AEE Report

Matua Stormwater Upgrade

Prepared for Tauranga City Council

Final for Lodgement

By Beca Ltd (Beca)

17 September 2014

Revision History

Revision N°	Prepared By	Description	Date
A	Jotham Alex	Draft for Internal Review	3/12/2013
B	Jotham Alex	Draft for Client	10/07/2014
C	Jotham Alex	Final	3/09/2013

Document Acceptance

Action	Name	Signed	Date
Prepared by	Jotham Alex		28/08/2014
Reviewed by	Keith Frentz		21/08/2014
Approved by	Keith Frentz		3/09/2014
on behalf of	Beca Ltd		

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Appendices

Please note that information in this report has been derived from available public records (including the Regional and District Plans and Policy Statements as they were provided, either in hard copy or on the respective local authority websites), at the time of preparation of this document. These records are continually changing and are frequently incomplete and therefore Beca Ltd cannot be held responsible for any misrepresentation, incompleteness, or inaccuracies provided within that information, or for updating or revising this report in respect of any changes that may occur after the date of this document, or for notifying Tauranga City Council of such changes. Should any other information become available, then this report should be reviewed accordingly by Tauranga City Council.

1 Introduction

Tauranga City Council (TCC) has commissioned Beca Ltd (Beca) to prepare an assessment of environmental effects to support a resource consent application from TCC and Bay of Plenty Regional Council (BOPRC) for a proposal to establish up to five new stormwater outfalls (attached as Appendix A) to drain the Matua Catchment in Tauranga.

An Authority from the New Zealand Historic Places Trust will also be applied for as part of this project.

1.1 Overview

During heavy rainfall events, the Matua Catchment experiences significant flooding. Several residential properties have suffered damage as a result of the flooding and it is expected that this will continue unless drainage improvements are made. TCC has instigated the Integrated Stormwater Project (ISP) in the wake of the storm event and subsequent flooding that occurred on the 20th and 21st of April 2013. This proposal forms part of the ISP.

Recent flooding has resulted in properties on Matua Peninsula being inundated by as much as 500mm of water. This water then discharged overland to Matua Road, flooding another property.

Upstream at the Smiths Road / Kings Avenue intersection, stormwater overtopped the road and flooded an adjacent garage. The driveway and basement garage on this site lie below the footpath and road.

Figure 1-1 shows the stormwater network and extent of modelled risk within the wider Matua catchment. Two areas that shall be referred to as ‘Matua North’ and ‘Matua South’ generally being north and south of Levers Road are also shown. Within these areas up to five stormwater outfalls are proposed to mitigate flooding.

Flooding is predicted to continue occurring in the Matua catchment resulting in damage to property unless the proposed outfalls are constructed.

