

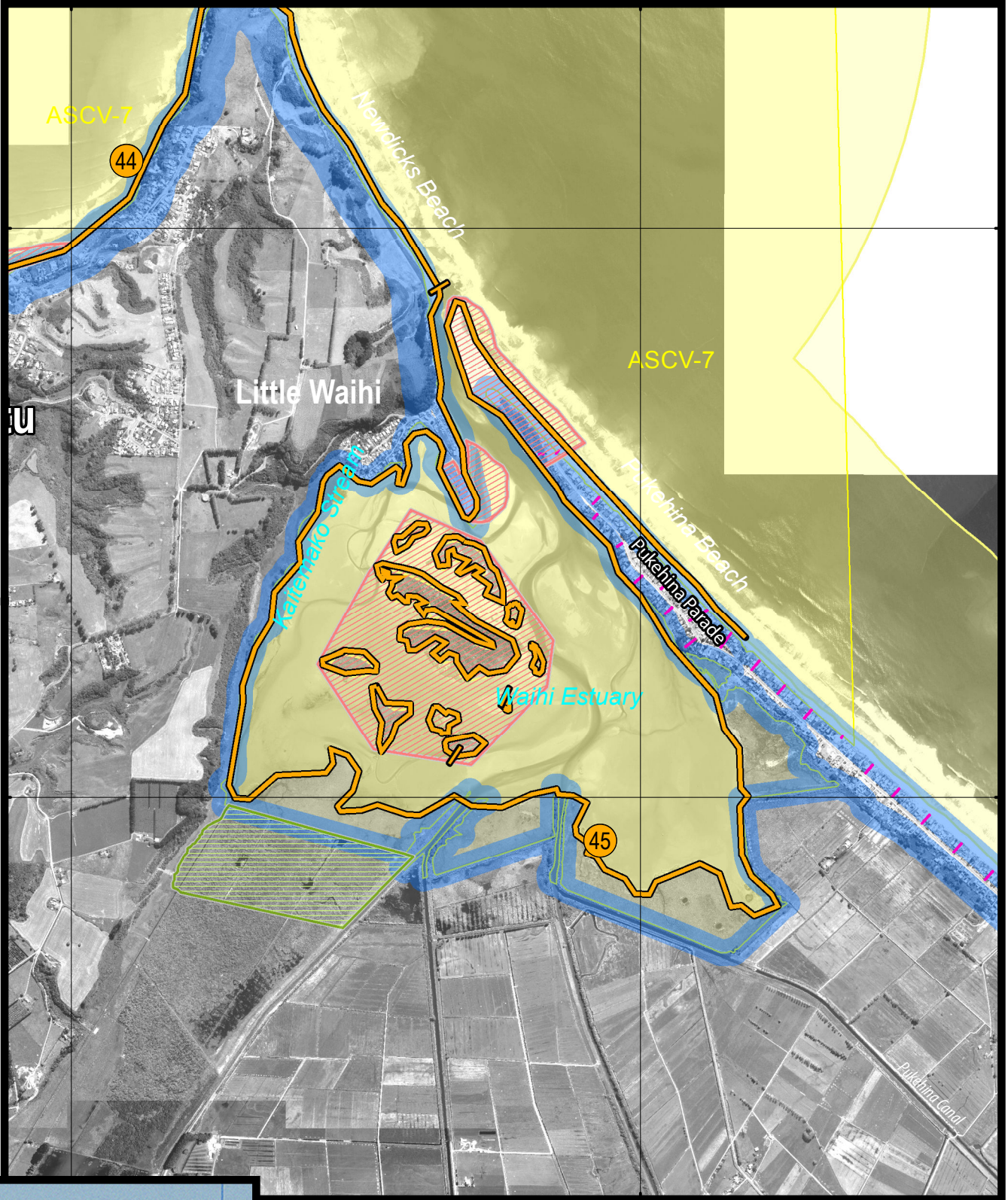
Site 45	Little Waihi Estuary	Risk ranking: 1
<p>DESCRIPTION</p> <p>This site comprises of a large estuary with extensive saltmarsh vegetation and intertidal mudflats, and diverse sub tidal habitat. There are multiple fresh water contributions the: Kaikokopu Canal; Wharere Canal; Pongakawa Canal; Pukehina Canal, all enter from the southern end. Island ecosystems in estuary.</p> <p>Internationally protected migratory shore birds feeding – treaty obligations (JAMBA, CAMBA, ROKAMBA). Meets RAMSAR criteria for an internationally significant wetland.</p>		
<p>Foreshore type/environmental value</p>	<p>Intertidal flats, saltmarsh, mangroves, open water in channel, foreshore vegetation, riparian vegetation</p> <p>Habitat (intertidal), all shore segments have “habitat value”</p>	
<p>Map sheets</p>	<p>NZ Topo 50</p> <p>BD 38 Maketu</p>	<p>Chart Number</p> <p>NZ 541</p>
<p>Segments</p>	<p>BOP-00380 to 00420, BOP-00150, BOP-01350 to 01430</p>	
<p>At Risk Resources</p> <ul style="list-style-type: none"> • Saltmarsh and mangroves, foreshore vegetation • Fish spawning nursery areas • There is a large diversity of birds including at risk and threatened species, e.g.: New Zealand dotterel (tuturiwhatu) (breeds on the spit), caspian tern (taranui), wrybill (ngutuparore), banded rail (kataitai), fern bird (matata), bittern (matuku hūrepo), spotless crane (pūweto), white heron (kōtuku) • The whole estuary, sand spit and coastal area are identified in the Regional Coastal Plan as areas of significant conservation/cultural value • Kaimoana: fishery and shellfish gathering • Cultural sites: taiapure and is of special cultural significance as a food source • NZAA V14/157 (Midden site), NZAA V14/2 (Pa site) • NZAA V14/18 (Occupation layer (10-30 cm thick). Covers an area c. 50 x 30 m) 		
<p>Notes</p> <p>The main priority area for protection is the estuarine margin wetlands towards the back of the estuary, which have high wildlife values. Oil that enters the low energy systems of Little Waihi Estuary will remain for some time. Oil will harm saltmarsh habitat, biodiversity in intertidal flats and whitebait spawning areas in the estuary.</p> <p>Actions</p> <ul style="list-style-type: none"> • Establish collection and recovery on sandy areas east of the estuary mouth • Establishing boom at estuary entrance difficult due to high currents • Notify wildlife team • Discuss pre-clean-up of intertidal debris - tidal range specific • Consider pre-emptive capture of New Zealand dotterel • Consider pre-emptive capture of wildlife generally • Activation of oiled wildlife response collection teams if required 		

