Notes for track changes. Pink version. Recommendations made by the Coast Officers Report are shown in Orange. Recommendations made by the Coast Officers Supplementary Report are shown in Blue. 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: Boundaries, Zones and Water Management

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

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This schedule includes:

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)

1.	Coastal Marine Area	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 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
3.	Management Zones	H10 H11 H12 H13	Port Zone Protection Zones: • Whanganui River and Whangaehu River • Turakina River and Rangitikei River • Manawatu River and Cape Turnagain

1. Coastal Marine Area Maps H1 – H2

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These maps 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) seaward to the 12 nm limit of the territorial sea. The rules in Chapter ~~20~~ 17 apply to the CMA.

2. Coastal Marine Area Cross River Boundaries Maps H3 – H9

These maps depict where the CMA boundary lies when it crosses a river or stream (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.

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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.)

3. Management Zones Maps H10 – H13

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

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**.

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The Port Zone is depicted on Map **H10**.
There are some rules in Chapter ~~20~~ 17 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 **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 **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

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- the values of significance/importance relating to each protection zone and as referred to in Policy 9-2 are shown in ~~the table~~ Table H1 below:

Whanganui River Protection Zone	• 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 pectin shells • Coastal landforms and adjacent dunes are important nesting habitat
Whangaehu River Protection Zone	• 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 Note: • The Witiau 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 Zone	• 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 Zone	• 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 Zone	• 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 Zone	• 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

