soil type, plasticit characteristics, colour, minor componen	ty/particle (s	MOISTURE CONDITION	CONSISTENCY	Test Type	Resut	Structure and additional observations
KET	ered				****	CL	FILL: Sandy CLAY, pale brown Sand fine medium grained, some grass roots up to 5i	to	w.	Fb			FILL/TOPSOIL
300mm FOOTHED BUCKET	Mat Encountered			0.5 1.0 1.5		СН	2000 FILL: Sandy CLAY, orarge/tert, traces of white-yel/ow motting, sand fine to coarse, Grayel, fine to coarse, subangular	traces of	2	Pb/H			fiL.
Wate	Wa	er Level		3.0 3.0 3.5 4 10 5.8 7 5.8 7 5.8 7 5.8 7 5.8 7 5.8 7 5.8 7 5.8 7 5.8 7 5.8 7 5.9 7 7 5.9 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	noics an Somm But s	Diamet ample fo	el tobe sample y CBR Basing sample	5 5 F F	nex (ey Soft		×2 25 50	25 (MPa 55 5-50 - 100 0 - 200	D Dry M Moisi W Wet
	taCha G	er Inflow er Outflow Inges Indiational of Instronal stra sfinilitye or dis	ta	ASS B Field Test PID CCP(x-y) HP	Acid S Bulk S 2 Photol Dynam	iufate S iample ionisatio nicipetie	ol Samole n tetestor reading (ppm) bometer lest (lest depth interval sinown) relartast (UCS kPa)	VSt V H H	Very Stiff Hard Hable V L ME D	Vi Lis M	20 Sery Lo	06 - 400 100	W. Liquid Limit Density Index <15% Density Index 15 - 35%

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

	1	REGIO GEOTE SOLUT	CHNIC	AL C P S	ENGINEERING LOG - TEST PIT CLIENT: Port Macquarie Hestings Council PROJECT NAME: Proposed Residential Subdivision SITE LOCATION: Emily Avenue, Port Macquarie TEST LOCATION: Refer to figure 1 Excavator EASTING: 490702 m SU						ENT: Port Macquarie Hastings Council PAGE DJECT NAME: Proposed Residential Subdivision JOB N E LOCATION: Emily Avenue, Port Macquarie LOGO ST LOCATION: Refer to figure 1 DATE						NT: Port Macquarie Hastings Council PAGE: JECT NAME: Proposed Residential Subdivision JOB NO: LOCATION: Emily Avenue, Port Macquarie LOGGED FLOCATION: Refer to figure 1 DATE:					ENT: Port Macquarie Hastings Council PAGE: 1 proposed NECT NAME: Proposed Residential Subdivision JOB NO: RGS E LOCATION: Emily Avenue, Port Macquarie LOGGED BY: GC TLOCATION: Refer to figure 1 DATE:			
1997		ENT TYPE		Mini E 2.0 m		x IDTH:	EASTING: 0.4 m NORTHING:		100	DATU	22.2	RL:	AHD												
	DTB	ing and San	ndling		1		Material description and profile information		_		Fiel	d Tost													
METHOD	WATER	SAMPLES	RL (m)	CIEPTH (711)	GRAPHIC LOG	CLASSIFICATION SVMBOL	MATERIAL DESCRIPTION: Soli type, plasticity pharacteristics, colour, minor components	particle	MOISTURE	VINSISTEMCY	Test Type	Resut	Structure and additiona observations												
KET	tered					CL	FILL: Sandy CLAY, low plasticity, dark brown fine to medium, some grass roots up to 5mm	n, Sand	< Wr	FD			FILL/TOPSOIL												
300mm TOOTHED BUCKET	Not Encountered			۵.5		СН	2000 FILL: Sandy CLAY, medium plasticity, orange/trown, traces of grey motifing, traces Greyel, fine to coarse, subangular	10	Ŵ	Pb/H			FILL HP = >F00kPa												
				1.0		СН	Som Sandy CLAY: Medium plasticity, crange/red medium to coarse grained, traces of Gravel In subangular	, Sand Ine,					RESIDUAL SOIL												
-	-				12892		120m Hole Terminated at 1.20 m		1																
				20 25 30																					
Wat	Wal (Dal Wal I Wal I Wal I Wal I Wal I Wal	er Level e and time si er inflow er Outflow motes radational dr instituenal stra finiliye or da rata change	sown) t	Notes, Ser UL SBR E ASS B Field Tests PID SCP(x-y) HP	50mm Built s Eowra Acid S Built S Built S Built S Built S	Diame ample f nimenta Suffate S Sample Ionisatio	er tube sample or CBR bashing xample oil Samole n setector reading (ppm) toorster (cst (cst depth interval stravm) meartrast (USS kPa)	S F S F S V H H	ICX ery Soft off imn ant ery Stiff and U L ME D	Vi Lis M	25 50 20 20 20 20 20 20 20 20 20 20 20 20 20	5 - 50 0 - 100 00 - 200 00 - 400 100	D Dry M Motsi W Wet W _p Plastic Limit W ₁ Liquid Limit Density Index <15% Density Index 15. 35%												

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	1	REGIOI GEOTE SOLUT	CHNI	CAL C P S		T NA				P J L	AGE	NO: GED E	1 of 1 RGS20789 1
		ENT TYPE		Mini E 2.0 m		x IDTH:	EASTING: 490 0.4 m NORTHING: 6519	707 n 598 n		DATU		RL:	AHD
_	DTE	ing and San	noling	-	-	2	Material description and profile information	Т			F(0)	d Tost	
METHOD	WATER	SAMPLES	RL (m)	CIEPTH (711)	GRAPHIC	CLASSIFICATION SVMBOL	MATERIAL DESCRIPTION: Soil type, plasticity partici characteristics, colour, minor components	e	MOISTURE CONDITION	VTISNED DENSIGTENCY	Test Type	Result	Structure and additiona observations
300mm TOOTHED BUCKET	Not Encountered					GL CH	TOPSOIL: Sandy GLAY, low plasticity, Sand fine li coarse grained; some grass rocks up to 5mm Sandy GLAY: Mexium Pacifichy, or ange/led, trace or Gravel fine to medium, subangular boom Hole Termina led at 0.50 m	_1	$ \dot{W} < W_{\rm p}$	Fb ()H			TOPSOIL RESIDUAL SOIL
				1.0 2.0 2.5 3.0 3.0									
Wate	Wat (Dat Wat Wat	er Level e and time si er http:// er Outifow mores radational of	sown)	Notes, Ser UL CBR E ASS B Eield Test	50inm Bulk s Enviro Acid S Bulk S	Diame ample f	Econo VS VS of CBR basing F sample St oil Sample. VSt H Fa Dans Dans Dans	5of Film Suit Ver Har File	y Soft 1 n 1 y Stiff 1	P	25 10 20	CS (MPa 25 5 - 50 0 - 100 00 - 200 00 - 400 100	D Dry M Moisi W Wet W Plastic Limit
-	- Da	radational dr institional stra sfiniliys or dis rata change	ta	PID DCP(x-y) HP	Photo Dynar	nic pene	n belestor reading (ppm) Itometer (est (lest depit interval sinown)) metarteat (UCS kPa)				9066	n Densi	Density Index 15 - 35%

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

	1	REGION GEOTE SOLUT	CHNI	JAL P	ROJEC ITE LO EST LI					J	AGE OB N OGC ATE	NO: SED E	1 pf 1 RGS20789 1 M2: GC
		ENT TYPE		Mini E 2.0 m		x IDTH:	EASTING: 0.4 m NORTHING: 6	490716 5519608		DATU		RL:	AHD
	DTB	ing and San	ndling				Material description and profile information				Field	d Tost	
METHOD	WATER	SAMPLES	RL (m)	CIEPTH (711)	GRAPHIC LOG	CLASSIFICATION SVMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/ characteristics, colour, minor components	particle	MOISTURE	ADVETENCY DENSITY	Test Type	Result	Structure and additiona observations
JCKET	Encountered			-		CL	FILL: Sandy CLAY, low plasticity, dark brown medium to coarse grained trace of grass root occm Smith	n, Sand Is up to	$\mathbf{W} \in \mathbf{W}_{\mathbf{r}}$	Fb			FILL/TOPSOIL
HED BL						CH	FILL: Sandy CLAY, medium plasticity, prown traces of arey/white motiling	K					FILL
SOOMIN TOOTHED BUCKET	Net		_	0.5		СH	o.dos sandy CLAY: Medium plasticity, pranga/red, sine to medium grained, traces of Gravel fine, subangular	Sand	-		_	-	RESIDUAL SOIL
30				1.0 1.5 2.0 3.0 3.0									
Wat	Wal (Dal Wal I Wal taCha G	er Level e and time si er inflow er Outflow inges instional dra chnikke or dia	ta	Notes, Ser Ug CBR E ASS B Field Tests PID DCPIx-yi	50imm Bulk s Enviro Acid S Bulk S Bulk S	Diame ample f nimenta iulfate S ample ionisatio	lei tube sample or GBR testing i sample foil Sample n petestor reading (ppm) storneter (est (est depti interval stravm)	S SX F Fil St SX VSt VX H Hi	ery Soft xrt m	L	25 50 20 20 20 20 20 20 20 20 20 20 20 20 20	5 - 50 0 - 100 00 - 200 00 - 400 100	D Dry M Motsti W Wet W, Plastic Lmit W, Liquid Lmit Density Index <15% Density Index 15. 35%

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Appendix C

Laboratory Test Result Sheets

Regional Geotechnical Solutions RGS20789.1-AB 16 April 2019

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> > Item 13.08 Attachment 2

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Certificate of Analysis

\$3	eurofins	

mgt

Regional Geotechnical Solutions 44 Bent Street Wingham NSW 2429



NATA Accredited Accreditation Number 1261 Site Number 18217

Accretited for compliance with ISO/IEC 17025 - Testing The results of the tests, calibrations and/or measurements included in Fils document are traceable in Exercision accounts in

Attention:

Report Project name Project ID Received Date 645047-S PROPOSED RESIDENTIAL SUBDIVISION RGS20789.1 Mar 13, 2019

Tim Morris

Client Sample ID Sample Matrix			TP1_0-0.2 Soll	TP1_0.35-0.45	TP2_0-0.2 Soll	TP3_0-0.2 Soll
Eurofins mgt Sample No.		1.1	N19-Ma15100	N19-Ma15101	N19-Ma15102	N19-Ma15103
Date Sampled		-	Mar 12, 2019	Mar 12, 2019	Mar 12, 2019	Mar 12, 2019
Test/Reference	LOR	Unit	11111 12, 2010	1.01 12, 2010	Mar 12, 2010	
Total Recoverable Hydrocarbons - 1999 NEPM		1 One				1
TRH C6-C9	20	I man floor	1	< 20	-	-
TRH C10-C14	20	mg/kg mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	200		-
TRH C13-C28 TRH C29-C36	50	mg/kg		140	-	-
TRH C10-36 (Total)	50	mg/kg	-	340		1
BTEX	1 30	1 mg/kg		-340	-	
Brex	0,1	mg/kg		< 0.1		1
Toluene	0.1	mg/kg		< 0.1	-	-
Ethylbenzene	0,1	mg/kg mg/kg		< 0.1	-	
m&p-Xylenes	0.2	mg/kg		< 0.2		-
o-Xylene	0.1	mg/kg		< 0.2	-	1
Xvlenes - Total	0.3	mg/kg		< 0.3	-	
4-Bromofluorobenzene (surr.)	1	- Mg/Kg		92		
Total Recoverable Hydrocarbons - 2013 NEPM	the second se	70		92		-
Naphthalene ^{NC2}	0.5	mg/kg	-	< 0.5		
TRH >C10-C16 less Naphthalene (F2) ^{Not}	50	mg/kg mg/kg		< 50		-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1) ^{N34}	20	mg/kg	-	< 20		-
Polycyclic Aromatic Hydrocarbons	1 20	I mg/kg	-	\$20	-	-
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg		5.7	-	1
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg		6.0	-	1
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	6.0	-	1
Acenaphthene	0.5	mg/kg	-	3.4	-	
Acenaphthylene	0.5	mg/kg	-	0.5	-	-
Anthracene	0.5	mg/kg	-	1.6	-	1
Benz(a)anthracene	0.5	mg/kg	-	32		
Benzo(a)pyrene	0.5	mg/kg		42	-	
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg		5.4		-
Benzo(g h.i)perylene	0.5	mg/kg	-	5.0	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	1.5		
Chrysene	0.5	mg/kg	-	3.2	1	1
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	1
Fluoranthene	0.5	mg/kg		9.7		
Fluorene	0.5	mg/kg	-	1.7	-	1
Indeno(1.2.3-cd)pyrene	0.5	mg/kg		4.5		

Date Reported: Mar 20, 2015.

Eurofine | mg Urill F3, Bulloing F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABN -50 005 085 521 Telephone: +612 5900 8400 Page 1 of 22 Report Number: 645047-5

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> > Item 13.08 Attachment 2

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mgt

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP 1_0-0.2 Soil N19-Ma15100 Mar 12, 2019	TP1_0.35-0.45 Soil N19-Ma15101 Mar 12, 2019	TP2_0-0.2 Soil N19-Ma15102 Mar 12, 2019	TP3_0-0.2 Soil N19-Ma15103 Mar 12, 2019
Polycyclic Aromatic Hydrocarbons	Lon	Gitte		-		
Naphthalene	0.5	ma/ka		< 0.5		1
Phenanthrene	0.5	mg/kg		5.4		
Pyrene	0.5	mg/kg	-	9.0	-	-
Total PAH*	0.5	mg/kg		58.4		
2-Fluorobiphenyi (sur.)	1	Mg/ng	-	94	-	
p-Terphenyl-d14 (surr.)	1	%	-	88	-	
Organochlorine Pesticides		18		00	-	
Chlordanes - Total	0.1	mg/kg		< 0.1	-	+
						-
4.4'-DDD 4.4'-DDE	0.05	mg/kg		< 0.05		-
		mg/kg	-		-	
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	~
a BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg		< 0.05		
d-BHC	0.05	mg/kg		< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg		< 0.05	-	-
Endosultan II	0.05	mg/kg	- ÷	< 0.05		-
Endosulfan sulphate	0.05	mg/kg		< 0.05	~	
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg		< 0.05		
Endlin Kelone	0.05	mg/kg	-	< 0.05	-	· · · ·
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05		-
Heptachlor	0.05	mg/kg	-	< 0.05		
Heptachlor epoxide	0.05	mg/kg	~	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	~	< 0.05	-	-
Methoxychlor	0.2	mg/kg	-	₹0.2	-	-
Toxaphene	1	mg/kg	-	<1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	1
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	200	1 T-
Vic EPA IWRG 621 OCP (Total)"	0.1	mg/kg	-	< 0.2	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.2	-	-
Dibutyichlorendate (surr.)	1	%	1 () () () () () () () () () (102	1	1
Tetrachioro-m-xylene (surr.)	4	1/6	-	99		
Organophosphorus Pesticides						-
Azinphos-methyl	0.2	mg/kg	-	< 0.2		-
Bolstar	0.2	mg/kg	-	< 0.2		1.
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	1
Chlorpyrifos	0.2	mg/kg		< 0.2	-	
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	1 ~ e	1
Coumaphos	2	mg/kg	-	< 2	-	-
Demeton-S	0.2	mg/kg	-	< 0.2		
Demeton-O	0.2	mg/kg	~	< 0.2		1
Diazinon	0.2	mg/kg	-	< 0.2		
Dichlorvos	0.2	mg/kg	-	< 0.2	-	1
Dimethoate	0.2	mg/kg	-	< 0.2	-	1
Disulfoton	0.2	mg/kg	-	< 0.2	-	1
EPN	0.2	mg/kg	-	< 0.2	-	
Ethion	0.2	mg/kg		< 0.2	-	1

Date Reported War 20, 2015

Eurofine | mgf Urill F3. Euroling F, 16 Mars Road, Lane Cove West, NSW, Australia, 2086 ABH: 50 005 085 521 Telephone: +6:12 5990 8400 Page 2 of 22 Report Number: 645047-5

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eurofins	
	mgt

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled			TP1_0-0.2 Soil N19-Ma15100 Mar 12, 2019	TP1_0.35-0.45 Soil N19-Ma15101 Mar 12, 2019	TP2_0-0.2 Soil N19-Ma15102 Mat 12, 2019	TP3_0-0.2 Soil N19-Ma15103 Mar 12, 2019
Test/Reference	LOR	Unit	and the second second			
Organophosphorus Pesticides		-				1
Ethoprop	0.2	mg/kg	1.02.00	< 0.2	1- 20	1. 22
Ethyl parathion	0.2	mg/kg		< 0.2		
Fenitrothion	0.2	mg/kg	-	< 0.2	-	-
Fensultothion	0.2	mg/kg		< 0.2		
Fenthion	0.2	mg/kg	-	< 0.2		-
Malathion	02	mg/kg	-	< 0.2	-	-
Merphos	0.2	ma/ka		< 2	-	1
Methyl parathion	0.2	mg/kg		< 0.2		
Mevinphos	02	mg/kg		< 0.2	2 1	
Monocrotophos	2	mg/kg		\$2	-	1
Naled	0.2	ma/ka	-	< 0.2		-
Omethoate	2	mg/kg		< 2	-	-
Phorate	0.2	mg/kg	~	< 0.2		-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	1	-
Pyrazophos	0.2	mg/kg	2	< 0.2		11
Ronnel	0.2	mg/kg		< 0.2	-	1 -
Terbulos	0.2	mg/kg		< 0.2		1
Tetrachlorvinphos	0.2	mg/kg	~	< 0.2	-	-
Tokuthion	0.2	mg/kg	-	< 0.2	-	-
Trichloronate	0.2	mg/kg		< 0.2		5
Triphenyiphosphate (surr.)	- i -	%		83		1
Total Recoverable Hydrocarbons - 2013 NE	PM Fractions		-		-	
TRH >C10-C16	.50	mg/kg		< 50		-
TRH >C16-C34	100	ma/ka	~	290		-
TRH >C34-C40	100	mg/kg	-	110		
TRH >C10-C40 (total)*	100	mg/kg	~	400	-	-
Heavy Metals		1				
Arsenic	2	mg/kg	70	28	14	13
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	210	220	240	69
Copper	.5	mg/kg	190	160	36	21
Lead	5	mg/kg	440	310	19	20
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	27	30	28	8.7
Zinc	5	mg/kg	2700	2300	53	57
% Moisture	1 - 1	98	22	15	19	14

Dale Reponed, Mar 20, 2015

Eurofine | mg/Lirli F3, Eulioling F, 36 Vars Road, Late Cove West, NSW, Australia, 2066 ABN - 50 005 085 521 Telephone: ~61 2 3900 8400

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mgt

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Client Sample ID			TP 3A_0-0.2	TP4_0.3-0.4	TP5_0-0.2	TP5_1-1.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			N19-Ma15104	N19-Ma15105	N19-Ma15106	N19-Ma15107
Date Sampled			Mar 12, 2019	Mar 12, 2019	Mar 12, 2019	Mar 12, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM		1	1			1
TRH C6-C9	20	mg/kg	1927	- 22	< 20	
TRH C10-C14	20	mg/kg	1	1	< 20	1
TRH C15-C28	50	mg/kg			< 50	1
TRH C29-C36	50	mg/kg			< 50	
TRH C10-36 (Total)	50	mg/kg	-		< 50	-
BTEX	10.00	1	-	1		1
Benzene	0.1	mg/kg	-	-	<01	1
Toluene	0.1	mg/kg			<0.1	
Ethylbenzene	0.1	mg/kg	-	-	<0.1	
m&p-Xylenes	0.2	mg/kg			< 0.2	-
o-Xylene	0.1	mg/kg	-		<0.1	-
Xylenes - Total	0.3	mg/kg			< 0.3	
4-Bromofluorobenzene (surr.)	0.5	111g/kg %	-	-	54	-
Total Recoverable Hydrocarbons - 2013 NEPM		1 /4		-		1
Naphthalene ^{NI2}	0.5	mg/kg			< 0.5	+
TRH >C10-C16 less Naphthalene (F2) ^{k01}	50	mg/kg		-	< 50	1
TRH C6-C10		-				1
TRH C6-C10 less BTEX (F1) ^{NDR}	20	mg/kg mg/kg			< 20 < 20	-
	1 20	mg/kg	-	-	< 20	-
Polycyclic Aromatic Hydrocarbons	- 1	In organization				1
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg		×	< 0.5	
Benzo(a)pyrene TEQ (medium bound)+	0.5	mg/kg			0.6	
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg		-	1.2	
Acenaphthene	0.5	mg/kg			< 0.5	
Acenaphthylene	0.5	mg/kg	+		< 0.5	
Anthracene	0.5	mg/kg	-		< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-		< 0.5	-
Benzo(a)pyrene	0.5	mg/kg			< 0.5	-
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg		-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	1 E	~	< 0.5	
Benzo(k)fluoranthene	0.5	mg/kg	-		< 0.5	-
Chrysene	0.5	mg/kg	-		< 0.5	-
Dibenz(a.n)anthracene	0.5	mg/kg	÷		< 0.5	-
Fluorantherie	0.5	mg/kg		-	< 0.5	-
Fluorene	0.5	mg/kg	-	~	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg		× 1	< 0.5	-
Naphinalene	0.5	mg/kg			< 0.5	-
Phenanthrene	0.5	mg/kg		-	< 0.5	-
Pyrene	0.5	mg/kg	~		< 0.5	-
Total PAH*	0.5	mg/kg			< 0.5	-
2-Fluorobiphenyi (sun)	1	%	-	-	87	
p-Terphenyl-d14 (surr.)	1 1	%	-	1	86	-
Organochlorine Pesticides	1	T	-	-	-	1
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg			< 0.05	-
4.4'-DDE	0.05	mg/kg		-	< 0.05	-
d d'-DDT	0.05	mg/kg	-	1 × 1	< 0.05	-
a-BHC	0.05	mg/kg	-		< 0.05	
Aldrin	0.05	mg/kg mg/kg	-	-	< 0.05	1

Date Reponed: War 20, 2015

Eurofne (mgr Unit F3, Euroing F, 16 Mars Road, Lane Gove West, NSW. Australia, 2088 ABN - 20 005 065 521 Texeptione: 3612 5500 3400

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Client Sample ID			TP 3A_0-0.2 Soil	TP4_0,3-0.4 Soil	TP5_0-0.2 Soil	TP5_1-1.2 Soll
Sample Matrix			REAL STREET	The second second	The second	Total Commence
Eurofins mgt Sample No.			N19-Ma15104	N19-Ma15105	N19-Ma15106	N19-Ma15107
Date Sampled			Mar 12, 2019	Mar 12, 2019	Mar 12, 2019	Mar 12, 2019
Test/Reference	LOR	Unit	2	10 10 1 1 I		
Organochiorine Pesticides		1				
d-BHC	0.05	ma/ka	100	1	< 0.05	1
Dieldrin	0.05	mg/kg			< 0.05	-
Endosulfan I	0.05	mg/kg		-	< 0.05	-
Endosultan Ji	0.05	mg/kg			< 0.05	-
Endosulfan sulphate	0.05	mg/kg		14-1	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	
Endrin aldehyde	0.05	ma/ka			< 0.05	1
Endrin ketone	0.05	mg/kg			< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	1	1 1 1 1 1	< 0.05	1.
Heptachlor	0.05	mg/kg		100	< 0.05	
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	
Methoxychlor	0.2	mg/kg		~	< 0.2	-
Toxaphene	1	mg/kg	1.000	1	<1	1.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg		-	< 0.05	1
DDT + DDE + DDD (Totai)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg			< 0.2	1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg		-	< 0.2	1.
DibutyIchlorendate (surr.)	1	%	-	-	87	-
Tetrachloro-m-xylene (surr.)	1	%		0.44	99	
Organophosphorus Pesticides		1 70				
Azinphos-methyl	0.2	mg/kg			< 0.2	
Bolstar	0.2	mg/kg	1	-,	< 0.2	-
Chlorfenvinghos	0.2	ma/ka			< 0.2	
Chlorpyrifos	0.2	mg/kg			< 0.2	1
Chlorpyritos-methyi	0.2	mg/kg	-	-	< 0.2	-
Coumaphos	2	mg/kg			<2	1
Demeton-S	0.2	mg/kg	-		<02	1
Demetor-O	02	mg/kg		1	<0.2	
Diazinon	0.2	mg/kg	-	-	< 0.2	1
Dichlorvos	0.2	mg/kg	-	-	< 0.2	
Dimethoate	0.2	mg/kg		-	< 0.2	1
Disultoton	0.2	mg/kg		-	< 0.2	-
EPN.	0.2	mg/kg	-		< 0.2	
Ethion	0.2	mg/kg	-	1	< 0.2	1
Ethoprop	0.2	mg/kg	-	-	< 0.2	-
Ethyl parathion	0.2	mg/kg		1.0	< 0.2	1
Entrothion	0.2	mg/kg			< 0.2	-
Fensultothion	0.2	mg/kg	-	-	< 0.2	1
Fenthion	0.2	mg/kg			< 0.2	
Malathion	0.2				< 0.2	-
	0.2	mg/kg mg/kg			< 0.2	-
Merphos Melhul porathion	0.2			-	< 0.2	-
Methyl parathion Mevinphos	0.2	mg/kg			< 0.2	
	2	mg/kg	-	-	<0.2	
Monocrotophos		mg/kg	-	-		-
Naled	0.2	mg/kg	-		< 0.2	-
Omethoate	2	mg/kg	-		<2	
Phorate Pirimiphos-methyl	0.2	mg/kg mg/kg		-	< 0.2	

Dale Reported Mar 20, 2015

Eurofne | mgf Lirlt F3. Eurolog F., 16 Viars Road, Lane Cove West, NSW, Australia, 2066 ABH: 50 005 085 521 Telephone: +612 5960 8400

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Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled		b	TP 3A_0-0.2 Soil N19-Ma15104 Mar 12, 2019	TP4_0,3-0.4 Soil N19-Ma15105 Mar 12, 2019	TP5_0-0.2. Soil N19-Ma15106 Mat 12, 2019	TP5_1-1.2 Soll N19-Ma15107 Mar 12, 2019
Test/Reference	LOR	Unit	p.,	10. 10 A A	1.00	
Organophosphorus Pesticides		-				1
Pyrazophos	0.2	mg/kg	100	1 141	< 0.2	1 2
Ronne)	0.2	mg/kg			< 0.2	-
Terbufos	0.2	mg/kg	-		< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-		< 0.2	-
Tokuthion	0.2	mg/kg		1.00	< 0.2	
Trichloronate	0.2	mg/kg		140	< 0.2	-
Triphenyiphosphate (surr.)		%	4	- 148	74	
Total Recoverable Hydrocarbons - 2013 NE	PM Fractions				1	1
TRH >C10-C16	50	mg/kg	-	-	< 50	1 -
TRH >C.16-C34	100	mg/kg		1.1	< 100	1
TRH >C34-C40	100	mg/kg	(m)	~	< 100	1
TRH >C10-C40 (total)*	100	mg/kg	~	-	< 100	1
Heavy Metals					1	1
Arsenic	2	mg/kg	15	19	17	16
Cadmium	0.4	mg/kg	< 0.4	< 0.4	~0.4	< 0.4
Chromium	5	mg/kg	71	250	330	310
Copper	5	mg/kg	20	68	57	63
Lead	5	mg/kg	22	7.5	13	21
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	× 0.1
Nickel	5	mg/kg	8.3	27	36	29
Zinc	5	mg/kg	72	14	44	55
% Moisture	1 4	%	14	20	18	20

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled		1	TP6_0-0.2 Soll N19-Ma15108 Mar 12, 2019	TP6_1.5-1.6 Soll N19-Ma15109 Mar 12, 2019
Test/Reference	LOR	Unit	States and the states	and a second
Total Recoverable Hydrocarbons - 1999 NEPM	Fractions	-		
TRH C6-C9	20	mg/kg	-	< 20
TRH C10-C14	20	mg/kg	1 23-1	< 20
TRH C15-C28	50	mg/kg	÷	< 50
TRH C29-C36	50.	mg/kg	-	< 50
TRH C10-36 (Total)	50	mg/kg	-	< 50
BTEX	Annual Contraction			
Benzene	0.1	mg/kg	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1
Ethylbenzene	0,1	mg/kg	1	< 0.1
m&p-xylenes	0.2	mg/kg	-	< 0.2
o-Xylene	0.1	mg/kg		< 0.1
Xylenes - Total	0.3	mg/kg		< 0.3
4-Bromofluorobenzene (surr.)	4	%		67
Total Recoverable Hydrocarbons - 2013 NEPM	Fractions		-	
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{NH}	50	mg/kg	-	< 50
TRH C6-C10	20	mg/kg	-	< 20
TRH C6-C10 less BTEX (F1) ^{NIX}	26	mg/kg	-	< 20

Date Reported: Mar 20, 2015

Eurofine | mg/Lirli F3, Eulioling F, 16 Mars Road, Lare Cove West, NSW, Australia, 2066 ABN - 50 005 065 521 Teleprone -1612 5900 8400 Page 6 of 22 Report Number: 845047-S

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Date	Senning	1dac 20	2015	

Eurofine mg Unit F3. 1	Bulloing F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066
ABN	50 005 085 521 Telephone: +61 2 5900 8400

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Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP6_0-0.2 Soil N19-Ma15108 Mar 12, 2019	TP6_1.5-1.6 Soil N19-Ma15109 Mar 12, 2019
Polycyclic Aromatic Hydrocarbons	1 cont	orde		
Benzo(a)pyrene TEQ (lower bound) **	0.5	ma/ka	1000	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg		0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg		1.2
Acenaphthene	0.5	mg/kg	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5
Anthracene	0.5	mg/kg		< 0.5
Benz(a)anthracene	0.5	mg/kg	+ +	< 0.5
Benzo(a)pyrene	0.5	mg/kg		< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg		< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg		< 0.5
Benzo(k)fluoranthene	0.5	mg/kg		< 0.5
Chrysene	0.5	mg/kg		< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg		< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg		< 0.5
Naphthalene	0.5	mg/kg	- + - · ·	< 0,5
Phenanthrene	0.5	mg/kg	~	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5
Total PAH*	0.5	mg/kg		< 0.5
2-Fluorobiphenyl (sur.)	1	%	-	93
p-Terphenyl-d14 (surr.)	1 1	%	2	93
Organochiorine Pesticides		-		
Chlordanes - Total	0.1	mg/kg	-	< 0.1
4.4'-DDD	0.05	mg/kg	~	< 0.05
4.4'-DDE	0.05	mg/kg	~	< 0.05
4.4-DDT	0.05	mg/kg	-	< 0.05
a-BHC	0.05	mg/kg		< 0.05
Aldrin	0.05	mg/kg	-	< 0.05
b-BHC	0.05	mg/kg		< 0.05
d-BHC	0.05	mg/kg		< 0.05
Dieldrin Endosulfan I	0.05	mg/kg mg/kg	-	< 0.05
Endosulfan li	0.05	mg/kg	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05
Endin aldehyde	0.05	mg/kg		< 0.05
Endrin ketone	0.05	mg/kg		< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05
Hexachlorobenzene	0.05	mg/Kg		< 0.05
Melhoxychlor	0.2	mg/kg	-	< 0.2
Toxaphene	- 1	mg/kg	-	<1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.2
Vic EPA IWRG 621 Other OCP (Total)	0.1	mg/kg	-	< 0.2
Dibutyichlorendate (surr.)	1	%		96
Tetrachloro-m-xylene (surr.)	+	%		103

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Client Sample ID Sample Matrix			TP6_0-0.2 Soil	TP6_1.5-1.6 Soil
			March Street and Street	
Eurofins mgt Sample No.			N19-Ma15108	N19-Ma15109
Date Sampled			Mar 12, 2019	Mar 12, 2019
Test/Reference	LOR	Unit	2	10.00
Organophosphorus Pesticides		-		
Azinphos-methyl	0.2	mg/kg	1.02.00	< 0.2
Bolstar	0.2	mg/kg		< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2
Chlorpyrites	0.2	mg/kg	-	< 0.2
Chlorpyillos-methyl	0.2	mg/kg	-	< 0.2
Coumaphos	2	mg/kg	-	<2
Demeton-S	0.2	mg/kg		< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2
Diazinon	0.2	mg/kg		< 0.2
Dichlorvos	0.2	mg/kg		< 0.2
Dimethoate	0.2	mg/kg		< 0.2
Disulfoton	0.2	mg/kg		< 0.2
EPN	0.2	mg/kg		< 0.2
Ethion	0.2	mg/kg	-	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2
Ethyl parathion	0.2	mg/kg		< 0.2
Fenitrothion	0.2	mg/kg		< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2
Fenthion	0.2	mg/kg		< 0.2
Malathion	0.2	mg/kg		< 0.2
Merphos	0.2	mg/kg	-	<2
Methyl parathion	0.2	mg/kg	1	< 0.2
Mevinphos	0.2	mg/kg		< 0.2
Monacrotophos	2	mg/kg		< 2
Naled	0.2	mg/kg	-	< 0.2
Omethoate	2	mg/kg	-	<2
Phorate	0.2	mg/kg	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2
Ronnel	0.2	mg/kg	÷	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg		< 0.2
Tokulhion	0.2	mg/kg	-	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2
Triphenylphosphate (surc)	1	%	-	79
Total Recoverable Hydrocarbons - 2013 NEP		1		1
TRH >C10-C16	50	mg/kg	-	< 50
TRH >C16-C34	100	mg/kg	-	< 100
TRH >G34-C40	100	mg/kg		< 100
TRH >C10-C40 (lotal)*	100	mg/kg	-	< 100
Heavy Metals	-	1		-
Arsenic	2	mg/kg	17	15
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	280	280
Copper	5	mg/kg	42	33
Lead	5	mg/kg	20	15
Mercurý Ničket	0.t	mg/kg	< 0.1	< 0.1
		mg/kg	27	30

Dale Reponed Mar 20, 2015

Eurofine (mgf Unit F3: Eurliding F, 16 Mars Road, Lane Cove West, NSW, Australia, 2086 ABN - 50 005 085 521 Telephone: =61 2 5500 3400

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Date Record Mar 20, 2019

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Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled			TP6_0-0.2 Soil N19-Ma15108 Mar 12, 2019	TP6_1,5-1,6 Soil N19-Ma15109 Mar 12, 2019
Test/Reference	LOR	Unit		
% Moisture	1	%	18	19

Eurofine | mgl Unif F3, Bulloing F, 16 Marz Road, Lane Cove West, NSW, Australia, 2066 ABN :50 005 085 521 Telephone: 161 2 5900 8400

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Sample History

Where samples are submitted analysed over sevenil days, the lest date of extraction and analysis is regorted. A recent seven of our LMS has resulted in the correction or clarification of some method leafing. Due to this, some of the method reference information on reports has changed, However, no substrintly-of sharps has been independently methods, and as such three is no sharps in the validity of surrent or previous results (regarding both quality and NATA acceditation). If the date and time of sampling are not previded, the Laboratory will not be responsible for compromised results should beeing be performed puts the method hading time.

Description	Testing Site	Extracted	Holding Time
Eurofins mgt Suite B10			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Mar 15, 2019	14 Day
Methad: LTM-0 RG-2010 TRH D6-C40			
BTEX	Sydney	Mar 15, 2019	14 Day
- Nethod: LTM-DRG-2150 VOCs in Solis Equid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 15, 2019	14 Day
Method: LTM-DRG-2010 TRH D6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Mar 15, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Mar 15, 2019	14 Day
- Method: LTM-ORG-2220.0CP & PGB in Soil and Water			
Organophosphorus Pesticides	Sydney	Mar 15, 2019	14 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 15, 2019	14 Day
- Methad: LTM-0 RG-2010 TRH C6-640			
Metals M8	Sydney	Mar 15, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Solis & Sedments by ICP-MS			
% Moisture	Sydney	Mar 13, 2019	14 Day
Method: LTM-GEN-7080 Moisture			

Date Reported Mar 20, 2015

Eurofine | mgl Unit F3, Bulloling F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABM : 50 003 085 521 Telephone: =61 2 5500 8400

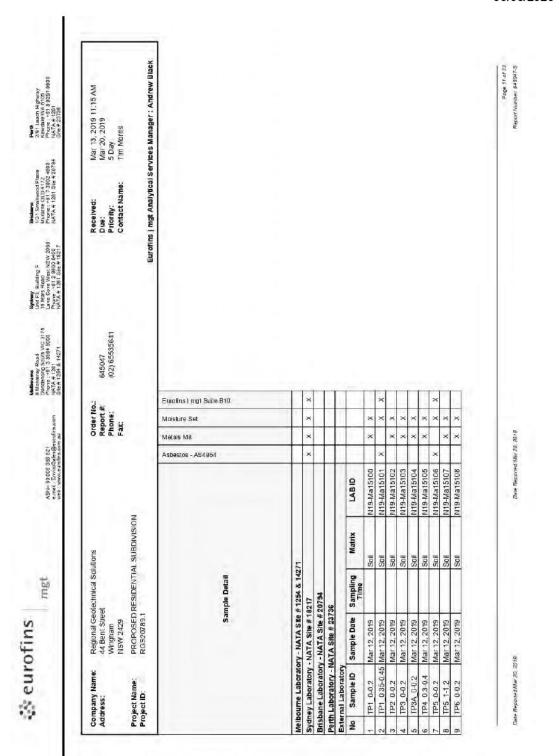
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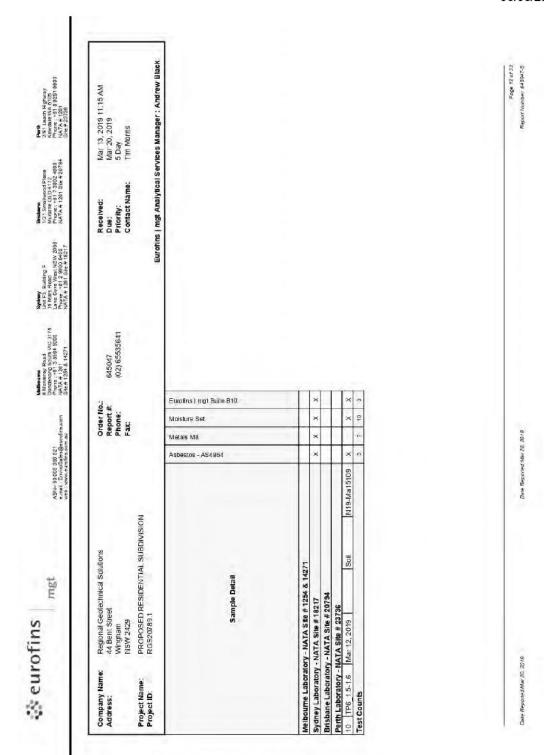
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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

	urofins	mgt	
		mgr	
Internal Quality	Control Review and G	lossary	
General			
		tes, Matrix Spikes, and Laboratory Control Samples follows guidelin ded in this QC report where applicable, Additional QC data may be	es delineated in the National Environment Protection (Assessment of Site available on request
	and the second	y basis, unless otherwise stated.	
	and the second sec	basis on the adulte portion, unless otherwise stated.	
		may be raised where sample extracts are divited due to interference sate recoveries except for PFAS compounds.	st.
		gate recoveries except for PEAs compounds. genised, unfittered samples, unless noted otherwise.	
Samples were and	alysed on an 'as received' basis.		
 This report replace 	is any interim results previously	issued.	
Holding Times			
	e Preservation and Container G	uide' for holding times (QS2001)	
		nctification of testing requirements should have been received at lea	
		required timeframe, and regardless of any other integrity issues, su	itatiy qualified results may still be reported.
		re compliance to these may be outside the laboratory's control, methyl vinvil ather the incidion time is 7 days however for all other \	DCs such as BTEX or Cb-10 TRH then the holding time is 14 days.
	s are reported as a range NOT i		see and a price of sector managements from the is 14 days.
	and the second second		
Jnits no/ko: milikorams per	kilaanaa	mo/L.: millionams per title	ud/L: microstants per itre
ng/kg. miligranis ber Ipm: Parts per milion		oob: Ferts per billion	W-Percentage
rg/100mL: Organism		NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millitin
lerms Irr	Where a protect on tracks	en determined on a solid sample the result is expressed on a dry ba	
OR	Limit of Reppring.	en deleramen una solid semple die residitis explessed une die die	33.2.
PIKE	Addition of the analyte to	the sample and reported as percentage recovery.	
IPD		ce between two Duplicate pieces of analysis	
CS .		e - reported as percent recovery.	
RM Aethod Blank		nal - reported as percent recovery.	he case of water samples these are performed on defonised water.
urr - Surrogate		residese are be formed on advisionly sended open sames and in a roound to the analyte target and reported as percentage recovery.	ne vase of water samples utese are performed on denomised, water.
Duplicate		is from the same sample and reported in the same units as the resu	It to show comparison.
USEPA	United States Environme	mail Protection Agency	
арна	American Public Health /		
ICLP COC	Teasiety Characteristic La Chain of Custody	aching Procedure	
SRA	Sample Receipt Advice		
SM	the second second second second second	se Quality Systems Manual Version 5.2 2018	
2P	Client Parent - QC was p	enformed on samples pertaining to this report	
IC P			tive of the sequence or batch that client samples were analysed within
ΈQ	Texic Equivalency Cluckie	int	
QC - Acceptanc	e Criteria		
		Oriteria is 30% however life following acceptance guidelines are equ	ally applicable:
Results < 10 times the		and a first	
	I times the LOR : RPD must lie LOR : RPD must lie between 0-		
	Recoveries must lie between 6		
FAS field samples th	at combin surregate recoveries	in excess of the QC limit designated in QSM 52 where no positive F	PFAS results have been reported have been reviewed and no data was
ffected.		and the second	
WA DIVER (n=10): PF	BA, PFPAA, PFHKA, PFHDA, P	FOA, PFBS, PFHxS, PFDS, 6/2 FTSA, 8/2 FTSA	
C Data Genera	I Comments		
			extract dilution required due to interferences or contaminant levels within
	noisture content or insufficient s		e batch, but within the laboratory sample batch at a 1:10 ratio. The Parent
	awn within this report that states a shown is not data from your se	the strategy of the state of the	e varur, vur menn pre laboratory sample cartol ara 1: ju rano, i he l'alent
	and the second se	ng LCS data, Toxaphene & Ohlordane are not added to the LCS.	
		ng Spike data. Tozaphene is not added to the Spike.	
Total Repoverable in the C10-C14 pe		g Spike & LCS date, a single spike of commercial Hydrocarbon prod	lucts in the range of C12-C30 is added and it's Total Recovery is reported
		Analysis on this test must begin within 30 minutes of samplion. That	efore laboratory analysis is unskely to be completed within holding time.
	as soon as possible after sump		
	Carlo Car	amalographic interference does not allow the determination of Reco	very the term "INT" appears against that analyte
		idition 1200 in Matrix Solikes and LC 5.	
d Enr Matrix Selling	and I C S rep site a data " / in th	a construction of the second a period super set edited to the 12" a	

- Fundmantmediteurstys are subject any two parameters in the mark solves and to 3
 For Mark Space and LCS results is den 7 in the report mean mark the generic analytic way not added to the CC sample.
 Duplicate RPDs are calculated from row enabytical dets thus it is possible to have two sols of data.

Date Reported Mar 20, 2015

Eurofine | mgr Unit F3, Eurluing F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABN - 50 005 085 921 Texebrone: +6 : 2 3900 8400

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

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Quality Control Results

Test	Units	Result 1	Acceptanc	e Pass Limits	Qualifying Code
Method Blank					
Total Recoverable Hydrocarbons - 1999 NEPM Fra	actions				
TRH C6-C9	mg/kg	< 20	20	Pass	
TRH C10-C14	mg/kg	< 20	20	Pass	
TRH C15-C28	mg/kg	< 50	50	Pass	
TRH C29-C36	mg/kg	< 50	50	Pass-	
Method Blank					
BTEX		· · · · · · · · · · · · · · · · · · ·		-	
Benzene	mg/kg	< 0.1	0.1	Pass	-
Tduene	mg/kg	<0.1	0.1	Pass	
Ethylbenzene	mg/kg	< 0.1	.0.1	Pass	
m&p-Xylenes	mg/kg	<02	0.2	Pass	
o-Xylene	mg/kg	< 0.1	0.1	Pass	-
Xylenes - Total	mg/kg	< 0.3	0.3	Pass	
Method Blank					
Total Recoverable Hydrocarbons - 2013 NEPM Fra	actions				
Naphthalene	mg/kg	<0.5	0.5	Pass	
TRH C6-C10	mg/kg	< 20	20	Pass	
Method Blank	1 A.			-	
Polycyclic Aromatic Hydrocarbons		· · · · · · · · · · · · · · · · · · ·		1000	1
Acenaphthene	mg/kg	< 0.5	0.5	Pass	
Acenaphthylene	mg/kg	< 0.5	0.5	Pass	
Anthracene	mg/kg	< 0.5	0.5	Pass	
Benz(a)anthracene	ma/ka	< 0.5	0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5	0.5	Pass	
Benzo(b&))fluoranthene	mg/kg	<0.5	0.5	Pass	
Benzo(g.h.i)perviene	mg/kg	< 0.5	0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5	0.5	Pass	
Chrysene	mg/kg	<0.5	0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5	0.5	Pass	21
Fluoranthene	ma/kg.	< 0.5	0.5	Pass	12.
Fluorene	mg/kg	< 0.5	0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5	0.5	Pass	
Naphthalene	mg/kg	< 0.5	0.5	Pass	
Phenanthrene	mg/kg	< 0.5	0.5	Pass	
Pyrene	mg/kg	<0.5	0.5	Pass	
Method Blank	1	L MAR L	1 0.0		1.0
Organochlorine Pesticides		1		1	
Chlordanes - Total	mg/kg	< 0.1	0,1	Pass	-
4.4'-DDD	mg/kg	< 0.05	0.05	Pass	-
4.4'-DDE	mg/kg	< 0.05	0.05	Pass	-
4.4'-DDT	mg/kg	< 0.05	0.05	Pass	-
a-BHC	mg/kg	< 0.05	0.05	Pass	
Aldrin	mg/kg	< 0.05	0.05	Pass	
b-BHC	mg/kg	< 0.05	0.05	Pass	-
d-BHC	mg/kg	< 0.05	0.05	Pass	-
Dieldrin	mg/kg	< 0.05	0.05	Pass	
Endosulfan 1	mg/kg	< 0.05	0.05	Pass	-
Endosulfan I	mg/kg	< 0.05	0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05	0.05	Pass	1
Endrin	and the second se	< 0.05	0.05	Pass	
Endrin aldehyde	mg/kg mg/kg	< 0.05	0.05	Pass	-

Date Reponed: Mar 20, 2015

Eurofine | mg/ Unif F3, Eufloing F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABN - \$0.005.065.521 Telephone: 161.2.3590.3400 Page 14 of 22 Report Number: 645047-5

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Test	Units	Result 1	Acceptance	Pass Limits	Qualifying Code
Endrin kelone	mg/kg	< 0.05	0.05	Pass	-
g-BHC (Lindane)	mg/kg	< 0.05	0.05	Pass	
Heptachlor	mg/kg	< 0.05	0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05	0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05	0.05	Pass	
Methoxychlor	mg/kg	<0.2	0.2	Pass	
Toxaphene	mg/kg	<1	1	Pass	
Method Blank					
Organophosphorus Pesticides				111	
Azinphos-methyl	mg/kg	< 0.2	0.2	Pass	
Bolstar	mg/kg	<02	0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2	0.2	Pass	
Chlorpyrifes	mg/kg	< 0.2	0.2	Pass	
Chlorpyrifos-methyl	mg/kg	× 0.2	0.2	Pass	
Coumaphos	mg/kg	<2	2	Pass	
Demeton-S	mg/kg	<0.2	0.2	Pass	
Demeton-O	mg/kg	< 0.2	0.2	Pass	
Diazinon	mg/kg	< 0.2	0.2	Pass	
Dichlorvos	mg/kg	< 0.2	0.2	Pass	
Dimethoate	mg/kg	<02	0.2	Pass	
Disulfoton	mg/kg	< 0.2	0.2	Pass	
EPN	mg/kg	< 0.2	0.2	Pass	
Ethion	mg/kg	<0.2	0.2	Pass	
Ethoprop	mg/kg	< 0.2	0,2	Pass	
Ethyl parathion	mg/kg	<02	0.2	Pass	7-
Fenitrothion	mg/kg	< 0.2	0.2	Pass	
Fensultothion	mg/kg	<0.2	0.2	Pass	
Fenthion	mg/kg	<02	0.2	Pass	1
Malathion	mg/kg	< 0.2	0.2	Pass	30
Merphos	mg/kg	<0.2	0.2	Pass	-
Methyl parathion	mg/kg	< 0.2	0.2	Pass	
Mevinphos	mg/kg	<0.2	0.2	Pass	
Monocrotophos	mg/kg	<2	2	Pass	
Naled	mg/kg	< 0.2	0.2	Pass	
Omethoate	mg/kg	<2	2	Pass	
Phorate	mg/kg	< 0.2	0,2	Pass	10.
Pirimiphos-methyl	mg/kg	<0.2	0.2	Pass	
Pyrazophos	mg/kg	< 0.2	0.2	Pass	1
Ronnel	mg/kg.	<0.2	0.2	Pass	
Terbufos	mg/kg	<02	0.2	Pass	
Tetrachiorvinphos	mg/kg	< 0.2	0.2	Pass	-
Tokuthion	mg/kg	<0.2	0.2	Pass	
Trichioronate	mg/kg	< 0.2	0.2	Pass	
Method Blank				_	
Total Recoverable Hydrocarbons - 2013 NEPM F	ractions	1			12-11-11
TRH >C10-C16	mg/kg	< 50	50	Pass	
TRH >C16-C34	mg/kg	~ 100	100	Pass	
TRH >C34-C40	mg/kg	< 100	100	Pass	
Method Blank		and the second sec			
Heavy Metals		1		1.000	
Arsenic	mg/kg	< 2	2	Pass	
Cadmium	mg/kg	< 0.4	0.4	Pass	
Chromium	mg/kg	< 5	5	Pass.	·
Copper	mg/kg	<5	5	Pass	

Dale Reported: War 20, 2015

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Test	Units	Result 1	Acceptance	Pass Limits	Qualifying Code
Lead	mg/kg	< 5	5	Pass	
Mercury	mg/kg	< 0.1	0.1	Pass	
Nickel	mg/kg	< 5	5	Pass	
Zinc	mg/kg	< 5	5	Pass	
LCS - % Recovery	14 CA 25 CA				
Total Recoverable Hydrocarbons - 1999 NEPM F	ractions		and the second		
TRH C6-C9	%	88	70-130	Pass	
TRH C10-C14	%	108	70-130	Pass	
LCS - % Recovery		1			
BTEX					
Benzene	%	80	70-130	Pass	
Toluene	%	92	70-130	Pass	
Ethylbenzene	%	86	70-130	Pass	
m&p-Xylenes	%	89	70-130	Pass	
o-Xylene	%	89	70-130	Pass	
Xylenes - Total	%	89	70-130	Pass	
LCS - % Recovery		1			
Total Recoverable Hydrocarbons - 2013 NEPM F	ractions				
Naphthalene	%	125	70-130	Pass	
TRH C6-C10	%	87	70-130	Pass	1
LCS -% Recovery	1 40		1 10-100	1 433	-
Polycyclic Aromatic Hydrocarbons			1	-	
Acenaphthene	%	92	70-130	Pass	
Acenaphthylene	10	96	70-130	Pass	-
Anthracene	96	93	70-130	Pass	-
Benz(a)anthracene	96 96	100	70-130	Pass	-
Benzo(a)pyrene	%	97	70-130	Pass	-
Benzo(b&)/fluoranthene	%	105	70-130	Pass	
Benzo(g.h.i)perylene	%	110	70-130	Pass	-
Benzo(k)fluoranthene	%	93	70-130	Pass	-
Chrysene	20	92	70-130	Pass	1
Dibenz(a h)anthracene	%	122	70-130	Pass	-
Fluoranthene		99	70-130	Pass	1
Fluorene	70	96	70-130	Pass	
Indeno(1.2.3-cd)pyrene		116	70-130	Pass	-
Naphthalene	70 %	93	70-130	Pass	-
Phenanthrene	74 %	95			
			70-130	Pass	
Pyrene	%	.96	70-130	Pass	-
LCS - % Recovery		T T	1 .1.	<u> </u>	-
Organochlorine Pesticides	Dr.	05	20:400	One	
4 4'-DDD	%	95	70-130	Pass	-
4.4'-DDE	%	88	70-130	Pass	-
4.4'-DDT	%	87	70-130	Pass	-
a-BHC	9%	87	70-130	Pass	
Aldrin	%	86	70-130	Pass	
b-BHC	%	82	70-130	Pass	-
d-BHC	%	92	70-130	Pass	
Dieldrin	0%	88	70-130	Pass	-
Endosulfan I	%	89	70-130	Pass	-
Endosulfan II	%	84	70-130	Pass	-
Endosulfan sulphate	%	92	70-130	Pass	-
Endrin	%	94	70-130	Pass	-
Endrin aldehyde	%	87	70-130	Pass.	-
Endrin ketone	%	84	70-130	Pass	

Date Reported War 20, 2015

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A Tractic Char	Test			Result 1	Acceptance	Pass Limits	Qualifying Code
g-BHC (Lindane)			%	87	70-130	Pass	
Heptachlor				87	70-130	Pass	
Heptachlor epoxide			%	-88	70-130	Pass	
Hexachlorobenzene				81	70-130	Pass	
Methoxychlor				88	70-130	Pass	
LCS -% Recovery	-			· ·		-	-
Organophosphorus Pestici	des				1 mar 1 1 mar	1	
Diazinon		_	%	102	70-130	Pass	
Dimethoale		_	%	102	70-130	Pass	
Ethion			%	123	70-130	Pass	
Methyl parathion			%	121	70-130	Pass	
Mevinphos			%	123	70-130	Pass	
LCS - % Recovery	and the second second	100 C	1000	-		20.000	
Total Recoverable Hydroca	rbons - 2013 NEPM Frac	lions				-	_
TRH >C10-C16		_	%	114	70-130	Pass	
LCS - % Recovery						1	
Heavy Metals		-	-				
Arsenic			%	109	70-130	Pass	-
Cadmium			%	115	70-130	Pass	-
Chromium			%	128	70-130	Pass	
Copper			%	90	70-130	Pass	
Lead			%	126	70-130	Pass	
Mercury			%	122	70-130	Pass	_
Nickel			1/6	108	70-130	Pass	
Zinc	1		%	106	70-130	Pass	
Test	Lab Sample (D	QA	Units	Barrist A	Acceptance	Pass	Duslifying
		Source	Units	Result 1	Limits	Limits	Gualifying Code
Spike - % Recovery	The costs of	Source	Units	Result 1	Limits		Code
Spike - % Recovery Heavy Metals	The reader of	Source	Units	Result 1	Limits		Code
the state of the state of the last state of the state of	\$19-Ma18928	NCP	%		70-130		Code
Heavy Metals				Result 1	Limits	Limits	Code
Heavy Metals Arsenic	\$19-Ma18928	NCP	%	Result 1 87	70-130	Limits Pass	Code
Heavy Metals Arsenic Cadmium	\$19-Ma18928 \$19-Ma18928	NCP NCP	%	Result 1 87 97	70-130 70-130	Limits Pass Pass	Code
Heavy Metals Arsenic Cadmium Chromium	\$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928	NCP NCP NCP	% % %	Result 1 87 97 111	70-130 70-130 70-130	Limits Pass Pass Pass	Code
Heavy Metals Arsenic Cadmium Chromium Copper	S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928	NCP NCP NCP NCP	% % %	Result 1 87 97 111 95	70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass	Code
Heavy Metals Arsenic Cadmium Chromium Copper Lead	\$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928	NCP NCP NCP NCP NCP	% % % %	Result 1 87 97 111 95 110	CLimits 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass	Code
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury	\$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928	NCP NCP NCP NCP NCP NCP	% % % %	Result 1 87 97 111 95 110 105	70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	Code
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel	\$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928	NCP NCP NCP NCP NCP NCP NCP	% % % % %	Result 1 87 97 111 95 110 106 91	Total 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	Code
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc	\$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928	NCP NCP NCP NCP NCP NCP NCP NCP	% % % % %	Result 1 87 97 111 95 110 106 91	Total 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	Code
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery	\$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928	NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % %	Resdi i 87 97 111 95 110 105 91 123	Total 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	Code
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recoverable Hydrocal	\$13-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 rbons - 1999 NEPM Frac	NCP NCP NCP NCP NCP NCP NCP NCP NCP	56 56 56 56 56 56 56 56 56 56	Result 1 87 97 111 95 110 105 91 123 Result 1	Total Total 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	Code
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recoverable Hydroca TRH C6-C9	\$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928	NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % %	Result 1 87 97 111 95 110 105 91 123 Result 1 88	Limits 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	Code
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recoverable Hydrocal TRH C6-C3 TRH C10-C14	\$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928	NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % %	Result 1 87 97 111 95 110 105 91 123 Result 1 88	Limits 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike - % Recovery Total Recover able Hydrocal TRH C6-C9 TRH C10-C14 Spike + % Recovery	\$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928	NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % %	Result 1 87 97 111 95 110 105 91 123 Result 1 88 122	Limits 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recoverable Hydrocal TRH C6-C9 TRH C10-C14 Spike -% Recovery BTEX	S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 rbons - 1999 NEPM Frac S19-Ma20699 S19-Ma15007	NCP NCP NCP NCP NCP NCP NCP NCP	96 96 96 96 96 96 96 96 96	Result 1 87 97 111 95 110 105 91 123 Result 1 68 122 Result 1	Climits 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recover able Hydrocal TRH C6-C9 TRH C6-C9 TRH C10-C14 Spike +% Recovery BTEX Benzene	\$13-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma18928 \$19-Ma15007 \$19-Ma15007	NCP NCP NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % %	Result 1 87 97 111 95 110 105 91 123 Result 1 88 122 Result 1 83	Limits 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recover able Hydroca TRH C6-C9 TRH C10-C14 Spike -% Recovery BTEX Benzene Toluene	\$19-Ma18928 \$19-Ma20699 \$19-Ma20699 \$19-Ma20699 \$19-Ma20699 \$19-Ma20699	NCP NCP NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % % %	Result 1 87 97 111 95 110 105 91 123 Result 1 88 122 Result 1 83 101	Limits 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recoverable Hydrocal TRH C6-C9 TRH C10-C14 Spike +% Recovery BTEX Benzene Trduene Elhylbenzerte	S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699	NCP NCP NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % % % %	Result 1 87 97 111 95 110 105 91 123 Result 1 88 122 Result 1 83 101 90	Climits 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recoverable Hydrocal TRH C6-C9 TRH C10-C14 Spike -% Recovery BTEX Benzone Toluene Einylbenzene måo-Xylenes	S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 rbons - 1999 NEPM Frac S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699	NCP NCP NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % % % % % %	Result 1 87 97 111 95 110 105 91 123 Result 1 88 122 Result 1 83 101 90 91	Climits 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recoverable Hydrocal TRH C10-C14 Spike -% Recovery BTEX Benzene Tcluene Elhylbenzene m&c-Xylenes o-Xylene	S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma18928 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699 S19-Ma20699	NCP NCP NCP NCP NCP NCP NCP NCP NCP NCP	96 96 96 96 96 96 96 96 96 96 96 96 96 9	Result 1 87 97 111 95 110 105 91 123 Result 1 88 122 Result 1 83 101 90 91 93	CLIMITS	Limits Pass Pass Pass Pass Pass Pass Pass Pa	
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recover able Hydrocat TRH C6-C9 TRH C10-C14 Spike -% Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes oXylene Xylenes-Total	\$13-Ma18928 \$13-Ma18928 \$19-Ma18928 \$19-Ma20699 \$19-Ma2	NCP NCP NCP NCP NCP NCP NCP NCP NCP NCP	96 96 96 96 96 96 96 96 96 96 96 96 96 9	Result 1 87 97 111 95 110 105 91 123 Result 1 88 122 Result 1 83 101 90 91 93	CLIMITS	Limits Pass Pass Pass Pass Pass Pass Pass Pa	
Heavy Metals Arsenic Cadmium Chromium Chromium Copper Lead Mercury Nickel Zinc Spike -% Recovery Total Recover able Hydroca TRH C6-C9 TRH C10-C14 Spike -% Recovery BTEX Benzene Totuene Eihytbenzene m&c-Xytenes -Xytenes -Total Spike -% Recovery	\$13-Ma18928 \$13-Ma18928 \$19-Ma18928 \$19-Ma20699 \$19-Ma2	NCP NCP NCP NCP NCP NCP NCP NCP NCP NCP	96 96 96 96 96 96 96 96 96 96 96 96 96 9	Result 1 87 97 111 95 110 105 91 123 Result 1 88 122 Result 1 83 101 90 91 93 92	CLIMITS	Limits Pass Pass Pass Pass Pass Pass Pass Pa	
Heavy Metals Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Zinc Zinc Spike -% Recovery Total Recoverable Hydrocal TRH C6-C9 TRH C10-C14 Spike -% Recovery BTEX Benzene Toluene Ethylbenzene m&c-Xylenes o-Xylenes Sylenes Sylene Sylenes Sylene Sy	\$19-Ma18928 \$19-Ma20699	NCP NCP NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % % % % % % % %	Result 1 87 97 111 95 110 105 91 123 Result 1 88 122 Result 1 83 101 90 91 93 92 Result 1	Climits 70-130	Limits Pass Pass Pass Pass Pass Pass Pass Pa	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthene	S19-Ma15448	NCP	- %	84			70-130	Pass	
Acenaphthylene	S19-Ma15448	NCP	%	90			70-130	Pass	
Anthracene	S19-Ma15448	NCP	%	87			70-130	Pass	
Benz(a)anthracene	S19-Ma15448	NCP	%	97	-		70-130	Pass	
Benzo(a)pyrene	519-Ma15448	NCP	%	91			70-130	Pass-	-
Benzo(o&j)fluoranthene	S19-Ma15448	NCP	%	75			70-130	Pass	
Benzo(g.h.i)perylene	\$19-Ma15448	NCP	%	107			70-130	Pass	
Benzo(k)fluoranthene	S19-Ma15448	NCP	%	78			70-130	Pass	
Chryserie	S19-Ma15448	NCP	%	89			70-130	Pass	
Dibenz(a.h)anthracene	\$19-Ma15448	NCP	%	114		1	70-130	Pass	
Fluoranthene	S19-Ma15448	NCP	%	100	· · · · · · ·		70-130	Pass	
Fluorene	\$19-Ma15448	NCP	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S19-Ma15448	NCP	%	111			70-130	Pass	
Naphthalene	S19-Ma15448	NCP	%	87		Î	70-130	Pass	
Phenanthrene	S19-Ma15448	NCP	%	90			70-130	Pass	
Pyrene	S19-Ma15448	NCP	%	.99			70-130	Pass	
Spike -% Recovery							-	-	-
Organochlorine Pesticides	State and the second			Result 1	1.000				
Chlordanes - Total	S19-Ma16831	NCP	%	82			70-130	Pass	
4.4'-DDD	S19-Ma24932	NCP	%	118		<u> </u>	70-130	Pass	
4.4'-DDE	\$19-Ma24932	NCP	%	104			70-130	Pass	
4.4'-DDT	S19-Ma24932	NCP	%	85			70-130	Pass	
a-BHC	S19-Ma24932	NCP	%	100		1	70-130	Pass	
Aldrin	S19-Ma24932	NCP	%	110		1	70-130	Pass	
b-BHC	S19-Ma24932	NCP	%	92			70-130	Pass	
d-BHC	S19-Ma24932	NCP	%	74	1	1	70-130	Pass	
Dieldrin	S19-Ma24932	NCP	%	104			70-130	Pass	
Endosulfan 1	S19-Ma24932	NCP	%	95			70-130	Pass	
Endosulfan II	S19-Ma24932	NCP	%	101			70-130	Pass	
Endosulfan sulphate	S19-Ma24932	NCP	%	90	-		70-130	Pass	-
Endrin	\$19-Ma24932	NCP	%	112			70-130	Pass	
Endrin aldehyde	S19-Ma24932	NCP	%	76		-	70-130	Pass	
Endrin ketone	\$19-Ma24932	NCP	%	92			70-130	Pass	
g-BHC (Lindane)	S19-Ma24932	NCP	%	96	-	6	70-130	Pass	
Heptachlor	S19-Ma24932	NGP	%	101			70-130	Pass	
Heptachlor epoxide	519-Ma24932	NCP	%	105		-	70-130	Pass	
Hexachlorobenzene	S19-Ma24932	NCP	%	99			70-130	Pass	
Methoxychlor	S19-Ma24932	NCP	%	93	-		70-130	Pass	
Toxaphene	S19-Ma16831	NCP	%	78			70-130	Pass	
Spike - % Recovery	1 013-Ma (003)	nor	NU .	1 10		-	1 10-100	1 0 55	-
Organophosphorus Pesticid	45		-	Result 1		1	1		-
Diazinon	S19-Ma14873	NCP	%	77			70-130	Pass	-
Dimethoale	S19-Ma 14673	NCP	70	81		-	70-130	Pass	
Ethion	S19-Ma14673	NCP	-746 9%	123		(70-130	Pass	
Mevinohos	\$19-Ma14873	NCP	7n %	102	1	-	70-130	Pass	
	515-Ma 146/3	NGP	70	102		-	J. 70-130	Pass	
Spike - % Recovery Total Recoverable Hydrocart	AND - 2013 NEDM From	lione		Decut 4	1	1	T	-	
TRH >C10-C16	S19-Ma16831	NCP	%	Result 1 72	-	-	70-130	Pass	-
		QA					Acceptance	Pass	Qualifying
Test	Lab Sample ID	Source	Units	Result 1		-	Limits	Limits	Code
Duplicate		-		Doctor	Doute	000	1	-	-
Heavy Metals	Districtors	Luco I	an a flar	Result 1	Result 2	RPD	0.000	Dest	-
Arsenic	S19-Ma14882	NCP	mg/kg	8.0	7.6	5.0	30%	Pass	-
Cadmium	519-Ma14882	NCP	mg/kg	0.6	0.5	15	30%	Pass	-
Chromium	S19-Ma14882	NCP	mg/kg	22	20	11	30%	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance	Pass Limits	Qualifying Code
Duplicate		A COLORED OF ME							
Heavy Metals				Result 1	Result 2	RPD			
Copper	S19-Ma14882	NCP	mg/kg	11	10	7.0	30%	Pass	
Lead	S19-Ma14882	NCP	mg/kg	30	28	7.0	30%	Pass	
Mercury	\$19-Ma16859	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Ma14882	NCP	mg/kg	<5	< 5	<1	30%	Pass	
Zinc	S19-Ma14882	NCP	mg/kg	48	43	12	30%	Pass	
Duplicate							1 - 1 - 1 - 1	and and a state of the	
Total Recoverable Hydrocarb	ons - 1999 NEPM Frac	ions		Result 1	Result 2	RPD	1 m	an est	_
TRH C6-C9	\$19-Ma15622	NCP	mg/kg	< 20	<20	<1	30%	Pass	-
TRH C10-C14	S19-Ma16830	NCP	ma/ka	< 20	21	15	30%	Pass	
TRH C15-C28	\$19-Ma16830	NCP	mg/kg	52	60	14	30%	Pass	-
TRH C29-C36	S19-Ma16830	NCP	mg/kg	< 50	66	34	30%	Fail	Q15
Duplicate		1 1907	ingrig		1 00 1		1 50 70	1 1011	410
BTEX			-	Result 1	Result 2	RPD		-	
Benzene	S19-Ma15622	NCP	mo/kg	<01	<0.1	<1	30%	Pass	
Toluene	\$19-Ma15622	NCP	mg/kg	< 0.1	<01	<1	30%	Pass	
Ethylbenzene	\$19-Ma15622	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S19-Ma15622	NCP		< 0.2	< 0.2	<1	30%	Pass	-
the second s		NCP	mg/kg	<0.1	<0.1	<1	30%		-
o-Xylene	S19-Ma15622		mg/kg					Pass	
Xylenes - Total	S19-Ma15622	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate			and the second s			000	1	-	
Total Recoverable Hydrocarb				Result 1	Result 2	RPD		-	-
Naphthalene	\$19-Ma15622	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S19-Ma15622	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate				1		-	1		
Polycyclic Aromatic Hydrocar		Low-1		Result 1	Result 2	RPD	-	-	
Acenaphthene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0,5	<1	30%	Pass	-
Anthracene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anlhracene	\$19-Ma11961	NCP	mg/kg	< 0,5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S19-Ma11961	NCP	mg/kg	<0.5	< 0.5	<1	30%	Pass	
Benzo(b&))fluoranthene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.l)perylene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	\$19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	-
Dibenz(a.h)anthracene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0,5	<1	30%	Pass	
Fluorene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	\$19-Ma11961	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate							2		
Organochlorine Pesticides	2			Result 1	Result 2	RPD		2.00	
Chlordanes - Total	\$19-Ma23352	NCP	mg/kg	0.2	0.2	4.0	30%	Pass	16.
4.4'-DDD	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S19-Ma23352	NCP	mo/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
And all the second s	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	-
d-BHC									

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RPD

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Duplicate						
Organochiorine Pesticides				Result 1	Result 2	
Endosulfan I	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	
Endosulfan II	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	
Endosulfan sulphate	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	
Endrin	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	
Endrin aldehyde	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	
Endrin ketone	\$19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	
g-BHC (Lindane)	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	
Heptachlor	S19-Ma23352	NCP	mg/kg	0.08	0.07	
Heptachlor epoxide	\$19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	
Hexachlorobenzene	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	
Methoxychlor	S19-Ma23352	NCP	mg/kg	< 0.2	< 0.2	

Heptachlor	\$19-Ma23352	NCP	mg/kg	0.08	0.07	9.0	30%	Pass
Heptachlor epoxide	\$19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S19-Ma23352	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S19-Ma23352	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Toxaphene	S19-Ma23352	NCP	mg/kg	< 1	<1	<1	30%	Pass
Duplicate		area and	Sec. 2 12					
Organophosphorus Pesticid	ies			Result 1	Result 2	RPD	· ·	
Azinphos-methyl	S19-Ma14872	NCP	mg/kg	<0.2	< 0.2	<1	30%	Pass
Bolstar	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S19-Ma14872	NGP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifes	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifes-methyl	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S19-Ma14872	NCP	mg/kg	< 2	<2	<1	30%	Pass
Demeton-S	S19-Ma14872	NCP	mo/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	\$19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S19-Ma14872	NCP	mg/kg	<0.2	< 0:2	<1	30%	Pass
Dimethoale	S19-Ma14872	NCP	mg/kg	<0.2	< 0.2	<1	30%	Pass
Disulfoton	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	\$19-Ma14872	NCP	mg/kg	< 0,2	< 0.2	<1	30%	Pass
Ethoprop	S19-Ma14872	NCP	mg/kg	<02	< 0.2	<1	30%	Pass
Ethyl parathion	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfothion	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ferithion	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S19-Ma14872	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Methyl parathion	S19-Ma14872	NCP	mg/kg	<0.2	< 0.2	<1	30%	Pass
Mevinphos	\$19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S19-Ma14872	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	\$19-Ma14672	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	519-Ma14872	NCP	mg/kg	< 2	<2	<1	30%	Pass
Phorate	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pinmiphos-methyl	\$19-Ma14872	NCP	mg/kg	< 0,2	< 0.2	<1	30%	Pass
Pyrazophos	S19-Ma14872	NCP	mg/kg	<0.2	< 0.2	<1	30%	Pass
Ronnel	S19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S19-Ma14872	NCP	mg/kg	<02	< 0.2	<1	30%	Pass
Tetrachlorvinphos	\$19-Ma14872	NCP	mg/kg	<02	< 0.2	<1	30%	Pass
Tokuthion	\$19-Ma14872	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S19-Ma14872	NGP	mg/kg	<02	< 0.2	<1	30%	Pass
Duplicate		22	11 - 140 - 12 - 1					
Total Recoverable Hydrocar	bons - 2013 NEPM Fract	ions		Result 1	Result 2	RPD		10-02
TRH >C10-C16	S19-Ma16830	NCP	mg/kg	< 50	< 50	-<1	30%	Pass
TRH >C16-C34	\$19-Ma16830	NCP	mg/kg	< 100	110	22	30%	Pass
TRH >C34-C40	S19-Ma16830	NCP	mg/kg	< 100	< 100	<1	30%	Pass

Date Reported Mar 20, 2015

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		_		_	_		_
Duplicate			1			-	-
Duplicate			Result 1	Result 2	RPD		

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Comments

Sample Integrity	
Custody Seals intact (ii used)	
Attempt to Chill was evident	
Sample correctly preserved	
Appropriate sample containers have been used	
Sample containers for volatile analysis received with minimal headspace	
Samples received within HoldingTime	
Some samples have been subcontracted	

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by entimetrally subtracting the "haphtholene" value from the ">C10-C10" value. The naphtholene value used in this calculation is obtained from volatiles (Funge & Trap analysis).
No2	Where we have reported both volatile (P&T GCNS) and semivolatile (GCNS) nophthalane data, results may not be identical. Provided correct sample handing protocols have been followed, any observed differences in results are it key to be due to procedual differences within each methodology. Results determined by both techniques have passed all GACB exceptance criters, and are criterily technically yraid.
N04	F1 is determined by anthme loally subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concertrations of BTEX analytes. The "C8-C10" value is obtained by quantitating against a standard of mixed aromatical/photic analytes.
N07	Please hate: These wa PAH isomers classly co-clute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-cluting PAH's
015	The RPD reported passes Eurofins mpt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glassary page of the report.

