

Notes for track changes: This is the final recommendation for wording of One Plan provisions made by Regional Council officers at the conclusion of the Water Hearing. **Red** Text denotes changes to Schedule H and uses the Provisional Determination as the base document and consolidates recommendations from the Planning Evidence and Recommendations Report (August 2009), Supplementary Report (November 2009) and End of Hearing Report (April 2010). **Text in grey highlight is related to deliberations of the coastal chapter.**

Words recommended to be added are shown in underline, words recommended to be removed are shown in ~~strike through~~

Terms defined within the Proposed One Plan glossary are *italicised* and marked with an asterisk (\*) symbol. Terms defined in the Resource Management Act 1991 are *italicised* and marked with a caret (^) symbol.

A detailed analysis of scope for recommendations to amend this schedule is presented in a separate report entitled “*Report on Scope for Water Chapter Recommendations*” (Barry Gilliland, 9 April 2010).

## **Schedule H: Coastal Marine Area<sup>^</sup>, (CMA) Activity Management Areas, and Water Management Zone\* and Sub-zones and Protection Areas**

For the purposes of clarity Parts A, B and Tables H2 and H3 of Part C form part of Part I – the Regional Policy Statement and Tables H4 to H7 of Part C form part of Part II – the Regional Plan.

This Schedule comprises: ~~includes the following maps.~~

**Part A:** CMA Boundaries: Figures H:1A-H:2A show a regional overview of the CMA and Figures H:3A-H:9A depict the location of the *mouth<sup>^</sup>* and the cross-river CMA boundary of identified rivers.

**Part B:** Activity Management Areas: Figures H:10A-H:13A show the Port, Protection and General Activity Management Areas. Table H1 lists the ecological and other important values in the Protection Activity Management Areas.

**Part C:** Water Management Zone and Sub-zones, objectives, values and *water<sup>^</sup>* quality standards: Tables H2-H13. Note that the *Estuary Water Management Sub-zones\** are shown on Figures H:3A to H:9A.

A description of the ~~maps~~ figures contained in this Schedule ~~and boundaries~~ is provided below.

	<u>Area</u>	<u>Figure</u>	<u>Description of Area</u>
1.	<i>Coastal Marine Area<sup>^</sup></i>	H:1A H:2A	The west coast CMA, beaches and <i>rivers<sup>^</sup></i> of the Manawatu-Wanganui Region The east coast CMA, <b>beaches</b> and <i>rivers<sup>^</sup></i> of the Manawatu-Wanganui Region
2.	<i>Coastal Marine Area<sup>^</sup> - river<sup>^</sup> mouths<sup>^</sup> and cross-river CMA boundaries.</i>  <u>These figures also show the Estuary Water Management Sub-zones* relevant to Part C.</u>	H:3A H:4A H:5A H:6A H:7A H:8A H:9A	Kai Iwi Stream and Mowhanau Streams Whanganui River and Whangaehu River Turakina River and Rangitikei River Manawatu River and Hokio Stream Ohau River Stream and Waikawa Stream Akitio River and Owahanga River Wainui River

3.	Activity Management Areas Zones	H:10A H:11A H:12A H:13A	Port Activity Management Area Zone Protection Activity Management Areas Zones: <ul style="list-style-type: none"> <li>• Whanganui River and Whangaehu River</li> <li>• Turakina River and Rangitikei River</li> <li>• Manawatu River and Cape Turnagain</li> </ul>
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## 1. Coastal Marine Area Maps H1-H2 Part A: CMA Boundaries

Figures H:1A-H:2A These maps depict the extent of the CMA within the boundaries of the Manawatu-Wanganui Regional Council. On the open coast, the CMA extends from the line of mean high water springs (MHWS) seaward to the 12 nautical mile outer limit of the territorial sea. The rules in Chapter 20 apply to the CMA.

## 2. Coastal Marine Area Cross River Boundaries Maps H3-H9

Figures H:3A-H:9A These maps depict the mouth of identified rivers as was agreed between the Minister of Conservation, the Territorial Authorities and the Regional Council in 1994 in accordance with s2 RMA. The figures additionally show where the CMA boundary lies up when it crosses a the identified rivers (which include or streams). (ie., the line of MHWS follows the river/ stream bank inland to the boundary crossing). That is called the cross-river CMA boundary in this Schedule.

For any stream or river which is not shown in these figures, maps the location of the mouth was agreed between the Minister of Conservation, the Territorial Authorities and the Regional Council in 1994 to be a straight line representing a continuation of the line of MHWS on each side of the river. is deemed to be a line continuous to the line of MHWS on either side of the stream/river mouth. The upstream location of the cross-river CMA boundary on these rivers is not mapped, but it is consistent with s2 RMA. It is the lesser of:

- (a) one kilometre upstream from the mouth of the river; or
- (b) the point upstream that is calculated by multiplying the width of the river mouth by five.

The rules in Chapter 20 17 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 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, 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.)

