

Notes for track changes. Recommendations made by the Coast Officers Report are shown in **Orange**. Recommendations made by the Coast Officers Supplementary Report are shown in **Blue**. Recommendations made by the Coast Officers 'end of hearing report' are made in **Green**. Changes made as a result of the planning review are shown in **Pink**. Words recommended to be added are shown in underline, words recommended to be removed are shown in ~~strike through~~.

**Schedule H: ~~Coastal Marine Area, Zones and Protection Areas~~
Coastal Marine Area (CMA)¹: Boundaries, Activity Management² Zones and Water Management³ Sub Zones and Standards²**

~~This schedule includes the following maps. A description of the maps and boundaries is provided below.³~~

This schedule includes:^{3 4}

Part A: Maps H1 – H13. A description of the maps and boundaries is provided below.

Part B: Water management values and water quality standards (Tables H2 – H11)⁴

This schedule⁴ comprises²:

Part A: CMA Boundaries²: Figures H1 – H2: a regional overview of the CMA and Figures H3 – H9 depicting local detail of the cross river boundaries of the CMA⁴

Part B: Activity Management Zones²: Figures H10 – H13 and Table H1 : A description and figures showing the Port, Protection and General Zones.⁴

Part C: Water Management Policy Sub Zones² and water quality standards: Tables H2 – H11.⁴

1. ~~Coastal marine area CMA⁴ Maps H1 – H2~~ Part A: CMA and Cross River Boundaries⁴

This section outlines Part A identifies² the CMA generally and the Cross River Boundaries in detail specifically².

	<u>Area Covered⁴</u>	<u>Figure Number⁴</u>	<u>Description of Area⁴</u>
1.	coastal marine area CMA¹ – General⁴	H1 H2	The west coast CMA, beaches and rivers of the Manawatu-Wanganui Region The east coast CMA and rivers of the Manawatu-Wanganui Region
2.	coastal marine area CMA¹ Cross River Boundaries	H3 H4 H5 H6 H7 H8 H9	Kai Iwi and Mowhanau Streams Whanganui River and Whangaehu River Turakina River and Rangitikei River Manawatu River and Hokio Stream Ohau Stream and Waikawa Stream Akitio River and Owahanga River Wainui River

¹ End Report, Appendix 2, pp. 91 – 99.

² End Report, Coast Hearing Panel's Preliminary Question 14, COA 83B, p 15

³ Recommendation COA 38, p. 139.

⁴ End Report, Appendix 6, pp. 103 – 116.

3.	Management Zones ⁴	H10 H11 H12 H13 ⁴	Port Zone Protection Zones: ● Whanganui River and Whangaehu River ● Turakina River and Rangitikei River ● Manawatu River and Cape Turnagain ⁴
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⁴ ~~The CMA Figures H1 – H2 These maps~~⁴ depict the extent of the CMA within the boundaries of the Manawatu-Wanganui Regional Council. The CMA extends from the line of ~~mean high water springs~~ MHWS (MHWS)¹ seaward to the 12 nm limit of the territorial sea. The rules in Chapter ~~20~~ 17⁵ apply to the CMA.

~~2. Coastal marine area CMA~~⁴ ~~Cross River Boundaries Maps H3 – H9~~⁴

~~The Cross River Boundaries: Figures H3 – H9 These maps~~⁴ depict where the CMA boundary lies ~~when it crosses a for identified rivers or streams (ie., the line of MHWS follows the river/ stream bank inland to the boundary crossing). The boundary for any stream or river which is not shown in these maps is deemed to be a line continuous to the line of MHWS on either side of the stream/river mouth.~~⁴

The rules in Chapter ~~20~~ 17⁵ apply to the CMA.

Note: in the event that the River banks or coastline change course over the lifespan of this Plan the boundary remains ~~as being~~² the line of MHWS.

(Note: s2 RMA definition: “coastal marine area” means the foreshore, seabed, and coastal water, and the air space above the water:

- (a) of which the seaward boundary is the outer limits of the territorial sea:
- (b) of which the landward boundary is the line of ~~mean high water springs~~ MHWS¹, except that where that line crosses a river, the landward boundary at that point shall be whichever is the lesser of:
 - (i) one kilometre upstream from the mouth of the river; or
 - (ii) the point upstream that is calculated by multiplying the width of the river mouth by five.)

⁵ Recommendation COA 61, p. 93.



Figure H:1 West Coast⁶

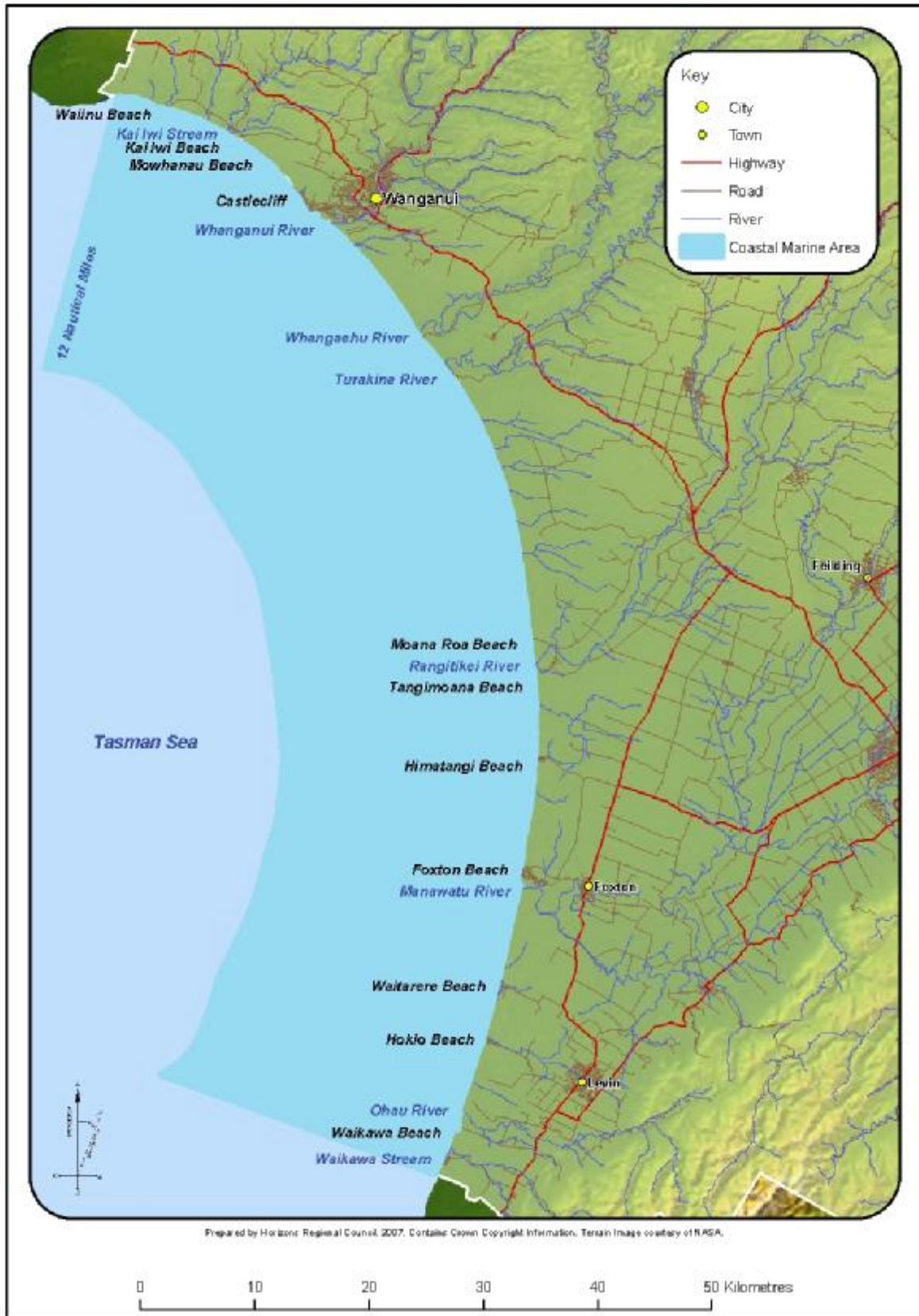


Figure H:1A West Coast⁶

⁶ End report, Coast Hearing Panels Preliminary Question 63, COA 79B, p. 47.

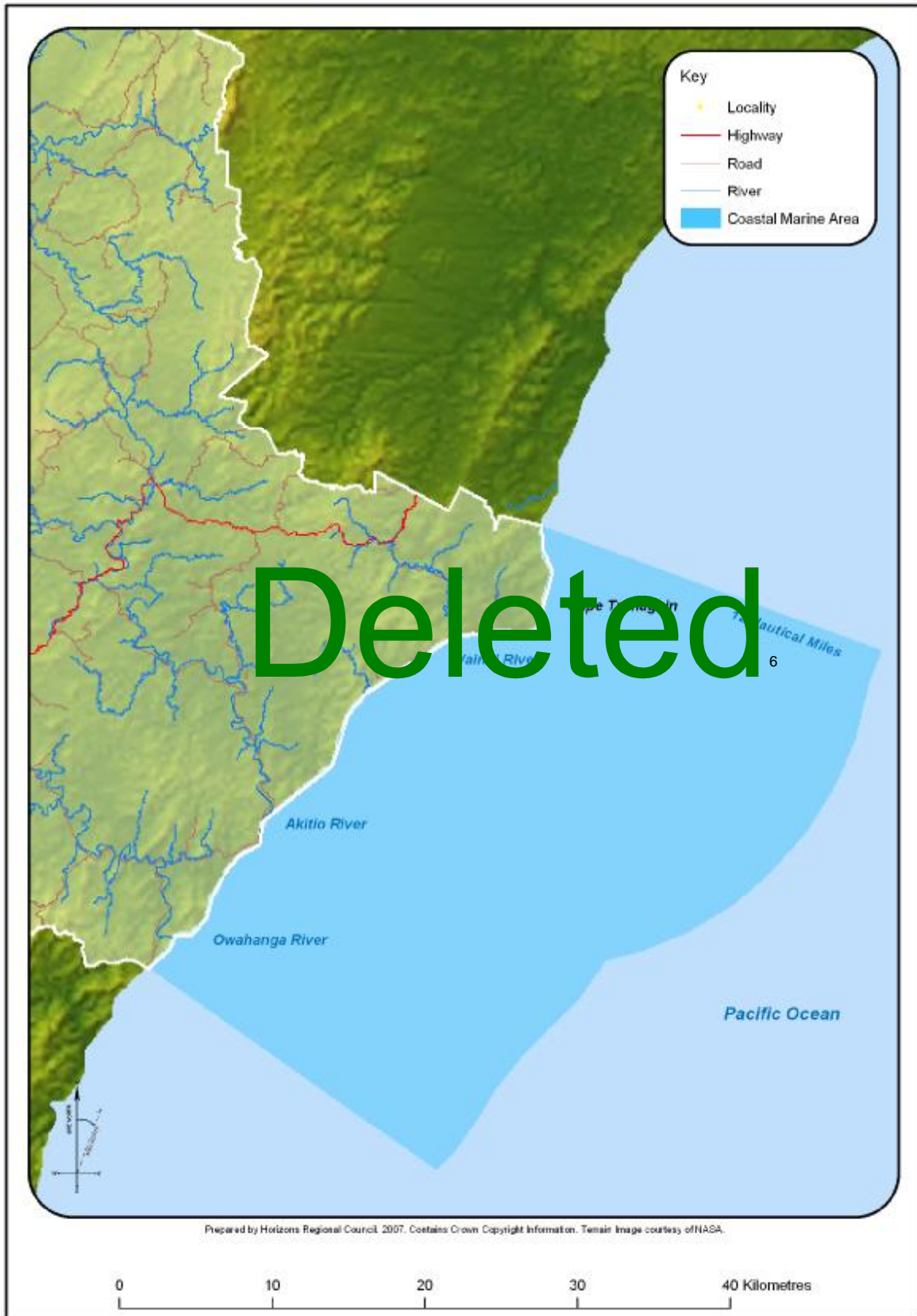
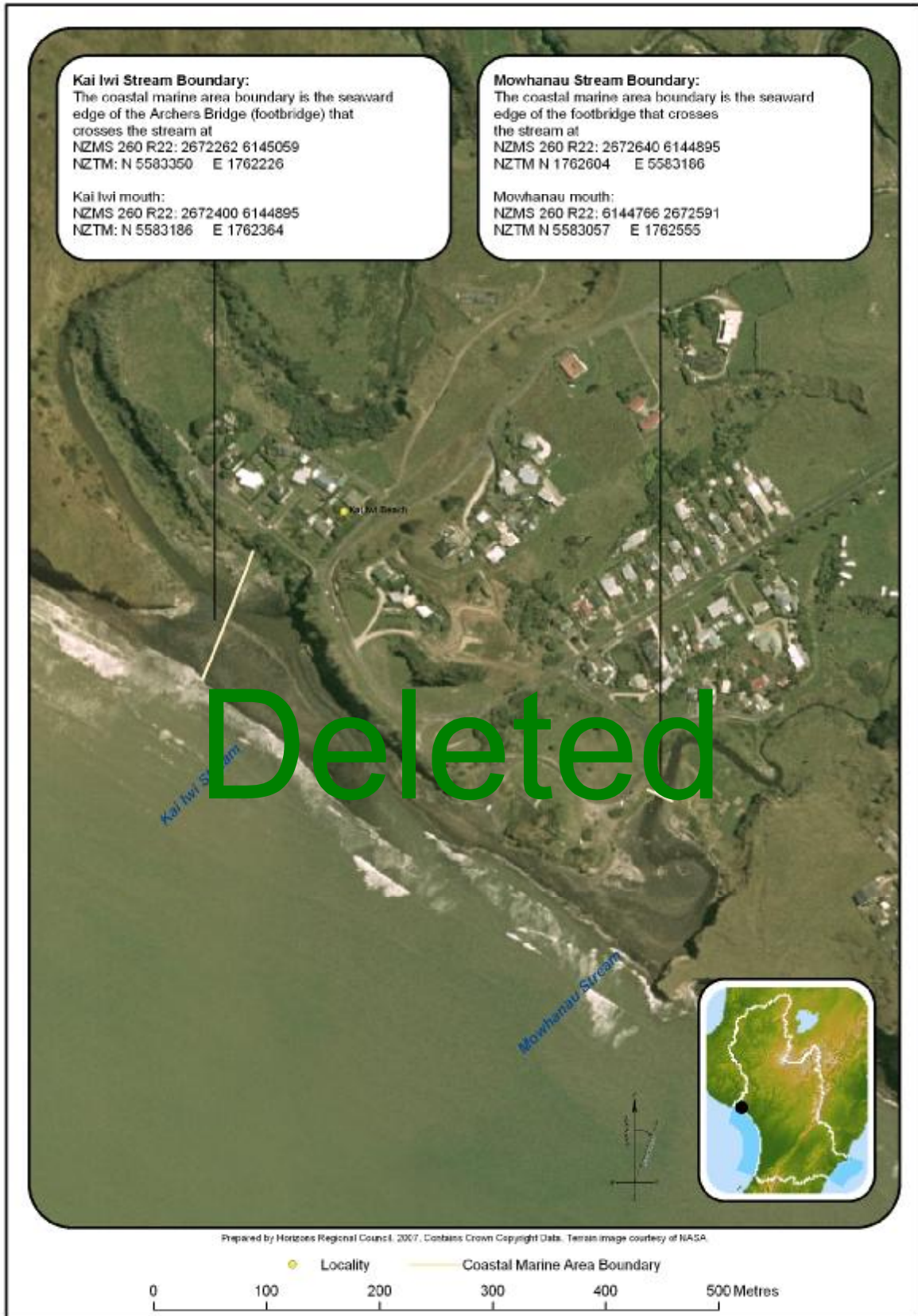