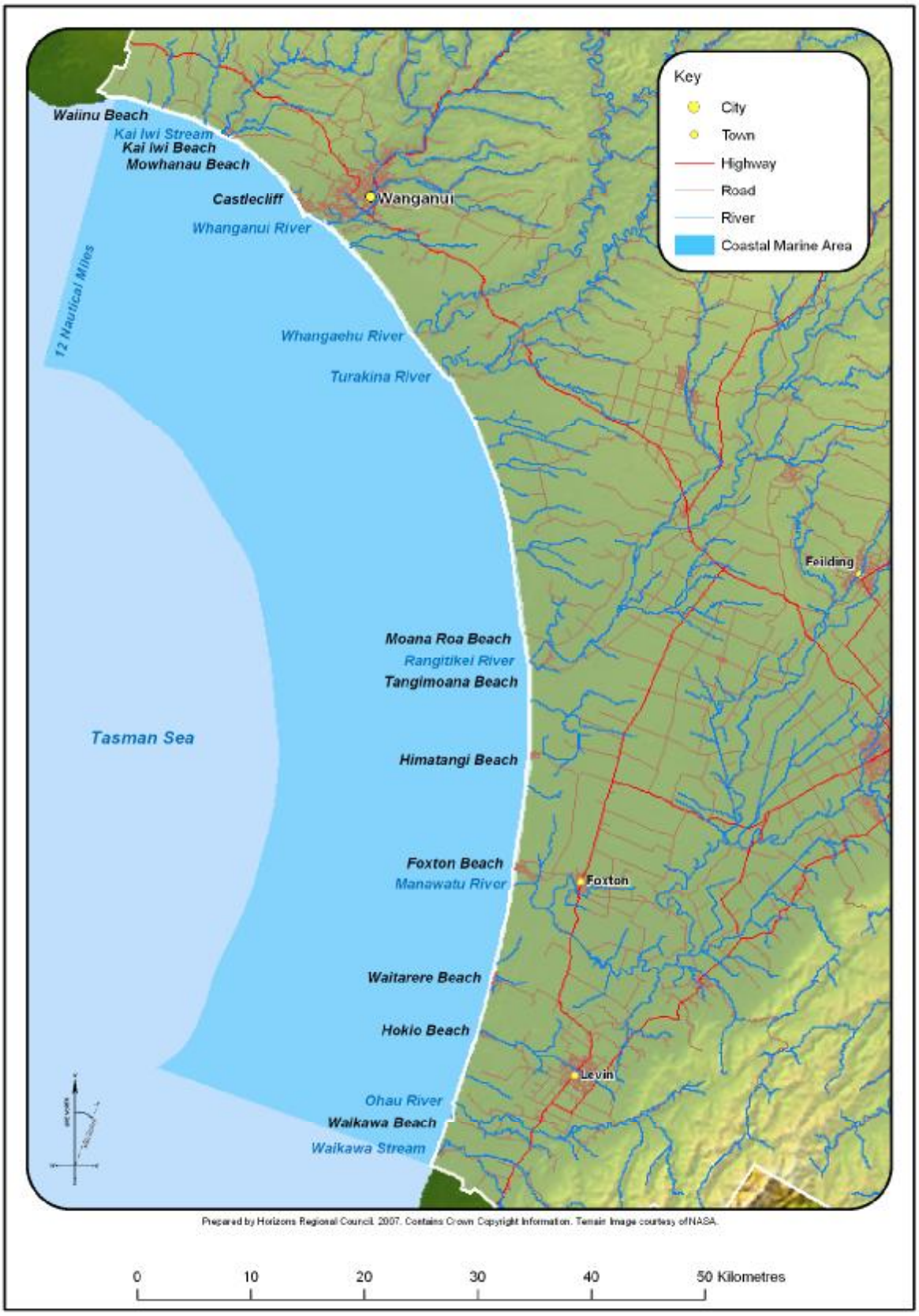

Figure H:1 West Coast

Figure H:2 East Coast

Figure H:3 Kai Iwi and Mowhanau Steam Boundaries

Figure H:4 Whanganui and Whangaehu River Boundaries

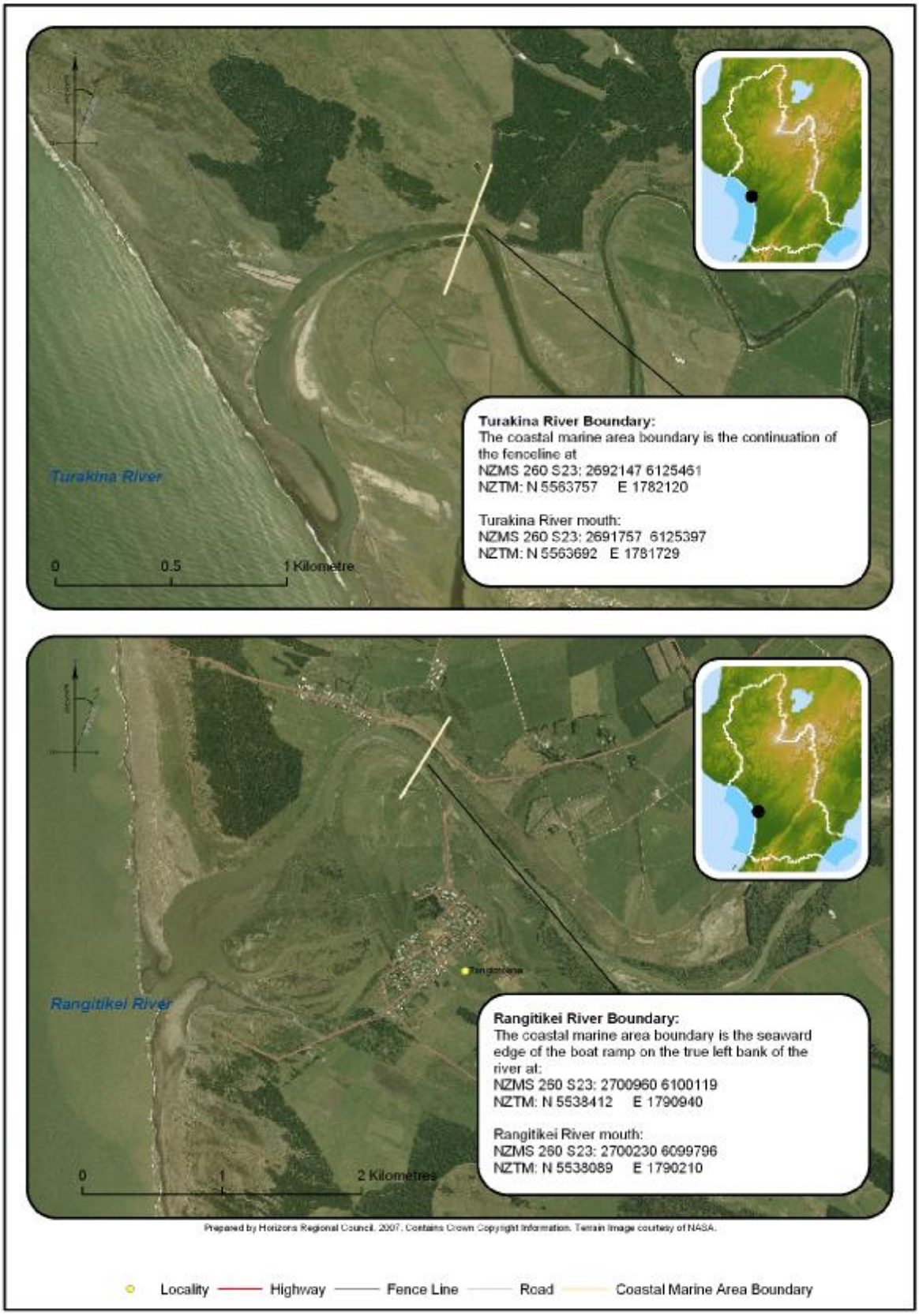

Figure H:5 Turakina and Rangitikei River Boundaries