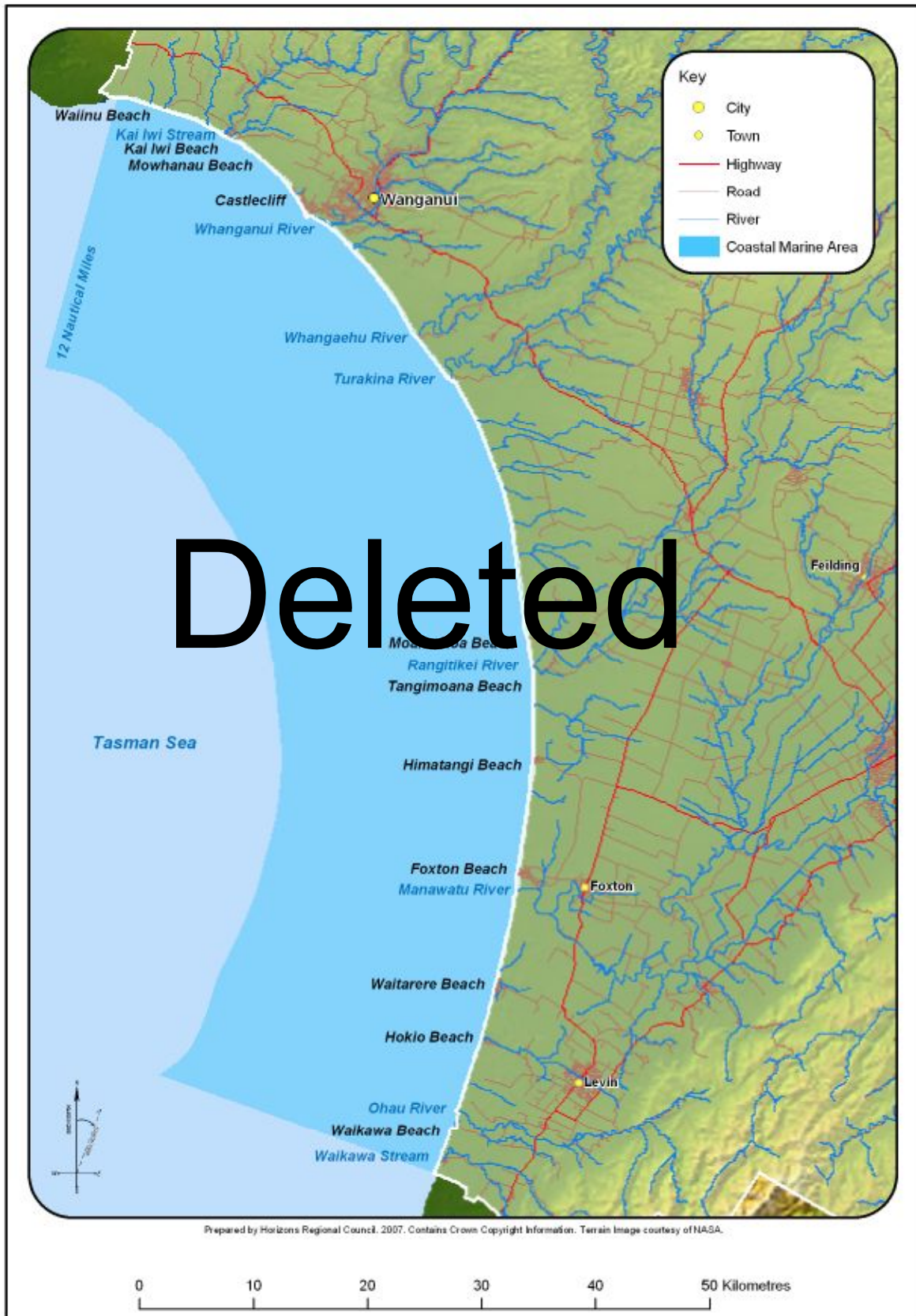


Figure H:1 West Coast

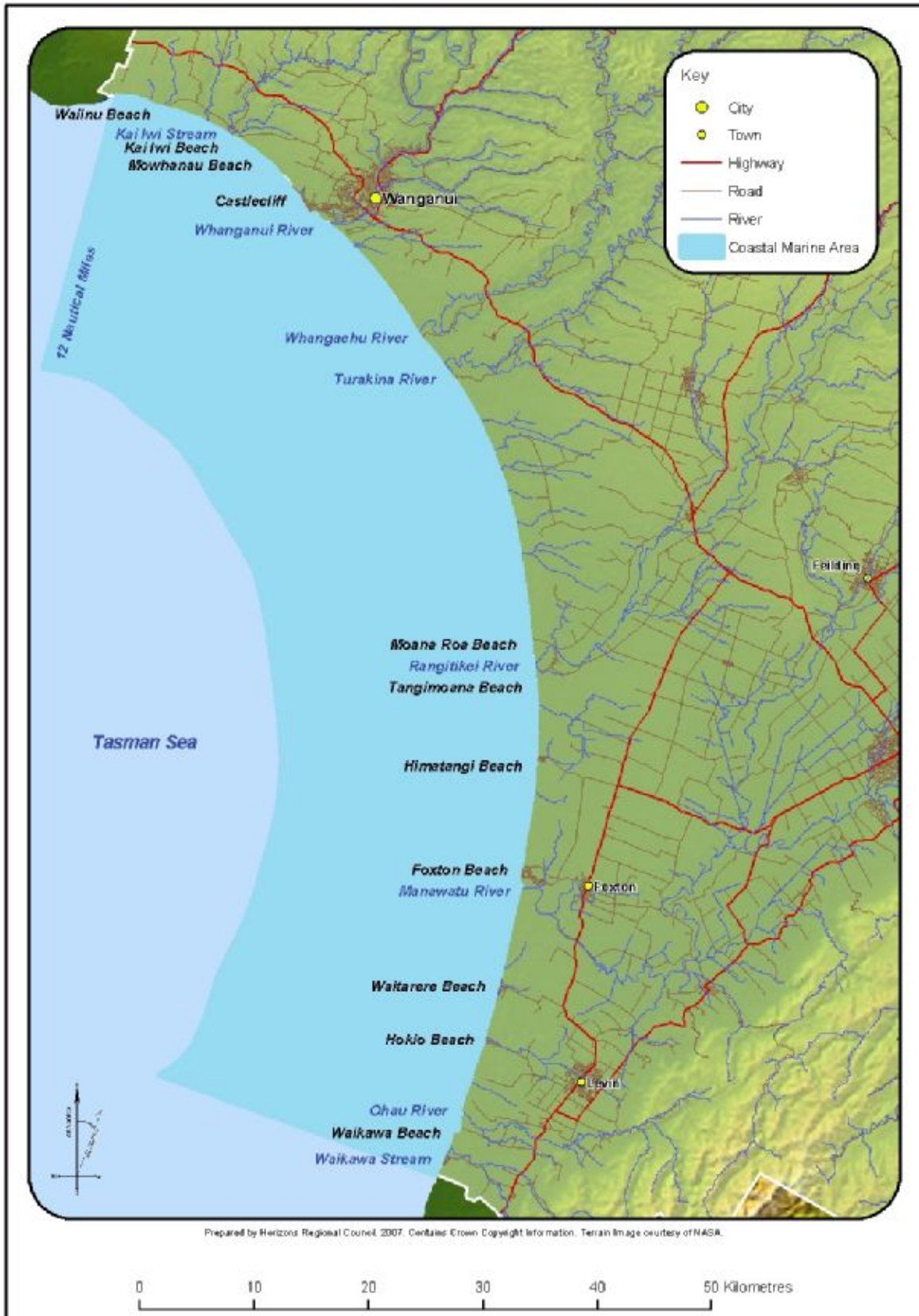


Figure H:1A West Coast Seawater Management Zone

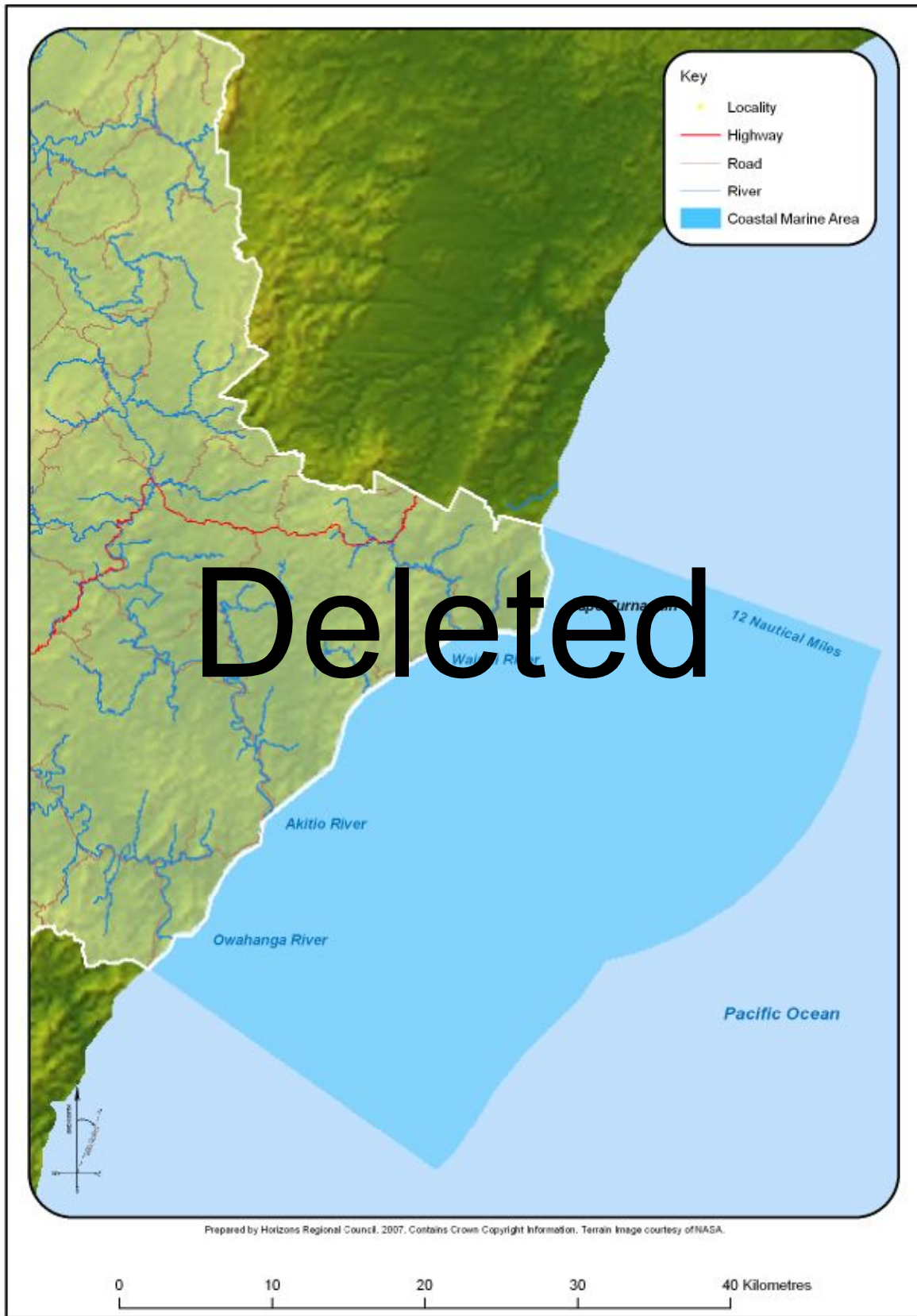


Figure H:2 East Coast



Figure H:2A East Coast Seawater Management Zone

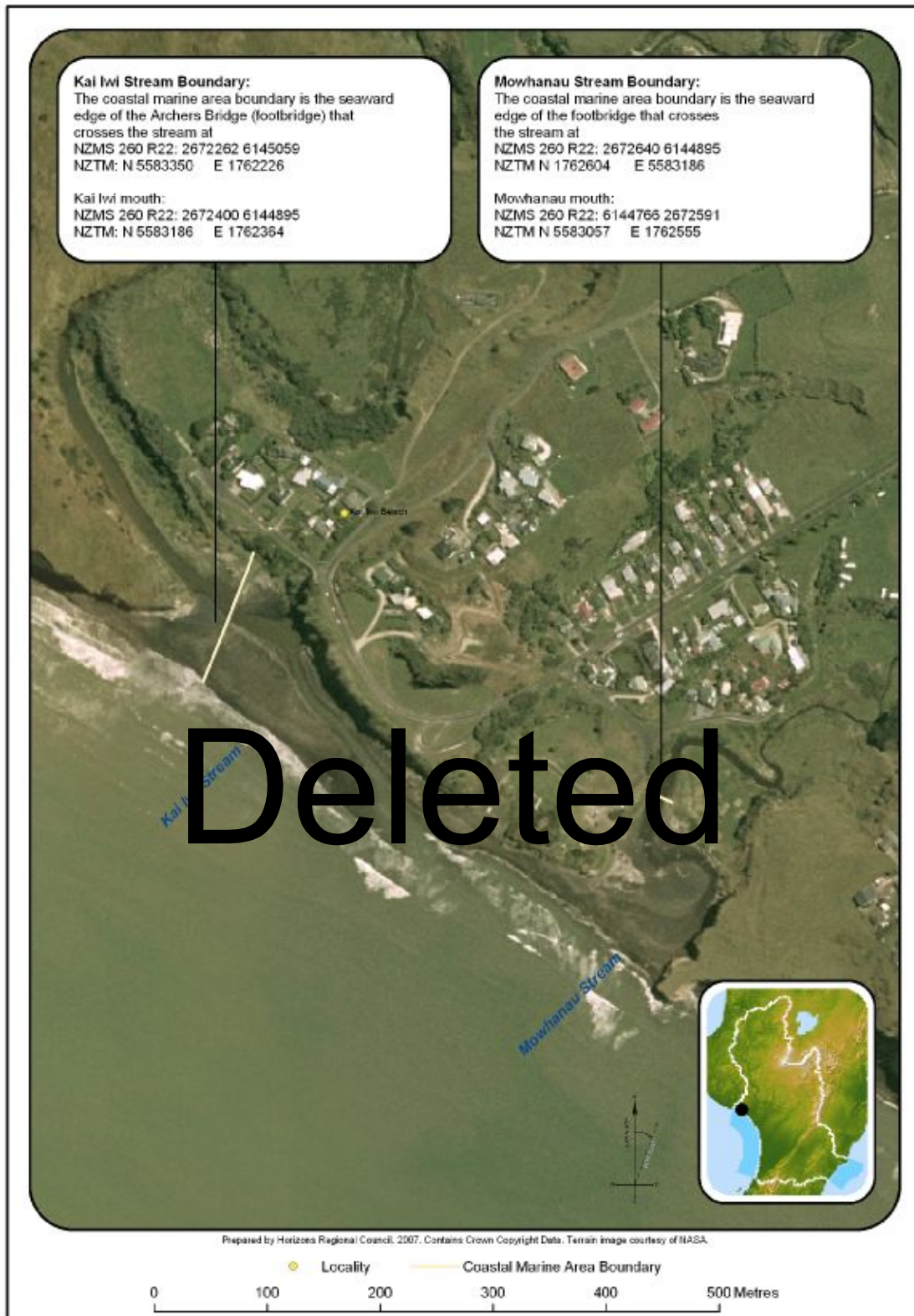
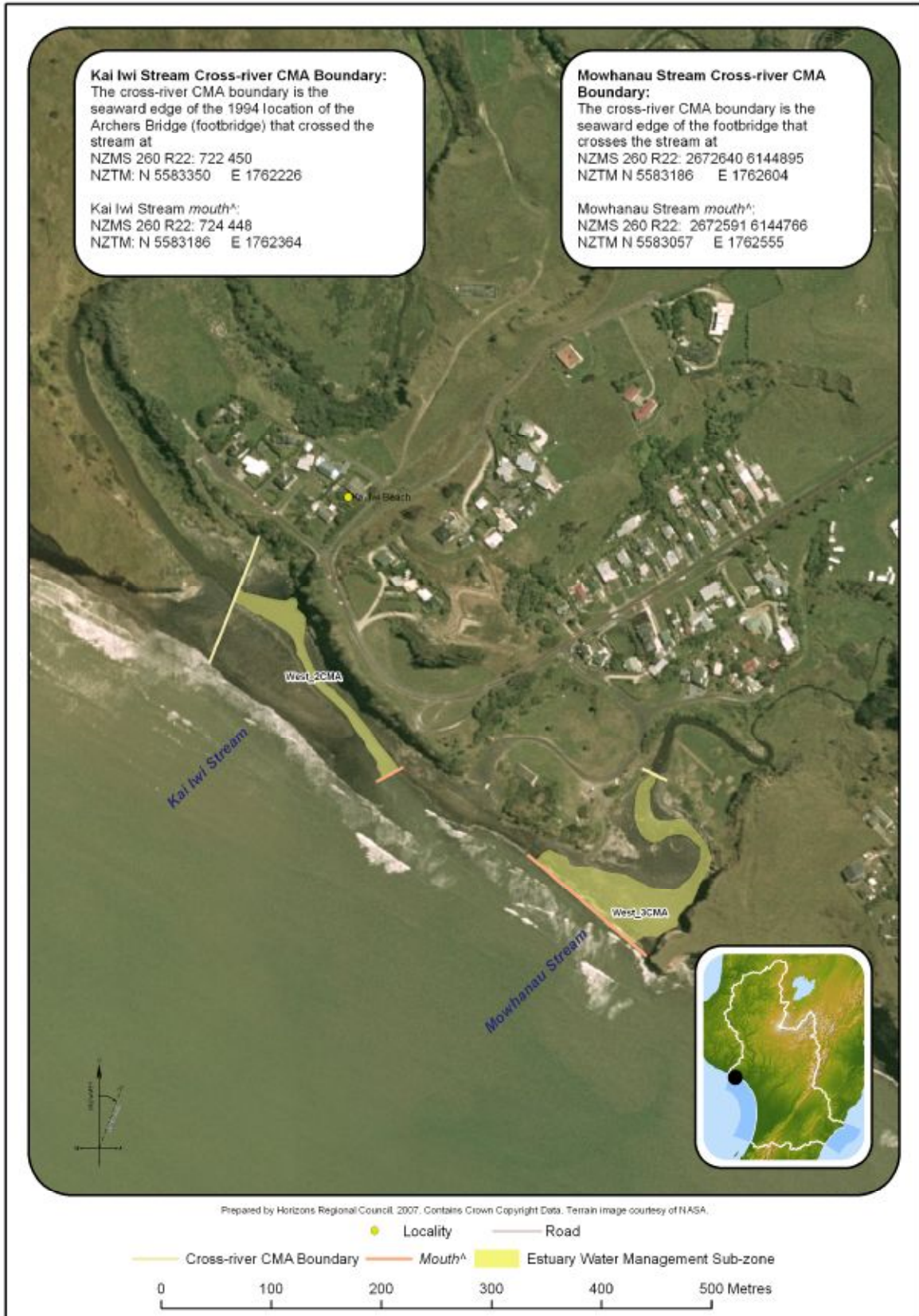