Figure H:2 East Coast ⁶



Figure H:2A East Coast⁶



~~Figure H:3 Kai Iwi and Mowhanau Stream Boundaries~~^{7 8}

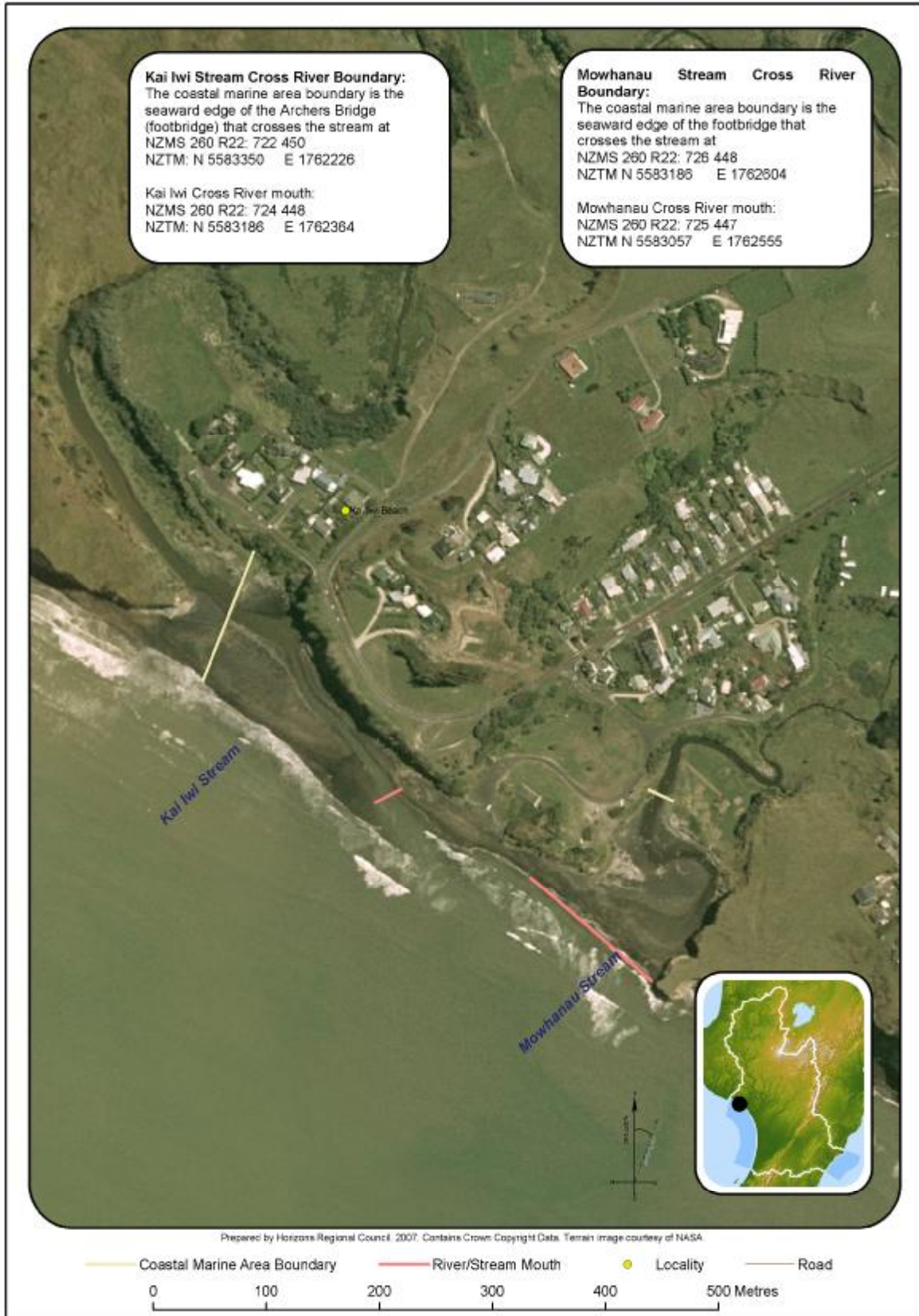


Figure H:3A Kai Iwi and Mowhanau Steam Cross River² Boundaries^{7 8}

⁷ End report Coast Hearing Panels Preliminary Question 64, COA 80B, p. 47.

⁸ End report Coast Hearing Panels Preliminary Question 65, COA 81B, p. 48.