Figure H:6 Manawatu River and Hokio Stream Boundaries

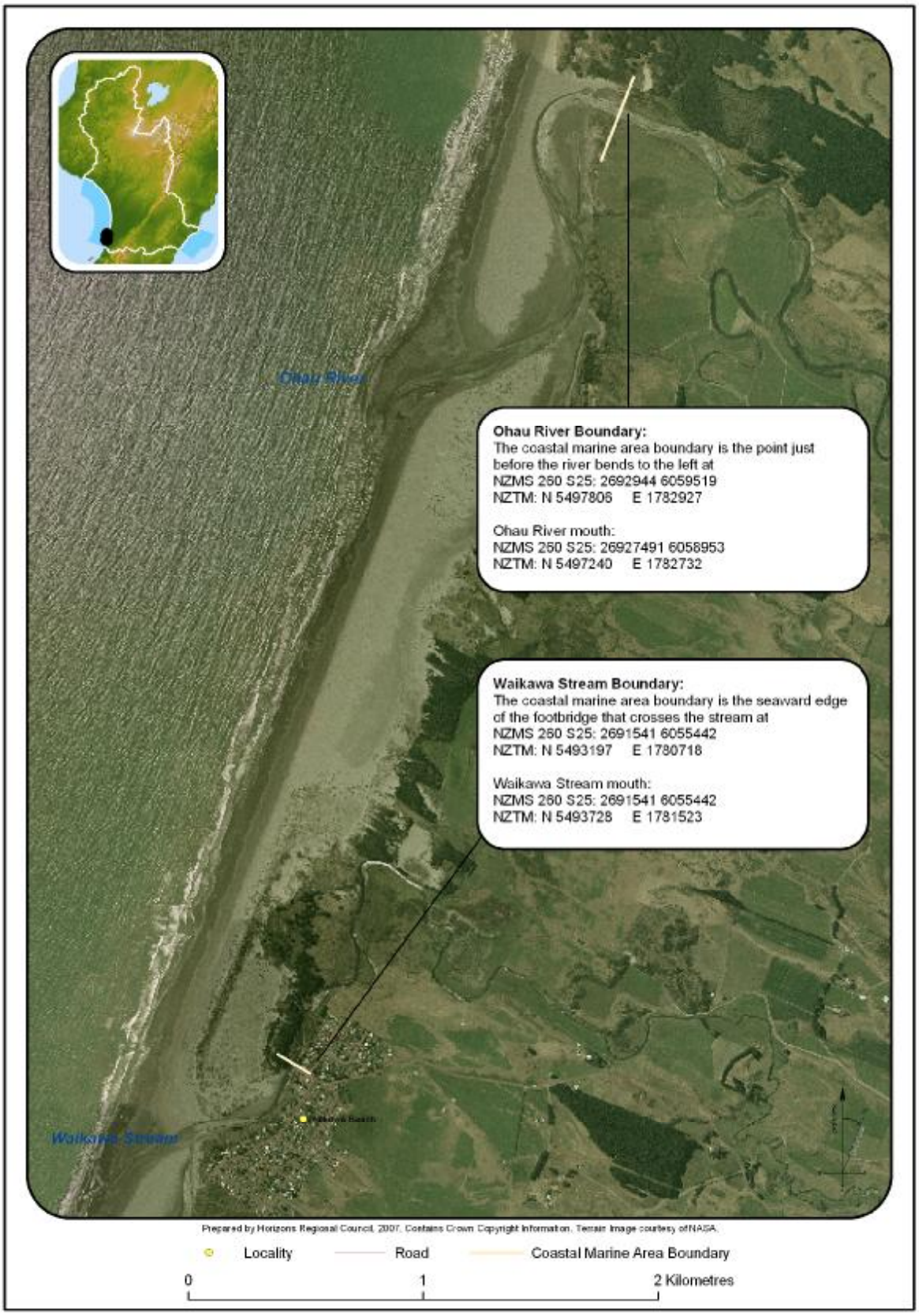

Figure H:7 Ohau River and Waikawa Stream Boundaries

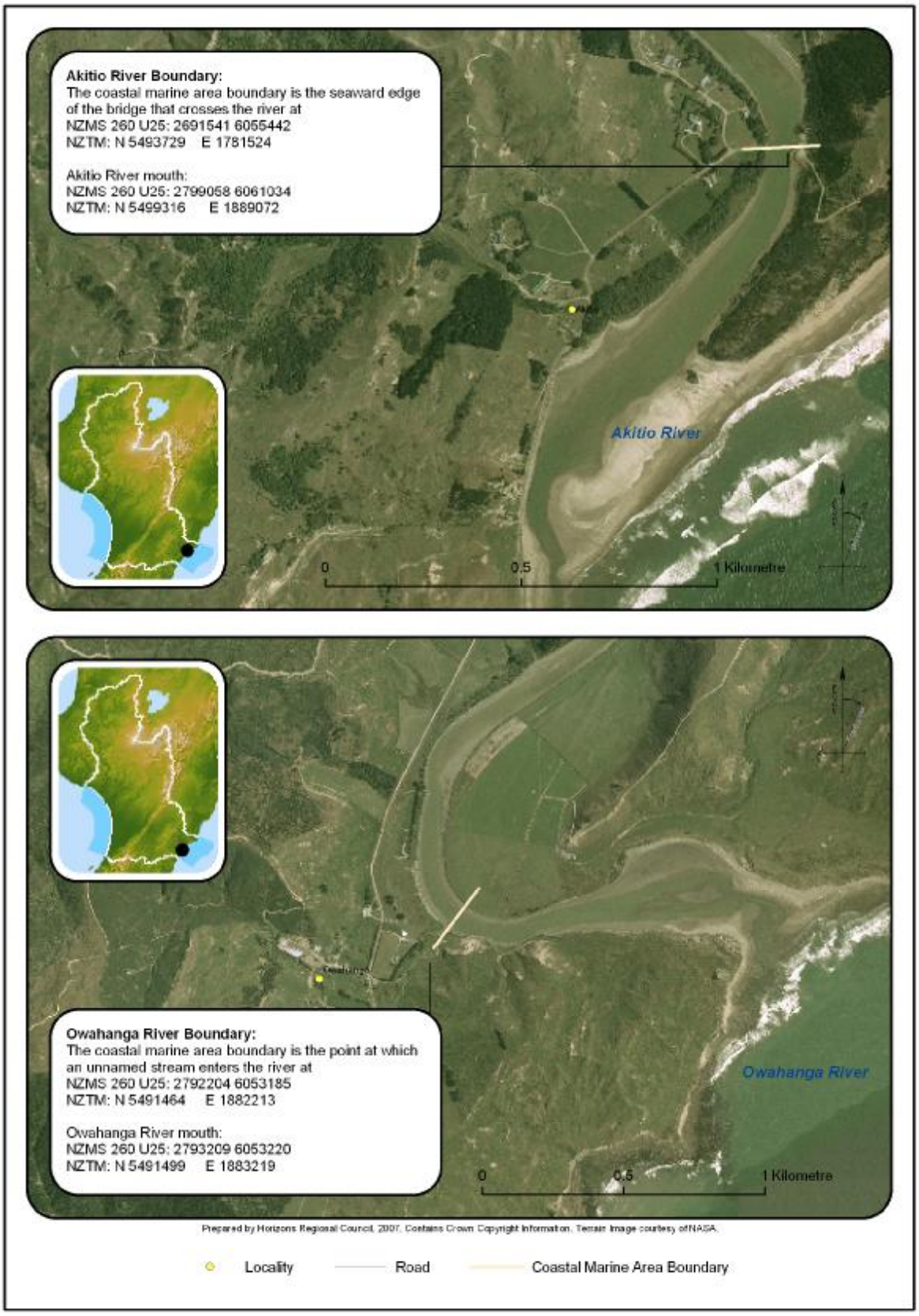

Figure H:8 Akitio River and Owahanga River Boundaries