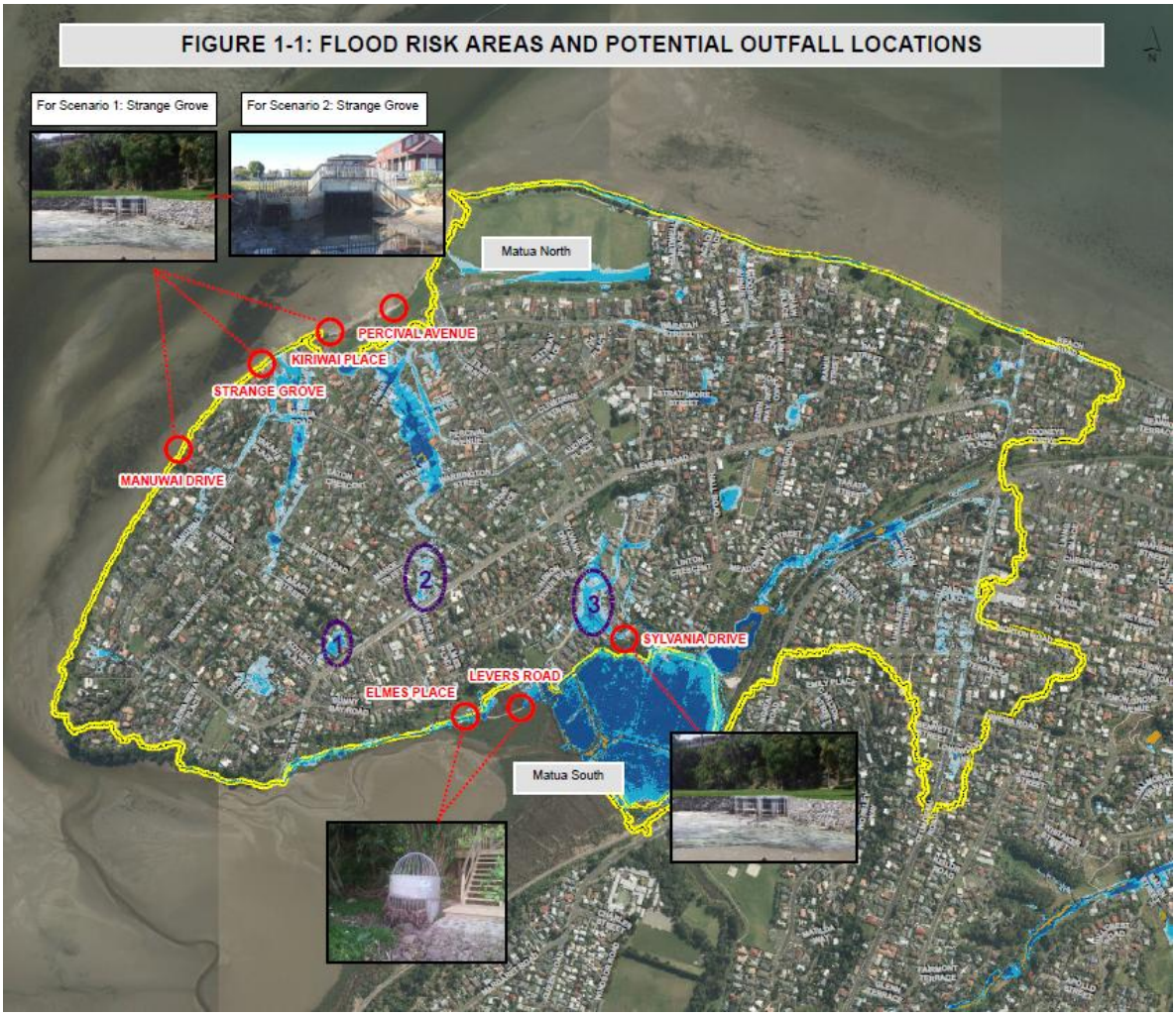

Figure 1-1: Flooding Risk Areas in Matua (Refer to Appendix A for a larger scale)

1.2 Consents required

The following resource consents are required for this project;

- Consent from Bay of Plenty Regional Council (BOPRC) for earthworks.
- Consent from Bay of Plenty Regional Council (BOPRC) for coastal structures.
- Consent from Tauranga City Council (TCC) for the provision of infrastructure to vest in Council.
- Consent from Tauranga City Council (TCC) for earthworks within 15m of Mean High Water Springs (MHWS) that lowers ground by more than 1m.

Seven areas within the Matua North and Matua South subcatchments have been identified where up to five stormwater outfalls may be established to mitigate flood risk within Matua. Of these, up to three outfalls are proposed for the northern area, and up to two in the south. A number of scenarios are proposed and the options are described in Section 4 of this report. For the purposes of flexibility, it is requested that a consent be granted within the broad parameters

of this application to enable the exact locations of outfalls to be determined once modelling and detailed design has been completed.

The quality aspects of stormwater discharges from the catchment are covered by Tauranga City's Comprehensive Stormwater Consent (CSC) 66823. No new discharge is being created in the catchment, rather existing stormwater flows from the catchment are being diverted to be discharged through the proposed outfalls.

2 Application Forms

Bay of Plenty Regional Council
PO Box 364
Whakatāne 3158

Free Phone: 0800 884 880

Free Fax: 0800 884 882

Website: boprc.govt.nz

File ref.

	SEEN		SEEN

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17 SEP 2014
BY:
Office Use Only

Application for a Resource Consent Resource Management Act 1991 (s.88) Form 2A Land Disturbing Activities (e.g. earthworks and quarrying)

Before you make an application it is recommended that you talk or meet with a Consents Officer to discuss. A Consents Officer may also be able to undertake a site visit to provide further advice.

If you would like to arrange this, please phone 0800 884 880.

If you are applying for more than one activity and you have already completed the basic details in Parts 1 on another form, go straight to Part 2 of this form.

See notes to applicant (last pages of form) before proceeding with application form.

Under section 88 of the Resource Management Act 1991, the undersigned hereby makes application for resource consent(s).

PART 1

A consent can only be issued to a legal entity such as a person(s), limited company, incorporated society, etc.

1 **Full name of applicant(s)** (*the name that will be on the consent*)

Company name: Tauranga City Council

Contact person: Jane Groves

Postal address: Tauranga City Council
Private Bag 12022
Tauranga
3143

Telephone (*please tick preferred contact number*)

☒ Business 07 577 7184

☒ Cell 021 2419056

Facsimile

Email jane.groves@tauranga.govt.nz

2 **Details of consultant** (*or other person authorised to make application on behalf of applicant*)

Company name Beca Ltd.

Contact person Jotham Alex

Postal address PO Box 903

Tauranga 3140

Telephone (*please tick preferred contact number*)

☒ Business 07 577 3872

Email jotham.alex@beca.com

All correspondence, including invoices for charges, relating to this application(s) should be sent to:

☐ Applicant ☒ Consultant

3 **Name and address of owner/occupier** (*of the site relating to application*)

Owner Tauranga City Council

Postal address Tauranga City Council

Private Bag 12022

Tauranga

3143

Business phone 07 577 7184

Please note: *If the applicant is not the owner of the land to which the activity relates, then it is good practice to submit the application with written approval from the landowner.*

4 **Consent(s) being applied for from Bay of Plenty Regional Council**

(a) You will need to fill in a separate form for each of the activities you propose to undertake. You may also need consent for one or more of the following.

