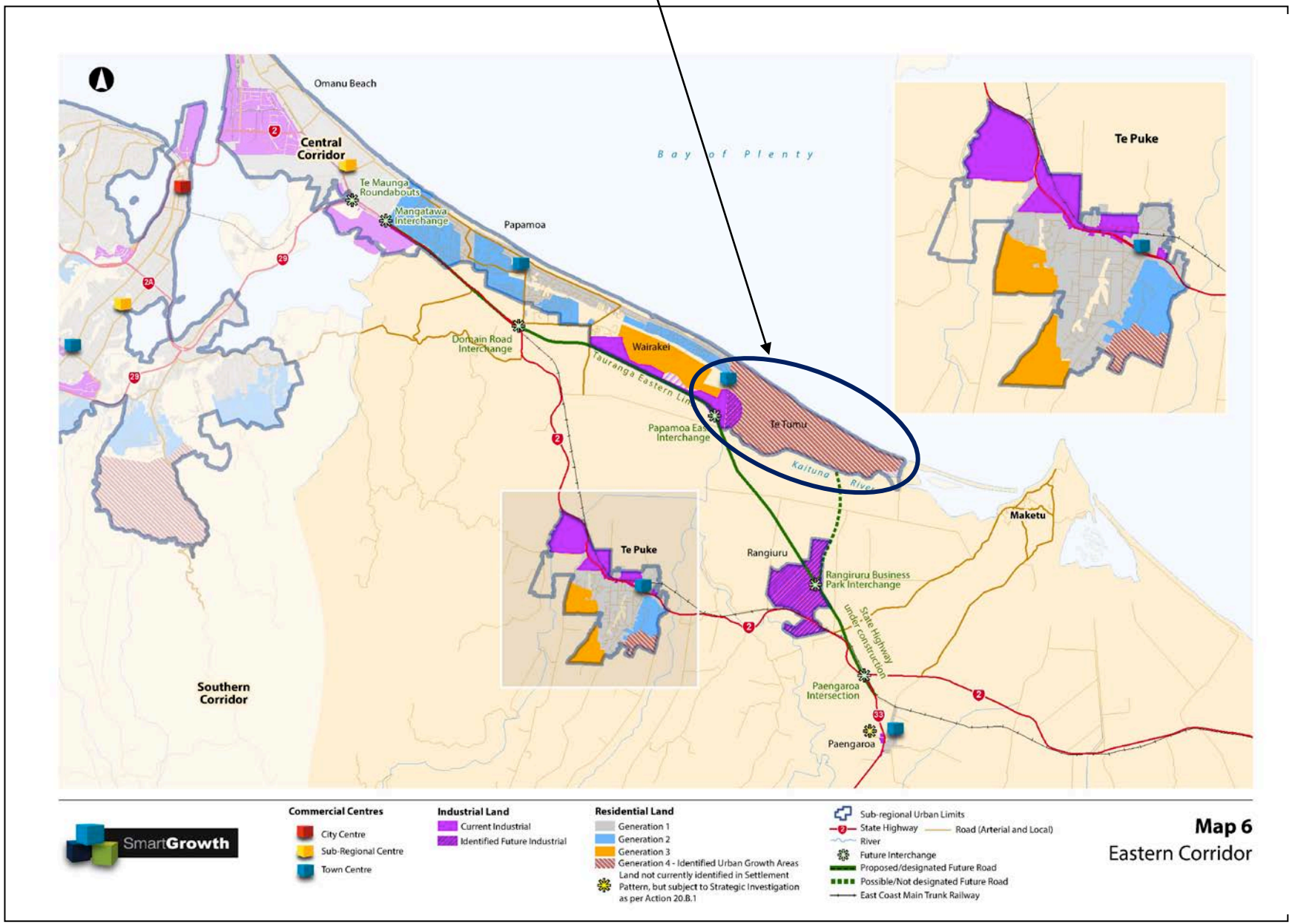
Te Tumu Future Urban Zone & Urban Growth Management Area



Bay of Plenty REGIONAL COUNCIL

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Submission in respect of a Resource consent application

File Ref:

Office Use Only

From: Full Name: **Te Tumu Landowners Group**

Postal Address: PO Box 13428, Tauranga 3141

Phone numbers: Work: 07 5742638 Home:

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Contact person: Jeff Fletcher

We hereby make a submission on the following resource consent applications and notice of requirement:

Details of resource consent application(s):

Kaituna River and Ongatoro/Maketu Estuary Enhancement Project

Application number(s): **BoPRC Number 67958 and WBoPDC Number 4944(L)**

Applicant's name: **Bay of Plenty Regional Council – Environmental Delivery Group**

Application site location: **Lower Kaituna River & Ongatoro/Maketu Estuary**

Type of consent(s) applied for:

1. Notice of Requirement for Designation.
2. Land Use Consent (earthworks)
3. Coastal Permit (structures)
4. Coastal Permit (reclamation)
5. Land Use Consent (rock protection, culvert installation)
6. Water Permit (divert water from Kaituna River)
7. Discharge Permit (construction activities).

Closing date for receipt of submission: 16 October 2014 (extension granted)

Tick the box to indicate your position: *(tick only one box)*

☑ We **support** (conditionally) the application(s)

☐ I **oppose** the application(s)

Tick the box to indicate your position: *(tick only one box)*

☑ We **wish** to be heard in support of our submission.

☐ I **do not wish** to be heard in support of my submission.

1 **We seek the following decision from the Bay of Plenty Regional Council:** *(Give precise details)*

See attached detailed submissions.

2 **The reasons for making our submissions are:**

Refer to attached detailed submissions.

3 **The general nature of any conditions we seek to be part of the consenst, if this application is granted are:**

Refer to attached detailed submissions.

Signature _____ Date: 16 October 2014 _____

(Signature or person making submission or person authorised to sign on behalf or person making submission).

NOTE: YOU MUST SEND A COPY OF THIS SUBMISSION TO THE APPLICANT AS SOON AS IS REASONABLY PRACTICABLE, AFTER SERVICE OF YOUR SUBMISSION ON THE CONSENT AUTHORITY.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 1**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Main Submission			
1	Qualified / Conditional Support	Entire Applications for Resource Consents and Notices of Requirement for the Kaituna River and Ongatoro/Maketu Estuary Enhancement Project being BoPRC No 67958 and WBoPDC No 4944(L) as notified on 10 September 2014.	**We conditionally support these applications to re-divert approximately 20 per cent of the flows from the Kaituna River back into the Ongatoro/Maketu Estuary via Ford's Channel for the purpose of enhancing the Ongatoro/Maketu Estuary, to establish new wetlands and to provide associated recreational opportunities.** Our support is conditional upon: 1. The acceptance and adoption of the requests and decisions sought in our detailed submissions herein. 2. The proposed Conditions for the Notice of Requirement (NoR) for a Designation being amended to adopt our detailed submissions herein. 3. The proposed Conditions for the Resource Consents (RC) being amended to adopt our detailed submissions herein. 4. This submission relates to the purposes and procedures of the Resource Management Act 1991, but it is otherwise without prejudice to all or any rights, claims, remedies, or entitlements which may arise under the Public Works Act 1981 or otherwise at common law.	Approve the Applications for Resource Consents and confirm / modify the Notice of Requirement for the Kaituna River and Ongatoro/Maketu Estuary Enhancement Project subject to the acceptance and adoption of the requests and decisions sought in our detailed submissions herein.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 2**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
2	Qualified Support	**Part 1 : Introduction, Section 1.1 Overview (p1)**	**Project Goal.** The goal does not recognise: 1. That in accordance with the RMA, that adverse effects on the environment include impact on people and their communities, the natural land and water resources, any physical resources associated with the land resource and the social, economic, aesthetic and cultural conditions which affect those matters. These could include impact on future land use as well as present land use, and on the operational aspects of the Kaituna River, flood protection schemes and recreational uses 2. That adverse effects are not limited to environmental effects and also relate to and impact, land use, private property and operational aspects of the Kaituna River and related schemes. It should be clear that adverse effects are to be avoided, remedied or mitigated.	1. An amended Project Goal reflecting our submissions. 2. In considering the proposed Notice of Requirement and resource consent applications ensure that the adverse effects of the project are avoided, remedied or mitigated.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 3**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
3	Seek amended NoR conditions and amended RC conditions of consent for the Project	**1. Part 1 : Introduction, Section 1.2 The Project (p2); and** **2. Part 3: Statutory Approvals Sought under the RMA; Section 3.2.1 Purpose of Designation (p16)** **3. Part 5: Description of the Project; Section 5.1 Overview (p45-46)**	**Project Main Features, Project Purpose &** **Project Description Overview.** The description of the main features of the Project should include: 1. The intention to provide vehicular access to the Ford Island from Ford Road across the proposed reclamation and the recreation reserve, as raised and discussed with the Regional Council through the pre-notification consultation. 2. The provision of rock ('rip-rap') protection up to mean spring tide level around the southern and western edges of Ford Island and to the eastern side of Ford Island adjacent to the mooring embayment, as raised and discussed with the Regional Council through the pre-notification consultation. **<u>Continues on next Submission Sheet</u>**	1. An amended Project Main Features and Description reflecting our submissions. 2. Acknowledge in the consideration of the resource consent decisions and the confirmation / modification of the Notice of Requirement and by way of conditions that the project includes: a) The construction of a combined 'salinity block' and vehicular access road from Ford Road to Ford Island (Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070); b) The construction of new moorings and the creation of a mooring embayment by dredging and ongoing maintenance dredging to ensure navigability in and around the new moorings and new boat ramp; **<u>Continues on next Submission Sheet</u>**

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 4**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
3 cont			**<u>Continued from previous Sheet</u>** **Project Main Features & Project Description Overview.** The description of the main features of the Project should include: 3. The dredging of the mooring and boat ramp embayment as necessary for both its construction and ongoing maintenance, as raised and discussed with the Regional Council through the pre-notification consultation. 4. A two lane vehicular crossing of Ford Road across the diversion channel by increasing the length of the culverts. We submit that this is necessary to for emergency services access to both the proposed boat ramp and the Te Tumu Cut and for safety reasons due to the current increasing use of this area and the inevitable heavy use this area will experience when the Tauranga Eastern Link is completed. Without a two lane crossing access to the proposed moorings for the Coast Guard will be compromised.	**<u>Continued from previous Sheet</u>** c) Provision of rock protection and a rock toe to the northern and southern sides of the salinity block / and Ford Island vehicular access road, up to mean high water springs. d) Provision of rock (rip-rap) protection to the southern and western edges of Ford Island and to the eastern side of Ford Island adjacent to the mooring embayment. e) A two lane vehicular crossing of Ford Road across the diversion channel by increasing the length of the existing and proposed culverts. Refer to Plan in **Attachment 1** showing the Project inclusions sought.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 5**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
4	Support	**Part 3: Statutory Approvals Sought under the RMA; Section 3.2.1 Purpose of Designation (p15-16)**	**Purpose of the Designation** We support the explanation to the 'purpose' statement particularly the following two points; ▪ *'Undertake works to avoid, remedy or mitigate any adverse effects arising from the re-diversion* ▪ *Monitor changes to the environment following the re-diversion.'*	Retain the 'Explanatory note' with the 'purpose' of the Designation for future reference in Regional and District Plans.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 6**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
5	Seek amended NoR conditions and amended RC conditions of consent for the Project	**1. Part 2: Reasons for Project; Section 2.4.4 Regional Policy Statement and Regional Plans (p11)** **2. Part 3: Statutory Approvals Sought under the RMA; Section 3.3 Resource Consents Required (p16-20)** **3. Part 4: Description of the Environment; Section 4.3.1 Plan Schedules (p33)**	The Statutory Assessments and Plan Schedules fail to adequately acknowledge consider and address: 1. That the Regional Policy Statement and Regional Plans contain, objectives, policies and methods / rules that are important for the strategic management of the surrounding area that is identified as Growth Management Areas for the Western Bay of Plenty. 2. Policy 11 – Indigenous Biodiversity of the New Zealand Policy Statement (NZCPS). The Wildland Report 2837 dated February 2013 was used to identify indigenous biodiversity in the Lower Kaituna River and Ongatoro/Maketu Estuary area for the purpose of identifying indigenous biodiversity in the Proposed Regional Coastal Environment Plan (pRCEP). This has not been acknowledged or addressed in the AEE Report. <u>**Continues on next Submission Sheet**</u>	Acknowledge in the consideration of the resource consent decisions and the confirmation / modification of the Notice of Requirement and by way of conditions that: a) Policy 11 of the NZCPS has been given regard to; and b) The proposed Regional Coastal Environment Plan is given appropriate regard and legal weight, particularly with regard to indigenous biodiversity.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 7**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
5 cont			**<u>Continued from previous Sheet</u>** The Statutory Assessments fail to adequately acknowledge consider and address: 3. The Proposed Regional Coastal Environment Plan (pRCEP). Paragraph 3 on p18 states: *'The Proposed Regional Coastal Environmental Plan was notified on 24th June 2014, The Council has resolved to delay the legal effect of the majority of the rules, and those few permitted activity rules not encompassed by the resolution are not relevant to the Project. Therefore, a rules assessment of the pRCEP is not required.'* TTLG submit that this is incorrect and not in accordance with s104 and s171 of the RMA which requires that regard must be given to a plan or proposed plan.	

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 8**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
6	Seek amended NoR conditions and amended RC conditions of consent for the Project.	**Part 3: Statutory Approvals Sought under the RMA; Section 3.3.1 NES / Contaminated Land (p21)**	**NES / Contaminated Land** TTLG disagree with the assessment that the NES is not applicable. With the area having been subject to extensive rural production activities combined with the volume of earthworks proposed, the proposed land uses changes and lack of historical information, we believe that at a minimum a Preliminary Site Investigation in accordance with the NES Regulations is required.	1. Carry out a Preliminary Site Investigation for the Project in accordance with the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS) and accompanying Users Guide by the Ministry for the Environment. 2. Acknowledge in the consideration of the resource consent decisions and the confirmation / modification of the Notice of Requirement and by way of conditions that compliance with the NESCS will be achieved through a Preliminary Site Investigation (PSI) and implementation of the recommendations of the PSI.
7	Qualified Support.	**Part 4: Description of the Environment; Section 4.2 General Location and Context (p23-24)**	**General Location and Context** The description of the Te Tumu Urban Growth Management Area (under the RPS) doesn't accurately reflect the regulatory context. *'The coastal sand dune country to the northwest of Te Tumu Cut is currently used for farming, but is zoned '**Future Urban'** by Tauranga City Council for future residential development in accordance with the Regional Policy Statement and SmartGrowth Strategy, as shown on Figure 5 below.'*	Acknowledge in consideration of the resource consent decisions and confirmation / modification of the Notice of Requirement the regulatory status of the Future Urban zoned Te Tumu area.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 9**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
8	Seek amended NoR conditions and amended RC conditions of consent for the Project.	**Part 4: Description of the Environment; Section 4.6.2 Erosion (p35-36)**	**Erosion from historical river diversions** There is no reference to the erosion that has resulted from historical diversions and artificial river cuts of the Lower Kaituna River and the potential for future erosion as a result of the Project. Lands owned by Ford Land Holdings Pty Ltd (FLH) have been subject to on-going erosion as a result of historical diversions and artificial river cuts of the Kaituna River as part of the Kaituna River Scheme. In particular, the area of active erosion which threatened parts of the bank of the 1981 artificial cut (creating Ford Island) creating a new course for the river flows was subject to an agreement between BoPRC and FLH relating to undertaking some limited protection work and ongoing maintenance in 2004. Accordingly a precautionary approach is required with regard to potential for erosion from the Project and monitoring, management and review conditions are proposed in the Resource Consents in this regard. This erosion is important in the context that both TTLG and FLH are concerned about the potential of the Project to create new erosion or further erode their lands.	Acknowledge in consideration of the resource consent decisions and confirmation / modification of the Notice of Requirement and by way of conditions the erosion that has resulted from historical diversions of the Kaituna River and the need for a precautionary approach with regard to potential for erosion from the Project and monitoring, management and review conditions are proposed in the Resource Consents and Notice of Requirement in this regard.

Name: Te Tumu Kaituna 11B2 Trust (TTK11B2) **Submission Sheet No: 10**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
9	Qualified Support	**Part 4: Description of the Environment; Section 4.10.2 Archaeological Sites (p41-42)**	**Te Tumu Pa Site** This section does not acknowledge the Environment Court decision on the Te Tumu Pa location. This is important with regard to the Project and Resource Consent and NoR Applications as the decision identified that the Te Tumu Pa most likely extended across to the eastern side of the Te Tumu cut. The script should read as follows (strikethrough and underline): *'The location of the culturally significant Ngai Te Rangi, Tapuika, Nga Potiki and Ngati Whakaue pa site of Te Tumu (V14/40) has recently been considered in the Environment Court in relation to appeals on the Tauranga City Plan (the boundary with WBoPDC being the Kaituna River).* *As a result of the Environment Court decision the description of the Te Tumu Pa in Appendix 7B of the Tauranga City Plan is:* *'An area associated with the remains of the Te Tumu Pa site and the battle of Te Tumu in 1836, located on the western banks at the mouth of the Kaituna River.* *Note: Areas associated with the Pa also extend across the Te Tumu Cut to the eastern banks of the mouth of the Kaituna River in the Western Bay of Plenty District.'*	Acknowledge in consideration of the resource consent decisions and confirmation / modification of the Notice of Requirement the correct Te Tumu Pa description.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 11**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
10	Seek amended NoR conditions and amended RC conditions of consent for the Project.	**Part 5: Description of the Project; Table 3: Construction Activities (p46-50)**	**Table 3: Construction Activities requires amendment to reflect the amended Project items sought in our Submission Point No3 above. The amendments include:** **1. Create Salinity Block and Provision of Vehicular Access in Ford's Loop** We seek that the project's Salinity Block construction is amended to also provide vehicular access between Ford Road and Ford Island as agreed between BoPRC and FLH. To assist in understanding the submission point we provide below a revision of the description as follows (strikethrough and underline); *'The existing channel (known as Ford's Loop) that feeds water from the river to the existing culverts will be closed to prevent the estuary filling with highly saline water. This closure ~~is~~ referred to as the "salinity block" will also be constructed to provide vehicular access between Ford Road and Ford Island (Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070). A permanent rock fill, up to mean spring tide level, will be placed at both the northern and southern ends of the salinity block / vehicular access to act as a containment bund with a crest level above spring high tides. At the southern end of the channel area a permanent, low height, rock fill toe will be pushed across the channel at approximately low tide level to provide containment. Weaker fill material will be placed in between the rock fill~~s *from the southern edge of the salinity block / vehicular access and rock fill toe at the southern end of the channel area to form a new wetland area, which will slope gently from north to south. ~~The northern rock fill will provide walking access to Ford Island[10] and the substrate of the new wetland.~~'* **Continues on next Submission Sheet**	Require as conditions in the resource consent decisions and in the confirmation / modification of the Notice of Requirement that the project includes the amendments sought in this submission point to 'Table 3 Construction Activities' (p46-50) in the AEE Report. Refer to **Attachment 1** to see the amendments sought above.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 12**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
10 cont			**Continued from previous Sheet** **2. Install new culverts (inlet structures)** We seek that the culverts across the new Ford's Cut channel and the existing culverts are increased in length to create a two lane vehicular crossing of the new Ford's Cut channel. With the proposed new boat ramp, lack of other boating access to the Kaituna River, the opening of the Tauranga Eastern Link in 2015 and planned urbanisation of the area TTLG believe that a single lane across the new Ford's Cut channel will create significant congestion and safety issues, particularly when it will provide access to the Coast Guard mooring and access for emergency services to get to the Te Tumu Cut carpark. To assist in understanding the submission point we provide below a revision of the first sentence of the description as follows (strikethrough and underline); *'21 new box culverts (2.5m high x 2.5m wide x length to suit two vehicular lanes for the Ford Road crossing of the new Channel / Ford's Cut) will be installed either side of the existing culverts beneath Ford Road. The existing culverts beneath Ford Road will also be extended in length to allow for a two lane vehicular crossing of the new channel.'* **Continues on next Submission Sheet**	

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 13**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
10 cont			**Continued from previous Sheet** **3. Construct New Re-diversion Channel – Rock Protection** We seek that the new diversion channel construction includes 'rip-rap' rock protection to the southern and western banks of Ford Island. To assist in understanding the submission point we provide below a revision of the last paragraph of the description as follows (strikethrough and underline); *'The excavated material will be used to construct the new stopbank (see above) and the remainder used as fill for the new car parking areas. The southern bank of the new channel and the southern and western banks of Ford Island will be lined with imported rock rip-rap, up to mean spring tide level. There will be a 5m wide berm between the top of the southern bank of the new channel and the northern toe of the new stopbank.'* **Continues on next Submission Sheet**	

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 14**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
10 cont			**<u>Continued from previous Sheet</u>** **4. Construct New Moorings, Parking Area and Boat Ramp** We seek that the construction and associated consents for new mooring / boat ramp embayment area allow: a) For ongoing maintenance dredging of the embayment area to provide an adequate depth for the ongoing use of the area by both the boats using the moorings and boat users using the boat ramp. b) For 'rip-rap' rock protection to the western banks of the new mooring / boat ramp embayment area. To assist in understanding the submission point we provide below a revision of the last paragraph of the description as follows (strikethrough and underline); *'Excavation of the river channel is required to provide adequate depth for the moorings <u>and boat ramp</u>, and will be undertaken over 2-3 days by a shore based excavator. Once completed the moorings <u>and boat ramp area</u> can be occupied for their uninterrupted use <u>and the depth of the boat ramp / mooring area will be maintained by maintenance dredging as necessary.</u>* *<u>The western banks on the new mooring / boat ramp embayment area will be protected from erosion by 'rip-rap' rock protection, up to mean spring tide level.</u>* *There will be temporary discharge of sediment to the river when the boat ramp is constructed, the channel is excavated, and during installation of wooden poles for the breakwater and the moorings.'*	

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 15**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
11	Support	**Part 6: Consideration of Alternatives; Section 6.2 Option and Evaluation Process (p55)**	**Option Assessment and Evaluation Process** TTLG support the option and evaluation process undertaken for the Project.	Acknowledge in the consideration of the resource consent decisions and confirmation / modification of the Notice of Requirement the option and evaluation process undertaken for the Project.
12	Seek amended NoR conditions and amended RC conditions of consent for the Project.	**Part 7: Consultation and Engagement; Section 7.2 Preliminary Phase and Section 7.3 Pre-Lodgement Phase (p61-63)**	**Te Tumu Landowners Group and Ford Land Holdings Pty Ltd (FLH) Consultation:** **Erosion Concerns** TTLG and FLH have extensively engaged with the applicant regarding their issues and concerns regarding the Project. Key amongst these concerns are potential erosion issues as a result of the Project. TTLG and FLH continue to experience erosion of their lands as a result of previous artificial river cuts and diversions of the Lower Kaituna River. This erosion is important in the context that both TTLG and FLH are concerned about the potential of the Project to create new erosion or further erode their lands. These concerns have been communicated to the Applicant and BoPRC on numerous occasions (including the Pre-Consent Consultation – Refer to **Attachment 3**) and TTLG and FLH are concerned this has not been noted in Sections 7.2 or 7.3 of the AEE Report.	Acknowledge in consideration of the resource consent decisions and confirmation / modification of the Notice of Requirement, and by way of conditions the erosion that has resulted from historical diversions of the Kaituna River and the need for a precautionary approach with regard to potential for erosion from the Project, and apply monitoring, management and review conditions in the Resource Consents and Notice of Requirement as for our Submission Point Nos 15,16,17,20 & 21.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 16**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
13	Seek an additional summary assessment and amended NoR conditions and amended RC conditions of consent for the Project.	**1. Part 8: Assessment of Effects; Section 8.2 Effects Identification (p65)** **2. Part 8: Assessment of Effects; Section 8.6 Shoreline erosion (p71-72)**	**Shoreline Erosion and River Bank Erosion** The potential erosion effects detailed in this section largely cover erosion effects within the Ongatoro / Maketu Estuary, with only limited mention of the potential for Lower Kaituna River bank and artificial cut erosion. There is no reference to the erosion that has resulted from historical diversions of the Kaituna River and the potential for future erosion from the Project. TTLG and FLH continue to experience erosion of their lands as a result of previous Kaituna River Diversions and artificial cuts. In particular, the area of active erosion which threatened parts of the bank of the 1981 artificial cut (creating Ford Island) creating a new course for the river flows was subject to an agreement between BoPRC and FLH relating to undertaking some limited protection work and ongoing maintenance in 2004. This erosion is important in the context that both TTLG and FLH are concerned about the potential of the Project to create new erosion or further erode their lands. This submission relates to the purposes and procedures of the Resource Management Act 1991, but it is otherwise without prejudice to all or any rights, claims, remedies, or entitlements which may arise under the Public Works Act 1981 or otherwise at common law.	1. Provide an additional summary assessment addressing our submission regarding Lower Kaituna River bank and artificial cut erosion. 2. Acknowledge in consideration of the resource consent decisions and confirmation / modification of the Notice of Requirement and by way of conditions, the erosion that has resulted from historical diversions of the Kaituna River and the need for a precautionary approach with regard to potential for erosion from the Project; and through conditions include monitoring, management and review conditions in the Resource Consents and Notice of Requirement as for our Submission Point Nos 15,16,17,20 & 21.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 17**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
14	Seek amended NoR conditions and amended RC conditions of consent for the Project.	**Part 8: Assessment of Effects; Section 8.12 Property (p83)**	**Ford Island Access** The Project will result in a loss of vehicular access to Ford Island. As agreed with the Applicant the proposed Salinity Block in the existing channel on the east side of Ford Island (known as Ford's Loop) will also be constructed to provide vehicular access between Ford Road and Ford Island To rectify this Section 8.12 should acknowledge as follows (underlined): *'To mitigate the loss of vehicular access to Ford Island for both the landowner and for future Project maintenance, the proposed Salinity Block in the existing channel on the east side of Ford Island (known as Ford's Loop) will also be constructed to provide vehicular access between Ford Road and Ford Island.'*	Acknowledge in the consideration of the resource consent decisions and confirmation / modification of the Notice of Requirement and by way of conditions that the project includes the construction of a combined 'salinity block' and vehicular access road from Ford Road to Ford Island (Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070).

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 18**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
15	Seek amended NoR conditions and amended RC conditions of consent for the Project.	**Part 9: Proposed Environmental Management & Monitoring; (p89-95)**	**Proposed Management & Monitoring - General** The Project is proposed to take place in a complex natural environment that is subject to a number of natural occurrences and natural hazards, a number of which are uncertain with regard to their frequency, duration and scale. Combined with surrounding land-use requirements, functions and impacts; and man-made impacts such as the Kaituna Catchment Control Scheme and discharges into both the river and estuary there is potential for changes made to the existing river and estuary to have unintended consequential effects. As such TTLG and FLH seek that a robust '**Operations, Monitoring, Maintenance and Management Plan'** for the Lower Kaituna River and Ongatoro/Maketu Estuary be developed and implemented as a key outcome if the Project. <u>**Continues on next Submission Sheet**</u>	Require as a condition of the resource consent decisions and confirmation / modification of the Notice of Requirement, the implementation of an: '**Operations, Monitoring, Maintenance and Management Plan** An Operations, Monitoring, Maintenance and Management Plan shall be prepared incorporating the following: 1. <u>An Operations and Maintenance Manual.</u> This shall include: a) Requirements similar to those detailed in the draft Resource Consent conditions (Nos 22-26– Schedule 1 in Appendix 3 of the Application AEE Report; with additional river bank and artificial cut erosion monitoring requirements. b) Emergency Management provisions with regard to flood management and the navigability of Te Tumu Cut. 2. <u>A Drainage and Flood Management Plan.</u> This shall include: a) A Drainage Report containing requirements similar to conditions 27-31 of draft RC Conditions. b) A Flood Management Report, including flood modelling updating requirements detailing responsibilities and the Project hydrodynamic / numerical model (by DHI) updating requirements. c) A Stakeholder and Agency Co-ordination Plan. <u>**Continues on next Submission Sheet**</u>

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 19**

Sub No	Support or Oppose	Submission Section & Particular Parts of the App'ns Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
15 cont			**Continued from previous sheet** **TTLG and FLH seek involvement in the development of this Plan.** The operations, monitoring and management system should at a minimum clearly identify: 1. The operational parameters of the Project. 2. What is to be monitored, 3. The extent (locations) and frequency of the monitoring, 4. Who will be responsible for the monitoring and associated reporting of the monitoring, 5. How the monitoring will be collated and reported and where and who it will be reported to. TTLG and FLH submit that the AEE lacks sufficient detail with regard to the monitoring and management for the Lower Kaituna River and Ongatoro/Maketu Estuary as part of the Project. This is particularly with regard to the monitoring of potential erosion and the responsibilities for the monitoring and coordination of monitoring activities with other processes and agencies involved in the Project area.	**Continued from previous sheet** 3. An Asset Management Plan. 4. A Wetland and Wetland Management Plan. This shall include: a) Requirements similar to conditions 32-36 of draft RC Conditions. b) Monitoring and maintenance responsibilities. 5. A Ford Road Boat Ramp and Boat Ramp Parking Management Plan. This shall include: a) Asset management requirements and responsibilities. b) Operational and maintenance requirements and responsibilities. The Boat Ramp and parking plan are to be administered by WBOPDC and can't be part of the application as a condition 6. Monitoring and Reporting Plan. Refer to Section 9.3 of the AEE and our Submission Point Nos 16 & 17. 7. Stakeholder Liaison and Reporting Plan. This shall detail the stakeholders and agencies that will be communicated with and reported to with regard to the ongoing operations, monitoring, maintenance and management for the Project.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 20**

Sub No	Support or Oppose	Submission Section & Particular Parts of the App'ns Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
16	Seek amended NoR conditions and amended RC conditions of consent for the Project.	**Part 9: Proposed Environmental Management & Monitoring; Section 9.3 Proposed Monitoring (p91-95)**	**Proposed Monitoring** Based on the current monitoring carried out in the Lower Kaituna River and Ongatoro/Maketu Estuary as detailed in Section 9.2 and the Proposed Monitoring detailed in Section 9.3 TTLG and FLH submit that the proposed monitoring detailed in Section 9.3 is inadequate in the following areas: 1. Kaituna River Flow and Flood monitoring. 2. Kaituna River bank erosion monitoring. 3. Kaituna River water quality monitoring. 4. Te Tumu Cut morphology monitoring. We further disagree with the statement under Natural Hazards: *'The potential for erosion on private land has been considered and appropriate measures are proposed so monitoring is not required.'* TTLG and FLH seek that: a) There is river bank monitoring of their lands – see **Attachment 2**, and b) Ford Island is protected from erosion around the southern and western sides – see **Attachment 1**. To assist in understanding this submission point please see below the inadequacies we have identified in Section 9.3 (strikethrough and underline): **Continues on next Submission Sheet**	Require as a condition of the resource consent decisions and confirmation / modification of the Notice of Requirement, the implementation of monitoring requirements that address our submissions. Refer to **Attachments 1 & 2** to see the amendments and requirements sought above.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 21**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
16 cont			**Continued from previous sheet** ***'Hydrodynamics / Morphology*** ▪ *changes to the overall hydrodynamics of the river and estuary from the additional volume of water* ▪ *Lower Kaituna River flows and flood levels* ▪ *Te Tumu Cut navigability and morphology* ▪ *Coastal morphology from 500m west of the Te Tumu Cut to Okurei Point* ▪ *water levels at the intake structure, in the lower river and in the estuary* ▪ *changes in flow into the Lower Kaituna Wildlife Management Reserve due to the diversion* ***Natural hazards*** ▪ *potential for scour to occur in the estuary in undesirable locations* ▪ *potential for Lower Kaituna River left (north) bank erosion from the Bell Road boat ramp to the Te Tumu Cut* ~~*The potential for erosion on private land has been considered and appropriate measures are proposed so monitoring is not proposed.*~~ ***Water quality*** ▪ *water quality in the Lower Kaituna River from the Waiari Stream to the Te Tumu Cut* ▪ *changes to nutrient concentrations within the estuary with additional nutrient rich river water entering the estuary impacts on bathing water suitability and shellfish collection at key sites within estuary changes to the overall salinities that will occur within the estuary.'*	

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 22**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
17	Seek amended NoR conditions and amended RC conditions of consent for the Project.	**Part 9: Proposed Environmental Management & Monitoring; Table 10: Proposed Monitoring / Management (p93-95)**	**Proposed Monitoring/Management** Based on the current monitoring carried out in the Lower Kaituna River and Ongatoro/Maketu Estuary as detailed in Section 9.2 and the Proposed Monitoring detailed in Section 9.3 TTLG and FLH submit that the proposed monitoring and management detailed in Table 10 is inadequate in the following areas: 1. It does not cover operations and management requirements with regard to flood management, wetland management, boat ramp and parking management and stakeholder liaison. 2. It does not allocate responsibilities. 3. Kaituna River Flow and Flood monitoring. 4. Kaituna River bank erosion monitoring. 5. Kaituna River water quality monitoring. 6. Te Tumu Cut morphology monitoring. 7. Hydrodynamic and Morphology monitoring of the Lower Kaituna River and Ongatoro/Maketu Estuary. This is critical monitor, assess and manage the impacts of the re-diversion and make adjustments to the Project, if required. To assist in understanding this submission point please see below the inadequacies we have identified in Table 10: 1. Include and complete 'Responsibility' and 'Reporting' columns for each section / attribute of Table 10. <u>**Continues on next Submission Sheet**</u>	Require as a condition of the resource consent decisions and confirmation / modification of the Notice of Requirement, the implementation of monitoring requirements that address our submissions as for our Table 10 amendment requests, items 1-7. Refer to **Attachment 2** to see the additional monitoring sought.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 23**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
17 cont			**Continued from previous sheet** 2. In 'Management' attribute / section: • Include and detail the requirement for an Operations, Monitoring, Maintenance and Management Plan as detailed in our Submission Point No 16 above on 'Proposed Management & Monitoring – General'. The Operations, Monitoring, Maintenance and Management Plan should include: i. An Operations and Maintenance Manual. ii. A Drainage and Flood Management Plan. iii. A Wetland and Wetland Management Plan. iv. A Ford Road Boat Ramp and Boat Ramp Parking Management Plan. v. A Monitoring and Reporting Plan. vi. A Stakeholder Liaison and Reporting Plan. • Management, Monitoring and Emergency Management Plan and Procedures to maintain Te Tumu Cut navigability. 3. In 'Water level/flows' attribute / section add sections to: • Install, operate and monitor telemetered water level and water flow recording devices at: i. Downstream of the Waiari Stream / Kaituna River confluence. ii. Upstream of the Diagonal Drain outlet into the Kaituna River. iii. At the proposed Ford Road Boat Ramp. • Monitor the Te Tumu Cut morphology and navigability. • Reporting of this data should occur 6 monthly. **Continues on next Submission Sheet**	

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 24**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
17 cont			**Continued from previous sheet** 4. In the 'Erosion' section include a section that details a requirement to survey: i. The Lower Kaituna River left (north) bank erosion from the Bell Road boat ramp to the Te Tumu Cut. This should include 'transect' surveys across the river as well as a continuous river bank survey. ii. The Lower Kaituna River right (south) bank erosion from the Diagonal Drain to Ford Island. iii. The Project diversion channel including the areas around Ford Island on the north side of channel. This should be a continuous river bank survey. iv. The northern, eastern and western Ford Island river banks. This should be a continuous river bank survey. 5. In the 'Water Quality' section include a section to provide additional water quality testing in the Lower Kaituna River at the following locations: i. Downstream of the Waiari Stream / Kaituna River confluence. ii. Upstream of the Diagonal Drain outlet into the Kaituna River. iii. At the proposed Ford Road Boat Ramp. 6. Include a new section to Table 10 called 'Hydrodynamics & Morphology' that includes and detailed requirements: i. To monitor the hydrodynamics and morphology changes to the Lower Kaituna River and Ongatoro/Maketu Estuary as a result of the Project through an annual Bathymetry survey, LiDAR survey and Aerial photography. ii. To calibrate and verify the Project Numerical Model on an annual basis using the Bathymetry, LiDAR and Aerial photography surveys carried out. 7. Include a requirement for all monitoring to be collated and reported on the BoPRC website for public viewing. Refer to **Attachment 2** to see the additional monitoring sought in Items 3, 4 & 5 above.	

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 25**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
18	Seek amended NoR conditions and amended RC conditions of consent for the Project.	**1. Part 10:Statutory Assessment; Section 10.2 Notice of Requirement (NoR) (p97-100) and Resource Consents and Appendix 2 – Relevant Objectives and Policies** **2. Part 10:Statutory Assessment; Section 10.3 Resource Consent Application (p100-103) and Appendix 2 – Relevant Objectives and Policies**	**NoR & Resource Consent Statutory Assessment** The Statutory Assessment of the NoR and Resource Consents in Sections 10.2 & 10.3 and Appendix 2 is incomplete and / or erroneous in a number of areas, for example: 1. <u>Section 10.2.2 & 10.3.4 National Policy Statements</u> a) The NZCPS Policy 10 assessment in Appendix 2 states that: *'The material to be used as fill has been tested and is suitable. In addition, will provide additional wetland habitat.'* The AEE contains no reference to any fill testing being carried out. This is also contrary to Section 3.3.1 (p21) of the AEE. b) The NZCPS Policy 11 assessment in Appendix 2 is in our opinion incomplete, in that the Wildland Report 2837 dated February 2013 was used to identify indigenous biodiversity in the Lower Kaituna River and Ongatoro/Maketu Estuary and this report was used for the purpose of identifying indigenous biodiversity in the Proposed Regional Coastal Environment Plan (pRCEP). This has not been acknowledged in the assessment. **<u>Continues on next Submission Sheet</u>**	1. Acknowledge in the consideration of the resource consent decisions and confirmation / modification of the Notice of Requirement, and by way of conditions that: a) Policy 10 of the NZCPS has been given regard to; b) Policy 11 of the NZCPS has been given regard to; and c) The proposed Regional Coastal Environment Plan is given appropriate regard and legal weight, particularly with regard to indigenous biodiversity 2. The provision of a Preliminary Site Investigation for the Project in accordance with the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS) and accompanying Users Guide by the Ministry for the Environment.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 26**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
18 cont			**Continued from previous sheet** 2. Section 10.2.3 & 10.3.2 National Environmental Standards This section states: 'There are no NES considered relevant to the proposed designation.' This is incorrect, refer to our Submission Point No 6. 3. Section 10.2.4 & 10.3.5 Regional Policy Statement This section and the corresponding assessment in Appendix 2 is not up to date as by the time the NoR Application was lodged the Proposed RPS Appeals had been significantly resolved, this is not accurately reflected or assessed. The last paragraph refers to the Proposed Regional Coastal Plan (pRCEP), however the AEE later states that no assessment has been carried out under the pRCEP. 4. Section 10.2.- & 10.3.6 Regional Plans There is no section or assessment of Regional Plans in the NoR Statutory Assessment, specifically the Regional Coastal Environment Plan, the Regional Water and Land Plan and the Proposed Regional Coastal Plan (pRCEP) as required under s171 of the RMA. Additionally Appendix 2 states that little weight should be applied to the pRCEP; for the reasons provided in our Submission Point No 5 we submit that this is incorrect.	

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 27**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Appl'ns Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Application Volume A – Assessment of Environmental Effects (AEE) Report			
19	Seek amended NoR conditions and amended RC conditions of consent for the Project.	**Part 11: Conclusion; (p109)**	**<u>Conclusion on AEE of Applications</u>** 1. The second last paragraph states that 'The potential adverse effects can be avoided, remedied, or mitigated through the design and construction of the Project, and through ongoing monitoring and contingency measures.' A key missing part of this statement is the ongoing management of the Project. 2. The last sentence states that the key RMA tests as contained in s104 and s107 of the RMA have been met. As noted in our Submission Point Nos 5 & 6 we submit that they haven't been met with regard to the NSCES and pRCEP.	Acknowledge in the consideration of the resource consent decisions and confirmation / modification of the Notice of Requirement and by way of conditions.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 28**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Form 18: Notice of Requirement (NoR) & Application Volume A – Appendix 3 Proposed Conditions			
20	Seek amended NoR conditions for the Project.	**Application Volume A – Appendix 3 Proposed Conditions**	1. The NoR Conditions do not include a Review Condition. **Continues on next Submission Sheet**	Amend the NoR conditions as follows: A. Add a Review Condition to the Notice of Requirement for Designation conditions as follows : *'1 The Western Bay of Plenty District Council may, once in any one year, on the five last working days of (specify Month),serve notice on the permit holder under S 128 of the Resource Management Act of its intention to review the conditions of this Designation. The purpose of such a review is :* *(a) to review the effectiveness of the conditions of this Designation in avoiding or mitigating any adverse effects on the environment and if necessary to avoid, remedy or mitigate such effects by way of further or amended conditions ;or* *(b) if necessary and appropriate, to require the holder of this Designation , to adopt the best practicable option to remove or reduce adverse effects on the surrounding environment due to activities authorised by this Designation and /or to require monitoring in addition to or instead of that required by the consents* 2. *The Regional Council Regulatory Division may within six months of completion of any impact, environmental investigation or compliance report carried out by either itself or the Drainage Division , that shows there is an adverse effect on the environment as a result of the Kaituna River Re-diversion and Ongatoro/Maketu Estuary Enhancement Project , serve notice on the Requiring Authority under section 128 (1) (a) (i) and /or (iii) of the Resource Management Act 1991 of its intention to review the conditions of this permit / Designation ,* 3. *The fair and reasonable costs associated with any review shall be recovered from the Requiring Authority* **Continues on next Submission Sheet**

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 29**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Form 18: Notice of Requirement (NoR) & Application Volume A – Appendix 3 Proposed Conditions			
20 cont		**Application Volume A – Appendix 3 Proposed NoR Conditions**	**<u>Continued from previous sheet</u>** 2. The NoR Conditions do not include any requirement for the ongoing operations, management or monitoring of the Project as is may affect the lands that would be designated. 3. Given the complexity of the project there should be a requirement for an Outline Plan to be submitted to Council prior to construction commencing showing compliance with the conditions applied to the Designation. 4. It is not clear in proposed Condition 3 who the relevant parties are and these should be nominated for clarity to all interested parties.	**<u>Continued from previous sheet</u>** <u>Amend the NoR conditions as follows:</u> B. Include a Condition that requires the preparation of an Operations, Monitoring, Maintenance and Management Plan by the Applicant together with stakeholders and submitters as for our Submission Point No 15. C. Delete proposed Condition 1. D. In proposed Condition 3 specify who the relevant parties will be. E. Include any other condition that reflects the contents of this submission.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 30**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Form 9: Application for Resource Consent (RC) & Application Volume A – Appendix 3 Proposed Conditions			
21	Seek amended RC conditions of consent for the Project.	**Application Volume A – Appendix 3 Proposed Conditions** **Schedule 1: General Conditions – All Resource Consents**	1. The Review Condition for the RC's requires amendment to reflect the requirement for a more precautionary approach to the future management of the water flows in the catchment. **Continues on next Submission Sheet**	1. Replace the Review Condition 7 for all of the Resource Consents as follows : *'1 The Bay of Plenty Regional Council Regulatory Division may, once in any one year, on the five last working days of (specify Month),serve notice on the permit holder under S 128 of the Resource Management Act of its intention to review the conditions of this permit. The purpose of such a review is:* *a) to review the effectiveness of the conditions of this permit / resource consent in avoiding or mitigating any adverse effects on the environment and if necessary to avoid, remedy or mitigate such effects by way of further or amended conditions ;or* *b) if necessary and appropriate, to require the holder of this permit / resource consent , to adopt the best practicable option to remove or reduce adverse effects on the surrounding environment due to activities authorised by this consent and /or to require monitoring in addition to or instead of that required by the permits / consents* *2. The Regional Council Regulatory Division may within six months of completion of any impact, environmental investigation or compliance report carried out by either itself or the Drainage Division , that shows there is an adverse effect on the environment as a result of the Kaituna River Re-diversion and Ongatoro/Maketu Estuary Enhancement Project , serve notice on the permit holder/ resource consent / Requiring Authority under section 128 (1) (a) (i) and /or (iii) of the Resource Management Act 1991 of its intention to review the conditions of this permit / resource consent ,* 3. *The fair and reasonable costs associated with any review shall be recovered from the consent holder* **Continues on next Submission Sheet**

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 31**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Form 9: Application for Resource Consent (RC) & Application Volume A – Appendix 3 Proposed Conditions			
21 cont	Seek amended RC conditions of consent for the Project.	**Application Volume A – Appendix 3 Proposed Conditions Schedule 1: General Conditions – All Consents**	**<u>Continued from previous sheet</u>** 2. The RC Conditions for the ongoing operations, management and monitoring of the Project require consolidating into an **Operations, Monitoring, Maintenance and Management Plan.**	**<u>Continued from previous sheet</u>** B. Include a Condition that requires the preparation of an Operations, Monitoring, Maintenance and Management Plan by the Applicant together with stakeholders and submitters as for our Submission Point No 15

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 32**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Resource Consent (RC) 1: Land Use Consent – Earthworks (s9 RMA) - Proposed Conditions			
22	Seek amended RC conditions of consent for the Project.	**Resource Consent 1: Land Use Consent – Earthworks (s9 RMA) - Proposed Conditions**	A. The Resource Consent description condition the Project Construction Plans do not include the following outcomes sought by TTLG and FLH, in our Submission Point No3, eg: 1. A two lane crossing of Ford Road over the widened channel. 2. The provision of vehicular access from Ford Road to Ford Island; Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070. B. The Resource Consent description condition does not include the carpark expansion areas which TTLG and FLH seek is consented for construction with the main carpark.	A. Add to the 'Description' condition the following works: 1. A two lane crossing of Ford Road over the widened channel. 2. The provision of vehicular access from Ford Road to Ford Island; Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070. B. Amend Item c) of the 'Description' condition as follows (underline): *'c) Realignment of Ford Road and carparking facilities, <u>including the area shown as expansion parking.</u>'* C. Amend the Project Construction Plans accordingly. Refer to **Attachment 1** to see the changes sought above.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 33**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Resource Consent (RC) 2: Coastal Permit (s12 RMA) - Proposed Conditions			
23	Seek amended RC conditions of consent for the Project.	**Resource Consent (RC) 2: Coastal Permit (s12 RMA) - Proposed Conditions**	The Resource Consent description condition and the Project Construction Plans do not include the following outcomes sought by TTLG and FLH, in our Submission Point No3, eg: 1. A two lane crossing of Ford Road over the widened channel, requiring the no of box culverts doubled to 42 and additional box culverts on the east side of the existing Ford's Twin Cut culverts. 2. The provision of vehicular access from Ford Road to Ford Island; Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070. 3. Additional 'rip-rap' lining of the channel edges on the south and west sides of Ford Island and the western bank of the mooring / boat ramp embayment to provide erosion protection. **<u>Continues on next Submission Sheet</u>**	Amend the 'Description' condition and the Project Construction Plans as follows (strikethrough and underline): *1. 'The construction of structures shall be limited to the following:* *a) 21 box culverts and associated concrete aprons of a length to suit two vehicular lanes for the Ford Road crossing of the new Channel / Ford's Cut* *b) <u>increase the length of the existing channel box culverts</u> to suit two vehicular lanes for the Ford Road crossing of the new Channel / Ford's Cut* *c) rip-rap lining of channel edges<u>, including the south and west edges of Ford Island and the western bank of the mooring / boat ramp embayment up to mean spring tide level</u>* *d) public boat ramp and temporary mooring jetty* *e) two wooden jetties and gangways* *f) wooden pole breakwater* *g) salinity block <u>and Ford Island access road</u>, rock protection <u>and northern</u> and southern toe rock and ramp <u>up to mean spring tide level</u>* *h) <u>The provision of vehicular access from Ford Road to Ford Island; Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070</u>* *i) footbridge* *As shown on the Construction Plans (Drawing No. 2-1542-115-6235, Sheets 1 to 20) which form part of this consent.* **<u>Continues on next Submission Sheet</u>**

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 34**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Resource Consent (RC) 2: Coastal Permit (s12 RMA) - Proposed Conditions			
23 cont			**<u>Continued from previous sheet</u>** 4. Construction and maintenance dredging of the boat ramp embayment area.	**<u>Continued from previous sheet</u>** *2. The taking, diverting and damming of coastal water shall be limited to the following:* *a) to divert water to enable construction* *b) to take water in order to dewater during installation of the culverts* *c) the damming of coastal water or open coastal water for construction purposes (sheet piles)* *d) Dredging <u>(including ongoing maintenance dredging)</u> of ~~channel to provide adequate depth for~~ the <u>boat ramp and mooring embayment areas to provide adequate depth</u> for the 2 moorings and operation of the boat ramp.* Refer to **Attachment 1** to see the changes sought above.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 35**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Resource Consent (RC) 3: Coastal Permit - Reclamation (s12 RMA) - Proposed Conditions			
24	Seek amended RC conditions of consent for the Project.	**Resource Consent 3: Coastal Permit - Reclamation (s12 RMA) - Proposed Conditions**	The Resource Consent description condition and the Project Construction Plans do not include the outcomes sought by TTLG and FLH, in our Submission Point No3, in relation to the provision of vehicular access from Ford Road to Ford Island; Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070.	Amend the 'Description' condition and the Project Construction Plans as follows (strikethrough and underline): 2. *'The reclamation of foreshore and seabed in the coastal marine area shall be limited to the following:* a) *placement of fill to form the salinity block and vehicular access from Ford Road to Ford Island; Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070 ~~between Ford Road and Ford Island~~'* Refer to **Attachment 1** to see the changes sought above.
	Detailed Submissions: Resource Consent (RC) 4: Land Use Consent – Rock Protection Works (s13 RMA) - Proposed Conditions			
25	Seek amended RC conditions of consent for the Project.	**Resource Consent 4: Land Use Consent – Rock Protection Works (s13 RMA) - Proposed Conditions**	The Resource Consent description condition the Project Construction Plans do not include the following outcomes sought by TTLG and FLH, in our Submission Point No3, eg: 1. The provision of vehicular access from Ford Road to Ford Island; Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070. 2. Additional rock protection / 'rip-rap' lining of the channel edges on the south and west sides of Ford Island to provide erosion protection.	Amend the 'Description' condition and the Project Construction Plans as follows (strikethrough and underline): 2. *'The construction of structures shall be limited to the following:* a) *Rock protection works along the proposed channel, including the south and west edges of Ford Island up to mean spring tide level;* b) *A culvert at Lower Kaituna Wildlife Management Reserve* c) *Rock protection works up to mean spring tide level to form the salinity block and vehicular access from Ford Road to Ford Island; Pt Sec 3 BlkVI Te Tumu SD: CFR SA3A/1070'* d) *Rock protection works up to mean spring tide level to the western bank of the boat ramp and mooring embayment area.* Refer to **Attachment 1** to see the changes sought above.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 36**

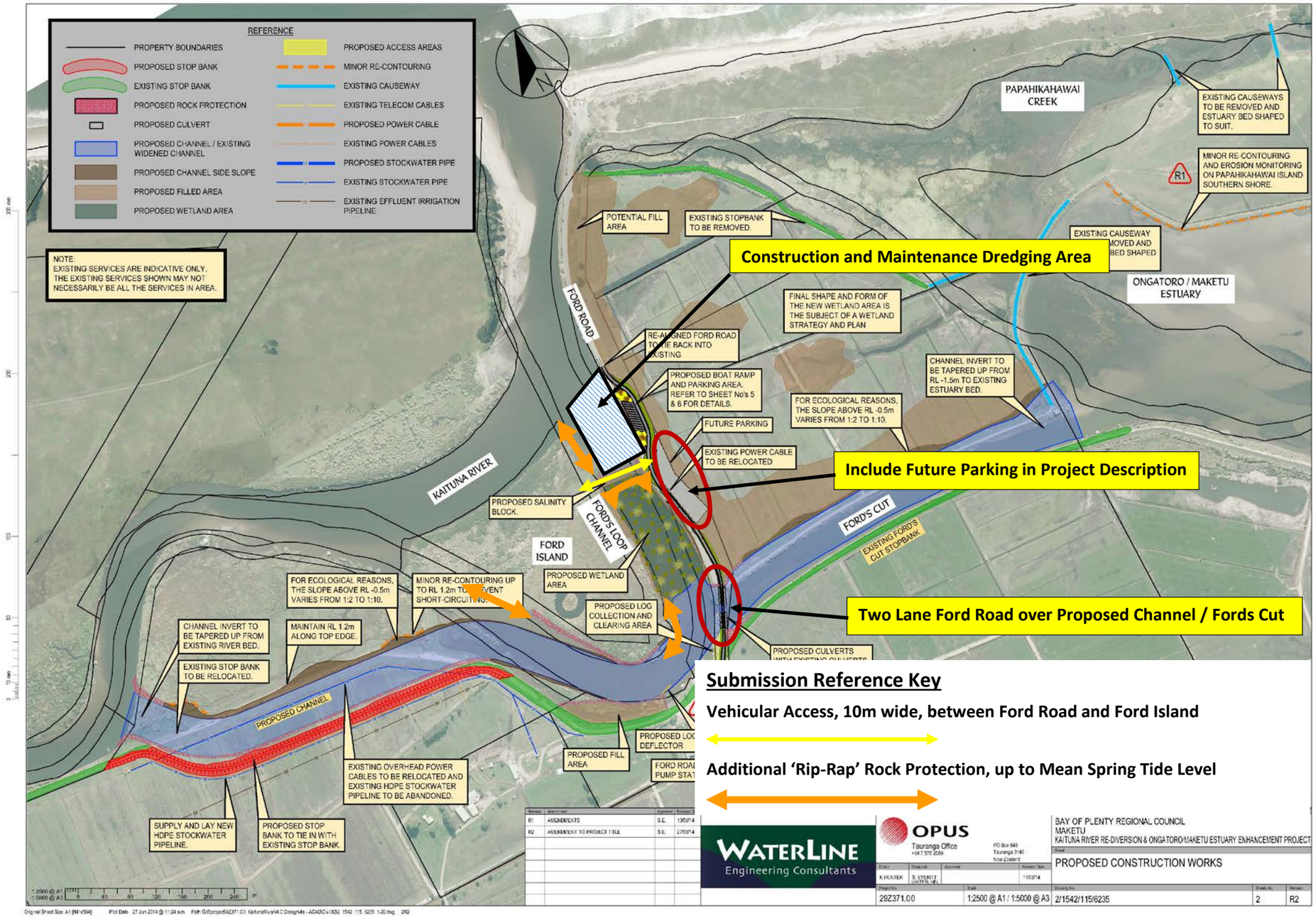
Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Resource Consent (RC) 5: Water Permit (s14 RMA) - Proposed Conditions			
26	Seek amended RC conditions of consent for the Project.	**Resource Consent 5: Water Permit (s14 RMA) - Proposed Conditions**	The Resource Consent monitoring condition requirements are inadequate in the following areas: 1. They not cover operations and management requirements with regard to flood management, wetland management, boat ramp and parking management and stakeholder liaison. 2. They do not allocate responsibilities. 3. They do not adequately provide for Kaituna River Flow and Flood monitoring. 4. They do not adequately provide for Kaituna River bank erosion monitoring. 5. They do not adequately provide for Kaituna River water quality monitoring. 6. They not cover Te Tumu Cut morphology monitoring. 7. They do not provide for Hydrodynamic and Morphology monitoring of the Lower Kaituna River and Ongatoro/Maketu Estuary. This is critical monitor, assess and manage the impacts of the re-diversion and make adjustments to the Project, if required. **Refer to our Submission Point Nos15, 16 &17**	Amend the 'Monitoring' condition to address the shortcomings detailed in our Submission Point Nos 15, 16 &17. Refer to **Attachment 2** to see the additional monitoring sought.

Name: Te Tumu Landowners Group (TTLG) **Submission Sheet No: 37**

Sub No	Support or Oppose	Submission Section & Particular Parts of the Applications Supported or Opposed	Reasons for Support or Opposition	Request / Decision Sought
	Detailed Submissions: Resource Consent (RC) 6: Discharge Permit (s15 RMA) - Proposed Conditions			
27	Seek amended duration for this resource consent.	**Resource Consent 6: Discharge Permit (s15 RMA) - Proposed Conditions**	The Duration of this resource consent for discharges from construction activities is too long at 35 years.	Amend the Duration of this resource consent for discharges from construction activities 10 years.

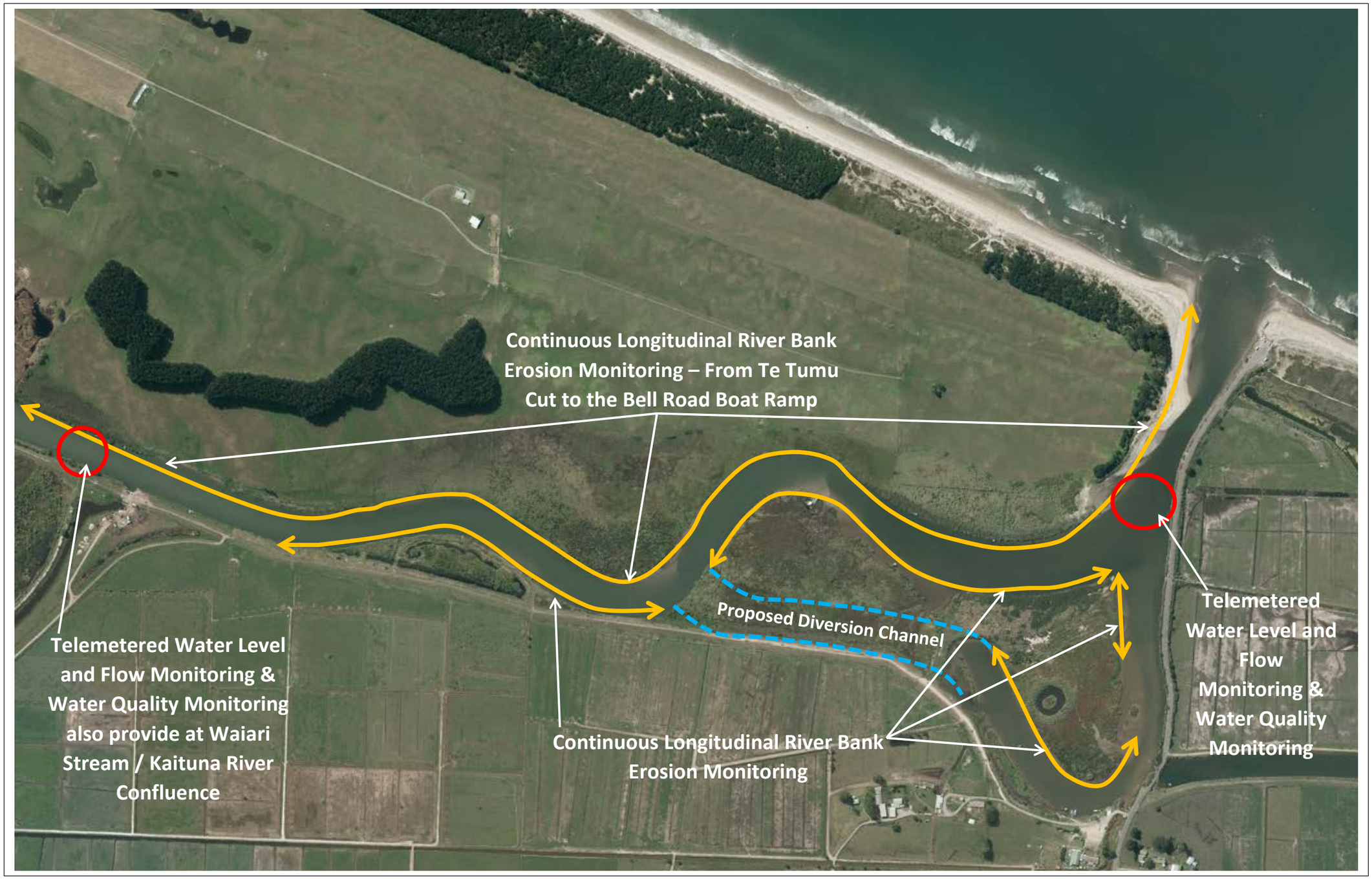
Attachment 1

Te Tumu Landowners Group (TTLG) Submission - Plan 1: Additional Project Works



Attachment 2

Te Tumu Landowners Group (TTLG) Submission - Plan 2: Additional Project Monitoring



Attachment 3

Te Tumu Landowners Group (TTLG) Submission - Pre-Consent Consultation Feedback

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20 June 2013

Te Tumu Landowners Group

Kaituna River Re-Diversion and Wetland Creation Project

Pre-Consent Consultation Feedback

1. Introduction

The proposed Kaituna River Re-Diversion and Wetland Creation Project ('the Project') is a significant project for the Bay of Plenty both in terms of the benefits sought, the potential consequential benefits and outcomes and the potential consequential risks and issues associated with 'the Project'.

The Te Tumu Landowners Group (TTLG) feedback is centred on:

(a) Taking into account the wider operating and natural environment and a wide range of potential consequential issues and risks.

(b) Taking into account current and future activities and processes.

(c) Taking into consideration the land uses changes that will occur in the lower Kaituna River area over the next 50+ years, the impact of 'the Project' will have on these land use changes and the potential for 'the Project' to take into account these land use changes to provide wider long term benefits.

The Te Tumu Landowners Group seek that their feedback is taken into consideration in both the proposed hydrological and hydraulic modeling and the resulting Assessment of Environmental Effects (AEE).

2. Future Urbanisation of Te Tumu and Rangiuru

The pre-consent consultation feedback information provided provides no recognition of the significant changes that will occur in the area (upstream to the new TEL Kaituna River bridge, if not to the existing SH2 Kaituna River bridge) with the urbanisation of Wairakei, Te Tumu and Rangiuru.

TTLG submit that:

- 'The Project' needs to consider the implications and requirements of the significant growth that will occur in the area over the next 50+ years, with the population for Papamoa and Papamoa East predicted to increase by 40,000 in this time period.
- Water based commercial and recreational based requirements and opportunities need to be considered and provided for, particularly safe ocean access through the Te Tumu Cut.
- Consideration of Tauranga City Council's proposed variation to the Papamoa Comprehensive Stormwater Consent is required.

3. Current and Future Activities and Processes

The information provided does not recognise, acknowledge or consider the following current and future activities and processes:

(a) **The Kaituna River Authority**

The establishment of a new statutory body called Te Maru o Kaituna ("**the Kaituna River Authority**") as part of the Tapuika Treaty Settlement.

We understand that the Kaituna River Authority will be formed following the Tapuika Treaty Settlement being enacted through legislation in the next 6-12 months.

As identified in the Tapuika Treaty Settlement:

*"The Kaituna River Authority will prepare and approve a document for the Kaituna River ("**Kaituna River Document**") [building on the current Kaituna River and Ongatoro/Maketu Estuary Strategy].*

5.59 The purpose of the Kaituna River Document is to:

5.59.1 Encourage the restoration, protection and enhancement of the environmental, cultural and spiritual wellbeing of the Kaituna River;

5.59.2 Provide, as appropriate, for the social and economic wellbeing of people and communities;

5.59.3 Identify the significant issues for the Kaituna River; and

5.59.4 Identify the vision, objectives and desired outcomes for the Kaituna River."

The Kaituna River Document will significantly influence the future changes and management of the Kaituna River – particularly the Lower Kaituna River.

While 'the Project' proposal and actions are likely to have some alignment with the future Kaituna River Document, it is important that 'the Project' does not pre-empt or head in directions that may be different to those to be developed.

(b) **The Kaituna Catchment Control Scheme (KCCS)**

The KCCS manages a significant area of 1,250 square kilometers which includes large areas of valuable dairy land which provides a significant contribution to the regional economy; and via a targeted rate scheme manages the potential flood and drainage impacts on this land.

Considerable investment has and continues to be made in this scheme and needs to be considered with regard to the potential impacts of 'the Project', particularly in terms of pump station management.

(c) **The Lower Kaituna Wildlife Management Reserve (LKWMR)**

The LKWMR is a significant remnant wetland reserve of approximately 230ha which through the Tapuika Treaty Settlement will be vested into a governance entity and then gifted back to the Crown.

The current administrator, the Department of Conservation, in association with Eastern Fish and Game have created a notable game shooting /bird watching recreational area and have draft management plans to convert pastoral lease back into wetland. All of this is dependent on water supply from the river and the proposed Kaituna River Re-Diversion needs to confirm the future water supply regime to this reserve.

(d) **Exiting Wastewater Discharges into the Lower Kaituna River**

There are two existing wastewater discharges into the Lower Kaituna from:

(i) The Te Puke Wastewater Treatment Plant, and

(ii) The Affco Rangiuru facility,

which contribute to the water quality environment of both the Lower Kaituna and Maketu/Ongatoro Estuary.

The Resource Consents for these discharges will come up for renewal in the next 3-7 years.

From a water quality perspective (see below) these are significant considerations which have not been addressed in the pre-consent documentation.

4. Recreation

   'The Project' pre-consent documentation provides little recognition or acknowledgement of opportunities for water based recreation (with the exception of shore based fishing) particularly in the context of the future population of the area that will come as a result of the urbanisation of Wairakei, Te Tumu and Rangiuru.

   In addition to shore based fishing and white baiting, recreational opportunities for the lower Kaituna River and Maketu/Ongatoro Estuary include:

   - Swimming,
   - Boating,
   - Kayaking / Canoeing,
   - Rowing,
   - Waka ama,
   - Rafting, and
   - Sailing.

5. Ocean Access

   Potential issues with regard to access to the ocean from both the Te Tumu entrance and Maketu/Ongatoro entrance have been acknowledged, however the proposals for 'the Project':

   (a) Need to address these access points to the ocean which will be required in the future for recreational, commercial and emergency access requirements.
   (b) Need to robustly address the potential morphological effects of the change in flow patterns, particularly the possibility of a progressive reduction over time of the capacity of the Te Tumu Cut, and consequent effects on navigability and flood capacity (and hence flood levels upstream).

   There are already very limited access opportunities to the ocean in the Western Bay of Plenty sub-region and consideration to improving this access as part of 'the Project' and acknowledgement of the demand for marine based recreational facilities and access for marine based recreation is required.

   Also not acknowledged or addressed is the existing Bell Road boat ramp and potential impacts on it.

6. Flooding

   The potential flooding risks of 'the Project' require careful consideration and detailed hydrological and hydraulic modeling.