Figure H:9 Wainui River Boundary

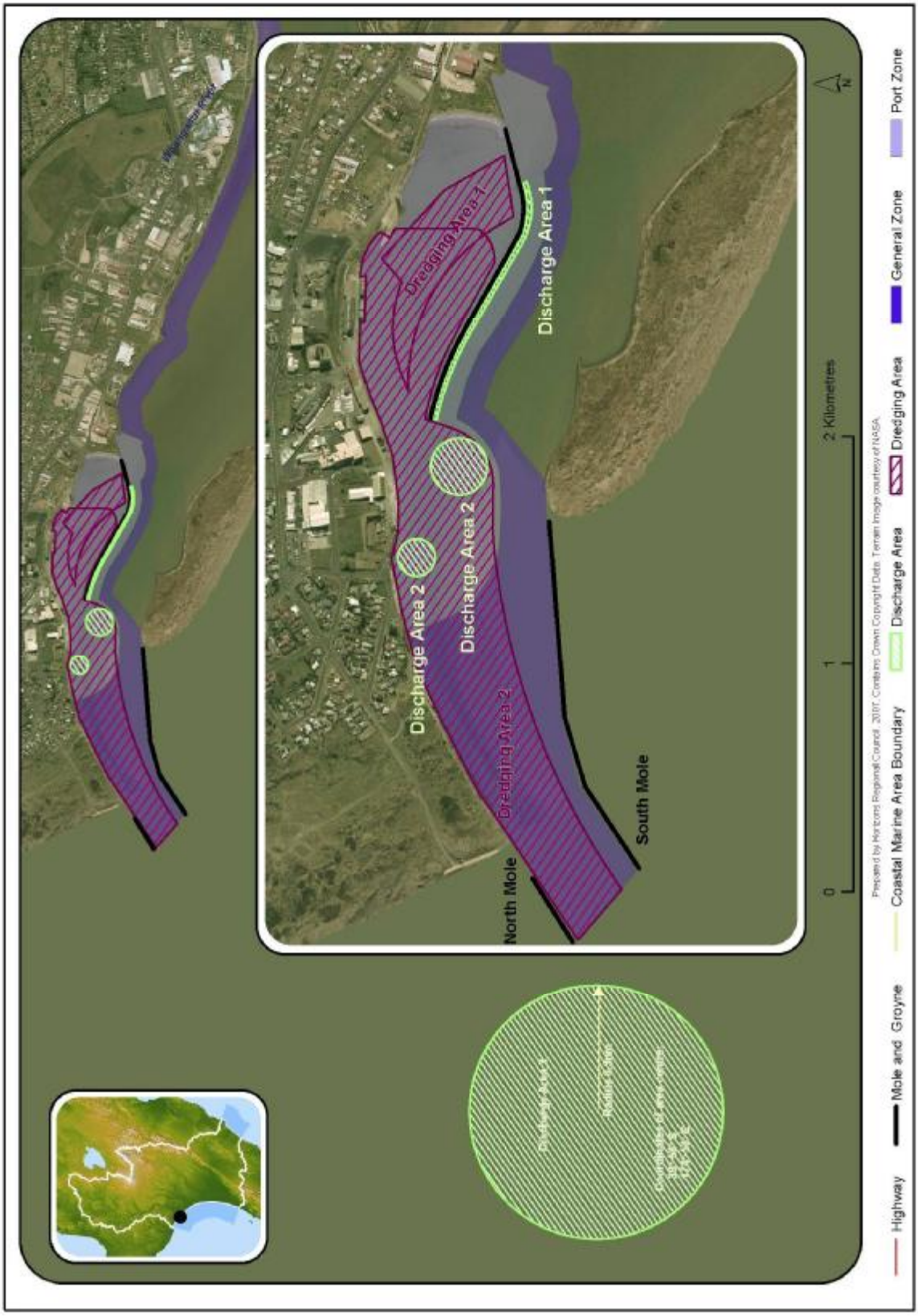

Figure H:10A Wanganui Port

Add third dredging zone to Schedule H 10 (shown as the following area: within a radius of 0.3 nautical miles of position 39058S 174058E) – Recommendation COA 63 Page 197