Land Use

☐ Form 1A Culverts, Bridges, Fords, Erosion Protection, Pipes, and Associated Works
☐ Form 1B Disturbance In or Around a Water Body (e.g. diversion, dredging, wetland disturbance, gravel extraction
☐ Form 1C Lake Structures (new and existing)
☒ Form 2A Land Disturbing Activities (e.g. earthworks & quarrying)
☐ Form 2B Land Disturbing Activities (forest harvesting/vegetation clearance)

Discharge (*including coastal*)

☐ Form 3A Onsite Effluent Discharge
☐ Form 3B Discharge Farm Dairy Effluent
☐ Form 3C Land Use Activities in the Catchments of Lakes Okareka, Rotoehu, Okaro, Rotorua, and Rotoiti
☐ Form 4A Discharge Stormwater to Water and/or Land from Urban Residential, Rural
☐ Form 4B Industrial Discharges to Water or Land (including stormwater)
☐ Form 4C Discharge Contaminants to Air

Water (*including coastal*)

☐ Form 5A Water Permit Application (s.14) – Take Surface Water (includes intake structure (s.13))
☐ Form 5B Water Permit Application (s.14) – Take Groundwater
☐ Form 5C Dam Water
☐ Form 5D Divert Water

☐ Form 6A Geothermal Take and Discharge – Domestic and Light Commercial

Coastal (*see point 4 of* Notes to Applicant *for explanation of the Coastal Marine Area*)

☒ Form 7A Application for Permit for Coastal Structures (*including associated occupation and disturbance*)

☒ Form 7B Application to Disturb Coastal Marine Area (no structure)

(b) In which District is the activity located?

☐ Whakatane District
☐ Rotorua District
☐ Western BOP District
☐ Taupo District
☐ Opotiki District
☐ Kawerau District
☒ Tauranga District

(c) Is this application to replace an existing or expired consent(s)? ☐ Yes ☒ No

If Yes, please state the consent number(s)

(d) Please specify the duration sought for your consent(s).

35 Years Months

Start date Summer 2016

Completion date (*if applicable*)

(e) Do you also require resource consent(s) from a district council? ☒ Yes ☐ No

Type of consent required

- stormwater reserves within a Category 2 Special Ecological Area
- Clearance of indigenous vegetation of land zoned Open Space
- Provision of infrastructure

Has it been applied for? ☒ Yes ☐ No

Has it been granted? (*If Yes, please attach.*) ☐ Yes ☒ No

5 Location description of activity

Site Address Various addresses in Matua

Legal description (*legal description can be obtained from your certificate of title, valuation notice, or rate demand*)

Road reserve and CMA

Map reference NZMS 260, (if known)

PART 2

1 **Description of activity**

Refer to Section 5 of the attached Assessment of Environmental Effects

2 **Site information**

Refer to Section 3 of the attached Assessment of Environmental Effects

3 **Site plan**

Refer to Appendix A of attached Assessment of Environmental Effects Report

4 **Erosion and sediment control details**

Refer to Section 8.6 of the attached Assessment of Environmental Effects

5 **Dust control**

Refer to Section 8.6 of the attached Assessment of Environmental Effects

6 Risk assessment

Refer to Section 8.6 of the attached Assessment of Environmental Effects

7 **Persons likely to be directly affected**

Refer to Section 9 of the attached Assessment of Environmental Effects

8 Extending timeframes

The Resource Management Act 1991 (RMA) specifies timeframes for processing resource consent applications (e.g. 20 working days for a non-notified application); however, these timeframes can be extended, if necessary, with the applicant's agreement.

Do you agree to the Bay of Plenty Regional Council extending RMA consent processing timeframes?

☐ Yes, provided that I can continue to exercise my existing consent until processing of this application is completed (*renewal applications only*).

☒ Yes, provided that the extension is for the specific purpose of discussing and trying to agree on consent conditions.

☐ Yes, provided that the application process is completed before .

☐ No.

9 Deposit fee

A deposit fee of $774.00, inclusive of GST, is payable with this application. This may be paid online, by cheque, or by eftpos at one of the Regional Council's reception desks.

- Bay of Plenty Regional Council's bank account number is **06 0489 0094734 00**. Please use the applicant's name as the reference. A GST invoice marked "PAID" will be issued on receipt of payment.
- An application will not be accepted as a complete application until the deposit fee has been paid. **Please note:** while we are happy to hold the forms in the meantime, the processing time will not start until payment is received.
- Additional charges are usually incurred, and will vary depending on the resources we use in the course of processing your application (*e.g. staff time*). Staff can give an estimate of expected costs. Please see the schedule of fees attached.