   Flooding issues and risks to be considered include:

   - Increased flooding risk to the low lying TTLG and other private land on the north side of the Lower Kaituna River. This land is not stop banked.
   - Increased flooding risk to Ford Island – also not stop banked.
   - Increased flooding risk to Maketu township and the surrounding low lying areas.
   - Impact on the level of protection provided by the existing Kaituna River stopbanks and associated Kaituna Catchment Control Scheme works.
   - Impact on the Lower Kaituna Wildlife Management Reserve.
   - Impact on the Bell Road boat ramp.
   - Impact on existing and proposed infrastructure including the Tauranga Eastern Link (TEL), the TEL Kaituna River Bridge, the Kaituna Link and the Bell Road Pump Station.
   - The frequency of discharges from Lake Rotoiti via the Okere Gates. These are likely to coincide with heavy rainfall events in the Lower Kaituna River; and the resultant downstream high river levels combined with Lake Rotoiti discharges can cause downstream flooding as was the case in 2007 when the Bell Road boat ramp went under water.
   - The impact of storm surges and king tides on the river and associated flooding risks.
   - Climate change considerations.

7. Erosion

   'The Project' pre-consent documentation identifies potential erosion issues which will require further careful consideration through detailed hydrological modeling.

   Erosion issues and risks include:

   - Increased erosion risk to the low lying TTLG land on the north side of the Lower Kaituna River. This land is not stop banked.
   - Ongoing erosion to the Ford Land Holdings land that resulted from the Kaituna River works in the early 1980's that created Ford Island. Hard walling of this area is required.
   - Erosion of Ford Island – this has eroded considerably in the last 25+ years and will require hard walling.
   - Erosion impacts within the Maketu/Ongatoro Estuary particularly the protected spit area and associated channels.
   - Increased erosion of the Kaituna River stopbanks.

8. Water Quality / Salinity / Ecology

'The Project' pre-consent documentation identifies that one of the risks associated with the project is that water in parts of the estuary may have slightly higher levels of bacterial contamination. This is a concern, with one of the key benefits of 'the Project' noted as being improving habitat for kaimoana.

Improving the river and estuary water quality should be a primary consideration with regard to the project as without this the key project actions of improving the ecology of the estuary, improving habitat for kaimoana and enabling swimming will be compromised.

In this context there is no mention in 'the Project' pre-consent documentation with regard to initiatives to address the Lower Kaituna River water quality issues.

We seek that consideration be given to prioritising the improvement of the Lower Kaituna water quality and carrying out further research into the impact of the current Lower Kaituna water quality on the health of estuary as a result of the increased flows into the estuary proposed through 'the Project'.

We note that the two re-diversion options are centred on getting as much freshwater into the estuary as possible.

We understand that the saltwater 'wedge' extends approximately 1km upstream and we would like the hydrological modeling to provide further detail with regard to the expected increase in the additional amount of freshwater and saltwater expected to enter the estuary as both a total and as a percentage of total estuary freshwater and saltwater per tidal cycle.

Additionally the impact on the saltwater 'wedge' needs to be considered with regard to changes that may affect the ecology, fauna and flora and recreational fishing (including white baiting) environment of the Lower Kaituna River.

The Maketu/Ongatoro Estuary contains:

- A wildlife reserve,
- Significant ecological areas,
- Areas of High Natural Character, and
- Areas with high landscape values,

It will be important to understand the potential impacts (positive and negative) of 'the Project' on the estuary ecology and associated values (as detailed above). We seek that this is investigated.

9. Cultural Heritage and Historic Heritage Considerations

The Lower Kaituna River and Maketu/Ongatoro Estuary has considerable cultural heritage and historic heritage significance, both Maori and European, which has been given little recognition in 'the Project' pre-consent documentation.

A considerable amount of historical information was provided as part of the Kaituna / Maketu Strategy development through the History Focus Group.
Through this Focus Group the following Iwi/Hapu and the Ford Family produced History Reports / Publications:

- Waitaha,
- Tapuika,
- Ngati Whakaue ki Maketu,
- Ngati Pikiao.

These reports / publications provide a valuable cultural and historic record of the Lower Kaituna River and Maketu/Ongatoro Estuary area, which requires recognition and consideration with regard to 'the Project'.

The significant history of the area is also well documented in the following books:

- Te Arawa: A History of the Arawa People – Don Stafford.
- Historic Maketu – Enid Tapsell.
- A History of Tauranga County – Evelyn Stokes.
- The Story of Te Waharoa: A Chapter in Early New Zealand History; Together with Sketches of Ancient Maori Life and History – J.A. Wilson.
- The Journal of Ensign Best, 1837-1843 – N.M. Taylor.

10. Morphological Impacts

'The Project' pre-consent documentation identifies uncertainties with regard to impacts on the lower estuary and Te Tumu Cut morphology.
The morphological impacts to both the river and coastline also need to be considered and our expectation is that these impacts will be considered as part of the detailed hydrological and hydraulic modeling to be carried out.
The coastal morphology changes are likely to impact the navigability of the both the Te Tumu entrance and Maketu/Ongatoro entrance.

11. Possible Refinements

We note under paragraph 5.4 (p14) of the Scoping Report for the AEE that there are a number of possible refinements, however it is unclear whether these will be included in the hydrological and hydraulic modeling to be carried out.

We seek that these refinements are included in the proposed hydrological and hydraulic modeling.

With regard to climate change effects we do not see this as a possible refinement; this should be part of the overall key considerations for 'the Project'.

12. Cost of The Project

There is no mention on the capital cost of 'the Project' and how 'the Project' will be funded (eg rates funded?).

This will be an important consideration moving forward from a community and community engagement perspective and we seek that 'the Project' costs are provided, for both the investigation, design and consenting stage and for its construction.

13. Consultation

As noted above 'the Project' is significant for the region both in terms of the benefits sought, the potential consequential benefits and outcomes and the potential consequential risks and issues.

In this context we seek that a comprehensive consultation process is developed and carried out.

We would see the stakeholders and groups to be included in this process to include:

- All Iwi and hapu located within the Kaituna River and Maketu/Ongatoro Estuary catchment area.
- Landowners and landowner groups adjoining the Kaituna River and within the Lower Kaituna River Catchment area.
- Ratepayers to the Kaituna Catchment Control Scheme.
- Community groups within the Kaituna River and Maketu/Ongatoro Estuary catchment area.
- Environmental groups within the Kaituna River and Maketu/Ongatoro Estuary catchment area.
- Recreational users of Kaituna River and Maketu/Ongatoro Estuary including recreational fishers, white baiters and 'boaties'.
- Commercial users Kaituna River and Maketu/Ongatoro Estuary.
- Emergency and Civil Defence users and authorities eg Maketu Coast Guard.
- Infrastructure providers including NZTA.

- The Western Bay of Plenty SmartGrowth Strategy Partnership, and
- Territorial Authorities within the Kaituna River and Maketu/Ongatoro Estuary catchment area.

Appendix 12 – Submission Summary

Bay of Plenty Regional Council Resource Consent RC68114

Western Bay of Plenty District Council NoR RC5080(L)

Resource Consent Applications 68114 and Notice of Requirement RC5080
Kaituna River Re-Diversion and Ongatoro / Maketu Estuary Enhancement Project
Summary of Submissions – Boat Ramp Proposal

Sub No	Name	Address	Resource Consent / NoR	Support/ Oppose	To be Heard?	Decision Sought	Comments
001	Rex BEER	197A State Highway 30, RD4, ROTORUA 3074	Resource Consent	Support	N	That resource consent is granted.	• Submitter is a user of both the Maketu and the Ford Road boat ramps. • Considers that the existing boat ramp at Ford Road is in poor condition, is too steep and the concrete does not extend far enough out for low tide launching. • Suggests that the jetty be replaced with a floating pontoon. • Considers that there is merit in deepening the water at the Maketu boat ramp and channel.
002	Te Runanga o Ngati Whakaue ki Maketu Maria HORNE	Postal Delivery Agency Maketu, MAKETU 3138	Resource Consent	Support	Y	Seeks that resource consent is granted and funding allocated and subject to the following condition: 1. That cultural monitors be present during earthworks activities.	• Submitter represents the local hapu in Maketu/Te Tumu and the project is within hapu boundaries. • Current state of the boat ramp is not suitable for constant use. • Members of the hapu use the ramp.
003	Powerco Limited Georgina McPHERSON	Burton Planning Consultants Limited PO Box 33-817, Takapuna, AUCKLAND 0740	Both	Neutral	Y	Seeks conditions on the resource consent and Notice of Requirement that: 1. Require the provision of a Network Utility Management Plan that addresses the safety, integrity, protection and, where necessary, relocation of Powerco's assets; or 2. Include an outcome-focused	• Submitter is a gas and electricity distributor, with assets/infrastructure within and adjacent the Project area. • Concerned that the Project has not adequately considered potential effects on Powerco assets in the AEE and proposed conditions.

Sub No	Name	Address	Resource Consent / NoR	Support/ Oppose	To be Heard?	Decision Sought	Comments
						condition requiring the maintenance of a secure electricity supply to customers during the period of works.	
004	Western Bay of Plenty District Council Marc FAUVEL	Private Bag 12803, TAURANGA 3143	Both	Support	Y	That the resource consent applications be granted and the confirmation of the Notice of Requirement be recommended, subject to the following: 1. The establishment of a contact protocol between a suitable representative of the Applicant and Western Bay of Plenty District Council's Reserves and Facilities Department. 2. Due recognition is given to the loss of land in the form of a formal agreement, with costs (if any) borne by the Applicant. 3. 20m wide proposed esplanade strips are indicated along both of the proposed river banks within the District Plan.	• Submitter is making submission in their capacity as both an affected landowner and as a Local Authority. • Has road and recreation assets within the wider Project Area (Ford Road and the Kaituna Sand Spit Recreation Reserve); • Supports the proposed designation as it will enhance public access to the coastal environment. • Has been consulted by the Applicant regarding future operation and maintenance of the boat ramp and jetty. • Seeks to ensure that its ongoing land management interests are suitably integrated. • Strip of recreation reserve vested in the Submitter located alongside the diversion site will be altered by the Wider Project.

Sub No	Name	Address	Resource Consent / NoR	Support/ Oppose	To be Heard?	Decision Sought	Comments
							• Seeks that 20m wide esplanade reserves/strips are identified along both sides of the River bank.
005	Ford Land Holdings Pty Limited C/- Jeff FLETCHER	PO Box 13428, TAURANGA 3141	Both	Support (conditional)	Y	That the resource consent applications be granted and the confirmation of the Notice of Requirement be recommended, subject to conditions requiring the following: 1. That rip-rap rock protection is provided up to mean high tide level along the northern, southern and western edges of Ford Island and on the opposing true left bank of the River (as created by the 1981 diversion); 2. Include a section 128 'review condition' on the NoR and the resource consent; 3. Include conditions on the NoR and resource consent that are the same as those for the NoR and resource consent for the Wider Project on pre-construction, hazardous substances/spill contingency, complaints, construction environmental management plan, traffic management plan,	• Submitter is part of a group of landowners who own land adjoining the Project area that is zoned for future urban development. • Agree that a single land road across the new re-diversion channel/Ford's cut is sufficient given the proposed location of the boat ramp. • Concerned about potential erosion effects on the northern, southern and western edges of Ford Island and the true left bank of the River (as created by the 1981 diversion) both due to increased boat wash associated with the Boat Ramp Proposal and also associated with the re-diversion channel proposed as part of the Wider Proposal. • Notice of Requirement and resource consent should include a 'review condition'. • Conditions are not the same as those for the Wider Project.

Sub No	Name	Address	Resource Consent / NoR	Support/ Oppose	To be Heard?	Decision Sought	Comments
						operation and maintenance manual, wetland plan and monitoring/sampling programmes and reporting; and 4. The submission of an Outline Plan for all works / delete the NoR condition that provides an ability for an Outline Plan waiver.	• Complexity of project should require the provision of an Outline Plan of works.
006	Te Tumu Kaituna 11B2 Trust C/- Jeff FLETCHER	PO Box 13428, TAURANGA 3141	Both	Support (conditional)	Y	That the resource consent applications be granted and the confirmation of the Notice of Requirement be recommended, subject to conditions requiring the following: 1. Include a section 128 'review condition' on the NoR and the resource consent; 2. Include conditions on the NoR and resource consent that are the same as those for the NoR and resource consent for the Wider Project on pre-construction, hazardous substances/spill contingency, complaints, construction environmental management plan, traffic management plan, operation and maintenance	• Submitter is part of a group of landowners who own land adjoining the Project area that is zoned for future urban development. • Agree that a single land road across the new re-diversion channel/Ford's cut is sufficient given the proposed location of the boat ramp. • Notice of Requirement and resource consent should include a 'review condition'. • Conditions are not the same as those for the Wider Project. • Complexity of project should require the provision of an Outline Plan of works.

Sub No	Name	Address	Resource Consent / NoR	Support/ Oppose	To be Heard?	Decision Sought	Comments
						manual, wetland plan and monitoring/sampling programmes and reporting; and 3. The submission of an Outline Plan for all works / delete the NoR condition that provides an ability for an Outline Plan waiver.	
007	Te Tumu Kaituna 14 Trust C/- Jeff FLETCHER	PO Box 13428, TAURANGA 3141	Both	Support (conditional)	Y	That the resource consent applications be granted and the confirmation of the Notice of Requirement be recommended, subject to conditions requiring the following: 1. Include a section 128 'review condition' on the NoR and the resource consent; 2. Include conditions on the NoR and resource consent that are the same as those for the NoR and resource consent for the Wider Project on pre-construction, hazardous substances/spill contingency, complaints, construction environmental management plan, traffic management plan, operation and maintenance manual, wetland plan and	• Submitter is part of a group of landowners who own land adjoining the Project area that is zoned for future urban development. • Agree that a single land road across the new re-diversion channel/Ford's cut is sufficient given the proposed location of the boat ramp. • Notice of Requirement and resource consent should include a 'review condition'. • Conditions are not the same as those for the Wider Project. • Complexity of project should require the provision of an Outline Plan of works.

Sub No	Name	Address	Resource Consent / NoR	Support/ Oppose	To be Heard?	Decision Sought	Comments
						monitoring/sampling programmes and reporting; and 3. The submission of an Outline Plan for all works / delete the NoR condition that provides an ability for an Outline Plan waiver.	
008	Te Tumu Landowners Group C/- Jeff FLETCHER	PO Box 13428, TAURANGA 3141	Both	Support (conditional)	Y	That the resource consent applications be granted and the confirmation of the Notice of Requirement be recommended, subject to conditions requiring the following: 1. That rip-rap rock protection is provided up to mean high tide level along the northern, southern and western edges of Ford Island and on the opposing true left bank of the River (as created by the 1981 diversion); 5. Include a section 128 'review condition' on the NoR and the resource consent; 6. Include conditions on the NoR and resource consent that are the same as those for the NoR and resource consent for the Wider Project on pre-construction, hazardous	• Submitter is part of a group of landowners who own land adjoining the Project area that is zoned for future urban development. • Agree that a single land road across the new re-diversion channel/Ford's cut is sufficient given the proposed location of the boat ramp. • Concerned about potential erosion effects on the northern, southern and western edges of Ford Island and the true left bank of the River (as created by the 1981 diversion) both due to increased boat wash associated with the Boat Ramp Proposal and also associated with the re-diversion channel proposed as part of the Wider Proposal. • Notice of Requirement and resource consent should include a

Sub No	Name	Address	Resource Consent / NoR	Support/ Oppose	To be Heard?	Decision Sought	Comments
						substances/spill contingency, complaints, construction environmental management plan, traffic management plan, operation and maintenance manual, wetland plan and monitoring/sampling programmes and reporting; and 7. The submission of an Outline Plan for all works / delete the NoR condition that provides an ability for an Outline Plan waiver.	'review condition'. • Conditions are not the same as those for the Wider Project. • Complexity of project should require the provision of an Outline Plan of works.

Appendix 13 – Peer Review Memorandums

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Auckland Wellington Christchurch

memorandum

TO	Shanan Miles	FROM	Kyle Christensen & Hayden Easton
		DATE	4/8/2014
RE	Kaituna River Re-Diversion and Maketu Estuary Enhancement Project – Peer Review		

Introduction

Pattle Delamore Partners Ltd (PDP) has been engaged by Bay of Plenty Regional Council (BoPRC) to review technical aspects of the resource consent application for the Kaituna River Re-Diversion and Maketu Estuary Enhancement Project (the Proposal).

This memorandum provides initial technical comments specifically relating to the morphological modelling that has formed much of the basis of the assessments of environmental effects. The morphological report was completed by DHI and provides numerical modelling of riverine, estuarine and coastal processes to assess potential morphological effects associated with the proposed partial re-diversion of the Kaituna River into the Maketu Estuary. A second report by Economos references the outputs of the morphological modelling but also provides first principle evidence to further support the overall assessment of potential change.

A teleconference was held between the authors of the DHI (Ben Tuckey) and Economos (Jim Dahm) report to discuss high level issues primarily related to the morphological modelling. The below summary of issues is spilt into two categories, the first category contains items that are considered fundamental issues that we consider should be dealt with before public notification. The second category are "nice to haves" that could be provided as further information. There is likely to be further discussion needed on items in the first category to agree scope and timing. We consider that these items could affect other assessments, including ecology and water quality so we propose waiting until these fundamental issues are closed out before proceeding with the broader review.

Fundamental Issues

1. **Sediment load from the Kaituna River -** Incoming sediment is a fundamental input into a morphological model and not including it raises doubt about the ability of the model to realistically provide an indication of future morphological behaviour. Further to this there is the potential for bedload to significantly increase in the future as the lower Kaituna River (below Te Matai) aggrades and an increasing proportion of the full catchment bedload (~50,000 t/yr or ~30,000 m^3/yr – NIWA (2006) reaches the coast. The reports suggest that the hydraulics aren't changing significantly so therefore the sediment transport processes are not changing significantly. This is acknowledged as being the case for typical tidal cycles and small (100 – 120 m^3/s) floods but the information provided in Table 8-4 of the DHI report shows significant reductions in peak flows during 1% annual exceedance probability (AEP) and 5% AEP flood events. Based on information presented in Table 8-4 of the DHI report the peak flows are reduced from approximately 90% passing through Te Tumu down to less than 70% with the Proposal in place. We believe there is a risk that the morphological effects, particularly immediately downstream of the new diversion channel have been underestimated due to exclusion of the expected bedload from the river. We consider this issue of

fundamental importance and suggest there is discussion on additional model runs that include the bedload and possibly also the suspended load from the river.

2. **Use of 'typical' year -** Based on modelling output data, the DHI report (section 7.2) states that a long-term easterly littoral drift transport rate at the subject location is 52,000 m^3/year. Using a 10 year wave climate dataset, the 'typical' year which has the closest relationship to this sediment transport rate occurred in 2006 (81,000 m^3/year). Since there is a large difference between the long-term rate and the modelled 2006 rate, can the authors please provide further justification regarding the variability of the 10 year data output. Further to the above question, the 2006 year appears to be considered typical solely on the basis of littoral drift transport. Another key physical process affecting the system will be river flows. Some consideration or further discussion on whether 2006 provides a 'typical' river flow scenario is needed. We consider this issue as fundamental as there is significant reliance on the outputs of this 'typical' year and further justification for only using one year is required to increase the confidence in the model outputs.

3. **Outputs from 'typical' year morphological model** – Notwithstanding the issues highlighted above we consider that measureable differences are presented in the outputs from morphological model at both the Te Tumu cut and the Maketu Estuary inlet for the one year simulation. Figure 7-22 shows a continuous channel of -3 to -2 m for the existing situation across the bar, whereas the proposed situation shows a reduction in depth of -2 to -1 m. Further to this Figure 7-29 shows a significant beach building up in the channel immediately upstream of the river mouth. It is acknowledged that there is a deepening of the existing channel immediately adjacent to this beach so it could be suggested that the channel is shifting rather than aggrading but this certainly warrants further discussion particularly considering this is only occurring after 1 year and noting the other issues above. At the Maketu Estuary entrance Figure 7.31 shows a measureable enlargement after the 1 year simulation. This has the potential to change the tidal flux as well as have impacts on the flood hazard assessment. No allowance for any enlargement of the estuary inlet has been made in the model runs which analyse the changes in water quality or flood hazard. We consider further model runs are needed to understand the possible morphological response particularly at the Te Tumu cut and Maketu Estuary entrance and that these predicted changes then need to be included in the model of the proposed option.

"Nice to Haves"

4. DHI and Economos reports state that accumulated sediment in the upper estuary is going to be eroded and dispersed. We agree with this statement however, it this sediment has been identified to have algal deposits and is anoxic. Can the authors therefore, please assess the model outputs further and discuss where the potential eroded sediment is likely to deposit.

5. The DHI report presents flood level estimates for various future events. Can similar outputs please be provided for potential sediment transport rates. From these plots, can discussion please be made on the potential effects that may occur. The purpose of this question is to ascertain the long-term morphological risks of the project due to effects such as climate change and sea level rise.

6. The DHI report discussed that estuarine current monitoring instrumentation were either biofouled or sank into muds. These issues led to the conclusion by DHI that current results obtained may have been underestimated. Based on this conclusion, can the authors therefore please provide discussion as to how the model were calibrated, and if it were calibrated, how were the reduced flows compensated for.

7. Following on from the above question, Figure 3-9 of the DHI report indicated that current measures measurements at the estuary entrance had an approximate peak velocity of 0.6 m/s. However, in reference to figure 7.13, it illustrates that the modelled maximum current speed for the same location (for the proposed option) ranges between 0.5 - 0.75 m/s. Can the authors please provide discussion on this flow occurrence. This question is to determine whether model outputs have been correctly validated or not. Based on these results modelled presented, we are led to believe that current speeds may have been underestimated.

8. Section 1.6 of the Economos report, states that spit breaches are likely to be reduced in the future or possibly prevented once the project has been implemented. Whilst we agree that the potential spit breaches may be reduced, we do not believe that they will be prevented in the future. Based on historic breaches of the spit, these occur during significant storm events. Modelling carried out did not account for all storm event processes, therefore it is not plausible to state that breaches could be possibly prevented. It is suggested that this issue is clarified for the purpose of not setting a public expectation that may not be accurate.

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memorandum

TO	Shanan Miles, Dylan Makgill	FROM	Bas Veendrick
		DATE	8 September 2014
RE	Kaituna Re-diversion – Review of Summary of Effects resulting from Water Level Changes Report		

The following memorandum provides initial technical comments related to the report '*Kaituna River Rediversion and* Ongatoro/Maketū Estuary Enhancement Project – Summary of Effects Resulting from Water Level Changes'. The report summarises the water level changes caused by the Project and assesses the effects on land drainage, water supplies and rural stopbanks. The report uses the results of the DHI modelling (DHI, 2014) to quantify these effects and to propose mitigation measures. As indicated in the PDP memorandum (4 August 2014) further model runs have been requested from DHI which have the potential to impact on the flood hazard assessment. Therefore the technical comments in this memorandum are preliminary only, based on the available information at the time of writing this memorandum.

Section 4 of the reviewed report discusses the effects of the Project and the proposed mitigation for the Lower Kaituna River and Section 5 deals with the Estuary and Maketū Township. We generally agree with the technical assessments and proposed mitigation for both areas but request further information on the items listed below. We also understand that the available mitigation options discussed in the report have been agreed in principle with the manager of the Kaituna Catchment Control Scheme, the Natural Hazards Group of the Bay of Plenty Regional Council and with the stakeholders in the Lower Kaituna River Management Reserve.

Section 4: Lower Kaituna River

Section 4.7 indicates that the proposed mitigation for the project effects on water intakes have not been agreed with Mr. Titchmarsh. Mr. Titchmarsh extracts water from the lower Kaituna River for irrigation and stockwater purposes. As indicated in Section 4.5 of the report, there is no effect on the ability for Mr. Titchmarsh to take the water volumes required, however, there is a higher chance of the water being saline.

The report suggests that this will be mitigated by providing Mr. Titchmarsh with a salinity monitoring device on his intakes and an additional storage tank for his stockwater, the intent being to avoid taking saline water and to be able to store sufficient fresh water. It is noted that the effects on salinity at Titchmarsh intake have been quantified in section 9.3 of the DHI modelling report (Tuckey, 2014), however neither of the reports comment on how the predicted increase in salinity relate to stock drinking water standards and or the risk of increased salinity on the irrigated land. Although we agree in principle with a monitoring approach it is unclear at this stage how significant the predicted increase in salinity would be and whether the proposed mitigation measures will actually mitigate the effects of the proposal.

Additional information should be provided about how the predicted increase in salinity at Mr. Titchmarsh's intake relates to relevant guidelines for stock drinking water and the risk of increased salinity on the irrigated land. We also note that, depending on the outcomes of these additional assessments, other mitigation measures may need to be considered.

Section 5: Estuary and Maketū Township

Section 5.2.2 describes the effect of higher estuary water levels related to drainage from Otumakoro Stream in Maketū Township. Paragraph 2 of section 5.2.2 states:

*'During heavy rain in the local Maketū catchment an estimate of peak rainfall runoff has been made using the Rational Method using a Time of Concentration of 20 minutes and a 2% AEP (50yr) rainfall event generated by HIRDS (with a **2%** increase for climate change).'*

We assume that this is a typo and that the author means a **2 degrees** increase in temperature for climate change resulting in a 16% increase in rainfall depth. Can the applicant please confirm that the analyses have been undertaken with a 16% increase in rainfall depth for the climate change scenario?

Summary

We generally agree with the assessments and the proposed mitigation in the report, however in order to fully understand the effects of the proposal further information is required on the items listed in this memorandum. As mentioned above the report is based on the results of the DHI modelling. Further model runs have been requested from DHI which have the potential to impact on the assessments and proposed mitigation described in the reviewed report.

References

WaterLine Engineering Consultants (July 2014). Kaituna River Rediversion and Ongatoro/Maketū Estuary Enhancement Project – Summary of Effects Resulting from Water Level Change.

Pattle Delamore Partners Ltd (August 2014). Kaituna Re-Diversion and Maketu Estuary Enhancement Project – Peer Review.

DHI (June 2014). Kaituna River Re-diversion and Ongotoro/Maketu Estuary Enhancement Project – Numerical Modelling.

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memorandum

TO	Shanan Miles, Dylan Makgill	FROM	Hayden Easton
		DATE	8 September 2014
RE	Kaituna Re-diversion - Review of Summary and Analysis of Options and Alternatives Report		

The following memorandum provides review comments for the document titled 'Kaituna River Re-diversion and Wetland Creation Project - Summary and Analysis of Options and Alternatives', that was prepared by Waterline Engineering Consultants Limited and Bay of Plenty Regional Council. Specifically, Pattle Delamore Partners Limited (PDP) has provided comment as to whether the prepared report meets RMA S.171 (1) b, which requires:

'*Regard to whether adequate consideration has been given to alternative sites, routes, or methods of undertaking work - if*

i. The requiring authority does not have an interest in the land sufficient for undertaking the work; or

ii. It is likely that the work will have significant adverse effect on the environment

It is recognised that alternative sites are not plausible for this project, therefore the review was solely based upon whether adequate consideration had been made towards alternative routes and/or methods to achieve the re-diversion of the Kaituna River into the Maketu Estuary.

In carrying out this review, it is recognised that key objectives are required to be achieved by this project. These are well discussed in the reviewed report. Whilst it is not within the scope of this review to determine the efficacy of these objectives, it is however acknowledged that these project objectives set guiding conditions for what are relevant alternatives that should be considered within this project.

The reviewed report discusses that the assessment of alternatives has been undertaken over a period of time, with options assessments and consequent investigations carried out in three stages:

1. Pre-2011: pre-feasibility studies.
2. 2011-2012: feasibility studies.
3. 2012 to present: investigation and preliminary design.

The initial stage 1 assessment considered 16 options. These options ranged from a status quo to a full Kaituna River diversion and an option involving flood relief of the surrounding lands.

Table 2 of the reviewed report, lists these considered stage 1 options and also provides commentary as to each options rationale for either exclusion of inclusion for further investigative analysis.

We consider that the quantity of options assessed is adequate. In addition, the methods used to assess these options and ultimately select a preferred option are considered acceptable. We note that it is not within the scope of this review to provide comment whether the preferred option chosen is the most appropriate.

Stage 1 option N was selected as the preferred option for further investigation. The stage 2 assessment, provided variations to the proposed Option N, these were:

1. Low flow partial diversion
2. Maximum flow partial diversion
3. Full diversion.

For each of these variations, we note a comparative status quo assessment was also carried out. **All possible options have been assessed in stage 2, therefore PDP consider that the assessment of stage 2 options are adequate.**

The selection of the preferred stage 2 option was made by the Bay of Plenty Regional Council's Operations, Monitoring and Regulation Committee. In this instance, the maximum flow partial diversion option was selected. As discussed the basis for this selection was determined via investigation work, and specifically whether options assessed would achieve the required project objectives.

Given that an investigative methodology was in place to ascertain a preferred option, PDP consider that adequate consideration for stage 2 options has been made.

Stage 3 of the options assessment specifically addressed how the maximum flow partial diversion could be achieved. Two options were considered. **We consider that these options are adequate for the project.**

Selection of a preferred option was achieved via a consultation process, which we note also included potentially affected parties. Feedback from the consultation process identified that there was no preferred option, i.e. parties consulted had no clear preference between the two options. As a result, selection of the preferred option was made by Council staff. Option 2 was selected based upon reduced risk and cost. **We consider the method used of selecting the proposed stage 3 option is appropriate.**

Summary

The various process used by Bay of Plenty Regional Council to consider options/alternatives for the Kaituna Re-diversion project are regarded as adequate and meet the requirements of S171 (1) b of the RMA.

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memorandum

TO	Shanan Miles	FROM	Karen Sky and Taryn Wilks
		DATE	08/08/2014
RE	Kaituna River Re-Diversion and Maketu Estuary Enhancement Project – Peer Review		

Introduction

Pattle Delamore Partners Ltd (PDP) has been engaged by Bay of Plenty Regional Council (BoPRC) to review technical aspects of the resource consent application for the Kaituna River Re-Diversion and Maketu Estuary Enhancement Project (the Proposal).

This memorandum provides initial technical comments and requests for further information specifically relating to the two ecology reports that have been submitted in support of the application. The first of these reports focuses on the existing ecological condition and potential effects of the proposal within the estuary and the second relates to terrestrial, avian and wetland restoration ecology. These reports are addressed separately below.

Hamill (2014) Kaituna River Re-diversion Project: Ongatoro/Maketu estuary condition and potential ecological effects

Review conducted by Karen Sky, Senior Environmental Scientist, PDP.

General Comments

This report provides a comprehensive overview of the current state of the Maketu estuary and lower Kaituna River based on investigations undertaken during the summer of 2013/2014. These investigations assessed macro-algae, shellfish and benthic macrofauna in the estuary, dissolved oxygen fluctuations, fish in the estuary and lower Kaituna River and macroinvertebrates in the lower Kaituna River. This report describes the existing environment in the estuary and lower river to the appropriate standard to allow effects of the proposal to be assessed and to provide adequate baseline data for ongoing monitoring in the estuary following the re-diversion, should consent for the proposal be granted. As a general comment, the report and strength of the effects assessment would benefit from additional information being provided regarding the rationale for site selection and representativeness of the sample locations for all investigations undertaken. This is addressed in some sections of the report but not others.

The report also assesses the potential effects of the re-diversion in terms of algae and nutrients, shellfish, benthic macrofauna, dissolved oxygen, fish and lower river macroinvertebrates. The assessment of effects within the River Lake Ltd (2014) report relies heavily on the results of the modelling investigation undertaken by DHI (2014). PDP has also peer reviewed that report and in a separate Memo has identified some fundamental issues with the modelling undertaken, for this reason, detailed peer review of the effects assessment within the estuary report has not been undertaken at this stage, as the information in these sections of the report is likely to require updating following the additional modelling that has been requested. As a general comment, it is considered that

further comment or acknowledgement should be provided in the report regarding the limitations associated with the modelling undertaken, and how these may result in uncertainties in the predictions of ecological effects in the estuary. Some more information on the anticipated timeframes before the anticipated positive effects are realised would also be useful. Finally, it is noted that only brief recommendations regarding ecological effects monitoring in the estuary are made in the report. It is considered that more information should be provided in the application with respect to the proposed monitoring following the re-diversion.

Overall the report is considered complete (no major information gaps) but in need of some fundamental adjustment as outlined in the four questions below. Updating the report as requested will allow for sufficient information to understand the potential effects of the project.

Requests for Further Information (Fundamental Issues)

Recommended S92 questions as a result of the initial review are provided below:

1. Many of the predictions of the ecological effects of the proposal within the estuary are based on the DHI (2014) modelling. It is understood that additional modelling is likely to be undertaken in the future and therefore the effects assessment within the report will need to be reviewed in light of any new modelling outputs (for example, sediment load from Kaituna River, additional salinity profiles as highlighted below in point K of the review of MacGibbon (2014). When this review and updating of the report is undertaken, it would be beneficial that any inherent limitations of the modelling are acknowledged when the model outputs are then used to predict ecological effects, i.e. that the level of uncertainty of predictions is acknowledged throughout the report as appropriate.

2. The report indicates that a number of positive ecological outcomes are anticipated in the estuary as a result of the re-diversion proposal. However, likely timeframes for the realization of these effects are not indicated. It would be useful in the context of understanding the effects of the proposal (and in providing realistic expectations to the wider public) that some indication of anticipated timeframes for positive effects is provided in the report.

3. Please provide brief comment in the report regarding the rationale for the specific site selection of assessments where this is not provided (such as for the algal assessment transects). Related to this, please comment on whether the nutrient content of the four composited algal samples collected from the transects are considered likely to be generally representative of nutrient content in algae throughout in the estuary and/or the extent of possible variation in other areas, and whether this has any bearing on the total mass of N and P estimated to be present within algae in the estuary.

4. Very general recommendations regarding monitoring in the estuary to measure the success of the re-diversion are provided throughout the report. Providing some more certainty at this stage in terms of what will be monitored and how frequently is considered appropriate. Please add a section to the report dedicated to the recommended effects monitoring, providing more details in this regard.

MacGibbon (2014) Kaituna River Re-diversion and Ongataoro / Maketū Estuary Enhancement Project; Terrestrial, Avian and Wetland Restoration Ecology

Review conducted by Taryn Wilks, Senior Environmental Ecologist, PDP.

General Comments

This report focuses on the potential effects, both positive and negative of the changes on estuarine margin vegetation and the biota that live in and/or rely on that vegetation as a consequence of altering the freshwater inflow. Overall the report provided an in-depth summary of historic, current vegetation and likely changes to

vegetation post re-diversion. Given the limitation of avian data (i.e. gaps, inconsistency between historic survey methods), information provided is acceptable. However, there is an overall strength lacking in avian ecology and assessment of effects compared to vegetation sections. With regards to wetland restoration, information was very well presented and it was very clear that a high level of thought and consideration had been given. Having the ability to combine both technical and practical solutions / interpretations is critical to the success of any restoration plan. Because there are so many uncertainties as to how exactly the estuarine system is going to respond, particularly with regards to water quality, sedimentation, deposition and erosion, it is highly desirable that until sufficient time has passed to judge/measure effects on such elements that a staged approach is undertaken.

Many of the predictions of the ecological effects of the proposal within the estuary are based on the DHI (2014) modelling. It is understood that additional modelling is likely to be undertaken in the future and therefore the effects assessment within the report will need to be reviewed in light of any new modelling outputs (for example, sediment load and deposition from Kaituna River). When this review is undertaken, it would be beneficial that any inherent limitations of the modelling are acknowledged when the model outputs are then used to predict ecological effects, i.e. that the level of uncertainty of predictions is acknowledged as appropriate. For this reason, detailed peer review of the effects assessment within the terrestrial, avian and wetland restoration report has not been undertaken at this stage, as, not all but some aspects and information in these sections of the report are likely to require updating following additional modelling.

The report is considered complete (no major information gaps) but is in need of inclusion of some fundamental information, particularly with regards to avian ecology. We have provided some fundamental areas which require further comment and also inclusion on additional pieces of information or “nice haves”.

<u>Requests for Further Information (Fundamental Issues)</u>

Recommended S92 questions as a result of the initial review are provided below:

1. Please provide further comment on the importance of the time of year construction activities are to occur and re-establishment, both with regards to vegetation and avian ecology (i.e., breeding season and migration).
2. Please provide further comment on potential seasonal effects to vegetation and avian communities.
3. The report indicates that a number of positive ecological outcomes are anticipated in the marginal estuarine and wetland vegetation as a result of the re-diversion. However, likely timeframes for the realization of these effects are not indicated. It would be useful in the context of understanding the effects of the proposal (and in providing realistic expectations to the wider public) that some indication of anticipated timeframes for each of the questions addressed in the report for positive effects is provided.
4. Please provide further comment on vegetation survey methodology, including but not limited to justification of vegetation transect localities and chemical soil characteristics.
5. Threatened tussock *Poa billarierei* is known to occur in the eastern most 800m of the spit. Please provide brief comment as to why this was not included in the survey and if this area is of significance then an understanding of community composition should be obtained prior any works and also inclusion of this area into post-works monitoring is recommended.
6. It would be beneficial to have salinity models in the DHL (2014) of average river flow and average tidal cycle at water surface, mid water and bed. This would provide valuable information as to what the average expected conditions will be and thus the conditions as to which estuarine margin vegetation and wetland vegetation will be exposed to.
7. Mangrove communities in the estuary are largely non-existent and have been since the diversion of Kaituna River. Although not conclusively documented, it is eluded to that mangroves did cover a larger

area prior to the diversion of Kaituna River. Given increased anthropogenic activities and increased rates of sedimentation through landuse change, one could assume that should high levels of sediment deposition occur as a result of the re-diversion that mangrove communities could re-establish, particularly given nutrient enrichment. Please provide further comment on the potential for mangrove establishment and whether or not this is a desired community outcome.

8. Please provide more comment around avian ecology, including but not limed to feeding behaviours and habitat requirements and potential effects the project may have. Furthermore, a timeline of expected effects (positive and negative), short term, long-term effects on avian populations.
9. Please provide further comment on avian monitoring and mitigation recommendations, including but not limited to pre-construction activities. For example, relocating wetland birds during construction to minimise stress and potential death to an appropriately suitable area, then relocated into the newly established wetland.
10. Ongataoro / Maketū Estuary is recognised as a site of high ecological value, a 'hot spot' for shorebirds, especially annual migrations from northern hemisphere. However, limited discussion is provided on important times of the year for avian ecology (i.e., breeding). Please include comment around what months of year disturbance to avian habitat are best to be avoided.
11. Please provide brief detail around the proposed monitoring method for shorebirds and marshland and wetland species, including but not limited to, location of surveys, type of survey (i.e. 5 minute bird count), time of year and expected frequency of surveys preconstruction and post construction.

Supplementary comments for the overall benefit of the report ('Nice to haves")

Assessment of Objective 1: "The potential effects of re-diversion on the terrestrial and wetland vegetation including the estuarine margins and areas of salt marsh, Maketū Spit and Wildlife Management Reserve and lower Kaituna River margins".

1. The report highlights the importance sedimentation, erosion and salinity may have (had) on vegetation present / not present. Therefore, additional modelling of sediment load could provide valuable information with regards to predicting likely effects / limitation on vegetation survival / establishment.
2. Please comment on the usefulness of vegetation maps (utilising anticipated environmental changes as discussed in report) which demonstrate anticipated vegetation type and area of zones, at least 5 years post re-diversion. This may include but not be limited to development of three maps; worst case scenario, most likely and best case scenario. This would be a beneficial visual aid for the community to easily interpret and may provide the community and others with an indication / timeline of when they could expect to see the benefits of this project.
3. Please provide an indication of the likely frequency of vegetation monitoring during construction, post construction and post vegetative establishment.
4. Please provide comment as to the expected timeline to which the new 27.5 ha wetland will be established and should thus be able to be inhabited by avian species.
5. Please provide comment on saline intrusion under/through Maketū spit and how this may influence estuarine margin vegetation, lower littoral areas and anticipated establishment of freshwater wetland on the southern-side of the spit.
6. Please provide comment on how prevention of weed succession is to be controlled in high nutrient enriched environments.
7. Sediment modelling and deposition, and area inundated, length of time inundated are very important aspects required to assess effects on terrestrial and wetland vegetation. If there are changes to DHL (2014) this report will need to be re-reviewed by the author.

8. Please provide comment as to how the existing salt marsh may be protected from erosion and how this will be monitored. For example, protection of the saltmarsh edge using material to create a graduating slope.
9. Outside the scope of report reviewed, but worthy of note: Near farm nutrient (and microbial bacteria) contributions were discussed, however no discussion around point source discharges in the catchment was provided, particularly from agricultural drains. These drains can be significant contributors to water quality deterioration and should be included in mitigation activities. Improving on farming practices can significantly reduce contamination loading. A catchment scale approach should be included for improvement as a whole, in order to reduce pressure on the receiving environment - Ongataoro / Maketū Estuary and ocean. Although a brackish Lake system rather than estuarine, many lessons can be learned from experiences and knowledge of water and sediment dynamics in Lake Ellesmere / Te Waihora. Suggest making contact with Environment Canterbury and share knowledge of past experiences.

Supplementary comments for the overall benefit of the report ('Nice to haves")

Assessment of Objective 2: "The potential effects of re-diversion on the avifauna and avian habitat on and around the margins of the estuary".

1. The last avian survey appears to have been undertaken in 2013 by OSNZ, given the significance of particular 'hot spots' around the Ongatoro / Maketū Estuary and Kaituna River for shorebirds and wetland birds and status of many of those birds (Section 4.1.1.2). Please comment on if a survey will be conducted prior any construction activities. Furthermore, given the inconsistencies with survey methodologies, please provide comment as to the development of an avian monitoring programme and how previous inconsistencies with survey methodology will managed.
2. Please provide comment as to the expected timeline for the new 27.5 ha wetland to be able to be inhabited by avian species.

Supplementary comments for the overall benefit of the report ('Nice to haves")

Assessment of Objective 3: "The potential effects of establishment of up to 27.5 ha of wetland on the ecology of the estuary and its surrounds. Consideration is also given to the likely effects of re-vegetation of Papahikahawai Island, including both the southern wetland portion and the remaining terrestrial portion of the island".

1. It is important that field technicians are competent in plant identification, this will limit the likelihood that native plants are mistaken for weeds and that weeds are not inadvertently forested as natives.
2. Where practicable consideration should be given to eco-sourcing plants to help maintain local unique characteristics.
3. Given the expected high nutrient concentrations, consideration should be given to locating high nutrient stripping plants such as Raupo at the inflows of freshwater wetland areas.

We trust this memorandum aids BoPRC in the application assessment process. Please feel free to contact us should you have any queries.

Yours faithfully,

PATTLE DELAMORE PARTNERS LIMITED

Karen Sky, Senior Environmental Scientist **Taryn Wilks, Senior Environmental Ecologist**

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memorandum

TO	Shanan Miles and Dylan Makgill	FROM	Graeme Proffitt
		DATE	9/9/14
RE	Kaituna River Re-Diversion and Maketu Estuary Enhancement Project – Section 92 Response Comments		

This memo sets out Pattle Delamore Partners Limited's review of the Construction Description and Drawings report prepared by Waterline Engineering Consultants dated 13 June 2014.

Construction Description and Feasibility

Overall the construction description and proposed sequence is reasonable. The construction is expected to be relatively straightforward as an earthworks project, albeit a project where sediment-laden water will need to be managed to avoid excessive effects. The report acknowledges this need. Key to this will be the detail of construction management plans to be written after the consent is granted and enforcement of those plans.

There are details of the design which will not be determined until the detailed design is completed. It is not clear whether geotechnical investigations have been carried out to this point; no mention is made in the report or AEE. The source of materials and amount of excavation required may be affected by geotechnical matters and may affect the assumed duration of various tasks. For example, the new Titchmarsh stopbank is assumed to be constructed from silt excavated from the new diversion channel. Some comment on alternative sources of material, and the effects of obtaining alternative material and disposing of additional surplus material from the new channel, should the silt prove geotechnically unsuitable would be helpful. It could be a major issue for the project if the silt proved to be unsuitable, as additional material would require disposal and suitable material would have to be imported from somewhere.

Similarly, should the foundation under the new culvert section prove to require deeper excavation than assumed to provide an adequate foundation, this will require a greater amount of material requiring disposal. However, this is a relatively minor issue for the overall project.

We have difficulty reconciling the excavation and fill volumes provided in the AEE and the report (see appended table – only major volumes listed). Volumes are provided in the AEE that are not given in the report. Some volumes given in the AEE are not the same as the volumes provided in the report. It would be helpful if all the relevant volumes were provided in the report in the various sections describing the excavation and filling activities, so as to better assess the durations of the various tasks in the construction programme and the effects of the construction activities.

For example, an area of about 23 ha of Titchmarsh land (Pt Sec 5 Blk V Te Tumu SD) is proposed for disposal of surplus material. The report notes a disposal depth of up to 0.5 m. Even if the soil disposal depth averaged only half this amount, the area available would suggest up to 60,000 m^3 could be disposed of here yet the need for

such a large volume is not apparent from the figures given in the report or the AEE. Clarification of the volume to be disposed of to the Titchmarsh land and justification for such a large area would be helpful.

Construction Effects

The report notes various numbers of loads travelling past houses, for example 1000 loads past the Titchmarsh house from the existing stopbank removal. A better assessment of effects can be obtained by the number of vehicle movements, rather than loads. One thousand loads will actually be 2000 vehicle movements. The 1000 load calculation also assumes each load is 20 m^3 with trucks and trailers being used. In fact some of the material may be very wet and it may not be possible to carry such large loads and the contractor may decide to use just a truck, rather than truck and trailer for such short haul distances. This would then amount to perhaps 4000 truck movements, with a much greater traffic effect than is indicated in the report. Similarly greater effects would be indicated for other excavation and filling activities when vehicle movements are considered.

Material from the new channel excavation is to be used for the future additional car park fill. This material is likely to be very wet, with potential effects from sediment–laden material seeping from trucks during transport and draining from the fill after placement. These potential effects have not been addressed in the report. The intended management plans would be the appropriate place to address both issues.

There is an intention to leave the downstream end of the existing Ford's Cut open during the works to enlarge and line the cut. There will be water flow within the cut and much silt will be stirred up during excavation to deepen the cut below the water surface. The report claims that tidal flows in the upper estuary are "slow" and therefore the effects will be minimal, and less than the effects from installing a coffer dam to contain sediment-laden water. We are of the view that the effects could well be much greater than assumed and should be managed in a proactive way, which could include one or more coffer dams to allow part of the existing cut to act as a settlement ponds, and/or silt screens. This can be dealt with by appropriate consent conditions.

Construction Programme

The construction programme (Appendix 1) appears to be optimistic. Further comment should be sought on:

- The time allowed for the detailed design process and any geotechnical or other engineering investigations that might be needed for the final design. No time has been allowed for geotechnical or other engineering investigations.
- The time allowed to prepare and receive council approvals for various management plans.
- The time allowed for obtaining box culvert sections from a supplier. These are typically supplied to order, rather than be in stock.
- The new Titchmarsh stopbank is shown to be constructed in spring yet the report notes it is to be constructed from wet silt material from the new channel alignment. Regardless of the geotechnical suitability of the material mentioned above, it may be optimistic to expect to dry the silt to a suitable moisture content for compaction so early in the construction season. Delays may occur during this task which in turn will delay other activities.

Report Presentation

Not a technical matter, but we suggest that some aspects of the representation of the report could be improved to assist interested parties' understanding of the report. In particular the construction programme (Appendix 1) is not legible as reproduced in A4 size and barely readable if enlarged when viewed in electronic form. We suggest the programme is saved in A3 size when converted to the pdf format so as to improve the resolution of the text, and if issued in hard copy form, also copied in A3.

At least one of the drawing references is incorrect and should be corrected.

It is suggested these changes be made before the consent application is notified to avoid the council receiving queries from potential submitters.

Table of Excavation and Fill Volumes from AEE and Construction report

	AEE		Construction Report	
Location	Excavation	Fill	Excavation	Fill
Install new culverts (inlet structure)	6,000		6,000	
Deconstruct existing stopbank	18,000		20,000	
New diversion channel	45,000		?	
Construct new stopbank		20,000		?
Construct new moorings, parking area, boat ramp		14,000		20,000
Future additional parking		?		15,000
Ford's Cut and deepen River Loop	63,000		53,000	
Salinity Block and fill Ford's Loop		50,000		53,000
New wetland area		13,000		?
Upper estuary causeways	15,000		?	
Papahikahawai recontouring		15,000		?
Totals	147,000	112,000	?	?
Surplus	35,000		?	

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14 November 2014

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Dear Dylan

KAITUNA RE-DIVERSION – REVIEW OF TECHNICAL REPORTS

1.0 Introduction

Pattle Delamore Partners Ltd (PDP) has been engaged by the Bay of Plenty Regional Council (BoPRC) to review a number of technical reports supporting the resource consent application for the Kaituna River Re-Diversion and Maketu Estuary Enhancement Project (the Proposal). This review has been carried out in accordance with the Terms of Engagement dated 25 August 2014, which requires:

- Evaluating the applicant's expert assessment.
- Stating whether the findings are concurred with or not.
- Confirming the level of effect expected.
- Commenting on the effectiveness mitigation proposed, and whether any additional mitigation is required to avoid, remedy or mitigate effects.

The reports reviewed (in the order considered in this report) are:

- *Numerical Modelling* (DHI, 2014).
- *Maketu Estuary: Effect of Proposed Re-Diversion on Coastal Erosion* (ECONOMOS, 2014)
- *Kaituna River Re-diversion and Wetland Creation Project Summary of Effects Resulting from Water Level Changes* (Waterline, 2014)
- *Terrestrial, Avian and Wetland Restoration Ecology* (Roger MacGibbon, Opus, 2014)
- Ongatoro/Maketu Estuary Condition and Potential Ecological Effects (Keith Hamill, Riverlake, 2014)
- *Construction Description and Drawings* (Waterline, 2014)
- *Summary and Analysis of Options and Alternatives* (BoPRC, 2013).

Preliminary comment was provided in a series of memoranda in August and early September. At that stage, complete comment could not be provided due to perceived uncertainties with respect to the numerical modelling, which several of the other reports rely on. Subsequently, as a result of a s92 request by the council, a response to the request was

received from Opus and the results of "Sensitivity Tests" later received from DHI. These further communications were entitled:

- *Resource Consent Application 67958, Kaituna River Re-diversion and Ongatoro/Maketu Estuary Enhancement, Response to further information request* (Opus, 1 September 2014)
- *Sensitivity Tests to Provide Further Information Requested by PDP* (DHI, 13 October 2014)

This review takes into account the further information provided by Opus and DHI. We note that the ecology assessments rely on the DHI modelling and therefore any changes in the DHI conclusions could change these conclusions. However, we understand that the new modelling results were conveyed back to the ecology specialists and DHI had received assurances back that the revised modelling does not affect their conclusions.

The review is structured to provide comment on each of the reports in separate sections.

A number of PDP specialists were involved in the review:

- Ecology – Karen Sky and Taryn Wilks
- Coastal Erosion and Options and Alternatives – Hayden Easton
- Numerical modelling – Bas Veendrick and Hayden Easton
- Flood effects and construction – Bas Veendrick and Graeme Proffitt

2.0 Numerical Modelling of Riverine, Estuarine and Coastal Processes

The DHI report provides numerical modelling of riverine, estuarine and coastal processes to assess potential morphological, water level and water quality effects associated with the proposed partial re-diversion of the Kaituna River into the Maketu Estuary. We note that the report primarily provides detail around the modelling, tabulates and graphs the results and provides general comments. The report provides some comments on the significance of effects but proposed mitigation measures are largely commented on in the other reports.

Other reports by Economos (discussed in this section), Waterline, Roger MacGibbon and Keith Hamill (discussed in the following sections) reference the outputs of the numerical modelling reports and comment on the significance of effects and propose mitigation measures. Comments in this section are restricted to the DHI and Economos reports. Comments on the other reports, for matters where the assessed effects and proposed mitigation described in those reports are affected by the numerical monitoring, is contained in the later sections for each of those reports.

An initial teleconference was held between the authors of the DHI (Ben Tuckey) and Economos (Jim Dahm) reports, and relevant PDP peer reviewers to discuss high-level issues primarily related to the morphological modelling. We had concerns with a number of issues primarily related to the morphological modelling which, as noted above, resulted in the s92 request.

Following receipt of what DHI refer to as "sensitivity" modelling, further discussions were held with DHI (Ben Tuckey) to discuss the additional model runs and the model input parameters used in the modelling. Our comments in this section include comments on the findings and predicted effects detailed in the DHI letter (13 October 2014) '*Sensitivity Tests to Provide Further Information Requested by PDP*'. Some of the additional information requested relating to the numerical modelling report (DHI) and the Economos report has not been provided and therefore it is considered that without response to these questions, details that could potentially describe potential environmental effects are not clear.

2.1 Comments on Report and Additional Information provided by DHI

The comments in section 2.1.1 and 2.1.2 below relate to the additional information provided by DHI following the s92 request and section 2.1.3 relates to the water quality assessment in the numerical modelling report.

A substantial amount of both existing and new data was used for the morphological, flood and water quality modelling and the report provides a detailed description of these model inputs. It is generally considered that the modelling inputs and modelling methodology are adequately described.

There are always uncertainties with any modelling study due to the challenges of representing natural processes numerically, and the simplifications in behaviour that need to be made. However, following receipt of additional information following the s92 request, we agree with the modelling approach and consider the results adequate to support the assessment of effects, with certain exceptions described in sections 2.1.1 and 2.1.2.

2.1.1 Sediment load from the Kaituna River

Following the s92 request, DHI re-ran the morphological model with sediment supply from the Kaituna River included and assessed whether the additional sediment supply would impact on:

- the findings of the extreme flood event morphological assessment; and
- the findings of the one year morphological assessment.

The additional modelling provided by DHI does not cover one of our key concerns that hydraulics will significantly change with the proposal in place during large flood flow events (such as the 5 % and 1% AEP flood events). Peak flows are reduced from approximately 90% passing through Te Tumu down to less than 70% which has the potential to impact on the scour behaviour of the river mouth.

The model outputs only compare the flood levels for the proposed situation. Simulations with and without additional sediment supply are provided. No model outputs (with additional sediment supply included) have been provided showing the morphological changes between the existing and proposed situation following extreme flood flow events. Compared to the existing state, we anticipate that during an extreme flood flow event, there is likely to be increased scouring at the estuary mouth for the proposed situation, and less scouring for the proposed situation at the Kaituna River mouth.

The main reason that this information was requested (in the s92 request), was Section 7.4 of the DHI report (Extreme Flood Effects on Morphology) only assessed the morphological response at the estuary mouth during extreme flood flow. No assessment was provided for the morphological response of the Kaituna River mouth during extreme floods.

The bed level plots (for the situation with sediment supply from the Kaituna River included included) and associated comments from DHI on the year-long simulation generally indicate a similar pattern as the original one year morphological assessment (i.e. a general increase in bed levels). It has to be noted that the additional "sensitivity" assessment was run with a bed material supply rate of 15,000 m^3/year rather than the suggested 30,000 m^3/year. Irrespective of this, both the outputs from the original modelling and the modelling with sediment supply show a measurable difference in channel bed levels both in the river immediately upstream of the mouth and at the river mouth bar. The outputs indicate a general trend for increased bed levels (a reduction in depth) at the Te Tumu cut for the one year simulation.

DHI comments that the predicted deepening of bed levels for the existing situation is overestimated due to the scaling method. However, we note that prior to the flood event that occurs within the year-long simulation (with sediment supply from the Kaituna River included) a trend of increased bed levels in both the river immediately upstream of the mouth and at the river mouth bar is visible. As detailed in Section 7.2 of the DHI report, morphological changes take place over long time periods and it is for this reason that DHI used a user-defined scaling factor to provide realistic estimates of expected long-term morphological changes. Essentially the DHI comment that the predicted deepening of the bed levels for the existing situation is overestimated due to the scaling method means that the expected long-term morphological changes at the Te Tumu cut cannot be predicted with a high level of certainty.

We do acknowledge the model limitations and the dynamic nature of the river mouth, however, other information in the report also indicates that a general increase in bed levels at the Te Tumu Cut can be expected. This includes:

- An increase in flood tidal volume
- A decrease in ebb tidal volume (albeit small)
- A significant reduction in peak flows passing through Te Tumu during larger flood events such as the 5% and 1 % AEP flood events reducing the scouring of the river mouth.

Therefore, based on the information provided to date (modelling outputs) and the considerations above, we consider that there is a risk that the proposal will result in an increase in bed levels in the Lower Kaituna River between the proposed new diversion and the River Mouth and at the river mouth bar. This could lead to reduced navigability, adverse wave conditions, and reduced flood release capacity at the river mouth. In other words, we believe there is greater uncertainty in the effects at the mouth than the DHI report and additional modelling conveys.

We suggest a monitoring programme is developed to measure channel morphological change at the river mouth, with mitigation as required to address any related effect that may impede navigation. We also note in Section 3.2.1 of this letter that increased bed levels could result in reduced flood-release capacity at the river mouth and therefore increase flood risk in the Lower Kaituna River.

2.1.2 Larger Maketu estuary mouth

The modelling results in the DHI report show a measureable enlargement of the estuary mouth after the one-year simulation. A larger estuary mouth has the potential to change the tidal flux as well as have impacts on water quality, sediment transport patterns and flood hazard. To address these concerns DHI re-ran the model to assess whether a larger estuary mouth would impact on:

- the volume of water entering and existing the estuary and river;
- the residual sediment transport rates for the flood tide delta of the estuary; and
- the peak flood levels at different locations In the estuary.

Even though there is a decrease in the ratio of water exiting versus entering the estuary (1.9 to 1.7) and a decrease in the volume of water entering into the estuary from the river for the proposed situation as a result of a larger estuary mouth we agree that these changes are relatively small and are unlikely to change the water quality assessment described in the DHI report. We also agree that the additional model runs indicate that a larger estuary mouth results in only small changes in sediment transport patterns and no increase in the flood risk for Maketu Estuary. Therefore, we generally concur with the assessment of effects in relation to the estuary mouth.

2.1.3 Water quality

Assessment of environmental effects associated with water quality is provided within the DHI report. Numerical modelling assessment was undertaken to determine the impact of the proposal on:

- Overall salinity within the estuary;
- Additional risk for blue-green algae blooms within the estuary;
- Shellfish collection and bathing suitability within the estuary; and
- Nutrient concentrations within the estuary.

Based upon the information reported by DHI, we consider that the modelled water quality outputs presented have been derived by appropriate input information. We thereby confirm that the author has presented the appropriate detail to assess the potential for environmental effects to be present as a result of the proposed activity.

The following sections provide our comment on the individual water quality findings and the identified environmental effects. Comments on the proposed mitigation are presented in Section 7.

2.1.3.1 Salinity

Findings

Within the estuary, modelled changes to existing salinity are greatest during mean flow conditions and, as expected, at the estuary bed. DHI report that as a result of the proposed activity, salinity concentrations in the upper Maketu Estuary will increase, whilst in the mid estuary, salinity concentrations will reduce. No anticipated changes to salinity are expected at the estuary mouth. The DHI assessment is a consistent with the expected result.

The report states that the proposed activity will move the maximum extent of the salt wedge within the Kaituna River by 200 – 250 m upstream. Based upon Figure 9-27 presented within the DHI report we agree with this statement maximum movement of the salt wedge extent.

Effects

No discussion is provided by DHI in regards to the potential environmental effect associated with this change to salinity (however, we note potential environmental effects on aquatic fauna and flora communities as a result of this salinity change is discussed in Hamill (2014)).

DHI has identified a potential adverse effect to an existing water take for irrigation and stock water supplies (Alan Titchmarsh) as a result of the movement of the salt-water wedge within the Kaituna River further upstream. We concur with this assessment.

It is noted that the effects on salinity at Titchmarsh intake have been quantified in Section 9.3 of the DHI modelling report (Tuckey, 2014), however neither of the reports comments on how the predicted increase in salinity relate to stock drinking water standards or the risk of increased salinity on the irrigated land.

Mitigation

DHI proposes that in order for Alan Titchmarsh to better manage the extraction of water from the river, a salinity monitor should be installed in the river at the water intake to ensure that water is not extracted during periods with high salinities. The report states that other mitigation options may also be considered, such as providing additional storage for his stock water. Section 8.8.2 of the AEE confirms this approach and notes that to mitigate for the adverse effect, "the project will provide a combination of improved extraction controls to prevent saltwater contamination, and additional storage for stock water".

We consider that whilst the proposed mitigation measures will inform the affected party as to when water could be extracted from the Kaituna River, and we agree in principle with a monitoring approach. However, it is unclear at this stage how significant the predicted increase in salinity would be and whether the proposed mitigation measures will actually mitigate the effects of the proposal. Therefore other mitigation measures may need to be considered (for example, storage and/or a different intake location) should the potential for unacceptable effects be realised. We also note that the proposed mitigation for the project effects on water intakes has not been agreed with Mr. Titchmarsh.

As a result of the salinity modelling, DHI has also identified potential for some overtopping from the river channel to the proposed channel through the adjacent wetland. The proposed mitigation is a 1.3 m (Moturiki Datum) bund to prevent any flow through the wetland from the river to the proposed channel. Section 5.2 of the AEE notes that "*the northern toe of the stop bank will be retained below RL 1.3m as a bund to prevent short-circuiting of high salinity water from the river entering the new channel.*". We consider the mitigation measure proposed in the DHI report is appropriate for the identified environmental effect.

2.1.3.2 Blue-green algae, shellfish collection and bathing suitability assessments

Findings

DHI predicts that during the existing situation the critical blue-green algae concentration of 15,000 cells/ml will be exceeded 3.5% of the time, while for the proposed option it is estimated that the critical concentration will be exceeded 3.6% of the time.

The assessment of shellfish collection found the following:

> *'It is predicted that for the existing situation the critical faecal coliforms concentrations of 14 counts per 100 ml will be violated 32.2% of the time, while for the proposed option it is estimated that the critical concentration will be violated 44.1% of the time.*
>
> *It is predicted that for the existing situation the critical faecal coliforms concentration of 43 counts per 100 ml will be exceeded 12.6% of the time. Therefore the existing situation is not within the New Zealand guidelines for shellfish gathering, specifically that concentrations of 43 faecal coliforms should only be exceeded 10% of the time. For the proposed option it is estimated that the critical faecal coliforms concentration will be exceeded 20.6% of the time – also in excess of the New Zealand guidelines for shellfish gathering.'*

Based upon effects to bathing suitability, DHI predicts that for the existing situation the critical Enterococci concentration of 280 counts per 100 ml will be violated 2.0% of the time, while for the proposed option it is estimated that the critical concentration will be violated 3.3% of the time.

We consider that the methodologies used to determine the probabilities of blue-green algae and faecal coliforms exceeding critical concentrations are reasonable. We therefore regard the above findings reported by DHI as appropriate.

Effects

With respect to effects, DHI concludes that there is not a significant increase in risk for potential for blue-green algae blooms with the proposed option within the lower estuary, as such no environmental impact is anticipated. Based upon the evidence provided by DHI, we agree that there is no significant difference between the current and proposed states, therefore we concur that effects of the proposed activity (in regards to blue-green algae blooms) will have a no more than minor effect (but also not result in a great improvement).

DHI draws no conclusion regarding the shellfish collection findings achieved. Based upon the data presented, however, the proposed activity will cause an increased risk of adverse health effects to those collecting shellfish.

DHI also provides no conclusion regarding the effects of the proposed activity associated with bathing suitability. The data suggest a minor increase in unsuitable bathing conditions, but the general uncertainties inherent in modelling are probably greater than the predicted change.

Mitigation

The report presents discussion regarding mitigation for both potential blue-green algal blooms and unsuitable bathing conditions. Based upon the data presented in the DHI report, we consider that the proposed activity will cause a no more than minor effect. We therefore consider that no mitigation is required for potential blue-green algal blooms or bathing suitability.

No mitigation has been proposed within the DHI report for the predicted effects with respect to shellfish gathering. However, the AEE comments that "currently it is recommended that shellfish are not gathered for up to 5 days following rainfall, and the Project will not change this situation." Based upon the shellfish gathering data presented, we consider that the proposed activity will cause an increased adverse effect. We therefore consider that mitigation

measures should be proposed by the applicant to reduce faecal coliform concentrations, such that the probability of exceeding New Zealand guidelines for shellfish gathering is equal to or better than the current situation.

2.1.3.3 Nutrients

Findings

Two scenarios for nutrient concentrations have been assessed. These are:

- A base flow assessment, which includes a constant mean Kaituna river flow and baseline inflows for drains (as outlined in Section 3.3 of the DHI report).
- A rainfall assessment.

For the above scenarios, DHI reports:

> *'For Total Nitrogen, Total Phosphorus, Dissolved Inorganic Nitrogen and Dissolved Reactive Phosphorus the proposed option provides:*
>
> - *An increases to mean nutrient concentrations in the mid to lower estuary;*
> - *No significant change in mean nutrient concentrations in the upper estuary;*
> - *A relatively high (compared with the rest of the estuary) mean nutrient concentrations in the wetland created from Brains Land; and*
> - *A slightly larger area in the vicinity of the drains with higher mean nutrient concentrations. These higher values are also evident in the southern part of estuary, but interestingly the highest concentrations are slightly reduced.'*

We agree with the general findings stated above.

Effects

No discussion is provided by DHI in regards to the potential environmental effect associated with nutrient increases to the Maketu Estuary (however, we note potential environmental effects on ecological communities as a result of these nutrient increases are discussed in Hamill (2014)). We note that the nutrient increases do not appear to accord with the overarching objective (AEE, p8) of maximising the ecological and cultural benefits.

Mitigation

No mitigation is proposed within the DHI report for the identified increased nutrient concentrations. Given that the proposed activity is causing an increase to nutrient concentrations, we consider that mitigation measures be considered. We note that Hamill (2014) (see later) proposes measures to reduce nutrient loads. These measures are supported by PDP.

2.2 Comments on the Report provided by Economos

The Economos report provides an assessment of shoreline erosion risk around the estuary margin and along the river edge, including Maketu Spit, Beach Road sea wall, foreshore of the township, Papahikahawai Island, the margin of the Corbetts land, Ford Island, the new re-diversion channel and the lower Kaituna River.

2.2.1 Report findings

The assessment of environmental effects related to the above is primarily based upon modelling results presented within the DHI report, a single site inspection, previous reports and historical information, and the Economos author's local experience of coastal processes gained during previous projects. It is considered that the author has presented his expert opinion that has been informed from a large suite of information sources. These information sources are considered to be appropriate to ascertain the potential for environmental effect presence. However, as we have

outstanding uncertainties with the DHI modelling, we have less confidence in some of the findings discussed by Economos than we might otherwise have had. This is discussed further below.