~~**Figure H:10** Wanganui Port (Deleted)~~ Recommendation COA 63 Page 197

Figure H:11 Coastal Protection

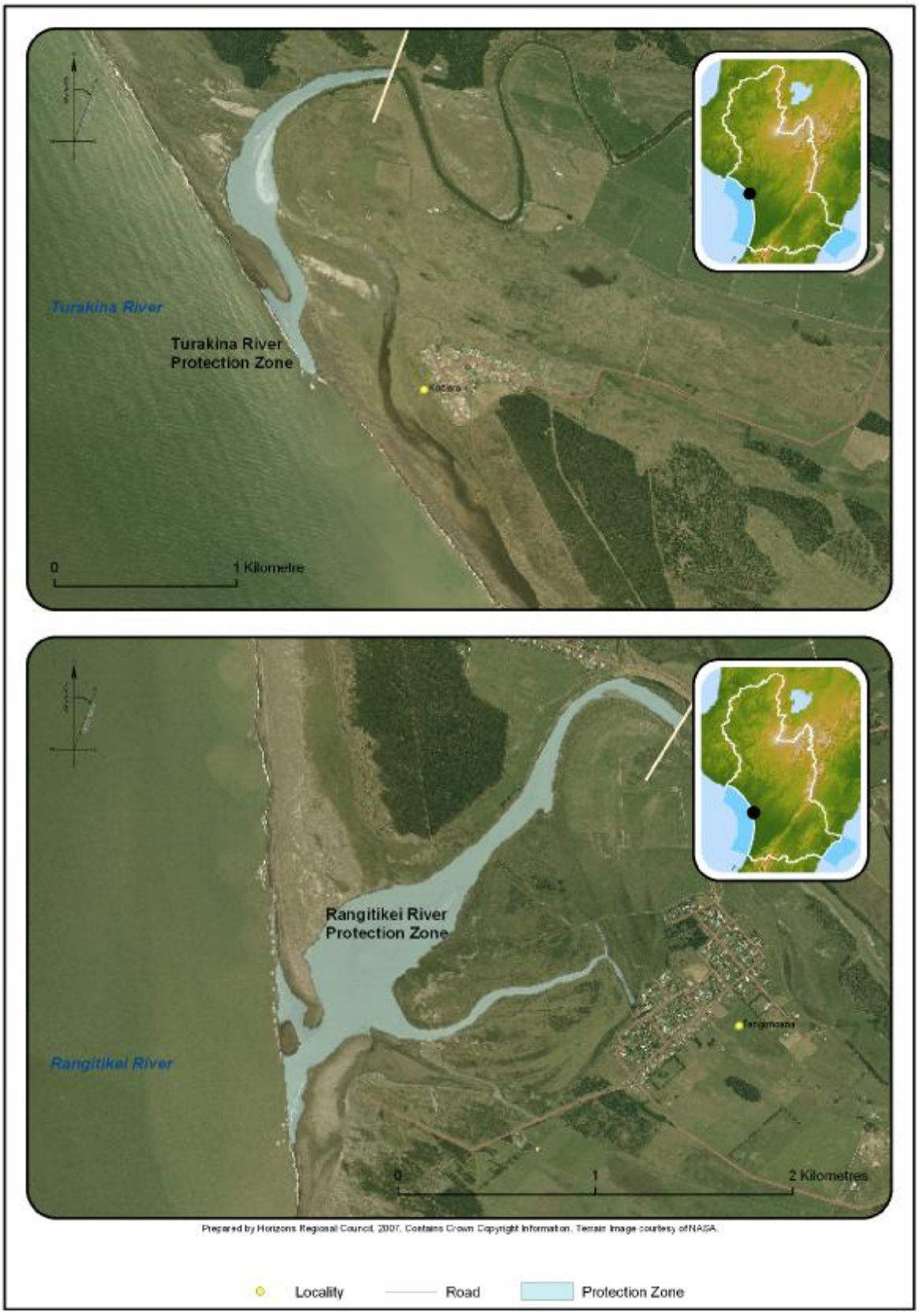

Figure H:12 Coastal Protection

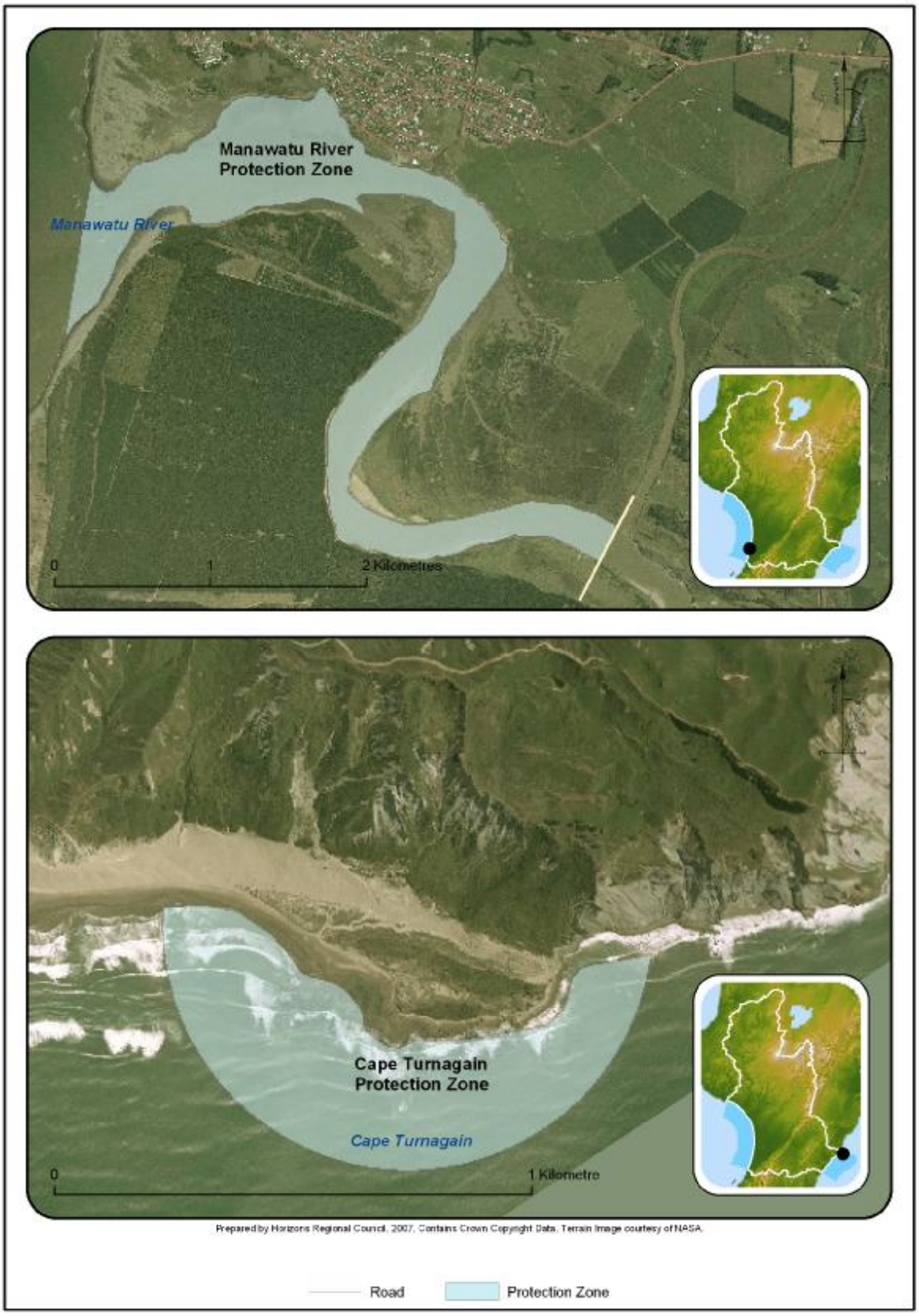

Figure H:13 Coastal Protection

Part B: Water Management

4. Water Management Zones and Water Quality Standards

There are two water management zones in the coastal marine area:

(i) open coastal waters (ie. seawards from MHWS and from the river mouths on the open coastline). Note the river mouth co-ordinates are shown on Maps H 3– H9.