Access

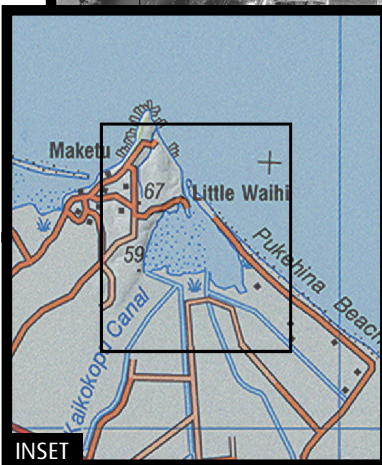
Vehicle access is via Pukehina Beach Road from the east and via Maketu to the west. The western side of the estuary can be accessed from Bledisloe Park Avenue. A boat ramp and jetty is located at the end of the peninsula that Bledisloe Park Avenue provides access to. There is also a boat launching ramp at the end of Pukehina Beach Road.

Preferred Response Option Matrix

	Most preferred	Least preferred	Feasibility
Containment and Recovery	High		Some deflection booming possible
On water Recovery	High		Strong tidal flows, not a good option
Dispersant Application	Low	Requires escalation to Tier 3 and MNZ approval	Water depth won't allow
Shoreline Clean-up	Medium		Sandy areas provide good clean-up options
Natural Recovery	Medium		Due to shallow and sensitive area, some natural recovery may be required



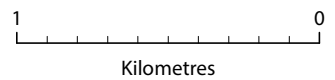
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LEGEND

-  SCAT Sites
-  Shorebird Roosts
-  Site District of Local Significance
-  Coastal Habitat Preservation Zone
-  Beach Accessways
-  Area Sensitive to Coastal Hazards
-  ASCV-7 Area of Significant Conservational Value