NVA Yes Yes Yes Yes Ne

Authorised By

Andrew Black Andrew Sullivan Gaoriele Cordero Nibha Vacya Analytical Services Manager Senior Analysi-Organic (NSW) Senior Analysi-Metal (NSW) Senior Analysi-Aspesios (NSW)

Glenn Jackson General Manager

Final report - this Report replaces any providually issued Report

- Indicates flot Requested

Indicates NATA accreditation does not pover the performance of this service.
 Measurement uncertainty of test data is available on request or please block nere

brokaj instala lakis kak la bazitak kangesi a esenasi hanel by te dati, manyate pesana ramany, est/hy kan ke se vlan jihamitah ajkani tik bentaj mate kak in nazisahi buohaj mate kak in nazisahi buohaj mate kak in nazisahi aki ka Intelaki, osordis alinge tri alin eto esenasi basigradica analy on ta teori ta atalian ote terposteri esis intel

Date Reported: Mar 20, 2015

Eurofine | mgf Unit F3, Eurlaing F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABN - 50 005 085 521 Telephone: +612 5900 8400 Page 22 of 22 Report Number, 645047-5

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Certificate of Analysis

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Regional Geotechnical Solutions 44 Bent Street Wingham NSW 2429

Grant Colliar



NATA Assredited Assreditation Number 1261 Site Number 18217

Accredited for compliance with ISO/IEC 17025 - Testing The results of the best, calibrations and/or measurements induced in his document are trapsible to Australian/indiced surfaces

Attention:

ATTACHMENT

Report Project name Project ID Received Date 545340-5-V2 ADDITIONAL - PROPOSED RESIDENTIAL SUBDIVISION RGS20789.1 Mar 20, 2019

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled	LOR		TP5_0-0.2 Soll S19-Ma26743 Mar 12, 2019
Test/Reference	LOR	Unit	-
Chromium (hexavalent)	1	mg/kg	<1
Chromium (trivalent)	5	mg/kg	240
% Moisture	1	%	19
Heavy Metals			-
Chromium	5	mg/kg	240

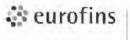
First Reported: Mar 27, 2019 Date Reported: Mar 28, 2019 Eurofins | mgl Linit F3, Euroling F, 16 Mars Road, Lane Cove Wesl, NSW, Australia, 2066 ABN :50 005 085 521 Telepriore: +61 2 5900 8400

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020



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Sample History

Where samples are submitted analysed over several days, the last date of extraction and analysis is regorted. A recent sever of our LMS has resulted in the correction or derification of some method identifications. Due to bits, some of the method reference information on reports has changed. However, ne substrictions share has been indexide your method and analysis is ne constant in the violation of several sectors integrating both guality and IDATA accordingtor).

Description	Testing Site	Extracted	Holding Tim
Chromium (speciated)			
Chromium (hexavalent)	Sydney	Mar 21: 2019	28 Day
- Methat: E067 Total Speciated Dhromium			
Chromium (trivalent)	Sydney	Mar 20, 2019	28 Day
- Nethad: E043 (E057 Total Speciated Chromium			
Heavy Metals	Sydney	Mar 28, 2019	180 Day
- Nethor: LTM-MET-3040 Matsis in Waters, Solis & Sedments by ICP-MS			
% Moisture	Sydney	Mar 20, 2019	14 Day
Method: LTM-GEN-7080 Maisture			

First Reported: Mar 27, 2019 Date Reported: Mar 28, 2019 Eurofine | mg/ Unit F3, Eurlaing F, 16 Mars Road, Late Cove West, NSW, Australia, 2066 ABN . 20 002 085 521 Telephone: +61 2 5900 8400

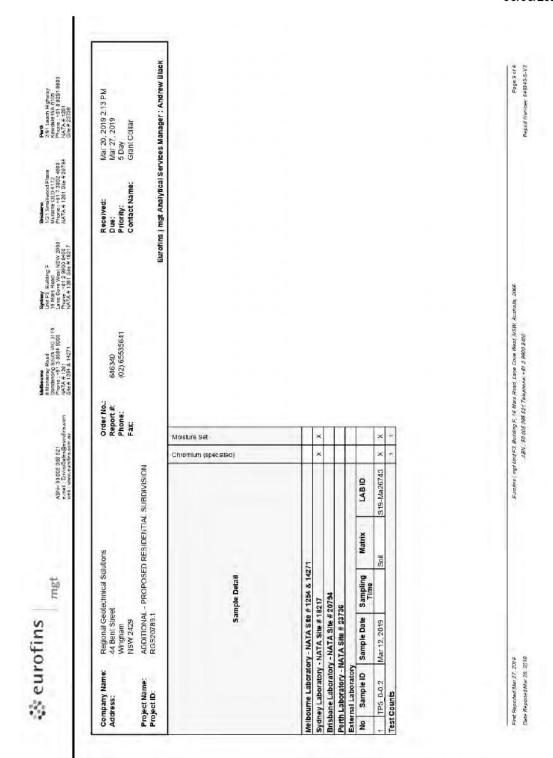
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ATTACHMENT



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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Internal Quality	Control Review and Gl	ossary	
General			
		Alatrix Spikes, and Laboratory Control Samples follows guidelined in this QC report where applicable. Additional QC data may be	nes delineated in the Mational Environment Protection (Assessment of Site available on request.
2 All soll/sediment/s	olid results are reported on a div	basis, unless otherwise stated	
3 All bitts/toor/vesu	its are reported on a wet weight t	as s on the edible portion, unless otherwise stated.	
4. Actual LORs are n	natris dependent. Quoted LORs r	ay be raised where sample extracts are cituled due to interference	sec.
		ate recoveries except for PFAS compounds.	
8 SVOC analysis on	waters are performed on homog	enised, unfiltered samples, unless noted otherwise.	
7. Samples were ana	alysed on an 'as received' basis.		
8. This report replace	es any interim results previously (ssued.	
Holding Times			
Please refer to 'Sample	e Preservation and Container Gu	de' far holding times (Q \$2001)	
For samples received a	on the last day of holding time, no	dification of testing requirements should have been received at lea	ast 6 hours prior to sample receipt deadlines as stated on the SRA.
f the Laboratory did no	ot receive the information in the re	equired timeframe, and regardless of any other integrity issues, su	itably qualified results may still be reported.
Holding times apply fro	an the date of sampling, therefore	compliance to these may be outside the laboratory's control.	
For VOGs containing v	inyl chloride, styrene and 2-chlor	ethyl vinyl ether the holding time is 7 days however for all other V	DCs such as BTEX or Cb-10 TRH then the holding time is 14 days.
"NOTE: pH ouplicates	s are reported as a range NOT as	RPD	
Units			
mg/kg: milligrams per	kilogram	mg/L: milligrams per fibre	ug/L: micrograms per Bre
ppm: Parts per million		ppb: Ferts per billion	%: Percentage
org/100mL: Organism	is per 100 millitres	NTU: Nephelometric Turbicity Units	MPN(100mL: Most Protrable Number of organisms per 100 milliting
Terms			
Dry	Where a moisture has been	n determined on a solid sample the result is expressed on a dry ba	dois.
LOR	Limit of Reporting.		
SPIKE	Addition of the analyte to t	he sample and reported as percentage recovery.	
RPD	Relative Percent Difference	e between two Duplicate pieces of analysis	
LCS	Laboratory Control Sample	- reported as percent recovery.	
CRM	Certified Reference Mater	al - reported as percent recovery.	
Method Blank	In the case of solid sample	s these are performed on laboratory certified clean sands and in t	the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like comp	sound to the analyte target and reported as percentage recovery.	
Duplicate	A second piece of analysis	from the same sample and reported in the same units as the resu	ult to show comparison.
USEPA	United States Environmen	al Protection Agency	
APHA	American Public Health As	sociation	
TCLP	Tossicity Characteristic Lea	ching Procedure	
COC	Chain of Custody		
SRA	Sample Receipt Advice		
QSM		e Quality Systems Manual Version 5.2 2018	
CP		formed on samples pertaining to this report	
NCP			tive of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Outlier	α.	
QC - Acceptanc			
		iteria is 30% however the following acceptance guidelines are equ	additable:
Results < 10 times the			
	I times the LOR : RPD must lie b		
	LOR : RPD must is between 0-3		
	Recoveries must lie between 50		
PFAS field samples the attached.	at combin surregate recoveries in	excess of the QC limit designated in QSM 52 where its positive I	PFAS results have been reported have been reviewed and no data was
WA DWER (n=10): PF	BA, PFPaA, PFHxA, PFHbA, PF	DA, PFBS, PFHxS, PFOS, 8:2 FTSA, 8:2 FTSA	
QC Data Genera	I Comments		
		than the nominated LOB, this is due to either matrix interference.	extract dilution required due to interferences or contaminant levels within
	nonture content or insufficient sa		the start of the s

the sample, high moisture content or insufficient sample provided.

Depleted basis of optimizer of the fact in the factor and second optimizer.
 Depleted basis shown with the report that states the word? "DATCH" is a Bab's Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 rails. The Perent and Duplicate data shown within the report that states the word? "DATCH" is a Bab's Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 rails. The Perent and Duplicate data shown within the report that states the word? "DATCH" is a Bab's Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 rails. The Perent and Duplicate data shown within the report that states the word "DATCH" is a Bab's Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 rails. The Perent and Duplicate data shown within the report that states the word "DATCH" is a Bab's Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 rails. The Perent and Duplicate data shown within the report that states the word "DATCH" is a Bab's Duplicate data shown within the laboratory sample batch, but within the laboratory sample batch at a 1:10 rails. The Perent and Duplicate data shown within the report that states the word "DATCH" is a Bab's Duplicate data shown at the sample batch, but within the laboratory sample batch at a 1:10 rails. The Perent sample batch at a 1:10 rails.

Organization in Pesticide analysis - where reporting Spike data. Toxaphene is not added to the LCS.
Organization Pesticide analysis - where reporting Spike data. Toxaphene is not added to the Spike.
Total Recovery is reported in the C10-C14 cell of the Report. m the CT0-CT0 each of the fleaver. 6 pH and The CT0 and each of the fleaver. 8 pH and The CT0 and the fleaver. Analysis will begin as soon as possible after sample yeared. 7. Recovery Data (SNAE & Surrogates) + where chatrandourghs interference does not allow the deterministion of Recovery the term "INT" agreers against that analyte. 8. Polycholomotal Biblionyta e State and will address a State and LCS. 9. For Manta Splate and LCS results a data " -" in the report investor that the specific analyte was not address to be CS sample.

- 10. Duplicate RPDs are calculated from row analytical data thus it is possible to have two sets of data.

Eurofine | mgr Linit F3, Bulluling F, 16 Mars Road, Lane Cove Wesi, NSW, Australia, 2066 ABN : 50 005 085 521 Telebrione: +6 12 3900 8400 First Reported: Mar 27, 2019 Page 4 of 6 RepartNumber 646340-3-Y2 Date Reported Mar 28, 2019

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

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Quality Control Results

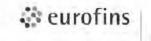
Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								1	
Chromium (hexavalent)			mg/kg	<1	-	_	1 1	Pass	-
Method Blank				21			14		
Heavy Metals					-	-	1		
Chromium			mg/kg	<5			5	Pass	
LCS - % Recovery			-	-		-	-		
Chromium (hexavalent)			%	101		-	70-t30	Pass	
LCS - % Recovery							A A CONTRACT		
Heavy Metals								1	
Chromium			%	101			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery						-	A	Contraction of the	
	-			Result 1		-			
Chromium (hexavalent)	\$19-Ma26743	CP	%	105			70-130	Pass	
Spike -% Recovery		1000	100	5 8 1		-	Carlo and	-	-
Heavy Metals	- 20 A T - 1 A			Result 1			1	1.00	
Chromium	N19-Ma26342	NCP	%	102			70-130	Pass	_
Test	Lab Sample ID	QA Source	Units	Result 1		-	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate	and the second second		-		1		And and a set of the s		1000 100
				Result 1	Result 2	RPD			1 m
Chromium (hexavalent)	\$19-Ma26743	CP	mg/kg	< 1	<1	<1	30%	Pass	
% Moisture	\$19-Ma23362	NCP	%	13	12	8.0	30%	Pass	-
Duplicate			-	-	-	1000		1. 27	
Heavy Metals				Result 1	Result 2	RPD	1	1	-
Chromium	N19-Ma26341	NCP	mg/kg	10	71	8.0	30%	Pass	

First Reported: Mar 27, 2019 Date Reported: Mar 25, 2015 Eurofine | mg/Linit F3, Europing F, 16 Mars Road, Lane Gove Weal, NSW, Australia, 2066 ABN - 50 005 065 521 Telepinone -161 2 5960 8400 Page 5 of 6 ReportNumber 646346-3- V2

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020



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Comments New version with repeated Cr.

Sample Integrity Custody Seals Intert (Hused) Attempt to Chill was evident Sample correctly preserved Appropriate sample sample rentainers have been used Sample containers for volatile analysis received with minimal headspace Samples received within HaldingTime Some samples have been subco Instied

N/A Vas Vas Vas Vas Vas Vas NIC

Authorised By

Andrew Black Gabriele Cordero Gaoriele Cordero Analytical Service's Manager Servicr Analyst-Inorganic (NSW) Servicr Analyst-Metal (NSW)

af faile

Glenn Jackson General Manager

Final report - this Report replaces any previously issued Report - Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

First Reported: Mar 27, 2019 Date Reported: Mar 28, 2019

Eurofine | mgf Unit F3, Eurlaing F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABN : 50 005 085 521 Telephone: +612 \$900 8400

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

	da la composición de			
seuro euro	ofins		C	ertificate of Analysis
Regional Geotec 44 Bent Street Wingham NSW 2429	hnical Solutions	Iac MRA	NATA	NATA Acciedited Accreditation Number 1261 Sile Number 1275 Accreditation Formber 1261 Fina reaute a the bate, calculations and ar measurements included in 76s tocoment are tracescie to Australianinatorial standards.
Attention:	Tim Morris			
Report	645047-AID			
Project Name	PROPOSED RESIDEN	TIAL SUBDIVISION		
Project ID	RGS20789.1	THAE GODDIVISION		
Received Date	Mar 13, 2019			
Date Reported	Mar 20, 2019			
Methodology:				
Asbestos Fibre Identification	Conducted in accordance with the Asbestos in Bulk Samples and in staining (DS) techniques. NOTE: Positive Trace Analysis	In-house Method LTM-ASB-80	020 by polari	Aelhod for the Qualitative Identification of sed light microscopy (PLM) and dispersion table respirable fibres.
Uriknown Mineral Fibres	Electron Microscopy, to confirm NOTE: While Actinolite, Anthop	unequivocal identity hyllite and Tremolite asbestos	may be dete	ire another analytical technique, such as acted by PLM with DS, due to variability in the ted as UMF unless confirmed by an
Subsampling Soil Samples	The whole sample submitted is matter greater than 10mm, grea analysed for the presence of as sampling routine based on ISO NO FE. Depending on the nature sampled for trace analysis, in an	iter than 2mm as well as the ri bestos. If the sub 2mm fractio 3082:2009(E) is employed. e and size of the soil sample,	natèrial pass m is greater t the sub-2 mr	m sieve followed by a 2mm sieve. All fibrous ing through the 2mm sieve are retained and han approximately 30 to 60g then a sub- n residue material may need to be sub-
Bonded asbestos- containing material (ACM)	matrices may be removed by dis combination. The resultant mate NOTE: Even after disintegration materials using PLM and DS. Th the material or to the fact that w	sintegration using a range of t rial is then further examined in it may be difficult to detect th his is due to the low grade or . lerv fine fibres have been dist	neat, chemica n accordance le presence o small length ributed intima	PLM and DS. Where required, interfering at or physical treatments, possibly in ewith AS 4564 - 2004 of asbestos in some asbestos-containing bulk or diameter of the asbestos fibres present in tatly throughout the materials. Viny/asbestos aining epoxy rešins and some ore samples are
Limit of Reporting	nominal reporting limit of U.01% The NEPM screening level of 0. (LOR), per se. Examination of a particularly AF, to aid assessme outside of AS 4964 and hence 1 shown with an asterisk). NOTE, NATA News March 201- reporting limit of 0.01 % " and th	(IWW): (w/w) is intended as an olarge sample size (e.g. 500 n ent against the NEPM criteria VATA Accreditation does not c 4, p.7, states in relation to AS hat currently in Australia There	non-site dete nL) may impr Gravimetric cover the per 4964: "This i c is no valida	eneous samples is around 0.1 g/kg (equivalent tace Analysis, this is considered to be at the miniation, not a laboratory Limit of Reporting ove the likelihood of detecting asbestos, determinations to this level of accuracy are formance of this service inon-NATA results is a qualitative method with a nominal ted method available for the quantification of
	asbestos" This report is consist WA DoH.	ent with the analytical procedu	ures and repo	nting recommendations in the NEPM and the

Data Reported: Mar 20, 2010

Eurofins | wet & Monterey Road, Dandenong South, Victoria, Australia 3176 ABM 60 005 035 621 Tolephone; +81 3 8581 6000 Page 1 of 7 Report Humsels 645047-AID

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ORDINARY COUNCIL 20/05/2020

DEVELOPMENT ASSESSMENT PANEL

06/05/2020

Page 2 of 7 Report Number: 845017-AID

Eurofine | mgt8 Montarey Road, Dandonong South, Vietoria, Australia 31/3 ABN : 50 005 085 521 Torophone: +61 3 8564 5000



ATTACHMENT

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			12.01	
	Result	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected No respirable fibres detected.	No aspestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.	No asbestos detected at the reporting limit of 0.01% w/w. Organic the detected. Morrestrizable fibres detected.
PROPOSED RESIDENTIAL SUBDIVISION RGS207891 Mar 12, 2019 645047.AID	Sample Description	Mar 12, 2019 Approximate Sample 64g Sample consisted of Brown coarse-grained sol and rocks	Mar 12, 2019 Approximate Sample 619 Sample consisted of Blown coarse-grained soil and rocks	Mar 12, 2019 Approximate Sample 56g Sample consisted of Brown coarse-grained soit and rocks
SED RESIDEN 39.1 019 VID	Date Sampled	Mar 12, 2019	Mar 12, 2019	Mar 12, 2019
PROPOSED F RGS20789.1 Mar 12, 2019 645047-AID	Eurofins mgt Sample No.	19-Ma15101	19-Ma15106	19-Ma15109
Project Name Project ID Date Sampled Report	Client Sample ID	TP1_035-045	TP5_0.0,2	1.5.1.5

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Date Reported: Mar 20, 2010

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description Asbestos - LTM-ASB-8020 Testing Site Extracted Sydney Mar 13, 201

Extracted Holding Time Mar 13, 2019 Indefinite

Data Reported: Mar 20, 2010

Eurofins | wgt 6 Montorcy Road, Dandanong South, Victoria, Australia 3176 ABN : 60 005 095 621 Telephone: +81 3 8564 6000 Page 3 of 7 Report Humsel: 645047-AID

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

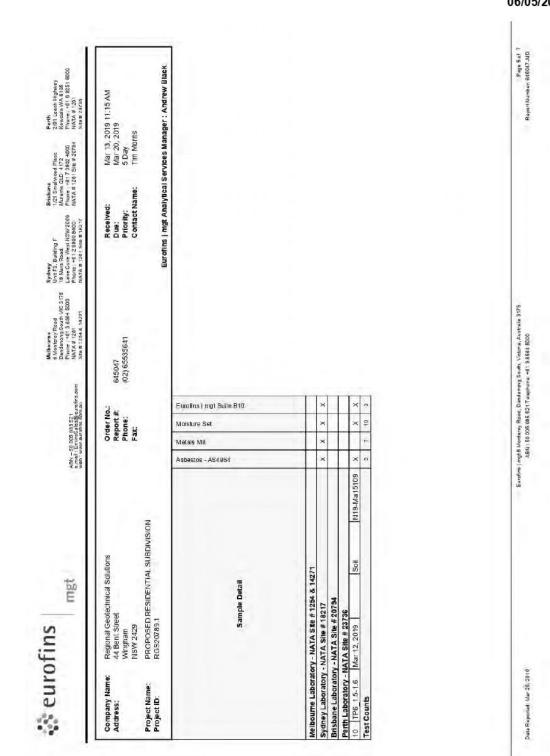
ATTACHMENT

Page 4 of 7 Report Number, 845047-AID Perth 2/81 Leach Highwey Revolde WA 8105 Fhone: 141 8 8251 8800 NATA # 1261 Ste# 23736 Eurofins | mgt Analytical Services Manager : Andrew Black Mar 13, 2019 11:15 AM Mar 20, 2019 5 Day Tim Morris Brisbans 1/21 Smaltwood Place Murame GLD: 4172 Phone: +61 7 5922 4600 NATA # 1201 She # 20794 Received: Due: Priority: Contact Name: Sydney Unit F3, Building F 18 Mars Road Laine Gore West NSW/2066 Phone: +012 2800 8400 NATA # 1201 Siee # 18277 Malbourne 6 Nonterey Road Danderong South VIC 3175 Phone - 1461 3 4584 5000 NATA # 1201 Ster # 1254 # 14271 Impt8 Montarey Ripad, Dandanang South, Vistoria, Australia 3175 ABN : 50 005 085 621 Talephone: +61 3 8564 6000 645047 (02) 65535641 ABN - 50 005 085 521 e.mail: EnviroSales@eurefins.com web: www.aurofine.fom.au Eurofins | mgt Suite B10 × Order No.: Report # Phone: Fax: Moisture Set > x × × × × × Metals M8 × × Asbestos - AS4954 Eurofins N19-Ma15101 N19-Ma15102 N19-Ma15103 N19-Ma15104 N19-Ma15106 N19-Ma15106 N19-Ma15106 N19-Ma15108 119-Ma15100 LABID PROPOSED RESIDENTIAL SUBDIVISION RGS20789.1 Matrix Melbourne Laboratory - NATA Site # 1254 & 14271 Sydney Laboratory - NATA Site # 1277 Brisbane Laboratory - NATA Site # 20794 Perth Laboratory - IAITA Site # 23736 External Laboratory No Sample ID Sample Date | Sampling | M Regional Geotechnical Solutions 44 Bent Street Sol Sol Sol Sol Sol Sol Sol Soil mgt Sampling Sample Detail Mar 12, 2019 Wingham NSW 2429 eurofins Mar 12, 2019 TP1 0-0.2 P Date Reported: Mar 20, 2010 Company Name: Address: TP2 0.0.2 TP3 0.0.2 TP4 0.3.0.4 Project Name: Project ID: TP5_0-0.2 TP5_1-1.2 TP6 0-0.2 ò,

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

ATTACHMENT



ltem 05 Attachment 6 Page 161

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

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		mgt

Internal Quality Control Review and Glossary General

- 1. QC data may be available on request.
- Cloada may be available united as in the set united as in the set of the

Holding Times

Rease refer to 'Sample Preservation and Container Guide' (ar holding times (Q3001)). For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

Fine Laboratory did not receive the information in the required fimeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. times apply from the date of sampling, therefore compliance to these may be putside the laborat

Horoug mines apply in	on the date of samping, therefore compliance to these in	ay be buside the abbraidry's sonitor.
Units		
% w/w; weight for wei	gnt bass.	grams per kilogram
Filter loading:		fibres/100 graticule sreas
Reported Concentration	en:	fibres/mL
Flowrate:		Limn
Terms		
Dry	Sample is dried by heating prior to analysis	
LOR	Limit of Reporting	
coc	Chain of Custody	
SRA	Sample Receipt Advice	
50	International Standards Organisation	
AS	Australian Standards	
WA DOH		of Western Australia, Ouidelines for the Assessment, Remediation and Management of Asbestos-Contaminated sting obcument Recommendad Procedures for Loboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protestian (Assessment of S	Sée Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials, Asbestos containe NEPM, ACM is generally restricted to those mater	ed within a non-asbesius matrix, typically presented in bonded and/or sound condition. For the purposes of the nais that do not pass of 7mm 17mm siovo.
AF	Asbestos Fines. Asbestos containing materials, in equivalentto "non-bonded / friable".	oluding friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as
FA	Fibrous Asbestos, Asbestos containing materials i materials that do not pass a 7mm x 7mm sieve.	in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those
Friable	Askestos-containing materials of any size that ma putsicle of the (aboratory's remit to assess degree	y be broken ar onimbled by hand pressure. For the autposes of the NEPM, this includes both AF and FA. It is of frishillay,
Trace Analysis	Analytical procedure used to detect the presence	of respectio fibres in the metha.

Data Reported: Mar 20, 2010

Eurofins | mgt 8 Montorey Road, Dandanong South, Victoria, Australia 3175 ABN : 50 005 095 521 Telephone: +81 3 8584 5000

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

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Comments

The samples received were not collected in an approved asbestos bag and was therefore sub-sampled from the 250mL glass jar. Valid subsampling procedures were applied so as to ensure that the sub-samples to be analysed accurately represented the samples received.

Sample Integrity	
Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample contextly preserved	Yes
Appropriate sample containers have been used	Y25
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Net

 Qualifier Codes/Comments

 Code
 Description

 N/A
 Net applicable

Asbestos Counter/Identifier:

Chemath JHM Annehkoge Senior Analyst-Aspestos (HSW)

Senior Analyst-Aspestos (NSW)

Authorised by:

Glenn Jackson

General Manager

Final Report - this report replaces any previously issued Report

- Indicates Not Requested

Indicates NATA accreditation does not cover the performance of this service. Measurement uncertainty of test data is available on request or please <u>allock here.</u>

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Data Reported: Mar 20, 2010

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

DAVID PENSINI Building Certification and Environmental Services

BUSHFIRE HAZARD ASSESSMENT

PROPOSED RESIDENTIAL SUBDIVISION

PORTION OF LOT 302 DP 754434, EMILY AVENUE, PORT MACQUARIE

> CLIENT: PORT MACQUARIE HASTINGS COUNCIL

> > APRIL 2019

3 Blair Street, Port Macquarie NSW 2444 – PO Box 5581, Port Macquarie NSW 2444 – Phone 0434 166 150 – Email <u>kdpensini@biopond.com</u> A2N 55 183 050 741

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

BUSHFIRE HAZARD ASSE SUBDIVISION – PORTION	SSMENT OF LOT 302 EMILY AVE, PORT MACQUARIE	AP RIL 2019
	This report has been prepared by David Pensini – Building Certification and Environmental Services with all reasonable skill, care and diligence for Port Macquarie Hastings Council.	
	The information contained in this report has been gathered from discussions with representatives of for Port Macquarie Hastings Council, a review of the plans provided on behalf of for Port Macquarie Hastings Council and experience.	
	No inspection or assessment has been undertaken on other aspects of the proposed development outside the scope of this report.	
	This report does not imply, nor should it be implied, that the proposed development will comply fully with relevant legislation.	
	The report shall not be construed as relieving any other party of their responsibilities or obligations.	
	David Pensini – Building Certification and Environmental Services disclaims any responsibility for Port Macquarie Hastings Council and others in respect of any matters outside the scope of this report.	
	The report is confidential, and the writer accepts no responsibility of whatsoever nature, to third parties who use this report, or part thereof is made known. Any such party relies on this report at their own risk.	
	For and on behalf of David Pensini – Building Certification and Environmental Services.	
	Prepared by: David Pensini	
	Signed:	
	Dated: 17 th April 2019	
L		

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BUSHFIRE HAZARD ASSESSMENT SUBDIVISION – PORTION OF LOT 302 EMILY AVE. PORT MACQUARIE APRIL 2019

Version	Date	Information relating to report				
		Reason for issue				
1.0	8 th April 2019		Draft			
2.0	17 th April 2019		Issued to Client			
			Prepared by	Verified by	Approved by	
		Name	David Pensini		David Pensini	
		Signature	Desuchan		Decechar	

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APPENDIX 1 – Subject Site APPENDIX 2 – Proposed Development APPENDIX 3 – APZ Compliance Concept

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BUSHFIRE HAZARD ASSESSMENT SUBDIVISION – PORTION OF LOT 302 EMILY AVE. PORT MACQUARIE APRIL 2019

1.0 INTRODUCTION

The land which comprises the subject site is currently known as Lot 302 DP 754434 Emily Avenue, Port Macquarie.

It is proposed to subdivide the southern portion of the subject site so as to provide for five (5) separate residential lots. The reminder of the subject site will continue to form part of the Wayne Richards Sports Complex which is used for various active recreational activities.

This report is based on site assessments carried out on 4th March 2019.

As the proposed development of the subject land involves the creation of residential lots the subject development is an Integrated Development and has a requirement for a Bush Fire Safety Authority under Section 100B of the *Rural Fires Act 1997*.

The purpose of this report is to demonstrate that the bushfire risk is manageable for the proposed residential subdivision and to determine the bushfire protection management measures which are applicable to the future development of the subject site.

NOTE

The report has been prepared with all reasonable skill, care and diligence.

The information contained in this report has been gathered from field survey, experience and has been completed in consideration of the following legislation.

- 1. Rural Fires Act 1997.
- 2. Environmental Planning and Assessment Act 1979.
- 3. Building Code of Australia.
- 4. Council Local Environment Plans and Development Control Plans where applicable.
- 5. NSW Rural Fire Services, Planning for Bushfire Protection, 2006.
- 6. AS 3959 2009 Construction of Buildings in Bushfire Prone Areas.

The report recognizes the fact that no property and lives can be guaranteed to survive a bushfire attack. The report examines ways the risk of bushfire attack can be reduced where the site falls within the scope of the legislation.

The report is confidential, and the writer accepts no responsibility of whatsoever nature, to third parties who use this report or part thereof is made known. Any such party relies on this report at their own risk.

This report has been based upon the vegetation characteristics observed at the time of site inspection. No responsibility is taken where the vegetation characteristics of the subject site or surrounding areas is changed or modified beyond that which is presented within this report.

1.1 Objectives

The objectives of this report are to:

- Ensure that the proposed residential subdivision of the land has measures sufficient to minimize the impact of bushfires; and
- Reduce the risk to property and the community from bushfire.

1.2 Legislative Framework

On 1st August 2002 the Environmental Planning and Assessment Act 1979 and the Rural Fires Act 1997 were both amended to enhance bush fire protection through the development assessment process.

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BUSHFIRE HAZARD ASSESSMENT SUBDIVISION – PORTION OF LOT 302 EMILY AVE, PORT MACQUARIE APRIL 2019

In broad terms, the planning considerations provide two main steps. These involve:

(a) Strategic Planning through;

the mapping of bush fire prone;

determining suitable bush fire requirements during the preparation of a Local Environmental
Plan and/or Development Control Plan; and

• the identification of the extent to which land is bushfire prone.

(b) Development assessment through;

 obtaining a bush fire safety authority for residential or rural-residential subdivision and special fire protection purpose developments in bushfire prone areas from the Rural Fire Service (RFS);

 seeking advice from the RFS in relation to infill and other developments in bushfire prone areas that cannot comply with the requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006; and

 the application of additional requirements of the Building Code of Australia (BCA) in relation to construction standards for Class 1, 2, 3, 4 and some Class 9 buildings in bushfire prone areas.

It is noted that this report focuses upon the development assessment processes associated with the proposed residential subdivision of the subject site.

1.2.1 Objectives for Residential Subdivision Developments

The specific objectives for residential subdivision developments as provided for by NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 are to;

- Minimise perimeters of the subdivision exposed to the bush fire hazard. Hourglass shapes, which maximise perimeters and create bottlenecks, should be avoided.
- · Minimise bushland corridors that permit the passage of bush fire.
- Provide for the siting of future dwellings away from ridge-tops and steep slopes particularly up-slopes, within saddles and narrow ridge crests.
- Ensure that separation distances (APZ) between a bush fire hazard and future dwellings enable conformity with the Deemed-to-Satisfy requirements of the BCA. In a staged development, the APZ may be absorbed by future stages.
- Provide and locate, where the scale of development permits, open space and public recreation areas as accessible public refuge areas or buffers (APZs).
- Ensure the ongoing maintenance of asset protection zones.
- Provide clear and ready access from all properties to the public road system for residents and emergency services.
- Ensure the provision of and adequate supply of water and other services to facilitate effective firefighting.

It is noted that the proposed development is considered to be consistent with the above objectives together with the relevant acceptable solutions/standards which are applicable to the residential subdivision and development of the subject site.

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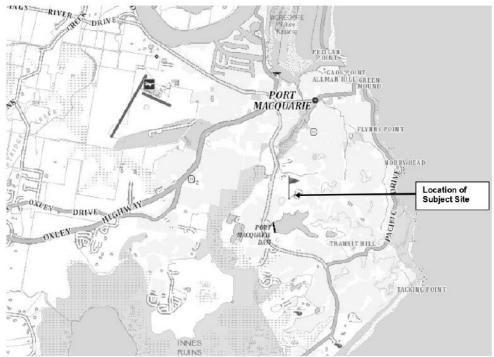
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BUSHFIRE HAZA RD ASSESSMENT SUBDIVISION – PORTION OF LOT 302 EMILY AVE, PORT MACQUARIE APRIL 2019

1.3 Location and Site Description

The subject site currently comprises one (1) allotment of land which are known as Lot 302 DP 754434 Emily Avenue, Port Macquarie. The subject site is situated approximately 2.5km to the south of the Port Macquarie CBD, refer to Figure 1 below;

Figure 1 - Site Location



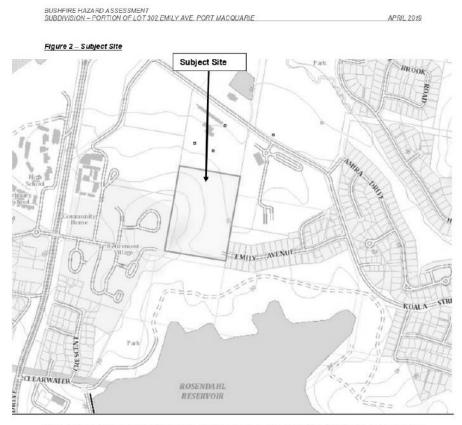
Being located to the north of the Rosendahl Water Supply Reservoir which services the Port Macquarie township and forming part of the Wayne Richard Sports Complex, the land within this area has and will continue to be dominated by significant areas of open space with Emily Avenue to the east of the subject site supporting residential development and the St Agnes Aged Care Facility adjoining to the west, refer to Figure 2 below.

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The subject site is rectangular in shape with a site area of approximately six (6) hectares, refer to Appendix 1.

Access to the subject site is via Koala Street which provides access to the Wayne Richards Sports Complex which the subject site forms part of. Koala Street is present to the north of the subject site. It is also noted that access to the subject site is also available via Emily Avenue which adjoins the subject site in the south-eastern corner.

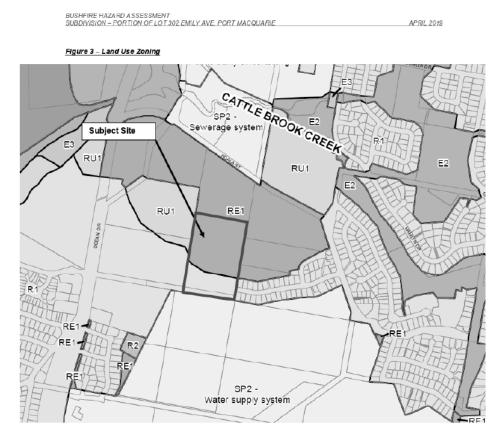
The majority of the subject site is zoned for recreational purposes (RE1) pursuant to Port Macquarie – Hastings Local Environmental Plan (2011) however a small area along the southern portion of the subject site is zoned for Residential (R1) purposes. Adjoining and adjacent land to the north and east is zoned Recreation (RE1) whilst land with a residential land use zoning extends to the southeast and southwest. A small area of Rural (RU1) land use zoning is present to the northwest whilst land to the south is zoned to reflect the presence of the Rosendahl Water Supply Reservoir with a special purpose (SP2) zoning applicable to this area, refer to Figure 3.

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The topography of the subject site and the immediate surrounding area is dominated by two separate topographical features with a small hill present to the west of the subject site and a ridgeline feature present to the south. Being located partly on the side slopes of each feature provides for moderate south to north downslopes over the southern portion of the subject site with moderate to steep west to east downslopes present along the western portion of the subject site. The central and eastern areas of the subject site are generally flat and reflects the modification of topography associated with the construction of playing fields within the Wayne Richards Sports Complex.

Most of native vegetation has been removed from the subject site with managed grasslands dominating the playing fields within the Wayne Richards Sports Complex. It is however noted that grasslands with scattered and clusters of trees dominate the southern portion of the subject site with scrub and grasslands present along the western portion of the subject site. An area of highly modified Wet Sclerophyll Forest is present within the Rosendahl Water Supply Reservoir to the south of the subject site with managed vegetation associated with developed residential lots extending to the east of the subject site although some small forest remnants have been retained within the sports complex which extends to the east of the subject site. Vegetation to the north of the subject site is dominated by the managed grass surfaces within the sports complex whilst the vegetation to the west of the subject site consists of managed vegetation within the St Agnes Aged Care and McKillop School complexes.

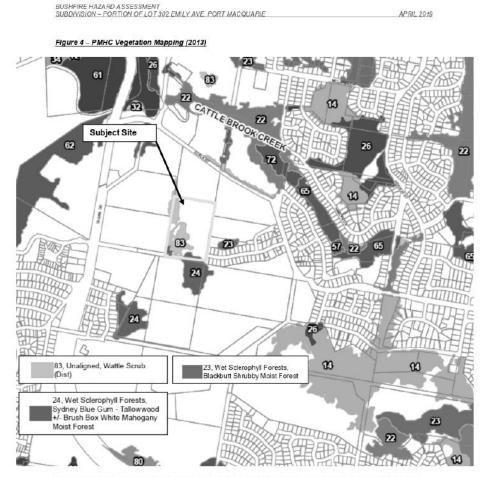
The dominant vegetation communities located on and adjoining/adjacent to the subject site can be seen in **Figure 4** below;

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The closest Fire Service is located approximately 1.6km to the northwest of the subject site, (Port Macquarie Fire Brigade), with the closest Fire Control Centre being at Wauchope which is 20 kilometres west or 20 minutes by car from Port Macquarie.

1.4 Site History

The subject land is owned by Port Macquarie Hastings Council and forms part of the Wayne Richards Sports Complex.

The subject site historically formed part of the Port Macquarie Hastings Council works depot which is present to the northwest of the subject site.

Forming part of the Wayne Richards Sports Complex improvements to the subject site reflect the active recreation use of the land with sports fields, amenity, carparking and access roads present in the central and eastern portions of the subject site whilst the western and southern portions of the subject site support the presence of mountain biking tracks.

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Fire has not recently occurred on the site or on adjoining and adjacent land.

The environmental and heritage features of those areas of the subject site which form the basis of this report are summarized as follows;

Table 1 – Environmental and Heritage Features

ENVIRONMENTAL/HERITAGE FEATURE	COMMENT
Riparian Corridors	There are no riparian corridors on the subject site.
SEPP (Coastal Management) 2018	The subject site is not identified as being subject to the SEPP.
SEPP 44 – Koala Habitat	The cleared nature of the subject site is such that the land would not be subject to the requirements of SEPP 44.

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Areas of geological interest	The subject site is not identified as potentially containing acid sulphate soils in accordance with Port Macquarie – Hastings Local Environmental Plan (2011). Based upon previous land use it is expected that no land contamination issues will be relevant to the subject site.
Environmental Protection Zones	The subject site currently contains no Environmental Protection Zones. The majority of the subject site is zoned for recreational purposes (RE1) pursuant to Port Macquarie – Hastings Local Environmental Plan (2011) however a small area along the southern portion of the subject site is zoned for Residential (R1) purposes. Adjoining and adjacent land to the north and east is zoned Recreation (RE1) whilst land with a residential land use zoning extends to the southeast and southwest. A small area of Rural (RU1) land use zoning is present
Land slip	to the northwest whilst land to the south is zoned to reflect the presence of the Rosendahl Water Supply Reservoir with a special purpose (SP2) zoning, refer to Figure 3 . Given the flat to moderate topography of the subject site and surrounding areas land slip is not considered to be an issue for the
Flood prone land	subject site. The subject site is not identified as being flood prone land and as such is not subject to compliance with the flood planning area provisions of Port Macquarie-Hastings Councils LEP, 2011.
National Park Estate or other Reserves	The subject sites do not form part of the National Park Estate or other Reserves.
Threatened species, populations, endangered ecological communities and critical habitat	Threatened species, populations, endangered ecological communities and critical habitat are unlikely to be present as the subject site has been the subject of significant modification over time however this issue is to be the subject of separate assessment.
Ecologically Endangered Communities (EEC's)	Given the level of historic disturbance of the subject site in the areas of the proposed development it is unlikely to contain or support EEC's however this issue is to be the subject of separate assessment.
OEH Key Habitats and Corridors	The proposed development area does not fall within a regional or sub-regional corridor.
Aboriginal Heritage	Items of aboriginal heritage are unlikely to be present given the active vegetation modification and management which has occurred on the subject site and the level of site disturbance which is likely to have occurred over the years.

1.5 Development Proposal

It is proposed to subdivide the southern portion of the subject site so as to provide for five (5) separate residential lots. The reminder of the subject site will continue to form part of the Wayne Richards Sports Complex, which is used for various active recreational activities, refer to **Appendix 2**.

Access to the proposed lots will be either direct connection to the existing Emily Avenue public road or via a proposed 'Right of Carriage Way' access driveway which connects with Emily Avenue. In this regard proposed Lots 1 and 2 will connect directly with the cul de sac turning DAVID FENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES 12

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head of Emily Avenue whilst proposed Lots 3, 4 and 5 will connect with Emily Avenue by a single driveway which functions as a 'Right of Carriageway' arrangement.

1.6 Fauna and Flora Issues

A fauna and flora evaluation has not been undertaken in conjunction with this bushfire hazard assessment and as such issues pertaining to fauna and flora are outside the scope of this report.

2.0 BUSHFIRE HAZARD ASSESSMENT

2.1 Assessment Methodology

In order to meet the scope of activities that are the subject of this report the following method was utilized.

(i) Stage 1 - Desktop Survey.

The identification and assessment of existing and historic information pertaining to the subject site in relation to;

- Road infrastructure.
- Land use.
- Ecological characteristics.
- Topographic features.

(ii) Stage 2 - Field Survey.

A detailed inspection of the subject site was undertaken by David Pensini - Building Certification and Environmental Services on 4^{th} March 2019 in order to identify relevant bushfire hazard factors and characteristics such as;

- Slope conditions.
- Vegetation characteristics.
- Fire Danger Index

Each of the above factors need to be considered in determining the bushfire hazard for the subject site and proposed development. These factors must be reviewed in determining the bushfire protection measures which are applicable to the subject site and the proposed residential subdivision of the area of land which is the subject of this report.

The assessment of slope and vegetation characteristics has been carried out in accordance with Appendix 2 and Appendix 3 of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 and Section 2 of AS 3959 - 2009.

(iii) Stage 3 - Data Compilation and Project Reporting.

Based upon an assessment of the information obtained from Stages 1 and 2 above the following bushfire hazard management information was determined and documented as being appropriate for the proposed residential subdivision of the subject land;

- The required minimum Asset Protection Zones, (APZ's), which would be applicable to residential subdivision developments and for Special Fire Protection Purpose forms of development.
- Indicative Bushfire Attack Levels (BAL's) and associated construction standards which would be applicable to building infrastructure associated with any future development.

Considerations for the provision of services, (water, electricity and gas).

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- Road network considerations in providing for access and egress from future development.
- · Emergency management including access for evacuation.

2.2 Hazard Vegetation

Bushfire Prone Land Risk Mapping provides that the central and north eastern portions of the subject site do not contain areas of hazard vegetation whilst the western and southern portions of the subject site are shown to contain areas of Category 1 and Category 2 vegetation albeit that these areas of vegetation are intermingled.

Fragmented areas of Category 2 vegetation are shown to be present to the east of the southern portion of the subject site whilst an area of Category 1 vegetation is shown to be present to the south of the subject site, refer to Figure 5 below.

Figure 5 -Bushfire Risk Mapping



2.3 Slope Assessment

Slope is a major factor to consider when assessing the bushfire risk of any development which is subject to compliance with the requirements of NSW Rural Fire Service, *Planning for* DAVID PENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES 14

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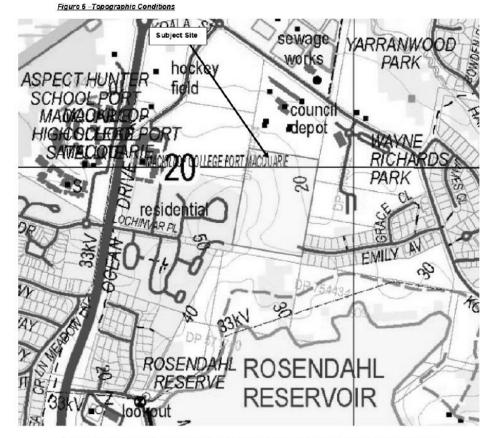
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Bushfire Protection, 2006. Therefore, the slope of the subject site and surrounding area, (to a distance of 100m), was measured using a Suunto PM-5/360 PC Clinometer.

The topography of the subject site and the immediate surrounding area is dominated by two separate topographical features with a small hill present to the west of the subject site and a ridgeline feature present to the south. Being located partly on the side slopes of each feature provides for moderate south to north downslopes over the southern portion of the subject site with moderate to steep west to east downslopes present along the western portion of the subject site. The central and eastern areas of the subject site are generally flat and reflects the modification of topography associated with the construction of playing fields within the Wayne Richards Sports Complex.

The topographical conditions on the subject site and on adjoining and adjacent land can be seen in **Figure 6** below;



The hazard vegetation on the subject site and on adjoining and adjacent land that was relevant to the proposed residential subdivision were identified in relation to the subject site and the slopes within the vegetation measured.

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The following table shows the results. It is noted that the identification of hazard vegetation was based upon the development concepts which were provided, refer to **Appendix 2**.

Table 2 - Slope Assessment Results

DIRECTION OF HAZARD	SLOPE degrees)	UPSLOPE/DOWN SLOPE
North	5°- 6°	Down slope
Northeast	5*-6*	Down slope
South	3°-4'	Down slope
East	5°-6°	Down slope
West	7°- 15° (0°)	Upslope

The above slopes were considered when assessing the required defendable spaces and indicative Bushfire Attack Levels, (BAL's), for any future development/s.

2.4 Vegetation Assessment

The vegetation on and surrounding the subject site was assessed over a distance of 140m from the proposed development.

The vegetation formations were classified using the system adopted as per Keith (2004) and in accordance with Appendix 3 of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 and Table 2.3 of AS 3959 - 2009.

The following information is provided in relation to the floristic characteristics of the subject site and adjoining and adjacent land. In adopting a conservative approach to bushfire hazard assessment worst case vegetation characteristics have been identified.

The following vegetation characteristics were identified as being relevant to this bushfire hazard assessment.

2.4.1 Vegetation within Subject Site

Most of native vegetation has been removed from the subject site with managed grasslands dominating the playing fields within the Wayne Richards Sports Complex. It is however noted that grasslands with scattered and clusters of trees dominate the southern portion of the subject site in the area of the proposed development.

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The western portion of the subject sile contains a mixture of remnant and highly disturbed areas of scrub and grasslands. In adopting a conservative approach to bushfire hazard assessment, a classification similar to Tall Heath (Scrub) has been adopted for the western aspect as this classification reflects;

- the ecotone of vegetation which is present;
- the highly disturbed and fragmented characteristics of the vegetation present in this aspect;
- the presence of upslope conditions in this aspect with fire runs away from the subject site;
- the continued presence of active use recreational infrastructure within the western
 portion of the subject site.
- The presence of managed land to the west of the hazard vegetation which provides for fragmentation and disconnection in hazard vegetation.



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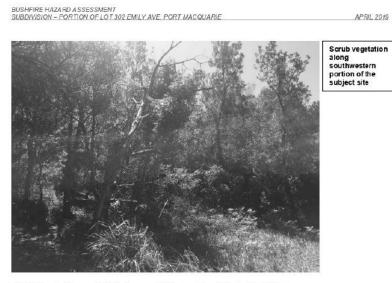
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Grasslands along western portion of the subject site

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2.4.2 Vegetation on Adjoining and Adjacent Land to Subject Site

The following vegetation characteristics were identified as being relevant to the proposed development.

Developed residential lots are present for in excess of 140m to the east of the subject site, (in the area of the proposed development), and accordingly no areas of hazard vegetation were identified in this aspect.



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Managed grasslands within the playing fields of the Wayne Richards Sports Complex extend for >140m to the north of the area of the subject site which is proposed to be subdivided. It is however noted that the relationship of the proposed development to areas of vegetation is such that a narrow area of grasslands will separate the proposed residential lots from the managed vegetation within the sports complex. Therefore, in adopting a conservative approach to bushfire hazard assessment a classification similar to grasslands has been adopted for the northern aspect.





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To the northeast of the area of land which is proposed to be subdivided are a number of small fragmented and highly disturbed areas of Wet Sclerophyll Forest which fringe to south-eastern portion of the Wayne Richards Sports Complex. Given their remnant size and context and there highly disturbed floristic characteristics a specification similar to Rainforest has been adopted for these areas of vegetation.



An area of highly modified Wet Sclerophyll Forest is present within the Rosendahl Water Supply Reservoir to the south of the subject site. Whilst a Wet Sclerophyll Forest classification has been adopted for the southern aspect this classification is considered to be conservative as understorey fuel loads are being managed as grasslands with shrub layer absent. The resultant floristic characteristics are more in keeping with a Grassy Woodland except that the percentage of canopy cover exceeds the 30% criteria which is typical for Woodlands.



Modified Forest vegetation within area of the water supply reservoir

Vegetation to the west of the subject site consists of managed vegetation within the St Agnes Aged Care and McKillop School complexes. DAVID PENSINI - BUILDING CERTIFICATION AND ENVIRONMENTAL SERVICES

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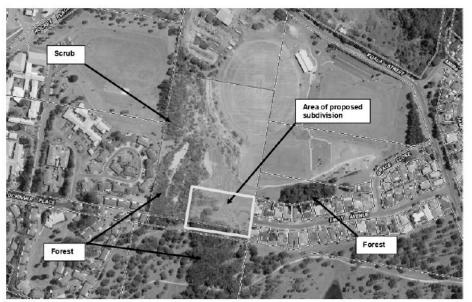
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The vegetation characteristics of the subject site and adjoining and adjacent land are shown in Figure 7 below;

Figure 7 – Vegetation Characteristics



The following table summarizes the various vegetation structures which are of bushfire significance to the proposed allotments.

Table 3 - Summary of Vegetation Characteristics

ASPECT	VEGETATION DESCRIPTION	VEGETATION CLASSIFICATION – (Keith, 2004)
North	Narrow band of unmanaged Grasslands within the Wayne Richards Sports Complex	Grasslands
Northeast	Remnant areas of Wet Sclerophyll Forest vegetation within the Wayne Richards Sports Complex	Similar in specification to Rainforest
South	Area of highly modified Wet Sclerophyll Forest present within the Rosendahl Water Supply Reservoir	Wet Sclerophyll Forest
West	Remnant and highly disturbed areas of forest vegetation with scrub and grasslands	Similar in specification to Tall Heath (Scrub)

2.5 Fire Danger Index

The fire weather for the site is assumed on the worst-case scenario. In accordance with NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 and Table 2.1 of AS 3959 - 2009, the fire weather for the site is based upon the 1:50 year fire weather scenario and has a Fire Danger Index (FDI) of 80. 21

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3.0 BUSHFIRE THREAT REDUCTION MEASURES

3.1 NSW Rural Fire Services, Planning for Bushfire Protection, 2006

The following issues and constraints have been identified through considering the requirements of NSW Rural Fire Service, **Planning for Bushfire Protection**, 2006 as they apply to the future residential development of the area which is the subject of this report.

3.1.1 Defendable Space/Asset Protection Zone

To ensure that the aims and objectives of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 are achieved for the proposed subdivision, a Defendable Space/Asset Protection Zone (APZ) between the asset and the hazard should be provided.

The APZ provides for; minimal separation for safe firefighting, reduced radiant heat, reduced influence of convection driven winds, reduced ember viability and dispersal of smoke. The APZ consists of an Inner Protection Area (IPA) and Outer Protection Area (OPA). The IPA is an area closest to the buildings that incorporates defendable space and is used for managing heat intensities at the building surface. The OPA is positioned adjacent to the hazard and the purpose of the OPA is to reduce the potential length of flame by slowing the rate of spread, filtering embers and suppressing the crown fire.

The following assessment of APZ/defendable space requirements which are relevant to the proposed subdivision is provided as follows.

(i) Residential Subdivision Development

Any future residential developments require APZ's in accordance with the residential subdivision requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006. APZ's in residential subdivision situations must be such that radiant heat levels of greater than 29kW/m² will not be experienced by residential buildings.

The following table indicates the minimum Asset Protection Zones required from the hazard vegetation to the areas which are the subject of this report. The table is based upon the vegetation type, slopes and fire weather (FDI) which is applicable to this assessment.

ASPECT	VEGETATION	SLOPE		TOTAL UIRED	-	MINIMUM POTENTIALLY	COMPLIANCE WITH MINIMUM
			IPA	OPA	APZ	AVAILABLE COMPLIANT APZ	APZ REQUIREMENTS
North	Grasslands	5'- 6' Down slope	10m	-	10m	>10m	•
Northeast	Similar in specification to Rainforest	5°- 6° Down slope	15m	-	15m	> 25 m	(see
South	Wet Sclerophyll Forest	3°-4° Down slope	15m	12m	27m	>27m	Contract of the second s
West	⊤all Coastal Heath	7*-15* (0*) Upslope	15m	-	15m	>15m	Gard

Table 4 – APZ Requirements for Residential Subdivision Developments (29kW/m²)

Having regard to the above it is noted that the minimum required APZs which would be applicable to any future residential developments on the subject site <u>can</u> be achieved either

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within the boundaries of the individual lots or by using a combination of onsite and offsite areas, (i.e. existing and proposed roads).

The APZ acceptable solution provisions which would apply to the residential subdivision development are detailed in the following table.

Table 5 – APZ Performance Requirements

Intent of measures: to provide sufficient space and maintain reduced fuel loads, so as to ensure radiant heat levels at buildings are below critical limits and to prevent direct flame contact with a building.

Performance Criteria	Acceptable Solutions	Compliance Comment
The intent may be achie	wed where:	
Radiant heat levels at any point on a proposed building will not exceed 29 kW/m ²	An APZ is provided in accordance with the relevant tables/ figures in Appendix 2 of NSWRFS Planning for Bushfire Protection 2006	The minimum required asset protection zones can be provided to any future development – refer to Table 4 .
	APZ's are wholly within the boundaries of the development site. Exceptional circumstances may apply (see section 3.3 of NSW RFS Planning for Bushfire Protection 2006)	The required asset protection zones can be provided to any future development in compliance.
APZs are managed and maintained to prevent the spread of a fire towards the building.	APZ's managed in accordance with the requirements of Standards for Asset Protection Zones (RFS, 2005) Note: A Monitoring and Fuel Management Program should be required as a condition of development consent.	APZ's will need to be created and maintained to the standards which are applicable to Inner and Outer Protection Areas.
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is negated	APZ's are located on lands with a slope less than 18 degrees.	No land with steep slopes present in areas which are the subject of this report.

Having regard to the above the acceptable solution, (Deemed-to-Satisfy), provisions for APZ's as detailed in Appendix 2 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 can be achieved for the future development of the proposed residential lots.

Having regard to the information provided in above an APZ compliance concept has been prepared for the proposed development, refer to **Appendix 3**.

3.1.2 Defendable Space/Asset Protection Zone Management

Areas identified as forming part of the minimum APZ requirements for the proposed residential subdivision development must be managed so as to comply with the standards which are applicable to Asset Protection Zones as follows;

Inner Protection Area

An IPA should provide a tree canopy cover of less than 15% and should be located greater than 2 metres from any part of the roofline of a building.

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Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10m from an exposed window or door.

Trees should have lower limbs removed up to a height of 2 metres above the ground

Outer Protection Area

An OPA should provide a tree canopy cover of less than 30% and should have the understorey managed (mowed) to treat all shrubs and grasses on an annual basis in advance of the fire season (usually September).

In this regard it will be necessary to provide and maintain for the life of any future development the minimum Asset Protection Zones as required by **Table 4** of this report.

Compliance with the minimum APZ requirements is achievable for the proposed development of the subject site having regard to the size of the areas of land which are the subject of this report and the characteristics of the hazard vegetation which are relevant to the proposed subdivision.

3.1.3 Operational Access and Egress

Access to and egress from the proposed residential subdivision development is via Emily Avenue which is an existing two wheel drive all weather public road which adjoins the development site to the east. Emily Avenue services the already residentially developed areas of the Emily Avenue residential area.

Being located to the west of the furthest most extent of Emily Avenue, access and egress from the proposed residential lots will be from the east from areas which are protected from the impacts of bushfire. Travel along Emily Avenue to the east provides for connection to Koala Street which is a main connecting road within the locality. Koala Street provides for multiple access and egress options and opportunities via connecting public road infrastructure.

Given the relationship of the proposed development with existing residential development in the locality it is considered that access and egress to and from the proposed lots can be provided in compliance with the relevant requirements of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006.

Proposed Lots 1 and 2 will connect directly with the cul de sac turning head of Emily Avenue whilst proposed Lots 3, 4 and 5 will connect with Emily Avenue by a single driveway which functions as a 'Right of Carriageway' arrangement.

It is noted that Section 4.1.3 of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 provides that no specific access requirements apply to dwellings in an urban area where a 70 metre unobstructed path can be demonstrated between the most distant external part of a proposed dwelling and the nearest part of the public access road, (where the road speed limit is not greater than 70kph), that supports the operational use of emergency fire fighting vehicles (i.e. a hydrant or water supply). In this regard the speed limit along Emily Avenue is a maximum of 50kph and the maximum unobstructed path between Emily Avenue and the most distant external part of the proposed dwellings is less than 70m.

Notwithstanding the above a two-wheel drive all weather access driveways from Emily Avenue and the proposed "Right of Carriageway' access road to proposed Lots 3, 4 and 5 is required to be provided.

Based upon the separation of the proposed residential dwellings from the bushfire hazard vegetation it is considered that the requirements of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 for the provision of access and egress can be satisfied by the proposed development.

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It is considered that the proposed access arrangements are acceptable for the proposed development having regard to the nature, construction and extent of the existing public road infrastructure which is present in the locality and the proposed access road infrastructure.

3.1.4 Services - Water, Gas and Electricity

As set out in Section 4.1.3 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006, residential subdivision developments in bushfire prone areas must maintain a water supply reserve dedicated to fire-fighting purposes.

Given that the existing residential development in the area is serviced by the reticulated water supply which services the residential development within Emily Avenue it is considered that opportunities exist to extend the reticulated water supply to service the proposed residential lots so as to comply with the relevant requirements of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006.

It is however noted that in accordance with NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 the determination of a guaranteed water supply is to be made by the water supply authority where mains water supply is available.

Electricity supply is available and will be accessible to the residential development of the land.

Reticulated gas services are not available in the locality and are therefore not available to the subject site.

The incorporation into the proposed residential subdivision of the following relevant provisions of the following acceptable solutions as provided for by NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 will ensure compliance with the intent for the provision of services to the proposed residential lots.

Table 6 - Service Provision Requirements

Intent of measures: to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building

water supplies are easily accessible and intervals for areas with perimeter roads. • fire hydrant spacing, sizing and pressures comply with AS 2419.1 – 2005. Where this cannot be met, the RFS will require a test report of the water pressures anticipated by the relevant water supply authority. In such cases, the location, number and sizing of hydrants shall be determined using fire engineering principles; provided in the Em reserve. provided	ıt
supplies subdivisions uses a ring main system for areas with perimeter roads. Hydrophydia • water supplies are casily • fire hydrant spacing, sizing and pressures comply with AS 2419.1 – provided in the En reserve. • for hydrant spacing, sizing and pressures comply with AS 2419.1 – 2005. Where this cannot be met, the RFS will require a test report of the water pressures anticipated by the relevant water supply authority. In such cases, the location, number and sizing of hydrants shall be determined using fire engineering principles;	
 hydrants are not located within any road carriageway all above ground water and gas service pipes external to the building are metal, including and up to any taps. the provisions of parking on public roads are met. 	rant coverage is by way of system with ily Avenue road

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Electricity Services • location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings • regular inspection of lines is undertaken to ensure they are not fouled by branches.	where practicable, electrical transmission lines are underground. where overhead electrical transmission lines are proposed: lines are installed with short pole spacing (30 metres), unless crossing gullios, gorges or riparian areas; and no part of a tree is closer to a power line than the distance set out in accordance with the specifications in 'Vegetation Safety Clearances' issued by Energy Australia (NS179, April 2002).	Future development proposals to comply
Gas services • location of gas services will not lead to ignition of surrounding bush land or the fabric of buildings	 reticulated or bottled gas is installed and maintained in accordance with AS 1596 and the requirements of relevant authorities. Metal piping is to be used. all fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side of the installation. if gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2 metres away from any combustible material, so that they do not act as a catalyst to combustion. Connections to and from gas cylinders are metal. polymer sheathed floxible gas supply lines to gas meters adjacent to buildings are not used. 	Future development proposals to comply

3.1.6 Construction Requirements

It is noted that Appendix 3 of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 now contains specific construction requirements which the NSW Rural Fire Service will seek to impose, through the development control process, in addition to the construction requirements contained within AS3959 – 2009.

Accordingly, the determination of the construction requirements which will be applicable to any specific future development proposal will need to have regard to the construction requirements nominated in Appendix 3 of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 in addition to the requirements of AS3959 – 2009.

Based upon the size of the proposed Torrens Title lots and the nature of the proposed residential dwelling development it is considered that the requirements of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006 for the siting, design and construction of residential buildings can be satisfied.

The relevant requirements of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006, are summarized as follows;

Table 7 - Building Siting and Design Requirements (PfBP 2006)

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
in relation to siting and	 buildings are designed and sited in accordance with the
design:	siting and design principles
	*

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 buildings are sited and designed to minimize the risk of bush fire attack. 	
in relation to construction standards: • it is demonstrated that the proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact	construction determined in accordance with Appendix 3 and the Requirements for attached garages and other structures

3.2 Construction of Buildings in Bushfire Prone Areas

3.2.1 General

In NSW, the bushfire protection provisions of the Building Code of Australia, (BCA), are applied to Class 1, 2, 3, Class 4 parts of buildings, some Class 10 buildings and Class 9 buildings that are Special Fire Protection Purposes (SFPP's).

The BCA references AS3959 – 2009 as the Deemed-to-Satisfy (DTS) solution for construction requirements in bushfire prone areas for NSW.

It is however noted that there are a number of NSW variations to the application of AS3959 – 2009 including a restriction on the utilization of the Bushfire Attack Level – Flame Zone requirements of the Australian Standard as a 'deemed to safisfy solution' for these situations. Consequently, in NSW all situations which are determined as being subject to the Bushfire Attack Level – Flame Zone requirements of AS3959 – 2009 must be treated on merit with construction requirements being determined on a specific site assessment basis.

As the development concept involves the construction of residential dwellings the requirements of AS3959 – 2009 will be applicable to the future development of each of the proposed Torrens Title lots.

Whilst the proposed Torrens Title subdivision of the subject site does not involve the construction of buildings the determination of specific construction requirements which would be applicable to buildings is not specifically relevant at this stage of the land use planning process.

Notwithstanding the above the following preliminary assessment of Bushfire Attack Levels in accordance with AS 3959 – 2009 is provided as it applies to the residential subdivision development of the subject site. This assessment is based upon the provision of the minimum required APZ as provided for by **Table 4** of this report. **3.2.2 Vegetation**

To complete the assessment under AS 3959 (2009) the vegetation, as originally assessed in accordance with Keith, has to be converted to Specht. The following table shows the conversion:

Table 8 – Summary of Vegetation Characteristics

ASPECT	VEGETATION DESCRIPTION	VEGETATION CLASSIFICATION - (Keith, 2004)	VEGETATION CLASSIFICATION
North	Narrow band of unmanaged Grasslands within the Wayne Richards Sports	Grasslands	Grasslands

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	Complex		
Northeast	Remnant areas of Wet Sclerophyll Forest vegetation within the Wayne Richards Sports Complex	Similar in specification to Rainforest	Rainforest
South	of highly modified Wet Sclerophyll Forest is present within the Rosendahl Water Supply Reservoir	Wet Sclerophyll Forest	Wet Sclerophyll Forest
West	Remnant and highly disturbed areas of forest vegetation with scrub and grasslands	Similar in specification to Tall Heath	Scrub

3.2.3 AS3959 - 2009 Construction of Buildings in Bushfire Prone Areas

The following construction requirements in accordance with AS 3959 - 2009 Construction of Buildings in Bushfire Prone Areas is required for the bushfire attack level categories.

Table 9 – Bushfire Attack Levels

	BUSHFIRE ATTACK LEVEL (BAL)
ľ	No construction requirements under AS 3959-2009
ł	BAL - 12.5
	BAL - 19
Ī	BAL - 40
[BAL - FZ

Based upon the information presented in Section 2 of this report the worst-case Bushfire Attack Levels pursuant to AS3959 - 2009 have been determined as being applicable to the future residential development of each of the proposed lots.

It is noted that the following BAL assessment has been based upon the provision of the required Asset Protection Zones to residential subdivision developments as provided for by Table 4 of this report.

Table 10 – Worst Case Bushfire Attack Levels for Nominated Vegetation Classifications and Slopes

ASPECT	VEGETATION CLLASSIFICATION	DISTANCE (of proposed Lot/Building from Hazard Vegetation)	SLOPE	BUSHFIRE ATTACK LEVEL (BAL)
Proposed Lot	±1			
North	Grasslands	Minimum 10m	5°- 6° Down slope	BAL 29
Northeast	Rainforest	>50m	5°-6° Down slope	BAL 12.5
South	Wet Sclerophyll Forest	Minimum 27m	3°- 4° Down slope	BAL 29
West	Scrub	>85m	7°-15° (0°) Upslope	BAL 12.5
Proposed Lot	12	·	· ·	
North	Grasslands	Minimum 10m	5°- 6°	BAL 29

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			Down	
			slope	
Northeast	Rainforest	>70m	5°- 6°	BAL 12.5
nonineast	Rainorest	27011	Down	DAL 12.5
			slope	
South	Wet Sclerophyll	Minimum 27m	3°- 4°	BAL 29
South	Forest		Down	DAL 29
	Folest			
West	Scrub	>70m	slope 7°-15' (0°)	BAI 12.5
west	Scrub	>70m		BAL 12.5
Proposed Lot 3	2		Upslope	
Proposed Lot 3	2			
North	Grasslands	Minimum 10m	5°- 6°	BAL 29
			Down	
			slope	
Northeast	Rainforest	>85m	5°- 6°	BAL 12.5
			Down	
			slope	
South	Wet Sclerophyll	Minimum 27m	3'- 4'	BAL 29
ooutii	Forest		Down	Drie 20
	1 of est		slope	
West	Scrub	>50m	7°- 15' (0°)	BAL 12.5
11031	Serub	- 00111	Upslope	DAL 12.0
Proposed Lot 4	4	1 1	opsiops	1
North	Grasslands	Minimum 10m	5*- 6*	BAL 29
Norui	Grassianus	Minimum Iom	Down	DAL25
			slope	
Northeast	Rainforest	>100m	5°- 6°	BAL Low
Northeast	Rainorest	-100111	Down	Threat
			slope	linear
South	Wet Sclerophyll	Minimum 27m	3°- 4°	BAL 29
South	Forest		Down	DAL 29
	FUICSL		slope	
West	Scrub	>35m	7'- 15' (0')	BAL 12.5
West	ocrub	P3011	Upslope	DAL 12.3
Proposed Lot §	5		Opsiope	1
			54.04	- Bulloo
North	Grasslands	Minimum 10m	5°- 6°	BAL 29
			Down	
			slope	-
Northeast	Rainforest	>120m	5°-6°	BAL Low
			Down	Threat
			slope	
South	Wet Sclerophyll	Minimum 27 m	3'- 4'	BAL 29
	Forest		Down	
			slope	
West	Scrub	Minimum 15m	7°-15° (0°)	BAL 29
			Upslope	

The information presented in the above table indicates that under the worst case spatial separation scenario between future residential dwellings on the proposed Torrens Title Lots and areas of bushfire hazard vegetation, future residential dwellings would be subjected to a worst case Bushfire Attack Level of BAL-29 by virtue of the bushfire hazard vegetation which is present in the northern, north-eastern, southern and western aspects to the subject site.

The preliminary BAL construction requirements which are applicable to future residential dwellings on the proposed Torrens Title lots are summarized as follows;

Dwelling on proposed Lot 1 – BAL 29

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- Dwelling on proposed Lot 2 BAL 29
- Dwelling on proposed Lot 3 BAL 29
- Dwelling on proposed Lot 4 BAL 29
- Dwelling on proposed Lot 5 BAL 29

4.0 SUMMARY OF FINDINGS

The following requirements are provided in response to the proposed Torrens Title subdivision and associated residential dwelling development provided for in **Appendix 2**.

- Asset Protection Zones are to be provided in accordance with Section 3.1.1 of this Report, (in particular Table 4).
- (ii) Water and other services are to be provided to the proposed Torrens Title lots in accordance with the requirements detailed in Section 3.1.3 of this report.
- (iii) Two-wheel drive all weather access driveway from Emily Avenue and proposed Torrens Title lots 3, 4 and 5 is required to be provided.
- (iv) Future residential dwellings on each of the proposed Torrens Title lots shall be constructed so as to comply with the following Bushfire Attack level (BAL) Construction Requirements of AS3959 – 2009 (as amended by NSW Rural Fire Services, *Planning for Bushfire Protection*, 2006);
 - Dwelling on proposed Lot 1 BAL 29
 - Dwelling on proposed Lot 2 BAL 29
 - Dwelling on proposed Lot 3 BAL 29
 - Dwelling on proposed Lot 4 BAL 29
 - Dwelling on proposed Lot 5 BAL 29

Bushfire Attack Levels for future residential dwellings on each of the proposed Torrens Title lots are to be confirmed prior to construction.

