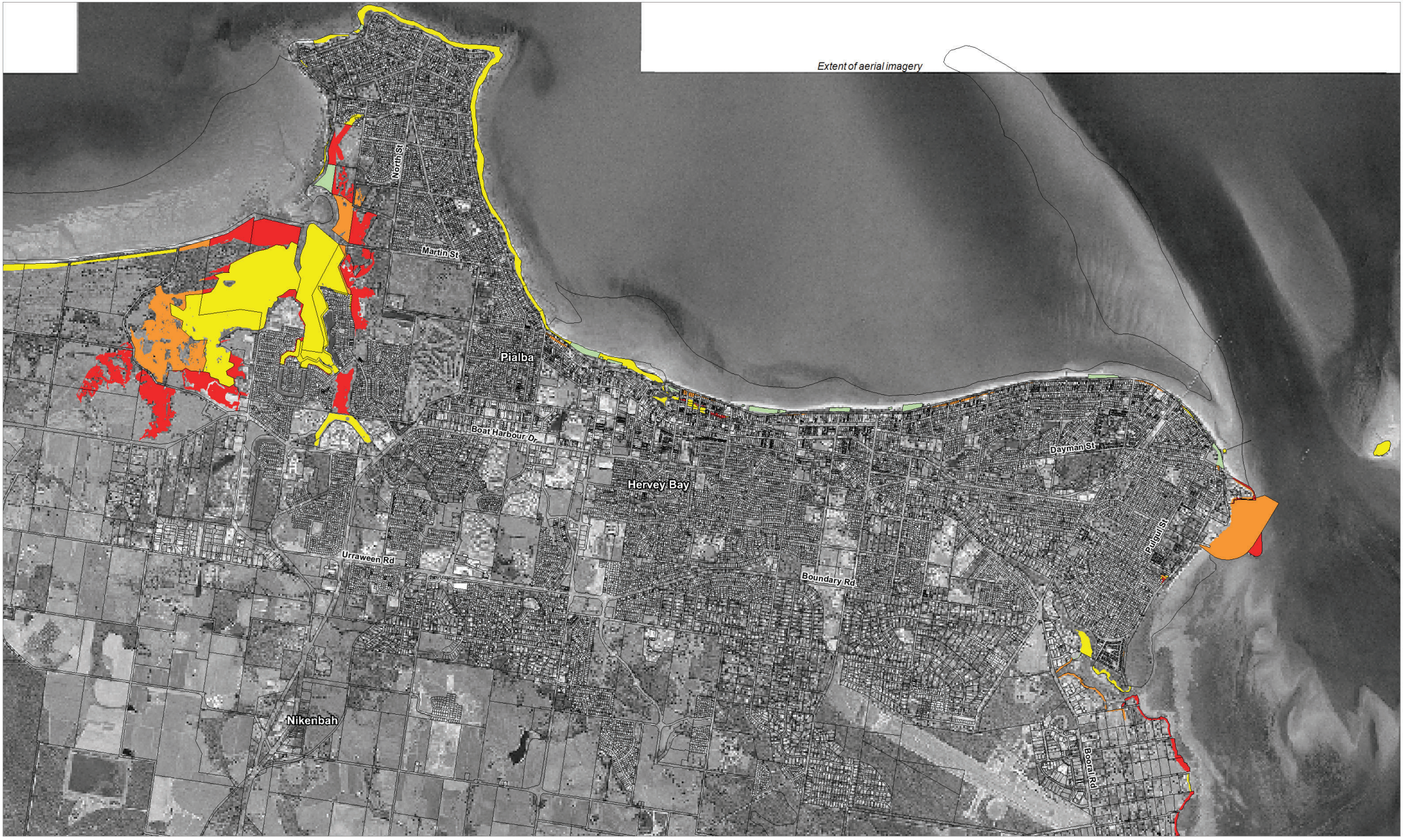


LEGEND

Cadastral Boundaries

Risk Rating

- Low
- Medium
- High
- Extreme

Title:

Regional Planning Zone and Land Parcel Assessment 2050 Erosion and Sea Level Rise

Figure:

Rev: **A**

N

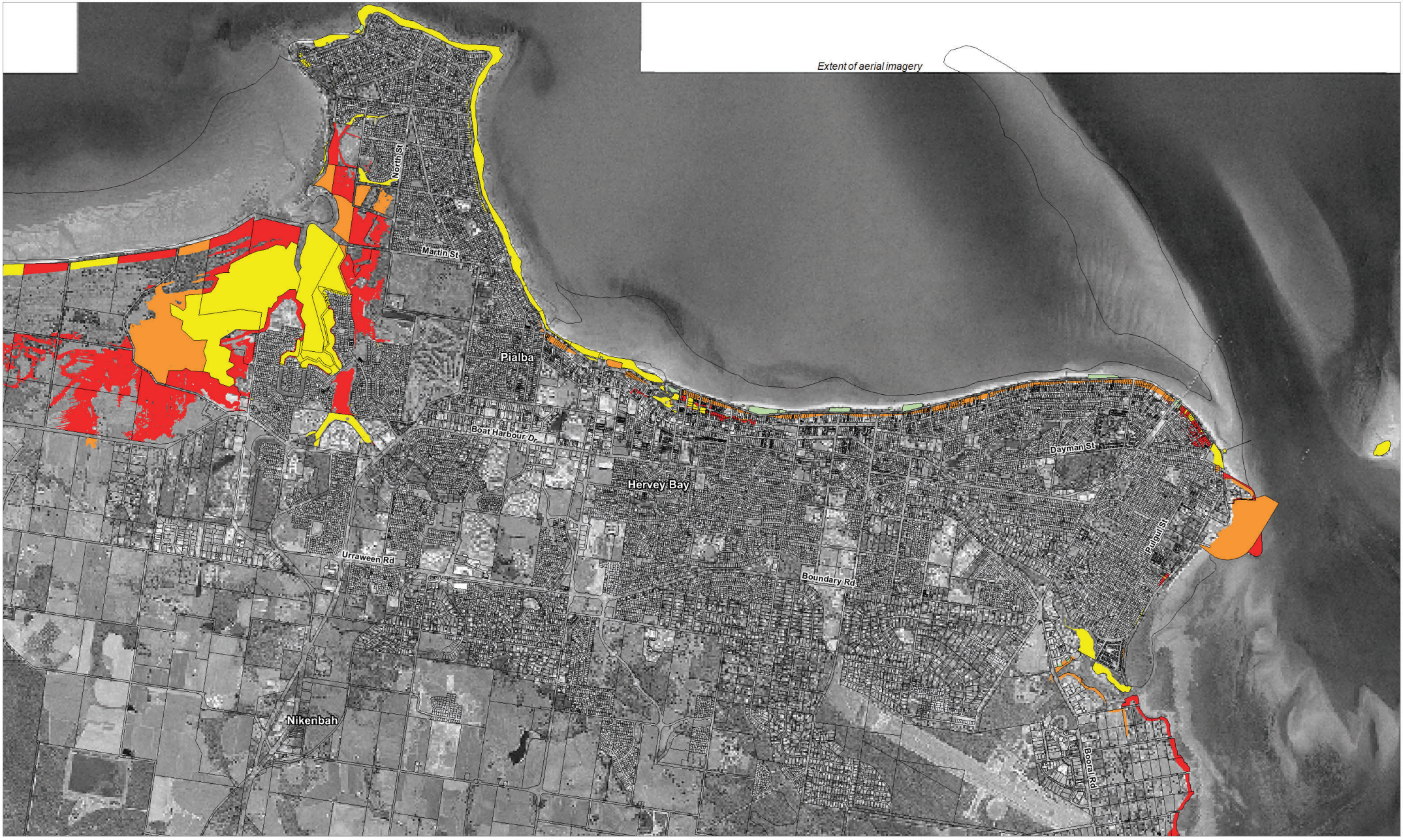
0 1 2km

Approx. Scale

BMT

www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_325_200624_Zone3_2050_SLR_RiskRating.WOR



LEGEND

Cadastral Boundaries

Risk Rating

- Low
- Medium
- High
- Extreme

Title:

Regional Planning Zone and Land Parcel Assessment 2100 Erosion and Sea Level Rise

Figure:

Rev: **A**

N

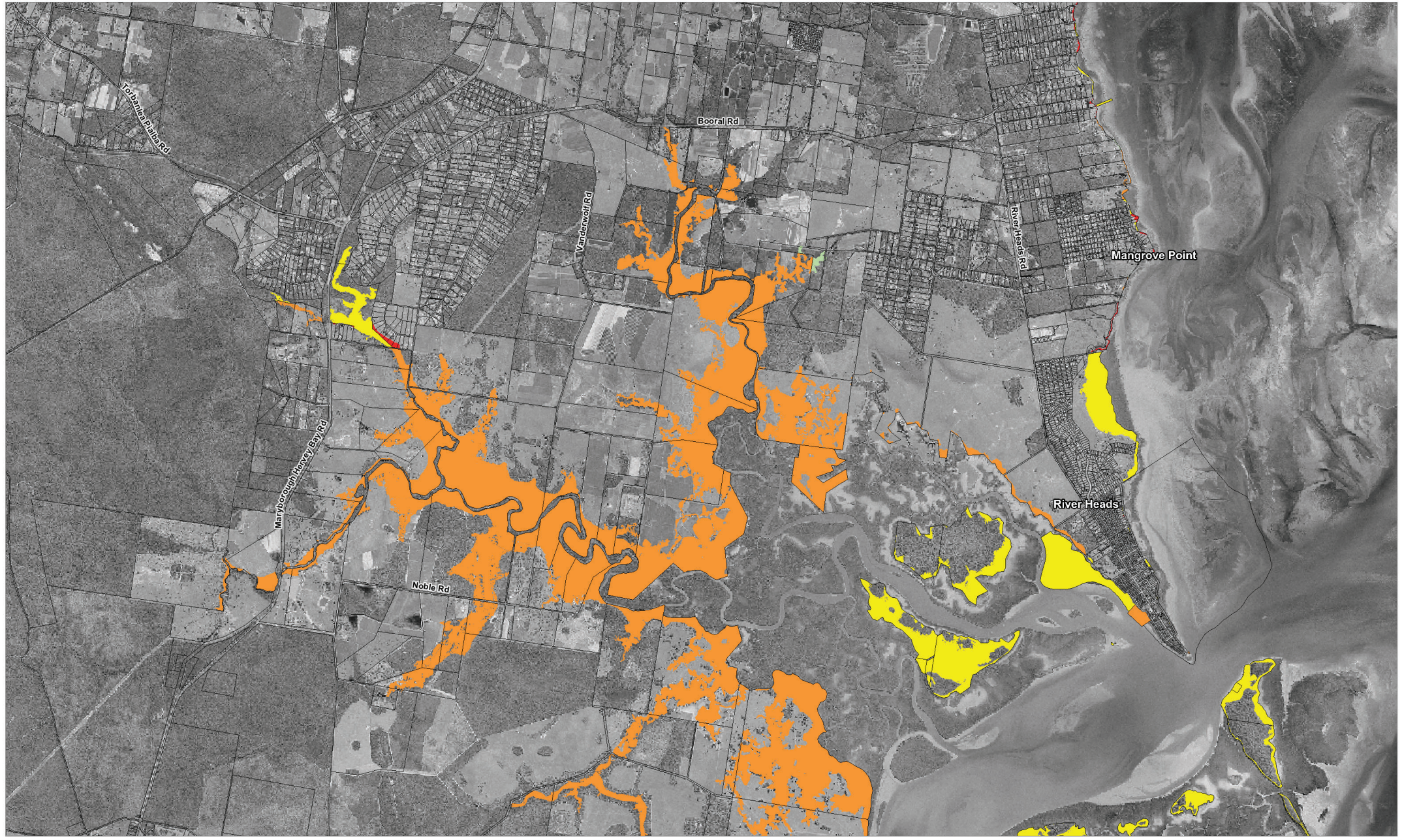
0 1 2km

Approx. Scale

BMT

www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_326_200624_Zone3_2100_SLR_RiskRating.WOR



LEGEND

Cadastral Boundaries

Risk Rating

- Low
- Medium
- High
- Extreme

Title:

Regional Planning Zone and Land Parcel Assessment Present Day Erosion and Sea Level Rise

Figure:

Rev: **A**

N

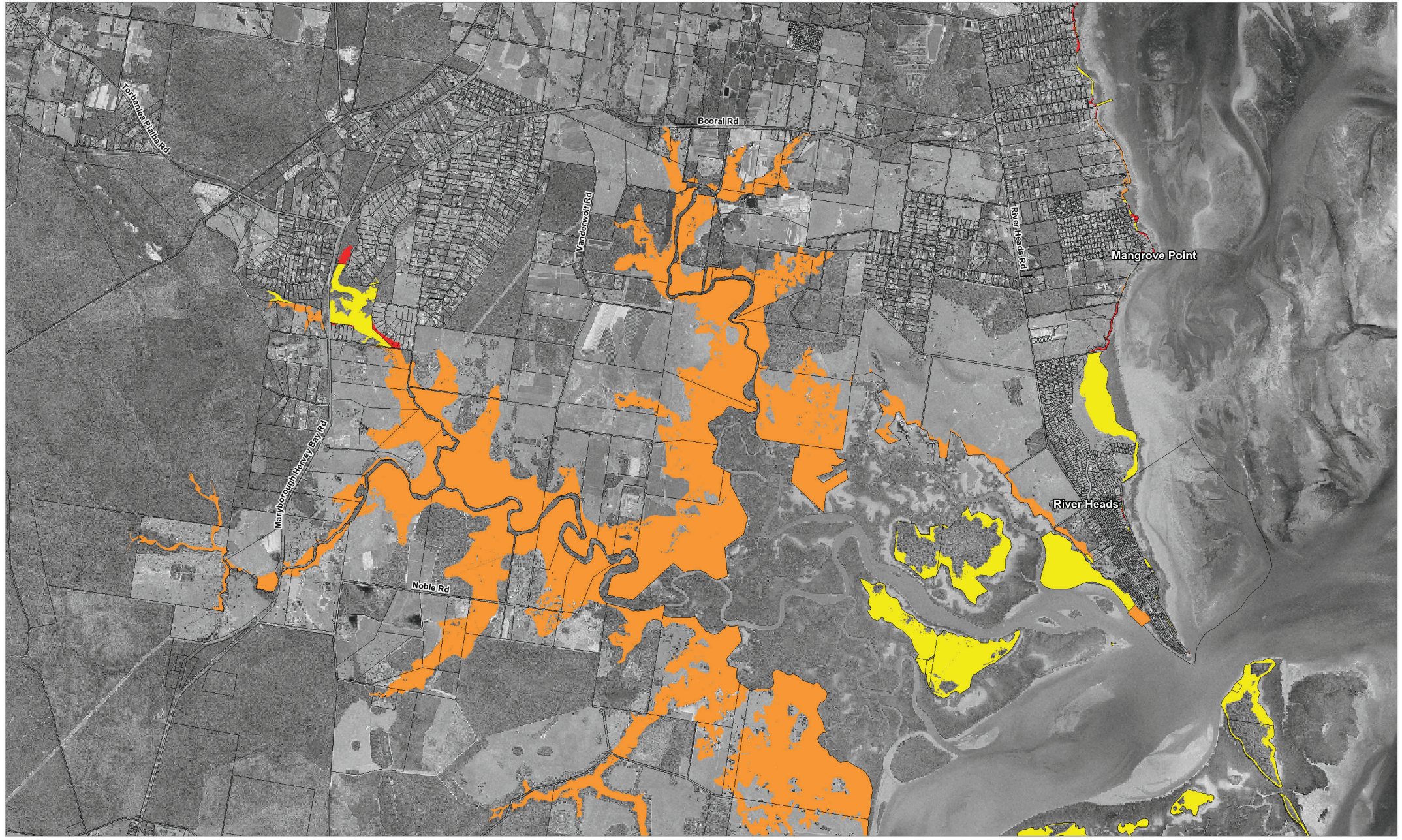
0 2 4km

Approx. scale

BMT

www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_327_200624_Zone4_PC_SLR_RiskRating.wor



LEGEND

Cadastral Boundaries

Risk Rating

- Low
- Medium
- High
- Extreme

Title:

Regional Planning Zone and Land Parcel Assessment 2050 Erosion and Sea Level Rise

Figure:

Rev: **A**

N

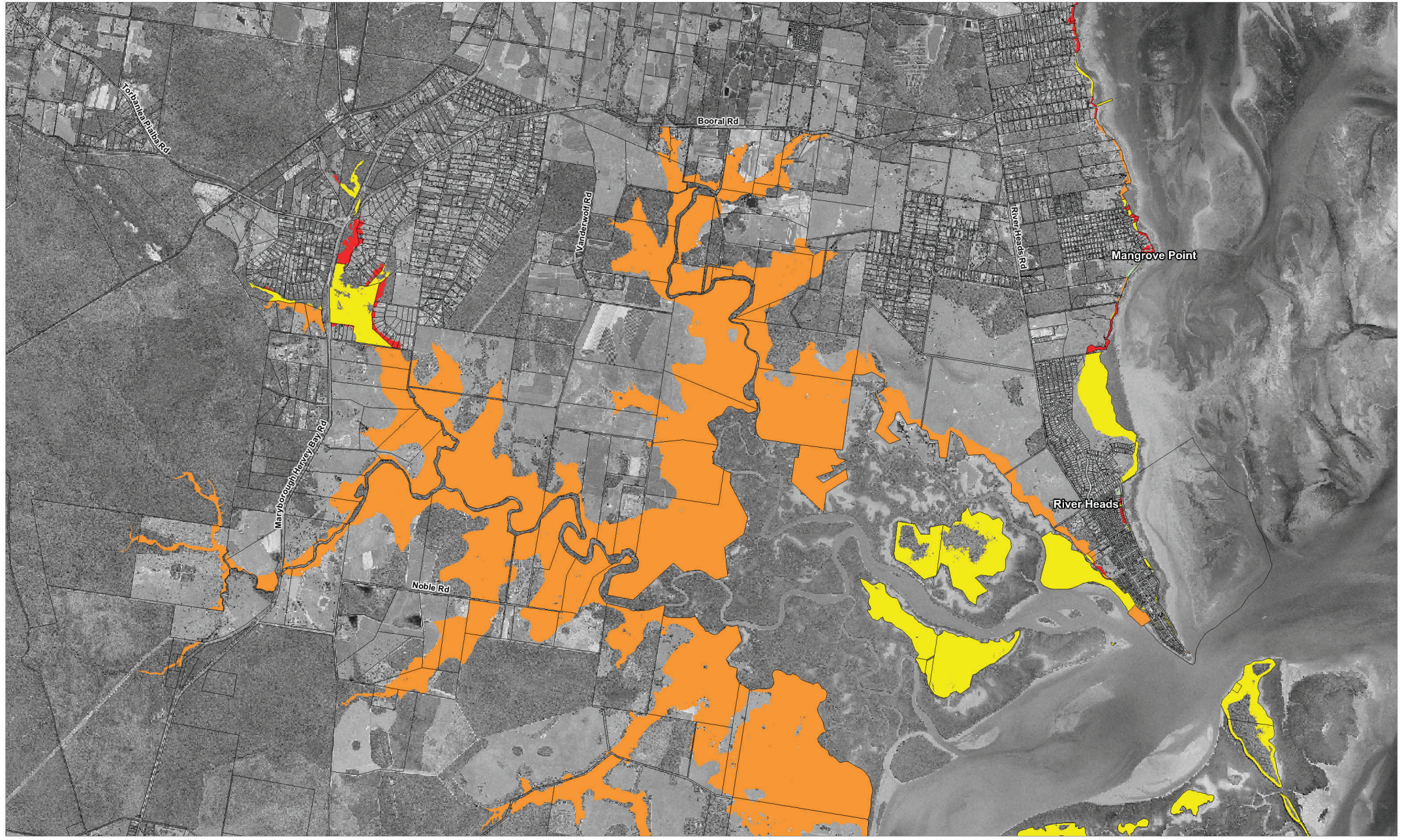
0 2 4km

Approx. scale

BMT

www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_328_200624_Zone4_2050_SLR_RiskRating.wor