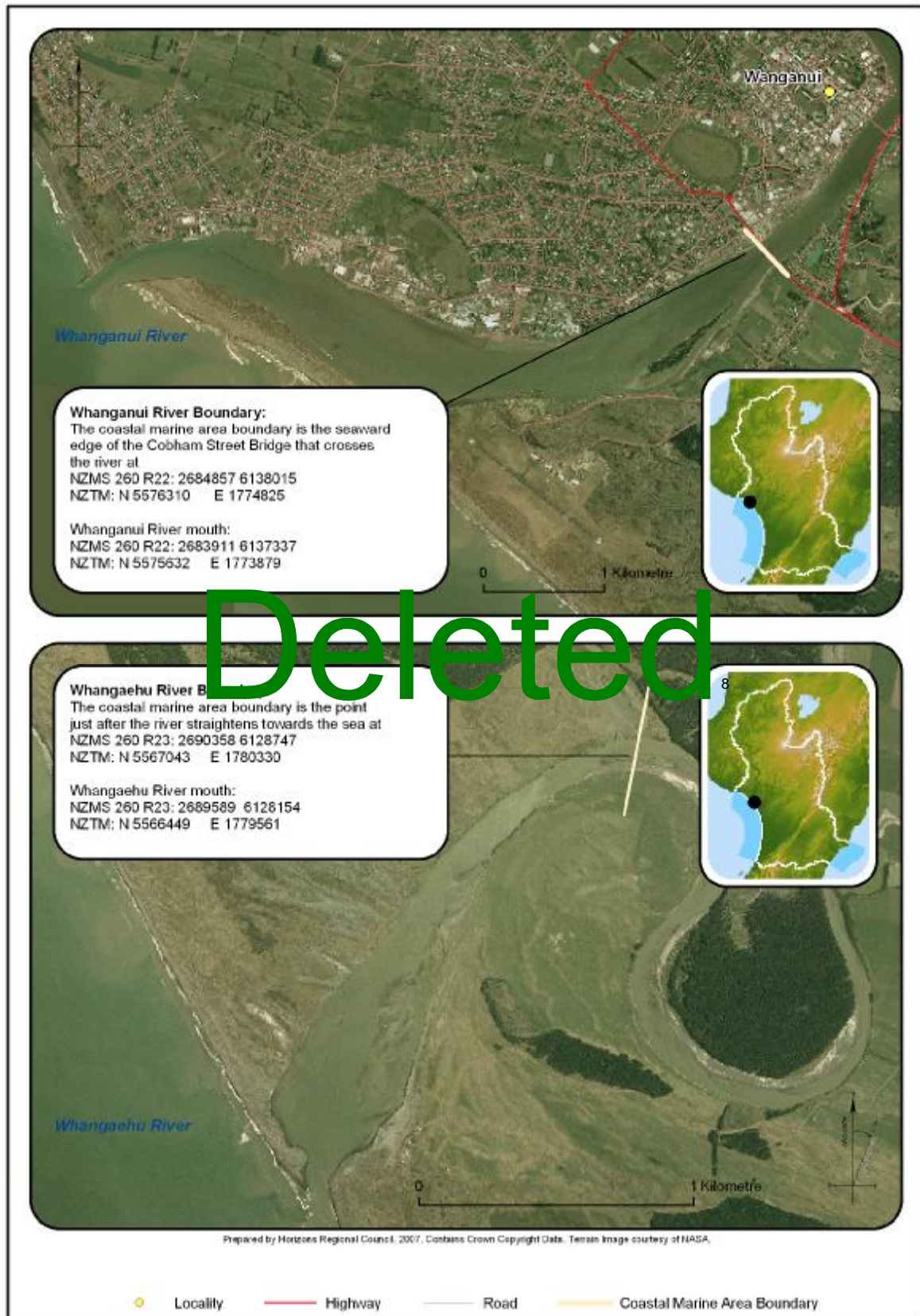


Figure H:4 Whanganui and Whangaehu River Boundaries ⁸

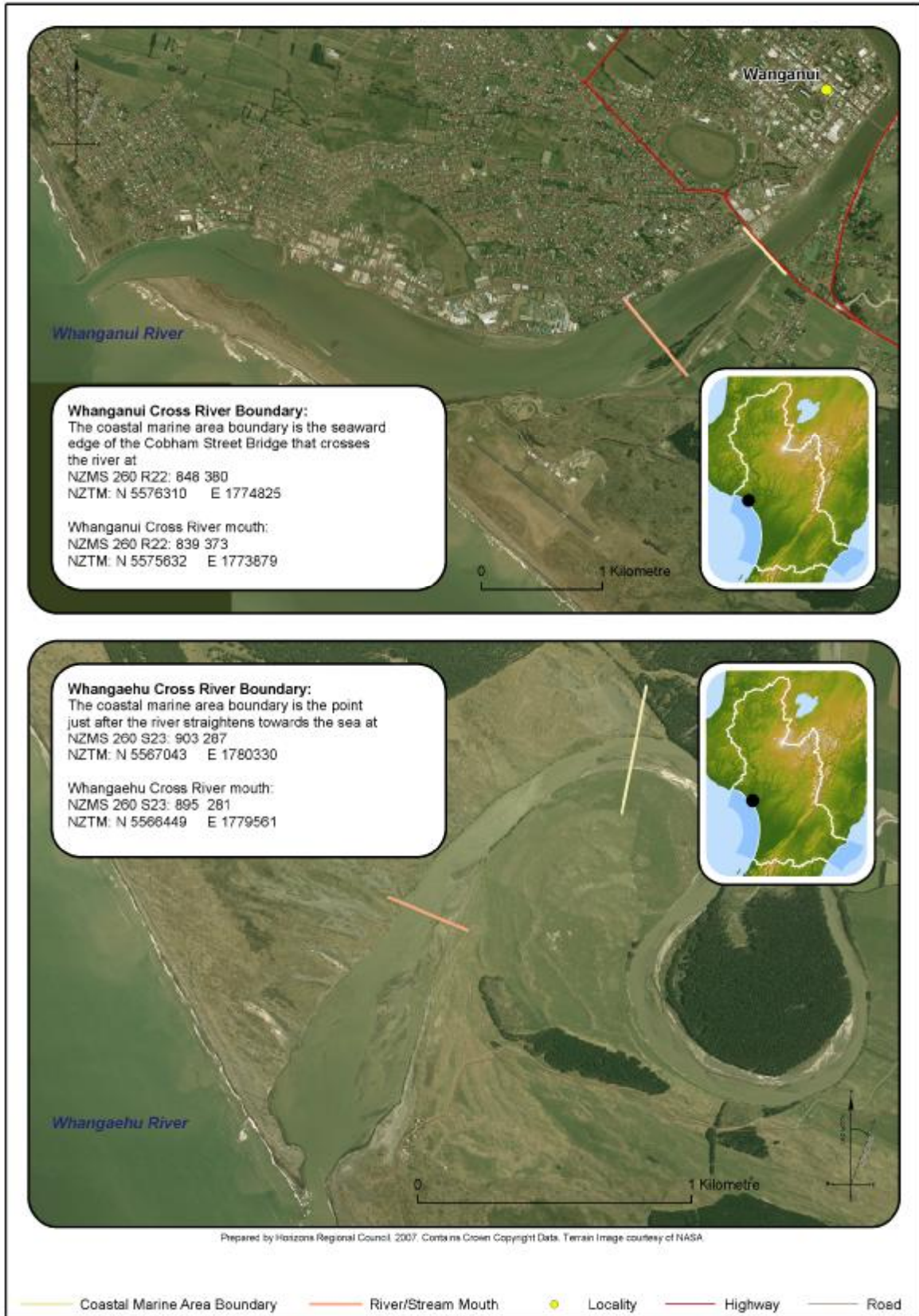


Figure H:4A Whanganui and Whangaehu Cross² River Boundaries⁸

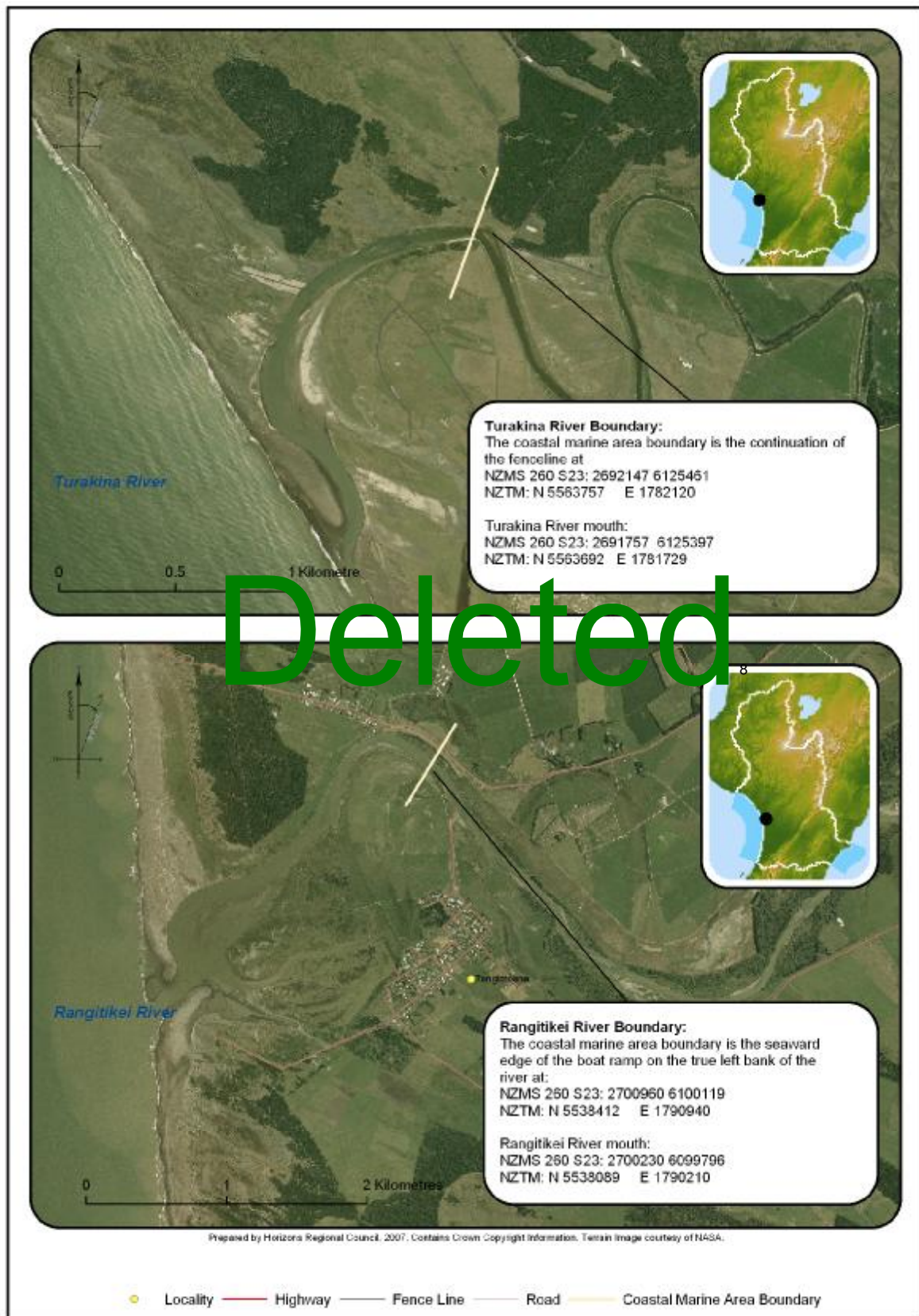


Figure H:5 Turakina and Rangitikei River Boundaries⁸

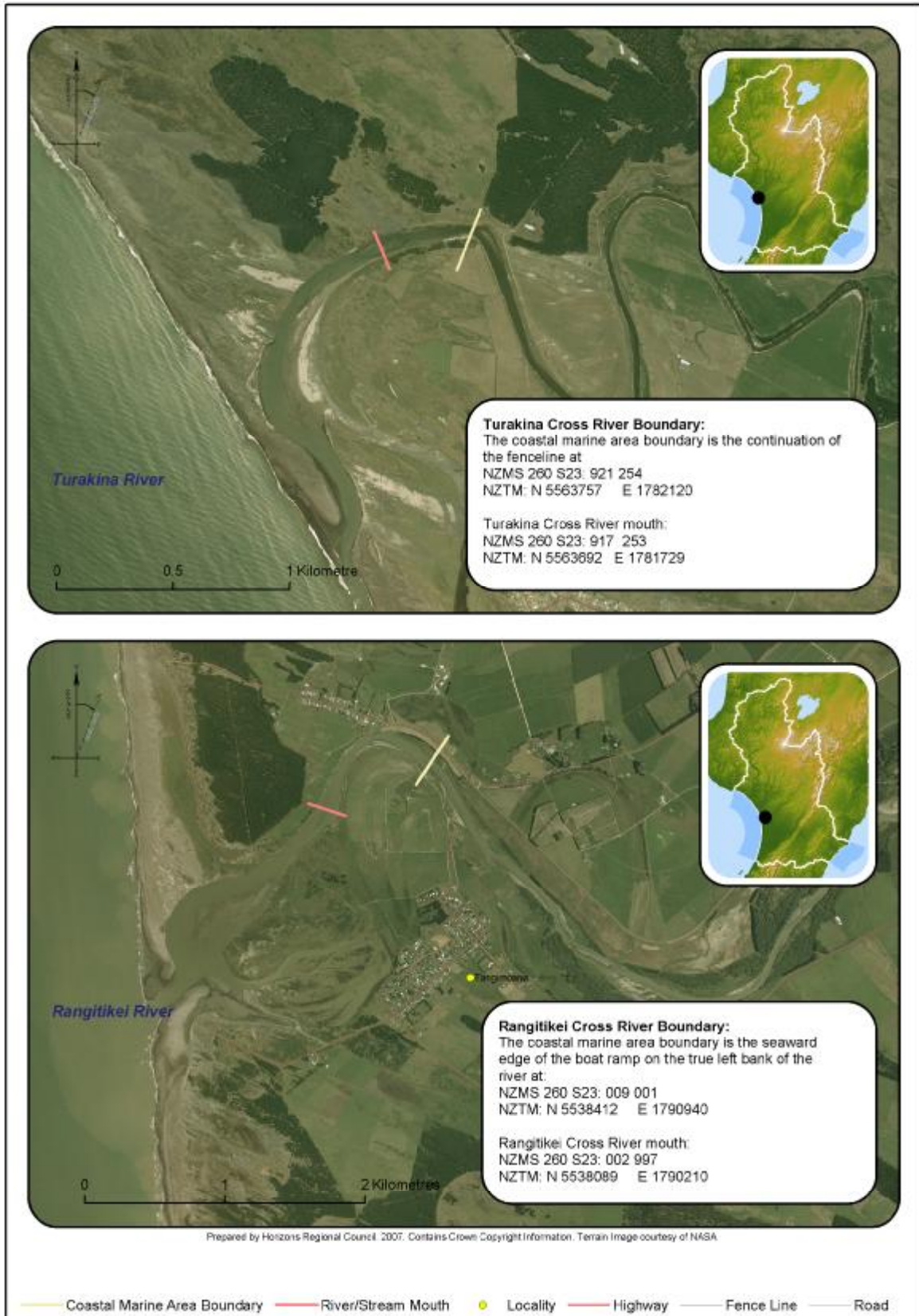


Figure H:5A Turakina and Rangitikei Cross² River Boundaries⁸



Figure H:6 – Manawatu River and Hokio Stream Boundaries⁸



Figure H:6A Manawatu River and Hokio Stream Cross River² Boundaries⁸

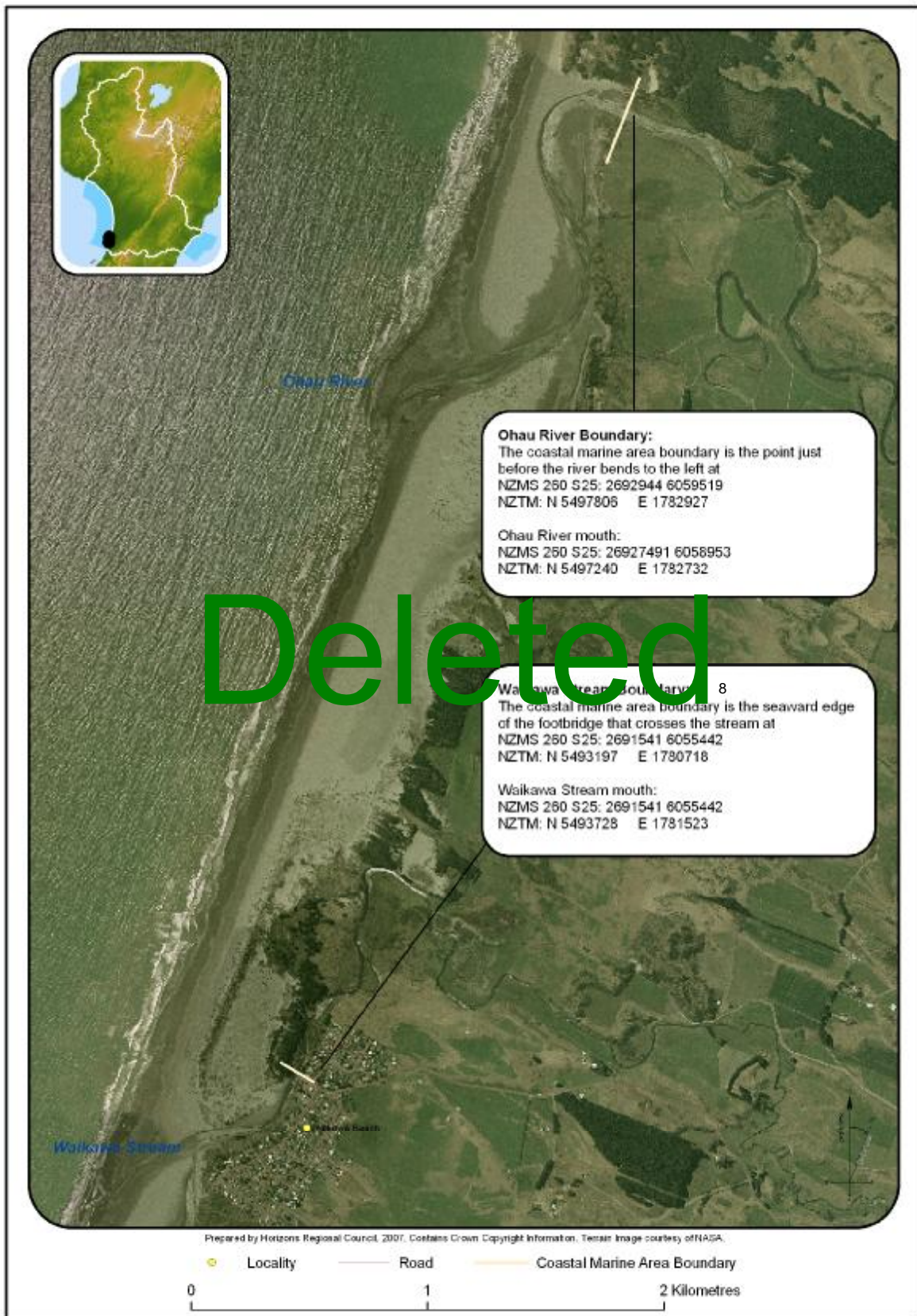


Figure H:7 Ohau River and Waikawa Stream Boundaries⁸

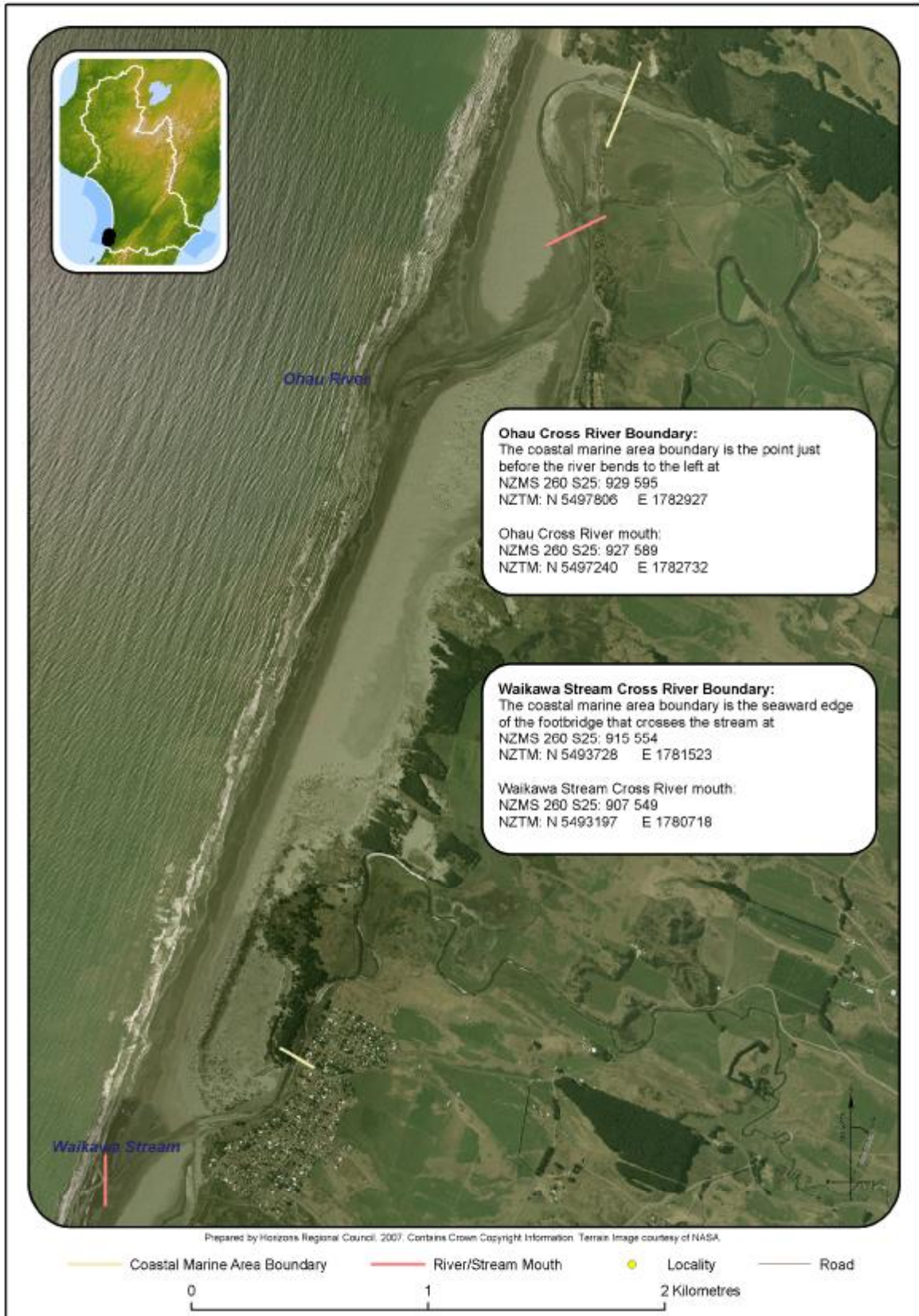


Figure H:7A Ohau River and Waikawa Stream Cross River² Boundaries⁸

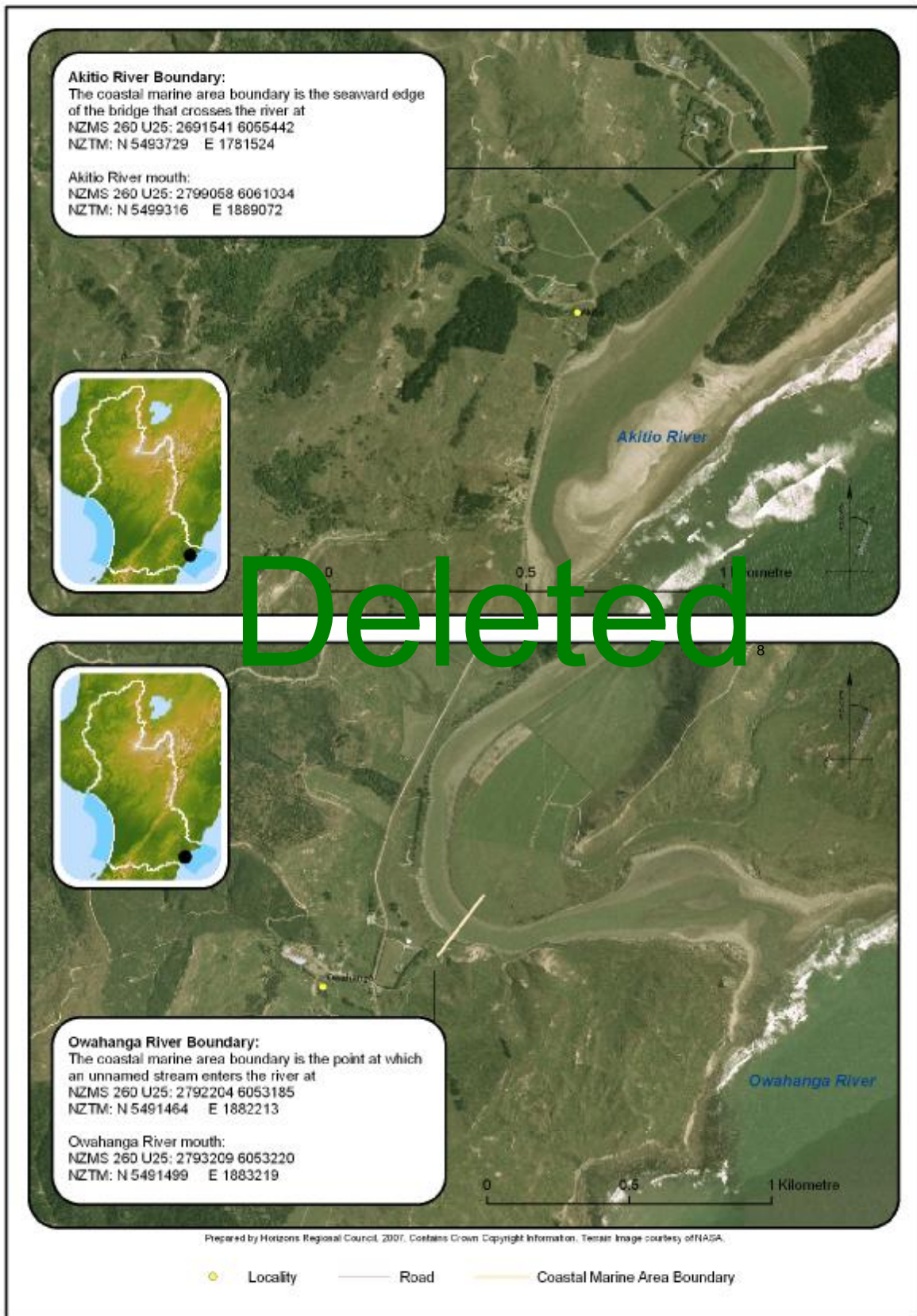


Figure H:8 Akitio River and Owahanga River Boundaries⁸

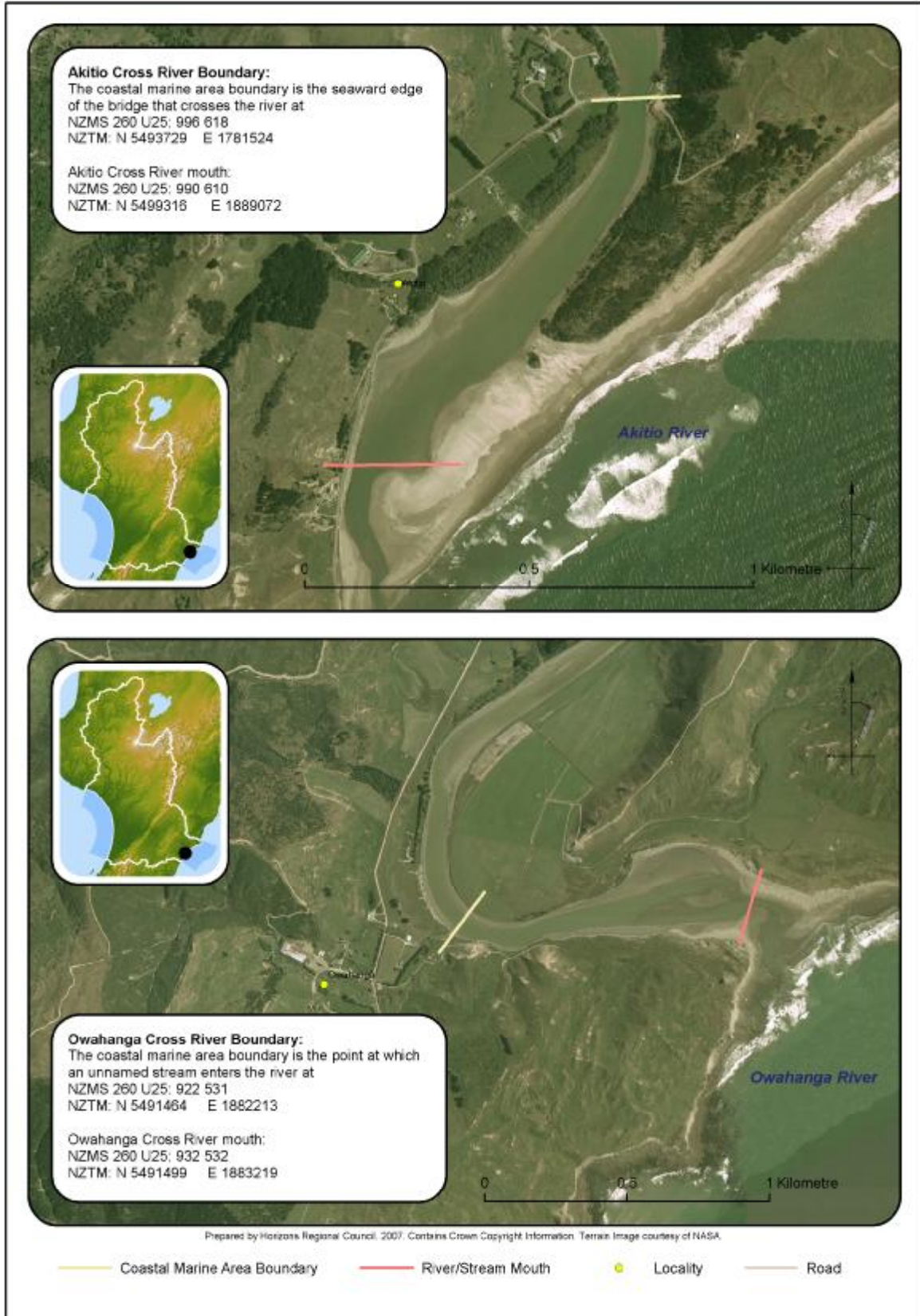


Figure H:8A Akitio River and Owahanga Cross² River Boundaries⁸

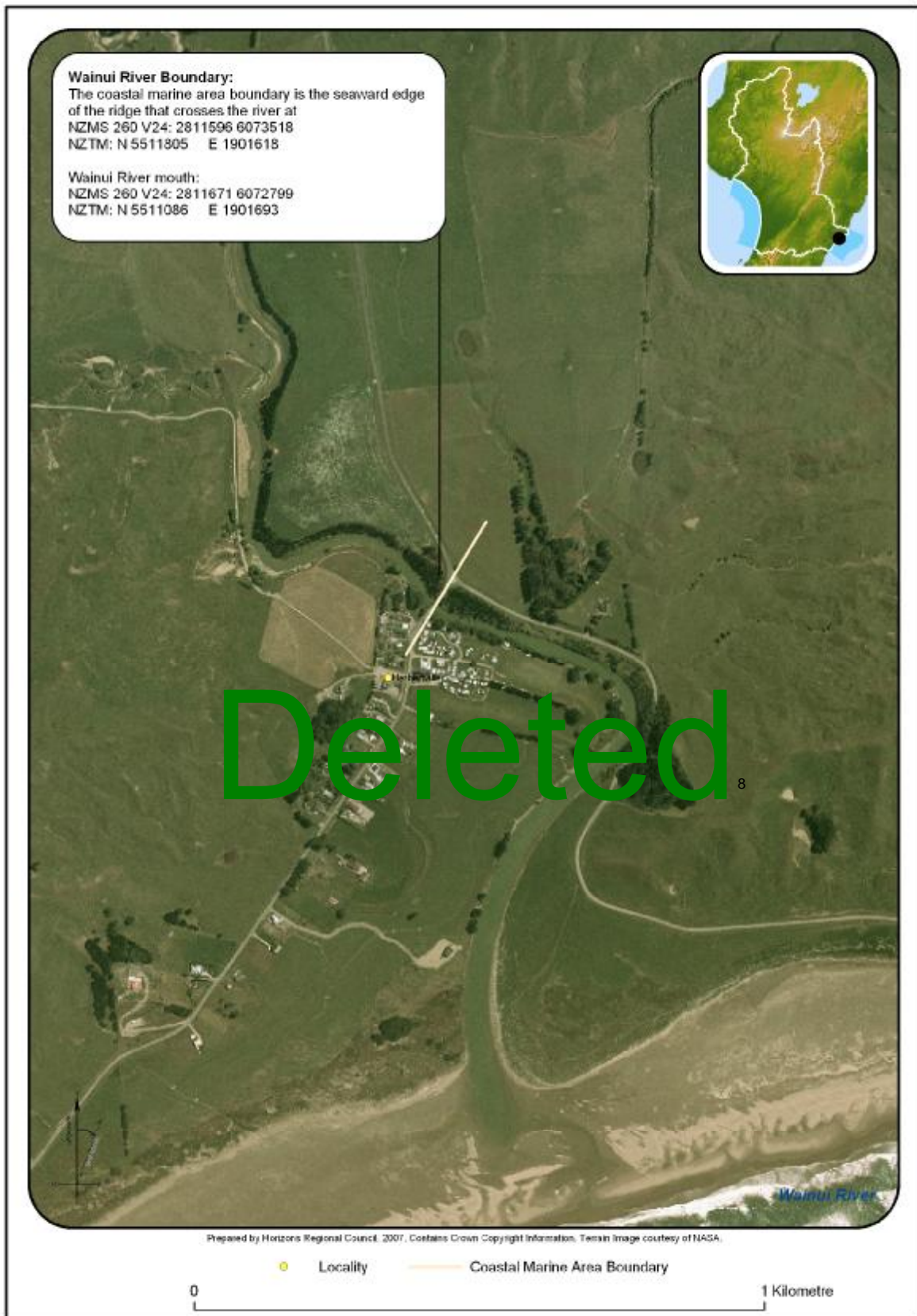


Figure H:9 Wainui River Boundary ⁸



Figure H:9A Wainui Cross² River Boundary⁸

3. Management Zones Maps H10 – H13 Part B: Activity² Management Zones

This Plan includes ~~3~~ ⁴ different management zones: ~~Port Zone, Protection Zones and General Zone and Water Management zones.~~^{9 4}

This section ~~outlines~~ ^{identifies²} the 3 Activity² Management Zones (as referred to in the rules in Chapter 17): ~~comprising the Port Zone, Protection Zones and a General Zone.~~⁴

List of Figures and Table:⁴

	Area Covered	Figure/ Table Number	Description of Area
3.	Management Zones	H10A ⁴ H11 H12 H13	Port Zone Protection Zones ⁴ Whanganui River and Whangaehu River Protection Zones ⁴ Turakina River and Rangitikei River Protection Zones ⁴ Manawatu River and Cape Turnagain Protection Zones ⁴
	Protection Zones	Table H1	Values that apply to the Protection Zones

The General Zone: This zone is not ~~specifically²~~ mapped. It ~~includes all other areas within the it~~ ^{comprises the entire²} CMA ~~that are not otherwise except those parts of the CMA²~~ covered by the Port Zone or the Protection Zones. ~~In the case of the² the General Zone in for⁴ the²~~ Whanganui River the General Zone⁴ includes ~~that part of the CMA comprising⁴~~ a band of 100 m ~~width⁴~~ from the line of MHWS of the northern bank of the River, ~~as well as a band of 100m and⁴~~ ^{and⁴} from the edge of the Port Zone as shown in ~~Map⁴~~ Figure⁴ H10.