(v) Adopt Landscaping principals in accordance with Section 3.1.4 of this report.

5.0 CONCLUSION

It is considered that the proposed Torrens Title subdivision development of portion of land known as Lot 302 DP 754434 Emily Avenue, Port Macquarie is at risk of bushfire attack; however, it is in our opinion that with the implementation of the bushfire threat reduction measures and consideration of the recommendations in this report, the bushfire risk is manageable for the proposed Torrens Title subdivision.

With the implementation of the recommendations it is considered that it will be possible for the proposed subdivision to meet the applicable acceptable solutions as provided for in NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006 having regard to the existing subdivision layout, the size of the existing and proposed lots and the extent of the existing and proposed development on each proposed lot.

This report is however contingent upon the following assumptions and limitations.

Assumptions

- (i) For a satisfactory level of bushfire safety to be achieved regular inspection and testing of proposed measures, building elements and methods of construction, specifically nominated in this report, is essential and is assumed in the conclusion of this assessment.
- (ii) There are no re-vegetation plans in respect to hazard vegetation and therefore the assumed fuel loading will not alter.

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- (iii) It is assumed that the building works will comply with the DTS provisions of the BCA including the relevant requirements of Australian Standard 3959 – 2009.
- Any future developments are constructed and maintained in accordance with the risk reduction strategy in this report.
- (v) The vegetation characteristics of the subject site and surrounding land remains unchanged from that observed at the time of inspection.
- (vi) The information contained in this report is based upon the information provided for review, refer to Appendix 2.

No responsibility is accepted for the accuracy of the information contained within the above plans.

Limitations

- (i) The data, methodologies, calculations and conclusions documented within this report specifically relate to the building and must not be used for any other purpose.
- (ii) A reassessment will be required to verify consistency with this assessment if there is building alterations and/or additions, change in use, or changes to the risk reduction strategy contained in this report.

6.0 REFERENCES

NSW Rural Fire Services, Planning for Bushfire Protection, 2006

AS 3959-2009, Construction of Buildings in Bushfire Prone Areas

Keith David 2004, Ocean Shores to Desert Dunes, The Native Vegetation of New South Wales and the ACT, Department of Environment and Conservation

NSW State Government, Rural Fires Act, 1997

Port Macquarie-Hastings Councils, Bushfire Prone Land Mapping

NSW Rural Fire Service, Guideline for Bushfire Prone Land Mapping, 2002

Australian Building Codes Board, Building Code of Australia, 2011 NSW Rural Fire Service – Guideline for Bushfire Prone Land Mapping 2002

Disclaimer

The findings referred to in this report are those which, in the opinion of the author, are required to meet the requirements of NSW Rural Fire Service, *Planning for Bushfire Protection*, 2006. It should be noted that the Local Authority having jurisdiction for the area in which the property is located may, within their statutory powers, require different, additional or alternative works/requirements to be carried out other than those referred to in this report.

This report has been prepared partially on information provided by the client. Information provided by the client in respect of details of construction.

The author denies any legal liability for action taken as a consequence of the following:

 The Local Authority requiring alternative or additional requirements to those proposed or recommended in this report.

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 Incorrect information, or mis-information, provided by the client with regard the proposed development which is in good faith included in the strategies proposed in this report and later found to be false.

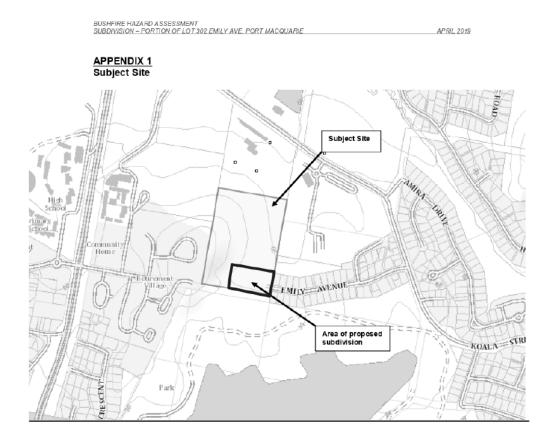
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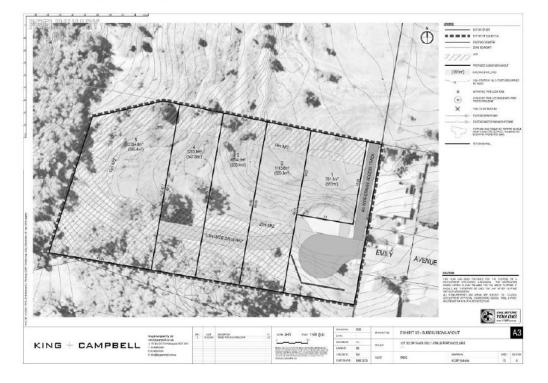
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APPENDIX 2 Proposed Development



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APPENDIX 3 APZ Concept	
Tinimum 19m vide APZ Is scrub vegetation	Important Important Important Important
NOT TO SCALE	Minimum 27m wide APZ to Forest vegetation

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Your reference: DA 2019/309 Our reference: DA-2019-01630-CL55-1

Date: Tuesday 7 January 2020



NSW RURAL FIRE SERVICE

Port Macquarie-Hastings Council PO Box 84 PORT MACQUARIE NSW 2444

ATTENTION: Ben Roberts

Dear Sir/Madam,

Integrated Development Application s100B – Subdivision – Torrens Title Subdivision Koala Street, Port Macquarie Port Macquarie New South Wales AUS, 302//DP754434

I refer to your correspondence dated 14/10/2019 seeking general terms of approval for the above Integrated Development Application.

The New South Wales Rural Fire Service (NSW RFS) has considered the information submitted. General Terms of Approval, under Division 4.8 of the *Environmental Planning and Assessment Act* 1979, and a Bush Fire Safety Authority, under section 100B of the *Rural Fires Act* 1997, are now issued subject to the following conditions:

General Conditions

1. The development proposal is to comply with the layout identified on the drawing titled 'Exhibit 03A -Subdivision Layout' prepared by King & Campbell (Ref: Project No. 5328, Sheet 03, Revision D), dated 27 November 2019.

Asset Protection Zones

The intent of measures is to provide sufficient space and maintain reduced fuel loads so as to ensure radiant heat levels of buildings are below critical limits and to prevent direct flame contact with a building. To achieve this, the following conditions shall apply:

1. At the issue of a subdivision certificate and in perpetuity, the entire area of Lots 1 to 5 must be managed as an inner protection area (IPA). The IPA must comprise:

- Minimal fine fuel at ground level;
- Grass mowed or grazed;
- Trees and shrubs retained as clumps or islands and do not take up more than 20% of the area;
- Trees and shrubs located far enough from buildings so that they will not ignite the building;
- Garden beds with flammable shrubs not located under trees or within 10 metres of any windows or doors;
- Minimal plant species that keep dead material or drop large quantities of ground fuel;
- Tree canopy cover not more than 15%;



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- Tree canopies not located within 2 metres of the building;
- Trees separated by 2-5 metres and do not provide a continuous canopy from the hazard to the building; and.
- Lower limbs of trees removed up to a height of 2 metres above the ground.

2. A restriction to the land use pursuant to section 88B of the Conveyancing Act 1919 shall be included over Lots 1 to 5 to prohibit the construction of a dwelling or Class 10 building within 10 metres of a dwelling, within the area identified as an 'asset protection zone' on the diagram titled 'Exhibit 03A - Subdivision Layout' prepared by King & Campbell (Ref: 5328, Rev. D) dated 27 November 2019, except that the asset protection zone along the northern boundary of Lots 3, 4 and 5 shall be increased to 12 metres wide.

Access - Public Roads

The intent of measures is to provide safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area. To achieve this, the following conditions shall apply:

3. Public road access shall comply with the following requirements of section 4.1.3 (1) of 'Planning for Bush Fire Protection 2006':

- Road(s) shall be two wheel drive, all weather roads.
- Traffic management devices are constructed to facilitate unobstructed access by emergency services vehicles.
- Public roads have a cross fall not exceeding 3 degrees.
- Dead end roads incorporate a turning area in accordance with Figure A3.5 of 'Planning for Bush Fire
 Protection (pre-release, August 2018), are clearly signposted as a dead end and direct traffic away from
 the hazard.
- Non perimeter road widths comply with Table 4.1 in 'Planning for Bush Fire Protection 2006'.
- Curves of roads (other than perimeter roads) are a minimum inner radius of 6 metres
- The minimum distance between inner and outer curves is 6 metres.
- Maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient.
- There is a minimum vertical clearance to a height of 4 metres above the road at all times.
 The capacity of road surfaces and bridges is sufficient to carry fully loaded fire fighting vehicles
- The capacity of road surfaces and proges is sufficient to carry runy roaded mengining ventces (approximately 15 tonnes for areas with reticulated water, 28 tonnes or 9 tonnes per axle for all other areas). Bridges clearly indicate load rating.
- Public roads greater than 6.5 metres wide locate hydrants outside of parking reserves to ensure
 accessibility to reticulated water supply for fire suppression.
- Public roads between 6.5 metres and 8 metres wide are 'No Parking' on one side with services (hydrants) located on this side to ensure accessibility to reticulated water for fire suppression.
- Public roads 5.5 to 6.5 metres wide (kerb to kerb) provide parking within parking bays located outside the kerb to kerb space and located services outside of the parking bays to ensure accessibility to reticulated water for fire suppression.
- Parking bays are a minimum of 2.6 metres wide from kerb to edge of road pavement. No services are located within the parking bays.
- Public roads directly interfacing the bush fire hazard provide roll top kerbing to the hazard side of the road.

Water and Utility Services

The intent of measures is to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building. To achieve this, the following conditions shall apply:

4. Water, electricity and gas are to comply with section 4.1.3 of 'Planning for Bush Fire Protection 2006'.

Landscaping Assessment

The intent of measures is for landscaping. To achieve this, the following conditions shall apply:



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5. Landscaping of the site should comply with following principles of Appendix 5 of 'Planning for Bush Fire Protection 2006':

- Suitable impervious areas are provided immediately surrounding the building such as courtyards, paths and driveways.
- Grassed areas, mowed lawns or ground cover plantings are provided in close proximity to the building.
- · Planting is limited in the immediate vicinity of the building.
- Planting does not provide a continuous canopy to the building (i.e. trees or shrubs should be isolated or located in small clusters).
- Landscape species are chosen in consideration needs of the estimated size of the plant at maturity.
- Species are avoided that have rough fibrous bark, or which keep/shed bark in long strips or retain dead material in their canopies.
- Smooth bark species of tree are chosen which generally do not carry a fire up the bark into the crown.
- Planting of deciduous species is avoided which may increase fuel at surface/ ground level (i.e. leaf litter).
- Climbing species are avoided to walls and pergolas.
- Combustible materials such as woodchips/mulch and flammable fuel are stored away from the building.
- Combustible structures such as garden sheds, pergolas and materials such timber garden furniture are located way from the building.
- Low flammability vegetation species are used.

For any queries regarding this correspondence, please contact Paul Creenaune on 1300 NSW RFS.

Yours sincerely,

Kalpana Varghese Manager Planning & Environment Services Planning and Environment Services



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BUSH FIRE SAFETY AUTHORITY

Subdivision – Torrens Title Subdivision Koala Street, Port Macquarie Port Macquarie New South Wales AUS, 302//DP754434 RFS Reference: DA-2019-01630-CL55-1 Your Reference: DA 2019/309

This Bush Fire Safety Authority is issued on behalf of the Commissioner of the NSW Rural Fire Service under s100b of the Rural Fires Act (1997) subject to the attached General Terms of Approval.

This authority confirms that, subject to the General Terms of Approval being met, the proposed development will meet the NSW Rural Fire Service requirements for Bush Fire Safety under *s100b of the Rural Fires Act 1997*.

Kalpana Varghese

Manager Planning & Environment Services Planning and Environment Services

Tuesday 7 January 2020

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SUSTAINABLE PARTNERSHIPS DEDICATED TO ACHIEVING ECOLOGICAL AND ECONOMICAL BALANCE

LEADING THE WAY IN ENVIRONMENTAL MANAGEMENT

ECOLOGICAL ASSESSMENT FOR PROPOSED 5 LOT SUBDIVISION, EMILY AVENUE PORT MACQUARIE KING AND CAMPBELL

April 2019

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ECOLOGICAL ASSESSMENT FOR PROPOSED 5 LOT SUBDIVISION, EMILY AVENUE PORT MACQUARIE | APRIL 2019

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1. Executive Summary

The site was assessed in accordance with the requirements of the NSW *Biodiversity Conservation Act 2016*, Biodiversity Conservation Regulation 2017 and the *Commonwealth Environment Protection and Biodiversity Conservation (EPBCA) Act 1999* - Matters of National Environmental Significance (MNES). Assessment of the relevant provisions for Koala food trees under the Port Macquarie-Hastings Council Development Control Plan 2013 is also provided.

Development Proposal

The proposal is to subdivide the southwestern corner of Lot 302 DP 754434 into five residential lots to allow for residential dwellings on Emily Avenue. The proposed development site covers an area of approximately 0.8 ha and is located in a historically cleared portion of the larger land parcel. The property is currently vacant and encompasses part of a mountain bike trail and includes a portion the sporting ovals of Wayne Richards Park. Earthworks and tree removal will be required to establish the proposed subdivision.

Key Survey Results

Site surveys were carried out in March and April 2019. The subject site comprises a vacant Lot which contains a small number of canopy trees with no understorey or shrub layer present. No threatened flora were recorded and the site vegetation does not qualify as an Endangered Ecological Community (EEC). Five threatened fauna species were recording within the property at the time of survey and a total of 13 threatened fauna species were found to have at least a low potential to occur within the study area.

Impact of the Proposal

The proposed development will have a limited impact on native flora and fauna. Seven trees within the development site will require removal to establish the subdivision. These trees do not contain hollows and are not preferred Koala food trees. Despite this, the loss of vegetation has potential to have at least a minor impact on the recorded and potentially occurring threatened species via loss of habitat.

Indirect impacts associated with the proposal will be minor due to the scale of the development, context of the site and the existing level of disturbance in the area.

Legislative Compliance

Local

PMHC Development Control Plan: The proposal has been assessed against Section 2.6 of the DCP for Koala food trees, hollow-bearing trees, Endangered Ecological Communities (EECs) and riparian vegetation. None of these features occur on the subject site.

State

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SEPP 44 – Koala Habitat Protection: The subject site is part of a larger property greater than 1 ha, hence SEPP 44 applies. An assessment under this legislation determined that the subject property contains Potential Koala Habitat however, due to the absence of Koalas during surveys and the lack of historical records on the property, is not considered to contain Core Koala Habitat.

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 $\underline{Coastal Management SEPP}$ – No Littoral Rainforest or Coastal Wetlands are mapped within the study area.

<u>Fisheries Management Act 1994</u>: The proposal does not contain any aquatic habitat and will not affect any matters listed under the FM Act.

<u>Biodiversity Conservation Act and Regulation</u>: The proposed development will not trigger the requirement for a Biodiversity Development Assessment Report (BDAR) as the amount of vegetation removal required will not exceed the prescribed threshold and the site is not mapped on the Biodiversity Value Map.

The recorded and potentially occurring species have been assessed as per the Test of Significance. This has determined that the proposal will not result in a significant effect on listed species or ecological communities, or their habitats. A BDAR or Species Impact Statement is not required to accompany the Development Application.

Federal

Assessment under the EPBC Act – MNES determined that the impact of the proposal on MNES was unlikely to be significant. Hence referral to Department of Environment and Energy (DEE) for approval is not required.



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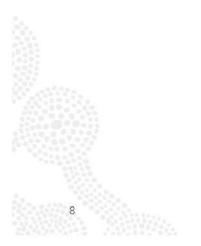
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2. Abbreviations

Table 1: List of abbreviations used within the report

Biodiversity Assessment Method	
Biodiversity Conservation Act	
Biodiversity Development Assessment Report	
Biodiversity Australia	
Central Business District	
Development Application	
Development Control Plan	
Department of Environment and Conservation	
Department of Environment and Energy	
Endangered Ecological Community	
Environment Protection and Biodiversity Conservation Act	
Hollow-bearing Tree	
Koala Food Tree	
Koala Plan of Management	
Key Threatening Process	
Local Environment Plan	
Local Government Area	
Matter of National Environmental Significance	
New South Wales	
Office of Environment and Heritage	
Plant Community Type	
Passive Infrared Camera	
Port Macquarie-Hastings Council	
Spot Assessment Technique	
State Environmental Protection Policy No. 44	
Threatened Ecological Community	



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3. Background Information

3.1 Location of the Study Site and Key Definitions

The subject property (Lot 302 DP 754434) is a 5.5 ha lot which is located across the southwestern portion of Wayne Richards Park and extends south to Emily Avenue and the Rosendahl Reservoir reserve. The development/subject site forms the south-eastern corner of this property and encompasses the cul-de-sac of Emily Avenue. The development site is approximately 2.6 km south of Port Macquarie CBD and approximately 0.8 ha in size. The location of the site and property is shown in Figure 1.

The site is currently a vacant lot containing a portion of the Wayne Richards Park mountain bike trail. Vegetation on site consists of patchily distributed canopy trees and slashed native/exotic grassland.

Residential properties adjoin the site to the east and forested vegetation is located to the south and west. This vegetation to the south forms a buffer between the site and a large reservoir 200 m south. Vegetation to the west extends out to the remainder of the property where the mountain bike trail continues. To the north of the subject site are the sporting ovals of Wayne Richards Park.

The subject site is defined as the area of land directly affected by the proposed development (the development/impact footprint) and covers 0.8 ha. The subject property is defined as the extent of Lot 302 DP 754434. The study area is land within 50 m of the subject site. The locality is land within 10 km radius of the site.

3.2 Development Proposal

The proposal is to subdivide the site into five residential lots with an access driveway off Emily Avenue. Building envelopes cover an area of 2754 m² with the remainder of the subject site comprising an Asset protection Zone (APZ). A 4 m wide gravel access track is also proposed in the east of the site which would link Wayne Richards Park to Emily Avenue. The development layout plan is shown in Figure 2.

The development has been designed to minimise vegetation removal by siting the development envelopes in currently cleared areas. Only a handful of Eucalypts and shrubs will require removal, with the remainder of vegetation affected comprising managed grassland.

3.3 Soils, Topography and Geology

The western end of the subject site is located at 40 m elevation and slopes gently to the east and northeast. There are no drainage lines or distinctive topographical features on the site. Soils on the site comprise free draining red clay loams.

As shown in Figure 3, the development site does not occur on a mapped alluvial formation or floodplain (Troedson and Hishimoto 2008).

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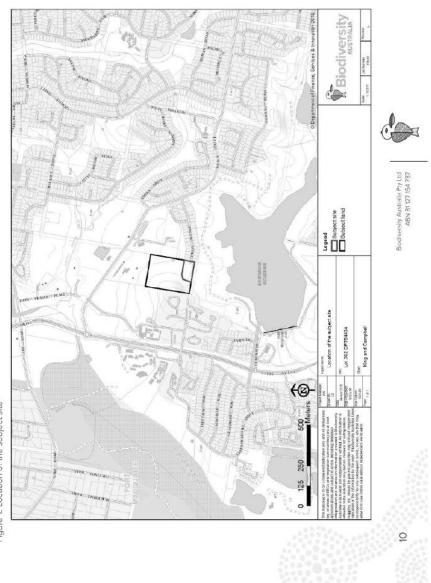
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Figure 1: Location of the subject site



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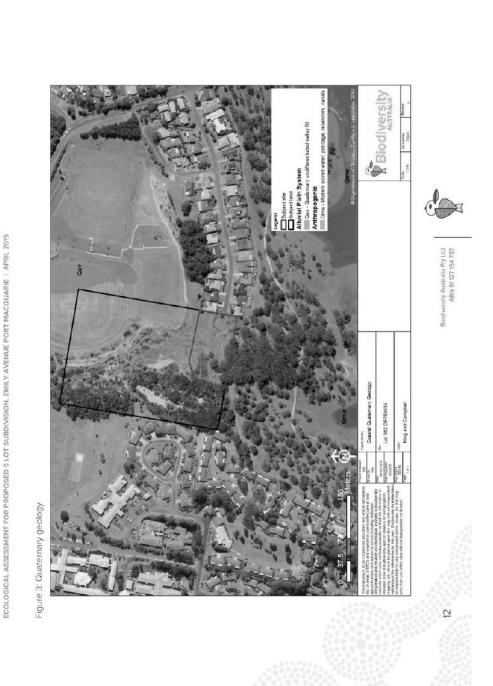
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Figure 2: Development layout plan



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4. Methods

4.1 Desktop Study and Literature Review

A desktop study was carried out prior to the field survey to gather relevant information and data. The following databases and Geographic Information System (GIS) layers were searched/obtained:

- Department of Environment and Energy Protected Matters Search Tool (DEE 2019).
- Office of Environment and Heritage NSW BioNet/Atlas of Wildlife (OEH 2019a).
- Office of Environment and Heritage Threatened Biodiversity Data Collection (OEH 2019b).
- Port Macquarie LGA Vegetation Communities and EECs digital data layer (Biolink 2013a).
- Port Macquarie LGA Koala Habitat digital data layer (Biolink 2013a).
- Coastal Quaternary Geology North and South Coast of NSW digital data layer (Troedson & Hashimoto 2008).
- NSW Biodiversity Value Map.

4.2 Flora Survey

The flora survey consisted of four main components:

- Identification, description and mapping of the vegetation communities on the site.
- Searches for threatened species listed under the Biodiversity Conservation Act 2016 (BC Act) and Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) undertaken in accordance with the NSW Guide to Surveying Threatened Plants (OEH 2016).
- Identification, mapping and condition assessment of any Endangered Ecological Communities listed under the BC Act, and EPBC Act.

4.2.1 Vegetation Classification and Mapping

Vegetation communities were sampled via random meander transects and vegetation integrity survey plots as per the Biodiversity Assessment Method (BAM) methodology. This consists of a 20x20 m plot in which floristic composition and structural attributes are collected, and a 20x50 m plot which collects ecosystem function attributes. The random meander transects allowed for a more comprehensive flora inventory within the development site.

Two vegetation plots were sampled within the development site on the 12th March 2019. The location of these is mapped in Figure 4 below.

The following information was collected at each vegetation plot:

Observer, location and date;

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- Plot dimensions and orientation;Photographic record of vegetation;
- Vegetation Class and Plant Community Type (PCT);
- Physical features and disturbance history;
- Full flora list ;

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•	Growth form, cover and abundance of	Recruitment;
	each species;	Presence of hollow-bearing trees;
	Exotic and High Threat Exotic (HTE)	Longth of logs: and

- Length of logs; and
- Litter cover.

Vegetation classifications were based on the NSW Plant Community Type (PCT) Classification and Local Government Area (LGA) wide vegetation community classification (Biolink 2013a). Identification of possible Threatened Ecological Communities (TECs) was based on the data collected in the survey and review of the relevant listings on the OEH website (www.environment.nsw.gov.au) and Department of Environment and Energy- MNES SPRAT website (DEE 2019).

Plant species were identified to species or subspecies level and nomenclature conforms to that currently recognised by the Royal Botanic Gardens and follows Harden (1990, 2007) and PlantNET (Royal Botanic Gardens 2019) for changes since Harden.

- Threatened Flora Species 4.2.2
- 4.2.2.1 Searches

plant cover;

Number of large trees;

Searches for threatened flora were carried out in the study area on the 12th March 2019.

Threatened plant searches for locally and regionally recorded threatened species consisted of undertaking random meanders throughout the site and parallel field traverses as per the NSW Guide to Surveying Threatened Plants (OEH 2016).

Parallel field traverses involve searches along a grid of parallel traverses within the subject site. The traverses are a set distance apart depending on the life form and type of vegetation and cover the entire extent of potential habitat for each target plant species. A total of three dedicated transects were conducted within the site. These traverses focused on areas of potentially suitable habitat within the development site.

Opportunistic searches for threatened flora species were also undertaken during the vegetation plot surveys as well as during other activities on the development site. Given the small site area, the combination of these methods allowed a thorough search of its entire extent.

Figure 4 maps the location of targeted flora transects and Table 2 provides details of each transect.

Table 2: Parallel field traverse details

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Transect 1	East	130	-	Following fence line along southern boundary
Transect 2	West	137	20	Through the centre of site
Transect 3	East	125	25	Northern section of site

4.2.2.2 Potential Occurrence Assessment

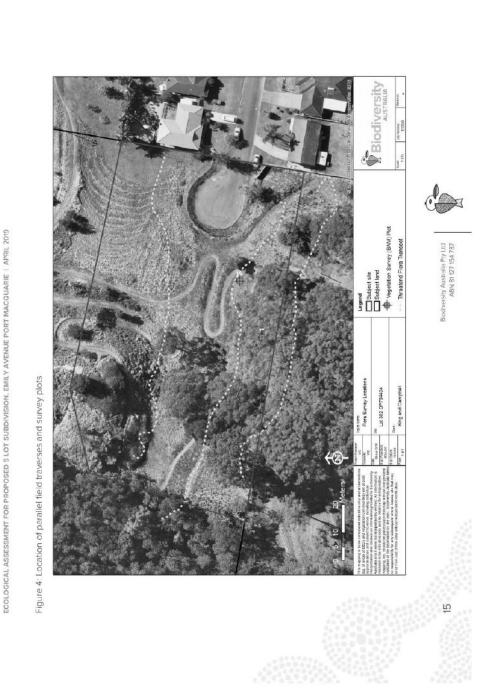
Potential occurrence assessment of threatened flora species is provided in Appendix 2. This section assesses threatened species for their potential to occur on site.

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4.3 Fauna Survey

The fauna survey was undertaken by a Principal Ecologist and Ecologist under Biodiversity Australia's scientific license and animal research authority between the 7th March and 16th April 2019. The methods per survey measure are detailed below.

4.3.1 Habitat Evaluation

This was the main survey method employed to assess the suitability of site habitats for threatened species recorded in the locality.

Habitats on and adjacent to the subject site were defined and assessed according to parameters such as:

- Structural and floristic characteristics of the vegetation
- Degree and extent of disturbance
- Presence of water in any form
- Size and abundance of hollows and fallen timber.
- Availability of shelter e.g. rocks, logs, hollows, undergrowth.
- Wildlife corridors, refuges and proximate habitat types.
- Presence of mistletoe, nectar, gum, seed and sap sources.

This information is considered for evaluation of the potential occurrence of threatened species on or adjacent to the site based on cited ecology and personal experience/knowledge of the species.

4.3.2 Secondary Evidence/Reptile Searches

Physical habitat searches involved lifting up of any timber, rocks and debris, and inspection of dense vegetation and leaf litter for frogs and reptiles; inspection of trees for Koalas and claw markings; binocular inspection of trees; searches for nests; and searches for scats, owl regurgitation pellets, tracks and scratches.

Searches for evidence of cones chewed by Glossy Black Cockatoos were also carried out under any Allocasuarina species within the development site.

4.3.3 Diurnal Bird Survey

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This involved passive surveys (e.g. listening for bird calls) and active observation/binocular searches while walking around the entire development site; and opportunistically during other activities.

A total of four person hours was spent on bird surveys over four days.

4.3.4 Koala Spot Assessment Technique (SAT) surveys

One dedicated Koala survey using the Spot Assessment Technique (SAT) was conducted within the subject site. An additional three SAT surveys were conducted outside of the development site on the subject property as shown in Figure 5.

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Each SAT surveys consisted of identifying a centre tree which is known to be frequented by the Koala, known to contain faecal pellets of the Koala or is likely to be considered as a potentially important tree for the Koala. In the event that a tree of this criteria was not located, a centre tree was randomly selected in an area of habitat most likely to support this species.

Once a centre tree was selected, active searches for Koala scats were undertaken under this tree and under the twenty-nine nearest trees. Searches involved checking the ground and leaf litter within a 1 m radius of each tree, for a period of two minutes per tree or until a scat was found. This technique is recognised as a very efficient method of detecting Koala presence, and in some instances, is a method used to identify areas of major Koala activity/significance e.g. Core Koala Habitat (Phillips and Callahan 1995; Jurskis and Potter 1997).

4.3.5 Passive Infra-red (PIR) Cameras

Six Stealthcam STC-G34 infra-red cameras were deployed on site for a period of 15 days.

Three were mounted on trees at a height of approximately four metres facing a hair tube on a platform to target arboreal species. The remaining three were placed on trees at approximately 0.5 m facing a hair tube placed on the ground. The hair tubes were baited with a mixture of oats, peanut butter, honey and vanilla essence.

The location of the PIR cameras is shown in Figure 5.

4.3.6 Spotlighting and Torch Searches

Spotlighting was conducted by two ecologists for two hours per night over four nights. This was undertaken via walking transects through forested areas of the subject site and property. A hand held 1100 lumen LED spotlight was used and the ecologists targeted the trunks and branches of canopy trees and understorey, whilst also periodically scanning the ground.

4.3.7 Call Playback and Detection

The Koala and Squirrel Glider were the main target species for the call playback survey, and calls of these species were broadcast prior to and after spotlighting surveys. Recorded calls of the Barking Owl, Powerful Owl, Masked Owl and Yellow-bellied Glider were also broadcast during the call playback survey.

Calls were played through a portable MP3 player via a 55W PA system from multiple separate locations at a sound level approximating natural intensities for the target species. The general methodology involved an initial period of listening and spotlighting; followed by playback of the calls simulating a natural pattern.

Playback was utilised over four nights. The location of call playback surveys is shown in Figure 5.

4.3.8 Microbat Call Recording and Analysis

Microchiropteran bat call detection was undertaken using an Anabat Express unit (Titley Scientific) set along the edge of a potential microbat corridor within the subject site for four nights. The recordings were forwarded to Dr Anna McConville of Echo Ecology, a bat call identification consultant, for identification of the bat species.

The survey location of the Anabat unit is shown in Figure 5.

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4.3.9 Hollow-bearing Tree and Koala Food Tree Survey

All hollow-bearing trees (HBTs) and preferred Koala Food Trees (KFTs) within and adjoining the subject were located and recorded via a GPS enabled tablet. These were marked with orange tape and given an identifier number. Any potential hollows found were inspected for signs of usage e.g. chewed or worn edges and assessed for potential habitat value.

4.4 Survey Timing and Limitations

The fauna survey period fell in autumn which is a period of declining activity for arboreal mammals, Microchiropteran bats, frogs and birds (DEC 2004). Longitudinal and latitudinal migrants such as the Swift Parrot would not be present at this time of year.

The warm temperatures and rainfall events over the surrey period are likely to have triggered flowering by potentially occurring threatened plants, and the survey timing is not considered a limitation on their detection.

To counter any limitations, qualitative and quantitative habitat evaluation was used as well as a standard ecological field survey to assess the site's significance to threatened species. Habitat evaluation conservatively assesses the potential occurrence of threatened species based on potentially suitable habitat and local records, providing a prediction of the likelihood of a particular threatened species occurring in the study area (DEC 2004, DECC 2007). This approach is considered best practice to address the Principle of Uncertainty.

4.5 Weather Conditions

The weather over the survey period was fine and sunny with occasional light-moderate rainfall events. Maximum temperatures ranged from 21-34°C across the survey period. Minimum temperatures ranged from 7-22°C (BOM 2019).



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5. Results

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5.1 Desktop Search Results

5.1.1 Locally Recorded Threatened Species

The following table lists the threatened flora and fauna species identified in database and literature searches of the locality.

Table 3: Locally recorded threatened species

	Flora					
Scented Acronychia	Acronychia littoralis	E	E	OEH Bionel		
Dwarf Heath Casuarina	Allocasuarina defungens	E	E	OEH Bionel		
Trailing Woodruff	Asperula asthenes	v	v	OEH Bione		
Bailey's Cypress Pine	Callfiris bailey!	E		OEH Bionel		
Sand Spurge	Chamaesyce psammogeton	E		OEH Bione		
White-flowered Wax Plant	Cynanchum elegans	E	E	OEH Bione		
Spider orchid	Dendrobium melaleucaphilum	E		OEH Bione		
Byron Bay Diuris	Diuris sp. aff. chrysantha	E	2	OEH Bione		
Narrow-leaved Black Peppermint	Eucalyptus nicholii	v	V	OEH Bione		
Wallangarra White Gum	Eucelyptus scoparia	E	v	OEH Bione		
Sleinder Screw Fern	Lindsaea incisa	E		OEH Bione		
Macadamia Nut	Macadamia Integrifolia		v	OEH Blone		
Slender Marsdenia	Marsdenia longiloba	E	v	OEH Bione		
•	Maundia triglochinoides	v	-	OEH Bione		
Biconvex Paperbark	Melaleuca biconvexa	v	v	OEH Bione		
Grove's Paperbark	Melaleuca groveana	v		OEH Blone		
Red-flowered King of the Fairles	Oberonia titania	v	2	OEH Bione		
Brown Fairy-chain Orchid	Peristeranthus hillii	v	-	OEH Bione		
Scrub Turpentine	Rhodamnia rubescens	CE	-	OEH Bione		
Nativo Guava	Rhodomyrtus psidioides	CE	-	OEH Bione		
Rainforest Cassia	Senna acclinis	E	-	OEH Bione		
Silverbush	Sophora tomentosa	E	2	OEH Bione		
Amphibia						
Wallum Froglet	Crinia tinnula	v	10	OEH Bione		
Green & Golden Bell Frog	Litoria aurea	E	v	OEH Blone		
Green Thighed Frog	Litoria brevipalmata	v		OEH Bione		
Giant Barred Frog	Mixophyes iteratus	1.4	E	OEH Bione		
	Aves					
Magple Goose	Anseranas semipalmata	v		OEH Bione		
Regent Honeyeater	Anthochaera phrygia	CE	CE	OEH Bione		



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Dusky Woodswallow	Artamus cyanopterus cyanopterus	v	-	OEH Bione
Australasian Bittern	Botaurus polciloptilus	E	E	OEH Blone
Bush Stone-curlew	Burhinus grallarius	E		OEH Bione
Glossy Black Cockatoo	Calyptorhynchus lathami	v	E	OEH Bione
Spotted Harrier	Circus assimilis	v		OEH Bione
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	ν		OEH Blone
Barred Cuckoo-shrike	Coracina lineata	v		OEH Bione
Varied Sittella	Daphoenositta chrysoptera	v		OEH Bione
Emu (population in the NSW North Coast Bioregion and Port Stephens LGA)	Dromaius novaehollandiae	E		OEH Bione
Black-necked Stork	Ephippiorhynchus asiaticus	E		OEH Bione
Little Lorikeet	Glossopsitta pusilla	v		OEH Bione
Brolga	Grus rubicunda	v		OEH Bione
Little Eagle	Hierasetus morphnoides	v		OEH Bione
Comb-crested Jacana	irediparra gallinacea	v		OEH Bione
Black Bittern	Ixobrychus flavicollis	v		OEH Bione
Swift Parrot	Lathamus discolor	E	CE	OEH Bione
Square-tailed Kite	Lophoictinia isura	v	-	OEH Bione
Barking Owl	Ninox contivens	v		OEH Bione
Powerful Owl	Ninox strenua	v		OEH Bione
Eastern Curlew	Numenius madagascariensis	-	CE	OEH Bione
Blue-billed Duck	Oxyura australis	v	-	OEH Bione
astern Osprey	Pandion cristatus	v	м	OEH Bione
Scarlet Robin	Petroica boodang	v		OEH Bione
Tame Robin	Petroica phoenicea	v		OEH Bione
Eastern Ground Parrot	Pezoporus wallicus wallicus	v		OEH Bione
Marbled Frogmouth	Podargus ocellatus	v		OEH Bione
Grey-crowed Babbler (eastern subspecies)	Pomatostomus temporalis	v		OEH Bione
Vompoo Fruit-Dove	Ptilinopus magnificus	v		OEH Bione
Rose-crowned Fruit-Dove	Ptilinopus regina	v		OEH Bione
reckled Duck	Stictonetta naevosa	v		OEH Bione
astern Grass Owl	Tyto longimembris	v		OEH Blone
Masked Owl	Tyto novaehoilandiae	٧	-	OEH Bione Bio Aus 20
	Insecta			
aced Fritiliary	Argynnis hyperblus	Е		OEH Bione
Giant Dragonfly	Petalura gigantea	E		OEH Bione
	Mammalia			
Rutous Bettong	Aepyprymnus rufescens	v	-	OEH Bione
Eastern Pygmy-possum	Cercartetus nanus	v		OEH Blone



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Large-eared Pied Bat	Chalinolobus dwyeri	v	v	OEH Bione
Hoary Wattled Bat	Chalinolobus nigrogriseus	v	-	OEH Bione
Spotted-Tailed Quoll	Dasyurus maculatus	v	E	OEH Bione
Eastern Quoll	Dasyurus viverrinus	E	E	OEH Bione
Eastern False Pipistrelle	Falsistrellus tasmaniensis	v	-	OEH Bione Bio Aus 201
Little Bent-wing Bat	Miniopterus australis	٧	-	OEH Bione Bio Aus 201
Eastern Bent-wing Bat	Miniopterus schreibersii oceanensis	v		OEH Bione
Eastern Free-tail Bat	Mormopterus norfokensis	v	-	OEH Blone Bio Aus 201
Southern Myotis	Myotis macropus	v	-	OEH Bione Bio Aus 201
Greater Glider	Petauroides volans	E	v	OEH Bione
Yellow-bellied Glider	Petaurus austraiis	v	-	OEH Bione
Squirrel Glider	Petaurus norfolcensis	v	-	OEH Bione
Brush-tailed Phascogale	Phascogale tapoatafa	v		OEH Bione
Koala	Phascolarctos cinereus	v	v	OEH Bione Bio Aus 201
Common Planigale	Planigale maculata	v	-	OEH Bione
Eastern Chestnut Mouse	Pseudomys gracilicaudatus	v	-	OEH Bione Bio Aus 201
Grey-headed Flying Fox	Pteropus poliocephalus	v	v	OEH Bione Bio Aus 201
Yellow-bellied Sheath-tail Bat	Saccolaimus flaviventris	v	-	OEH Bione
Greater Broad-nosed Bat	Scoteanax rueppellii	v	-	OEH Bione
Common Blossom Bat	Syconycteris australis	v	-	OEH Bione
Eastern Cave Bat	Vespadelus troughtoni	v	-	OEH Bione
	Reptilia			
Woma	Aspidites ramsay/	v	-	OEH Bione

Key: Critically Endangered (CE), Endangered (E), Vulnerable (V), Migratory (M).

5.1.2 Matters of National Environmental Significance

The results of the MNES search are provided in Section 10. The search was undertaken using a 10 km search radius from the subject site. See Appendix 5 for the full report.

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5.2 Flora Survey Results

5.2.1 Vegetation Communities

Previous clearing and under scrubbing was evident through most of the subject site with the majority of vegetation comprising slashed grass. Port Macquarie-Hastings Council mapping identifies only two vegetation communities within the development site. These consist of *Sydney Blue Gum* - *Tallowwood +/- Brush Box White Mahogany Moist Forest* and *Wattle Scrub* (Figure 6). This existing mapping was ground-truthed during the vegetation surveys.

Two native vegetation communities were identified within the subject site with neither of these listed as a Threatened Ecological Community (TEC) or Endangered Ecological Community (EEC) under the *BC Act* or *EPBC Act*. These are further described in the following tables. Refer to the site photos following.

Exotic vegetation comprising exotic grassland/scattered regrowth and weed thickets comprise the remaining vegetation on the site. A detailed assessment of these communities was not conducted. Figure 7 maps the location of each vegetation community identified.

A flora list is provided in Appendix 1.

Table 4: Vegetation community 1 description

	y Modified Open Forest
	No 586: Blackbutt - Pink Bloodwood shrubby open forest of the coastal lowlands of the NSW North Coast Bloregion
Mapped PMHC Community	Sydney Blue Gum - Tailowwood +/- Brush Box White Mahogany Moist Forest
EEC Status	Not an EEC
	Occurs along the southern boundary, extending towards the centre of the site. Area on site is 0.2 ha which includes overhanging trees located on adjacent land to the south.
	a) Canopy:
	Structure and Species: Comprises a mid-dense canopy consisting of Blackbutt (Eucalyptus pilularis). Height ranges from 23-28 m.
	b) Understory:
	Absent
	c) Shrub layer: Structure and Species: A very sparse shrub layer including a mix of native trees and exotic shrubs.
	Dominant species include Sychey Golden Wattle (Azacia kongifolia), Bitto Bush (Chrysanthamoides monifilera), Native Rasberry (Rubus parvifolius) and Tie Bush (Wikstroemia indica). Height ranges from 0.3-1.5 m.
	d) Ground layer:
	Structure and Species: Groundcover consisted of mostly exotic grasses and forbs including Cobbler's Pegs (Bidens pilosa), Paddy's Lucerne (Sida rhombifoiia) and Rhodes Grass (Chloris gayana). Native species present in this layer included Blady Grass (imperata cylindrica), Blue Flax Lily (Dianelia caerulea) and Ground Lily (Trifpadenia cunninghami), Height ranges from 0.05:0.5 m.
	This community comprises a small patch of vegetation in good-moderate condition on the edge of a larger community extending south and west. Disturbance history is evident with the lack of understory trees and the high abundance of exotic species in the ground layer.
	. (
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Photo 1: Modified open forest community on the site



Table 5: Vegetation community 2 description



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Structure and Species: Groundcover consists of a mix of native and exotic species with the native, Bledy Grass (Imperate cylindrice) dominant. Barbed Wire Grass (Cymbopogon refractus) and Ivy- leaved Violet (Viola hederacea) were the only other native species in this layer. Exotics species present include Flatwead (Hypochaeris radicata), Purpletop (Verbena bonariensis) and Red Natal Grass (Melinis repens). Height ranges from 0.05-0.7 m.
This community is in poor condition and has been totally cleared in the past It is maintained as a derived grassland through regular slashing.

Photo 2: Derived native grassland community on the site





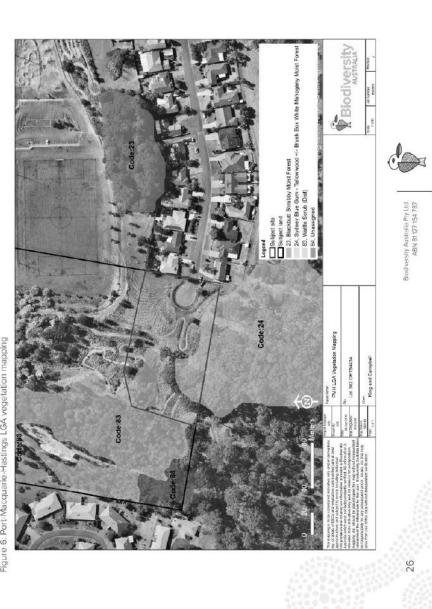
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Figure 6: Port-Macquarie-Hastings LGA vegetation mapping

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- 5.2.2 Threatened Flora
- 5.2.2.1 Results of Threatened Flora Survey

No threatened plants were recorded on the subject site.

5.2.2.2 Potential Occurrence Assessment

As tabulated in Section 5.1.1 of this report, searches of relevant literature and databases (OEH 2019) found records of 22 threatened flora species including two Critically Endangered Populations in the locality. The Protected Matters Search Tool also produced a list of additional potential occurrences in the locality. These are assessed for their potential to occur on site in Appendix 3.

Given the current and historical disturbances on site and thorough searches of vegetation, it is considered highly unlikely that any threatened flora species would occur on the subject site. Thus no further threatened flora species are considered in the subsequent statutory assessments.

5.2.3 Endangered Ecological Communities

The vegetation on site does not qualify as an Endangered Ecological Community due to the topographic and landscape position and floristic/structural composition of the vegetation.

5.3 Fauna Survey Results

5.3.1 Habitat Evaluation, Corridors and Linkages

The following table summarises the habitat evaluation results and comments on regional/local corridors and habitat linkages.

Table 6: Summary of site habitat values

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Groundcover	Groundcover comprises mostly of a mix of native and exotic grasses.	No significance for any threatened species.
Logs and debris	No fallen logs occur in the subject site. Site is managed for debris.	No significance for any threatened species.
Hollows	No hollow-bearing trees were recorded in the development site. One Blackbutt containing two small trae hollows was recorded on the boundary of the site, in adjoining land. No direct impacts on this tree will result from this proposal.	No hollows were present on the development site Lack of nesting/denning habitat for hollow-obligate species.
Nectar Sources	Canopy trees within the development site only likely to provide a Spring to Autumn nectar source.	Eucalypts in study area could potentially be use when flowering by Grey-headed Flying Fox and Littl Lorikeet.
Primary preferred Koala browse trees	No locally preferred Koala food tree species occur within the subject site. One SEPP 44 listed primary browse species occurs near the boundary of the site in joining land.	Site contains a low quality foraging resource for th Koala. Higher quality foraging habitat occurs in th extent of the subject property and in adjolnin landholdings. No Koala scats or Koalas wer recorded within the subject site during the survey.
Allocasuarinas	Absent on site	Absence of foraging resources for the Glossy-blac Cockatoo.

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Acquatic/wetland habitats	Absent on site. Rosendahl Reservoir is located approximately 200 m south of the site.	No significance for any threatened species.
Fruiting species	Very few fruiting species occur on the subject site and most are immature.	No fruiting resource for threatened frugivores such as Wompoo Fruit-dove, Rose-crowned Fruit-dove, Barred Cuckoo Shrike and the Grey Headed Flying Fox.
Caves, cliffs, overhangs, culverts, bridges	Absent on site	Absence of roosts for obligate Microchiropteran bats.
Small terrestrial prey	No shrub layer present on site and limited groundcover. Poor habitat for small terrestrial species.	Despite limitations, site may form a small part of the foraging range of the Powerful Owl, Masked Owl and Square-tailed Kite.
Corridors	Site cloes not fall within an OEH mapped regional or sub-regional corridor.	Site vegetation does not provide a significant contribution to mapped regional and sub-regional corridors.
Habitat Linkages	The forest community extends offsite to the northwest, west and south. Connectivity to the north and east is broken by roads, residential areas and sporting fields. A large wire fence separates the habitat on site with that contained within Rosendahl Reserve. This would be a barrier for terrestrial species. Two Koala ladders are situated along this fence line.	Poorly developed groundcover over the site would pose a barrier for small terrestrials' dependant on continuous cover (e.g. Common Planigale). Arboreal species such as the Koala and Gilders would be able to access the site vegetation. Highly mobile species (e.g. birds and bats) would be able to move freely through the site.
Key Habitat	The site is not mapped as Key Habitat by OEH.	N/A



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5.3.2 Observed/Detected Fauna

The surveys detected a range of fauna species over the site. Species recorded consisted of common birds such as the Australian Magpie, Grey Butcherbird, Laughing Kookaburra and Whitebellied Cuckoo-shrike. Some were observed within the subject site while others were seen flying overhead or heard calling from adjacent habitats.

Eleven mammal species were detected throughout the survey period and a single reptile (Photo 8) was recorded. No amphibians were identified during the site surveys.

Photos 3-7 display some of the fauna detected within the subject property via PIR cameras. Appendix 2 provides the total fauna list for the site and details the method of detection for each species.

Five threatened fauna species was detected during the survey. These comprised:

- Eastern Osprey (Pandion cristatus);
- Eastern Coastal Free-tail Bat (Mormopterus norfolkensis);
- Little Bent-wing Bat (Miniopterus australis); and
- Grey-headed Flying Fox (Pteropus poliocephalus).
- Koala (Phascolarctus cinereus)

These species are further discussed in Section 5.3.3 below.

Photo 3: Red Fox

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Photo 4: Eastern Grey Kangaroo



Photo 5: Grey Butcherbird





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Photo 6: Bush Rat



Photo 7: Satin Bowerbird

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Photo 8: Blue-tongue Lizard observed on site



5.3.3 Threatened Fauna

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5.3.3.1 Detected Threatened Fauna

Five threatened fauna species, the Eastern Osprey, Eastern Coastal Free-tail Bat, Little Bent-wing Bat, Koala and Grey-headed Flying Fox were detected during the survey period. Each of these species are listed as Vulnerable under the *BC Act* with the Grey-headed Flying Fox and Koala also listed as Vulnerable under the *EPBC Act*.

The Little Bent-wing Bat and Eastern Coastal Free-tail Bat were detected on site via Anabat deployment. Multiple passes of the Little Bent-wing Bat were recorded on each night of Anabat deployment whilst passes for the Eastern Coastal Free-tail Bat were recorded on two nights only.

The Grey-headed Flying Fox was detected on site during spotlighting surveys. This species was both heard calling from within the development site and visually observed flying over the site and foraging amongst trees within the subject property. No Grey-headed Flying Fox camps were detected within the subject property.

The Koala was recorded via scats at three SAT survey points on the subject property. It was not recorded on the development site. The site does not contain any preferred food trees, however the Koala could potentially use the site whilst moving between preferred habitats in the area. Results of Koala surveys and a Core Koala Habitat assessment is provided in Section 8.2.

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The Eastern Osprey was detected flying over the site during a diurnal bird survey. This species feeds over large waterbodies and nests in dead branches of tall trees or other artificial structures. As neither feeding nor breeding habitat for this species occurs within the development site, it is unlikely that this species utilises the site and would occur as a fly-over only.

No secondary evidence of any threatened species was found on the site.

5.3.3.2 Potential Occurrence Assessment

A number of threatened fauna species have been recorded in the locality in the Bionet Atlas of Wildlife (OEH 2019), and a number of others are considered potential occurrences by the EPBC Protected Matters Search Tool (DEE 2019). In Appendix 4, these species are evaluated for their potential to occur on the site and their eligibility/requirement for further assessment.

Locally recorded marine species have not been addressed as there is no habitat for these species on the subject site or property.



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6. Impact Assessment

6.1 Direct Impacts

The proposal is to subdivide the subject site into five new lots to allow the development of residential dwellings. An APZ will be established around the building envelopes and will extend to the subject site boundaries. Ecological impacts will be limited as the development site has been historically cleared and will not directly impact any hollow-bearing trees or Koala food trees.

It is estimated that seven mature trees will require removal comprising six Blackbutt and one Sydney Golden Wattle. Trees on adjoining land to the south which overhang the site boundary will not require removal. The extent of native vegetation removal/modification (including derived native grassland) is approximately 0.2ha.

Shrubs and groundcover within the building envelopes is likely to be completely removed, while vegetation in the APZ will be maintained as low groundcover to keep fuel loads low and prevent regrowth.

6.2 Indirect Impacts

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The following potential indirect impacts may be associated with the proposal:

- a) Fragmentation and landscape change: The proposal will contribute local fragmentation as some trees will require removal. No impacts are expected on connectivity due to the limited extent of trees to be removed and the extent of vegetation to remain of the subject property. The development design will need to consider movement corridors for Koalas between Rosendahl reserve to the south and the subject property.
- b) Injury/mortality during clearing: No hollow-bearing trees are proposed to be removed hence the potential for fauna injury/mortality during clearing however this is low. The understorey and groundcover is open, also suggesting a low chance for fauna injury/mortality during clearing. Pre-clearing surveys by an ecologist are recommended.
- c) Edge effects: The vegetation on site and in the study area is currently exposed to edge effects due to current land use practices and historic clearing. The limited vegetation removal is unlikely to increase edge effects.
- d) Fencing: Fences have potential to obstruct the movement of fauna across the site. Any additional or new fencing should be Koala friendly and not pose any barrier or block Koala movement from the adjoining reservoir land to the south.
- e) Weed invasion: Weeds currently occur throughout the site. The proposal is unlikely to introduce any new weed species, however may increase the potential for spread of weeds within the site through vegetation modification.
- f) Erosion and sedimentation: Standard mechanisms and controls will be required to ensure that erosion and sedimentation impacts do not extend beyond the development footprint where they could potentially impact other vegetation on site. Stormwater and runoff will need to be managed adequately to ensure that potential impacts on adjoining vegetation are minimised.

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- g) Noise and vibration: The construction phase will temporarily increase noise levels however will be diurnal only. This is not expected to pose any impacts to potentially occurring threatened species.
- h) Introduction of feral species: The residents of the new dwellings may wish to keep domestic pets. This has the potential to increase the number feral species in the area if animals are not contained.
- i) Artificial Lighting: Any new dwellings resulting from the subdivision may feature external lighting. If directed into adjacent vegetation, it may impact nocturnal fauna by changing their behaviour or making them more vulnerable to predation.



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7. PMHC DCP Compliance Assessment

Under the Port Macquarie-Hastings Council Local Environmental Plan (PMHC LEP) 2011, Council has prepared and implemented the PMHC Development Control Plan (DCP) 2013.

The DCP has a specific provisions for hollow-bearing trees (HBTs) and Koala Food Trees (KFTs) which require offset measures should they be removed along with provisions for EECs and riparian zones which require buffers on land >1 ha. The relevant provisions for these are discussed below.

7.1 HBT Provisions

The DCP 2013 requires each hollow-bearing tree (HBT) to be assessed by an ecologist using the PMHC HBT assessment protocol. Based on the scores, the following provisions apply:

- Yellow: Low constraint (score <8): Tree may be considered for removal subject to compensatory measures.
- Orange: Medium constraint (score 8-12): Tree may be considered for removal if management measures are 'impractical to allow retention' (determined by an arborist) subject to compensatory measures.
- Red: High constraint (score >12): Tree must be retained within an exclusion zone/buffer (minimum 1.25 x tree height, measured horizontally), or located with an area protected as environmental land.

No trees containing hollows were recording within the development site however one hollowbearing tree was recorded immediately outside the development footprint, on adjoining land (Photo 9). Although this tree is not within the development site, branches from this tree overhang the site, hence as a precautionary measure, this hollow-bearing tree has been assessed as per the PMHC DCP.

The following table summarises the results of this HBT assessment and the location of this tree is shown in Figure 8.

Table 7: DCP HBT assessment results

1	Blackbutt	Alive	Э	>80	3	2-4	1.5	<50	1	In situ	З	High	З	14.5

Assessment under the DCP HBT protocol determined that the hollow-bearing tree overhanging the development site scored a high constraint. Recommendations have been made to ensure that the root system of this tree is not damaged as a result of the proposed subdivision.

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Photo 9: Hollow-bearing tree

7.2 Koala Food Trees

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Koala food trees listed under the Port Macquarie Hastings Council, Development Control Plan 2013 have been identified by Biodiversity Australia. No KFTs we identified within the development footprint however one primary browse species, Swamp Mahogany (*Eucalyptus robusta*), was noted immediately outside the boundary of the site, on adjoining land. Details of this KFT are provided in Table 8 below and the location is mapped in Figure 8.

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Table 8: DCP Koala Food Tree Assessment Results

KIFT 1	Swamp Mahogany	Eucalyptus robusta	8	20	-31.456827	152.90247		
* values are approximate								

The Port Macquarie Hastings Council, Development Control Plan 2013 states that the removal of Koala browse tree species is to be replaced at a ratio of 2:1 on the development site or at a secure offsite location agreed to by Council.

The KFT recorded does not fall within the development footprint, hence does not require removal.

Blackbutt is listed as 'other browse species' in the DCP, and six Blackbutt will require removal. It is recommended that replacement plantings at a 2:1 ratio are undertaken within the property to the north of the site. Replacement species should comprise Tallowwood and Swamp Mahogany.

7.3 EEC Provisions

No EECs were recorded on or in close proximity to the development site, hence the PMHC DCP provisions for EECs do not apply.

7.4 Riparian Zone Provisions

The development site does not contain any waterways or areas of riparian vegetation, hence the PMHC DCP provisions for riparian zones do not apply.



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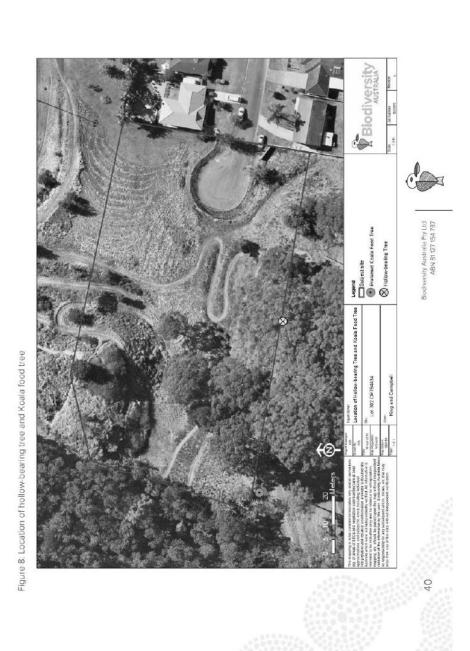


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8. State Environmental Planning Policy No. 44

The identification of an area of land as Potential Koala habitat is determined by the presence of Primary Preferred Koala Browse tree species. These species are listed under Schedule 2 of SEPP 44: *Koala Habitat Protection* (NSW Government 1995).

Potential Koala Habitat is defined as areas where the tree species listed under Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component. Primary preferred food species occurring in the LGA are: Scribbly Gum (*E. signata*), Tallowwood (*E. microcorys*), Swamp Mahogany (*E. robusta*) and Forest Red Gum (*E. tereticornis*).

An area of land to which the policy applies to must be at least 1 ha (and may include adjoining land in the same ownership).

8.1 Potential Koala Habitat Assessment

The property (Lot 302 DP 754434) is greater than 1 ha, hence SEPP 44 applies and a Potential Koala Habitat Assessment was carried out during the survey. This involved inspection of the vegetation to determine if primary browse species listed under Schedule 2 of SEPP 44 comprised >15% of the canopy or understorey species on the site.

The subject property contains a number of Koala food trees, comprising mostly of Swamp Mahogany. Tallowwood, Forest Red Gum and Scribbly Gum are also present within the property, each which are Primary Food Trees listed in Schedule 2 of SEPP 44. These trees comprise approximately 20% of the tree component present within the southwest portion of the property, and hence it would qualify as Potential Koala Habitat (PKH).

It is noted that most of the Koala food trees on the property are immature and many have been planted over the past 5 years as part of offsets for the Link Road KPoM.

Given that the property contains PKH, a Core Koala Habitat Assessment is required.

8.2 Core Koala Habitat Assessment

8.2.1 Definition of Core Koala Habitat

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Under SEPP 44, Core Koala Habitat is defined as "an area of land with a resident population of Koalas, as evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a Koala population" (Source: State Environment Planning Policy No. 44 - Koala Habitat Protection).

The definition "an area of land" is interpreted as the land to which the development application applies (if it exceeds 1 ha in area, together with any land in the same ownership).

Information to determine if a resident population of Koalas exists on the site was obtained by direct survey of the site using standard survey techniques (direct survey of Koalas, scat searches) and review of relevant published information and records.

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- 8.2.2 Methods and Results
- 8.2.2.1 Literature Review

The Bionet Atlas shows 1619 records of Koalas within 10km of the site. Of these, 1430 records occur within 5km, 377 within 2km and 61 within 1km of the site. Records within 1km of the site range from historic records to recent.

There no historical Koala records on the subject property however several occur in adjoining properties. The nearest Koala records are located 78m to the east of the development site on Emily Avenue (2013), 82m and 220m north of the subject property in adjoining vegetation (2017) and 112m northeast of the subject property at the entrance to Wayne Richards Park (2008). This record also forms the closest vehicle strike records to the site.

8.2.2.2 Field Survey

A field survey was undertaken over the entire site in March and April 2019. This involved direct searches for Koalas in the crowns of trees, four nights of spotlighting and call playback, opportunistic scat searches and four dedicated SAT searches within the subject property.

8.2.2.3 Results

No Koalas were observed within the property however scats were recorded at three of the four SAT surveys. No scats were recorded within the development footprint. No indicative Koala scratches were observed on any trees on the site.

Based on findings from dedicated SAT searches, Phillips and Callaghan (2011) categorise Koala activity levels into either Low, Medium or High use categories. The East Coast (Medium-high) density is appropriate for this site. These categories provide a general classification of the intensity of use by local Koala populations. When a low activity level is applied, care must be taken in the interpretation of this, as results may be indicative of transitory use rather than sedentary ranging patterns.

The following table details the findings of each SAT survey.

Table 9: SAT survey results

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SAT 1	-31.456728	152.902784	0	0%	Nil activity
SAT 2	-31,456539	152.901999	2	6.6%	Low use
SAT 3	-31.455.419	152.903087	1	3.3%	Low use
SAT 4	-31.454740	152.902205	1	3.3%	Low use

8.2.2.4 Site Context and Linkage

The site and property form a body of fragmented forest surrounded by residential and recreation areas. Vegetation to the north, west and east of the subject property consist of managed sporting fields, the council works depot and scattered trees within developed areas.

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Vegetation to the south of the property directly adjoins forest vegetation which extends to Rosendahl Reservoir. A large wire mesh fence separates the site from this habitat, however two Koala ladders have been constructed to assist Koala crossing. Ocean Drive forms a significant barrier to the west of the site. Koala Street to the east would be easily crossable however it represents a high risk of road strike.

The habitat on the property is likely to form part of a north-south movement corridor for Koalas which extends from Rosendahl Reservoir to retained vegetation to the north of Koala Street. Tree removal on the development site is unlikely to impact local Koala movements as most of the existing vegetation on the property will remain. Any new fencing around the site as part of the development proposal will need to consider Koala connectivity and recommendations have been provided.

8.2.3 Discussion and Conclusion

SEPP 44 defines Core Koala Habitat as "an area of land with a resident population of Koalas, as evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a Koala population".

In regards to the two identified attributes, the following is provided:

1) "Breeding females (that is, females with young)". This assessment did not record any evidence of breeding i.e. a female with a joey. No Koalas were observed and only scats were found which resulted in low activity levels.

2) "Recent sightings and historical records of a Koala population". Review of the available literature failed to determine any historical records of Koalas on the site or property, however several records occur nearby. This survey detected scats in three locations within the subject property indicating Koala usage despite none being observed or heard calling during intensive surveys. It is likely that these findings indicate usage by transient Koalas.

Given that most of the vegetation on the property comprises young regrowth and planted Koala food trees, it is unlikely to comprise any significant foraging area for Koalas at present. Over time as the trees mature, it may provide higher quality habitat and foraging values for Koalas.

Due to the lack of Koalas recorded during intensive surveys and the absence of historical records of a Koala population, the property does not appear to support a sedentary population of Koalas and hence does not qualify as Core Koala Habitat

8.3 Conclusion

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Assessment has determined that the property is unlikely to qualify as Core Koala Habitat, hence a Koala Plan of Management (KPoM) for the development is not required. Notwithstanding, specific recommendations to maintain connectivity for Koalas and planting of Koala food trees are provided in Section 11.

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9. Biodiversity Conservation Act 2016 Assessment

9.1 Assessment Pathway

Under the NSW Biodiversity Conservation Act 2016 and Biodiversity Conservation Regulation 2017, Part 4 developments under the Environmental Planning & Assessment Act 1979 (other than State Significant Development) are assessed through the following process:

- For developments in which the impact exceeds the clearing threshold, will impact any area mapped on the Biodiversity Value Map or impact on an area of Outstanding Biodiversity Value, a Biodiversity Development Assessment Report (BDAR) will be required. This assesses the impact using the Biodiversity Assessment Method (BAM) and determines the offset obligations required. Offsets can be met through several options including:
 - Purchase and retirement of biodiversity credits from the open market.
 - Establish a biodiversity stewardship site and create credits via managing the land for conservation in perpetuity.
 - Pay an amount of money into the newly established Biodiversity Conservation Trust who will source credits on behalf of the proponent.
- Developments which fall below the clearing threshold and do not impact on sensitive biodiversity values must be assessed under the new five part test of significance (replacing the former seven part test). If the test determines that a significant impact is likely, a BDAR will be required. There is no offset obligation for Part 4 developments which fall below the threshold and/or are unlikely to have a significant impact on threatened species and/or ecological communities.

The table below provides an assessment to determine if a BDAR is required.

Table 10: Assessment of BDAR requirement

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Will the development require clearing of native vegetation?	Yes
Has the development been granted Biodiversity Certification?	No
Is the development considered State Significant Infrastructure?	No
Does the development affect an area mapped in the NSW Biodiversity Values Map?	No – refer to Figure 9
Minimum lot size on which the development is located.	450 m²
Will the development require the removal of >0.25 ha of vegetation?	No. Only 0.2 ha of native vegetation removal required.
Result	BDAR not required

The above assessment has determined that a BDAR is not required for the proposal. The next stage of the assessment which determines whether the development is likely to have a significant effect threatened species or ecological communities is provided below.

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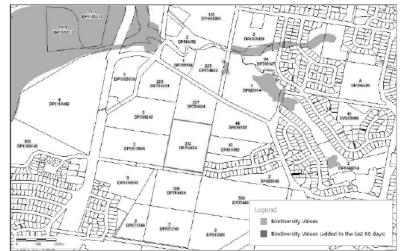


Figure 9: Extract of Biodiversity Value Map, with subject property marked red

9.2 Test of Significance

The Test of Significance is prescribed in Part 7, Division 1, Section 7.2 of the *Biodiversity Conservation Act 2016*. The purpose of the Test of Significance is to determine whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

If it is determined that a development or activity will have a significant effect, a Biodiversity Development Assessment Report will be required.

The Test of Significance has been prepared in consideration of the *Threatened Species Test of* Significance Guidelines (OEH 2018).

9.2.1 Entities to be Assessed

The Eastern Osprey, Eastern Coastal Free-tail Bat, Little Bent-wing Bat, Koala and Grey-headed Flying Fox were recorded during the survey and are subject to the Test of Significance. The potential occurrence assessment in Appendix 3 and 4 have determined that the following species are considered to be potentially occurring in the study area and are also subject to the Test of Significance:

- Little Eagle
- Square-tailed Kite
- Barking Owl
- Masked Owl

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- Powerful Owl
- Dusky Woodswallow
- Little Lorikeet
- Eastern False Pipistrelle

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Yellow-bellied Sheath-tail Bat

Greater Broad-nosed Bat

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- Eastern Bent-wing Bat
- Squirrel Glider
- Brush-tailed Phascogale
- 9.2.2 Responses

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 a) In the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

The proposed development is for the establishment of five residential lots within the development site. This will involve the removal of sx Blackbutt trees and one Sydney Golden Wattle from a modified open forest community. Areas of derived native grassland will also be removed. No preferred Koala food tree species or hollow-bearing trees will require removal. There is some potential for minor indirect impacts such as noise, artificial lighting and predation on native fauna from domestic pets.

While the habitats present on the subject site may provide foraging resources for a number of the subject species, it would not comprise any significant extent of habitat or be capable of supporting breeding. Sufficient habitat to support the local populations of these species will remain in adjoining and nearby lands. Connectivity across the site will be reduced, however the remaining trees within and on the boundary of the site would still maintain connectivity through adjoining vegetation for arboreal species including the Koala.

As such, removal of this habitat would be highly unlikely to place a viable population of the subject species at risk of extinction.

- b) In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
 - Is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
 - (ii) Is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

No EECs are present on the subject site.

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- c) In relation to the habitat of a threatened species or ecological community:
 - The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
 - (ii) Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and
 - (iii) The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.

Habitat to be removed comprises a handful of trees from a modified open forest community.

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The habitat to be removed only represents a small portion of the habitat available to the subject species in the study area and subject property, and is unlikely to be of any key importance to threatened species.

No hollow-bearing trees or Koala food trees are present on the site and no other habitat features such as habitat logs or aquatic habitats will be removed.

The vegetation on site may provide local connectivity for species such as the Koala and removal of these trees will lead to a minor reduction in connectivity for arboreal species. The remaining trees within the community will however allow connectivity to be maintained and no areas of habitat will become isolated as a result of the proposal.

The site offers potential habitat for several threatened fauna species. However given the extent of modification and limitations of the site habitats, these species would be reliant on adjacent and nearby habitats to fulfil their lifecycle requirements and the site would not be of any key importance.

 Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

The proposed development will not directly or indirectly affect an area of outstanding biodiversity value.

e) Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

A Key Threatening Process (KTP) is defined as a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, populations or ecological communities.

The following table lists all of the current KTP's listed under the BC Act and whether the proposed activity is recognised a threatening process.

Table 11: Contribution to Key Threatening Processes

Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners Manorina melanocephala	No
Alteration of habitat following subsidence due to longwall mining	No
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	No
Anthropogenic Climate Change	Yes – vegetation removal and greenhouse gasses generated by machinery used during construction
Bushrock removal	No
Clearing of native vegetation	Yes – minor extent of native vegetation to be removed.
Competition and grazing by the feral European Rabbit, Oryctologus cuniculus	No

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Competition and habitat degradation by Feral Goats. <i>Capra hircus</i>	No
Competition from feral honey bees, Apis mellifera	No
Death or injury to marine species following capture in shark control programs on ocean beaches	No
Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments	No
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	No
Herbivory and environmental degradation caused by feral deer	No – feral deer already occur within the subject property.
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	No
Importation of Red Imported Fire Ants Solenopsis Invicta	No
Infection by <i>Psittacine Circoviral</i> (beak and feather) Disease affecting endangered psittacine species and populations	No
Infection of frogs by amphibian chytrid causing the clisease chytridlomycosis	No
Infection of native plants by Phytophthora cinnamomi	No
Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae	No
Introduction of the Large Earth Bumblebee Bombus terrestris	No
Invasion and establishment of exotic vines and scramblers	No
Invasion and establishment of Scotch Broom (Cytisus scoparius)	No
Invasion and establishment of the Cane Toad (Bufo marinus)	No
Invasion of native plant communities by African Olive Olea europaea subsp. cuspidata.	No
Invasion of native plant communities by Chrysanthemoides monilifera	No
Invasion of native plant communities by exotic perennial grasses	No – exotic plant species already occur on site. Residents may plant exotic ornamental species within the new lots.
Invasion of the Yellow Crazy Ant, $\ensuremath{\textit{Anopiolepis}\xspace}\xspace$ into NSW	No
Invasion, establishment and spread of Lantana (Lantana camara)	No
Loss and degradation of native plant and animal habitat by Invasion of escaped garden plants, including aquatic plants	No
Loss of Hollow-bearing Trees	No - no hollow-bearing trees occur within the development site.



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Loss or degradation (or both) of sites used for hill- topping by butterflies	No
Predation and hybridisation by Feral Dogs, Canis lupus familiaris	No
Predation by <i>Gambusia holbrooki</i> (Plague Minnow or Mosquito Fish)	No
Predation by the European Red Fox Vulpes vulpes	No – the European Fox already occurs on site.
Predation by the Feral Cat Felis catus	No
Predation by the Ship Rat Rattus rattus on Lord Howe Island	No
Predation, habitat degradation, competition and disease transmission by Feral Pigs, Sus scrofa	No

9.3 Conclusion

The Test of Significance has determined that the proposed development would not result in a significant impact on threatened species or ecological communities. A BDAR is not required for the development proposal.



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10. EPBC Act 1999 - MNES Significance Assessment

10.1 General Assessment Overview

The provisions of the EPBC Act (1999) require determination of whether the proposal has, will or is likely to have a significant impact on a "matter of national environmental significance". These matters are listed and addressed in summary as follows:

- World Heritage Properties: The site is not listed as a World Heritage area nor does the proposal affect any such area.
- 2) National Heritage Places: The site is not listed as a National Heritage Place nor does the proposal affect any such area.
- Ramsar Wetlands of International Significance: A Ramsar wetland does not occur on the site, nor does the proposal affect a Ramsar Wetland.
- 4) EPBCA listed Threatened Species and Communities: One threatened species listed under the EPBC Act was recorded on site, the Grey-headed Flying Fox. The Koala was recorded on the subject property. As assessed below, the proposal is not considered likely to have a significant impact on these species.
- Migratory Species Protected under International Agreements: No Migratory species is likely to be significantly affected by the proposal as assessed below.
- The Commonwealth Marine Environment (CME): The site is not within the CME nor does it affect such.
- The Great Barrier Reef Marine Park: The proposal does not affect the Great Barrier Reef Marine Park.
- 8) Nuclear Actions: The proposal is not a nuclear action.
- A water resource, in relation to coal seam gas development and large coal mining development: The proposal is not a mining development.