Checklist

If you have dealt with a staff member regarding your consent application, please provide their name here

Marlene Bosch

☒ Complete all details applicable in this application form.

☒ Complete all details on the specific consent activity form(s) (*e.g. Land Disturbing Activities*).

☒ Include an Assessment of Environmental Effects (AEE) of the activity, as set out in Schedule 4, summarised at the back of this form. (*For minor activities, complete the relevant section in the activity application form. For major activities, a more detailed AEE must be attached to the application.*)

☒ Supply written approval from all affected parties, if any, and/or summary of consultation carried out.

☒ Include a site plan.

☒ Sign and date the application form.

☒ Pay the required deposit.

☒ Include any other information you think relevant (*e.g. Certificate of Title, details from the Companies Register, etc.*).

☒ If your application is a large application, please submit an electronic version on CD, and one hard copy.

☒ Assessment of cultural impacts.

Please be aware any unchecked boxes may result in your application being returned under s.88.

Information privacy issues

The information you provide in this application is regarded as official information. It is required under the provisions of the Resource Management Act 1991 to process this application, and to assist in the management of the region's natural and physical resources.

The information will be held by Bay of Plenty Regional Council, Quay Street, Whakatāne. This information is subject to the provisions of the Local Government Official Information and Meetings Act 1987, and the Privacy Act 1993. The information you provide in this application will generally be available to the public. If there is any information that you would like to remain confidential please contact a Consents Officer to discuss.

Failure to provide this information will mean that Bay of Plenty Regional Council will be unable to process your application.

1. **I confirm that I have authority to sign on behalf of the party/ies named as the applicants for this consent.**

2. **I have read, and understand, all of the information contained on this application form, including the requirement to pay additional costs that will be itemised.**

3. **I confirm that all the information provided is true and correct and understand that any inaccurate information provided could result in my resource consent later being cancelled.**

Signature _____ Date 17/9/2014

Environmental Planning

Application Form

For all application types (except Temporary Events)

TCC Ref:A5256476

Site Location

Street Address ……Various addresses in Matua……..……..

Suburb ……Matua……..……

Legal Description ……Road Reserve and CMA……

Applicant Details

Applicant Name ……Tauranga City Council……..……

Address of Applicant …… Tauranga City Council, Private Bag 12022 , Tauranga 3143 ……..

Property Owner … Tauranga City Council …… Occupant (if applicable) ……...

Phone Work……07 577 7184…… Mobile……021 2419056…

Fax …….. Email …… jane.groves@tauranga.govt.nz ……..

Address for Service

Agent Name …… Beca Ltd……

Postal Address ..…

Jotham Alex Beca Ltd
PO Box 903
Tauranga 3140

……..

Phone Work……07 577 3872……. Home…… Mobile……

Fax …….. Email ……Jotham.alex@gmail.com……..

Type of Application/s (tick relevant boxes)

Subdivision Consent – RMA s88	(form 9 equiv)	☐	Post-Subdivision – Survey Plan – RMA s223	☐
Land use Consent – RMA s88	(form 9 equiv)	●	Post-Subdivision – Completion Certificate - RMA s224	☐
Consent Condition – Cancel/Vary – RMA s127	(form 10 equiv)	☐	Consent Notice – Cancel/Vary – RMA s221	☐
Existing Use Certificate – RMA s139A & s10		☐	Easement – Create/Cancel – RMA s243	☐
Outline Plan (for designated site) – RMA s176A		☐	Designation – RMA s168	☐
Certificate of Compliance – Permitted Activity (including Liquor) – RMA s139		☐	Section 100(f) Sale and Supply of Alcohol Certificate	☐
Other (specify)		☐		

Describe Proposal (in brief)

New stormwater outfalls in Matua. 7 outfall locations are under consideration. Refer to Section 5 of the attached Assessment of Environmental Effects Report……

……*Attach additional pages as necessary*

Supporting Information (attached)

Applicant check ●

Assessment of Environmental Effects (accords with RMA 4th Schedule, Tauranga District Plan - Chapter 12, and attached checklist) ●

The information supplied with this application is true and complete to the best of my knowledge. I understand the Council is relying on this information in making its decision on this application.

Signed – by applicant or person authorised to sign on behalf of applicant …… Date: ……

Important Note – Have you booked your Lodgement Meeting yet?

Disclaimer

This form is for guidance only. It does not comprise any type of Council approval, nor does it in any way prevent Council from making a request for additional information required to process the application.