The Port Zone is depicted on Map Figure⁴ H10.

There are some rules in Chapter ~~20~~ ^{17⁵} which apply specifically to this zone.

For clarification:

- the Port Zone extends 50 m to the outside of the river training wall as shown on Map Figure⁴ H10.
- the identified dredging and discharge areas relate to Rule 17-21 and indicates that these activities are considered under this rule (and not as an a RCA under Rule 17-22).

The Protection Zones are shown in Maps Figures⁴ H11 – 13.

There are some rules in Chapter 17 which apply specifically to these zones.

For clarification:

- the landward edges of each Protection Zone is the line of MHWS
- the seaward boundary of the Cape Turnagain Protection Zone extends seaward for a maximum distance of 100 m
- the values of significance/importance relating to each protection⁹ zone and as referred to in Policy 9-2 are shown in ~~the table~~ Table H1⁹ below:

⁹ Recommendation COA 38, p. 139

Table H1: Protection Zones: Values of Significance/ Importance⁴

<u>Protection Zone and Figure References</u>	<u>Significant Values/ Features</u>
Whanganui River Protection Zone⁵ Figure H 11⁴	<ul style="list-style-type: none"> Nationally important as a nursery for freshwater and estuarine species Nationally important ecosystem for bird species Nationally important strategic site for migratory bird species Provides habitat for threatened species Important roosting and feeding area for wading birds (especially shellfish beds) Important feeding and breeding ground for many fish species (especially access ways for whitebait and lamprey) Corliss Island has a saltmarsh fringe and is important for hawks Languard Bluff comprises a nationally important sequence of Pleistocene sedimentary strata and pecten shells Coastal landforms and adjacent dunes are important nesting habitat