2.2.2 Project effects on shoreline erosion risk

The Economos report states that no significant adverse effect anticipated as a result of the proposed activity in relation to shoreline erosion risk. The AEE goes further and states in Section 8.6 that the project will have a significant positive effect on shoreline erosion.

As mentioned in Section 2.1.1, PDP raised questions in response to the DHI numerical modelling of riverine processes. Given that PDP consider there to be risk present in regards to a general increase in bed levels at the Te Tumu Cut, it is considered that there is still uncertainty as to whether adverse wave conditions may occur at the Kaituna River mouth, and therefore whether the erosion risk is as predicted. We therefore reemphasise the desirability of a monitoring programme and contingency mitigation measures to address this possibility, if further information is not available to reduce the uncertainty.

Section 2.3 below lists a number of questions (that identify potential environmental effects) that were earlier posed to DHI and Economos that are yet to be addressed by the applicant. It is therefore currently unclear whether all environmental effects have been identified, and also unclear as to the degree to which potential environmental effects may be realised. Furthermore, since it is unclear whether environmental effects could occur as a result of the proposed activity (in regard to shoreline erosion risk), it is uncertain whether mitigation may be required.

2.2.3 Spit breaches

Section 1.6 of the Economos report states that spit breaches are likely to be reduced in the future or possibly prevented once the project has been implemented. Whilst we agree that the potential spit breaches may be reduced, we do not believe that they will be prevented in the future. Based on historic breaches of the spit, these occur during significant storm events. Modelling carried out did not account for all storm event processes, therefore it is not plausible to state that breaches could be possibly prevented. We therefore consider the Economos report over-emphasises the potential positive effect of possible reduced spit breach frequency.

2.2.4 Proposed mitigation

It is reported by Economos (and also in the AEE Section 8.6), that rock protection is to be placed:

- Along the southern bank of the new diversion channel to protect the stop bank, with a 5 m berm also placed between the top of the channel and the stop bank of the proposed diversion channel.
- On the outside banks of the minor bends in the new channel of the proposed diversion channel

We concur with Economos that this proposed risk management measure is appropriate, however, it is not clear whether this provides adequate mitigation to deal with the modelling uncertainties.

2.3 Outstanding Questions from DHI and Economos Reports

We had previously provided questions relating to the numerical modelling report (DHI) and Economos reports in a memorandum dated 4 August 2014. Some of the questions we consider are still outstanding and therefore contribute to uncertainties of whether all environmental effects have been identified, and to what degree potential environmental effects may be realised. These uncertainties are discussed below.

1. DHI (and Economos) reports state that accumulated sediment in the upper estuary is going to be eroded and dispersed. We agree with this statement, however, this sediment has been identified to have algal deposits and be anoxic. An uncertainty is where the potentially eroded sediment is likely to deposit, and whether the locations of that deposition may have an adverse effect to social, cultural, and environmental values.

2. The DHI report notes that estuarine current monitoring instrumentation was either biofouled or sank into muds. These issues led to the conclusion by DHI that current monitoring results obtained may have been underestimated. There is therefore uncertainty about how well the model was calibrated, and if it were calibrated, how the reduced flows were compensated for. This creates uncertainty around the model results for the estuary, and therefore the predicted effect. We cannot assess the scale of that uncertainty.

3.0 Summary of Effects Resulting from Water Level Changes

The report *Summary of Effects Resulting from Water Level Changes* by WaterLine Engineering Consultants (2014) summarises the water level changes caused by the proposal and assesses the effects on land drainage, water supplies and rural stop banks.

3.1 Comment on Report Findings

Waterline (2014) describes the existing environment including details of the Kaituna Catchment Control Scheme and existing flood risk and drainage in the area. It is considered that the description of the existing environment provides a good overview of the relevant background information essential for understanding the effects of the project on water levels in the Lower Kaituna River and on the Estuary and Maketu Township. It is considered that the information sources used by Waterline are adequately described and appropriate to assess the potential environmental effects.

3.2 Comment on Water Level Effects

3.2.1 Effects of the project on the Lower Kaituna River

Section 4.1 to 4.6 of Waterline (2014) discusses the effects of the Project on the Lower River for a range of river flow and climatic conditions. The report concludes that the effects in the lower Kaituna River down to the Ford Road Drain outlet are:

- during normal river flows, slightly higher low tides and lower high tides, with the changes magnified during river floods;
- longer periods of higher and mid and low tides after the flood peaks;
- pumps maintaining the low levels in Ford Road Drain will operate for up to 10 % longer;
- farmland will take longer to drain; and
- 10% less water entering the Lower Kaituna Wetland Management Reserve.

We concur with these conclusions and consider that the effects of the proposal on water levels in the Lower River are adequately assessed except for:

- the effects of the proposal on water levels during extreme high river flows (Section 4.3 of the report);
- the effects on Mr. Allan Titchmarsh's stockwater and irrigation water supply (Section 4.5).

Section 4.3 (High River Flow and Stop banks) relies on the outputs of the DHI numerical modelling report and comments that for all six flood scenarios modelled the peak water level drops in the lower Kaituna River. We agree with this conclusion for the situation where the new culverts are open, however, the proposed mitigation (sections 5.7.2 and 5.7.3 of the report) is likely to result in closure of the new culverts during extreme events when Maketu Township is at risk of flooding.

As detailed in Section 2.1.1 of this letter there is a risk that the proposal will result in increased bed levels in the Kaituna River between the proposed new diversion and the river mouth and at the river mouth bar. This could lead to a reduction in flood release capacity at the river mouth and hence higher water levels during high river flows when the new culverts are closed. This effect has not been assessed in the report.

As detailed in Section 4.5 of the report Mr. Titchmarsh extracts water from the lower Kaituna River for irrigation and stockwater purposes. We agree that there is no effect on the ability for Mr. Titchmarsh to take the water volumes required, however, as also noted in the DHI report, there is a higher chance of the water being saline. We have previously commented on this potential effect, and proposed mitigation, in Section 2.1.4 above.

3.2.2 Effects of the project on the estuary and Maketu Township

Section 5.1 to 5.6 of Waterline (2014) discusses the effects of the project on the estuary and Maketu Township for a range of river flow and climatic conditions. The report concludes that the effects on the estuary are:

- during normal river flows, slightly higher water levels with changes magnified during high river flows;
- longer periods of higher low tides after flood peaks;
- a reduction in drainage capacity and increase in the time the pumps have to operate to maintain the desired water levels in the drains;
- increased flood risk around Maketu Township during the 1% AEP event (1 in 100 year); and
- no effect on flows through the culvert under Maketu Road at Spencer from the Otumakoro Catchment.

We agree with these conclusions and consider that the effects of the proposal on water levels in the Estuary and Maketu Township have been adequately assessed.

We note that paragraph 2 of Section 5.2.2 (which describes the effect of higher estuary water levels related to drainage from Otumakoro Stream in Maketū Township) states:

> '*During heavy rain in the local Maketū catchment an estimate of peak rainfall runoff has been made using the Rational Method using a Time of Concentration of 20 minutes and a 2% AEP (50yr) rainfall event generated by HIRDS (with a 2% increase for climate chang*e).'

We assume that this is a typographical error and that the author means a two degrees increase in temperature for climate change, resulting in a 16% increase in rainfall depth. It is however unlikely that the conclusion (no effect on flows through the culvert under Maketu Road) will change if the allowance for increased rainfall for climate change is adjusted.

3.3 Proposed Mitigation

3.3.1 Proposed mitigation for effects on the Lower Kaituna River

Section 4.7 of Waterline (2014) proposes mitigation for the effects of the project on the Lower River. The Project proposes to provide compensation to the Kaituna Catchment Control Scheme by providing compensation for the increased running cost at the Ford Road pump station, funding an additional gravity culvert at Ford Road drain and provide an additional culvert to supply water to the Lower Kaituna Wildlife Management reserve. These measures are also documented in section 8.5 of the AEE.

We concur with the proposed mitigation for farmland drainage around the Lower River and for the Lower Kaituna Wetland Management Reserve. Even though the proposed mitigation is subject to final detailed design we agree that options are available and Appendix 6 of the report provides sufficient detail to satisfy us that adverse effects will be adequately mitigated. We also understand that the available mitigation options discussed in the report have been agreed in principle with the manager of the Kaituna Catchment Control Scheme, the Natural Hazards Group of the Bay of Plenty Regional Council, and with the stakeholders in the Lower Kaituna River Management Reserve.

As noted in Section 3.2.1 above, there is a risk that the project will lead to reduced flood release capacity at the Te Tumu Cut resulting in higher water levels in the Lower Kaituna River during high river flows when the new culverts are closed. These effects have not been considered and therefore, it is recommended that a monitoring programme and mitigation measures be developed. Any proposed mitigation (and monitoring) should consider stop bank levels in the Lower Kaituna River to maintain the required level of service for the Kaituna Catchment Control Scheme.

3.3.2 Proposed mitigation for the estuary and Maketu Township

Section 5.6 of the report proposes mitigation for the effects of the project for the estuary and Maketu Township. As noted above, it is proposed to provide compensation to the Kaituna Catchment Control Scheme by providing compensation for the increased power costs at Singleton's and Dean's pump station and funding additional gravity culverts along the shoreline between Ford's Cut and Singleton Pump station.

One of the key effects of the project is related to higher estuary water levels (due to increased flows from the Kaituna River into the Estuary) resulting in a significant increase in flood risk for some of the less frequent events (1% AEP). The applicant proposes to mitigate this effect by limiting the amount of river flow into the estuary at times when the flood risk is increased. Operational controls will be placed on the new culverts in accordance with an Operation and Maintenance Manual (OMM).

The key objective of the flood management section of the OMM is to ensure that the effect of the proposal on flood risk at Maketu Township is mitigated. It is considered that the report provides adequate information on how this key objective will be achieved including details of real time monitoring, flood and sea level prediction models, required actions when water levels reach warning levels etc. We agree that the effects of the project can be adequately mitigated with the proposed flood management approach outlined in the report.

4.0 Ecological Reports

The findings and effects presented in the two ecology reports, the terrestrial, avian and wetland restoration ecology by MacGibbon and the estuary ecology by Hamill, are discussed in sections 4.1 and 4.2, respectively. The ecological mitigation measures are discussed in Section 4.3.

4.1 Terrestrial, Avian and Wetland Restoration Ecology (MacGibbon 2014)

The MacGibbon (2014) report focused on the potential effects, both positive and negative of the changes on estuarine margin vegetation and the biota that live in and/or rely on that vegetation as a consequence of altering the freshwater inflow. This report provides an assessment of the environmental effects of the proposed project on three aspects of the area's ecology:

1. The potential effects of re-diversion on the terrestrial vegetation including the estuarine margins and areas of salt marsh, Maketū Spit and Wildlife Management Reserve and lower Kaituna River margins.
2. The potential effects of re-diversion on the avifauna and avian habitat on and around the margins of the estuary.
3. The potential effects of establishment of wetland on the ecology of the estuary and its surrounds. Consideration is also given to the likely effects of revegetation of Papahikahawai Island, including both the southern wetland portion and the remaining terrestrial portion of the island.

MacGibbon (2014) has been reviewed based on the assumption that the DHI modelling outputs are appropriate from an ecological assessment point of view and that additional modelling undertaken by DHI has no effect on the original MacGibbon (2014) report assessment (as confirmed by MacGibbon). As for any modelling, there are uncertainties, which will result in uncertainties in the assessed effects. It is not possible to quantify the scale of these uncertainties.

4.1.1 Comment on report findings

4.1.1.1 Terrestrial vegetation

Section 3 of the report provides good information on historic, current vegetation and likely changes to vegetation post re-diversion and provides a good summary of relevant information from the DHI report to which the ecological assessments were assessed against. We agree with concerns raised by the author re stop bank removal, excavation

deposition, particularly with regards minimising/limiting sediment deposition and erosion during construction. It is considered that the description of the existing environment provides a good overview of the relevant background information essential for understanding the effects of the project on terrestrial vegetation including the estuarine margins and areas of salt marsh.

4.1.1.2 Avian fauna and habitat

Although there appears to be gaps, inconsistency between historic survey methods and current avian data available for analysis and review and thus assessment, it is considered that the description of avian fauna provided in Section 4 provides an adequate overview of the relevant background information essential for understanding the effects of the project on avian fauna and avian habitat.

4.1.1.3 Wetland restoration

It is considered that the description of the wetland restoration proposal provides a good overview of the relevant background information essential for understanding the potential effects of the project on estuarine ecology and its surrounds and likely effects of revegetation of Papahikahawai Island, including both the southern wetland portion and the remaining terrestrial portion of the island.

4.1.2 Comments on effects

4.1.2.1 Vegetation

Section 3.3 of MacGibbon (2014) discusses the potential effects of the proposed activity on terrestrial and estuarine marginal vegetation. We agree with the concerns raised about sediment erosion (Section 3.3.2) and the importance of a good Sediment Management Plan. We agree with the technical analyses described in this section of the report and consider that the effects of the proposal on terrestrial vegetation including the estuarine margins and areas of salt marsh are adequately assessed.

4.1.2.2 Avian fauna

Section 4.3 of MacGibbon (2014) discussed the potential effects of the proposed activity on shorebirds and marshland and wetland avian fauna. The assessment of effects relies heavily on the DHI modelling and conclusions of Hamill (2014), as these documents provide relevant information around potential physical and chemical environmental changes which may influence avian habitat and food resources.

We agree with the proposed mitigation measures and monitoring of Titchmarsh wetland to minimise effects on wetland birds and consider potential effects on avian fauna discussed to be acceptable.

4.1.2.3 Wetland restoration and estuarine ecology

Section 5.7 of the report discusses the potential ecological effects of wetland restoration on estuarine ecology. We agree with the technical analyses described in this section of the report and consider the effects of the proposed wetland restoration on estuarine ecology are adequately assessed.

4.2 Estuary Condition and Potential Ecological Effects

The Hamill (2014) report provides an overview of the current state of the Maketu estuary and lower Kaituna River based on investigations undertaken during the summer of 2013/2014. These investigations assessed macro-algae, shellfish and benthic macrofauna in the estuary, dissolved oxygen fluctuations, fish in the estuary and lower Kaituna River and macroinvertebrates in the lower Kaituna River. The report also assesses the potential effects of the re-diversion in terms of algae and nutrients, shellfish, benthic macrofauna, dissolved oxygen, fish and lower river macroinvertebrates, relying heavily on the DHI model results.

4.2.1 Comment on report findings and level of effect expected

Hamill (2014) describes the existing environment in the estuary and Lower River to the appropriate standard to allow effects of the proposal to be assessed and to provide adequate baseline data for ongoing monitoring in the estuary following the re-diversion, should consent for the proposal be granted.

With respect to the assessment of effects of the proposal, the report indicates that based on model outputs the proposed re-diversion is expected to result in the following key effects:

- an overall decrease in algal cover and improvement in ecological health in the estuary, with increased likelihood of seagrass re-establishing
- positive impacts on the benthic invertebrate fauna due to the expected changes to environmental factors within the estuary
- an improved dissolved oxygen regime in many sections of the estuary
- improved fish habitat and feeding areas within the estuary
- only minor effects on Macroinvertebrate fauna in the lower Kaituna River.

While PDP concur that these positive effects are potential outcomes of the re-diversion, it is considered that there remains uncertainty over the likely scale of these effects and the likely timeframes for their realisation. It is also considered that potential ecological effects relating to ongoing inputs of sediment from the Kaituna River to the estuary following the re-diversion have not been fully considered in the ecological assessment.

The Hamill (2014) report proposes that monitoring will be key in assessing the benefits of the re-diversion but provides little detail in this regard. PDP similarly consider that monitoring will be essential to ensure that effects are as anticipated, and that any unforeseen eventualities can be promptly detected and if necessary addressed via contingency actions. It is understood that monitoring proposals are addressed in the AEE.

4.3 Proposed Ecological Mitigation

Because there are uncertainties as to how exactly the estuarine system is going to respond to the proposal, particularly with regards to water quality, sedimentation, deposition and erosion, it is highly desirable that appropriate vegetation and avian monitoring and mitigation options are in place and agreed upon and monitored until sufficient time has passed to measure ecological effects / success.

4.3.1 Terrestrial and riparian vegetation

Section 3.4 of the MacGibbon (2014) report discusses mitigation and monitoring for the Titchmarsh wetland and the southern edge of Papahikahawai Island and other marginal vegetation estuarine areas.

MacGibbon (2014) makes general recommendations for vegetation monitoring to be undertaken at the Tichmarsh wetland, and the benefit of 'preventative mitigation' and contingency provisions. We agree this monitoring would be beneficial, however specific detail is not provided.

We agree with the general monitoring and mitigation options provided in Section 3.4.2 of the MacGibbon (2014) report. This section and Section 3.4.3 make some useful suggestions around additional monitoring, but lack detail. Without specific monitoring plans and other mitigation detail we cannot assess whether the proposed mitigation and monitoring are adequate.

4.3.2 Wetland restoration/creation

Throughout Section 5 of the MacGibbon (2014) report, several best practice and mitigation options are discussed for construction, earthworks, and restoration for all three proposed wetland areas; Brain Land (19 ha), the southern low lying flats of Papahikahawai Island (8 ha) and the portion of Fords's Loop channel (0.5 ha). We agree with mitigation options discussed, specifically those around earthworks, planting specifications (specific consideration to be given the

selection of vegetation according to tolerance ranges to site conditions and the suggestion to trial plantings and monitor species performance) and discussions around maintenance activities such as weed management and pest animal management. We also agree with the need to have a "*restoration planting plan produced that details the planting zones, species mixes, plant spacing's, plant grades, site preparation and post planting maintenance requirements*" for each of the selected restoration areas.

The Hamill (2014) report addresses mitigation in the context of the loss of 100 m of existing wetland margin due to the construction of the proposed intake and makes recommendations that the northern side of the new channel should have 'soft' planted margin and gentle sloping banks. The report states that this will "*maximise the potential for whitebait rearing habitat"* and that *"It would also maximise the net gain in wetland from the project*". The report also states that the proposed mitigation would only *partially* mitigate the loss of 100 m of wetland edge in this location. However, the AEE indicates that the project will re-establish freshwater, estuarine margin and saltmarsh wetlands on up to 27.5 hectares of land within and adjacent to the estuary. Therefore, although on the northern side of the new channel the proposed mitigation measures may not be fully effective, additional wetlands are proposed in other areas (as discussed in MacGibbon 2014).

Although there may be some loss to the existing wetland habitat, we agree that the restoration of up to 27.5 ha of wetland will likely have substantial benefit to the ecology Ongatoro – Maketu estuary after re-diversion. We understand from the AEE that a Wetland Plan will be prepared as part of the detailed design. Therefore, assuming that this plan is prepared and implemented with input from appropriate specialists, the proposed mitigation measures to restore wetlands in these areas are likely to be effective.

4.3.3 Nitrogen loads and fish-friendly flap gate to Waitipuia Stream outlet

Other recommendations made by Hamill (2014) include that attention should be given to reducing nutrient loads into the estuary, in particular nitrogen entering the southern estuary from Waitipuia Stream and nearby drains (p28) and that consideration should be given to installing a fish-friendly flap gate to Waitipuia Stream outlet to allow fish movement and open up inanga habitat in the wetland.

We support consideration of these measures, to maximise the positive ecological outcomes of the project. The AEE notes that in relation to managing nutrient inputs to see ecological improvements in the southern part of the estuary (Section 8.8.4) "although outside the scope of this Project, BoPRC are working with landowners to address this situation." However, the AEE does not indicate whether installing the fish-friendly flap gate has been considered.

4.3.4 Avian ecology

Section 4.4 of the MacGibbon (2014) report makes general recommendations for avian monitoring and mitigation, with which we agree, however, no specific details are provided. We also agree with the discussion on the potential need for careful mitigation and monitoring of Titchmarsh wetland to minimise effects on wetland birds during the project development. We also agree with the s92 response (Opus letter of 1 September 2014) mitigation measure of "*if construction timing avoids breeding season the effects on bird life are not expected to be significant*".

A question raised in the s92 request is still outstanding. It is stated in the report that:

> '*an improved programme of monitoring of bird species on and around the estuary is recommended so that the impacts of the re-diversion, both positive and negative, can be determined and responded to if necessary. Standardisation of bird survey methodology and survey timing is strongly recommended so that the collected data can be evaluated statistically*.'

The s92 requested more detail around the avian monitoring programme rather than the received response "No avian monitoring regime is recommended as necessary". This response appears to be contrary to the original recommendation in MacGibbon (2014). We consider it is important that adequate avian monitoring occur, particularly

for wetland species prior to construction, post-diversion and post-wetland restoration, in order to effectively assess impacts of the re-diversion and restoration of wetlands.

At this stage, we cannot assess whether the originally recommended avian monitoring is adequate as no avian monitoring plan has been provided.

We note that Section 8.9.7 of the AEE states that "*The Project will not result in significant adverse effects on birds*." No mitigation options or additional proposed are discussed, however Section 9.2 notes that bird surveys are currently undertaken annually and seasonally.

4.3.5 General monitoring proposals

As noted above, a robust monitoring programme will be required to identify any unforeseen eventualities or adverse ecological effects, ensuring that these can be addressed via contingency actions or additional mitigation measures if deemed necessary. However, the details of the monitoring is not presented in the two ecology reports, and, therefore, it cannot be stated with confidence whether the monitoring would be sufficient to identify any adverse effects should they arise. We have not assessed whether the AEE proposals are adequate as this is outside our scope.

5.0 Construction Description

This section sets out our views on the *Construction Description and Drawings* report prepared by Waterline Engineering Consultants, dated 13 June 2014.

5.1 Comment on Report Findings

Overall the construction description and proposed sequence is reasonable. The construction is expected to be relatively straightforward as an earthworks project, albeit a project where sediment-laden water which will need to be managed to avoid excessive effects. The report acknowledges this need. Key to this will be the detail of construction management plans to be written after the consent is granted, and enforcement of those plans.

There are details of the design which will not be determined until the detailed design is completed. It is not clear whether geotechnical investigations have been carried out to this point; no mention is made in the report or AEE. The source of materials and amount of excavation required may be affected by geotechnical matters and may affect the assumed duration of various tasks. For example, the new Titchmarsh stop bank is assumed to be constructed from silt excavated from the new diversion channel. Some comment on alternative sources of material, and the effects of obtaining alternative material and disposing of additional surplus material from the new channel, should the silt prove geotechnically unsuitable would be helpful. It could be a major issue for the project if the silt proved to be unsuitable, as additional material would require disposal and suitable material would have to be imported from somewhere.

Similarly, should the foundation under the new culvert section prove to require deeper excavation than assumed to provide an adequate foundation, this will require a greater amount of material requiring disposal. However, this is a relatively minor issue for the overall project.

We have difficulty reconciling the excavation and fill volumes provided in the AEE and the report. Some volumes are provided in the AEE that are not given in the report and some volumes given in the AEE are not the same as the volumes provided in the report. The uncertainty of volumes means the proposed durations of the various tasks in the construction programme and the effects of the construction activities described in the report have some uncertainty.

For example, an area of about 23 ha of Titchmarsh land (Pt Sec 5 Blk V Te Tumu SD) is proposed for disposal of surplus material. The report notes a disposal depth of up to 0.5 m. Even if the soil disposal depth averaged only half this amount, the area available would suggest up to 60,000 m^3 could be disposed of here yet the need for such a large volume (and land area) is not apparent from the figures given in the report or the AEE.

The construction programme (Appendix 1 of the report) appears to be optimistic. For example:

- Insufficient time has been allowed for the detailed design process and no time has been allowed for geotechnical or other engineering investigations.
- No time has been appears to have been allowed to prepare and receive council approvals for various management plans.
- Insufficient time has been allowed for obtaining box culvert sections from a supplier. These are typically supplied to order, rather than be in stock.

The new Titchmarsh stop bank is shown to be constructed in spring yet the report notes it is to be constructed from wet silt material from the new channel alignment. Regardless of the geotechnical suitability of the material mentioned above, it may be optimistic to expect to dry the silt to a suitable moisture content for compaction so early in the construction season. Delays may occur during this task which in turn will delay other activities.

5.2 Comment on Construction Effects

Overall the effects described are reasonable. However, the report notes various numbers of loads travelling past houses, for example 1000 loads past the Titchmarsh house from the existing stop bank removal. A better assessment of effects can be obtained by the number of vehicle movements, rather than loads. One thousand loads will actually be 2000 vehicle movements. The 1000 load calculation also assumes each load is 20 m^3 with trucks and trailers being used. In fact some of the material may be very wet and it may not be possible to carry such large loads and the contractor may decide to use just a truck, rather than truck and trailer for such short haul distances. This would then amount to perhaps 4000 truck movements, with a much greater traffic effect than is indicated in the report. Similarly greater effects would be indicated for other excavation and filling activities when vehicle movements are considered.

The likely longer duration of some activities than indicated on the programme will mean construction impacts on the local community will be longer than currently contemplated. This possibility has not been considered.

Material from the new channel excavation is to be used for the future additional car park fill. This material is likely to be very wet, with potential effects from sediment–laden material seeping from trucks during transport and draining from the fill after placement. These potential effects have not been addressed in the report. The intended management plans would be the appropriate place to address both issues.

There is an intention to leave the downstream end of the existing Ford's Cut open during the works to enlarge and line the cut. There will be water flow within the cut and silt will be mobilised when excavating below the water surface to deepen the cut. The report claims that tidal flows in the upper estuary are "slow" and therefore the effects will be minimal, and less than the effects from installing a coffer dam to contain sediment-laden water. We are of the view that the effects could well be much greater than assumed and should be managed in a proactive way

5.3 Mitigation

Mitigation is not specifically discussed in the report. However, it is expected the proposed management plans should deal with the short-term construction effects.

As noted above, we believe mitigation measures (or at least contingency measures) should be put in place to manage suspended sediment during excavation of the diversion cut.

6.0 Options and Alternatives

The Options and Alternatives report is not strictly a specialist technical report and therefore our approach to the review has been different from the other reports. Instead, we have considered whether the prepared report meets RMA s171 (1) b, which requires:

Regard to whether adequate consideration has been given to alternative sites, routes, or methods of undertaking work - if

i. The requiring authority does not have an interest in the land sufficient for undertaking the work; or

ii. It is likely that the work will have significant adverse effect on the environment

It is recognised that alternative sites are not plausible for this project, therefore the review was solely based upon whether adequate consideration had been made towards alternative routes and/or methods to achieve the re-diversion of the Kaituna River into the Maketu Estuary.

In carrying out this review, it is recognised that key objectives are required to be achieved by this project. These are well discussed in the reviewed report. Whilst it is not within the scope of this review to determine the efficacy of these objectives, it is however acknowledged that these project objectives set guiding conditions for what are relevant alternatives that should be considered within this project.

The reviewed report discusses that the assessment of alternatives has been undertaken over a period of time, with options assessments and consequent investigations carried out in three stages:

1. Pre-2011: pre-feasibility studies.
2. 2011-2012: feasibility studies.
3. 2012 to present: investigation and preliminary design.

The initial stage 1 assessment considered 16 options. These options ranged from a status quo to a full Kaituna River diversion and an option involving flood relief of the surrounding lands.

Table 2 of the reviewed report, lists these considered stage 1 options and also provides commentary as to each options rationale for either exclusion of inclusion for further investigative analysis.

We consider that the quantity of options assessed is adequate. In addition, the methods used to assess these options and ultimately select a preferred option are considered acceptable. We note that it is not within the scope of this review to provide comment whether the preferred option chosen is the most appropriate.

Stage 1 option N was selected as the preferred option for further investigation. The stage 2 assessment provided variations to the proposed Option N. These were:

1. Low flow partial diversion
2. Maximum flow partial diversion
3. Full diversion.

For each of these variations, we note a comparative status quo assessment was also carried out. All possible options have been assessed in stage 2, therefore PDP consider that the assessment of stage 2 options are adequate.

The selection of the preferred Stage 2 option was made by the Bay of Plenty Regional Council's Operations, Monitoring and Regulation Committee. In this instance, the maximum flow partial diversion option was selected. As discussed the basis for this selection was determined via investigation work, and specifically whether options assessed would achieve the required project objectives.

Given that an investigative methodology was in place to ascertain a preferred option, we consider that adequate consideration for stage 2 options has been made.

Stage 3 of the options assessment specifically addressed how the maximum flow partial diversion could be achieved. Two options were considered. We consider that these options are adequate for the project.

Selection of a preferred option was achieved via a consultation process, which we note also included potentially affected parties. Feedback from the consultation process identified that there was no preferred option, i.e. parties

consulted had no clear preference between the two options. As a result, selection of the preferred option was made by Council staff. Option 2 was selected based upon reduced risk and cost. We consider the method used of selecting the proposed stage 3 option is appropriate.

In summary, the various process used by the applicant to consider options/alternatives for the Kaituna Re-diversion project are regarded as adequate and meet the requirements of S171 (1) b of the RMA.

7.0 Summary and Conclusions

Six technical reports related to numerical modelling predicting river morphology, water levels and water quality; coastal erosion; estuarine, terrestrial, avian and wetland ecology; and construction, and a further report on analysis of options and alternatives have been reviewed. The review included additional information provided in response to the council's s92 request, mainly some additional modelling "sensitivity tests".

As required, the review has focused on whether we concur with the reports' findings or not, whether they confirm the level of effects expected and whether the proposed mitigation is appropriate and sufficient to avoid, remedy or mitigate the predicted effects.

Most of the reports rely on the numerical modelling by DHI. It is inherent with all numerical modelling that there will be uncertainties. Thus, any assessment that relies on the modelling will have some uncertainties. While we can review the general approach taken with, and broad inputs into, the modelling, we are not in a position to determine whether the modelling is "correct". That would require a much more detailed assessment of the modelling than is expected by the scope of this review.

With this overarching caveat, we are generally satisfied with the approach to, and inputs into, the modelling by DHI. However, we have concerns regarding the certainty of predictions for the Te Tumu Cut channel geometry and bed levels, and possible lack of future flood capacity with associated increased flood levels. We do not feel the report has adequately acknowledged this uncertainty of effects. It is our view that the Kaituna River mouth should be monitored and contingency mitigation provided for.

We are generally satisfied with the predictions for the Maketu Estuary water levels and quality, although we have some concerns regarding the model calibration due to problems with current-monitoring instrumentation. We also generally concur with the predicted effects for the estuary mouth. However, we have concerns that the potential salinity increases at the Titchmarsh stockwater and irrigation intake have not been adequately addressed. While mitigation is proposed, the uncertainty over how much the salinity may increase means additional mitigation measures to those proposed may be necessary. The proposed salinity monitoring is appropriate.

The water-quality modelling predicts a significant increase in the frequency of water conditions not being satisfactory for shellfish gathering. The potential constraints on the local community being able to gather shellfish and/or the implications for public health are not discussed. This is a gap in the consideration of effects. Mitigation should also be considered.

Nutrient concentrations are predicted to increase in the estuary. No mitigation is proposed in the modelling report but appropriate mitigation is proposed in the estuarine ecology report by Hamill.

The DHI modelling report notes that accumulated sediment in the upper estuary will be eroded but provides no predictions at to where it will redeposit. This sediment is acknowledged to contain algal deposits and to be anoxic. The potential effect of redeposition on a variety of receptors is not considered and is a gap in the consideration of effects.

Related to the uncertainty of bed levels at the Kaituna River mouth, there is uncertainty of coastal erosion effects assessed by Economos. While we are generally satisfied with the report on shoreline erosion, we have concerns that if the bed level increases at the river mouth are larger than predicted, there may be adverse wave conditions with

consequent uncertain erosion effects. We therefore emphasise the desirability of monitoring the Kaituna River mouth and implementation of appropriate contingency mitigation measures.

The Economos report notes a predicted decrease in or possible prevention of spit breaches as a positive effect. However, we believe it is over-optimistic to assume the possibility of spit-breach prevention, and the possibility of this still occurring should be allowed for.

Economos also proposes some erosion protection at the proposed diversion channel. We concur with this mitigation but it is unclear to us whether this is sufficient to deal with the uncertainties of the river bed modelling.

The water level report by Waterline provides adequate consideration of effects and appropriate mitigation measures. We note, as above, that flood levels in the Kaituna River may be higher than has been considered if, as we consider possible, the river outlet bed level increases more than predicted.

We generally agree with the approach taken and findings reported in the two ecological reports by MacGibbon (terrestrial, avian and wetland ecology) and Hamill (estuarine ecology). We also largely concur with the predicted effects (noting there will be uncertainties around conclusions based on the numerical modelling). However, while we agree with positive effects on the estuary assessed by Hamill, we have a concern that the scale and timeframes for their realisation have not been properly assessed. In addition, we have concerns that ecological effects from ongoing sediment inputs into the estuary have not been fully assessed.

A variety of ecological mitigation measures are proposed. We concur that the proposed wetland restoration will have a significant ecological benefit, and generally agree with the detail provided around that restoration. However, while we agree with the general thrust of other mitigation measures, insufficient detail is provided to properly assess whether this other mitigation is adequate. There are various proposals for monitoring, but the detail of the proposed monitoring is lacking. Without specific monitoring plans we cannot assess whether the monitoring and non-specific preventative mitigation proposals will be adequate.

It is unclear to us what avian monitoring is intended. We consider that before, during and after construction monitoring is necessary.

The construction description report by Waterline adequately describes the proposal and construction sequence. However, the construction programme appears optimistic, with construction effects, and associated disruption to the local community, potentially being of a longer duration than currently assessed.

We also largely concur with the assessment of construction effects, but note that the effect of construction traffic past the Titchmarsh house is not properly described, being potentially a large underestimate. We also consider the effects of suspended sediment mobilised during the deepening of the diversion on the upper estuary has been underestimated. Measures should be put in place to mitigate the likely effects.

Mitigation is not discussed in the report. We expect that various management plans, if properly implemented and enforced, will provide adequate mitigation.

The Options and Alternatives report is not a specialist technical report and therefore our consideration has been whether it meets the requirements of s171(1)b of the RMA. We consider the assessment is adequate.

8.0 Limitations

This review has been prepared on the basis of information prepared by others and provided by the Bay of Plenty Regional Council. PDP has not independently verified the accuracy of the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing the review. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

This report has been prepared by PDP on the specific instructions of the Bay of Plenty Regional Council for the limited purposes described in the report. PDP accepts no liability to any other person for their use of or reliance on this report, and any such use or reliance will be solely at their own risk.

I trust these comments provide the information you were seeking. Please contact us should you have any queries.

Yours sincerely

PATTLE DELAMORE PARTNERS LIMITED

Managed and reviewed by:

Clare Maginness

Senior Environmental Scientist

Directed and approved:

Graeme Proffitt

Director

Kaituna River Re-diversion and Ongatoro/Maketu Estuary Enhancement Project

Caucus meeting notes: 25/3/15

Present
Bas Veendrick, Hayden Easton - for PDP
Ben Tuckey, Martin Single, Steve Everitt – for applicants

Note: Bas Veendrick and Steve Everitt not present during the caucusing related to sediment deposition in upper estuary.

Discussion points:

a) Flood conditions
b) Proposed monitoring of ebb tide delta
c) Salinity at Titchmarsh property
d) Sediment deposition in upper estuary

a) Flood conditions

Question asked: What happens during high flow/flood conditions?
Potential effect of reduced scouring of ebb delta deposits during large flood events on provision of reset to channel position and depth. Is this a quantifiable effect? How long would the effect last?

We discussed the events modelled, and the results showing potential effects with regard to scouring and resultant channel depth/ depth above the bar. The model shows the potential geomorphic work that can be done for the flood events, but is limited in quantifying the real world situation due to the flood reaching the available capacity of work that can be done (erodability and availability of mobile sediment). In effect, the geomorphological work done by the flood flows often is reached before the peak of the flood.

The duration of the effect depends on the antecedent conditions (the state of the bar/delta; wave environment and alongshore sediment transport rates) and oceanic processes after the flood event. If the wave environment is quiescent, then potential the effect could be long lasting – deeper channel across the bar, more directly in line with the river channel. However a wave event, and any resulting alongshore sediment transport can change the bar and ebb delta in a matter of hours, so the effect of the flood could be relatively short-lived.

Action: Applicant is to provide to PDP either prior to the hearing, or as evidence, a description of the effect of flood flows on the ebb tidal delta and channel stability that demonstrates that the geomorphological work done by the flood flows is often reached before the peak of the flood. Provided that the additional information requested from the applicant confirms the above, the conclusion is that the effects after the project are not inconsistent with the existing situation and present process environment.

b) Proposed monitoring of ebb tidal delta

Identified the possible types of monitoring as contained in the Economos Navigation Memo:

1 Measurement of bar depth
2 Measurement of outflows
3 Incident reporting

Agreed that measurement of bar depth is problematic and unlikely to provide useful/reliable data to indicate difference between pre- and post- project conditions. This is due to the

difficultly of aligning coastal and riverine conditions, and also the resolution of data capture to determine morphological change.

Agreed that measurement of outflows could be useful in calibrating and/or validating the model predictions.

Agreed that incident reporting would not provide comparative information on pre- and post– project conditions, i.e. only a negatively biased dataset would be achieved.

Monitoring of flows upstream of the river mouth for calibration of model findings is recommended. Existing proposed condition not discussed in detail but seems to fit the bill as useful and relevant to assessing effects of the project.

c) Salinity at Titchmarsh property

PDP agreed there should be some mitigation to provide property owner with access to water as pre-project. Questions asked as to whether sufficient mitigation could be quantified, and whether sufficient mitigation can be supplied. PDP commented that the decision of whether sufficient mitigation has been proposed, relies upon Mr Titchmarsh. Should Mr. Titchmarsh not agree with what's offered further quantification of pre- and post-project access to (fresh) water may need to be provided.

Agreed that salinity measurement, control of pumps and providing a water storage tank is an appropriate mitigation measure.

d) Sediment deposition in upper estuary

Where will anoxic sediments and algal deposits eroded from the upper estuary be deposited? Will this have ecological and/or cultural effects?

Agreed most eroded muds from upper estuary will be discharged from the estuary in suspension. Agreed that deposition of some upper estuarine sediments may also occur in low energy areas within the Maketu Estuary.

Agreement that mitigation of staging the initial opening of project to prevent a large slug of muds being eroded and moved into the wider estuary body.

Monitoring plan to reflect identification of mud deposition, and response to findings if adverse deposition is identified. PDP considered that the Environmental Monitoring Programme document include an assessment of the appropriateness of trigger levels, contingencies and feedback loops should environmental effects associated with deposition of upper estuarine sediments were observed.

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d) Sediment deposition in upper estuary

Where will anoxic sediments and algal deposits eroded from the upper estuary be deposited? Will this have ecological and/or cultural effects?

Agreed most eroded muds from upper estuary will be discharged from the estuary in suspension. Agreed that deposition of some upper estuarine sediments may also occur in low energy areas within the Maketu Estuary.

Agreement that mitigation of staging the initial opening of project to prevent a large slug of muds being eroded and moved into the wider estuary body.

Monitoring plan to reflect identification of mud deposition, and response to findings if adverse deposition is identified. PDP considered that the Environmental Monitoring Programme document include an assessment of the appropriateness of trigger levels, contingencies and feedback loops should environmental effects associated with deposition of upper estuarine sediments were observed.

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Bas Veendrick

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Hayden Easton

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Ben Tuckey

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Martin Single

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Steve Everitt

Kaituna River Re-diversion and Ongatoro/Maketu Estuary Enhancement Project

Caucus meeting notes: 25/3/15

Karen Sky, Hayden Easton - for PDP
Keith Hamill, Roger MacGibbon – for applicants

Discussion points:

a) Sediment deposition within the upper estuary
b) Effects on microbial health risk
c) Avian Ecology and
d) Wetland extent

a) Sediment deposition within the upper estuary
We discussed the potential effects of the re-diversion flushing organic muds from the upper estuary and Papahikahawai Lagoon. Hayden wanted to know how the project addresses the risk that some of the muds may re-distribute to other parts of the estuary. There was agreement that the risk could be managed by monitoring algae and surface sediments after the initial opening (phase 1) and using information from this monitoring to manage the commissioning phase.

PDP sought to clarify the monitoring approach (defined by conditions 30.1 and 30.2) with regard to sediment deposition in the estuary. Keith outlined the approach to sediment monitoring within the estuary at the proposed transects. Karen commented in the caucusing that the visual/qualitative sediment assessments proposed (e.g. % cover of mud/silt, depth of mud/silt, anoxic layer depth, algae cover and type) would provide useful information if undertaken in conjunction with all of the macrofauna sampling sites referred to in condition 28.2. Keith concured that this information would be useful.
Sediment cores were stated by Hayden as the preferred means of detailed sediment assessments at the transects referred to in condition 30.

It was agreed:

- The modelling and analysis gives us confidence that the re-diversion will cause an increase in current velocity over much of the estuary, and the net residual current velocity will increase towards the estuary entrance. This will increase the flushing from the estuary of algal accumulations and associated anoxic muds.

- The largest improvements in flushing will occur in the upper estuary, south of Papahikahawai Island and in Papahikahawai lagoon.

- In the short term, there is a risk that some of the muds mobilized by the increased current will redistribute to other parts of the estuary. This risk could be managed by monitoring sediments after the initial opening (phase 1) and using information from this monitoring to manage the commissioning phase. It was agreed that an additional sediment survey within one year from commissioning is recommended (but would need to be agreed by the applicant), as this is when peak sediment loads are likely to occur.

- The variables collected at macrofauna monitoring sites should include:
    - Algae cover and type
    - Percent cover of mud/silt
    - Depth of mud/silt
    - Anoxic depth i.e. depth of RPD

- The areas most likely to be affected are already low current zones where algae and associated muds already accumulate.

- In the long term the net sediment mobilised as a result of the re-diversion will be flushed as the estuary establishes a new state of dynamic equilibrium.

PDP suggested:

- that a way to deal with the uncertainty regarding deposition, and the potential for any unexpected results, is that the Environmental Monitoring Programme document includes an assessment of the appropriateness of trigger levels, contingencies and feedback loops.

- that sediment cores will be collected at all proposed sediment sampling locations in condition 30 as a means of assessing effects of sediment accumulation (e.g. depth of mud/silt, anoxic layer depth). Keith considers that there are alternative methods that are faster and more accurate and that method details can be provided in a monitoring plan.

b) Effects on microbial health risk to shellfish gathering
We discussed the potential impact of the re-diversion on microbial contamination of shellfish gathering waters. Hayden identified that the re-diversion will result in an increased risk of microbial contamination of shellfish waters and considered that this should be mitigated.

Hayden and Keith had a subsequent telephone conversation on Friday 27 March. We clarified that he had not seen the memo 'Microbiological health risk of bathing and shellfish gathering in the Maketū estuary' dated 16 July 2014. A copy was provided to Hayden.

It was agreed:

- The re-diversion will result in an increased risk of microbial contamination of shellfish waters in the Maketū estuary.

- The 90 percentile guideline will be exceeded more frequently, increasing from about 12% exceedance to about 19% exceedance after the re-diversion. This is respectively 2% and 9% more often than the allowable 10% exceedance under the shellfish gathering guidelines.

- The majority of exceedance are associated with rain events and this will remain the case after the re-diversion.

- The microbial contamination of shellfish gathering waters could be reduced by improved catchment management.

- The re-diversion itself will provide ecological and health risk improvements such as reduction of the cyanobacteria Lyngbya species density from the upper estuary.

- Catchment works planned by BOPRC will reduce microbial effects from the re-diversion. We did not have an agreed view on whether these works can or could be 'locked-in' as consent conditions.

Keith's view is that the current and future risk of microbial contamination can also be managed by better advice on how and when to undertake shellfish gathering. Hayden noted

however, that whilst risk could be managed better by providing advice to public, this doesn't alter the issue of an increased frequency of non-shellfish gathering days.

During Hayden and Keith's subsequent teleconference (17 March 2015), Hayden noted that effects associated with an increased frequency of non-shellfish gathering days need to viewed in combination with the positive environmental effects that the application creates. As such, any mitigation required and its quantity (as a result of shellfish gathering effects), should be decided by commissioners via the hearing process.

Works intended for the catchment are:

- NPS Freshwater – Kaituna is a priority catchment
- Council has funding for riparian management works
- Kaituna River and Ongatoro/Maketu Estuary Strategy – the Implementation Plan has actions around improving water quality
- Council are working with landowners on developing Biodiversity Management Plans. The one most relevant to this project is the Papahikahawai Island Trust

Avian Ecology

Discussion points:

a) Bird surveys
b) Timing of works

a) Bird surveys
Roger was questioned why it was that in his ecological assessment report he had mentioned the desirability of monitoring the effects of the project on bird populations while in the AEE and conditions there was no provision made for this.
Roger's response was that we looked at whether the baseline data was sufficiently robust on which to any changes change in a statistically significant way, and the conclusion was that the pre-project data was not suitable. General avian survey requirements are for 5 years - Roger also noted that it was very unlikely there would be any effects of any significance resulting from the project works, and any longer-term effects (eg. resulting from changes to shellfish beds) if any could not be tied with any certainty to the project without 5 years of sound pre-project survey data.
This view was accepted by PDP.

b) Timing of works
A question was raised as to whether works on the diversion channel should be halted during the wetland bird breeding season.

Roger's response was the channel works were not going to have any direct effect on wetland breeding habitat – the channel skirts down the edge of the Titchmarsh wetland but doesn't take out thick wetland habitat. Some discussion occurred around whether the edge of the Titchmarsh wetland alongside the proposed works zone should be checked for wetland bids and nests if works were to occur during breeding season but it was agreed that such an inspection and any effort to relocate nests would be more disruptive than letting the birds move of their own volition. This was accepted by PDP.

What was agreed was, and should be added into the conditions, is a statement that the CEMP be required to address any avian ecology issues, and that the works area alongside wetland areas (including the Titchmarsh wetland) should be kept as narrow and confined as possible and every effort should be made to prevent machinery and people movement beyond the footprint and into the wetland areas.

Wetlands

Discussion points:

a) Restoration proposal

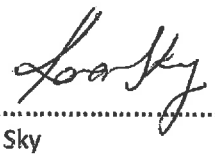
One issue was raised about the wetland restoration proposal. It was noted by PDP that the conditions do not prescribe any obligation for BOPRC to restore any minimum sized area. While it is implied that there will be sizeable wetland restoration efforts there is no reference to a minimum area. It was suggested that either the condition referring to wetland restoration should refer back to the AEE for the size and location of the proposed restoration effort or for the condition to include some reference to size and location.

Roger noted that he has no problem with this provided the condition doesn't tie the consent holder to restoration effort in areas that may prove to be unsuitable because of changed environmental conditions (eg. salinity is too high or tidal erosion too great). Wording could be something like: " An area of X ha will be targeted for wetland restoration". Or a figure could be referred to.

We collectively agreed that the condition should be altered to include some reference to the area of wetland to be targeted for restoration.

Fish flap gate

Karen noted that none of the proposed conditions refer to the installation of the fish-friendly flap gate to the Waitipuia Stream outlet to allow fish movement and open up inanga habitat in the wetland. Consideration of this flap gate was recommended in Hamill (2014); however the AEE did not include any consideration of this. The Opus letter dated 9 March 2015 states that this will be installed when the outlet is upsized, and that the Rivers and Drainage Team have agreed that this is of highest priority. The possibility of including a condition to ensure that the flap gate is installed when the outlet is upgraded was raised during caucusing. Keith stated that they would need to discuss this with the applicant.



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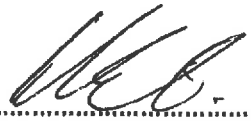
Karen Sky



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Hayden Easton

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Keith Hamill

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Roger MacGibbon

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solutions *for your environment*

30 March 2015

Dylan Makgill
Team Leader Consents
Environment Bay of Plenty
6 Rata Street
MOUNT MAUNGANUI

Dear Dylan,

PEER REVIEW COMMENTS

Pattle Delamore Partners Ltd (PDP) has been engaged by the Bay of Plenty Regional Council (BoPRC) to review various technical memorandums and associated letters that support the resource consent application for the Kaituna River Re-Diversion and Maketu Estuary Enhancement Project (the Proposal).

The technical memorandum reviewed is titled:

- Kaituna River Re-diversion and Ongatoro/Maketu Estuary Enhancement Response to PDP memo, Opus, dated 9 March 2015.

Subsequent to the review of the above documents, PDP was involved in a caucusing meeting with the applicant's technical specialists (held 25 March 2015), to discuss any remaining issues.

Members of the caucusing meeting included:

- Bas Veendrick - PDP
- Hayden Easton - PDP
- Karen Sky - PDP
- Ben Tuckey - DHI
- Steve Everitt - Waterline
- Martin Single - Coastal Systems
- Keith Hamill - River Lake Ltd
- Roger MacGibbon - Opus

PDP has also been issued a draft copy of resource consent conditions (dated 23 March 2015). This letter provides PDP comments on the proposed consent conditions.

1.0 General

As an outcome of reviewing the Opus letter (9 March 2015) and technical memorandum, PDP is in agreement with most statements made within the technical memorandum and associated letters.

Key issues that PDP sought further information and discussion on during the 25 March caucusing meeting were:

- The assessment of flood flows through the Te Tumu cut.
- The proposed monitoring to assess potential navigability affects through the Te Tumu cut.

- Shellfish gathering and the increased frequency of non-gathering conditions.
- Potential erosion of upper estuarine sediments and resultant deposition of these sediments within the Maketu Estuary, and the proposed sediment accretion monitoring.
- Avian ecology monitoring.

For each of the above issues following sections provide:

- A background discussion of the individual issue;
- Commentary of the discussions that were held between the various technical experts during the caucusing meeting;
- A 'way forward approach' that was proposed by the technical specialists to resolve the issue.
- PDP's overall position should the 'way forward approach' be implemented as was proposed/agreed upon.

2.0 Flood Flows through the Te Tumu Cut

2.1 Background

As a result of the proposal, additional water is diverted to the estuary resulting in a change to the hydraulics in both the estuary and at the Te Tumu Cut. During large flood flow events peak flows through Te Tumu are reduced as a result of the diversion which has the potential to reduce scouring of the mouth.

Following our review, PDP requested further information regarding this potential effect (memo dated 4/8/2014) and subsequently noted in our letter dated 14 November 2014 that this query had not been addressed in the sensitivity tests provided by DHI (dated 13 October 2014). The most recent correspondence (letter DHI to BoPRC, 4 March 2015) acknowledges that there is the potential for reduced scouring during large flood flow events but comments that the resulting changes in bed levels for the lower river will be short-term and hence not result in a significant impact on navigability and flood release through Te Tumu Cut.

2.2 Caucusing Discussion

PDP outlined that the DHI modelling results indicate that, once there is a change in bed levels at Te Tumu Cut when comparing the proposed option to the existing situation (for example as a result of reduced scouring), these shallower depths last for a long period of time (Section 7.2 of the DHI numerical modelling report, June 2014).

PDP recognises that, for the majority of the floods (i.e. the smaller floods) there is very little difference in the peak flow and current velocities through Te Tumu when comparing the existing and proposed option and hence the impact on the morphology of the river mouth should be minimal

PDP requested further quantification of the likely reduction in scouring effect during larger events and the likely timeframes that any resulting reduction in bed levels would persist following these events.

Mr Single outlined some of the work undertaken on one of the main rivers in Canterbury where it was found that the main morphological work (scouring) done by flood flows is done before the peak of the flood. Morphological modelling may not fully represent this process. Based on this work he indicated that, even though there is a reduction in peak flows through Te Tumu Cut, the effects on the morphology of Te Tumu Cut are unlikely to be significant. He also commented that once flows recede the dominant morphological process would be littoral transport carrying sediment back to the river mouth indicating that any morphological changes as a result of reduced scouring is likely to be short-lived. It was however recognised that if the wave environment is quiescent, then the potential effect could be long lasting.

2.3 Way Forward Approach

It was agreed that further modelling is unlikely to provide further insight into this matter and it was agreed that the new information discussed at the caucusing will be provided by the applicant.

2.4 PDP Position

Provided that the additional information requested from the applicant confirms that the reduction in peak flood flows is unlikely to result in a significant reduction in scouring at Te Tumu Cut, PDP consider that the effects of the proposal on navigability and flood release capacity are less than minor.

3.0 Proposed Monitoring of Navigability Affects

3.1 Background

The 9 March 2015 technical memorandum proposes three monitoring approaches to assess any potential navigability affects associated with the proposed activity. These monitoring approaches were:

- Measurements of outflows to check model calibrations.
- Measurements of bar depths before and after re- diversion.
- Incident reporting.

3.2 Caucusing Discussion

PDP suggested that measurements of bar depths would be too difficult to obtain a dataset that would determine effects. This is due to:

- The probability of achieving comparable pre and post activity riverine and coastal processes.
- The expected poor resolution of depth measurements to determining if an increase of bed depth was occurring.

In addition, PDP suggested that incident reporting would only produce a biased dataset. All specialists agreed that the existing bar is, at times, dangerous. The proposed activity will not reduce the dangerous nature of the bar (i.e. the navigability of the bar will not be enhanced as a result of the proposed activity). As such, only negative comments are expected to be received in any post-diversion incident reports.

PDP agreed that the only monitoring approach that will provide useful assessment of potential adverse navigability effect would be to monitor the outflows (that are tidal influenced) at the lower Kaituna River. The data obtained will be used as a means of validating the model produced and its associated outputs.

3.3 Way Forward Approach

As required by proposed consent condition 25, the applicant will undertake outflow monitoring at the lower Kaituna and compare obtained results with modelled scenarios and outputs.

3.4 PDP Position

By the applicant undertaking flow monitoring at the lower Kaituna, PDP consider that the effects of navigability through the Te Tuma cut can be assessed appropriately.

4.0 Shellfish Gathering

4.1 Background

As a result of the proposed activity, the annual number of exceedances of shellfish gathering guidelines (MfE and MoH, 2003)[1] increases by approximately 30 days (8% of the year). PDP believes this increase in frequency is a more than minor effect, and as a result should require mitigation.

The applicant does recognise that there is an increase in the frequency, however, no mitigation for this effect is proposed.

4.2 Caucusing Discussion

PDP outlined that an increase of approximately 30 days does provide an adverse effect and suggested this would require some mitigation to be proposed. Mr Hamill did agree that there is an effect as a result of the increased non-shellfish gathering frequency, however, he was not in agreement that mitigation could be provided for this effect.

4.3 Way Forward Approach

PDP recognises that management of the faecal coliforms and *E Coli* (that lead to shellfish gathering guideline exceedances) would require a catchment-wide management approach. It is also recognised that there is difficulty in establishing such a catchment-wide management approach. This is due to funding and logistical considerations.

4.4 PDP Position

PDP consider that the Applicants do acknowledge that the effect resulting from the increased frequency of non-shellfish gathering days is 'more than minor'.

PDP consider that mitigation could be in the form of a compensational mitigation where mitigation may be in the form of environmental enhancement to a local environmental feature. PDP recommends that the form and quantity of mitigation be determined by commissioners during the hearing process.

5.0 Erosion and Deposition of Upper Estuarine Sediments

5.1 Background

As a result of increased freshwater flows into the upper Maketu Estuary, erosion of anoxic and algal deposits within upper estuarine sediments are likely to be eroded and transported throughout the estuary. All specialists are in agreement that this is likely to occur; however, PDP sought further clarification as to where these deposits are likely to go, and potentially redeposit.

From the 9 March 2015 memorandum, Mr Tuckey suggested that the majority of these deposits would be discharged out of the Maketu Estuary. We do agree with this statement, however, we also believe that a proportion of these sediments will also be deposited to low energy (with low-velocity water currents) areas. PDP have identified such areas as east of Papahikahawai Island and within the central area of the Maketu Estuary (southeast of Papahikahawai Island). PDP sought clarification as to what social interests or ecological habitats may be affected within these areas, e.g. fishing, shellfish gathering etc.

The Applicant has proposed a consent conditions (proposed conditions 30.2 and 30.3) that provide monitoring of depositional zones within the Maketu Estuary. The conditions specify that visual assessments of these areas will be carried out. PDP sought further clarification of these conditions, as we

[1] Ministry for the Environment and Ministry of Health, 2003. *Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas*.

felt that 'visual assessments' may not be sufficient to understand the potential effects that may occur in these areas, i.e. visual assessments indicate to PDP that surficial assessments of the sediments will be carried out only.

5.2 Caucusing Discussion

All specialists agreed that there would be a proportion of upper estuarine sediments that could be deposited (in the short term) to low energy depositional zones within the Maketu Estuary. Mr Hamill indicated that the only the central Maketu Estuary area is where locals collect shellfish. Other areas are either too difficult to access, or are not used. Mr Hamill also suggested that the proposed consent conditions (30.1 and 30.2) will be used as mechanisms to assess potential effects associated with potential deposition of sediments.

PDP sought to clarify the monitoring approach (defined by conditions 30.1 and 30.2) with regard to sediment deposition in the estuary. Mr Hamill outlined the approach to sediment monitoring within the estuary at the proposed transects. PDP commented in the caucusing that the visual/qualitative sediment assessments proposed (e.g. % cover of mud/silt, depth of mud/silt, anoxic layer depth, algae cover and type) would provide useful information if undertaken in conjunction with all of the macrofauna sampling sites referred to in condition 28.2. Mr Hamill appeared to concur that this information would be useful.

In addition to the proposed sediment surveying timeframes (prescribed in consent condition 30.1), PDP proposed that an additional sediment survey be carried out within one year from commissioning. This additional survey round is considered to be required by PDP as this period is when effects would be most realised. Mr Hamill concurred with this additional surveying round.

PDP queried what would occur if unexpected results or effects are obtained during the monitoring. Mr Hamill discussed potential feedback loops for staging the opening.

5.3 Way Forward Approach

All parties agreed in principle that a way to deal with the uncertainty is that the Environmental Monitoring Programme document include an assessment of the appropriateness of trigger levels, contingencies and feedback loops (even if the overall conclusion in the document is that no such levels or actions are appropriate or practicable in the case of a particular monitoring parameter). PDP recommend Condition 23 be reworded to reflect this, as detailed in Section 7 below.

PDP recommends that the visual sediment assessments detailed in condition 30 be undertaken at all macrofauna sampling sites referred to in condition 28.2. We understand Mr Hamill agreed with this approach, and as such we have recommended amendments to the conditions to include this, as discussed in Section 7 below.

PDP also recommended that sediment cores be collected at all proposed sediment sampling locations as a means of assessing effects of sediment accumulation (e.g. depth of mud/silt, anoxic layer depth). This was agreed to by the Applicant's specialists.

5.4 PDP Position

PDP considers that the potential effects of sediment accumulation from upper estuarine sediments will be appropriately assessed if:

- Consent condition 30.1 also includes an additional sediment surveying round within one year from commissioning.
- The Environmental Monitoring Programme document includes assessment of the appropriateness of potential trigger levels, contingencies and feedback loops.
- Sediment assessments are undertaken at all macrofauna sampling sites.

- As part of the sediment assessments, sediment cores are collected at all proposed sediment sampling locations as an additional means of assessing effects of sediment accumulation.

6.0 Avian Monitoring

6.1 Background

The technical report titled "Terrestrial, Avian and Wetland Restoration Ecology" (by Roger MacGibbon, Opus, 2014) contained a number of recommendations regarding ongoing avian monitoring to assess the effects of the re-diversion. Following our initial review of this report, PDP requested more detail regarding the monitoring in our correspondence (PDP Memorandum to Shanan Miles, dated 8 August 2014), and subsequently noted in our letter dated 14 November 2014 that this query had not been addressed in the Section 92 response (dated 1 September 2014). The most recent Opus letter responses (dated 25 November 2014 and 9 March 2015) simply indicate that no monitoring is proposed. No justification was provided for this response.

PDP had also noted that the proposed consent conditions relating to the Construction Environmental Management Plan did not mention the timing of the works in relation to avian breeding seasons, whereas the Opus letter dated September 2014 had previously indicated that adverse effects would be avoided by timing the construction outside of the avian breeding season.

6.2 Caucusing Discussion

PDP sought to clarify why the avian monitoring recommendations by MacGibbon (2014) were not actually proposed by the applicant. Mr MacGibbon explained that the possibility had been evaluated in some detail and it was concluded that ongoing avian monitoring following the re-diversion would provide little value in determining the effects of the re-diversion on avian species. The reasons given were that the baseline data is inadequate (primarily due to inconsistent survey methodologies by the Ornithological Society of NZ - OSNZ) to give a robust "pre-works" dataset for comparison to any "post-works" monitoring data and insufficient time was now available to obtain adequate baseline data, as it was Mr MacGibbon's opinion that five years of standardised monitoring would be required to get an accurate appreciation for the baseline condition. PDP accepted this position.

PDP queried the need for construction activities to avoid the breeding season, as had previously been proposed. It was noted by Mr MacGibbon that the monitoring recommended in his initial report and comments regarding construction avoiding the breeding season were made prior having a lot of detail about the exact works methodology (as this was not available at that time), and now that this detail was known, he considers it very unlikely there would be any effects of any significance on avian species resulting from the project works. Nevertheless, Mr MacGibbon stated that the works area alongside wetland areas (including the Titchmarsh wetland) should be kept as narrow and confined as possible and every effort should be made to prevent machinery and people movement beyond the footprint and into the wetland areas. PDP requested that the condition relating to the Construction Environmental Management Plan include specific reference to avian ecology. Mr MacGibbon agreed that this was appropriate.

6.3 Way Forward Approach

PDP accepts the explanation from Mr MacGibbon regarding the avian monitoring and have recommended an amendment to condition 11.5.

6.4 PDP Position

PDP is in agreement with the Applicant's position that it is impractical to monitor avian species following the re-diversion, due to the lack of statistical reliability/validity of the baseline data. PDP agree that significant adverse effects on avian species are unlikely; however it is our opinion that the Construction

Environmental Management Plan should consider any potential for effects on avian ecology and ways to avoid or minimise these if they are identified. We have accordingly recommended that condition 11.5 be amended to include reference to avian ecology (see below).

7.0 Proposed Resource Consent Conditions

PDP generally agrees with the draft conditions, with the following recommended amendments:

- Condition 5 requires that the works shall be undertaken in accordance with the referenced Construction Plans; however none of the other application documents or figures are referenced. The application documents should be referred to in the consent conditions in more detail, to ensure that the consented activities are undertaken in accordance with the information provided in the AEE and supporting documents.
- Condition 11.5 stipulates what the Construction Environmental Management Plan (CEMP) will address. PDP is of the opinion that consideration of relevant avian ecological issues should be required in the CEMP, to determine whether any specific actions to minimise effects are required during construction (e.g. minimising particular works areas to the greatest extent practicable). This was raised during caucusing and Mr MacGibbon was in general agreement that there should be consideration of bird ecology in the CEMP.
- Condition 20 relates to Drainage. The Everitt (2014) report on water level effects assessments, states that the project will provide compensation for the increased power costs brought about by the project at the privately owned Dean pump station. None of the conditions refer to the Dean pump station. PDP recommends including a condition similar to 20.4 (a) for the Dean pump station.
- Condition 21 outlines the requirements for an Operations and Maintenance Manual (OMM). Condition 21.1 stipulates that the OMM shall be provided to the Regional Council at least one month prior to Stage 2 commissioning of the diversion culverts. As detailed in condition 18.1 Stage 1 of the project results in an increase of the re-diverted from the Kaituna River to the Estuary from around 150,000 m^3 to 400,000 m^3. This indicates that the project will result in an increased flood risk for Maketu Township following stage 1 commissioning. Therefore PDP recommends that the OMM be provided at least one month prior to Stage 1 commissioning.

  The Everitt (July 2014) report outlines what the flood management section of the OMM will contain. This includes the development of a sea level prediction model to provide predicted sea levels and the use of the flood forecasting model being developed by the Bay of Plenty Regional Council that allows prediction of flows in the Kaituna River and water levels at Ford Rd and in the estuary. None of the proposed conditions refer to these models. The (timely) development of these models is considered a critical component when considering the proposed mitigation for the increased flood risk for Maketu Township as a result of the project. PDP recommends that consent conditions are included that the culverts shall not be commissioned until these models are developed.
- Condition 22 relates to the Wetland Plan. As the wetland planting is considered to be mitigation in the application documents, PDP recommend that this condition either refer to a figure showing the areas where planting is proposed to occur, or state a minimum area to undergo planting/enhancement. Otherwise the condition will not require the consent holder to carry out the scale of planting which has been proposed in the application and considered as mitigation. This was raised during caucusing and the applicant's specialists were in general agreement that this condition could be slightly re-worded to provide more certainty, although PDP acknowledge that there is some uncertainty as to the exact extent of areas that will be able to be planted due to final ground levels.

- None of the proposed conditions refer to the installation of the fish-friendly flap gate to the Waitipuia Stream outlet to allow fish movement and open up inanga habitat in the wetland. Consideration of this flap gate was recommended in Hamill (2014); however the AEE did not include any consideration of this (as indicated in the PDP letter from 14 November 2015). The Opus letter dated 9 March 2015 states that this will be installed when the outlet is upsized, and that the Rivers and Drainage Team have agreed that this is of highest priority. The possibility of including a condition to ensure that the flap gate is installed when the outlet is upgraded was raised during caucusing. The applicant's specialists stated that they would need to discuss this with the applicant. PDP recommends including such a condition to maximise the positive ecological outcomes of the project, if the applicant is in agreement.
- Condition 23 outlines the requirements of the Environmental Monitoring Programme. PDP recommends a sub-clause be inserted relating to the assessment of appropriate trigger levels and contingencies for the various monitoring parameters, as discussed in Section 5. This is a standard inclusion in any monitoring plan.
- Condition 25.1 specifies at which sites water level monitoring will be undertaken. As real-time monitoring from some of these sites is critical for flood warning purposes, PDP recommends specifying which sites will be telemetered. It may also be worth specifying a backup site or alternative approach for the NIWA gauge at Tauranga should this site no longer be maintained by NIWA (condition 25.1 (e)).
- Condition 25.4 relates to the additional culvert at Lower Kaituna Wildlife Management Reserve in order to maintain flows into the wetland. This condition also specifies that the consent holder shall establish a relationship between water levels in the Kaituna Wetland, water levels in the Kaituna River and flows into the wetland. Following installation of the culvert, the analyses shall be repeated to demonstrate that the flow rates are as predicted. PDP recommends the inclusion of a condition which specifies what remedial action will be undertaken should the analyses demonstrate that the flow rates are not as predicted.
- Condition 27.1 prescribes the timing of water quality and shellfish monitoring. PDP recommends that this condition be reworded to ensure monitoring is carried out during both dry weather and wet weather conditions. PDP also recommends that an additional monitoring round be undertaken within one year of commissioning. This is to align with proposed changes to consent condition 30.1.
- Condition 30 relates to assessment of sediment in the estuary along transects. PDP recommends that sediment cores be collected at these transects also. This would allow for the assessment of depth of mud/silt and anoxic layer depth.
- Condition 30.1 prescribes the timing for sediment surveys to be carried out. PDP recommends that an additional sediment survey be carried out within one year of commissioning.
- Condition 30.3 states that "*where appropriate sampling shall be integrated with macrofauna sampling required under condition 78*" (Note, this should read "condition 28"). As noted above, PDP commented in the caucusing that visual sediment assessments of this type (e.g. % cover of mud/silt, depth of mud/silt, anoxic layer depth, algae cover and type) would provide useful information if undertaken in conjunction with all of the macrofauna sampling sites, and the use of the wording "*where appropriate*" didn't provide any clarity as to the extent to which integrated sampling will actually occur. PDP recommend that the visual sediment assessments which are detailed in Condition 30 be undertaken at all macrofauna sampling sites referred to in condition 28.