Figure H.3 Kai Iwi and Mowhanau Stream Boundaries



**Figure H:3A** Kai Iwi Stream and Mowhanau Stream *mouth*<sup>^</sup> locations, cross-river CMA boundaries and extent of the Estuary Water Management Sub-zones \*





Figure H:4 Whanganui and Whangaehu River Boundaries

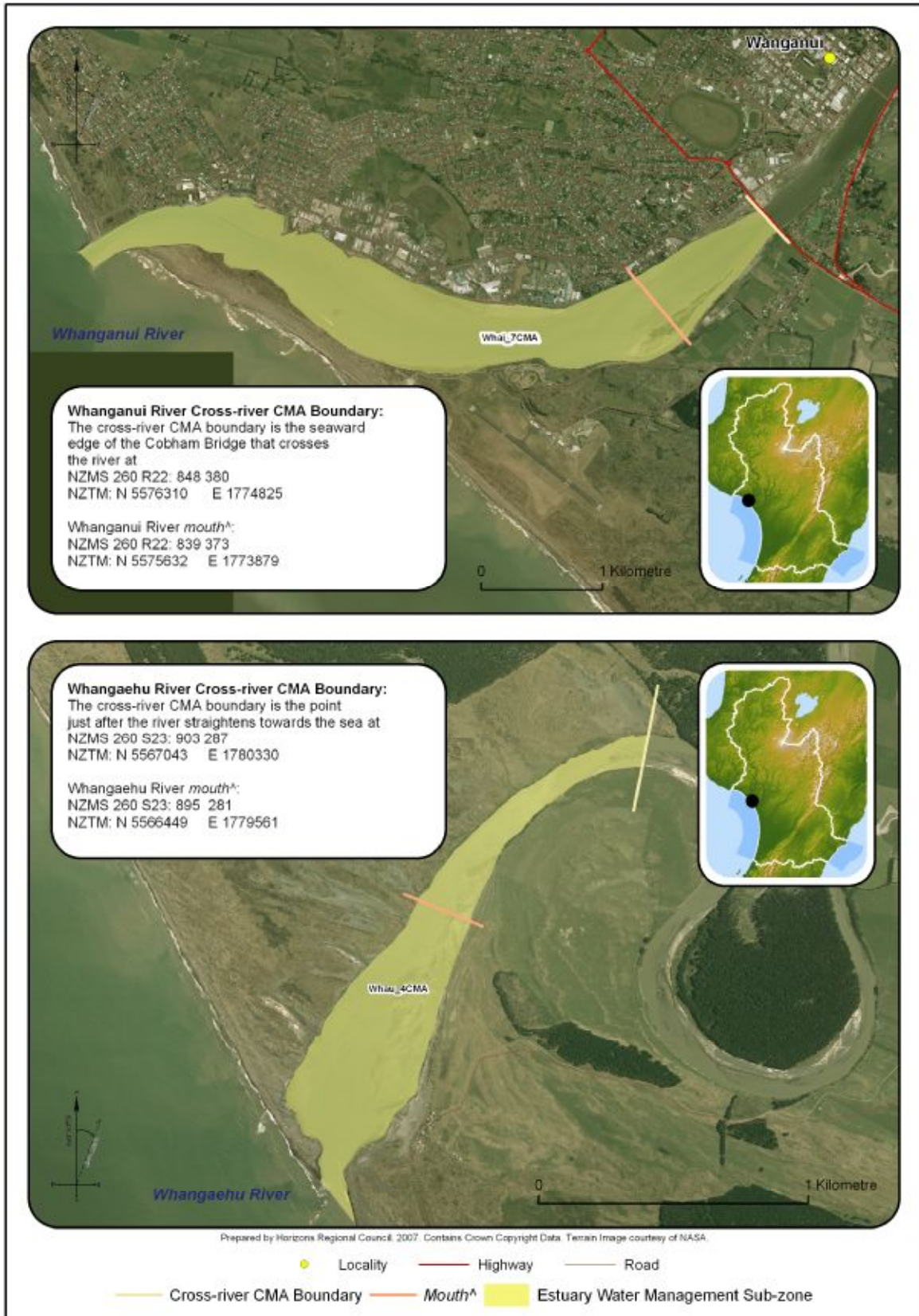


Figure H:4A Whanganui River and Whangaehu River *mouth<sup>^</sup>* locations, cross-river CMA boundaries and extent of the Estuary Water Management Sub-zones<sup>\*</sup>

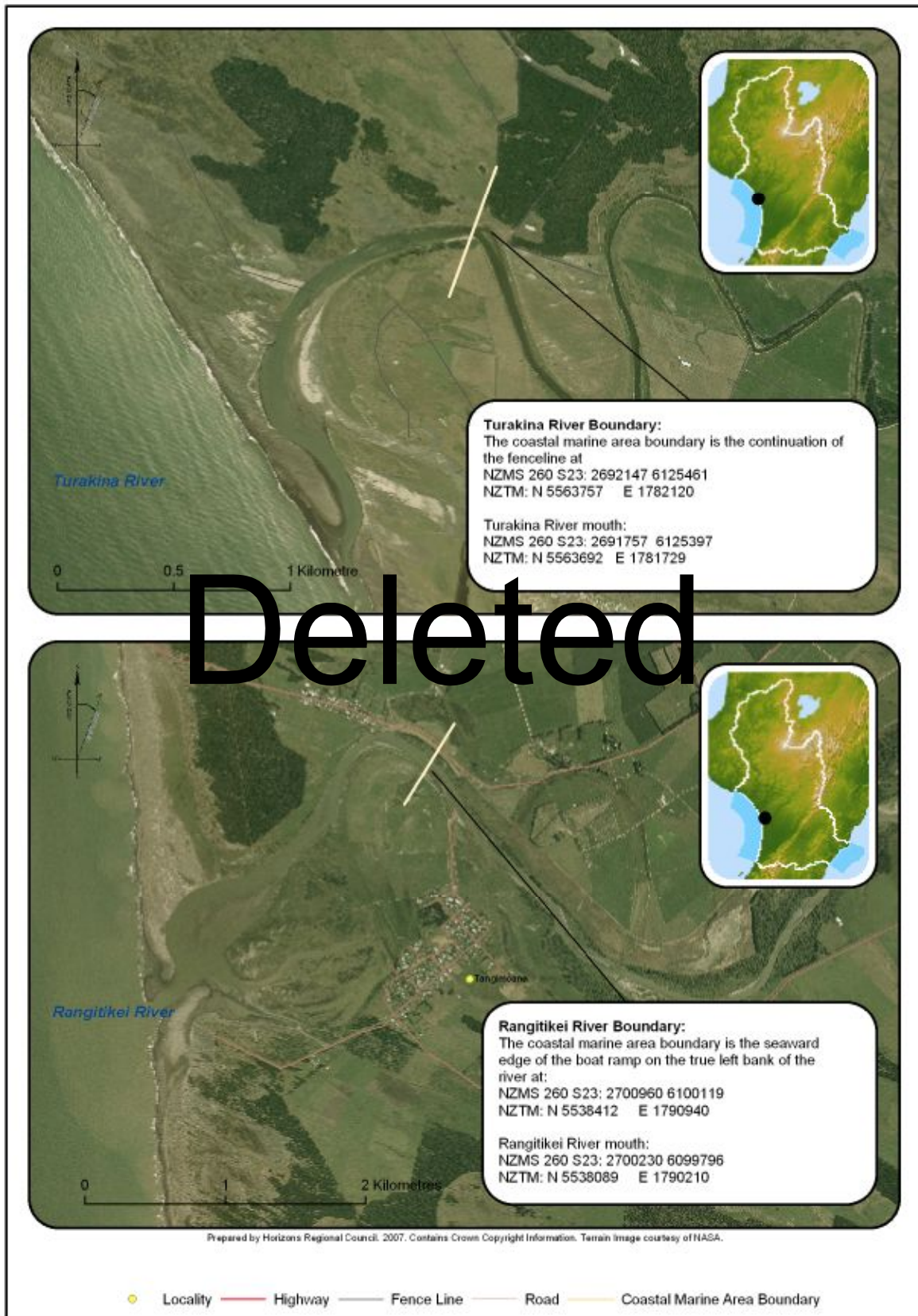


Figure H:5 Turakina and Rangitikei River Boundaries

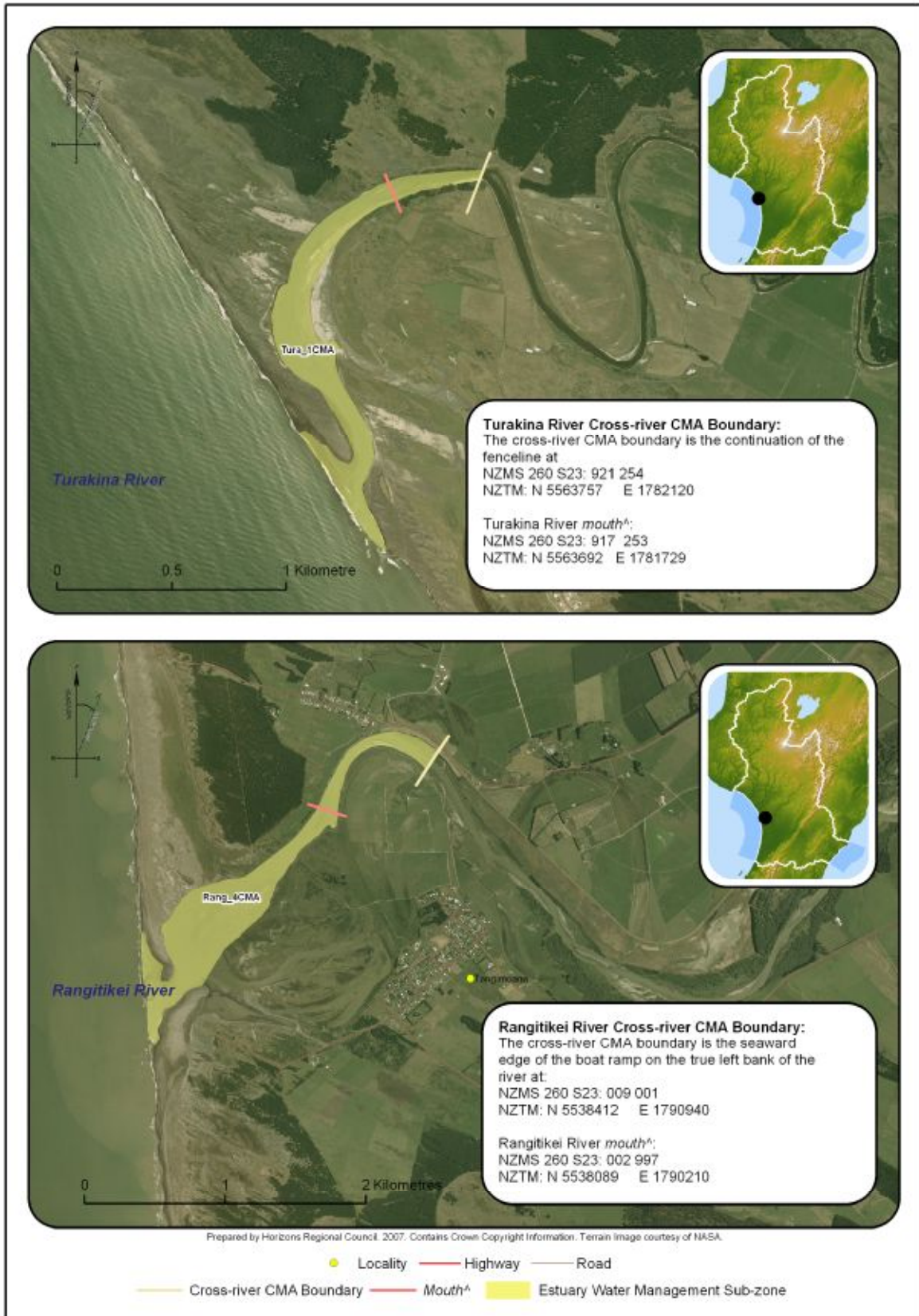


Figure H:5A Turakina River and Rangitikei River *mouth*<sup>^</sup> locations, cross-river CMA boundaries and extent of the Estuary Water Management Sub-zones\*