Supporting Information - General

	Applicant check
Description of Proposal – Activity Status – Relevant Rules, Objectives and Policies of the District Plan (incl. any Plan Changes) – Relevant provisions of the National Policy Statement, NZ Coastal Policy Statement, Regional Plan, and Strategies – Assessment of actual and potential effects (incl. alternative sites and monitoring requirements)	●
Deposit Fee/s (incl GST) – Refer Environmental Services Group - Schedule of Fees and Charges	●
Certificate of Title (not less than 3 months old) & any restriction details – building line, covenant, consent notice, easements	☐
Full set of Development Plans (Scale - 1:100 or 1:200) – refer District Plan Information requirements under Chapter 12.1	●
Identification of Persons interested or affected by the proposal, including: – Written Approval of Affected Persons (unconditional, correctly completed, including signing of the AEE and plans)	●
– Record of Consultation with any parties (incl. with Tangata Whenua), and any response. *Note – Reference should be made to the Tauranga City Council Policy entitled: "Tangata Whenua Consultation in relation to Resource Consents" – which requires a written response from the affected Iwi or Hapu.*	●
Specialist Assessments (Landscape, Visual, Traffic, Noise, Arborist, Geotechnical) are from appropriately qualified experts	●
Other Consents Required: Environment Bay of Plenty (discharge, earthworks); NZ Historic Places (archaeological)	●
Earthworks and Excavation: the extent (illustrated and described), finished contours, and geotechnical detail	●

IMPORTANT NOTE

For comprehensive information requires (for all application types), you are strongly advised to refer to the Fourth Schedule of the Resource Management Act 1991, and Chapter 12 of the Tauranga District Plan.

Additional guidance for certain types of applications

If for a Subdivision – Section 88

	Applicant check	Planner check
- Scheme Plan Detail: the position of all existing and new boundaries, services and easements / amalgamation; the areas of all new allotments	☐	☐

If for a Consent Condition – Cancellation or Variation – Section 127

	Applicant check	Planner check
- Referenced the approved consent and clearly identified whether seeking cancellation or variation	☐	☐
- Assessment of Environmental Effects accords with RMA 4th Schedule and corresponds with scale and significance of effects the change or cancellation may have on the environment	☐	☐

If for a Permitted Activity – Section 139

	Applicant check	Planner check
- Demonstrate permitted activity status, and how all associated permitted activity conditions have been satisfied	☐	☐

If for an Existing Use – Section 139A and Section 10

	Applicant check	Planner check
- Detail the effect of the character, intensity and scale of the activity / use	☐	☐
- Evidence how the activity / use was lawfully established prior to the rule becoming operative, proposed plan being notified, or designation being removed	☐	☐

If for an associated Liquor Licence application – Section 139 or Sale and Supply of Alcohol Certificate Section 100(f)

	Applicant check	Planner check
- All licensed areas (indoor and outdoor) are clearly outlined on the plans (to scale)	☐	☐
- All carparking and loading spaces associated with the premises are clearly outlined on the plans	☐	☐
- Detail any other land use activities operating from this site and associated carparking	☐	☐
- Detail the hours of operation (indoor and outdoor) of all activities operating from this site	☐	☐
- **Attach** – Copies (including plans) of all previous planning certificates / resource consents / certificates of compliance	☐	☐

If for a Temporary Activity or Event – refer to Application Form (Temporary Activity/Events)

If for an Outline Plan – Section 176A

	Applicant check	Planner check
- Reference the designation	☐	☐
- Detailed height, shape and bulk of the public work, project or work	☐	☐
- Shown location on the site of the works, and likely finished contour of the site;	☐	☐
- Detailed vehicular access, circulation and provision for parking	☐	☐
- Shown landscaping proposed	☐	☐
- Detailed any other matters to avoid, remedy or mitigate any adverse effects on the environment	☐	☐

If for a Consent Notice – Cancellation or Variation – Section 221

	Applicant check	Planner check
- Reference the approved consent and clearly identified whether seeking cancellation or variation	☐	☐
- **Attach** copy of Consent Notice details	☐	☐

If for a Post-Subdivision Application – Section 223 (survey plan) and/or Section 224 (certificate)

	Applicant check	Planner check
- Survey plan and supporting documentation align with specific conditions of the approved subdivision consent	☐	☐
- Plans and supporting documentation align with specific conditions of the approved subdivision consent	☐	☐

Lodgement Meeting Advice Notes – for the Applicant

– Information provided with an application lodged with the Council is public information, unless classified otherwise.

– Council can only accept your application when all details are completed, all relevant information is provided, the application is signed and the deposit fees are paid.

– Under RMA s88(3), if an application does not include an adequate assessment of environmental effects, within 5 working days after first lodged, the Council may determine the application is incomplete and return it with written reasons

– Under RMA s92, the Council may request additional information or seek to commission a specialist report in order to better understand your application, and make an informed decision.

Although a hard copy is required, an **electronic** copy of all documentation and plans is strongly encouraged.

Environmental Planning
Lodgement Meeting Outcome - Office Use Only

Disclaimer: This form does not comprise any type of Council approval, nor does it in any way prevent Council from making a request for additional information required to process the application

Street Address ……

Council Reference RC……

Meeting Record

Date ……..

Time ……..