Whangaehu River Protection Zone⁵ Figure H 11⁴	<ul style="list-style-type: none"> Nationally important strategic site for migratory bird species Provides habitat for threatened bird species Important roosting and feeding area for wading birds Regionally important for its high degree of naturalness <p>Note:</p> <ul style="list-style-type: none"> The Witiāu Scientific Reserve is located adjacent to the true right bank of the estuary. There is a dense concentration of archaeological sites adjacent to the estuary.
Turakina River Protection Zone⁵ Figure H 12⁴	<ul style="list-style-type: none"> Nationally important strategic site for migratory bird species Provides habitat for threatened bird species Important roosting and feeding habitat for wading birds Regionally distinct vegetation communities Regionally important for its high degree of naturalness Locally rich in archaeological sites
Rangitikei River Protection Zone⁵ Figure H 12⁴	<ul style="list-style-type: none"> Contains regionally important plant species Regionally important for bird species Regionally important for saltmarsh communities and estuarine native turf species Provides habitat for rare and threatened bird species Important roosting and feeding area for wading birds Important for whitebait spawning
Manawatu River Protection Zone⁵ Figure H 13⁴	<ul style="list-style-type: none"> Nationally important as a nursery for freshwater and estuarine species Internationally important strategic site for migratory bird species Provides habitat for rare and threatened bird species Important roosting and feeding area for wading birds Contains regionally important plant species Internationally recognised as a wetland of International importance under the RAMSAR Convention. Regionally important for its high degree of naturalness and diversity
Cape Turnagain Protection Zone⁵ Figure H 13⁴	<ul style="list-style-type: none"> Important haul out area for marine mammals Important feeding, roosting and breeding area for birds (especially blue penguins) Site of high value to iwi Site of geological importance

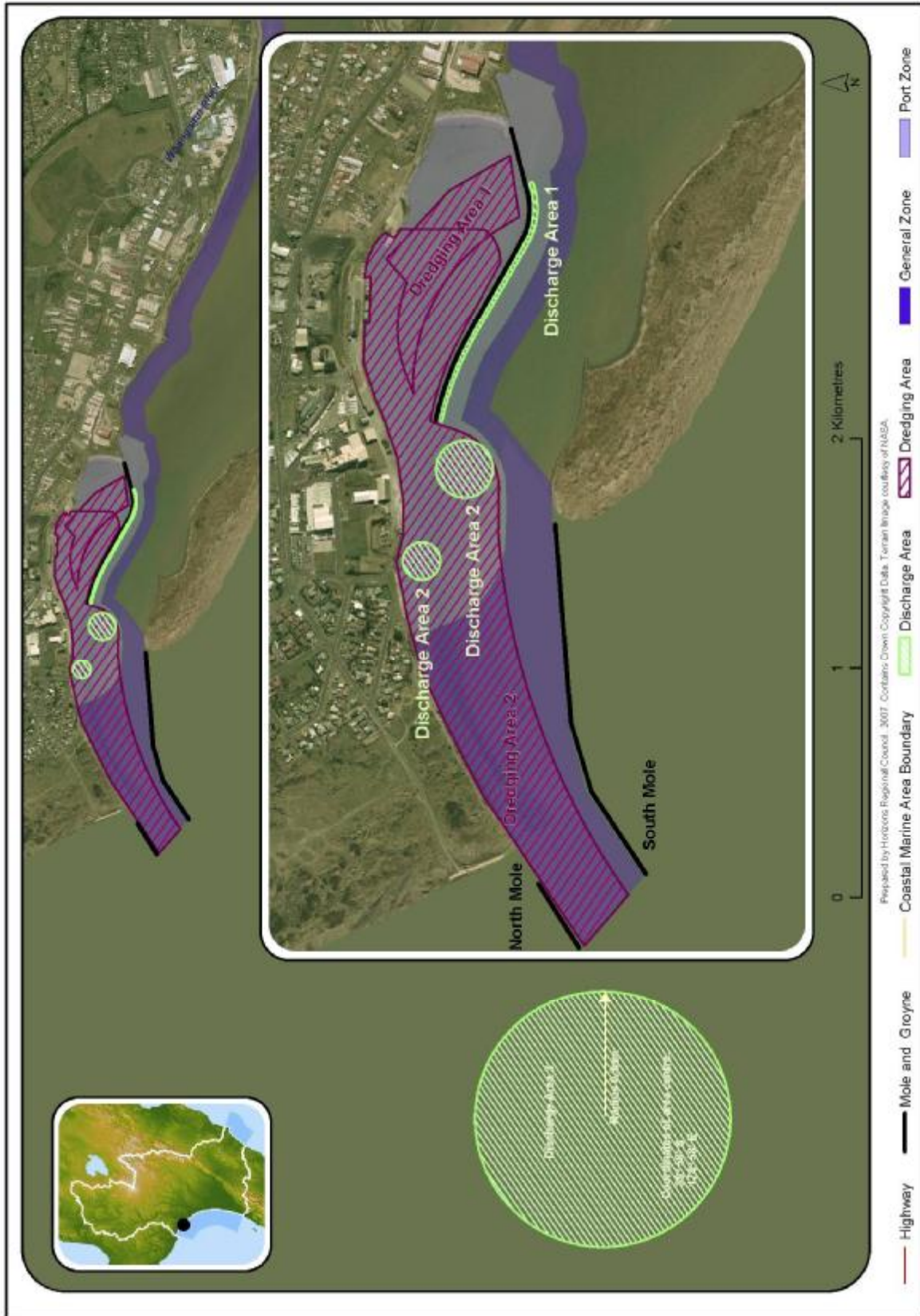


Figure H:10A Wanganui Port ¹⁰

¹⁰ Recommendation COA 63, p. 197.