8.0 Summary

Two technical memorandums, and associated letters, relating to Applicant responses to PDP's November 2014 letter, navigational issues, and 'nice to haves', and draft consent conditions were reviewed by PDP.

As required, the review of the two technical memorandums focused on whether we concur with the conclusions reached, or where there is still a divergence in professional opinion and the reasons why.

In the main, PDP concurred with the conclusions reached by the Applicant's specialists. For conclusions that PDP still did not have a clear understanding a caucusing meeting was held to enable PDP and applicant specialists to discuss these, and obtain further information. Key issues for which PDP sought further information during the 25 March caucusing meeting were:

- The assessment of flood flows through the Te Tumu cut.
- The proposed monitoring to assess potential effects on navigability through the Te Tumu cut.
- Shellfish gathering and the increased frequency of non-gathering conditions.
- Potential erosion of upper estuarine sediments, resultant deposition of these sediments within the Maketu Estuary, and the proposed sediment accretion monitoring.
- Avian ecology monitoring.

From the caucusing meeting, PDP and the applicant specialists were able to identify mechanisms (be it additional information or additional/modification to proposed consent conditions) to resolve all remaining PDP concerns.

PDP, in majority, are in agreement with most consent conditions proposed by the Applicant. Any comment or alteration to a proposed consent condition has been provided to align with discussions had during the caucusing meeting held 25 March.

9.0 Limitations

This report has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of information provided by Environment Bay of Plenty. PDP has not independently verified the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing the report. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

This report has been prepared by PDP on the specific instructions of Environment Bay of Plenty for the limited purposes described in the report. PDP accepts no liability if the report is used for a different purpose or if it is used or relied on by any other person. Any such use or reliance will be solely at their own risk.

I trust these comments provide the information you were seeking. Please contact us should you have any queries.

Yours faithfully

PATTLE DELAMORE PARTNERS LIMITED

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Appendix 14 – Applicant's Proposed Conditions (23 March 2015)

As submitted to Council on 23/03/15

Proposed consent conditions for the Kaituna River Re-diversion
&
Ongatoro/Maketu Estuary Enhancement Project

The following activities are authorised by these consents:

(a) Under section 12(1)(a) of the Resource Management Act 1991 and Rule 15.2.4(b) of the Bay of Plenty Regional Coastal Environment Plan to undertake a reclamation of land in the coastal marine area.

(b) Under section 14(1) of the Resource Management Act 1991 and Rule 48 of the Bay of Plenty Regional Water and Land Plan to divert water from the Kaituna River down the new diversion channel.

(c) Under section 9(2) of the Resource Management Act 1991 and Rule 1C, 2C and 85 of the Bay of Plenty Water and Land Plan to undertake earthworks, vegetation clearance and planting.

(d) Under sections 12(1)(b), (c), (d) and (f) and 12(2)(b) of the Resource Management Act 1991 and Rules 13.2.4(h), 14.2.4(b), (e) and (j) of the Bay of Plenty Regional Coastal Environment Plan to erect structures; deposit on and disturb of the foreshore or seabed; to remove, damage, modify or destroy of indigenous vegetation; to disturb, deposit, dredge, and remove sand, shingle and shell from the foreshore or seabed.

(e) Under section 13(a), (b) and (d) of the Resource Management Act 1991 and Rule 71 of the Bay of Plenty Water and Land Plan to install erosion protection works.

(f) Under section 13(a) and (b) of the Resource Management Act 1991 and Rule 71 of the Bay of Plenty Water and Land Plan to erect a structure at the Lower Kaituna Wildlife Management Reserve.

(g) Under section 14(2) of the Resource Management Act 1991 and Rule 10.2.4(d), (e), (g) of the Bay of Plenty Regional Coastal Environment Plan to take, divert and dam coastal water.

(h) Under section 14(1) of the Resource Management Act 1991 and Rule 48 of the Bay of Plenty Regional Water and Land Plan to divert water from the Kaituna River into the Lower Kaituna Wildlife Management Reserve.

(i) Under section 12(2)(a) of the Resource Management Act 1991 and Rule 12.2.4(a) of the Bay of Plenty Regional Coastal Environment Plan to occupy the coastal marine area with structures.

(j) Under section 15(1)(a) and (b) of the Resource Management Act 1991 and Rule 9.2.4(b) of the Bay of Plenty Regional Coastal Environment Plan to discharge sediment during construction.

(k) Under section 15(1)(a) and (b) of the Resource Management Act 1991 and Rule 37 of the Bay of Plenty Regional Water and Land Plan to discharge sediment during construction.

(l) Under section 15(2A)(b) of the Resource Management Act 1991 and Rule 19(z) of the Bay of Plenty Regional Air Plan to discharge contaminants, namely dust, during construction.

1. **Purpose**

1.1 To authorise and set conditions for:

(a) the construction of a new channel from the Kaituna River to Fords Cut and the widening of the Cut and the diversion of an increased flow of freshwater into the Ongatoro/Maketu Estuary including associated erosion protection works;

(b) the reclamation of land to create a salinity block;

(c) the installation and operation of culvert works to maintain flows to the Lower Kaituna Wildlife Management Reserve;

(d) the provision of public and commercial boat and parking facilities;

(e) works associated with the creation of wetlands and estuary enhancement works;

(f) the temporary discharge of contaminants and taking, damming and diverting water, associated with construction activities

2. **Location**

The activity site is the lower reaches of the Kaituna River and surrounds, the Ongatoro/Maketu Estuary, Papahikahawai Island and Maketu Spit and adjacent land, as generally shown on Plan [x]

3. **Map References**

Name of Area	Approximate NZTM map reference (midpoint)
Fords Cut	1,901,072 E 5,815,885 N
Salinity block	1,900,744 5,816,167
Boat ramp	1,900,691 5,815,801
Causeways – mid point	1,901,473 5,816,108 and 1,901,952 5,816,198
Lower Kaituna Wildlife Management Reserve	1,897,485 5,816,541

4. **Legal description**

The legal descriptions of the proposed activity are:

Stopped Road SO 55944
Pts Sec 5 SO 55943 & SO 55944 Soil Cons and River Control
Pt Sec 5 Blk V Te Tumu SD, Sec 1 SO 55944
Tumu Kaituna 11A1 Block
Pt Sec 6 Blk VI Te Tumu DC (SO 46938)
Pt Sec 1 Blk VI Te Tumu SD (SO 38964)
Lot 2 DPS 12129, Lot 3 DPS 12129 and Pt Sec 1 Blk VI Te Tumu SD
Lot 1 DPS 12129
Pt Sec 2 Blk VI Te Tumu SD (SO 46938)
Papahikahawai No 2 Block
Sec 7 Blk VI Te Tumu SD (SO 46938)
Secion 10 SO 52144
River Bed
Legal Road
Coastal marine area

5. **Plans**

The works shall be undertaken in general accordance with Construction Plans Drawing No. 2-1542-115-6235, Sheets 1 to 20.

6. **Definitions**

"District Council" means the Western Bay District Council's Chief Executive Officer or nominee

"Commissioning" unless otherwise clear from the condition wording, the culverts are deemed to be fully commissioned at Stage 2, being when all culverts and their gates are fully operational without any short-term controls

"Consent Holder" means the Bay of Plenty Regional Council's Environmental Delivery Group or nominee

"Regional Council" means the Bay of Plenty Regional Council's Chief Executive Officer or nominee

"Project" means the Kaituna River Re-Diversion and Ongatoro/Maketu Estuary Enhancement Project and associated activities

"Works" means the construction works required to give effect to the Project

7. **Notification and pre-construction meeting**

7.1 The Regional Council shall be notified in writing of the intention to commence construction work at least two months prior to the start of any construction activities on site.

7.2 Prior to commencement of works the Consent Holder or their agent shall arrange and conduct a pre-construction site meeting between the Regional Council and the primary contractor. At a minimum, the following shall be covered at the meeting:

(a) Scheduling and staging of the works;

(b) Responsibilities of all relevant parties;

(c) Contact details for all relevant parties;

(d) Expectations regarding communication between all relevant parties;

(e) Procedures for implementing any amendments to the management; plans submitted

(f) Site inspection;

(g) Confirmation that all relevant parties have copies of these consent conditions document and its attachments, as well as the Construction Environmental Management Plan; and

(h) all associated erosion and sediment control plans and methodology.

7.3 A meeting shall also be held prior to commencement of works with the directly affected landowners and iwi representatives to discuss:

(a) scheduling and staging of the works;

(b) contact details for all parties; and

(c) expectations regarding communication between all parties.

7.4 All operational personnel involved with the construction of the Project shall be made aware of, and have access to, all consent documents, conditions and schedules applicable to the construction of the Project.

7.5 The Regional Council shall be notified in writing of the intention to commission the culverts, in accordance with the Commissioning Plan required under condition 19, at least 5 working days prior.

8. **Accidental Discovery**

8.1 A Cultural Monitor shall be employed by the Consent Holder to monitor, as necessary, and report any discoveries during earthworks.

8.2 Prior to construction commencing the Consent Holder shall provide training to those working on the Project on the discovery protocols.

8.3 In the event of any archaeological site or material being uncovered or reasonably suspected to have been uncovered during the exercise of these consents, activities in the vicinity of the discovery shall cease and the Consent Holder shall notify the Regional Council as soon as possible.

8.4 If any koiwi (human remains) are encountered, or reasonably suspected, notify the Heritage New Zealand Pouhere Taonga Regional Archaeologist, New Zealand Police and the Regional Council and no further work may take place until future actions have been agreed by all parties.

8.5 The Consent Holder shall notify Te Rūnanga o Ngati Whakaue ki Maketu, Tapuika Iwi Authority, Te Maru o Ngati Rangiwewehi, Waitaha Raupatu Trust, Ngāti Pikiao, Ngāti Tūnohopū and Ngati Makino Heritage Trust, , and shall ensure as far as practicable that procedures are undertaken in accordance with:

(i) The Ngati Rangiwewehi koiwi and accidental discovery protocol

(ii) The Waitaha Raupatu Trust, Ngati Makino Heritage Trust, Komiti o Ngati Pikao (Ki Maketu), Ngati Tunohopu Accidental Discovery Protocols

(iii) The Te Taonga Tuturu Act - immediate notification of Tapuika representatives in the event that a site or objects of significance are discovered during works.

Note: This condition is in addition to any agreements that are in place between the consent holder and the [Cultural Site Accidental Discovery Protocols] or Heritage New Zealand Pouhere Taonga.

9. **Complaints**

9.1 The Consent Holder upon receipt of any complaint in relation to construction shall promptly investigate the complaint, where appropriate remedy or mitigate the cause of the complaint and inform the Regional Council as soon as practicable, but no later than 48 hours of receiving the complaint, of the details of the complaint and the action taken.

9.2 The Consent Holder shall maintain and keep a complaint register for all aspects of operations in relation to construction activities. The register shall record the date, time and type of complaint, cause of the complaint, the action taken by the Consent Holder in response to the complaint and steps to prevent a reoccurrence. The register shall be available to the Regional Council at all times.

10. **Hazardous Substances and Spill Contingency**

10.1 As part of construction activities there shall be no storage of fuel or lubricants, refuelling, maintenance or lubrication of vehicles or machinery within 20 metres of the Kaituna River, Ford's Cut, Ongatoro/Maketu Estuary, open excavations, exposed groundwater or any other waterway.

10.2 During construction the Consent Holder shall maintain on site at all times measures to prevent spills of hazardous substances entering land or water. These measures shall include but not be limited to:

(a) The equipment, systems and procedures to be used to minimise the risk of spills or leaks of hazardous substances;

(b) The spill management and containment equipment to be maintained at all times on site, and its location;

(c) Procedures for containing, managing, cleaning and disposing of any spill or leak, or contaminated material to be removed from the site as a result of a spill or leak;

(d) Procedures to notify and report to the Consent Holder and the Bay of Plenty Regional Council within 24 hours of a spill or leak occurring, including a maintained schedule of emergency contact names and numbers;

(e) An inspection schedule for all storage containers, refuelling areas, and plant; and

(f) Procedures to be followed to identify causes of spills or leaks.

10.3 In the event of a spill of hazardous substances on the site, the Consent Holder shall record and provide to the Regional Council within 24 hours of the spill:

(a) The date, time and volume of the spill;

(b) The substance spilt;

(c) Measures taken to contain and absorb the spilt substance;

(d) The cause of the spill; and

(e) The measures taken since to prevent a repeat of the incident.

11. **Construction Environmental Management Plan**

11.1 At least 20 working days prior to the Consent Holder granting site possession to the contractor the Consent Holder shall submit to the Regional Council the Construction Environmental Management Plan (CEMP) outlining the construction activities and all practices and procedures to be adopted in the construction of the Project.

11.2 The CEMP shall be certified by appropriately experienced and qualified practitioners. The certification from the certifier shall confirm that:

(a) the CEMP adopts the mitigation measures identified in the application documentation and / or otherwise required under the conditions of the consent; and

(b) the implementation of the CEMP will appropriately mitigate the anticipated adverse effects of the public work.

11.3 Works shall not commence until the certified CEMP described in condition 11.2 has been received and confirmed in writing by the Regional Council. If written acknowledgement is not provided within 10 working days of the Consent Holder sending the certification, the certification shall be deemed to be confirmed.

11.4 The objectives of the CEMP shall be:

(a) To ensure that construction activities achieve compliance with conditions for these activities;

(b) To minimise the environmental nuisance effects of construction activities;

(c) To ensure that disturbance is limited to that necessary to undertake the construction works;

(d) To minimise the release of sediment during disturbance to the bed of any waterway;

(e) To limit the disturbance of the beds and margins of the coastal marine area and waterways to the extent necessary to undertake construction works, and to avoid or mitigate adverse effects on the quality and passage of coastal and surface water and aquatic habitat.

(f) To ensure that disturbance does not cause flooding or erosion.

11.5 The CEMP will address, as a minimum, the following aspects of the works:

(a) Timing of construction works including construction of the diversion channel inlet construction outside of during whitebait fishing season (15 August - 30 November);

(b) Working hours; and

(c) Restrictions on public access.

11.6 The following supplementary management plans shall form subsets of and must be submitted to Regional Council as part of the certified CEMP:

(a) Erosion, Sediment & Dust Control Plan; and

(b) Construction Flood Management Plan.

11.7 In the event of any conflict between resource consent conditions and CEMP practices and procedures, the resource consent conditions shall be complied with.

11.8 The CEMP may be amended at any time provided that any amendments made maintain or enhance the degree and / or extent to which adverse environmental effects attributable to the construction, maintenance or operation of the Project are avoided or mitigated; and those amendments do not result in non-compliance with any resource consent condition. A copy of the amended Plan shall be provided to the Regional Council for their records.

12. **Compliance with CEMP**

12.1 The Consent Holder shall implement and comply with the CEMP and the Supplementary Management Plans set out in conditions 11, 13 and 14.

Note: The CEMP prepared in relation to Regional Council resource consents will be the same CEMP as that prepared in relation to the designation submitted to Western Bay of Plenty District Council, but will include different supplementary plans specific to the regional consents.

13. **Erosion, Sediment and Dust Control Plan**

13.1 The objectives of the Earthworks, Sediment and Dust Control Plan (ESDCP) shall be:

(a) To ensure construction activities achieve compliance with the conditions of consent for these activities;

(b) To ensure that the effects of erosion on water quality are minimised; and

(c) To ensure consistency with Bay of Plenty Regional Council Guideline No. 2010/01 - “Erosion and Sediment Control for Land Disturbing Activities”.

13.2 The ESDCP shall be prepared in general accordance with Bay of Plenty Regional Council Guideline No. 2010/01 - “Erosion and Sediment Control for

Land Disturbing Activities" and shall clearly define the sediment and erosion control measures and dust control measures to be implemented for each stage of the works authorised by this consent. The Plan shall include, but not be limited to:

(a) A locality map detailing as a minimum the location of roads, property boundaries, surface waterways and crossings, the direction of stormwater flows, and the erosion, sediment and dust control devices;

(b) A site description, including land type, climate, topography, vegetation soils, and water bodies;

(c) A detailed programme of works identifying:

  (i) each stage of construction;

  (ii) an estimate of the maximum area of bare ground (cumulative total) exposed at each stage of construction;

  (iii) an estimate of the total length of exposed roads, trenches and tracks;

  (iv) the volume of earthworks proposed;

(d) Detailed drawings and specifications of all designated erosion and sediment control measures selected from the Erosion and Sediment Control Guidelines, including contingency measures, on-site catchment boundaries, measures to be taken at the temporary construction management areas and off-site sources of runoff with supporting calculations, including all key design parameters. The measures may consist of but not be limited to the following:

  (i) clean water diversion channels;

  (ii) decanting earth bunds or sediment ponds;

  (iii) on-site silt trapping devices, such as hay bales, silt fences, filter cloth barriers and rock filters;

  (iv) soakage pits, infiltration basins and / or swales;

  (v) design information as is necessary to demonstrate that run-on water is controlled, "clean" and "dirty" water is separated where possible, land surface is protected from erosion, and sediment is managed;

(e) A description of the mitigation and rehabilitation measures proposed;

(f) A programme for managing exposed areas including progressive stabilisation and minimising exposed areas by:

  (i) ensuring that any earthworks and/or vegetation clearance should where practicable, be limited to the footprint of the works;

  (ii) staging of the construction;

(iii) providing best practice measures, vegetative or structural, to protect exposed soil from erosion;

(g) Measures to ensure that the tracking of mud or earth onto the existing road network is reduced to the practicable minimum;

(h) A schedule outlining the frequency and methods of inspection, monitoring and maintenance of all erosion, sediment control and dust control measures as may be necessary to achieve compliance with the conditions of the consents;

(i) Details of any proposed monitoring to demonstrate the effectiveness of the proposed measures; and

(j) Include emergency procedures that set out measures that will be implemented if there is a significant sediment discharge to surface water.

13.3 The Consent Holder shall carry out inspections, at a minimum frequency of weekly, of all working areas of the site in order to ensure they are well maintained and that erosion and sediment control devices remain effective.

13.4 Visual inspection shall be undertaken on a daily basis during the construction phase when earthworks are being undertaken at the inlet of the proposed channel (when works are being undertaken in this area), the estuary end of Ford's Cut, and Papahikahawai Creek to assess whether there is any visible plume as a result of the work.

14. **Construction Flood Management Plan**

14.1 The Construction Flood Management Plan (CFMP) shall be developed in consultation with the Bay of Plenty Regional Council Rivers and Drainage Manager and the Utilities Manager of the Western Bay of Plenty District Council.

14.2 The objectives of the CFMP shall be to:

(a) Minimise or avoid any increase in flood risk arising as a consequence of undertaking the works;

(b) Ensure that the Contractor takes into account the potential for increased flood risk when planning and executing work; and

(c) Ensure that in the event of a flood occurring at a construction site processes and procedures are in place to manage such an event.

14.3 The CFMP shall as a minimum address the following matters:

(a) Provision of a 24 hour emergency contact person who is able to respond to a flood warning and implement emergency control measures;

(b) An outline of the probability of various flood levels;

(c) Construction methodology for installation the Fords Cut culverts, the diversion channel, widening and deepening of Fords Cut and construction of the new stopbank;

(d) Provision to restrict the length of stopbank being worked on and the number of work fronts affecting stopbanks to the minimum practicable; and

(e) Existing flood management procedures for the Kaituna Catchment Control Scheme as included in the Regional Council's Flood Warning Manual.

14.4 Flood protection systems must be fully reinstated for weekends and public holidays unless alternative interim measures, as approved by the Bay of Plenty Regional Council Rivers and Drainage Manager, are implemented.

14.5 The Consent Holder shall maintain a stockpile of material and sufficient plant on site to be able to undertake immediate reinstatement of stopbank works in the event of a flood warning.

14.6 Along the alignment of the proposed diversion channel full flood protection shall be maintained by the existing stopbank except for when the tie-ins are made at each end. The period under which the tie-ins shall be agreed with the Bay of Plenty Regional Council Natural Hazards Group prior to the works being undertaken.

15. **Design**

15.1 The Consent Holder shall use natural rock and soil material, where practicable.

15.2 All fill material shall be placed and compacted so as to minimise any erosion and/or instability.

15.3 The top level of the diversion control structure shall not be less than 2.20m (Moturiki Datum).

16. **On-going Maintenance**

16.1 The Consent Holder shall ensure that all structures and works authorised under this consent are maintained in a structurally sound condition at all times.

16.2 Any scour or erosion of the Coastal Marine Area at the entrance or exit points of the culverts, shall be effectively stabilised, to the satisfaction of the Regional Council.

16.3 The Consent Holder shall undertake any maintenance work on the structures and works authorised under this consent, as soon as reasonably practicable, if directed by the Regional Council.

Note: The Bay of Plenty Regional Council has obligations to prepare Asset Management Plans for its assets. The assets constructed as part of this Project will be included and managed in accordance with those Asset Management Plans.

17. **Private Water Supply**

17.1 Prior to diverting water into the new diversion channel, the Consent Holder shall install a salinity monitoring device that shuts off the existing water intake when the salinity makes the water unsuitable for use as stock drinking water

on Sec 5 Blk V Te Tumu SD, Kaituna Pastoral Farms Ltd. The Consent Holder shall also provide a 30,000 litres tank for the landowners installation for storage of water.

18. **Commissioning Plan**

18.1 The commissioning of the culverts shall be staged as follows:

(a) Stage 1: Increase the re-diverted flow from 150,000m³ to ~400,000 m^3 per mean tidal cycle; and

(b) Stage 2: Increase the re-diverted flow to ~600,000m3 after a period of one year, subject to monitoring the effects of Stage 1.

18.2 The Consent Holder shall submit to the Regional Council a detailed commissioning plan at least 15 working days prior to commencing commissioning of Stage 1 of the diversion culverts for their approval.

18.3 The objective of the Commissioning Plan is to manage the operation of the culverts during Stage 1 such that:

(a) There is no increase in flood risk or erosion attributable to the Project; and

(b) Adverse effects on water quality arising from the discharge are minimised.

18.4 The Plan shall address, as a minimum:

(a) Progressive opening of the culverts;

(b) Procedures for the management of a flood event should it occur during Stage 1;

(c) Water levels, erosion and ecological monitoring in accordance with the monitoring conditions; and

(d) discharge quality.

18.5 The culverts shall be commissioned in accordance with the Commissioning Plan.

Note: The culverts are deemed to be fully commissioned at Stage 2, being when all culverts and their gates are fully operational without any short-term controls. This will be clearly stated in the Commissioning Plan.

The Operations and Maintenance Manual (referred to in condition 21 below) will address the operation of the culverts once fully commissioned.

19. **Lower Kaituna Wildlife Management Reserve**

19.1 The Consent Holder shall ensure that the Lower Kaituna Wildlife Management Reserve culvert is installed prior to commencing Stage 1 of the culvert commissioning.

19.2 The location of the Lower Kaituna Wildlife Management Reserve culvert shall be confirmed in consultation with Fish and Game and the Department of

Conservation. A copy of the culvert plan shall be provided to the Regional Council no less than 5 working days prior to it being installed.

19.3 The operation of the diversion control structure shall not alter the water levels at the Lower Kaituna Wildlife Management Reserve unless it can be demonstrated that lower or higher levels provide ecological benefit.

20. **Drainage**

20.1 Prior to the commissioning of the culverts, the Consent Holder shall consult with the Manager of the Kaituna Catchment Control Scheme or his appointee ("Scheme") to;

(a) Determine the extent of any adverse pastoral effects attributable to the re-diversion in relation to the operation of the Scheme's drainage network as a consequence of increasing water levels in the Maketu Estuary.

(b) Determine by agreement the amount of compensation to be paid by the Consent Holder to the Manager of the Scheme to mitigate the adverse pastoral effects of the re-diversion in relation to the operation of the Scheme's drainage network.

20.2 The Consent Holder shall provide a report to the Regional Council providing details of the agreed extent of any adverse pastoral effects attributable to the re-diversion and the agreed amount of compensation, or if these matters have not been able to be agreed, details of the areas of agreement and disagreement.

20.3 In the event the Consent Holder and the Manager of the Scheme are unable to agree on the extent of any adverse pastoral effects caused to the Scheme's drainage network from the re-diversion and / or the amount of compensation to be paid in mitigation of those effects, those matters shall be determined by a Panel of two suitably qualified independent experts appointed by the Regional Council.

20.4 The amount of any compensation to be paid to the Scheme shall be:

(a) To provide compensation for the increased running costs at the Ford Road and Maketu (Singletons) pump stations as a result of the re-diversion;

(b) As a contribution to the planned upgrade of the pump station and culverts draining into the Kaituna River from the Ford Road drain;

(c) As a contribution to the design and construction of additional culverts draining into the Maketu Estuary between Fords Cut and Maketu (Singletons) pump station;

(d) In the event a Panel is required to determine the amount of compensation, for any other initiatives the Panel recommends be implemented.

20.5 The culverts shall not be commissioned until the amount of compensation payable has been determined in accordance with this condition.

21. **Operations and Maintenance Manual**

21.1 An Operations and Maintenance Manual (OMM) shall be provided to the Regional Council at least one month prior to Stage 2 commissioning of the diversion culverts. The OMM shall be prepared in consultation with Bay of Plenty Regional Council Rivers and Drainage Manager and Western Bay of Plenty District Council and by a suitably qualified person and shall detail as how the effects of the flow regime and diversion are to be minimised and managed.

21.2 The OMM shall be certified by appropriately experienced and qualified practitioners. The certification from the certifier shall confirm that:

(a) the OMM meets the objectives and conditions of the consent; and

(b) the implementation of the OMM will appropriately manage the ongoing operation of the Project.

21.3 The objectives of the OMM shall be:

(a) To ensure that procedures are in place to:

(i) operate the diversion to maximise ecological outcomes; and

(ii) manage the flow regime and discharges such that adverse effects are minimised.

(b) To specify how erosion control works will be maintained.

(c) To specify how the culverts are to be controlled to ensure the Project does not increase the flood risk at Maketu township (i.e. overtopping of Maketu Road).

21.4 The OMM shall, at a minimum, address the following matters:

(a) To provide a description of the Project assets;

(b) Provision to ensure that the passage of fish through the diversion structure is unimpeded at all times that the gates are open;

(c) To describe the flow regime operating rules for the diversion including identification of the triggers and responses to manage flood events in accordance with the conditions of this consent;

(d) Roles and responsibilities;

(e) The operating regime to maximise ecological outcomes;

(f) Operational procedures for the culvert gates;

(g) Procedures for the maintenance and removal of debris at the culverts;

(h) Procedures for inspecting and maintaining erosion protection works;

(i) Emergency management procedures; and

(j) A process for investigating complaints.

21.5 The Consent Holder shall implement and comply with the OMM.

21.6 A copy of the OMM shall be provided to the Regional Council Rivers and Drainage Manager so the culvert operational procedures can be included in the Council's Flood Warning Manual.

21.7 The OMM may be amended at any time provided that any amendments made maintain or enhance the degree and / or extent to which adverse environmental effects attributable to the maintenance or operation of the Project are avoided or mitigated; and those amendments do not result in non-compliance with any resource consent condition. A copy of the amended Plan shall be provided to the Regional Council for their records

21.1 During river flood events that coincide with high sea levels, the culverts shall be operated in a manner that does not increase the existing flood risk at Maketu Road (over topping of Maketu Road) and resultant inundation of property.

21.2 The Consent Holder shall meet with the Utilities Manager of Western Bay of Plenty District Council at least once per year to review the operation of the OMM in relation to flood management within Maketu township.

22. **Wetland Plan**

22.1 A Wetland Plan shall be prepared and submitted to the Regional Council at least two months prior to the first planting season. The Plan shall be certified by appropriately experienced and qualified practitioners. The certification from the certifier shall confirm that the Wetland Plan meets the objectives and conditions of the consent.

22.2 The objective of the Wetland Plan shall be to demonstrate how works will be undertaken such that the land available results in a state where there is a sustainable cover of indigenous plants that is as close to the original natural species diversity that can be achieved taking into consideration the substantial and irreversible human-induced changes that have occurred to the landscape surrounding the estuary.

22.3 The Wetland Plan shall provide details of how the above objective is to be achieved, including:

(a) A map showing the locations of the proposed work;

(b) Identification of the personnel or organisations that would carry out the work;

(c) The timescale of activities;

(d) Initial monitoring of site growing conditions (especially soil salinity, soil saturation, tidal induced sediment erosion and deposition) after re-diversion;

(e) Creation of a planting zone plan based on site growing conditions and species tolerances;

(f) A programme for trial planting of plant species especially in areas where growing conditions are likely to be challenging (e.g. areas exposed to open tidal water and those with higher salinity);

(g) Details of mass planting once species can be matched to site conditions with high confidence of success;

(h) restoration planting plan produced that details the planting zones, species mixes, plant grades, site preparation and post-planting maintenance requirements;

(i) identifying opportunities for tangata whenua and the community to be involved in planning and implementation of wetland restoration planting;

(j) Monitoring plan to objectively measure plant and species performance;

(k) Weed and pest control for each area; and

(l) Any ongoing requirements to ensure the objective of the Plan is achieved.

22.4 The Consent Holder shall undertake all wetland works and weed and pest control in general accordance with the Wetland Plan.

22.5 The Wetland Plan may be amended at any time provided that any amendments made maintain or enhance the degree and / or extent to which adverse environmental effects attributable to the construction, maintenance or operation of the Project are avoided or mitigated; and those amendments do not result in non-compliance with any consent condition. A copy of the amended Plan shall be provided to the Regional Council for their records.

23. **Environmental Monitoring Programme**

23.1 The Consent Holder shall prepare an Environmental Monitoring Programme that details the monitoring required under Conditions 26 to 23. The Programme shall be submitted to the Regional Council [specify timeframe] and:

(a) Be carried out by suitably experienced and qualified specialists.

(b) Be designed and carried out using scientifically accepted methods which shall aim to obtain results with a high level of confidence.

(c) Be designed so as to be capable of testing and verifying the performance measures listed in these consent conditions.

(d) Be consistent with all conditions of these consents and the Consent Holder shall undertake all sampling, monitoring and reporting in accordance with the Programme.

(e) Include a description of the method(s) and frequency to be used for monitoring, including that undertaken for internal/management purposes.

(f) Include a map and if appropriate photos of all sampling sites.

(g) Specify the name of any laboratory and method of analysis of all samples collected.

(h) Detail the operation and maintenance of any automatic sampling or monitoring equipment.

(i) Identify opportunities for tangata whenua and the community to be involved in developing education or research projects associated with the Project, particularly around incorporating elements of Mataauranga Maori, and in wetland restoration and ecological monitoring.

24. **Reporting**

24.1 The Consent Holder shall annually from commencement of the consents by 1 August provide a written monitoring report outlining the results of all monitoring, and an interpretation of those results, to Regional Council. This report shall cover the period to the end of the May preceding the August reporting date.

24.2 The monitoring parameters, site locations and frequency of sampling outlined in the Environmental Monitoring Programme and any other alterations may be reviewed as part of the each monitoring report.

24.3 As part of its annual report required under Condition 25.1, the Consent Holder may apply to the Regional Council for approval to reduce the frequency of the monitoring and/or the number of sampling sites (reduced sampling programme). The reason for the request shall be that monitoring results are not demonstrating any significant adverse effects and there is no longer considered to be a need to monitor as a result. Such a request shall form part of an amended Monitoring Plan to be submitted to the Regional Council for approval and shall provide for the following amendments:

(a) Details regarding the frequency of monitoring;

(b) A description of the number and location of sampling sites where monitoring is to occur;

(c) Provision for monitoring to be increased again if results of monitoring demonstrate a reversal of the trend or otherwise unexpected monitoring results; and

Ceasing or reintroducing the monitoring requirements for a particular parameter/contaminant.

24.4 The Consent Holder shall not apply to the Regional Council for approval to cease monitoring unless it has first undertaken a reduced sampling programme in accordance with Condition 25.3 above, to the satisfaction of the Regional Council.

24.5 Such a request shall form part of an amended Monitoring Plan to be submitted to the Regional Council for approval and which shall provide for the resumption of monitoring if so directed in writing by the Regional Council.

25. **Water levels and flows**

25.1 No less than 10 days prior to the commissioning of any of the culverts, water level monitoring shall commence and be undertaken on a permanent basis at

the sites outlined below. Where monitoring stations currently do not exist, these shall be established by the Consent Holder prior to commissioning. The monitoring stations shall be located at:

(a) Water levels in Kaituna River at Te Matai. The site is located at map reference U14: 064 734

(b) Water levels in the Kaituna River in the vicinity of the Ford Road pump station. The site is located at map reference 1,900,715 E , 5,815,802 N NZTM

(c) Water levels in Ongatoro/Maketu Estuary at Maketu township

(d) Water levels in Fords Cut downstream of the diversion culverts. The monitoring device shall be suitable to be used for making operational decisions about the volume of water to be released into Ford's Cut

(e) Sea level data obtained from the NIWA gauge at Tauranga (Moturiki) as long as the site is maintained by NIWA

25.2 Data from the sites shall be used to manage the flow regime through the culverts in accordance with the OMM.

25.3 Within 12 months of full commissioning, the water levels and sea level data collected under Condition 25.1 shall be assessed to validate the assessment of effects by comparing the model predictions with actual changes, both before and after the project under a range of flow conditions. If the actual reduction in average low flow ebb tide volume is greater than 20% for equivalent low flow conditions the Consent Holder shall alter the project settings in order to stay below that figure.

25.4 During detailed design of the additional culvert at Lower Kaituna Wildlife Management Reserve, in order to maintain flows into the wetland, the Consent Holder shall establish a relationship between water levels in the Kaituna Wetland, water levels in the Kaituna River and flows into the wetland. Following installation of the culvert, the analysis shall be repeated to demonstrate that the flow rates are as predicted. Data shall all be checked and analysed for a period of 2 years after commissioning.

26. **Erosion**

26.1 The Consent Holder shall establish permanent markers in order to undertake transect monitoring in the vicinity of Papahikahawai Island to monitor for any erosion as a result of the diversion as follows:

(a) The transects shall be located at four sites to the west and south of the island with each transect extending at least 50 metres offshore to pick up changes in near shore depths over time. The transects shall also go from RL 2m to MHWS.

(b) The transects shall be undertaken using RTK GPS.

(c) Transects shall be measured:

(i) annually from commencement of construction until commissioning

(ii) twice a year for three years following commissioning and thereafter the frequency shall be assessed as part of the reporting requirements of Condition 25.3.

26.2 The Consent Holder shall undertake a RTK GPS survey of Maketu Spit shoreline from RL 2m to MHWS over the area identified in Plan X. The first survey shall be undertaken at least one month prior to commissioning and thereafter annually for five years. After five years of annual surveys the frequency of the survey shall be assessed as part of the reporting requirements of Condition 25.3. The purpose of the survey is to monitor for any erosion as a result of the diversion.

Comment [SB1]: Need to mark up on a plan that can be attached the extent of the survey – this is the estuary edge.

26.3 The Consent Holder shall undertake surveys at Maketu township and Beach Road to monitor for any erosion as a result of the diversion as follows:

(a) A shoreline survey using RTK GPS in the area shown on Plan X along the dune toe or seaward edge of the vegetation;

Comment [SB2]: Need a plan to define the extent of this area

(b) A minimum of six cross sections in total with two along Beach Road and four distributed around Maketu township from Park Road foreshore to the marae. Each cross section shall extend to no less than 50 metres offshore; and

(c) The survey and transects shall be measured at least one month prior to commissioning and thereafter annually for five years. After five years of annual surveys the frequency of the survey shall be assessed as part of the reporting requirements of Condition 25.3.

26.4 The Consent Holder shall undertake a RTK GPS survey from the diversion channel intake to Y along both banks of the Lower Kaituna River every five years from commissioning. The purpose of the survey is to provide information to the adjacent landowner and identify if there are adverse erosion effects attributable to the Project. Any erosion identified does not automatically mean non-compliance with this condition recognising that there has been a history of some erosion prior to the exercise of this consent.

Comment [SB3]: to go as far as the bottom cross section on this image

26.5 The Consent Holder shall analyse aerial photos to assess for any erosion as a result of the diversion. The aerial photos used shall be those collected by Bay of Plenty Regional Council as part of their aerial photo programme, for the

area that covers Maketu spit, Ongatoro/Maketu Estuary and the lower Kaituna River. For the purpose of clarity the Consent Holder is not required to undertake specific aerial photography in order to comply with this condition.

27. **Water Quality and Shellfish**

27.1 The Consent Holder shall use data loggers to measure dissolved oxygen, temperature and salinity in the Ongatoro/Maketū Estuary. Monitoring shall occur during the period January to March (inclusive) with measurements made at intervals of 10 minutes (or less) for a period of at least 14 days. The monitoring shall occur at the following two locations shown in Figure 4.1 of Hamill (2014) "Kaituna River Re-diversion Project: Ongatoro/Maketū Estuary condition and potential ecological effects": Mid-estuary and Papahikahawai Lagoon 2. Monitoring shall be carried out once prior to commissioning, once within two years from commissioning, and once within five years of commissioning.

27.2 From Stage 1 commissioning the Consent Holder shall undertake water quality monitoring three times every year during the period December to March inclusive at high tide and low tide. Samples shall be collected from Ford's Cut, the mid estuary and at Maketu boat ramp and analysed for:

(a) Total nitrogen

(b) Nitrate-nitrite nitrogen

(c) Total ammoniacal nitrogen

(d) Total Phosphorus

(e) Dissolved Reactive Phosphorus

(f) Salinity

(g) Faecal coliform bacteria

(h) Enterococci bacteria

27.3 On same day that water samples are collected, the Consent Holder shall sample five shellfish samples at 3 sites in the lower to-mid estuary. Samples shall include at least two pipi and two cockle samples. The shellfish samples shall be tested and test for faecal coliform bacteria.

27.4 Annually from Stage 1 commissioning for five years the Consent Holder shall undertake a pipi survey in the lower estuary during the period December to March inclusive. A minimum of eight replicate cores shall be collected along a transect parallel to the channel. All shellfish in the cores shall be identified and counted in 5mm size classes.

27.5 Annually from Stage 1 commissioning for five years the Consent Holder shall sample shellfish at three sites in the mid estuary during the period December to March inclusive. Eight replicate sediment cores shall be randomly collected over a 10m radius of the site location. All shellfish in the cores shall be identified and counted in 5mm size classes.

28. **Ecology (fauna)**

28.1 The Consent Holder shall undertake broad scale mapping of algae distribution and species in the estuary annually from Stage 1 commissioning for five years. Reporting shall generally be in the form of Figure 2.1 of Hamill (2014) "Kaituna River Re-diversion Project: Ongatoro/Maketū Estuary condition and potential ecological effects".

28.2 The Consent Holder shall undertake a survey of benthic macrofauna at the eight sites identified on Plan X and one site in Papahikahawai Island lagoon and one at the end of Papahikahawai Creek. Infauna shall be sampled using eight replicate sediment cores shall be randomly collected within a 10 m radius of the site location and macrofauna identified. Epifuana shall be surveyed using eight randomly placed 0.25 m^2 quadrats. The survey shall be undertaken once within two years and then again at five years from commissioning.

Comment [SB4]: These are the eight sites in red on the figure below

Figure 3.1: Location of shellfish and macrofauna sampling sites. Additional infauna samples were collected at the eight sites with the red squares. Google Earth image from September 2012.

29. **Ecology (flora)**

29.1 The Consent Holder shall undertake vegetation transect monitoring to determine the effects of the diversion on terrestrial and wetland vegetation as follows:

	Location	Frequency
Transects 1-8	As shown on Plan X with Transect 7 being extended to the waters edge of the new diversion channel	no later than 6 months after full commissioning and thereafter annually for 5 years
Transect 9	1 new transect to be established on land in the general location shown in Plan X	No less than 1 month prior to Stage 1 commissioning and then no later than 6 months after full commissioning and thereafter annually for 5 years
Transect 10	1 north-south and 1 east-	No less than 1 month prior to

Comment [SB5]: This is the aerial plan below

Comment [SB6]: This is the red line on the plan

and 11	west transect to be established on the land north of Fords Cut using paired plot methodology	Stage 1 commissioning and then within 6 months of each planting stage and then 12 monthly for 5 years

29.2 Transects should be measured using the methodology from section 3.1.5.1 of MacGibbon (2014) 'Kaituna River Re-diversion Project: Ongatoro/Maketū Estuary Enhancement Project – Terrestrial, Avian and Wetland Ecology'

29.3 Should access not be gained from the landowner to Transects 8 and 9 there is no requirement to monitor.

29.4 The salt marsh remnants and the small Sacocornia patch in Papahikahawai Creek shall be monitored using photopoint monitoring. Surveys shall be carried out annually from commissioning for 5 years.

29.5 The vegetation composition and spatial extent along the true left bank of the re-diversion channel shall be surveyed prior to river re-diversion and monitored 6 monthly for 2 years following commissioning.

30. **Sediment**

30.1 The Consent Holder shall undertake a survey of sediment and algae in the estuary. The survey shall involve visual assessment of sediment and algae cover along transects. There shall be a minimum of three transects in the upper estuary and three in the mid-estuary, (including one at the downstream end of Papahikahawai Creek) and one in the lower estuary. The survey shall be undertaken once prior to commissioning once within two years from commissioning, and once within five years of commissioning.

30.2 Variables assessed during the survey shall include:

(a) Algae cover and type

(b) Percent cover of mud/silt

(c) Depth of mud/silt

(d) Anoxic depth i.e. depth of RPD (redox potential discontinuity)

30.3 Where appropriate sampling shall be integrated with macrofauna sampling required under condition 78.

31. **Community Relationships**

31.1 No less than 20 working days prior to the Consent Holder granting site possession to the Contractor, the Consent Holder shall prepare and submit to the Regional Council a Community Relationship Plan following a public information session. The public information session shall discuss the scheduling and staging for works and expectations regarding communication between the Consent Holder and the community.

31.2 The objective of the Plan is to enable iwi, the general public and stakeholders to be kept informed of the works and restoration being undertaken and facilitate the free flow of information between the Consent Holder and the community.

31.3 As a minimum, the Plan shall:

(a) Identify the frequency of communication, taking into account different phases of the project (such as the works phase, wetland works, and monitoring and reporting phases);

(b) Make provision for a public information session at least every two years for the duration of the consent, and more regularly during construction and commissioning. As a minimum the following parties shall be directly invited:

- Department of Conservation
- Fish & Game
- Tangata whenua
- Manager of the Kaituna Catchment Control Scheme
- Coastguard Maketu
- Maketu Ongatoro Wetland Society Inc
- Maketu Community Board

(c) Identify an agreed method(s) for providing information, such as a website or other form of communication;

(d) Identify the nature of information to be made available, including progress updates on the project, monitoring results, summaries of reports and complaints received with respect to the project;

(e) Identifying the procedures for providing feedback to the Consent Holder on the implementation of the project.

31.4 The Plan shall be implemented to the satisfaction of the Regional Council.

32. **Review**

32.1 The Bay of Plenty Regional Council may, once in any year, on the five last working days of [specify month – to be six monthly], serve notice of its intention to review the conditions of these consents under section 128 of the Resource Management Act 1991 for the purpose of:

(a) Dealing with any adverse effect on the environment which may arise from the exercise of the consents and which it is appropriate to deal with at a later stage; or

(b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment; or

(c) Requiring the Consent Holder to carry out monitoring in addition to or instead of that required by the consents.

(d) Addressing any issues identified in the annual reports submitted under conditions 24.

33. **Term of Consent**

33.1 The term of the consent is 35 years.

34. **Resource Management Act Charges**

34.1 The Consent Holder shall pay the Bay of Plenty Regional Council such administrative charges as are fixed from time to time by the Regional Council in accordance with section 36 of the RMA.

Advice notes

The Consent Holder will be seeking an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014, prior to the commencement of construction. The authority may include requirements for detailed investigations and monitoring effects and are also likely to require the preparation of a Heritage Management Plan (or an Archaeological Management Plan).

As submitted to Council on 23/03/15

Proposed designation conditions for the Kaituna River Re-diversion
&
Ongatoro/Maketu Estuary Enhancement Project

DEFINITIONS

"District Council" means the Western Bay District Council's Chief Executive Officer or nominee

"Requiring Authority" means the Bay of Plenty Regional Council

"Project" means the Kaituna River Re-Diversion and Ongatoro/Maketu Estuary Enhancement Project and associated activities

"Works" means the construction works required to give effect to the Project

Notices of requirement

The following Notices of Requirement are authorised by these conditions:

a) Designation for the construction of boating facilities, enhancement works, earthworks and diversion works

b) Designation for the operation and maintenance of the Project including diversion, enhancement works, boating facilities

Subject to the following conditions:

Plans

The extent of the designations are as shown on:

(a) the Designation Plan prepared by Bay of Plenty Regional Council on 19 March 2014

(b) the Designation Plan (Boat Facilities) prepared by Bay of Plenty Regional Council on 21 November 2014

Comment [SB1]: Combine plans into 1

General Conditions 1 to 9 not to be included in the District Plan

1. **All designations**

1.1 The District Council shall be notified in writing of the intention to commence construction work at least two months prior to the start of any construction activities on site.

1.2 Prior to commencement of works the Requiring Authority or their agent shall arrange and conduct a pre-construction site meeting between the District Council and the primary contractor. At a minimum, the following shall be covered at the meeting:

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(a) Scheduling and staging of the works

(b) Responsibilities of all relevant parties

(c) Contact details for all relevant parties

(d) Expectations regarding communication between all relevant parties

(e) Procedures for implementing any amendments to the management plans submitted

(f) Site inspection

(g) Confirmation that all relevant parties have copies of the contents of this consent document and all associated erosion and sediment control plans and methodology.

1.3 A meeting shall also be held with the directly affected landowners and iwi representatives to discuss: scheduling and staging of the works, contact details for all parties, expectations regarding communication between all parties.

1.4 All operational personnel involved with the construction of the Project shall be made aware of, and have access to, all designation documents, conditions and schedules applicable to the construction of the Project.

2. **Complaints**

2.1 The Requiring Authority upon receipt of any complaint in relation to construction shall promptly investigate the complaint, where appropriate remedy or mitigate the cause of the complaint and inform Bay of Plenty Regional Council as soon as practicable, but no later than 48 hours of receiving the complaint, of the details of the complaint and the action taken.

2.2 The Requiring Authority shall maintain and keep a complaint register for all aspects of operations in relation to construction activities. The register shall record the date, time and type of complaint, cause of the complaint, the action taken by the Requiring Authority in response to the complaint and steps to prevent a reoccurrence. The register shall be available to the District Council at all times.

3. **Construction Environmental Management Plan**

3.1 At least 20 working days prior to the Requiring Authority granting site possession to the contractor the Requiring Authority shall submit to the District Council the Construction Environmental Management Plan (CEMP) outlining the construction activities and all practices and procedures to be adopted in the construction of the Project.

3.2 The CEMP shall be certified by appropriately experienced and qualified practitioners. The certification from the certifier shall confirm that:

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(a) the CEMP adopts the mitigation measures identified in the application documentation and / or otherwise required under the conditions of the consent; and

(b) the implementation of the CEMP will appropriately mitigate the anticipated adverse effects of the public work.

3.3 Works shall not commence until the certified CEMP described in condition 3.2 has been received and confirmed in writing by the District Council. If written acknowledgement is not provided within 10 working days of the Requiring Authority sending the certification, the certification shall be deemed to be confirmed.

3.4 The objectives of the CEMP shall be:

(a) To ensure that construction activities achieve compliance with conditions for these activities;

(b) To minimise the environmental nuisance effects of construction activities;

(c) To ensure that disturbance is limited to that necessary to undertake the construction works;

(d) To minimise the release of sediment during disturbance to the bed of any waterway; and

(e) To limit disturbance of the beds and margins of the coastal marine area and waterways will be limited to the extent necessary to undertake construction works, and to avoid or mitigate adverse effects on the quality and passage of coastal and surface water and aquatic habitat.

(f) To ensure that disturbance does not cause flooding or erosion.

3.5 The CEMP will address, as a minimum, the following aspects of the works:

(a) Timing of construction works including construction of the diversion channel inlet construction outside of during whitebait fishing season (15 August - 30 November)

(b) Working hours; and

(c) Restrictions on public access.

3.6 The following supplementary management plans shall form subsets of and must be submitted to District Council as part of the certified CEMP:

(a) Erosion, Sediment & Dust Control Plan;

(b) Construction Traffic Management Plan; and

(c) Construction-Flood Management Plan.

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3.7 In the event of any conflict between designation conditions and CEMP practices and procedures, the designation conditions shall be complied with.

3.8 The CEMP may be amended at any time provided that any amendments made maintain or enhance the degree and / or extent to which adverse environmental effects attributable to the construction, maintenance or operation of the Project are avoided or mitigated; and those amendments do not result in non-compliance with any resource consent condition. A copy of the amended Plan shall be provided to the District Council for their records.

4. **Compliance with CEMP**

4.1 The Requiring Authority shall implement and comply with the CEMP and the Supplementary Management Plans set out in conditions 3, 5, 7 and 8.

Note: The CEMP prepared in relation to the Bay of Plenty Regional Council resource consents will be the same CEMP as that prepared in relation to the designation submitted to Western Bay of Plenty District Council but will include different supplementary plans specific to the designation.

5. **Traffic Management**

5.1 The Requiring Authority shall submit a Construction Traffic Management Plan (CTMP) to the Road Asset Manager for certification at least 15 Working Days prior to commencement of any distinct stages of the works requiring traffic management. The purpose of the CTMP is to outline the proposed procedures, requirements and standards necessary for managing the traffic effects of the works to achieve the outcomes and standards contained in Conditions 5.2 to 5.6 inclusive.

5.2 Construction shall not commence until the Requiring Authority has received the Road Asset Manager's written certification of the CTMP.

5.3 In managing traffic during the works, the Requiring Authority shall achieve the following outcomes:

(a) Minimise the disruption to users of local travel routes; and

(b) Maintain a safe passage for all travel routes, including road and footpath users affected by the Work.

5.4 The CTMP shall be consistent with the version of the New Zealand Transport Agency Code of Practice for Temporary Traffic Management (COPTTM) which applies at the time the CTMP is prepared. Where it is not possible to adhere to this standard, the COPTTM's prescribed Engineering Exception Decision (EED) process will be followed, which will include appropriate mitigation measures agreed with the Road Asset Manager.

5.5 The CTMP shall, as a minimum, address the following aspects of construction traffic:

(a) Construction sequence and methodology for all traffic activity associated with the Project.

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(b) Hours of operation, including times and days when traffic-generating activities would occur.

(c) Description of the types of vehicles that will be used on public roads.

(d) Details and locations of where works will occur within the road reserve and the method of traffic management control to be used.

(e) Management strategies where full compliance with safety standards may not be achieved, including active control of traffic at locations where full safe stopping distances cannot be achieved for the temporary traffic volumes expected.

(f) Description of routes for haulage of materials on public roads, and measures for ensuring the road network is maintained in a satisfactory condition.

(g) How provision will be made for access to affected properties during construction.

(h) Temporary work-site access arrangements.

(i) Procedures for liaison between the community, the Requiring Authority, the contractor and the relevant road controlling authorities about traffic related matters.

(j) Monitoring of road closures and deviations to ensure that excessive disruption or traffic hazards are not created.

(k) Monitoring of hazardous traffic conditions arising from dust on public roads.

(l) On-going monitoring of traffic conditions to ensure road safety is maintained.

5.6 The Requiring Authority shall take the best practicable option to avoid the deposit of debris onto public roads during the construction period. Any facilities required to achieve this outcome shall be installed prior to works commencing.

6. **Construction Noise**

6.1 The Requiring Authority shall ensure that all works shall be designed and carried out to ensure that the noise from the work complies with the New Zealand Construction Standard NZS6803:1999 “Acoustics - Construction Noise” at all times at 1 metre from the most exposed façade of any existing occupied dwelling.

7. **Erosion, sediment and dust control**

7.1 The works shall not cause noxious, offensive or objectionable levels of dust beyond the designation boundaries.

7.2 An Erosion, Sediment and Dust Control Management Plan (ESDCP) shall be prepared as part of the CEMP in accordance with Bay of Plenty Regional

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Council Guideline No. 2010/01 - "Erosion and Sediment Control for Land Disturbing Activities" and shall give effect to :

(a) Best practicable methods for controlling dust emissions during construction;

(b) Procedures for monitoring the effectiveness of the controls;

(c) A complaints procedure; and

(d) Inspection and auditing procedures and contingency plans for if controls fail.

8. **Construction Flood Management Plan**

8.1 The Construction Flood Management Plan (CFMP) shall be developed in consultation with the Bay of Plenty Regional Council Rivers and Drainage Manager and the Utilities Manager of the Western Bay of Plenty District Council.

8.2 The objectives of the CFMP shall be to:

(a) Minimise or avoid any increase in flood risk arising as a consequence of undertaking the works;

(b) Ensure that the Contractor takes into account the potential for increased flood risk when planning and executing work; and

(c) Ensure that in the event of a flood occurring at a construction site processes and procedures are in place to manage such an event.

8.3 The CFMP shall as a minimum address the following matters:

(a) Provision of a 24 hour emergency contact person who is able to respond to a flood warning and implement emergency control measures;

(b) An outline of the probability of various flood levels;

(c) Construction methodology for installation the Fords Cut culverts, the diversion channel, widening and deepening of Fords Cut and construction of the new stopbank;

(d) Provision to restrict the length of stopbank being worked on and the number of work fronts affecting stopbanks to the minimum practicable; and

(e) Existing flood management procedures for the Kaituna Catchment Control Scheme as included in the Regional Council's Flood Warning Manual.

8.4 Flood protection systems must be fully reinstated for weekends and public holidays unless alternative interim measures, as approved by the Bay of Plenty Regional Council Rivers and Drainage Manager, are implemented.

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8.5 The Requiring Authority shall maintain a stockpile of material and sufficient plant on site to be able to undertake immediate reinstatement of stopbank works in the event of a flood warning.

8.6 Along the alignment of the proposed diversion channel full flood protection shall be maintained by the existing stopbank except for when the tie-ins are made at each end. The period under which the tie-ins shall be agreed with the Bay of Plenty Regional Council Natural Hazards Group prior to the works being undertaken.

9. **Network Utilities**

9.1 At the time of Outline Plan preparation and at least 20 working days prior to the requiring Authority granting site possession to the Contractor, the Requiring Authority shall submit to the District Council a Network Utility Management Plan (NUMP) prepared jointly by the Requiring Authority, or its agents, and Powerco.

9.2 The NUMP submitted in accordance with this condition shall record if there is agreement between the parties and, if not, where and why there is disagreement and the steps taken in an attempt to resolve that disagreement. These matters can then be considered by the Council when assessing the Outline Plan.

9.3 All construction activities of the Project are to be undertaken in accordance with the NUMP.

9.4 The purpose of the NUMP shall be to ensure that the enabling works, design and construction of the project adequately take account of, and include measures to address the safety, integrity, protection or, where necessary, relocation of existing electricity network utilities.

9.5 The NUMP shall include but need not be limited to methods and measures to:

(a) Identify protocols for liaising with Powerco and for overseeing and approving works that impact on services.

(b) Accurately identify and verify the location of existing electricity network utilities,

(c) Identify appropriate measures for working near services or the appropriate standards if they have to be relocated.

(d) Identify timing and sequencing of work associated with relocation and / or protection of electricity utility services.

(e) Ensure that existing, relocated and/or replacement electricity network utility infrastructure can be accessed for maintenance at all reasonable times, or emergency works at all times during construction activities.

(f) To appropriately manage the effects of dust and any other material potentially resulting from construction activities and able to cause material damage, beyond normal wear and tear to overhead electricity lines.

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(g) To ensure that no activity is undertaken during construction that would result in ground vibrations and/or ground instability likely to cause material damage to overhead electricity lines, including support structures.

(h) To ensure the continued operation and supply of electricity infrastructure services, which may include, but not be limited to, any relocated or replacement electricity lines and cables being made operational prior to the termination of existing lines and cables.

(i) Confirm that the works will comply with the minimum separation distances set out in the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP34:2001).

Conditions 10 – 12 to be included in the District Plan

10. **Wetland Plan**

10.1 A Wetland Plan shall be prepared and submitted to the District Council at least two months prior to the first planting season. The Plan shall be certified by appropriately experienced and qualified practitioners. The certification from the certifier shall confirm that the Wetland Plan meets the objectives and conditions of the designation.

10.2 The objective of the Wetland Plan shall be to demonstrate how works will be undertaken such that the land available results in a state where there is a sustainable cover of indigenous plants that is as close to the original natural species diversity that can be achieved taking into consideration the substantial and irreversible human-induced changes that have occurred to the landscape surrounding the estuary.

10.3 The Wetland Plan shall provide details of how the above objective is to be achieved, including:

(a) A map showing the locations of the proposed work;

(b) Identification of the personnel or organisations that would carry out the work;

(c) The timescale of activities;

(d) Initial monitoring of site growing conditions (especially soil salinity, soil saturation, tidal induced sediment erosion and deposition) after re-diversion;

(e) Creation of a planting zone plan based on site growing conditions and species tolerances;

(f) A programme for trial planting of plant species especially in areas where growing conditions are likely to be challenging (e.g. areas exposed to open tidal water and those with higher salinity);

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(g) Details of mass planting once species can be matched to site conditions with high confidence of success;

(h) restoration planting plan produced that details the planting zones, species mixes, plant grades, site preparation and post-planting maintenance requirements;

(i) identifying opportunities for tangata whenua and the community to be involved in planning and implementation of wetland restoration planting;

(j) Monitoring plan to objectively measure plant and species performance;

(k) Weed and pest control for each area; and

(l) Any ongoing requirements to ensure the objective of the plan is achieved.

10.4 The Requiring Authority shall undertake all wetland works and weed and pest control in accordance with the Wetland Plan.

10.5 The Wetland Plan may be amended at any time provided that any amendments made maintain or enhance the degree and / or extent to which adverse environmental effects attributable to the construction, maintenance or operation of the Project are avoided or mitigated; and those amendments do not result in non-compliance with any designation condition. A copy of the amended Plan shall be provided to the District Council.

11. **Community Relationships**

11.1 No less than 20 working days prior to the Requiring Authority granting site possession to the Contractor, the Requiring Authority shall prepare and submit to the District Council a Community Relationship Plan following a public information session. The public information session shall discuss the scheduling and staging for works and expectations regarding communication between the Requiring Authority and the community.

11.2 The objective of the Plan is to enable iwi, the general public and stakeholders to be kept informed of the works and restoration being undertaken and facilitate the free flow of information between the Requiring Authority and the community.

11.3 As a minimum, the Plan shall:

(a) Identify the frequency of communication, taking into account different phases of the project (such as the works phase, wetland works, and monitoring and reporting phases);

(b) Make provision for a public information session at least every two years for the duration of the consent, and more regularly during

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construction and commissioning. As a minimum the following parties shall be directly invited:

- Department of Conservation
- Fish & Game
- Tangata whenua
- Manager of the Kaituna Catchment Control Scheme
- Coastguard Maketu
- Maketu Ongatoro Wetland Society Inc
- Maketu Community Board

(c) Identify an agreed method(s) for providing information, such as a website or other form of communication;

(d) Identify the nature of information to be made available, including progress updates on the project, monitoring results, summaries of reports and complaints received with respect to the project;

(e) Identifying the procedures for providing feedback to the Requiring Authority on the implementation of the project

11.4 The Plan shall be implemented to the satisfaction of the District Council.

12. **Accidental Discovery**

12.1 A Cultural Monitor shall be employed by the Requiring Authority to monitor, as necessary, and report any discoveries during earthworks.

12.2 Prior to construction commencing the Requiring Authority shall provide training to those working on the Project on the discovery protocols.

12.3 In the event of any archaeological site or material being uncovered or reasonably suspected to have been uncovered during the exercise of this designation, activities in the vicinity of the discovery shall cease and the Requiring Authority shall notify the District Council as soon as possible.

12.4 If any koiwi (human remains) are encountered, or reasonably suspected, notify the Heritage New Zealand Pouhere Taonga Regional Archaeologist, New Zealand Police and the District Council and no further work may take place until future actions have been agreed by all parties.

12.5 The Requiring Authority shall notify Te Rūnanga o Ngati Whakaue ki Maketu, Tapuika Iwi Authority, Te Maru o Ngati Rangiwewehi, Waitaha Raupatu Trust, Ngāti Pikiao, Ngāti Tūnohopū and Ngati Makino Heritage Trust, , and shall ensure as far as practicable that procedures are undertaken in accordance with:

(i) The Ngati Rangiwewehi koiwi and accidental discovery protocol

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(ii) The Waitaha Raupatu Trust, Ngati Makino Heritage Trust, Komiti o Ngati Pikao (Ki Maketu), Ngati Tunohopu Accidental Discovery Protocols

(iii) The Te Taonga Tuturu Act - immediate notification of Tapuika representatives in the event that a site or objects of significance are discovered during works.

Note: This condition is in addition to any agreements that are in place between the consent holder and the [Cultural Site Accidental Discovery Protocols] or Heritage New Zealand Pouhere Taonga.

Advice Note: The Requiring Authority will be seeking an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014, prior to the commencement of construction. The authority may include requirements for detailed investigations and monitoring effects and are also likely to require the preparation of a Heritage Management Plan (or an Archaeological Management Plan).

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Appendix 15 – Relevant Provisions:
National Policy Statement Freshwater Management 2014

Part A: Water Quality

Objective A1

To safeguard:

a) the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of fresh water; and

b) the health of people and communities, at least as affected by secondary contact with fresh water;

in sustainably managing the use and development of land, and of discharges of contaminants.

Objective A2

The overall quality of fresh water within a region is maintained or improved while:

a) protecting the significant values of outstanding freshwater bodies;

b) protecting the significant values of wetlands; and

c) improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.

Policy A3

By regional councils:

a) imposing conditions on discharge permits to ensure the limits and targets specified pursuant to Policy A1 and Policy A2 can be met; and

b) where permissible, making rules requiring the adoption of the best practicable option to prevent or minimise any actual or likely adverse effect on the environment of any discharge of a contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.

Part D: Tangata Whenua Roles and Interests

Objective D1

To provide for the involvement of iwi and hapū, and to ensure that tāngata whenua values and interests are identified and reflected in the management of fresh water including associated ecosystems, and decision-making regarding freshwater planning, including on how all other objectives of this national policy statement are given effect to.

Policy D1

Local authorities shall take reasonable steps to:

a) involve iwi and hapū in the management of fresh water and freshwater ecosystems in the region;

b) work with iwi and hapū to identify tāngata whenua values and interests in fresh water and freshwater ecosystems in the region; and

c) reflect tāngata whenua values and interests in the management of, and decision-making regarding, fresh water and freshwater ecosystems in the region.

Appendix 16 – Relevant Provisions:
New Zealand Coastal Policy Statement 2010

Objective 1
To safeguard the integrity, form, functioning and resilience of the coastal environment and sustain its ecosystems, including marine and intertidal areas, estuaries, dunes and land, by:

- *maintaining or enhancing natural biological and physical processes in the coastal environment and recognising their dynamic, complex and interdependent nature;*
- *protecting representative or significant natural ecosystems and sites of biological importance and maintaining the diversity of New Zealand's indigenous coastal flora and fauna; and*
- *maintaining coastal water quality, and enhancing it where it has deteriorated from what would otherwise be its natural condition, with significant adverse effects on ecology and habitat, because of discharges associated with human activity.*

Objective 2
To preserve the natural character of the coastal environment and protect natural features and landscape values through:

- *recognising the characteristics and qualities that contribute to natural character, natural features and landscape values and their location and distribution;*
- *identifying those areas where various forms of subdivision, use, and development would be inappropriate and protecting them from such activities; and*
- *encouraging restoration of the coastal environment.*

Objective 3
To take account of the principles of the Treaty of Waitangi, recognise the role of tangata whenua as kaitiaki and provide for tangata whenua involvement in management of the coastal environment by:

- *recognising the ongoing and enduring relationship of tangata whenua over their lands, rohe and resources;*
- *promoting meaningful relationships and interactions between tangata whenua and persons exercising functions and powers under the Act;*
- *incorporating mātauranga Māori into sustainable management practices; and*
- *recognising and protecting characteristics of the coastal environment that are of special value to tangata whenua.*

Objective 4
To maintain and enhance the public open space qualities and recreation opportunities of the coastal environment by:

- *recognising that the coastal marine area is an extensive area of public space for the public to use and enjoy;*
- *maintaining and enhancing public walking access to and along the coastal marine area without charge, and where there are exceptional reasons that mean this is not practicable providing alternative linking access close to the coastal marine area; and*
- *recognising the potential for coastal processes, including those likely to be affected by climate change, to restrict access to the coastal environment and the need to ensure that public access is maintained even when the coastal marine area advances inland.*

Objective 6

To enable people and communities to provide for their social, economic, and cultural wellbeing and their health and safety, through subdivision, use, and development, recognising that:

- *the protection of the values of the coastal environment does not preclude use and development in appropriate places and forms, and within appropriate limits;*
- *some uses and developments which depend upon the use of natural and physical resources in the coastal environment are important to the social, economic and cultural wellbeing of people and communities;*
- *functionally some uses and developments can only be located on the coast or in the coastal marine area;*
- *the coastal environment contains renewable energy resources of significant value;*
- *the protection of habitats of living marine resources contributes to the social, economic and cultural wellbeing of people and communities;*
- *the potential to protect, use, and develop natural and physical resources in the coastal marine area should not be compromised by activities on land;*
- *the proportion of the coastal marine area under any formal protection is small and therefore management under the Act is an important means by which the natural resources of the coastal marine area can be protected; and*
- *historic heritage in the coastal environment is extensive but not fully known, and vulnerable to loss or damage from inappropriate subdivision, use, and development.*

Policy 2: The Treaty of Waitangi, Tangata Whenua and Maori

In taking account of the principles of the Treaty of Waitangi (Te Tiriti o Waitangi), and kaitiakitanga, in relation to the coastal environment:

a) recognise that tangata whenua have traditional and continuing cultural relationships with areas of the coastal environment, including places where they have lived and fished for generations;

b) involve iwi authorities or hapū on behalf of tangata whenua in the preparation of regional policy statements, and plans, by undertaking effective consultation with tangata whenua; with such consultation to be early, meaningful, and as far as practicable in accordance with tikanga Māori;

c) with the consent of tangata whenua and as far as practicable in accordance with tikanga Māori, incorporate mātauranga Māori in regional policy statements, in plans, and in the consideration of applications for resource consents, notices of requirement for designation and private plan changes;

d) provide opportunities in appropriate circumstances for Māori involvement in decision making, for example when a consent application or notice of requirement is dealing with cultural localities or issues of cultural significance, and Māori experts, including pūkenga[2], may have knowledge not otherwise available;

e) take into account any relevant iwi resource management plan and any other relevant planning document recognised by the appropriate iwi authority or hapū and lodged with the council, to the extent that its content has a bearing on resource management issues in the region or district; and

   i. where appropriate incorporate references to, or material from, iwi resource management plans in regional policy statements and in plans; and

   ii. consider providing practical assistance to iwi or hapū who have indicated a wish to develop iwi resource management plans;

f) provide for opportunities for tangata whenua to exercise kaitiakitanga over waters, forests, lands, and fisheries in the coastal environment through such measures as:

i. bringing cultural understanding to monitoring of natural resources;

ii. providing appropriate methods for the management, maintenance and protection of the taonga of tangata whenua;

iii. having regard to regulations, rules or bylaws relating to ensuring sustainability of fisheries resources such as taiāpure, mahinga mātaitai or other non commercial Māori customary fishing;

g) in consultation and collaboration with tangata whenua, working as far as practicable in accordance with tikanga Māori, and recognising that tangata whenua have the right to choose not to identify places or values of historic, cultural or spiritual significance or special value:

i. recognise the importance of Māori cultural and heritage values through such methods as historic heritage, landscape and cultural impact assessments; and

ii. provide for the identification, assessment, protection and management of areas or sites of significance or special value to Māori, including by historic analysis and archaeological survey and the development of methods such as alert layers and predictive methodologies for identifying areas of high potential for undiscovered Māori heritage, for example coastal pā or fishing villages.