Figure H:6 – Manawatu River and Hoki Stream Boundaries



Figure H:6A Manawatu River and Hokio Stream *mouth*^ locations, cross-river CMA boundaries and extent of the Estuary *Water Management Sub-zones* \*



Figure H:7—Ohau River and Waikawa Stream Boundaries

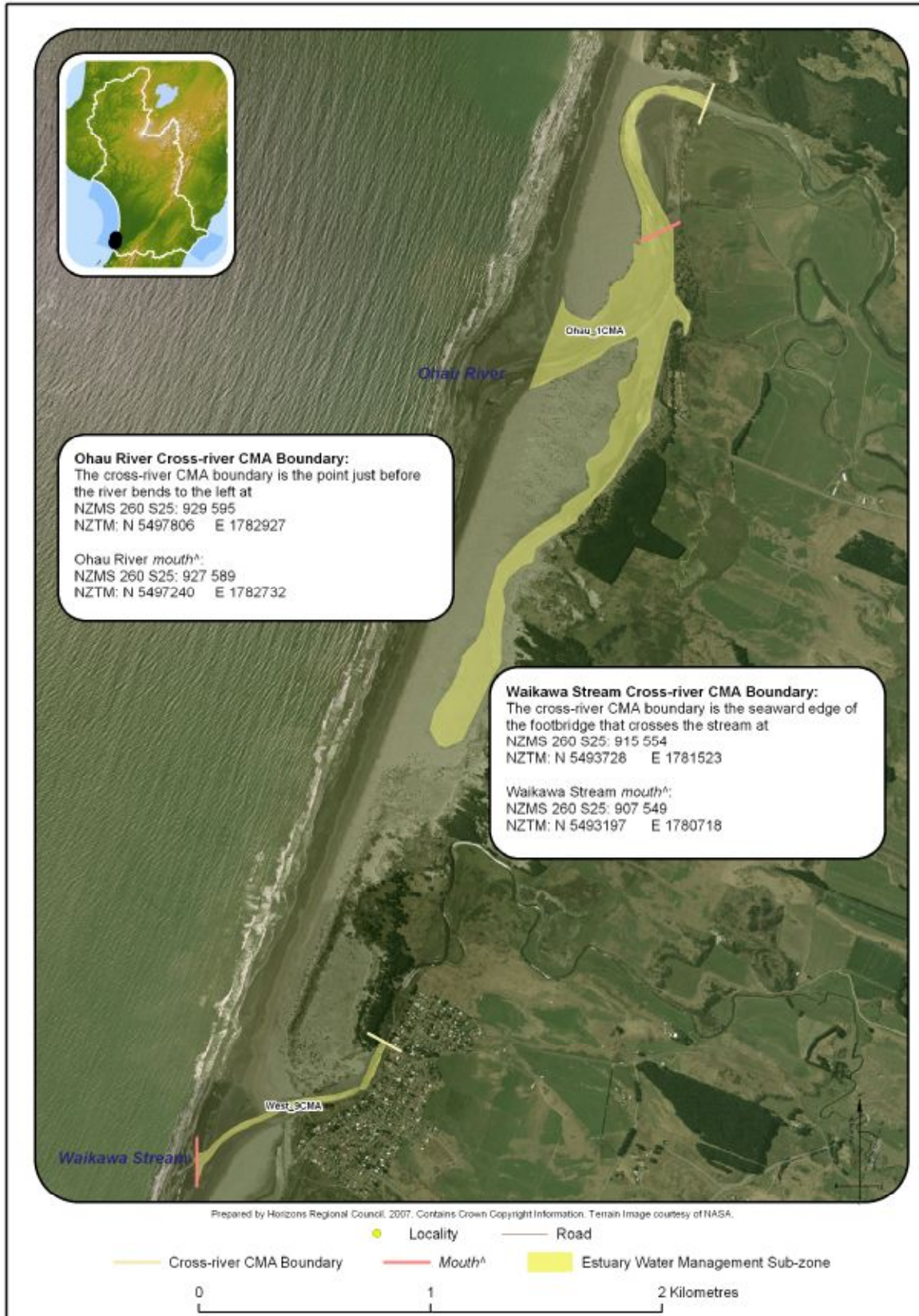


Figure H:7A Ohau River and Waikawa Stream *mouth<sup>h</sup>* locations, cross-river CMA boundaries and extent of the Estuary Water Management Sub-zones\*





Figure H:8 Akitio River and Owahanga River Boundaries

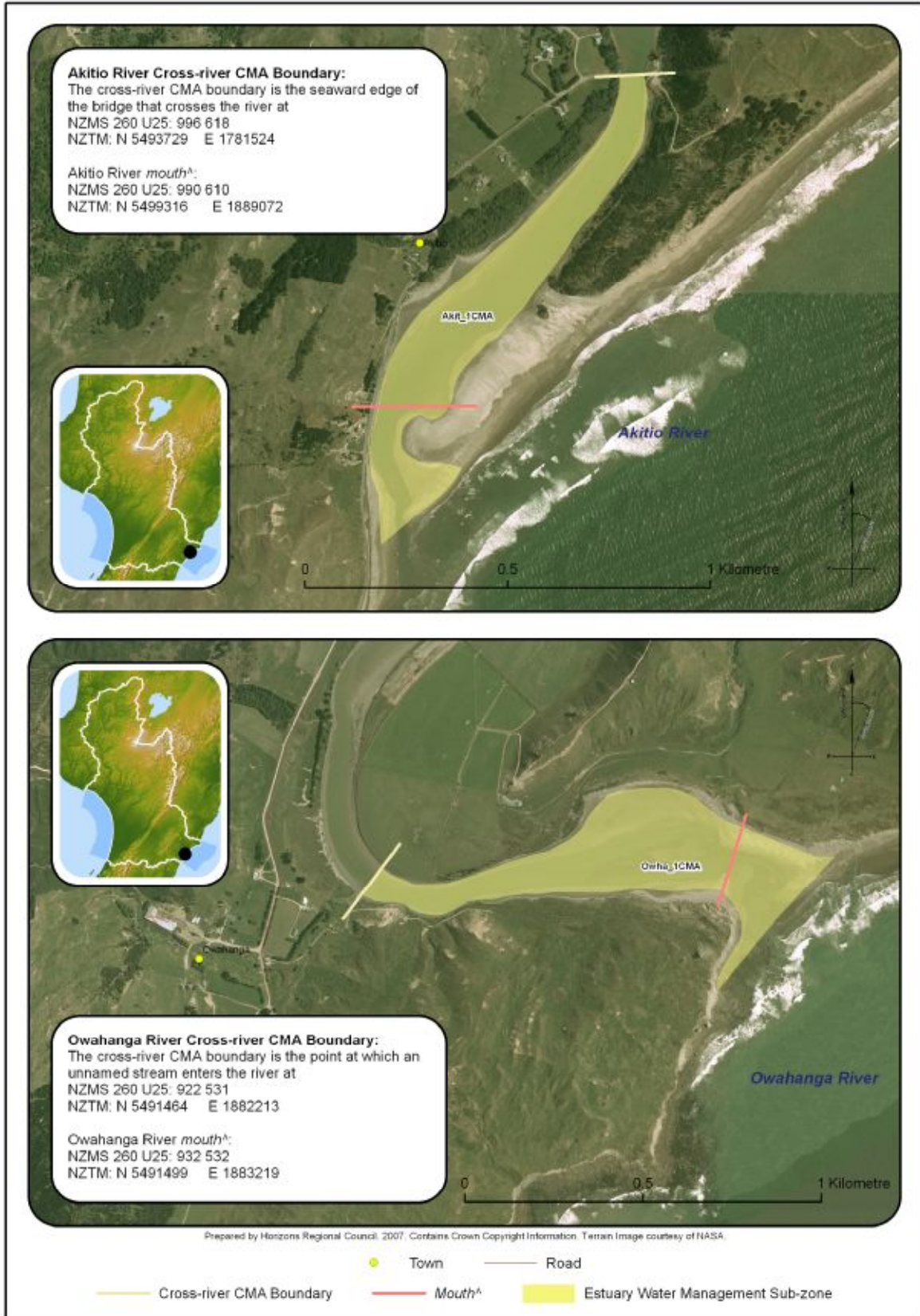


Figure H:8A Akitio River and Owahanga River *mouth*^ locations, cross-river CMA boundaries and extent of the Estuary Water Management Sub-zones\*