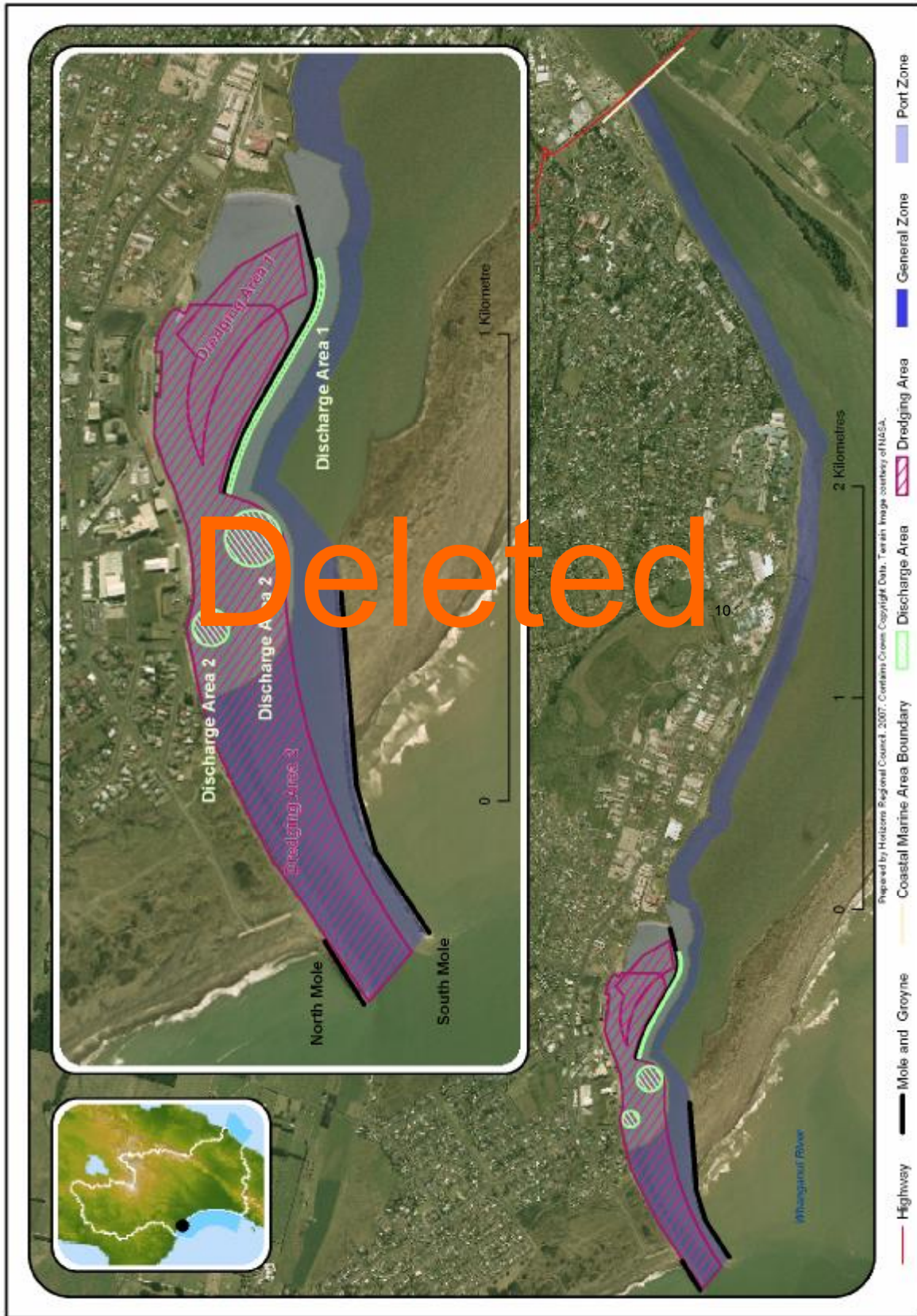


Figure H:10 Wanganui Port¹⁰



Figure H:11 Coastal Protection

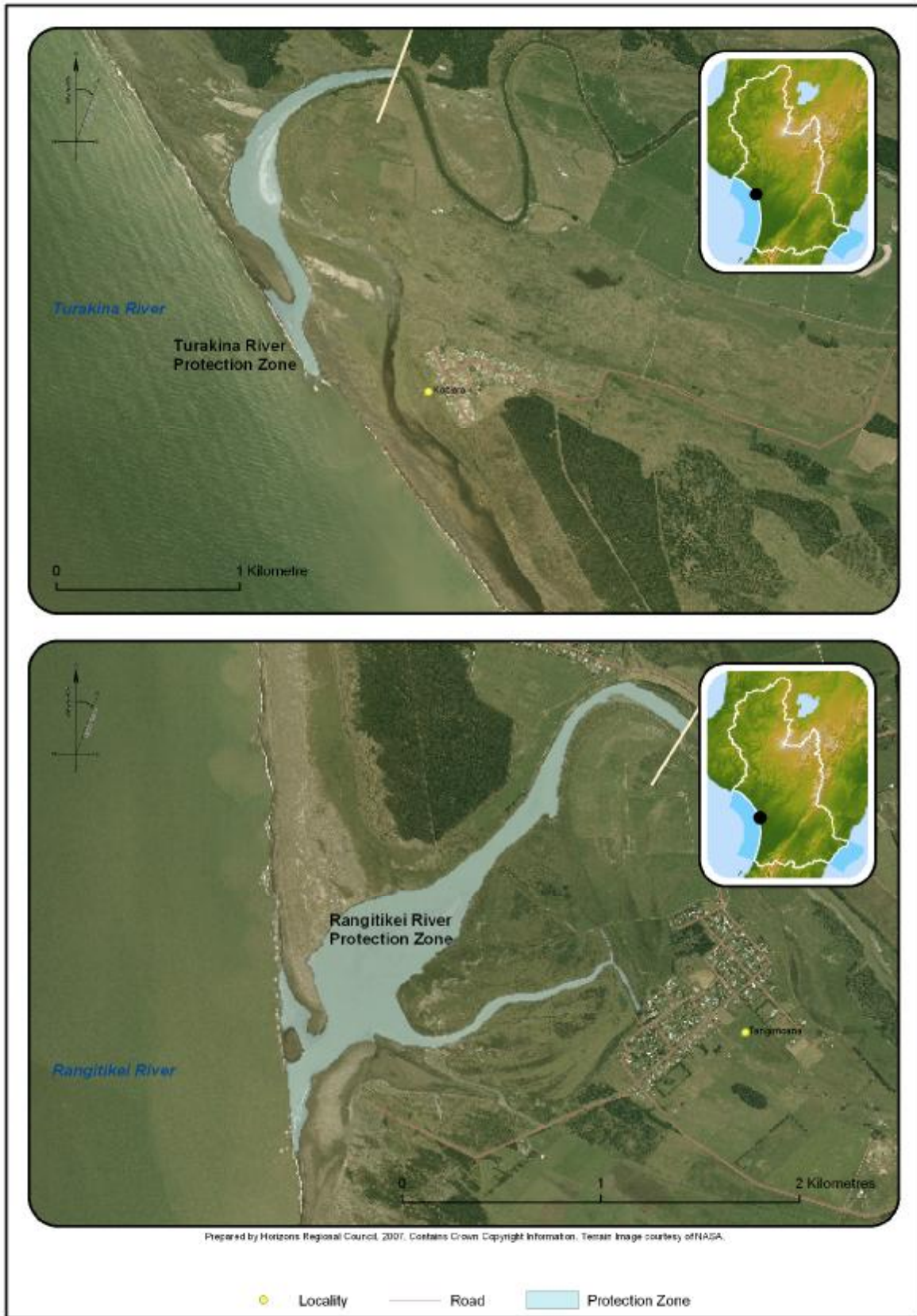


Figure H:12 Coastal Protection

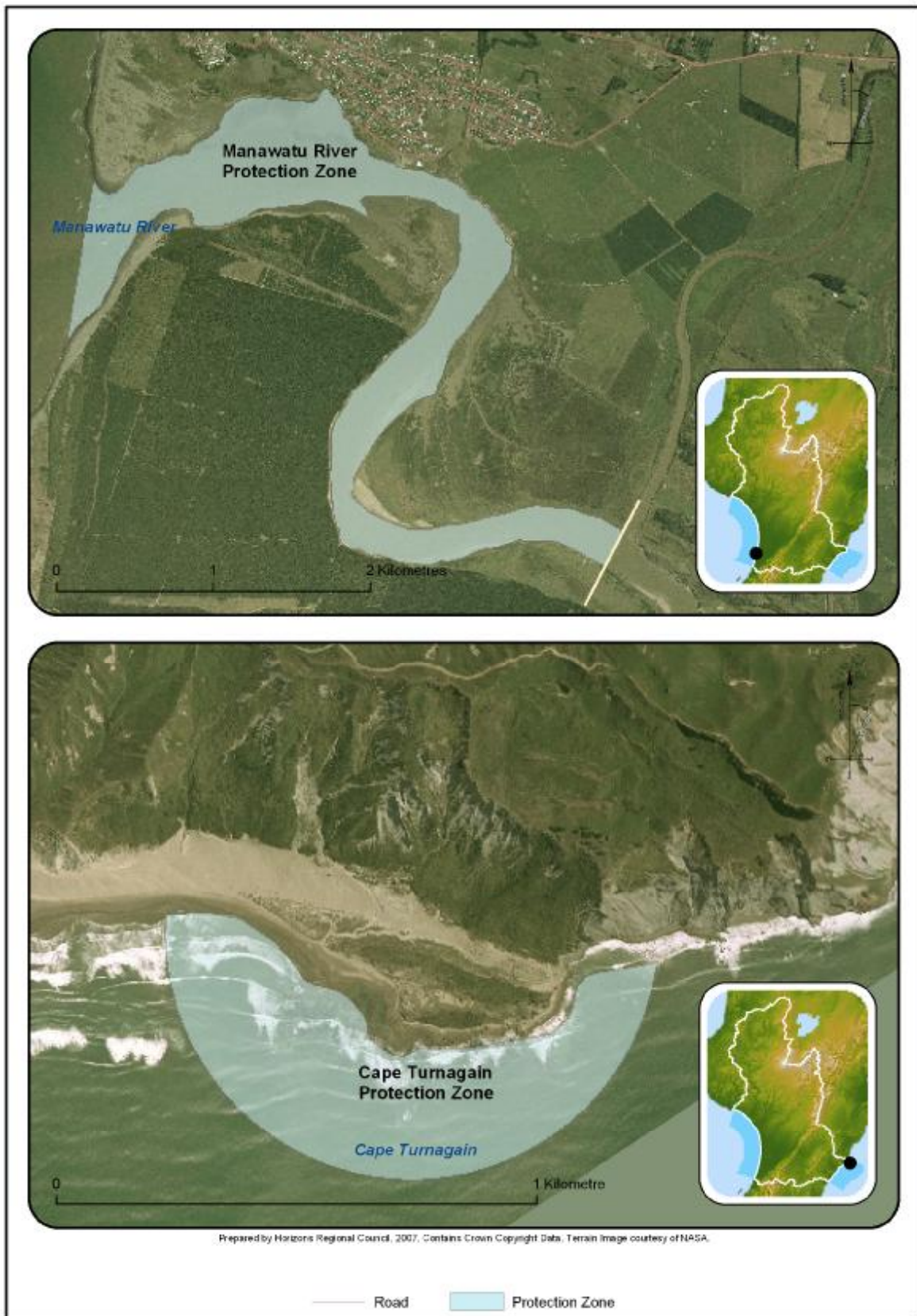


Figure H:13 Coastal Protection

Part C: Water Management ¹¹

Water Management Zones and Sub-zones, Values and Water Quality Standards

1. For water quality management purposes the CMA is divided into:
 - (a) One Seawater Management Zone comprising primarily open coastal waters;
 - (b) Several Water Management Estuary Sub-zones associated with specified estuary waters. The term sub-zone is used because the estuary waters are part of a larger Water Management Zone for that river or stream (see schedule D).

The respective zones are specifically defined below.

2. For the purpose of delineating the boundaries between the Seawater Management Zone and the Water Management Estuary Sub-zones the following term is used: River/Coast Interface Boundary.
3. The River/Coast Interface Boundary for the purposes of schedule H means a notional landward boundary of the Seawater Management Zone. The River/Coast Interface Boundary is the line created by joining the lines of MHWS at the open coast either side of the interface between the river or stream and the open coast.
4. The Seawater Management Zone comprises all of the CMA seawards from MHWS (on the open coast) and from the River/Coast Interface Boundary to the 12 nautical mile boundary.
5. The water management estuary sub-zones are associated with the water management zones detailed in Schedule D. The water management estuary sub-zones comprise that part of the CMA in a river or stream extending from the River/Coast Interface Boundary to the Cross River Boundary depicted in figures H3-H9.

¹¹ (All changes to Schedule H: Part C) End of hearing report. Appendix 6 pp 106 - 132

List of Tables relating to the Water Management Zones and Sub-zones:

Table Number	Description
Table H2	List of values, management objectives and where they apply
Table H3	List of values by Water Management Estuary Sub-zones in the CMA
Table H4	Life Supporting Capacity Values in the CMA
Table H5	Sites of Significance in the CMA – Aquatic Values
Table H6	Sites of Significance in the CMA – Riparian Values
Table H7	Native Fish Spawning Values in the CMA
Table H8	Amenity Values in the CMA
Table H9	Native Fishery Values in the CMA
Table H10	Water Management Estuary Sub-zones in the CMA: Water Quality Definitions
Table H11	Water Management Estuary Sub-zones in the CMA: Water Quality Standards
Table H12	Seawater Management Zone in the CMA: Water Quality Definitions
Table H13	Seawater Management Zone in the CMA: Water Quality Standards

5. Values that apply to Water Management Sub-Zones in the CMA

Table H.2: List of values, management objectives, and where they apply

Value group	Individual Values		Management Objective	Where it applies	
Ecosystem Values	LSC	Life-Supporting capacity	The CMA supports healthy aquatic life / ecosystems	All of the CMA	
	SOS-A	Sites of Significance - Aquatic	Sites of significance for native aquatic biodiversity within the CMA are maintained or improved	Specified sites / reaches – see table H5	
	SOS-R	Sites of Significance - Riparian	Sites of significance for native riparian biodiversity within the CMA are maintained or improved	Specified sites / reaches – see table H6	
	NFS	Native Fish Spawning	The CMA sustains healthy native fish spawning and fry development	Specified sites / reaches – See table H7	
Recreational and Cultural Values	CR	Contact recreation	The CMA is suitable for contact recreation	All of the CMA	
	Am	Amenity	The amenity values of the CMA are maintained or improved	All waters within the Seawater Management Zone and Specified sites / reaches of Estuary Sub-zones – refer tables	
	NF	Native Fishery	The CMA sustains populations of native fish that can be harvested in a sustainable manner	Specified sites / reaches – See table H8	
	MAU	Mauri	The Mauri of the CMA is maintained or improved	All of the CMA	
	SG	Shellfish Gathering	The CMA is suitable for shellfish harvesting	All waters within the Seawater Management Zone	
	SOS-C	Sites of Significance - Cultural	Sites of significance for cultural values are maintained	To be defined	
Social/ Values	Economic	CAP	Capacity to Assimilate Pollution	The capacity of a waterbody to assimilate pollution is not exceeded	All waters within the Seawater Management Zone
		FC	Flood Control	The integrity of existing flood and river bank erosion protection structures within the CMA is not compromised	Existing flood / erosion control schemes

Table H3: List of Values by Water Management Sub-Zones in the CMA
Legend:

Table Headings: **WQS**: Water Quality Standard; **LSC**: Life Supporting Capacity; **M**: Marine; **CR**: Contact Recreation; **SG**: Shellfish Gathering; **Mau**: Mauri; **SOS-A**: Sites of Significance for Aquatic Biodiversity; **SoS-R**: Sites of Significance for Riparian biodiversity; **SoS-A**: Sites of Significance for Aquatic biodiversity; **Am**: Amenity; **NFS**: Native Fish Spawning; **NF**: Native Fishery; **SoS-C**: Sites of Significance for Cultural value; **CAP**: Capacity to Assimilate Pollution

Key for LSC Classes: **HM**: Hill Mixed, **LM**: Lowland Mixed, **LS**: Lowland Sand, **HSS**: Hill country soft sedimentary

Water Management Zone	Sub Zone	Description	Zone Wide Values				Site/ Reach Specific Values						
			LSC	CR	SG	Mau	SOS A	SoS R	NFS	AM	NF	SoS C	CAP
Seawater Management Zone	N/A	All waters seaward from the MHWS to the 12 nautical mile boundary	M	ü	ü	ü				ü			ü
Coastal Manawatu (Mana_13)	Manawatu Estuary (Mana_13CMA)	From the cross river boundary on the seaward edge of the Foxton Loop (S24: 009 766) as shown in Figure H6 to the River/Coast Interface Boundary*.	LM	ü		ü		ü	ü		ü		
Coastal Rangitikei (Rang_4)	Rangitikei Estuary (Rang_4CMA)	From the cross river boundary at the seaward edge of the boat ramp on the true left bank of the river (S23:009 001) as shown in Figure H5 to the River/Coast Interface Boundary*.	LM	ü		ü		ü	ü		ü		
Lower Whanganui (Whai_7)	Whanganui Estuary (Whai_7CMA)	From the cross river boundary at the seaward edge of Cobham Street Bridge (R22: 848 380) as shown in Figure H4 to the River/Coast Interface Boundary*.	LM	ü		ü		ü	ü	ü	ü		
Coastal Whangaehu (Whau_4)	Whangaehu Estuary (Whau_4CMA)	From the cross river boundary just after the river straightens towards the sea (S23: 903 287) as shown in Figure H4 to the River/Coast Interface Boundary*.	HSS	ü		ü		ü	ü		ü		
Turakina (Tura_1)	Turakina Estuary (Tura_1CMA)	From the cross river boundary at the continuation of the fenceline (S23: 921 254) as shown in Figure H5 to the River/Coast Interface Boundary*.	HSS	ü		ü		ü	ü		ü		
Ohau (Ohau_1)	Ohau Estuary (Ohau_1CMA)	From the cross river boundary just before the river bends to the left (S25: 929 595) as	HM	ü		ü		ü	ü		ü		

Water Management Zone	Sub Zone	Description	Zone Wide Values				Site/ Reach Specific Values						
			LSC	CR	SG	Mau	SOS A	SoS R	NFS	AM	NF	SoS C	CAP
		shown in Figure H7 to the River/Coast Interface Boundary*.											
Lake Horowhenua (Hoki_1)	Hokio Estuary (Hoki_1CMA)	From the cross river boundary at the seaward edge of the bridge that crosses the stream (S25: 949 657) as shown in Figure H6 to the River/Coast Interface Boundary*.	LS	ü		ü			ü	ü	ü		
Owahanga (Owha_1)	Owahanga Estuary (Owha_1CMA)	From the cross river boundary at the point at which an unnamed stream enters the river (U25: 922 531) as shown in Figure H8 to the River/Coast Interface Boundary*.	HSS	ü		ü							
East Coast (East_1)	Wainui Estuary (East_1CMA)	From the cross river boundary at the seaward edge of the bridge that crosses the river (V24: 115 735) as shown in Figure H9 to the River/Coast Interface Boundary*.	HSS	ü		ü		ü					
Akitio (Akit_1)	Akitio Estuary (Akit_1CMA)	From the cross river boundary at the seaward edge of the bridge that crosses the river (U25: 996 618) as shown in Figure H8 to the River/Coast Interface Boundary*.	HSS	ü		ü			ü		ü		
Kai Iwi (West_2)	Kai Iwi Estuary (West_2CMA)	From the cross river boundary at the seaward edge of the Archers Bridge (footbridge) that crosses the stream (R22: 722 450) as shown in Figure H3 to the River/Coast Interface Boundary*.	HSS	ü		ü			ü	ü	ü		
Mowhanau (West_3)	Mowhanau Estuary (West_3CMA)	From the cross river boundary at the seaward edge of the footbridge that crosses the stream (R22: 726 448) as shown in Figure H3 to the River/Coast Interface Boundary*.	LM	ü		ü			ü	ü	ü		
Waikawa (West_9)	Waikawa Estuary (West_9CMA)	From the cross river boundary at the seaward edge of the footbridge that crosses the stream (S25: 915 554) as shown in Figure H7 to the River/Coast Interface Boundary*.	HM	ü		ü	ü	ü		ü			

Table H4: Life Supporting Capacity Values in the CMA

Water Management Zone	Sub-Zone	Life Supporting Capacity Classification
Seawater Management Zone	N/A	M
Coastal Manawatu (Mana_13)	Manawatu Estuary (Mana_13CMA)	LM
Coastal Rangitikei (Rang_4)	Rangitikei Estuary (Rang_4CMA)	LM
Lower Whanganui (Whai_7)	Whanganui Estuary (Whai_7CMA)	LM
Coastal Whangaehu (Whau_4)	Whangaehu Estuary (Whau_4CMA)	HSS
Turakina (Tura_1)	Turakina Estuary (Tura_1CMA)	HSS
Ohau (Ohau_1)	Ohau Estuary (Ohau_1CMA)	HM
Lake Horowhenua (Hoki_1)	Hokio Estuary (Hoki_1CMA)	LS
Owahanga (Owha_1)	Owahanga Estuary (Owha_1CMA)	HSS
East Coast (East_1)	Wainui Estuary (East_1CMA)	HSS
Akitio (Akit_1)	Akitio Estuary (Akit_1CMA)	HSS
Kai Iwi (West_2)	Kai Iwi Estuary (West_2CMA)	HSS
Mowhanau (West_3)	Mowhanau Estuary (West_3CMA)	LM
Waikawa (West_9)	Waikawa Estuary (West_9CMA)	HM

Table H5: Sites of Significance In the CMA – Aquatic Values

Water Management Zone	Sub-Zone	River / Stream Name	Species	Reference
Waikawa (West_9)	Waikawa Estuary (West_9CMA)	Waikawa Stream	Shortjaw kokopu and redfin bully	From the cross river boundary at the seaward edge of the footbridge that crosses the stream (S25: 915 554) as shown in Figure H7 to the River/Coast Interface Boundary*.

Table H6: Sites of Significance In the CMA – Riparian Values

Water Management Zone	Sub-Zone	River	Reference	Riparian Habitat Value
Coastal Manawatu (Mana_13)	Manawatu Estuary (Mana_13CMA)	Manawatu River	From the cross river boundary on the seaward edge of the Foxton Loop (S24: 009 766) as shown in Figure H6 to the River/Coast Interface Boundary*.	Gravel and Sand (Dotterel) Mud / Silt habitat and estuarine roosts (Waders)
Coastal Rangitikei (Rang_4)	Rangitikei Estuary (Rang_4CMA)	Rangitikei River	From the cross river boundary at the seaward edge of Cobham Street Bridge (R22: 848 380) as shown in Figure H4 to the River/Coast Interface Boundary*.	Gravel and Sand (Dotterel)
Lower Whanganui (Whai_7)	Whanganui Estuary (Whai_7CMA)	Whanganui River	From the cross river boundary just after the river straightens towards the sea (S23: 903 287) as shown in Figure H4 to the River/Coast Interface Boundary*.	Gravel and Sand (Dotterel) Mud / Silt habitat and estuarine roosts (Waders)
Coastal Whangaehu (Whau_4)	Whangaehu Estuary (Whau_4CMA)	Whangaehu River	From the cross river boundary on the seaward edge of the Foxton Loop (S24: 009 766) as shown in Figure H6 to the River/Coast Interface Boundary*.	Gravel and Sand (Dotterel) Mud / Silt habitat and estuarine roosts (Waders)
Turakina (Tura_1)	Turakina Estuary (Tura_1CMA)	Turakina River	From the cross river boundary at the seaward edge of the boat ramp on the true left bank of the river (S23:009 001) as shown in Figure H5 to the River/Coast Interface Boundary*.	Gravel and Sand (Dotterel) Mud / Silt habitat and estuarine roosts (Waders)
Ohau (Ohau_1)	Ohau Estuary (Ohau_1CMA)	Ohau River	From the cross river boundary just before the river bends to the left (S25: 929 595) as shown in Figure H7 to the River/Coast Interface Boundary*.	Gravel and Sand (Dotterel) Mud / Silt habitat and estuarine roosts (Waders)
East Coast (East_1)	Wainui Estuary (East_1CMA)	Wainui Stream	From the cross river boundary at the seaward edge of the bridge that crosses the river (V24: 115 735) as shown in Figure H9 to the River/Coast Interface Boundary*.	Gravel and Sand (Dotterel) Mud / Silt habitat and estuarine roosts (Waders)
Waikawa (West_9)	Waikawa Estuary (West_9CMA)	Waikawa Stream	From the cross river boundary at the seaward edge of the footbridge that crosses the stream (S25: 915 554) as shown in Figure H7 to the River/Coast Interface Boundary*.	Mud / Silt habitat and estuarine roosts (Waders)

Table H7: Native Fish Spawning Values in the CMA

Water Management Zone	Sub-Zone	River / Stream Name	Reference
Coastal Manawatu (Mana_13)	Manawatu Estuary (Mana_13CMA)	Manawatu River	From the cross river boundary on the seaward edge of the Foxton Loop (S24: 009 766) as shown in Figure to the River/Coast Interface Boundary*.
Coastal Rangitikei (Rang_4)	Rangitikei Estuary (Rang_4CMA)	Rangitikei River	From the cross river boundary at the seaward edge of Cobham Street Bridge (R22: 848 380) as shown in Figure H4 to the River/Coast Interface Boundary*.
Lower Whanganui (Whai_7)	Whanganui Estuary (Whai_7CMA)	Whanganui River	From the cross river boundary just after the river straightens towards the sea (S23: 903 287) as shown in Figure H4 to the River/Coast Interface Boundary*.
Coastal Whangaehu (Whau_4)	Whangaehu Estuary (Whau_4CMA)	Whangaehu River	From the cross river boundary just before the river bends to the left (S25: 929 595) as shown in Figure H7 to the River/Coast Interface Boundary*.
Turakina (Tura_1)	Turakina Estuary (Tura_1CMA)	Turakina River	From the cross river boundary on the seaward edge of the Foxton Loop (S24: 009 766) as shown in Figure H6 to the River/Coast Interface Boundary*.
Ohau (Ohau_1)	Ohau Estuary (Ohau_1CMA)	Ohau River	From the cross river boundary at the seaward edge of the boat ramp on the true left bank of the river (S23:009 001) as shown in Figure H5 to the River/Coast Interface Boundary*.
Lake Horowhenua (Hoki_1)	Hokio Estuary (Hoki_1CMA)	Hokio Stream	From the cross river boundary at the seaward edge of the bridge that crosses the stream (S25: 949 657) as shown in Figure H6 to the River/Coast Interface Boundary*.
Akitio (Akit_1)	Akitio Estuary (Akit_1CMA)	Akitio River	From the cross river boundary at the seaward edge of the bridge that crosses the river (U25: 996 618) as shown in Figure H8 to the River/Coast Interface Boundary*.
Kai Iwi (West_2)	Kai Iwi Estuary (West_2CMA)	Kai Iwi Stream	From the cross river boundary at the seaward edge of the Archers Bridge (footbridge) that crosses the stream (R22: 722 450) as shown in Figure H3 to the River/Coast Interface Boundary*.
Mowhanau (West_3)	Mowhanau Estuary (West_3CMA)	Mowhanau Stream	From the cross river boundary at the seaward edge of the footbridge that crosses the stream (R22: 726 448) as shown in Figure H3 to the River/Coast Interface Boundary*.

Table H8: Amenity Values in the CMA

Water Management Zone	Sub-Zone	Site	Description
Seawater Management Zone	N/A	N/A	All waters in the Seawater Management Zone
Lower Whanganui (Whai_7)	Whanganui Estuary (Whai_7CMA)	Whanganui River	From the cross river boundary at the seaward edge of Cobham Street Bridge (R22: 848 380) as shown in Figure H4 to the River/Coast Interface Boundary*.
Lake Horowhenua (Hoki_1)	Hokio Estuary (Hoki_1CMA)	Hokio Stream	From the cross river boundary at the seaward edge of the bridge that crosses the stream (S25: 949 657) as shown in Figure H6 to the River/Coast Interface Boundary*.
Kai Iwi (West_2)	Kai Iwi Estuary (West_2CMA)	Kai Iwi Stream	From the cross river boundary at the seaward edge of the Archers Bridge (footbridge) that crosses the stream (R22: 722 450) as shown in Figure H3 to the River/Coast Interface Boundary*.
Mowhanau (West_3)	Mowhanau Estuary (West_3CMA)	Mowhanau Stream	From the cross river boundary at the seaward edge of the footbridge that crosses the stream (R22: 726 448) as shown in Figure H3 to the River/Coast Interface Boundary*.
Waikawa (West_9)	Waikawa Estuary (West_9CMA)	Waikawa Stream	From the cross river boundary at the seaward edge of the footbridge that crosses the stream (S25: 915 554) as shown in Figure H7 to the River/Coast Interface Boundary*.