Policy 3: Precautionary Approach

1. Adopt a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse.

2. In particular, adopt a precautionary approach to use and management of coastal resources potentially vulnerable to effects from climate change, so that:

a) avoidable social and economic loss and harm to communities does not occur;

b) natural adjustments for coastal processes, natural defences, ecosystems, habitat and species are allowed to occur; and

c) the natural character, public access, amenity and other values of the coastal environment meet the needs of future generations.

Policy 6: Activities in the Coastal Environment

1. In relation to the coastal environment:

a) recognise that the provision of infrastructure, the supply and transport of energy including the generation and transmission of electricity, and the extraction of minerals are activities important to the social, economic and cultural well-being of people and communities;

b) consider the rate at which built development and the associated public infrastructure should be enabled to provide for the reasonably foreseeable needs of population growth without compromising the other values of the coastal environment;

a) encourage the consolidation of existing coastal settlements and urban areas where this will contribute to the avoidance or mitigation of sprawling or sporadic patterns of settlement and urban growth;

b) recognise tangata whenua needs for papakāinga, marae and associated developments and make appropriate provision for them;

c) *consider where and how built development on land should be controlled so that it does not compromise activities of national or regional importance that have a functional need to locate and operate in the coastal marine area;*

d) *consider where development that maintains the character of the existing built environment should be encouraged, and where development resulting in a change in character would be acceptable;*

e) *take into account the potential of renewable resources in the coastal environment, such as energy from wind, waves, currents and tides, to meet the reasonably foreseeable needs of future generations;*

f) *consider how adverse visual impacts of development can be avoided in areas sensitive to such effects, such as headlands and prominent ridgelines, and as far as practicable and reasonable apply controls or conditions to avoid those effects;*

g) *set back development from the coastal marine area and other water bodies, where practicable and reasonable, to protect the natural character, open space, public access and amenity values of the coastal environment; and*

h) *where appropriate, buffer areas and sites of significant indigenous biological diversity, or historic heritage value.*

2. Additionally, in relation to the coastal marine area:

a) *recognise potential contributions to the social, economic and cultural wellbeing of people and communities from use and development of the coastal marine area, including the potential for renewable marine energy to contribute to meeting the energy needs of future generations;*

b) *recognise the need to maintain and enhance the public open space and recreation qualities and values of the coastal marine area;*

c) *recognise that there are activities that have a functional need to be located in the coastal marine area, and provide for those activities in appropriate places;*

d) *recognise that activities that do not have a functional need for location in the coastal marine area generally should not be located there; and*

e) *promote the efficient use of occupied space, including by:*

i. *requiring that structures be made available for public or multiple use wherever reasonable and practicable;*

ii. *requiring the removal of any abandoned or redundant structure that has no heritage, amenity or reuse value; and*

iii. *considering whether consent conditions should be applied to ensure that space occupied for an activity is used for that purpose effectively and without unreasonable delay.*

Policy 10: Reclamation and De-reclamation

1. Avoid reclamation of land in the coastal marine area, unless:

a) *land outside the coastal marine area is not available for the proposed activity;*

b) *the activity which requires reclamation can only occur in or adjacent to the coastal marine area;*

c) *there are no practicable alternative methods of providing the activity; and*

d) *the reclamation will provide significant regional or national benefit.*

2. Where a reclamation is considered to be a suitable use of the coastal marine area, in considering its form and design have particular regard to:

a) *the potential effects on the site of climate change, including sea level rise, over no less than 100 years;*

b) *the shape of the reclamation and, where appropriate, whether the materials used are visually and aesthetically compatible with the adjoining coast;*

c) *the use of materials in the reclamation, including avoiding the use of contaminated materials that could significantly adversely affect water quality, aquatic ecosystems and indigenous biodiversity in the coastal marine area;*

d) *providing public access, including providing access to and along the coastal marine area at high tide where practicable, unless a restriction on public access is appropriate as provided for in Policy 19;*

e) *the ability to remedy or mitigate adverse effects on the coastal environment;*

f) *whether the proposed activity will affect cultural landscapes and sites of significance to tangata whenua; and*

g) *the ability to avoid consequential erosion and accretion, and other natural hazards.*

3. *In considering proposed reclamations, have particular regard to the extent to which the reclamation and intended purpose would provide for the efficient operation of infrastructure, including ports, airports, coastal roads, pipelines, electricity transmission, railways and ferry terminals, and of marinas and electricity generation.*
4. *De-reclamation of redundant reclaimed land is encouraged where it would:*

a) *restore the natural character and resources of the coastal marine area; and*

b) *provide for more public open space.*

Policy 11: Indigenous Biological Diversity

To protect indigenous biological diversity in the coastal environment:

a) *avoid adverse effects of activities on:*

i. *indigenous taxa that are listed as threatened[5] or at risk in the New Zealand Threat Classification System lists;*

ii. *taxa that are listed by the International Union for Conservation of Nature and Natural Resources as threatened;*

iii. *indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare;*

iv. *habitats of indigenous species where the species are at the limit of their natural range, or are naturally rare;*

v. *areas containing nationally significant examples of indigenous community types; and*

vi. *areas set aside for full or partial protection of indigenous biological diversity under other legislation; and*

b) *avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on:*

i. *areas of predominantly indigenous vegetation in the coastal environment;*

ii. *habitats in the coastal environment that are important during the vulnerable life stages of indigenous species;*

iii. *indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification, including estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh;*

iv. *habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes;*

v. *habitats, including areas and routes, important to migratory species; and*

vi. *ecological corridors, and areas important for linking or maintaining biological values identified under this policy.*

Policy 13: Preservation of Natural Character

1. *To preserve the natural character of the coastal environment and to protect it from inappropriate subdivision, use, and development:*
    a) *avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character; and*
    b) *avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment; including by:*
    c) *assessing the natural character of the coastal environment of the region or district, by mapping or otherwise identifying at least areas of high natural character; and*
    d) *ensuring that regional policy statements, and plans, identify areas where preserving natural character requires objectives, policies and rules, and include those provisions.*
2. *Recognise that natural character is not the same as natural features and landscapes or amenity values and may include matters such as:*
    a) *natural elements, processes and patterns;*
    b) *biophysical, ecological, geological and geomorphological aspects;*
    c) *natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks;*
    d) *the natural movement of water and sediment;*
    e) *the natural darkness of the night sky;*
    f) *places or areas that are wild or scenic;*
    g) *a range of natural character from pristine to modified; and*
    h) *experiential attributes, including the sounds and smell of the sea; and their context or setting.*

Policy 14: Restoration of Natural Character

Promote restoration or rehabilitation of the natural character of the coastal environment, including by:

a) *identifying areas and opportunities for restoration or rehabilitation;*
b) *providing policies, rules and other methods directed at restoration or rehabilitation in regional policy statements, and plans;*
c) *where practicable, imposing or reviewing restoration or rehabilitation conditions on resource consents and designations, including for the continuation of activities; and recognising that where degraded areas of the coastal environment require restoration or rehabilitation, possible approaches include:*
    i. *restoring indigenous habitats and ecosystems, using local genetic stock where practicable; or*
    ii. *encouraging natural regeneration of indigenous species, recognising the need for effective weed and animal pest management; or*
    iii. *creating or enhancing habitat for indigenous species; or*
    iv. *rehabilitating dunes and other natural coastal features or processes, including saline wetlands and intertidal saltmarsh; or*
    v. *restoring and protecting riparian and intertidal margins; or*
    vi. *reducing or eliminating discharges of contaminants; or*
    vii. *removing redundant structures and materials that have been assessed to have minimal heritage or amenity values and when the removal is authorised by required permits, including an archaeological authority under the Historic Places Act 1993; or*

viii. *restoring cultural landscape features; or*

ix. *redesign of structures that interfere with ecosystem processes; or*

x. *decommissioning or restoring historic landfill and other contaminated sites which are, or have the potential to, leach material into the coastal marine area.*

Policy 15: Natural Features and Natural Landscapes

To protect the natural features and natural landscapes (including seascapes) of the coastal environment from inappropriate subdivision, use, and development:

a) *avoid adverse effects of activities on outstanding natural features and outstanding natural landscapes in the coastal environment; and*

b) *avoid significant adverse effects and avoid, remedy, or mitigate other adverse effects of activities on other natural features and natural landscapes in the coastal environment; including by:*

c) *identifying and assessing the natural features and natural landscapes of the coastal environment of the region or district, at minimum by land typing, soil characterisation and landscape characterisation and having regard to:*

i. *natural science factors, including geological, topographical, ecological and dynamic components;*

ii. *the presence of water including in seas, lakes, rivers and streams;*

iii. *legibility or expressiveness – how obviously the feature or landscape demonstrates its formative processes;*

iv. *aesthetic values including memorability and naturalness;*

v. *vegetation (native and exotic);*

vi. *transient values, including presence of wildlife or other values at certain times of the day or year;*

vii. *whether the values are shared and recognised;*

viii. *cultural and spiritual values for tangata whenua, identified by working, as far as practicable, in accordance with tikanga Māori; including their expression as cultural landscapes and features;*

ix. *historical and heritage associations; and*

x. *wild or scenic values;*

d) *ensuring that regional policy statements, and plans, map or otherwise identify areas where the protection of natural features and natural landscapes requires objectives, policies and rules; and*

e) *including the objectives, policies and rules required by (d) in plans.*

Policy 18: Public Open Space

Recognise the need for public open space within and adjacent to the coastal marine area, for public use and appreciation including active and passive recreation, and provide for such public open space, including by:

a) *ensuring that the location and treatment of public open space is compatible with the natural character, natural features and landscapes, and amenity values of the coastal environment;*

b) *taking account of future need for public open space within and adjacent to the coastal marine area, including in and close to cities, towns and other settlements;*

c) *maintaining and enhancing walking access linkages between public open space areas in the coastal environment;*

d) *considering the likely impact of coastal processes and climate change so as not to compromise the ability of future generations to have access to public open space; and*

e) *recognising the important role that esplanade reserves and strips can have in contributing to meeting public open space needs.*

Policy 23: Discharge of contaminants

1. *In managing discharges to water in the coastal environment, have particular regard to:*
    a. *the sensitivity of the receiving environment;*
    b. *the nature of the contaminants to be discharged, the particular concentration of contaminants needed to achieve the required water quality in the receiving environment, and the risks if that concentration of contaminants is exceeded; and*
    c. *the capacity of the receiving environment to assimilate the contaminants; and:*
    d. *avoid significant adverse effects on ecosystems and habitats after reasonable mixing;*
    e. *use the smallest mixing zone necessary to achieve the required water quality in the receiving environment; and*
    f. *minimise adverse effects on the life-supporting capacity of water within a mixing zone.*
2. *In managing discharge of human sewage, do not allow:*
    a. *discharge of human sewage directly to water in the coastal environment without treatment; and*
    b. *the discharge of treated human sewage to water in the coastal environment, unless:*
        i. *there has been adequate consideration of alternative methods, sites and routes for undertaking the discharge; and*
        ii. *informed by an understanding of tangata whenua values and the effects on them.*
3. *Objectives, policies and rules in plans which provide for the discharge of treated human sewage into waters of the coastal environment must have been subject to early and meaningful consultation with tangata whenua.*
4. *In managing discharges of stormwater take steps to avoid adverse effects of stormwater discharge to water in the coastal environment, on a catchment by catchment basis, by:*
    a. *avoiding where practicable and otherwise remedying cross contamination of sewage and stormwater systems;*
    b. *reducing contaminant and sediment loadings in stormwater at source, through contaminant treatment and by controls on land use activities;*
    c. *promoting integrated management of catchments and stormwater networks; and*
    d. *promoting design options that reduce flows to stormwater reticulation systems at source.*
5. *In managing discharges from ports and other marine facilities:*
    a. *require operators of ports and other marine facilities to take all practicable steps to avoid contamination of coastal waters, substrate, ecosystems and habitats that is more than minor;*
    b. *require that the disturbance or relocation of contaminated seabed material, other than by the movement of vessels, and the dumping or storage of dredged material does not result in significant adverse effects on water quality or the seabed, substrate, ecosystems or habitats;*
    c. *require operators of ports, marinas and other relevant marine facilities to provide for the collection of sewage and waste from vessels, and for residues from vessel maintenance to be safely contained and disposed of; and*

d. *consider the need for facilities for the collection of sewage and other wastes for recreational and commercial boating.*

Appendix 17 – Relevant Provisions:
Operative Bay of Plenty Regional Policy Statement 2014

Part 2.1: Air Quality

Objective 1
The adverse effects of odours, chemical emissions and particulates are avoided, remedied or mitigated so as to protect people and the environment.

Policy AQ 2A: Managing adverse effects from the discharge of odours, chemicals, and particulates
Protect people's health and the amenity values of neighbouring areas from discharges of offensive and objectionable odours, chemical emissions and particulates.

Part 2.2: Coastal Environment

Objective 2
Preservation, restoration and, where appropriate, enhancement of the natural character and ecological functioning of the coastal environment.

Policy CE 2B: Managing adverse effects on natural character within the coastal environment
Preserve the natural character of the coastal environment and protect it from inappropriate subdivision, use and development by including provisions in regional and district plans, and when making decisions on resource consents to:

(a) Avoid adverse effects of activities on the attributes that comprise natural character in areas of the coastal environment with outstanding natural character as identified in the maps and tables in Appendix I and J;

(b) Avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on the attributes comprising the natural character in all other areas of the coastal environment, recognising that areas identified in maps in Appendix I as having high or very high natural character can be especially sensitive to the adverse effects of inappropriate subdivision, use and development; and

(c) Recognise that open coastal water in the region is of at least high natural character.

Policy CE 4A: Protecting and restoring natural coastal margins
Protect the natural functioning of coastal margins and identify opportunities to restore and enhance natural functioning to allow for:

(a) The continued natural functioning of physical processes, including changes arising as a result of climate change; and

(b) The capacity of natural features (such as beaches, estuaries, sand dunes, wetlands, coastal vegetation and barrier islands) to provide subdivision, use or development with a protective buffer from natural hazards.

Policy CE 6B: Protecting indigenous biodiversity
Use the criteria in Policy 11 of the New Zealand Coastal Policy Statement 2010 to identify and protect areas of indigenous biological diversity in the coastal environment requiring protection under that policy.

Policy CE 8B: Ensuring subdivision, use and development is appropriate to the natural character of the coastal environment

When assessing the effect of subdivision, use and development on the natural character of the coastal environment, particular regard shall be given to:

(a) The level of natural character as shown in Maps in Appendix I, as described in Appendix J, and the level of protection to be afforded by Policy CE 2B;

(b) The criteria contained in Set 1 of Appendix F to further refine natural character for resource consents or site-specific mapping;

(c) Maintaining coastal margins in a natural state and protecting the natural values of beaches and dune systems, including their ability to reduce the impacts of coastal hazards such as tsunami and storm surge;

(d) The appropriateness of the introduction or accumulation of man-made modifications recognizing activities that are:

- *(i) planned (consented, zoned or designated);*
- *(ii) provided for in reserve management plans; or*
- *(iii) identified in Appendix C, D and E; or*
- *(iv) lawfully established;*

(e) The provisions of Customary Marine Title Management Plans;

(f) Subject to Policy CE 2B avoiding significant adverse effects and avoiding, remedying or mitigating (including, where appropriate, through provision of buffers) other adverse effects on:

- *(i) Visually, ecologically or culturally sensitive landforms, including ridgelines, coastal cliffs, beaches, headlands, and peninsulas and visually prominent public open space;*
- *(ii) Estuaries, lagoons, wetlands and their margins (saline and freshwater), dune lands, rocky reef systems and areas of eelgrass and salt marsh;*
- *(iii) Terrestrial and marine ecosystems;*
- *(iv) Natural patterns of indigenous and exotic vegetation and processes that contribute to the landscape and seascape value of the area; and*
- *(v) Regionally significant surf breaks and their swell corridors, including those at Matakana Island and the Whakatā ne Heads;*

(g) Encouraging efficient use of occupied space through intensification and clustering of developments, rather than sprawling, sporadic or unplanned patterns of settlement and urban growth;

(h) Setting buildings and structures back from the coastal marine area and other waterbodies where necessary, practicable and appropriate to protect natural character, open space, public access and amenity values of the coastal environment, while recognising some structures may have a functional need to be located in the coastal environment, for which a setback would be inappropriate.

Policy CE 9B: Safeguarding the life-supporting capacity of coastal ecosystems

Safeguard the life-supporting capacity of coastal and marine ecosystems by maintaining or enhancing:

(a) Any area within the inter-tidal or sub-tidal zone that contains unique, rare, distinctive or representative marine and avian species or habitats;

(b) Areas used by marine mammals as breeding, feeding or haul-out sites;

(c) Habitats in the coastal environment that are important during the vulnerable life stages of indigenous species or any life stage of species listed as threatened or at risk by the Department of Conservation;

(d) Any areas that contain indigenous coastal ecosystems and habitats that are particularly vulnerable to modification – such as estuaries, lagoons, coastal wetlands, dunelands, rocky reef systems and salt marshes;

(e) The integrity, functioning and resilience of physical and ecological processes; and

(f) Promoting water quality in the coastal marine area that sustains healthy aquatic ecosystems.

Part 2.6: Iwi Resource Management

Objective 13
Kaitiakitanga is recognized and the principles of the Treaty of Waitangi (Te Tiriti o Waitangi) are systematically taken into account in the practice of resource management.

Objective 15
Water, land, coastal and geothermal resource management decisions have regard to iwi and hapu resource management planning documents.

Objective 17
The mauri of water, land, air and geothermal resources is safeguarded and where it is degraded, where appropriate, it is enhanced over time.

Policy IW 2B: Recognising matters of significance to Māori
Proposals which may affect the relationship of Māori and their culture and traditions must:

(a) Recognise and provide for:

- *(i) Traditional Māori uses and practices relating to natural and physical resources such as mahinga mātaitai, waahi tapu, papakāinga and taonga raranga;*
- *(ii) The role of tangata whenua as kaitiaki of the mauri of their resources;*
- *(iii) The mana whenua relationship of tangata whenua with, and their role as kaitiaki of, the mauri of natural resources;*
- *(iv) Sites of cultural significance identified in iwi and hapū resource management plans; and*

(b) Recognise that only tangata whenua can identify and evidentially substantiate their relationship and that of their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga.

Policy IW 4B: Taking into account iwi and hapū resource management plans
Ensure iwi and hapū resource management plans are taken into account in resource management decision making processes.

Policy IW 5B: Adverse effects on matters of significance to Māori

When considering proposals that may adversely affect any matter of significance to Māori recognise and provide for avoiding, remedying or mitigating adverse effects on:

(a) The exercise of kaitiakitanga;

(b) Mauri, particularly in relation to fresh, geothermal and coastal waters, land and air;

(c) Mahinga kai and areas of natural resources used for customary purposes;

(d) Places sites and areas with significant spiritual or cultural historic heritage value to tangata whenua; and

(e) Existing and zoned marae or papakāinga land.

Part 2.7: Matters of National Importance

Objective 18
The protection of historic heritage and outstanding natural features and landscapes from inappropriate subdivision, use and development.

Objective 19
The preservation of the natural character of the region's coastal environment (including coastal marine areas) wetlands, lakes and rivers and their margins.

Objective 21
Recognition of and provision for the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.

Policy MN 4B: Encouraging ecological restoration
Encourage ecological restoration and rehabilitation through:

(a) Retention or establishment of vegetation corridors linking otherwise isolated habitats and greater use of buffer zones;

(b) A co-ordinated and co-operative approach;

(c) The protection of remaining habitats from further fragmentation, degradation and invasion by pests;

(d) Non-regulatory initiatives for the restoration or rehabilitation of degraded habitats; and

(e) The protection of ecosystems and habitats identified by the National Priorities for Biodiversity Protection on Private Land (Ministry for the Environment 2006).

Part 2.9: Water Quality

Objective 27
The quality and mauri of water in the region is maintained or, where necessary to meet the identified values associated with its required use and protection, enhanced.

Objective 29
Land use activities are:

1. within the capability of the land to support the activity;

2. integrated with the wider environmental values of their surroundings; and

3. within the capacity of receiving waters to assimilate any discharge.

Policy WL 7B: Minimising the effects of land and soil disturbance

Achieve regional consistency by controlling land and soil disturbance activities to:

(a) Avoid accelerated erosion and soil loss; and

(b) Minimise silt and sediment runoff into water, or onto or into land that may enter water, so that healthy aquatic ecosystems are sustained.

Policy WL 8B: Providing for regular reviews of regional council consent conditions

Require that land use, allocation and discharge consents granted by the Regional Council include provision for regular reviews of conditions to take into account advances in science and technology.

Proposed Change 2 – Natural Hazards

Objective 23

Avoidance or mitigation of natural hazards by reducing risk where necessary for people's safety and the protection of property and lifeline utilities.

Policy NH 1B: Taking a risk management approach

Take a risk management approach to control the use, development and protection of land to avoid or mitigate natural hazards by assessing the level of risk according to the likelihood of natural hazards occurring consequences.

Policy NH 5B: Assessment of natural hazard risk at the time of subdivision, or land use change or intensification

Assess natural hazard risk associated with proposals to subdivide land or change or intensify land use using the methodology set out in Appendix K:

(a) Where the subdivision of land or the change or intensification of land use is:

(i) Of a scale and/or a nature that could, if affected by a hazard event, represent a significant consequence; and

(ii) Proposed before a district or (where applicable) regional plan gives effect to Policies NH 3A and NH 4A and the applicable operative or proposed plan provides for the proposal as a discretionary or non-complying activity; or

(iii) Proposed after a district or (where applicable) regional plan has given effect to Policies NH 3A and NH 4A but the proposal is not provided for in the district or regional plan or is provided for only as a non-complying activity.

or

(b) Where the district or regional plan specifically provides for natural hazard risk assessment to be undertaken.

For the avoidance of doubt, the obligation to assess the risk of a natural hazard under this policy shall not arise where:

i. an assessment of the susceptibility of the subject land to that hazard has demonstrated that the land is not susceptible to that natural hazard; or

ii. the risk derives from geothermal hazard which is managed under this Statement's section 2.4 and the Geothermal Resources Policies and Methods.

Policy NH 9B: Avoiding or mitigating natural hazards in the coastal environment

Despite Policies NH 6B, NH 7B and NH 8A, ensure that on any land within the coastal environment that is potentially affected by coastal erosion or coastal inundation over at least the next 100 years:

(a) no land use change or redevelopment occurs that would increase the risk from that coastal hazard; and

(b) land use change or redevelopment that reduces the risk from that coastal hazard is encouraged.

Policy NH 10B: Exceptions to the natural hazard risk management strategy

Despite Policies NH 6B, NH 7B, NH 8A and NH 9B, provide for the establishment, operation and maintenance of activities that have more than low natural hazard risk or which are located in high and medium natural hazard zones if the activity:

(a) Has a significant social, economic or cultural benefit to the community it serves, or is a lifeline utility; and

(b) Has a functional need for the location.

Appendix 18 – Relevant Provisions:

Operative Bay of Plenty Regional Coastal Environment Plan 2003

Part 4: Natural Character

Objective
The preservation of the natural character of the coastal environment and its protection from inappropriate subdivision, use and development.

Policy 4.2.3(c)
To recognise that all remaining areas of indigenous vegetation and habitats in the coastal environment contribute to the overall natural character of the environment. Cumulative adverse effects on these areas should be avoided.

Policy 4.2.3(d)
To recognise the important ecological interconnections that are necessary to sustain species and their habitats. Cumulative and irreversible adverse effect on these interconnections should be avoided.

Policy 4.2.3(g)
Natural character must be restored where appropriate in areas where it has been degraded.

Part 5: Natural Features and Landscapes

Objective
The maintenance of the quality of the outstanding and regionally significant landscape features.

Policy 5.2.3(a)

To ensure the visual quality, and the physical and ecological integrity of the outstanding and regionally significant natural features and landscapes of the coastal environment are maintained. The guidelines contained in the Fifth Schedule – Management Guidelines for Natural Features and Landscapes, will be applied.

Policy 5.2.3(g)
To protect the cumulative landscape qualities of channels, tidal flats, beaches, coastal margins, vegetation and the land backdrop.

Policy 5.2.3(i)
New development should be of a design, materials and colours which blend the development with the surrounding environment, and maintain amenity values. Markers or high visibility materials may be required to provide for safety where relevant.

Part 6: Significant Areas of Flora and Fauna

Objective
The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna within the coastal environment.

Policy 6.2.3(b)
To avoid or remedy adverse effects on the values of the sites and areas of significance in the Coastal Management Zone. The sites and areas are shown on the maps, and a summary of values is provided in the Third Schedule – Areas of Significant Conservation Value, the Sixth Schedule – Significant Marshbird Habitat Areas, and the Seventh Schedule – Significant

Indigenous Vegetation Areas. Remediation can be achieved by means of a financial contribution, where appropriate, as set out in the Tenth Schedule – Financial Contributions.

Policy 6.2.3(c)
To promote and encourage the appropriate protection and management of all sites of significance on land within the coastal environment, as identified in the maps, the Sixth Schedule – Significant Marshbird Habitat Areas, and the Seventh Schedule – Significant Indigenous Vegetation Areas.

Policy 6.2.3(d)
To afford an appropriate level of protection to significant indigenous vegetation and habitats of indigenous fauna which are not specifically identified in this plan.

Policy 6.2.3(e)
To ensure that all Environment Bay of Plenty planning, decision-making and operations within the coastal environment provide for the protection of significant sites of indigenous vegetation and significant habitats of indigenous fauna as matters of national importance.

Part 7: Public Access

Objective
The maintenance and enhancement of appropriate public access to and along the coastal marine area.

Policy 7.2.3(a)
To promote public access to and along the coastal marine area and ensure that public access is restricted only where necessary:

- *To protect areas of significant indigenous vegetation and/or significant habitats of indigenous fauna;*
- *To protect Maori cultural values;*
- *To protect public health or safety;*
- *To ensure a level of security consistent with the purpose of a resource consent; or*
- *In other exceptional circumstances sufficient to justify the restriction notwithstanding the national importance of maintaining that access.*

Further provision for and enhancement of public access to and along the coastal marine area will, as far as practicable, avoid any adverse effects on other values.

Policy 7.2.3(d)
New facilities should be designed to maximise public use and access as well as private use.

Part 8: Tangata Whenua Interests

Objectives
The involvement of tangata whenua in management of the coastal environment.

The protection of the characteristics of the coastal environment of special spiritual, cultural and historical significance to tangata whenua.

Sustaining the mauri of coastal resources.

Policy 8.2.3(a)
To recognise the significance of the coastal environment to tangata whenua, and to provide for customary uses and management practices relating to the natural and physical resources of the coastal environment, including mahinga mataitai, waahi tapu and taonga raranga, in accordance with tikanga Maori.

Policy 8.2.3(b)
To recognise the role of tangata whenua of the Bay of Plenty as kaitiaki of the region's coastal resources, and the right of each iwi to define their own preferences for coastal management within their tribal boundaries.

Policy 8.2.3(c)
To avoid, remedy or mitigate adverse effects on resources or areas of special spiritual, historical or cultural significance to tangata whenua. This includes, but is not limited to, those areas and values identified in the maps and Fourteenth Schedule – Areas of Significant Cultural Value.

Part 9: Coastal Discharges

Objective
Maintenance and enhancement of the water quality and mauri of the Bay of Plenty coastal marine area.

Policy 9.2.3(a)
To integrate the management of water quality in the coastal marine area with the management of land use and freshwater.

Policy 9.2.3(b)
Discharges must not have significant adverse effects on aquatic life, habitats, feeding grounds, ecosystems or amenity values in the coastal marine area. This policy applies whether or not the actual point of discharge is in the coastal marine area.

Policy 9.2.3(c)
Discharges must not cause water quality to be unsuitable for the purposes of contact recreation, and shellfish gathering for human consumption, throughout harbours and estuaries and on the open coast out to a distance of 400 metres from the line of mean high water springs. This policy applies whether or not the actual point of discharge is in the coastal marine area.

Part 10: Taking, Using, Damming or Diversion of Coastal Waters

Objectives
No significant changes in marine ecosystems from the taking, diversion or damming of water.

The diversion of natural watercourses only where necessary to protect human safety.

Policy 10.2.3(a)
Coastal water should not be taken in a quantity or at a rate that would cause adverse effects on marine fauna or ecosystems.

Policy 10.2.3(b)
Damming or diversion of coastal water should not adversely affect ecosystems, the natural character of the coastal environment, or increase the danger of flooding.

Policy 10.2.3(c)
Where estuaries are being adversely affected by existing flood protection and drainage works, then remedial work should be undertaken, where practicable, when maintenance or additional works are undertaken.

Policy 10.2.3(d)
The integrity of major flood protection schemes is to be protected.

Part 11: Coastal Hazards

Objective
No increase in the total physical risk from coastal hazards.

Policy 11.2.3(j)
To protect natural values and features that provide natural hazard protection. This includes but is not limited to dunes, active offshore sand reservoirs and estuarine vegetation. Allowance should be made for the future inland migration of some natural features as a result of coastal processes (including sea level rise).

Policy 11.2.3(l)
To take into account the most recent mid range IPCC IS92a sea level rise scenario when considering the design and location of structures in the coastal marine area.

Part 12: Occupation of Space

Objective
Provision for the exclusive occupation of land and any related part of the coastal marine area while avoiding, remedying or mitigating any associated adverse environmental effects.

Policy 12.2.3(a)
To recognise and provide for the benefits to the wellbeing of present and future generations of maintaining public access to the coastal marine area. Public access should only be restricted where the criteria in policy 7.2.3(a) apply, or specific areas have been identified in accordance with method 7.2.4(a).

Part 13: Structures

Objective
Any structures in the coastal marine area are to be appropriate.

Policy 13.2.3(e)
To allow an activity in the Coastal Management Zone where it is appropriate having considered the actual or potential effects on the environment, including the values of the site.

Policy 13.2.3(h)
To avoid, remedy or mitigate any adverse effects of activities associated with structures in the Coastal Management Zone.

Policy 13.2.3(i)
The effects of structures on coastal hydrological and geomorphic processes will be specifically taken into account.

Policy 13.2.3(l)
To recognise that structures that would adversely affect navigation and mooring within navigation channels and mooring areas are inappropriate.

Part 14: Disturbance, Deposition and Extraction

Objective
Provisions for disturbance and deposition within the coastal marine area only as appropriate and while avoiding, remedying or mitigating any associated adverse environmental effects.

Policy 14.2.3(a)
To avoid the adverse effects of disturbance and deposition within the coastal marine area caused by disposal of spoil from land-based activities.

Policy 14.2.3(f)
To avoid, remedy or mitigate any adverse environmental effects associated with disturbance, deposition or mineral extraction.

Policy 14.2.3(i)
To take a precautionary approach to sand, shell and shingle removal, or dredging; within the coastal environment in recognition of:

- *the importance of maintaining the ability of coastal land forms to resist erosion and flooding; and*
- *the limited nature of knowledge on coastal processes in general and local sediment dynamics in particular; and*
- *rising sea level and the impact this will have on beach erosion.*

Part 15: Reclamation

Objective
Provision for reclamations within the coastal marine area that are either necessary or otherwise appropriate while avoiding, remedying or mitigating any associated adverse environmental effects.

Policy 15.2.3(b)
To take a precautionary approach to reclamations within the Coastal Management Zone. The precautionary approach should consider effects on:

- *siltation rates;*
- *flushing of harbours and estuaries;*
- *the life supporting capacity of harbours and estuaries;*
- *hydrodynamic, geomorphic and ecological processes.*

Policy 15.2.3(e)
To discourage the proliferation of new reclamations and encourage the efficient use of existing land and reclamation as alternatives to new reclamations.

Policy 15.2.3(g)
Reclamations must:

- *be constructed of inert materials which will not result in contaminants leaching into the coastal marine area; and*

- *be finished with materials which are compatible with the amenity values, landscape and natural character of the coastal environment in the location; and*
- *be designed by an engineer to a high standard of structural integrity; and*
- *not impede the flow of floodwater.*

Part 18: Historic and Cultural Heritage

Objective
The protection of the heritage values and heritage resources within the coastal marine area.

Policy 18.2.3(a)
To protect the heritage resources within the Bay of Plenty coastal marine area which are either scheduled by the Historic Places Trust, recorded in the New Zealand Archaeological Association Site Recording Scheme, or listed in the Regional Heritage Inventory (proposed in 18.2.5(a)).

Policy 18.2.3(c)
To require the conservation and protection of heritage resources within the coastal marine area not registered by the Historic Places Trust or in the New Zealand Archaeological Association Site Recording Scheme, but nevertheless of significance.

Policy 18.2.3(d)
To recognise the sensitivity associated with certain forms of Maori cultural heritage within the coastal marine area.

Policy 18.2.3(e)
To avoid adverse effects on heritage resources as far as practicable, and where avoidance is not practicable, effects shall be remedied or mitigated.

Part 19: Recreation

Objective
Appropriate recreation within the Bay of Plenty coastal environment.

Policy 19.2.3(a)
To recognise the recreational values of the Bay of Plenty coastal marine area as being of national significance. Effects on those values shall be avoided as far as practicable, and where avoidance is not practicable, remedied or mitigated.

Policy 19.2.3(d)
To promote provision of the appropriate land-based infrastructure to support recreational activities within the coastal environment while ensuring minimal adverse effects associated with such facilities.

Policy 19.2.3(e)
To avoid, remedy or mitigate any significant adverse environmental effects of recreation.

Policy 19.2.3(g)
Areas of high actual or potential use for recreation should be protected from incompatible activities.

Appendix 19 – Relevant Provisions:

Proposed Bay of Plenty Regional Coastal Environment Plan 2014

Topic 2: Natural Heritage

Objective 2

Protect, and where necessary restore:

(a) The visual quality and the physical and ecological integrity of the outstanding natural features and landscapes of the coastal environment;

(b) Indigenous biological diversity areas; and

(c) Areas of high, very high and outstanding natural character.

Objective 3

Prevent the further loss of the quality and extent of rare and threatened habitats in the coastal environment of the region. These include coastal forest, seagrass beds, saltmarsh wetlands, intertidal flats and sand dunes.

Objective 4

Enable the restoration and rehabilitation of the natural heritage of the coastal environment, including kaimoana resources.

Policy NH 1

In relation to the natural heritage of the coastal environment, activities may be considered appropriate if they contribute to the restoration and rehabilitation of natural heritage and cultural values (including kaimoana resources), or if they:

(a) Are compatible with the existing built environment and level of modification to the environment;

(b) Are compact, and do not add to sprawl or sporadic development;

(c) Have a functional need to be located in or near the coastal environment and no reasonably practicable alternative locations exist;

(d) Are of an appropriate form, scale and design to be compatible with the existing landforms, geological features and vegetation;

(e) Will not, by themselves or in combination with effects of other activities, significantly disrupt the natural processes or ecological functioning of the coastal marine area; and

(f) Manage the adverse effects on natural heritage values in accordance with Policies NH 2 – 17.

Policy NH 4

Subject to Policy NH 5, adverse effects must be avoided on the values and attributes that contribute to the following areas:

(a) Outstanding Natural Character areas (as identified in Appendix I of the Proposed RPS);

(b) Outstanding Natural Features and Landscapes (as identified in Schedule 3);

(c) Any Indigenous Biological Diversity Area A (as identified in Schedule 2, Table 1); and

(d) Taxa that meet the criteria listed in Policy 11(a)(i) or (ii) of the NZCPS.

Policy NH 5

Subdivision, use and development proposals within the areas listed in Policy NH 4 may be considered appropriate where:

(a) The proposal is related to the construction or maintenance of regionally or nationally significant infrastructure, or otherwise gives rise to a demonstrable and regionally significant social, economic, cultural or natural heritage benefit; and

(b) There are no practical alternative locations available outside the areas listed in Policy NH 4; and

(c) The associated adverse effects on natural heritage values will be managed in accordance with Policy NH 11.

Policy NH 6
Significant adverse effects must be avoided on the values of any Indigenous Biodiversity Area B (as identified in Schedule 2, Table 2).

Policy NH 7
All remaining areas of indigenous biodiversity in the coastal environment contribute to the overall natural character of the environment and cumulative adverse effects on these areas should be avoided, remedied or mitigated.

Policy NH 8
There should be no net loss of the quality and extent of seagrass beds, saltmarsh wetlands, intertidal flats, sand dunes and coastal forest.

Policy NH 9
Maintain, and where degraded, enhance ecological interconnections that are necessary to sustain indigenous species, including migratory routes, intact ecological sequences and ecological corridors. Irreversible and other significant adverse effects on these interconnections should be avoided, including significant cumulative adverse effects.

Policy NH 10
Recognise that there is limited information available on the natural heritage values of the subtidal coastal environment. A site specific assessment will be required for activities that may have an adverse effect on subtidal areas. A precautionary approach should be adopted if the adverse effects have the potential to be serious or irreversible.

Policy NH 14
Subdivision, use and development in the coastal environment should use a design, materials and colours that are compatible with the surrounding environment in order to maintain existing natural character values. Markers or high visibility materials may be required to provide for safety where relevant. Subdivisions in the coastal environment may require set-back from beaches and sand dunes to avoid significant adverse effects on natural character.

Policy NH 15
Planting associated with remediation or mitigation should use appropriate native species, and consider whether the use of ecosourced native plants is practicable. The introduction of exotic plants into areas of outstanding natural character or an Indigenous Biological Diversity Area A is inappropriate.

Policy NH 16
Where the natural heritage values of the coastal marine area are likely to be adversely affected by the effects of activities, the consent authority may impose financial contributions as set out in Schedule 11 Financial Contributions, in order to remedy, mitigate or offset those adverse effects.

Topic 3: Water Quality

Objective 6

Sediment accumulation in harbours and estuaries resulting from land use and accelerated erosion is minimised and progressively reduced compared to current levels.

Objective 7

Discharges of contaminants to the coastal marine area are managed to meet the following goals:

(a) After reasonable mixing, discharges of contaminants meet the water quality classification of the receiving water bodies as a minimum; and have no more than minor adverse effects on aquatic life, habitats, and recreational uses.

(b) Discharges of contaminants occur in a manner that takes into account the cultural values of mana whenua acknowledged for that area.

Policy WQ 2

To take into account the objectives and policies of the following documents when making decisions on the management of land and water resources, including coastal waters, in the Bay of Plenty region:

(a) Tauranga Harbour Integrated Management Strategy;

(b) Ōhiwa Harbour Strategy;

(c) Kaituna River to Ōngātoro/Maketū Estuary Strategy;

(d) Any relevant planning document that is developed as a result of Treaty of Waitangi Settlement agreements or recognitions made under the Marine and Coastal Area (Takutai Moana) Act 2011; and

(e) Any relevant Iwi Management Plan recognised by an iwi authority and lodged with the Regional Council.

Policy WQ 5

Avoid the adverse effects on coastal and estuarine ecosystems and coastal water quality that can result from stock access to, and use of, the coastal marine area.

Topic 4: Iwi Resource Management

Objective 12

The active involvement of tāngata whenua in management of the coastal environment when activities may affect their interests and values.

Objective 13

Tāngata whenua are able to undertake customary activities in the coastal marine area, and have access to sites used for cultural practices, gathering kaimoana and areas of cultural significance.

Objective 14

The protection of those taonga, relationship characteristics, sites, areas, features, resources or attributes of the coastal environment (including the Coastal Marine Area) which are either of cultural value or special significance to tāngata whenua (where these are known).

Objective 15

The restoration of areas of cultural significance, kaimoana habitat and the mauri of coastal waters where cultural activities and the ability to collect healthy kaimoana are restricted or compromised.

Policy IW 1

Proposals which may affect the relationship of Māori and their culture and traditions must recognise and provide for:

(a) Traditional Māori uses and practices relating to natural and physical resources of the coastal environment such as mahinga kai, mātaitai, wāhi tapu, ngā toka (rocks), Tauranga waka, tauranga ika (fishing ground) and taiāpure in accordance with tikanga Māori;

(b) The role and mana of tāngata whenua as kaitiaki of the region's coastal environment and the practical expression of kaitiakitanga;

(c) The right of iwi and hapū to define their own preferences for coastal management within their tribal boundaries; and

(d) Areas of significant cultural value identified in Schedule 6, other areas or sites of significant cultural value identified by Statutory Acknowledgment, iwi and hapū resource management plans or by tāngata whenua.

Policy IW 2

To not allow use and development which will have a significant adverse effect on resources or areas of spiritual, historical or cultural significance to tāngata whenua in the coastal environment unless that effect can specifically be remedied or mitigated, or where not possible to remedy or mitigate, that effect can be offset.

Policy IW 4

The following shall be taken into account during decision-making:

(a) The consistency of the proposal with any Iwi or Hapū Management Plan recognised by an Iwi Authority and lodged with the Regional Council that applies to the area affected; and

(b) Recognition provided under any other legislation – including but not limited to: Treaty of Waitangi settlements; gazetting of Rohe Moana and Mātaitai under the Kaimoana Customary Fishing Regulations 1998 and the customary rights recognitions available under the Marine and Coastal Area (Takutai Moana) Act 2011.

Policy IW 5

Decision makers shall recognise that only tāngata whenua can identify and evidentially substantiate their relationship and that of their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga.

Policy IW 6

All applications for coastal permits should include sufficient evidence of consultation with all tāngata whenua that are likely to be affected by the proposed activity or those who otherwise have tribal jurisdiction over the intended location of the proposed activity.

Policy IW 7

Where proposals are likely to have an adverse effect on the mauri of the coastal environment, the consent authority shall consider imposition of consent conditions that incorporate the use of matauranga Māori based methods or cultural indicators that recognise and express Māori values to monitor the effects of the activity on the mauri of the natural and physical resources of the coastal environment.

Policy IW 8
Tāngata whenua shall be involved in developing appropriate mitigation and remediation options for activities that have an adverse effect on areas of significant cultural value (identified in accordance with Policy IW 1(d)).

Policy IW 9
Appropriate mitigation and remediation may include, but is not limited to, the following:

(a) Restoring and protecting areas of significant cultural value and mahinga kai sites; and

(b) Contribution of resources (financial or otherwise) to environmental, social or cultural enhancement and improvement programmes run by affected tāngata whenua.

Policy IW 10
To not allow use and development which would restrict the access of tāngata whenua to sites used for cultural practices, gathering kaimoana and areas of cultural significance in the common marine and coastal area, unless that access can specifically be provided for, or the loss can be adequately remedied.

Topic 5: Historic Heritage

Objective 18

Protection of historic heritage values and historic heritage resources in the coastal environment.

Policy HH 2
When making decisions on any subdivision, use or development that could impact on historic heritage resources in the coastal environment, regional, district and city councils shall:

(a) Assess whether the historic heritage resource is of national importance in accordance with Policy MN 1B of the Proposed RPS and Appendix F set 5;

(b) Determine whether the activity is appropriate based on Policy MN 7B and Appendix G of the Proposed RPS;

(c) Ensure matters of significance to Māori are managed in accordance with Proposed RPS Policies IW 2B, IW 4B, and IW 5B; and

(d) Ensure an integrated management approach is taken in accordance with Proposed RPS Policy IR 6B.

Topic 6: Coastal Hazards

Objective 20
Development and activities in the coastal environment are managed to take account of the dynamic nature of coastal processes.

Objective 21
Coastal processes are able to occur as naturally as possible, with as limited restrictions from development as practicable.

Policy CH 2
The design and location of activities in the coastal environment shall avoid creating or exacerbating any potential threats to human life, property or the environment from coastal erosion or inundation over a 100 year period.

Policy CH 5
Any lowering of the dune system or any breaches in the dune system shall be avoided. Any re-shaping of dunes shall only occur to increase or maintain the level of natural protection from coastal hazards, and includes re-shaping required for dune planting and the provision of formal coastal access ways.

Topic 7: Recreation

Objective 22
Maintain and enhance integrated access to the coastal environment to support people's recreational activities, safe ocean access for recreational ships and enjoyment of coastal open space qualities.

Policy RA 2
Protect the public open space qualities of the coastal environment by ensuring that any activities or new facilities:

(a) Have a functional need to locate in the coastal marine area;

(b) Recognise the national and regional significance of the coast for recreational activities, and give preference to avoiding any adverse effects on recreation opportunities, but recognising that where avoidance is not possible some adverse effects may be remedied or mitigated;

(c) Do not restrict people's pedestrian access to and within the coastal marine area, unless consistent with NZCPS Policy 19(3);

(d) Recognise the cumulative effect of the loss of public space in a particular location;

(e) Are designed and located to:

(i) Maximise public use and access;

(ii) Ensure safe public access;

(iii) Avoid any restrictions on recreational access or people's enjoyment of any foreshore and public reserve areas abutting coastal settlements; and

(f) Take particular account of Proposed RPS Policies CE 5A, CE 7B(f), CE 10B(c) and CE 10B(d).

Policy RA 3
Retain or establish public access to and along the coast in a manner that is consistent with Proposed RPS Policies MN 5B and MN 6B.

Topic 8: Activities in the Coastal Marine Area

Objective 24
Resources and space in the coastal marine area are used efficiently and public access is appropriately provided for.

Objective 25
Activities and structures that depend upon the use of natural and physical resources in the coastal marine area, or have a functional need to be located in the coastal marine are recognised.

Objective 26
Activities and structures in the coastal marine area are located, designed and undertaken in a manner that is appropriate given the values and existing uses of their location.

Objective 28
Inappropriate reclamation or drainage of the foreshore or seabed is avoided.

Objective 29
No significant changes in marine ecosystems from the taking, diversion or damming of water.

Objective 30
The diversion of natural watercourses in the coastal marine area is only undertaken where necessary to:

(a) Protect human safety, including protection from flooding;

(b) Provide for navigational safety;

(c) Restore or rehabilitate the coastal environment; or

(d) Maintain or improve water quality.

Objective 31
The integrity of Existing River Schemes and Land Drainage Schemes and associated works is protected unless their original purpose is changed or they are shown to be unsustainable.

Objective 37
Protect significant natural, social, recreational and cultural values from the adverse effects of aquaculture development.

Policy SO 1
Recognise the following structures are appropriate in the coastal marine area, subject to Natural Heritage Policies NH 1 and NH 4, Iwi Resource Management Policy IW 2 and an assessment of adverse effects on the location:

(a) Structures associated with activities that are functionally dependent on being located in the coastal marine area (including aquaculture); and

(b) Regionally and nationally significant infrastructure; or

(c) Structures that provide for public access or recreation that is dependent on a coastal location; or

(d) Structures associated with Existing River Schemes and Land Drainage Schemes.

Policies: Structures and Occupation of Space in the Coastal Marine Area

Policy SO 2
Structures in the coastal marine area shall:

(a) Be consistent with the requirements of the NZCPS, in particular Policies 6(1)(a), 6(2), 11, 13(1)(a) and (b), 15(a) and (b);

(b) Be consistent with the requirements of the Proposed RPS in relation to the Coastal Environment, in particular Policies CE 2A, CE 4A, CE 5A, CE 7B, CE 8B, CE 10B, and CE 11B;

(c) Avoid, remedy or mitigate adverse effects on coastal hydrological and geomorphic processes;

(d) Be designed to avoid or mitigate erosion or scour (including stormwater outfall structures);

(e) Avoid adverse effects on navigation channels and mooring areas, while recognising structures associated with transportation (marine and land), public access, and structures below the seabed may be appropriate in such areas; and

(f) Not exceed the airport height restrictions in Tauranga Harbour identified in Map Sheets 9c, 10c, 11c, 12c, 13c, 14c and 15c.

Policy SO 4

Require the efficient use of space in the coastal marine area, including:

(a) Concentration of mooring areas, so as to leave some areas in a natural state free of boats, and to provide for efficient management of parking, storage and facilities;

(b) Efficient use of existing structures, facilities and network utility corridors. Where practical, new services and structures are located in, or adjacent to, existing infrastructure, whilst having regard to:

(i) Whether they are compatible with the existing services or utilities; and

(ii) Whether the environmental effects of locating at an existing facility will be less than the effects of alternatives.

(c) Removal of derelict, redundant or abandoned structures; and

(d) That structures be made available for public or multiple use where it will not conflict with operational or safety requirements.

Policy SO 6

When considering the occupation of space in the common marine and coastal area, comply with the following:

(a) The requirements of Policy 6(2) of the NZCPS;

(b) The requirements of Policy CE 10B of the Proposed RPS;

(c) Only impose restrictions on public walking access to or along the coastal marine area where necessary in accordance with Policy 19(3) NZCPS; and

(d) Encourage the provision of public access over existing and new erosion protection structures, where appropriate to the location and public safety.

Policy SO 7

Discourage the proliferation of commercial, recreational or tourist activities (including structures for such activities) where these would unduly interfere with existing public access to, and recreational use of the coastal marine area. Care shall be taken to ensure that existing recreational opportunities and public access are not progressively lost through the cumulative impact of new development.

Policies: Disturbance, Deposition and Extraction

Policy DD 1

Avoid the adverse effects of disturbance and deposition within the coastal marine area caused by disposal of spoil from land-based activities.

Policy DD 6

Discourage channelisation or piping of watercourses flowing into estuaries or harbours.

Policy DD 7

Activities that cause disturbance of the foreshore and seabed shall:

(a) Be undertaken at times of the day or year that will avoid significant adverse effects and remedy or mitigate other adverse effects on the environment, particularly on:

(i) The growth and reproduction of indigenous vegetation and the feeding, spawning and migratory patterns of indigenous fauna, including bird roosting, nesting and feeding, and whitebait runs;

(ii) *Indigenous ecosystems and habitats that are particularly vulnerable to modification, including: estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh;*

(iii) *Habitats of indigenous species that are important for recreational, commercial, cultural or traditional purposes, including traditional Māori gathering, collection or harvest of kaimoana;*

(b) *Ensure that the foreshore or seabed is, as far as practicable, reinstated in a manner which is in keeping with the natural character and visual amenity of the area;*

(c) *Avoid significant adverse effects on biota caused by the release of contaminants; and*

(d) *Be undertaken at times of the day or year, and using methodologies, that will avoid as far as practicable, remedy or mitigate adverse effects on:*

(i) *Recreational use of the coastal marine area; and*

(ii) *Other lawfully established activities in the coastal marine area.*

Policies: Coastal Discharges

Policy CD 1

Discharges to the coastal marine area must:

(a) *Avoid significant adverse effects, including cumulative effects, on aquatic life, habitats, feeding grounds, kaimoana, ecosystems or amenity values in the coastal marine area after reasonable mixing;*

(b) *Minimise adverse effects on the life-supporting capacity of water within the mixing zone;*

(c) *Not alter the salinity of the receiving waters such that it adversely affects the ability to support indigenous flora and fauna and kaimoana beds;*

(d) *Not cause water quality to be unsuitable for the purposes of contact recreation, and shellfish gathering for human consumption after reasonable mixing, throughout harbours and estuaries and on the open coast out to a distance of 400 metres from the line of mean high water springs;*

(e) *Avoid the discharge of persistent toxic contaminants into the environment.*

(f) *Avoid, remedy or mitigate adverse effects on the stability of the coastal environment, including localised erosion and scour resulting from the discharge;*

(g) *Avoid changes to the physical characteristics of receiving waters that adversely affect their life-supporting capacity;*

(h) *be of a quality that has particular regard to:*

(i) *The sensitivity of the receiving environment;*

(ii) *The capacity of the receiving environment to assimilate contaminants; and*

(iii) *The nature of the contaminants to be discharged, the concentration of contaminants needed to achieve the required water quality in the receiving environment, and the risks if that concentration of contaminants is exceeded.*

Policy CD 2

Apply the water quality classifications and standards contained in Schedule 10 to discharges to the coastal marine area, unless other standards can be demonstrated to be more consistent with the purpose of the Act. When existing water quality is significantly better than the classification standards, a higher standard will be applied to prevent degradation of existing water quality.

Policy CD 4

To recognise and provide for the effects on the mauri of the receiving environment caused by the discharge of contaminants to the coastal marine area by:

(a) Where reasonable to do so, taking steps to promote better use of water by discouraging disposal of toxic materials via wastewater systems.

(b) Encouraging a shift to land based treatment and disposal systems, where appropriate and environmentally sustainable and socially, technically and economically feasible. This includes disposal of sewage by passage through land, soil or wetlands.

(c) Avoiding, remedying or mitigating adverse effects on coastal resources or sites that are of significance to tāngata whenua, where such resources or sites have been identified by tāngata whenua.

Policies: Reclamation

Policy RM 1

Reclamations must not have adverse effects on the ecological values of any Indigenous Biological Diversity Area A (as identified in Schedule 2, Table 1).

Policy RM 2

Only consider granting consent for reclamation of land in the coastal marine area where all of the following criteria are met:

(a) Land outside the coastal marine area is not available for the proposed activity,

(b) The activity which requires reclamation can only occur in or adjacent to the coastal marine area,

(c) The reclamation will not cause the loss of kaimoana beds,

(d) There are no practicable alternative methods of providing the activity, and

(e) The reclamation will provide significant regional or national benefit. In particular, the extent to which the reclamation and intended purpose would provide for the efficient operation of infrastructure, including ports, airports, coastal roads, pipelines, electricity transmission, railways and ferry terminals, and of marinas and electricity generation.

Policy RM 3

Where reclamation is considered to be a suitable use of the coastal marine area, in considering its form and design, the consent authority will have particular regard to:

(a) The potential effects on the site of climate change, including sea level rise, over no less than 100 years;

(b) The shape of the reclamation, and, where appropriate, whether the materials used are visually and aesthetically compatible with the adjoining coast;

(c) The use of materials in the reclamation, including avoiding the use of contaminated materials that could significantly adversely affect water quality, aquatic ecosystems and indigenous biodiversity in the coastal marine area;

(d) Whether the reclamation includes provision for public access, including access to and along the coastal marine area at high tide where practicable, unless a restriction on public access is appropriate as provided for in Policy 19 of the NZCPS;

(e) The ability to remedy or mitigate adverse effects on the coastal environment;

(f) Whether the proposed activity will affect cultural landscapes and sites of significance to tāngata whenua; and

(g) The ability to avoid consequential erosion and accretion, and other natural hazards.

Policy RM 4
Discourage the proliferation of new reclamations and encourage the efficient use of existing land and reclamation as alternatives to new reclamations.

Policy RM 5
Reclamations must:

(a) be constructed of inert materials which will not result in contaminants leaching into the coastal marine area,

(b) be finished with materials which are compatible with the amenity values, landscape and natural character of the coastal environment in the location,

(c) be designed by an engineer to a high standard of structural integrity, and

(d) not impede the flow of floodwater.

Policies: Taking, Using, Damming or Diverting of Coastal Water

Policy TD 1
Coastal water shall not be taken in a quantity or at a rate that would cause adverse effects on marine fauna or ecosystems.

Policy TD 2
Damming or diversion of coastal water shall not adversely affect ecosystems, the natural character of the coastal environment, or increase the danger of flooding.

Policy TD 3
The diversion of natural watercourses within the coastal marine area is only consented where necessary to:

(a) Protect human safety, including protection from flooding,

(b) Provide for navigational safety,

(c) Provide for coastal restoration or enhancement, including wetlands, and

(d) Maintain or improve water quality in the coastal environment, including stormwater management that will improve the overall quality of the environment.

Policy TD 4
Require the maintenance of Existing River Schemes and Land Drainage Schemes to avoid, remedy or mitigate adverse effects on the coastal environment, while maintaining the integrity of the scheme.

Appendix 20 – Relevant Provisions:
Operative Bay of Plenty Land and Water Plan 2008

Chapter 2: Kaitiakitanga

Objective 1

The principles of the Treaty of Waitangi (Te Tiriti o Waitangi) are recognised and taken into account in the management of water, land and geothermal resources.

Objective 2

Environment Bay of Plenty to cultivate partnership protocols with tangata whenua to:

(a) Have particular regard to the role of kaitiaki and Nga Tangata Pukenga in the management of water, land and geothermal resources.

(b) Achieve the integrated management of land, water and geothermal resources.

Objective 3

Consultation with tangata whenua that recognises their societal structures, practices, protocols, and procedures, and status under the Act.

Objective 4

The water, land and geothermal concerns of tangata whenua are taken into account and addressed as part of resource management processes, while recognising that different iwi and hapu may have different concerns or practices.

Objective 5

Water, land and geothermal resource management decisions have regard to iwi resource management planning documents.

Objective 6

Maintain the biological and physical aspects of the mauri of water, land and geothermal resources; and where practicable achieve the ongoing improvement of the biological and physical aspects of the mauri where it has been degraded, as it relates to:

(a) Water quality meeting the specified water quality classifications.

(b) Water flows not breaching the instream minimum flow requirements.

(c) The life-supporting capacity of soils are sustained.

(d) Protection of geothermal surface features identified by, and of special value to tangata whenua.

Objective 7

The extent of the spiritual, cultural and historical values of water, land and geothermal resources (including waahi tapu, taonga and sites of traditional activities) to tangata whenua are identified.

Policy 1

To recognise that tangata whenua, as indigenous peoples, have rights protected by the Treaty of Waitangi (Te Tiriti o Waitangi) and that consequently the Act accords Maori a status distinct from that of interest groups and members of the public.

Policy 2

To take into account the principles of the Treaty of Waitangi in the management of land, water and geothermal resources.

Policy 5
To ensure that resource management issues of concern to tangata whenua are taken into account and addressed, where these concerns are relevant and within the functions of Environment Bay of Plenty.

Policy 8
To recognise that kaitiakitanga involves both:

(a) The use and development of land, water and geothermal resources by tangata whenua, and

(b) The protection of taonga, waahi tapu, significant sites, traditional use sites, and other natural and physical resources of importance to tangata whenua.

Policy 9
To have particular regard to kaitiakitanga, including customary use and management practices relating to water, land and geothermal resources, including mahinga kai whenua and mahinga kai awa, waahi tapu and taonga raranga, in accordance with tikanga Maori, and the mana and responsibilities of Nga Tangata Pukenga, where this is consistent with the Act.

Policy 11
To recognise and provide for the mauri of water, land and geothermal resources when assessing resource consent applications.

Policy 14
To consult tangata whenua on water, land and geothermal resource management issues according to the requirements of the Act, tikanga Maori methods of consultation, and in a manner consistent with case law.

Policy 15
To consult all appropriate tangata whenua holding mana whenua in circumstances where rohe (tribal boundaries), or areas of ancestral or historic interest overlap.

Policy 16
To recognise that different iwi and hapu may have different water, land and geothermal resource management concerns, practices and management methods.

Policy 17
To:

(a) Take into account iwi resource management planning documents, when preparing or changing a regional plan, where such documents exist.

(b) Have regard to iwi resource management planning documents when considering resource consent applications, where such documents exist.

Policy 18
To avoid, remedy or mitigate adverse effects on water, land and geothermal resources or sites of spiritual, cultural or historical significance to tangata whenua, where these resources and sites have been identified by tangata whenua.

Policy 19
To encourage tangata whenua to recommend appropriate measures to avoid, remedy or mitigate the adverse environmental effects of the use and development of water, land and

geothermal resources.

Policy 20
To assess effects of proposed development activities on the cultural and historic values and sites of water, land and geothermal resources in consultation with tangata whenua.

Chapter 3: The Integrated Management of Land and Water

Objective 8
Integrated management of land and water resources.

Objective 9
Land use and land management practices are appropriate to the environmental characteristics and limitations of the site, and avoid, remedy or mitigate adverse effects on the life-supporting capacity of soil resources, the receiving environment and heritage values.

Objective 10
Stewardship of natural resources which:

(a) Sustains the life-supporting capacity of soil, water and ecosystems.

(b) Maintains, and where appropriate, protects cultural, ecological, amenity, natural character and landscape values through management practices that avoid, remedy or mitigate adverse effects.

Objective 13
The water quality in rivers and streams is maintained or improved to meet the Water Quality Classifications set in the Water Quality Classification Map, and the following environmental outcomes:

(a) Natural State (Lake) Water Quality Classification - the natural quality of the water shall not change.

(b) Natural State (River) Water Quality Classification - the natural quality of the water shall not change.

(c) Managed State (Lake) Water Quality Classification - the water quality in the lake shall not deteriorate.

(d) Aquatic Ecosystem (Bay of Plenty) Water Quality Classification - water quality shall be sufficient to support diverse and healthy aquatic ecosystems.

(e) Contact Recreation Water Quality Classification - water quality shall be sufficient to allow contact recreational uses.

(f) Water Supply Water Quality Classification - water quality shall be sufficient to allow for municipal water supply purposes, while recognising water treatment may still be required.

(g) Drains with Ecological Values Water Quality Classification - water quality shall be sufficient to support aquatic ecosystems, while recognising that aquatic ecosystems in such areas are limited.

(h) Regional Baseline Water Quality Classification - water quality shall not deteriorate.

Objective 14
The water quality of lakes and bathing sites on rivers and streams listed in Schedule 10 is maintained at a level suitable for swimming.

Objective 17
Riparian margins are appropriately managed to protect and enhance their soil conservation, water quality and heritage values.

Objective 19
Protect vulnerable areas from erosion.

Objective 21
Maintain and improve the protective function of coastal sand dunes.

Objective 22
Recognition of the beneficial effects of the use and development of water, land and geothermal resources on the social, cultural and economic wellbeing of people and communities.

Polciy 21
To manage land and water resources in the Bay of Plenty within an integrated catchment management framework to:

(a) Maintain or enhance water quality in individual lakes to meet their Trophic Level Index ('TLI') and Water Quality Classification.

(b) Require the management of nitrogen or phosphorus in individual Rotorua lake catchments.

(c) Reduce cyanobacterial algal blooms on the Rotorua Lakes by managing nutrient inputs in the lake catchment.

(d) Maintain or improve water quality in streams and rivers to meet their Water Quality Classification.

(e) Have full regard to the water quality classifications for coastal waters (including harbours and estuaries), and policies relevant to the coastal environment in the Bay of Plenty Regional Coastal Environment Plan.

(f) Recognise and provide for heritage values in resource management decisions.

(g) Maintain existing high quality groundwater, where the following have been identified:

- *(i) Potable water, including aquifers used for municipal water supply.*
- *(ii) Natural water quality that has not been adversely affected by land use or point source discharges.*
- *(iii) Recharge areas of aquifers related to areas specified in (i) and (ii).*

  and
- *(iv) In the groundwater catchments of the Rotorua lakes, Ohiwa and Tauranga harbours.*

(h) Avoid, remedy or mitigate adverse effects on groundwater quality in other areas not otherwise addressed by (g).

(i) Ensure the levels of bacteria in those rivers and streams that have been identified as important swimming sites and in lakes in Schedule 10 meet the Ministry of Health/Ministry for the Environment Recreational Water Quality Guidelines (1999) as a minimum.

(j) Understand the effects of changing land cover and land use practices on water flows and levels in rivers, streams, lakes.

(k) Promote and encourage the adoption of sustainable land management practices that are appropriate to the environmental characteristics and limitations of the site to:

- *(i) Protect the soil and avoid, remedy or mitigate the adverse effects of erosion.*
- *(ii) Maintain the health of the region's soil resources for future generations.*
- *(iii) Achieve the appropriate management of riparian areas, including the retirement and planting of riparian areas of streams, rivers, lakes, wetlands and estuaries.*

(iv) *Avoid, remedy or mitigate adverse effects on water quality in the receiving environment.*

(v) *Take into account the assimilative capacity of the soil.*

(vi) *Recognise and provide for heritage values of the site.*

(vii) *Maintain or improve the protective function of coastal sand dunes.*

(viii) *Control sediment entering estuaries and harbours from use and development activities.*

(l) *Manage land and water resources according to realistic management goals that are appropriate to the existing environmental quality and heritage values (including ecosystem values) of the location.*

Policy 24

To recognise and provide for people and organisations who have adopted proven good environmental management practices.

Policy 25

To encourage and provide for community involvement in the management of water, and land resources.

Policy 31

To promote the adoption of the stewardship of soil and water resources, ecosystems, and cultural, amenity, natural character and landscape values.

Policy 32

To allow resource use and development where there are beneficial effects on the social, cultural and economic wellbeing of people and communities; and adverse effects on the environment are avoided, remedied or mitigated.