It is considered that, the proposal is not required to be referred to Department of Environment and Energy (DEE) for approval under the EPBC Act (1999).

10.2 Koala Referral Assessment

The habitat on site has been assessed using the Koala habitat assessment tool from the EPBC Act Referral Guidelines (Department of the Environment 2014). To qualify as critical habitat, it must score 5 or more. This is shown in the following table:

Table 12: Koala habitat assessment

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Koala Occurrence	2	Desktop	Multiple records occur within 2 km of the site on Bionet Atlas, however these are more than 5 years old.
Koala Occurrence	4	On-ground	No Koala or Koala scats found on the development site. Koala scats were detected within the subject property.
	1	Desktop	N/A

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Vegetation structure and composition		On-ground	The development site comprises open fcrest with no SEPP 44 listed feed tree species. One KFT is however located on the boundary of the development site, in adjoining land holdings.			
Habitat connectivity	Q		Site is not part a contiguous landscape which is >300 ha. Large residential areas and main roads without Koala crossing measures surround the subject property.			
Manager and the second	0	Desktop	OEH Bionet has multiple records of Koala road kill in the study area.			
Key existing threats		On-ground	Domestic dogs and roads in surrounding rural-residential areas would be a likely threat to local Koalas.			
Recovery value	٥	The minor amount of vegetation affected by the proposal is unlikely to be important for the recovery of the Koala.				
Total	3	Site does not qualify as critical habitat.				

As per the Koala habitat assessment tool, the subject site does not qualify as critical habitat and no further assessment is required.

10.3 Protected Species Assessments

An assessment of significance of the proposal on the Grey-headed Flying Fox is as follows

10.3.1 Factors To Be Considered for Vulnerable Species

The guidelines to assessment of significance to this Matter, define an action is as likely to have a significant impact on a Vulnerable species, if it will:

- a) Lead to a long-term decrease in the size of an important population of a species, or:
- b) Reduce the area of occupancy of an important population, or:
- c) Fragment an existing important population into two or more populations, or:
- d) Adversely affect habitat critical to the survival of a species, or:
- e) Disrupt the breeding cycle of an important population, or:
- Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, or:
- g) Result in invasive species, that are harmful (by competition, modification of habitat, or predation) to a Vulnerable species, becoming established in the Vulnerable species' habitat, or:
- h) Introduce a disease that may cause a species to decline, or:
- i) Interferes substantially with the recovery of the species.

An *important population* is one that is necessary for a species' long-term recovery. This includes such populations as:

Key populations either for breeding or dispersal;

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- Populations that are necessary for maintaining genetic diversity; and/or
- Populations that are near the limit of the species range.

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10.3.1.1 Assessment of Significance

This section addresses each of the previous points listed.

a) Lead to a long-term decrease in the size of an important population of a species, or:

The proposal will require the removal of a handful of trees from an area of potential foraging habitat. This may provide an extremely small nectar resource for the population relative to its ecological requirements and local extent of potential habitat. While in very strict terms a negative effect, this loss will have a very low impact on the local Grey-headed Flying Fox population as the site in total would only form a very minute fraction of this species wider opportunistic/seasonally variable foraging range.

The study area is also not a known roost (Eby 2000) and better quality alternative foraging habitat in the locality is evidently extensive. The proposal will thus not lead to a long-term decrease in the size of an important population.

b) Reduce the area of occupancy of an important population, or:

For the Grey-headed Flying Fox, the minor loss of foraging habitat on the subject site is insignificant relative to the area of occupancy which is measured in terms of hundreds of thousands of hectares. Consequently, the proposal would not reduce the area of occupancy of the important population.

c) Fragment an existing important population into two or more populations, or:

The Grey headed Flying Fox is highly mobile and known to be capable of crossing human modified habitat. The proposal will offer no barrier to movement. Thus it will not fragment an existing important population.

d) Adversely affect habitat critical to the survival of a species, or:

"Critical habitat" refers to areas critical to the survival of a species or ecological community may include areas that are necessary for/to:

- activities such as foraging, breeding, roosting or dispersal;
- succession;

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- maintain genetic diversity and long term evolutionary development; or
- reintroduction of populations or recovery of the species/community.

The vegetation on site is not considered critical habitat for the Grey-headed Flying Fox due to its limited extent and the ecology of the species.

e) Disrupt the breeding cycle of an important population, or:

The proposal will not disrupt the breeding cycle of an important population given that:

- The site habitat does not represent breeding habitat for the subject species.
- The potential for this species to occur in the study area will be retained post development.
- The site does not comprise any significant area of foraging habitat for the subject species.
- Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, or:

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As detailed previously, the degree of possible vegetation loss imposed by the proposed development is not significant enough to affect a local population of the subject species to the point that it could cause a decline of the species.

g) Result in invasive species, that are harmful (by competition, modification of habitat, or predation) to a Vulnerable species, becoming established in the Vulnerable species' habitat, or:

No new species that affects the subject species is likely to be introduced as a direct result of the proposal.

h) Introduce a disease that may cause a species to decline, or:

- No disease that poses a potential risk to these species is likely to be introduced to the site.
- i) Interferes substantially with the recovery of the species.

Ideally, the goal in threatened species recovery is to increase the abundance and range of the threatened species, so that it is not in risk of becoming extinct.

As detailed previously, the proposal is unlikely to significantly impact on the Grey-headed Flying, thus it will have minimal effect on the recovery of these species.

10.3.1.1.1 Conclusion

The proposal is not considered likely to have a significant impact on the Grey-headed Flying Fox and thus a referral to DEE is not required.

10.4 Migratory Species

The migratory species, Eastern Osprey was recorded flying over the site during the field survey. This species is unlikely to utilise the site as food sources and breeding habitat do not occur within the site.

The habitats present across the site and study area provide potential habitat for a few listed migratory species such as the Horsefield's Cuckoo, White-throated Needletail, and Rufous Fantail.

These species are collectively assessed below.

10.4.1 Factors To Be Considered

The guidelines to assessment of significance to this Matter, define an action as likely to have a significant impact on a migratory species, if it will:

- Substantially modify (including fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat of the migratory species, or;
- b) Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat of the migratory species, or;
- c) Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of the species.

An important area of habitat is:

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- Habitat used by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species, or:
- 2) Habitat utilised by a migratory species which is at the limit of the species range, or;
- 3) Habitat within an area where the species is declining.

10.4.1.1 Assessment of Significance

This section addresses each of the previous points listed.

 Substantially modify (including fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat of the migratory species, or;

The site is not considered likely to constitute an important area of habitat given that it is not of sufficient extent to support an ecologically significant proportion of any of the above listed species.

b) Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat of the migratory species, or;

An invasive species is one that may become established in the habitat, and harm the migratory species by direct competition, modification of habitat, or predation. The proposal will not introduce any such invasive species.

c) Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of the species.

No disruption of the lifecycle of any migratory bird is likely as:

- Habitat affected is either only marginally suitable, and/or locally abundant.
- No significant extent of potential or known nesting/breeding habitat is affected.
- No significant extent of potential or known foraging habitat will be affected.

10.4.1.1.1 Conclusion

In view of the above, no migratory bird is considered likely to be significantly affected by the proposal.



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11. Recommendations

The following are recommended to be included as conditions of consent if the proposal is approved. The conclusions of this assessment assume the measures are implemented and effective in mitigating impacts.

11.1 General Clearing Measures

The following measures are recommended to manage clearing:

- The extent of the development footprint to be clearly marked (e.g. via pegging/fencing/flagging) before clearing in order to prevent any inadvertent clearance beyond what is required and has been assessed and to avoid damage or encroachment into the root zone of retained trees. This fencing/marking is to remain until all clearing and construction is completed.
- Site induction is to specify that no clearing is to occur beyond the marked area. All vehicles
 are only to be parked in designated areas.
- Clearing and earthworks is to avoid damage to root zones of the retained trees on adjoining land.
- Weeds are not to be mulched with native vegetation and should be taken to a licenced landfill facility.

11.2 Animal Welfare Considerations

The following is recommended to be implemented to minimise risk of direct mortality of fauna during clearing works:

- The area of clearing work is to be inspected for Koalas and other fauna by an ecologist immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. Pre-clearing checks will include searches of habitat e.g. lifting and destruction of logs, searches for bird nests, and raking of leaf litter. Other than Koalas, any detected fauna is to be relocated off-site. Any bird nest considered active is to be removed in a manner that allows retrieval of eggs/young, and these are to be taken into care by FAWNA.
- If a Koala is present in the proposed clearing area, works are to be suspended until the Koala
 moves along on its own volition. If the Koala is located in a position that a 50 m buffer may be
 established, works may proceed outside this buffer.

11.3 Tree Replacement

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The development will require the removal of six Blackbutt trees which may provide foraging habitat for threatened fauna. It is recommended that these are offset with replacement plantings at a 2:1 ratio in existing canopy gaps in the subject property. Species for planting should be sourced as advanced trees from a local nursery and comprise Tallowwood and/or Swamp Mahogany. Trees should be regularly maintained (eg watering, weeding, mulching) until they are at least 2m tall and any losses are to be replaced.

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11.4 Koala Ladders

There are two existing Koala ladders on the fenceline between Rosendahl Reservoir reserve and the strip of land which adjoins the southern site boundary (see Figure 10 below). To increase the number of potential crossing points and connectivity for Koalas, a third Koala ladder is recommended to be installed to the southwest of the site as shown in Figure 10.

The existing wire fence adjoins the southwest of the site boundary as shown in Figure 10. If the site boundary is fenced as part of the development it has the potential to limit Koala access around the subject site and may direct Koalas into the proposed new development area or onto Emily Avenue to the northeast.

Ideally, a gap should be maintained here for Koalas to pass through from the reserve to habitat within the east of the property (Lot 302). Another option is to re-align the existing wire fence so it aligns with the boundary of Lot 306.



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11.5 Domestic Pets

New residents may wish to keep cats and dogs. These should be restrained to the vicinity of the residences and yards as far as practicable to avoid potential injury to native fauna. Pets should not be allowed to roam nearby bushland areas and signage is recommended to be installed notifying residents. Ideally, dogs should be restricted within a fence which prevents fauna access, but permits their escape (eg by a wooden post).

11.6 Sedimentation and Erosion Control

Standard soil and sedimentation control measures will be required throughout the clearing works to ensure that habitats on the site and in the study area, as well as any subsequent aquatic habitats to the south are not substantially affected by erosion and sedimentation.

11.7 Weed Control

Disturbance of the development site's soils and vegetation removal has potential to encourage weed invasion. Hence, it is recommended that:

- Disturbance of vegetation and soils on the site should be limited to the areas of the proposed work and should not extend into adjacent vegetation.
- All plant used for clearing and construction works is certified as weed free.
- Appropriate collection and disposal of all weed material removed via clearing.
- Removal of any new weed infestations that have developed throughout the construction phase.

11.8 Fencing

Temporary fencing may be required upon construction of the residential dwellings. Fences have potential to obstruct the movement of fauna across the site. Any fencing required should be Koala friendly, permeable and not pose a barrier or risk of entanglement to fauna (e.g. post and plain wire).



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12. Conclusion

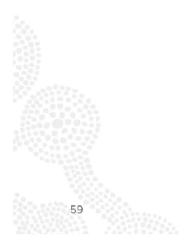
This report has assessed the impact of establishing a residential subdivision over the site. This comprises 5 Lots with a defined development envelope. An APZ and access driveway will also be established. The development will require the removal of a small amount of vegetation from on the site which comprises scattered trees and glassland. No hollow-bearing trees or Koala food trees occur on the site.

No threatened flora species were recorded during the survey and the vegetation on site does not qualify as an EEC. Five threatened fauna species were detected on the site and property. An additional 13 threatened species were identified as having potential to use the site as a small part of a larger range.

Assessment under SEPP 44 determined that the property comprises Potential Koala habitat, however many of the Koala feed trees are young regrowth or have been planted. As such, it offers limited foraging opportunities for Koalas at present and is unlikely to comprise Core Koala Habitat.

The significance assessments carried out for the proposed development determined that the proposal is not expected to significantly impact upon the known/potentially occurring threatened species on site due to the limited scale of the development; the fact that local populations of the subject species would extend beyond the study area; and the proposed ameliorative measures detailed in this report.

Consequently, the proposal is not considered to require a Biodiversity Development Assessment Report, or referral to the DEE for approval under the EPBC Act 1999.



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13. References

- Australian Koala Foundation (2007). Planning Guidelines for Koala Conservation and Recovery: A Guide to Best Planning Practice. Australian Koala Foundation, Brisbane. Website </www.savethekoala.com.au>.
- Biodiversity Australia (2015). Ecological Assessment for Rezoning, Greenmeadows Drive, Port Macquarie. Biodiversity Australia, Port Macquarie.
- Biodiversity Australia (2019). Biodiversity Development Assessment Report for Residential Subdivision, Lot 3 DP533058 John Oxley Drive, Port Macquarie. Biodiversity Australia, Port Macquarie.

 Biodiversity
 Conservation
 Act
 (2016).
 Website

 <https://www.legislation.nsw.gov.au/~/view/act/2016/63>.

Biolink (2013a). Vegetation of the Port Macquarie-Hastings Local Government Area. Unpublished report to PMHC, Port Macquarie. Biolink Ecological Consultants, Uki, NSW

Biolink (2013b). Port Macquarie – Hastings Koala Habitat and Population Assessment. Unpublished report to PMHC, Port Macquarie. Biolink Ecological Consultants, Uki, NSW.

Brooker, MIH & Kleinig, DA (2006). Field Guide to Eucalypts. Volume 1, South-eastern Australia, Bloomings Books, Hawthorn, Victoria.

Department of Environment and Conservation (DEC 2004). Threatened Biodiversity Survey and Assessment: Guidelines for Development and Activities. Working Draft. NSW DEC, Hurstville.

Department of Environment and Climate Change (DECC 2007). Threatened Species Assessment Guidelines: The Assessment of Significance. NSW DECC, Hurstville.

DECC (2008). Recovery Plan for the Koala (Phascolarctos cinereus). NSW DECC, Hurstville.

- Department of Environment and Energy (DEE 2019). Matters of National Environmental Significance Search Tool. Website <">www.environment.gov.au/epbc>.
- Department of the Environment (2014). EPBC Act referral guidelines for the Vulnerable Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory). Department of the Environment.

Eby, P. (2000). A Case for Listing Grey-Headed Flying Fox (Pteropus poliocephalus) as Threatened in NSW Under IUCN Criterion A2. In: Proceedings of a Workshop to Assess the Status of the Grey-Headed Flying Fox in NSW. Richards, G. (Ed.). Australasian Bat Society, Sydney.

Environment Protection and Biodiversity Conservation Act (1999) https://www.legislation.gov.au/Series/C2004A00485.

Harden, G.J. (Editor) (1990) Flora of NSW. Vols 1-4. NSW Press, Sydney.

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- Harden, G.J, McDonald, B. and Williams, J.B. (2007).Rainforest Climbing Plants A field guide to their identification. Gwen Harden Publishing, Nambucca Heads.
- Jurskis, V. and Potter, M. (1997). Koala Surveys, Ecology and Conservation at Eden. Research Paper No. 34. State Forests, Sydney.

NSW Government (1995). State Environmental Planning Policy No 44 - Koala Habitat Protection.

Office of Environment and Heritage (2016). NSW Guide to Surveying Threatened Plants.

OEH (2018). Threatened Species Test of Significance Guidelines.

OEH (2019a) Bionet/Atlas of Wildlife. Website http://www.bionet.nsw.gov.au/.

OEH (2019b) Threatened Species. Website </www.threatenedspecies.environment.nsw.gov.au>.

Phillips, S, and Callaghan, J. (1995). The Spot Assessment Technique for determining the significance of habitat utilisation by Koalas. Addendum to Proceedings of a conference on the status of the Koala in 1995. Australian Koala Foundation. Brisbane.

Phillips, S. and Callaghan, J. 2011. The Spot Assessment Technique: a tool for determining levels of localised habitat use by Koalas *Phascolarctos cincreus*. *Australian Zoologist* **35**(3): 774 780.

Royal Botanical Gardens (2019). Plantnet. Website <www.plantnet.rbgsyd.nsw.gov.au/search>.

Triggs, B. (1996). Scat, track and other traces. New Holland, Sydney.

- Troedson, A.L. and Hashimoto, T.R. (2008). Coastal Quaternary Geology north and south coast of NSW. Geological Survey of New South Wales, Bulletin 34.
- Van Dyck, S., Gynther, I. and Baker, A. (2013). Field Companion to the Mammals of Australia. Brisbane, Australia: New Holland Publishers.



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14. Appendices

A-1 Site Vegetation List

	Scientific Name			
	Canopy Trees			
Blackbutt	Eucalyptus pilularis	×		х
	Trees and Shrubs			
Two-veined Hickory	Acacia binervata			х
Fringed Wattle	Acacia fimbriata			Х
Sydney Golden Wattle	Acacia longifolia	×	x	
Lilly Pilly	Acmena smithii			Х
Coast Banksia	Banksia integrifolia			х
Coffee Bush	Breynia oblongifolia	×	X	
Bitou Bush**	Chrysanthemoides monilifera**	х		
Oliver's Sassafras	Cinnamomum oliveri			х
Lolly Bush	Clerodendrum floribundum			Х
Narrow-leaved Palm Lily	Cordyline stricta	×		
Tuckeroo	Cupaniopsis anacardioides	×		
Bolwarra	Eupomatia laurina	×		
Sandpaper Fig	Ficus coronata			Х
Cheese Tree	Glochidion ferdinandi	×		
Narrow-leaved Cotton Bush*	Gomphocarpus fruticosus	×		
Guioa	Guioa semiglauca			Х
Lantana**	Lantana camara**	×	х	
Prickly Beard-heath	Leucopogon juniperinus			х
Large-leaved Privet**	Ligustrum lucidum**		X	
Unknown	Myrsine variabilis			Х
Large Mock-olive	Notelaea longifolia			Х
Mickey Mouse Plant**	Ochna serrulata**			х
-	Persoonia stradbrokensis		x	
Wild Yellow Jasmine	Pittosporum revolutum			Х
Native Daphne	Pittosporum undulatum			х
Elderberry Panax	Polyscias sambucifolia	×		
Molucca Bramble	Rubus moluccanus			×
Native Rasberry	Rubus parvifolius	×		
Rose-leaf Bramble	Rubus rosifolius			х
Senna**	Senna pendula**			х
Wild Tobacco Bush*	Solanum mauritianum*		x	
Scentless Rosewood	Synoum glandulosum			х
Native Peach	Trema tomentosa			Х





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Tie Bush	Wikstroemia indica	×		
	Vines and Scramblers			
Wombat Berry	Eustrephus latifolius	×		
Scrambling Lily	Geitonoplesium cymosum			х
-	Glycine clandestina	×		
-	Glycine tabacina	×		
Climbing Guinea Flower	Hibbertia scandens			×
Coastal Morning Glory**	ipomoea cairica**		×	
Dusky Coral Pea	Kennedia rubicunda			х
Cork Passionflower*	Passiflora suberosa"	×	x	
Pearl Vine	Sarcopetalum harveyanum	×		
Lawyer Vine	Smilax australis	×		
Snake Vine	Stephania japonica		x	
	Ferns			
Asparagus Fern**	Asparagus aethiopicus**			х
Gristle Fern	Blechnum cartilagineum	×		
Binung	Christella dentata			х
Tree Fern	Cyathea cooperi			Х
Rasp Fern	Doodia aspera	×		
Common Bracken	Pteridium esculentum	×		
	Grasses			
Narrow-leafed Carpet Grass**	Axonopus fissifolius**		Х	
Rhodes Grass**	Chloris gayana**	×	х	
Barbed Wire Grass	Cymbopogon refractus	×	×	
Blady Grass	imperata cylindrica	×	x	
Red Natal Grass*	Melinis repens*	×	х	
Australian Basket Grass	Oplismenus aemulus	×		
Paspalum**	Paspalum dilatatum**		x	
Broadleaf Paspalum*	Paspalum mandiocanum*		×	
South African Pigeon Grass*	Setaria sphacelata*		х	
Paramatta Grass'	Sporobolus africanus"		х	
Kangaroo Grass	Themeda triandra	×		
	Groundcovers			
Billygoat weed*	Ageratum houstonianum*		×	
Cobbler's Pegs**	Bidens pilosa**	×	х	
Flaxleaf Fleabane*	Conyza bonariensis*		×	
Blue Flax Lily	Dianella caerulea	×		
Kidney Weed	Dichondra repens			х
Flatweed*	Hypochaeris radicata*	х	X	





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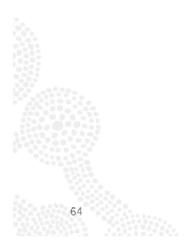
> Item 13.08 Attachment 2

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Scotch Thistle*	Onopordum acanthium*			х
Vasey Grass*	Paspalum urvillei*		x	
Castor Oil Plant**	Ricinus communis**			x
Paddy's Lucerne*	Sida rhombifolia*	×	x	
Ground Lily	Tripladenia cunninghamii	×		
Purpletop**	Verbena bonariensis**		x	
Ivy-leaved Violet	Viola hederacea		×	
	Sedges, Rushes and Aquatics			
Spiny-headed Mat-rush	Lomandra longifolia	×	x	
Key: Random meander (RM), Exo	tic species ("), High threat exotic species ("	').		



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	Aves	
Australian King-Parrot	Alisterus scapularis	Vis
Australian Magpie	Cracticus tibicon	HC, Vis
Brown Thornbill	Acanthiza pusilla	HC
Crested Pigeon	Ocyphaps lophotes	Vis
Eastern Osprey	Pandion cristatus	Vis
Eastern Rosella	Platycercus eximius	HC, Vis
Galah	Eolophus roseicapilia	HC
Grey Butcherbird	Cracticus torquatus	Vis, Cam
Laughing Kookaburra	Dacelo novaeguineae	Vis
Lewin's Honeyeater	Meliphaga lewinii	HC, Vis
Little Black Cormorant	Phalacrocrax sulcirostris	Vis
Little Corelia	Cacatua sanguinea	Vis
Little Wattlebird	Anthochaera chrysoptera	HC, Vis
Magpie Lark	Grallina cyanoleuca	Vis
Masked Lapwing	Vanellus miles	Vis
Noisy Miner	Manorina melanocephala	HC
Pied Butcherbird	Cracticus nigrogularis	HC
Rainbow Lorikeet	Trichoglossus moluccanus	HC, Vis
Red Wattlebird	Anthochaera carunculata	HC
Satin Bowerbird	Ptilonorhynchus violaceus	Cam
Spotted Dove	Spilopelia chinensis	HC
Superb Fairywren	Malurus cyaneus	HC
Torresian Crow	Corvus orru	HC
Welcome Swallow	Hirundo neoxena	Vis
White-bellied Cuckoo-shrike	Coracina papuesis	Vis
White-headed Pigeon	Columba leucomela	HC
Willie Wagtail	Rhipidura leucophrys	HC
	Mammalia	
Black Rat	Rattus rattus	Cam
Bush Rat	Rattus fuscipes	Cam
Chital Deer	Axis axis	Vis
Common Ringtail Possum	Pseudocheirus peregrinus	Vis
Eastern Coastal Free-tail Bat	Mormopterus norfolkensis	Anabat
Eastern Grey Kangaroo	Macropus giganteus	Cam
Gould's Wattled Bat	Chalinolobus gouldii	Anabat
Grey-headed Flying Fox	Pteropus poliocephalus	HC, Vis

A-2 Site Fauna List

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Little Bent-wing Bat	Miniopterus australis	Anabat
Red Fox*	Vulpes vulpes*	Cam
Ride's Free-tailed Bat	Ozimops ridei	Anabat
	Reptilia	
Eastern Blue-tongue Lizard	Tiliqua scincoides	Vis
,	or EPBC Act (bold), Introduced specie n), Heard Calling (HC), Scats (SC), Visu	

66

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Flora Species Eligibility for Test of Significance and MNES Assessment

A-3

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http://www.environment.nsw.gov.au/threatenedspeci esapp/profile_aspx?id=10030	No suitable habitat on site. Unlikely to occur.	Ñ
http://www.environment.nsw.gov.au/threatenedspeci esepp/profile_aspx?id=10037	No suitable habitat on site. Unlikely to occur.	Ž
http://www.environment.gov.au/cgi [.] bin/sprat/public/publicspecies.pl?taxon_id=21927	No suitable habitat on site. Unlikely to occur.	Ñ
https://www.environment.nsw.gov.au/threatenedSpe ciesApp/profile.aspx?id=10066	No suitable habitat on site. Unlikely to occur.	N
http://www.environment.nsw.gov.au/threatenedSpeci esApp/profile.aspx?id=10068	This species is known to occur in damp areas, often along iver banks. Suitable habitat does not occur on site and the plant was not found. Unlikely to occur.	Ñ
https://www.environment.nsw.gov.au/threatenedSpe ciesApp/profile.aspx?id=10131	Site is located beyond known distribution. Unlikely to occur.	Ñ
https://www.environment.nsw.gov.au/threatenedSpe clesApp/profile.aspx?id=10160	No suitable habitat on site. Unlikely to occur.	Ñ
https://www.environment.nsw.gov.au/threatenedSpe ciesApp/profile.aspx?id=10187	Site habitat unlikely to be suitable due to disturbance history and extent of dense exotic groundcover. No local records. Unlikely to occur.	Ñ
htp://www.ervironment.nsw.gov.au/ihreatenedspeci esapp/profile.aspx?id=10196	This species predominately occurs in dry rainforest and the process or the subject step and the subject step and not occur on the subject site and this species was not found. Unlikely to occur.	N
http://www.environment.new.gov.au/ithreatenedspeci esepp/profile_aspx?id=10213	No suitable habitat on site. Urtikely to occur	Ž
https://www.environment.nsw.gov.au/threatenedSpe ciesApp/profile.aspx?id=10241	No suitable habitat on site. Urlikely to occur	Ñ
https://www.environment.nsw.gov.au/threatenedSpe ciesApp/profile.aspx?id=10302	Site is located beyond known distribution and local records are planted trees. Unlikely to occur.	Ñ
	pp/crofile.aspx?id=10066 p/mw.environmert.nsw.gov.au/threatenedSpeci pprofile.aspx?id=10068 //mw.environmert.nsw.gov.au/threatenedSpe pp/crofile.aspx?id=10131 //mw.environmert.nsw.gov.au/threatenedSpe pp/crofile.aspx?id=10187 //mw.environmert.nsw.gov.au/threatenedSpeci pp/crofile.aspx?id=10196 //mw.environmert.nsw.gov.au/threatenedSpeci //mw.environmert.nsw.gov.au/threatenedSpeci //mw.environmert.nsw.gov.au/threatenedSpeci //mw.environmert.nsw.gov.au/threatenedSpeci pp/Crofile.aspx?id=10213 //mw.environmert.nsw.gov.au/threatenedSpeci pp/Crofile.aspx?id=10213 //mw.environmert.nsw.gov.au/threatenedSpeci pp/Crofile.aspx?id=10213 //mw.environmert.nsw.gov.au/threatenedSpeci pp/Crofile.aspx?id=1032	¥

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Euclification Interfactor								
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Expressia argua CE 0 https://www.anvironment.nsw.gov au/threatenedSpe Expressia argua E 2 https://www.anvironment.nsw.gov au/threatenedSpeci Indees Screw Feren E 2 https://www.anvironment.nsw.gov au/threatenedSpeci Indees Screw Feren E 2 https://www.anvironment.nsw.gov au/threatenedSpeci Macadami and Marsdenia E V 2 eesapp/prioritie asprifici-20163 Macadami and Marsdenia E V 2 http://www.anvironment.nsw.gov au/threatenedSpeci Macadami and Marsdenia E V 1 2 http://www.anvironment.nsw.gov au/threatenedSpeci Macadami and Marsdenia E V 1 2 http://www.anvironment.nsw.gov au/threatenedSpeci Marsdenia knybochind apprinter asprificie asprific	Wallangarra White Eucelyptus scop	te Gum Daria	ш	>	-	https://www.environment.nsw.gov.au/threatenedSpe clesApp/profile.aspx?Id=10315	Site is located beyond known distribution and local records are planted trees. Unlikely to occur.	Na
Siender Screer Fern Lindseee incla E - 2 https://www.environment.new.gov.au/threatenedSpel cladseee incla Macadamia Nut - V 2 https://www.environment.new.gov.au/threatenedSpel cladsee Macadamia Nut - V 2 http://www.environment.new.gov.au/threatenedSpel cladse Macadamia Nut - V 2 http://www.environment.new.gov.au/threatenedSpel cladse Macadamia nuegrificia V 1 0 1 0 1 Macadamia nuegrificia V 2 Num Num Num Num Maradenia inglocinoides V 1 0 1 1 Num Num Maundia inglocinoides V 2 10 Num	- Euphrasla argu	uta	3	IJ	0	https://www.environment.nsw.gov.au/threatenedSpe ciesApp/profile.aspx?id=20165	No suitable habitat on site. Urlikely to occur	Ñ
Macadamia Nut. v 2 Ntp.//www.entviconment.nsw.gov.au/threateneckpediation for the set of th	Slender Screw I Lindsaea incis	Fern sa	ш		2	https://www.environment.nsw.gov.au/threatenedSpe clesApp/profile.aspx?ld=10482	No suitable habitat on site. Unlikely to occur	No
Stender Marsdenia E V 1 Http://www.environment.new.gov.au/threatened5peci Marsdenia iongdoba v - 10 Reppfrantle aspx?td=10511 Marsdenia iongdoba v - 10 Reppfrantle aspx?td=10514 Marancla intglactrinotdes v v 47 BeApp/profile aspx?td=10514 Mandla intglactrinotdes v v 2 Reppfrantle aspx?td=10514 Mealauren bizoneza v v 2 Reppfrantle aspx?td=10514 Mealauren bizoneza v 1 Reppfrantle aspx?td=10514 Repefrantle aspx?td=10514 Mealauren bizoneza v v 1 Reppfrantle aspx?td=10516 Reppfrantle aspx?td=10516 Mealauren bizoneza v 1 1 Reppfrantle aspx?td=10516 Reppfrantle aspx?td=10516 Reppfrantle aspx?td=10516 Reppfrantle aspx?td=10516 Reperencespeci Reppfrantle aspx?td=10516	Macadamia N Macadamia Integ	Jut rifolia		>	2	http://www.environment.nsw.gov.au/threatenedspeci esapp/profile.aspx?id=20244	Site is located beyond known distribution and local records are planted trees. Unlikely to occur.	N
Mauncia triglochinocides V Itip//www.environment.nsw.gov.au/threatenedSpeci Bitconvex Papertark V 47 Mthy/www.environment.nsw.gov.au/threatenedSpeci Bitconvex Papertark V 47 Mthy/www.environment.nsw.gov.au/threatenedSpeci Bitconvex Papertark V 27 Pth//www.environment.nsw.gov.au/threatenedSpeci Mealeucra biconvexa V 28 Mth//www.environment.nsw.gov.au/threatenedSpeci Growe's Papertark V 28 Nth//www.environment.nsw.gov.au/threatenedSpeci Mealeucra groveana V 29 20 Mth//www.environment.nsw.gov.au/threatenedSpeci Growe's Papertark V 29 11 Mth//www.environment.nsw.gov.au/threatenedSpeci Mealeucra groveana V 29 1 1 Mth//www.environment.nsw.gov.au/threatenedSpeci Operand in unbescents V 29 1 1 1 1 Persteranture statistic 2 2 2 3 1 3 3 Persteranture statistic 2 3 1 1 3 3 3 <td>Slender Marsdi Marsdenia longi</td> <td>enia Noba</td> <td>ш</td> <td>></td> <td>-</td> <td>http://www.environment.new.gov.au/threatenedspeci esapp/profile.aspx?tc=10507</td> <td>Typically recorded in wet sclerophyll forest and reinforest. Site habitat unlikely to be suitable and there are ro proximate records. Unlikely to occur.</td> <td>No</td>	Slender Marsdi Marsdenia longi	enia Noba	ш	>	-	http://www.environment.new.gov.au/threatenedspeci esapp/profile.aspx?tc=10507	Typically recorded in wet sclerophyll forest and reinforest. Site habitat unlikely to be suitable and there are ro proximate records. Unlikely to occur.	No
V 47 http://www.environment.new.gov.au/threatened5peci V 2 2 http://www.environment.new.gov.au/threatened5peci V 2 1 http://www.environment.new.gov.au/threatened5peci V 2 3 https://www.environment.new.gov.au/threatened5peci CE 2 3 https://www.environment.new.gov.au/threatened5peci CE 2 34 https://www.environment.new.gov.au/threatened5peci CE 2 34 https://www.environment.new.gov.au/threatened5peci CE 2 34 https://www.environment.new.gov.au/threatened5peci CE 2 34 https://www.environment.new.gov.au/threatened5peci	- Maundia triglochir	noides	>		10	http://www.environment.nsw.gov.au/threatenedSpeci esApp/profile.aspx?id=10511	No sultable habitat on site. Urilkely to occur	No
V 2 2 Ittp://www.ervironment.rew.gov.au/threatenedspect V - 1 Hitp://www.ervironment.rew.gov.au/threatenedspect V - 1 Hitp://www.ervironment.rew.gov.au/threatenedspect V - 1 Hitp://www.ervironment.rew.gov.au/threatenedspect V - 1 Hitp://www.ervironment.rew.gov.au/threatenedspect V - 1 https://www.environment.rew.gov.au/threatenedspect E E 0 https://www.environment.nsw.gov.au/threatenedSpect CE - 3-4 https://www.environment.nsw.gov.au/threatenedSpect CE - 28 https://www.environment.nsw.gov.au/threatenedSpect CE - 28 https://www.environment.nsw.gov.au/threatenedSpect	Biconvex Paper Melaleuca bicon	rbark Wexa	>	>	47	http://www.environment.new.gov.au/threatenedSpeci esApp/profile.aspx?d=10514	This species occurs in swamp margins or creek edges. Habitat of this type does not occur within the dowolopment site and species not found. Unlikely to occur.	N
V 1 http://www.environment.nsw.gov.au/threatenec/speci V 1 http://www.environment.nsw.gov.au/threatenec/speci V 1 http://www.environment.nsw.gov.au/threatenec/speci E E 0 http://www.environment.nsw.gov.au/threatenec/speci CE 2 34 https://www.environment.nsw.gov.au/threatenec/speci CE - 34 https://www.environment.nsw.gov.au/threatenec/speci CE - 34 https://www.environment.nsw.gov.au/threatenec/speci CE - 28 https://www.environment.nsw.gov.au/threatenec/speci CE - 28 https://www.environment.nsw.gov.au/threatenec/speci	Grove's Papert Melaleuca grove	bark eana	>		2	http://www.environment.new.gov.au/threatenedspeci esapp/profile.aspx?tc=10516	Site habitat is unifikely to be suitable and there are no proximate records. Likely to be readily detected if present. Unlikely to occur.	Ň
V - 1 https://www.environment.nsw.gov.au/threatenedSpo E E 0 tessApp/profile.aspx?id=10868 E D https://www.environment.nsw.gov.au/threatenedSpo CE - 34 https://www.environment.nsw.gov.au/threatenedSpo CE - 34 https://www.environment.nsw.gov.au/threatenedSpo CE - 28 desapp/profile.aspx?id=20341 CE - 28 https://www.environment.nsw.gov.au/threatenedSpo	d-flowered King of Oberonia titan	the Fairies Via	>		-	http://www.environment.nsw.gov.au/threatenedspeci esapp/profile.aspx?id=10571	No suitable habitat on site. Urlikely to occur	N
E 0 https://www.environment.nsw.gorv.au/threatened.Spc CE - 34 https://www.environment.nsw.gorv.au/threatened.Spc CE - 34 https://www.environment.nsw.gorv.au/threatened.Spc CE - 28 https://www.environment.nsw.gorv.au/threatened.Spc CE - 28 https://www.environment.nsw.gorv.au/threatened.Spc	Brown Fairy-chain Peristeranthus	Orchid	>		-	https://www.environment.nsw.gov.au/threatenedSpe ciesApp/profile.aspx?id=10868	Nó suitablé habitat on site. Urlikely to occur	Ñ
CE - 34 https://www.environment.tnsw.gov.au/threatenedSpe CE - 34 cessApp/profile.aspx?id=20341 CE - 28 https://www.environment.tnsw.gov.au/threatenedSpe	Lesser Swamp-o Phalus austral	srchid <i>lis</i>	ш	ш	0	https://www.environment.nsw.gov.au/threatenedSpe ciesApp/profile.aspx?id=10610	No suitable habitat on site. Unlikely to occur	N
CE - 28 https://www.environment.nsw.gov.au/threatenedSpo ClesApp/profile aspx?td=20342 Biodversity Australie Py Ltd ABN 81127154757	Scrub Turpent Rhodamnia rube:	tine scens	U		36	https://www.environment.new.gov.au/threatenedSpe clesApp/profile.asp?iu=20341	A rainforest species which is also occasionally found in we corroward in worther of these habitat communities occur on the subject site and this species was not found. Unitikely to occur.	Ň
Bodversity Australia Py Ltd ABN 81 127 154 737	Native Guav Rhodomyrtus psid	a tioides	B	I.	28	https://www.environment.nsw.gov.au/threatenedSpe clesApp/profile.aspx?td=20342	This species is often found near creeks and drainage lines within rainforest communities. Habitat of this type	Na
E						Biodiversity Australia Pty Ltd ABN 81127 154 787		

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					does not occur within the subject site and this species was not found. Unlikely to occur.	
Rainforest Cassia Senna acclinis	ш		-	http://www.environment.nsw.gov.au/threatenectspeci esapp/profile.aspx?tc=10753	No suitable habitat on site. Unlikely to occur	ß
Silverbush Sophora tomentosa	ш		7	https://www.environment.nsw.gov.au/threatenedSpe ciesApp/profile.aspx?id=10765	No suitable habitation site. Unlikely to occur	Ñ
Magenta Lilly Pilly Syzygium peniculatum	ш	>	0	https://www.environment.nsw.gov.au/threatenedSpe clesApp/profile_aspx?id=10794	No suitable habitat on site. Unlikely to occur	Ñ
Austral Toadflax Thesium australe	>	>	0	https://www.anvironment.nsw.gov.au/threatenedSpe ciesApp/profile.aspx?ld=10802	Ste contains some areas of native groundcover, however the habital in general is unifiely to be autidate for this species which is more often associated with grassland on coastal seadiffs. No local records. Unilkely to occur.	Ž
Key: Critically Endangered (CE), Endangered (E), Vulnerable (V)	dangered (E), Vulner:	able (V).			



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ORDINARY COUNCIL 20/05/2020

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

ECOLOGICAL ASSESSMENT FOR PROPOSED 5 LOT SUBDIVISION, EMILY AVENUE PORT MACQUARIE | APRIL 2019

A-4 Fauna Species Eligibility for Test of Significance and MNES Assessment

Table 14: Potential occurrence assessment - fauna

				Link to Profile		
				Amprilaia		
Wallum Froglet Crinia tinnula	>	ı	64	https://www.environment.nsw.gov.au/thre atenedSpeclesApp/profile.aspx?ld=10183	This species is mostly found in paperbark swamps and wet sedgelands. Habitat of this type does not occur within the development site. Unlikely to occur.	Ň
Green & Golden Bell Frog Litoria aurea	ш	>	ŝ	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.asp.x?id=10.483	Recorded north of Lake innes Nature Reserve to the west of the site. No potential habitat occurs on the site, hence it is unlikely to occur.	No
Green Thighed Frog Litoria brevipalmeta	>	1	ч	https://www.environment.nsvr.gov.au/thre atenedSpeciesApp/profile.aspx?id=10.485	This species occurs in moist eucaypt forests and minorests containing pooled water or incoded arees. Although some areas of suitable habitat may occur nearby to the south of the site, the subject site feer and pose not contain habitat suitable for this species and has a significance disturbance history. Unlikely to occur.	ů
Giant Barred Frog Mixophyes fleratus		ш	а	http://www.environment.nsvr.gov.au/thre atenedSpeciesApp/profile.aspx?id=10538	This species is found in molst forests and rainforests. The vegetation communities on site are not suitable and this species has not been recorded in the locality within the last ten years. Unlikely to occur.	N
				Aves		
Magpie Goose Anseranas semipalmata	>	ı	٢	https://www.environment.nsw.gov.au/thre etenedSpeciesApp/profile.aspx?id=10056	This species is generally found in shallow wetlands stronded by dense sedges or rulates however may graze in grassland communities. The site does not contan potential habitat, unlikely to occur.	N
Regent Honeyeater Anthochaera phrygia	CE	CE	7	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?id=10841	Favoured wirther flowening nectar sources for this species do not occur within the development site. Unlikely to occur.	No
Dusky Woodswallow Artamus cyanoptarus cyanopterus	>	,	00	http://www.environment.new.gov.au/threa tenedspeciesapp/profile.aspx?id=20303	Site may contain generic potential habitat for this species, however it was not recorded during the survey, Low chance of occurrence.	Yes
Australasian Bittern Botaurus poiciloptilus	ш	ш	2	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.asp.x?id=10105	An estuarine or freshwater species found in areas of dense seciges, reeds and rusines. Suitable habitat for this species does not occur on site. Unlikely to occur.	NO
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Bush Stone-curlew Burhinus grallarius	ω	,	a	https://www.envirorment.nsw.gov.au/htre attenedSpeciesApp/profile.aspx?/d=10113	This spockes requires an abundance of leaf litter and distinct debits for breading. Site has been extensively disturbed in the past by logging which would be a deterrent for this spocies. Not recorded by survey and not recorded within the locality within the past ten years. Unikedy to occur.	°
Giossy Black Cockatoo Calyptorhynchus lathami	>	ш	4 8	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?id=10140	This species requires Allocasuarina and/or casuarina species to forage and large tree hollows to breed. Nether of these requirements occur within the development site, hence it is unlikely to occur.	Ň
Spotted Harrier Circus assimilis	>	1	12	https://www.envirorment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?/d=20134	This species is mostly found in native grassland or or organger over a previnations. The prev resources for this species require groundcover and are sensitive to mebrat cogradation. Moriteration of grassland on sto and lack of groundcover for prev species is considered a finitetion for this species. Unitedly to occur.	Ñ
Brown Treecreeper (eastern subspecies) Climacteris picumnus victoriae	>		~	https://www.envirorment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=10171	Site at best contains broadly suitable potential habitat to constained by the lack of hollows and long history of disturbance. Not recorded in locality within the past ten years. Unlikely to occur.	Ň
Barred Cuckoo-shrike Coracina lineata	>	I	31	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?id=10176	This species is found in rainforest and moist forests. Habitat of this type does not occur within the development sta hence, unlikely to occur.	No
Varied Sittella Daphoenositta chrysoptera	>	1	34	http://www.anvironment.nsw.gov.au/threa tenedspeciesappiprofile.aspx?id=20135	This species forages in trees with rough bark or on dead trees. It is known to occur in a range of vegetation types excluding deserts and grassland. Habitat within the subject stile is likely to be too exposed and fragmented. Unlikely to occur.	Ŷ
Eastern Bristlebird Dasyornis brachypterus	ш	ш	0	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?id=10206	Site habitat is unsuitable for this species and there are no local records. Unlikely to occur.	No
Emu (population in the NSW North Coast Bioregion and Port Stephens LGA) Dromaius novaehollandiae	w	I	~	http://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=10250	Single local record is from a former wildlife park. No Erru population is known to occur in the area.	Ň
Black-necked Stork Ephippiorhynchus asiaticus	w	,	74	https://www.environment.nsw.gov.au/thre etenedSpeciesApp/profile.aspx?id=10275	This species is found in close proximity to a water source. Genorally inhabits lakes, swamps, mudiats and margooves. A reservoir occurs south of the site however habitat of this type does not occur on the development site. Unlikely to occur.	Ň
71				Biodiversity Australia Pry Ltd ABN B1 127 154 7 737	Ny Australia Pry Ltd ABN B1127 155 787	

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Little Lorikeet Giossops <i>itta pusilie</i>	>		27	http://www.environment.nsw.gov.au/threa tanedspeciesapp/profile.asp.x?/d-2011	This species is mostly found in areas of profuse- mosting euclytis where if feeds on nearch and pollen from the free canopy. Has been recorded occurring in colated roadside and paddock trees. A potential organg resource or this species occurs on site and in adjoining properties. Fair chance of occurrence.	Yes
Painted Honeyeater Grantiella picta	>	>	o	http://www.environment.nsw.gov.au/threa tanedSpeciesApp/profile.aspx?id=10357	This species inhabits mistetoe-infested forest and wooddand communities. This habitat does not occur on site and this species has not been recorded in the locality. Unlikely to occur.	Ň
Brolga Grus rubicunda	>		ß	https://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=10382	A coastal and inland wetland species. No wetlands occur within the development site, hence considered unlikely to occur.	No
Little Eagle Hieraaetus morphnoides	>		ব	http://www.environment.nsw.gov.au/three tenedspeciesapp/profile.aspx?/d=20131	This species foreges in forest and woodland communities that contain an abundance of prey resources. The development site is unlikely to support a sufficient prev source for this species however there as every merginal potential for it to forege over the site set per rol a larger range.	Yes
Comb-crested Jacana Irectiparra gallinacea	>	I.	4	https://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?/d=10435	This species is found in areas with a permanent water source and a good cover of surface vegetation. It is not commonly recorded in freshwater avamps, pillaborgs and ports, Habra for this spooles does not occur on site. Unlikely to occur.	No
Black Bittern Ixobrychus flavicollis	>		ന	https://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=10441	This species is found in freshwater and estuarine wetlands with dense vegetation. Habitat of this type does not occur on site. Unlikely to occur.	No
Swift Parrot Lathamus discolor	ш	B	67	http://www.environment.gov.au/cgi- bin/sprat/public/publicspecies.pl?taxon_id =744	Local records occur approximately 2 km west of the term the provident of the eventydats which do not occur within the development site. Unlikely to occur.	°N
Square-tailed Kite Lopholctnia isura	>		45	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.aspx?/d=10495	This species is commonly found in open forests and wordands. Large stck masts are contructed in forts of king these. No mests found on or adjacent to the site and it was not detected by the survey. Recorded in locality, thence at least fair chance of occurrence as part of a large tronging imge.	Yes
Barking Owl Ninox connivens	>	1	9	https://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?/d=10561	This species hunts over large territories where is prefers open country. Tree hollows in well-korested hills flats or riverine woodland are required for nesting. No nasting habitat_accur on site for this species	Yes
72				Biodiversity Australia Pry Ltd ABN 81 127 154 787	All BLIZZISIA PRULICI	

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					however the subject site may provide foreging habitat as a small part of a large hunting range. Low-moderate chance of occurrence.	
Powerful Owl Ninox strenue	>	1	я	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.asp.x?id=10562	This species occurs in sclerophyll forests and requires an abundance and diversity of prey species. Tree hollows are also required for nesting. They species are likely to be scarce however the site may form part of a larger foraging territory. Fair chance of occurrence.	Yes
Blue-billed Duck Oxyura australis	>		7	https://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=10580	Site does not contain any aquatic habitat. Unlikely to occur.	No
Scarlet Robin Petroica boodang	>		m	https://www.envirorment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=20133	Site is likely to be too exposed and does not contain derstorey vegetation or any coarse woody debns. Not recorded in the locality within the last 10 years. Unlikely to occur.	No
Flame Robin Petroica phoenicea	>		-	https://www.envirorment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=20129	Site is likely to be too exposed and does not contain derstorey vegetation or any coarse woody debris. Not recorded in the locality within the last 10 years. Unlikely to occur.	N
Eastern Ground Parrot Pezoporus wallicus wallicus	>		4	https://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=10608	No suitable heathland habitat occurs in the study area. Unlikely to occur.	No
Grey-crowed Babbler (eastern subspecies) Pomatostomus temporalis	>	ı	÷	https://www.environment.nsw.gov.au/thre atened\$peciesApp/profile.aspx?id=10660	Site does not contain typical habitat for this species and there are no nearby records. Unlikely to occur.	No
Wompoo Fruit-Dove Ptilinopus magnificus	>		ŧ	http://www.environment.nsw.gov.au/threa tanedSpeciesApp/profile.aspx?td=10707	A rainforest species which also inhabits wet sclerochyll rocests with a mainforest understopy. No rainforest or work scienciphyll forest habitat occurs within the subject site. Unikely to occur.	No
Rose-crowned Fruit-Dove Ptilinopus regina	>	1	19	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?td=10708	Fuulting plants on the site were very rare and site is unlikely to provide foraging hebitat for this species. Unlikely to occur.	No
Freckled Duck Stictonetta naevosa	>		13	https://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=10771	Site does not contain any aquatic habitat. Unlikely to occur.	No
Eastern Grass Owl Tvto lonaimembris	>	ı	સ	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.aspx?id=10819	No suitable habitat for this species occurs on the site. Unlikely to occur.	No

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Masked Owi Tyto novæhollandfae	>	,	8	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.asp.x?id=10820	This species occurs in forests and woodlands with a parse understory, it requests there hollows for nealing and an abundance and diversity of prevy species. Prev species are likely scared across the tudy' area, however there is some potential to forage over the site as part of a larger range. Low channe of occurrence.	Yes
				Insecta		
Laced Fritillary Argynnis hyperbius	ш		n	https://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=10064	No suitable habitat occurs on the site. Unlikely to occur,	No
Giant Dragonfly Petalura gigantea	ш	,	4	https://www.environment.nsw.gow.au/thre atenedSpeciesApp/profile.aspx?id=10600	No suitable habitat occurs on the site. Unlikely to occur.	No
				Mammalia		
Rufous Bettong Aepyprymnus rutescens	>		F	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?td=f0033	This species occurs in open woodland/lorest areas with a dense grass layer. Site is likely to be to exposed to support this species and there are no nearby records. Unleevite occur.	No
Eastern Pygmy-possum Cercartetus nanus	>		71	https://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=10155	Sife habitat is likely to be too exposed due to the lack of understory and shrub layers. Poor foraging values. Unlikely to occur.	Ñ
Large-eared Pied Bat Chaiinclobus dwyeri	>	>	÷	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?id=10157	The development site lacks preferred roosts such as soese, mines and Faity Mattin mests. Considered unlikely to occur on site due to the lack of breeding habitat and limited records in the locality.	No
Hoary Wattled Bat Chalinolobus nigrogriseus	>		-	https://www.environment.nsw.gov.au/thre atenedSpeciesApp/profile.aspx?id=10158	In NSW, this spaces favours forests dominated by potted Gun tionbaris and boxes; and healthy coastal forests where Scribby Gun and feed Bloodwood are common Vagotation within the dow lopment site is too disturbed to support this species and commuties found on the site are not favoured by this species.	N
Spotted-Tailed Quoll Dasyurus maculatus	>	ш	26	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profie.aspx?fid=10207	This species prefers forest habitats with dense operation for nesting, social negation for present within nolows are required. This habitat is not present within the subject site. Unlikely to occur.	No
Eastern False Pipistrelle Falsistrellus tasmaniensis	>		'n	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?td=10331	Site contains some potential habitat which may be used for foraging as part of a larger area. No potential roosting habitat occurs on site. Low potential to occur.	Yes

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Eastern Bent-wing Bat Miniopterus schreibersii oceanensis	>		29	http://www.environment.nsw.gov.au/threa tenedspeciesapp./profile.aspx?id=10534	This spaces is known to occur in well-forestod areas and other fourto rossing in covers. old mines and old buildings. Suitable roosting habitat for this species does not occur on development atte however site may form a small part of larger foraging range. Low chance of occuring on site.	Yes
Southern Myotis Myotis macropus	>		12	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?td=10549	This species requires tree hollows, caves, turnels or adves tiplage to roosting. Torrages follow creek iness and other water bodies and has a preterence for riparian habitat. The site does not contain any pareitorides which may be used for foraging and potential roosting habitat was not found. Unlikely to occur.	N
Greater Glider Petauroldes volans	ш	>	m	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.aspx?id=20306	Site and property is unlikely to contain enough habitat to support this species, and tree holicows in the area are are. Not recorded during field surveys. Unlikely to occur.	N
Yellow-bellied Glider Poteurus australis	>	1	15	http://www.environment.nsw.gov.au/threa tenedspeckesapp/profile.aspx?id=10601	Site and property is unlikely to contain enough habitet to support this species, and tree hollows in the area are rise. Not recorded during field surveys. Unlikely to occur.	Ň
Squirrel Gilder Petaurus norfolcensis	>		36	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.asp.x?id=10604	This species is commonly found in dry, open forests with an abundance of winter-loweing trees. The sta has some low quality potential foreging habitat but does not contain flowering shrubs in the understorey. Low chance of occurring.	Yes
Brush-tailed Phascogale Phascogale tapoatafa	>	1	71	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.aspx?id=10613	This species prefers dry sclerophyll forests with sparse promocover in howaver is commonly found in paddock trees and toadside vegitation in unal areas. It is known to real in tree hollows which do not occur within the development site. Low chance of utilising the subject site for longing.	Yes
Common Planigale Planigale maculata	>	I	4	http://www.environment.nsw.gov.au/threa tenedspeciesappiprofile.aspx?/d=10635	This spacles is found in areas where there is danse proximity to water. Hollow logs, nocks and crevices are required for shelter durnality. Limited shelter occurs on the development atmosf to this spaces due to a disturbance history and removal of costee woody debits. As such the site is not considered to contain suitable habitat.	°2

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ECOLOGICAL ASSESSMENT	FOR PRC	DPOSED 5	LOT SUBD	ECOLOGICAL ASSESSMENT FOR PROPOSED 5 LOT SUBDIVISION, EMILY AVENUE PORT MACQUARIE APRIL 2019	5 APRIL 2019	
Long-nosed Potoroo (SE mainland) Potorous tridactylus	>	>	0	http://www.environment.gov.au/cgi- bin/spravpublic/publicspecies.pl?taxon_id =6.6645	This species requires a dense understory and groundcover for retuge whilst feeding. This habitat does not occur on site. Unlikely to occur.	Ň
Eastern Chestnut Mouse Pseudomys gracilicaudatus	>		15	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?id=10687	This species requires intact habitats with a dense understory. Suitable habitat for this species does not occur on site. Unlikely to occur.	No
New Holland Mouse Pseudomys novaehollandiae		>	0	http://www.environment.gov.au/cgi- bin/sprat/public/publicspecies.pl?taxon_id =95	This species requires heathlands with a dense understory. Suitable habitat for this species does not occur on site. Unlikely to occur.	No
Yellow-bellied Sheath-tail Bat Saccolaimus flaviventris	>	1	ŝ	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.aspx?id=10741	Sile contains some potential habitat which may be used for foraging as part of a larger area. No potential roosting habitat occurs on site. Low potential to occur.	Yes
Greater Broad-nosed Bat Scoteanax rueppelli	>		71	http://www.environment.nsw.gov.au/threa tenedSpeciesApp/profile.aspx?id=10748	Site contains some potential habitat which may be used for foraging as part of a larger area. No potential roosting habitat occurs on site. Fair potential to occur.	Yes
Common Blossom Bat Syconycteris australis	>	I	n	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.aspx?id=10785	Site does not contain preferred foraging habitat and is not located near any potential roosting areas.	No
Eastern Cave Bat Vespadelus troughton	>	,	Ø	http://www.environment.nsw.gov.au/threa tenedspeciesapp/profile.asp.z?ld=10829	A cave-dwelling bet that inhabits wet sclerophyll forest and tropical mixed woodland. Su table habitat for this species does not exist of site and this species has not been recorded in the locality in the past ten years. Unlikely to occur.	Ň
Key: Critically Endangered (CE), Endangered (E), Vulnerable (V), Migratory (M),	Endangere	ed (E), Vulr	nerable (V),	Migratory (M).		

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ECOLOGICAL ASSESSMENT FOR PROPOSED 5 LOT SUBDIVISION, EMILY AVENUE PORT MACQUARIE | APRIL 2019

A-5 EPBC MNES Search Results



Biodiversity Australia Pty Ltd ABN 81127-154-787



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> Item 13.08 Attachment 2

DEVELOPMENT ASSESSMENT PANEL 06/05/2020



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about <u>Environment Assessments</u> and the EPBC Act including significance guidelines, forms and application process details.

Report created: 17/04/19 09:15:42

<u>Summary</u> **Details** Matters of NES Other Matters Protected by the EPBC Act Extra Information Caveat **Acknowledgements**



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Coordinates

Buffer: 10.0Km



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> Item 13.08 Attachment 2

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	69
Listed Migratory Species:	68

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A <u>permit</u> may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	6
Commonwealth Heritage Places:	None
Listed Marine Species:	88
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	6
Regional Forest Agreements:	1
Invasive Species:	37
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

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Details

Matters of National Environmental Significance

Commonwealth Marine Area

[Resource Information] Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name

EEZ and Territorial Sea

ata Daat

Marine Regions

[Resource Information]

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name

Temperate East		
Listed Threatened Ecological Communities		[Resource Information]
For threatened ecological communities where the distril plans, State vegetation maps, remote sensing imagery community distributions are less well known, existing ve produce indicative distribution maps.	and other sources. Where	threatened ecological
Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus		
Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Charadrius mongolus		
Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Dasyornis brachypterus		
Eastern Bristlebird [533]	Endangered	Species or species

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Name	Status	Type of Presence
Diomedea antipodensis		habitat likely to occur within area
Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<u>Diomedea sanfordi</u> Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Fregetta grallaria_grallaria White-bellied Storm-Petrel (Tasman Sea), White- bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
<u>Grantiella picta</u> Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
<u>Macronectes giganteus</u> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<u>Macronectes halli</u> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur_subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
<u>Pterodroma neglecta neglecta</u> Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may

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JO/	U	3/	2	υ	2	υ

Name	Status	Type of Presence occur within area
Rostratula australis		occur within area
Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Thalassarche bulleri		
Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
<u>Thalassarche bulleri platei</u> Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
<u>Thalassarche cauta cauta</u> Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
<u>Thalassarche cauta</u> steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita		widini area
Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Fish		within area
Epinephelus daemelii		
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Insects		
Argynnis hyperbius inconstans		
Australian Fritillary [88056]	Critically Endangered	Species or species habitat likely to occur within area
Mammals		
Balaenoptera borealis	Vulnerable	Forming for disc or solution
Sei Whale [34]	vunerable	Foraging, feeding or relate behaviour likely to occur within area
<u>Balaenoptera musculus</u> Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or relate behaviour likely to occur within area
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population	on)	
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area

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Name	Status	Type of Presence
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<u>Megaptera novaeangliae</u> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat known to occur within area
Phascolarctos cinereus (combined populations of Qld, Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	NSW and the ACT) Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat likely to occur within area
<u>Pseudomys novaehollandiae</u> New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		
Acronychia littoralis		
Scented Acronychia [8582]	Endangered	Species or species habitat likely to occur within area
<u>Allocasuarina defungens</u> Dwarf Heath Casuarina [21924]	Endangered	Species or species habitat known to occur within area
Allocasuarina thalassoscopica [21927]	Endangered	Species or species habitat known to occur within area
<u>Arthraxon hispidus</u> Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area
<u>Asperula asthenes</u> Trailing Woodruff [14004]	Vulnerable	Species or species habitat known to occur within area
<u>Cryptostylis hunteriana</u> Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area
<u>Cynanchum elegans</u> White-flowered Wax Plant [12533]	Endangered	Species or species habitat known to occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area
<u>Macadamia integrifolia</u> Macadamia Nut, Queensland Nut Tree, Smooth- shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area
<u>Melaleuca biconvexa</u> Biconvex Paperbark [5583]	Vulnerable	Species or species habitat known to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area

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Name	Status	Type of Presence
Syzygium paniculatum		
Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat may occur within area
Thesium australe		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta		
Loggerhead Turtle [1763] Chelonia mydas	Endangered	Foraging, feeding or related behaviour known to occur within area
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
<u>Natator depressus</u> Flatback Turtle [59257]	Vulnerable	Breeding likely to occur
Flawaor Turtle [59257]	vullerable	Breeding likely to occur within area
Sharks		
Carcharias taurus (east coast population)		
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information
* Species is listed under a different scientific name on	the EPBC Act - Threatened	I Species list.
Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus		One share an arrestor but it is
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
<u>Calonectris leucomelas</u> Streaked Shearwater [1077]		Species or species habitat may occur within area
Dismedes entinedensis		
<u>Diomedea antipodensis</u> Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora		
Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Southern Royal Albatross [89221] Diomedea exulans		behaviour likely to occur within area
Southern Royal Albatross [89221]	Vulnerable Vulnerable	

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Name	Threatened	Type of Presence
		related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
<u>Sternula albifrons</u> Little Term [82849]		Species or species habitat may occur within area
<u>Thalassarche bulleri</u> Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
<u>Thalassarche cauta</u> Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
<u>Thalassarche eremita</u> Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
<u>Thalassarche impavida</u> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<u>Thalassarche salvini</u> Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<u>Thalassarche steadi</u> White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
<u>Balaena glacialis_australis</u> Southern Right Whale [75529]	Endangered*	Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
<u>Balaenoptera musculus</u> Blue Whale [36]	Endangered	Species or species

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Name	Threatened	Type of Presence
Balaenoptera physalus		habitat may occur within area
Fin Whale [37]	Vulnerable	Foraging, feeding or related behavicur likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<u>Chelonia mydas</u> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Dugong dugon Dugong [28]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
<u>Lamna nasus</u> Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
<u>Manta alfredi</u> Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
<u>Manta birostris</u> Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
<u>Megaptera novaeangliae</u> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<u>Natator depressus</u> Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
<u>Orcinus orca</u> Killer Whale, Orca [46]		Species or species habitat may occur within area
<u>Rhincodon lypus</u> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
Migratory Terrestrial Species Cuculus optatus		
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
<u>Monarcha melanopsis</u> Black-faced Monarch [609]		Species or species habitat

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			00
Name	Threatened	Type of Presence within area	
<u>Monarcha trivirgatus</u> Spectacled Monarch [610]		Species or species habitat known to occur within area	
<u>Myiagra cyanoleuca</u> Satin Flycatcher [612]		Species or species habitat known to occur within area	
<u>Rhipidura rufifrons</u> Rufous Fantail [592]		Species or species habitat known to occur within area	
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	
<u>Arenaria interpres</u> Ruddy Turnstone [872]		Roosting known to occur within area	
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	
<u>Calidris canutus</u> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	
<u>Calidris ferruginea</u> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	
<u>Calidris melanotos</u> Pectoral Sandpiper [858]		Species or species habitat may occur within area	
<u>Calidris ruficollis</u> Red-necked Stint [860]		Roosting known to occur within area	
<u>Charadrius bicinctus</u> Double-banded Plover [895]		Roosting known to occur within area	
<u>Charadrius mongolus</u> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting may occur within area	
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area	
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area	
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	
<u>Numenius madagascariensis</u> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	
Pandion haliaetus Osprey [952]		Breeding known to occur within area	

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Name	Threatened	Type of Presence
Pluvialis fulva	Theatonea	1) po en recenso
Pacific Golden Plover [25545]		Roosting known to occur within area
<u>Pluvialis squatarola</u> Grey Plover [865]		Roosting known to occur
Tringa brevipes		within area
Grey-tailed Tattler [851]		Roosting known to occur within area
<u>Tringa nebularia</u> Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Xenus cinereus		
Terek Sandpiper [59300]		Roosting known to occur within area
Other Matters Protected by the EPB	C Act	
Commonwealth Land	11	[Resource Information]
The Commonwealth area listed below may inc the unreliability of the data source, all proposa Commonwealth area, before making a definiti department for further information.	ils should be checked as t	o whether it impacts on a
Name		
Commonwealth Land - Australian Postal Com Commonwealth Land - Australian Postal Corp Commonwealth Land - Australian Telecommu	oration nications Commission	
Commonwealth Land - Commonwealth Bank Commonwealth Land - Defence Service Hom Commonwealth Land - Telstra Corporation Lir	es Corporation	
Listed Marine Species * Species is listed under a different scientific r	ame on the EPBC Act - T	[Resource Information]
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus		
		Species or species habitat
		Species or species habitat likely to occur within area
Common Noddy [825] Apus pacificus		likely to occur within area
Common Noddy [825] Apus pacificus		
Common Noddy [825] <u>Apus pacificus</u> Fork-tailed Swift [678]		likely to occur within area Species or species habitat
Common Noddy [825] A <u>pus pacificus</u> Fork-tailed Swift [678] A <u>rdea alba</u>		likely to occur within area Species or species habitat
Common Noddy [825] A <u>pus pacificus</u> Fork-tailed Swift [678] A <u>rdea alba</u> Great Egret, White Egret [59541]		likely to occur within area Species or species habitat likely to occur within area Species or species habitat
Common Noddy [825] A <u>pus pacificus</u> Fork-tailed Swift [678] A <u>rdea alba</u> Great Egret, White Egret [59541] A <u>rdea ibis</u>		likely to occur within area Species or species habitat likely to occur within area Species or species habitat
Common Noddy [825] A <u>pus pacificus</u> Fork-tailed Swift [678] A <u>rdea alba</u> Great Egret, White Egret [59541] A <u>rdea ibis</u> Cattle Egret [59542] A <u>renaria interpres</u>		likely to occur within area Species or species habitat likely to occur within area Species or species habitat known to occur within area Species or species habitat
Common Noddy [825] <u>Apus pacificus</u> Fork-tailed Swift [678] <u>Ardea alba</u> Great Egret, White Egret [59541] <u>Ardea ibis</u> Cattle Egret [59542] <u>Arenaria interpres</u> Ruddy Turnstone [872] Calidris acuminata		likely to occur within area Species or species habitat likely to occur within area Species or species habitat known to occur within area Species or species habitat may occur within area
Common Noddy [825] A <u>pus pacificus</u> Fork-tailed Swift [678] Ardea alba Great Egret, White Egret [59541] A <u>rdea ibis</u> Cattle Egret [59542] A <u>renaria interpres</u> Ruddy Turnstone [872] Calidris acuminata		likely to occur within area Species or species habitat likely to occur within area Species or species habitat known to occur within area Species or species habitat may occur within area Roosting known to occur
Common Noddy [825] A <u>pus pacificus</u> Fork-tailed Swift [678] A <u>rdea alba</u> Great Egret, White Egret [59541] <u>Ardea ibis</u> Cattle Egret [59542] <u>Arenaria interpres</u> Ruddy Turnstone [872] <u>Calidris acuminata</u> Sharp-tailed Sandpiper [874]		likely to occur within area Species or species habitat likely to occur within area Species or species habitat known to occur within area Species or species habitat may occur within area Roosting known to occur within area Species or species habitat known to occur within area
Common Noddy [825] A <u>pus pacificus</u> Fork-tailed Swift [678] A <u>rdea alba</u> Great Egret, White Egret [59541] A <u>rdea ibis</u> Cattle Egret [59542] A <u>renaria interpres</u> Ruddy Turnstone [872]	Endangered	likely to occur within area Species or species habitat likely to occur within area Species or species habitat known to occur within area Species or species habitat may occur within area Roosting known to occur within area Species or species habitat

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_	
Threatened	Type of Presence habitat known to occur
	within area
Critically Endangered	Species or species habitat known to occur within area
	Species or species habitat
	may occur within area
	Roosting known to occur within area
	Species or species habitat may occur within area
	Species or species habitat may occur within area
	Roosting known to occur
	within area
Endangered	Roosting known to occur within area
	Roosting known to occur within area
Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Vulnerable*	Foraging, feeding or related
Vullerable	behaviour likely to occur within area
Endengered	Foreging, feeding or related
Endangered	Foraging, feeding or related behaviour likely to occur within area
	Species or species habitat known to occur within area
	Species or species habitat likely to occur within area
	Roosting may occur within
	area
	Roosting likely to occur within area
	Roosting likely to occur within area
	Species or species habitat known to occur within area
	Roosting known to occur
	Critically Endangered Endangered Vulnerable

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			06
Name	Threatened	Type of Presence	
<u>Hirundapus caudacutus</u> White-throated Needletail [682]		within area Species or species habitat known to occur within area	
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	
<u>Limosa lapponica</u> Bar-tailed Godwit [844]		Species or species habitat known to occur within area	
<u>Macronectes giganteus</u> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	
<u>Merops ornatus</u> Rainbow Bee-eater [670]		Species or species habitat may occur within area	
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area	
<u>Myiagra cyanoleuca</u> Satin Flycatcher [612]		Species or species habitat known to occur within area	
<u>Numenius madagascariensis</u> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	
Pachyptila.turtur Fairy Prion [1066]		Species or species habitat known to occur within area	
Pandion haliaetus Osprey [952]		Breeding known to occur within area	
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	
<u>Pluvialis fulva</u> Pacific Golden Plover [25545]		Roosting known to occur within area	
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area	
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area	
<u>Rhipidura rufifrons</u> Rufous Fantail [592]		Species or species habitat known to occur within area	

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Sterna albiftons Species or species habita Little Tern [813] Species or species habita Dalassarche buller! Buller's Albatross, Pacific Albatross [64460] Vulnerable Species or species habita Tassarche buller Buller's Albatross, Pacific Albatross [64460] Vulnerable Species or species habita Tassarche cauta Species or species habita Species or species habita Tassarche cauta Species or species habita Species or species habita Chatham Albatross [64457] Endangered Species or species habita Thalassarche impavida Species or species habita Species or species habita Thalassarche impavida Species or species habita Species or species habita Thalassarche salvini Species or species habita Species or species habita Thalassarche salvini Species or species habita Species or species habita Thalassarche salvini Species or species habita Species or species habita Thalassarche salvini Species or species habita Species or species habita Thalassarche salvini Species or species habita Species or species habita Thalassarche salvini Vulnerable Species or species habita Thalassarche salvini Species or species habita Species or species habita Thalassarche salved <td< th=""><th></th><th></th><th></th></td<>			
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			Species or species habitat may occur within area

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Name	Threatened	Type of Presence
<u>Hippocampus whitei</u> White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]		Species or species habitat likely to occur within area
<u>Histiogamphelus briggsii</u> Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
<u>Lissocampus runa</u> Javelin Pipefish [66251]		Species or species habitat may occur within area
<u>Maroubra perserrata</u> Sawtooth Pipefish [66252]		Species or species habitat may occur within area
<u>Solegnathus dunckeri</u> Duncker's Pipehorse [66271]		Species or species habitat may occur within area
<u>Solegnathus spinosissimus</u> Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
<u>Solenostomus cyanopterus</u> Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
<u>Solenostomus paradoxus</u> Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area
<u>Stigmatopora nigra</u> Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
<u>Syngnathoides biaculeatus</u> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
<u>Trachyrhamphus bicoarctatus</u> Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
<u>Urocampus carinirostris</u> Hairy Pipefish [66282]		Species or species habitat may occur within area
<u>Vanacampus margaritifer</u> Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Mammals		
<u>Arctocephalus forsteri</u> Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
<u>Arctocephalus pusillus</u> Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
<u>Dugong dugon</u> Dugong [28]		Species or species habitat may occur within area
Reptiles		
<u>Caretta caretta</u> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<u>Chelonia mydas</u> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known

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Name	Threatened	Type of Presence
		to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata		within alca
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Hydrophis elegans		
Elegant Seasnake [1104]		Species or species habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
Pelamis platurus		
Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area
Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<u>Balaenoptera edeni</u> Bryde's Whale [35]		Species or species habitat
		may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis		Chasics of aposics habitat
Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
<u>Eubalaena australis</u> Southern Right Whale [40]	Endangered	Species or species habitat
		likely to occur within area
Grampus griseus		
Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<u>Megaptera novaeangliae</u> Humpback Whale [38]	Vulnerable	Species or species habitat
		known to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis		
Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
Stenella attenuata		
Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area

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Name	Status	Type of Presence
Tursiops aduncus		
Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str.		
Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Lake Innes	NSW
Lake Innes	NSW
Limeburners Creek	NSW
Macquarie	NSW
Sea Acres	NSW
Woregore	NSW
Regional Forest Agreements	[Resource Information]
Note that all areas with completed RFAs have been included.	
Name	State
North East NSW RFA	New South Wales
Invasive Species	[Resource Information]
Weeds reported here are the 20 species of national significance (WoNS), along that are considered by the States and Territories to pose a particularly significa	

that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis		
Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos		
Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis		
European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata		
Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus		
House Sparrow [405]		Species or species habitat likely to occur within area
Pycnonotus jocosus		
Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis		
Spotted Turtle-Dove [780]		Species or species

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Name	Status	Type of Presence	
		habitat likely to occur within	
		area	
Sturnus vulgaris		Onesies or enables habitat	
Common Starling [389]		Species or species habitat likely to occur within area	
		likely to occur within area	
Turdus merula			
Common Blackbird, Eurasian Blackbird [596]		Species or species habitat	
		likely to occur within area	
Frogs			
Rhinella marina			
Cane Toad [83218]		Species or species habitat	
		known to occur within area	
Mammals			
Bos taurus			
Domestic Cattle [16]		Species or species habitat	
		likely to occur within area	
		-	
Canis lupus familiaris		0	
Domestic Dog [82654]		Species or species habitat	
		likely to occur within area	
Felis catus			
Cat, House Cat, Domestic Cat [19]		Species or species habitat	
		likely to occur within area	
Feral deer			
Feral deer species in Australia [85733]		Species or species habitat	
		likely to occur within area	
Lepus capensis		Species or species habitat	
Brown Hare [127]		Species or species habitat likely to occur within area	
		intery to obout minimarea	
Mus musculus			
House Mouse [120]		Species or species habitat	
		likely to occur within area	
Oryctolagus cuniculus			
Rabbit, European Rabbit [128]		Species or species habitat	
		likely to occur within area	
Rattus norvegicus			
Brown Rat, Norway Rat [83]		Species or species habitat	
		likely to occur within area	
Rattus rattus		Onacias as anacias habitat	
Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area	
Vulpes vulpes			
Red Fox, Fox [18]		Species or species habitat	
		likely to occur within area	
Plants			
Alternanthera philoxeroides			
Alligator Weed [11620]		Species or species habitat	
		likely to occur within area	
Anredera cordifolia			
Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine,		Species or species habitat	
Anredera, Gulf Madeiravine, Heartleaf Madeiravine,		likely to occur within area	
Potato Vine [2643]			
Asparagus aethiopicus		Species or species hakitet	
Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus	5	Species or species habitat likely to occur within area	
[62425]	*	andly to occur within area	
Asparagus plumosus			
Climbing Asparagus-fern [48993]		Species or species habitat	
		likely to occur within area	
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Name	Status	Type of Presence
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171] Chrysanthemoides monilifera		Species or species habitat likely to occur within area
Bitou Bush, Boneseed [18983]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Eichhornia crassipes		
Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara		
Lantana, Common Lantana, Kamara Lantana, Large- leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] Opuntia spp.		Species or species habitat likely to occur within area
Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata		
Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate		
Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla		
Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salvinia molesta		
Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis		
Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Nationally Important Wetlands		[Resource Information
Name		State
Limeburners Creek Nature Reserve		NSW

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Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data lavers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, roloK or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped: - migratory and

- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vacrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers
- The following groups have been mapped, but may not cover the complete distribution of the species: - non-threatened seabirds which have only been mapped for recorded breeding sites
 - Initialiteatered seatings which have only been mapped to recorded deeding sites
 seals which have only been mapped for breeding sites near the Australian continent
- Such breeding sites may be important for the protection of the Commonwealth Marine environment

Coordinates

-31.45664 152.90329

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Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice: -Office of Environment and Heritage, New South Wales -Department of Environment and Primary Industries, Victoria -Department of Primary Industries, Parks, Water and Environment, Tasmania -Department of Environment, Water and Natural Resources, South Australia -Department of Land and Resource Management, Northern Territory -Department of Environmental and Heritage Protection, Queensland -Department of Parks and Wildlife, Western Australia -Environment and Planning Directorate, ACT -Birdlife Australia -Australian Bird and Bat Banding Scheme -Australian National Wildlife Collection -Natural history museums of Australia -Museum Victoria -Australian Museum -South Australian Museum -Queensland Museum -Online Zoological Collections of Australian Museums -Queensland Herbarium -National Herbarium of NSW -Royal Botanic Gardens and National Herbarium of Victoria -Tasmanian Herbarium -State Herbarium of South Australia -Northern Territory Herbarium -Western Australian Herbarium -Australian National Herbarium, Canberra -University of New England -Ocean Biogeographic Information System -Australian Government, Department of Defence Forestry Corporation, NSW -Geoscience Australia -CSIRO -Australian Tropical Herbarium, Cairns -eBird Australia -Australian Government - Australian Antarctic Data Centre -Museum and Art Gallery of the Northern Territory -Australian Government National Environmental Science Program -Australian Institute of Marine Science -Reef Life Survey Australia -American Museum of Natural History -Queen Victoria Museum and Art Gallery, Inveresk, Tasmania -Tasmanian Museum and Art Gallery, Hobart, Tasmania -Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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ATTACHMENT

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ECOLOGICAL ASSESSMENT FOR PROPOSED 5 LOT SUBDIVISION, EMILY AVENUE PORT MACQUARIE | APRIL 2019

A-6 Anabat Analysis Results



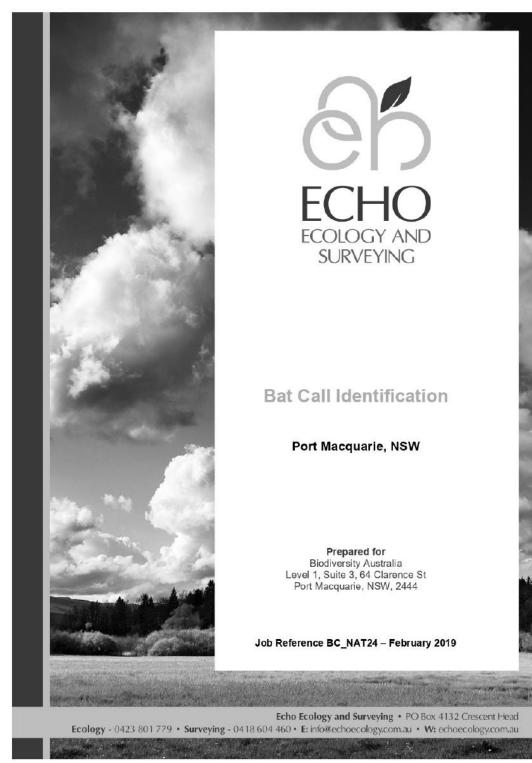
Biodiversity Australia Pty Ltd ABN 81127154787



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Bat Call Analysis Port Macquarie, NSW

This report has been prepared to document the analysis of digital ultrasonic bat echolocation calls received from a third party. The data was not collected by the author and as such no responsibility is taken for the quality of data collection or for the suitability of its subsequent use.