LEGEND

Cadastral Boundaries

Risk Rating

- Low
- Medium
- High
- Extreme

Title:

Regional Planning Zone and Land Parcel Assessment 2100 Erosion and Sea Level Rise

Figure:

Rev: **A**

N

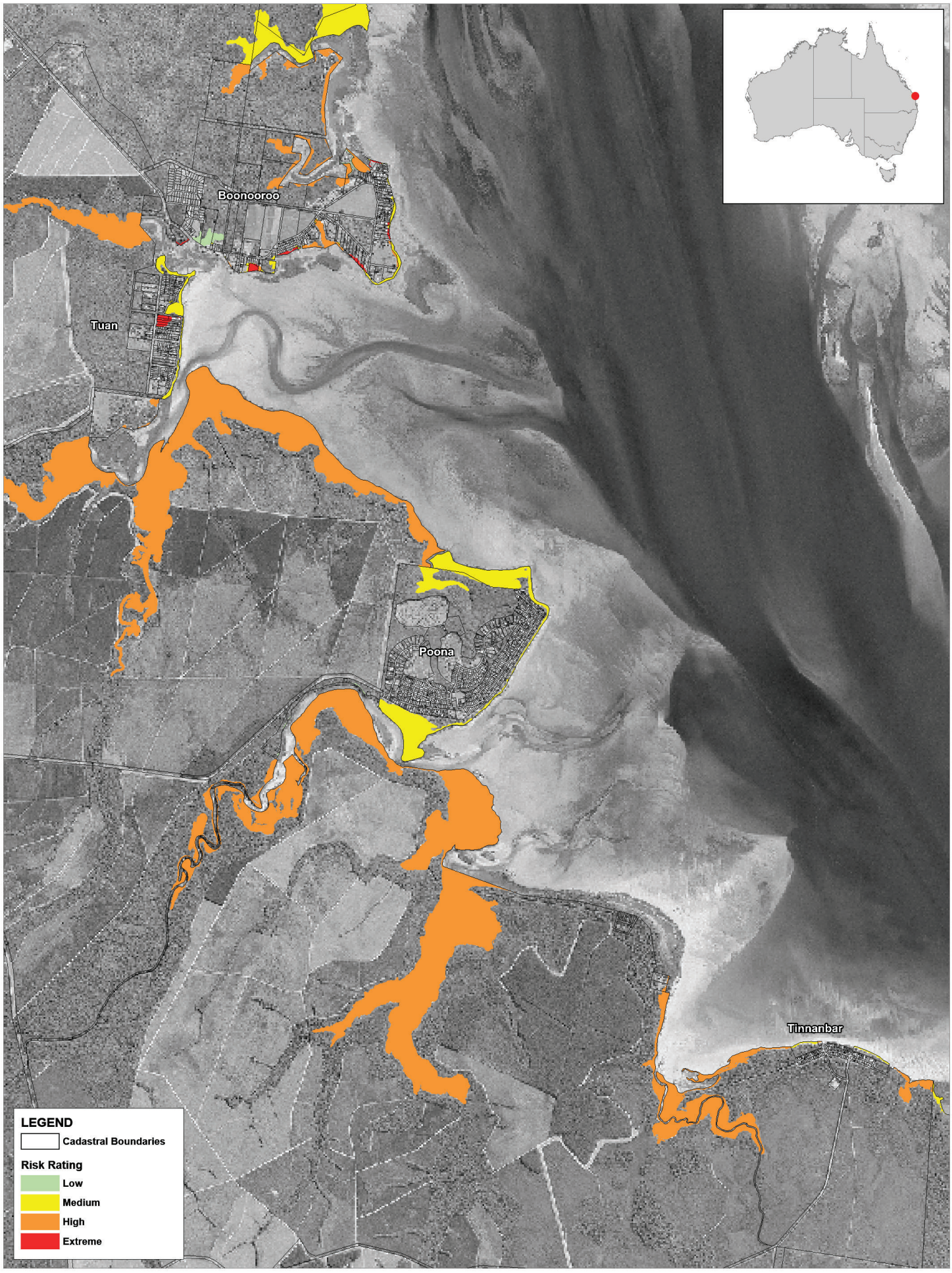
0 2 4km

Approx. scale

BMT

www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_329_200624_Zone4_2100_SLR_RiskRating.wor



Title:

Regional Planning Zone and Land Parcel Assessment
Present Day Erosion and Sea Level Rise

Figure:

Rev: **A**

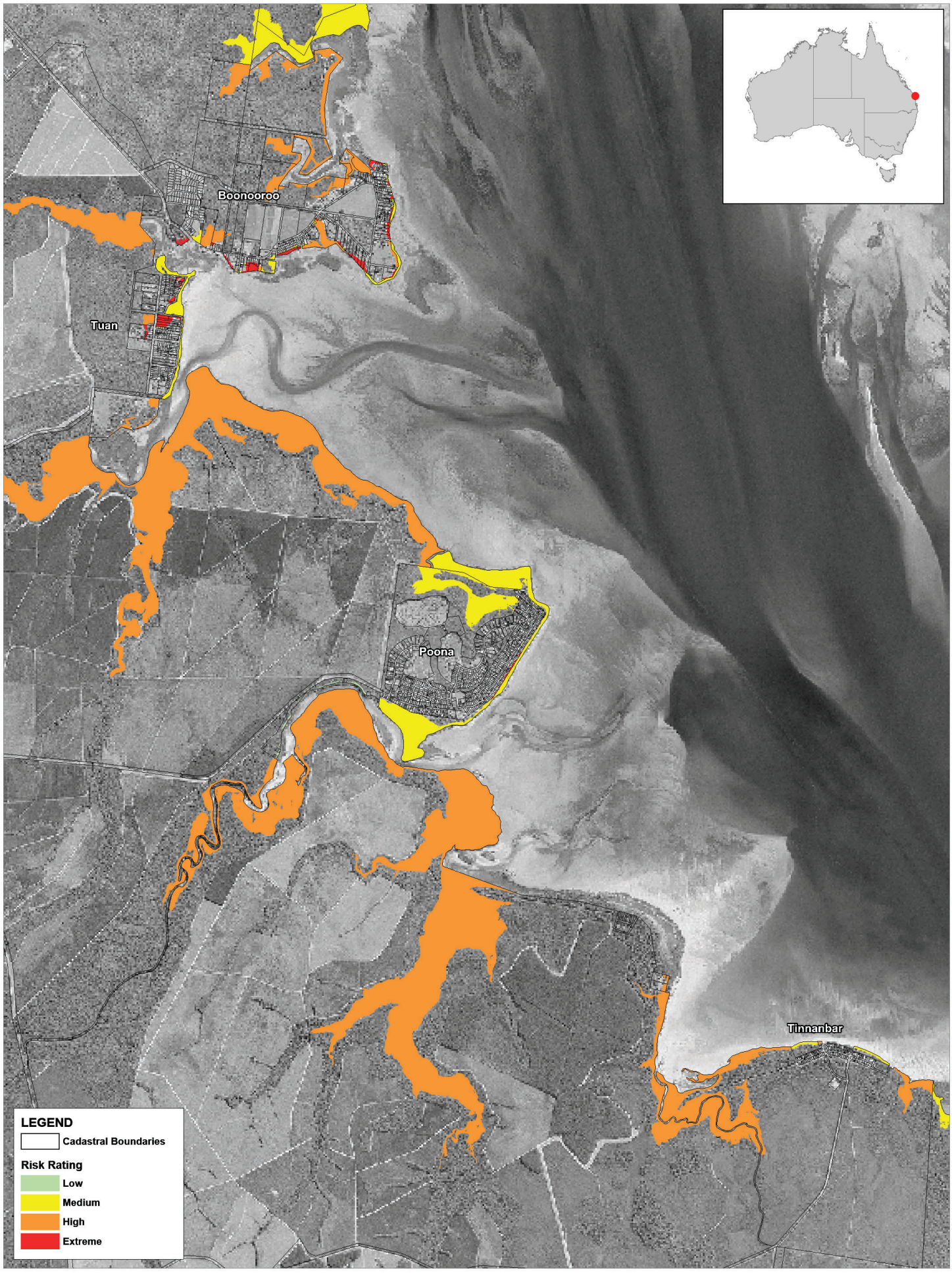
N

0 4 8km

Approx. Scale

BMT
www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_330_200624_Zone5_PC_SLR_RiskRating.WOR



Title:

Regional Planning Zone and Land Parcel Assessment
2050 Erosion and Sea Level Rise

Figure:

Rev: A

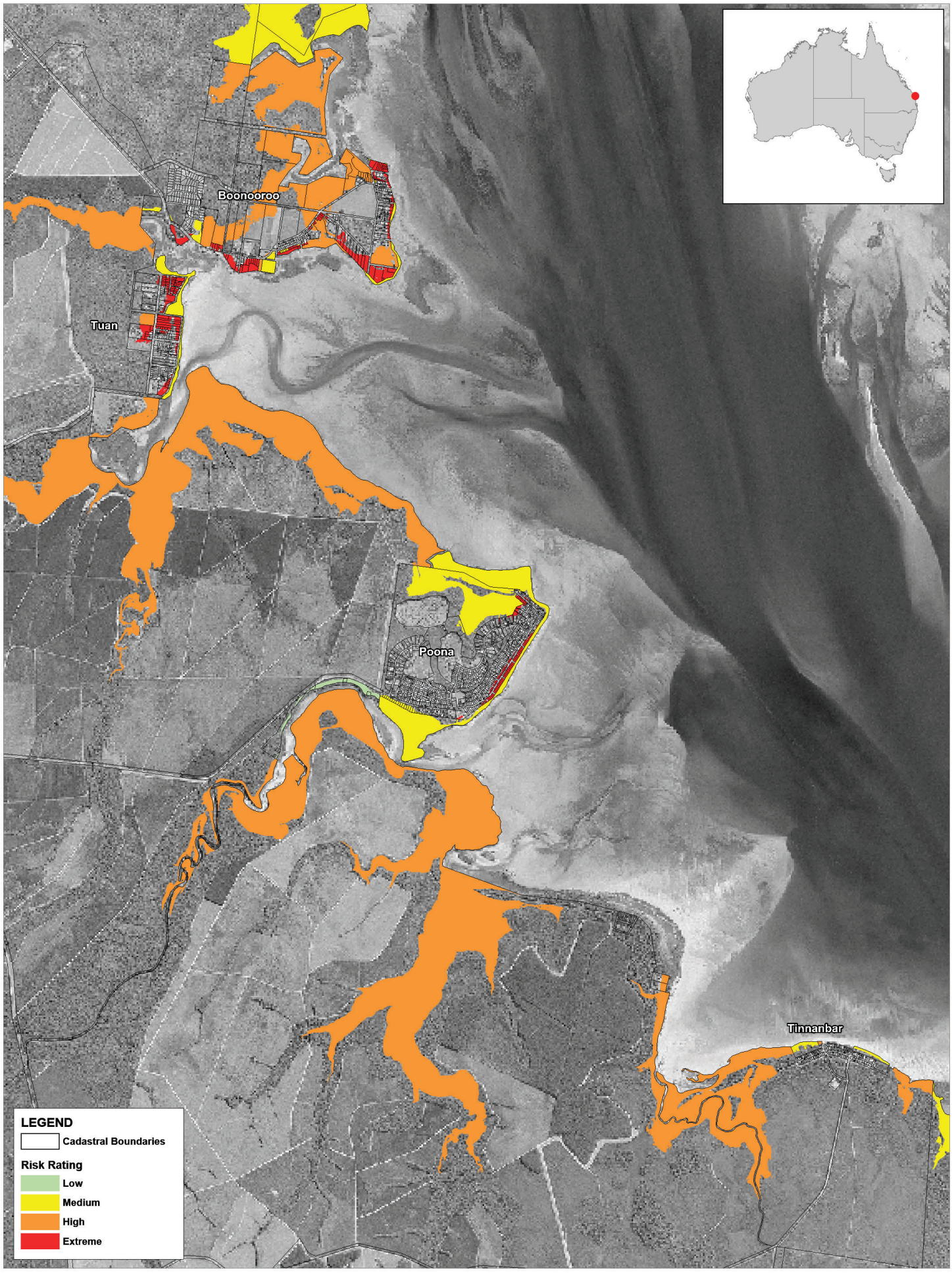
N

0 4 8km

Approx. Scale

BMT
www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_331_200624_Zone5_2050_SLR_RiskRating.WOR



Title:

Regional Planning Zone and Land Parcel Assessment
2100 Erosion and Sea Level Rise

Figure:

Rev: **A**

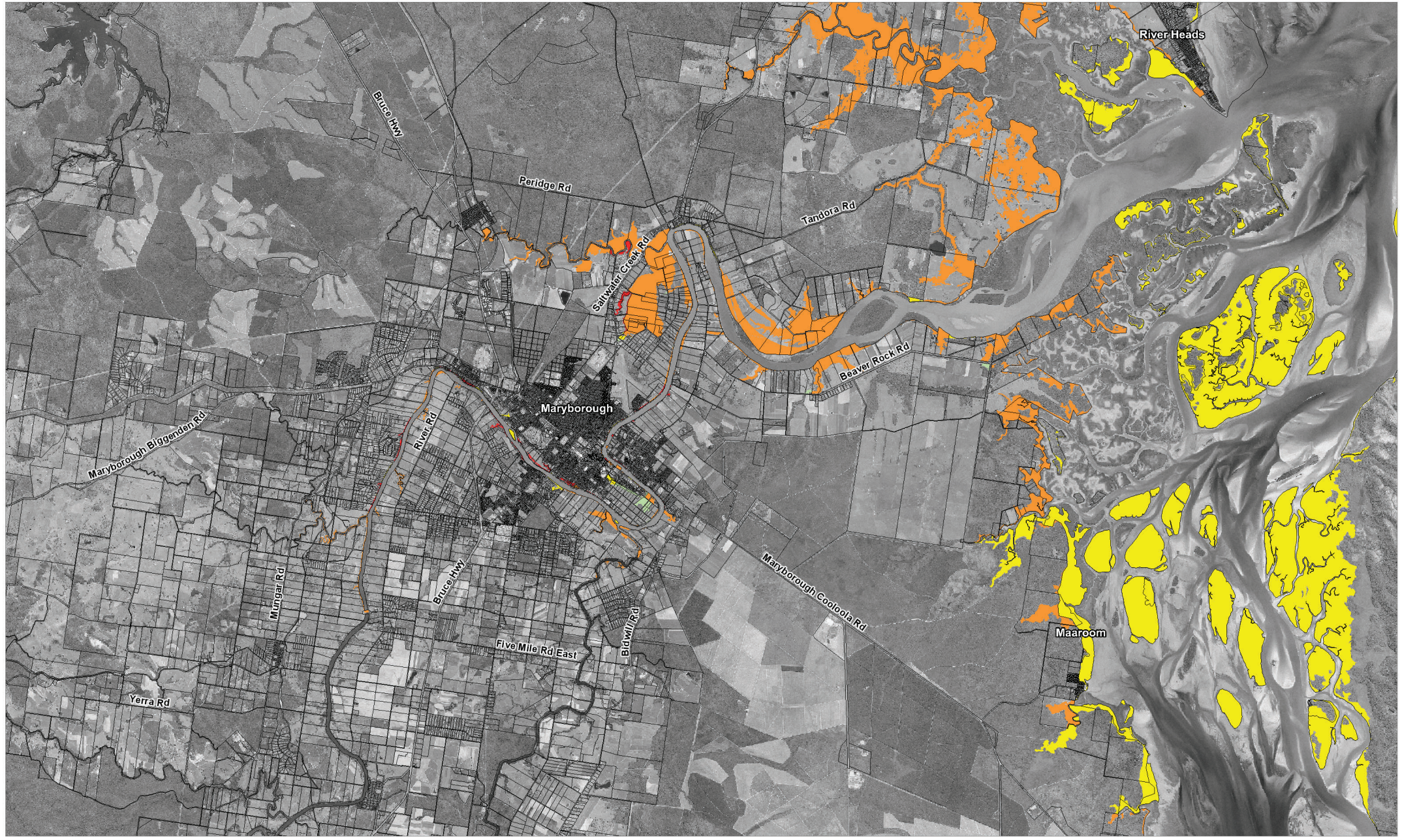
N

0 4 8km

Approx. Scale

BMT
www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_332_200624_Zone5_2100_SLR_RiskRating.WOR



LEGEND

Cadastral Boundaries

Risk Rating

- Low
- Medium
- High
- Extreme

Title:

Regional Planning Zone and Land Parcel Assessment Present Day Erosion and Sea Level Rise

Figure:

Rev: **A**

N

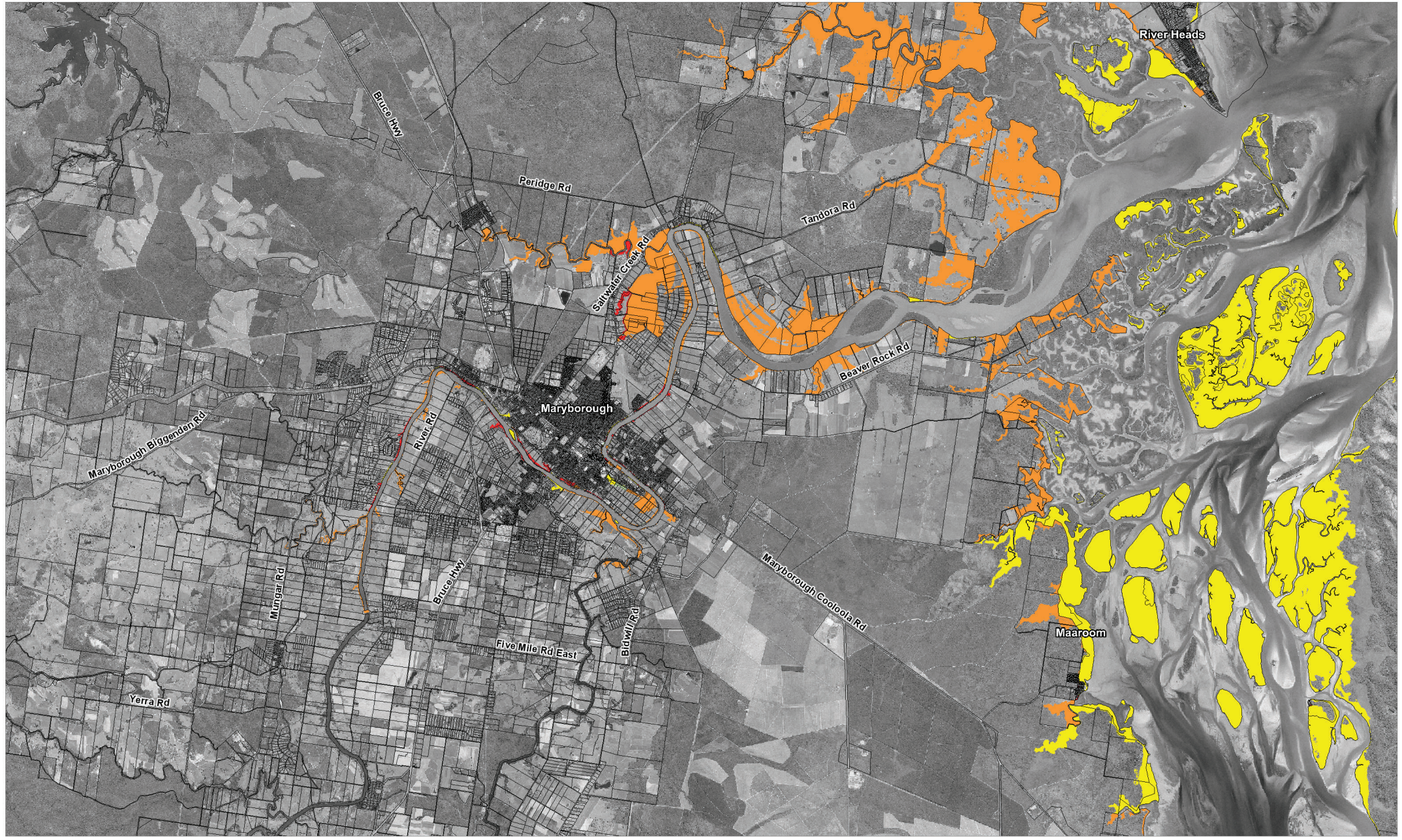
0 3 6km

Approx. Scale

BMT

www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_333_200624_Zone6_PC_SLR_RiskRating.WOR



LEGEND

Cadastral Boundaries

Risk Rating

- Low
- Medium
- High
- Extreme

Title:

Regional Planning Zone and Land Parcel Assessment 2050 Erosion and Sea Level Rise

Figure:

Rev: **A**

N

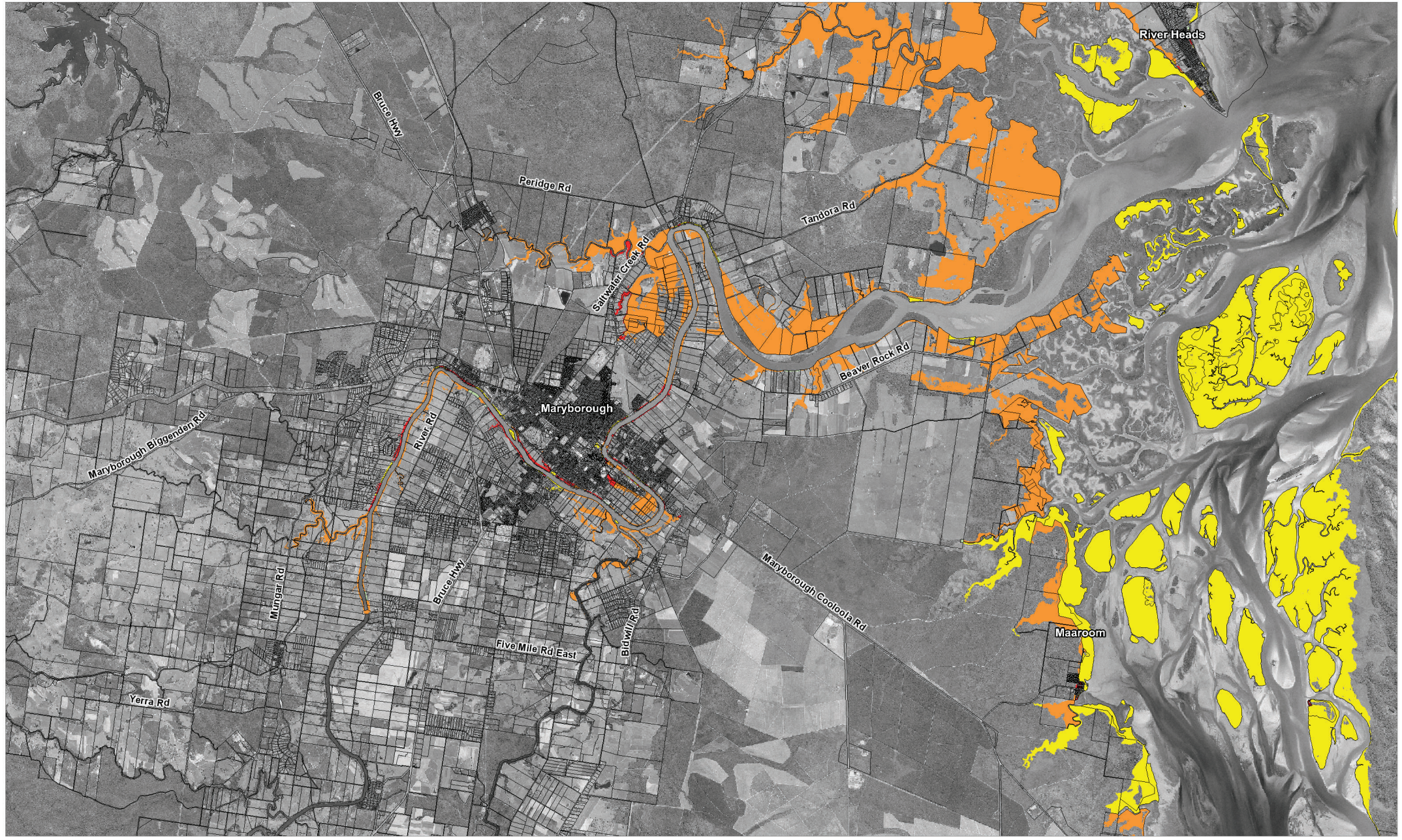
0 3 6km

Approx. Scale

BMT

www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_334_200624_Zone6_2050_SLR_RiskRating.WOR



LEGEND

Cadastral Boundaries

Risk Rating

- Low
- Medium
- High
- Extreme

Title:

Regional Planning Zone and Land Parcel Assessment 2100 Erosion and Sea Level Rise

Figure:

Rev: **A**

N

0 3 6km

Approx. Scale

BMT

www.bmt.org

Filepath: I:\B23628_i_jgc_FCRC_CHAS_Phase3to8_mpb\DRG\RegionalRiskAssessment\COA_335_200624_Zone6_2100_SLR_RiskRating.WOR

Appendix D Fraser Coast Regional Council's Detailed Consequence Guide

Consequence	Business Continuity and Business Systems	Economic	Environmental and Community	Financial	Infrastructure and Assets	Legal Compliance and Liability	Political	Public Health	Reputation	Staff	WH&S
Catastrophic	Permanent loss of activity.	Failure of a significant industry or sector	Widespread and irreversible environmental damage / harm attributed by the courts to be negligent or incompetent actions of Council.	Financial impact jeopardises Council as a going concern.	Widespread, long term loss of substantial key assets, infrastructure, corporate information and/or IT network/hardware	Major civil lawsuit and/or criminal charges with prosecution.	Loss of power and influence restricting decision making and capabilities. Dismissal of Council by State Government.	Fatality or Irreversible and major health effects on the community.	Loss of State Government support with scathing criticism and removal of the Council. Negative National media exposure against Council.	Staff issues cause continuing failure to deliver essential services.	Any fatality or significant irreversible disability.
Major	Significant disruption which has a serious impact on business activity, stakeholders or regulatory compliance resulting in contingency plans being invoked.	Significant structural adjustment required by identified industry to respond and recover from emergency event	Severe environmental or community/planning impact requiring significant remedial action. Penalties and/or direction or compliance order incurred.	Financial impact limiting the capacity of the Council to achieve objectives.	Widespread, short to medium term loss of key assets, infrastructure, corporate information and/or IT network/hardware	Breach of regulation resulting in substantial fine, civil law suit, loss of contract/license, future transactions affected.	Adverse impact and intervention by State Government, including loss of power and also added responsibilities and duties without resources.	Wide spread health effects across the community. Multiple serious injuries	State media and public concern / exposure with adverse attention and long-term loss of support from Fraser Coast residents.	Staff issues cause widespread failure to deliver several major strategic objectives and long term failure of day to day service delivery.	Serious Injury with LTI.
Moderate	Some disruption with unacceptable impact on business activity, stakeholders or regulatory compliance.	Significant industry or business sector is significantly impacted by the emergency event, resulting in medium-term (i.e. more than one year) profit reductions	Moderate impact on the environment and or community/planning; no long term or irreversible damage. May incur cautionary notice or infringement notice.	Financial impact requiring reallocation of funds across directorates.	Short to medium term loss of key assets, infrastructure, corporate information and/or IT network/hardware.	Breach of regulation resulting in significant fine, threat of legal action or threat of loss of contract/licence.	Adverse impact and intervention by another local government & LGAQ.	Injuries require expert medical treatment, or One or two people may suffer ongoing health effects or a dozen or so people may suffer transient health impacts, or the community may be at some short term minor health risk.	Significant local concern / exposure and short to mid-term loss of support from Fraser Coast residents.	Staff issues cause failure to deliver minor strategic objectives and temporary and recoverable failure of day to day service delivery.	Medical treatment.
Minor	Temporary and recoverable disruption with minor impact on business activity, stakeholders or regulatory compliance.	Significant industry or business sector is impacted by the emergency event, resulting in short-term (i.e. less than one year) profit reductions	Minor environmental or community/planning damage such as remote temporary pollution.	Financial impact that can be absorbed and dealt with at the directorate level.	Minor loss/damage. Repairs required.	Breach of regulation resulting in infringement notice, isolated threat of legal action, isolated threat of loss of contract/licence.	Adverse impact by another local government.	Injury requiring first aid.	Minor local community concern manageable through good public relations.	Staff issues cause several days interruption of day to day service delivery.	First aid treatment.
Insignificant	Disruption with negligible impact on business activity, stakeholders, or regulatory compliance.	Inconsequential business sector disruption	Brief, non-hazardous, transient pollution or damage.	Financial impact that can be absorbed and dealt with at the individual activity/project level.	Damage where repairs are required however facility/ infrastructure/ network/hardware are still operational.	Minor complaint, incident or contract issue resolved by management.	Negligible impact from another local government.	A minor site treated or no lost time injury possible Negligible impact on community health.	Transient matter, e.g. customer complaint, resolved in day-to-day management.	Staff issues Short term low staffing level/performance temporarily reduces activity quality, but there is no impact on stakeholders.	Slight injury or health effect not requiring first aid. Report Only