SITE 45 Little Waihi Estuary Oil Spill Management Plan



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INSET

Site 46	Waitahanui Stream	Risk ranking: 1
<p>DESCRIPTION</p> <p>This site comprises the Waitahanui Stream mouth, tidal lagoon to the west on the shore side of the dunes. The tidal influence is 500 m up to SH 2.</p> <p>No major wetlands, small lagoon within dune system.</p>		
<p>Foreshore type/environmental value</p>	<p>Sand, lagoon, riparian vegetation</p> <p>All shore segments have “habitat value”</p>	
<p>Map sheets</p>	<p>NZ Topo 50</p> <p>BD 38 Maketu</p>	<p>Chart Number</p> <p>NZ 542</p>
<p>Segments</p>	<p>BOP-00299, BOP-00301</p>	
<p>At Risk Resources</p> <ul style="list-style-type: none"> • Numerous at risk birds, threatened species including: banded rail (kataitai), spotless crane (pūweto), bittern (matuku hūrepo), fernbird (kareni), New Zealand dotterel (tuturiwhatu) • Freshwater fish - whitebait (inunga) • Lagoon – aquatic vegetation present • Cultural sites/values: <ul style="list-style-type: none"> ▪ NZAA V15/719 		
<p>Notes</p> <ul style="list-style-type: none"> • Public use including fishermen and whitebaiters • Oil that enters the low energy systems of the estuary will remain for some time. Oil will harm intertidal and sand flats habitat <p>Actions</p> <ul style="list-style-type: none"> • Limit the amount of oil entering the estuary by putting protection or deflection booms in place • Alternatively, close the lagoon at high tide to prevent oil entering the low energy lagoon system, repair lagoon cut off at low tide (flow dependent) • Consider pre-emptive capture of New Zealand dotterels from the western spit • Notify wildlife team of potential for oiling • Discuss pre-clean-up of intertidal debris - tidal range specific – with wildlife team • Consider pre-emptive capture of wildlife generally • Activation of oiled wildlife response collection teams if required • The size of the lagoon may vary from that in the map/photo 		
<p>Access</p> <p>Via SH 2, Otamarakau. Onto beach, will need to cross the estuary from the eastern side. Alternative access is across private farm land to the west of the lagoon and then by foot across the train tracks.</p> <p>Note that access is across a train line. Develop safety plan for safe access to this site, in conjunction with KiwiRail.</p>		

Preferred Response Option Matrix

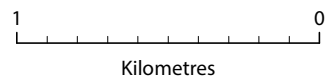
	Most preferred	Least preferred	Feasibility
Containment and Recovery	High		Shallow coastal environment
On water Recovery	High		Prior to reaching shore with appropriate vessel
Dispersant Application	Low	Requires escalation to Tier 3 and MNZ approval	Shallow coastal environment
Shoreline Clean-up	High		Good access for beach teams, pre-clean required
Natural Recovery	Medium		May be required due to foreshore moments



LEGEND

-  SCAT Sites
-  Shorebird Roosts
-  Site District of Local Significance
-  Coastal Habitat Preservation Zone
-  Beach Accessways
-  Area Sensitive to Coastal Hazards
-  ASCV - Area of Significant Conservational Value