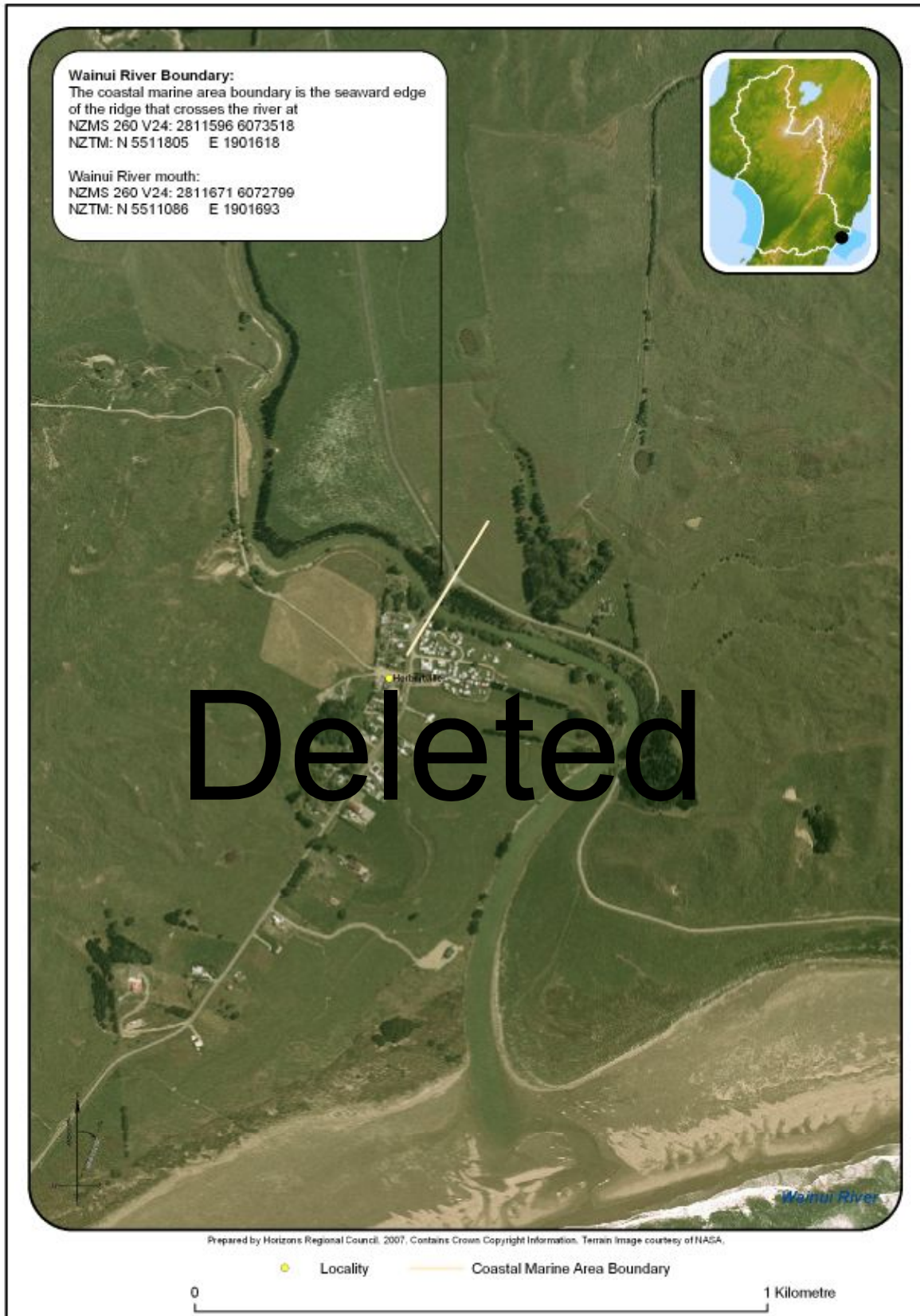


Figure H9 Wainui River Boundary



**Figure H:9A** Wainui River *mouth*<sup>^</sup> location, cross-river CMA boundary and extent of the Estuary Water Management Sub-zones \*

### 3. **Management Zones Maps H10-H13 Part B: Activity Management Areas**

This Plan includes 3 three different Activity Management Areas management zones: being the Port Zone, Protection Zones and General Activity Management Areas Zone. These Activity Management Areas delineate discrete areas of the CMA within which different presumptions apply regarding the protection, use and development of the *foreshore*<sup>^</sup> and seabed.

**The General Zone:** This zone is not specifically mapped. It includes all other areas within the CMA that are not otherwise covered by the Port Zone or the Protection Zones.

For clarification:

- the General Zone in the Whanganui River includes a band of 100 m width from the line of MHWS of the northern bank of the River, and from the edge of the Port Zone as shown in Map H10

**The Port Activity Management Area Zone** is depicted in Map Figure H:10A. There are some *rules*<sup>^</sup> in Chapter 20 17 which apply specifically to this Area zone.

For clarification:

- the Port Activity Management Area Zone extends 50 m to the outside of the river training wall as shown on Map Figure H:10A.
- the identified dredging and discharge areas relate to Rule 17-23 and indicates that these activities are considered under this *rule*<sup>^</sup> (and not as an *RCA restricted coastal activity*<sup>^</sup> under Rule 17-24).

**The Protection Activity Management Areas Zones** are shown in Maps Figures H:11A-13A.

There are some *rules*<sup>^</sup> in Chapter 17 which apply specifically to these Areas zones.

For clarification:

- the landward edges of each Protection Activity Management Area Zone is the line of MHWS
- the seaward boundary of the Cape Turnagain Protection Activity Management Area Zone extends seaward for a maximum distance of 100 m
- the values of *significance/importance* relating to each Protection Activity Management Area zone and as referred to in Policy 9-2 of the Regional Policy Statement are shown in the table Table H1 below: It is these values that have led to each Area being identified as a Protection Activity Management Area and the values will be taken into account by decision-makers considering use and development proposals in those Areas.

**The General Activity Management Area Zone:** This zone is not specifically mapped. It includes all other areas within the comprises the entire CMA that are not otherwise except those parts of the CMA covered by the Port Activity Management Area Zone or and the various Protection Activity Management Areas Zones. For clarification: In the General Zone in the Whanganui River the General Activity Management Area includes part of the CMA comprising a band of 100 m width from the line of MHWS of the northern bank of the River, as well as a band

of 50 m and from the edge of the Port Activity Management Area and includes the river entrance between the South Mole and the North Mole and northern river bank Zone as shown in Map Figure H:10A.