Attended By

Applicant ……

Agent / Specialists ……

……

……

Council Staff ……

……

Meeting Notes

……

……

……

……

……

Use additional pages as necessary

Meeting Outcome

☐ **Accepted** – to be vetted for adequacy of information

Under s88(3) of the Resource Management Act, if an application does not include an adequate assessment of environmental effects, within 5 working days after first lodged, the Council may determine the application is incomplete and return it with written reasons.

☐ **Not Accepted** – for the reasons stated below

		Applicant check	Relodge check	Planner check
1.	……	☐	☐	☐
2.	……	☐	☐	☐
3.	……	☐	☐	☐

Office Use Only	Planner check	Council Stamp – date received:
– *Retained original copy for the file*	☐	
– *Supplied copy to the Applicant / Agent*	☐	
– *Time/cost for meeting attendance charged*	☐	*Planner check* ☐

Council Application Reference:	*Council Customer Reference:*	*Council Receipt Reference:*
RC		

3 Description of the Existing Environment

3.1 Surrounding Environment

The Matua area is situated in the west of Tauranga City and is characterised by undulating topography. The predominant soil type in Matua is classed as Orthic Allophanic soils (NZ Legend Code 'LO', with characteristics of Katikati sandy loam with hill soils). This soil type is typically well draining, however it is also subject to "moderate creep" and "slight slips" erosion. In addition, there are smaller areas of Truncated Anthropic Soils.

The area is mostly comprised of detached residential dwellings. However, many sites have been subdivided and consequently a significant amount of infill housing has been constructed in recent years. Infill housing generally increases the paved impermeable surfaces and is potentially contributing to increased stormwater runoff from driveways and roofs.

3.2 Zoning

The following planning zones of the Tauranga City Plan (TCP) apply to the Matua Peninsula, as depicted in Figure 3-1:

- Conservation Zone
- Passive Open Space Zone
- Suburban Residential Zone
- Flood Hazard Plan Area
- The area to the south of the Matua Peninsula is a Special Ecological Area (Category 2)

In addition to the TCP planning zones, the following special provisions also apply:

Bay of Plenty Operative Regional Coastal Environment Plan

- Coastal Management Zone (CMZ)
- Tauranga Harbour is an Area of Significant Conservation or Cultural Value (in the CMA)
- Tauranga Harbour is classified as an Outstanding Natural Feature and Landscape

Bay of Plenty Proposed Regional Coastal Environment Plan June 2014 (PRCEP)

- Tauranga Harbour is an Outstanding Natural Feature and Landscape (in the CMA)
- Tauranga Harbour is also an Area of Significant Cultural Value (in the CMA).
- Matua Estuary is an Indigenous Biological Diversity Area B

Figure 3-1: TCP Zoning and Potential Outfall locations

3.3 Landform

The Matua catchment consists of undulating topography with many crests and depressions. In some areas, the road carriageway is higher than the property level on either side. The road then acts as a barrier, preventing stormwater flowing across the road and creating localised flooding on a number of properties. There are 7 existing man-made discharge outfalls that drain the northern end of the catchment, 2 between Strange Grove and Kiriwai Place, 1 outfall from Percival Avenue and 3 at the end of Tilby Drive.

3.4 Physical Environment

The following information is sourced from the Tauranga City Council Comprehensive Stormwater Consents (CSC) – Volume VI – Appendix B – State of the Receiving Environment (SoRE) Report, Boffa Miskell, May 2011, which was included in the Tauranga City CSC application documentation.

The area of the Tauranga Harbour where the existing outfalls are located is a low energy estuarine environment predominantly comprising sand flats. There is no freshwater environment in the catchment and hence there are no freshwater invertebrates (SoRE Report).

Sediment sampling west of Fergusson Park has revealed predominantly coarse-grained sediment with contaminants such as zinc, copper, lead and High-Molecular-Weight Polycyclic Aromatic Hydrocarbons below the Interim Sediment Quality Guidelines low guideline value. This indicates that the total sediment at the site is generally 'good' (SoRE Report).

Recreational bathing water quality surveys indicate good water quality at Tilby Point with 98% of days monitored complying with bathing water quality guidelines. There is significant water flow to the north east and north west which provides good flushing and dilution (SoRE Report).

3.5 Ecological Environment

There is a low diversity of estuarine invertebrate taxa, with a species richness of 4 placing it in a 'poor' category. Spionid Polychaete worms dominate, followed by Nereid and Oligochaete worms (SoRE Report).