SITE 46 Waitahanui Stream Oil Spill Management Plan



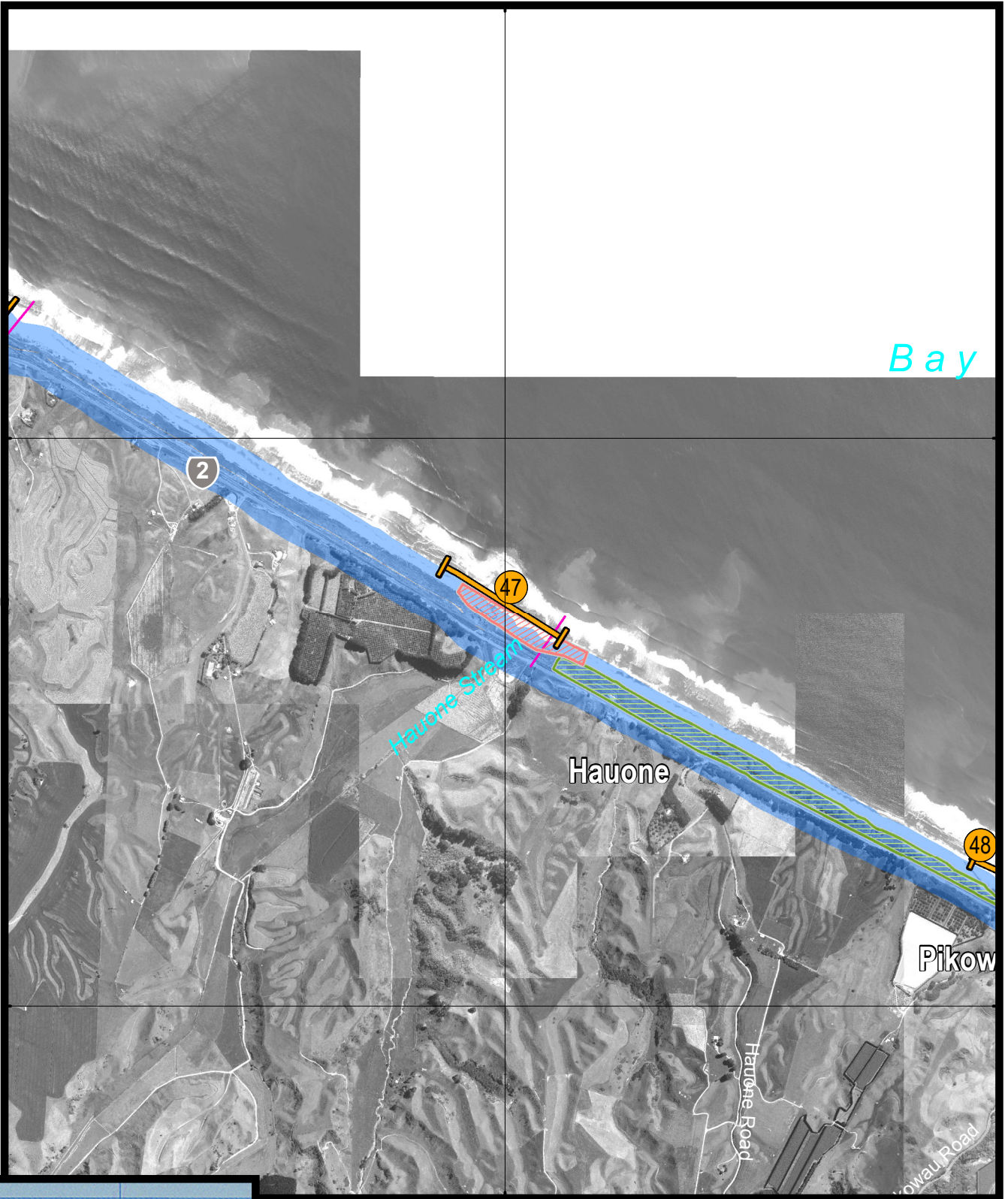
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Site 47	Hauone Stream	Risk ranking: 3
<p>DESCRIPTION</p> <p>This site is comprised of a small fresh water stream that is tidal to SH 2. Although no wetlands, there is a 500 m long lagoon behind the dune system. The stream mouth is highly mobile and may not be connected in normal flow conditions to the sea.</p>		
Foreshore type/environmental value	Sand, lagoon, steep beaches All shore segments have “habitat value”	
Map sheets	NZ Topo 50 BD 38 Maketu	Chart Number NZ 542
Segments	BOP-00305	
<p>At Risk Resources</p> <ul style="list-style-type: none"> • New Zealand dotterel (tuturiwhatu) nesting – one pair • Whitebait (inanga) • Common gecko (mokomoko) • Lagoon behind vegetated supratidal area • Riparian vegetation • Moderate public use by fishermen and whitebaiters 		
<p>Notes</p> <p>Oil that enters the low energy system of this lagoon will remain for some time. Oil will harm saltmarsh habitat and whitebait spawning areas</p> <p>Actions</p> <ul style="list-style-type: none"> • Prevent oil from entering the side lagoon • Notify wildlife team • Discuss pre-clean-up of intertidal debris - tidal range specific (maintain gecko habitat) • Consider pre-emptive capture of New Zealand dotterel • Consider pre-emptive capture of wildlife generally • Activation of oiled wildlife response collection teams if required • Shoreline clean-up – remove cleaned material from beaches daily (do not allow to remain over any high tidal period) and place at staging location to be agreed 		
<p>Access</p> <p>Via SH 2, Hauone.</p> <p>Note that access is across a train line. Develop safety plan for safe access to this site, in conjunction with KiwiRail.</p>		