**Table H1: Protection Activity Management Areas: ecological and other important values**

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

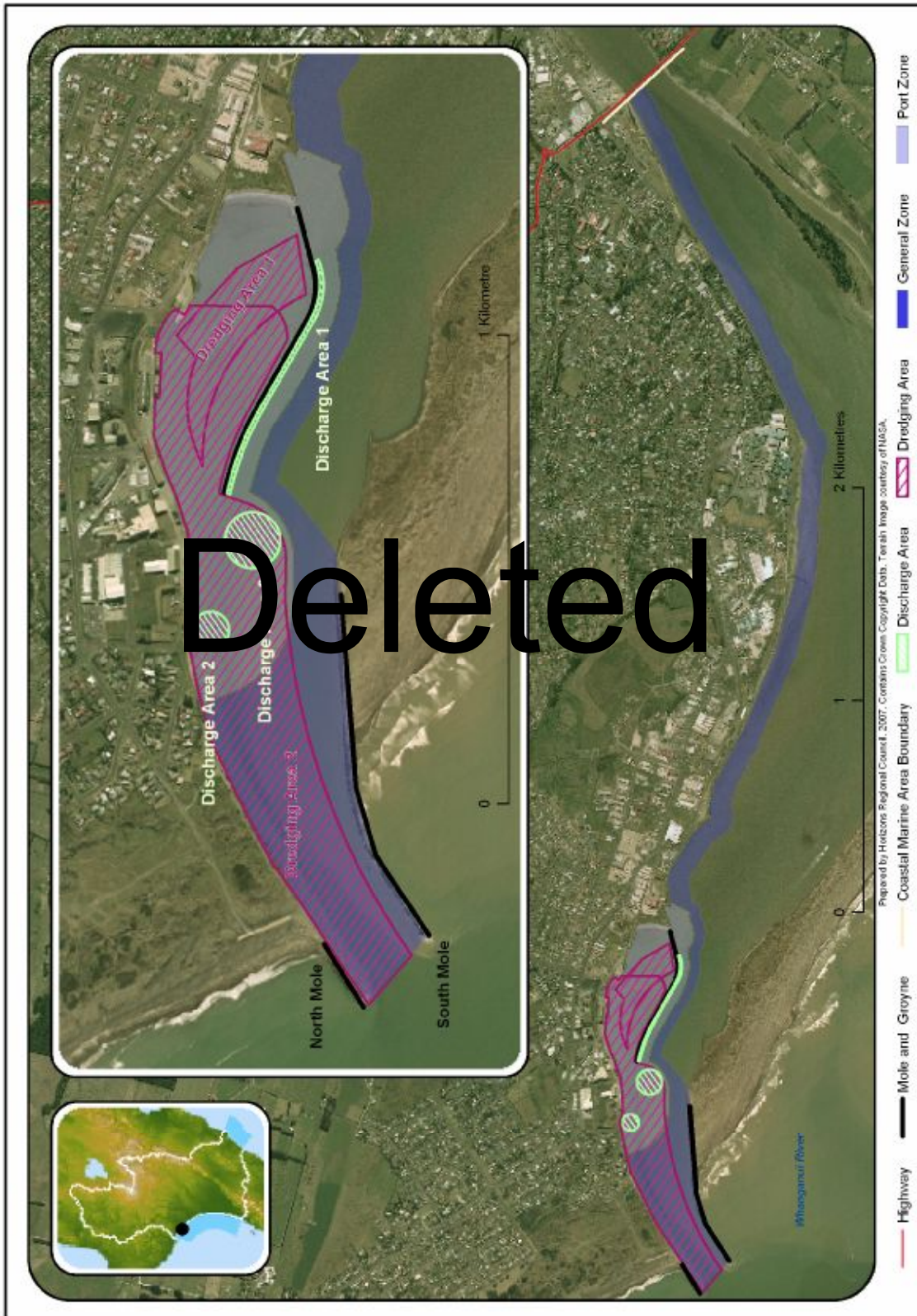


Figure H:10 Wanganui Port

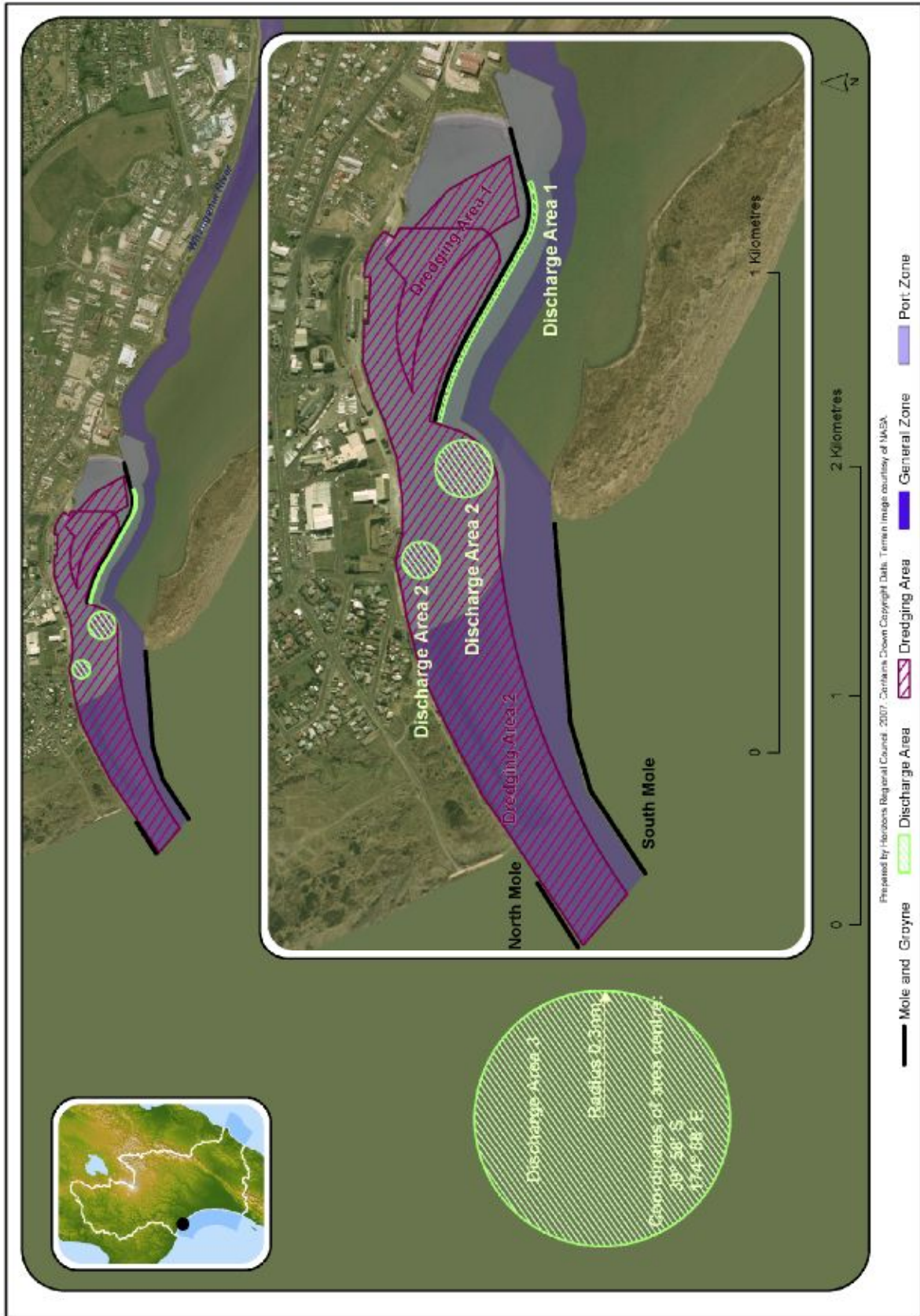


Figure H:10A Port Activity Management Area





Figure H:11 Coastal Protection



Figure H:11A Protection Activity Management Areas



Figure H:12 Coastal Protection

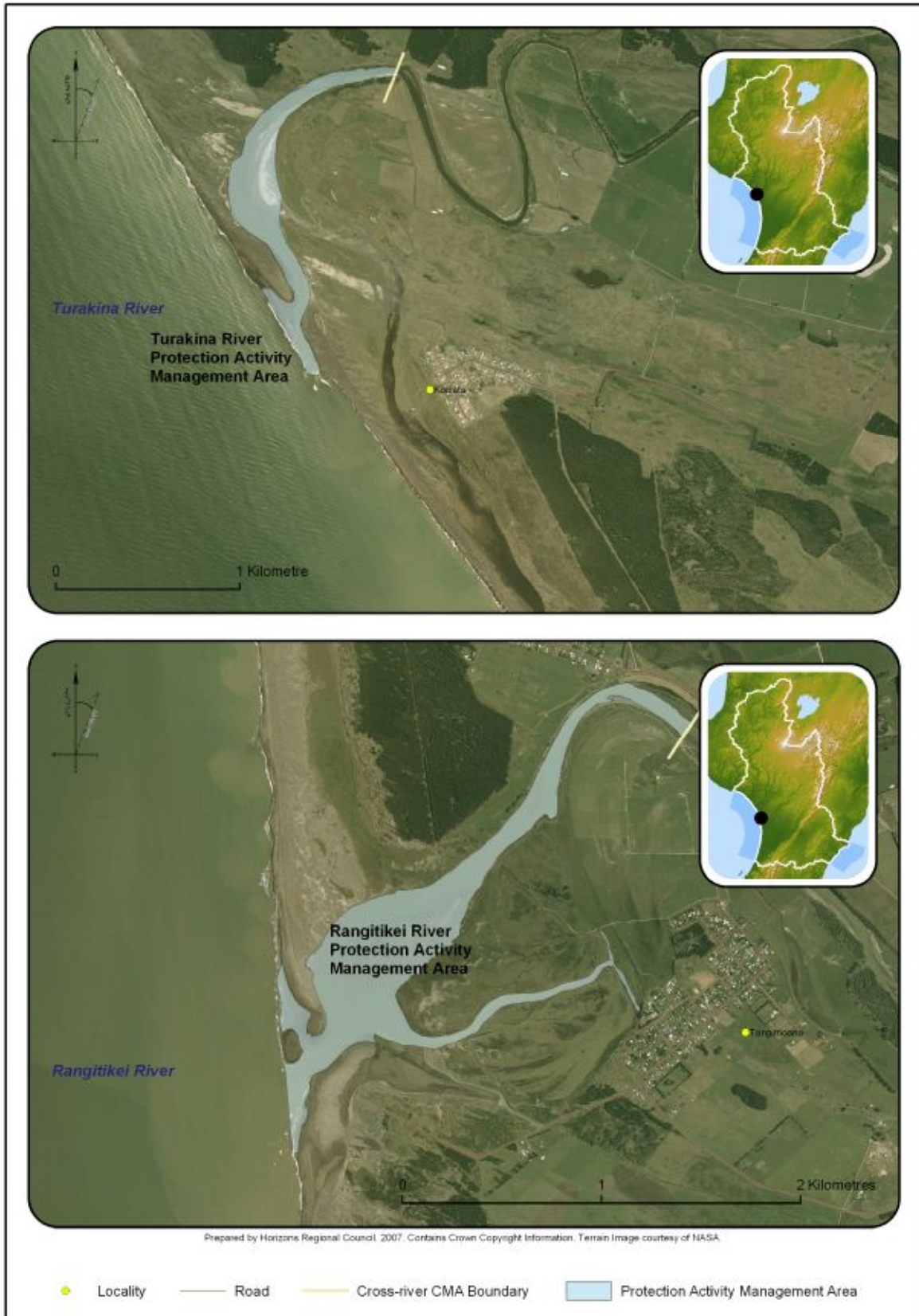


Figure H:12A Protection Activity Management Areas

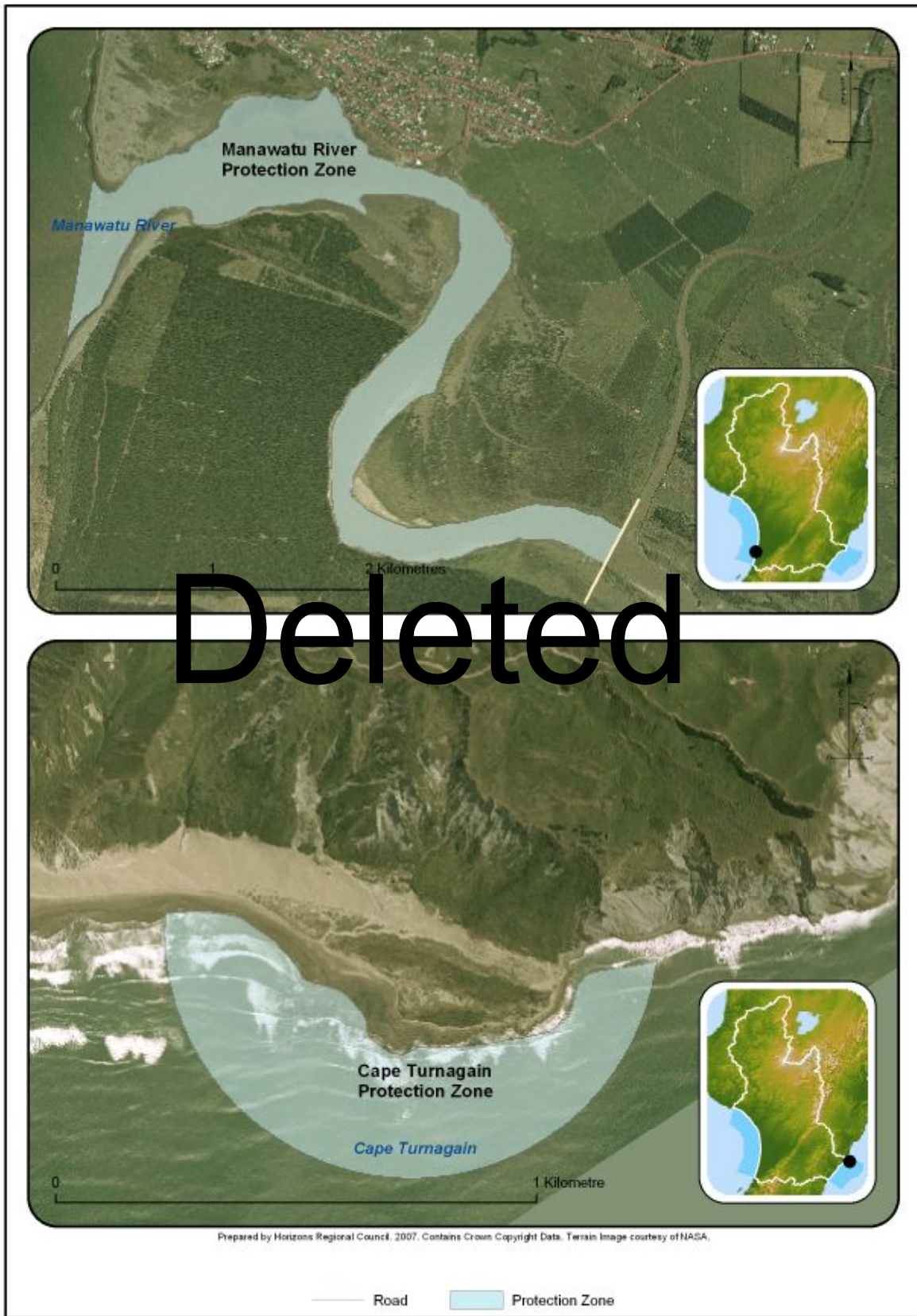


Figure H:13 Coastal Protection

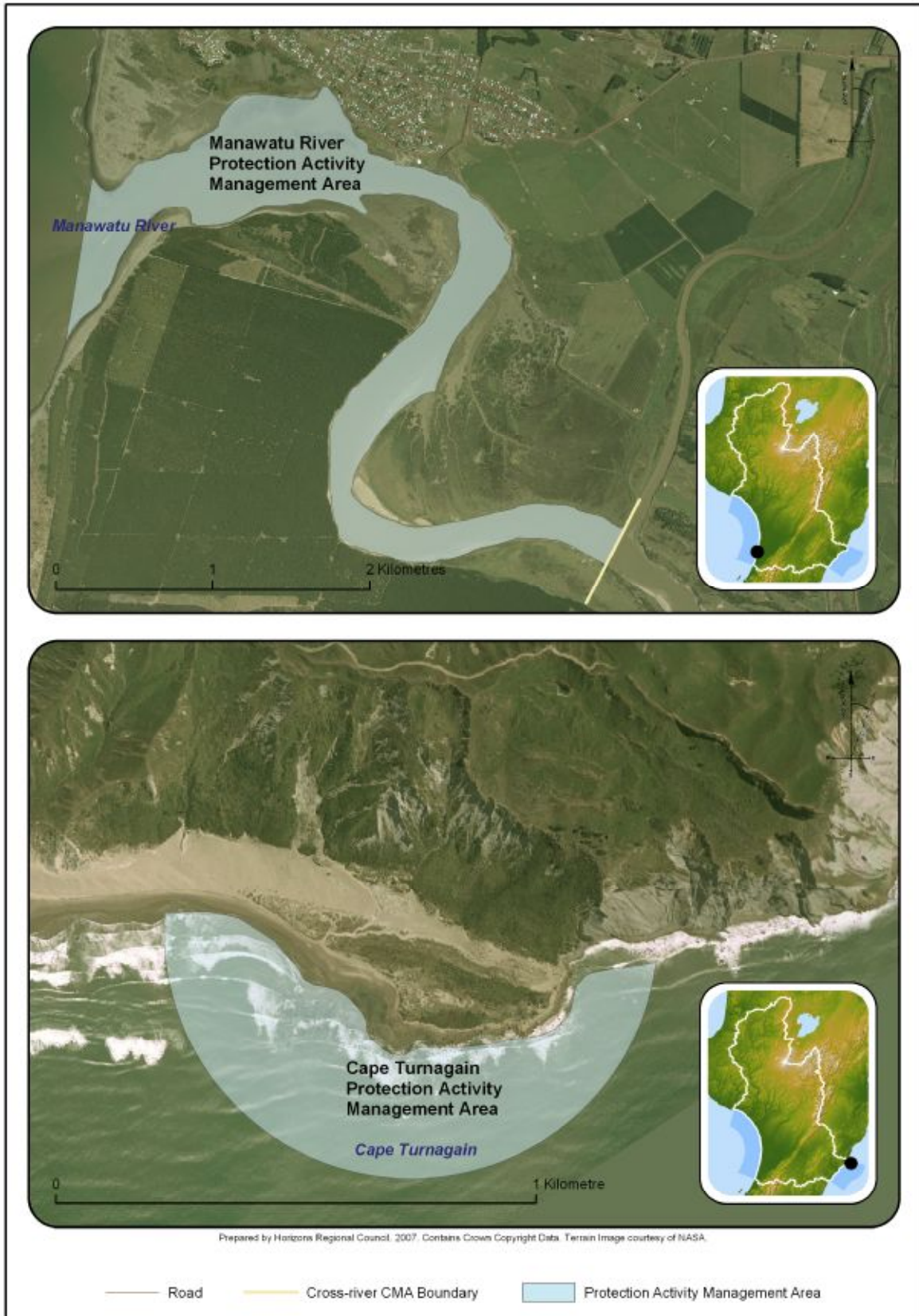


Figure H:13A Protection Activity Management Areas

## **Part C: Water Management**

### **Water Management Zone ~~Water Management Zone~~\* and Sub-zones, Objectives, Values and Water Quality Standards**

For the purposes of clarity the standards specified in Part C, Tables H5a and H7a of Schedule H are not standards in terms of s69 of the RMA.