Appendix E Risk Assessment Overview

Table E-1 Management Zone 1 – Burrum Heads – Planning zone risk summary, count of land parcels

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Community Facilities 2												
Erosion	1		1		1		4		2		15	
SLR				1			1	3			6	9
ST		4				17	3			8	13	
Community Facilities 5												
Erosion									1			
ST						1				2		
District Centre												
ST					1	1			1	1	1	
Emerging Communities												
Erosion			1				1				1	
SLR				1				1				1
ST			1				2				2	
Environmental Management and Conservation												
Erosion	8	23			4	27			2	29		
SLR		3	20			3	24			1	28	
ST	7				32				36			
Local Centre												
Erosion										5		2
SLR											2	
ST					1	7				6	2	
Low Density Residential												

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Erosion		104		5		186		34		175		191
SLR			1	4			28	6			90	101
ST	10	8			281	413	4		62	1060	154	
Medium Density Residential												
Erosion				1			2	1			2	1
SLR			1					1				1
ST		1			2	1	1			3	3	
Neighbourhood Centre												
ST										1		
Open Space												
Erosion	3	7			2	14			2	21		
SLR		4	3			5	9			4	17	
ST	8				37				38			
Rural												
Erosion	35		55		22		108		42		131	
SLR		9	17	29		11	61	36		8	50	73
ST	12	81			50	118			29	164		
Rural Residential												
Erosion	78		60		52		94		29		128	
SLR			15	45			17	77			10	118
ST	2	66	18		2	92	60		4	33	128	
Sport and Recreation												
ST									2			

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
No zone provided												
Erosion				1				1				1
SLR				1				1				1
ST							1				1	

Table E-2 Management Zone 1 – Burrum Heads – Risk exposure of key Council assets

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Roads (m length)												
Erosion			146				225			427	586	
SLR										30	219	208
ST		1314	460		149	494	2376	223	37	627	1644	4361
Boat Ramps (count)												
Erosion		7				7				7		
SLR				7				7				7
ST		7				7				7		
Jetties and Piers (count)												
Erosion		1				1				1		
SLR				1				1				1
ST		1				1				1		
Water Supply (m length)												
Erosion			1236	545			1553	1773			2592	6122

Asset	2019 climate				2050 climate				2100 climate			
SLR				545				1773				6122
ST		8816				18547				33668		
Sewerage (m length) *Sewer Gravity Mains*												
Erosion		291		53		1131		436		2591		2944
SLR				53				436				2944
ST		4856				10001				21567		
Effluent Reuse												
Erosion						525						
SLR												
ST												
Stormwater (m length) *Pipes*												
Erosion		276		346		899		1113		745		2810
SLR			346				1113				2810	
ST		5493				11626				15962		
Open Channels												
Erosion		210		80		25		580		1		1123
SLR			80				580				1123	
ST	1388				3035				3995			

Table E-3 Management Zone 2 – Toogoom to Dundowran Beach – Planning zone risk summary, count of land parcels

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Community Facilities 2												
Erosion			1				1				1	
SLR				1				1				1
ST		1			2	1	1		1	5	2	
Emerging Communities												
Erosion	5		2		5		4		2		11	
SLR				2				4			3	8
ST		10				12	3			4	12	
Environmental Management and Conservation												
Erosion	7	6			11	6			14	9		
SLR			6				6			1	8	
ST	4				27				29			
Local Centre												
ST					1					1		
Low Density Residential												
Erosion		220		32		278		59		471		137
SLR			22	10			25	34			34	103
ST	10	76	1		343	534	19		185	1479	208	
Medium Impact Industry												
ST									2	9		
Neighbourhood Centre												
Erosion		3				1		2		1		2

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
SLR							2					2
ST						3				1	2	
Open Space												
Erosion	8	10			14	11			13	15		
SLR		1	9			1	10			2	13	
ST	12				36				50			
Rural												
Erosion	6		34		3		55		6		76	
SLR		2	10	22		3	15	37		4	15	57
ST	4	46			17	67			10	83		
Rural Residential												
Erosion	19		9		22		15		38		35	
SLR			2	7			4	11			6	29
ST	1	20	4		11	74	9		1	75	31	
Sport and Recreation												
Erosion			1				2				3	
SLR				1			1	1			1	2
ST	1	2				3			1	3		

Table E-4 Management Zone 2 – Toogoom to Dundowran Beach – Risk exposure of key Council assets

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Roads (m length)												
Erosion		66	871			98	1354			531	2130	
SLR			241		20	156	848		30	80	2173	
ST		617	1440	1185		1315	1980	2137	18	1480	4041	6828
Boat Ramps (count)												
Erosion		1				1				1		
SLR				1				1				1
ST		1				1				1		
Jetties and Piers (count)												
Erosion		1				1				1		
SLR				1				1				1
ST		1				1				1		
Water Supply (m length)												
Erosion		3388	295				4131	949			6065	2576
SLR			295					949				2576
ST		5917				17694				46122		
Sewerage (m length) *Sewer Gravity Mains*												
Erosion		16				115				1822		
SLR												
ST		247				2349				13110		
Effluent Reuse												

Asset	2019 climate				2050 climate				2100 climate			
Erosion												
SLR												
ST						722						
Stormwater (m length) *Pipes*												
Erosion		312		138		337		719		815		1064
SLR			138				719				1064	
ST		2450				7830				20998		
Open Channels												
Erosion		441		2422		384		3032		222		6070
SLR			2422				3032				6070	
ST	7891				10021				12434			

Table E-5 Management Zone 3 – Eli Waters to Urangan – Planning zone risk summary, count of land parcels

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Community Facilities 1												
ST					1					1		
Community Facilities 2												
Erosion	4		6		5		7		6		14	
SLR			3	3				7			2	12
ST	1	8			4	14	3			14	8	
Community Facilities 4												
Erosion					1				1		2	
SLR											2	
ST					1	2			1	3		
District Centre												
Erosion						1						2
SLR											2	
ST	2					3	1		1	2	4	
Emerging Communities												
Erosion			2				2				2	
SLR				2				2				2
ST			2				2				2	
Environmental Management and Conservation												
Erosion		10				10				10		
SLR		2	8				10				10	
ST	5				10				10			

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
High Density Residential												
Erosion			50				241	23			725	66
SLR							10	13			15	51
ST	8	13			261	467	76		22	522	463	
Limited Development (Constrained Land)												
Erosion			1				1				1	
SLR				1				1				1
ST		1				1	1			1	1	
Low Density Residential												
Erosion		18		7		59		53		144		196
SLR			1	6			4	49			83	113
ST	17	42	8		420	437	133		499	1565	171	
Medium Density Residential												
Erosion							10	4			40	28
SLR								4			19	9
ST		2	1		156	217	26		81	507	149	
Medium Impact Industry												
Erosion		1		4		4		4		7		6
SLR		3	1				4			2	4	
ST	3				3	4			5	5		
Mixed Use												
Erosion		2		6		2		6		3		6
SLR			1	5				6				6

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
ST		1	3		2	2	6		9	11	6	
Neighbourhood Centre												
Erosion										1		
ST										1		
Open Space												
Erosion	15	13			14	31			13	42		
SLR		4	9			4	27			5	37	
ST	13				92				112			
Principal Centre												
Erosion										6		9
SLR											5	4
ST		3	1		6	15	5		23	29	14	
Rural												
Erosion			1				1				1	
SLR			1					1				1
ST		1				1				1		
Rural Residential												
Erosion	3		6		1		8				9	
SLR			1	5			2	6			1	8
ST	1	5				5	4			5	6	
Sport and Recreation												
Erosion	3				3				2		1	
SLR											1	

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
ST	1				3	1			3	4		

Table E-6 Management Zone 3 – Eli Waters to Urangan – Risk exposure of key Council assets