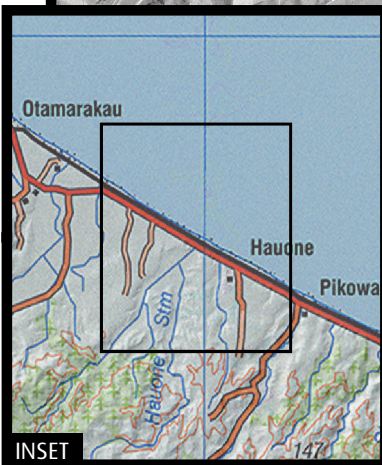
Preferred Response Option Matrix

	Most preferred	Least preferred	Feasibility
Containment and Recovery	High		Sand boom across entrance
On water Recovery	High		Shallow coastal shoreline
Dispersant Application	Low	Requires escalation to Tier 3 and MNZ approval	Shallow coastal shoreline
Shoreline Clean-up	High		Access to stream area is over train line
Natural Recovery	Medium		High intensity coastline



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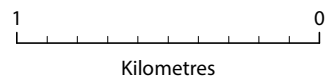
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LEGEND

-  SCAT Sites
-  Shorebird Roosts
-  Site District of Local Significance
-  Coastal Habitat Preservation Zone
-  Beach Accessways
-  Area Sensitive to Coastal Hazards
-  Area of Significant Conservation Value

SITE 47 Hauone Stream Oil Spill Management Plan



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Site 48	Pikowai Stream	Risk ranking: 3
<p>DESCRIPTION</p> <p>This site comprises a small fresh water stream that is tidal to where it is crossed by SH 2. A 500 m long lagoon sits behind the dune system. Stream may not be connected in normal flow conditions to the sea.</p>		
<p>Foreshore type/environmental value</p>	<p>Sand, lagoon All shore segments have “habitat value”</p>	
<p>Map sheets</p>	<p>NZTopo50 BD38 Maketu</p>	<p>Chart Number NZ542</p>
<p>Segments</p>	<p>BOP-00308</p>	
<p>At Risk Resources</p> <ul style="list-style-type: none"> • New Zealand dotterel (tuturiwhatu) nesting – two pairs • Whitebait (inanga) • Sand spit • Locally important recreational fisheries • Moderate public use by fishermen and whitebaiters. Pikowai Campground beside 		
<p>Notes</p> <p>Oil that enters this system will be able to be cleaned up as there is no natural vegetation in the riparian areas</p> <p>Actions</p> <ul style="list-style-type: none"> • Limit the amount of oil entering and moving through the estuary by placing a barrier across the entrance as oil approaches and monitor • Release built-up stream water from sand barrier during low tides as required, but close before high tide returns • Sand may form an effective barrier, but only after local cultural liaison and/or supervision • Shoreline clean-up – remove cleaned material from beaches daily (do not allow to remain over any high tidal period) and place at staging location to be agreed • Notify wildlife team of potential for oiling • Discuss pre-clean-up of intertidal debris - tidal range specific – with wildlife team • Consider pre capture New Zealand dotterels from the western spit • Consider pre-emptive capture of wildlife generally • Activation of oiled wildlife response collection teams if required 		
<p>Endpoint Criteria</p> <p>Clean segments to endpoint criteria (refer to endpoint clean-up criteria according to environmental value).</p>		
<p>Access</p> <p>Via SH 2, Pikowai.</p> <p>Note that access is across a train line. Develop safety plan for safe access to this site in conjunction with KiwiRail.</p>		