For water quality management purposes, the CMA is divided into:

- (a) one Seawater Management Zone which comprises the entire CMA other than the Estuary Water Management Sub-zones
- (b) 13 Estuary Water Management Sub-zones associated with specified estuary waters as shown on Figures H:3A to H:9A. The term ~~s~~Sub-zone is used because the estuary waters are part of a larger Water Management Zone for that ~~river~~<sup>^</sup> (including streams) (see Schedule ~~D~~<sup>B</sup>a).

### **List of Tables relating to the ~~Water Management Zone~~ ~~Water Management Zone~~\* and Sub-zones:**

Table Number	Description
Table H2	List of values, <del>water management zone</del> <del>Water Management Zone</del> * and <del>s</del> Sub-zone <del>v</del> Values and objectives and where they apply
Table H3	List of <del>w</del> Water <del>q</del> Quality <del>v</del> Values in the <del>by</del> <del>Water Management Zone</del> <del>Water Management Zone</del> * and Estuary Sub-zones in the CMA
<del>Table H3a</del>	<del>Sites of Significance – Cultural Values in the CMA</del>
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 H10a	Water Management Estuary Sub-zones in the CMA: Water Quality Definitions
Table H11a	Water Management Estuary Sub-zones in the CMA: Water Quality Standards
Table H12a	Seawater Management Zone in the CMA: Water Quality Definitions
Table H13a	Seawater Management Zone in the CMA: Water Quality Standards

## Values that apply to the Water Management Zone and Sub-zones in the CMA

**Table H.2: List of values water management zone Water Management Zone\* and sub-zone values and objectives, and where they apply**

The following ~~v~~Values and management objectives apply in the Seawater Management Zone and Estuary Water Management Sub-zones as identified in ~~the Zone-wide Zone-wide Values and Site/Reach Specific Values columns of~~ Table H3.

Value group	Individual Values		Management Objective	Where it applies
Ecosystem Values	LSC	Life-Supporting eCapacity	The CMA supports healthy aquatic life / ecosystems	All of the CMA
	SOS-A	Sites of Significance – Aquatic	Sites of significance for <del>native-indigenous</del> 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 <del>native-indigenous</del> riparian biodiversity within the CMA are maintained or improved	Specified sites / reaches – see table H6
	<del>NFS</del>	<del>Native Fish Spawning</del>	<del>The CMA sustains healthy native fish spawning and fry development</del>	Specified sites / reaches – See table H7
	<del>IS</del>	<del>Inanga Spawning</del>	<del>The CMA sustains healthy inanga spawning and egg development</del>	
	<del>WM</del>	<del>Whitebait Migration</del>	<del>The CMA is maintained or improved to provide safe passage of inwardly migrating juvenile native fish known collectively as whitebait</del>	
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
	<del>NF</del>	<del>Native Fishery</del>	<del>The CMA sustains populations of native fish that can be harvested in a sustainable manner</del>	Specified sites / reaches – See table H8
	MAU	<del>Mauri*</del>	The <del>Mauri*</del> 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 and Economic Values	CAP	Capacity to Assimilate Pollution	The capacity of a <del>water_body*</del> to assimilate pollution is not exceeded	All waters within the Seawater Management Zone
	<del>FC</del>	<del>Flood Control</del>	<del>The integrity of existing flood and river bank erosion protection structures within the CMA is not compromised<sup>1</sup></del>	Existing flood / erosion control schemes
	<del>EI</del>	<del>Existing Infrastructure</del>	<del>The integrity of existing infrastructure shall not be compromised</del>	

<sup>1</sup> For existing flood / erosion control schemes



**Table H.3: List of Water Quality Values in the by ~~Water Management Zone~~ Water Management Zone\* and 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~~; ~~IS: Inanga Spawning~~; ~~NF: Native Fishery~~; ~~WM: Whitebait Migration~~; SoS-C: Sites of Significance ~~\_ for Cultural value~~; ~~EI: Existing Infrastructure~~ CAP: Capacity to Assimilate Pollution

Key for LSC Classes: HM: Hill Mixed; LM: Lowland Mixed; LS: Lowland Sand; HSS: Hill country soft sedimentary; M: Marine

<u>Water Management Zone</u> <u>Water Management Zone*</u>	<u>Water Management Sub-zone*</u>	Description	<u>Zone-Wide Values<sup>2</sup> Zone-wide Values</u> <u>Site/Reach Specific Values</u>											
			LSC	CR	SG	Mau	SOS-A	SoS-R	NFS IS	Am	NF WM	SoS-C	EI	CAP
Seawater Management Zone Entire CMA other than Estuary Water Management Sub-zones	N/A	All waters seaward from the MHWS to the 12 nautical mile boundary	M	ü	ü	ü				ü		ü	ü	ü
Coastal Manawatu (Mana_13)	Manawatu Estuary (Mana_13CMA) See Figure H:6A	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 1, 2	ü	ü	ü	ü	ü	
Coastal Rangitikei (Rang_4)	Rangitikei Estuary (Rang_4CMA) See Figure H:5A	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 1	ü	ü	ü		ü	
Lower Whanganui (Whai_7)	Whanganui Estuary (Whai_7CMA) See Figure H:4A	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 1, 2	ü	ü	ü		ü	

- 1 Gravel and Sand (Dotterel)
- 2 Mud / Silt habitat and estuarine roosts (~~W~~waders)
- 3 Shortjaw kokopu and redfin bully

<sup>2</sup> Note to the hearing panel - As all values apply to the whole CMA these have been made Zone-wide Values

<u>Water Management Zone</u> <u>Water Management Zone*</u>	<u>Water Management Sub-zone*</u>	Description	<u>Zone-Wide Values<sup>3</sup>-Zone-wide Values</u> <u>Site/ Reach Specific Values</u>												
			LSC	CR	SG	Mau	SOS <sub>A</sub>	SoS <sub>R</sub>	NFS <sub>IS</sub>	Am	NF <sub>WM</sub>	SoS <sub>C</sub>	EI	CAP	
Coastal Whangaehu (Whau_4)	Whangaehu Estuary (Whau_4CMA) See Figure H:4A	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 1,2	ü	ü	ü		ü	
Turakina (Tura_1)	Turakina Estuary (Tura_1CMA) See Figure H:5A	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 1,2	ü	ü	ü		ü	
Ohau (Ohau_1)	Ohau Estuary (Ohau_1CMA) See Figure H:7A	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*.	HM	ü		ü			ü 1,2	ü	ü	ü		ü	
Lake Horowhenua (Hoki_1)	Hokio Estuary (Hoki_1CMA) See Figure H:6A	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		ü	
Owahanga (Owha_1)	Owahanga Estuary (Owha_1CMA) See Figure H:8A	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				ü	ü	ü	ü	ü	
East Coast (East_1)	Wainui Estuary (East_1CMA) See Figure H:9A	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 1,2	ü	ü	ü	ü	ü	

- 1 Gravel and Sand (Dotterel)
- 2 Mud / Silt habitat and estuarine roosts (Waders)
- 3 Shortjaw kokopu and redfin bully

<sup>3</sup> Note to the hearing panel - As all values apply to the whole CMA these have been made Zone-wide Values

<u>Water Management Zone</u> <u>Water Management Zone*</u>	<u>Water Management Sub-zone*</u>	Description	<u>Zone Wide Values<sup>4</sup>-Zone-wide Values</u> <u>Site/ Reach Specific Values</u>												
			LSC	CR	SG	Mau	SOS - A	SoS - R	<u>NFS IS</u>	<u>Am</u>	<u>NF WM</u>	SoS - C	<u>EI</u>	CA P	
Akitio (Akit_1)	Akitio Estuary (Akit_1CMA) See Figure H:8A	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	ü	ü	ü	
Kai Iwi (West_2)	Kai Iwi Estuary (West_2CMA) See Figure H:3A	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		ü	
Mowhanau (West_3)	Mowhanau Estuary (West_3CMA) See Figure H:3A	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		ü	
Waikawa (West_9)	Waikawa Estuary (West_9CMA) See Figure H:7A	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 <sub>3</sub>	ü <sub>1,2</sub>		ü	ü	ü		ü	

- 1 Gravel and Sand (Dotterel)
- 2 Mud / Silt habitat and estuarine roosts (Waders)
- 3 Shortjaw kokopu and redfin bully

<sup>4</sup> Note to the hearing panel - As all values apply to the whole CMA these have been made Zone-wide Values

**Table H.3a: Sites of Significance – Cultural Values in the CMA**

<u>Water Management Zone*</u>	<u>Water Management Sub-zone*</u>	<u>River</u>	<u>Locality Description</u>	<u>Reason</u>	<u>Iwi</u>
<u>Coastal Manawatu (Mana 13)</u>	<u>Coastal Manawatu (Mana 13a)</u>	<u>Manawatu River</u>	<u>From mouth to the cross - river CMA boundary at approx NZMS 260 S24:009-766</u>	<u>Density of cultural and historical sites of significance including Waahi tapu and Taonga.</u>	<u>Rangitāne o Manawatu</u>
<u>East Coast (East 1)</u>	<u>Wainui River (East 1CMA)</u>	<u>Wainui River</u>	<u>Wainui River from the mouth to the cross - River CMA boundary at approximately NZMS 260 V24:115-735.</u>	<u>Taonga Kaitiakitanga Mahinga kai - particularly tuna (eels), mullet, kahawai, sole, flounder and whitebait, Kohanga (nursery) for juveniles of above species plus snapper, gurnard and red cod.</u>	<u>Ngati Kere Ngati Papauma o Kahungunu me Rangitāne</u>
<u>Akitio (Akit 1)</u>	<u>Akitio River (Akit 1CMA)</u>	<u>Akitio River</u>	<u>Akitio River from the mouth to the cross - river CMA boundary at approximately NZMS 260 U25:915-554</u>	<u>Taonga Kaitiakitanga Mahinga kai - particularly tuna (eels), mullet, kahawai, sole, flounder and whitebait, Kohanga (nursery) for juveniles of above species plus snapper, gurnard and red cod</u>	<u>Ngati Papauma o Kahungunu me Rangitāne</u>
<u>Owahanga (Owha 1)</u>	<u>Owhanga River (Owha 1CMA)</u>	<u>Owahanga River</u>	<u>Owahanga River from the mouth to the cross - river CMA boundary at approximately NZMS 260 U25:922-531</u>	<u>Taonga Kaitiakitanga Mahinga kai - particularly tuna (eels), mullet, kahawai, sole, flounder and whitebait, Kohanga (nursery) for juveniles of above species plus snapper, gurnard and red cod</u>	<u>Ngati Papauma o Kahungunu me Rangitāne</u>
<u>Seawater Management Zone</u>			<u>East Coast</u>	<u>Taonga Kaitiakitanga Mahinga mataitai The East Coast CMA (as regulated by and referenced in the One Plan is of significance to Ngati Kahungunu and Rangitāne</u>	<u>Ngati Kahungunu Rangitāne</u>

**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*.	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*.	Gravel and Sand (Dotterel) 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 (Whau_4)	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 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*.