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Roads (m length)												
Erosion		2526	35		1	4807	156			9509	397	
SLR							260		22	53	925	
ST	55	1777	987	465	290	4929	6337	1553	126	946	12065	11280
Boat Ramps (count)												
Erosion		7				7				7		
SLR				7				7				7
ST		7				7				7		
Jetties, Piers and Boardwalks (count)												
Erosion		5				5				5		
SLR				3				3				3
ST		3				4				5		
Water Supply (m length)												
Erosion			1304	43			4209	330			10957	3396
SLR				43				330				3396
ST		5078				32006				67696		
Sewerage (m length) *Sewer Gravity Mains*												

Asset	2019 climate				2050 climate				2100 climate			
Erosion		2203		312		4718		661		11349		3620
SLR				312				661				3620
ST		5360				33948				70839		
Effluent Reuse												
Erosion		318		525		394		1144		449		2051
SLR			525				1144				2051	
ST		1979				2858				3862		
Stormwater (m length) *Pipes*												
Erosion		3424		523		5743		1083		8594		4542
SLR			523				1083				4542	
ST		6815				28937				53599		
Open Channels												
Erosion		242	31	856		308	39	2039		518	79	4568
SLR		31	856			39	2039			79	4568	
ST	4707				10388				14146			

Table E-7 Management Zone 4 – River Heads – Planning zone risk summary, count of land parcels

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Community Facilities 2												
Erosion			2				3		2		3	
SLR				2			1	2				3
ST			1			1	2		1		3	
Emerging Communities												
Erosion	1						1				1	
SLR								1				1
ST		1				1					1	
Environmental Management and Conservation												
Erosion		8				8			1	8		
SLR			8				8				8	
ST	6				8				8			
Local Centre												
Erosion						1				1		
Low Density Residential												
Erosion		20		2		37		10		74		14
SLR			1	1			8	2			1	13
ST		11			5	19	1		15	27	9	
Open Space												
Erosion		13			1	14			2	15		
SLR		4	9			3	11				15	
ST	12				16				16			

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Rural												
Erosion	8		76		4		89		1		97	
SLR		3	41	32		3	38	48		3	20	74
ST	19	67			12	90			10	101		
Rural Residential												
Erosion	6		24		2		38		1		56	
SLR			5	19			13	25			7	49
ST	2	40	5			43	18		7	41	31	

Table E-8 Management Zone 4 – River Heads – Risk exposure of key Council assets

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Roads (m length)												
Erosion			84			6	220			211	175	
SLR												
ST		36					140		8	130		250
Boat Ramps (count)												
Erosion		3				3				3		
SLR				3				3				3
ST		3				3				3		
Boardwalk (count)												
Erosion		1				1				1		
SLR												1

Asset	2019 climate				2050 climate				2100 climate			
ST						1				1		
Water Supply (m length)												
Erosion												42
SLR												42
ST		32				98				519		
Sewerage (m length) *Sewer Gravity Mains*												
Erosion												
SLR												
ST												
Effluent Reuse												
Erosion		95				82		72				370
SLR							72				370	
ST		347				701				1211		
Stormwater (m length) *Pipes*												
Erosion		24		31		64		132		288		269
SLR			31				132				269	
ST		231				828				1263		
Open Channels												
Erosion		22		166		15		185		29		213
SLR			166				185				213	
ST	213				250				497			

Table E-9 Management Zone 5 – Great Sandy Strait – Planning zone risk summary, count of land parcels

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Community Facilities 2												
Erosion			2				2				2	
SLR			1	1				2				2
ST		2				2				2		
Community Facilities 5												
Erosion											1	
SLR											1	
ST					1					1		
Environmental Management and Conservation												
Erosion	6	19			6	20			5	20		
SLR		5	14			3	17				20	
ST	16				20				20			
Limited Development (Constrained Land)												
Erosion			1				1				1	
SLR				1				1				1
ST			1				1				1	
Low Density Residential												
Erosion		60		14		93		98		76		333
SLR			8	6			79	19			117	216
ST	18	8			145	92			97	346		
Medium Density Residential												
Erosion			1					1				2

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
SLR							1					2
ST	1					1				2		
Open Space												
Erosion	2	7				9				10		
SLR		2	5			2	7			1	9	
ST	8				10				11			
Rural												
Erosion	15		42		6		59		2		77	
SLR		14	14	14		12	32	15		3	50	24
ST	35	14			54	19			34	48		
Rural Residential												
Erosion	7		11		6		20		4		38	
SLR			11				9	11			9	29
ST	9	9			10	21			11	42		
Sport and Recreation												
Erosion			1				1				2	
SLR		1					1				2	
ST	1				2				2	1		

Table E-10 Management Zone 5 – Great Sandy Strait – Risk exposure of key Council assets

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Roads (m length)												
Erosion		187	519			458	908			2313	1127	
SLR						12	33			1518	788	
ST	6				142	440			35	406	3585	
Boat Ramps (count)												
Erosion		8				8				8		
SLR				8				8				8
ST		8				8				8		
Jetties and Piers (count)												
Erosion		2				2				2		
SLR				2				2				2
ST		2				2				2		
Water Supply (m length)												
Erosion												
SLR												
ST												
Sewerage (m length) *Sewer Gravity Mains*												
Erosion												
SLR												
ST												
Effluent Reuse												

Asset	2019 climate				2050 climate				2100 climate			
Erosion												
SLR												
ST												
Stormwater (m length) *Pipes*												
Erosion		390		174		378		561		190		2332
SLR			174				561				2332	
ST		440				1390				3636		
Open Channels												
Erosion		271	102	461		110	102	1565		73	102	2972
SLR			461			100	1565			102	2972	
ST	1442				2340				3438			

Table E-11 Management Zone 6 – Mary River – Planning zone risk summary, count of land parcels

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Community Facilities 1												
Erosion			1				1				1	
SLR				1				1				1
ST						2				1	2	
Community Facilities 2												
Erosion	5		8		5		12		3		18	
SLR			1	7				12				18
ST	1	7			1	12	8		1	9	16	
Community Facilities 4												
Erosion	1				1				1		1	
SLR											1	
ST						1				1		
Emerging Communities												
Erosion	8		27		4		31		1		34	
SLR			3	24				31				34
ST	3	23	7		1	18	16			9	32	
Environmental Management and Conservation												
Erosion	1	6			2	6			1	7		
SLR			6				6			1	6	
ST	2				7				7			
High Impact Industry												
Erosion			15	3			15	4			12	6

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
SLR			3				1	3			2	4
ST					1	11	1		1	8	7	
Limited Development (Constrained Land)												
Erosion	34		73		28		81		14		93	
SLR			15	58			7	74			4	89
ST	6	44	7		12	118	42		10	106	91	
Low Density Residential												
Erosion		101		54		110		66		99		82
SLR			5	49			12	54			6	76
ST		14	17		7	58	41		7	53	66	
Low Impact Industry												
Erosion		20		13		17		16		8		23
SLR		4	3	6		2	8	6		2	12	9
ST	9	2			14	15			8	24		
Medium Density Residential												
Erosion			2	1			1	2			1	3
SLR				1				2			1	2
ST						1	2				3	
Medium Impact Industry												
Erosion		10		5		16		7		3		8
SLR			2	3			3	4		1		7
ST		3			2	7			3	9		
Open Space												

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Erosion	3	12			4	12			1	15		
SLR			12				12			1	14	
ST	10				16				17			
Principal Centre												
Erosion		1		4				7				7
SLR			3	1			2	5				7
ST	1	1				2	5				7	
Rural												
Erosion	92		314		50		385		30		443	
SLR		17	136	161		33	143	209		20	99	324
ST	131	194			143	380			91	576		
Rural Residential												
Erosion	25		27		31		31		27		50	
SLR			1	26			4	27			3	47
ST		6	9		6	22	28		3	34	37	
Sport and Recreation												
Erosion	1		3				4				5	
SLR		1	1	1		1	2	1			3	2
ST	3					5			1	5		
Waterfront and Marine Industry												
Erosion				2				2				2
SLR				2				2				2
ST		1				2				2		

Table E-12 Management Zone 6 – Mary River – Risk exposure of key Council assets

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Roads (m length)												
Erosion			1552							9	2508	
SLR						134				155	419	
ST	29	238				187	474	414	29		833	1321
Boat Ramps (count)												
Erosion		6				6				6		
SLR				6				6				6
ST		6				6				6		
Jetties, Piers & Boardwalks (count)												
Erosion		5				5				5		
SLR				4				4				5
ST		4				5				6		
Water Supply (m length)												
Erosion			483	547			666	639			270	1099
SLR				547				639				1099
ST		924				1366				2408		
Sewerage (m length) *Sewer Gravity Mains*												
Erosion		426				950		3		438		506
SLR								3				506
ST		185				846				1579		

Asset	2019 climate				2050 climate				2100 climate			
Effluent Reuse												
Erosion		1162		999		1127		1327		488		1966
SLR			999				1327				1966	
ST		1589				2766				4335		
Stormwater (m length) *Pipes*												
Erosion		638		70		843		317		488		1103
SLR			70				317				1103	
ST		702				1813				2480		
Open Channels												
Erosion		1535		108		1133		541				1801
SLR			108				541				1801	
ST	1776				2355				3360			

Table E-13 Management Zone 7 – K'gari (Fraser Island) & Great Sandy Strait Islands – Planning zone risk summary, count of land parcels

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Community Facilities 2												
Erosion	1		1		1		1		2		1	
SLR				1				1				1
ST		1					1				1	
Community Facilities 4												
Erosion	1				1				1			
ST					1					1		
Environmental Management and Conservation												
Erosion	12	59			9	63			9	64		
SLR		12	47			5	58			1	63	
ST	22				66				66			
Low Density Residential												
Erosion		37				44		3		64		11
SLR							3				1	10
ST					8	2			1	11		
Mixed Use												
Erosion		1		1		1		1		2		1
SLR				1				1				1
ST							1				1	
Neighbourhood Centre												
Erosion										2		
Open Space												