(ii) river/estuarine waters (ie. from the cross river boundary downstream to the river mouth). Note the cross river boundaries and the river mouth co-ordinates are shown on Maps H 3–H9.

The values that apply to these zones are detailed in Tables H2- H7. The water quality standards are set out in Tables H8 – H11.

5. Values that apply to waters in the coastal marine area

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

Value group		Individual Values	Management Objective	Where it Applies
Ecosystem Values	LSC	Life-Supporting capacity	The waterbody supports healthy aquatic life / ecosystems	All open coastal waters River/ estuarine waters within the coastal marine area as listed in Table H4 page H [to be inserted]
	NFS	Native Fish Spawning	The waterbody sustains healthy native fish spawning and fry development	Specified sites / reaches Shown in Map D:13 Page D-40 and listed in Table H5: page H [to be inserted]
Recreational and Cultural Values	CR	Contact recreation	The waterbody is suitable for contact recreation	All open coastal waters
	Am	Amenity	The amenity values of the waterbodies and their margins are maintained or improved	Coastal Marine Area as listed in Table H6 page H [to be inserted]
	NF	Native Fishery	The waterbody sustains populations of native fish that can be harvested in a sustainable manner	Coastal Marine Area as listed in Table H7 page H [to be inserted]
	MAU	Mauri	The Mauri of the waterbody is maintained or improved	Coastal Marine Area
	SG	Shellfish Gathering	The waterbody is suitable for shellfish harvesting	Coastal Marine Area
	SOS-C	Sites of Significance - Cultural	Sites of significance for cultural values are maintained	To be defined
	Ae	Aesthetics	The aesthetic values of the waterbody and its margins are maintained or improved	Coastal Marine Area
Social/ Economic Values	CAP	Capacity to Assimilate Pollution	The capacity of a waterbody to assimilate pollution is not exceeded	Coastal Marine Area
	FC	Flood Control	The integrity of existing flood and river bank erosion protection structures is not compromised	Existing flood/ erosion control schemes in the coastal marine area

Table H3: Values by Zone in the Coastal Marine area

Legend:
Table Headings: **WQS**: Water Quality Standard; **LSC**: Life Supporting Capacity; **CR**: Contact Recreation; **Am**: Amenity; **SG**: Shellfish Gathering; **Mau**: Mauri;; **SW**: Stockwater; **NS**: Natural State; ~~**SoS-A**: Sites of Significance for Aquatic biodiversity~~; **SoS-R**: Sites of Significance for Riparian biodiversity; **Ae**: Aesthetics; **NFS**: Native Fish Spawning; **NF**: Native Fishery; **SoS-C**: Sites of Significance for Cultural value~~; TS: Trout Spawning~~; **CAP**: Capacity to Assimilate Pollution; **WS**: Water Supply; **IA**: Industrial Abstraction; **I**: Irrigation.

Key for LSC Classes: ~~UHS: Upland Hard Sedimentary, UVA: Upland Volcanic Acidic, UVM: Upland Volcanic Mixed, Uli: Upland Limestone,~~ **HM:** Hill Mixed, **LM:** Lowland Mixed, **LS:** Lowland Sand**, HSS:** Hillcountry soft sedimentary

~~Key for Fishery Classes: I: Outstanding, II: Regionally Significant, III: Other Trout Fishery~~

Note: Further detail of the sub zones are shown in maps D 1 - D 8.

Manage-ment Zone	Description	Sub Zone	Zone Wide Values							Site/ Reach Specific Values											
			LSC	CR	Am	SG	Mau	~~TF~~	SW	NS	~~SoS A~~	SoS R	Ae	NFS	NF	SoS C	~~TS~~	CAP	WS	IA	I
Open Coastal waters	Coastal Marine Area – from MHWS on the open coastline and from the river mouth co-ordinates shown on Maps H 3– H9 seawards to 12 nautical miles		Sea	ü	ü	ü	ü							ü	ü			ü			
River/ estuarine waters	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as	Coastal Manawatu (Mana_13a)	LM	ü	ü		ü	~~III~~	ü		~~ü~~	ü		ü	ü			ü	ü		ü
		Tidal Rangitikei (Rang_4b)	LM	ü	ü		ü	~~III~~	ü	ü		ü		ü	ü			ü	ü		ü
		Coastal Whanganui (Whai_7b)	LM	ü	ü		ü		ü			ü		ü	ü			ü		ü	

Manage-ment Zone	Description	Sub Zone	Zone Wide Values							Site/ Reach Specific Values											
			LSC	CR	Am	SG	Mau	~~TF~~	SW	NS	~~SoSA~~	SoSR	Ae	NFS	NF	SoSC	~~TS~~	CAP	WS	IA	I
	shown on Maps H 3– H9.	Coastal Whangaehu (Whau_4)	HSS	ü	ü		ü		ü			ü		ü	ü			ü			ü
		Lower Turakina (Tura_1b)	HSS	ü	ü		ü		ü			ü		ü	ü			ü			
		Lower Ohau (Ohau_ba)	HM	ü	ü		ü	~~III~~	ü		~~ü~~	ü		ü	ü		~~ü~~	ü	ü		ü
		Owahanga (Owha_1)	HSS	ü			ü		ü		~~ü~~							ü			
		East Coast (East_1)	HSS	ü	ü		ü		ü		~~ü~~	ü						ü			
		Lower Akitio (Akit_1b)	HSS	ü	ü		ü		ü		~~ü~~			ü	ü			ü			ü
		Kai Iwi (West_2)	HSS	ü	ü		ü		ü		~~ü~~			ü	ü			ü			ü
		Mowhanau (West_3)	LM	ü	ü		ü		ü		~~ü~~			ü	ü			ü			ü
		Waikawa (West 9)	HM	ü	ü		ü		ü		~~ü~~	ü						ü	ü		ü
		Hokio (Hokio 1_b)	LS	ü	ü		ü		ü					ü	ü			ü			