Table H9: Native Fishery Values in the CMA

Water Management Zone	Sub-Zone	River / Stream Name	Reference
Coastal Manawatu (Mana_13)	Manawatu Estuary (Mana_13CMA)	Manawatu River	From the cross river boundary on the seaward edge of the Foxton Loop (S24: 009 766) as shown in Figure H6 to the River/Coast Interface Boundary*.
Coastal Rangitikei (Rang_4)	Rangitikei Estuary (Rang_4CMA)	Rangitikei River	From the cross river boundary at the seaward edge of the boat ramp on the true left bank of the river (S23:009 001) as shown in Figure H5 to the River/Coast Interface Boundary*.
Lower Whanganui (Whai_7)	Whanganui Estuary (Whai_7CMA)	Whanganui River	From the cross river boundary at the seaward edge of Cobham Street Bridge (R22: 848 380) as shown in Figure H4 to the River/Coast Interface Boundary*.
Coastal Whangaehu	Whangaehu Estuary (Whau_4CMA)	Whangaehu River	From the cross river boundary just after the river straightens towards the sea (S23: 903 287) as shown in Figure H4 to the

(Whau_4)				River/Coast Interface Boundary*.
Turakina (Tura_1)	Turakina Estuary (Tura_1CMA)	Turakina River		From the cross river boundary at the continuation of the fenceline (S23: 921 254) as shown in Figure H5 to the River/Coast Interface Boundary*.
Ohau (Ohau_1)	Ohau Estuary (Ohau_1CMA)	Ohau River		From the cross river boundary just before the river bends to the left (S25: 929 595) as shown in Figure H7 to the River/Coast Interface Boundary*.
Lake Horowhenua (Hoki_1)	Hokio Estuary (Hoki_1CMA)	Hokio Stream		From the cross river boundary at the seaward edge of the bridge that crosses the stream (S25: 949 657) as shown in Figure H6 to the River/Coast Interface Boundary*.
Akitio (Akit_1)	Akitio Estuary (Akit_1CMA)	Akitio River		From the cross river boundary at the seaward edge of the bridge that crosses the river (U25: 996 618) as shown in Figure H8 to the River/Coast Interface Boundary*.
Kai Iwi (West_2)	Kai Iwi Estuary (West_2CMA)	Kai Iwi Stream		From the cross river boundary at the seaward edge of the Archers Bridge (footbridge) that crosses the stream (R22: 722 450) as shown in Figure H3 to the River/Coast Interface Boundary*.
Mowhanau (West_3)	Mowhanau Estuary (West_3CMA)	Mowhanau Stream		From the cross river boundary at the seaward edge of the footbridge that crosses the stream (R22: 726 448) as shown in Figure H3 to the River/Coast Interface Boundary*.

6. Water Quality Standards

Table H 10: Water Management Estuary Sub-Zones in the CMA: Water Quality Definitions

The water quality standards for the Water Management Estuary Sub-Zones in the CMA, as defined in **Table H11** shall be read as follows (The numerical values in are indicated by [...])

Column		Standard spelt out
Header	Sub-header	
pH	Range	The pH of the water shall be within the range [...] to [...]
	Δ	The pH of the water shall not be changed by more than [...]
Temp (°C)	<	The temperature of the water shall not exceed [...] degrees Celsius.
	Δ	The temperature of the water shall not be changed by more than [...]degrees Celsius.
DO (%SAT)	<	The concentration of dissolved oxygen shall exceed [...] % of saturation
BOD ₅ (g/m ³)	<	The soluble carbonaceous five-days biological oxygen demand shall not exceed [...] grams per cubic metre.
POM (g/m ³)	<	The concentration of particulate organic matter shall not exceed [...] grams per cubic metre.
Periphyton	Chl a (mg/m ²)	The algal biomass in the river/ estuarine area shall not exceed [...] milligrams of chlorophyll a per square metre.
	% cover	The maximum cover of visible foreshore or seabed by periphyton (as filamentous algae more than 2 centimetres long) shall not exceed [...]%
DRP (mg/m ³)	<	The annual average concentration of dissolved reactive phosphorus when the river flow is at or below three times the median flow shall not exceed [...] milligrams per cubic meter, unless natural levels already exceed this standard.
SIN (mg/m ³)	<	The annual average concentration of soluble inorganic nitrogen when the river flow is at or below three times the median flow shall not exceed [...] milligrams per cubic meter.
QMCI		The quantitative macroinvertebrate index shall exceed [...], unless natural physical conditions are beyond the scope of application of the QMCI.
Ammonia (mg/m ³)	<	The concentration of ammonia nitrogen shall not exceed [...] milligrams per cubic meter.
Toxicants	<	For toxicants not otherwise defined in these standards, the concentration of toxicants in the water shall not exceed the trigger values for coastal waters defined in the 2000 ANZECC guidelines Table 3.4.1 with the level of protection of [...] % of species.
Turbidity (NTU)	< ½ m	The turbidity of the water when the river flow is at or below half median flow shall not exceed [...] Nephelometric Turbidity Units (NTU)
	<m	The turbidity of the water when the river flow is at or below median flow shall not exceed [...] Nephelometric Turbidity Units (NTU)
	<3 x m	The turbidity of the water when the river flow is at or below three times median flow shall not exceed [...] Nephelometric Turbidity Units (NTU)
	%Δ	The turbidity of the water shall not be changed by more than [...] %. This standard shall apply only when physical conditions existing at the site prevent adequate water clarity (back Disc) measurement.
Clarity (m)	%Δ	The clarity of the water measured as being the horizontal sighting range of a 200 mm black disc shall not be changed by more than [...] %

Note: Soluble Inorganic Nitrogen (SIN) concentration is measured as the sum of nitrate nitrogen, nitrite nitrogen and ammonia nitrogen

Note 2: Some water quality parameters are potentially influenced by tidal fluctuations. Samples shall be taken as near as possible to the peak of an outgoing tide cycle to minimise the influence of marine waters on the results.

Table H 11: Water Management Estuary Sub-Zones in the CMA: Water Quality Standards
The following water quality standards apply to the Water Management Sub-zones in the CMA.

Water Management Zone	Estuary Sub-zone	pH		Temp (°C)		DO (%SAT)	BOD ₅ (g/m ³)	Periphyton		DRP (mg/m ³)	SIN (mg/m ³)	QMCE error! Bookmark not defined.†	Ammonia (mg/m ³)	Tox.	Turbidity (NTU)				Clarity (m)
		Range	Δ	<	Δ	>	<	Chl a (mg/m ²)	% cover	<	<	<	< 1/2 m		< m	< 3 xm	%Δ	%Δ	
Coastal Manawatu (Mana_13)	Manawatu Estuary (Mana_13CMA)	7 to 8.5	0.5	24	3	70	2	200	30	15	444	5	400	95	2.5		15	30	30
Coastal Rangitikei (Rang_4)	Rangitikei Estuary (Rang_4CMA)	7 to 8.5	0.5	24	3	70	2	200	30	15	167	5	400	95	2.5		15	30	30
Lower Whanganui (Whai_7)	Whanganui Estuary (Whai_7CMA)	7 to 8.5	0.5	24	3	60	2	200	30	15	167	5	400	95		20		30	30
Coastal Whangaehu (Whau_4)	Whangaehu Estuary (Whau_4CMA)	7 to 8.5 ¹²	0.5	22	3	70	2	200	30	15	167	5	400	95		20 ¹³		30	30
Turakina (Tura_1)	Turakina Estuary (Tura_1CMA)	7 to 8.5	0.5	22	3	70	2	200	30	15	167	5	400	95		20		30	30
Ohau (Ohau_1)	Ohau Estuary (Ohau_1CMA)	7 to 8.5	0.5	22	3	70	2	120	30	10	110	5	400	95	2.5		15	30	30
Lake Horowhenua (Hoki_1)	Hokio Estuary (Hoki_1CMA)	7 to 8.5	0.5	24	3	60	2	200	30	15	167	5	400	95			15	30	30
Owahanga (Owha_1)	Owahanga Estuary (Owha_1CMA)	7 to 8.5	0.5	22	3	70	2	200	30	15	167	5	400	95		20		30	30
East Coast (East_1)	Wainui Estuary (East_1CMA)	7 to 8.5	0.5	22	3	70	2	200	30	15	167	5	400	95		20		30	30
Akitio (Akit_1)	Akitio Estuary (Akit_1CMA)	7 to 8.5	0.5	22	3	70	2	200	30	15	167	5	400	95		20		30	30

¹² Except where natural conditions, resulting from volcanic or lahar activity on Mt Ruapehu cause exceedence of the standard.

¹³ Except where natural conditions, resulting from volcanic or lahar activity on Mt Ruapehu cause exceedence of the standard

Water Management Zone	Estuary Sub-zone	pH		Temp (°C)		DO (%SAT)	BOD ₅ (g/m ³)	Periphyton		DRP (mg/m ³)	SIN (mg/m ³)	QACE Error! Bookmark not defined.	Ammonia (mg/m ³)	Tox.	Turbidity (NTU)				Clarity (m)
		Range	Δ	<	Δ	>	<	Chl a (mg/m ²)	% cover	<	<	<	<		<1/2 m	< m	< 3 xm	%Δ	%Δ
Kai Iwi (West_2)	Kai Iwi Estuary (West_2CMA)	7 to 8.5	0.5	22	3	70	2	200	30	15	167	5	400	95		20		30	30
Mowhanau (West_3)	Mowhanau Estuary (West_3CMA)	7 to 8.5	0.5	24	3	60	2	200	30	15	167	5	400	95			15	30	30
Waikawa (West_9)	Waikawa Estuary (West_9CMA)	7 to 8.5	0.5	22	3	70	2	120	30	10	167	5	400	95			15	30	30

Table H 12: Seawater Management Zone in the CMA: Water Quality Definitions

The water quality standards for the Seawater Management Zone in the CMA, as defined in **Table H13** shall be read as follows (The numerical values in are indicated by [...])

Column		Standard spelt out
header	sub-header	
pH	Range	The pH of the water shall be within the range [...] to [...]
	Δ	The pH of the water shall not be changed by more than
	Δ	The temperature of the water shall not be changed by more than [...] degrees Celsius.
DO (%SAT)	<	The concentration of dissolved oxygen shall exceed [...] % of saturation within 2 metres of the surface
Periphyton	Chl <i>a</i> (mg/m ³)	The average annual algal biomass shall not exceed [...] milligrams of chlorophyll <i>a</i> per square metre.
TP (mg/m ³)	<	The average annual concentration of total phosphorus shall not exceed [...] milligrams per cubic meter.
TN (mg/m ³)	<	The average annual concentration of total nitrogen shall not exceed [...] milligrams per cubic meter.
Ammonia (mg/m ³)	<	The concentration of ammonia nitrogen reactive phosphorus shall not exceed [...] milligrams per cubic meter.
Toxicants	<	For toxicants not otherwise defined in these standards, the concentration of toxicants in the water shall not exceed the trigger values defined in the 2000 ANZECC guidelines Table 3.4.1 with the level of protection of [...] % of species.
Turbidity (NTU)	%Δ	The turbidity of the water shall not be changed by more than [...] % . This standard shall apply only when physical conditions existing at the site prevent adequate water clarity (Secchi Disc) measurement.
Clarity (m)	%Δ	The clarity of the water shall not be changed by more than [...] % measured by Secchi Disc

Notes:

- The pH change standard applies only within the bounds of the pH range standard
- The temperature change standard applies only within the bounds of the temperature standard.
- Soluble Inorganic Nitrogen (SIN) concentration is measured as the sum of nitrate nitrogen, nitrite nitrogen and ammonia nitrogen

Table H 13: Seawater Management Zone in the CMA: Water Quality Standards

The following water quality standards apply to the Seawater Management Zone.

Management Zone	Sub zone	pH		Temp (°C)		DO (%SAT)	BOD ₅ (g/m ³)	POM (g/m ³)	Periphyton		TP (mg/m ³)	TN (mg/m ³)	OMCl	Ammonia (mg/m ³)	Tox.	Turbidity (NTU)				Clarity (m)
		Range	Δ	<	Δ	>	<	<	Chl a (mg/m ³)	% cover	<	<		<		<	<1/2 m	< m	< 3 xm	%Δ
Seawater Management Zone	N/A	8 to 8.3	0.1		1	90	2		1		10	60		60	99				20	20

Additional water quality standards for the Seawater Management Zone

1. The concentration of *Enterococci* shall not exceed 140 per 100 millilitres. This standard applies during the period 1st November to 30th April inclusive; and
2. The concentration of *Enterococci* shall not exceed 280 per 100 millilitres. This standard applies during the period 1st May to 31st October inclusive.
3. The median concentration of faecal coliforms shall not exceed 14 per 100 millilitres and the 90th percentile shall not exceed 43 per 100 millilitres. This standard applies year round.
4. The concentration of toxins due to cyanobacteria (blue-green algae) shall not exceed 20 milligrams per cubic metre. This standard applies year round.