This report was authored by

filler.

Dr Anna McConville PhD, B.Env.Sc.

Job Reference: BC_NAT24 25 March 2019

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Bat Call Analysis Port Macquarie, NSW

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Bat Call Analysis Port Macquarie, NSW

1.0 INTRODUCTION

This report has been commissioned by Biodiversity Australia to analyse bat echolocation call data (Anabat, Titley Electronics) collected from Port Macquarie, NSW. Data was provided electronically to the author. This report documents the methods involved in analysing bat call data and the results obtained only.

2.0 METHODS

The identification of bat echolocation calls recorded during surveys was undertaken using AnalookW (Chris Corben, Version 4.4a) software. The calls were recorded using Data Division Ratio 8. Files were first run through a noise filter in Anabat Insight (Titley Electronics, Version 1.8.4) and any files that passed the filter marked as 'Noise'. The identification of calls was undertaken with reference to Pennay et al. (2004) and through the comparison of recorded reference calls from the north coast region. Reference calls were obtained from the NSW database and from the authors personal collection.

Each call sequence ('pass') was assigned to one of five categories, according to the confidence with which an identification could be made, being:

- Definite Pass identified to species level and could not be confused with another species
- Probable Pass identified to species level and there is a low chance of confusion with another species
- Possible Pass identified to species level but short duration or poor quality of the pass increases the chance of confusion with another species
- Species group Pass could not be identified to species level and could belong to one of two or more species. Occurs more frequently when passes are short or of poor quality
- Unknown Either background 'noise' files or passes by bats which are too short and/or of poor quality to confidently identify.

Call sequences that were less than three pulses in length were not analysed and were assigned to 'Unknown' and only search phase calls were analysed. Furthermore, some species are difficult to differentiate using bat call analysis due to overlapping call

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Bat Call Analysis Port Macquarie, NSW

frequencies and similar shape of plotted calls and in these cases calls were assigned to species groups.

The total number of passes (call sequences) per unit per night was tallied to give an index of activity.

It should be noted that the activity levels recorded at different sites may not be readily able to be compared. Activity levels should not be compared among species as different species have different detectability due to factors such as call loudness, foraging strategy and call identifying features. Activity comparisons among sites are dependent on many variables which need to be carefully controlled during data collection and statistically analysed. Influential variables include wind, rain, temperature, duration of recording, season, detector and microphone sensitivity, detector placement, weather protection devices etc.

Nomenclature follows the Australian Chiroptera taxonomic list described by Reardon et al. (2015).

2.1 Characteristics Used to Differentiate Species

Miniopterus australis was differentiated from Vespadelus pumilus, by characteristic frequency or the presence of a down-sweeping tail on pulses.

Calls from *Mormopterus* spp. were differentiated by the presence of mainly flat pulses. *Mormopterus ridei* was differentiated from *Mormopterus norfolkensis* in long call sequences with little pulse alternation.

Chalinolobus gouldii was differentiated from other species by the presence of curved, alternating call pulses.

Myotis macropus was differentiated from *Nyctophilus* spp. by calls with pulse intervals < 75 ms, initial slope > 400 OPS and often with a central kink and varying slopes among pulses.

3.0 RESULTS

A total of 1,508 call sequences were recorded, of which 347 call sequences were able to be analysed (ie were not 'noise' files or bat calls of short length). Of the bat calls, 165 call sequences (48 %) were able to be confidently identified (those classified as either definite or probable identifications) to species level (Table 3-1). Species recorded confidently within the site include:

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Bat Call Analysis

- Chalinolobus gouldii •
- Miniopterus australis •
- Mormopterus norfolkensis
- . Mormopterus ridei

- Port Macquarie, NSW
- (Gould's Wattled Bat) (Little Bent-winged Bat) (Eastern coastal Free-tailed Bat) (Ride's Free-tailed Bat)

Additionally, the following bat species potentially occurred within the site, but could not be confidently identified (those calls classified as possible or as a species group):

- Falsistrellus tasmaniensis •
- Miniopterus orianae oceanensis .
- Myotis macropus
- ٠ Nyctophilus geoffroyi
- Nyctophilus gouldi •
- Scoteanax rueppellii
- Scotorepens orion •
- Vespadelus darlingtoni ٠
- Vespadelus pumilus
- Vespadelus regulus
- (Eastern Falsistrelle) (Eastern Bent-winged Bat) (Large-footed Myotis) (Lesser long-eared bat) (Gould's long-eared bat) (Greater Broad-nosed Bat) (Eastern Broad-nosed Bat) (Large Forest Bat) (Eastern Forest Bat) (Southern Forest Bat)

It should be noted that additional bat species may be present within the site but were not recorded by the detectors (or are difficult to identify by bat call) and habitat assessment should be used in conjunction with these results to determine the likelihood of occurrence of other bat species.

Table 3-1 below summarises the results of the bat call analysis.

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Bat Call Analysis
Port Macquarie, NSW

Table 3-1: Results of bat call analysis (number of passes per site per night)

IDENTIFICATION	Anabat 7/03/2019	Anabat 8/03/2019	Anabat 9/03/2019	Anabat 10/03/2019
DEFINITE				
Chalinolobus gouldii	2	1	4	1
Miniopterus australis	47	3	8	15
Mormopterus ridei	-	-	3	-
PROBABLE				
Chalindobus gouldii	5	-	14	4
Miniopterus australis	35	5	4	4
Mormopterus norfolkensis	2	-	-	1
Mormopterus ridei	-	-	2	5
POSSIBLE				
Chalindobus gouldii	17	5	4	8
Miniopterus australis	4	1	-	1
Myotis macropus	-	-	-	1
SPECIES GROUPS				
Chelinolobus gouldii / Mormopterus norfolkensis / Mormopterus ridei	13	5	6	13
Chalinolobus gouldii / Mormopterus ridei	21	-	11	17
Chalindobus gouldii / Scoteanax rueppellii	3	-	1	-
Falsistrellus tasmaniensis / Scotorepens orion	1	1	-	-
Falsistrellus tasmaniensis / Scotorepens orion / Scoteanax rueppellii	1	-	-	-
Miniopterus australis / Vespadelus pumilus	17	-	2	3
Miniopterus orianae oceanensis / Vespadelus darlingtoni / Vespadelus regulus	2	-	-	-
Mormopterus norfolkensis / Mormopterus ridei	8	4	1	3

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Bat Cali Analysis Port Macquarie, NSW

IDENTIFICATION	Anabat 7/03/2019	Anabat 8/03/2019	Anabat 9/03/2019	Anabat 10/03/2019
Myotis macropus / Nyctophilus geoffroyi / Nyctophilus gouldi	7	-	-	1
UNKNOWN				
'Noise' files	25	650	5	422
Unknown	22	6	10	21
TOTAL	232	681	75	520

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Bat Call Analysis Port Macquarie, NSW

4.0 SAMPLE CALLS

A sample of the calls actually identified from the site for each species is given below.

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Figure 4-1: Chalinolobus gouldii definite call

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Figure 4-2: Miniopterus australis definite call

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Figure 4-3: Mormopterus norfolkensis probable call

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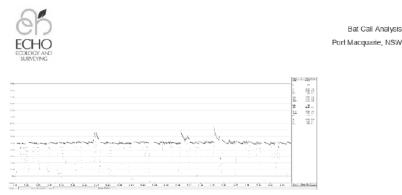


Figure 4-4: Mormopterus ridei definite call

5.0 REFERENCES

Adams, M. D., Law, B.S., French, K.O. (2009). "Vegetation structure influences the vertical stratification of open- and edge-space aerial-foraging bats in harvested forests." Forest Ecology and Management 258(9): 2090-2100.

Adams, M. D., Law, B.S., French, K.O. (2010). Reliable automation of bat call identification for eastern New South Wales, Australia, using classification trees and AnaScheme software. *Acta Chiropterologica* 12(1): 231-245.

Australasian Bat Society Incorporated (undated) *Standards for reporting bat detector surveys*, <u>http://batcall.csu.edu.au/abs/issues/ABS_Anabat_survey_standards.pdf</u>

Churchill, S. (2008). Australian Bats. Second Edition Allen & Unwin; Crows Nest, NSW.

Law, B.S., Reinhold, L. and Pennay, M. (2002). Geographic variation in the echolocation calls of Vespadelus spp. (Vespertilionidae) from New South Wale and Queensland, Australia. *Acta Chiropterologica* 4: 201-215.

Pennay, M., Law, B. and Reinhold, L. (2004). *Bat calls of New South Wales: Region based guide to the echolocation calls of Microchiropteran bats*. NSW Department of Environment and Conservation, Hurstville.

Reardon, T., Armstrong, K., Jackson, S. (2015). A current taxonomic list of Australian Chiroptera, Australasian Bat Society, Inc. Version 2015-05-15.

Reinhold, L., Law, B., Ford, G. and Pennay, M. (2001a). *Key to the bat calls of south-east Queensland and north-east New South Wales*. Queensland Department of Natural Resources and Mines, State Forests of New South Wales, University of Southern Queensland, and New South Wales National Parks and Wildlife Service, Australia.

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Bat Call Analysis Port Macquarie, NSW

Reinhold, L., Herr, A., Lumsden, L., Reardon, T., Corben, C., Law, B., Prevett, P., Ford, G., Conole, L., Kutt, A., Milne, D. and Hoye, G. (2001b). Geographic variation in the echolocation calls of Gould's wattled bat *Chalinolobus gouldii*. *Australian Zoologist* 31: 618-624.

Van Dyck, S. and Strahan, R. (Eds.) (2008). *The Mammals of Australia: Third Edition*. New Holland; Sydney.

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KING + CAMPBELL

Traffic Impact Assessment Staged Residential Subdivision Part Lot 302 DP 754434, Emily Avenue, Port Macquarie

Prepared for:

Port Macquarie Hastings Council

Prepared by:

King & Campbell Pty Ltd 1^{ss} Floor, Colonial Arcade 25-27 Hay Street P O Box 243 Port Macquarie P O Box 243 Port Macquarie 2444 Ph: (02) 6586 2555 Fax: (02) 6583 4064 info@kingcampbell.com.au

Date: March 2019

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Post-Developed

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Tables

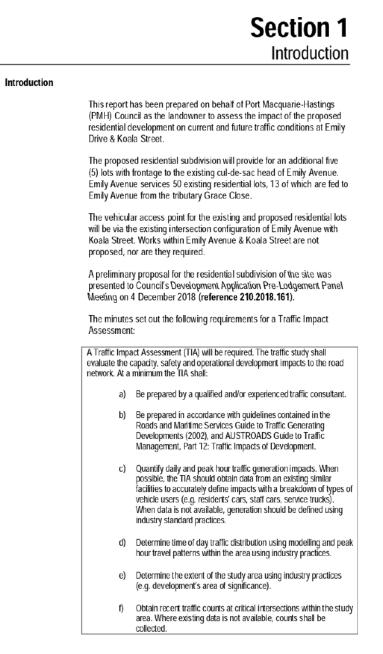
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Post-Developed

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g) Study existing and future conditions for critical driveways and intersections evaluating capacity (level of service) and operational (queuing and safety) impacts. At a minimum, the study shall evaluate:) Any proposed driveway intersecting with the public road network

ii) Emily Avenue & Koala Street

h) Consider connectivity for public transport facilities and active transport modes such as walking and cycling. At a minimum, pathways to be provided on both sides of Collector Roads, and on one side of all smaller local roads. DetaIs shall match Council's standard drawing ASD 100 series.

This assessment will demonstrate that the existing Emily Road access from Koala Street has sufficient capacity to cater for the proposed development for the existing intersection configuration.

Intersection performance has been assessed using the software package SIDRA 8.0 to obtain the capacity of the traffic movements for the proposed development and in accordance with the assumptions made by GHD (GHD PMH LGA Traffic Study 2018).

1.2 Review of GHD PMH LGA Traffic Study, June 2018

GHD Pty Ltd were engaged by PMH Council & Roads and Maritime Services (RMS) to prepare a Traffic Study for the PMH LGA (GHD PMH LGA Traffic Study 2018). The purpose of the study was to evaluate current & future road network performance (from 2016 up to the year 2036) within the PMH LGA and identify a road & improvement hierarchy for future planning. The report considered the main urban areas & key linkage roads within the PMH LGA, as well as major rural roads linking regional towns and centres.

The report utilised the Aimsun modelling software package with model development informed by traffic volume, travel time & origin-destination surveys, existing PMH Council population & land-use data, and in situ traffic observations. The report identified peak AM traffic volumes as occurring between 8am – 9am, and peak PM traffic volumes as occurring between 3pm – 4pm.

The report made several recommendations on the road network improvements required to effectively manage the impact of future growth. The report notes that Koala Street is a collector road located within the Port Macquarie area that provides linkage between Ocean Drive & Kennedy Drive. The report identifies the Kennedy Drive/Koala Street intersection upgrade (roundabout) as being High priority level by the year 2026, and Koala Street/Granite Street intersection upgrade (roundabout) as being Moderate priority level by the year 2026. The Kennedy Drive/Koala Street intersection upgrade was recommended as a Medium term (approximately 2026) upgrade.

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1.3 Background Traffic Volume Estimation

Traffic volume data was initially obtained by GHD via the undertaking of peak-period turn movement counts at 59 intersections within the model area, classified tube count data at 6 locations, origin-destination surveys at 9 locations, and travel time surveys for 3 routes within the model area. Data surveys were collected for the seven-day period between the 8^{h} February 2016 – 14th February 2016 (inclusive) and within the AM & PM peak-traffic periods (7am-10am & 2pm-6pm respectively).

The report presented hourly traffic volume ranges for the Koala Street/Emily Drive intersection for the survey year (2016) and 20-year projected (2036). These values are presented in **Table 1**, from which zero or negative increase in the hourly traffic volume ranges over the 20-year projected period is observed for Koala Street.

Table 1 - Hourly Traffic Volume Ranges on Koala Street (GHD Pty Ltd, 2018)

Koala Street Trafic Range (veh/hr)					
		AM		P	М
		Southbound	Northbound	Southbound	Northbound
2016 Range	Min	100	500	100	500
	Wax	250	1000	250	1000
2036 Range	Min	100	2 50	100	250
	Wax	250	5 00	250	500

1.4 2019 - 2039 Traffic Volume Estimation

A 20 year lifespan from 2019 – 2039 has been selected as the modelling horizon for analysis within SIDRA. To maintain consistency with the GHD (2018) report, upper-range values of hourly traffic volume for 2016 & 2036 have been interpolated/extrapolated. These values are presented in **Table 2**.

Table 2 - Interpolated & Extrapolated Hourly Traffic Volume Ranges on Koala Street (GHD Pty Ltd, 2018)

	Koala Sireet Traffic Range (veh/hr)					
		А	М	PM		
		Southbound	Northbound	Southbound	Northbound	
2016 Range	Nin	100	500	100	500	
2010 Kange	Max	250	1000	250	1000	
2036 Range	Min	100	250	100	250	
2030 Kange	Мах	250	500	250	500	
2019 Range	Min	100	462.5	100	462.5	
(interpolated)	Мах	250	925	250	925	
2039 Range	Min	100	212.5	100	212.5	
(Extrapolated)	Мах	250	425	250	42.5	

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This study adopted the highest value between the 2016, 2019 (interpolated), 2036 and 2039 (extrapolated) maximum hourly traffic volume ranges as the design hourly traffic volume for both the 2019 and 2039 traffic models for Koala Street. This was done to ensure that model results provided a conservative estimate of Koala Street traffic volumes entering the Koala Street/Emily Avenue intersection within the SIDRA model. Adopted values are presented in **Table 3**.

Table 3 – Adopted Hourly Traffic Volume Ranges on Koala Street (GHD Pty Ltd, 2018)

		Koala Stree	t Traffic Range (veh		
		A	M	P	M
	-	Southbound	Northbound	Southbound	Northbound
2016 Range	Nin	100	500	100	500
2010 Nange	Max	250	1000	250	1000
2026 D	Min	100	250	100	250
2036 Range	Max	250	500	250	500
2019 Range	Nin	100	462.5	100	462.5
(Interpolated)	Max	250	925	250	925
2039 Range	Min	100	212.5	100	212.5
(Extrapolated) Max		250	425	250	425
2019 Adopted Value		250	1000	250	1000
2039 Adopted Value		250	1000	250	1000

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Section 2

Traffic Impact Assessment

2.1 Traffic Generation

2.1.1 Intersection Catchment

The catchment for the Koala Street/Emily Avenue intersection was determined as being all lots serviced by Emily Avenue (and Grace Close). This consists of 40 lots serviced directly by Emily Avenue, 10 lots serviced indirectly by Emily Avenue (via Grace Close), and a proposed 5 lots to be serviced directly by Emily Avenue in the post-development case, as shown within the indicative lot analysis shown in Figure 1.



Figure 1 - Intersection Catchment Plan

2.1.2 Pre-Development & Post-Development Traffic Generation

The RMS guide to traffic generating developments recommends a traffic generation rate of 0.85 weekday peak hour vehicle trips per dwelling to be adopted for residential subdivisions. This rate was adopted for both the pre-development & post-development model.

Traffic volume inputs for the pre-development and post-development models are presented in **Table 4**. To provide a contra-flow within the model, it has been assumed that traffic generation within Emily Avenue in the non-dominant direction is equal to 10% of the traffic generation amount for the dominant direction.

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Table 4 - Adopted Hourly Traffic Volume Ranges on Koala Street (GHD Pty Ltd, 2018)

Traffic Generation Pre-Development	
Number of Lots (Pre-Development)	50
Vehicles/Hour/Lot in Peak times	0.85
Total Vehicles Departing (AM) / Entering (PM)	42.5
Total Vehicles Entering (AM) / Departing (PM)	425
Traffic Generation Post-Development	
Number of Lots (Pre-Development)	50

Namper of cors (Fre-beveropinency	
Number of Proposed Lots	5
Number of Lots (Post-Development)	55
Vehicles/Hour/Lot in Peak times	1
Total Vehicles Departing (AM) / Entering (PM)	55
Total Vehicles Entering (AM) / Departing (PM)	5.5

2.1.3 Destination and Route Modelling

A gravity model was constructed to determine the likely destinations for trips generated within the current & proposed development at Emily Avenue (incl. tributary Grace Close), based on the relative populations of the surrounding area and estimated peak-hour travel times (based on those reported from Google Maps (Google Inc., 2018)) to each of those areas. Derivation & application of a gravity model methodology to traffic flow modelling is well documented in the literature (Jong, Wang, & Stanley, 2008).

Table ${\bf 5}$ sets out the likely destination for each trip generated from the proposed development.

Table 5 - Destination Gravity Model

		Fastest Travel Time	Population/ Travel	Destination
Destination	Population	(mins)	Time^2	Percentage
Port Macquarie	46000	6	1277.8	96%
Wauchope	7500	22	15.5	1%
Camden Haven	6000	40	3.8	0%
Kew/Kendall	3500	28	4.5	0%
Kempsey	8000	40	5.0	0%
Taree	18000	60	5.0	0%
Bonny Hills	3900	22	8.1	1%
Lake Cathie	2500	18	1.1	1%
			Sum =	100%

The above probabilities were then applied to the two available alternate routes (Koala Street northbound & Koala Street southbound) to determine the probability of each trip taking a particular route to their respective destination.

The route probabilities were calculated and are presented in Table 6 for both AM & PM peak times, and have been adopted for the 2019 model & the 2039 model in the associated SIDRAS model. The sensitivity of the gravity model to temporal population variation was assessed with negligible variation observed.

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Table 6 - Route Probability Table for Peak AM hour

[Koa	ala Street Northbo	und	Koala Street Southbound		
Destination	T-Time (mins)	Percentage Traffic. Northbound	Population-Distance Weighted Percentage	T.Time (mirs)	Percentage Traffic Southbound	Population-Distance Weighted Percentage
PortMacquarie	6	73.5%	70.8%	10	26.5%	25.5%
Wauchope	22	65.0%	0.8%	30	35.0%	0.4%
Camden Haven	40	50.0%	0.1%	40	50.0%	0.1%
Kew/Kendall	28	61.0%	0.2%	35	39.0%	0.1%
Kempsey	40	55.9%	0.2%	45	44.1%	0.2%
Taree	60	56.9%	0.2%	69	43.1%	0.2%
Bonny Hills	22	50.0%	0.3%	22	50.0%	0.3%
Lake Cathie	18	50.0%	0.3%	18	50.0%	0.3%
All Destinations			73%			27%

Table 7 - Route Probability Table for Peak PM hour

	Koa	ala Street Northbo	und	Koa	la Street Southbo	und
Destination	T-Time (mins)	Per centage Traffic Northbound	Population-Distance Weighted Percentage	T-Tine (mirs)	Percentage Traffic Southbound	Population-Distance Weighted Percentage
PortMacquarie	7	74.6%	70.8%	12	25.4%	24.1%
Wauchope	22	71.7%	1.1%	35	28.3%	0.4%
Camden Haven	40	50.0%	0.2%	40	50.0%	0.2%
Kew/Kendall	35	42.4%	0.2%	30	57.6%	0.3%
Kempsey	45	55.2%	0.3%	50	44.8%	0.2%
Taree	69	50.0%	0.3%	69	50.0%	0.3%
Bonny Hills	22	40.1%	0.3%	18	59.9%	0.5%
Lake Cathie	18	64.0%	0.5%	24	36.0%	0.3%
All Destinations			74%			26%

The key directional traffic distribution results calculated from the gravity model are summarised in Table 8 below.

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Table 8 - Route Probability Table for Peak AM & PM times

Directional Traffic Distribution from	m Gravity Model
Koala Street North (AM)	73%
Koala Street South (AM)	27%
Koala Street North (PM)	74%
Koala Street South (PM)	26%

2.1.4 Intersection Traffic Generation

Intersection traffic for the Koala Street/Emily Avenue intersection is presented in Figure 2 for both peak time periods (AM/PM). The model considers four alternate traffic volume combinations resulting from variation in the development state of Emily Avenue (pre- and post-developed) and the analysis year for Koala Street (2019 and 2039 aerial population growth).

Trafi c Generating Scenarios 50 Lots (Pre-Developed), 2019 Trafic Volume 55 Lots (Post-Developed), 2019 Trafic Volume 50 Lots (Pro-Developed), 2039 Trafic Volume 55 Lots (Post-Developed), 2039 Trafic Volume

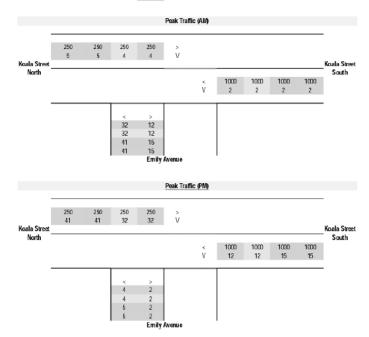


Figure 2 - AM and PM Peak Hour Traffic Flow - Koala Street/Emily Avenue Intersection

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2.2 Intersection Analysis & Results

The intersection between Koala Street and Emily Avenue was modelled using the existing intersection configuration. Aerial Imagery of the existing intersection configuration is shown within Figure $\mathbf{3}$.



Figure 3 - Aerial Photograph of existing Intersection of Koala Street and Emily Avenue

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2.2.1 SIDRA Intersection Analysis

The configuration of the existing intersection as modelled within SIDRA is shown within **Figure 4**.

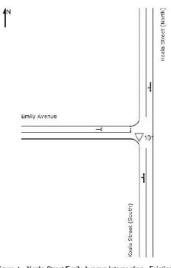


Figure 4 – Koala Street/Emily Avenue Intersection – Existing Configuration – SIDRA representation

The existing intersection configuration has been modelled within SIDRA 8.0 for each combination of 2019 & 2039 background traffic volumes (as outlined in Section 3), and the AM & PM peak hour traffic volumes travelling to/from Emily Avenue for both the pre- and post- developed scenarios (as outlined in Section 4). This is summarised in **Table 9**.

Table 9 - Summary of Model Scenarios for analysis

Peak Hour	Analysis Year	Level of Development	Model Scenario
AM	2019	Pre-Developed	AM 2019 Pre-Developed
		Post-Developed	AM 2019 Post-Developed
	2039	Pre-Developed	AM 2039 Pre-Developed
2		Post-Developed	AM 2039 Post-Developed
PM	2019	Pre-Developed	PM 2019 Pre-Developed
		Post-Developed	PM 2019 Post-Developed
	2039	Pre-Developed	PM 2039 Pre-Developed
28		Post-Developed	PM 2039 Post-Developed

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2.2.2 SIDRA Intersection Results

SIDRA intersection analysis results for Level of Service (LOS) & queue distance are presented in Table 10 for each of the modelled scenarios.

Table 10 - Summary of Model Scenarios for analysis

	Max. Level of	Max. Queue
Model Scenario	Service	Distance
AM 2019 Pre-Developed	В	1
AM 2019 Post-Developed	В	2
AM 2039 Pre-Developed	В	1
AM 2039 Post-Developed	В	2
PM 2019 Pre-Developed	В	3
PM 2019 Post-Developed	В	4
PM 2039 Pre-Developed	В	3
PM 2039 Post-Developed	В	4

Output of key results from SIDRA for each model scenario are presented in Appendix A, including level of service (LOS) and intersection performance results.

Detailed output from SIDRA for each model scenario is presented in Appendix B, which provides information on model parameters and analysis results.

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Section 6 Conclusion

This Traffic Impact Assessment confirms that the anticipated traffic generated by the proposed additional five (5) lots of the residential subdivision fronting Emily Avenue will not exceed the capacity of the existing Koala Street & Emily Avenue intersection. The detailed modelling, which has been based on the expected peak hour trip generation for the existing and proposed development, demonstrates the suitability of the intersection.

The SIDRA intersection analysis results demonstrate that the proposed additional five (5) lots will generate a consistent increase in queue distance of 1 vehicle is as the result of the proposed development for AM & PM peak traffic volume periods in both 2019 & 2039. The results demonstrate that Level of Service is not affected by the proposed development and LOS Class B will be maintained for the existing intersection configuration, for the pre- and post- development scenarios in both AM & PM peak traffic volume periods and at analysis year 2019 & 2039.

These results demonstrate that the existing intersection configuration provides excess LOS for both the AM & PM peak hour traffic volumes until at least 2039, with negligible change in intersection performance as a result of the proposed development.

This Assessment confirms that the proposed residential development (5 Lots) can be adequately served by the existing intersection configuration of Emily Avenue with Koala Street. This Assessment also confirms that the retention of the existing intersection will not adversely affect the wider road network within Port Macquarie, with queueing lengths being of acceptable length. Accordingly, additional mitigation strategies or road upgrades are not required beyond those expected to cater for background traffic volumes on Koala Street.

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APPENDIX A – SIDRA Key Results & Output

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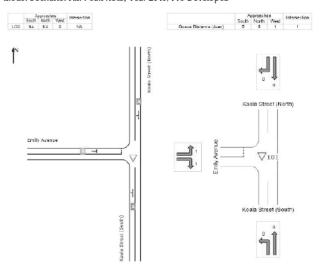
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Model Scenario: PM Peak Hour, Year 2039, Post-Developed

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Model Scenario: AM Peak Hour, Year 2019, Pre-Developed

Figure 5- LOS Summary & Queue Distance Summary for Model Scenario: AM Peak Hour, Year 2019, Pre-Developed

Table 11 - SIDRA Intersection Performance Summary for Model Scenario: AM Peak Hour, Year 2019, Pre-Developed

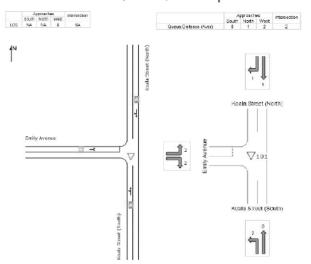
intersection Ferformance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average) Travel Elsterice (Total) Travel Time (Total)	59.1 km/h 1300.5 veti-km/h 23.1 veh-h/h	59.1 km/h 1039.5 pers-km/h 27.7 pers-h/h
Demand Flows (Total) Percent Heavy Yohikes (Demand) Degree of Saturation Practical Spare Capacity Effective Intersection Cepacity	1366 vetr/h 0.0 % 0.541 51.2 % 2530 vetr/h	1042 pers/h
Control Delay, Marsono) Control Delay, Marsono) Control Delay, (Marsono) Control Delay, (Marsono) Geometric Delay, (Marsono) Sing-Line Delay (Marsono) Ulting Timo (Avarongo) Minisensina Leag di Servite (LDS)	0.20 vch-huh 1.6 soc 21.0 soc 0.2 soc 0.5 soc 0.3 soc NA	0.35 para-huh 0.8 sec 21.0 sec
95% Baik of Queue - Véholes (Vorst Lane) 95% Baik of Queue - Detanse (Worst Lane) Queue Storage Fatto (Worst Lane) Total Effective Stope Effantive Stop Rate Plopotion Queued Performanse in Meak	0.4 veh 2.1 m 0.01 47 veh/h 0.03 0.04 23.6	55 pars/h 0.03 0.04 23.5
Cosi (Total) Fiel Consumption (Total) Canhon Disside (Total) Hydrocarbona (Total) Canhon Monoxide (Total) NSx (Total)	483.86 S/h 792 Uh 1881 leph 0014 leph 0241 leph 037 leph	496.00 Sh

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Model Scenario: AM Peak Hour, Year 2019, Post-Developed

Figure 6- LOS Summary & Queue Distance Summary for Model Scenario: AM Peak Hour, Year 2019, Post-Developed

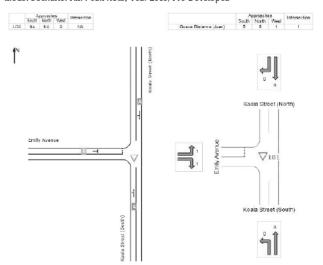
Table 12 - SIDRA Intersection Performance Summary for Model Scenario: AM Peak Hour, Year 2019, Post-Developed

Performance Measure	Vehicles	Persons
Travel Speed (Average)	58.9 km/h	58.9 km/h
Travel Distance (Total)	1376.3 veh-km/h	1651.6 pers-km/h
Travel Time (Total)	23.4 veh-h/h	28.0 pers-h/h
Demand Flows (Total)	1362 veh/h	1659 pers/h
Percent Heavy Vehicles (Demand)	0.0 %	rooo pordin
Degree of Saturation	0.541	
Practical Spare Capacity	81.2 %	
Effective Intersection Capacity	2555 veh/h	
Line are interaction capacity	2000 461011	
Control Delay (Total)	0.36 veh-h/h	0.43 pers-h/h
Control Delay (Average)	0.9 sec	D.9 sec
Control Delay (Worst Lane)	16.1 sec	
Control Delay (Worst Movement)	21.5 565	21.5 sec
Seometric Delay (Average)	0.3 sec	
Stop-Line Delay (Average)	0.7 sec	
dling Time (Average)	0.4 sec	
ntersection Level of Service (LOS)	NA	
	110	
5% Back of Queue - Vehicles (Worst Lane)	0.6 veh	
35% Back of Queue - Distance (Worst Lane)	4.1 m	
Queue Storage Ratio (Worst Lane)	0.01	
lotal Effective Stops	59 veh/h	71 pers/h
Effective Stop Rate	0.04	0.04
Proportion Queued	0.05	0.05
Performance Index	24.3	24.3
Cost (Total)	506.13 \$/h	506.13 \$/h
uel Consumption (Total)	80.3 L/h	
Carbon Dioxide (Total)	188.6 kg/h	
Hydrocarbons (Total)	0.014 kg/h	
Carbon Monoxide (Total)	0.244 kg/h	
NOx (Total)	0.038 kg/h	

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Model Scenario: AM Peak Hour, Year 2039, Pre-Developed

Figure 7- LOS Summary & Queue Distance Summary for Model Scenario: AM Peak Hour, Year 2039, Pre-Developed

Table 13 - SIDRA Intersection Performance Summary for Model Scenario: AM Peak Hour, Year 2039, Pre-Developed

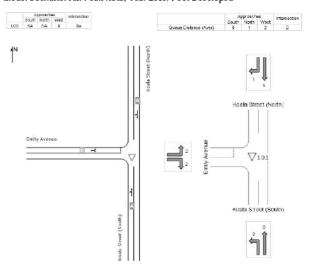
Performance Measure	Vehicles	Persons
Travel Speed (Average) Travel Distance (Total) Travel Time (Total)	59.1 km/h 1366.5 veh-km/h 23.1 veh-h/h	59.1 km/h 1639.8 pers-km/h 27.7 pers-h/h
Demand Flows (Total) Parcent Heavy Vehicles (Demand) Degree of Saturation Practical Spare Capacity Effective intersection Capacity	1388 veh/h 0.0 % 0.541 81.2 % 2530 veh/h	1642 pers/h
Control Delay (Total) Control Delay (Average) Control Delay (Worst, Lane) Control Delay (Worst, Anee) Scop-Line Delay (Average) Stop-Line Delay (Average) Idling Time (Average) Intersection Level of Service (LOS)	0.29 veh-h/h 0.8 sec 15.6 sec 21.0 sec 0.2 sec 0.5 sec 0.3 sec NA	0.35 pers-h/h 0.8 sec 21.0 sec
95% Back of Queue - Vehicles (Worst Lone) 95% Back of Queue - Distance (Worst Lane) Queue Storage Ratio (Worst Lane) Total Effective Stop Effective Stop Rate Proportion Queued Parformance Index	0.4 veh 3.1 m 0.01 47 veh/h 0.03 0.04 23.8	56 pers/h 0.03 0.04 23.6
Cost (Total) Fuel Consumption (Total) Cardon Dioxide (Total) Hydroc arbons (Total) Carbon Monoxide (Total) Nox (Total)	498.86 \$/h 79.2 L/h 166.1 kg/h 0.014 kg/h 0.241 kg/h 0.037 kg/h	498.86 S/h

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Model Scenario: AM Peak Hour, Year 2039, Post-Developed

Figure 8- LOS Summary & Queue Distance Summary for Model Scenario: AM Peak Hour, Year 2039, Post-Developed

Table 14 - SIDRA Intersection Performance Summary for Model Scenario: AM Peak Hour, Year 2039, Post-Developed

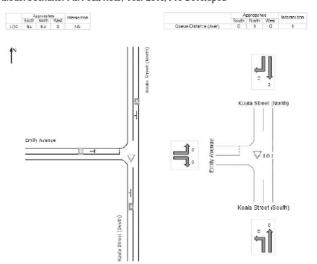
erformance Measure	Vehicles	Persons
ravel Speed (Average)	58.9 km/h	58.9 km/h
ravel Distance (Total)	1376.3 veh-km/h	1651.6 pers-km/h
ravel Time (Total)	23.4 veh-h/h	28.0 pers-h/h
emand Flows (Total)	1382 veh/h	1659 pers/h
Percent Heavy Vehicles (Demand)	0.0 %	
Degree of Saturation	0.541	
Practical Spare Capacity	81.2 %	
ffective Intersection Capacity	2555 veh/h	
Control Delay (Total)	0.36 veh-h/h	0.43 pers-h/h
Control Delay (Average)	0.9 sec	0.9 sec
Control Delay (Worst Lane)	16.1 sec	
Control Delay (Worst Movement)	21.5 sec	21.5 sec
Geometric Delay (Average)	0.3 sec	
Stop-Line Delay (Average)	0.7 sec	
dling Time (Average)	0.4 sec	
ntersection Level of Service (LOS)	NA	
5% Back of Queue - Vehicles (Worst Lane)	0.6 veh	
5% Back of Queue - Distance (Worst Lane)	4.1 m	
Queue Storage Ratio (Worst Lane)	0.01	
otal Effective Stops	59 veh/h	71 pers/h
ffective Stops	0.04	D.04
Proportion Queued	0.05	0.05
reportion Queuea	24.3	24.3
chormanice muck	24.0	24.3
Cost (Total)	506.13 S/h	506.13 \$/h
uel Consumption (Total)	80.3 L/h	
Carbon Dioxide (Total)	188.6 kg/h	
lydrocarbons (Total)	0.014 kg/h	
Carbon Monoxide (Total)	0.244 kg/h	
IOx (Total)	0.038 kg/h	

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Model Scenario: PM Peak Hour, Year 2019, Pre-Developed

Figure 9- LOS Summary & Queue Distance Summary for Model Scenario: PM Peak Hour, Year 2019, Pre-Developed

Table 15 - SIDRA Intersection Performance Summary for Model Scenario: PM Peak Hour, Year 2019, Pre-Developed

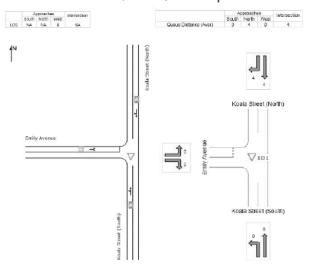
Performance Measure	Vehicles	Persons
Fravel Speed (Average)	58.6 km/h	58.6 km/h
Travel Distance (Total)	1366.4 veh-km/h	1639.7 pers-km/h
Travel Time (Total)	23.3 veh-h/h	28.0 pers-h/h
Demand Flows (Total)	1368 veh/h	1642 pers/h
Percent Heavy Vehicles (Demand)	0.0 %	
Degree of Saturation	D.547	
Practical Spare Capacity	79.3 %	
Effective Intersection Capacity	2503 veh/h	
Control Delay (Total)	0.48 veh-h/h	0.58 pers-h/h
Control Delay (Average)	1.3 sec	1.3 sec
Control Delay (Worst Lane)	15.9 sec	
Control Delay (Worst Movement)	21.0 sec	21.0 sec
Geometric Delay (Average)	0.2 sec	21.0 000
Stop-Line Delay (Average)	1.1 sec	
Idling Time (Average)	0.6 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	1.2 veh	
95% Back of Queue - Distance (Worst Lane)	8.5 m	
Queue Storage Ratio (Worst Lane)	0.01	
Total Effective Stops	39 veh/h	47 pers/h
Effective Stop Rate	0.03	0.03
Effective Stop Rate Proportion Queued	0.03	0.03
Proportion Queued Performance Index	24.5	24.5
Penormance index	24.0	24.5
Cost (Total)	524.26 \$/h	524.26 \$/h
Fuel Consumption (Total)	81.4 L/h	
Carbon Dioxide (Total)	191.4 kg/h	
Hydrocarbons (Total)	0.014 kg/h	
Carbon Monoxide (Total)	0.246 kg/h	
NOx (Total)	0.040 kg/h	

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Model Scenario: PM Peak Hour, Year 2019, Post-Developed

Figure 10-LOS Summary & Queue Distance Summary for Model Scenario: PM Peak Hour, Year 2019, Post-Developed

Table 16 - SIDRA Intersection Performance Summary for Model Scenario: PM Peak Hour, Year 2019, Post-Developed

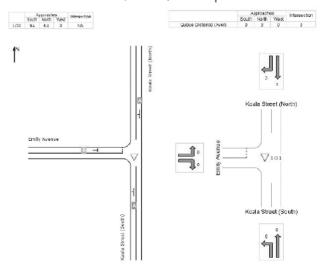
Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	58.3 km/h	58.3 km/h
Travel Distance (Total)	1373.9 veh-km/h	1648.7 pers-km/h
Travel Time (Total)	23.6 veh-h/h	28.3 pers-h/h
Demand Flows (Total)	1379 veh/h	1655 pers/h
Percent Heavy ∀ehicles (Demand)	0.0 %	
Degree of Saturation	0.547	
Practical Spare Capacity	79.3 %	
Effective Intersection Capacity	2523 veh/h	
Control Delay (Total)	0.59 veh-h/h	0.71 pers-h/h
Control Delay (Average)	1.6 sec	1.6 sec
Control Delay (Worst Lane)	15.6 sec	
Control Delay (Worst Movement)	21.3 sec	21.3 sec
Geometric Delay (Average)	0.3 sec	
Stop-Line Delay (Average)	1.3 sec	
Idling Time (Average)	0.8 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	1.5 veh	
35% Back of Queue - Distance (Worst Lane)	10.8 m	
Queue Storage Ratio (Worst Lane)	0.01	
lotal Effective Stops	49 veh/h	59 pers/h
Effective Stop Rate	0.04	0.04
Proportion Queued	0.10	0.10
Performance Index	25.1	25.1
Cost (Total)	535.57 S/h	535.57 \$/h
Fuel Consumption (Total)	82.7 L/h	
Carbon Dioxide (Total)	194.4 ka/h	
Hydrocarbons (Total)	0.015 kg/h	
Carbon Monoxide (Total)	0.249 kg/h	
NOx (Total)	0.042 kg/h	

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Model Scenario: PM Peak Hour, Year 2039, Pre-Developed

Figure 11-LOS Summary & Queue Distance Summary for Model Scenario: PM Peak Hour, Year 2039, Pre-Developed

Table 17 - SIDRA Intersection Performance Summary for Model Scenario: PM Peak Hour, Year 2039, Pre-Developed

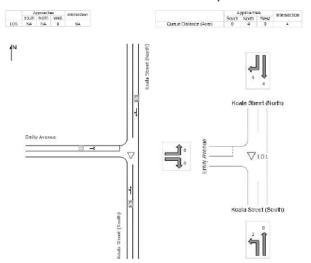
Performance Measure	Vchicles	Persons
Travel Speed (Average)	58.6 km/h	58.6 km/h
Travel Distance (Total)	1366.4 veh-km/h	1639.7 pers-km/h
Travel Time (Total)	23.3 veh-h/h	28.0 pers-h/h
Demand Flows (Total)	1368 veh/h	1642 pers/h
Percent Heavy Vehicles (Demand)	0.0 %	1042 pers/ri
Degree of Saturation	0.547	
Practical Spare Capacity	79.3 %	
Effective Intersection Capacity	2503 veh/h	
Ellective intersection Capacity	2503 Ver/m	
Control Delay (Total)	0.48 veh-h/h	0.58 pers-h/h
Control Delay (Average)	1.3 sec	1.3 sec
Control Delay (Worst Lane)	15.9 sec	
Control Delay (Worst Movement)	21.0 sec	21.0 sec
Geometric Delay (Average)	0.2 sec	
Stop-Line Delay (Average)	1.1 860	
Idling Time (Average)	0.6 sec	
Intersection Level of Service (LOS)	NA	
	104	
95% Back of Quaue - Vehicles (Worst Lane)	1.2 veh	
95% Back of Queue - Distance (Worst Lane)	8.5 m	
Queue Storage Ratio (Worst Lane)	0.01	
Total Effective Stops	39 veh/h	47 pers/h
Effective Stop Rate	0.03	0.03
Proportion Queued	0.08	0.08
Performance Index	24.5	24.5
	F04.00 PF	50100.00
Cost (Total)	524.26 \$/h	524.26 \$/h
Fuel Consumption (Total)	81.4 L/h	
Carbon Dioxide (Total)	191.4 kg/h	
Hydrocarbons (Total)	0.014 kg/h	
Carbon Monoxide (Total)	0.246 kg/h	
NOx (Total)	0.040 kg/h	

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Model Scenario: PM Peak Hour, Year 2039, Post-Developed

Figure 12-LOS Summary & Queue Distance Summary for Model Scenario: PM Peak Hour, Year 2039, Post-Developed

Table 18 - SIDRA Intersection Performance Summary for Model Scenario: PM Peak Hour, Year 2039, Post-Developed

Performance Measure	Vchicles	Persons
revel Speed (Average)	58.3 km/h	58.3 km/h
(Total)	1376.2 veh-km/h	1651.4 pers-km/h
fravel Time (Total)	23.6 veh-h/h	28.3 pers-h/h
Demand Flows (Total)	1382 veh/h	1659 pers/h
Percent Heavy Vehicles (Demand)	0.0 %	
Degree of Saturation	0.548	
Practical Spare Capacity	78.7 %	
Effective Intersection Capacity	2521 veh/h	
Control Delay (Total)	0.60 veh-h/h	0.73 pers-h/h
Control Delay (Average)	1.6 sec	1.6 sec
Control Delay (Worst Lane)	15.6 sec	1.0 000
Control Delay (Worst Movement)	21.4 sec	21.4 sec
Seometric Delay (Average)	0.3 sec	21.4 000
Stop-Line Delay (Average)	1.3 sec	
dling Time (Average)	0.8 sec	
ntersection Level of Service (LOS)	NA	
5% Back of Quaue - Vehicles (Worst Lane)	1.6 veh	
5% Back of Queue - Distance (Worst Lane)	10.9 m	
Queue Storage Ratio (Worst Lane)	0.01	
otal Effective Stops	51 veh/h	61 pers/h
Effective Stop Rate	0.04	0.04
Proportion Queued	0.10	0.10
Performance Index	25.1	25.1
Cost (Total)	537.45 \$/h	537.45 \$/h
uel Consumption (Total)	83.0 L/h	
Carbon Dioxide (Total)	195.0 kg/h	
lydrocarbons (Total)	0.015 kg/h	
Carbon Monoxide (Total)	0.250 kg/h	
NCx (Total)	0.042 kg/h	

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APPENDIX B – SIDRA Detailed Output

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W Peak Hour, Yee W Peak Hour, Yee W Peak Hour, Yee W Peak Hour, Yee M Peak Hour, Yee M Peak Hour, Yee M Peak Hour, Yee	Table of Contents	Model Scenario: AM Peak Hour, Year 2019, Pre-Developed2	Model Scenario: AM Peak Hour, Year 2019, Post-Developed	Model Scenario: AM Peak Hour, Year 2039, Pre-Developed	Model Scenario: AM Peak Hour, Year 2039, Post-Developed54	Model Scenario: PM Peak Hour, Year 2019, Pre-Developed71	Model Scenario: PM Peak Hour, Year 2019, Post-Developed	Model Scenario: PM Peak Hour, Year 2039, Pre-Developed106	Model Scenario: PM Peak Hour, Year 2039, Post-Developed124
W Peak Hour, Y W Peak Hour, Y W Peak Hour, Y W Peak Hour, Y M Peak Hour, Y M Peak Hour, Y M Peak Hour, Y		ear 2019, Pre-Devel	ear 2019, Post-Deve	ear 2039, Pre-Devel	ear 2039, Post-Deve	ear 2019, Pre-Devel	ear 2019, Post-Deve	ear 2039, Pre-Devel	ear 2039, Post-Deve
Addel Scenario: / Addel Scenario: / Addel Scenario: / Addel Scenario: / Addel Scenario: F Addel Scenario: F Addel Scenario: F		Aodel Scenario: AM Peak Hour, Ye	Aodel Scenario: AM Peak Hour, Ye	Jodel Scenario: AM Peak Hour, Ye	Aodel Scenario: AM Peak Hour, Ye	Aodel Scenario: PM Peak Hour, Ye	Aodel Scenario: PM Peak Hour, Ye	Aodel Scenario: PM Peak Hour, Ye	Aodel Scenario: PM Peak Hour, Ye

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Model Scenario: AM Peak Hour, Year 2019, Pre-Developed

DETAILED OUTPUT \bigtriangledown site: 101 [Emily Road AM 2019 Not Developed GHDVals]

New Site Site Category: (None)

Site Category: (None) Giveway / Yield (Two-Way) 0:15328_PMHC_EmilyAvenue/01_Council\5328_106_Traffic.docx 2

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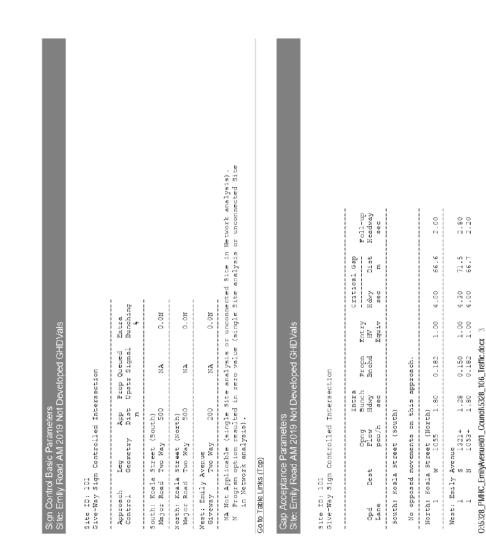
Mitwovements Intersection Negotitation and Travel Data Movement Capacity and Performance Parameters Fuel Consumption, Emissions and Cost In Flow Rates Origin-Destination Flow Rates (Total) Origin-Destination Flow Rates by Movement Class Lane Flow Rates Lancs Lancs Performance and Capacity Information Lanc, Approach and Intersection Performance Driver Characteristics Sign Control Sign Control Basic Parameters Gap Acceptance Parameters #=Other Parameter Settings Summary Diagnostics Lane Queues Lane Queue Percentiles Lane Stops OUTPUT TABLE LINKS Sign Control

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Values in this table are adjusted for movement classes in the entry stream. Use the Pedestrians and Priorities input dialogs to specify opposing pedestrian movements. + Percentage of exiting flow included in opposing vehicle flow

Go to Table Links (Top)

Movements

Intersection Negotiation and Travel Data Site: Emily Road AM 2019 Not Developed GHDVals

site ID: 101
Give-Way Sign Controlled Intersection

TRAVEL DISTANCE AND TRAVEL TIME TRAVEL SPRED,

From To Approach Exit	Turn	Running Speed km/h	Travel Speed km/h	Travel Distance m	Travel Time s	Total Travel Distance Dem Flows Arv Flows Veh-km/h veh-km/h	l Distance Arv Flows veh-km/h	Tot.Trav. Time veh-h/h
South: Koala Street (South) West L2 North T1	t (South) L2 T1	57.5 59.8	57.5 59.8	710.0# 1010.0#	44.4 4 60.8#	1.5 1063.2	1.5 1063.2	0.0 17.8
North: Koala Street (North) South T1 Weat R2	t (North) T1 R2	59.7 56.4	59.3 55.9	1010.0# 710.0#	61.3# 45.7#	265.8 3.0	265.8 3.0	4.5 0.1
West: Emily Avenue North South	L2 В2	48.3	42.6 42.1	714.3# 714.3#	60.34 61.04	24.1 9.0	24.1 9.0	0.6 0.2
ALL VEHICLES:		59.4	59.1	49.866	60.84	1366.5	1366.5	23.1

delays including intersection cruise times and ir and idling delays. values include n, deceleration Travel Time va acceleration, Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

-##

INTERSECTION NEGOTIATION DATA

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From To approach Exit Turn and approach Exit Turn and South: Koala Street (South) 10 North: Koala Street (North) North: Ti Ti Ti Ti Ti North North 12 North 12 10 North 12 10 North 12 10 10 North 12 10 10 10 South 12 0 10 South 12 0 10 10 10 Distance specified was 19 Distance specified was 19 Some Negotiation Radius, Spec	in so so high	Negn Speed Km/h 60.0 60.0 17.2 17.2 20.2	Ween Dist m m 15.7 10.0 10.4 15.7 10.4	Appe Diat 00 200 200 200 200 200 200 200 200 200	Exit Dist 7 7 7 7 7 7 7 7 7 7 0 0 5 0 0 5 0 0 5 0 0 5 0 0 5 0 0 5 0 0 5 0 0 5 0 0 5 0 0 5 0 0 1 8 7 0 1 8 7 1 1 8 7 1 1 8 7 1 1 8 7 1 1 8 7 1 1 1 8 7 1 1 1 1	Downstr Dist MR NR NR NR NR
ala Street (South Weath T1 Weath T1 Weath T1 South T1 Weath T2 Weath T2 North L2 South T2 South T2 Sou	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20.2 60.0 17.2 17.2	15.7 10.0 10.4 10.4 10.4	000 000 000 000 000 000 000	200 200 200 200 200 200	EN EN EN EN EN
dala Street (Sout Novest 11 Novest 11 Jouth 11 South 11 West 71 Novth 12 South 12 South 12 South 12 Novth 12 Novth 12 Novth 12 South 12 So	5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	20.2 60.0 17.2 17.2	15.7 10.0 10.4 10.4 10.4	0.0 0.0 0.0 0.0 0.0 0.0 0 0.0 0 0 0 0 0	200 200 200 200 200 200 200 200	an a
old Street (Nort Jouth TI West T1 West T2 Worth L2 Sorth R2 Sorth R2 Sorth R2 Sorth R2 Sorth R2 Sorth R2 Sorth R2 Sorth R2 Sorth R2 Istance specified Istance specified sectified secutation Radius	00 00 H	60.0 17.2 20.2 17.2	10.0 10.4 15.7 10.4	2 0 0 2 0 0 2 0 0 2 0 0	200 200 200 200 200 200	en en
Jouth T1 West R2 North L2 South L2 South R2 South R2 South R2 South R2 South R2 Lance Interna Litance ageorited istance ageorited istance Ageoritied secrited secrited	3 9 9 9 9 9 9	60.0 17.2 20.2 17.2	10.0 15.7 10.4	200	200	en en en
11 y Avenue 11 y Avenue North L2 South R2 nstream Distance di ta an interna di tanne specified la tance specified la tance specified settation Radius	6t 60	20.2 17.2	10.	200	200	en en
North R2 North R2 Nstream Distance At is an interna tistance specified istance specified istance specified egotiation Radius	5	17.2 17.2	19	200	200	en En
nstream Distance Ait is an intern w at the secretar w is tance specified is tance specified egotiation Radius sperts AND GROWE	방식	walu 1f				
cgotiation R SPEEDS AND	ch reas reas	th th	4	rotia leg		Distance
SPEEDS AND	, Speed or	Distance	ce values	are	user sp	specified.
	TRIC DELAY					
pp. Speed	1.6	Speeds	Queue			
Mov Cruise Negn ID Turn hm/h hm/h	Negn Cru km/h kn	Cruise M	speed speed km/h	Delay		

5.5

60.0 60.0

20.2

(South) 20.2 2 60.0 6

Street (60.0 2 60.0 6

Koala S 12 Tl

MOV ID T South: - C1 5.4

0.2

60.0 60.0

60.0 17.2

(North) 60.0 17.2 1

North: Koala Street (North: Koala Street (North: 8 T1 60.0 60

5.5

11.8

60.0 60.0

20.2

20.2 17.2

West: Emily Avenue 10 L2 60.0 12 R2 60.0

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Movement Capacity and Performance Parameters Site: Emily Road AM 2019 Not Developed GHDVals

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Site ID: Give-Way	101 Sign Contr	Controlled Intersection	tersect	uoi						
NOVENENT	NOVENENT CAPACITY PARAMETERS	ARAMETER	g							
Mov Turn ID	n Mov Cl. Arv Flow vch/h	opng ' w Flow /h vch/h	Movement Adjust Flow h pcu/h	· · ·	Total P Cap. D Seh/h	Prac. E Deg. Satn C Mp	Prac. Spare Cap.	Deg. Sacn X		
South: Wo 1 L2 2 T1	KDala Street L2 # 2 T1 # 1053	(south) 2 0 3 0	00	19	946 0	86- 86-	81 81	0.541*		
orth: 9	Moala Street T1 ± 263 R2 ± 4	(North) 3 (North) 4 1055	1055	18	1814 0 29 0	86.	576	0.145		
West: Emily 10 L2 12 R2	1y Avenue	4 1053 3 1321	1053	61	233 0 87 0	80.	452 452	0.145		
* Maximum # Combined MOVENENT PERI	* Maximum degree o * Combined Movement MOVENENT PERFORMANCE	4.6		om parameters	ម អ ស	shown f	for all	1 Move	Movement Classes	ຍຸ ຍຸ
Mov Turn ID	Total Delay veh-h/h)	Total Delay (pers-h/h)	Aver. Delay () [sec)	Eff. Stop Rate	Total Stops	Perf. Index	1.1.1.1	Tot.Trav. Distance (veb-km/h)	Tot.Trav. Tot.Trav. Distance Time (veh-km/h) [veh-h/h)	Aver. Speed (km/h)
South: Koa 1 L2 2 T1	ala Stree 0.00 0.03	(South) 0.00 0.03	5.6 0.1	0.00	0.0	0.0	3 10	1.5	0.0	57.5 59.8
North: Koa 8 Tl 9 R2	Koala Street T1 0.04 R2 0.02	(North) 0.04 0.02	0.5 15.3	0.01	2.6 0.0	4.5	4.60	265.8 3.0	4.5	6.05 6.05
Weat: Emily 10 12 12 82	ly Avenue 0.13 0.07	0.16	13.8 21.0	0.92	31.0 11.6	0.8	81	24.1	0.6	42.6 42.1

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Fuel Consumption, Emissions and Cost Site: Emily Road AM 2019 Not Developed GHDVals

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Site ID: 101 Give-Way Sign Controlled Intersection

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

DI ID

ł

Mov Turn ID	cost Total \$/h	Fuel Total L/h	co2 Total kg/h	co Total kg/h	нс Total kg/h	NOX Total kg/h
South: Koala S 1 L2 2 T1	Street (South) 0.71 377.55	h) 0.1 60.1	0.2 141.3	0.00	0.000	0.000
	378.26	60.2	141.5	0.18	0.010	0.027
North: Koala S 8 Tl 9 R2	Street (North) 98.47 1.49	h) 15.5 0.2	36.5 0.4	0.05	0.003	0.007
	70.97	15.7	37.0	0.05	0.003	0.008
West: Emily Avenue 10 12 12 R2	renue 15.00 5.62	2.4	5.5 2.1	0.01	0.001	0.002
	20.62	3.2	7.6	0.01	0.001	0.003
INTERSECTION:	498.86	79.2	186.1	0.24	0.014	0.037

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

нс Rate g/km CO Rate g/len co2 Rate g/km Fuel Rate L/100km Cost Rate \$/km Turn VCM UI

0.026 0.026

0.010

0.17

133.0 132.9

5.J

Koala Street (South) L2 0.48 T1 0.36

south:

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NOX Rate g/km

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Lane Util &	100	100	100
Deg. Satn X	0.541 100	0.145 100	Q.145
Tot Cap veh/h	South) 1950	et (Worth) 267 1843	320
Min Cap veh/h	Street (South) 1055 1950	Street (Worth) 267 1843	9 Dre
Total Arv Flow Veh/h	Koala St 1055	Koala St 267	Emily Avenue 46
Lane No.	South: 1	North: 1	West: 1

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

Go to Table Links (Top)

Lane, Approach and Intersection Performance Site: Emily Road AM 2019 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

South: Koala Street (South) 1 1055 0 1950 0.541 0.1 1055 0 0.950 0.541 0.1 North: Koala Street (North) North: Koala Street (North) 267 0 0.145 0.7 1 Nest: Emily Avenue Nest: Emily Avenue 1 267 0 0.145 15.8 3 ALL VEHICLES ALL VEHICLES ALL VEHICLES ALL PEHNAMMON Convents Not Tenter Area 0 00538 INL Tenter Area 0	Lane No.	Arrival Flow (veh/h)	VH. ⁸	Adj. Basic Satf.	Deg Sat	Aver. Delay sec	Longest Queue M	Lane Length m
	South: 1	Koala 1055	treet	(South) 1950	0.541	0.1		500
J J J J J J J J J J J J J J J J J J J		1055	0		0.541	0.1		
	North: 1	Koala 267	treet	(North)	0.145	0.7	1	200
		267	0		0.145	0.7	-	
		Emily Av 46	e nue		0.145	15.8	m	200
		4 6	0		0.145	15.8	м	
16328 PMHC EmilyAvenue/01 Council/5328 106 Traffic ducy 9	ALL VE.	HICLES Total	٥P		Маж	Aver.	Мам	
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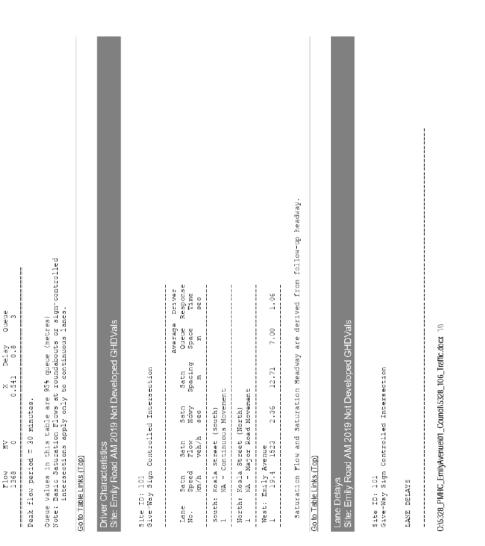
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	Stop-line Delay Acc. Queuing Stopd lat 2nd Total Dec. Total NVUp (Idle) Geom Control dl d2 dSL dn dq dqm di dig dio	L.D	.1 0.7	8.7 10.3 0.0 10.3 3.2 7.1 0.0 7.1 5.5 15.8	21
	pd le) Ge di(1.0 0.0	0.5 0.6 0.0 0.6 0.3 0.4 0.0 0.4 0.1	.1 5	
Delay (seconds/veh)	Stol p (Idl di	ó	0	0 7.	p-110
ds/veh	euing al MvU dqm		4	1 0.	ered Sto
Second	Iotu dq		0.0	-	sum unque nclud
elay (Acc. Dec.		0.3	3.2	1s the d and that 1 ro spe
A 	Delay Total dSL		0.6	10.3	elay elay ar-se
	-line 2nd d2	0.1	0.0	.7 10.3 0.0 10.3 3.2 7.1 0.0	trol I cs icles line d y) at ne
	Stop lst dl		0.e	10.3	. Con cc cas stop- g dela time
	Min Del dm		0.5	R.7	a used ceptand for al of the nove-ug idling)
	Deg. ⁹ Arv Frog. Satn During Factor M Creen	(South)	(North) NA	W	SIDRA Standard Delay Model is used. Control Delay is the sum of Stop-line Delay and Geneticic Delay. And Ninium delay for gap acceptance cases dai: Ninium delay (fcd14d) dai: Average stop-start delay for all vehicles queued and unqueued dai: Average stop-start delay for all vehicles queued and unqueued dai: Stop-line delay (the part of the stop-line delay that includes day (stopped delay (the part of the stop-line delay that includes days Stopped delay (stopped (idling) time at near-seto speed) days (stopped delay (stopped (idling) time at near-seto speed) days (stopped delay (stopped (idling) time at near-seto speed)
	% Arv During Creen	South: Koala Street (South) 1 0.541	North: Koala Street (North) 1 D.145 NA NA	venue NA	stDRA Standard belay wood dmi geometric Delay. dmi winimum delay for gel ddi. Stop-line delay (Ted ddi. Average scop-start d dg: Oueuling delay drid ep stopped delay diak dir stopped delay (stopp dig: Geometric delay dig: Geometric delay
	Deg. Satn M	Koala 0.541	Koala Stree D.145 NA	West: Emily Avenue 1 0.145 NA	standa inimum inimum Stop-li Verage ueuing tupped tupped topped feometr
	Lane No.	South: 1	North: 1	West: 1	stDRA dm: dm: d dm: M ddn: M ddn: M ddn: M ddn: S ddn: S

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ane Queues šite: Emily Road AM 2019 Not Developed GHDVal

Site ID: 101 Give-Way Sign Controlled Intersection

BACK OF QUEUE (VEHICLES)

	Deg.	8 ALV	8 Arv Prog.	Cvrfl.		k af	Back of Queue (veh)	N.	Oueue	Stor.	Prob.	Prob.
No.	Sat D	Dur ing Green	ractor	No	TeN	Nb2	Nol Nb2 No	958	Av.	958 958	Natio Biock 958 Av. 958 &	. мо па
South	Koal	South: Koala Street (South)	South: Koala Street (South)									
North: 1 (North: Koala 1 0.145	North: Koala Street (North) 1 0.145 NA NA	(North) NA	i	0.1	0.0	0.1	0.0 0.1 0.0 0.1 0.2 0.00 0.00 0.0 NA	0.00	0.00	0.0	MA
West:	West: Emily Avenu	West: Emily Avenue	1		с с	<	6		6	0	<	1

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BACK OF QUEUE (DISTANCE)

	Deg.		. Prog.		Bac	k ef c	Back of Queue (m)		Queue	Queue Stor.	Prob.	Prob.
No.	С И 80	Dur rng Green	ractor	No	No.1	Nb2	Na Lan Ian	958	AV.		a Pota	сл л
South	Koala	south: Koala Street (South)	(South)									
North: 1 C	Koala .145	North: Koala Street (North) 1 0.145 NA NA	(North) NA		0.4	0.0	0.4	1.1	0.00	00.0	0.0 0.4 0.0 0.4 1.1 0.00 0.00 NA	NA
West: l C	West: Emily Avenue 1 0.145 NA	West: Emily Avenue 1 0.145 NA NA 0.0 1.3	YN	NA 0.0 1.3 0.0 1.3 3.1 0.01 0.02 0.0 NA	1.3	0.0	0.0 1.3 3.1	3.1	0.01	0.02	0.01 0.02 0.0	NA

OTHER QUEUE RESULTS (VEHICLES)

,		8 ALV	- boz -	Ovrfl.	Ovrfl. Cyc-Av. Queue	Oueue
No.	0040 N	Dur 1ng Green	ractor	No	Nc 95%	95%
South:	Koa	Street	(South)			
North: 1 0	No. 14	Street NA	(North) NA	0.0	0.0	0.1
West: l (West: Emily Avenue 1 0.145 NA	Avenue NA	NA	0.0	0.1	0.2

OTHER QUEUE RESULTS (DISTANCE)

1.7 Queue 95% 0.6 ⊂yc-av. 0.3 ō.0 ЛC Ovrfl. Oueue No 0.0 0.0 South: Koala Street (South) North: Koala Street (North) 1 0.145 NA NA Frog. Factor ¥2 % Arv During Green West: Emily Avenue 1 0.145 NA Deg. Satn × Lane No.