## Water<sup>^</sup> Quality Standards

**Table H 10.4a: Estuary Water Management ~~Estuary Sub-zones\*~~ in the CMA: Water<sup>^</sup> Quality Definitions**

The water<sup>^</sup> quality standards for the Estuary Water Management ~~Estuary Sub-Zones\*~~ in the CMA, as defined in **Table H11.5** shall be read as follows (The numerical values in Table H5a are indicated by [...])

Column-Abbreviations used in Table H.5a		Standard-spell-out-Full wording of the standard
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 <sub>5</sub> (g/m <sup>3</sup> )	<	The soluble carbonaceous five days biological oxygen demand shall not exceed [...] grams per cubic metre.
POM (g/m <sup>3</sup> )	<	The concentration of particulate organic matter shall not exceed [...] grams per cubic metre.
Periphyton Algal biomass Chl a (mg/m <sup>23</sup> )	≤	The algal biomass in the river/ estuarine area shall not exceed [...] milligrams of chlorophyll a per square cubic metre.
	% cover	The maximum cover of visible foreshore or seabed by periphyton (as filamentous algae more than 2 centimetres long) shall not exceed [...]%
Macro-algae % cover	≤	The maximum cover of visible shore surface by macro-algae shall not exceed [...]%
DRP (mg/m <sup>3</sup> )	<	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.
		The annual average concentration of dissolved reactive phosphorus (DRP) when the river flow is at or below the 20 <sup>th</sup> flow exceedence percentile shall not exceed [...] grams per cubic metre.
SIN (mg/m <sup>3</sup> )	<	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.
		The annual average concentration of soluble inorganic nitrogen (SIN) <sup>5</sup> when the river flow is at or below the 20 <sup>th</sup> flow exceedence percentile shall not exceed [...] grams per cubic metre.
QMCI		The quantitative macroinvertebrate index shall exceed [...], unless natural physical conditions are beyond the scope of application of the QMCI.
Ammoniacal nitrogen <sup>6</sup> (mg/m <sup>3</sup> )	<	The concentration of ammoniacal nitrogen shall not exceed [...]milligrams per cubic meter metre.
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. For toxicants not otherwise defined in these standards, the concentration of toxicants in the water <sup>^</sup> shall not exceed the trigger values defined in the 2000 ANZECC guidelines

<sup>5</sup> Soluble Inorganic Nitrogen (SIN) concentration is measured as the sum of nitrate nitrogen, nitrite nitrogen and ammoniacal nitrogen or a sum of total oxidised nitrogen and ammoniacal nitrogen

<sup>6</sup> Ammoniacal nitrogen is a component of SIN. SIN standards should also be considered when assessing ammoniacal nitrogen concentrations against the standards

		Table 3.4.1 for the level of protection of [...] % of species. For metals the trigger value shall be adjusted for hardness and apply to the dissolved fraction as directed in the table.
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.
<i>E. coli</i> / 100 ml	< 50 <sup>th</sup> %ile	The concentration of <i>Escherichia coli</i> shall not exceed [...] per 100 millilitres from 1 November – 30 April (inclusive) when the river flow is at or below the 50 <sup>th</sup> flow exceedence percentile
	< 20 <sup>th</sup> %ile	The concentration of <i>Escherichia coli</i> shall not exceed [...] per 100 millilitres when the river flow is at or below the 20 <sup>th</sup> flow exceedence percentile year round.
Euphotic depth	%Δ	Euphotic depth shall not be reduced by more than [...]%
Visual Clarity (m)	%Δ	The visual clarity of the water measured as being the horizontal sighting range of a 200 mm black disc shall not be reduced changed by more than [...] %
	≥	The visual clarity of the water <sup>^</sup> measured as the horizontal sighting range of a black disc shall equal or exceed [...] metres when the river <sup>^</sup> is at or below the 50 <sup>th</sup> flow exceedence percentile.

Note: Soluble Inorganic Nitrogen (SIN) concentration is measured as the sum of nitrate nitrogen, nitrite nitrogen and ammoniacal 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 44.5a: Estuary Water Management Sub-zones\* in the CMA: Water Quality Standards**

The following water quality standards apply to the Estuary Water Management Sub-zones\* in the CMA.

Water Management Zone*	Estuary Sub-zone	pH		Temp (°C)		DO (%SAT)	BOD <sub>5</sub> (g/m <sup>3</sup> )	Periphyton		DRP (mg/m <sup>3</sup> )	SIN (mg/m <sup>3</sup> )	CMC Error! Bookmark not defined.†	Ammoniacal Nitrogen (mg/m <sup>3</sup> )	Tox. %	Turbidity (NTU)			E. coli / 100 ml		Euphotic Depth 10	Visual Clarity (m)	
		Range	Δ	<	Δ			>	<						Chl a (mg/m <sup>3</sup> )	% cover	<	<	<-3 xm		< 50 <sup>th</sup> %ile	%Δ
		7-8	0.5	24	3	70	2	200-4	30-5	0.015	444-0.444	5	0.400	95	2-5		15	260	10	10	1.2	3-20
Coastal Manawatu (Mana_13)	Manawatu Estuary (Mana_13CMA)	7-8 8.5	0.5	24	3	70	2	200-4	30-5	0.015	444 0.444	5	0.400	95	2-5		15	260	10	10	1.2	3-20
Coastal Rangitikei (Rang_4)	Rangitikei Estuary (Rang_4CMA)	7-8 8.5	0.5	24	3	70	2	200-4	30-5	0.015	0.167	5	0.400	95	2-5		15	260	10	10	1.2	3-20
Lower Whanganui (Whai_7)	Whanganui Estuary (Whai_7CMA)	7-8 8.5	0.5	24	3	60-70	2	200-4	30-5	0.015	0.167	5	0.400	95		20	260	10	10	1.2	3-20	
Coastal Whangaehu (Whau_4)	Whangaehu Estuary (Whau_4CMA)	7-8 8.5 <sup>7</sup>	0.5	22	3	70	2	200-4	30-5	0.015	0.167	5	0.400	95		20 <sup>8</sup>	260	10	10	1.2	3-20	
Turakina (Tura_1)	Turakina Estuary (Tura_1CMA)	7-8 8.5	0.5	22	3	70	2	200-4	30-5	0.015	0.167	5	0.400	95		20	260	10	10	1.2	3-20	
Ohau (Ohau_1)	Ohau Estuary (Ohau_1CMA)	7-8 8.5	0.5	22	3	70	2	200-4	30-5	0.010	0.110	5	0.400	95	2-5		15	260	10	10	1.2	3-20
Lake Horowhenua (Hoki_1)	Hoki Estuary (Hoki_1CMA)	7-8 8.5	0.5	24	3	60-70	2	200-4	30-5	0.015	0.167	5	0.400	95			15	260	10	10	1.2	3-20
Owahanga (Owha_1)	Owahanga Estuary (Owha_1CMA)	7-8 8.5	0.5	22	3	70	2	200-4	30-5	0.015	0.167	5	0.400	95		20	260	10	10	1.2	3-20	
East Coast (East_1)	Wainui Estuary (East_1CMA)	7-8 8.5	0.5	22	3	70	2	200-4	30-5	0.015	0.167	5	0.400	95		20	260	10	10	1.2	3-20	
Akitio (Akit_1)	Akitio Estuary (Akit_1CMA)	7-8 8.5	0.5	22	3	70	2	200-4	30-5	0.015	0.167	5	0.400	95		20	260	10	10	1.2	3-20	
Kai Iwi (West_2)	Kai Iwi Estuary (West_2CMA)	7-8 8.5	0.5	22	3	70	2	200-4	30-5	0.015	0.167	5	0.400	95		20	260	10	10	1.2	3-20	
Mowhanau (West_3)	Mowhanau Estuary (West_3CMA)	7-8 8.5	0.5	24	3	60-70	2	200-4	30-5	0.015	0.167	5	0.400	95			15	260	10	10	1.2	3-20
Waikawa (West_9)	Waikawa Estuary (West_9CMA)	7-8 8.5	0.5	22	3	70	2	120-4	30-5	0.010	0.167	5	0.400	95			15	260	10	10	1.2	3-20

<sup>7</sup> Except where natural conditions, resulting from volcanic or lahar activity on Mt Ruapehu cause exceedence of the standard

<sup>8</sup> Except where natural conditions, resulting from volcanic or lahar activity on Mt Ruapehu cause exceedence of the standard

**Table H 12.6a: Seawater Management Zone in the CMA: Water<sup>^</sup> Quality Definitions**

The water<sup>^</sup> quality standards for the Seawater Management Zone in the CMA, as defined in Table H137a shall be read as follows (The numerical values in are indicated by [...])

Column-Abbreviations used in Table H. 7a	Standard-spelt out-Full wording of the standard
header	sSub-header
pH	Range
	Δ
	Δ
DO (%SAT)	← ≥
Periphyton Algal biomass Chl a (mg/m <sup>3</sup> )	Chl-a (mg/m <sup>3</sup> ) ≤
TP (mg/m <sup>3</sup> )	<
TN (mg/m <sup>3</sup> )	<
Ammoniacal nitrogen (mg/m <sup>3</sup> )	<
Toxicants	< %
Turbidity (NTU)	%Δ
Visual Clarity (m)	%Δ
	≥
Enterococci	1 November – 30 April (inclusive)
	1 May – 31 October (inclusive)
Faecal coliforms	≤
	90 <sup>th</sup> %ile

**Table H 13.7a: 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	pH	Temp (°C)	DO (%SAT)	BOD <sub>5</sub> (g/m <sup>3</sup> )	POM (g/m <sup>3</sup> )	Periphyton Algal Biomass		TP (mg/m <sup>3</sup> )	TN (mg/m <sup>3</sup> )	OMC1	Ammoniacal nitrogen (mg/m <sup>3</sup> )	Tox. (%)	Turbidity (NTU)				Visual Clarity (m)		Enterococci		FC	
		Range	Δ	< Δ	>	<	<	Chl a (mg/m <sup>3</sup> )	% cover	<	<		<1/2 m	< m	< 3 xm	%Δ	>	%Δ	1 Nov – 30 <sup>th</sup> April	1 May – 31 Oct	<	90 <sup>th</sup> tile		
Seawater Management Zone	N/A	8.1-8.3	0.1	1	90	2		1-3		0.010	0.060		0.060	99				20	1.6	20	140	280	14	43

**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 31<sup>st</sup> October inclusive.~~
- ~~3. The median concentration of faecal coliforms shall not exceed 14 per 100 millilitres and the 90<sup>th</sup> 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.~~