Table H4: Life Supporting Capacity Value by Management Zone/ Sub-zone in the Coastal Marine Area

Management Zone/ Sub-Zone	Description	Life Supporting Capacity Classification
Coastal Manawatu (Mana_13a)	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps H 3– H9. .	LM
Tidal Rangitikei (Rang_4b)		LM
Coastal Whanganui (Whai_7b)		LM
Coastal Whangaehu (Whau_4)		HSS
Lower Turakina (Tura_1b)		HSS
Lower Ohau (Ohau_ba)		HM
Owahanga (Owha_1)		HSS
East Coast (East_1)		HSS
Lower Akitio (Akit_1b)		HSS
Kai Iwi (West_2)		HSS
Mowhanau (West_3)		LM
Waikawa (West 9)		HM
Hokio_(Hokio 1_b)		LS

Table H5: Native Fish Spawning Value in the Coastal Marine Area

Management Zone	Sub-Zone	River/ Stream Name	Reference
Coastal Manawatu	Coastal Manawatu	Manawatu River	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps H 3– H9.
Coastal Rangitikei	Tidal Rangitikei	Rangitikei River	
Lower Whanganui	Coastal Whanganui	Whanganui River	
Coastal Whangaehu	Coastal Whangaehu	Whangaehu River	
Turakina	Lower Turakina	Turakina River	
Ohau	Lower Ohau	Ohau River	
Akitio	Lower Akitio	Akitio River	
Kai-Iwi	Kai-Iwi	Kai-Iwi Stream	
Mowhanau	Mowhanau	Mowhanau Stream	
Lake Horowhenua	Hokio	Hokio Stream	

Table H6: Amenity Value in the Coastal Marine Area

Management Zone	Sub-Zone	Site	Description
Coastal Manawatu	Coastal Manawatu	Foxton Beach	At approx NZMS 260 S24:978-806
Coastal Rangitikei	Tidal Rangitikei	Holben Reserve	At approx NZMS 260 S24:989-997
Lower Whanganui	Lower and Coastal Whanganui	Whanganui River	From River Mouth to approx NZMS 260 R22:888-434
	Coastal Whanganui	Castlecliff Beach	At approx NZMS 260 R22:788-388
Coastal Whangaehu	Coastal Whangaehu	Whangaehu Beach	At approx NZMS 260 R23:893-269
East Coast	East Coast	Herbertville Beach	At approx NZMS 260 V24:103-719
Akitio	Lower Akitio	Akitio Beach	At approx NZMS 260 U25::989-597
Northern Coastal	Northern Coastal	Ototoka Beach	At approx NZMS 260 R22:667-471
Kai Iwi	Kai Iwi	Kai-Iwi Beach	At approx NZMS 260 R22:725-448
Mowhanau	Mowhanau	Mowhanau Stream	At approx NZMS 260 R22:726-448
Northern Manawatu Lakes	Northern Manawatu Lakes	Himatangi Beach	At approx NZMS 260 S24:991-905
Waitarere	Waitarere	Waitarere Beach	At approx NZMS 260 S24:958-701
Lake Horowhenua	Hokio	Hokio Stream @ Hokio Beach	At approx NZMS 260 S25:949-657

Table H7: Native Fishery Value in the Coastal Marine Area

Management Zone	Sub-Zone	River/ Stream Name	Reference
Coastal Manawatu	Coastal Manawatu	Manawatu River	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps H 3– H9.
Coastal Rangitikei	Tidal Rangitikei	Rangitikei River	
Lower Whanganui	Lower/ Coastal Whanganui	Whanganui River	
Coastal Whangaehu	Coastal Whangaehu	Whangaehu River	
Turakina	Lower Turakina	Turakina River	
Ohau	Lower Ohau	Ohau River	
Akitio	Lower Akitio	Akitio River	
Kai-Iwi	Kai-Iwi	Kai-Iwi Stream	
Mowhanau	Mowhanau	Mowhanau Stream	
Lake Horowhenua	Hokio	Hokio Stream	

Table H7A: Sites of Significance - Riparian Value in the Coastal Marine Area

Management Zone	Sub-Zone	River/ Stream Name	Reference	Riparian Habitat Value
Coastal Manawatu	Coastal Manawatu (Mana_13a)	Manawatu River	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps H 3– H9.	Gravel and Sand (Dotterel) Mud/Silt habitat and estuarine roosts (Waders)
Coastal Rangitikei	Tidal Rangitikei (Rang_4b)	Rangitikei River and Estuary	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps H 3– H9.	Gravel and Sand (Dotterel)
Lower Whanganui	Coastal Whanganui (Whai_7b)	Whanganui River and Estuar	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps H 3– H9.	Gravel and Sand (Dotterel) Mud/Silt habitat and estuarine roosts (Waders)
Coastal Whangaehu	Coastal Whangaehu (Whau_4)	Whangaehu River	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps H 3– H9.	Gravel and Sand (Dotterel) Mud/Silt habitat and estuarine roosts (Waders)
Turakina	Lower Turakina (Tura_1b)	Turakina River	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps H 3– H9.	Gravel and Sand (Dotterel) Mud/Silt habitat and estuarine roosts (Waders)
Ohau	Lower Ohau (Ohau_ba)	Ohau River	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps H 3– H9.	Gravel and Sand (Dotterel) Mud/Silt habitat and estuarine roosts (Waders)
Waikawa	Waikawa (West 9)	Waikawa Stream	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps H 3– H9.	Gravel and Sand (Dotterel) Mud/Silt habitat and estuarine roosts (Waders)
East Coast	East Coast	Wainui River	Coastal Marine Area – from the cross river boundary downstream to the river mouth co-ordinates as shown on Maps	Mud/Silt habitat and estuarine roosts (Waders)

H 3– H9.