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l				100%		0.2	0.5			100%		1.3	3.7	
			veh)	88 88 5		0.2	0.5		metres)	88 6		1.2	ы. г.	
IDVals			Queue (veh	95%		0.2	0.4		Oueue (95 %		1.1	3.1	
ped GH	uo		Back of	\$ 06		0.1	0.4		Percentile Back of Queue (metres)	906		6.0	2.7	
Develo	ers ect 1	CLES)	Percentile B	85%		1.0	ē.0	ANCE)	ntile B	85%		8.D	e. 1	
s 019 Not	led Int	S (VEHICLES)	Perce	70%	(South)	(North) 0.1	0.2	QUEUE PERCENTILES (DISTANCE)	Perce	70%	(South)	(North) 0.6	1.6	
rcentile d AM 2	Control	CENTILE		50%	Street	Street 0.1	Avenue 0.2	CENTILE		50%	Koala Street	Street 0.4	venue 1.3	(do
Jeue Pé lijy Roa	: 101 Y Sign	eue per	- C- C-	x n socn	Koala	North: Koala 1 0.145	Emily A 0.145	eue per	Deg.	ца ж ж		North: Koala 1 0.145	Emily Avenue 0.145 1.3	e Links (T
Lane Queue Percentiles Site: Ernily Road AM 2019 Not Developed GHDVals	Site ID: 101 Give-Way Sign Controlled Intersection	LANE QUEUE PERCENTILES		No.	South:	North: 1	West:] 1	LANE QUI		No.	South:	North: 1		Go to Table Links (Top)

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Lane Stops Site: Emily Road AM 2019 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

Deg. Lane Satn	Deg. % Arv Satn During	Prog. Factor	15	fective	Stop Geom.	Effective Stop Rate Geom. Overall		Queue Total Move-up Stops Rate	Total Queue Move-ups	Prop. Ouened	Aver. Num. of Cvcles to
	Green	1	hel	he2	hig	hel he2 hig h	'æ	ահվ	нсн н		Depart
South: Noala Street (South) 1 0.541 NA NA	a Street NA	(South) NA			0.00	0.00 0.00	1.3				
North: Koala Street (North) 1 0.145 NA NA	a Street NA	(North) NA	00.0	000	10.0	0.00 0.00 D.D1 0.01	2.7	2.7 0.00	0.0	0.06	0.06
West: Emily Avenue 1 0.145 NA	Avenue	МА	18.0	0.00	11.0	XA 0.81 0.00 01.0 4	42.6	42.6 0.00	0.0	0.81	0.81

Go to Table Links (Top)

Flow Rates

Origin-Destination Flow Rates (Total) Site: Emily Road AM 2019 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection TOTAL FLOW RATES for All Movement Classes (vch/h)

From SOUTH To:	M	Z	
Turn:	12	Ë	LOL
Flow Rate	2.1	1052.6	1054.7
HV (all	0.0	0.0	0.0
From NORTH TO:	σ	×	
Turn:	ΪF	R2	TOT
Flow Rate	263.2	4.2	267.4

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%HV (all designations)		0.0 0.0 0.0	0.0
	N	ŋ	
	L2	R2	TOT
	33.7	12.6	46.3
SHV (all designations)	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: unt Time for Volumes = 60 minutes teak Flow Feridod = 30 minutes Effects of Volume Factors Peak Flow Factor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

Go to Table Links (Top)

ent Class	d GHDVals
by Movem	it Develope
Flow Rates	M 2019 No
estination I	ily Road Al
Origin-D	Site: Em

Site ID: 101 Give-Way Sign Controlled Intersection

1

FLOW RATES for Light Vehicles (veh/h)

	W 1.2	N II	TOT
Flow Rate	2.1	1052.6	1054.7
Flow Scale	1.00	00.I	
Peak Flow Factor Residual Demand	0.95	0.95	- 0.0
From NORTH To: Turn:	αĿ	9 E E	LOL
Flow Rate	263.2	4.2	267.4
Mov Class %	100.0	100.0	100.0
Flow Scale	1.00	1.00	'
Peak Flow Factor	0.95	0.95	'
Residual Demand	0.0	0.0	0.0
From WEST To:	N	N.	
Turn:	1.2	я2	TOT
Flow Rate	33.7	12.6	46.3
Mov Class 8	100.0	100.0	100.0

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5

Peak Flow Factor 0.95 0.	. 95
Residual Demand 0.0 0	0.0 0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Time for Volumes = 60 minutes Peak Flow Period = 30 minutes Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in netWork analysis.

Go to Table Links (Top)

Lane Flow Rates Site: Emily Road AM 2019 Not Developed GHDVals

Site ID: 101 Give-Way Sign

Controlled Intersection

FLOW RATES AT STOP LINE (veh/h) LANE

								91.
TOT	1054.7 1054.7	1054.7	TOT	267.4 267.4	267.4	TOT	46.3 46.3	. 7 12.6 46.3 _Council\5328_106_Traffic.docx
N L	1052.6 1052.6	1052.6	м В.2	4 4 0 0	4.2	м 16 С1	12.6 12.6	12.6 Indi\5328_1
M LI2	2.1 2.1	2.1	νĘ	263.2 263.2	263.2	п 15	33.7 33.7	33.7 enue\01_Cou
From SOUTH To: Turn:	Lane l LV Total	Approach	From NORTH TO: Turn:	Lane l LV Total	Approach	From WEST To: Turn:	Lane 1 LV Total	Approach 33 0:45328_PMHC_EmilyAvenuel01

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SIDRA INTERSECTION 8.0 | Copyright © 2000-2019 Akcelik and Associates Pty Ltd | sidrasolutions.com Organisation: KING & CAMPBELL PTY LTD | Processed: Monday, 11 March 2019 1.48.03 PM Project OA3328_PMHC_EmilyAvenue'22_Engineering/Emily Ave 50existing 2019-2039 GHDMaxValues/NoRale sip8 90°0 Site Model Variability Index (Iterations 3 to N): Number of Iterations: 3 [Maximum: 10) * Basic Parameters: Intersection Type: Unsignalised - Give Way Driving on the left-hand side of the road Input data specified in Metric units Nodel Defaults: Mev South Wales Feak Flow Period (for performence): 30 minutes Finit time (for volumes): 60 minutes. 57DRA Standard Delay model used FIDRA Standard Delay model used FIDRA Standard Delay model used Fuel of Structs based on: Delay (RTA NSW) Oucue percentile: 95% Diagnostics Site: Emily Road AM 2019 Not Developed GHDVals Parameter Settings Summary Site: Emily Road AM 2019 Not Developed GHDVals Site ID: 101 Give-Way Sign Controlled Intersection site ID: 101 Give-Way Sign Controlled Intersection Other Diagnostic Messages [if any]: Lane Flow-Capacity Iterations: Go to Table Links (Top) Go to Table Links (Top) other .

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Model Scenario: AM Peak Hour, Year 2019, Post-Developed

New Site Site Category: (None) Giveway / Yield (Two-Way)

OUTPI

NLa

ÎN FI

TOth

Sign

Sign Control Basic Parameters Site: Emily Road AM 2019 Developed GHDVals

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Sign Control Sign Control Basic Parameters Gap Acceptance Parameters Gap Acceptance Parameters Movements Intersection Negotiation and Travel Data Movements Intersection Negotiation and Travel Data Movement Capacity and Performance Parameters Fuel Consumption, Emissions and Cost Lanes Lanes Lane Approach and Intersection Performance Driver Characteristics Lane Queue Percentiles Lane Cueues Control Origin-Destination Flow Rates by Movement Class Lane Flow Rates Other Parameter Settings Summary Diggnostics

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I01 : 01 Site

Interaection	
Controlled	
Sign	
Give-Way	

				NA NOT Applicable (single Site analysis or unconnected Site in Network analysis). N Program option resulted in zero value (single Site analysis or unconnected Site in Network analysis)
Extra Bunching %	NO.O	NO.O	NA D.ON	r unconnecte (single site
Approach leg App PropOuted Extra Control Geometry Dist Upstr Signal Bunching A	ΨN	ΨN		NA NOT Applicable (single site analysis of N Program option resulted in zero value in Network analysis).
App Dist n	iouth) 500	North) 500	200	ungle S sulted 1 is).
Leg Geometry	t Street (5 Two Way	I Street (N Two Way	Avenue Two Way	Wot Applicable (single Program option resulte in Network analysis).
Approach Leg App Control Geometry Dis m	South: Koala Street (South) Major Road Two Way 50	North: Koala Street (North) Major Road Two Way 50	West: Emily Avenue Giveway Two Way	NA Not App N Program in Netw

Go to Table Links (Top)

Gap Acceptance Parameters	Site: Emily Road AM 2019 Developed GHDVals	

Site ID: 101 Give-Way Sign Controlled Intersection

and Lod	Headway acc			2.00	2.80 2.20
Critical Gap	D1st m			9.99	71.5 66.7
Critic	Hdwy sec			1.00 4.00	4.30 4.00
10 H 01	HV HV Equiv			1.00	1.00 1.00
2000	Bnchd		oroach.	0.182	0.151 0.182
Intra	Hdwy sec	th)	this app	th) 1.80	1.28 1.80
2000	Flow Flow	eet (Sou	ments on	cet (Nor 1055	322+ 053+
	Dest	South: Koala Street (South)	No opposed movements on this approach.	North: Koala Street (North) 1 w 1055 1	West: Emily Avenue 1 s 1322+ 1 M 1053+
		South: H	No oppi	North: 1 1	West: E: 1 1

Values in this table are adjusted for movement classes in the entry stream. Use the Pedestrians and Priorities input dialogs to specify opposing pedestrian movements. 035328_PMHC_EmNjAvenue001_Councll5328_106_Iraffic.docx 20

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Movements Intersection Negotiation and Travel Data Site: Emiy Road AM 2019 Developed GHDVals	Controlled Intersection	TRAVEL DISTANCE AND TRAVEL TIME	Running Travel Travel Travel Diatance Tot.Trav. Running Travel Travel Travel Diatance Tot.Trav. Speed Distance Time Dem Tlovs Arv Flows Time Turn km/h km/h rm s veh-km/h veh-km/h veh-t/h	Srreet (South) Weet L2 57.5 57.5 710.0# 44.4# 1.5 1.5 0.0 North T1 59.8 59.8 1010.0# 60.8# 1063.2 1063.2 17.8	treet (North) uth Tl 59.6 59.1 1010.0# 61.5# 265.8 265.8 4.5 wet R2 56.3 55.7 710.0# 45.9# 3.7 3.7 0.1	re n II2 48.1 42.4 714.3# 60.7≢ 30.8 30.8 0.7 n R2 47.5 41.9 714.3# 61.4≢ 11.3 11.3 0.3	59.2 58.9 995.8# 60.9# 1376.3 1375.3 23.4	"Running Speed" is the average speed excluding stopped periods. Travel Time values include cruise times and incersection delays including acceleration, deceleration and idling delays.	Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.	INTERSECTION NEGOTIATION DATA	Negn Negn Negn App Exit Downstr
Movements Intersection Ne	Site ID: 101 Give-Way Sign	TRAVEL SPEED,	From To Approach Exit	Koa	North: Koala Street South West		ALL VEHICLES:	"Running Spe Travel Time acceleration	# Travel Di on the Ex	TERSECTION N	

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th T1 5 6.0 10.0 500 500 500 th L2 10.0 20.1 500 500 500 500 th L2 10.0 20.2 15.7 200 500	South R2 6.6 17.2 10.4 200 500 tream Distance does not apply if: tream Distance does not apply if: ogram" option was openified to the exit Negotiation Di cance specified was greater than the Exit Negotiation Di tance specified was greater than the exit leg length trans apply speeds that the exit leg length of lation Radius, Speed or Distance values are user sp apply speeds Exit Speeds Queete Geom Apply speeds Exit Speeds Queete Geom Critice Negn Negn Cruise Speed Delay hm/h km/h km/h km/h km/h shr/h Sci a Street (South) 60.0 60.0 60.0 60.0 0.2 0.0 1a Street (North) 1a Street (North) 60.0 17.2 17.2 60.0 11.8 5.5 60.0 17.2 17.2 60.0 11.8 5.5	Devinstream Distance does not apply if: - Exit is an internal leg of a network - "program" optication was preater than the Exit Ne - "Distance specified was greater than the exit - "Bistance specified was greater than the "Bistance values" - "Bistance specified was greater than the "Bistance" - "Bistance specified was greater than the "Bistance" - "Bistance" - "Bistance" "Bistance" - "Bistance" - "Bistance" "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - "Bistance" - """ - "" - "" - "" - "" - "" - ""	YUN YUN YUN	NRA NRA NRA NRA NRA NRA NRA NRA NRA NRA		
th TI 5 6.0 17.2 10.0 500 th H2 6.6 17.2 10.4 500 th H2 0.0 20.2 10.4 500 th Low H2 10.4 500 10.0 500 th M2 Low H2 10.4 500 10.0 <td>South F2 6.6 17.2 10.4 200 tream Distance does not apply if: t is an internal leg of a network pran" option was specified an the Exit Negotiat cance specified was jest than the Exit leg. tance specified was jest than the Exit leg. App. Speeds Exit Speeds Queue Speed App. Speeds Conterned Conterned Speed App. 20.0 60.0 60.0 0.0 0.0 0.0 0.0 0.0 0.0 0.</td> <td>A Downstream Distance does not apply if: - Exit is an internal leg of a network - Targaneam option was specified an the Exit Negoria - Distance specified was greater than the Exit Negoria - Distance specified was greater than the exit leg one Negotiation Radius, Speed or Distance values are a App. Speeds Exit Speeds Could and a App. Speeds Exit Speeds Queue App. Speed Neyn Crubs Speed Geon Trun Crubs Neyn Neyn Crubs Speed Geon Trun Crubs Neyn Neyn Crubs Speed Geon Trun Strate (South) 1 12 60.0 60.0 60.0 60.0 0.2 0.0 8 22 60.0 17.2 17.2 60.0 11.8 5.5 11 20 20.0 20.2 20.2 60.0 11.8 5.5 12 12 60.0 20.0 20.2 20.2 60.0 11.8 5.5 12 12 20.0 20.0 20.0 11.2 2.5 12 12 20.0 17.2 17.2 60.0 11.8 5.5</td> <td>200 200 200</td> <td>500 500 500 500 11 10 10 10 10 10 10 10 10 10 10 10 1</td> <td></td> <td></td>	South F2 6.6 17.2 10.4 200 tream Distance does not apply if: t is an internal leg of a network pran" option was specified an the Exit Negotiat cance specified was jest than the Exit leg. tance specified was jest than the Exit leg. App. Speeds Exit Speeds Queue Speed App. Speeds Conterned Conterned Speed App. 20.0 60.0 60.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	A Downstream Distance does not apply if: - Exit is an internal leg of a network - Targaneam option was specified an the Exit Negoria - Distance specified was greater than the Exit Negoria - Distance specified was greater than the exit leg one Negotiation Radius, Speed or Distance values are a App. Speeds Exit Speeds Could and a App. Speeds Exit Speeds Queue App. Speed Neyn Crubs Speed Geon Trun Crubs Neyn Neyn Crubs Speed Geon Trun Crubs Neyn Neyn Crubs Speed Geon Trun Strate (South) 1 12 60.0 60.0 60.0 60.0 0.2 0.0 8 22 60.0 17.2 17.2 60.0 11.8 5.5 11 20 20.0 20.2 20.2 60.0 11.8 5.5 12 12 60.0 20.0 20.2 20.2 60.0 11.8 5.5 12 12 20.0 20.0 20.0 11.2 2.5 12 12 20.0 17.2 17.2 60.0 11.8 5.5	200 200 200	500 500 500 500 11 10 10 10 10 10 10 10 10 10 10 10 1		
T1 5 6.0 10.0 th E2 6.6 17.2 10.4 th E2 10.0 20.2 15.7 th E2 10.0 20.2 15.7 th E2 10.0 20.2 15.7 th E2 10.0 20.2 10.4 n Distance does not eggly if: 20.2 10.4 an internal leg of a network a network ext * specified was leasthan the Exit ext 20.2 ion Radius, Speed or Distance value 20.4 20.4 i ND GEOMETRIC DELAY Move-up Move-up i ND Methin Mich Mich Mich Mich Mich Move-up 20.2 i ND 20.2 60.0 0.0 0.2 i ND 20.2 60.0 0.2 20.2 i ND 20.2 60.0 0.2 20.2 i ND 20.2 60.0 0.2 2 i ND 20.2 60.0 0.2 2 i ND 20.2 60.0 0.2 </td <td>south R2 6.6 17.2 10.4 tream Distance does not apply if: an internal leg of a network cance specified was less than the Exit i cance specified was less than the Exit i trance specified was less than the Exit i cance specified was less than the Exit i and that is the exit is the ex</td> <td>Devnstreem Distance does not apply if: - Exit is an internal leg of a network - Exit is an internal leg of a network - Distance specified was less than the Exit i - Distance specified was less than the exit - Distance specified was greater than the exit - NT SPEDS AND GEOMTRIC DELAY ENT SPEDS AND GEOMTRIC DELAY ENT SPEDS AND GEOMTRIC DELAY - App. Speeds Exit Speeds Queue App. Speeds Exit Speeds Queue - App. Speed 0 or Distance Value - App. Speed Exit Speeds Outle Speed - App. Speed 0 or 0.0 0.0 0.0 0.2 - Emily Avenue - 20.0 17.2 17.2 60.0 11.8 - 20.1 0 0.0 17.2 17.2 60.0 11.8 - 20.1 17.2 17.2 60.0 11.8 - 20.1 17.2 17.2 0.0 0.1 - 20.1 17.2 0.0 0.1 - 20.2 20.2 0.0 11.8 - 20.</td> <td>000 000 000 000</td> <td>2000 2000 2000 Geoma arc Delay Delay</td> <td>0.0 4.0</td> <td></td>	south R2 6.6 17.2 10.4 tream Distance does not apply if: an internal leg of a network cance specified was less than the Exit i cance specified was less than the Exit i trance specified was less than the Exit i cance specified was less than the Exit i and that is the exit is the ex	Devnstreem Distance does not apply if: - Exit is an internal leg of a network - Exit is an internal leg of a network - Distance specified was less than the Exit i - Distance specified was less than the exit - Distance specified was greater than the exit - NT SPEDS AND GEOMTRIC DELAY ENT SPEDS AND GEOMTRIC DELAY ENT SPEDS AND GEOMTRIC DELAY - App. Speeds Exit Speeds Queue App. Speeds Exit Speeds Queue - App. Speed 0 or Distance Value - App. Speed Exit Speeds Outle Speed - App. Speed 0 or 0.0 0.0 0.0 0.2 - Emily Avenue - 20.0 17.2 17.2 60.0 11.8 - 20.1 0 0.0 17.2 17.2 60.0 11.8 - 20.1 17.2 17.2 60.0 11.8 - 20.1 17.2 17.2 0.0 0.1 - 20.1 17.2 0.0 0.1 - 20.2 20.2 0.0 11.8 - 20.	000 000 000 000	2000 2000 2000 Geoma arc Delay Delay	0.0 4.0	
the T1 5.600 the T1 5.600 the R2 6.6 17.2 the R2 6.6 17.2 the R2 10.0 20.2 the R2 6.6 17.2 the R2 10.0 20.2 the R2 10.0 20.0 the R2 11.2 50.0 the R	south R2 6:6 17:2 south R2 6:6 17:2 tream Datamace does not apply it are an internal leg of a networ ogram option vas specified an etwo cance specified was less than th tence specified was less that the specified was less that har/h hm/h hm/h hm/h hm/h hm/h hm/h hm/h hm	Devnstream Distance does not epply ii - Exit is an internal leg of a netword - "Justance specified was greater that - Distance specified was greater that - Distance specified was greater that - Merchanton Radius, Speed or Distance - Merchanton Radius, Speed or Distance Banton - Merchanton Radius	15.7 10.0 10.4 10.4	15.7 15.7 10.4 the exit i the exit the exit for evalue for evalue	0.2	11.8
th T1 6.6 th T2 6.6 th R2 10.0 th R2 6.6 Distance does not a an internal leg of a an internal leg of a respectified was great the specified was great specified was great the modius, Speed or the modius, Speed or 1 AND GEOMETRIC DELAY AND GEOMETRIC DELAY 1 AND G	south R2 666 treem Distance does not e et is an internal leg of e ogram" option was apearin tance specified was great cance specified was great tance and the specified was great tance and the specified was great tance specified was great tance and tance and tance and the specified was great tance and tance and tank tance and tand tand tance and tand tance and tance an	Devnstream Distance does not e - Exit is an internal leg of e - Distance specified was less - Distance specified was less - Distance specified was less - Distance Specified was less - Exit is less - Distance Specified was less - Distance Sp	60.0 60.0 17.2	2002 11.20 11.20 11.20 11.20 11.20 11.20 11.20 11.20 11.00 1	0.0	0.0
this T1 the T1 the T2 the T2 t	South R2 South R2 Lie an internel dees ogram on internel leg ogram oppion vas ag tance specified was tance specified was concerned ag tance specified was perconcerned ag and an internel ag tance specified was approximately ag Approximation ag A	Devunstream Distance does - Exit is an internal leg - Program vas specified was - Distance specified was - Distance specified was regeneration Radius, Spe RNT SPEEDS AND GEOWETRIC - Regeneration Radius, Spe - Regenerat	10.0 6.6	6.6.6 		
th Tl th br>th th th th th th th th th th th th	South R2 south R2 south R2 souther souther souther souther souther souther and souther and souther souther and souther and sou	Devraticen Distance - Exit is an interne - Tregenar options with - Distance specified - Distance specified		docs docs 1.1 les aa les raa les raa les raa les raa Neg fon ho ho fon fon fon fon fon fon fon fon fon fo	2	20.
A the second sec	South So	Devnstreem Dist = "Exit is an in = "Exit is an in = "Exerce spec = Distance spece = Distance spec = Distance spece = Distance	L2 T1 (North) T1 R2	a contraction of the contraction	(Nort 60.0 17.2	20.2 17.2
	стания стани	Devisition Parts is Parts is Part	North: Koala Street South: Koala South West	West: Emily Avenue West: Emily Avenue South South South - "Exit tian init - "Exit tian init - "Exit tian - "Exit tian - Distance spec - Distan	4	

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Movement Capacity and Performance Parameters Site: Emily Road AM 2019 Developed GHDVals

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Tot.Trav. Tot.Trav. Aver. Distance Time Speed (veh-km/h) (veh-h/h) (km/h) 57.5 59.8 59.1 42.4 for all Movement Classes. 0.0 4.5 0.3 0.541* 0.541* Deg. Satn 0.148 0.148 0.184 1.5 1063.2 30.8 11.3 × 265.8 3.7 Prac. Spare Cap. \$ 818 564 335 335 Perf. 0.03 4.57 1.14 shown Prac. Deg. Satn Xp 0.98 0.98 0.98 0.80 0.0 40.1 14.7 3.3 Total Stops анс Total Cap. veh/h 4 1946 1783 36 235 86 Capacity parameters Eff. Stop Rate 0.00 0.93 0.01 ID: 101 Way Sign Controlled Intersection Movement Adjust. Flow h pcu/h 0 1055 00 1053 Aver. Delay (sec) 14.2 21.5 5.6 0.1 0.6 n Total Total Av Delay Delay De (veh-h/h) (pers-h/h) (s) Flow veh/h (South) 2 0 3 0 MOVENENT CAPACITY PARAMETERS 0png 0 1055 1053 1322 (South) 0.00 0.03 (Nerth) 0.05 0.03 (North) 0.20 Arv Flow veh/h Maximum degree of Combined Movement (Street (263 5 Koala Street (9 L2 # 2 T1 # 1053 2 1053 43 Koala Street (L2 0.00 0 T1 0.03 0 Koala Street Tl 0.04 R2 0.02 NOVENENT PERFORMANCE Avenue Avenu 0.17 0.09 Mov Cl. Koala Tl # R2 # + West: Emily / 10 L2 # 12 R2 # Emily L2 R2 Turn Turn

South:

MoV

51te Give-

ню

North: 8 9

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Go to Table Links (Top)

South:

Mov

* =#:

н N

North: 8 9

West: 10 12

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Fuel Consumption, Emissions and Cost Site: Emily Road AM 2019 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

EMISSIONS AND COST (TOTAL) CONSUMPTION, FUEL

Mov Turn ID	Cost Total \$/h	Fuel Total L/h	co2 Total kg/h	co Total kg/h	нс Total kg/h	NOX Total kg/h
south: Koala Stu 1 L2 2 T1	street (south) 0.71 377.55	h) 0.1 60.1	0.2 141.3	0.00	0.000	0.000
	378.26	60.2	141.5	0.18	0.010	0.027
North: Koala Str 8 Tl 9 R2	reet (North) 99.53 1.89	h) 15.7 0.2	36.8 0.5	0.05	0.003	0.008
	101.42	15.9	37.4	0.05	0.003	0.008
West: Emily Avenue 10 L2 12 R2	1u c 19.36 7.08	3.0 1.1	7.1 2.6	0.01	0.001	0.002
	26.45	4.1	9.7	0.01	0.001	0.003
INTERSECTION:	506.13	80.3	188.6	0.24	0.014	0.038
FUEL CONSUMPTION,	N, EMISSIONS	NS AND	COST (RATE)	18)		
Mov Turn ID	Cost Rate \$/hm L	Fuel Rate /100km	co2 Rate g/km	CO Rate g/ltm	HC Rate g/km	NOX Rate g/km
south: Koala Str 1 L2 2 Tl	reet (south 0.48 0.36	ь) 5.7 5.7	133.0 132.9	0.17	0.010	0.026
	0.36	5.7	132.9	0.17	0.010	0.026
North: Koala Sti 9 Tl	Street (North) 0.37	h) 5.9	138.6	0.18	0.010	0.029

Mov Turn ID	Cost Rate \$/km	Fuel Rate L/100km	co2 Rate g/km	CO Rate g/hm	HC Rate g/km	NOX Rate g/km
south: Koala s 1 L2 2 T1	Street (South) 0.48 0.36	(South) 0.48 5.7 0.36 5.7	133.0 132.9	0.17	0.010	0.026
	0.0	0.36 5.7	5.7 132.9	0.17	0.17 0.010 0.026	0.026
<pre>North: Koala Street (North) 8 71 0.37 5.9 138.6 0.18 0:6328_PMHC_EmilyAvenue00_Council5328_106_Traffic.docx 24</pre>	Street (No. 0.:: MAVENUENOT	orth) 37 5.9 Coundil5328	138.6 106_Traffic	0.18 docx 24	0.010	0.029

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0.078		Lane Length m	500.0	500.0	200.0
0.26 0.021 0.26 0.021 0.26 0.021 0.18 0.010		Queue 958 Back vch m		D.2 1.4	0.6 4.1
Meet: Emily Avenue 0.63 9.8 230.7 0. 12 R2 0.63 9.8 230.7 0. 12 R2 0.65 9.8 230.7 0. 12 R2 0.37 5.8 137.0 0. 11 INTERSECTION: 0.37 5.8 137.0 0. 20 to Table Links (Top)	6	Eff. Stop Rate	0.00	10.0	0.93
9.8 9.8 2 9.8 2 9.8 2 7.8 1 7.8 1 1 7 Inform	екаесті	Aver. Delay sec	0.1	e.o	16.1
0.63 0.63 0.37 0.37 2019 Dev	Site ID: 101 Give-Way Sign Controlled Intersection LANE PERFORMANCE	Cap Deg. Satn veh/h m	South: Koala Street (South) 1 1055 1950 0.541	North: Koala Street (North) 1 268 1819 0.148	321 0.184

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The capacity values of Continuous Lanes are obtained by adjusting the basic sturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified. In Table Links (Top) on Path Doce And Intersection Performance	Longest Quese H	0.541 0.1 500 0.441 0.1 0.148 0.9 1 500 0.148 0.9 1	0.184 16.1 4 200 0.184 16.1 4 Max AVer. Max
lues of Continu- for lane width scale applies . M 1000 P M 1000 P	h and Intersection ad AM 2019 Deve controlled Inter 1 410 Add. 1 410 Add. 1 5ast. 5teet (south)	1950 (North)	Mest: Emily Avenue 1 59 0 0.184 59 0 0.184 ALL VEHTCLES ALL VEHTCLES Flow HV X

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Geom Control dig dic

Delay (seconds/veh) -----stop-ins Delay Acc. Quanty Stopd lat Dad Total Dec. Nob (IDLe) di di dSL dno. dq dqm di

Min Del

Frog. Factor

% Arv During Green

Deg. Satn M

Lane No.

DELAYS

LANE 1 0:\5328_PMHC_EmilyAvenue\01_Council\5328_106_Traffic.docx 21

Queue values in this table are 95% queue (metres) Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

Go to Table Links (Top)

Driver Characteristics Site: Emiy Road AM 2019 Developed GHDVals	Site ID: 101 Give-Way Sign Controlled Intersection	Satn Satn Average Driver Satn Satn Queue Sceponse Flow Hdny Space Time veh/h sec m m sec	Roala Street (South) NA - Continuous Movement	Koala Street (Norch) Na - Major Road Movement	nue 1225 2.36 12.71 7.00 1.06	Saturation Flow and Saturation Headway are derived from follow-up headway.		Lane Delays Site: Ernily Road AM 2019 Developed GHDVals	Site ID: 101 Give-Way Sign Controlled Intersection
2019 Develop	iled Interac	Satn Hdwy Sec	(South) tous Movement	(North) (oad Movement	2.36	ıd Saturation		2019 Develop	illed Interse
Driver Characteristics Site: Emily Road AM	: 101 7 Sign Contro	Satn Satn Speed Flow km/h veh/	South: Koala Street (South) 1 NA - Continuous Move	North: Koala Street (North) 1 NA - Major Road Move	West: Emily Avenue 1 19.4 1525	ation Flow an	Links (Top)	lays ily Road AM :	r 101 7 Sign Contro
Driver Cl Site: Em	Site ID: 101 Give-Way Sig	1	South: 1	North: 1	West: E 1	Satura	Go to Table Links (Top)	Lane Delays Site: Emily R	Site ID: 101 Give-Way Sig

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North: Koala Street (Worth) 1 0.148 NA NA				0.1					0.0	L.0	
	et (North)	0.6	0.8	0.0	0.8	0.3	0.5	0.0	0.5	0.1	6.0
West: Emily Avenue 1 0.184 NA	NA.	9. 8	10.4	0.2	10.6	3.2	7.4	U.1	7.3	5.5	16.1
SIDRA Standard Delay Model 1s used.	elay Model	1s used		crol D	Control Delay is the sum of	the s		stop-11	Stop-line Delay	ay	
and Geometric Delay. dm: Minimum delay for gap acceptance cases	. for gap	acceptan	tce cast	ត្							
abu: Scop-line delay (-olt-dd) dd: Average stop-start delay for all vehicles queued and unqueued dd: Queuing etop-start delay for all vehicles delay that includes	elay (=dl+ -start del r (the par	d∠) ay for a t of the	all veh: : stop-1	line d	queued elay th	and un at inc.	queved ludes				
stopped delay and queue move-up delay) dam: Onene move-up delay	r and queu m delau	e move-u	up dela;	۲) (۲							
usi word delary court of diling) time at near-rero speed) dig: Geometric delay dic: Control delay	r (stopped elay	outlbt)	g) time	at ne	ar-zero	speed	_				
Go to Table Links (Top)											
Lane Queues Site: Ernily Road AM 2019 Developed GHDVals	1 2019 Dev	reloped (GHDVa	s							
Site ID: 101 Give-Way Sign Controlled Incersection	solled Int	ersectio	ç								
BACK OF QUEUE (VEHICLES)	(CLES)										
1		Ovrfl.	Back	Back of Q	Queue (vi	(veh)	Queue Stor.	Stor.	Prob.	1	1.
Satn During x Green	g Factor	Queue	TQN	Nb2	dN	958	Rat Av.	Ratio 7. 95%	Block e	NO IS	·.
South: Koala Street (South)	t (South)										ł
North: Koala Street (North) 1 0.148 NA NA	t (North) NA	0.0	0.1	0.0	0.1	0.3	0.00	0.00	0.0	MN	
West: Emily Avenue 1 0.184 NA	Ŕ	0.0	0.2	0.0	0.2	9.0	0.01	0.02	0.0	AN	1

BACK OF QUEDE (DISTANCE) 0:6328_PMHC_EmilyAvenue001_CoundI\5328_106_Traffic.docx 28

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Jame Struct During Factor Queue Barlook Barloo	Lane Satn Durin No. x Green South: Koala Stre North: Koala Stre North: Koala Stre North: Voala Stre North: Yoan West: Emily Avenu 1 0.184 NA	19 Fac		Queue		Wh2						
cet (Jouth) 1.4 0.00 0.00 0.0 met (Morth) 0.1 1.6 0.0 0.5 0.0 0.0 met (Morth) 0.1 1.6 0.0 1.4 0.00 0.0 met (Morth) 0.1 1.6 0.0 1.6 0.0 0.0 met (Morth) 0.1 1.6 0.0 1.6 0.0 0.0 met (Morth) 0.0 0.1 0.1 0.1 0.0 0.0 met (South) 0.0 0.1 0.1 0.1 0.1 0.0 met (South) 0.0 0.1 0.1 0.1 0.1 0.1 met (South) 0.0 0.2 0.3 0.3 0.0 0.0 met (South) 0.0 0.1 0.1 0.1 0.1 0.1 met (South) 0.0 0.2 0.3 0.3 0.3 0.3 met (South) 0.0 0.1 0.1 0.1 0.1 0.1 <	South: Koala Str North: Koala Str North: Koala Str 1 0.148 NA Nest: Emily Aven 1 0.184 NA	ret (So		O N D	Icini		QN	958	Rai Av.	95 8	Block %	SL OV
met (Marth) 0.0 0.5 0.1 0.00	North: Koala Stre 1 0.148 NA West: Emily Aven 1 0.184 NA		uth)									
Mc NA 0.1 1.6 0.0 1.6 4.1 0.02 0.0 If (VEHICLES) If (VEHICLES) If (VEHICLES) If (VEHICLES) If (VEHICLES) If (VEHICLES) If Y PERGY, OUTCH OUTCH OUTCH OUTCH If (VEHICLES) If (VEHICLES) If Y PERGY, OUTCH OUTCH OUTCH If (VEHICLES) If (VEHICLES) If Y PERGY, OUTCH OU O.1 O.1 If (VEHICLES) If Y NA O.0 O.1 O.1 If (VEHICLES) If Y NA O.0 O.2 O.3 If (VEHICLES) If Y NA O.0 O.1 O.1 If (VEHICLES) If Y NA O.0 O.4 O.7 If (VEHICLES) If Y NA O.0 O.4 O.7 If (VEHICLES) If Y NA	West: Emily Aven 1 0.184 NA		urth) La	0.0	0.5	0.0	0.5	1.4	0.00	0.00	0.0	NA
JS (VEHICLES) V Prog. Ovrfl. Cyc-Av. Ou IN Factor Oucue ret (south) Cet (lorth) 0.1 NA 0.0 0.1 NA 0.0 0.2 JS (DISTANCE) JS (DISTANCE) Cet (lorth) MC 0.2 MC			5	1.0	1.6	0.0	1.6	4.1	0.01	0.02	0.0	NA
JS (VEHICLES) TY Frog. Ovrfl. Cyc-Av. Ou TH Factor Outle												
V Prog. Ovrfl. Cyc-Av. Ou rig Factor Outle - No ret (South) vect (Horth) 0.0 0.1 vect (Horth) 0.0 0.2 Ma 0.0 0.2 Ma 0.0 0.2 Ma 0.0 0.2 Ma 0.0 0.4 ma 0.0 0.4 ma 0.0 0.4 Ma 0.1 1.2 Ma 0.1 1.2	nusar anang rahr	TS (VEH	SHICLES	~								
ng Factor Queue No rect (Horth) Cet (Horth) A 0.0 0.1 A 0.0 0.2 A				Durfl.	C VC-AV	Ouene						
ret (South) ret (Narth) ret (Narth) ne NA 0.0 0.1 ne NA 0.0 0.2 ret Prog. Outfl. Cyc-Av. Gu ret Fred Outer - No ret (North) ret (North) ret (North) ret (Narth) ret	Sato N D			Queue	No	95%						
rect (Horth) 0.0 0.1 Nue NA 0.0 0.2 As (DISTANCE) As (DISTANCE) As Prog. Ovrfl. Cyc-Av. Gu As Factor Quete - NG As (South) Cet (Horth) 0.4 A NA 0.1 1.2 Ame NA 0.1 1.2	South: Koala Stre	eet (So	uth)									
Me NA 0.0 0.2 TS (DISTANCE) TS (DI	Worth: Woala Stre L 0.148 NA	cet (No N	urth) GA	0.0	0.1	0.1						
JS (DISTANCE) V Prog. Outfl. Cyc-Av. Gu V Prog. Outfl. Cyc-Av. Gu No No No No No No No No No No No	West: Emily Avenu L 0.184 NA		Ŕ	0.0	0.2	0.3						
JS (DISTANCE) W Prog. ovrr1. Cy-Av. Gu ng Factor Queue												
W Prog. Ovtfl. Cyc-Av. Gu Ing Factor Ducte - No meet (south) cet (Morth) ret (Morth) A 0.0 0.4 Mu NA 0.1 1.2 Mu NA 0.1 1.2	NHER QUEUE RESULD	SIC) SI	TANCE	~								
ng Factor Ducue Mc m No No No cet (South) cet (North) n 0.0 0.4 ne NA 0.1 1.2 ne NA 0.1	Deg.	1		Ovrfl.	Cyc-Av.							
ret (South) ret (Horth) NA 0.0 0.4 Ne NA 0.1 1.2	Sato M			Dueue No	Nc	95%						
cet (North) 0.0 0.4	South: Koala Stre	eet (So	uth)									
NIE NIA 0.1 1.2	North: Noala Stre 1 0.148 NA	cet (No N	urth) UA	0.0	0.4	0.7						
to Table Links (Top)	West: Emily Avenu L 0.184 NA		Ę	1.0	1.2	2.2						
to Table Links (Top)												
	Go to Table Links (Top)											

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Lane Queue Percentiles Site: Emily Road AM 2019 Developed GHDVals	Site ID; 101 Give-Way Sign Controlled Intersection	LANE QUEUE PERCENTILES (VEHICLES)	g. Percencile Back of Queue (veh)		South: Koala Street (South)	h) 0.1 0.2 0.2 0.2	ly Avenue 34 0.2 0.3 0.4 0.5 0.6 0.6 0.7	RCENTILES	g. Percentile Back of Queue (metres)	x 50% 70% 85% 90% 95% 98% 100%	South: Koala Street (South)		ly Avenue 54 1.6 2.1 3.0 3.5 4.1 4.5 4.8	ks ([0p)	
	Site ID: 101 Give-Way Sign Contro	DUEUE PERCENTIL	Deg.	заци Х 50%	1: Koala Street	: Koala Street 0.148 0.1	West: Emily Avenue 1 0.184 0.2	QUEUR PERCENTIL	Deg.		South: Koala Street	1: Koala Street 0.148 0.5	West: Emily Avenue 1 0.184 1.6	Go to Table Links (Top)	and Otana

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Site ID: 101 Give-Way Sign Controlled Intersection

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No. ach Du		Prog.	Eff	fecti ve	Stop	Rate	Total	Effective Stop Rate Total Moverup	Total Queue Prop.	Prop.	Aver. Num. of
to the verte	Green	Lactor	hel	he2	hig.	ecom. OVERALL STOPS hel he2 hig h H	e dop n H	h qm	Home-ups	Pq	Cycles to Depart
JOULD: NORLA SULEEL (SOUCH) I 0.541 NR. NA.	ureet NA	(South) NA			0.00	0.00 0.00					
North: Koala Street (North) 1 0.148 NA NA	ureet NA	i i	0.00	10.0 0.0	0.01	0.00 0.00 0.01 0.01		3.4 0.00	0.0	0.07	0.00 0.0 0.07 0.07
West: Emily Avenue 1 0.184 NA	e nuc NA	NA	0.82	10.0	11.0	NA 0.82 0.01 0.11 0.93		54.8 Q.Q3	1.5	0.82	0.84
hig is the average value for all movements in a shared lane hqm is average queue move up rate for all vehicles queued and unqueued	erage v	/alue for	r all n	novemer for al	lts in L vehi	a shared cles que	lane zed and	unqueued			
Go to Table Links (Top)	2										
Flow Rates											
Origin-Destination Flow Rates (Total) Site: Emily Road AM 2019 Developed GHDVals	n Flow AM 20	Rates (1	[otal)	GHDV	<u>als</u>						I

Site ID: 101 Give-Way Sign Controlled Interaction

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	M	N	
Turn:	II2	Ë	LOL
Flow Rate	2.1	1052.6	1054.7
Ň	0.0	0.0	0.0
From NORTH To:	v	м	
Turn:	Ē	82	LOL
Flow Rate	263.2	5.3	268.4
%HV (all designations)	0.0	0.0	0.0
From WEST To:	N	n	
Turn:	12	R2	LOL
045328 PMHC EmilyAvenue/01 Council/5328 106 Traffic docx 31	SIL5328 106	Traffic doc	x 31

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Flow Rates (veh/h) based on the following input specifications: 58.9 15.8 43.2 Flow Rate SHV (all designations)

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input spu Teak Flow Period = 30 minutes Teak Plow Period = 30 minutes Flow Seriod = 30 minutes Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies . network analysis

ų,

Go to Table Links (Top)

Origin-Destination Flow Rates by Movement Class Site: Emily Road AM 2019 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

FLOW RATES for Light Vehicles $(\mbox{vehicles}\ (\mbox{vehicles}\))$

From South To: Turn:	ы ГС	NL	TOT
Flow Rate Mov Class %	1.0.0	1052.6 1052.6	1054.7 100.0
Flow	0.95	0.0	0.0
From NORTH To: Turn:	s T1	м В	TOT
Flow Rate Mov Class & Flow Scale Peak Flow Factor Residual Demand	263.2 100.0 1.00 0.95 0.95	5.3 100.0 1.00 0.95 0.0	268.4 100.0 0.0
From MEST To: Turn:	ы 12	ы 182	TOT
Flow Rate Mov Class % Flow Scale Peak Flow Factor Residual Demand	43.2 100.0 1.00 0.95 0.05	15.8 100.0 1.00 0.95 0.0	58.9 100.0 -
0:\5328_PMHC_EmityAvenue\01_Council\5328_106_Traffic.docx	e\01_Counc	il\5328_106	Traffic.doc

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Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Fime for Volumes = 60 minutes Peak Flow Period = 30 minutes Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

Go to Table Links (Top)

Lane Flow Rates Site: Emily Road AM 2019 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

RATES AT STOP LINE (veh/h) FLOW LANE

(i	TOT	1054.7 1054.7	1054.7	TOT	268.4 268.4	268.4	TOT	6.8 6.8 6.8	58.9	
/uen) जगान	лг	1052.6 1052.6	1052.6	м СЦ		5.3	ខ្លួ	15.8 15.8	15.8	
T ADIS IN	M L L	2.1 2.1	2.1	υ E	263.2 263.2	263.2	и ГГ	43.2 43.2	43.2	
LANE FLOW RATES	From SOUTH To: Turn:	Lane 1 LV Total	Approach	From NORTH To: Turn:	Lane 1 LV Total	Approach	From WEST To: Turn:	Lane l LV Total	Approach	

EXIT LANE FLOW RATES 036328_PMHC_EmityAvenue01_Council6328_106_Traffic.docx 33

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Parameter Settings Summary Site: Emliy Road AM 2019 Developed GHDVals	Site ID: 101 Give-Way Sign Controlled Intersection	Dasic Farameters: Intersection Type: Unsignalized - Give Way Driving on the left-hand eide of the road Input data perifed in Mercr units Model Defaults: We South Males Feak Flow Period (for performance): 30 minutes Unit time (for volumes): 60 minutes SIDRA standard Queue model used SIDRA standard Queue model used Devel of Strict based on: Delay (RTA NSW) Queue precentile: 959	Go to Table Links (Top)	Diagnostics Site: Emily Road AM 2019 Developed GHDVals	site ID: 101 Give-Way Sign Controlled Intersection	Lane Flow-Capacity Iterations:	site Model Variability Index (Iterations 3 to W): 0.0% Number of Iterations: 3 [Maximum: 10]	Other Diagnostic Messages (if any):	Go to Table Links. (Top)	SIDRA INTERSECTION 8.0 Copyright © 2000-2019 Akcelik and Associates Pty Ltd sidrasolutions.com Organisation: KING & CAMPBELL PTY LTD Processed: Monday, 11 March 2019 1.48.04 PM Project O:\5338_PMHC_EmilyAvenue/2_Engineering\Emily Ave 50exsting 2019-2039 GHDMaxValuesNoRate sip8
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ORDINARY COUNCIL 20/05/2020

06/05/2020

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Model Scenario: AM Peak Hour, Year 2039, Pre-Developed

 Vertee: 101 [Emily Road AM 2039 Not Developed
 Vertee
 Vertee DETAILED OUTPUT GHDVals]

New Site Site Category: (None)

Giveway / Yield (Two-Way)

OUTPUT TABLE LINKS

- Sign Control Sign Control Basic Parameters Gap Acceptance Parameters
- Mitwovements Intersection Negotitation and Travel Data Movement Capacity and Performance Parameters Fuel Consumption, Emissions and Cost

 - Lancs Lancs Performance and Capacity Information Lanc, Approach and Intersection Performance Driver Characteristics Lane Queues Lane Queue Percentiles Lane Stops
- In Flow Rates Origin-Destination Flow Rates (Total) Origin-Destination Flow Rates by Movement Class Lane Flow Rates #=Other Parameter Settings Summary Diagnostics

Sign Control

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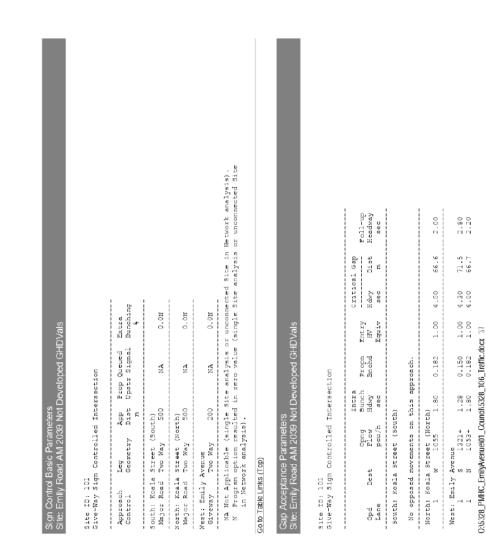
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Values in this table are adjusted for movement classes in the entry stream. Use the Pedestrians and Priorities input dialogs to specify opposing pedestrian movements. + Percentage of exiting flow included in opposing vehicle flow

Go to Table Links (Top)

Movements

Intersection Negotiation and Travel Data Site: Emily Road AM 2039 Not Developed GHDVals

site ID: 101
Give-Way Sign Controlled Intersection

TRAVEL DISTANCE AND TRAVEL TIME TRAVEL SPRED,

From To Approach Exit	Turn	Running Speed km/h	Travel Speed km/h	Travel Distance m	Travel Time s	Total Travel Distance Dem Flows Arv Flows veh-km/h veh-km/h	. Distance Arv Flows veh-km/h	Tot.Trav. Time veh-h/h
South: Koala Street (South) West L2 North T1	. (South) L2 T1	57.5 59.8	57.5 59.8	710.0# 1010.0#	44.4 4 60.8±	1.5 1063.2	1.5	0.0 17.8
North: Koala Street (North) South Tl Weat R2	: (North) T1 R2	59.7 56.4	59.3 55.9	1010.0# 710.0#	61.3# 45.7#	265.8 3.0	265.8 3.0	4.5 0.1
West: Emily Avenue North South	L2 R2	48.3 47.7	42.6 42.1	714.3# 714.3#	60.34 61.04	24.1 9.0	24.1 9.0	0.6 0.2
ALL VEHICLES:		59.4	59.1	998.6#	60.8#	1366.5	1366.5	23.1

delays including intersection cruise times and ir and idling delays. values include n, deceleration Travel Time va acceleration, Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

-##

INTERSECTION NEGOTIATION DATA

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From Approach	To Exit	Turn	Negn Radius M	Negn Speed km/h	Negn Dist m	App Dist m	Exit Dist m	Downstr Dist m
South: Koala	I 2	(South) L2 T1	10.0 s	20.2 60.0	15.7 10.0	5 00	200	AN
North: Koala	1 0	(North) T1 R2	6.9 9	60.0 17.2	10.0 10.4	200	200	en En
West: Emily	Avenue North South	L2 R2	10.0 6.6	20.2 17.2	15.7 10.4	200	500	AN
NA Downstream - Exit is a - "Program" - Distance - Distance	Wnstream Dis Exit is an i "Program" op Distance spe Distance spe	<pre>Distance does n an internal leg " option was spc specified was g</pre>	of of cif rea	ដុំង ជុំរុំ	· · · · · · · · · · · · · · · · · · ·	gotia leg		Distance
Some Negot	Negotiation	Radius,	Speed or	r Distance	nce values	are	user ab	specified.
NOVENENT SPI	SPEEDS AND	GEOMETRIC	IC DELAY	24				
>	1 0.	Speeds Feeds		00 I II	Queue Move-up Speed	Geom Delay		
ID Turn	h/h		icm/h lic	ltm/h	d/h	200		

5.5

60.0 60.0

20.2

(South) 20.2 2 60.0 6

: Koala Street () 12 60.0 20 Tl 60.0 60

MOV ID T South: - C1 5.4

0.2

60.0 60.0

60.0 17.2

(North) 60.0 17.2 1

North: Koala Street (North: Koala Street (North: 8 T1 60.0 60

5.5

11.8

60.0 60.0

20.2

20.2 17.2

West: Emily Avenue 10 L2 60.0 12 R2 60.0

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ATTACHMENT

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Movement Capacity and Performance Parameters Site: Emily Road AM 2039 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

MOVENENT CAPACITY PARAMETERS

```
for all Movement Classes.
                                      0.541*
0.541*
                     ×
                                                             0.145
0.145
                                                                                     0.145
0.145
    Deg.
Satn
    Prac.
Spare
Cap.
                                                                                    452
452
                                                             576
                                       81
                                                                                                             shown
    Prac.
Deg.
Satn
Xp
                                      0.98
                                                              0.98
                                                                                     0.80
                                                                                                             e H e
    Total
                      veh/h
                                       4
1946
           Cap.
                                                              1814
29
                                                                                     233
87
                                                                                                     Maximum degree of saturation
Combined Movement Capacity parameters
    opng Movement :
Adjust.
Flow Flow
vch/h pcu/h
                                                              0
1055
                                       00
                                                                                     1053
1321
                            : Koala Street (South)
12 # 2 0
11 # 1053 0
                                                        (North)
3 0
4 1055
                                                                                     1053
1321
                                                    North: Koala Street (N
8 T1 # 263
9 R2 # 4
          Arv
Flow
veh/h
                                                                                     9 0 1 3 <del>0</del>
                                                                              West: Emily Avenue
10 12 # 34
12 R2 # 13
    Mov
Cl.
    Turn
                                 South:
1
2
                            WOW
ID
                                                                                                     * #
l
```

MOVEMENT PERFORMANCE

Tot.Trav. Tot.Trav. Aver. Distance Time Speed (veh-km/h) (veh-h/h) (km/h) Perf. Total Stops Eff. Stop Rate Total Total Aver. Delay Delay Delay veh-h/h)(pers-h/h)(sec) Turn NOV ID

South:		Koala Street	(South)							
I	112	00.00	0.00	5.6	0.00	0.0	0.03	1.5	0.0	57.5
64	Ē	T1 0.03	0.03	0.1	0.00	1.3	1.3 17.75	1063.2	17.8	59.8
North:	Koali	North: Koala Street (North)								
60	11	0.04		0.5	10.0	2.6	4.54	265.8	4.5	59.3
đh	R2	R2 0.02	0.02	15.3	10.0	0.0	0.0 0.13	3.0	0.1	55.9
Vest:	Emily	West: Emily Avenue								
10	10 L2	0.13	0.16	13.8 0.92	0.92	31.0	0.88	24.1	0.6	42.6
12	R2	70.0	0.09	21.0	0.92	11.6	0.47	0.0	0.2	42.1

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Fuel Consumption, Emissions and Cost Site: Emily Road AM 2039 Not Developed GHDVals

Go to Table Links (Top)

Site ID: 101 Give-Way Sign Controlled Intersection

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

N E

Mov Turn ID	Cost Total \$/h	Fuel Total L/h	co2 Total kg/h	co Total kg/h	нс Total kg/h	NOX Total kg/h
South: Koala St 1 L2 2 T1	treet (South) 0.71 377.55	h) 0.1 60.1	0.2 141.3	0.00	0.000	0.000
	378.26	60.2	141.5	0.18	0.010	0.027
North: Koala St 8 Tl 9 R2	street (North) 98.47 1.49	h) 15.5 0.2	36.5 0.4	0.05	0.003	0.007
	99.97	15.7	37.0	0.05	0.003	0.008
West: Emily Avenue 10 12 12 R2	nue 15.00 5.62	2.4	5.5 2.1	0.01	0.001	0.002
	20.62	3.2	7.6	0.01	0.001	0.003
INTERSECTION:	498.86	79.2	186.1	0.24	0.014	0.037

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

нс Rate g/km CO Rate g/len co2 Rate g/km Fuel Rate L/100km Cost Rate \$/km Turn VCM UI

NOX Rate g/km

0.026 0.026

0.010

0.17

133.0 132.9

5.J

Koala Street (South) L2 0.48 T1 0.36

South:

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Lane Util &	100	100	100
Deg. Satn x	0.541	0.145	0.145
Tot Cap veh/h	South) 1950	(Worth) 7 1843	320
Min Cap veh/h	Street (South) 1055 1950	reet 26	9 Une
Total Arv Flow veh/h	Koala 1055	Koala St 267	Emily Avenue 46
Lane No.	South: 1	North: l	West: 1

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

Go to Table Links (Top)

Lane, Approach and Intersection Performance Site: Emily Road AM 2039 Not Developed GHDVal

Site ID: 101 Give-Way Sign Controlled Intersection

	Arrival Flow (veh/h)	8 HV	Adj. Basic Satf.	Sat Sat	Aver. Delay sec	Longest Queue M	Lane Length m
South: 1	Koala S 1055	treet	Street (South) 0 1950	0.541	0.1		500
	1055	D		Q.541	0.1		
North: 1	Koala 267	treet	Street (Worth) 0	0.145	0.7	г	500
	267	0		0.145	0.7		
West:] l	Emily Avenue 46	0 Enue		0.145	15.8	m	200
	4 9	0		0.145	15.8	м	
ALL VEHICLES Tota	HICLES Total	o₽		Маж	Aver.	Маж	

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ATTACHMENT

oueue 3 Delay 0.8 х 0.541 N O Flow 1368

minutes. Peak flow period = 30 Oueue values in this table are 95% queue (metres) Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lancs.

Go to Table Links (Top)

Driver Characteristics Site: Emily Road AM 2039 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

Response Time sec Driver 1.06 Average Oueue Space M 7.00 Satn Spacing m 12.71 South: Koala Street (South) 1 NA - Continuous Movement North: Koala Street (North) 1 NA - Major Road Movement Satn Hdwy sec 2.36 Satn Flow veh/h l NA - Major Roa Nest: Emily Avenue 1 19.4 1523 Satn Speed km/h Lane No. ł į

Saturation Flow and Saturation Readway are derived from follow-up headway.

Go to Table Links (Top)

Lane Delays Site: Ernily Road AM 2039 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

LANE DELAYS

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

			~	
Contro dic		0.7	15.8	
Geom (dig	L.D	0.1	5.5	
Delay (seconds/veh)	0.0	0.5 0.6 0.0 0.6 0.3 0.4 0.0 0.4	8.7 10.3 0.0 10.3 3.2 7.1 0.0 7.1 5.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
veh) Ing MvUp Iqm		0.0	0.0	stop -
econds/veh) Queuing Total MvUg dq dqm		0.4	7.1	tum of tudes
ay (se Acc. Dec. dn		0.3	3.2	and un and un apeed
Delay (seconds/veh) ne Delay Acc. Queuing nd Total Dec. Total MVUp 2 dSL dn dq dqm		0.6	10.3	rlay 1s rlay th rrsero
line I 2nd 1 d2	0.1	0.0	0.0	at near a n
Stop ⁻ lst dl		ور 0	10.3	c case c case stop-1 delay time
Min Del dm		o.5	L.8	used. cptanc for al f the ove-up dling)
Frog. Factor	South)	North) NA	NA	SIDRA Standard Delay Model is used. Control Delay is the sum of Stop-line Delay and Geneticic Delay. And Minimum delay (set delay control delay undered di Minimum delay (set) for all vehicles queed and ungueued di Outling delay (set delay for all vehicles queed and ungueued stopped delay (set delay) (stopped delay and queue move up delay) hat includes di Stopped delay and queue move up delay) di Stopped delay (stopped (idling) time at near-sero speed) di Control delay.
Deg. % Arv Satn During M Green	Street	Street NA	re nue NA	srpRA Standard Delay Noci dan Minimum de Lay Tor ge dan Minimum de Lay Tor ge dSL: Stop-line delay (=d) dd: Average scop-start de dd: Queuling delay und gu dqm: Queue move-up delay und gu dtm: Stopped delay delay delay dis: Stopped delay (stopped dis: Control delay
Deg. Satn M	Koala 3 0.541	Koala S D.145	mily An 0.145	stigka Standard hal and Gentetic Dela and Gentetic Dela di Miniamun delay di Stop-line del di Stopped delay di Oueue nove-up di Stopped delay di Stopped delay di Stopped delay di Stopped delay
Lane No.	South: Koala Street (South) 1 0.541	North: Koala Street (North) 1 0.145 NA NA	West: Emily Avenue 1 0.145 NA	stinga dar: Mi dar: Mi dar: Av dar: Av dar: Cou dar: Cou

Go to Table Links (Top)

ane Queues Site: Emity Road AM 2039 Not Developed GHDVal

Site ID: 101 Give-Way Sign Controlled Intersection

BACK OF QUEUE (VEHICLES)

	Deg.	Deg. 8 Arv Frog. Ovrfl. Back of Queue (veh)	- Ford	ovrfl.	Bac	k af	Jueue	(veh)		Oueue Stor.	Prob.	Prob.
Lane No.	Satn X	Dur ing Green	Factor	Oueue No	IdN	Nb2	No	Nol Nb2 No 958		58 958	Ratio Block Av. 958 %	SL OV.
South	Koal	South: Koala Street (South)	(South)	South)								
North	: Koal	North: Noala Street (North) 1 0.145 NA NA	(North) NA	0.0	0.1	0.0	0.1	0.0 0.1 0.0 0.1 0.2 0.00 0.00 NA	0.00	0.00	0.0	NA
West: 1	Mest: Emily Avenu 1 D.145 NA	West: Emily Avenue 1 D.145 NA	D_D AN	00	¢ 0	0	0		0	0 01 0 02 0 0	0	

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

BACK OF QUEUE (DISTANCE)

	Deg.	Deg. % Arv	Бтад.	Ovrfl.	Bac	k of C	Back of Queue (m)	~	Queue	Queue Stor.	Prob. Prob.	Prob.
No.			ractor	No	No.1	Nb2	an 2an Ian	958	AV.	AULIO AV. 95%		сл л
South	Koala	South: Koala Street (South)	(South)									
North: 1 0	Koala 145	North: Koala Street (North) 1 0.145 NA NA	(North) NA		0.4	0.0	0.4	1.1	0.00	00.0	0.0 0.4 0.0 0.4 1.1 0.00 0.00 NA	NA
West: 1 0	Emily .145	West: Emily Avenue 1 0.145 NA	Ŕ	NA 0.0 1.3 0.0 1.3 3.1 0.01 0.02 0.0 NA	1.3	0.0	0.0 1.3	3.1	0.01	0.01 0.02	0.0	NA

	NA	
	0.0	
	0.02	
	0.01	
	3.1	
	1.3	
	0.0	
	l.3	
	0.0	
	NA	
AVEDUC	NA	
A VLENZ	0.145	

OTHER QUEUE RESULTS (VEHICLES)

1

Ourfl. Cyc-Av. Queue Ourur	958		0.1	0.2	
Cyc-Av.	Nc		0.0		
Ourur .	οN		0.0	0.0	
Prog. Factor		(South)		AN	
% Arv During	Green	reet	Street NA	Avenue NA	
Beg. Satn	н	: Koala	Noal 145	±1y 45	
Lane	No.	South	North: 1 0	West: l	

OTHER QUEUE RESULTS (DISTANCE)

0.3 Ovrfl. Oueue No 0.0 South: Koala Street (South) North: Koala Street (North) 1 0.145 NA NA Frog. Factor å arv During Green Deg. Satn x Lane No.

ō.0 0.0 ¥2 West: Emily Avenue 1 0.145 NA

1.7 0.6

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Lane Queue Percentiles Site: Emily Road AM 2039 Not Developed GHDVals

Go to Table Links (Top)

	0-9. 	Percentile		Back of	Queue (veh	(veh)	
			858	\$06	95 %	80 80	100%
South: Koala 	a Street a Street 0.1	(South) (Nerth) 0.1	0.1	0.1	0.2	0.2	0.2
West: Emily 1 0.145	Avenue 0.2	0.2	E.D	0.4	0.4	0.5	0.5
Deg.		Percent11e		Back of		Oueue (metres)	
Sa ch X	50%	70%	858	\$06	958	989	100%
South: Koala	a Street	(South)					
North: Koala 1 0.145	a Street 0.4	(North) 0.6	8.0	6.0	1.1	1.2	1.3
West: Emily 1 0.145	Emily Avenue 0.145 1.3	1.6	2.3	2.7	3.1	л. С	3.7

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			_	
Aver. um. of cles to Depart	0.06	0.81		

Lane Stops Site: Emily Road AM 2039 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

Lane Sa No.	ч с с с с с с с с	Deg. % Arv Satn During x Green	Prog. Factor	2f hel	fectiv [.] he2	e Stop Geom. hig	Effective Stop Rate Geom. Overall hel he2 h1g h	Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hom	Prop. Queued Pq	Aver. Num. of Cycles to Depart
South: Noala Street (South) 1 0.541 NA NA	541a	t Street NA	(South) NA			0.00	0.00 0.00	1.3				
North: Koala Street (North) 1 0.145 NA NA	oala 145	Street NA	(North) NA		0.00	10.0	0.00 0.00 0.01	2.7	2.7 0.00	0.0	0.0 0.06	0.06
West: Emily Avenue 1 0.145 NA	ily A 145	Avenue NA	MA	0.81	0.00	11.0	0.92	42.6	MA 0.81 0.00 0.11 0.92 42.6 0.00		0.0 0.81	0.81

Go to Table Links (Top)

Flow Rates

l	
otal)	eveloped GHDVals
ion Flow Rates (To	id AM 2039 Not De
Origin-Destinati	Site: Emily Roa

Site ID: 101 Give-Way Sign Controlled Intersection TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	M	Z	
Turn:	12	Ë	LOL
Flow Rate	2.1	1052.6	1054.7
%HV (all designations)	0.0	0.0	0.0
OM NORT	υ Ω	М	
Turn:	1 E	R2	TOT
Flow Rate	263.2	4.2	267.4

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

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DEVELOPMENT ASSESSMENT PANEL

From WEST To: N S TOT Turn: E20 R2 TOT Flow Rate 33.7 12.6 46.3 MHV (all designations) 0.0 0.0 0.0 Dev rates shown above are Arrival Flow Rates (veh(h) based on the Following input specifications:			
Turn: I2 R2 707 Frow Rate 33.7 12.6 46.3 MHV (all designations) 0.0 0.0 0.0 Elow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications			
Pilox tate 33.7 12.6 46.3 MHV (all designations) 0.0 0.0 0.0 Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specification	urn! L2 R:	TOT	
AHV (all designations) 0.0 0.0 0.0 			
Plov rates shown above are Arrival Flow Rates (veh/h) based on the following inbut specification	0.0		
	ow rates shown above are Arrival Flow R	tes (veh/h) ba	ased on the following input specifications

Go to Table Links (Top)

Origin-Destination Flow Rates by Movement Clas Site: Emily Road AM 2039 Not Developed GHDV

Site ID: 101 Give-Way Sign Controlled Intersection

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To: Turn:	W II2	N TI	TOT
Flow Rate Nov Class & Flow Scale Feak Flow Factor	2.1 100.0 1.00 0.95	1052.6 100.0 1.00 0.95	1054.7 100.0
1 64	• I 00 [H	· 1 3 0	
Flow Rate Mov Class % Flow Scale Peak Flow Factor Residual Demand	263.2 100.0 1.00 0.95	4.2 100.0 1.00 0.95	267.4 100.0
From WEST To: Turn:	N L2	s R2	TOT
Tiow Rate 33.7 12.6 46.3 Mov class \$ 100.0 100.0 00.0 0:5328_PMHC_EmilyAvenue/01_Councils328_106_Traffic.docx	33.7 100.0 eV01_Counc	12.6 100.0 N5328_106	46.3 100.0

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	1.00	1.00	'
Peak Flow Factor	0.95	0.95	I
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Time for Volumes = 60 minutes Peek Plow Feriod = 30 minutes Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in netWork analysis.