Planning Zones and Hazards	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Erosion	1				1				1			
Rural												
Erosion	1				2				2			
No zone provided												
Erosion			1	3			2	3			1	4
SLR			1	2				3				4
ST		1			3	2	2			5	3	

Table E-14 Management Zone 7 – K'gari (Fraser Island) & Great Sandy Strait Islands – Risk exposure of key Council assets

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Barge Ramps (count)												
Erosion		2				2				2		
SLR				2				2				2
ST		2				2				2		

Appendix F Risk Assessment Results for Higher Order Roads

Table F-1 Burrum Heads – Higher order road risk summary, m length

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Burrum Heads Summary												
Erosion			33				65			210	278	
SLR										20	96	208
ST		1314	279		149	494	2376		37	104	1629	3790
Burrum Heads Rd												
Erosion			33				55				127	
SLR										19	3	
ST		265				50	436		37		537	596
Ivor Dr												
Erosion												
SLR											93	
ST		196			40	27	417				408	749
Orchid Dr												
Erosion							10				151	
SLR												
ST		653			109	48	834				684	1248
Riverview Dr												
Erosion										210		
SLR										2		208
ST		200	279				688			104		786

Asset	2019 climate				2050 climate				2100 climate			
Ross St												
Erosion												
SLR												
ST						369						410

Table F-2 Craignish, Dundowran Beach and Toogoom – Higher order road risk summary, m length

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Craignish summary												
Erosion			669				1026				1299	
SLR				241				848				1121
ST				1185		201		1235	5			1868
Petersen Rd												
Erosion												
SLR												
ST					201							498
Pialba Burrum Heads Rd												
Erosion			669				1026				1299	
SLR				241				848				1121
ST				1185				1235	5	323		1370

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Dundowran Beach summary												
Erosion												
SLR												
ST						388				323	506	
Petersen Rd												
Erosion												
SLR												
ST						180					234	
Sawmill Rd												
Erosion												
SLR												
ST						208					271	
Toogoom summary												
Erosion		66	202			98	328			531	879	
SLR						20	156			30	80	1053
ST		617	1440			726	1980	902	13		2720	4961
Carkeet Rd												
Erosion												
SLR												
ST						259						692
Desmond Dr												
Erosion												
SLR												
ST		157				317	224					666

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Helm Street												
Erosion												
SLR												
ST											191	
Jeppesen Rd												
Erosion												
SLR												
ST						114			13		282	179
Kingfisher Pde												
Erosion												
SLR												
ST		234					549					725
Lorikeet Av												
Erosion		66				98				451		
SLR						20						246
ST			411				530					530
Morris Rd												
Erosion												
SLR												
ST							72					93
Northshore Av												
Erosion												
SLR												
ST						35					1016	

Asset	2019 climate				2050 climate				2100 climate			
O'Regan Creek Rd												
Erosion										80	30	
SLR										30	80	
ST		226	162				545				755	960
Toogoom Rd												
Erosion			202				328				849	
SLR							156					807
ST			868				60	902				1116

Table F-3 Management Zone 3 – Higher order road risk summary, m length

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Eli Waters summary												
Endeavour Way												
Erosion												
SLR												
ST						116					292	1065
Ibis Bvd												
Erosion												
SLR										9		
ST	20					259			29	150	505	155

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Imperial Cct												
Erosion												
SLR												
ST										55	309	
Lady Penrhyn Dr												
Erosion												
SLR												
ST						230					906	
Serenity Dr												
Erosion												
SLR												204
ST			203				303				305	
Pialba summary												
Esplanade												
Erosion												
SLR												
ST	5	621					1438	269				
Hythe St												
Erosion												
SLR												
ST										34		

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Long St												
Erosion												
SLR												
ST									18			
Main St												
Erosion												
SLR												
ST						11					26	
Newhaven St												
Erosion												
SLR												
ST									13			
Point Vernon summary												
Banksia St												
Erosion										32		
SLR												
ST											146	
Corser St												
Erosion												
SLR												
ST											30	

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Esplanade												
Erosion		305				413				470		
SLR							260			13		404
ST		37	140	465			58	605				663
Joselyn Dr												
Erosion												
SLR												
ST											15	
Lambour Ct												
Erosion												
SLR												
ST						13					13	
Mant St												
Erosion												
SLR												
ST			19					24				36
Martin St												
Erosion												
SLR												
ST						157					410	
North St												
Erosion												
SLR												
ST									56		423	

Risk Assessment Results for Higher Order Roads

Asset	2019 climate					2050 climate				2100 climate		
Wattle St												
Erosion												
SLR												
ST						224	83			92	611	166
Flinders St												
Erosion										13		
SLR												
ST												
Kelly St												
Erosion										5		
SLR												
ST												
Scarness summary												
Esplanade												
Erosion												
SLR												
ST		2				630	70					
Queens Rd												
Erosion												
SLR												
ST						157				18	201	

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Torquay summary												
Campbell St												
Erosion												
SLR												
ST						269						276
Cypress St												
Erosion												
SLR												
ST					58	788					1481	
Dayman St												
Erosion												
SLR												
ST							437					437
Esplanade												
Erosion												
SLR												
ST	8	535				126	1912				371	2156
Fraser St												
Erosion										26		
SLR												
ST					57		247				122	307

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Tavistock St												
Erosion										19		
SLR												
ST						107						213
Truro St												
Erosion												
SLR												
ST					81	658					1681	
Urangan summary												
Booral Rd												
Erosion								5				5
SLR												
ST												
Boat Harbour Dr												
Erosion												
SLR												
ST									5			
Buccaneer Dr												
Erosion												
SLR												
ST											266	

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Churchill St												
Erosion												
SLR												
ST			119			151		126			162	126
Cypress St												
Erosion												
SLR												
ST	20	105			6	357	233				841	388
Dayman St												
Erosion												
SLR												
ST					16					179	272	
Esplanade												
Erosion												
SLR												318
ST		426	503		73	139	799	529			989	1329
Kent St												
Erosion												
SLR												
ST						51					127	
King St												
Erosion												
SLR												
ST						24				21	461	

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Miller St												
Erosion												
SLR												
ST										108		
Moolyyir St												
Erosion												
SLR												
ST						140					156	
Pier St												
Erosion												
SLR											53	
ST		53					104				109	122
Truro St												
Erosion												
SLR												
ST						194	504				143	586
William St												
Erosion												
SLR												
ST						127	150			289	167	222

Table F-4 River Heads – Higher order road risk summary, m length

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
River Heads summary												
Erosion												
SLR												
ST										11		
North Esp												
Erosion												
SLR												
ST										11		

Table F-5 Management Zone 5 – Higher order road risk summary, m length

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Boonooroo summary												
Erosion		140	151			387	193			1128	555	
SLR							33				276	598
ST					31	304			206	256	1496	
Boonooroo Rd												
Erosion											155	
SLR												
ST												
Eckert Rd												

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Erosion		127				329	33			483		
SLR												232
ST						154			26	25	272	
Rawson St												
Erosion		13				58				645		
SLR											276	293
ST					31	130				229	1046	
Wilkinson Rd												
Erosion			151				193				400	
SLR												73
ST						20					178	
Maaroom summary												
Erosion										110		
SLR											110	
ST					26					38	174	
Granville Rd												
Erosion										110		
SLR											110	
ST					26					38	174	
Poona summary												
Erosion										675		
SLR											675	
ST					28				8	111	759	
Boronia Dr												

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Erosion										675		
SLR											675	
ST					28				8	111	759	
Poona Rd												
Erosion												
SLR												
ST												
Tuan summary												
Erosion		47	178			71	211			400	374	
SLR						12					456	191
ST					57						1156	
Turton St												
Erosion										38		
SLR											38	
ST											230	
Wilkinson Rd												
Erosion		47	178			71	211			361	347	
SLR						12					418	191
ST					57						926	

Table F-6 Management Zone 6 – Higher order road risk summary, m length

Asset	2019 climate				2050 climate				2100 climate			
	Low	Medium	High	Extreme	Low	Medium	High	Extreme	Low	Medium	High	Extreme
Beaver Rocks summary												
Beaver Rock Rd												
Erosion			129				177				155	
SLR											155	
ST							260		4			330
Bidwill summary												
Bidwill Rd												
Erosion											15	
SLR												
ST												
Dundathu summary												
Maryborough Hervey Bay Rd												
Erosion			14				232				43	
SLR												
ST									24			
Island Plantation summary												
Island Plantation Rd												
Erosion			121				222				116	
SLR											116	
ST	29					76	214				406	404

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Maryborough summary												
Kent St												
Erosion												
SLR												
ST						111			1		277	
Queen St												
Erosion										9		
SLR												
ST											81	
Tiger St												
Erosion			101				111				117	
SLR												
ST												
St Helens summary												
Saltwater Creek Rd												
Erosion			134				323				135	
SLR												
ST											68	
Tinana summary												
Bruce Hwy												
Erosion			199				206				241	
SLR												
ST												

Risk Assessment Results for Higher Order Roads

Asset	2019 climate				2050 climate				2100 climate			
Walkers Point summary												
Beaver Rock Rd												
Erosion			147				184				303	
SLR							134					303
ST		238										587
Yengarie summary												
Mungar Rd												
Erosion							20				33	
SLR												
ST												

BMT has a proven record in addressing today's engineering and environmental issues.

Our dedication to developing innovative approaches and solutions enhances our ability to meet our client's most challenging needs.

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