Chapter 4: Discharges to Land and Water

Objective 23

Discharges of contaminants to water are managed to meet the following goals:

(a) *After reasonable mixing, discharges of contaminants to lakes, streams and rivers meet the water quality classification of the receiving water bodies as a minimum; and have no more than minor adverse effects on heritage values, existing users in downstream areas, and lakes, harbours and estuaries.*

(b) *Discharges of contaminants to water are in a manner that takes into account the cultural values of tangata whenua acknowledged for that area.*

Objective 26

Discharges of contaminants to land are managed to:

(a) *Not exceed the natural treatment capacity of the soil.*

(b) *Avoid, remedy or mitigate the adverse effects of run off to surface water.*

(c) *Prevent the long-term contamination of the soil by hazardous substances, and safeguard the life-supporting capacity of soil.*

(d) *Ensure that any adverse effects on high quality groundwater are no more than minor:*

(i) *Where there is potable water, including aquifers used for municipal water supply.*

(ii) *Where natural water quality has not been adversely affected by land use or point source discharges.*

(iii) *Where there are recharge areas of (i) and (ii)*

(iv) *In the groundwater catchments of the Rotorua lakes, Ohiwa and Tauranga harbours.*

(e) *Ensure adverse effects on groundwater not otherwise addressed by (d) are avoided, remedied or mitigated.*

(f) *Prevent adverse effects on lake water quality in relation to the TLI of the lake, where the discharge is in the catchment of a lake.*

Objective 27

Discharges of water to water avoid, remedy or mitigate adverse effects on the environment as appropriate to the values, uses and existing environmental quality of the activity site.

Objective 28

Cumulative effects of small-scale discharges of contaminants to water and land are managed appropriately to avoid, remedy or mitigate adverse effects on water quality (including coastal waters), and soil health and ecosystems.

Policy 38

Discharges of contaminants to water are to comply with the following requirements:

(b) *Rivers and streams*

(i) *Discharges of contaminants to streams and rivers with Water Supply or Natural State (river) water quality classifications are avoided where practicable.*

(ii) *Discharges to rivers and streams are to:*

- *Meet the water quality classification of the stream or river after reasonable mixing.*
- *Avoid, remedy or mitigate adverse effects on heritage values and existing users in downstream areas. This may include consideration of appropriate mixing methods for the discharge.*

(iii) *For discharges to rivers and streams that are tributaries of lakes, there shall be no net increase of nitrogen or phosphorus in lake catchments. Full regard will be given to the effect on the TLI of the lake, including cumulative effects.*

(iv) *For discharges to rivers and streams that flow directly to the open coast, or are tributaries of harbours and estuaries, the effect on the water quality of coastal waters will be given full regard. This includes cumulative effects.*

Policy 42

To recognise and provide for the effects on the mauri of the receiving environment caused by the discharge of contaminants to water by:

(a) *Where appropriate, encouraging early and ongoing consultation with tangata whenua during the consideration of wastewater treatment systems to take into account the cultural values of tangata whenua acknowledged for that area.*

(b) *Where reasonable and practicable to do so, take steps to promote better use of freshwater by discouraging disposal of toxic materials via wastewater systems.*

(c) *Encouraging a shift to land based treatment and disposal systems, where appropriate and environmentally sustainable and socially, technically and economically feasible. This includes disposal of sewage by passage through land, soil or wetlands.*

(d) *Avoid, remedy or mitigate adverse effects on water, land and geothermal resources or sites that are of significance to tangata whenua, where such resources or sites have been identified by tangata whenua.*

(e) *Avoiding physical degradation of the life-supporting capacity of receiving waters.*

Policy 43

To take appropriate action to avoid, remedy or mitigate the cumulative effects of discharges of contaminants to water or to land where such discharges are having an adverse effect on water quality, the life-supporting capacity of soil, or the coastal environment.

Policy 43A

When considering any application for a discharge the consent authority must have regard to the following matters:

(a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water; and

(b) the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided; and

(c) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with fresh water; and

(d) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their secondary contact with fresh water resulting from the discharge would be avoided.

Policy 44

To require the appropriate management of discharges of contaminants to land, and to land where the contaminant may enter water, to ensure that:

(a) The rate and volume of the discharge does not exceed the natural treatment and assimilative capacity of the soil and its vegetative cover.

(b) Surface runoff of contaminants to rivers, streams, lakes, wetlands and drains is avoided, remedied or mitigated.

(c) The creation of contaminated sites is prevented.

(d) Any adverse effects on high quality groundwater are no more than minor:

(i) Where there is potable water, including aquifers used for municipal water supply.

(ii) Where natural water quality has not been adversely affected by land use or point source discharges.

(iii) Where there are recharge areas of (i) and (ii).

(iv) In the groundwater catchments of the Rotorua lakes, Ohiwa and Tauranga harbours.

(e) Adverse effects on groundwater not otherwise addressed by (d) are avoided remedied or mitigated.

(f) There is no net increase of nitrogen or phosphorus in lake catchments.

Policy 47

To avoid, remedy or mitigate the adverse effects of discharges of water to water on:

(a) Flooding.

(b) Any relevant Maori cultural values.

(c) Stability of the beds and banks of the receiving water body.

(d) Ecological values.

Policy 48
To encourage, as appropriate, discharge activities to comply with current best engineering practices and best practicable options to avoid or mitigate adverse effects on the environment so that the requirements of this regional plan and other Environment Bay of Plenty requirements are met. Best engineering practices are relevant where the scale, intensity and potential adverse effects require such engineering practices.

Chapter 5: Water Quantity and Allocation

Take and Use of Surface Water and Groundwater

Objective 39
Efficient use of water resources in the Bay of Plenty.

Objective 41
Water flows in streams and rivers are maintained to:

(a) Provide protection for existing aquatic life in the water body.

(b) Maintain identified significant ecological values, landscape values, recreational values, and Maori customary values and traditional instream uses of rivers and streams.

(c) Maintain water quality relative to the assimilative capacity of the water body, and the Water Quality Classification of the water body.

(d) Avoid or mitigate adverse effects on downstream environments, and existing uses of the water resource.

Objective 42
Instream flow variability is maintained to sufficient levels to allow for instream biota and stream flushing requirements.

Policy 65
To allow for flow variation in streams and rivers when allocating water, and controlling the effects of damming and diversion activities.

Policy 66
To allocate surface water according to Policy 71, Policy 73, and Policy 69, and the following (refer to Figure 5 for explanation):

(a) Low flow allocation: To allocate no more than the maximum allocatable flow in a stream reach. The maximum allocatable flow is Q5 7 day low flow minus the instream minimum flow requirement.

(b) High flow allocation (water harvesting) during periods of high flow: To consider allocating water flow above the Q5 7 day low flow for water takes that are of short duration, and do not compromise the instream minimum flow requirement.

Policy 67
To take into account adverse effects of water abstraction from rivers and streams on existing downstream water users, including non-consumptive users.

Policy 68
To consider granting an application for a resource consent to take water from a river or stream, subject to an instream minimum flow that is an alternative to that specified in Schedule 7 or Method 179, on a case by case basis, where:

(a) The applicant has proposed an appropriate Instream Minimum Flow Requirement based on new or improved scientific knowledge; and

(b) The adverse effect on aquatic ecosystems is no more than minor; and

(c) The adverse effect on significant landscape, recreational, and Maori customary and traditional heritage values is no more that minor (where the values have been identified as significant through the use of the Criteria for Assessing Specified Matters in the Bay of Plenty Region in the Bay of Plenty Regional Policy Statement); and

(d) The matters listed in Method 177(c) have been considered; and

(e) The adverse effects of the take on existing downstream users, including non-consumptive users, are no more than minor.

Policy 68A

When considering any application the consent authority must have regard to the following matters:

(a) the extent to which the change would adversely affect safeguarding the life- supporting capacity of fresh water and of any associated ecosystem and

(b) the extent to which it is feasible and dependable that any adverse effect on the life-supporting capacity of fresh water and of any associated ecosystem resulting from the change would be avoided.

Policy 79

To assess the adverse effects of proposed abstraction of surface water or the discharge of contaminants to water on the assimilative capacity of the water body when processing resource consent applications. The assimilative capacity will be determined relative to the water quality classification, instream minimum flow requirement, ecological values, landscape values, recreational values, Maori customary values and traditional instream uses of the water body, amount of water already abstracted from the water body, and cumulative effect of existing and proposed activities in the catchment.

Damming and Diversion of Water

Objective 47

Damming and diversion activities avoid, remedy or mitigate adverse effects on the environment, as appropriate to the values, uses and existing environmental quality of the water body and downstream of the activity

Objective 48

Land use and development activities avoid, remedy or mitigate adverse effects on the natural flow of water, including flood flows.

Policy 81

All new damming and diversion activities, or changes to existing damming and diversion activities, are required to comply with the following environmental standards:

(a) Water flow

- *Ensure a sustainable residual flow to maintain the instream minimum flow requirement and provide for existing surface water takes, and for existing assimilative requirements associated with existing discharges of contaminants to water in downstream areas.*
- *Provide for natural flow-variability where appropriate.*

(b) Water quality

- *Not cause the breach of Water Quality Classification of the stream, river or lake.*

(c) Stability of Banks and Beds of Water bodies

- *Avoid, remedy or mitigate adverse effects on the stability of banks and beds of surface water bodies, including scour, erosion and slumping which can be directly attributed to the existence and operation of the dam. Any erosion events that can be directly attributed to the existence and operation of the dam are to be remedied or mitigated as soon as practicable.*

(d) Landscape values, natural character, recreational use, public access to and along the margins of rivers and lakes, and Maori cultural values

- *Refer to section 15.3.1 and 16.3.1 of the Bay of Plenty Regional Policy Statement. Refer to Policy 100 for requirements for aquatic habitats. Refer to Section 2 of this regional plan for matters relating to Maori cultural values.*

(e) Wetlands

- *Refer to section 8 of this regional plan for provisions regarding wetlands.*

Policy 82
Where a resource consent holder applies for a change to an existing damming or diversion activity, only the aspects in Policy 81 relevant to the change in the activity will be considered.

Policy 83
Mitigation or remediation is a requirement for all existing dams and diversions, and associated maintenance activities, to address adverse effects on aquatic ecosystems, water quality, water flow, the beds and banks of surface water bodies, and significant heritage values, where appropriate. Actions to mitigate or remedy adverse effects are to be appropriate to the scale of the effect, and have regard to the requirements of Policy 81.

Policy 84
To recognise that damming and diversion of water may be necessary to maintain or enhance wetlands.

Management of Flood Hazards and Land Drainage

Objective 49
The effects of flood hazards on the region's people, communities, and natural and physical resources are avoided or mitigated.

Objective 50
The adverse environmental effects of flood hazard mitigation works, including river and land drainage schemes are avoided, remedied or mitigated.

Objective 51
Flood hazard mitigation works that are agreed by the community as being necessary are not threatened by inappropriate land use activities.

Policy 87
To adopt and promote an integrated, catchment-based approach to flood hazard mitigation

Policy 90
To require river schemes and land drainage schemes to be constructed, operated and maintained to:

(a) Avoid adverse effects on significant heritage values. Where existing works are having adverse effects on such values, the effects are to be remedied or mitigated.

(b) Avoid, remedy or mitigate adverse effects on the environment while maintaining the integrity of the scheme.

(c) Remedy adverse effects on natural character, and terrestrial and aquatic habitats, where practicable.

Chapter 6: Beds of Rivers, Streams, Lakes and Wetlands

Activities in the Beds of Rivers, Streams and Lakes

Objective 55
Aquatic ecosystems, aquatic habitats of indigenous species, spawning areas and migratory pathways of fish, and significant aquatic vegetation are maintained and enhanced.

Objective 57
Adverse effects on fish passage and migration along rivers and streams is avoided, remedied or mitigated.

Objective 58
Activities in, on, under or over the beds of streams, rivers and lakes:

(a) Do not significantly impede the flow of flood waters, except where the activity is necessary for flood control purposes.

(b) Provide for water flow and volume requirements in downstream areas, including authorised water abstractions and non-consumptive uses.

(c) Avoid, remedy or mitigate adverse effects on natural hydrological processes of the stream, river or lake, or downstream areas.

(d) Do not lead to accelerated erosion of the beds and banks of streams, rivers and lakes.

(e) Maintain existing public access to and along the margins of rivers and lakes, where appropriate.

(f) Avoid or mitigate the contamination of water by sediment.

(g) Avoid adverse effects on areas of significant natural character.

(h) Avoid, remedy or mitigate adverse effects on ecological values.

Objective 59
Structures in, on, under or over the beds of streams, rivers and lakes are:

(a) Designed to commonly accepted design standards (including flood design standards) in relation to the use and location of the structure.

(b) Constructed to a standard to withstand flood events.

(c) Designed and used to account for natural lake level fluctuations.

Objective 61
Avoid introduction of plants into the beds of streams, rivers and lakes, except where indigenous species are planted to enhance the stream, river or lakes; or the planting is necessary for river control works.

Policy 98

To require activities in the beds of rivers, streams and lakes to be undertaken in a comprehensive and integrated manner that recognises and provides for the water quality, water quantity (including flood hazards), soil conservation, aquatic ecosystem issues in the water body, and areas of significant natural character.

Policy 99

All new activities in the beds of streams, rivers and lakes, reconstruction of existing structures, re-planting of plants, and existing activities upon renewal of consents, are required to comply with the following:

(a) Stability of Banks and Beds of Water Bodies

- *Avoid, remedy or mitigate adverse effects on the stability of banks and beds of surface water bodies, including scour and erosion that can be directly attributed to the existence and operation of the activity. Any erosion or scour events that can be directly attributed to the existence or operation of the activity is remedied as soon as practicable.*

(b) Water Quality

- *Avoid or mitigate the release of sediment to water from activities in the bed of streams, rivers and lakes.*
- *Require practices that minimise the release of sediment to water.*
- *Not cause the breach of Water Quality Classification of the stream, river or lake.*

(c) Water and Flood Flows

- *Avoid impeding the flow of flood waters, except where the activity is specifically for flood or water level control purposes, or is a dam.*
- *Avoid, remedy or mitigate adverse effects on natural hydrological processes, instream minimum flow requirements, and non-consumptive uses.*

(d) Natural Character, Landscape Values, Maori Cultural Values

- *Avoid adverse effects on areas of significant natural character.*
- *Refer to sections 15 and 16 of the Bay of Plenty Regional Policy Statement. Also refer to Policies 18, 19, 20 and 100 of this regional plan.*
- *Markers or high visibility materials required for navigational safety are excluded from requirements relating to natural character.*

(e) Wetlands

- *Refer to section 8 of this regional plan.*

(f) Existing Uses

- *Avoid, remedy or mitigate adverse effects on existing users of the water body, including water abstractions, except where written approval of affected parties is obtained.*

(g) Public Access

- *When assessing the adverse effects of proposed activities, consider the effects on authorised public access to and along the margins of rivers, streams and lakes.*

Policy 100

To avoid, remedy or mitigate adverse effects on aquatic ecosystems, the aquatic habitats of indigenous fauna, important trout habitats, and fish migration. This is to be achieved by designing, planning, constructing or undertaking, and maintaining activities to:

(a) Avoid undertaking significant instream bed disturbance activities at spawning sites during relevant spawning periods of fish species present in the water body.

(b) Avoid, remedy or mitigate the adverse effects of instream works on:

(i) The aquatic habitats of indigenous aquatic fauna and flora, including spawning sites.

(ii) The important aquatic habitats of trout, including spawning sites.

(c) Provide for fish passage for migration, recruitment, and habitat range in areas where there are no natural barriers to fish passage. Where fish passage is necessary it is not to be impeded by new structures, or beyond the duration of any instream works. Manual transference will be considered to be the provision of fish passage for existing structures.

(d) Remediate aquatic habitat characteristics at the activity site that have been degraded by the activity, except where restoration or enhancement of aquatic habitats at other locations is more appropriate.

Policy 101

New structures in, on, under or over the beds of rivers, streams and lakes, and the reconstruction of existing structures, are to be designed, constructed and maintained to comply with the requirements of Policies 99 and 100, and the following environmental standards:

(a) Designed to flood design standards that are appropriate to the Bay of Plenty region (refer to Method 206), and to the site of the structure. This does not apply to flood control structures (refer to Rule 45 and 51).

(b) Designed, constructed and maintained to appropriate standards to:

(i) Withstand flood events.

(ii) Ensure the integrity of the structure is maintained for its specified use.

(c) Located, designed, constructed and used a manner that accounts for the effect of natural lake water level fluctuations.

For the purpose of this regional plan, gabion baskets and rock riprap are considered to be structures.

Policy 107

Reclamation of the bed of a river, stream or lake is to comply with Policy 83 and the following standards:

(a) Reclamation activities on the beds of lakes Tarawera, Rotoma, Okataina, Okareka, Rotokakahi, Rotomahana and Tikitapu, are limited to the protection of existing structures (including infrastructure and state highways), waahi tapu and cultural sites, and heritage sites under threat from severe erosion.

(b) Reclamations are to use material that will not lead to the discharge of contaminants to water, excluding minor sediment.

Policy 108

The introduction of plants into the beds of rivers, streams and lakes is to comply with Policy 100, and the following standards:

(a) Plants introduced into the bed of a surface water body are to be of a species and at a location suitable to maintain or enhance the values and uses of the water body.

(b) Aquatic plant pests are not to be introduced into the beds of streams, rivers and lakes.

Note: Plants can only be introduced to the bed of a surface water body, or land where the permission of the landowner or administrating body is obtained, and the activity complies with Rule 68 (permitted) or a resource consent is obtained.

Policy 110
To encourage and promote the use of appropriate indigenous plant species for plantings in the beds of rivers and lakes, including the use of eco-sourced stock where and when available.

Policy 111
To maintain legal public access to and along the margins of rivers and lakes when assessing the effects of activities in the beds of streams, rivers and lakes, or land disturbance activities, through the resource consent process, except where restriction is necessary to:

(a) Prevent the occurrence or exacerbation of erosion of river or lake banks or beds.

(b) Preserve the natural character of streams, rivers, lakes and wetlands.

(c) Protect private property rights.

(d) Safeguard ecological or intrinsic attributes of streams, rivers and lakes.

(e) Preserve sites of natural and cultural heritage.

(f) Avoid conflict between competing uses.

(g) Protect cultural values of tangata whenua.

(h) Provide for other exceptional circumstances that are sufficient to justify the restriction, notwithstanding the national importance of maintaining access.

(i) Protect the primary soil conservation functions of riparian plantings.

(j) Protect the integrity of river and flood control works.

(k) Protect public health and safety.

Chapter 8: Wetlands

Objective 55
The preservation of the remaining wetlands in the Bay of Plenty.

Objective 56
The enhancement of the values and functions of degraded wetlands where enhancement is viable.

Objective 57
Creation of new wetland habitats where appropriate and practicable.

Objective 58
The adverse effects of any necessary maintenance in wetlands, or sustainable use of wetlands, on the ecological values, water quality, water quantity, or natural character of the wetland are avoided, remedied or mitigated

Policy 133
To protect existing wetlands, including small wetlands, to maintain their natural functions.

Policy 134
To maintain or enhance migratory pathways to wetlands, and ecological sequences that include wetlands.

Policy 135
To maintain or enhance the values of existing wetlands by encouraging landowners and the community to:

(a) Maintain or improve water quality in wetlands, while recognising that wetlands themselves are natural water filtering systems.

(b) Maintain or improve the hydrological regime, including enhancing water quantity and flows, providing for flood retention, and fluctuations of water levels.

(c) Maintain or improve soil conservation values.

(d) Maintain or improve aquatic and terrestrial indigenous biodiversity of flora and fauna.

(e) Maintain or enhance cultural values.

(f) Maintain or enhance amenity values.

These are to be applied relative to the type of wetland and specific values of individual wetlands.

Policy 136

To prioritise action to enhance wetlands where:

(a) The wetland has significant heritage values, including ecological values.

(b) The hydrology is sufficient to sustain wetland species and habitat.

Policy 139

To encourage and promote the creation of new wetland habitats in appropriate locations.

Policy 140

To determine water levels for those wetlands where water quantity is artificially managed, and establish water levels at an appropriate level that provides for the natural functions of the wetland and has regard to the concerns of adjacent landowners

Policy 142

To recognise and provide for the sustainable use of wetlands, including the use of wetlands for customary practices by tangata whenua. Sustainable use means the use of resources within a wetland at a rate or in a manner that does not damage or destroy the water quality, water quantity, soil conservation, natural character, habitat values of indigenous flora and fauna, or cultural values of the wetland.

Policy 143

To allow for the removal or disturbance of low-growing indigenous wetland vegetation (such as flax, raupo and sedges) to maintain existing amenity values in accordance with an approved management document, plan or agreement.

Policy 144

To assess the appropriateness of the creation of new open water areas within a natural wetland on a case by case basis in relation to the adverse or beneficial effects on:

(a) Aquatic ecosystems.

(b) Indigenous biodiversity.

(c) Significant indigenous vegetation and the significant habitats of indigenous fauna.

(d) Soil conservation.

(e) Water quality.

(f) Water quantity.

(g) Affected parties.

Appendix 21 – Relevant Provisions:
Operative Bay of Plenty Regional Air Plan 2003

Objective 1
Maintain and protect high air quality in the Bay of Plenty region and in instances or areas where air quality is degraded, to enhance it by specifically addressing discharges into air of gases, particulates, chemicals, agrichemicals, combustion and odour.

Objective 2
Avoid, remedy or mitigate the adverse effects of all discharges of contaminants into air on the environment which includes the effects on: ecosystems, human health and safety, crops and livestock, amenity values, cultural values, the mauri of natural and physical resources and the global environment.

Policy 1(a)
Significant adverse effects of discharges of contaminants into air should be avoided.

Policy 1(b)
Adverse effects of discharges into air of contaminants that cannot be practicably avoided should be remedied or mitigated.

Policy 8
Cumulative and/or synergistic effects of discharges into air are to be considered when assessing the environmental effects of activities

Policy 12
Provide for the involvement of tangata whenua as kaitiaki (guardians) in the management of the mauri of air.

Appendix 22 – Relevant Provisions:
Operative Western Bay of Plenty District Plan 2012

Section 4C: Amenity

Noise and Vibration

4C.1.2.1 - Objectives

An environment free of unreasonable noise in accordance with the character and amenity of the zone within which the noise is generated and received.

4C.1.2.2 - Policies

1. *Ensure activities do not generate noise levels inconsistent with the character and amenity of the zone in which the generated noise is received.*

2. *Exempt from the maximum permitted noise level requirements are those activities which are an integral part of accepted management practices of activities associated with production land in rural areas as well as other activities clearly of a temporary nature (e.g. construction works, military training exercises).*

3. *Have regard to any relevant New Zealand standards, guidelines, or codes of practice in the assessment of applications for resource consents.*

Section 5: Natural Environment

5.2.1 – Objectives

1. *Protection of all significant native plant and animal habitats within the Western Bay of Plenty District.*

2. *Preservation of the natural character of the District's coastal environment (including the coastal marine area), rivers, lakes, and their margins.*

3. *Preservation of wetland and riparian areas and where practicable the enhancement or restoration of the values and function of degraded wetland and riparian areas.*

5.2.2 – Policies

1. *Ecological sites that have been scientifcally identified as significant should be protected.*

3. *Protective measures should account for the dynamics of water related effects on wetlands.*

4. *Importance should be placed on the off site contributions of riparian areas to the health of adjoining habitats (wetlands, rivers, the sea, estuaries and other associated land/water interfaces).*

5. *Likely changes in sea level should be provided for in ways that allow for the natural inland migration of the coast and associated identified native habitats and ecosystems.*

6. *Protection measures should take into account natural seasonal fluctuations in habitat character and sensitivity.*

7. *An approach which is precautionary but responsive to increased knowledge should be adopted where the management of the environment is hindered by lack of understanding about processes and the effects of activities.*

8. *Activities should not adversely affect any identified significant native plant and animal habitats and ecosystems.*

9. *The adverse effects of inappropriate subdivision, use and development on the natural character of the coastal environment, wetlands, rivers, lakes, and their margins should be avoided. Where avoidance is not practicable, such effects should be appropriately remedied or mitigated.*

11. *To protect and maintain wetlands and riparian areas and enhance and restore wetlands and riparian areas in appropriate locations.*

Section 6: Landscape

6.2.1 – Objective

The unique visual quality and character of the District's outstanding natural features, landscapes and viewshafts are protected from inappropriate subdivision, use and development.

6.2.2 – Policies

1. *Within areas identified as being outstanding natural features and landscapes, landscape character should be protected and enhanced by managing the adverse effects of inappropriate land use and development activities.*

Section 7: Historic Heritage

7.2.1 – Objectives

3. *That the Kaitiakitanga of tangata whenua in relation to sites and objects of cultural and natural heritage is respected.*

7.2.2 - Policies

7*. Tangata whenua should be consulted regarding the identification, protection and management of sites and objects considered to be of cultural and natural heritage value.*

Section 8: Natural Hazards

8.2.1 – Objectives

1. *Minimisation of the threat of natural hazards to human life and the natural and physical environment.*

2. *Protection of the existing natural character of the coastal environment and other natural features having recognised ecological, landscape or other significance to the District.*

8.2.2 – Policies

2*. Control or prevent the establishment of activities which have the potential to increase the extent to which natural hazards have or may have an adverse effect on human life or the natural or built environment.*

6. *Enable natural ecosystems in currently undeveloped areas to migrate inland as a result of dynamic coastal processes (including sea level rise as predicted by recognised national or international agencies).*

7. *Encourage the conservation and enhancement of natural features such as sand dunes and wetlands which have the capacity to protect existing developed land.*

Section 18: Rural

18.2.1 – Objectives

1. *The rural land resource and versatile land capability is maintained to enable its use for rural production activities.*

2. *Primary productive activities should be able to operate in the Rural Zone without unreasonable constraints being imposed on them by other activities.*

3. *Appropriate provision for activities not directly based on primary production but which have a functional or other legitimate need for a rural location.*

4. *The efficient use and development of the rural land resource for primary production.*

5. *Maintain the rural character and amenity values associated with the low density rural environment.*

6. *Protection and enhancement of ecological, landscape, cultural, heritage and other features located in the rural environment which are of value to the wider community.*

18.2.2 – Policies

1. *Subdivision, use and development of versatile land should occur in a way which retains its potential to be used for a range of productive rural purposes and which maximises the likelihood of it actually being used for such purposes.*

2. *Fragmentation of versatile land for purposes not directly related to maintaining or enhancing the primary productive potential of the rural land resource should be avoided or minimised.*

5. *Subdivision, use and development of rural land for purposes other than primary production and which have the potential to inhibit the efficient and lawful operation of existing or designated network utility operations should be avoided or minimised.*

10. *Activities with a functional or other legitimate need for a rural location should not be established in rural areas unless they are able to be undertaken without constraining the lawful operation of productive rural land uses which are carried out in accordance with accepted management practices.*

Appendix 23 – Reporting Officer's Recommended Draft Resource Consent Conditions

Reporting Officer's Recommended Draft Resource Consent Conditions

The following activities are authorised by these consents:

a) *Under section 9(2) of the Resource Management Act 1991 and **Rule 1C of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for land disturbing activities (including earthworks within the bed of a river or stream, earthworks within the Riparian Management Zone of a river or stream and earthworks within the Coastal Margin setbacks);*

b) *Under section 9(2) of the Resource Management Act 1991 and **Rule 2C of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for land disturbing activities by way of vegetation clearance (including vegetation clearance within the Riparian Management Zone of a river or stream during earthworks activities);*

c) *Under sections 15(1)(a) and 15(1)(b) of the Resource Management Act 1991 and **Rule 37 of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for the temporary discharge of (sediment) contaminated water to water and to land (in circumstances where contaminants may enter water) during construction activities;*

d) *Under sections 14(2), 14(3), 15(1)(a) and 15(1)(b of the Resource Management Act 1991 and **Rule 43 of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for the temporary take of water during construction activities;*

e) *Under sections 14(2) and 14(3) of the Resource Management Act 1991 and **Rule 48 of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for the permanent diversion of water from the Kaituna River into Ongatoro / Maketū Estuary and to the Lower Kaituna Wildlife Management Reserve;*

f) *Under sections 13(1) and 13(2) of the Resource Management Act 1991 and **Rule 71 of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for the placement of structures on, and the disturbance of, the bed of the Kaituna;*

g) *Under section 9(2) of the Resource Management Act 1991 and **Rule 85 of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for the modification of the Ongatoro / Maketū Estuary and Lower Kaituna Wildlife Management Reserve Wetlands through permanent changes in water flow and temporary discharges of sediment during construction activities;*

h) *Under sections 15(2) and 15(2A) of the Resource Management Act 1991 and **Rule 19(z) of the Bay of Plenty Regional Air Plan** as a Discretionary Activity – for the temporary discharge of dust during construction activities;*

i) *Under section 12(3) of the Resource Management Act 1991 and **Rule 9.2.4(b) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – to temporarily discharge sediment contaminated water into the Coastal Marine Area during construction activities and to permanently discharge contaminated coastal water from the Kaituna River into the Ongatoro/Maketū Estuary;*

j) *Under section 12(3) of the Resource Management Act 1991 and **Rule 10.2.4(d) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – to temporarily take coastal water from within the Ongatoro/Maketū Estuary at a rate greater than 15 cubic metres per day during construction activities;*

k) *Under section 12(3) of the Resource Management Act 1991 and **Rule 10.2.4(e) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – to temporarily dam coastal water during construction activities;*

l) *Under sections 12(3) and 14(3) of the Resource Management Act 1991 and **Rule 10.2.4(f) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – to divert coastal water from the Kaituna River into the Ongatoro/Maketū Estuary;*

m) *Under section 12(3) of the Resource Management Act 1991 and **Rule 10.2.4(g) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – to temporarily divert coastal water during construction activities;*

n) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 12.2.4(a) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – for the occupation of the Coastal Marine Area;*

o) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 13.2.4(h) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity - for structures within the Coastal Management Zone;*

p) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 14.2.4(b) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity - for the disturbance of, removal of material from, and the deposition of material on, the foreshore and seabed;*

q) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 14.2.4(e) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – for construction activities associated with a Discretionary Activity;*

r) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 14.2.4(j) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – for the removal, damage, modification and destruction of indigenous vegetation in the foreshore and seabed; and*

s) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 15.2.4(b) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – for a reclamation within the Coastal Management Zone.*

subject to the following conditions:

1. **Purpose**

1.1 To authorise and set conditions for:

(a) The construction of a new channel from the Kaituna River to Fords Cut and the widening of Ford's Cut including associated erosion protection works;

(b) The diversion of water from the Kaituna River into the Ongatoro/Maketu Estuary;

(c) The reclamation of land to create a salinity block;

(d) The installation and operation of an additional culvert to the Lower Kaituna Wildlife Management Reserve;

(e) The diversion of water from the Kaituna River into the Lower Kaituna Wildlife Management Reserve;

(f) The provision of public and commercial boat and parking facilities adjoining and within the Coastal Marine Area;

(g) Works associated with the creation of wetlands and estuary enhancement;

(h) The temporary discharge of contaminants and taking, damming and diverting water, associated with construction activities.

2. **Location**

The activity site is the lower reaches of the Kaituna River and surrounds, the Ongatoro/Maketu Estuary, Papahikahawai Island and Maketu Spit and adjacent land, as generally shown on BOPRC Plan Numbers RC67958/1 and RC67958/10.

3. **Map References**

Name of Area	Approximate NZTM map reference (midpoint)
Fords Cut	1,901,072 E 5,815,885 N
Salinity block	1,900,744 5,816,167
Boat ramp	1,900,691 5,815,801
Causeways – mid point	1,901,473 5,816,108 and 1,901,952 5,816,198
Lower Kaituna Wildlife Management Reserve	1,897,485 5,816,541

4. **Legal description**

The legal descriptions of the proposed activity site are:

Stopped Road SO 55944
Pts Sec 5 SO 55943 & SO 55944 Soil Cons and River Control
Pt Sec 5 Blk V Te Tumu SD, Sec 1 SO 55944
Tumu Kaituna 11A1 Block
Pt Sec 6 Blk VI Te Tumu DC (SO 46938)
Pt Sec 1 Blk VI Te Tumu SD (SO 38964)
Lot 2 DPS 12129, Lot 3 DPS 12129 and Pt Sec 1 Blk VI Te Tumu SD
Lot 1 DPS 12129
Pt Sec 2 Blk VI Te Tumu SD (SO 46938)
Papahikahawai No 2 Block

Sec 7 Blk VI Te Tumu SD (SO 46938)
Section 10 SO 52144
River Bed
Legal Road
Coastal marine area

5. **Plans**

The works shall be undertaken in accordance with the following Construction Plans prepared by Opus International Consultants Limited and WaterLine Engineering Consultants Limited and referenced as Drawing Number 2/1542/115/6235:

- '*Proposed Construction Works*', referenced as Sheet Number 2, Revision 3 and dated 3 December 2014 [BOPRC Plan Number RC67958/1];
- '*Proposed Ford Road Re-Alignment Plan and Longsection'*, referenced as Sheet Number 3, Revision 3 and dated 3 December 2014 [BOPRC Plan Number RC67958/2];
- '*Proposed Ford Road Re-Alignment Plan – Cross Sections – Sheet 2 of 4*', referenced as Sheet Number 8, Revision 2 and dated 3 December 2014 [BOPRC Plan Number RC67958/3];
- '*Proposed Ford Road Re-Alignment Plan – Cross Sections – Sheet 3 of 4*', referenced as Sheet Number 9, Revision 2 and dated 3 December 2014 [BOPRC Plan Number RC67958/4];
- '*Proposed Culvert Installations – Plan and Longsection and Typical Section*', referenced as Sheet Number 14, Revision 2 and dated 3 December 2014 [BOPRC Plan Number RC67958/5];
- '*Fords Loop Channel – Plan and Section A-A'*, referenced as Sheet Number 15, Revision 3 and dated 3 December 2014 [BOPRC Plan Number RC67958/6];
- '*Proposed Channel and Existing Ford's Cut Channel Remedial Works – Plan and Sections* ', referenced as Sheet Number 16, Revision 3 and dated 3 December 2014 [BOPRC Plan Number RC67958/7];
- '*Proposed Channel and Existing Ford's Cut - Cross Sections – Sheet 1 of 2*', referenced as Sheet Number 17, Revision 1 and dated 27 June 2014 [BOPRC Plan Number RC67958/8];
- '*Proposed Channel and Existing Ford's Cut - Cross Sections – Sheet 2 of 2*', referenced as Sheet Number 18, Revision 1 and dated 27 June 2014 [BOPRC Plan Number RC67958/9];
- '*Land Use Plan*', referenced as Sheet Number 19, Revision 2 and dated 3 December 2014 [BOPRC Plan Number RC67958/10]; and
- '*Papahikahawai Island Remediation Plan*', referenced s Sheet Number 20, Revision 2 and dated 27 June 2014 [BOPRC Plan Number RC67958/11].

6. **Definitions**

The following terms within these conditions shall have the following definitions:

"*District Council*" means the Western Bay District Council's Chief Executive Officer or their nominee.

"*Commissioning*" unless otherwise clearly identified through the resource consent condition wording, means that the culverts are deemed to be fully commissioned at Stage 2, being when all culverts and their gates are fully operational without any short-term controls on flow rates.

"*Consent Holder*" means the Bay of Plenty Regional Council's Environmental Delivery Group or their nominee.

"*Regional Council*" means the Bay of Plenty Regional Council's Chief Executive Officer or their nominee.

"*Project*" means the Kaituna River Re-Diversion and Ongatoro/Maketu Estuary Enhancement Project and associated activities.

"*Works*" means the construction works required to give effect to the Project.

7. Notification and pre-construction meeting

7.1 The Regional Council shall be notified in writing of the intention to commence construction work at least two months prior to the start of any construction activities on site.

7.2 Prior to commencement of works the Consent Holder or their agent shall arrange and conduct a pre-construction site meeting between the Regional Council and the primary contractor. At a minimum, the following shall be covered at the meeting:

(a) Scheduling and staging of the works;

(b) Responsibilities of all relevant parties;

(c) Contact details for all relevant parties;

(d) Expectations regarding communication between all relevant parties;

(e) Procedures for implementing any amendments to the management plans submitted;

(f) Site inspection;

(g) Confirmation that all relevant parties have copies of this resource consent conditions document and its attachments, as well as the Construction Environmental Management Plan; and

(h) All associated erosion and sediment control plans and methodology.

7.3 A meeting shall also be held prior to commencement of works with the directly affected landowners and iwi representatives to discuss:

(a) Scheduling and staging of the works;

(b) Contact details for all parties;

(c) Cultural monitoring of construction activities; and

(d) Expectations regarding communication between all parties.

7.4 All operational personnel involved with the construction of the Project shall be made aware of, and have access to, all resource consent documents, conditions and schedules applicable to the construction of the Project.

7.5 The Regional Council shall be notified in writing of the intention to commission the culverts, in accordance with the Commissioning Plan required under condition 19 of this resource consent, at least 5 working days prior.

7.6 The Consent Holder shall keep minutes of the meetings required by conditions 7.2 and 7.3 of this resource consent. The minutes shall record:

(a) The names of those who attended the meeting;

(b) Main topics of discussion; and

(c) Any agreed outcomes (including an agreed Cultural Monitoring Protocol).

The Consent Holder shall forward copies of these minutes to the Regional Council prior to the commencement of construction works authorised by this resource consent.

8. **Accidental Discovery**

8.1 A Cultural Monitor shall be employed by the Consent Holder to monitor, as necessary, and report any discoveries during earthworks. The role and presence of the Cultural Monitor shall be in accordance with an agreed Cultural Monitoring Protocol following the meeting required by condition 7.3 of this resource consent.

8.2 Prior to construction commencing the Consent Holder shall provide training to those working on the Project on the accidental discovery protocols.

8.3 In the event of any archaeological site or material being uncovered or reasonably suspected to have been uncovered during the exercise of this resource consent, activities in the vicinity of the discovery shall cease and the Consent Holder shall notify the Regional Council as soon as possible.

8.4 If any koiwi (human remains) are uncovered, or reasonably suspected to have been uncovered during the exercise of this resource consent, the Consent Holder or their representative shall:

(a) Notify Heritage New Zealand's Pouhere Taonga Regional Archaeologist, the New Zealand Police and the Regional Council; and

(b) Undertake no further work until actions have been agreed by all parties listed in condition 8.4(a) and confirmation has been provided in writing from the Regional Council that works may re-commence.

8.5 In the event of an accidental discovery, the Consent Holder shall notify Te Rūnanga o Ngati Whakaue ki Maketu, Tapuika Iwi Authority, Te Maru o Ngati Rangiwewehi, Waitaha Raupatu Trust, Ngāti Pikiao, Ngāti Tūnohopū and Ngati Makino Heritage Trust, and shall ensure, as far as practicable, that procedures are undertaken in accordance with:

(a) The Ngati Rangiwewehi koiwi and accidental discovery protocol;

(b) The Waitaha Raupatu Trust, Ngati Makino Heritage Trust, Komiti o Ngati Pikiao (Ki Maketu), Ngati Tunohopu Accidental Discovery Protocols; and

(c) The Te Taonga Tuturu Act - immediate notification of Tapuika representatives in the event that a site or objects of significance are discovered during works.

Note: This condition is in addition to any agreements that are in place between the Consent Holder and Tangata Whenua or Heritage New Zealand Pouhere Taonga.

9. Complaints

9.1 The Consent Holder shall, upon receipt of any complaint in relation to construction, promptly:

(a) investigate the complaint,

(b) where appropriate remedy or mitigate the cause of the complaint; and

(c) inform the Regional Council as soon as practicable, but no later than 48 hours of receiving the complaint, of the details of the complaint and the action taken.

9.2 The Consent Holder shall keep and maintain a complaint register for all aspects of operations in relation to construction activities. The complaints register shall include:

(a) the date, time and type of complaint,

(b) the cause of the complaint, and

(c) the action taken by the Consent Holder in response to the complaint and steps to prevent a reoccurrence.

9.3 The complaints register shall be made available to the Regional Council at all times on request.

10. Hazardous Substances and Spill Contingency

10.1 As part of construction activities there shall be no storage of fuel or lubricants, refuelling, maintenance or lubrication of vehicles or machinery within 20 metres of the Kaituna River, Ford's Cut, Ongatoro/Maketu Estuary, open excavations, exposed groundwater or any other waterway.

10.2 During construction the Consent Holder shall maintain on site at all times, measures to prevent spills of hazardous substances entering land or water. These measures shall include but not be limited to:

(a) The equipment, systems and procedures to be used to minimise the risk of spills or leaks of hazardous substances;

(b) The spill management and containment equipment to be maintained at all times on site, and its location;

(c) Procedures for containing, managing, cleaning and disposing of any spill or leak, or contaminated material to be removed from the site as a result of a spill or leak;

(d) Procedures to notify and report to the Consent Holder and the Bay of Plenty Regional Council within 24 hours of a spill or leak occurring, including a maintained schedule of emergency contact names and numbers;

(e) An inspection schedule for all storage containers, refuelling areas, machinery and plant; and

(f) Procedures to be followed to identify causes of spills or leaks.

10.3 In the event of a spill of hazardous substances on the site, the Consent Holder shall record and provide to the Regional Council within 24 hours of the spill:

(a) The date, time and volume of the spill;

(b) The substance spilt;

(c) Measures taken to contain and absorb the spilt substance;

(d) The cause of the spill; and

(e) The measures taken since to prevent a repeat of the incident.

10.4 Prior to any plant or machinery entering or working within 20 metres of any water body, the Consent Holder or their representative shall:

(a) Inspect the machinery or plant for any residual hazardous substances or leaks; and

(b) Clean and/or repair machinery or plant as necessary to prevent hazardous substance contamination of waterways.

11. Construction Environmental Management Plan

11.1 At least 20 working days prior to site establishment works commencing, the Consent Holder shall submit to the Regional Council, for certification, a Construction Environmental Management Plan ('CEMP'), including its sub-sets, outlining the construction activities and all practices and procedures to be adopted in the construction of the Project. Regional Council's certification shall be limited to that the CEMP:

(a) Complies with conditions 11.4, 11.5, 13.2 ,13.3, 14.3 and 14.4 of this resource consent;

(b) Adopts the best practicable option(s); and

(c) Contains provisions that are enforceable.

11.2 The CEMP shall be verified by independent appropriately experienced and qualified practitioners and confirm that:

(a) the CEMP adopts the mitigation measures identified in the application documentation and / or otherwise required under the conditions of the consent; and

(b) the implementation of the CEMP will appropriately mitigate the anticipated adverse effects of the public work.

11.3 Works shall not commence until the CEMP described in condition 11.2 has been acknowledged in writing by the Regional Council.

11.4 The objectives of the CEMP shall be:

(a) To ensure that construction activities achieve compliance with the applicable resource consent conditions;

(b) To minimise the environmental nuisance effects of construction activities;

(c) To ensure that disturbance is limited to that necessary to undertake the construction works;

(d) To minimise the release of sediment during disturbance to the bed of any waterway;

(e) To limit the disturbance of the beds and margins of the coastal marine area and waterways to the extent necessary to undertake construction works, and to avoid or mitigate adverse effects on the quality and passage of coastal and surface water and aquatic habitat;

(f) To ensure that disturbance does not cause flooding or erosion; and

(g) To minimise, as far as practicable, the disturbance of existing wetland areas and avian habitat within the Project site.

11.5 The CEMP will address, as a minimum, the following aspects of the works:

(a) Construction sequencing in general accordance with Table 3: *Construction Sequence* on pages 30 and 31 of the application document prepared by Opus International Consultants Limited entitled '*Kaituna River Re-diversion and Ongatoro/Maketu Estuary Enhancement Project – Notice of Requirements and Resource Consent Application (Boating Facilities)* and dated December 2014, as follows:

(i) Site establishment;

(ii) Construction of inlet structure;

(iii) Construction of new stop bank along southern side of proposed re-diversion channel;

(iv) Removal of existing stop bank;

(v) Construction of new re-diversion channel;

(vi) Construction of new moorings (including the temporary mooring for the barge operator);

(vii) Construction of the 'salinity block';

(viii) Improvements to Ford's Cut and Ford's Loop;

(ix) Removal of stop banks and causeways within the estuary and construct bridge between Papahikahawai Island and Maketu Spit;

(x) Construction of new culvert to Lower Kaituna Wildlife Management Reserve;

(xi) Open re-diversion channel inlet; and

(xii) Wetland creation.

(b) Timing of construction works including construction of the diversion channel inlet construction outside of whitebait fishing season (15th of August to the 30th November (inclusive));

(c) Working hours;

(d) Restrictions on public access;

(e) Means of limiting the physical extent of disturbance of flora and fauna (with particular focus on avian ecological issues) within the wetland located north of the proposed diversion channel; and

(f) For Coastguard Maketu and commercial mooring holders within Ford's Loop, means of providing access to their existing moorings prior to the construction of the 'salinity block' and ongoing access to the sea via Te Tumu.

11.6 The following supplementary management plans shall form subsets of the verified CEMP, and must be submitted to Regional Council for certification concurrently with the CEMP:

(a) Erosion, Sediment & Dust Control Plan; and

(b) Construction Flood Management Plan.

11.7 In the event of any conflict between resource consent conditions and CEMP practices and procedures, the resource consent conditions shall be complied with.

11.8 Subject to compliance with condition 11.9 of this resource consent, the CEMP may be amended at any time.

11.9 Any amendments made to the certified CEMP shall be certified, verified and operationalised in the manner required by conditions 11.1, 11.2 and 11.3 of this resource consent.

12. **Compliance with CEMP**

12.1 The Consent Holder shall implement and comply with the CEMP and the Supplementary Management Plans set out in conditions 11, 13 and 14.

Note: The CEMP prepared in relation to Regional Council resource consents will be the same CEMP as that prepared in relation to the designation submitted to Western Bay of Plenty District Council, but will include different supplementary plans specific to the regional consents.

13. Erosion, Sediment and Dust Control Plan and Management

13.1 As a sub-set and part of the CEMP required by condition 11 of this resource consent, the Consent Holder shall also provide an Earthworks, Sediment and Dust Control Plan ('ESDCP').

13.2 The objectives of the ESDCP shall be:

(a) To ensure construction activities achieve compliance with the conditions of consent for these activities;

(b) To ensure that the effects of erosion and sedimentation on water quality are minimised; and

(c) To ensure construction activities are carried out in a manner that is consistent with Bay of Plenty Regional Council's Guideline No. 2010/01 - "Erosion and Sediment Control for Land Disturbing Activities".

13.3 The ESDCP shall be prepared in general accordance with Bay of Plenty Regional Council Guideline No. 2010/01 - "Erosion and Sediment Control for Land Disturbing Activities" and shall clearly define the sediment, erosion and dust control measures to be implemented for each stage of the works authorised by this resource consent. The Plan shall include, but not be limited to:

(a) A locality map detailing as a minimum the location of roads, property boundaries, surface waterways and crossings, the direction of stormwater flows, and the erosion, sediment and dust control devices;

(b) A site description, including land type, climate, topography, vegetation soils, and water bodies;

(c) A detailed programme of works identifying:

(i) Each stage of construction;

(ii) Overall construction sequencing generally incorporating the sequencing sediment discharge mitigations described within the WaterLine Report entitled 'Kaituna River Re-Diversion and Ongatoro/Maketu Estuary Enhancement Project – Construction Description and Drawings' and dated 13 June 2014,

(iii) An estimate of the maximum area of bare ground (cumulative total) exposed at each stage of construction;

(iv) An estimate of the total length of exposed roads, trenches and tracks; and

(v) The volume of earthworks proposed.

(d) Detailed drawings and specifications of all designated erosion and sediment control measures selected from the Erosion and Sediment Control Guidelines, including contingency measures, on-site catchment boundaries, measures to be taken at the temporary construction management areas and off-site sources of runoff with supporting calculations, including all key design parameters. The measures may consist of but not be limited to the following:

(i) clean water diversion channels;

(ii) decanting earth bunds or sediment ponds;

(iii) on-site silt trapping devices, such as hay bales, silt fences, filter cloth barriers and rock filters;

(iv) soakage pits, infiltration basins and / or swales; and

(v) design information as is necessary to demonstrate that run-on water is controlled, “clean” and “dirty” water is separated where possible, land surface is protected from erosion, and sediment is managed.

(e) A description of the mitigation and rehabilitation measures proposed;

(f) A programme for managing exposed areas including progressive stabilisation and minimising exposed areas by:

(i) Ensuring that any earthworks and/or vegetation clearance should where practicable, be limited to the footprint of the works;

(ii) Staging of the construction; and

(iii) Providing best practice measures, vegetative or structural, to protect exposed soil from erosion;

(g) Measures to ensure that the tracking of mud or earth onto the existing road network is reduced to the practicable minimum;

(h) A schedule outlining the frequency and methods of inspection, monitoring and maintenance of all erosion, sediment control and dust control measures as may be necessary to achieve compliance with the conditions of the consents;

(i) Details of any proposed monitoring to demonstrate the effectiveness of the proposed measures; and

(j) Include emergency procedures that set out measures that will be implemented if there is a significant sediment discharge to surface water.

13.4 Land disturbing activities authorised by this resource consent shall not commence within any stage until the sediment and erosion control devices have been inspected by the Regional Council.

13.5 The Consent Holder shall carry out inspections, at a minimum frequency of weekly, of all working areas of the site in order to ensure they are well maintained and that erosion and sediment control devices remain effective.

13.6 Accumulated sediment shall be removed from the sediment retention devices before sediment levels reach 25 per cent of that device’s volume.

13.7 Visual inspection shall be undertaken on a daily basis during the construction phase when earthworks are being undertaken at the inlet of the proposed channel (when works are being undertaken in this area), the estuary end of Ford's Cut, and Papahikahawai Creek to assess whether there is any visible plume as a result of the work.

13.8 The Consent Holder shall maintain the sediment and erosion control devices in place until the work area is stabilised to the satisfaction of the Chief Executive of the Bay of Plenty Regional Council or delegate and shall undertake any remedial works as directed to achieve compliance with these conditions.

14. Construction Flood Management Plan

14.1 As a sub-set and part of the CEMP required by condition 11 of this resource consent, the Consent Holder shall also provide a Construction Flood Management Plan ('CFMP').

14.2 The CFMP shall be developed in consultation with the Bay of Plenty Regional Council Rivers and Drainage Manager and the Utilities Manager of the Western Bay of Plenty District Council.

14.3 The objectives of the CFMP shall be to:

(a) Minimise or avoid any increase in flood risk arising as a consequence of undertaking the works;

(b) Ensure that the Contractor takes into account the potential for increased flood risk when planning and executing work; and

(c) Ensure that in the event of a flood occurring at a construction site processes and procedures are in place to manage such an event.

14.4 The CFMP shall, as a minimum, address the following matters:

(a) Provision of a 24 hour emergency contact person who is able to respond to a flood warning and implement emergency control measures;

(b) An outline of the probability of various flood levels;

(c) Construction methodology and sequencing for the installation of the Fords Cut culverts, the diversion channel, widening and deepening of Fords Cut and construction of the new stopbank;

(d) Provision to restrict the length of stopbank being worked on and the number of work fronts affecting stopbanks to the minimum practicable;

(e) Provision of full flood protection in association with the construction of the diversion channel and relocation of the Titchmarsh stopbank; and

(f) Existing flood management procedures for the Kaituna Catchment Control Scheme as included in the Regional Council's Flood Warning Manual.

14.5 Flood protection systems must be fully reinstated for weekends and public holidays unless alternative interim measures, as approved by the Bay of Plenty Regional Council Rivers and Drainage Manager, are implemented. Within five working days of this approval, the Consent Holder shall provide a copy of this approval in writing to the Regional Council.

14.6 The Consent Holder shall maintain a stockpile of material and sufficient plant on site to be able to undertake immediate reinstatement of stopbank works in the event of a flood warning.

14.7 Along the alignment of the proposed diversion channel full flood protection shall be maintained by the existing stopbank except for when the tie-ins are made at each end. The period under which the tie-ins shall be agreed with the Bay of Plenty Regional Council Natural Hazards Group prior to the works being undertaken. Within five working days of agreement being reached, the Consent Holder shall provide a copy of this agreement in writing to the Regional Council.

15. Network Utilities

15.1 At least 20 working days prior to the Consent Holder granting site possession to the contractor and site establishment works commencing, the Consent Holder shall submit to the Regional Council a Network Utility Management Plan (NUMP) prepared jointly by the Consent Holder, or its agents, and Powerco.

15.2 The NUMP submitted in accordance with condition 15.1 shall record if there is agreement between the parties and, if not, where and why there is disagreement and the steps taken in an attempt to resolve that disagreement. Matters of disagreement shall be resolved through independent verification by a suitably qualified and experienced practitioner at the Consent Holder's expense.

15.3 All construction activities of the Project are to be undertaken in accordance with the NUMP.

15.4 The purpose of the NUMP shall be to ensure that the enabling works, design and construction of the project adequately take account of, and include measures to address the safety, integrity, protection or, where necessary, relocation of existing electricity network utilities.

15.5 The NUMP shall include but need not be limited to methods and measures to:

(a) Identify protocols for liaising with Powerco and for overseeing and approving works that impact on services.

(b) Accurately identify and verify the location of existing electricity network utilities,

(c) Identify appropriate measures for working near services or the appropriate standards if they have to be relocated.

(d) Identify timing and sequencing of work associated with relocation and / or protection of electricity utility services.

(e) Ensure that existing, relocated and/or replacement electricity network utility infrastructure can be accessed for maintenance at all reasonable times, or emergency works at all times during construction activities.

(f) To appropriately manage the effects of dust and any other material potentially resulting from construction activities and able to cause material damage, beyond normal wear and tear to overhead electricity lines.

(g) To ensure that no activity is undertaken during construction that would result in ground vibrations and/or ground instability likely to cause material damage to overhead electricity lines, including support structures.

(h) To ensure the continued operation and supply of electricity infrastructure services, which may include, but not be limited to, any relocated or replacement electricity lines and cables being made operational prior to the termination of existing lines and cables.

(i) Confirm that the works will comply with the minimum separation distances set out in the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP34:2001).

16. **Design**

16.1 The Consent Holder shall use natural rock and soil material, where practicable.

16.2 All fill material shall be placed and compacted so as to minimise any erosion and/or instability.

16.3 The top level of the diversion control structure shall have a minimum height of RL 2.20 metres (Moturiki Datum).

16.4 The culverts on the inlet structure shall be designed and constructed to allow practical and reliable reduction of flows from the re-diversion channel to the Ongatoro/Maketu Estuary.

16.5 All structures, devices, channels and erosion protection works shall be designed and constructed to an engineering standard that is suitable for their intended purpose and functions. Compliance with this condition shall be verified in writing by an independent appropriately qualified and experienced practitioner(s) prior to Stage 1 commissioning of the culverts.

17. **On-going Maintenance**

17.1 The Consent Holder shall ensure that all structures and works authorised under this consent are maintained in a structurally sound condition at all times to the satisfaction of the Regional Council.

17.2 Any scour or erosion of the Coastal Marine Area at the entrance or exit points of the culverts, shall be effectively stabilised, to the satisfaction of the Regional Council.

17.3 The Consent Holder shall undertake any maintenance work on the structures and works authorised under this resource consent, as soon as reasonably practicable, if directed by, and to the satisfaction of, the Regional Council.

18. Private Water Supply

18.1 Prior to the construction of the diversion channel, the Consent Holder shall relocate or replace the private stockwater main (including connections) that conveys water from the Kaituna River to Sec 5 Blk V Te Tumu SD, Kaituna Pastoral Farms Ltd as shown on BOPRC Plan Number RC67958/1.

18.2 No less than 10 working days prior to carrying out the works required by condition 18.1 of this resource consent, the Consent Holder shall advise the landowner of Sec 5 Blk V Te Tumu SD of the date these proposed works are to occur and the period of time that water supply will be affected.

18.3 Prior to diverting water into the new diversion channel, the Consent Holder shall install a salinity monitoring device that shuts off the existing water intake when the salinity makes the water unsuitable for use as stock drinking water on Sec 5 Blk V Te Tumu SD, Kaituna Pastoral Farms Ltd. The Consent Holder shall also provide a 30,000 litre tank for the landowners installation for storage of water.

19. Commissioning Plan

19.1 The commissioning of the culverts providing water from Kaituna River via the diversion channel shall be staged as follows:

(a) Stage 1: Increase the re-diverted flow from 150,000m³ to ~400,000 m^3 per mean tidal cycle; and then

(b) Stage 2: After a period of one year of Stage 1, subject to monitoring and necessary adjustments and/or works, Increase the re-diverted flow to ~600,000m3 per mean tidal cycle.

19.2 The Consent Holder shall submit to the Regional Council a detailed commissioning plan at least 15 working days prior to commencing commissioning of Stage 1 of the diversion culverts for their approval. The Commissioning Plan shall be verified by an independent appropriately experienced and qualified practitioner.

19.3 The objective of the Commissioning Plan is to manage the operation of the culverts during Stage 1 such that:

(a) There is no increase in flood risk or erosion attributable to the Project; and

(b) Adverse effects on water quality arising from the discharge are minimised.

19.4 The Plan shall address, as a minimum:

(a) Progressive opening of the culverts;

(b) Procedures for the management of a flood event should it occur during Stage 1;

(c) Water levels, erosion and ecological monitoring in accordance with the monitoring conditions; and

(d) Discharge quality.

19.5 Following Stage 1 but prior to Stage 2 commissioning of the culverts, the Consent Holder shall provide a report to the Regional Council that has been verified by an independent appropriately experienced and qualified practitioner. This report shall, as a minimum:

(a) Provide a copy of the monitoring results obtained for Stage 1;

(b) Provide an analysis and interpretation of monitoring results obtained for Stage 1;

(c) Identify and prescribe the proposed measures and responses to issues identified following an analysis of monitoring results for Stage 1; and

(d) Identify the means of measuring the effectiveness of proposed measures and responses under 19.5(b).

19.6 The Consent Holder shall not commence Stage 2 commissioning of the culverts until such time as it has been demonstrated to the satisfaction of the Regional Council that issues identified within the report required by condition 19.5 of this resource consent have been effectively addressed.

19.7 The culverts shall be commissioned in accordance with the Commissioning Plan.

Note: The culverts are deemed to be fully commissioned at Stage 2, being when all culverts and their gates are fully operational without any short-term controls. This will be clearly stated in the Commissioning Plan.

The Operations and Maintenance Manual (referred to in condition 23 below) will address the operation of the culverts once fully commissioned.

20. **Lower Kaituna Wildlife Management Reserve**

20.1 During the detailed design of the additional culvert at Lower Kaituna Wildlife Management Reserve, in order to maintain flows into the wetland, the Consent Holder shall determine the relationship between water levels in the Kaituna Wetland, water levels in the Kaituna River and flows into the wetland.

20.2 In consultation with the Department of Conservation and Fish and Game, the Consent Holder shall submit a final plan for the additional culvert to the Lower Kaituna Wildlife Management Reserve for the certification of the Regional Council. This plan and certification shall include:

(a) The final location of the culvert, which is to be somewhere between Intakes 1 and 2 as shown on the 'Location Plan' provided with the Applicant's S92 Request on the 1st of September 2014 by way of a letter prepared by Opus entitled '*Resource Consent Application 67958 – Kaituna River Re-Diversion and Ongatoro/Maketu Estuary Enhancement- Response to Further Information Request*';

(b) The diameter of the culvert, which is to be no less than 0.9 metres;

(c) The provision of measures to allow fish passage;

(d) Erosion and scour protection at the inlet and outflow points;

(e) Maximum earthworks volume of no greater than 5,000 cubic metres; and

(f) Confirmation from an appropriately qualified and experienced practitioner(s) that the culvert and associated structures have been designed to an engineering standard that is suitable for their intended purposes and functions.

20.3 The Consent Holder shall install the Lower Kaituna Wildlife Management Reserve culvert prior to commencing Stage 1 of the culvert commissioning.

20.4 The operation of the diversion control structure shall not alter the water levels at the Lower Kaituna Wildlife Management Reserve unless it can be demonstrated to the satisfaction of the Regional Council by way of a report prepared by an appropriately qualified and experienced practitioner(s), that lower or higher levels provide ecological benefit to the Lower Kaituna Wildlife Management Reserve.

21. **Drainage – Kaituna Catchment Control Scheme**

21.1 Prior to the Stage 1 commissioning of the culverts, the Consent Holder shall consult with the Manager of the Kaituna Catchment Control Scheme ('the Scheme') or their appointee to;

(a) Determine the extent of any adverse effects attributable to the re-diversion in relation to the operation of the Scheme's drainage network as a consequence of increasing water levels in the Maketu Estuary;

(b) Determine, by agreement, the amount of compensation to be paid by the Consent Holder to the Manager of the Scheme to mitigate the adverse effects of the re-diversion in relation to the operation of the Scheme's drainage network; and

(c) The timing and frequency of providing the compensation.

21.2 The Consent Holder shall provide a report to the Regional Council providing details of the agreed extent of any adverse pastoral effects attributable to the re-diversion and the agreed amount of compensation, or if these matters have not been able to be agreed, details of the areas of agreement and disagreement.

21.3 In the event that the Consent Holder and the Manager of the Kaituna Catchment Control Scheme are unable to agree on the extent of any adverse pastoral effects caused to the Scheme's drainage network from the re-diversion and / or the amount of compensation to be paid in mitigation of those effects and / or the timing and frequency of payment of compensation, those matters shall be determined by a Panel of two suitably qualified independent experts appointed by the Regional Council at the Consent Holder's expense.

21.4 The amount of any compensation to be paid to the Scheme shall be:

(a) To provide compensation for the increased running costs at the Ford Road and Maketu (Singletons) pump stations as a result of the re-diversion;

(b) As a contribution to the planned upgrade of the pump station and culverts draining into the Kaituna River from the Ford Road drain;

(c) As a contribution to the design and construction of additional culverts draining into the Maketu Estuary between Fords Cut and Maketu (Singletons) pump station;

(d) In the event a Panel is required to determine the amount of compensation, for any other initiatives the Panel recommends be implemented.

21.5 The decision of the Panel prescribed within condition 21.3 of this resource consent shall be final.

21.6 The culverts shall not be commissioned until the amount of compensation payable has been determined in accordance with this condition.

21.7 The Consent Holder shall pay the compensation as determined by either condition 21.1 or 21.3 of this resource consent.

22. **Drainage – Dean Pump Station**

22.1 Prior to the Stage 1 commissioning of the culverts, the Consent Holder shall consult with the owner of number 196 Kaituna Road, Maketu (legally described as Sec 2 SO 12541) or their appointee to;

(a) Determine the extent of any adverse effects attributable to the re-diversion in relation to the operation of their privately owned and operated pump station as a consequence of increasing water levels in the Maketu Estuary.

(b) Determine, by agreement, the amount of compensation to be paid by the Consent Holder to the landowner to mitigate the adverse effects (if any) of the re-diversion in relation to the operation of the land serviced by the privately owned pump station.

22.2 The Consent Holder shall provide a report to the Regional Council providing details of the agreed extent of any adverse pastoral effects attributable to the re-diversion and

the agreed amount of compensation, or if these matters have not been able to be agreed, details of the areas of agreement and disagreement.

22.3 In the event that the Consent Holder and the landowner of number 196 Kaituna Road, Maketu (legally described as Sec 2 SO 12541) are unable to agree on the extent of any adverse pastoral effects caused by the re-diversion and / or the amount of compensation to be paid in mitigation of those effects, those matters shall be determined by a Panel of two suitably qualified independent experts appointed by the Regional Council at the Consent Holder's expense.

22.4 The amount of any compensation to be paid to the landowner of number 196 Kaituna Road, Maketu (legally described as Sec 2 SO 12541) shall be to provide compensation (if any) for the additional running costs of the Dean pump station as a result of the re-diversion.

22.5 The decision of the Panel prescribed within condition 22.3 of this resource consent shall be final.

22.6 The culverts shall not be commissioned until the amount of compensation payable has been determined in accordance with this condition.

22.7 The Consent Holder shall pay the compensation as determined by either condition 22.1 or 22.3 of this Resource Consent on an annual basis no later than the 31st of March.

Note: It is acknowledged that improvements to the Kaituna Catchment Control Scheme as a result of the works under Condition 21 of this resource consent may mitigate the Project's effects on the need for this privately-owned pump station to operate longer during flood events and that compensation may not be required if this can be demonstrated through condition 22.1 or 22.3.

23. **Operations and Maintenance Manual**

23.1 An Operations and Maintenance Manual ('OMM') shall be provided to the Regional Council for certification at least one month prior to Stage 1 commissioning of the diversion culverts. Regional Council's certification shall be limited to that the OMM:

(a) Complies with conditions 23.4 and 23.5 of this resource consent;

(b) Adopts the best practicable option(s); and

(c) Contains provisions that are enforceable.

23.2 The OMM shall be prepared, in consultation with the Bay of Plenty Regional Council Rivers and Drainage Manager and Western Bay of Plenty District Council, by a suitably qualified and experienced practitioner and shall detail how the effects of the flow regime and diversion are to be minimised and managed.

23.3 The OMM shall be verified by appropriately experienced and qualified practitioners, confirming that the OMM:

(a) Meets the OMMs objectives;

(b) Complies with resource consent conditions; and

(c) The implementation of the OMM will appropriately manage the ongoing operation of the Project.

23.4 The objectives of the OMM shall be:

(a) To ensure that procedures are in place to:

(i) Operate the diversion to maximise ecological outcomes; and

(ii) Manage the flow regime and discharges such that adverse effects are minimised.

(b) To specify how erosion control works will be maintained.

(c) To specify how the culverts are to be controlled to ensure the Project does not increase the flood risk at Maketu Township (that is, overtopping of Maketu Road).

23.5 The OMM shall, as a minimum, address the following matters:

(a) Describe Project assets;

(b) Describe how provision is made to ensure that the passage of fish through the diversion structure is unimpeded at all times that the gates are open;

(c) Describe the flow regime operating rules for the diversion including identification of the triggers and responses to manage flood events in accordance with the conditions of this consent, including but not limited to:

(i) Installation of a telemetered water level recording device in the Ongatoro/Maketu Estuary near the Maketu Township;

(ii) Continued operation and monitoring of existing water level devices in the Kaituna River at Te Matai and the Ford Road Pump Station;

(iii) Monitoring of sea level;

(iv) A sea level prediction model that predicts sea level in the locality;

(v) A flood forecasting model that predicts flows in the Kaituna River and water levels at Ford Road and within the Ongatoro/Maketu Estuary; and

(vi) Design and installation of devices on the new culverts that allow for practical and reliable reduction of water flow into the Ongatoro/Maketu Estuary via the diversion structure.

(d) Roles and responsibilities;

(e) The operating regime to maximise ecological outcomes;

(f) Operational procedures for the culvert gates;

(g) Procedures for the maintenance and removal of debris at the culverts;

(h) Procedures for inspecting and maintaining erosion protection works;

(i) Emergency management procedures; and

(j) A process for investigating complaints.