Go to Table Links (Top)

Lane Flow Rates Site: Emily Road AM 2039 Not Developed GHDVals

Controlled Intersection Site ID: 101 Give-Way Sign

FLOW PATES AT STOP LINE (veh/h) LANE

N TOT IT	1052.6 1054.7 1052.6 1054.7	1052.6 1054.7	W R2 TOT	4.2 267.4 4.2 267.4	4.2 267.4	s R2 TOT	12.6 46.3 12.6 46.3	12.6 46.3
M TIS	2.1	2.1	νĘ	263.2 263.2	263.2	n LL2	33.7 33.7	33.7
From SOUTH To: Turn:	Lane 1 LV Total	Approach	From NORTH TO: Turn:	Lane l LV Total	Approach	From WEST To: Turn:	Lane l LV Total	Approach

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

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EXIT LANE FLOW RATES	ATES			
Movement Class:	ΤΛ	ΗV	TOT	
Exit: SOUTH Lane: 1 Total	275.8 8.775	* *	275.8	
Exit: NORTH Lane: 1 Total	1086.3 1086.3	* *	1086.3	
Exit: WEST Lane: 1 Total	9 U 19 19	**	9.9 9.9	
Movement not allocated to the lane bownsrgam laws flow with some	t allocated	to th	e lane IT ROADS	
Movement Class:	IN	HV	TOT	
Exit: SOUTH Lane: l Total	275.8 275.8	* *	275.8 275.8	
Exit: WORTH Lane: 1 Total	1086.3 1086.3	* *	1086.3	
Exit: WEST Lane: 1 Total	ଜ ଜ ଜ ଜ	* *	6.9 6.3	
* Movement not allocated to the lane	t allocated	to th	e lane	
Flow rates shown above a Unit Time for Volumes = Teck Flow Feriod = 30 m Effects of Volume Factor Arrival Flow Rates may b network analysis.	above are Arri Lumes = 60 mir = 30 minutes e Factors (Peal es may be less	re Arrival) 60 minutes inutes 8 (Peak Flo 9 less than	l Flow Ru cs low Facto an Demano	Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Time for Volumes = 60 minutes Peak Prov Period = 30 minutes Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.
Go to Table Links (Top)				
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ORDINARY COUNCIL 20/05/2020

DEVELOPMENT ASSESSMENT PANEL 06/05/2020

SIDRA INTERSECTION 8.0 | Copyright © 2000-2019 Akcelik and Associates Pty Ltd | sidrasolutions.com Organisation: KING & CAMPBELL PTY LTD | Processed: Monday, 11 March 2019 1.48.05 PM Project OA3328_PMHC_EmilyAvenue'22_Engineering/Emily Ave 50existing 2019-2039 GHDMaxValues/NoRale sip8 90°0 Site Model Variability Index (Iterations 3 to N): Number of Iterations: 3 [Maximum: 10) * Basic Parameters: Intersection Type: Unsignalised - Give Way Driving on the left-hand side of the road Input data specified in Metric units Nodel Defaults: Mev South Wales Feak Flow Period (for performence): 30 minutes Finit time (for volumes): 60 minutes. 57DRA Standard Delay model used FIDRA Standard Delay model used FIDRA Standard Delay model used Fuel of Structs based on: Delay (RTA NSW) Oucue percentile: 95% Diagnostics Site: Emily Road AM 2039 Not Developed GHDVals Parameter Settings Summary Site: Emily Road AM 2039 Not Developed GHDVals Site ID: 101 Give-Way Sign Controlled Intersection site ID: 101 Give-Way Sign Controlled Intersection Other Diagnostic Messages [if any]: Lane Flow-Capacity Iterations: Go to Table Links (Top) Go to Table Links (Top) other

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Model Scenario: AM Peak Hour, Year 2039, Post-Developed

DETAILED OUTPUT

V Site: 101 [Emily Road AM 2039 Developed GHDVals]

New Site Site Category: (None) Giveway / Yield (Two-Way)

OUTPUT TABLE LINKS

Sign Control Sign Control Basic Parameters Gap Acceptance Parameters

MM overnents Intersection Negotiation and Travel Data Movement Capacity and Performance Parameters Fuel Consumption, Emissions and Cost

Lanes Lane Performance and Capacity Information Lane, Approach and Intersection Performance Driver Characteristics

Lane Queues Lane Queue Percentiles Lane Stops Ir Flow Rates

Origin-Destination Flow Rates (Total) Origin-Destination Flow Rates by Movement Class Lane Flow Rates

BTOther Parameter Settings Summary Diagnostics

Sign Control

Sign Control Basic Parameters Site: Emily Road AM 2039 Developed GHDVals

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Site ID: 101 Give-Way Sign Controlled Intersection

				ed Site in N e analysis o
Extra Bunching 8	N0.0	NO.O	D.0M	r unconnect (single sit
Prop Queued Upstr Signal	NA	MA		NA NOT Applicable (single site analysis or unconnected site in N Program option resulted in zero value (single site analysis in Network analysis).
App Dist m	(South) y 500	(North) y 500		(single Sit resulted in lysis).
Leg Geometry	a street I Two Way	a Street I Two Way	Avenue Two Way	wot Applicable (singl Program option result in Network analysis).
Approach Control	nd nd i	North: Koala Street (North) Major Road Two Way 50	West: Emily Avenue Giveway Two We	NA WOT Applicable N Program option in Network anal

Go to Table Links (Top)

Network analysis). or unconnected Site

ped GHDVals Gap Acceptance Paramete Site: Emily Road AM 2039

Site ID: 101 Give-Way Sign Controlled Intersection

Dest	Cond		Pr opn	Entry		dan restruct	Foll-up
	c Flow pcu/h	aec sec	Bnchd	HV Equiv	Hdwy sec	D1st m	Headway
Koala	South: Koala Street (South)	uth)					
posed r	No opposed movements on this approach.	n this apl	proach.				
Koala	North: Koala Street (North) 1 w 1055 1.80	rth) 1.80	0.182	1.00	4.00	66.6	2.00
West: Emily Avenue I S 1: 1 N 1	Avenue 5 1322+ 1 1053+	1.28 1.80	0.151 0.182	1.00 1.00	4.30	71.5 66.7	2.80

Values in this table are adjusted for movement classes in the entry stream. Use the Pedestrians and Priorities input dialogs to specify opposing pedestrian movements. 035328_PMHC_EmNjAvenue001_Councll5328_106_Iraffic.dox 55

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HDVals		VEL TIME	Travel Travel Total Travel Distance Tot.Trav. Seeed Distance Time Dem Flows Arv Flows Time km/h ustance the veh-km/h veh-km/h veh-h/h	57.5 710.0# 44.4# 1.5 1.5 0.0 59.8 1010.0# 60.8# 1063.2 1063.2 17.8	59.1 1010.0# 61.5# 265.8 265.8 4.5 55.7 710.0# 45.9# 3.7 3.7 0.1	42.4 714.3# 60.7# 30.8 30.8 0.7 41.9 714.3# 61.4# 11.3 11.3 0.3	58.9 995.8# 60.9# 1376.3 1376.3 23.4	"Running Speed" is the average speed excluding stopped periods. Travel Time values include cruise times and intersection delays including	acceleration, deceleration and idling delays. # Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.		n Negn App Exit Downstr ed Dist Dist Downstr
egotiation and Travel Data ad AM 2039 Developed GHDVals	Controlled Intersection	TRAVEL DISTANCE AND TRAVEL TIME	Running Speed km/h	55 59.8	6.0 6.0 9.0	48.1 47.5	59.2	rerage spee le cruise t	on and idli cavel Time or user-spe	VIA	Negn Negn Redius Socod
on and ⁻ 2039 De	olled In	L DISTAN	Turn	(South) L2 T1	(North) Tl R2	ц2 В2		a the av	eleratio e and Tr stance o	NEGOTIATION DATA	
Movements Intersection Negotiati Site: Emily Road AM	Site ID: 101 Give-Way Sign Contro	TRAVEL SPEED, TRAVEI	From To Approach Exit	south: Koala Street West North	North: Koala Street South West	West: Emily Avenue North South	ALL VEHICLES:	"Running Speed" is Travel Time values	acceleration, deceleration and idling delays. # Travel Distance and Travel Time values inc. on the Exit Distance or user-specified Down	INTERSECTION NEGOTIZ	Ton To

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15.7 500 200 NA 10.0 500 500 NA	10.0 500 500 NA. 10.4 500 200 NA	15.7 200 500 NA	wnstream Distance does not apply if: Duit is an interval leg of a network "Program" option was specified Distance specified was greater than the Exit Negotiation Distance Distance specified was greater than the exit leg length	Some Negotiation Radius, Speed or Distance values are user specified. VEMENT SFEEDS AND GEOMETRIC DELAY	Queue Mova-in Gaom		5.5	0.2 0.0	11.8 5.5 11.8 5.4
 20.2	60.0 17.2	20.2	Downstream Distance does not apply if: - Evis an internal leg of a network - "Program" option was specified - Distance specified was greater than - Distance specified was greater than	or Dist AY	Speeds	Cruise km/h	60.0 60.0	60.0 60.0	60.0 60.0
) 10.0) 6.6	10.0 6.6	oes not leg of a speci was les was gre	Speed RIC DEI	Exit Speeds		20.2 60.0	60.0 17.2	20.2
South: Koala Street (South) West L2 North T1	North: Koala Street (North) South T1 West R2	L2 R2	wnstream Distance does not app Evit is an internal leg of a n "Program" option was specified Distance specified was greater Distance specified was greater	Some Wegotiation Radius, Speed or MOVENENT SPEEDS AND GEOMETRIC DELAY	App. Speeds	N∈gn km/h	Street (South) 60.0 20.2 60.0 60.0	Street (North) 60.0 60.0 60.0 17.2	20.2 17.2

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Tot.Trav. Tot.Trav. Aver. Distance Time Speed (veh-km/h) (veh-h/h) (km/h) 57.5 59.8 59.1 42.4 for all Movement Classes. 0.0 4.5 0.3 0.541* 0.541* Deg. Satn 0.148 0.148 0.184 1.5 1063.2 30.8 11.3 × 265.8 3.7 Prac. Spare Cap. \$ 818 564 335 335 Perf. 0.03 4.57 1.14 shown Prac. Deg. Satn Xp 0.98 0.98 0.98 0.80 0.0 40.1 14.7 3.3 Total Stops анс Total Cap. veh/h 4 1946 1783 36 235 86 Capacity parameters Eff. Stop Rate 0.00 0.93 0.01 ID: 101 Way Sign Controlled Intersection Movement Adjust. Flow h pcu/h 0 1055 00 1053 Aver. Delay (sec) 14.2 21.5 5.6 0.1 0.6 n Total Total Av Delay Delay De (veh-h/h) (pers-h/h) (s) Flow veh/h Opng 1 (South) 2 0 3 0 MOVENENT CAPACITY PARAMETERS 0 1055 1053 1322 (South) 0.00 0.03 (North) 0.05 0.03 (North) 0.20 Arv Flow veh/h Maximum degree of Combined Movement (Street (263 5 Koala Street (9 L2 # 2 T1 # 1053 2 1053 43 Koala Street (L2 0.00 0 T1 0.03 0 Koala Street Tl 0.04 R2 0.02 NOVENENT PERFORMANCE Avenue Avenu 0.17 0.09 Mov Cl. Koala Tl # R2 # + West: Emily / 10 L2 # 12 R2 # Emily L2 R2 Turn Turn

South:

MoV

51te Give-

ню

North: 8 9

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South: 1 2

Mov

* =#:

North: 8 9

West: 10 12

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Fuel Consumption, Emissions and Cost Site: Emily Road AM 2039 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

EMISSIONS AND COST (TOTAL) CONSUMPTION, FUEL

Mov Turn ID	cost Total \$/h	Fuel Total L/h	co2 Total kg/h	co rotal kg/h	HC Total kg/h	NOX Total kg/h
south: Koala Str 1 L2 2 Tl	reet (South) 0.71 377.55	h) 0.1 60.1	0.2 141.3	0.00	0.000	0.000
	378.26	60.2	141.5	0.18	0.010	0.027
Worth: Koala Str 8 Tl 9 R2	reet (North) 99.53 1.89	h) 15.7 0.2	36.8 0.5	0.05	0.003	0.008
	101.42	15.9	37.4	0.05	0.003	0.008
West: Emily Avenue 10 L2 12 R2	19. 7.	3.0 1.1	7.1 2.6	0.01		0.0
	26.45	4.1	9.7	0.01	0.001	0.003
INTERSECTION:	506.13	80.3	188.6	0.24	0.014	0.038
PUEL CONSUMPTION	', EMISSIONS	US AND	COST (RATE)	15)		
Mov Turn ID	Cost Rate \$/hm L	Fuel Rate /100km	co2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
south: Koala str l L2 2 Tl	reet (South) 0.48 0.36	5.7 5.7	133.0 132.9	0.17	0.010	
	0.36	5.7	132.9	0.17	0.010	0.026
North: Koala Str 9 Tl	cet (North 0.37	h) 5.9	138.6	0.18	0.010	0.029

5.7 133.0 5.7 132.9 5.7 132.9	CO HC Rate Rate g/km	NOX Rate g/km
5.7 132.9	0.17 0.010 0.17 0.010	0.026
Vorth: Koala Street (North)	0.17 0.010 0.026	0.02
8 TI 0.37 5.9 138.6 0.18	18 0.010	0.025

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Lane. Approach and Intersection Performance Site: Emly Road AM 2039 Developed GHDVals are by Sign controlled Intersection Give-Nay Sign Controlled Intersection Give-Nay Sign Controlled Intersection and Arrival WHV Basic Sat Delay (veh/h) Basic Sat Delay veh/h) Satt. x sec 300th: Roala Street (Suth) 1 1055 0 1950 0.541 0.1 1055 0 1950 0.541 0.1 1055 0 0.148 0.9 268 0 0.148 0.9 Rest: Emly Avenue Coll 268 0 0.184 16.1 268 0 0.184 16.1 39 0 0.184 16.1 39 0 0.184 16.1 ALL VENCES Frow HV AR Aver.

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Geom Control dig dic Stopd (Idle) di are derived from follow-up headway. ------ Delay (seconds/veh) Stop-line Delay Acc. Quening (lst 2nd Total Dec. Total MVUp dl d2 dSL dn dq dqm Queue values in this table are 95% queue (metres) Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes. e Driver Response Time sec 1.06 Average Queue Space m 7.00 Driver Characteristics Site: Emily Road AM 2039 Developed GHDVals Lane Delays Site: Emily Road AM 2039 Developed GHDVals Spacing m Saturation Flow and Saturation Neadway 12.71 Site ID: 101 Give-Way Sign Controlled Interaction Site ID: 101 Give-Way Sign Controlled Intersection Min Del dm South: Koala Street (south) 1 NA - Continuous Movement North: Koala Street (North) 1 NA - Najor Road Movement Frog. Factor Satn Hdwy sec 2.36 % Arv During Green 3atn Flow veh/h West: Emily Avenue 1 19.4 1525 Go to Table Links (Top) Go to Table Links (Top) Satn Speed km/h Deg. Satn M 1 19. LANE DELAYS Lane No. Lane No. ł 1

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				0.1					0.0	۲.9	
North: Koala Street (Worth) 1 0.148 NA NA	reet (North) NA NA	0.	6 0.8	_	0.8	0.3	0.5	0.0	0.5	0.1	6.0
West: Emily Avenue 1 0.184 NA	nue NA NA	A 8.6	6 10.4	0.2	10.6	3.2	7.4	0.1	7.3	5.5	16.1
sIDRA Standard Delay Model 1s used.	Jelay Mod	el 1s us		ntrol	Control Delay is the sum of	the s		Stop-line Delay	ne Del	чZ	
and Geometric Delay. dm: Minimum delay for gap acceptance cases dSL: Stop-line delay (=d1+d2) dSL: Stop-line delay (=d1+d2)	elay. ay for ga ielay (=di)-start dé	p accept 1+d2) elay for	ance ca: all vel	ses hicles	dneneq	and un	queued				
dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)	ay (the p vy and que	art of t tue move	he stop -up dela	-line (ay)	delay th	lat inc	ludes				
dqm: Queue move-up delay ddm: Queue move-up delay dig: Seometric delay dig: Control delay	up delay ay (stopp ielay ay	tlb1) be	ng) tim	ם א ש	ear-zero	s peed	â				
Go to Table Links (Top)											
Lane Queues Site: Emily Road AM 2039 Developed GHDVals	M 2039 D	eveloped	d GHDV	als							
Site ID: 101 Give-Way Sign Controlled Incersection	rolled I	ntersect	lon								
BACK OF QUEUE (VEHICLES)	(ICLES)										
Deg. & Arv	V Prog.	Ovefil.		Back of (Queue (v	(veh)	Queue Stor.	tue Stor. Satio	Prob.	Prob.	1.,1
			TQN	Nb2	QN	958	Av.	95 8	4 a 0 T O T O		
South: Koala Street (South)	et (South	(q									1
Koala 148	set (Nort) NA	h) 0.0	0.1	0.0	0.1	0.2	00.00	0.00	0.0		
West: Emily Avenue 1 0.184 NA	ie Na	0.0	0.2	0.0	0.2	0.6	0.01	0.02	0.0	NA	Ι.



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LARE SAUR PULLING No. X Green	Tohopa	ND	IdN	Idb2	ЧN	826	AULU 9	95 8	*nord	- ^^ ~
South: Noala Street (South)	c (South)									
North: Koala Street 1 0.148 NA	Street (North) NA NA	0.0	0.5	0.0	0.5	1.4	0.00	00.0	0.0	МД
West: Emily Avenue 1 0.184 NA	YN	1.0	1.6	0.0	1.6	4.1	0.01	0.02	0.0	NA
om trance crimes		í.								
(сяпотнях) славания (ландо	ALD LHAV)	ŝ								
Deg. % Arv Lane Satn During No. x Green	Frog.	Ovrfl. Queue No	Ovrfl. Cyc-Av. Queue Queue	. Gueue						
South: Koala Street (South)	c (South)									
North: Koala Street (North) 1 0.148 NA NA	c (North) NA	0.0	0.1	0.1						
West: Emily Avenue 1 0.184 NA	NA	0.0	0.2	0.3						
OTHER QUEUE RESULTS (DISTANCE)	(DISTANC	(2)								
Deg. % Arv Tene Sato During	Prog. Factor		Ovrfl. Cyc-Av.	- Cueue						
м			Nc	95%						
South: Koala Street (South)	(South)									
North: Noala Street (North) 1 0.148 NA NA	c (North) NA	0.0	0.4	0.7						
West: Emily Avenue 1 0.184 NA	NA	۲.0	1.2	2.2						
Go to Table Links (Top)										
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Frob. SL Ov. Prob. Bleck Queue Stor. Ratio

Back of Queue (m) Ovrfl. Queue % Arv Prog. During Factor Deg. Deg. No. 1 Deg. 1

	Queue 95%		0.1	0.3		Queue 95%		0.7	2.2
	Cyc-Av.		0.1	0.2		Cyc-Av.		0.4	1.2
6	Ovrfl. Queue No		0.0	0.0	(i)	Ovrfl. Queue No		0.0	1.0
(VEHICLES)	Frog. Factor	(South)	(North) NA	AN	(DISTANCE)	Frog. Factor	(South)	(North) NA	NA
RESULTS	% Arv During Green	a Street	NA NA	Avenue NA	STIDSER	% Arv During Green	a Street	NA NA	Avenue NA
QUEUE	Deg. Satn x	Koal	1: Koala D.148	: Emily 0.184	a anano	Deg. Sato X	Koal	1: Koala 0.148	. Emily 0.184
OTHER	Lane No.	South:	North: 1 0	West	OTHER	Lane No.	South:	North: 1 0	West: 1

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ORDINARY COUNCIL

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l															
				100%		0.2	0			100%		1.6	- 4 1 00		l
			(veh)	98 8		0.2	0.6		(metres	88 01		1.5	4 5		
als			Queue	958		0.2	0.6		Queuc	95 8		1.4	4.1		als
I GHDV	uo		Percentile Back of Queue (veh)	\$ 06		0.2	0.5		Percentile Back of Queue (metres)	90 8		1.2	3.5		I GHDV(
/eloped	ersecti	CLES)	ntile E	858		1.0	9.0	ANCE)	ntile E	858		1.0	D. E		/eloped
is 039 Dev	led Int	IHEN) S	Perce	708	(South)	(North) 0.1	0.9	S (DIST	Perce	70%	(South)	(Worth) 0.7	2.1		039 Dev
arcentile Id AM 2	Control	CENTILE		50%	Street	Street 0.1	wenue 0.2	CENTILE		50%	Street	Street 0.5	wenue 1.6	विव	d AM 2
Lane Queue Percentiles Site: Emily Road AM 203	Site ID: 101 Give-Way Sign Controlled Intersection	LANE QUEUE PERCENTILES (VEHICLES)	Deg.	X	South: Koala Street	North: Koala Street (North) 1 0.148 0.1 0.1	West: Emily Avenue 1 0.184 0.2	LANE QUEUE PERCENTILES (DISTANCE)	0 0	X			West: Emily Avenue 1 0.184 1.6	e Links (T	Lane Stops Site: Emily Road AM 2039 Developed GHDVals
Lane Queue Percentiles Site: Emily Road AM 2039 Developed GHDVals	Site ID: 101 Give-Way Sign	LANE QU		No.	South:	North: 1	West: 1	LANE QU		No.	South:	North: Koala 1 0.148	West: 1	Go to Table Links (Top)	Lane Stops Site: Emily F

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Site ID: 101 Give-Way Sign Controlled Intersection

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he2	p Rate I . Overall 9 h	otal Move-up tops Rate H hqm	buccu local love-up Queue Rate Move-ups hqm Hqm	Prop. Queued Pq	Aver. Num. of Cycles to Depart
South: Koala Street (South) 1 0.541 NA NA 0.00	0.00 0.00	1.3			
Narth:Koala Steet (North) 1 0.148 NR NR 0.00 0.00 0.01 0.01 3.4 0.00 0.0 0.07 0.07	0.01	3.4 0.00	0.0	0.07	0.07
West: Emily Avenue 1 0.184 NA NA 0.82 0.01 0.11 0.93		54.8 Q.Q3	1.5	0.82	0.84
hig is the average value for all movements in a shared lane	n a shared l	hig is the average value for all movements in a shared lane hom is average value move-up rate for all vehicles graved and unovered	р		

Flow Ra

loped GHDVals Origin-Destination Flow Rates (7 Site: Emily Road AM 2039 Deve

Site ID: 101 Give-Way Sign Controlled Intersection

TOTAL FLOW RATES for All Movement Classes (vch/h)

From SOUTH To:	M	Ν	
Turn:	I.2	Ë	LOL
Flow Rate	2.1	1052.6	1054.7
&HV (all designations)	0.0	0.0	0.0
From NORTH TO:	v	8	
	Ē	82	LOL
Flow Rate	263.2	5.3	268.4
%HV (all designations)	0.0	0.0	0.0
From WEST To:	N	n	
Turn:	51	R2	LOL
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58.9 15.8 43.2 Flow Rate SHV (all designations)

Flow Rates (veh/h) based on the following input specifications:

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input spu Teak Flow Period = 30 minutes Teak Plow Period = 30 minutes Flow Seriod = 30 minutes Arrival Flow Sates may be less than Demand Flow Rates if capacity constraint applies . network analysis

ų,

Go to Table Links (Top)

Origin-Destination Flow Rates by Movement Class Site: Emily Road AM 2039 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

FLOW RATES for Light Vehicles $(\, veh/h)$

Turn:	E2	Π	TOT
Flow Rate	2.1	1052.6	1054.7
Mov Class 🖁	100.0	100.0	100.0
Scale	1.00	1.00	'
Peak Flow Factor Residual Demand	0.0	0.0	0.0
From NORTH To: Turn:	νĘ	м Сы	TOT
Flow Rate	263.2	5.3	268.4
- H	100.0	100.0	100.0
Flow Scale	1.00	1.00	'
Peak Flow Factor	0.95	0.95	I
Residual Demand	0.0	0.0	0.0
FYOM WEST TO:	N	n.	
Turn:	12	R2	TOT
Flow Rate	43.2	15.8	58.9
	100.0	100.0	100.0
Flow Scale	1.00	1.00	'
Peak Flow Factor	0.95	0.95	1
Residual Demand	0.0	0.0	0.0

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Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Time for Volumes = 60 minutes Peak Plow Pariod = 30 minutes Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

Go to Table Links (Top)

Lane Flow Rates Site: Emily Road AM 2039 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

RATES AT STOP LINE (veh/h) FLOW LANE

(u/uan) ANTH ANTS IN	W N L2 TI TOT	2.1 1052.6 1054.7 2.1 1052.6 1054.7	2.1 1052.6 1054.7	S W TI R2 TOT	263.2 5.3 268.4 263.2 5.3 268.4	263.2 5.3 268.4	N 5 L2 R2 TOT	43.2 15.8 58.9 43.2 15.8 58.9	43.2 15.8 58.9
LANE FLOW HATES	From SOUTH To: Turn:	Lane 1 LV Total	Approach	From NORTH To: Turn:	Lane 1 LV Total	Approach	From WEST To: Turn:	Lane l LV Total	Approach

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EXIT LANE FLOW RATES 036328_PMHC_EmityAvenue01_Council6328_106_Traffic.docx 68

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ratances exemps summary Site: Emily Road AM 2039 Developed GHDVals	Site ID: 101 Give-Way Sign Controlled Intersection	Basic Farameters: Intersection Type: Unsignalized - Give Way Driving on the lett-hand side of the road Input data specified in Metric units Model Defaults: Mew South Wales Model Defaults: New South Wales Feek Filow Feridd (for performance): 30 minutes Unit time (for volumes): 60 minutes Sings frandard Delay model used Sings standard Delay model used Outeue percentile: 95%	Go to Table Links (Top)	Diagnostics Site: Emily Road AM 2039 Developed GHDVals	site ID: 101 Give-Way Sign Controlled Intersection	Lane Flow-Capacity Iterations:	site Model Variability Index (Iterations 3 to N): 0.0% Number of Iterations: 3 (Maximum: 10)	Other Diagnostic Messages (if any):	Go to Table Links (Top)
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Model Scenario: PM Peak Hour, Year 2019, Pre-Developed

 Vertee: 101 [Emily Road PM 2019 Not Developed
 Vertee
 Vertee DETAILED OUTPUT GHDVals]

New Site Site Category: (None)

Sign Control

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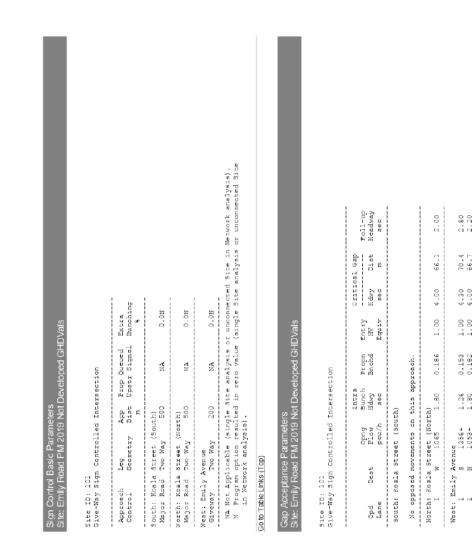
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Mitwovements Intersection Negotitation and Travel Data Movement Capacity and Performance Parameters Fuel Consumption, Emissions and Cost In Flow Rates Origin-Destination Flow Rates (Total) Origin-Destination Flow Rates by Movement Class Lane Flow Rates Lancs Lancs Performance and Capacity Information Lanc, Approach and Intersection Performance Driver Characteristics Sign Control Sign Control Basic Parameters Gap Acceptance Parameters #=Other Parameter Settings Summary Diagnostics Lane Queues Lane Queue Percentiles Lane Stops Giveway / Yield (Two-Way) OUTPUT TABLE LINKS

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Values in this table are adjusted for movement classes in the entry stream. Use the Pedestrians and Priorities input dialogs to specify opposing pedestrian movements. + Percentage of exiting flow included in opposing vehicle flow

Go to Table Links (Top)

Movements

Intersection Negotiation and Travel Data Site: Emily Road PM 2019 Not Developed GHDVals

site ID: 101
Give-Way Sign Controlled Intersection

TRAVEL DISTANCE AND TRAVEL TIME TRAVEL SPRED,

From To Approach Exit	Turn	Running Speed km/h	speed km/h	Distance	Time 8	Total Travel Distance Dem Flows Arv Flows Veh-km/h veh-km/h	. Distance Arv Flows veh-km/h	Tot.Trav. Time veh-h/h
South: Koala Street (South) West L2 North T1	et (South) L2 T1	57.5 59.7	57.5 59.7	710.1# 1010.1#	44.5# 60.9#	9.0 1063.2	9.0 1063.2	0.2 17.8
North: Koala Street (North) South T1 West R2	et (North) T1 R2	57.8 54.1	55.5 51.2	1010.0# 710.0#	65.6 4 49.9 4	265.8 23.9	265.8 23.9	4.8 0.5
West: Emily Avenue North South	е Г.2 R2	48.3 47.7	42.6 42.1	713.9# 713.9#	60.44 61.14	3.0 1.5	3.0 1.5	0.0 0.0
ALL VEHICLES:		59.2	58.6	\$5°866	61.3#	1366.4	1366.4	23.3

delays including intersection cruise times and ir and idling delays. values include n, deceleration Travel Time va acceleration, Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

-##

INTERSECTION NEGOTIATION DATA

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From Approach	To Exit	Turn	Negn Radius M	Negn Speed km/h	Negn Dist m	App Dist m	Exit Dist m	Downstr Dist m
South: Koala	I 2	(South) L2 T1	10.0 s	20.2 60.0	15.7 10.0	5 00	200	AN
North: Koala	1 0	(North) T1 R2	6.9 9	60.0 17.2	10.0 10.4	200	200	en En
West: Emily	Avenue North South	L2 R2	10.0 6.6	20.2 17.2	15.7 10.4	200	500	AN
NA Downstream - Exit is a - "Program" - Distance - Distance	Wnstream Dis Exit is an i "Program" op Distance spe Distance spe	<pre>Distance does n an internal leg " option was spc specified was g</pre>	of of cif rea	ដុំង ជុំរុំ	· · · · · · · · · · · · · · · · · · ·	gotia leg		Distance
Some Negot	Negotiation	Radius,	Speed or	r Distance	nce values	are	user ab	specified.
NOVENENT SPI	SPEEDS AND	GEOMETRIC	IC DELAY	24				
>	1 0.	Speeds Feeds		00 L 11	Queue Move-up Speed	Geom Delay		
ID Turn	h/h		icm/h lic	ltm/h	d/h	200		

5.5

60.0 60.0

20.2

(South) 20.2 2 60.0 6

: Koala Street () 12 60.0 20 Tl 60.0 60

MOV ID T South: - C1 5.4

1.4

60.0 60.0

60.0 17.2

(North) 60.0 17.2 1

North: Koala Street (North: Koala Street (North: 8 T1 60.0 60

5.5

11.7 11.7

60.0 60.0

20.2

20.2 17.2

West: Emily Avenue 10 L2 60.0 12 R2 60.0

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Movement Capacity and Performance Parameters Site: Emily Road PM 2019 Not Developed GHDVals

ATTACHMENT

Site ID: Give-Way	101 Sign	Contro	lled In	Controlled Intersection	ion						
MOVENER	MOVENENT CAPACITY PARAMETERS	ITY PA	RAMETER	ين ا							
I VCM II	Turn Nov Cl.	Arv Flow vch/h	d	opng Movement Adjust Flow Flow veh/h pcu/h		Total P1 Cap. D6 St vch/h	Prac. Deg. Satn Xp	Prac. Spare Cap.	Sach. Sach		
south: 1 2	Koala S L2 # T1 #	treet 13 1053	(South) 0 0	00	19	23 0. 1926 0.	0.98	5 7 9 6	0.547* 0.547*		
North: 8 9	Koala S T1 ± R2 ±	street 263 34	(North) 0 1065	1065		1208 0. 155 0.	89.0 89.0	350	0.218		
West: E 10 12	Emily Avenue 12 # R2 #	en ue 2.4	1053 1356	1053	-1	861	0.80	3662 3662	0.021		
* Ma # Com MOVENEN	* Maximum degree # Combined Movemen MOVENENT PERFORMANCE	degree of Movement ORMANCE	45	saturation apacity par	on parameters parameters	0 भ ह	unous	for al	all Movement	ment Classes.	10 10
MOV I ID	Turn Total Delay [veh-h/	al ay (p	n Total Total Delay Delay (veh-h/h)(pers-h/h)	Aver. Delay) [sec)	Eff. Stop Rate	Total Stops	Perf. Index		Tot.Trav. Distance (veh-km/h)	Tot.Trav. Time [veh-h/h]	Aver. Speed (km/h)
south: 1 2	MDALA Street 12 0.02 Tl 0.03		(South) 0.02 0.03	5.6 0.1	0.01	0.1	1 0.17 5 17.79		9.0 1063.2	0.2 17.8	57.5 59.7
North: 8 9	Koala Str Tl 0.26 R2 0.15	t t	(North) (.31 0.18	3.5 15.9	0.09	23.0	0 5.31 9 1.05		265.8 23.9	4.8	55.5
West: E 10 12	Emily Aven L2 0.02 R2 0.01	ę	0.02	13.3 21.0	16.0 16.0	ω.1 8.6.	8 0.11 9 0.07		3.0 1.5	1.0	42.6 42.1
0:\5328_PI	035328_PMHC_EmityAvenue/01_Council/5328_106_Traffic.docx 75	Avenuel	01_Counc	il\5328_10	6_Traffic	cdocx 79					

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Fuel Consumption, Emissions and Cost Site: Emily Road PM 2019 Not Developed GHDVals

Go to Table Links (Top)

101 Sign Controlled Intersection Site ID: Cive-Way

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov Turn ID	cost Total \$/h	Fuel Total L/h	co2 Total kg/h	co Total kg/h	нс Total kg/h	NOX Total kg/h
South: Koala St 1 L2 2 T1	Street (South) 379.31	h) 0.5 60.4	1.2	0.00	0.000	0.000
	383.62	60.9	143.1	0.19	0.010	0.028
North: Koala St 8 Tl 9 R2	Street (North) 122.76 15.07	h) 18.3 1.8	43.1 4.2	0.05	0.003	110.0 100.0
	137.83	20.1	47.3	0.06	0.004	0.012
West: Emily Ave 10 L2 12 R2	Avenue 1.88 0.94	0.3	0.7	0.00	0.000	0.000
	2.81	0.4	1.0	0.00	0.000	0.000
INTERSECTION:	524.26	81.4	191.4	0.25	0.014	0.040

EMISSIONS AND COST (FATE) FUEL CONSUMPTION,

нс Rate g/km CO Rate g/len co2 Rate g/km Fuel Rate L/100km Cost Rate \$/km Turn VCM UI ļ

NOX Rate g/km

0.026

0.010

0.17

133.7 133.5

5.J

KDala Street (South) L2 0.48 T1 0.36

south:

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Util 8	100	100	100
	0.547	0.218	12D.D
Cap Cap	(South) 1949	ala Street (Worth) 297 52 1363 0.218 100	enue 6 297 0.021 100
cap veh/h	reet 1065	reet 52	9 Due
Arv Flow Cap Cap Veh/h veh/h veh/h	South: Noala Street (South) 1 1065 1065 1949 0.547 100	North: Koala Street (Worth) 1 297 52 1363	West: Emily Avenue 1 6 6
Lane Iocal No. Arv Flow veh/h	South: 1	North: 1	West: E l

Go to Table Links (Top)

Lane, Approach and Intersection Performance Site: Emily Road PM 2019 Not Developed GHDVals

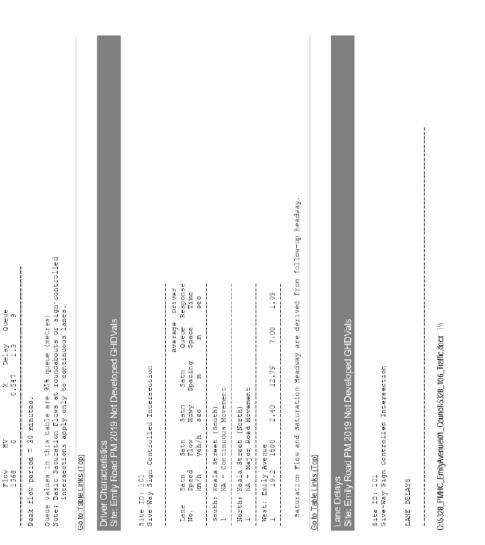
Site ID: 101 Give-Way Sign Controlled Intersection

No.	Arrival Flow (veh/h)	γHβ	Adj. Basic Satf.	sad sad	Aver. Delay sec	Longest Queue M	Lane Length M
South: 1	Koala 1065	treet	Street (South) 0 1950	0.547	0.2		500
	1065	D		0.547	0.2		
North: 1	Koala 297	treet 0	Street (North) 0	0.218	4.9	Φ	500
	297	0		0.218	4.9	a	
West: 1	Emily Avenue 6	enue 0		0.021	15.9	0	200
	u	0		0.021	15.9	0	
ALL VEHICLES Tota	HICLES Total	oP		Маж	Aver.	Маж	

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Geom Control dig dic 15.9 9.9 0.2 5.5 9.0 Delay Stopd (Idle) di 7.2 0.1 2.7 Stop-line 0.0 0.0 Mest: Emily Avenue 1 0.021 NA Avenue SIDRA Standard Delay Model is used. Control Delay is the sum of Stop-and Gennetric Delay (and the used. Control Delay is the sum of Stop-dni Anisum delay for gap acceptance cases dni Anisum delay (callay for all vhitoles queued and unqueued dist Stop-line delay (callay for all vhitoles queued and unqueued dri Stopered delay for the part of the stop-line delay that includes dq: Oueuing delay (the part of the stop-line delay that includes dq: Stopered delay (adqueed (idling) time at near-zero speed) dd: Scoperd delay (stopped (idling) time at near-zero speed) dd: Control delay 2.7 Delay (y Acc Dec 1.6 Delay Total dSL 4.3 -line 2nd 0.1 0.1 Stop⁻ lst dl 4.2 э. о Min Del Frog. Factor (North) NA (South) % Arv During Creen Koala Street (D.547 North: Koala Street 1 D.218 NA Deg. Satn M Lane No. South: 1 1

Go to Table Links (Top)

Lane Queues Site: Erniy Road PM 2019 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

OF QUEUE (VEHICLES) BACK

	Deg.	8 ALV	8 Arv Prog.		Bac	ik of o	ueue (reh)	Oueue	Stor.	Prob.	Prob.
Lane No.	Satn M	Dur ing Green	Factor	Queue	IcN	Nb2	No.1 Nb2 No	Nol Nb2 No 958		58 958	Ratio Block S Av. 958 %	SL OV.
South	Koal	South: Koala Street (South)	South: Koala Street (South)									
North	North: Koala 1 0.218	North: Noala Street (North) 1 0.218 NA NA	(North) NA	0.0	0.5	0.0	0.5	1.2	0.01	0.02	0.0 0.5 0.0 0.5 1.2 0.01 0.02 0.0 NA	NA
West:	West: Emily Avenu	West: Emily Avenue	venue		0	0	4		6	00	<	

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BACK OF QUEUE (DISTANCE)

		8 ALV			Bac	k of C	Back of Queue (m)		Queue	Queue Stor.	Prob. Prob.	Prob.
No.		Green Green	ractor	No	ToN	Nb2	No.1 Nb2 Nb	958	AV.	AV. 95%		7
South:	Koala	South: Koala Street (South)	South: Koala Street (South)									
North: 1 0	Koala .218	North: Koala Street (North) 1 D.218 NA NA	North: Koala Street (North) 1 0.218 NA NA	0.2	3.2	0.2	3.2 0.2 3.4 8.5 0.01 0.02	8.5	0.01	0.02		0.0 NA
West: 1 0	West: Emily Avenue 1 0.021 NA	West: Emily Avenue 1 0.021 NA	West: Emily Avenue 1 0.021 NA NA 0.0	0.0	0.2	0.0	0.0 0.2 0.0 0.2 0.4 0.00 0.00	0.4	0.00	0.00	0.0	0.0 NA

0.4 0.2 0.0 0.2 0.0 ΝA : Emily Avenue 0.021 NA

OTHER QUEUE RESULTS (VEHICLES)

Onene	95%		0.6	0.0	
Ourfl. Cyc-Av. Queue Ourue	Nc		0.4	0.0	
Ourfl. Ourur	0 N		0.0	0.0	
Prog. Factor		(South)	(North) NA		
% Arv During	Gre en	South: Koala Street (South)	North: Koala Street (North) 1 0.218 NA NA	Avenue NA	
Deg. Satn	н	Koala	h: Koala 0.218	West: Emily Avenue 1 0.021 NA	
Lane	No.	South:	North: 1 C	West: l C	

OTHER QUEUE RESULTS (DISTANCE)

0.2 4.5 2.5 0.1 Ovrfl. Oueue No 0.2 0.0 South: Koala Street (South) North: Koala Street (North) 1 0.218 NA NA Frog. Factor ¥2 % Arv During Green West: Emily Avenue 1 0.021 NA Deg. Satn × Lane No.

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Lane Queue Percentiles Site: Emily Road PM 2019 Not Developed GHDVals

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No.	sacn:		Percentile	atile F	Back of	Queue (veh)	(veh)	
	×	50%	70%	82 8	90 %	95 8	88 8 9	100%
South:	1: Koala	Street	(South)					
North 1	North: Koala 1 0.218	N Street 0.5	(North) 0.6	6.D	1.0	1.2	1.3	1.5
West: 1		Emily Avenue 0.021 0.0	0.0	0.0	0.1	0.1	0.1	1.0
0 E	ad Energ	RCENTILE	LANE QUEUE PERCENTILES (DISTANCE)	ANCE)				
			Percent11e		Back of	ouene ((metres)	
No.	un na Na Na Na	50%	70%	85%	\$06	95%	88 G	100%
South:	1: Koala	Street	(South)					
rth	North: Koala 1 0.218	Street 3.4	(North) 4.4	6.2	7.2	8.5	6.4	10.2
West: l		Emily Avenue 0.021 0.2	0.2	6.0	0.4	0.4	0.5	0.5

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Go to Table Links (Top)				
Flow Rates				
Origin-Destination Flow Rates (Total) Site: Emily Road PM 2019 Not Developed GHDVals	s (Total) ot Develo	ped GHI	Vals	
Site ID; 101 Give-Way Sign Controlled Intersection	itersecti	uo		
TOTAL FLOW RATES for All Movement Classes (weh/h)	vement C	lasses (veh/h)	
From SOUTH To: M N N Turn: L2 T1 TOT Flow Rate 12.6 1055.3 MTV (all designations) 0.0 0.0 0.0	м 12.6 0.0	W N I TOT 12.6 1052.6 1065.3 0.0 0.0 0.0	TOT 1065.3 0.0	
From NORTH To: Turn: Flow Rate	5 11 263.2	м В2 33.7	TOT 296.8	
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Lane Stops Site: Emily Road PM 2019 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

Lane No .	Deg. Satn x	% Arv During Green	Prog. Factor		fective he2	Stop Geom. hig	Effective Stop Rate Geom. Overall hel h=2 h1g h	Total Stops H	Cueue Total Move-up Stops Rate H hqm	Total Queue Move-ups Hqm	Prop. Queued Pq	Aver. Num. of Cycles to Depart
outh:	South: Nogla Stree 1 0.547 NA	South: Noala Street (South) 1 0.547 NA	(South) NA			10.0	0.01 0.01 7.5	7.5				
orth:	North: Koala Stree 1 0.218 NA	Street NA	North: Koala Street (North) 1 0.218 NA NA	0.04	0.00	0.04	0.04 0.00 0.04 0.09		0.04	25.9 0.04 11.4 0.37	0.37	0.41
t:	West: Emily Avenue 1 0.021 NA	Avenue	MA		0.00	0.12	16.0	5.7	0.79 0.00 0.12 0.91 5.7 0.00	0.0	0.80	0.80

Go to Tat

Flow

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From WEST To: Turn:	N L2	ດ ເ	Ē			
Turn:	12	C E	LOL			
		ŝ	101			
Flow Rate	4.2	2.1	6.3			
SHV (all designations)	0.0	0.0	0.0			
Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:	Arrival Fl	ow Rates	(veh/h) based	d on the following	input spec	ifications:
Unit Time for Volumes = 60 minutes	minutes					
<pre>Feak Flow Period = 30 minutes</pre>	Ces					
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.	Peak Flow	Factor,	'low Scale, GI	rowth Rate) are inc	cluded.	
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in	ess than D	emand Fl	w Rates if ca	apacity constraint	applies in	
network analysis.						

Origin-Destination Flow Rates by Movement Clas Site: Emily Road PM 2019 Not Developed GHDVi

Go to Table Links (Top)

Site ID: 101 Give-Way Sign Controlled Intersection

FLOW RATES for Light Vehicles (veh/h)

al\5328_10	nue/01_Count	0:\6328_PMHC_EmilyAvenue\01_Council\5328_106_Traffic.docx
2.1 100.0	4.2	Flow Rate Mov Class &
ы 1872 1872	N L2	From WEST To: Turn:
33.7 100.0 1.00 0.95 0.0	263.2 100.0 1.00 0.95 0.95	Flow Rate Mov Class % Flow Scale Peak Flow Factor Residual Demand
ы В Д	а. Г	From NORTH To: Turn:
1052.6 100.0 1.00 0.95 0.0	12.6 100.0 0.95 0.95	Flow Rate Mov Class & Flow Scale Peak Flow Factor Residual Demand
NLT	W L2	From SOUTH To: Turn:
	T1 T1 T1 T052.6 1052.6 10020 1.0000 1.000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.	W W N J2 6 105.5 100.0 100.0 1.00 100.0 0.00 0.100 0.00 0.0 0.00 0.0 0.00 1.00 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.

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Peak Flow Factor 0.95 0.	. 95
Residual Demand 0.0 0	0.0 0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Time for Volumes = 60 minutes Peak Flow Period = 30 minutes Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in netWork analysis.

Go to Table Links (Top)

Lane Flow Rates Site: Emily Road PM 2019 Not Developed GHDVals

Site ID: 101 Give-Way Sign

Controlled Intersection

FLOW PATES AT STOP LINE (veh/h) LANE

06_Traffic.d	Incil\5328_1	enue/01_Cou	0:\5328_PMHC_EmilyAvenue\01_Council\5328_106_Traffic.docx
	2.1		Abbroach
	2.1	4.4 1.1	Lane 1 LV TV
TOT	ም ሺ	N L2	From WEST To: Turn:
296.8	33.7	263.2	Approach
296.8 296.8	33.7 33.7	263.2 263.2	Lane l LV Total
TOT	м В 2	ωĘ	From NORTH To: Turn:
1065.3	1052.6	12.6	Approach
1065.3 1065.3	1052.6 1052.6	12.6 12.6	Lane l LV Total
TOT	N II	81	rrom south fo: Turn:

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EXIT LANE FLOW RATES	ATES			
Movement Class:	Νī	ΗV	TOT	
Exit: SOUTH Lane: 1 Total	265.3 265.3	**	265.3 265.3	
Exit: NORTH Lane: 1 Total	1056.8 1056.8	**	1056.8	
Exit: WEST Lane: 1 Total	46.3 46.3	**	46.3	
* Movement not allocated to the lane DOMNSTREAM LANE FLOW RATES FOR EXIT ROADS	Movement not allocated to the TREAM LANE FLOW RATES FOR EXIT	to th FOR E	te lane UT ROAI	
Movement Class:	TN	ΗV	TOT	1 64
Exit: SOUTH Lane: l Total	265.3 265.3	**	265.3 265.3	
Exit: NORTH Lane: 1 Total	1056.8 1056.8	* *	1056.8 1056.8	
Exit: WEST Lane: 1 Total	46.3 46.3	* *	46.3 46.3	- ee
* Movement not allocated to the lane	t allocated	to to	te lane	
Flow rates shown above a Unit Time for Volumes = Effects flow ferziod = 30 m Effects of Volume Factor Arrival Flow Rates may b network analysis.	above are Arri lumes = 60 mir = 30 minutes e Factors [Peal es may be less	re Arrival) 60 minutes inutes i (Peak Flor e less chan	Ll Flow ccs flow Fac tan Demi	Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Time for Volumes = 60 minutes Peak Thow Period = 30 minutes Effects of Volume Factors (pask Plow Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.
Go to Table Links (Top)	-			
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SIDRA INTERSECTION 8.0 | Copyright © 2000-2019 Akcelik and Associates Pty Ltd | sidrasolutions.com Organisation: KING & CAMPBELL PTY LTD | Processed: Monday, 11 March 2019 1.48.08 PM Project OA3328_PMHC_EmilyAvenue'22_Engineering/Emily Ave 50existing 2019-2039 GHDMaxValues/NoRale sip8 90°0 Site Model Variability Index (Iterations 3 to N): Number of Iterations: 3 [Maximum: 10) * Basic Parameters: Intersection Type: Unsignalised - Give Way Driving on the left-hand side of the road Input data specified in Merica units Nodel Defaults: Mew South Wales Feak Flow Period (for performence): 30 minutes Finit time (for volumes): 60 minutes. 57DRA Standard Delay model used FIDRA Standard Delay model used FIDRA Standard Delay model used Fuel of Structs based on: Delay (RTA NSW) Oueue percentile: 95% Diagnostics Site: Emily Road PM 2019 Not Developed GHDVals Parameter Settings Summary Site: Emily Road PM 2019 Not Developed GHDVals Site ID: 101 Give-Way Sign Controlled Intersection site ID: 101 Give-Way Sign Controlled Intersection Other Diagnostic Messages [if any]: Lane Flow-Capacity Iterations: Go to Table Links (Top) Go to Table Links (Top) other .

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Model Scenario: PM Peak Hour, Year 2019, Post-Developed

DETAILED OUTPUT

V Site: 101 [Emily Road PM 2019 Developed GHDVals]

New Site Site Category: (None) Giveway / Yield (Two-Way)

OUTPUT TABLE LINKS

Sign Control Sign Control Basic Parameters Gap Acceptance Parameters

Mimovements Intersection Negotitation and Travel Data Movement Capacity and Performance Parameters Fuel Consumption, Emissions and Cost

Lanes Lane Performance and Capacity Information Lane, Approach and Intersection Performance Driver Characteristics

Lane Queues Lane Queue Percentiles Lane Stops Ir Flow Rates

Origin-Destination Flow Rates (Total) Origin-Destination Flow Rates by Movement Class Lane Flow Rates

BTOther Parameter Settings Summary Diagnostics

Sign Control

Sign Control Basic Parameters Site: Emily Road PM 2019 Developed GHDVals

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ID: 101 Site

Intersection	
Controlled	
Sign	
Give-Way	

				ed Site in N e analysis o
Extra Bunching &	NO.O	NO.O	0.0N	r unconnect (single 51t
Prop Queued Upstr Signal	NA	MA	NA	NA NOT Applicable (single Site analysis or unconnected Site in N Program option resulted in Zero value (single Site analysis in Network analysis).
y Dist m	(South) 500	(North) 500		(single Si resulted j ysis).
Leg Geometry	Street Two Way	Street Two Way	Avenue Two Way	Wot Applicable (singl Program option result in Network analysis).
Approach Control	South: Koala Street (South) Major Road Two Way 50	North: Koala Street (North) Major Road Two Way 50	West: Emily Avenue Giveway Two W	NA Not App N Program in Netw

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Can Accentance Parameters	SITE: EMILY ROAD PINI 2019 DEVELOPED GHUVAIS	

Network analysis). or unconnected 51te

Site ID: 101 Give-Way Sign Controlled Intersection

Intra Bunch Propn Entry Critical day Bnchd HV Hdy sec Equiv sec	Inrea Propn Entry ang Bunch Propn Entry (ow Hday Bnchd HV au/h sec Equiv (south)	de	D1st	ł
Intra Bunch Propn Entry Idwy Bnchd HV sec Equiv	Intra Intra Bunc Propn Intry Hdny Bnchd HV sec Equiv tth)	cal G	E E	
Intra Sunch Propn Entry Idwy Bnchd HV sec Bnchd Equiv	Intra Bunch Propn Entry Hdwy Bnchd HV sec Equiv ith)	Critic	Hdwy sec	
Intra Bunch Propn Adwy Bnchd sec	Intra Bunch Propn Hdwy Bnchd sec tth		Entry HV Equiv	
Intra Bunch Jdwy sec	Intra Bunch Hdwy sec tth)		Pr opn Bn chd	
	png Low cu/h (Sout	Intra	Bunch Hdwy sec	
Stree			Dest	Koala
t Stree				1

Foll-up Headway sec

No opposed movements on this approach.

2.00 2.80 66.1 70.0 66.7 4.00 4.00 1.00 1.00 1.00 0.186 0.153 North: Noala Street (North) 1 w 1065 1.80 1.25 West: Emily Avenue 1 S 1365+ 1 N 1053+

Values in this table are adjusted for movement classes in the entry stream. Use the Pedestrians and Priorities input dialogs to specify opposing pedestrian movements. 035328_PMHC_EmMjAvenue001_Councll5328_106_Iraffic.dox 90

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l Data Ped GHDVals	ttion	TRAVEL DISTANCE AND TAAVEL TIME	uning Travel Travel Travel Distance Tot.Trav. Speed Speed Distance Time Dem Tlovs Arv Flows Time km/h km/h m s veh-km/h veh-km/h veh-h/h	57.5 57.5 710.1# 44.5# 9.0 9.0 0.2 59.7 59.7 1010.1# 60.5# 1063.2 1063.2 17.8	57.4 54.6 1010.1# 66.6# 265.8 265.8 4.9 53.5 50.1 710.1# 51.0# 30.6 30.6 0.6	48.3 42.7 714.2# 60.1# 3.8 3.9 0.1 47.7 42.3 714.2# 60.8# 1.5 1.5 0.0	59.0 58.3 996.3# 61.5# 1373.9 1373.9 23.6	"Running Speed" is the average speed excluding stopped periods. Travel Time values include cruise times and intersection delays including acceletation, deceletation and inding delays.	Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.
egotiation and Travel Data ad PM 2019 Developed GI	Controlled Intersection	DISTANCE AN	Running Speed Turn km/h	(South) L2 57 T1 59	(North) T1 57 R2 53	L2 48 R2 47	ы П	the average include cru	and Travel tance or use
Movements Intersection Negotiation and Travel Data Site: Emily Road PM 2019 Developed GHDVals	Site ID: 101 Give-Way Sign Contro	TRAVEL SPEED, TRAVEL	From To Poproach Exit	4	North: Koala Street South West		ALL VEHICLES:	"Running Speed" is the average speed excludin Travel Time values include cruise times and i acceletation, deceletation and idling delays.	# Travel Distance on the Exit Dist

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Negn Cruise km/h km/h 20.2 60.0 60.0 50.0 60.0 60.0 17.2 60.0	60.0 60.0 60.0	60.0 60.0 60.0	5.5 0.0	Delay sec	eo U
Negn km/h 60.0 117.2 20.2 20.2 20.2	h) 20.2 60.0 17.2 17.2			Speed km/h	Queue Move-up
Negn km/h 60.0 117.2 20.2 20.2 20.2	h) 20.2 60.0 17.2 17.2		60.0	kuise km/h	Speeds
	(South) (South) (North) 17.2	5 F.0	20.2	Negn C km/h	EX1t S

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Movement Capacity and Performance Parameters Site: Emily Road PM 2019 Developed GHDVals

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57.5 59.7 Tot.Trav. Tot.Trav. Aver. Distance Time Speed (veh-km/h) (veh-h/h) (km/h) 42.7 42.3 54.6 for all Movement Classes. 0.2 4.9 0.0 0.547* 0.547* Deg. Satn 0.241 0.024 9.0 1063.2 × 265.8 30.6 9.0 1.0 Prac. Spare Cap. \$ 6 L 6 L 3221 306 306 0.17 17.79 Perf. 5.54 0.14 shown Prac. Deg. Satn Xp 0.98 0.98 0.98 0.80 0.1 7.5 1 29.9 4.8 1.9 Total Stops анс Total Cap. veh/h 23 1926 179 218 87 Capacity parameters Eff. Stop Rate 16.0 10.0 0.11 ID: 101 Way Sign Controlled Intersection Movement Adjust. Flow h pcu/h 0 1065 00 1053 Aver. Delay (sec) 5.6 0.1 4.4 16.1 13.3 21.3 n Total Total Av Delay Delay De (veh-h/h) (pers-h/h) (s) Flow veh/h (South) 3 0 3 0 MOVENENT CAPACITY PARAMETERS 0png 0 1065 1053 1365 (South) 0.02 0.03 (North) 0.39 0.23 (North) 0.02 Arv Flow veh/h Maximum degree of Combined Movement (Street 263 43 1053 1053 Koala Street (L2 # 13 T1 # 1053 **и**я по Koala Street (L2 0.02 0 T1 0.03 0 Koala Street Tl 0.32 (R2 0.19 (NOVENENT PERFORMANCE Avenue Avenu 0.02 0.01 Mov Cl. Koala Tl # R2 # + West: Emily / 10 L2 # 12 R2 # Emily L2 R2 Turn Turn

South:

MoV

51te Give-

ню

North: 8 9

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Go to Table Links (Top)

South:

Mov

* =#:

н N

North: 8 9

West: 10 12

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Fuel Consumption, Emissions and Cost Site: Emily Road PM 2019 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

ala Street (south) 4.31 0.5 379.31 60.4 383.62 60.9 1 383.62 60.9 1 128.45 19.0		rotal kg/h	Total kg/h	Total kg/h
383.62 60.9 1 Koala Street (North) Tl 128.45 19.0	1.2 141.9	0.00	0.000	0.000
Koala Street (North) Tl 128.45 19.0	143.1	0.19	0.010	0.028
R2 20.24 2.4	44 5.6	0.05	0.004	0.012
148.69 21.3	50.1	0.06	0.004	0.013
West: Emily Avenue 2.33 0.4 10 12 12 2.33 0.4 12 R2 0.93 0.1	0.9	0.00	0.000	0.000
3.27 0.5	1.2	0.00	0.000	0.000
INTERSECTION: 535.57 82.7 10	194.4	0.25	0.015	0.042

	Fuel CO2 Rate Rate L/100km g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: Kcala Street (South) 1 12 0.48 5.7 2 Tl 0.36 5.7	133.7 133.5	0.17	0.17 0.010 0.17 0.010	0.026
0.36 5.7	5.7 133.5	0.17	0.17 0.010 0.026	0.026

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26 0.021 26 0.021 26 0.021 28 0.011 3 Bet L 26 0.011 26 0.011 26 0.011 20 0.01 20 0.01 20 0.01 20 0.01 20 0.01 20 0.02 20 0.02	26 0.021 26 0.021 18 0.011 18 0.011 18 0.011 18 0.011 18 0.011 18 0.011 18 0.011 18 0.011 18 0.011 19 0.01 10 0.0 1 10 0.0	9.8 229.9 0.26 0.021 9.8 229.9 0.26 0.021 9.8 229.9 0.26 0.011 6.0 141.5 0.18 0.011 6.0 Aver. Eff. 0.18 0.011 Aver. Eff. 0.18 0.011 Aver. Eff. 0.18 0.011 Aver. Eff. 0.18 0.011 25.0 0.01 0.2 0.01 5.0 0.11 1.5 10.8 5 5.0 0.5 10.5 5 5.0 0.5 10.5 5 5.0 0.5 10.5 5	0.078 0.078 0.078 0.078
Hoven 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	a 229.9 0.2 a 229.9 0.2 b 141.5 0.1 b 141.5 0.1 c 0 0.2 peed GHDVals 0.2 0.1 c 0 0.2 c 0 0.1 c 0 0.1 c 0 0.1 c 0 0.1 c 0 0.0	2 9.8 229.9 0.2 2 9.8 229.9 0.2 2 9.8 229.9 0.2 9 6.0 141.5 0.1 9 6.0 141.5 0.1 9 6.0 141.5 0.2 9 6.0 141.5 0.1 9 5.4 141.5 0.1 9 5.4 9.4 0.2 9 2.4 141.5 0.1 2.5 5.4 9.4 9.5 2.6 3.4 2.5 0.1 2.41 0.2 0.01 1. 2.41 5.0 0.1 1 2.41 5.0 0.1 1 2.41 5.0 0.11 1 1 2.41 5.6 0.91 0.1 1	0.021 0.021 0.021

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		200		500		500	Lence Length m			The capacity values of Continuous Lanes are obtained by adjusting the basic sturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.			
Max Queue 11	~	Г	11	П			Longest Queue m			re obtail rement ol 1.			
Aver. Delay 1.6	15.6	15.6	6.0	6.0	0.2	0.2	Aver. Delay sec	G	mance	Lanes al ade, mov pecifiec	100		100
Max x 0.547	0.024	0.024	0.241	0.241	0.547	0.547	Sat Sat	ersectio	in Perfor	cinuous idth, gr ies if s	0.024		0.241
				(North)		(South) 1950	Adj. Basic Satf.	led Inte	tersectic 019 Dev	of Cont lane wi le appl:		306	(Worth) 1270 306
8° 7 H	0	e nue 0	0		•		8 HV	ontrol	and In PM 20	ow for ow sca	values	enue 6 values	street (enue values
ALL VEHICLES Total Flow 1379	7	West: Emily Avenue 1	306	1.4	1065		Arrival Flow (veh/h)	Site ID: 101 Give-Way Sign Controlled Intersection	Lane, Approach and Intersection Performance Site: Emily Road PM 2019 Developed GHDvals	apacity ation fl ation fl		West: Emily Avenue 1	North: Koala Street (North) 1 306 42 1270 1 306 42 1270 West: Emily Avenue 1 7 6 306
121		t:		North: 1		South: 1	Lane No.	e ID e-Wa	EL P	ae c atur atur	а		th

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Geom Control dig dic Stopd (Idle) di are derived from follow-up headway. ------ Delay (seconds/veh) Stop-line Delay Acc. Quening (lst 2nd Total Dec. Total MVUp dl d2 dSL dn dq dqm Queue values in this table are 95% queue (metres) Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes. e Driver Response Time sec 1.07 Average Queue Space m 7.00 Driver Characteristics Site: Emily Road PM 2019 Developed GHDVals Lane Delays Site: Emily Road PM 2019 Developed GHDVals Spacing m Saturation Flow and Saturation Neadway 12.73 Site ID: 101 Give-Way Sign Controlled Interaction Site ID: 101 Give-Way Sign Controlled Intersection Min Del dm South: Koala Street (south) 1 NA - Continuous Movement North: Koala Street (North) 1 NA - Najor Road Movement Frog. Factor Satn Hdwy sec 2.37 % Arv During Green 3atn Flow veh∕h West: Emily Avenue 1 19.3 1518 Go to Table Links (Top) Go to Table Links (Top) Satn Speed km/h Deg. Satn M 1 19.3 LANE DELAYS Lane No. Lane No. ł 1

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Mest: The second	<pre>cet: Emily Area on 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.</pre>	9.1 15 used. 15 used. 12 12 12 12 12 12 12 12 12 12 12 12 12	11.1 Cont Cont Cont Cont 11.4	s cles d	0.1 0.0 10.1 3.2 6.9 0.0 6.9 5. Control Delay is the sum of Stop-line Delay cases vehicles queued and unqueued cop-line delay that includes iclay) ine at near-zero speed) ine at near-zero speed)	the su the su ind unc speed)	and the second s			
SIDRA Standard belay and geometric Delay dm: Minimum delay io dd: Ncoprimum delay io dd: Newroge stopesta dq: Queud delay (t dq: Queen moveup d dd: Stopped delay (t dig: Geometric delay di: Control delay di: Control delay (DTADELINKS (TOP)	<pre>v Model v Model v (cor gap a vy (=dl+d art dela the part the queue delay (stopped ay</pre>	1s used. 12 comptanc 12 of for al 10	Cont cont cont stop-1 clay time	s schea s at nea s t nea	lay is neued a lay tha tr-zero	the su the su speed)	21 or Indeted	top-11.	De l	≥n re
	Lane Queues Site: Emily Road PM 2019 Developed GHDVals site ID: 101 Give-Way Sign controlled Intersection BACK OF QUEUE (VEHICLES) Lane Seth Mark Partor Onthe Lane Seth Mark Partor Onthe	Ploped G rs ection Ovifl.	Back of	no je	Queue (veh)	(म	Queue Stor. Ratio	Stor.	Prob. Block	
	Lane Satn During Factor No. x Green South: Koala Street (South)	Ou cue	ToN	Nb2	QN	958	Ratio Av. 5	10 95 8	Block	SL Ov.
4 4	Journ: Noala Jureet (Journ) North: Koala Street (Worth) 1 0.241 NA NA	0.0	0.6	0.0	0.6	1.5	0.01	0.02	0.0	Ϋ́Ν
West: Emily Avenue 1 0.024 NA	9				0.0	1.0	0.00	0.00	0.0	NA

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		. Prog.	Ovrfl.		Back of Queue (m)	teue (m	<i>_</i>	Queue	Queue Stor.		Prob.
Lane Satn No. x	n During Green	Factor	Queue	Icin	No.1 No.2 No		958	Rat Av.	Ratio 7. 95%	Block %	SL OV
South: No:	South: Noala Street (South)	(South)									
North: Koal 1 D.241	North: Koala Street (North) 1 0.241 NA NA	(North) NA	e.0	4.0	0.3	4.3	10.8	0.01	0.02	0.0	Νġ
West: Emily Avenue 1 0.024 NA	ly Avenue 4 NA	YN	0.0	0.2	0.0	0.2	0.5	0.00	0.00	0.0	NA
THER QUEU	OTHER QUEUE RESULTS (VEHICLES)	(VEHICLE	ŝ								
1	1	Prog.	Ovrfl.	Ovrfl. Cyc-Av.	. Oueue						
	n During Green	Factor	Queue No	Nc	958						
South: No.	South: Koala Street (South)	(South)									
North: Koa 1 0.241	North: Koala Street (North) 1 0.241 NA NA	(North) NA	0.0	0.4	0.8						
West: Em1 1 0.02	West: Emily Avenue 1 0.024 NA	NA	0.0	0.0	0.0						
THER QUEUI	OTHER QUEUE RESULTS (DISTANCE)	(DISTANC	E)								
Deg.		Prog.	Ovrfl.	⊂yc-av.	ouene.						
No. X	Green	L ACCOL	No	Nc	95%						
South: Ko	South: Koala Street (South)	(South)									
North: Koal 1 0.241	North: Koala Street (North) 1 0.241 NA NA	(North) NA	E.D	3.1	5.7						
West: Emily Avenue 1 0.024 NA	ly Avenue 4 NA	NA	0.0	0.1	0.3						
Go to Table Links (Top)	ks (Top)										
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20/05/2020

DEVELOPMENT ASSESSMENT PANEL

ORDINARY COUNCIL

06/05/2020

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			-	100%		1.8	1.0		-	100%		12.8	0.6			
			veh)	889 889		1.7	1.0		metres)	88 88 0		11.9	9.0			
S) enenc	958		1.5	0.1		Dueue ()	958 8		10.8	0.5			s
GHDVa	G		Percentile Back of Queue (veh)	3 0 8		1.3	0.1		Percentile Back of Queue (metres)	90 8		9. T	0.4			GHDVa
eloped	ersecti	(SELS)	ntile B	858		1.1	1.0	ANCE)	ntile B	858		6 . L	ō.9			eloped
s J19 Dev	led Int	VEHI	Perce	70%	(South)	(North) 0.8	0.0	s (DIST	Ferce	70%	(South)	(Worth) 5.6	۳. 0			019 Dev
d PM 20	Control	CENTLLE'		50%	Street	Street 0.6	venue 0.0	CENTILE ²		50%	Street		venue 0.2	(ac	1	d PM 20
ueue Pe Nily Roa	: 101 Y Sign (EUE PER(Deg.				West: Emily Avenue 1 0.024 0.0	EUE PER(Deg.				West: Emily Avenue 1 0.024 0.2	Links (To		ops ìily Roa
Lane Queue Percentiles Site: Emily Road PM 2019 Developed GHDVals	Site ID: 101 Sive-Way Sign Controlled Intersection	LANE QUEUE PERCENTILES (VEHICLES)		No.	South:	North: Koala 1 0.241	West: 1	LANE QUEUE PERCENTILES (DISTANCE)		No.	South: Koala	North: 1	West: 1	Go to Table Links (Top)		Lane Stops Site: Emily Road PM 2019 Developed GHDVals

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DEVELOPMENT ASSESSMENT PANEL 06/05/2020

Deg: Arv Frog Effective Stop Rate - Total Nove-up Queue Frog. Mun. of st. During Pactor hel he2 hag or h 1 H Agn Hem Nove-up Queated Cycles to x Ozeen hel he2 hag or h 1 H Agn Hem Per Depart Soala Street (South) 0.01 0.01 7.5 .347 NA NA 0.05 0.01 0.01 7.5 .341 NA 0.06 0.00 0.05 0.11 34.7 0.07 20.2 0.45 0.51 .31 NA 0.79 0.00 0.12 0.91 6.7 0.00 0.0 0.80 0.80 .324 NA NA 0.79 0.00 0.12 0.91 6.7 0.00 0.0 0.80 0.80 .324 NA NA 0.79 0.00 0.12 0.91 6.7 0.00 0.0 0.80 0.80 .324 NA NA 0.79 0.00 1.12 0.91 6.7 0.00 0.0 0.80 0.80 .324 NA NA 0.79 0.00 1.12 0.91 6.7 0.00 0.00 0.80 0.80 .324 NA NA 0.79 0.00 1.12 0.91 6.7 0.00 0.00 0.80 0.80 .324 NA NA 0.79 0.00 1.12 0.91 6.7 0.00 0.00 0.80 0.80 .324 NA NA 0.79 0.00 0.12 0.91 6.7 0.00 0.00 0.80 0.80 .324 NA NA 0.79 0.00 0.11 0.91 6.7 0.00 0.00 0.80 0.80 .324 NA NA 0.79 0.00 0.11 0.91 6.7 0.00 0.00 0.80 0.80										Queue			Aver.
South: Koala Street (South) 0.01 0.01 7.5 1 0.547 NR NA 0.01 0.1 7.5 North: Koala Street (Morth) 1 0.51 34.7 0.7 20.2 0.45 0.51 North: Koala Street (Morth) 0.66 0.00 0.05 0.11 34.7 0.07 20.2 0.45 0.51 Mest: Emily Avenue NA 0.79 0.00 0.12 0.91 6.7 0.00 0.80 0.80 1 0.024 NA 0.79 0.00 0.12 0.91 6.7 0.00 0.80 0.80 Mest: Emily Avenue NA 0.79 0.01 0.91 6.7 0.00 0.80 0.80 1 0.024 NA 0.79 0.01 0.91 6.7 0.00 0.80 0.80 0.80 0.80 1 0.024 NA 0.79 0.01 0.1 0.1 4.7 0.00 0.80 0.80 0.80 </th <th>0.01</th> <th>rn Duris x Grees</th> <th>ны bud</th> <th>rog. actor</th> <th> Ef hel</th> <th>fective he2</th> <th>: Stop Gcom. hig</th> <th>Rate Overall h</th> <th>Total Stops H</th> <th>Move-up Rate hqm</th> <th></th> <th>Prop. Ducued Pq</th> <th>0</th>	0.01	rn Duris x Grees	ны bud	rog. actor	Ef hel	fective he2	: Stop Gcom. hig	Rate Overall h	Total Stops H	Move-up Rate hqm		Prop. Ducued Pq	0
Narth: Koala Steet (North) 1 0.241 NA NA 0.06 0.00 0.05 0.11 34.7 0.07 20.2 0.45 0.51 Nest: Emily Avenue 1 0.024 NA NA 0.79 0.00 0.12 0.91 6.7 0.00 0.0 0.80 0.80 h1g 1s the average value for all movements in a shared lare hqm is average queue move-up rate for all vehicles queued and unqueued	0 0	ala Stret 47 NA	et (3	outh) NA			10.0	0.01	7.5				
0.0	9.0	ala Stre 41 NA	et (N	orth) MA	90.06	0.00	0.05	0.11	34.7	0.07	20.2	0.45	0.51
hig is the average value for all movements in a shared lane hqu is average queue move-up rate for all vehicles queued and unqueued	12 0	ly Avenut 24 NA	U.	MA	61.D	0.00	0.12	0.91	6.7	0.00	0.0	0.80	0.80
	l ⇒ q	he avera; verage qu	ge va ueue	lue foi move-ui	r all p rate	movemen for al	tcs in l veh:	a shared icles que	lane ued and	unqueued			
	Flow Rates	v											

Site ID: 101 Give-Way Sign Controlled Intersection

Flow F

Origin-Destination Flow Rates (Total) Site: Emily Road PM 2019 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Interaction

TOTAL FLOW RATES for All Movement Classes (vch/h)

TULN: II2 II1 TOT Flow Rate 12.6 105.2.6 1065.3 HFV (all designations) 0.0 0.0 0.0 From NORTH To: 5 N 707 TULIN: 71 726 1065.3 1065.3 From NORTH To: 5 N 707 FULN: 71 82 707 HILON RATH TO: 263.2 432 306.3 HILON REAT TO: 0.0 0.0 0.0 306.3 From NEST TO: N 5 TOT 10.1	From SOUTH To:	M	Ν	
12.6 12.6 102.6 H To: 0.0 0.0 H To: 0.0 0.0 Comparison 0.0 0.0 0.0 Comparison 0.0 0.0 0.0 To: To: N 5 To: To N 5	Turn:	112	Ë	LOL
designations) 0.0 0.0 0.0 4 To: 5 M 12 263.2 4 3 12 263.2 263.2 4 3 12 263.2 263.2 2 10 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Flow Rate	12.6	1052.6	1065.3
H To: 5 M T1 R2 designations) 263.2 43.2 designations) 0.0 0.0 T0: 10 R2		0.0	0.0	0.0
T1 R2 263-143.2 6esignations) 263.2 0.0 0.0 7.0. 82 70: L2 R2	NORTH	vi	8	
263.2 43.2 designations) 0.0 0.0 To: N 5 To: L2 R2		I.F.	52	LOL
designations) 0.0 0.0 To: N 5 L2 R2	Flow Rate	263.2	43.2	306.3
To: N 5 L2 R2	(all	0.0	0.0	0.0
: L2 R2		И	n	
	Turn:	12	R2	TOT

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7.4 2.1 5.3 % Rate
(all designations)

Flow

Flow Rates (veh/h) based on the following input specifications:

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input spu Teak Flow Period = 30 minutes Teak Plow Period = 30 minutes Flow Seriod = 30 minutes Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies . network analysis

ų,

Go to Table Links (Top)

Origin-Destination Flow Rates by Movement Class Site: Emily Road PM 2019 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

FLOW RATES for Light Vehicles $(\, veh/h)$

Turn:	112	F	TOT
	2	1052.6	1065.3
Class	100.0	55	100.0
Flow Scale Peak Flow Factor	0.95	0.95	
Residual Demand	0.0	0.0	0.0
From NORTH To:	s	3	
Turn:	Ē	82	TOT
Flow Rate	263.2	43.2	306.3
Class	100.0	0	100.0
Flow scale Peak Flow Factor	0.95	0.95	
d lauk	0.0		0.0
FYOM WEST TO:	N	מ	
Turn:	1.2	R 2	TOT
Flow Rate	5.3	2.1	7.4
Class	100.0	100.0	100 ° 0
Feak Flow Factor	0.95	0.95	
lual D	0.0	0.0	0.0

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Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Fime for Volumes = 60 minutes Peak Flow Period = 30 minutes Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

Go to Table Links (Top)

Lane Flow Rates Site: Emily Road PM 2019 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

RATES AT STOP LINE (veh/h) FLOW LANE

Ĝ	TOT	1065.3 1065.3	1065.3	TOT	306.3 306.3	306.3	TOT	7.4 4.7	7.4	
TNE (vev/u)	NI	1052.6 1052.6	1052.6	M 2.R	43.2 43.2	43.2	5 E	2.1	2.1	
TT ADIS IN	м СП П	12.6 12.6	12.6	8 달	263.2 263.2	263.2	и ГГ	സസ പ്ര	5.3	
LANE FLOW RATES A	From SOUTH To: Turn:	Lane 1 LV Total	Approach	From NORTH To: Turn:	Lane 1 LV Total	Approach	From WEST To: Turn:	Lane 1 LV Total	Approach	

EXIT LANE FLOW RATES 035328_PMHC_EmilyAvenue001_Council5328_106_Traffic.docx 103

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Site: Emily Road PM 2019 Developed GHDVals	
51te ID1 101 Give-Way Sign Controlled Intersection	
* Baric Parameters: Intersection Type: Unsignalized - Give Way Driving on the left-hand side of the road num data specified in Metric units Model Defails: New South Wales Peak Flow Period (for performance): 30 minutes Unit time (for volumes): 60 minutes SIDRA Standard Delay model used SIDRA Standard Queue model used	
Level of Serrice based on: Delay (RTA NSM) Queue percentile: 955 Goth Tablelinks (Ton)	
Diagnostics Site: Emily Road PM 2019 Developed GHDVals	1
site ID: 101 Give-Way Sign Controlled Intersection	
Lane Flow-Capacity Iterations:	
<pre>Site Model Variability Index (Iterations 3 to W): 0.0% Number of Iterations: 3 (Maximum: 10)</pre>	
Other Diagnostic Nessages (if any):	
Go to Table Links (Top)	

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Model Scenario: PM Peak Hour, Year 2039, Pre-Developed

 Vertee: 101 [Emily Road PM 2039 Not Developed
 DETAILED OUTPUT GHDVals]

New Site Site Category: (None)

Giveway / Yield (Two-Way)

OUTPUT TABLE LINKS

- Sign Control Sign Control Basic Parameters Gap Acceptance Parameters
- Mitwovements Intersection Negotitation and Travel Data Movement Capacity and Performance Parameters Fuel Consumption, Emissions and Cost