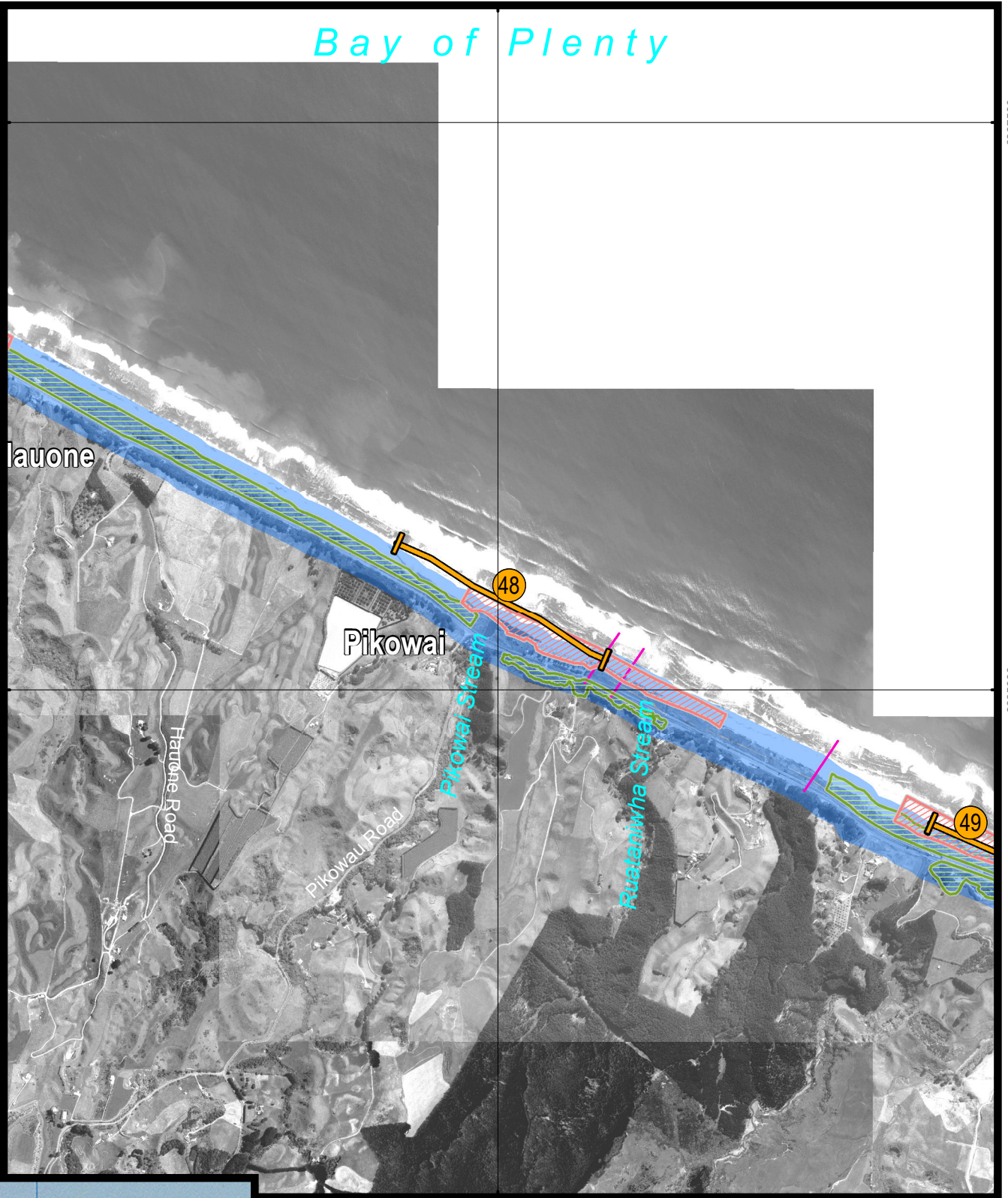
Preferred Response Option Matrix

	Most preferred	Least preferred	Feasibility
Containment and Recovery	High		Sand boom across entrance
On water Recovery	High		Shallow coastal shoreline
Dispersant Application	Low	Requires escalation to Tier 3 and MNZ approval	Shallow coastal shoreline
Shoreline Clean-up	High		Access to stream area is over trainline
Natural Recovery	Medium		High intensity coastline

Bay of Plenty

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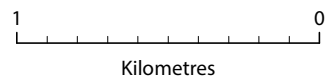
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LEGEND

-  SCAT Sites
-  Shorebird Roosts
-  Site District of Local Significance
-  Coastal Habitat Preservation Zone
-  Beach Accessways
-  Area Sensitive to Coastal Hazards
-  Area of Significant Conservational Value

SITE 48 Pikowai Stream Oil Spill Management Plan



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