The Matua Estuary is a Special Ecological Area (Category 2) in the TCP. According to the TCP, the Matua Estuary:

> *'is a relatively large example of estuarine vegetation with contiguous palustrine and terrestrial communities characteristic of the vegetation of the Tauranga Ecological District. A diverse range of birdlife, including banded rail and North Island fernbird are present. The Special Ecological Area is of high wildlife value. The Special Ecological Area has high botanical conservation value, several regionally uncommon plant species occur here. It is a large and relatively diverse natural area and is of regional conservation significance.'*

3.6 Historic / Cultural Background

Manuwai Drive and Strange Grove are two locations that are near recorded archaeological sites. Early settlement of the peninsula probably began in the 14th Century on the northern coastal bench near Kulim Park, Waikareao Pa and Kaiarero. Artifacts from Polynesian settlement have been found in these areas. There are six identified pa on the northern Matua / Otumoetai Peninsula including Otumoetai Pa, considered to be one of the most historically important sites in Tauranga. There are two previously recorded archaeological sites located in the vicinity of the project, the Matuaiwi Pa and an occupation and Burial site at 55 Manuwai Drive.

Ngai Tamarawaho have prepared a Cultural Impact Assessment (CIA) of the proposal, contained in Appendix B. According to the CIA, the Otumoetai Pa was the largest pa in Tauranga in the 18th and 19th centuries. Otumoetai Pa is located in the present day reserve on Levers Road. The proposal area is at least 1km from Otumoetai Pa. Refer to section 9.1.1 for further detail in regard to this CIA.

3.7 Physical Environment

The following information has been sourced from Graeme Dohnt, Stormwater Technical Advisor, Tauranga City Council. The names of the locations are sourced from the roads where outfalls may extend from. For example, Strange Grove refers to an outfall that could be constructed from Strange Grove to the coast.

3.7.1 Matua North

a. Strange Grove

The coastal land at the end of Strange Grove is zoned Suburban Residential and is situated on the coast of the Tauranga Harbour. The character of the surrounding environment is significantly modified, with sea walls built along the property boundaries and boat ramps extending into the coastal marine area (CMA) from some properties. Figure 3-2 shows the existing coastal environment at Strange Grove.

Figure 3-2: Strange Grove Existing Environment

b. Manuwai Drive

There is a pedestrian access walkway from Manuwai Drive to the coast to the north-west. The walkway slopes down from Manuwai Drive with a depression half way along before ascending once more to a cliff on the coast. At the cliff there is a steep staircase to the beach, as shown in Figure 3-3. There is a mixture of vegetation on the cliff including a pohutukawa tree next to the accessway. Each property has its own sea wall to protect the cliff from erosion. Some of these sea walls are in poor condition. The natural character of this area is also significantly modified as a result of the staircase and seawalls.

Figure 3-3: Manuwai Drive Existing Environment

c. Kiriwai Place / Percival Avenue

This area is predominantly flat, with low density residential dwellings lining a grassed esplanade reserve along the harbour frontage. During heavy rainfall, stormwater flows down Kiriwai Place and along an overland flowpath to Tauranga Harbour, as seen in Figure 3-4.

3.7.2 Matua South

a. Sylvania Drive

An open culvert is located at the end of Sylvania Drive (Figure 3-5). This drains stormwater that flows down Sylvania Drive. This open drain leads into a salt marsh area which is identified as a Special Ecological Area (Category 2). There are a variety of low-lying plants and grasses in the salt marsh. Public access is provided via a boardwalk.

Figure 3-4: Kiriwai Drive / Percival Avenue Existing Environment

Figure 3-5: Sylvania Drive Open Culvert

b. Elmes Place / Levers Road

This area is a salt marsh with a variety of plants present. A public board walk connects Sylvania Drive in the east with Elmes Place in the west. Tauranga Harbour is to the south west. The area has a high amenity value, as seen in Figure 3-6.

Figure 3-6: Elmes Place / Levers Road Existing Environment

4 Options Analysis

Investigations to improve drainage in the Matua catchment and the options identified are described below.

4.1 Matua North

For Matua North six options to mitigate flooding were developed as follows:

- Option 1 – A pumped / gravity pipe and a gravity pipe. This option includs two outfalls, one directionally drilled from Manuwai Drive and including a pumped discharge from Smiths Road and the other outfall was a combination of a pipe and an open channel extending from Strange Grove;
- Option 2a – Two outfalls at the northern end of the catchment. This would be fed by gravity pipe from Manuwai Drive and a pumped rising main from Smiths Road via Eaton Crescent and Matua Road to the harbour;
- Option 2b – Similar to 2a but with a pumped rising main from the middle of Eaton Crescent via Matua Road to the harbour. This rising main alignment follows the valley between Eaton Crescent and Matua Road;
- Option 3a – Two outfalls at the northern end which were to be fed exclusively by gravity pipes and channels. One gravity pipe would be laid along Manuwai Drive and includes a sealed gravity pipe segment from Manuwai Drive to exit through an open channel.
- Option 3b – Similar to 3a but with a slight variation in upstream pipework.
- Option 4 – An outfall at Strange Grove and an outfall from Manuwai Drive. A combination of a gravity pipe and a pumped rising from Eaton Crescent main would feed the Manuwai Drive outfall.