23.6 The Consent Holder shall implement and comply with the OMM.

23.7 A copy of the OMM shall be provided to the Regional Council Rivers and Drainage Manager so the culvert operational procedures can be included in the Council's Flood Warning Manual.

23.8 Subject top compliance with condition 23.9 of this resource consent, the OMM may be amended at any time.

23.1 A copy of the amended Plan shall be provided to the Regional Council for their certification accompanied by verification from appropriately experienced and qualified practitioner(s) that the amended OMM meets the conditions of this resource consent (including the objectives under condition 23.4). Regional Council's certification shall be limited to that the amended OMM:

(a) Complies with conditions 23.4 and 23.5 of this resource consent;

(b) Adopts the best practicable option(s); and

(c) Contains provisions that are enforceable.

23.2 During river flood events that coincide with high sea levels, the culverts shall be operated in a manner that does not increase the existing flood risk at Maketu Road (that is, over topping of Maketu Road) and resultant inundation of property.

23.3 The Consent Holder shall meet with the Utilities Manager of Western Bay of Plenty District Council at least once per year to review the operation of the OMM in relation to flood management within Maketu Township.

23.4 The Consent Holder shall keep minutes of the meeting required by condition 23.3 of this resource consent. The minutes shall record:

(a) The names of those who attended the meeting;

(b) Main topics of discussion; and

(c) Any agreed outcomes.

The Consent Holder shall forward a copy of these minutes to the Regional Council within 20 working days of the meeting being held.

24. **Wetland Plan, Establishment and Maintenance**

24.1 Prior to the commencement of planting, a Wetland Plan for the proposed 19 hectare wetland north for Ford's Cut shall be prepared and submitted to the Regional Council for certification at least two months prior to the first planting season. Regional Council's certification shall be limited to that the Wetland Plan:

(a) Complies with conditions 24.2 and 24.4 of this resource consent;

(b) Adopts the best practicable option(s); and

(c) Contains provisions that are enforceable.

24.2 The Wetland Plan shall be verified by appropriately experienced and qualified practitioners, confirming that the Wetland Plan:

(a) Meets the Wetland Plan objective(s); and

(b) Complies with the resource consent conditions.

24.3 The objective of the Wetland Plan is to achieve a wetland of no less than 19 hectares of sustainable cover of indigenous plants that is as close to the original natural species diversity, taking into consideration the substantial and irreversible human-induced changes that have occurred to the landscape surrounding the Ongatoro/Maketu Estuary.

24.4 The Wetland Plan shall provide details of how the above objective is to be achieved, including:

(a) A map showing the locations of the proposed work;

(b) Identification of the personnel or organisations that are to carry out the work;

(c) The timescale of activities;

(d) Initial monitoring of site growing conditions (especially soil salinity, soil saturation, tidal induced sediment erosion and deposition) after re-diversion;

(e) Creation of a planting zone plan based on site growing conditions and species tolerances;

(f) A programme for trial planting of plant species especially in areas where growing conditions are likely to be challenging (for example, areas exposed to open tidal water and those with higher salinity);

(g) Details of mass planting once species can be matched to site conditions with high confidence of success;

(h) Restoration planting plan produced that details the planting zones, species mixes, plant grades, site preparation and post-planting maintenance requirements;

(i) Identification of opportunities for Tangata Whenua and the community to be involved in planning and implementation of wetland restoration planting;

(j) Monitoring plan to objectively measure plant and species performance;

(k) Weed and pest control for each area; and

(l) Any ongoing requirements to ensure the objective of the Wetland Plan is achieved.

24.5 The Consent Holder shall undertake all wetland works and weed and pest control in accordance with the Wetland Plan.

24.6 Subject to compliance with condition 24.7 of this resource consent, the Wetland Plan may be amended at any time.

24.7 A copy of the amended Plan shall be provided to the Regional Council for their certification accompanied by verification from appropriately experienced and qualified practitioner(s) that the amended Wetland Plan meets the conditions of this resource consent (including the objective under condition 24.3). Regional Council's certification shall be limited to that the amended Wetland Plan:

(a) Complies with conditions 24.2 and 24.4 of this resource consent;

(b) Adopts the best practicable option(s); and

(c) Contains provisions that are enforceable.

25. Environmental Monitoring Programme

25.1 Prior to the commencement of works authorised by this resource consent, the Consent Holder shall prepare an Environmental Monitoring Programme that details the monitoring required under Conditions 27 through 32 (inclusive).

25.2 The Programme shall be prepared and verified by appropriately experienced and qualified practitioners, and:

(a) Confirm that monitoring is carried out by suitably experienced and qualified specialists.

(b) Be designed and carried out using scientifically accepted methods which shall aim to obtain results with a high level of confidence.

(c) Be designed so as to be capable of testing and verifying the performance measures listed in these resource consent conditions.

(d) Be consistent with all conditions of this resource consent and the Consent Holder shall undertake all sampling, monitoring and reporting in accordance with the Programme.

(e) Include a description of the method(s) and frequency to be used for monitoring, including that undertaken for internal/management purposes.

(f) Include a map and, if appropriate, photos of all sampling sites.

(g) Specify the name of any laboratory and method of analysis of all samples collected.

(h) Detail the operation and maintenance of any automatic sampling or monitoring equipment.

(i) Identify opportunities for tangata whenua and the community to be involved in developing education or research projects associated with the Project, particularly around incorporating elements of Mataauranga Maori, and in wetland restoration and ecological monitoring.

26. **Reporting**

26.1 The Consent Holder shall, annually from the commencement of this resource consent and, by the 1st of August each year, provide to the Regional Council a written monitoring report that:

(a) Covers the previous 12 month period ending on the 31st of May;

(b) Provides a copy of the results of all monitoring for:

(i) The certified Wetland Plan;

(ii) Water Levels and Flows;

(iii) Erosion;

(iv) Water Quality and Shellfish;

(v) Ecology (flora);

(vi) Ecology (fauna); and

(vii) Sediment.

(c) Provides an analysis and interpretation of those results prescribed by condition 26.1(b) of this resource consent;

(d) Identify and prescribe the proposed measures and responses to issues identified following an analysis of monitoring results; and

(e) Identify the means of measuring the effectiveness of proposed measures and responses under 26.1(d) including any necessary amendments to the Environmental Monitoring Programme.

26.2 The monitoring parameters, site locations and frequency of sampling outlined in the Environmental Monitoring Programme and any other alterations may be reviewed as part of each monitoring report.

26.3 As part of its annual report required under Condition 26.1 of this resource consent, the Consent Holder may apply to the Regional Council for approval to reduce the frequency of the monitoring and/or the number of sampling sites (reduced sampling programme).

26.4 A request under condition 26.3 of this resource consent may only be made on the basis that monitoring results are not demonstrating any significant adverse effects and there is no longer considered to be a need to monitor as a result.

26.5 A request under condition 26.3 of this resource consent shall be verified by a appropriately experienced and qualified practitioner(s) and form part of an amended Environmental Monitoring Plan to be submitted to the Regional Council for approval and shall provide for the following amendments:

(a) Details regarding the frequency of monitoring;

(b) A description of the number and location of sampling sites where monitoring is to occur;

(c) Provision for monitoring to be increased again if results of monitoring demonstrate a reversal of the trend or otherwise unexpected monitoring results; and

(d) Ceasing or reintroducing the monitoring requirements for a particular parameter/contaminant.

26.6 The Consent Holder shall not apply to the Regional Council for approval to cease monitoring unless it has first undertaken a reduced sampling programme in accordance with Condition 26.3 above, to the satisfaction of the Regional Council.

26.7 Such a request shall form part of an amended Environmental Monitoring Plan under condition 26.3 and is to be submitted to the Regional Council for approval and which shall provide for the resumption of monitoring if so directed in writing by the Regional Council.

27. **Water levels and flows**

27.1 No less than 10 working days prior to the Stage 1 commissioning of any of the culverts, the Consent Holder shall commence permanent water level monitoring at the following sites:

(a) Kaituna River at Te Matai (map reference U14: 064 734);

(b) Kaituna River in the vicinity of the Ford Road pump station (map reference 1,900,715 E, 5,815,802 N NZTM);

(c) Ongatoro/Maketu Estuary at Maketu township;

(d) Fords Cut downstream of the diversion culverts. The monitoring device shall be suitable to be used for making operational decisions about the volume of water to be released into Ford's Cut; and

(e) Sea level data obtained from the NIWA gauge at Tauranga (Moturiki) as long as the site is maintained by NIWA.

27.2 Where monitoring stations do not currently exist at the sites specified in condition 27.1 of this resource consent or where existing sites cease to operate, the Consent Holder shall establish a new site to ensure compliance with the water level monitoring requirements of this resource consent.

27.3 Data from the sites specified in condition 27.1 of this resource consent shall be used to manage the flow regime through the culverts in accordance with the OMM for the Project.

27.4 Within 12 months of Stage 2 commissioning, the water level and sea level data collected under Condition 27.1 of this resource consent shall be assessed to validate the assessment of effects by comparing the model predictions with actual changes, both before and after the Project under a range of flow conditions. If the actual reduction in average low flow ebb tide volume is greater than 20 per cent for equivalent low flow conditions the Consent Holder shall within 20 working days alter the Project settings in order to stay below that figure.

27.5 In addition to the water level monitoring required by condition 27.1 of this resource consent, for a minimum of two years following installation of the additional culvert for the Lower Kaituna Wildlife Management Reserve under condition 20, the Consent Holder shall undertake water level monitoring within 10 metres of the intake for this culvert via a new telemetered site.

27.6 Analysis of the data obtained by water level monitoring under conditions 27.1 and 27.5 shall be repeated to demonstrate that the flow rates to the Lower Kaituna Wildlife Management Reserve are as predicted.

Note: Results of the analysis carried out under condition 27.6 needs to be assessed for compliance with condition 20.4 and where a non-compliance is identified, the additional culvert will need to be altered as necessary.

28. Erosion

28.1 Prior to the commencement of works authorised under this resource consent, the Consent Holder shall establish permanent markers in order to undertake transect monitoring in the vicinity of Papahikahawai Island to monitor for any erosion as a result of the diversion as follows:

(a) The transects shall be located at four sites to the west and south of the island with each transect extending at least 50 metres offshore to pick up changes in near shore depths over time. The transects shall also go from RL 2.0 metres Moturiki Datum to Mean High Water Springs.

(b) The transects shall be undertaken using Real Time Kinematic Global Positioning System.

(c) Transects shall be measured as follows:

(i) Annually from the commencement of construction until Stage 1 commissioning of the culverts; and then

(ii) twice a year for three years following commissioning and thereafter the frequency shall be assessed as part of the reporting requirements of Condition 26.3.

28.2 The Consent Holder shall undertake a Real Time Kinematic Global Positioning System survey of Maketu Spit shoreline from RL 2.0 metres Moturiki Datum to Mean High Water Springs over the area identified in Plan X.

28.3 The first survey under condition 28.2 of this resource consent shall be undertaken at least one month prior to commissioning and thereafter annually for a period of five years. After five years of annual surveys the frequency of the survey shall be assessed as part of the reporting requirements of Condition 26.3. The purpose of the survey is to monitor for any erosion as a result of the diversion.

28.4 The Consent Holder shall undertake surveys at Maketu Township and Beach Road to monitor for any erosion or aggradation as a result of the diversion as follows:

(a) A shoreline survey using Real Time Kinematic Global Positioning System in the area shown on Plan X along the dune toe or seaward edge of the vegetation;

(b) A minimum of six cross sections in total with two along Beach Road and four distributed around Maketu township from Park Road foreshore to the marae. Each cross section shall extend to no less than 50 metres offshore;

(c) Bed and channel depths adjacent the Maketu Boat Ramp; and

(d) The survey and transects shall be measured at least one month prior to commissioning and thereafter annually for five years. After five years of annual surveys the frequency of the survey shall be assessed as part of the reporting requirements of Condition 26.3.

28.5 The Consent Holder shall undertake a Real Time Kinematic Global Positioning System survey from the diversion channel intake to Y along both banks of the Lower Kaituna River every five years from Commissioning.

Advice Note: The purpose of the survey required by condition 28.5 is to provide information to the adjacent landowner and identify if there are adverse erosion effects attributable to the Project. Any erosion identified does not automatically mean non-compliance with this condition recognising that there has been a history of some erosion prior to the exercise of this resource consent.

28.6 The Consent Holder shall analyse aerial photographs to identify any erosion as a result of the Project. The aerial photos used shall be those collected by Bay of Plenty Regional Council as part of their aerial photography programme, for the area that covers Maketu Spit, Ongatoro/Maketu Estuary and the lower Kaituna River. For the

purpose of clarity the Consent Holder is not required to undertake specific aerial photography in order to comply with this condition.

29. **Water Quality and Shellfish**

29.1 The Consent Holder shall use data loggers to measure dissolved oxygen, temperature and salinity in the Ongatoro/Maketū Estuary. Monitoring shall occur during the periods January to March (inclusive) and June to August (inclusive) with measurements made at intervals of 10 minutes (or less) for a period of at least 14 days.

29.2 The monitoring required by condition 29.1 shall occur at the following two locations shown in Figure 4.1, page 51 of Hamill (2014) "*Kaituna River Re-diversion Project: Ongatoro/Maketū Estuary condition and potential ecological effects*" attached to the application material:

(a) Mid-estuary; and

(b) Papahikahawai Lagoon 2.

29.3 The monitoring required by condition 29.1 shall be carried out as follows:

(a) Once prior to Stage 1 commissioning of the culverts;

(b) Once following Stage 1 but prior to Stage 2 commissioning of the culverts;

(c) Once within two years of Stage 2 commissioning of the culverts; and

(d) Once within five years of commissioning.

29.4 From Stage 1 commissioning, the Consent Holder shall undertake water quality monitoring three times every year during the period December to March (inclusive) at high tide and low tide. Samples shall be collected from Ford's Cut, the mid estuary and at Maketu boat ramp and analysed for:

(a) Total nitrogen;

(b) Nitrate-nitrite nitrogen;

(c) Total ammoniacal nitrogen;

(d) Total Phosphorus;

(e) Dissolved Reactive Phosphorus;

(f) Salinity;

(g) Faecal coliform bacteria; and

(h) Enterococci bacteria

29.5 On the same day that water samples required by condition 29.4 are collected, the Consent Holder shall sample five shellfish samples at three sites in the lower to-mid Ongatoro/Maketū Estuary comprising a minimum of:

(a) Two pipi; and

(b) Two cockle samples.

29.6 The shellfish samples required by condition 29.5 shall be tested for faecal coliform bacteria concentrations.

29.7 Annually, from Stage 1 commissioning for a period of five years, the Consent Holder shall undertake a pipi survey in the lower estuary for the period December to March (inclusive) comprising a minimum of eight replicate cores along a transect parallel to the channel. All shellfish in the cores shall be identified and counted in 5.0 millimetre size classes.

29.8 Annually, from Stage 1 commissioning for a period of five years, the Consent Holder shall sample shellfish at three sites in the mid estuary during the period December to March (inclusive) comprising eight replicate sediment cores randomly collected over a 10 metre radius of the site location. All shellfish in the cores shall be identified and counted in 5.0 millimetre size classes.

30. **Ecology (fauna)**

30.1 The Consent Holder shall undertake broad scale mapping of algae distribution and species in the estuary annually from Stage 1 commissioning for a period of five years. Reporting shall generally be in the form of Figure 2.1, page 6 of Hamill (2014) "*Kaituna River Re-diversion Project: Ongatoro/Maketū Estuary condition and potential ecological effects*" of the application material.

30.2 The Consent Holder shall undertake a survey of benthic macrofauna at the eight sites identified on Plan X and one site in Papahikahawai Island lagoon and one at the end of Papahikahawai Creek as follows:

(a) Infauna shall be sampled using eight replicate sediment cores randomly collected within a 10 metre radius of the site location and macrofauna identified;

(b) Epifuana shall be surveyed using eight randomly placed 0.25 m^2 quadrats; and

(c) The survey shall be undertaken once within two years of Stage 2 commissioning and then again at five years from Stage 2 commissioning.

Figure 3.1: Location of shellfish and macrofauna sampling sites. Additional infauna samples were collected at the eight sites with the red squares. Google Earth image from September 2012.

31. **Ecology (flora)**

31.1 The Consent Holder shall undertake vegetation transect monitoring to determine the effects of the diversion on terrestrial and wetland vegetation as follows:

	Location	Frequency
Transects 1-8	As shown on Plan X with Transect 7 being extended to the waters edge of the new diversion channel	no later than 6 months after full commissioning and thereafter annually for 5 years
Transect 9	1 new transect to be established on land in the general location shown in Plan X	No less than 1 month prior to Stage 1 commissioning and then no later than 6 months after full commissioning and thereafter annually for 5 years
Transect 10 and 11	1 north-south and 1 east-west transect to be established on the land north of Fords Cut using paired plot methodology	No less than 1 month prior to Stage 1 commissioning and then within 6 months of each planting stage and then 12 monthly for 5 years

31.2 Transects should be measured using the methodology from section 3.1.5.1, on pages 18 to 20, of MacGibbon (2014) '*Kaituna River Re-diversion Project: Ongatoro/Maketū Estuary Enhancement Project – Terrestrial, Avian and Wetland Ecology*' provided as part of the application material in the locations shown on the plan below.

31.3 In the event that access to Transects 6 and 8 cannot be gained from the landowner, there is no requirement to monitor. The Consent Holder shall notify the Regional Council in writing within 10 working days of access being denied identifying the attempts made to gain access.

31.4 The salt marsh remnants and the small Sacocornia patch in Papahikahawai Creek shall be monitored using photopoint monitoring. Surveys shall be carried out annually from Stage 1 commissioning for a period of five years.

31.5 The vegetation composition and spatial extent along the true left bank of the re-diversion channel shall be surveyed prior to river re-diversion and monitored 6 monthly for a period of two years following commissioning.

32. **Sediment**

32.1 The Consent Holder shall undertake a survey of sediment and algae in the estuary. The survey shall involve visual assessment and core sampling of sediment and algae cover as follows:

(a) Along a minimum of three transects in the upper estuary;

(b) Along a minimum of three transects in the mid-estuary, (including one at the downstream end of Papahikahawai Creek); and

(c) Along a minimum of one transect in the lower estuary.

32.2 The sediment survey shall be undertaken:

(a) Once prior to the Stage 1 commissioning of the culverts;

(b) Once within one year of the Stage One commissioning of the culverts;

(c) Once within two years of the Stage 2 commissioning of the culverts; and

(d) Once within five years of the Stage 2 commissioning of the culverts.

32.3 Variables assessed during the sediment survey shall include:

(a) Algae cover and type;

(b) Per cent cover of mud/silt;

(c) Depth of mud/silt; and

(d) Anoxic depth (that is, depth of RPD (redox potential discontinuity)).

32.4 Sediment sampling shall be integrated with macrofauna sampling required under condition 29.8 of this resource consent.

33. Community Relationships

33.1 No less than 20 working days prior to the Consent Holder granting site possession to the Contractor, the Consent Holder shall facilitate and resource a public information session for the purposes of discussing the scheduling and staging for works and expectations regarding communication between the Consent Holder and the community.

33.2 In addition to the community in general, the Consent Holder shall, as a minimum, directly invite the following parties to the public information session required by condition 33.1 of this resource consent:

(a) Department of Conservation;

(b) Fish & Game;

(c) Tangata Whenua;

(d) The Manager of the Kaituna Catchment Control Scheme;

(e) Coastguard Maketu;

(f) Maketu Ongatoro Wetland Society Incorporated;

(g) Maketu Community Board;

(h) Te Maru o Kaituna; and

(i) R.D. & S.F. Waterhouse Partnership.

33.3 Following the public information session required by condition 33.1 but prior to the commencement of the works authorised by this resource consent, the Consent Holder shall prepare a Community Relationship Plan.

33.4 The objective of the Plan is to enable Tangata Whenua, the general public and stakeholders to be kept informed of the works and restoration being undertaken and to facilitate the free flow of information between the Consent Holder and these parties.

33.5 As a minimum, the Community Relationship Plan shall:

(a) Identify the frequency of communication, taking into account different phases of the Project (such as the works phase, wetland works, and monitoring and reporting phases); and

(b) As a minimum, make provision for Public Information Sessions as follows:

(j) Once every three months during the construction phase;

(ii) Once per year for the first five years following Stage 1 commissioning of the culverts; and then

(iii) Once every two years for the duration of the consent.

(c) Identify an agreed method(s) for providing information, such as a website or other form of communication;

(d) Identify the nature of information to be made available, including progress updates on the project, monitoring results, summaries of reports and complaints received with respect to the Project;

(e) Identifying the procedures for providing feedback to the Consent Holder on the implementation of the project.

33.6 The Consent Holder shall directly invite, in writing, those parties prescribed in condition 33.2 to the ongoing Public Information Sessions required by condition 33.5 of this resource consent.

33.7 The Consent Holder shall keep minutes of the Public Information Sessions required by condition 33.5 of this resource consent. The minutes shall record:

(a) The names of those who attended the meeting;

(b) Main topics of discussion; and

(c) Any agreed outcomes.

The Consent Holder shall forward a copy of these minutes to the Regional Council within 20 working days of the meeting being held.

33.8 The Consent Holder shall resource and implement the Community Relationship Plan to the satisfaction of the Regional Council.

34. **Plans for Certification – Moorings**

34.1 Prior to the commencement of the works authorised by this resource consent, the Consent Holder shall submit a final plan for the proposed moorings and associated facilities for the certification of the Regional Council. This plan shall include:

(a) The final location of the proposed moorings north of the 'salinity block' in general accordance with BOPRC Plan Number RC67958/6;

(b) The final orientation and design of the proposed moorings;

(c) The provision of two permanent moorings for Coastguard Maketu and the R.D. & S.F. Waterhouse Partnership each comprising:

(i) A minimum length of 12.0 metres and a maximum length of 15.0 metres;

(ii) A maximum width of 3.0 metres; and

(iii) Jetties, if required, with a maximum lengths of 10.0 metres and maximum widths of 3.0 metres.

(d) The provision of a temporary mooring for the use of the commercial barge operator;

(e) Timber pole breakwater; and

(f) Car parking and security lighting and fencing.

34.2 The Consent Holder shall construct the moorings and associated facilities in accordance with the certified plan under condition 34.1 of this resource consent prior to the commencement of construction of the 'salinity block' shown on BOPRC Plan Number RC67958/6.

35. **Plans for Certification – Boat Ramp**

35.1 Prior to the commencement of the works authorised by this resource consent, the Consent Holder shall submit a final plan for the proposed public boat ramp and associated facilities for the certification of the Regional Council. This plan shall include:

(a) The final location of the proposed boat ramp in general accordance with BOPRC Plan Number RC67958/2;

(b) The final orientation, design and materials of the proposed boat ramp, log deflectors and jetty;

(c) The provision of a public boat ramp comprising a maximum length of 28 metres in length (13 metres exposed at high tide) by nine metres in width;

(d) The provision of a timber jetty or floating pontoon comprising a maximum length of 16 metres by 1.3 metres in width; and

(e) The provision of a timber ramp to access the jetty or pontoon comprising a maximum length of 6.0 metres by 1.3 metres on width.

35.2 The Consent Holder shall construct the public boat ramp and associated facilities in accordance with the certified plan under condition 35.1 of this resource consent.

36. **Papahikahawai and Maketu Spit Bridge**

36.1 Prior to the commencement of the construction of the foot/light all terrain vehicle bridge linking Papahikahawai Island to the Maketu Spit, the Consent Holder shall submit to the Regional Council a final plan that has been verified by suitably qualified and experienced engineering and landscape architecture practitioners that:

(a) The bridge has been designed to an acceptable engineering standard in terms of its intended use and location within the coastal environment; and

(b) The bridge has been designed (including materials) that are appropriate in the landscape context and will not compromise the existing landscape values of the subject locality.

36.2 The bridge shall be located in general accordance with BOPRC Plan Number RC67958/11.

36.3 The bridge shall be constructed in accordance with the verified plan under condition 36.1 of this resource consent.

37. **Review**

37.1 The Regional Council may, on the five last working days of September and/or March, serve notice of its intention to review the conditions of this resource consent under section 128 of the Resource Management Act 1991 for the purpose of:

(a) Dealing with any adverse effect on the environment which may arise from the exercise of the resource consent and which it is appropriate to deal with at a later stage; or

(b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment; or

(c) Requiring the Consent Holder to carry out monitoring in addition to or instead of that required by the resource consent.

(d) Addressing any issues identified in the annual reports submitted under condition 26 of this resource consent.

38. **Term of Consent**

38.1 With the exception of the ‘Salinity Block’ and associated wetland area identified on BOPRC Plan Numbers RC67958/1 and RC67958/6, the term of the consent is 35 years.

38.2 The reclamation for the ‘Salinity Block’ and associated wetland area identified on BOPRC Plan Numbers RC67958/1 and RC67958/6 shall have an unlimited consent term in accordance with section 123(a) of the Resource Management Act 1991.

39. **Resource Management Act Charges**

39.1 The Consent Holder shall pay the Bay of Plenty Regional Council such administrative charges as are fixed from time to time by the Regional Council in accordance with section 36 of the RMA.

Advice notes

The Consent Holder will be seeking an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014, prior to the commencement of construction. The authority may include requirements for detailed investigations and monitoring effects and are also likely to require the preparation of a Heritage Management Plan (or an Archaeological Management Plan).

The following activities are authorised by these consents:

a) *Under section 9(2) of the Resource Management Act 1991 and **Rule 1C of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for land disturbing activities (including earthworks within the bed of a river or stream, earthworks within the Riparian Management Zone of a river or stream and earthworks within the Coastal Margin setbacks);*

b) *Under section 9(2) of the Resource Management Act 1991 and **Rule 2C of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for land disturbing activities by way of vegetation clearance (including vegetation clearance within the Riparian Management Zone of a river or stream during earthworks activities);*

c) *Under sections 15(1)(a) and 15(1)(b) of the Resource Management Act 1991 and **Rule 37 of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for the temporary discharge of (sediment) contaminated water to water and to land (in circumstances where contaminants may enter water) during construction activities;*

d) *Under sections 14(2), 14(3), 15(1)(a) and 15(1)(b of the Resource Management Act 1991 and **Rule 43 of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for the temporary take of water during construction activities;*

e) *Under sections 14(2) and 14(3) of the Resource Management Act 1991 and **Rule 48 of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for the permanent diversion of water from the Kaituna River into Ongatoro / Maketū Estuary and to the Lower Kaituna Wildlife Management Reserve;*

f) *Under sections 13(1) and 13(2) of the Resource Management Act 1991 and **Rule 71 of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for the placement of structures on, and the disturbance of, the bed of the Kaituna;*

g) *Under section 9(2) of the Resource Management Act 1991 and **Rule 85 of the Bay of Plenty Regional Water and Land Plan** as a Discretionary Activity – for the modification of the Ongatoro / Maketū Estuary and Lower Kaituna Wildlife Management Reserve Wetlands through permanent changes in water flow and temporary discharges of sediment during construction activities;*

h) *Under sections 15(2) and 15(2A) of the Resource Management Act 1991 and **Rule 19(z) of the Bay of Plenty Regional Air Plan** as a Discretionary Activity – for the temporary discharge of dust during construction activities;*

i) *Under section 12(3) of the Resource Management Act 1991 and **Rule 9.2.4(b) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – to temporarily discharge sediment contaminated water into the Coastal Marine Area during construction activities and to permanently discharge contaminated coastal water from the Kaituna River into the Ongatoro/Maketū Estuary;*

j) *Under section 12(3) of the Resource Management Act 1991 and **Rule 10.2.4(d) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – to temporarily take coastal water from within the Ongatoro/Maketū Estuary at a rate greater than 15 cubic metres per day during construction activities;*

k) *Under section 12(3) of the Resource Management Act 1991 and **Rule 10.2.4(e) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – to temporarily dam coastal water during construction activities;*

l) *Under sections 12(3) and 14(3) of the Resource Management Act 1991 and **Rule 10.2.4(f) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – to divert coastal water from the Kaituna River into the Ongatoro/Maketū Estuary;*

m) *Under section 12(3) of the Resource Management Act 1991 and **Rule 10.2.4(g) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – to temporarily divert coastal water during construction activities;*

n) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 12.2.4(a) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – for the occupation of the Coastal Marine Area;*

o) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 13.2.4(h) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity - for structures within the Coastal Management Zone;*

p) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 14.2.4(b) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity - for the disturbance of, removal of material from, and the deposition of material on, the foreshore and seabed;*

q) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 14.2.4(e) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – for construction activities associated with a Discretionary Activity;*

r) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 14.2.4(j) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – for the removal, damage, modification and destruction of indigenous vegetation in the foreshore and seabed; and*

s) *Under sections 12(1) and 12(3) of the Resource Management Act 1991 and **Rule 15.2.4(b) of the Bay of Plenty Regional Coastal Environment Plan** as a Discretionary Activity – for a reclamation within the Coastal Management Zone.*

subject to the following conditions:

1. **Purpose**

1.1 To authorise and set conditions for:

(a) The construction of a new channel from the Kaituna River to Fords Cut and the widening of Ford's Cut including associated erosion protection works;

(b) The diversion of water from the Kaituna River into the Ongatoro/Maketu Estuary;

~~(b)~~(c) The reclamation of land to create a salinity block;

~~(c)~~(d) The installation and operation of an additional culvert to the Lower Kaituna Wildlife Management Reserve;

(e) The diversion of water from the Kaituna River into the Lower Kaituna Wildlife Management Reserve;

~~(d)~~(f) The provision of public and commercial boat and parking facilities adjoining and within the Coastal Marine Area;

~~(e)~~(g) Works associated with the creation of wetlands and estuary enhancement;

~~(f)~~(h) The temporary discharge of contaminants and taking, damming and diverting water, associated with construction activities.

2. **Location**

The activity site is the lower reaches of the Kaituna River and surrounds, the Ongatoro/Maketu Estuary, Papahikahawai Island and Maketu Spit and adjacent land, as generally shown on BOPRC Plan Numbers RC67958/1 and RC67958/10.

3. **Map References**

Name of Area	Approximate NZTM map reference (midpoint)
Fords Cut	1,901,072 E 5,815,885 N
Salinity block	1,900,744 5,816,167
Boat ramp	1,900,691 5,815,801
Causeways – mid point	1,901,473 5,816,108 and 1,901,952 5,816,198
Lower Kaituna Wildlife Management Reserve	1,897,485 5,816,541

4. **Legal description**

The legal descriptions of the proposed activity site are:

Stopped Road SO 55944
Pts Sec 5 SO 55943 & SO 55944 Soil Cons and River Control
Pt Sec 5 Blk V Te Tumu SD, Sec 1 SO 55944
Tumu Kaituna 11A1 Block
Pt Sec 6 Blk VI Te Tumu DC (SO 46938)
Pt Sec 1 Blk VI Te Tumu SD (SO 38964)
Lot 2 DPS 12129, Lot 3 DPS 12129 and Pt Sec 1 Blk VI Te Tumu SD
Lot 1 DPS 12129
Pt Sec 2 Blk VI Te Tumu SD (SO 46938)
Papahikahawai No 2 Block

Sec 7 Blk VI Te Tumu SD (SO 46938)
Section 10 SO 52144
River Bed
Legal Road
Coastal marine area

5. **Plans**

The works shall be undertaken in accordance with the following Construction Plans prepared by Opus International Consultants Limited and WaterLine Engineering Consultants Limited and referenced as Drawing Number 2/1542/115/6235:

- '*Proposed Construction Works*', referenced as Sheet Number 2, Revision 3 and dated 3 December 2014 [BOPRC Plan Number RC67958/1];
- '*Proposed Ford Road Re-Alignment Plan and Longsection'*, referenced as Sheet Number 3, Revision 3 and dated 3 December 2014 [BOPRC Plan Number RC67958/2];
- '*Proposed Ford Road Re-Alignment Plan – Cross Sections – Sheet 2 of 4*', referenced as Sheet Number 8, Revision 2 and dated 3 December 2014 [BOPRC Plan Number RC67958/3];
- '*Proposed Ford Road Re-Alignment Plan – Cross Sections – Sheet 3 of 4*', referenced as Sheet Number 9, Revision 2 and dated 3 December 2014 [BOPRC Plan Number RC67958/4];
- '*Proposed Culvert Installations – Plan and Longsection and Typical Section*', referenced as Sheet Number 14, Revision 2 and dated 3 December 2014 [BOPRC Plan Number RC67958/5];
- '*Fords Loop Channel – Plan and Section A-A'*, referenced as Sheet Number 15, Revision 3 and dated 3 December 2014 [BOPRC Plan Number RC67958/6];
- '*Proposed Channel and Existing Ford's Cut Channel Remedial Works – Plan and Sections* ', referenced as Sheet Number 16, Revision 3 and dated 3 December 2014 [BOPRC Plan Number RC67958/7];
- '*Proposed Channel and Existing Ford's Cut - Cross Sections – Sheet 1 of 2*', referenced as Sheet Number 17, Revision 1 and dated 27 June 2014 [BOPRC Plan Number RC67958/8];
- '*Proposed Channel and Existing Ford's Cut - Cross Sections – Sheet 2 of 2*', referenced as Sheet Number 18, Revision 1 and dated 27 June 2014 [BOPRC Plan Number RC67958/9];
- '*Land Use Plan*', referenced as Sheet Number 19, Revision 2 and dated 3 December 2014 [BOPRC Plan Number RC67958/10]; and
- '*Papahikahawai Island Remediation Plan*', referenced s Sheet Number 20, Revision 2 and dated 27 June 2014 [BOPRC Plan Number RC67958/11].

6. **Definitions**

The following terms within these conditions shall have the following definitions:

"*District Council*" means the Western Bay District Council's Chief Executive Officer or their nominee.

"*Commissioning*" unless otherwise clearly identified through the resource consent condition wording, means that the culverts are deemed to be fully commissioned at Stage 2, being when all culverts and their gates are fully operational without any short-term controls on flow rates.

"*Consent Holder*" means the Bay of Plenty Regional Council's Environmental Delivery Group or their nominee.

"*Regional Council*" means the Bay of Plenty Regional Council's Chief Executive Officer or their nominee.

"*Project*" means the Kaituna River Re-Diversion and Ongatoro/Maketu Estuary Enhancement Project and associated activities.

"*Works*" means the construction works required to give effect to the Project.

7. Notification and pre-construction meeting

7.1 The Regional Council shall be notified in writing of the intention to commence construction work at least two months prior to the start of any construction activities on site.

7.2 Prior to commencement of works the Consent Holder or their agent shall arrange and conduct a pre-construction site meeting between the Regional Council and the primary contractor. At a minimum, the following shall be covered at the meeting:

(a) Scheduling and staging of the works;

(b) Responsibilities of all relevant parties;

(c) Contact details for all relevant parties;

(d) Expectations regarding communication between all relevant parties;

(e) Procedures for implementing any amendments to the management plans submitted;

(f) Site inspection;

(g) Confirmation that all relevant parties have copies of this resource consent conditions document and its attachments, as well as the Construction Environmental Management Plan; and

(h) All associated erosion and sediment control plans and methodology.

7.3 A meeting shall also be held prior to commencement of works with the directly affected landowners and iwi representatives to discuss:

(a) Scheduling and staging of the works;

(b) Contact details for all parties;

~~(b)~~(c) Cultural monitoring of construction activities; and

~~(c)~~(d) Expectations regarding communication between all parties.

7.4 All operational personnel involved with the construction of the Project shall be made aware of, and have access to, all resource consent documents, conditions and schedules applicable to the construction of the Project.

7.5 The Regional Council shall be notified in writing of the intention to commission the culverts, in accordance with the Commissioning Plan required under condition 19 of this resource consent, at least 5 working days prior.

7.6 The Consent Holder shall keep minutes of the meetings required by conditions 7.2 and 7.3 of this resource consent. The minutes shall record:

(a) The names of those who attended the meeting;

(b) Main topics of discussion; and

(c) Any agreed outcomes (including an agreed Cultural Monitoring Protocol).

The Consent Holder shall forward copies of these minutes to the Regional Council prior to the commencement of construction works authorised by this resource consent.

8. **Accidental Discovery**

8.1 A Cultural Monitor shall be employed by the Consent Holder to monitor, as necessary, and report any discoveries during earthworks. The role and presence of the Cultural Monitor shall be in accordance with an agreed Cultural Monitoring Protocol following the meeting required by condition 7.3 of this resource consent.

8.2 Prior to construction commencing the Consent Holder shall provide training to those working on the Project on the accidental discovery protocols.

8.3 In the event of any archaeological site or material being uncovered or reasonably suspected to have been uncovered during the exercise of this resource consent, activities in the vicinity of the discovery shall cease and the Consent Holder shall notify the Regional Council as soon as possible.

8.4 If any koiwi (human remains) are uncovered, or reasonably suspected to have been uncovered during the exercise of this resource consent, the Consent Holder or their representative shall:

(a) Notify Heritage New Zealand's Pouhere Taonga Regional Archaeologist, the New Zealand Police and the Regional Council; and

~~(a)~~(b) Undertake no further work until actions have been agreed by all parties listed in condition 8.4(a) and confirmation has been provided in writing from the Regional Council that works may re-commence.

8.48.5 In the event of an accidental discovery, the Consent Holder shall notify Te Rūnanga o Ngati Whakaue ki Maketu, Tapuika Iwi Authority, Te Maru o Ngati Rangiwewehi, Waitaha Raupatu Trust, Ngāti Pikiao, Ngāti Tūnohopū and Ngati Makino Heritage Trust, and shall ensure, as far as practicable, that procedures are undertaken in accordance with:

(a) The Ngati Rangiwewehi koiwi and accidental discovery protocol;

(b) The Waitaha Raupatu Trust, Ngati Makino Heritage Trust, Komiti o Ngati Pikiao (Ki Maketu), Ngati Tunohopu Accidental Discovery Protocols; and

(c) The Te Taonga Tuturu Act - immediate notification of Tapuika representatives in the event that a site or objects of significance are discovered during works.

Note: This condition is in addition to any agreements that are in place between the Consent Holder and Tangata Whenua or Heritage New Zealand Pouhere Taonga.

9. Complaints

9.1 The Consent Holder shall, upon receipt of any complaint in relation to construction, promptly:

(a) investigate the complaint,

(b) where appropriate remedy or mitigate the cause of the complaint; and

(a)(c) inform the Regional Council as soon as practicable, but no later than 48 hours of receiving the complaint, of the details of the complaint and the action taken.

9.2 The Consent Holder shall keep and maintain a complaint register for all aspects of operations in relation to construction activities. The complaints register shall include:

(a) the date, time and type of complaint,

(b) the cause of the complaint, and

(c) the action taken by the Consent Holder in response to the complaint and steps to prevent a reoccurrence.

9.29.3 The complaints register shall be made available to the Regional Council at all times on request.

10. Hazardous Substances and Spill Contingency

10.1 As part of construction activities there shall be no storage of fuel or lubricants, refuelling, maintenance or lubrication of vehicles or machinery within 20 metres of the Kaituna River, Ford's Cut, Ongatoro/Maketu Estuary, open excavations, exposed groundwater or any other waterway.

10.2 During construction the Consent Holder shall maintain on site at all times, measures to prevent spills of hazardous substances entering land or water. These measures shall include but not be limited to:

(a) The equipment, systems and procedures to be used to minimise the risk of spills or leaks of hazardous substances;

(b) The spill management and containment equipment to be maintained at all times on site, and its location;

(c) Procedures for containing, managing, cleaning and disposing of any spill or leak, or contaminated material to be removed from the site as a result of a spill or leak;

(d) Procedures to notify and report to the Consent Holder and the Bay of Plenty Regional Council within 24 hours of a spill or leak occurring, including a maintained schedule of emergency contact names and numbers;

(e) An inspection schedule for all storage containers, refuelling areas, machinery and plant; and

(f) Procedures to be followed to identify causes of spills or leaks.

10.3 In the event of a spill of hazardous substances on the site, the Consent Holder shall record and provide to the Regional Council within 24 hours of the spill:

(a) The date, time and volume of the spill;

(b) The substance spilt;

(c) Measures taken to contain and absorb the spilt substance;

(d) The cause of the spill; and

(e) The measures taken since to prevent a repeat of the incident.

10.4 Prior to any plant or machinery entering or working within 20 metres of any water body, the Consent Holder or their representative shall:

(a) Inspect the machinery or plant for any residual hazardous substances or leaks; and

(b) Clean and/or repair machinery or plant as necessary to prevent hazardous substance contamination of waterways.

11. Construction Environmental Management Plan

11.1 At least 20 working days prior to site establishment works commencing, the Consent Holder shall submit to the Regional Council, for certification, a Construction Environmental Management Plan ('CEMP'), including its sub-sets, outlining the construction activities and all practices and procedures to be adopted in the construction of the Project. Regional Council's certification shall be limited to that the CEMP:

(a) Complies with conditions 11.4, 11.5, 13.2 ,13.3, 14.3 and 14.4 of this resource consent;

(b) Adopts the best practicable option(s); and

(c) Contains provisions that are enforceable.

~~11.1~~11.2 The CEMP shall be verified by independent appropriately experienced and qualified practitioners and confirm that:

(a) the CEMP adopts the mitigation measures identified in the application documentation and / or otherwise required under the conditions of the consent; and

(b) the implementation of the CEMP will appropriately mitigate the anticipated adverse effects of the public work.

11.3 Works shall not commence until the CEMP described in condition 11.2 has been acknowledged in writing by the Regional Council.

~~11.2~~11.4 The objectives of the CEMP shall be:

(a) To ensure that construction activities achieve compliance with the applicable resource consent conditions;

(b) To minimise the environmental nuisance effects of construction activities;

(c) To ensure that disturbance is limited to that necessary to undertake the construction works;

(d) To minimise the release of sediment during disturbance to the bed of any waterway;

(e) To limit the disturbance of the beds and margins of the coastal marine area and waterways to the extent necessary to undertake construction works, and to avoid or mitigate adverse effects on the quality and passage of coastal and surface water and aquatic habitat;

(f) To ensure that disturbance does not cause flooding or erosion; and

~~(f)~~(g) To minimise, as far as practicable, the disturbance of existing wetland areas and avian habitat within the Project site.

~~11.3~~11.5 The CEMP will address, as a minimum, the following aspects of the works:

(a) Construction sequencing in general accordance with Table 3: *Construction Sequence* on pages 30 and 31 of the application document prepared by Opus International Consultants Limited entitled '*Kaituna River Re-diversion and Ongatoro/Maketu Estuary Enhancement Project – Notice of Requirements and Resource Consent Application (Boating Facilities)* and dated December 2014, as follows:

(i) Site establishment;

(ii) Construction of inlet structure;

(iii) Construction of new stop bank along southern side of proposed re-diversion channel;

(iv) Removal of existing stop bank;

(v) Construction of new re-diversion channel;

(vi) Construction of new moorings (including the temporary mooring for the barge operator);

(vii) Construction of the 'salinity block';

(viii) Improvements to Ford's Cut and Ford's Loop;

(ix) Removal of stop banks and causeways within the estuary and construct bridge between Papahikahawai Island and Maketu Spit;

(x) Construction of new culvert to Lower Kaituna Wildlife Management Reserve;

(xi) Open re-diversion channel inlet; and

(xii) Wetland creation.

~~(a)~~(b) Timing of construction works including construction of the diversion channel inlet construction outside of whitebait fishing season (15th of August to the 30th November (inclusive));

~~(b)~~(c) Working hours;

(d) Restrictions on public access;

(e) Means of limiting the physical extent of disturbance of flora and fauna (with particular focus on avian ecological issues) within the wetland located north of the proposed diversion channel; and

(f) For Coastguard Maketu and commercial mooring holders within Ford's Loop, means of providing access to their existing moorings prior to the construction of the 'salinity block' and ongoing access to the sea via Te Tumu.

~~11.4~~11.6 The following supplementary management plans shall form subsets of the verified CEMP, and must be submitted to Regional Council for certification concurrently with the CEMP:

(a) Erosion, Sediment & Dust Control Plan; and

(b) Construction Flood Management Plan.

~~11.5~~11.7 In the event of any conflict between resource consent conditions and CEMP practices and procedures, the resource consent conditions shall be complied with.

11.8 Subject to compliance with condition 11.9 of this resource consent, the CEMP may be amended at any time.

11.9 Any amendments made to the certified CEMP shall be certified, verified and operationalised in the manner required by conditions 11.1, 11.2 and 11.3 of this resource consent.

12. **Compliance with CEMP**

12.1 The Consent Holder shall implement and comply with the CEMP and the Supplementary Management Plans set out in conditions 11, 13 and 14.

Note: The CEMP prepared in relation to Regional Council resource consents will be the same CEMP as that prepared in relation to the designation submitted to Western Bay of Plenty District Council, but will include different supplementary plans specific to the regional consents.

13. **Erosion, Sediment and Dust Control Plan and Management**

13.1 As a sub-set and part of the CEMP required by condition 11 of this resource consent, the Consent Holder shall also provide an Earthworks, Sediment and Dust Control Plan ('ESDCP').

~~13.1~~13.2 The objectives of the ESDCP shall be:

(a) To ensure construction activities achieve compliance with the conditions of consent for these activities;

(b) To ensure that the effects of erosion and sedimentation on water quality are minimised; and

(c) To ensure construction activities are carried out in a manner that is consistent with Bay of Plenty Regional Council's Guideline No. 2010/01 - "Erosion and Sediment Control for Land Disturbing Activities".

~~13.2~~13.3 The ESDCP shall be prepared in general accordance with Bay of Plenty Regional Council Guideline No. 2010/01 - "Erosion and Sediment Control for Land Disturbing Activities" and shall clearly define the sediment, erosion and dust control measures to be implemented for each stage of the works authorised by this resource consent. The Plan shall include, but not be limited to:

(a) A locality map detailing as a minimum the location of roads, property boundaries, surface waterways and crossings, the direction of stormwater flows, and the erosion, sediment and dust control devices;

(b) A site description, including land type, climate, topography, vegetation soils, and water bodies;

(c) A detailed programme of works identifying:

(i) Each stage of construction;

(ii) Overall construction sequencing generally incorporating the sequencing sediment discharge mitigations described within the WaterLine Report entitled 'Kaituna River Re-Diversion and Ongatoro/Maketu Estuary Enhancement Project – Construction Description and Drawings' and dated 13 June 2014,

~~(ii)~~(iii) An estimate of the maximum area of bare ground (cumulative total) exposed at each stage of construction;

~~(iii)~~(iv) An estimate of the total length of exposed roads, trenches and tracks; and

~~(iv)~~(v) The volume of earthworks proposed.

(d) Detailed drawings and specifications of all designated erosion and sediment control measures selected from the Erosion and Sediment Control Guidelines, including contingency measures, on-site catchment boundaries, measures to be taken at the temporary construction management areas and off-site sources of runoff with supporting calculations, including all key design parameters. The measures may consist of but not be limited to the following:

(i) clean water diversion channels;

(ii) decanting earth bunds or sediment ponds;

(iii) on-site silt trapping devices, such as hay bales, silt fences, filter cloth barriers and rock filters;

(iv) soakage pits, infiltration basins and / or swales; and

(v) design information as is necessary to demonstrate that run-on water is controlled, “clean” and “dirty” water is separated where possible, land surface is protected from erosion, and sediment is managed.

(e) A description of the mitigation and rehabilitation measures proposed;

(f) A programme for managing exposed areas including progressive stabilisation and minimising exposed areas by:

(i) Ensuring that any earthworks and/or vegetation clearance should where practicable, be limited to the footprint of the works;

(ii) Staging of the construction; and

(iii) Providing best practice measures, vegetative or structural, to protect exposed soil from erosion;

(g) Measures to ensure that the tracking of mud or earth onto the existing road network is reduced to the practicable minimum;

(h) A schedule outlining the frequency and methods of inspection, monitoring and maintenance of all erosion, sediment control and dust control measures as may be necessary to achieve compliance with the conditions of the consents;

(i) Details of any proposed monitoring to demonstrate the effectiveness of the proposed measures; and

(j) Include emergency procedures that set out measures that will be implemented if there is a significant sediment discharge to surface water.

13.4 Land disturbing activities authorised by this resource consent shall not commence within any stage until the sediment and erosion control devices have been inspected by the Regional Council.

13.5 The Consent Holder shall carry out inspections, at a minimum frequency of weekly, of all working areas of the site in order to ensure they are well maintained and that erosion and sediment control devices remain effective.

13.313.6 Accumulated sediment shall be removed from the sediment retention devices before sediment levels reach 25 per cent of that device's volume.

13.7 Visual inspection shall be undertaken on a daily basis during the construction phase when earthworks are being undertaken at the inlet of the proposed channel (when works are being undertaken in this area), the estuary end of Ford's Cut, and Papahikahawai Creek to assess whether there is any visible plume as a result of the work.

13.413.8 The Consent Holder shall maintain the sediment and erosion control devices in place until the work area is stabilised to the satisfaction of the Chief Executive of the Bay of Plenty Regional Council or delegate and shall undertake any remedial works as directed to achieve compliance with these conditions.

14. Construction Flood Management Plan

14.1 As a sub-set and part of the CEMP required by condition 11 of this resource consent, the Consent Holder shall also provide a Construction Flood Management Plan ('CFMP').

14.114.2 The CFMP shall be developed in consultation with the Bay of Plenty Regional Council Rivers and Drainage Manager and the Utilities Manager of the Western Bay of Plenty District Council.

14.214.3 The objectives of the CFMP shall be to:

(a) Minimise or avoid any increase in flood risk arising as a consequence of undertaking the works;

(b) Ensure that the Contractor takes into account the potential for increased flood risk when planning and executing work; and

(c) Ensure that in the event of a flood occurring at a construction site processes and procedures are in place to manage such an event.

14.314.4 The CFMP shall, as a minimum, address the following matters:

(a) Provision of a 24 hour emergency contact person who is able to respond to a flood warning and implement emergency control measures;

(b) An outline of the probability of various flood levels;

(c) Construction methodology and sequencing for the installation of the Fords Cut culverts, the diversion channel, widening and deepening of Fords Cut and construction of the new stopbank;

(d) Provision to restrict the length of stopbank being worked on and the number of work fronts affecting stopbanks to the minimum practicable;

(d)(e) Provision of full flood protection in association with the construction of the diversion channel and relocation of the Titchmarsh stopbank; and

(e)(f) Existing flood management procedures for the Kaituna Catchment Control Scheme as included in the Regional Council's Flood Warning Manual.

~~14.4~~14.5 Flood protection systems must be fully reinstated for weekends and public holidays unless alternative interim measures, as approved by the Bay of Plenty Regional Council Rivers and Drainage Manager, are implemented. Within five working days of this approval, the Consent Holder shall provide a copy of this approval in writing to the Regional Council.

~~14.5~~14.6 The Consent Holder shall maintain a stockpile of material and sufficient plant on site to be able to undertake immediate reinstatement of stopbank works in the event of a flood warning.

14.7 Along the alignment of the proposed diversion channel full flood protection shall be maintained by the existing stopbank except for when the tie-ins are made at each end. The period under which the tie-ins shall be agreed with the Bay of Plenty Regional Council Natural Hazards Group prior to the works being undertaken. Within five working days of agreement being reached, the Consent Holder shall provide a copy of this agreement in writing to the Regional Council.

15. Network Utilities

15.1 At least 20 working days prior to the Consent Holder granting site possession to the contractor and site establishment works commencing, the Consent Holder shall submit to the Regional Council a Network Utility Management Plan (NUMP) prepared jointly by the Consent Holder, or its agents, and Powerco.

15.2 The NUMP submitted in accordance with condition 15.1 shall record if there is agreement between the parties and, if not, where and why there is disagreement and the steps taken in an attempt to resolve that disagreement. Matters of disagreement shall be resolved through independent verification by a suitably qualified and experienced practitioner at the Consent Holder's expense.

15.3 All construction activities of the Project are to be undertaken in accordance with the NUMP.

15.4 The purpose of the NUMP shall be to ensure that the enabling works, design and construction of the project adequately take account of, and include measures to address the safety, integrity, protection or, where necessary, relocation of existing electricity network utilities.

15.5 The NUMP shall include but need not be limited to methods and measures to:

(a) Identify protocols for liaising with Powerco and for overseeing and approving works that impact on services.

(b) Accurately identify and verify the location of existing electricity network utilities,

(c) Identify appropriate measures for working near services or the appropriate standards if they have to be relocated.

(d) Identify timing and sequencing of work associated with relocation and / or protection of electricity utility services.

(e) Ensure that existing, relocated and/or replacement electricity network utility infrastructure can be accessed for maintenance at all reasonable times, or emergency works at all times during construction activities.

(f) To appropriately manage the effects of dust and any other material potentially resulting from construction activities and able to cause material damage, beyond normal wear and tear to overhead electricity lines.

(g) To ensure that no activity is undertaken during construction that would result in ground vibrations and/or ground instability likely to cause material damage to overhead electricity lines, including support structures.

(h) To ensure the continued operation and supply of electricity infrastructure services, which may include, but not be limited to, any relocated or replacement electricity lines and cables being made operational prior to the termination of existing lines and cables.

(i) Confirm that the works will comply with the minimum separation distances set out in the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP34:2001).

16. **Design**

16.1 The Consent Holder shall use natural rock and soil material, where practicable.

16.2 All fill material shall be placed and compacted so as to minimise any erosion and/or instability.

16.3 The top level of the diversion control structure shall have a minimum height of RL 2.20 metres (Moturiki Datum).

16.4 The culverts on the inlet structure shall be designed and constructed to allow practical and reliable reduction of flows from the re-diversion channel to the Ongatoro/Maketu Estuary.

16.5 All structures, devices, channels and erosion protection works shall be designed and constructed to an engineering standard that is suitable for their intended purpose and functions. Compliance with this condition shall be verified in writing by an independent appropriately qualified and experienced practitioner(s) prior to Stage 1 commissioning of the culverts.

17. **On-going Maintenance**

17.1 The Consent Holder shall ensure that all structures and works authorised under this consent are maintained in a structurally sound condition at all times to the satisfaction of the Regional Council.

17.2 Any scour or erosion of the Coastal Marine Area at the entrance or exit points of the culverts, shall be effectively stabilised, to the satisfaction of the Regional Council.

17.3 The Consent Holder shall undertake any maintenance work on the structures and works authorised under this resource consent, as soon as reasonably practicable, if directed by, and to the satisfaction of, the Regional Council.

18. Private Water Supply

18.1 Prior to the construction of the diversion channel, the Consent Holder shall relocate or replace the private stockwater main (including connections) that conveys water from the Kaituna River to Sec 5 Blk V Te Tumu SD, Kaituna Pastoral Farms Ltd as shown on BOPRC Plan Number RC67958/1.

18.2 No less than 10 working days prior to carrying out the works required by condition 18.1 of this resource consent, the Consent Holder shall advise the landowner of Sec 5 Blk V Te Tumu SD of the date these proposed works are to occur and the period of time that water supply will be affected.

~~18.1~~18.3 Prior to diverting water into the new diversion channel, the Consent Holder shall install a salinity monitoring device that shuts off the existing water intake when the salinity makes the water unsuitable for use as stock drinking water on Sec 5 Blk V Te Tumu SD, Kaituna Pastoral Farms Ltd. The Consent Holder shall also provide a 30,000 litre tank for the landowners installation for storage of water.

19. Commissioning Plan

19.1 The commissioning of the culverts providing water from Kaituna River via the diversion channel shall be staged as follows:

(a) Stage 1: Increase the re-diverted flow from 150,000m³ to ~400,000 m^3 per mean tidal cycle; and then

(b) Stage 2: After a period of one year of Stage 1, subject to monitoring and necessary adjustments and/or works, Increase the re-diverted flow to ~600,000m3 per mean tidal cycle.

19.2 The Consent Holder shall submit to the Regional Council a detailed commissioning plan at least 15 working days prior to commencing commissioning of Stage 1 of the diversion culverts for their approval. The Commissioning Plan shall be verified by an independent appropriately experienced and qualified practitioner.

~~19.2~~19.3 The objective of the Commissioning Plan is to manage the operation of the culverts during Stage 1 such that:

(a) There is no increase in flood risk or erosion attributable to the Project; and

(b) Adverse effects on water quality arising from the discharge are minimised.

~~19.3~~19.4 The Plan shall address, as a minimum:

(a) Progressive opening of the culverts;

(b) Procedures for the management of a flood event should it occur during Stage 1;

(c) Water levels, erosion and ecological monitoring in accordance with the monitoring conditions; and

(d) Discharge quality.

19.5 Following Stage 1 but prior to Stage 2 commissioning of the culverts, the Consent Holder shall provide a report to the Regional Council that has been verified by an independent appropriately experienced and qualified practitioner. This report shall, as a minimum:

(a) Provide a copy of the monitoring results obtained for Stage 1;

(b) Provide an analysis and interpretation of monitoring results obtained for Stage 1;

(c) Identify and prescribe the proposed measures and responses to issues identified following an analysis of monitoring results for Stage 1; and

(d) Identify the means of measuring the effectiveness of proposed measures and responses under 19.5(b).

19.6 The Consent Holder shall not commence Stage 2 commissioning of the culverts until such time as it has been demonstrated to the satisfaction of the Regional Council that issues identified within the report required by condition 19.5 of this resource consent have been effectively addressed.

~~19.4~~19.7 The culverts shall be commissioned in accordance with the Commissioning Plan.

Note: The culverts are deemed to be fully commissioned at Stage 2, being when all culverts and their gates are fully operational without any short-term controls. This will be clearly stated in the Commissioning Plan.

*The Operations and Maintenance Manual (referred to in condition 2*3 *below) will address the operation of the culverts once fully commissioned.*

20. **Lower Kaituna Wildlife Management Reserve**

20.1 During the detailed design of the additional culvert at Lower Kaituna Wildlife Management Reserve, in order to maintain flows into the wetland, the Consent Holder shall determine the relationship between water levels in the Kaituna Wetland, water levels in the Kaituna River and flows into the wetland.

20.2 In consultation with the Department of Conservation and Fish and Game, the Consent Holder shall submit a final plan for the additional culvert to the Lower Kaituna Wildlife

Management Reserve for the certification of the Regional Council. This plan and certification shall include:

(a) The final location of the culvert, which is to be somewhere between Intakes 1 and 2 as shown on the 'Location Plan' provided with the Applicant's S92 Request on the 1st of September 2014 by way of a letter prepared by Opus entitled '*Resource Consent Application 67958 – Kaituna River Re-Diversion and Ongatoro/Maketu Estuary Enhancement- Response to Further Information Request*';

(b) The diameter of the culvert, which is to be no less than 0.9 metres;

(c) The provision of measures to allow fish passage;

(d) Erosion and scour protection at the inlet and outflow points;

(e) Maximum earthworks volume of no greater than 5,000 cubic metres; and

(f) Confirmation from an appropriately qualified and experienced practitioner(s) that the culvert and associated structures have been designed to an engineering standard that is suitable for their intended purposes and functions.

~~20.1~~20.3 The Consent Holder shall install the Lower Kaituna Wildlife Management Reserve culvert prior to commencing Stage 1 of the culvert commissioning.

20.4 The operation of the diversion control structure shall not alter the water levels at the Lower Kaituna Wildlife Management Reserve unless it can be demonstrated to the satisfaction of the Regional Council by way of a report prepared by an appropriately qualified and experienced practitioner(s), that lower or higher levels provide ecological benefit to the Lower Kaituna Wildlife Management Reserve.

21. **Drainage – Kaituna Catchment Control Scheme**

21.1 Prior to the Stage 1 commissioning of the culverts, the Consent Holder shall consult with the Manager of the Kaituna Catchment Control Scheme ('the Scheme') or their appointee to;

(a) Determine the extent of any adverse effects attributable to the re-diversion in relation to the operation of the Scheme's drainage network as a consequence of increasing water levels in the Maketu Estuary;

(b) Determine, by agreement, the amount of compensation to be paid by the Consent Holder to the Manager of the Scheme to mitigate the adverse effects of the re-diversion in relation to the operation of the Scheme's drainage network; and

(c) The timing and frequency of providing the compensation.

21.2 The Consent Holder shall provide a report to the Regional Council providing details of the agreed extent of any adverse pastoral effects attributable to the re-diversion and the agreed amount of compensation, or if these matters have not been able to be agreed, details of the areas of agreement and disagreement.

21.3 In the event that the Consent Holder and the Manager of the Kaituna Catchment Control Scheme are unable to agree on the extent of any adverse pastoral effects caused to the Scheme's drainage network from the re-diversion and / or the amount of compensation to be paid in mitigation of those effects and / or the timing and frequency of payment of compensation, those matters shall be determined by a Panel of two suitably qualified independent experts appointed by the Regional Council at the Consent Holder's expense.

21.4 The amount of any compensation to be paid to the Scheme shall be:

(a) To provide compensation for the increased running costs at the Ford Road and Maketu (Singletons) pump stations as a result of the re-diversion;

(b) As a contribution to the planned upgrade of the pump station and culverts draining into the Kaituna River from the Ford Road drain;

(c) As a contribution to the design and construction of additional culverts draining into the Maketu Estuary between Fords Cut and Maketu (Singletons) pump station;

(d) In the event a Panel is required to determine the amount of compensation, for any other initiatives the Panel recommends be implemented.

21.5 The decision of the Panel prescribed within condition 21.3 of this resource consent shall be final.

21.6 The culverts shall not be commissioned until the amount of compensation payable has been determined in accordance with this condition.

~~21.5~~21.7 The Consent Holder shall pay the compensation as determined by either condition 21.1 or 21.3 of this resource consent.

22. **Drainage – Dean Pump Station**

22.1 Prior to the Stage 1 commissioning of the culverts, the Consent Holder shall consult with the owner of number 196 Kaituna Road, Maketu (legally described as Sec 2 SO 12541) or their appointee to;

(a) Determine the extent of any adverse effects attributable to the re-diversion in relation to the operation of their privately owned and operated pump station as a consequence of increasing water levels in the Maketu Estuary.

(b) Determine, by agreement, the amount of compensation to be paid by the Consent Holder to the landowner to mitigate the adverse effects (if any) of the re-diversion in relation to the operation of the land serviced by the privately owned pump station.

22.2 The Consent Holder shall provide a report to the Regional Council providing details of the agreed extent of any adverse pastoral effects attributable to the re-diversion and

the agreed amount of compensation, or if these matters have not been able to be agreed, details of the areas of agreement and disagreement.

22.3 In the event that the Consent Holder and the landowner of number 196 Kaituna Road, Maketu (legally described as Sec 2 SO 12541) are unable to agree on the extent of any adverse pastoral effects caused by the re-diversion and / or the amount of compensation to be paid in mitigation of those effects, those matters shall be determined by a Panel of two suitably qualified independent experts appointed by the Regional Council at the Consent Holder's expense.

22.4 The amount of any compensation to be paid to the landowner of number 196 Kaituna Road, Maketu (legally described as Sec 2 SO 12541) shall be to provide compensation (if any) for the additional running costs of the Dean pump station as a result of the re-diversion.

22.5 The decision of the Panel prescribed within condition 22.3 of this resource consent shall be final.

22.6 The culverts shall not be commissioned until the amount of compensation payable has been determined in accordance with this condition.

22.7 The Consent Holder shall pay the compensation as determined by either condition 22.1 or 22.3 of this Resource Consent on an annual basis no later than the 31st of March.

Note: It is acknowledged that improvements to the Kaituna Catchment Control Scheme as a result of the works under Condition 21 of this resource consent may mitigate the Project's effects on the need for this privately-owned pump station to operate longer during flood events and that compensation may not be required if this can be demonstrated through condition 22.1 or 22.3.

~~22.~~23. **Operations and Maintenance Manual**

23.1 An Operations and Maintenance Manual ('OMM') shall be provided to the Regional Council for certification at least one month prior to Stage 1 commissioning of the diversion culverts. Regional Council's certification shall be limited to that the OMM:

(a) Complies with conditions 23.4 and 23.5 of this resource consent;

(b) Adopts the best practicable option(s); and

(c) Contains provisions that are enforceable.

~~22.1~~23.2 The OMM shall be prepared, in consultation with the Bay of Plenty Regional Council Rivers and Drainage Manager and Western Bay of Plenty District Council, by a suitably qualified and experienced practitioner and shall detail how the effects of the flow regime and diversion are to be minimised and managed.

~~22.2~~23.3 The OMM shall be verified by appropriately experienced and qualified practitioners, confirming that the OMM:

(a) Meets the OMMs objectives;

~~(a)~~(b) Complies with resource consent conditions; and

~~(b)~~(c) The implementation of the OMM will appropriately manage the ongoing operation of the Project.

~~22.3~~23.4 The objectives of the OMM shall be:

(a) To ensure that procedures are in place to:

(i) Operate the diversion to maximise ecological outcomes; and

(ii) Manage the flow regime and discharges such that adverse effects are minimised.

(b) To specify how erosion control works will be maintained.

(c) To specify how the culverts are to be controlled to ensure the Project does not increase the flood risk at Maketu Township (that is, overtopping of Maketu Road).

~~22.4~~23.5 The OMM shall, as a minimum, address the following matters:

(a) Describe Project assets;

(b) Describe how provision is made to ensure that the passage of fish through the diversion structure is unimpeded at all times that the gates are open;

(c) Describe the flow regime operating rules for the diversion including identification of the triggers and responses to manage flood events in accordance with the conditions of this consent, including but not limited to:

(i) Installation of a telemetered water level recording device in the Ongatoro/Maketu Estuary near the Maketu Township;

(ii) Continued operation and monitoring of existing water level devices in the Kaituna River at Te Matai and the Ford Road Pump Station;

(iii) Monitoring of sea level;

(iv) A sea level prediction model that predicts sea level in the locality;

(v) A flood forecasting model that predicts flows in the Kaituna River and water levels at Ford Road and within the Ongatoro/Maketu Estuary; and

~~(i)~~(vi) Design and installation of devices on the new culverts that allow for practical and reliable reduction of water flow into the Ongatoro/Maketu Estuary via the diversion structure.

~~(c)~~(d) Roles and responsibilities;

~~(d)~~(e) The operating regime to maximise ecological outcomes;

~~(e)~~(f) Operational procedures for the culvert gates;

~~(f)~~(g) Procedures for the maintenance and removal of debris at the culverts;

~~(g)~~(h) Procedures for inspecting and maintaining erosion protection works;

~~(h)~~(i) Emergency management procedures; and

~~(i)~~(j) A process for investigating complaints.

~~22.5~~23.6 The Consent Holder shall implement and comply with the OMM.