Lancs Lancs Performance and Capacity Information Lanc, Approach and Intersection Performance Driver Characteristics Lane Queues Lane Queue Percentiles Lane Stops

In Flow Rates Origin-Destination Flow Rates (Total) Origin-Destination Flow Rates by Movement Class Lane Flow Rates #=Other Parameter Settings Summary Diagnostics

Sign Control

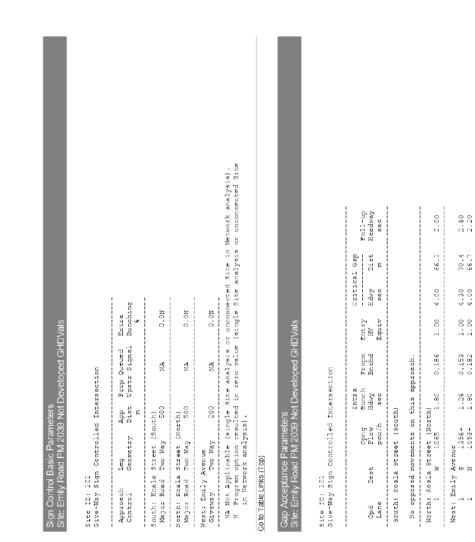
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Values in this table are adjusted for movement classes in the entry stream. Use the Pedestrians and Priorities input dialogs to specify opposing pedestrian movements. + Percentage of exiting flow included in opposing vehicle flow

Go to Table Links (Top)

Movements

Intersection Negotiation and Travel Data Site: Emily Road PM 2039 Not Developed GHDVals

site ID: 101
Give-Way Sign Controlled Intersection

TRAVEL DISTANCE AND TRAVEL TIME TRAVEL SPRED,

From To Approach Exit	Turn	Running Speed km/h	Travel Speed km/h	Travel Distance m	Travel Time s	Total Travel Distance Dem Flows Arv Flows veh-km/h veh-km/h	. Distance Arv Flows veh-km/h	Tot.Trav. Time veh-h/h
South: Koala Street (South) West L2 North T1	t (South) L2 T1	57.5 59.7	57.5 59.7	710.1# 1010.1#	44.5# 60.9#	9.0 1063.2	9.0 1063.2	0.2 17.8
North: Koala Street (North) South T1 Weat R2	t (North) T1 R2	57.8 54.1	55.5 51.2	1010.0# 710.0#	65.6 4 49.9 <u>+</u>	265.8 23.9	265.8 23.9	4.8 0.5
West: Emily Avenue North South	г2 В2	48.3 47.7	42.6 42.1	713.9# 713.9#	60.44 61.14	3.0 1.5	3.0 1.5	0.0 0.0
ALL VEHICLES:		59.2	58.6	45.869	61.3#	1366.4	1366.4	23.3

delays including intersection cruise times and ir and idling delays. values include n, deceleration Travel Time va acceleration,

-##

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

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From								
Approach	To Exit	Turn	Negn Radius m	Negn Speed km/h	Negn Dist m	App Dist m	Ewit Dist m	Downatr Dist m
South: Koala	la Street West North	(South) L2 T1	10.0 s	20.2 60.0	15.7 10.0	5 00	200	AN NA
North: Koala	1 02	(North) T1 R2	6.6 3	60.0 17.2	10.0 10.4	5 00	200	AN
West: Emily	y Avenue North South	12 12 12 12	10.0 6.6	20.2 17.2	15.7 10.4	2 00	20 D 20 D	AN NA
NA Downstr - Exit - "Prog - Dista	n s n s n n s n s n n s n s n	<pre>IDistance does not an internal leg of n" option was speci specified was les pecified was gre</pre>	ы <u>т</u> и та та	ដុំង ជុំក្		gotia leg	tion Di length	Distance
Some Neg	Negotiation 1	Radius,	Speed or		Distance values	are	user sp	specified.
MOVENENT S	SPEEDS AND	GEONETRIC	IC DELAY					
	App. Sp.	Speeds	Exit Spe	Speeds	Queue Move-up	uce D		
Mov ID Turn	Cruise lan/h	Negn lm/h	Negn Cru km/h kn	Cruise km/h	Speed km/h	Delay		

5.5

60.0 60.0

20.2

(South) 20.2 2 60.0 6

Street (60.0 2 60.0 6

Koala S 12 Tl

MOV ID T South: - C1 5.4

1.4

60.0 60.0

60.0 17.2

(North) 60.0 17.2 1

North: Koala Street (North: Koala Street (North: 8 T1 60.0 60

5.5

11.7 11.7

60.0 60.0

20.2

20.2 17.2

West: Emily Avenue 10 L2 60.0 12 R2 60.0

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Movement Capacity and Performance Parameters Site: Emily Road PM 2039 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

MOVENENT CAPACITY PARAMETERS

```
for all Movement Classes.
                                     0.547*
0.547*
                    ×
                                                           0.218
0.218
                                                                                 0.021
0.021
    Deg.
Satn
    Prac.
Spare
Cap.
                                                           350
                                                                                 3662
3662
                                     6 C
6 G
    Prac.
Deg.
Satn
Xp
                                     0.98
                                                            0.98
                                                                                 0.80
                                                                                                 Maximum degree of saturation
Combined Movement Capacity parameters are
    Total
                    veh/h
          Cap.
                                    23
1926
                                                                                 198
99
                                                           1208
    Opng Movement :
Flow Flow
vch/h pcu/h
                                                            0
1065
                                     00
                                                                                 1053
1356
               Flow
veh/h
                           : Koala Street (South)
12 # 13 0
11 # 1053 0
                                                      (North)
3 0
4 1065
                                                                                 1053
1356
          Arv
Flow
veh/h
                                                     North: Koala Street (1
8 Tl ± 263
9 R2 ± 34
                                                                                 9.61
                                                                           West: Emily Avenue
10 12 #
12 R2 # 2
    Mov
Cl.
    Turn
                               South:
1
2
                           WOW
ID
                                                                                                 * #
l
```

shown

MOVENENT PERFORMANCE

Tot.Trav. Tot.Trav. Aver. Distance Time Speed (veh-bm/h) (veh-h/h) (km/h) Perf. Total Stops Eff. Stop Rate n Total Total Aver. Delay Delay Delay (veh-h/h)(pers-h/h)(sed) Koala Street (South) Turn 5 outh: MOV ID

T1 0.03 0.03 0.1 0.01 7.5 17.79 1065.2 : Kcala Street (North) T1 0.26 0.31 3.5 0.09 2.3 5.31 253.9 T2 0.15 0.18 15.9 0.09 2.9 1.05 23.9 Emily Avenue 2.0 0.02 0.02 13.3 0.91 3.8 0.11 3.0	-	12	0.02	0.02	5.6	0.01	0.1	0.17	9.0	0.2	57.5
3.5 0.09 23.0 5.31 265.8 15.9 0.09 2.9 1.05 23.9 13.3 0.91 3.8 0.11 3.0	61	E	E0.0	0.03		10.0	7.5	17.79	10 63.2	17.8	59.7
ri 0.26 0.31 3.5 0.09 23.0 5.31 265.8 R2 0.15 0.18 15.9 0.09 2.9 1.05 23.9 Emily Avenue L2 0.02 0.02 13.3 0.91 3.8 0.11 3.0	orthi	Koali	a Street								
R2 0.15 0.18 15.9 0.09 2.9 1.05 23.9 Emily Averue L2 0.02 0.02 13.3 0.91 3.8 0.11 3.0		11	0.26		с м		23. D	5.31	265.8	4.8	55.0
Emily Avenue 12 0.02 0.02 13.3 0.91 3.8 0.11 3.0	on	82	0.15		15.9		6.5	1.05	23.9	0.5	51.2
L2 0.02 0.02 13.3 0.91 3.8 0.11 3.0	est: El	ylim	Avenue								
		12	0.02	0.02	13.3	16.0	ю. 8.	0.11	з. о	0.1	42.6
ST 0.01 0.01 18.0 0.12 10.0 10.0 ZX	12	R 2	10.0	10.01	21.D	16.0	1.9	0.07	1.5	0.0	42.1

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Fuel Consumption, Emissions and Cost Site: Emily Road PM 2039 Not Developed GHDVals

Go to Table Links (Top)

Site ID: 101 Give-Way Sign Controlled Intersection

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

NoV TUEN	cost Total \$/h	Fuel Total L/h	co2 Total kg/h	co Total kg/h	нс Total kg/h	NOX Total kg/h
south: Koala St 1 L2 2 T1	Street (South) 379.31	h) 0.5 60.4	1.2	0.00	0.010	0.000
	383.62	60.9	143.1	0.19	0.010	0.028
North: Koala St 8 Tl 9 R2	Street (North) 122.76 15.07	h) 18.3 1.8	43.1 4.2	0.05	0.003	10.0
	137.83	20.1	47.3	0.06	0.004	0.012
West: Emily Avenue 10 L2 12 R2	nue 1.88 0.94	0.3	0.3	0.00	0.000	0.000
	2.81	0.4	1.0	0.00	0.000	0.000
INTERSECTION:	524.26	81.4	191.4	0.25	0.014	0.040

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

нс Rate g/km CO Rate g/ltm co2 Rate g/km Fuel Rate L/100km Cost Rate \$/km Turn VCM UI

NOX Rate g/km

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0.026 0.026

0.010

0.17

133.7 133.5

5.J

Koala Street (South) L2 0.48 T1 0.36

south:

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Lane Util å	100	100	100
Deg. Satn x	0.547	0.218	120.0
Tot Cap veh/h	\$C1	Street (Worth) 52 1363	297
Min Cap veh/h v	reet (1065	reet (52	9 Due
Total Arv Flew veh/h	Noala Sti 1065	Koala Sti 297	Emily Avenue 6
Lane No.	South: 1	North: 1	West: 1

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

Go to Table Links (Top)

Lane, Approach and Intersection Performance Site: Emily Road PM 2039 Not Developed GHDVa

Site ID: 101 Give-Way Sign Controlled Intersection

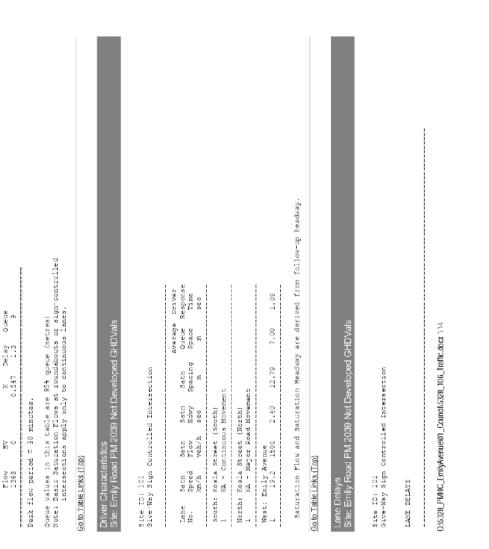
No.	Flow (veh/h)	νHβ	Basic Satf.	sat sat	Delay sec	Queue	Length m
South:	Koala St 1065	reet	Street (South) 0 1950	0.547	0.2		200
	1065	•		0.547	0.2		
North: 1	Koala St 297	Leet 0	Street (North) 0	0.218	4.9	¢,	500
	297	0		0.218	4.9	a.	
West: l	Emily Avenue 6	Due		0.021	15.9	0	200
	ų	0		0.021	15.9	0	
ALL VE	VEHICLES Total	a		Мах	Aver.	Max	

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Geom Control dig dic 15.9 9.9 0.2 5.5 9.0 Delay Stopd (Idle) di 7.2 0.1 2.7 Stop-line 0.0 0.0 Mest: Emily Avenue 1 0.021 NA Avenue SIDRA Standard Delay Model is used. Control Delay is the sum of Stop-and Gennetric Delay Model is used. Control Delay is the sum of Stop-dni Anisum delay for gap acceptance cases dni Anisum delay (callay for all vhitoles gueed and unqueued dist Stop-line delay (callay for all vhitoles gueed and unqueued dri Stoperd delay for the part of the stop-line delay that includes den Occentrore delay (stoped (idling) time at near-zero speed) dist Stoped delay (stoped (idling) time at near-zero speed) dist Control delay 2.7 Delay (y Acc Dec 1.6 Delay Total dSL 4.3 -line 2nd 0.1 0.1 Stop⁻ lst dl 4.2 э. о Min Del Frog. Factor (North) NA (South) % Arv During Creen Koala Street (D.547 North: Koala Street 1 D.218 NA Deg. Satn M Lane No. South: 1 1

Go to Table Links (Top)

Lane Queues Site: Erniy Road PM 2039 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

OF QUEUE (VEHICLES) BACK

	Deg.	8 ALV	8 Arv Prog.	Ovrfl. B	Bac	sk of C	acae (veh)	Oueue	Stor.	Prob.	Prob.
Lane No.	Satn M	Dur ing Green	Factor	Oueue	IoN	Nb2	No	958	Av.	58 958	Nol Nb2 No 958 AV. 958 8	SL OV.
South	Koal	South: Koala Street (South)	(South)									
North	: Koal	North: Koala Street (North) 1 0.218 NA NA	(North) NA		0.5	0.0	0.5	1.2	0.01	0.02	0.0 0.5 0.0 0.5 1.2 0.01 0.02 0.0 NA	NA
West:	West: Emily Avenu	West: Emily Avenue	5			0	0		0	00	<	1

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BACK OF QUEUE (DISTANCE)

		8 ALV			Bac	k of C	Back of Queue (m)		Queue	Queue Stor.	Prob. Prob.	Prob.
No.		Green Green	ractor	No	ToN	Nb2	No.1 Nb2 Nb	958	AV.	AV. 95%		7
South:	Koala	South: Koala Street (South)	South: Koala Street (South)									
North: 1 0	Koala .218	North: Koala Street (North) 1 D.218 NA NA	North: Koala Street (North) 1 0.218 NA NA	0.2	3.2	0.2	3.2 0.2 3.4 8.5 0.01 0.02	8.5	0.01	0.02		0.0 NA
West: 1 0	West: Emily Avenue 1 0.021 NA	West: Emily Avenue 1 0.021 NA	West: Emily Avenue 1 0.021 NA NA 0.0	0.0	0.2	0.0	0.0 0.2 0.0 0.2 0.4 0.00 0.00	0.4	0.00	0.00	0.0	0.0 NA

0.4 0.2 0.0 0.2 0.0 ΝA : Emily Avenue 0.021 NA

OTHER QUEUE RESULTS (VEHICLES)

Queue 95%		9.0	0.0	
<pre>beg. % Arv Frog. Ovrfl. Cyc-Av. Queue Satn During Factor Oucue x Green No No 95%</pre>		0.4	0.0	
Ovrfl. Oveve No		0.0	0.0	
Frog. Factor	(South)	(North) NA	NA	
% Arv During Green	South: Koala Street (South)	Street (North) NA NA	Avenue NA	
Deg. Satn M	Koala	North: Koala 1 0.218	West: Emily Avenue 1 0.021 NA	
Ľ.	South:	North: 1 C	West: 1 (

0

OTHER QUEUE RESULTS (DISTANCE)

0.2 4.5 2.5 0.1 Ovrfl. Oueue No 0.2 0.0 South: Koala Street (South) North: Koala Street (North) 1 0.218 NA NA Frog. Factor ¥2 % Arv During Green West: Emily Avenue 1 0.021 NA Deg. Satn × Lane No.

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Lane Queue Percentiles Site: Emily Road PM 2039 Not Developed GHDVals

Go to Table Links (Top)

LANE QUEUE PERCENTILES (VEHICLES) LANE QUEUE PERCENTILES (VEHICLES) LANE Queth: Koala Street (South) North: Koala Street (South) North: Koala Street (North) North: Koala Street (North) North: Koala Street (North) LANE QUEUE PERCENTILES (DISTANCE) LANE QUEUE PERCENTILES (DISTANCE) Merchi Scola Street (North) Nochi Scola Street (North)	Cueue (veh) 95% 98% 100%	1.2 1.3 1.5	L.0 L.D L.O	L.D	Oueue (metres)	95% 93% 100%		8.5 9.4 10.2	0.4 0.5 0.5
	Back of 90%				Back of				
				0.0 (DISTAN	Percent		(South)		

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		_	

Lane Stops Site: Emily Road PM 2039 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

Aver. Num. of Cycles to Depart 0.80 0.41 Prop. Queued Pq 0.37 0.80 Total Qucue Move-ups Hqm 11.4 0.0 Queue Move-up Pate hqm hig is the average value for all movements in a shared lane hqm is average queue move-up rate for all vehicles queued and unqueued 0.04 00.0 25.9 Total Stops H 7.5 5.7 Rate --Overall h 16.0 0.01 0.09 -- Effective Stop R Geom. C hel he2 hig 0.12 10.0 0.04 00.00 0.00 0.04 0.79 Lane Satn During Factor No. x Green South: Roals Street (South) 1 0.547 NA. NA North: Roals Street (Morth) 1 0.218 NA NA Prog. Factor ИЛ % Arv During Green West: Emily Avenue 1 0.021 NM Sacn. x ł

Go to Table Links (Top)

Flow Rates

Origin-Destination Flow Rates (Total) Site: Emily Road PM 2039 Not Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

TOTAL FLOW RATES for All Movement Classes (vch/h)

From SOUTH To:	M	Z	
Turn:	12	Ë	TOT
Flow Rate	12.6	1052.6	1065.3
%HV (all designations)	0.0	0.0	0.0
DM NORT	σ	М	
Turn:	ΪF	R2	TOT
Flow Rate	263.2	33.7	296.8

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%HV (all designations)	0.0	0.0	0.0
rom WEST To:	и	ŋ	
Turn:	L2	R2	LOL
Flow Rate	4.2	2.1	6.3
8HV (all designations)	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Time for Volumes = 60 minutes Feek Flow Feriod = 30 minutes Effects of Volume Factors (Peek Flow Factor, Flow Scale, Scawth Rate) are included. Arrival Flow Bates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

Go to Table Links (Top)

Class	HDVals
/ement	pped G
by Mov	Develo
Rates	139 Not
n Flow	PM 20
stinatio	/ Road
gin-Des	:: Emily
Ö	Site

Site ID: 101 Give-Way Sign Controlled Intersection

Vehicles Light for RATES FLOW

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	1.00	1.00	'
Peak Flow Factor	0.95	0.95	I
lesidual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Time for Volumes = 60 minutes Peck Flow Feriod = 30 minutes Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in netWork analysis.

Go to Table Links (Top)

Lane Flow Rates Site: Emily Road PM 2039 Not Developed GHDVals

Controlled Intersection Site ID: 101 Give-Way Sign

FLOW PATES AT STOP LINE (veh/h) LANE

12.6 1052.6 1065.3 12.6 1052.6 1065.3 12.6 1052.6 1065.3	To: 5 W TI R2 TOT 263.2 33.7 296.8 263.2 33.7 296.8	263.2 33.7 295.8 12 n s 12 R2 TOT 4.2 2.1 6.3 4.2 2.1 6.3
Lane l LV Total Approach	From NORTH T Turn: Lane 1 Total Total	Approach From WEST To Turn: Lane 1 Lotal Total

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SIDRA INTERSECTION 8.0 | Copyright © 2000-2019 Akcelik and Associates Pty Ltd | sidrasolutions.com Organisation: KING & CAMPBELL PTY LTD | Processed: Monday, 11 March 2019 1.48.09 PM Project OA3328_PMHC_EmilyAvenue'22_Engineering/Emily Ave 50existing 2019-2039 GHDMaxValues/NoRale sip8 90°0 Site Model Variability Index (Iterations 3 to N): Number of Iterations: 3 [Maximum: 10) * Basic Parameters: Intersection Type: Unsignalised - Give Way Driving on the left-hand side of the road Input data specified in Merica units Nodel Defaults: Mew South Wales Feak Flow Period (for performence): 30 minutes Finit time (for volumes): 60 minutes. 57DRA Standard Delay model used FIDRA Standard Delay model used FIDRA Standard Delay model used Fuel of Structs based on: Delay (RTA NSW) Oueue percentile: 95% Diagnostics Site: Emily Road PM 2039 Not Developed GHDVals Parameter Settings Summary Site: Emily Road PM 2039 Not Developed GHDVals Site ID: 101 Give-Way Sign Controlled Intersection site ID: 101 Give-Way Sign Controlled Intersection Other Diagnostic Messages [if any]: Lane Flow-Capacity Iterations: Go to Table Links (Top) Go to Table Links (Top) other

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Model Scenario: PM Peak Hour, Year 2039, Post-Developed

DETAILED OUTPUT

V Site: 101 [Emily Road PM 2039 Developed GHDVals]

New Site Site Category: (None) Giveway / Yield (Two-Way)

OUTPUT TABLE LINKS

Sign Control Sign Control Basic Parameters Gap Acceptance Parameters

MM overnents Intersection Negotiation and Travel Data Movement Capacity and Performance Parameters Fuel Consumption, Emissions and Cost

Lanes Lane Performance and Capacity Information Lane, Approach and Intersection Performance Driver Characteristics

Lane Queues Lane Queue Percentiles Lane Stops Ir Flow Rates

Origin-Destination Flow Rates (Total) Origin-Destination Flow Rates by Movement Class Lane Flow Rates

BTOther Parameter Settings Summary Diagnostics

Sign Control

Sign Control Basic Parameters Site: Emily Road PM 2039 Developed GHDVals

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Site ID: 101 Give-Way Sign Controlled Intersection

				NA NOT Applicable (single Site analysis or unconnected Site in Network analysis). N Frogram option resulted in Zero Value (single Site analysis or unconnected Site in Network analysis)
Extra Bunching §	NO.O	NO.O	NA D.ON	r unconnect (single site
Approach Leg App PropOuened Extra Control Geometry Dist Upatr Signal Bunching a	ΨN	MA	AN	NA NOT Applicable (single Site analysis or unconnec N Program option resulted in zero value (single Si in Network analysis).
App Dist m	outh) 500	orth) 500	200	ingle Si sulted 1 is).
Leg Geometry	a Street (S Two Way	a Street (N Two Way	Avenue Two Way	wot Applicable (singl' Program option result in Network analysis).
Approach Control	South: Koala Street (South) Major Road Two Way 50	North: Koala Street (North) Major Road Two Way 500	West: Emily Avenue Giveway Two Way	NA Not Apr N Program in Netw

Go to Table Links (Top)

Gap Acceptance Parameters	Site: Emily Road PM 2039 Developed GHDVals	

Site ID: 101 Give-Way Sign Controlled Intersection

		0000	Lncra Ducka	Tee ores	104 000	Critic	Critical Gap	2011 - 11 - 11
Opd Dest Lane	st	Flow Flow pcu/h	Hdwy	Bnchd	HV HV Equiv	Hdwy sec	D1st m	Headway Sec
outh: Koala	a Str	South: Koala Street (South)	ch)					
opposed	D VOE	No opposed movements on this approach.	this ap	proach.				
h: Koale 1	a Str	North: Koala Street (North) 1 w 1068 1	rth) 1.80		0.187 1.00 4.00	4.00	66.0	2.00
West: Emily Avenue 1 s 13 1 N 10	Aver S	ue 1367+ 1053+	1.25	0.153	1.00	4.30	70.0	2.80

Values in this table are adjusted for movement classes in the entry stream. Use the Pedestrians and Priorities input dialogs to specify opposing pedestrian movements. 035328_PMHC_EmNjAvenue001_Councll5328_106_Iraffic.dox 125

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Tavel Data veloped GHDVals	Controlled Intersection	TRAVEL DISTANCE AND TRAVEL TIME	Running Travel Iravel Total Travel Distance Tot.Trav. Seed Seed Distance Time Dem Flows Arv Flows Time Km/h km/h veh-h/h	57.4 57.4 710.1# 44.5# 11.2 11.2 0.2 59.7 59.7 1010.1# 60.9# 1063.2 1063.2 17.8	57.4 54.5 1010.1# 66.7# 265.8 265.8 4.9 53.5 50.0 710.1# 51.1# 30.6 30.6 0.6	48.3 42.7 714.2# 60.2# 3.8 3.8 0.1 47.7 42.3 714.2# 60.8# 1.5 1.5 0.0	59.0 58.3 995.7# 61.5# 1376.2 1376.2 23.6	"Running Speed" is the average speed excluding stopped periods.	rravel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.	# Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.	13.	Negn Negn App Exit Downstr
on and T 2039 Dev	olled Int	L DISTANC	Turn	(South) L2 T1	(North) T1 R2	L2 R2		a the ave	s include eleration	e and Tra stance or	NEGOTIATION DATA	Negn Negn
wovenients Intersection Negotiation and Travel Data Site: Emity Road PM 2039 Developed GHDVals	site ID: 101 Give-Way Sign Contro	TRAVEL SPEED, TRAVEJ	From To Approach Exit	bala	North: Koala Street South West	West: Emily Avenue North South	ALL VEHICLES:	"Running Speed" i	Travel Time values acceleration, dece	# Travel Distance on the Exit Dist	INTERSECTION NEGOTIA	

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10.0 6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.	Speeds Quaue Speeds Quaue Am/h Move-up Am/h km/h km/h 60.0 50.0 60.0 1.8	500 500 NA	500 200 NA	
<pre>L2 10.0 20.2 R2 6.6 17.2 erral leg of a netwo cernal leg of a netwo that are a netwo that a netwo that a netwo that a netwo a netwo second as least that field was greater that dius, Speed or Dista dius, Speed or Dista dius, Speed or Dista dius, Netwo han</pre>	peeds Extt Speeds Megn Negn Cruise Mm/h Mm/h Km/h t (south) 20.2 20.2 60.0 60.0 60.0 60.0 t (North) t (North) 17.2 17.2 60.0	10.0 10.4	15.7 5 10.0 5	
H2 10 H2 10 6 10 6 10 6 10 11	peeds Negn km/h t (south) t (south) 60.2 60.2 60.2 17.2 17.2	5 60.0 6.6 17.2		10.0 20.2 5 60.0
			(North)	

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Movement Capacity and Performance Parameters Site: Emily Road PM 2039 Developed GHDVals

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Tot.Trav. Tot.Trav. Aver. Distance Time Speed (veh-km/h) (veh-h/h) (km/h) 57.4 54.5 42.3 for all Movement Classes. 0.2 4.9 0.0 0.548* 0.548* Deg. Satn 0.242 0.024 11.2 1063.2 × 265.8 30.6 9.0 1.0 Prac. Spare Cap. \$ 3215 3215 6 L 6 L 305 305 0.21 17.80 Perf. 5.55 0.14 shown Prac. Deg. Satn Xp 0.98 0.98 0.80 0.98 1.0 1.0 29.9 4.8 1.9 Total Stops анс Total Cap. veh/h 29 1920 1088 178 218 87 Capacity parameters Eff. Stop Rate 16.0 10.0 0.11 ID: 101 Way Sign Controlled Intersection Movement Adjust. Flow h pcu/h 0 1068 00 1053 Aver. Delay (sec) 5.6 0.1 4.4 13.3 21.4 n Total Total Av Delay Delay De (veh-h/h) (pers-h/h) (s) Flow veh/h (South) 6 0 3 0 MOVENENT CAPACITY PARAMETERS 0png 0 1068 1053 1367 (South) 0.03 0.04 (North) 0.39 0.23 (North) 0.02 Arv Flow veh/h Maximum degree of Combined Movement (Street 263 43 1053 1053 Koala Street (L2 # 16 T1 # 1053 **и**я по Koala Street (L2 0.02 0 T1 0.03 0 Koala Street Tl 0.33 (R2 0.19 (NOVENENT PERFORMANCE Avenue Avenu 0.02 0.01 Mov Cl. Koala Tl # R2 # + West: Emily / 10 L2 # 12 R2 # Emily L2 R2 Turn Turn

South:

MoV

51te Give-

ню

North: 8 9

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Go to Table Links (Top)

South:

Mov

* =#:

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North: 8 9

West: 10 12

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Fuel Consumption, Emissions and Cost Site: Emily Road PM 2039 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

CONSUMPTION, EMISSIONS AND COST (TOTAL) FUEL

Mav Turn ID	cost Total \$/h	Fuel Total L/h	co2 Total kg/h	co rotal kg/h	нс Total kg/h	NOX Total kg/h
south: Koala Str 1 12 2 Tl	reet (south) 5.39 379.84	h) 0.6 60.5	1.5 142.1	0.00	0.000	0.000
	385.23	61.1	143.6	0.19	0.010	0.028
Worth: Koala Str 8 Tl 9 R2	reet (North 128.68 20.28	h) 19.0 2.4	44 5.6	0.05	0.004	0.012
	148.95	21.4	50.2	0.06	0.004	0.013
West: Emily Avenue 10 L2 12 R2	0 13	0.4	0.0 0.0	0.00		
	3.27	0.5	1.2	0.00	0.000	0.000
INTERSECTION:	537.45	83.0	195.0	0.25	0.015	0.042
FUEL CONSUMPTION,	N, EMISSIONS	NS AND	COST (RATE)	(BL		
Mov Turn ID	Cost Rate \$/hm L	Fuel Rate /100km	co2 Rate g/km	CO Rate g/htm	HC Rate g/km	NOX Rate g/km
south: Koala Str 1 L2 2 T1	reet (south 0.48 0.36	5.7 5.7	134.0 133.6	0.17	0.010	0.0
	0.36	5.7	133.6	0.17	0.010	0.026
North: Koala Str 9 Tl	reet (North 0.48	h) 7.1	167.8	0.21	0.014	0.045

Mov Turn ID	Cost Rate \$/km	Fuel Rate L/100km	CO2 Rate g/km	CO Rate g/len	HC Rate g/km	NOX Rate g/km
south: Koala St l L2 2 Tl	Street (South) 0.48 0.36	uth) 8 5.7 6 5.7	134.0 133.6	0.17	0.010	0.02
	0.3	0.36 5.7	5.7 133.6	0.17	0.17 0.010	0.02
North: Koala Street (North) 9 T1 0.48 7.1 167.8 0.21 0.5328_PMHG_EmilyAvenue001_Council5328_106_Traffic.docx 729	Avenue/01	(North) 0.48 7.1 01_CoundN5328	7.1 167.8 0.21 30.5328_106_Traffic.docx 129	0.21 Cudocx 1/29	0.014	0.04

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7.2 169.3 9.8 229.9 9.8 229.9 6.0 141.7 6.0 141.7 6.0 141.7 6.0 141.7 6.1 0.11 6.1 0.11	21 0.014 26 0.021 26 0.021 26 0.021 26 0.021 26 0.011 26 0.011 26 m 26 m 20 0.5	21 25 25 25 25 25 25 25 25 25 5 25 5 25
7.2 169.3 0.21 9.8 229.9 0.266 9.8 229.9 0.266 9.8 229.9 0.266 6.0 141.7 0.18 6.0 141.7 0.18 active for the second	21 0.014 26 0.021 26 0.021 26 0.021 26 0.011 18 0.011 26 b ck m 26 m m 26 m m 26 10.9	21 0.014
169.3 0.21 229.99 0.266 229.99 0.266 229.99 0.26 229.99 0.26 20.26 141.7 0.18 141.7 0.18 141.7 0.18 141.7 0.18 141.7 0.18 141.7 0.18 15 141.7 0.18 15 141.7 0.18 15 141.7 0.18	21 0.014 26 0.021 26 0.021 26 0.021 18 0.011 18 0.011 26 b b b b b b b b b b b b b b b b b b b	21 0.014
0.21 0.26 0.26 0.26 0.26 0.26 0.26 0.18 0.1	21 0.014 26 0.021 26 0.021 26 0.021 26 0.021 18 0.011 18 0.011 1.1 0.5	21 0.014
	01111111111111111111111111111111111111	

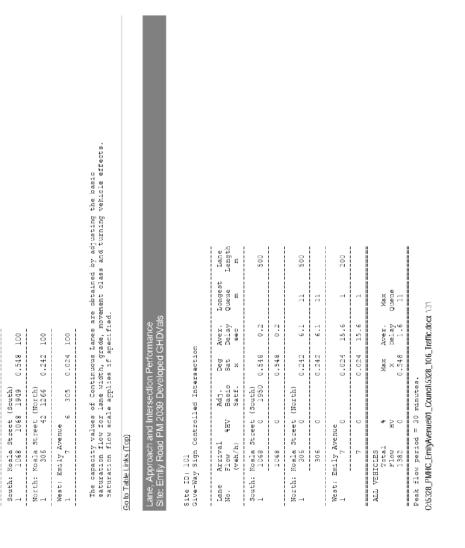
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veh/h veh/h veh/h

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Geom Control dig dic

Delay (seconds/veh) -----stop-ins Delay Acc. Quanty Stopd lat Dad Total Dec. Nob (IDLe) di di dSL dno. dq dqm di

Min Del

Frog. Factor

% Arv During Green

Deg. Satn M

Lane No.

DELAYS

LANE 1 0:6328_PMHC_EmilyAvenue/01_Council/5328_106_Traffic.docx 132

Queue values in this table are 95% queue (metres) Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

Go to Table Links (Top)

Driver Characteristics Site: Emily Road PM 2039 Developed GHDVals	Site ID: 101 Give-Way Sign Controlled Interacction	Lane Satn Satn Satn Average Driver No. Speed Tlow Hddy Space Response Mn/h veh/h sec m m sec	South: Koala Street (South) 1 NA - Continuous Movement	North: Koala Street (North) 1 NM - Major Road Movement	Meet: Emily Avenue 1 19.3 1518 2.37 12.73 7.00 1.07	Saturation Flow and Saturation Meadway are derived from follow-up headway.	Go to Table Links (Top)	Lanc Delays Site: Emily Road PM 2039 Developed GHDVals	Site ID: 101
Driver Ch Site: Emil	Site ID: 101 Give-Way Sig	Lane No.	South: P	North: F	West: Er l	Saturat	So to Table	Lane Delays Site: Emily R	Site ID: 101

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1 0.548				0.1					1.0	0.2	
North: Koala Street (Worth) 1 0.242 NA NA	(North) NA	3.6	5.1	0.2	5.3	2.0	3.4	0.0	en 1	0.8	6.1
West: Emily Avenue 1 0.024 NA	NA	9.1	10.1	0.0	10.1	м. 2	6.9	0.0	0. 9	5.5	15.6
SIDRA Standard Delay Model is used.	ay Model	1s used	i .	crol D	Control Delay is the sum of	the s		Stop-line Delay	ne Del	аy	
anu ocumentie setar. dm: Minimum dellay for gap acceptance cases der ecomente dollar for gap acceptance	for gap	acceptan 471	Ce case	0 0							
use, such that we have your of the stop-line delay that includes do: Average stop-start delay for all vehicles queued and ungueued do: Average delay (the part of the stop-line delay that includes	tart del (the par	ay for a t of the	ll veh: stop-1	Loles - Line d	gueued clay th	and un at inc	queved ludes				
stopped delay and queue move-up delay) dqm: Queue move-up delay	and queu delay	e move-u	p delay	~			,				
al: stopped delay dig: Geometric delay dic: Control delay	(stopped ay	butrpt)) стше	ac ne	ar-zero	speed	_				
Go to Table Links (Top)											
Lane Queues Site: Emily Road PM 2039 Developed GHDVals	2039 Dev	eloped (SHDVa	<u>s</u>							
Site ID: 101 Give-Way Sign Controlled Intersection	viled Int	ersectio	ç								
BACK OF QUEUE (VEHICLES)	(SEI)										
Deg. % Arv Satn During x Green	Prog. Factor	Ovrfl. Dueue No	Bac	Back of Q	Queue (veh)	eh) 958	Queue Rat Av.	Queue Stor. Ratio Av. 958	Prob. Block	LIS 15	ь.
South: Koala Street (South)	(South)										1
North: Koala Street (North) 1 0.242 NA NA	(North) NA	τ.0	0.6	0.0	0.6	1.6	0.01	0.02	0.0	N.A.	
West: Emily Avenue 1 0.024 NA	NA.	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	AN	_

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ORDINARY COUNCIL 20/05/2020

- Po	Ded. & Arv	R	Prog.	Ovrfl.	Bac	Back of Oueve (m)	mene (m		Ouete	Oueue Stor.	Prob.	Prob.
a		ing en	Factor	Queue	Nhl	Nb1 Nb2 Nb		959	Ratio Av. 9	10 95 8	Bleck	SL OV
South: N	South: Noala Street (South)	reet	(South)									
North: Koala Street (North) 1 0.242 NA NA	oala Stre 142 NA	ъ ъ ъ	(North) NA	Q.4	4.1	0.3	4.4	0. 01	0.01	0.02	0.0	μ'n
West: Emily Avenue 1 0.024 NA	iily Aver 124 NJ	Auc	YN	0.0	0.2	0.0	0.2	0.5	0.00	00.00	0.0	NA
		Ē										
JIHEN GUE	I NESA	212	(א באב כובג	ñ								
!		L.V.	Prog.		Cyc-Av.	. Cueue						
	Satn During x Green	eng	Factor	Dueue No	Nc	95%						
South: Koala Street (South)	oala Str	reet	(South)									
North: Noala Street 1 0.242 NA	ioala Stre 142 NA	Acct	(North) NA	1.0	0.5	0.8						
West: Emily Avenue 1 0.024 NA	11 Jy Avenu 24 NA	enne A	AN	0.0	0.0	0.0						
OTHER QUEUE RESULTS (DISTANCE)	INSER EU	SLITS	DISTANCE	(1)								
	Deg. % Arv		- ford		Cyc-Av.	eneno .						
Lane Sa No.	atn During z Green		Factor	Dueue No	Nc	95%						
South: K	South: Koala Street (South)	reet	(South)									
North: Koala Street (North) 1 0.242 NA NA	ioala Stre 142 NA	A	(North) NA	0.4	3.2	5.8						
West: Emily Avenue 1 0.024 NA	11 Avenu 24 NA	e anue	AN	0.0	0.1	0.3						
<u>Go to Table Links (Top)</u> 0.55328 PMHC EmiNAvenue01 Council/5328 106 Traffic.docx 134	C EmilvAve) enueV	11 Councillé	5328 106	Traffic.dc	CX 134						
				····								

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Lane Queue Percentiles Site: Emily Road PM 2039 Developed GHDVals

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Deg % Arv Frog. - Iffective Stop Rate - Total Moveup Queue Frop. Num. of Lane Sats During Factor hell hell	Deg. 9.Arv Frog. - Iffective Stop Rate - Iotal Nove-up Queue Frog. Nun. of No. 10, No. 20, N										onene	Total		Aver.
South: Koala Street (South) 1 0.548 WA NA 0.01 0.01 0.01 9.4 North: Koala Street (North) 1 0.242 WA 0.06 0.00 0.05 0.11 34.8 0.07 20.6 0.45 0.52 Wet: Emily Avene Wet: Emily Avene 1 0.024 WA 0.79 0.00 0.12 0.91 5.7 0.00 0.0 0.80 0.80 hg 1s the average value for all movements in a shared lane hg 1s the average queue move-up rate for all word end unqueued	South: Koala Street (South) 0.01 0.01 9.4 1 0.548 NA NA 0.01 9.4 North: Koala Street (North) 0.05 0.11 34.8 0.07 20.6 0.45 0.52 North: Koala Street (North) 0.05 0.11 34.8 0.07 20.6 0.45 0.52 Noth: Koala Street (North) 0.05 0.01 0.05 0.11 34.8 0.07 20.6 0.45 0.52 Net: Emily Avenue NA 0.79 0.00 0.12 0.91 6.7 0.00 0.80 0.80 I 0.024 NA 0.79 0.00 0.12 0.91 6.7 0.00 0.80 0.80 hig is the average value for all movernuts in a shared lane 0.00 0.12 0.91 6.7 0.00 0.80 0.80	Lane No.		% Arv During Green	Frog. Factor	Ef hel	fective he2	Geom. Big	Rate Overall h	Total Stops H	Move-up Rate hqm	Queue Move-ups Hom	Prop. Queued Pq	Num. of Cycles to Depart
North: Koala Street (North) 1 0.242 NA NA 0.05 0.00 0.05 0.11 34.8 0.07 20.6 0.45 0.52 West: Emily Arence 1 0.024 NA NA 0.79 0.00 0.12 0.91 6.7 0.00 0.0 0.80 hig is the arerage value for all movements in a shared lane hig is the average queue move-up rate for all vehicles queued and unqueued	North: Koala Steeet (North) 1 0.242 NM NA 0.06 0.00 0.05 0.11 34.8 0.07 20.6 0.45 0.52 Nest: Emily Avenue Nest: Emily Avenue 1 0.024 NM NA 0.79 0.00 0.12 0.91 6.7 0.00 0.0 0.80 0.80 hig 1s the average value for all movements in a shared lane hig 1s the average value for all writicles queued and unqueued Gob IsbleLinks(IOp) Gob IsbleLinks(IOp)	South	. Koala 0.548	Street	(South) NA			10.0	0.01	- 6 - 4				
West: Emily Avenue 1 0.024 NA 0.79 0.00 0.12 0.91 6.7 0.00 0.0 0.80 119 15 the average value for all movements in a shared lane hqm is average queue move-up rate for all vehicles queued and unqueued	West: Emily Avenue 1 0.024 NM NA 0.79 0.00 0.12 0.91 5.7 0.00 0.0 0.80 0.80 hig is the average value for all movements in a shared lane hig is average queue moverup rate for all vehicles queued and unqueued of TableLhMs (Top)	North	. Koala 0.242	Street NA	(North) NA	0.06	0.00	0.05	0.11	34. 8	0.07	20.6	0.45	0.52
hig is the average value for all movements in a shared lane hqm is average queue move up rate for all vehicles queued and unqueued	hig is the average value for all movements in a shared lane hqm is average queue moverup rate for all vehicles queued and unqueued of0_TableLinks([Op)	West: 1	Emily 0.024	Ave nue NA	1	0.79	0.00	0.12	0.91	6.7	0.00			0.80
	o to Table Links (Top)	hig hgm	Ls the is aver	average age quet	value fo	or all up rate	movemen for al	tcs in l vehi	a shared	lane ued and	unqueued			
		Elow Dates	2000											

Site ID: 101 Give-Way Sign Controlled Intersection

Flow I

Origin-Destination Flow Rates (Total) Site: Emily Road PM 2039 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Interaction

TOTAL FLOW RATES for All Movement Classes (vch/h)

From SOUTH To:	M	Ν	
Turn:	I.2	ΤE	LOL
Flow Rate	15.8	1052.6	1068.4
&HV (all designations)	0.0	0.0	0.0
From NORTH To:	vi	8	
Turn:	ΪF	52	LOL
Flow Rate	263.2	43.2	306.3
&HV (all designations)	0.0	0.0	0.0
From WEST To:	N	n	
Turn:	51	R2	LOL
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Flo 8HV	Flow Rate SHV (all	Flow Rate %HV (all designations	ations	_	5.3	00	2.1	7.4					
ļ													
Flow	rates	shown	above	are	Arrival	Flow	Rates	(veh/h)	based (on the	Flow rates shown above are Arrival Flow Rates (veh/n) based on the following input specific	input	specific
11n11	Time	for 110	a music	ŭ I	Cinit Time for Wollimes = 60 minites								

cations:

Flow rates shown above are Arrival rlow Rates (veruur, number of of time for Volumes = 60 minutes Fork Flow Retiod = 30 minutes Effects of Volume Pactors [Feak Flow Pactor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in

Go to Table Links (Top)

Origin-Destination Flow Rates by Movement Class Site: Emily Road PM 2039 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

FLOW RATES for Light Vehicles $(\mbox{vehicles}\ (\mbox{vehicles}\))$

Turn:	L2	ΞĒ	TOT
Flow Rate	15.8	1052.6	1068.4
Mov Class %	100.0	100.0	100 ° 0
Scale	1.00	1.00	'
Peak Flow Factor	0.95	0.95	1
Residual Demand	0.0	0.0	0.0
From NORTH To:	S	3	
Turn:	ΞF	R2	TOT
Flow Rate	263.2	43.2	306.3
			100.0
Flow Scale	1.00	1.00	'
Peak Flow Factor	0.95	0.95	
Residual Demand	0.0	0.0	0.0
FYOM WEST TO:	M	N.	
Turn:	12	R2	TOT
Flow Rate	5.3	2.1	7.4
	100.0	100.0	100 ° 0
Flow Scale			'
Peak Flow Factor	0.95	0.95	'
Residual Demand	0.0	0.0	0.0

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Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications: Unit Fime for Volumes = 60 minutes Peak Flow Period = 30 minutes Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included. Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

Go to Table Links (Top)

Lane Flow Rates Site: Emily Road PM 2039 Developed GHDVals

Site ID: 101 Give-Way Sign Controlled Intersection

FLOW RATES AT STOP LINE (veh/h) LANE

<u>a</u>	TOT	1068.4 1068.4	1068.4	TOT	306.3 306.3	306.3	TOT	7.4 7.4	7.4	
(u/uan) swith	и Г	1052.6 1052.6	1052.6	M 2.F	43.2 43.2	43.2	ក្ត	2.1	2.1	
FT ADIE IN	M CT	15.8 15.8	15.8	8 탄	263.2 263.2	263.2	N LL2	ມ ມ ຝ. ຜ.	°. Ω	
N CITYN MOLI IWM	From SOUTH To: Turn:	Lane 1 LV Total	Approach	From NORTH To: Turn:	Lane 1 LV Total	Approach	From WEST To: Turn:	Lane 1 LV Total	Approach	

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EXIT LANE FLOW RATES 035328_PMHC_EmilyAvenue001_Council5328_106_Traffic.docx 138

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DEVELOPMENT ASSESSMENT PANEL

265.3 * 265.3 265.3 * 265.3 1037.9 * 1037.9 58.9 * 58.9 58.9 * 58.9 58.9 * 58.9 58.9 * 1037.9 1037.9 * 1057.9 1057.9 * 1057.9 1057.9 * 1057.9 58.9 * 58.9 58.9 * 58.9
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ATTACHMENT

Item 05 Attachment 10 Page 478

Site ID: 101 Give-Way Sign Controlled Intersection	
* Basic Parameters: Intersection Type: Unsignalised - Give Way Driving on the left-hand side of the road input data specified in Metric units Model Defaults: New Youth Walks Model Defaults: New Youth Walks Presk Flow Feriod (for performance): 30 minutes	
unt thue (ic Youmes)! 90 minutes. SIDRA Standard Delay model used SIDRA Standard Queue model used Level of Service based on: Delay (RTA NSW) Queue percentile: 955	
Goto Table Links (Top) Diagnostics Site: Emily Road PM 2039 Developed GHDVals	
site ID: 101 Give-Way Sign Controlled Intersection	
Lame Flow-Capacity Iterations: 51te Model Variability Index (Tterations 3 to N): 0.0% Number of Iterations: 3 [Maximum: 10]	
other Diagnostic Messages (if any): Gob Table interfron)	

ATTACHMENT

ORDINARY COUNCIL 20/05/2020

06/05/2020

DEVELOPMENT ASSESSMENT PANEL

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Item 05

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Item 13.08 Attachment 2

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FOR USE BY PLANNERS/SURVEYORS TO PREPARE LIST OF PROPOSED CONDITIONS - 2011

NOTE: THESE ARE DRAFT ONLY

DA NO: 2019/309 DATE: 7/05/2020

PRESCRIBED CONDITIONS

The development is to be undertaken in accordance with the prescribed conditions of Part 6 - Division 8A of the *Environmental Planning & Assessment Regulations* 2000.

A - GENERAL MATTERS

(1) (A001) The development is to be carried out in accordance with the plans and supporting documents set out in the following table, as stamped and returned with this consent, except where modified by any conditions of this consent.

			÷
Plan/ Supporting Document	Reference	Prepared By	Date
Statement of Environmental Effects as amended	Job: 5328	King + Campbell Pty Ltd	April 2019
Subdivision Layout	Project: 5328 Exhibit 03A Sheet 3 Revision D	King + Campbell Pty Ltd	27 November 2019
Tree Removal and Offset Planting Plan	Project: 5328 Exhibit 03B Sheet 4 Revision A	King + Campbell Pty Ltd	27 November 2019
Preliminary Water and Sewer Plan	Project: 5328 Exhibit 04 Sheet 5 Revision C	King + Campbell Pty Ltd	27 November 2019
Preliminary Stormwater Management Plan	Project: 5328 Exhibit 05 Sheet 6 Revision C	King + Campbell Pty Ltd	27 November 2019
Stage 1 Contamination Assessment	RGS20789.1- AB	Regional Geotechnical Solutions	16 April 2019
Ecological Assessment	Project Number: EC3309	Biodiversity Australia	April 2019
	Document Reference: EC3309-BEC- REP- EmilyAve_EA- rev1.0		

Bushfire Hazard Assessment	Version 2.0	David Pensini Building Certification and Environmental Services	17 April 2019
Traffic Impact Assessment	0:\5328_EmilyA venue\01_Coun cil\5328_106_Tr affic.dox.	King + Campbell Pty Ltd	March 2019

In the event of any inconsistency between conditions of this development consent and the plans/supporting documents referred to above, the conditions of this development consent prevail.

- (2) (A002) No subdivision work shall commence until a Subdivision Works Certificate has been issued and the applicant has notified Council of:
 - a. the appointment of a Principal Certifying Authority; and

b. the date on which work will commence.

Such notice shall include details of the Principal Certifying Authority and must be submitted to Council at least two (2) days before work commences.

- (3) (A004) An application for a Subdivision Works Certificate will be required to be lodged with Council prior to undertaking subdivision works and a Subdivision Certificate is required to be lodged with Council on completion of works.
- (4) (A008) Any necessary alterations to, or relocations of, public utility services to be carried out at no cost to council and in accordance with the requirements of the relevant authority including the provision of easements over existing and proposed public infrastructure.
- (5) (A009) The development site is to be managed for the entirety of work in the following manner:
 - 1. Erosion and sediment controls are to be implemented to prevent sediment from leaving the site. The controls are to be maintained until the development is complete and the site stabilised with permanent vegetation;
 - 2. Appropriate dust control measures;
 - Building equipment and materials shall be contained wholly within the site unless approval to use the road reserve has been obtained. Where work adjoins the public domain, fencing is to be in place so as to prevent public access to the site;
 - 4. Building waste is to be managed via appropriate receptacles into separate waste steams;
 - 5. Toilet facilities are to be provided on the work site at the rate of one toilet for every 20 persons or part of 20 persons employed at the site.
 - 6. Building work being limited to the following hours, unless otherwise permitted by Council;
 - Monday to Saturday from 7.00am to 6.00pm
 - No work to be carried out on Sunday or public holidays

The builder to be responsible to instruct and control his sub-contractors regarding the hours of work.

(6) (A011) The design and construction of all public infrastructure works shall be in accordance with Council's adopted AUSPEC Specifications.

- (7) (A013) The general terms of approval from the following authorities, as referred to in section 4.50 of the Environmental Planning and Assessment Act 1979, and referenced below, are attached and form part of the consent conditions for this approval.
 - NSW Rural Fire Service The General Terms of Approval, Reference DA-2019-01630-CL55-1 and dated 7 January 2020, are attached and form part of this consent.
- (8) (A032) The developer is responsible for any costs relating to minor alterations and extensions to ensure satisfactory transitions of existing roads, drainage and Council services for the purposes of the development.
- (9) (A033) The applicant shall provide security to the Council for the payment of the cost of the following:
 - a. making good any damage caused to any property of the Council as a consequence of doing anything to which the consent relates,
 - b. completing any public work (such as road work, kerbing and guttering, footway construction, utility services, stormwater drainage and environmental controls) required in connection with the consent,
 - c. remedying any defects in any such public work that arise within twelve (12) months after the work is completed.

Such security is to be provided to Council prior to the issue of the Subdivision Certificate/Construction Certificate or Section 138 of the Roads Act, 1993.

The security is to be for such reasonable amount as is determined by the consent authority, being an amount that is 10% of the contracted works for Torrens Title subdivision development/the estimated cost plus 30% for building development of public works or \$5000, whichever is the greater of carrying out the development by way of:

i.deposit with the Council, or

ii.an unconditional bank guarantee in favour of the Council.

The security may be used to meet any costs referred to above and on application being made to the Council by the person who provided the security any balance remaining is to be refunded to, or at the direction of, that person. Should Council have to call up the bond and the repair costs exceed the bond amount, a separate invoice will be issued. If no application is made to the Council for a refund of any balance remaining of the security within 6 years after the work to which the security relates has been completed the Council may pay the balance to the Chief Commissioner of State Revenue under the Unclaimed Money Act 1995.

(10) A Stage 2 Contamination Assessment is to be carried out and Remedial Action Plan prepared in accordance with the Stage 1 Contamination Assessment, RGS20789.1-AB 2 prepared by Regional Geotechnical Solutions, dated 16 April 2019, pages 9-11.

Should any fill material require removal off-site, it will require assessment for a *Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014* in accordance with the *Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 – the Excavated Natural Material (ENM) Order 2014.*

(11) The recommendations detailed in Section 11, pages 55-56 of the Ecological Assessment prepared by Biodiversity Australia dated April 2019, form part of

this consent and shall be implemented at the respective stages throughout the development.

B - PRIOR TO ISSUE OF SUBDIVISION WORKS CERTIFICATE

- (1) (B001) Prior to release of the Subdivision Works Certificate, approval pursuant to Section 68 of the Local Government Act, 1993 to carry out water supply, stormwater and sewerage works is to be obtained from Port Macquarie-Hastings Council. The following is to be clearly illustrated on the site plan to accompany the application for Section 68 approval:
 - Position and depth of the sewer (including junction)
 - Stormwater drainage termination point
 - Easements
 - Water main
 - Proposed water meter location
- (2) (B003) Submission to the Principal Certifying Authority prior to the issue of a Subdivision Works Certificate detailed design plans for the following works associated with the developments. Public infrastructure works shall be constructed in accordance with Port Macquarie-Hastings Council's current AUSPEC specifications and design plans are to be accompanied by AUSPEC DQS:

1. Road works along the frontage of the development including extension of Emily Avenue to 'Access Place' standard (AUSPEC D1.5) joining smoothly with the existing section of road with a minimum carriage way width of six (6) metres ending in a sealed nine (9) metre radii cul-de-sac with reflectorised posts.

2. Earthworks, including filling of the land for flood protection.

Sewerage reticulation. Existing sewer infrastructure must be extended to
provide each proposed lot with an individual connection to Council's sewer main.
Any abandoned sewer junctions are to be capped off at Council's sewer main and
Council notified to carry out an inspection prior to backfilling of this work.
 Water supply reticulation. The existing 100mm PVC water main on the northern
side of Emily avenue will need to be extended to provide main frontage to each
proposed lot. Each proposed lot is to be provided with a sealed water service, final
water service sizing will need to be determined by a hydraulic consultant to suit
the domestic and commercial components of the development, as well as fire
service and backflow protection requirements in accordance with AS3500.

- 5. Retaining walls.
- 6. Stormwater systems.
- 7. Erosion & Sedimentation controls.
- Location of all existing and proposed utility services including:

 Conduits for electricity supply and communication services (including fibre optic cable).
 - b. Water supply
 - c. Sewerage
 - d. Stormwater
- 9. Detailed driveway profile in accordance with Australian Standard 2890,

AUSPEC D1, and ASD 201, Port Macquarie-Hastings Council current version.

10. Detailed design of pedestrian access way a minimum of 4m wide, from Emily Avenue to Wayne Richards Park; such access ways to include a concrete pathway 4m wide, including kerb ramps where necessary and gates or bollards to prevent the unauthorised vehicular access to Wayne Richards Park.

11. Detailed design of landscaping and batters in the cul-de-sac road reserve in accordance with NSW Rural Fire Service - The General Terms of Approval, Reference DA-2019-01630-CL55-1 and dated 7 January 2020, are attached and form part of this consent.

12. Detailed design of vehicular access and accommodation for 2 cars for any lots with a slope of 11%-15%.

(3) (B006) An application pursuant to Section 138 of the Roads Act, 1993 to carry out works required by the Development Consent on or within public road is to be submitted to and obtained from Port Macquarie-Hastings Council prior to release of the Subdivision Works Certificate.

Such works include, but not be limited to:

- Civil works
- Traffic management
- Work zone areas
- Hoardings
- Concrete foot paving (width)
- Footway and gutter crossing
- Functional vehicular access
- (4) (B030) Prior to issue of Subdivision Works Certificate, a pavement design report shall be prepared by a suitably qualified geotechnical or civil engineer and submitted to Council, including soil test results and in-situ CBR values (NATA certified). Council's minimum pavement compaction testing criteria are as follows:
 - a. 98% (modified) base layers Maximum Modified Dry Density test in accordance with AS1289.5.2.1
 - b. 95% (modified) sub-base layers Maximum Modified Dry Density test in accordance with AS1289.5.2.1
 - c. 100% (standard) subgrade/select layers Maximum Standard Dry Density test in accordance with AS1289.5.1.1 (or for in-situ subgrade soils only, wet density testing may be used)
- (5) (B038) Footings and/or concrete slabs of buildings adjacent to sewer lines or stormwater easements are to be designed so that no loads are imposed on the infrastructure. Detailed drawings and specifications prepared by a practising chartered professional civil and/or structural engineer are to be submitted to the Principal Certifying Authority with the application for the Subdivision Works Certificate.
- (6) (B039) Detailed drawings and specifications prepared by a professional engineer for all retaining walls supporting:

i. earthworks that are more than 600mm above or below ground level (existing); or

ii. located within 1m of the property boundaries; or

iii. earthworks that are more than 1m above or below ground level (existing) in any other location;

are to be submitted to the Principal Certifying Authority with the application for the Subdivision Works Certificate.

- (7) (B054) A driveway longitudinal section shall accompany the section 138 application pursuant to section 138 of the Roads Act, 1993. The section shall demonstrate compliance with Council's adopted AUSPEC Design and Construction Guidelines.
- (8) (B057) The existing sewer including junction and/or stormwater drainage shall be located on the site and the position and depth indicated on the plans which accompany the application for the Subdivision Works Certificate.
- (9) (B085) The location of electricity substations are to be clearly illustrated on the Subdivision Works Certificate plans. All substations are to remain on private property unless otherwise agreed to by Port Macquarie-Hastings Council.
- (10) (B197) A stormwater drainage design is to be submitted and approved by Council prior to the issue of a Subdivision Works Certificate. The design must be prepared in accordance with Council's AUSPEC Specifications, Australian Rainfall and Runoff 2019, the requirements of Relevant Australian Standards and shall make provision for the following:

a) The legal point of discharge for the proposed development is defined as the existing downstream informal vegetated stormwater basin. In this regard, a suitably sized piped drainage system (minimum 375mm diameter) shall be extended from the basin to the site. The pipeline must be designed to have capacity to convey flows that would be collected within the development as generated by a 5% AEP storm event.

Furthermore, in difference to the concept pipeline alignment illustrated on the Stormwater Management Plan prepared by King and Campbell, Drawing No, 5328P Exhibits Sheet 6 Revision C and dated 27-11-19, the location of the pipeline discharging to the existing 'basin' should be relocated to the north so that is located beneath the invert of the existing swale drain, or other such location with the agreement of Council's stormwater engineer, to assist in draining that area. The change of direction/inlet pit can also then function to capture runoff from the upstream swale to the west.

b) All allotments must be provided with a direct point of connection to the public piped drainage system. Kerb outlets are not permitted.

c) The design requires the provision of interallotment drainage in accordance with AUSPEC D5.

d) Where works are staged, a plan is to be provided which demonstrates which treatment measure/s is/are are to be constructed with which civil works stage. Separate plans are required for any temporary treatment (where applicable e.g. for building phase when a staged construction methodology is adopted) and ultimate design.

e) The design is to make provision for the natural flow of stormwater runoff from uphill/upstream properties/lands. The design must include the collection of such waters and discharge to the Council drainage system.

f) In addition to the works to drain the development site to the existing downstream vegetated informal stormwater basin, the following additional works shall be undertaken as a means of improving downstream amenity, lessening the maintenance burden, and mitigating any impacts resulting from increased stormwater discharge:

- a. The condition of the basin is to be restored to maximise its capacity and effectiveness. Weeds, debris and excess silt shall be removed to the satisfaction of Council.
- b. A low earthen berm is to be constructed along the northern side of the existing basin to ensure all stormwater from the development and surrounds can be confined to the basin (basin currently overtops) and prevented from inundating the adjacent sports fields. A cut/fill plan is to be submitted prior to approval of the Subdivision Works Certificate.
- (11) (B198) The access shaft to proposed lots 3, 4 and 5 shall be constructed to AUSPEC standard (with a 5.5 metre wide concrete or approved surface) over the full length of the shaft commencing from the edge of the public road pavement. Provision for water supply, sewerage, telephone and electricity shall be provided as necessary, in conduits laid for the full length of the shaft, prior to concrete construction. Details shall be provided with the application for Subdivision Works Certificate and constructed prior to release of Subdivision Certificate.
- (12) Prior to the issue of the Subdivision Works Certificate an offset tree planting plan shall be approved by Council's Natural Resource staff. The plan shall provide for eight (8) compensatory tree plantings on land determined to be suitable by Council's Natural Resource staff and clearly illustrate the specific location, species and size of trees. The plan shall have regard to location of existing services, access arrangements, maintenance and asset protection zone obligations.

C - PRIOR TO ANY WORK COMMENCING ON SITE

- (1) (C001) A minimum of one (1) week's notice in writing of the intention to commence works on public land is required to be given to Council together with the name of the principal contractor and any major sub-contractors engaged to carry out works. Works shall only be carried out by a contractor accredited with Council.
- (2) (C004) Prior to works commencing an application being made to the electricity and telecommunications service providers. Services are required to be underground.
- (3) (C008) No access through the adjoining Wayne Richards Park reserve shall be allowed without first obtaining written approval from Council's Parks and Gardens Manager. No clearing or damage to any vegetation on the reserve is permitted. No spoil, fill, waste liquids or solid materials shall be stockpiled on or allowed to move beyond the fence line for any period on the adjoining reserve during or after the development. In the event of accidental damage, the site must be revegetated to the satisfaction of Council. Such approval would need to be undertaken in accordance with Council Policy.
- (4) (C013) Where a sewer manhole and Vertical Inspection Shaft exists within a property, access to the manhole/VIS shall be made available at all times. Before during and after construction, the sewer manhole/VIS must not be buried, damaged or act as a stormwater collection pit. No structures, including retaining walls, shall be erected within 1.0 metre of the sewer manhole or located so as to prevent access to the manhole.

D – DURING WORK

(1) (D001) Development works on public property or works to be accepted by Council as an infrastructure asset are not to proceed past the following hold points without inspection and approval by Council. Notice of required inspection must be given 24 hours prior to inspection, by contacting Council's Customer Service Centre on (02) 6581 8111. You must quote your Subdivision Works Certificate number and property description to ensure your inspection is confirmed:

a. prior to commencement of site clearing and installation of erosion control facilities;

b. at the commencement of earthworks;

c. before commencement of any filling works;

d. when the sub-grade is exposed and prior to placing of pavement materials;

e. when trenches are open, stormwater/water/sewer pipes and conduits jointed and prior to backfilling;

f. at the completion of each pavement (sub base/base) layer;

g. before pouring of kerb and gutter;

h. prior to the pouring of concrete for sewerage works and/or works on public property;

- i. on completion of road gravelling or pavement;
- j. during construction of sewer infrastructure;

k. during construction of water infrastructure;

I. prior to sealing and laying of pavement surface course. All works at each hold point shall be certified as compliant in accordance with the requirements of AUSPEC Specifications for Provision of Public Infrastructure and any other Council approval, prior to proceeding to the next hold point.

- (2) (D033) Should any Aboriginal objects be discovered in any areas of the site then all excavation or disturbance to the area is to stop immediately and the National Parks and Wildlife Service, Department of Environment and Conservation is to be informed in accordance with Section 91 of the National Parks and Wildlife Act 1974. Subject to an assessment of the extent, integrity and significance of any exposed objects, applications under either Section 87 or Section 90 of the National Parks and Wildlife Act 1974 may be required before work resumes.
- (3)
- (4) (D051) Prior to commencement of any pavement works a material quality report from the proposed supplier shall be submitted to Council. The pavement materials shall meet Council's current specifications at the time of construction.
- (5) (D052) Prior to laying of Asphaltic Concrete (AC) or wearing surface course, submission to Council of pavement and soil test results prepared by a NATA registered person for all road pavement construction, including:
 - a. CBR test results, and
 - b. Subgrade / select fill, sub-base and base pavement compaction reports in accordance with AS1289.5.1.1 & AS1289.5.2.1 as applicable.

E – PRIOR TO THE ISSUE OF A SUBDIVISION CERTIFICATE

(1) (E005) Prior to the release of any bond securities held by Council for infrastructure works associated with developments, a formal written

(4)

application is to be submitted to Council specifying detail of works and bond amount.

- (2) (E006) Completion of engineering and environmental works for any land (other than proposed public roads) to be transferred to Council, in accordance with the approved Subdivision Works Certificate.
- (3) (E008) Payment to Council, prior to occupation or the issue of the Subdivision Certificate of the Section 7.11 contributions set out in the "Notice of Payment – Developer Charges" schedule attached to this consent unless deferral of payment of contributions has been approved by Council. The contributions are levied, pursuant to the Environmental Planning and Assessment Act 1979 as amended, and in accordance with the provisions of the following plans:
 - Port Macquarie-Hastings Administration Building Contributions Plan 2007
 - Hastings S94 Administration Levy Contributions Plan
 - Port Macquarie-Hastings Open Space Contributions Plan 2018
 - Hastings S94 Major Roads Contributions Plan
 - Port Macquarie-Hastings Community Cultural and Emergency Services
 Contributions Plan 2005

The plans may be viewed during office hours at the Council Chambers located on the corner of Burrawan and Lord Streets, Port Macquarie, 9 Laurie Street, Laurieton, and High Street, Wauchope.

The attached "Notice of Payment" is valid for the period specified on the Notice only. The contribution amounts shown on the Notice are subject to adjustment in accordance with CPI increases adjusted quarterly and the provisions of the relevant plans. Payments can only be made using a current "Notice of Payment" form. Where a new Notice of Payment form is required, an application in writing together with the current Notice of Payment application fee is to be submitted to Council.

- (E009) As part of Notice of Requirements by Port Macquarie-Hastings Council as the Water Authority under Section 306 of the Water Management Act 2000, the payment of a cash contribution, prior to occupation or the issue of a Subdivision Certificate of the Section 64 contributions, as set out in the "Notice of Payment – Developer Charges" schedule attached to this consent unless deferral of payment of contributions has been approved by Council. The contributions are levied in accordance with the provisions of the relevant Section 64 Development Servicing Plan towards the following:
 - augmentation of the town water supply headworks
 - augmentation of the town sewerage system headworks
- (5) (E010) Driveways, access aisles and parking areas shall be provided with a concrete surface. Such a surface shall be on a suitable pavement, constructed and maintained in accordance with Council's Development, Design and Construction Manuals (as amended).
- (6) (E011) Submission prior to the issue of a Subdivision Certificate of a plan prepared by a Registered Surveyor showing location of existing road formation relative to reserved and dedicated roads to enable determination of any road widening necessary. Any road widening is to be at no cost to Council.
- (7) (E012) Dedication as public road to Council, the area required for road widening along the frontage of the development at no cost to Council. Details are to be incorporated in the plan of subdivision.

- (8) (E015) Prior to release of the Subdivision Certificate details from a suitably qualified bushfire professional (recognised by the RFS) shall be provided to the satisfaction of the certifying authority confirming compliance with the issued bushfire safety authority conditions and Planning for Bushfire Protection Guidelines, 2006.
- (9) (E034) Prior to the issuing of the Subdivision Certificate, provision to the Principal Certifying Authority, of documentation from Port Macquarie-Hastings Council being the local roads authority certifying that all matters required by the approval issued pursuant to Section 138 of the Roads Act have been satisfactorily completed.
- (10) (E038) Interallotment drainage shall be piped and centrally located within an inter-allotment drainage easement, installed in accordance with Council's current AUSPEC standards (minimum 225mm pipe diameter within a minimum 1.5m easement). Details shall be provided:
 - As part of a Local Government Act (s68) application with evidence of registration of the easement with the Land Titles Office provided to Council prior to issue of the s68 Certificate of Completion; or
 - As part of a Subdivision Works Certificate application for subdivision works with dedication of the easement as part of any Subdivision Certificate associated with interallotment drainage.
- (11) (E039) An appropriately qualified and practising consultant is required to certify the following:
 - a. all drainage lines have been located within the respective easements, and
 - b. any other drainage structures are located in accordance with the Construction Certificate.
 - c. all stormwater has been directed to a Council approved drainage system
 - d. all conditions of consent/ construction certificate approval have been complied with.
 - e. Any on site detention system (if applicable) will function hydraulically in accordance with the approved Construction Certificate.
- (12) (E050) Prior to Council accepting new stormwater infrastructure, a CCTV inspection of all new and modified stormwater assets must be undertaken in accordance with the Conduit Inspection Reporting Code of Australia WSA 05.

A copy of the CCTV inspection footage and inspection report prepared and certified by a suitably qualified person shall be provided to Council prior to the acceptance of works into the nominated 'into maintenance period'.

- (13) (E051) Prior to the issuing of the Subdivision Certificate a section 68 Certificate of Completion shall be obtained from Port Macquarie-Hastings Council.
- (14) (E053) All works relating to public infrastructure shall be certified by a practicing Civil Engineer or Registered Surveyor as compliant with the requirements of AUSPEC prior to issue of Occupation/Subdivision Certificate or release of the security bond, whichever is to occur first.
- (15) (E056) A Certificate of Compliance under the provisions of Section 307 of the Water Management Act must be obtained prior to the issue of any occupation or subdivision certificate.
- (16) (E066) Ancillary works shall be undertaken at no cost to Council to make the engineering works required by this Consent effective to the satisfaction of Director of Council's Infrastructure Division. Such works shall include, but are not limited to the following:

- a. The relocation of underground services where required by civil works being carried out.
- b. The relocation of above ground power and telephone services
- c. The relocation of street lighting
- d. The matching of new infrastructure into existing or future design infrastructure
- (17) (E068) Prior to the issue of a Subdivision Certificate, evidence to the satisfaction of the Certifying Authority from the electricity and telecommunications providers that satisfactory services arrangements have been made to the lots (including street lighting and fibre optic cabling where required).
- (18) (E072) Lodgement of a security deposit with Council upon practical completion of the subdivision works.
- (19) (E079) Submission to the Principal Certifying Authority of certification by a Registered Surveyor prior to the issue of a Subdivision Certificate that all services and domestic drainage lines are wholly contained within the respective lots and easements.
- (20) (E080) The applicant is required to make provision in the application for a Subdivision Certificate:
 - a. dedication as public road of the area required for road widening,
 - b. registration of a reciprocal right of carriageway and easement for services and maintenance over those parts of the lots common to both.
- (21) (E081) The applicant will be required to submit prior to the issue of the Subdivision Certificate, a geotechnical report certifying construction of all earthworks as controlled fill in accordance with Council AUS-SPEC Standard and AS 3798. Such report to provide details of:
 - a. The surface levels of the allotments created, filled or reshaped as part of the development.
 - b. Compaction testing carried out to Controlled Fill Standard as per AS 3798.
 - c. Standard penetration tests and calculated N values.
 - d. Bore logs
 - e. Site classification of all allotments in accordance with AS2870.2011 Residential Slabs and Footings.
- (22) (E082) Submission of a compliance certificate accompanying Works as Executed plans with detail included as required by Council's current AUSPEC Specifications. The information is to be submitted in electronic format in accordance with Council's "CADCHECK" requirements detailing all infrastructure for Council to bring in to account its assets under the provisions of AAS27. This information is to be approved by Council prior to issue of the Subdivision Certificate. The copyright for all information supplied, shall be assigned to Council.
- (23) Prior to release of the Subdivision Certificate endorsement from Port Macquarie-Hasting Council's Natural Resource staff confirming the successful establishment of the offset tree plantings shall be provided to the certifying authority.

F - OCCUPATION OF THE SITE