(East 1)

6. Water Quality Standards for the Coastal Marine Area

Table H 8: Water Quality Definitions: River/ Estuarine areas of the Coastal Marine Area

The water quality standards defined in **Table H8** 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 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	Chla (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 [...] Nephlometric Turbidity Units (NTU)
	<m	The turbidity of the water when the river flow is at or below median flow shall not exceed [...] Nephlometric 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 [...] Nephlometric 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 potential 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 9: Water Quality Standards: River/ Estuarine areas of the Coastal Marine Area

The following water quality standards apply to the river/ estuarine waters in the coastal marine area (ie. from the cross river boundary downstream to the river mouth). Note the cross river boundaries and the river mouth co-ordinates are shown on Maps H 3– H9.

Management Zone	Sub zone	pH		Temp (°C)		DO (%SAT)	BOD_5 (g/m³)	~~POM (g/m³)~~	Periphyton		DRP (mg/m³)	SIN (mg/m³)	~~QMCI~~	Ammonia (mg/m³)	Tox.	Turbidity (NTU)				**Clarity (m)**
		Range	**Δ**	≤	**Δ**	≥	≤	≤	Chla (mg/m²)	% cover	≤	≤		≤		≤1/2 m	≤ m	≤ 3 xm	**Δ**	**Δ**
Coastal Manawatu (Mana_13)	Coastal Manawatu (Mana_13a)	7 to 8.5	0.5	24	3	70	2	~~5~~	200	30	15	444	~~5~~	400	95	2.5		15	30	30
Coastal Rangitikei (Rang_4)	Tidal Rangitikei (Rang_4b)	7 to 8.5	0.5	24	3	70	2	~~5~~	200	30	15	167	~~5~~	400	95	2.5		15	30	30
Lower Whanganui (Whai_7	Coastal Whanganui (Whai_7b)	7 to 8.5	0.5	24	3	60	2	~~5~~	200	30	15	167	~~5~~	400	95		20		30	30
Coastal Whangaehu (Whau_4)	Coastal Whangaehu	7 to 8.5[(a)]	0.5	22	3	70	2	~~5~~	200	30	15	167	~~5~~	400	95		20[(a)]		30	30
Turakina (Tura_1)	Lower Turakina (Tura_1b)	7 to 8.5	0.5	22	3	70	2	~~5~~	200	30	15	167	~~5~~	400	95		20		30	30
Ohau (Ohau_1)	Lower Ohau (Ohau_ba)	7 to 8.5	0.5	22	3	70	2	~~5~~	120	30	10	110	~~5~~	400	95	2.5		15	30	30
Owahanga (Owha_1)	Owahanga	7 to 8.5	0.5	22	3	70	2	~~5~~	200	30	15	167	~~5~~	400	95		20		30	30
East Coast (East_1)	East Coast	7 to 8.5	0.5	22	3	70	2	~~5~~	200	30	15	167	~~5~~	400	95		20		30	30
Akitio (Akit_1)	Lower Akitio (Akit_1b)	7 to 8.5	0.5	22	3	70	2	~~5~~	200	30	15	167	~~5~~	400	95		20		30	30
Kai Iwi (West_2)	Kai Iwi	7 to 8.5	0.5	22	3	70	2	~~5~~	200	30	15	167	~~5~~	400	95		20		30	30
Mowhanau (West_3)	Mowhanau	7 to 8.5	0.5	24	3	60	2	~~5~~	200	30	15	167	~~5~~	400	95			15	30	30
Waikawa (West_9)	Waikawa	7 to 8.5	0.5	22	3	70	2	~~5~~	120	30	10	167	~~5~~	400	95			15	30	30

Management Zone	Sub zone	pH		Temp (°C)		DO (%SAT)	BOD_5 (g/m^3)	~~POM~~ (g/m^3)	Periphyton		DRP (mg/m^3)	SIN (mg/m^3)	~~QMCI~~	Ammonia (mg/m^3)	Tox.	Turbidity (NTU)				**Clarity (m)**
		Range	**Δ**	≤	**Δ**	≥	≤	≤	Chla (mg/m^2)	% cover	≤	≤		≤		<1/2 m	< m	< 3 xm	**Δ**	**Δ**
Lake Horowhenua (Hoki_1)	Hokio (Hoki_1b)	7 to 8.5	0.5	24	3	60	2	5	200	30	15	167	5	400	95			15	30	30

Table H 10: Water Quality Definitions: Open Coastal areas of the Coastal Marine Area

The water quality standards defined in **Table H10** shall be read as follows (The numerical values in are indicated by [...])

Column header	Column sub-header	Standard spelt out
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	Chla (mg/m^2)	The average annual algal biomass shall not exceed [...] milligrams of chlorophyll a 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:

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

Table H 11: Water Quality Standards: Open Coastal areas of the Coastal Marine Area

The following water quality standards apply to the open coastal waters in the coastal marine area (ie seawards from MHWS and the river mouths on the open coastline). Note the river mouth co-ordinates are shown on Maps H 3– H9.

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)	QMCI	Ammonia (mg/m^3)	Tox.	Turbidity (NTU)				Clarity (m)
		Range	Δ	≤	Δ	≥	≤	≤	Chla (mg/m^2)	% cover	≤	≤		≤		<1/2 m	≤ m	≤ 3 xm	Δ	Δ
Open Coastal waters	CMA – from MHWS and the river mouth on the open coastline	8 to 8.3	0.1		1	90	2		1		10	60		60	99				20%	20%

Additional water quality standards for open coastal waters:

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 31th 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.