~~22.6~~23.7 A copy of the OMM shall be provided to the Regional Council Rivers and Drainage Manager so the culvert operational procedures can be included in the Council's Flood Warning Manual.

23.8 Subject top compliance with condition 23.9 of this resource consent, the OMM may be amended at any time.

23.1 A copy of the amended Plan shall be provided to the Regional Council for their certification accompanied by verification from appropriately experienced and qualified practitioner(s) that the amended OMM meets the conditions of this resource consent (including the objectives under condition 23.4). Regional Council's certification shall be limited to that the amended OMM:

(a) Complies with conditions 23.4 and 23.5 of this resource consent;

(b) Adopts the best practicable option(s); and

(c) Contains provisions that are enforceable.

~~22.7~~23.2 During river flood events that coincide with high sea levels, the culverts shall be operated in a manner that does not increase the existing flood risk at Maketu Road (that is, over topping of Maketu Road) and resultant inundation of property.

23.3 The Consent Holder shall meet with the Utilities Manager of Western Bay of Plenty District Council at least once per year to review the operation of the OMM in relation to flood management within Maketu Township.

23.4 The Consent Holder shall keep minutes of the meeting required by condition 23.3 of this resource consent. The minutes shall record:

(a) The names of those who attended the meeting;

(b) Main topics of discussion; and

(c) Any agreed outcomes.

The Consent Holder shall forward a copy of these minutes to the Regional Council within 20 working days of the meeting being held.

~~23.~~24. **Wetland Plan, Establishment and Maintenance**

24.1 Prior to the commencement of planting, a Wetland Plan for the proposed 19 hectare wetland north for Ford's Cut shall be prepared and submitted to the Regional Council for certification at least two months prior to the first planting season. Regional Council's certification shall be limited to that the Wetland Plan:

(a) Complies with conditions 24.2 and 24.4 of this resource consent;

(b) Adopts the best practicable option(s); and

(c) Contains provisions that are enforceable.

~~23.1~~24.2 The Wetland Plan shall be verified by appropriately experienced and qualified practitioners, confirming that the Wetland Plan:

(a) Meets the Wetland Plan objective(s); and

(b) Complies with the resource consent conditions.

~~23.2~~24.3 The objective of the Wetland Plan is to achieve a wetland of no less than 19 hectares of sustainable cover of indigenous plants that is as close to the original natural species diversity, taking into consideration the substantial and irreversible human-induced changes that have occurred to the landscape surrounding the Ongatoro/Maketu Estuary.

~~23.3~~24.4 The Wetland Plan shall provide details of how the above objective is to be achieved, including:

(a) A map showing the locations of the proposed work;

(b) Identification of the personnel or organisations that are to carry out the work;

(c) The timescale of activities;

(d) Initial monitoring of site growing conditions (especially soil salinity, soil saturation, tidal induced sediment erosion and deposition) after re-diversion;

(e) Creation of a planting zone plan based on site growing conditions and species tolerances;

(f) A programme for trial planting of plant species especially in areas where growing conditions are likely to be challenging (for example, areas exposed to open tidal water and those with higher salinity);

(g) Details of mass planting once species can be matched to site conditions with high confidence of success;

(h) Restoration planting plan produced that details the planting zones, species mixes, plant grades, site preparation and post-planting maintenance requirements;

(i) Identification of opportunities for Tangata Whenua and the community to be involved in planning and implementation of wetland restoration planting;

(j) Monitoring plan to objectively measure plant and species performance;

(k) Weed and pest control for each area; and

(l) Any ongoing requirements to ensure the objective of the Wetland Plan is achieved.

~~23.4~~24.5 The Consent Holder shall undertake all wetland works and weed and pest control in accordance with the Wetland Plan.

24.6 Subject to compliance with condition 24.7 of this resource consent, the Wetland Plan may be amended at any time.

24.1 A copy of the amended Plan shall be provided to the Regional Council for their certification accompanied by verification from appropriately experienced and qualified practitioner(s) that the amended Wetland Plan meets the conditions of this resource consent (including the objective under condition 24.3). Regional Council's certification shall be limited to that the amended Wetland Plan:

(a) Complies with conditions 24.2 and 24.4 of this resource consent;

(b) Adopts the best practicable option(s); and

(c) Contains provisions that are enforceable.

~~24.~~25. **Environmental Monitoring Programme**

~~24.1~~25.1 Prior to the commencement of works authorised by this resource consent, the Consent Holder shall prepare an Environmental Monitoring Programme that details the monitoring required under Conditions 27 through 32 (inclusive).

~~24.2~~25.2 The Programme shall be prepared and verified by appropriately experienced and qualified practitioners, and:

(a) Confirm that monitoring is carried out by suitably experienced and qualified specialists.

(b) Be designed and carried out using scientifically accepted methods which shall aim to obtain results with a high level of confidence.

(c) Be designed so as to be capable of testing and verifying the performance measures listed in these resource consent conditions.

(d) Be consistent with all conditions of this resource consent and the Consent Holder shall undertake all sampling, monitoring and reporting in accordance with the Programme.

(e) Include a description of the method(s) and frequency to be used for monitoring, including that undertaken for internal/management purposes.

(f) Include a map and, if appropriate, photos of all sampling sites.

(g) Specify the name of any laboratory and method of analysis of all samples collected.

(h) Detail the operation and maintenance of any automatic sampling or monitoring equipment.

(i) Identify opportunities for tangata whenua and the community to be involved in developing education or research projects associated with the Project, particularly around incorporating elements of Mataauranga Maori, and in wetland restoration and ecological monitoring.

~~25.~~26. **Reporting**

26.1 The Consent Holder shall, annually from the commencement of this resource consent and, by the 1st of August each year, provide to the Regional Council a written monitoring report that:

(a) Covers the previous 12 month period ending on the 31st of May;

(b) Provides a copy of the results of all monitoring for:

(i) The certified Wetland Plan;

(ii) Water Levels and Flows;

(iii) Erosion;

(iv) Water Quality and Shellfish;

(v) Ecology (flora);

(vi) Ecology (fauna); and

(vii) Sediment.

~~(a)~~(c) Provides an analysis and interpretation of those results prescribed by condition 26.1(b) of this resource consent;

(d) Identify and prescribe the proposed measures and responses to issues identified following an analysis of monitoring results; and

(e) Identify the means of measuring the effectiveness of proposed measures and responses under 26.1(d) including any necessary amendments to the Environmental Monitoring Programme.

~~25.2~~26.2 The monitoring parameters, site locations and frequency of sampling outlined in the Environmental Monitoring Programme and any other alterations may be reviewed as part of each monitoring report.

26.3 As part of its annual report required under Condition 26.1 of this resource consent, the Consent Holder may apply to the Regional Council for approval to reduce the frequency of the monitoring and/or the number of sampling sites (reduced sampling programme).

26.4 A request under condition 26.3 of this resource consent may only be made on the basis that monitoring results are not demonstrating any significant adverse effects and there is no longer considered to be a need to monitor as a result.

25.326.5 A request under condition 26.3 of this resource consent shall be verified by a appropriately experienced and qualified practitioner(s) and form part of an amended Environmental Monitoring Plan to be submitted to the Regional Council for approval and shall provide for the following amendments:

(a) Details regarding the frequency of monitoring;

(b) A description of the number and location of sampling sites where monitoring is to occur;

(c) Provision for monitoring to be increased again if results of monitoring demonstrate a reversal of the trend or otherwise unexpected monitoring results; and

(d) Ceasing or reintroducing the monitoring requirements for a particular parameter/contaminant.

25.426.6 The Consent Holder shall not apply to the Regional Council for approval to cease monitoring unless it has first undertaken a reduced sampling programme in accordance with Condition 26.3 above, to the satisfaction of the Regional Council.

25.526.7 Such a request shall form part of an amended Environmental Monitoring Plan under condition 26.3 and is to be submitted to the Regional Council for approval and which shall provide for the resumption of monitoring if so directed in writing by the Regional Council.

26.27. **Water levels and flows**

26.127.1 No less than 10 working days prior to the Stage 1 commissioning of any of the culverts, the Consent Holder shall commence permanent water level monitoring at the following sites:

(a) Kaituna River at Te Matai (map reference U14: 064 734);

(b) Kaituna River in the vicinity of the Ford Road pump station (map reference 1,900,715 E, 5,815,802 N NZTM);

(c) Ongatoro/Maketu Estuary at Maketu township;

(d) Fords Cut downstream of the diversion culverts. The monitoring device shall be suitable to be used for making operational decisions about the volume of water to be released into Ford's Cut; and

(e) Sea level data obtained from the NIWA gauge at Tauranga (Moturiki) as long as the site is maintained by NIWA.

27.2 Where monitoring stations do not currently exist at the sites specified in condition 27.1 of this resource consent or where existing sites cease to operate, the Consent Holder shall establish a new site to ensure compliance with the water level monitoring requirements of this resource consent.

~~26.2~~27.3 Data from the sites specified in condition 27.1 of this resource consent shall be used to manage the flow regime through the culverts in accordance with the OMM for the Project.

27.4 Within 12 months of Stage 2 commissioning, the water level and sea level data collected under Condition 27.1 of this resource consent shall be assessed to validate the assessment of effects by comparing the model predictions with actual changes, both before and after the Project under a range of flow conditions. If the actual reduction in average low flow ebb tide volume is greater than 20 per cent for equivalent low flow conditions the Consent Holder shall within 20 working days alter the Project settings in order to stay below that figure.

27.5 In addition to the water level monitoring required by condition 27.1 of this resource consent, for a minimum of two years following installation of the additional culvert for the Lower Kaituna Wildlife Management Reserve under condition 20, the Consent Holder shall undertake water level monitoring within 10 metres of the intake for this culvert via a new telemetered site.

27.6 Analysis of the data obtained by water level monitoring under conditions 27.1 and 27.5 shall be repeated to demonstrate that the flow rates to the Lower Kaituna Wildlife Management Reserve are as predicted.

Note: Results of the analysis carried out under condition 27.6 needs to be assessed for compliance with condition 20.4 and where a non-compliance is identified, the additional culvert will need to be altered as necessary.

~~27.~~28. **Erosion**

~~27.1~~28.1 Prior to the commencement of works authorised under this resource consent, the Consent Holder shall establish permanent markers in order to undertake transect monitoring in the vicinity of Papahikahawai Island to monitor for any erosion as a result of the diversion as follows:

(a) The transects shall be located at four sites to the west and south of the island with each transect extending at least 50 metres offshore to pick up changes in near shore depths over time. The transects shall also go from RL 2.0 metres Moturiki Datum to Mean High Water Springs.

(b) The transects shall be undertaken using Real Time Kinematic Global Positioning System.

(c) Transects shall be measured as follows:

(i) Annually from the commencement of construction until Stage 1 commissioning of the culverts; and then

(ii) twice a year for three years following commissioning and thereafter the frequency shall be assessed as part of the reporting requirements of Condition 26.3.

28.2 The Consent Holder shall undertake a Real Time Kinematic Global Positioning System survey of Maketu Spit shoreline from RL 2.0 metres Moturiki Datum to Mean High Water Springs over the area identified in Plan X.

~~27.2~~28.3 The first survey under condition 28.2 of this resource consent shall be undertaken at least one month prior to commissioning and thereafter annually for a period of five years. After five years of annual surveys the frequency of the survey shall be assessed as part of the reporting requirements of Condition 26.3. The purpose of the survey is to monitor for any erosion as a result of the diversion.

~~27.3~~28.4 The Consent Holder shall undertake surveys at Maketu Township and Beach Road to monitor for any erosion or aggradation as a result of the diversion as follows:

(a) A shoreline survey using Real Time Kinematic Global Positioning System in the area shown on Plan X along the dune toe or seaward edge of the vegetation;

(b) A minimum of six cross sections in total with two along Beach Road and four distributed around Maketu township from Park Road foreshore to the marae. Each cross section shall extend to no less than 50 metres offshore;

~~(b)~~(c) Bed and channel depths adjacent the Maketu Boat Ramp; and

~~(c)~~(d) The survey and transects shall be measured at least one month prior to commissioning and thereafter annually for five years. After five years of annual surveys the frequency of the survey shall be assessed as part of the reporting requirements of Condition 26.3.

28.5 The Consent Holder shall undertake a Real Time Kinematic Global Positioning System survey from the diversion channel intake to Y along both banks of the Lower Kaituna River every five years from Commissioning.

Advice Note: The purpose of the survey required by condition 28.5 is to provide information to the adjacent landowner and identify if there are adverse erosion effects attributable to the Project. Any erosion identified does not automatically mean non-compliance with this condition recognising that there has been a history of some erosion prior to the exercise of this resource consent.

~~27.4~~28.6 The Consent Holder shall analyse aerial photographs to identify any erosion as a result of the Project. The aerial photos used shall be those collected by Bay of Plenty Regional Council as part of their aerial photography programme, for the area that covers Maketu Spit, Ongatoro/Maketu Estuary and the lower Kaituna River. For

the purpose of clarity the Consent Holder is not required to undertake specific aerial photography in order to comply with this condition.

28.29. **Water Quality and Shellfish**

29.1 The Consent Holder shall use data loggers to measure dissolved oxygen, temperature and salinity in the Ongatoro/Maketū Estuary. Monitoring shall occur during the periods January to March (inclusive) and June to August (inclusive) with measurements made at intervals of 10 minutes (or less) for a period of at least 14 days.

29.2 The monitoring required by condition 29.1 shall occur at the following two locations shown in Figure 4.1, page 51 of Hamill (2014) "*Kaituna River Re-diversion Project: Ongatoro/Maketū Estuary condition and potential ecological effects*" attached to the application material:

(a) Mid-estuary; and

(b) Papahikahawai Lagoon 2.

29.3 The monitoring required by condition 29.1 shall be carried out as follows:

(a) Once prior to Stage 1 commissioning of the culverts;

(b) Once following Stage 1 but prior to Stage 2 commissioning of the culverts;

(c) Once within two years of Stage 2 commissioning of the culverts; and

(d) Once within five years of commissioning.

28.229.4 From Stage 1 commissioning, the Consent Holder shall undertake water quality monitoring three times every year during the period December to March (inclusive) at high tide and low tide. Samples shall be collected from Ford's Cut, the mid estuary and at Maketu boat ramp and analysed for:

(a) Total nitrogen;

(b) Nitrate-nitrite nitrogen;

(c) Total ammoniacal nitrogen;

(d) Total Phosphorus;

(e) Dissolved Reactive Phosphorus;

(f) Salinity;

(g) Faecal coliform bacteria; and

(h) Enterococci bacteria

29.5 On the same day that water samples required by condition 29.4 are collected, the Consent Holder shall sample five shellfish samples at three sites in the lower to-mid Ongatoro/Maketū Estuary comprising a minimum of:

(a) Two pipi; and

(b) Two cockle samples.

29.6 The shellfish samples required by condition 29.5 shall be tested for faecal coliform bacteria concentrations.

29.7 Annually, from Stage 1 commissioning for a period of five years, the Consent Holder shall undertake a pipi survey in the lower estuary for the period December to March (inclusive) comprising a minimum of eight replicate cores along a transect parallel to the channel. All shellfish in the cores shall be identified and counted in 5.0 millimetre size classes.

~~28.3~~29.8 Annually, from Stage 1 commissioning for a period of five years, the Consent Holder shall sample shellfish at three sites in the mid estuary during the period December to March (inclusive) comprising eight replicate sediment cores randomly collected over a 10 metre radius of the site location. All shellfish in the cores shall be identified and counted in 5.0 millimetre size classes.

~~29.~~30. **Ecology (fauna)**

~~29.1~~30.1 The Consent Holder shall undertake broad scale mapping of algae distribution and species in the estuary annually from Stage 1 commissioning for a period of five years. Reporting shall generally be in the form of Figure 2.1, page 6 of Hamill (2014) "*Kaituna River Re-diversion Project: Ongatoro/Maketū Estuary condition and potential ecological effects*" of the application material.

30.2 The Consent Holder shall undertake a survey of benthic macrofauna at the eight sites identified on Plan X and one site in Papahikahawai Island lagoon and one at the end of Papahikahawai Creek as follows:

(a) Infauna shall be sampled using eight replicate sediment cores randomly collected within a 10 metre radius of the site location and macrofauna identified;

(b) Epifuana shall be surveyed using eight randomly placed 0.25 m^2 quadrats; and

(c) The survey shall be undertaken once within two years of Stage 2 commissioning and then again at five years from Stage 2 commissioning.

Figure 3.1: Location of shellfish and macrofauna sampling sites. Additional infauna samples were collected at the eight sites with the red squares. Google Earth image from September 2012.

~~30.~~31. Ecology (flora)

~~30.1~~31.1 The Consent Holder shall undertake vegetation transect monitoring to determine the effects of the diversion on terrestrial and wetland vegetation as follows:

	Location	Frequency
Transects 1-8	As shown on Plan X with Transect 7 being extended to the waters edge of the new diversion channel	no later than 6 months after full commissioning and thereafter annually for 5 years
Transect 9	1 new transect to be established on land in the general location shown in Plan X	No less than 1 month prior to Stage 1 commissioning and then no later than 6 months after full commissioning and thereafter annually for 5 years
Transect 10 and 11	1 north-south and 1 east-west transect to be established on the land north of Fords Cut using paired plot methodology	No less than 1 month prior to Stage 1 commissioning and then within 6 months of each planting stage and then 12 monthly for 5 years

31.2 Transects should be measured using the methodology from section 3.1.5.1, on pages 18 to 20, of MacGibbon (2014) '*Kaituna River Re-diversion Project: Ongatoro/Maketū Estuary Enhancement Project – Terrestrial, Avian and Wetland Ecology*' provided as part of the application material in the locations shown on the plan below.

~~30.2~~31.3 In the event that access to Transects 6 and 8 cannot be gained from the landowner, there is no requirement to monitor. The Consent Holder shall notify the Regional Council in writing within 10 working days of access being denied identifying the attempts made to gain access.

~~30.3~~31.4 The salt marsh remnants and the small Sacocornia patch in Papahikahawai Creek shall be monitored using photopoint monitoring. Surveys shall be carried out annually from Stage 1 commissioning for a period of five years.

31.5 The vegetation composition and spatial extent along the true left bank of the re-diversion channel shall be surveyed prior to river re-diversion and monitored 6 monthly for a period of two years following commissioning.

~~31.~~32. **Sediment**

32.1 The Consent Holder shall undertake a survey of sediment and algae in the estuary. The survey shall involve visual assessment and core sampling of sediment and algae cover as follows:

(a) Along a minimum of three transects in the upper estuary;

(b) Along a minimum of three transects in the mid-estuary, (including one at the downstream end of Papahikahawai Creek); and

(c) Along a minimum of one transect in the lower estuary.

32.2 The sediment survey shall be undertaken:

(a) Once prior to the Stage 1 commissioning of the culverts;

(b) Once within one year of the Stage One commissioning of the culverts;

(c) Once within two years of the Stage 2 commissioning of the culverts; and

(d) Once within five years of the Stage 2 commissioning of the culverts.

~~31.1~~32.3 Variables assessed during the sediment survey shall include:

(a) Algae cover and type;

(b) Per cent cover of mud/silt;

(c) Depth of mud/silt; and

(d) Anoxic depth (that is, depth of RPD (redox potential discontinuity)).

~~31.2~~32.4 Sediment sampling shall be integrated with macrofauna sampling required under condition 29.8 of this resource consent.

~~32.~~33. **Community Relationships**

33.1 No less than 20 working days prior to the Consent Holder granting site possession to the Contractor, the Consent Holder shall facilitate and resource a public information session for the purposes of discussing the scheduling and staging for works and expectations regarding communication between the Consent Holder and the community.

33.2 In addition to the community in general, the Consent Holder shall, as a minimum, directly invite the following parties to the public information session required by condition 33.1 of this resource consent:

(a) Department of Conservation;

(b) Fish & Game;

(c) Tangata Whenua;

(d) The Manager of the Kaituna Catchment Control Scheme;

(e) Coastguard Maketu;

(f) Maketu Ongatoro Wetland Society Incorporated;

(g) Maketu Community Board;

(h) Te Maru o Kaituna; and

(i) R.D. & S.F. Waterhouse Partnership.

33.3 Following the public information session required by condition 33.1 but prior to the commencement of the works authorised by this resource consent, the Consent Holder shall prepare a Community Relationship Plan.

~~32.1~~33.4 The objective of the Plan is to enable Tangata Whenua, the general public and stakeholders to be kept informed of the works and restoration being undertaken and to facilitate the free flow of information between the Consent Holder and these parties.

~~32.2~~33.5 As a minimum, the Community Relationship Plan shall:

(a) Identify the frequency of communication, taking into account different phases of the Project (such as the works phase, wetland works, and monitoring and reporting phases); and

(b) As a minimum, make provision for Public Information Sessions as follows:

(i) Once every three months during the construction phase;

(ii) Once per year for the first five years following Stage 1 commissioning of the culverts; and then

(iii) Once every two years for the duration of the consent.

~~(b)~~(c) Identify an agreed method(s) for providing information, such as a website or other form of communication;

~~(c)~~(d) Identify the nature of information to be made available, including progress updates on the project, monitoring results, summaries of reports and complaints received with respect to the Project;

~~(d)~~(e) Identifying the procedures for providing feedback to the Consent Holder on the implementation of the project.

33.6 The Consent Holder shall directly invite, in writing, those parties prescribed in condition 33.2 to the ongoing Public Information Sessions required by condition 33.5 of this resource consent.

33.7 The Consent Holder shall keep minutes of the Public Information Sessions required by condition 33.5 of this resource consent. The minutes shall record:

(a) The names of those who attended the meeting;

(b) Main topics of discussion; and

(c) Any agreed outcomes.

The Consent Holder shall forward a copy of these minutes to the Regional Council within 20 working days of the meeting being held.

~~32.3~~33.8 The Consent Holder shall resource and implement the Community Relationship Plan to the satisfaction of the Regional Council.

34. **Plans for Certification – Moorings**

34.1 Prior to the commencement of the works authorised by this resource consent, the Consent Holder shall submit a final plan for the proposed moorings and associated facilities for the certification of the Regional Council. This plan shall include:

(a) The final location of the proposed moorings north of the 'salinity block' in general accordance with BOPRC Plan Number RC67958/6;

(b) The final orientation and design of the proposed moorings;

(c) The provision of two permanent moorings for Coastguard Maketu and the R.D. & S.F. Waterhouse Partnership each comprising:

(i) A minimum length of 12.0 metres and a maximum length of 15.0 metres;

(ii) A maximum width of 3.0 metres; and

(iii) Jetties, if required, with a maximum lengths of 10.0 metres and maximum widths of 3.0 metres.

(d) The provision of a temporary mooring for the use of the commercial barge operator;

(e) Timber pole breakwater; and

(f) Car parking and security lighting and fencing.

34.2 The Consent Holder shall construct the moorings and associated facilities in accordance with the certified plan under condition 34.1 of this resource consent prior to the commencement of construction of the 'salinity block' shown on BOPRC Plan Number RC67958/6.

35. **Plans for Certification – Boat Ramp**

35.1 Prior to the commencement of the works authorised by this resource consent, the Consent Holder shall submit a final plan for the proposed public boat ramp and associated facilities for the certification of the Regional Council. This plan shall include:

(a) The final location of the proposed boat ramp in general accordance with BOPRC Plan Number RC67958/2;

(b) The final orientation, design and materials of the proposed boat ramp, log deflectors and jetty;

(c) The provision of a public boat ramp comprising a maximum length of 28 metres in length (13 metres exposed at high tide) by nine metres in width;

(d) The provision of a timber jetty or floating pontoon comprising a maximum length of 16 metres by 1.3 metres in width; and

(e) The provision of a timber ramp to access the jetty or pontoon comprising a maximum length of 6.0 metres by 1.3 metres on width.

35.2 The Consent Holder shall construct the public boat ramp and associated facilities in accordance with the certified plan under condition 35.1 of this resource consent.

36. **Papahikahawai and Maketu Spit Bridge**

36.1 Prior to the commencement of the construction of the foot/light all terrain vehicle bridge linking Papahikahawai Island to the Maketu Spit, the Consent Holder shall submit to the Regional Council a final plan that has been verified by suitably qualified and experienced engineering and landscape architecture practitioners that:

(a) The bridge has been designed to an acceptable engineering standard in terms of its intended use and location within the coastal environment; and

(b) The bridge has been designed (including materials) that are appropriate in the landscape context and will not compromise the existing landscape values of the subject locality.

36.2 The bridge shall be located in general accordance with BOPRC Plan Number RC67958/11.

36.3 The bridge shall be constructed in accordance with the verified plan under condition 36.1 of this resource consent.

~~33.~~37. **Review**

~~33.1~~37.1 The Regional Council may, on the five last working days of September and/or March, serve notice of its intention to review the conditions of this resource consent under section 128 of the Resource Management Act 1991 for the purpose of:

(a) Dealing with any adverse effect on the environment which may arise from the exercise of the resource consent and which it is appropriate to deal with at a later stage; or

(b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment; or

(c) Requiring the Consent Holder to carry out monitoring in addition to or instead of that required by the resource consent.

(d) Addressing any issues identified in the annual reports submitted under condition 26 of this resource consent.

~~34.~~38. **Term of Consent**

~~34.1~~38.1 With the exception of the 'Salinity Block' and associated wetland area identified on BOPRC Plan Numbers RC67958/1 and RC67958/6, the term of the consent is 35 years.

38.2 The reclamation for the 'Salinity Block' and associated wetland area identified on BOPRC Plan Numbers RC67958/1 and RC67958/6 shall have an unlimited consent term in accordance with section 123(a) of the Resource Management Act 1991.

~~35.~~39. Resource Management Act Charges

~~35.1~~39.1 The Consent Holder shall pay the Bay of Plenty Regional Council such administrative charges as are fixed from time to time by the Regional Council in accordance with section 36 of the RMA.

Advice notes

The Consent Holder will be seeking an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014, prior to the commencement of construction. The authority may include requirements for detailed investigations and monitoring effects and are also likely to require the preparation of a Heritage Management Plan (or an Archaeological Management Plan).

Appendix 24 – Reporting Officer's Recommended Draft Designation Conditions

Reporting Officer's Recommended Draft Designation conditions

DEFINITIONS

The following terms within these conditions shall have the following definitions:

"District Council" means the Western Bay District Council's Chief Executive Officer or nominee

"Requiring Authority" means the Bay of Plenty Regional Council

"Project" means the Kaituna River Re-Diversion and Ongatoro/Maketu Estuary Enhancement Project and associated activities

"Works" means the construction works required to give effect to the Project

Notices of requirement

The following Notices of Requirement are authorised by these conditions:

a) Designation for the construction of boating facilities, enhancement works, earthworks and diversion works

b) Designation for the operation and maintenance of the Project including diversion, enhancement works and boating facilities.

Subject to the following conditions:

Plan

The extent of the designations are as shown on the plan prepared by Opus International Consultants Limited referenced as Drawing Number 2_1542_115_5235, Sheet Number 21, Revision 4 and dated the 7th of April 2015.

General Conditions 1 to 9 not to be included in the District Plan

1. **All Designations**

1.1 The District Council shall be notified in writing of the intention to commence construction work at least two months prior to the start of any construction activities on site.

1.2 Prior to commencement of works the Requiring Authority or their agent shall arrange and conduct a pre-construction site meeting between the District Council and the primary contractor. At a minimum, the following shall be covered at the meeting:

(a) Scheduling and staging of the works;

(b) Responsibilities of all relevant parties;

(c) Contact details for all relevant parties;

(d) Expectations regarding communication between all relevant parties;

(e) Procedures for implementing any amendments to the management plans submitted;

(f) Site inspection;

(g) Confirmation that all relevant parties have copies of the contents of this designation document; and

(h) All associated erosion and sediment control plans and methodology.

1.3 A meeting shall also be held with the directly affected landowners and Tangata Whenua representatives to discuss:

(a) Scheduling and staging of the works:

(b) Contact details for all parties: and

(c) Expectations regarding communication between all parties.

1.4 All operational personnel involved with the construction of the Project shall be made aware of, and have access to, all designation documents, conditions and schedules applicable to the construction of the Project.

2. **Complaints**

2.1 The Requiring Authority shall, upon receipt of any complaint in relation to construction, promptly:

(i) investigate the complaint,

(ii) where appropriate remedy or mitigate the cause of the complaint; and

(iii) inform the District Council as soon as practicable, but no later than 48 hours of receiving the complaint, of the details of the complaint and the action taken.

2.2 The Requiring Authority shall keep and maintain a complaint register for all aspects of operations in relation to construction activities. The complaints register shall include:

(i) the date, time and type of complaint,

(ii) the cause of the complaint, and

(iii) the action taken by the Requiring Authority in response to the complaint and steps to prevent a reoccurrence.

2.3 The complaints register shall be made available to the District Council at all times on request.

3. **Construction Environmental Management Plan**

3.1 At least 20 working days prior to the Requiring Authority granting site possession to the contractor and site establishment works commencing, the Requiring Authority shall submit to the District Council a Construction Environmental Management Plan ('CEMP') outlining the construction activities and all practices and procedures to be adopted in the construction of the Project.

3.2 The CEMP shall be verified by independent appropriately experienced and qualified practitioners. The certification from the certifier shall confirm that:

(a) The CEMP adopts the mitigation measures identified in the application documentation and / or otherwise required under the conditions of the consent; and

(b) The implementation of the CEMP will appropriately mitigate the anticipated adverse effects of the public work.

3.3 Works shall not commence until the certified CEMP described in condition 3.2 has been received and confirmed in writing by the District Council. If written acknowledgement is not provided within 10 working days of the Requiring Authority sending the certification, the verification shall be deemed to be confirmed.

3.4 The objectives of the CEMP shall be:

(a) To ensure that construction activities achieve compliance with the applicable designation conditions for these activities;

(b) To minimise the environmental nuisance effects of construction activities;

(c) To ensure that disturbance is limited to that necessary to undertake the construction works;

(d) To minimise the release of sediment during disturbance to the bed of any waterway; and

(e) To limit disturbance of the beds and margins of the coastal marine area and waterways will be limited to the extent necessary to undertake construction works, and to avoid or mitigate adverse effects on the quality and passage of coastal and surface water and aquatic habitat; and

(f) To ensure that disturbance does not cause flooding or erosion.

3.5 The CEMP will address, as a minimum, the following aspects of the works:

(a) Timing of construction works including construction of the diversion channel inlet construction outside of during whitebait fishing season (15th of August to the 30th of November (inclusive));

(b) Working hours; and

(c) Restrictions on public access.

3.6 The following supplementary management plans shall form subsets of the verified CEMP and must be submitted to District Council concurrently with the CEMP:

(a) Erosion, Sediment & Dust Control Plan;

(b) Construction Traffic Management Plan; and

(c) Construction-Flood Management Plan.

3.7 In the event of any conflict between designation conditions and CEMP practices and procedures, the designation conditions shall be complied with.

3.8 The CEMP may be amended at any time provided that any amendments made maintain or enhance the degree and / or extent to which adverse environmental effects attributable to the construction, maintenance or operation of the Project are avoided or mitigated; and those amendments do not result in non-compliance with any resource consent condition.

3.9 Any amendments made to the certified CEMP shall be verified and operationalized 3.1 and 3.2 of this Designation. in the manner required by conditions.

4. Compliance with CEMP

4.1 The Requiring Authority shall implement and comply with the CEMP and the Supplementary Management Plans set out in conditions 3, 5, 7 and 8.

Note: The CEMP prepared in relation to the Bay of Plenty Regional Council resource consents will be the same CEMP as that prepared in relation to the designation submitted to Western Bay of Plenty District Council but will include different supplementary plans specific to the designation.

5. Traffic Management

5.1 The Requiring Authority shall submit a Construction Traffic Management Plan ('CTMP') to the District Council for certification at least 15 Working Days prior to commencement of any distinct stages of the works requiring traffic management.

5.2 The purpose of the CTMP is to outline the proposed procedures, requirements and standards necessary for managing the traffic effects of the works to achieve the outcomes and standards contained in conditions 5.2 to 5.6 (inclusive).

5.3 Construction shall not commence until the Requiring Authority has received District Council's written certification of the CTMP.

5.4 In managing traffic during the works, the Requiring Authority shall achieve the following outcomes:

(a) Minimise the disruption to users of local travel routes;

(b) Maintain a safe passage for all travel routes, including road and footpath users affected by the Work;

(c) The provision of vehicle access to number 83 Ford Road and number 336 Kaituna Road; and

(d) The provision of vehicle access for Coastguard Maketu, the R.D. & S.F. Waterhouse Partnership and the barge operator to their moorings and on-shore facilities within Ford's Loop.

5.5 The CTMP shall be consistent with the version of the New Zealand Transport Agency Code of Practice for Temporary Traffic Management (COPTTM) which applies at the time the CTMP is prepared. Where it is not possible to adhere to this standard, the COPTTM's prescribed Engineering Exception Decision (EED) process will be followed, which will include appropriate mitigation measures agreed with the District Council.

5.6 The CTMP shall, as a minimum, address the following aspects of construction traffic:

(a) Construction sequence and methodology for all traffic activity associated with the Project;

(b) Hours of operation, including times and days when traffic-generating activities would occur;

(c) Description of the types of vehicles that will be used on public roads;

(d) Details and locations of where works will occur within the road reserve and the method of traffic management control to be used;

(e) Management strategies where full compliance with safety standards may not be achieved, including active control of traffic at locations where full safe stopping distances cannot be achieved for the temporary traffic volumes expected;

(f) Description of routes for haulage of materials on public roads, and measures for ensuring the road network is maintained in a satisfactory condition;

(g) How provision will be made for access to affected properties during construction;

(h) Temporary work-site access arrangements;

(i) Procedures for liaison between the community, the Requiring Authority, the contractor and the relevant road controlling authorities about traffic related matters.

(j) Monitoring of road closures and deviations to ensure that excessive disruption or traffic hazards are not created.

(k) Monitoring of hazardous traffic conditions arising from dust on public roads.

(l) On-going monitoring of traffic conditions to ensure road safety is maintained.

5.7 The Requiring Authority shall take the best practicable option to avoid the deposit of debris onto public roads during the construction period. Any facilities required to achieve this outcome shall be installed prior to works commencing.

6. Construction Noise

6.1 The Requiring Authority shall ensure that all works shall be designed and carried out to ensure that the noise from the work complies with the New Zealand Construction Standard NZS6803:1999 “Acoustics - Construction Noise” at all times at 1 metre from the most exposed façade of any existing occupied dwelling.

7. Erosion, Sediment and Dust Control

7.1 The works shall not cause noxious, offensive or objectionable levels of dust beyond the designation boundaries.

7.2 An Erosion, Sediment and Dust Control Management Plan (ESDCP) shall be prepared as part of the CEMP in accordance with Bay of Plenty Regional Council Guideline No. 2010/01 - “Erosion and Sediment Control for Land Disturbing Activities” and shall give effect to :

(a) Best practicable methods for controlling dust emissions during construction;

(b) Procedures for monitoring the effectiveness of the controls;

(c) A complaints procedure; and

(d) Inspection and auditing procedures and contingency plans for if controls fail.

8. Construction Flood Management Plan

8.1 The Construction Flood Management Plan (‘CFMP’) shall be developed in consultation with the Bay of Plenty Regional Council Rivers and Drainage Manager and the Utilities Manager of the Western Bay of Plenty District Council.

8.2 The objectives of the CFMP shall be to:

(a) Minimise or avoid any increase in flood risk arising as a consequence of undertaking the works;

(b) Ensure that the Contractor takes into account the potential for increased flood risk when planning and executing work; and

(c) Ensure that in the event of a flood occurring at a construction site processes and procedures are in place to manage such an event.

8.3 The CFMP shall as a minimum address the following matters:

(a) Provision of a 24 hour emergency contact person who is able to respond to a flood warning and implement emergency control measures;

(b) An outline of the probability of various flood levels;

(c) Construction methodology and sequencing for the installation of the Fords Cut culverts, the diversion channel, widening and deepening of Fords Cut and construction of the new stopbank;

(d) Provision to restrict the length of stopbank being worked on and the number of work fronts affecting stopbanks to the minimum practicable;

(e) Provision of full flood protection in association with the construction of the diversion channel and relocation of the Titchmarsh stopbank; and

(f) Existing flood management procedures for the Kaituna Catchment Control Scheme as included in the Regional Council's Flood Warning Manual.

8.4 Flood protection systems must be fully reinstated for weekends and public holidays unless alternative interim measures, as approved by the Bay of Plenty Regional Council Rivers and Drainage Manager, are implemented.

8.5 The Requiring Authority shall maintain a stockpile of material and sufficient plant on site to be able to undertake immediate reinstatement of stopbank works in the event of a flood warning.

8.6 Along the alignment of the proposed diversion channel full flood protection shall be maintained by the existing stopbank except for when the tie-ins are made at each end. The period under which the tie-ins shall be agreed with the Bay of Plenty Regional Council Natural Hazards Group prior to the works being undertaken.

9. Network Utilities

9.1 At the time of Outline Plan preparation and at least 20 working days prior to the requiring Authority granting site possession to the Contractor, the Requiring Authority shall submit to the District Council a Network Utility Management Plan (NUMP) prepared jointly by the Requiring Authority, or its agents, and Powerco.

9.2 The NUMP submitted in accordance with this condition shall record if there is agreement between the parties and, if not, where and why there is disagreement and the steps taken in an attempt to resolve that disagreement. These matters can then be considered by the Council when assessing the Outline Plan.

9.3 All construction activities of the Project are to be undertaken in accordance with the NUMP.

9.4 The purpose of the NUMP shall be to ensure that the enabling works, design and construction of the project adequately take account of, and include measures to address the safety, integrity, protection or, where necessary, relocation of existing electricity network utilities.

9.5 The NUMP shall include but need not be limited to methods and measures to:

(a) Identify protocols for liaising with Powerco and for overseeing and approving works that impact on services.

(b) Accurately identify and verify the location of existing electricity network utilities,

(c) Identify appropriate measures for working near services or the appropriate standards if they have to be relocated.

(d) Identify timing and sequencing of work associated with relocation and / or protection of electricity utility services.

(e) Ensure that existing, relocated and/or replacement electricity network utility infrastructure can be accessed for maintenance at all reasonable times, or emergency works at all times during construction activities.

(f) To appropriately manage the effects of dust and any other material potentially resulting from construction activities and able to cause material damage, beyond normal wear and tear to overhead electricity lines.

(g) To ensure that no activity is undertaken during construction that would result in ground vibrations and/or ground instability likely to cause material damage to overhead electricity lines, including support structures.

(h) To ensure the continued operation and supply of electricity infrastructure services, which may include, but not be limited to, any relocated or replacement electricity lines and cables being made operational prior to the termination of existing lines and cables; and

(i) Confirm that the works will comply with the minimum separation distances set out in the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP34:2001).

Conditions 10 – 12 to be included in the District Plan for All Designations

10. **Wetland Plan, Establishment and Maintenance**

10.1 Prior to the commencement of planting, a Wetland Plan shall be prepared and submitted to the District Council at least two months prior to the first planting season..

10.2 The Wetland Plan shall be verified by appropriately experienced and qualified practitioners, confirming that the Wetland Plan:

(a) Meets the Wetland Plan objective(s); and

(b) Complies with the designation conditions.

10.3 The objective of the Wetland Plan is to achieve a state where there is a sustainable cover of indigenous plants in new wetland areas that is as close to the original natural species diversity that can be achieved taking into consideration the substantial and irreversible human-induced changes that have occurred to the landscape surrounding the Ongatoro/Maketu Estuary and to manage areas of existing wetland within the Designation area.

10.4 The Wetland Plan shall provide details of how the above objective is to be achieved, including:

(a) A map showing the locations of the proposed work;

(b) Identification of the personnel or organisations that are to carry out the work;

(c) The timescale of activities;

(d) Initial monitoring of site growing conditions (especially soil salinity, soil saturation, tidal induced sediment erosion and deposition) after re-diversion;

(e) Creation of a planting zone plan based on site growing conditions and species tolerances;

(f) A programme for trial planting of plant species especially in areas where growing conditions are likely to be challenging (for example, areas exposed to open tidal water and those with higher salinity);

(g) Details of mass planting once species can be matched to site conditions with high confidence of success;

(h) Restoration planting plan produced that details the planting zones, species mixes, plant grades, site preparation and post-planting maintenance requirements;

(i) Identification of opportunities for Tangata Whenua and the community to be involved in planning and implementation of wetland restoration planting;

(j) Monitoring plan to objectively measure plant and species performance;

(k) Weed and pest control for each area; and

(l) Any ongoing requirements to ensure the objective of the plan is achieved.

10.5 The Requiring Authority shall undertake all wetland works and weed and pest control in accordance with the Wetland Plan.

10.6 The Wetland Plan may be amended at any time provided that any amendments made maintain or enhance the degree and / or extent to which adverse environmental effects attributable to the construction, maintenance or operation of the Project are avoided or mitigated; and those amendments do not result in non-compliance with any designation condition. A copy of the amended Plan shall be provided to the District Council.

11. Community Relationships

11.1 No less than 20 working days prior to the Requiring Authority granting site possession to the Contractor, the Requiring Authority shall facilitate and resource a public information session for the purposes of discussing the scheduling and staging for works and expectations regarding communication between the Requiring Authority and the community.

11.2 In addition to the community in general, the Requiring Authority shall, as a minimum, directly invite the following parties to the public information session required by condition 11.1 of this designation:

(a) Department of Conservation;

(b) Fish & Game;

(a) Tangata Whenua;

(b) The Manager of the Kaituna Catchment Control Scheme;

(c) Coastguard Maketu;

(d) Maketu Ongatoro Wetland Society Incorporated;

(e) Maketu Community Board;

(f) Te Maru o Kaituna; and

(g) R.D. & S.F. Waterhouse Partnership.

11.3 Following the public information session required by condition 11.1 but prior to the commencement of the works authorised by this Designation, the Requiring Authority shall prepare a Community Relationship Plan.

11.4 The objective of the Plan is to enable Tangata Whenua, the general public and stakeholders to be kept informed of the works and restoration being undertaken and to facilitate the free flow of information between the Requiring Authority and these parties.

11.5 As a minimum, the Community Relationship Plan shall:

(a) Identify the frequency of communication, taking into account different phases of the project (such as the works phase, wetland works, and monitoring and reporting phases);

(b) Make provision for a public information session at least every two years for the duration of the consent, and more regularly during construction and commissioning.

(c) Identify an agreed method(s) for providing information, such as a website or other form of communication;

(d) Identify the nature of information to be made available, including progress updates on the project, monitoring results, summaries of reports and complaints received with respect to the project; and

(e) Identifying the procedures for providing feedback to the Requiring Authority on the implementation of the project.

11.6 The Plan shall be implemented to the satisfaction of the District Council.

12. Accidental Discovery

12.1 A Cultural Monitor shall be employed by the Requiring Authority to monitor, as necessary, and report any discoveries during earthworks.

12.2 Prior to construction commencing the Requiring Authority shall provide training to those working on the Project on the accidental discovery protocols.

12.3 In the event of any archaeological site or material being uncovered or reasonably suspected to have been uncovered during the exercise of this designation, activities in the vicinity of the discovery shall cease and the Requiring Authority shall notify the District Council as soon as possible.

12.4 If any koiwi (human remains) uncovered, or reasonably suspected to have been uncovered during the exercise of this resource consent, the Requiring Authority or their representative shall:

(a) Notify Heritage New Zealand's Pouhere Taonga Regional Archaeologist, the New Zealand Police and the District Council; and

(b) Undertake no further work may take place until future actions have been agreed by all parties.

12.5 In the event of an accidental discovery, the Requiring Authority shall notify Te Rūnanga o Ngati Whakaue ki Maketu, Tapuika Iwi Authority, Te Maru o Ngati Rangiwewehi, Waitaha Raupatu Trust, Ngāti Pikiao, Ngāti Tūnohopū and Ngati Makino Heritage Trust and shall ensure, as far as practicable, that procedures are undertaken in accordance with:

(a) The Ngati Rangiwewehi koiwi and accidental discovery protocol;

(b) The Waitaha Raupatu Trust, Ngati Makino Heritage Trust, Komiti o Ngati Pikiao (Ki Maketu), Ngati Tunohopu Accidental Discovery Protocols; and

(c) The Te Taonga Tuturu Act - immediate notification of Tapuika representatives in the event that a site or objects of significance are discovered during works.

Note: This condition is in addition to any agreements that are in place between the Requiring Authority and the Tangata Whenua or Heritage New Zealand Pouhere Taonga.

***Advice Note**: The Requiring Authority will be seeking an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014, prior to the commencement of construction. The authority may include requirements for detailed investigations and monitoring effects and are also likely to require the preparation of a Heritage Management Plan (or an Archaeological Management Plan).*

Reporting Officer's Recommended Draft Designation conditions

DEFINITIONS

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"Requiring Authority" means the Bay of Plenty Regional Council

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Notices of requirement

The following Notices of Requirement are authorised by these conditions:

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b) Designation for the operation and maintenance of the Project including diversion, enhancement works and boating facilities.

Subject to the following conditions:

Plan

The extent of the designations are as shown on the plan prepared by Opus International Consultants Limited referenced as Drawing Number 2_1542_115_5235, Sheet Number 21, Revision 4 and dated the 7th of April 2015.

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1. **All Designations**

1.1 The District Council shall be notified in writing of the intention to commence construction work at least two months prior to the start of any construction activities on site.

1.2 Prior to commencement of works the Requiring Authority or their agent shall arrange and conduct a pre-construction site meeting between the District Council and the primary contractor. At a minimum, the following shall be covered at the meeting:

(a) Scheduling and staging of the works;

(b) Responsibilities of all relevant parties;

(c) Contact details for all relevant parties;

(d) Expectations regarding communication between all relevant parties;

(e) Procedures for implementing any amendments to the management plans submitted;

(f) Site inspection;

(g) Confirmation that all relevant parties have copies of the contents of this designation document; and

~~(g)~~(h) All associated erosion and sediment control plans and methodology.

1.3 A meeting shall also be held with the directly affected landowners and Tangata Whenua representatives to discuss:

(a) Scheduling and staging of the works;

(b) Contact details for all parties; and

~~(h)~~(c) Expectations regarding communication between all parties.

~~1.3~~1.4 All operational personnel involved with the construction of the Project shall be made aware of, and have access to, all designation documents, conditions and schedules applicable to the construction of the Project.

2. Complaints

2.1 The Requiring Authority shall, upon receipt of any complaint in relation to construction, promptly:

(i) investigate the complaint,

(ii) where appropriate remedy or mitigate the cause of the complaint; and

(iii) inform the District Council as soon as practicable, but no later than 48 hours of receiving the complaint, of the details of the complaint and the action taken.

2.2 The Requiring Authority shall keep and maintain a complaint register for all aspects of operations in relation to construction activities. The complaints register shall include:

(i) the date, time and type of complaint,

(ii) the cause of the complaint, and

(iii) the action taken by the Requiring Authority in response to the complaint and steps to prevent a reoccurrence.

2.3 The complaints register shall be made available to the District Council at all times on request.

3. **Construction Environmental Management Plan**

3.1 At least 20 working days prior to the Requiring Authority granting site possession to the contractor and site establishment works commencing, the Requiring Authority shall submit to the District Council a Construction Environmental Management Plan ('CEMP') outlining the construction activities and all practices and procedures to be adopted in the construction of the Project.

3.2 The CEMP shall be verified by independent appropriately experienced and qualified practitioners. The certification from the certifier shall confirm that:

(a) The CEMP adopts the mitigation measures identified in the application documentation and / or otherwise required under the conditions of the consent; and

(b) The implementation of the CEMP will appropriately mitigate the anticipated adverse effects of the public work.

3.3 Works shall not commence until the certified CEMP described in condition 3.2 has been received and confirmed in writing by the District Council. If written acknowledgement is not provided within 10 working days of the Requiring Authority sending the certification, the verification shall be deemed to be confirmed.

3.4 The objectives of the CEMP shall be:

(a) To ensure that construction activities achieve compliance with the applicable designation conditions for these activities;

(b) To minimise the environmental nuisance effects of construction activities;

(c) To ensure that disturbance is limited to that necessary to undertake the construction works;

(d) To minimise the release of sediment during disturbance to the bed of any waterway; and

(e) To limit disturbance of the beds and margins of the coastal marine area and waterways will be limited to the extent necessary to undertake construction works, and to avoid or mitigate adverse effects on the quality and passage of coastal and surface water and aquatic habitat; and

(f) To ensure that disturbance does not cause flooding or erosion.

3.5 The CEMP will address, as a minimum, the following aspects of the works:

(a) Timing of construction works including construction of the diversion channel inlet construction outside of during whitebait fishing season (15th of August to the 30th of November (inclusive));

(b) Working hours; and

(c) Restrictions on public access.

3.6 The following supplementary management plans shall form subsets of the verified CEMP and must be submitted to District Council concurrently with the CEMP:

(a) Erosion, Sediment & Dust Control Plan;

(b) Construction Traffic Management Plan; and

(c) Construction-Flood Management Plan.

3.7 In the event of any conflict between designation conditions and CEMP practices and procedures, the designation conditions shall be complied with.

3.8 The CEMP may be amended at any time provided that any amendments made maintain or enhance the degree and / or extent to which adverse environmental effects attributable to the construction, maintenance or operation of the Project are avoided or mitigated; and those amendments do not result in non-compliance with any resource consent condition.

~~3.8~~3.9 Any amendments made to the certified CEMP shall be verified and operationalized 3.1 and 3.2 of this Designation. in the manner required by conditions.

4. **Compliance with CEMP**

4.1 The Requiring Authority shall implement and comply with the CEMP and the Supplementary Management Plans set out in conditions 3, 5, 7 and 8.

Note: The CEMP prepared in relation to the Bay of Plenty Regional Council resource consents will be the same CEMP as that prepared in relation to the designation submitted to Western Bay of Plenty District Council but will include different supplementary plans specific to the designation.

5. **Traffic Management**

5.1 The Requiring Authority shall submit a Construction Traffic Management Plan ('CTMP') to the District Council for certification at least 15 Working Days prior to commencement of any distinct stages of the works requiring traffic management.

~~5.1~~5.2 The purpose of the CTMP is to outline the proposed procedures, requirements and standards necessary for managing the traffic effects of the works to achieve the outcomes and standards contained in conditions 5.2 to 5.6 (inclusive).

~~5.2~~5.3 Construction shall not commence until the Requiring Authority has received District Council's written certification of the CTMP.

~~5.3~~5.4 In managing traffic during the works, the Requiring Authority shall achieve the following outcomes:

(a) Minimise the disruption to users of local travel routes;

(b) Maintain a safe passage for all travel routes, including road and footpath users affected by the Work;

(c) The provision of vehicle access to number 83 Ford Road and number 336 Kaituna Road; and

~~(b)~~(d) The provision of vehicle access for Coastguard Maketu, the R.D. & S.F. Waterhouse Partnership and the barge operator to their moorings and on-shore facilities within Ford's Loop.

~~5.4~~5.5 The CTMP shall be consistent with the version of the New Zealand Transport Agency Code of Practice for Temporary Traffic Management (COPTTM) which applies at the time the CTMP is prepared. Where it is not possible to adhere to this standard, the COPTTM's prescribed Engineering Exception Decision (EED) process will be followed, which will include appropriate mitigation measures agreed with the District Council.

~~5.5~~5.6 The CTMP shall, as a minimum, address the following aspects of construction traffic:

(a) Construction sequence and methodology for all traffic activity associated with the Project;

(b) Hours of operation, including times and days when traffic-generating activities would occur;

(c) Description of the types of vehicles that will be used on public roads;

(d) Details and locations of where works will occur within the road reserve and the method of traffic management control to be used;

(e) Management strategies where full compliance with safety standards may not be achieved, including active control of traffic at locations where full safe stopping distances cannot be achieved for the temporary traffic volumes expected;

(f) Description of routes for haulage of materials on public roads, and measures for ensuring the road network is maintained in a satisfactory condition;

(g) How provision will be made for access to affected properties during construction;

(h) Temporary work-site access arrangements;

(i) Procedures for liaison between the community, the Requiring Authority, the contractor and the relevant road controlling authorities about traffic related matters.

(j) Monitoring of road closures and deviations to ensure that excessive disruption or traffic hazards are not created.

(k) Monitoring of hazardous traffic conditions arising from dust on public roads.

(l) On-going monitoring of traffic conditions to ensure road safety is maintained.

~~5.6~~5.7 The Requiring Authority shall take the best practicable option to avoid the deposit of debris onto public roads during the construction period. Any facilities required to achieve this outcome shall be installed prior to works commencing.

6. Construction Noise

6.1 The Requiring Authority shall ensure that all works shall be designed and carried out to ensure that the noise from the work complies with the New Zealand Construction Standard NZS6803:1999 “Acoustics - Construction Noise” at all times at 1 metre from the most exposed façade of any existing occupied dwelling.

7. Erosion, Sediment and Dust Control

7.1 The works shall not cause noxious, offensive or objectionable levels of dust beyond the designation boundaries.

7.2 An Erosion, Sediment and Dust Control Management Plan (ESDCP) shall be prepared as part of the CEMP in accordance with Bay of Plenty Regional Council Guideline No. 2010/01 - “Erosion and Sediment Control for Land Disturbing Activities” and shall give effect to :

(a) Best practicable methods for controlling dust emissions during construction;

(b) Procedures for monitoring the effectiveness of the controls;

(c) A complaints procedure; and

(d) Inspection and auditing procedures and contingency plans for if controls fail.

8. Construction Flood Management Plan

8.1 The Construction Flood Management Plan (‘CFMP’) shall be developed in consultation with the Bay of Plenty Regional Council Rivers and Drainage Manager and the Utilities Manager of the Western Bay of Plenty District Council.

8.2 The objectives of the CFMP shall be to:

(a) Minimise or avoid any increase in flood risk arising as a consequence of undertaking the works;

(b) Ensure that the Contractor takes into account the potential for increased flood risk when planning and executing work; and

(c) Ensure that in the event of a flood occurring at a construction site processes and procedures are in place to manage such an event.

8.3 The CFMP shall as a minimum address the following matters:

(a) Provision of a 24 hour emergency contact person who is able to respond to a flood warning and implement emergency control measures;

(b) An outline of the probability of various flood levels;

(c) Construction methodology and sequencing for the installation of the Fords Cut culverts, the diversion channel, widening and deepening of Fords Cut and construction of the new stopbank;

(d) Provision to restrict the length of stopbank being worked on and the number of work fronts affecting stopbanks to the minimum practicable;

(e) Provision of full flood protection in association with the construction of the diversion channel and relocation of the Titchmarsh stopbank; and

~~(e)~~(f) Existing flood management procedures for the Kaituna Catchment Control Scheme as included in the Regional Council's Flood Warning Manual.

8.4 Flood protection systems must be fully reinstated for weekends and public holidays unless alternative interim measures, as approved by the Bay of Plenty Regional Council Rivers and Drainage Manager, are implemented.

8.5 The Requiring Authority shall maintain a stockpile of material and sufficient plant on site to be able to undertake immediate reinstatement of stopbank works in the event of a flood warning.

8.6 Along the alignment of the proposed diversion channel full flood protection shall be maintained by the existing stopbank except for when the tie-ins are made at each end. The period under which the tie-ins shall be agreed with the Bay of Plenty Regional Council Natural Hazards Group prior to the works being undertaken.

9. Network Utilities

9.1 At the time of Outline Plan preparation and at least 20 working days prior to the requiring Authority granting site possession to the Contractor, the Requiring Authority shall submit to the District Council a Network Utility Management Plan (NUMP) prepared jointly by the Requiring Authority, or its agents, and Powerco.

9.2 The NUMP submitted in accordance with this condition shall record if there is agreement between the parties and, if not, where and why there is disagreement and the steps taken in an attempt to resolve that disagreement. These matters can then be considered by the Council when assessing the Outline Plan.

9.3 All construction activities of the Project are to be undertaken in accordance with the NUMP.

9.4 The purpose of the NUMP shall be to ensure that the enabling works, design and construction of the project adequately take account of, and include measures to address the safety, integrity, protection or, where necessary, relocation of existing electricity network utilities.

9.5 The NUMP shall include but need not be limited to methods and measures to:

(a) Identify protocols for liaising with Powerco and for overseeing and approving works that impact on services.

(b) Accurately identify and verify the location of existing electricity network utilities,

(c) Identify appropriate measures for working near services or the appropriate standards if they have to be relocated.

(d) Identify timing and sequencing of work associated with relocation and / or protection of electricity utility services.

(e) Ensure that existing, relocated and/or replacement electricity network utility infrastructure can be accessed for maintenance at all reasonable times, or emergency works at all times during construction activities.

(f) To appropriately manage the effects of dust and any other material potentially resulting from construction activities and able to cause material damage, beyond normal wear and tear to overhead electricity lines.

(g) To ensure that no activity is undertaken during construction that would result in ground vibrations and/or ground instability likely to cause material damage to overhead electricity lines, including support structures.

(h) To ensure the continued operation and supply of electricity infrastructure services, which may include, but not be limited to, any relocated or replacement electricity lines and cables being made operational prior to the termination of existing lines and cables; and

(i) Confirm that the works will comply with the minimum separation distances set out in the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP34:2001).

Conditions 10 – 12 to be included in the District Plan for All Designations

10. **Wetland Plan, Establishment and Maintenance**

10.1 Prior to the commencement of planting, a Wetland Plan shall be prepared and submitted to the District Council at least two months prior to the first planting season..

10.2 The Wetland Plan shall be verified by appropriately experienced and qualified practitioners, confirming that the Wetland Plan:

(a) Meets the Wetland Plan objective(s); and

(b) Complies with the designation conditions.

~~10.2~~10.3 The objective of the Wetland Plan is to achieve a state where there is a sustainable cover of indigenous plants in new wetland areas that is as close to the original natural species diversity that can be achieved taking into consideration the substantial and irreversible human-induced changes that have occurred to the landscape surrounding the Ongatoro/Maketu Estuary and to manage areas of existing wetland within the Designation area.

~~10.3~~10.4 The Wetland Plan shall provide details of how the above objective is to be achieved, including:

(a) A map showing the locations of the proposed work;

(b) Identification of the personnel or organisations that are to carry out the work;

(c) The timescale of activities;

(d) Initial monitoring of site growing conditions (especially soil salinity, soil saturation, tidal induced sediment erosion and deposition) after re-diversion;

(e) Creation of a planting zone plan based on site growing conditions and species tolerances;

(f) A programme for trial planting of plant species especially in areas where growing conditions are likely to be challenging (for example, areas exposed to open tidal water and those with higher salinity);

(g) Details of mass planting once species can be matched to site conditions with high confidence of success;

(h) Restoration planting plan produced that details the planting zones, species mixes, plant grades, site preparation and post-planting maintenance requirements;

(i) Identification of opportunities for Tangata Whenua and the community to be involved in planning and implementation of wetland restoration planting;

(j) Monitoring plan to objectively measure plant and species performance;

(k) Weed and pest control for each area; and

(l) Any ongoing requirements to ensure the objective of the plan is achieved.

~~10.4~~10.5 The Requiring Authority shall undertake all wetland works and weed and pest control in accordance with the Wetland Plan.

~~10.5~~10.6 The Wetland Plan may be amended at any time provided that any amendments made maintain or enhance the degree and / or extent to which adverse environmental effects attributable to the construction, maintenance or operation of the Project are avoided or mitigated; and those amendments do not result in non-compliance with any designation condition. A copy of the amended Plan shall be provided to the District Council.

11. Community Relationships

11.1 No less than 20 working days prior to the Requiring Authority granting site possession to the Contractor, the Requiring Authority shall facilitate and resource a public information session for the purposes of discussing the scheduling and staging for works and expectations regarding communication between the Requiring Authority and the community.

11.2 In addition to the community in general, the Requiring Authority shall, as a minimum, directly invite the following parties to the public information session required by condition 11.1 of this designation:

(a) Department of Conservation;

(b) Fish & Game;

(a) Tangata Whenua;

(b) The Manager of the Kaituna Catchment Control Scheme;

(c) Coastguard Maketu;

(d) Maketu Ongatoro Wetland Society Incorporated;

(e) Maketu Community Board;

(f) Te Maru o Kaituna; and

(g) R.D. & S.F. Waterhouse Partnership.

11.3 Following the public information session required by condition 11.1 but prior to the commencement of the works authorised by this Designation, the Requiring Authority shall prepare a Community Relationship Plan.

11.4 The objective of the Plan is to enable Tangata Whenua, the general public and stakeholders to be kept informed of the works and restoration being undertaken and to facilitate the free flow of information between the Requiring Authority and these parties.

11.5 As a minimum, the Community Relationship Plan shall:

(a) Identify the frequency of communication, taking into account different phases of the project (such as the works phase, wetland works, and monitoring and reporting phases);

(b) Make provision for a public information session at least every two years for the duration of the consent, and more regularly during construction and commissioning.

(c) Identify an agreed method(s) for providing information, such as a website or other form of communication;

(d) Identify the nature of information to be made available, including progress updates on the project, monitoring results, summaries of reports and complaints received with respect to the project; and

(e) Identifying the procedures for providing feedback to the Requiring Authority on the implementation of the project.

~~11.2~~11.6 The Plan shall be implemented to the satisfaction of the District Council.

12. Accidental Discovery

12.1 A Cultural Monitor shall be employed by the Requiring Authority to monitor, as necessary, and report any discoveries during earthworks.

12.2 Prior to construction commencing the Requiring Authority shall provide training to those working on the Project on the accidental discovery protocols.

12.3 In the event of any archaeological site or material being uncovered or reasonably suspected to have been uncovered during the exercise of this designation, activities in the vicinity of the discovery shall cease and the Requiring Authority shall notify the District Council as soon as possible.

12.4 If any koiwi (human remains) uncovered, or reasonably suspected to have been uncovered during the exercise of this resource consent, the Requiring Authority or their representative shall:

(a) Notify Heritage New Zealand's Pouhere Taonga Regional Archaeologist, the New Zealand Police and the District Council; and

~~(a)~~(b) Undertake no further work may take place until future actions have been agreed by all parties.

~~12.4~~12.5 In the event of an accidental discovery, the Requiring Authority shall notify Te Rūnanga o Ngati Whakaue ki Maketu, Tapuika Iwi Authority, Te Maru o Ngati Rangiwewehi, Waitaha Raupatu Trust, Ngāti Pikiao, Ngāti Tūnohopū and Ngati Makino Heritage Trust and shall ensure, as far as practicable, that procedures are undertaken in accordance with:

(a) The Ngati Rangiwewehi koiwi and accidental discovery protocol;

(b) The Waitaha Raupatu Trust, Ngati Makino Heritage Trust, Komiti o Ngati Pikiao (Ki Maketu), Ngati Tunohopu Accidental Discovery Protocols; and

(c) The Te Taonga Tuturu Act - immediate notification of Tapuika representatives in the event that a site or objects of significance are discovered during works.

Note: This condition is in addition to any agreements that are in place between the Requiring Authority and the Tangata Whenua or Heritage New Zealand Pouhere Taonga.

***Advice Note**: The Requiring Authority will be seeking an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014, prior to the commencement of construction. The authority may include requirements for detailed investigations and monitoring effects and are also likely to require the preparation of a Heritage Management Plan (or an Archaeological Management Plan).*

Appendix 25 – Resource Consent and Designation Plans for Approval

PAPAHIKAHAWAI CREEK

IMPROVE ACCESS TRACK ALONG SPIT INCLUDING RAISED WOODEN WALKWAYS WHERE NECESSARY. FINAL DESIGN TO BE AGREED WITH LANDOWNERS AND BoPRC AT LATER DATE.

CAUSEWAY

CONSTRUCT NEW WOODEN FOOT AND ATV BRIDGE IN THIS LOCATION. FINAL DESIGN TO BE AGREED WITH LANDOWNERS AND BoPRC AT LATER DATE.

CAUSEWAY

EXCAVATE EXISTING CAUSEWAYS DOWN TO RL 0m (MIN) AND SHAPE BED TO MATCH SURROUNDING ESTUARY. RELOCATE CAUSEWAY MATERIALS <50mm IN SIZE TO SOUTH SIDE OF PAPAHIKAHAWAI ISLAND. MATERIAL >50mm TO BE BURIED ON ISLAND AND COVERED WITH TOPSOIL.

CAUSEWAYS

EXCAVATE EXISTING CAUSEWAY TO ISLAND DOWN TO RL 0m (MIN) AND SHAPE BED TO MATCH SURROUNDING ESTUARY. MAXIMISE RELOCATION OF CAUSEWAY MATERIALS <50mm IN SIZE TO SOUTH SIDE OF PAPAHIKAHAWAI ISLAND BEFORE RETREATING AND REMOVING FINAL LINK.

PAPAHIKAHAWAI ISLAND

PAPAHIKAHAWAI ISLAND IS THE SUBJECT OF A BIO-DIVERSITY MANAGEMENT PLAN BEING DEVELOPED BETWEEN OWNERS AND THE BAY OF PLENTY REGIONAL COUNCIL.

R1

SOUTHERN EDGE OF PAPAHIKAHAWAI ISLAND AT RISK OF ON-GOING EROSION. ANY PROTECTION, ENHANCEMENT OR RESTORATION WILL BE THE SUBJECT OF A WETLAND STRATEGY PLAN.

WIDENED FORD'S CUT

ONGATORO / MAKETU ESTUARY

N

300 mm
200
100
50
10 mm
0

REFERENCE

PROPOSED CHANNEL / EXISTING

MINOR RE-CONTOURING

EXISTING CAUSEWAY

R1

FOR CONSENT

1:2000 @ A1
1:4000 @ A3
0 20 40 60 80 100 120 140 160 180 200 m

Revision	Amendment	Approved	Revision Date
R1	INDICATIVE RE-CONTOURING SHOWN	S.E.	13/06/14
R2	AMENDMENT TO PROJECT TITLE	S.E.	27/06/14

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Drawn	Designed	Approved	Revision Date
K.HUNTER	S. EVERITT (WATERLINE)		11/06/14

Project
BAY OF PLENTY REGIONAL COUNCIL
MAKETU
KAITUNA RIVER RE-DIVERSION & ONGATORO/MAKETU ESTUARY ENHANCEMENT PROJECT

Sheet
PAPAHIKAHAWAI ISLAND
REMEDIATION PLAN

Project No.	Scale	Drawing No.	Sheet. No.	Revision
29Z371.00	1:2000 @ A1 / 1:4000 @ A3	2/1542/115/6235	1348 20	R2

Original Sheet Size A1 [841x594] Plot Date 03 Dec 2014 @ 10:57 a.m. Path G:\5project\9Z371.00_KaitunaRiver\4.0 Design\4a - ACAD\Civil3D\2_1542_115_6235_1-20.dwg 20R2