Option 4 was considered the preferred option because Strange Grove and Manuwai Drive are the best locations to drain the catchment. The other options were also considered unsuitable because of the large number of properties that the alignments would have to pass through. Option 4 was subsequently tested in the hydraulic model. The initial options pipe sizing was based on a 2 hour storm event with a flat precipitation rate of 70mm / hour. The hydraulic modelling revealed that there was an insufficient drop in flood levels and a precipitation rate of 200mm / hour was applied for resizing the pipework for Option 4.

Following the recalculation of Option 4 discharges, it was decided that the Strange Grove outfall should be developed for two scenarios with an outfall through the 11 Strange Grove property:

- Scenario 1: 2 Outfalls - Maximum practicable outfall size assuming the dwelling to remain. This scenario also requires a directionally drilled outfall from Manuwai Drive (1.9m^3/s) and a box culvert at the end of Strange Grove (5.7m^3/s).
- Scenario 2: 1 Outfall – Box culvert at Strange Grove (7.6m^3/s) suitable to discharge the entire catchment flow thus not requiring an outfall at Manuwai Drive.

Scenarios 1 and 2 are shown in Figure 5-1.

If Scenarios A & B documented in Section 4.2 do not proceed, additional work in Kiriwai Place and Percival Avenue will be required. Refer to Section 4.3.

4.2 Matua South

Up to two further outfalls are proposed in Matua South to further mitigate flooding within the Matua catchment (as depicted on Figure 1-1). Stormwater flows towards the north is reduced by draining

the head of the catchment across Levers Road and discharging to the south of the Peninsula. Two scenarios A & B are under consideration within Matua South;

- Scenario A: 1 outfall at the end of Sylvania Drive (5.75m^3/s) to intercept flows from identified flood risk areas 1, 2 and 3, as seen in Figure 1-1.
- Scenario B: 2 outfalls:
    - Sylvania Drive (2.98m^3/s) to intercept flows from 3 **AND**;
    - Elmes Place (2.77m^3/s) to intercept flows from 1 and 2; **OR**
    - Levers Road (2.77m^3/s) to intercept flows from 1 and 2.

Further detailed design is required to confirm feasibility and constructability of both scenarios A and B however some discussion on these scenarios is provided in Section 7.

4.3 Additional Outfalls

If Scenarios A or B (as described in Section 4.2) to intercept flows from identified flood risk areas 1 and 2 (refer to Figure 1-1) do not proceed, then additional upgrade works will be required in Matua North, namely;

- Percival Avenue – upsizing the existing 750mm outfall (to result in a peak modelled flow rate of 4.6m^3/s) **OR**
- Kiriwai Place – to construct a box culvert for diffuse discharge to the grass reserve (to result in a peak modelled flow rate of 5.73m^3/s).

5 Description of Proposal

In order to address the drainage issues in the Matua Catchment as depicted in Figure 1-1, it is proposed to establish new stormwater outfalls to Tauranga Harbour.

It is anticipated that the works will take six months to complete and will commence when funding is approved.

With the outfalls in place, the total volume of stormwater discharged from the catchment will remain relatively unchanged, however the distribution of the discharge to the coast will change. The objective of the proposal is to expand the capacity of the stormwater network in the Matua Catchment in order to adequately drain the area and alleviate pressure on the system in storm events.

5.1 Matua North

5.1.1 Strange Grove

It is likely that a 1m x 1.5m box culvert would be established to drain stormwater that travels down the existing stormwater network in Strange Grove. This could be constructed from the existing stormwater pipe at the end of Strange Grove to the harbour, through the property at 11 Strange Grove. An excavator would be used to dig the culvert, a small segment could be dug and then a concrete base could be laid down before the next segment of culvert is excavated. Once the culvert has been dug, the concrete panels could be laid to form the top of the box and then it would be overlaid with soil. A tracked vehicle could be used to place rock around the outfall structure to channel the stormwater flows out from the shore. A rock apron would also dissipate the stormwater flows to reduce scour of the shore in high rainfall events. Section 8 describes the scour and erosion protection further.

Based on modelling, the outfall would have a maximum peak flow of 5.7m^3/s under Scenario 1 (which consists of outfalls at Strange Grove and Manuwai Drive) to 7.6m^3/s under Scenario 2 (which consists of an outfall at Strange Grove only). A shallow depression extending out from the shoreline 0.3m to 0.5m deep for 40m would be dug to encourage the formation of a natural channel for outfall flows over time. If this were built, there would be a 10m wide, 20m long strip of rock riprap extending into the CMA for scour protection.

5.1.2 Manuwai Drive

Under Scenario 1, a new stormwater pipe would be drilled from Manuwai Drive to the coast. This would likely be under the public walkway to the coast (next to 23 Manuwai Drive). A hole would be dug at the road end of the walkway and directional drilling would take place to install the pipe under the walkway and stairs. To make way for the outfall on the coast, it is likely the bottom of the existing stairs visible in Figure 3-3 would need to be relocated to the side. An outfall in this location could be approximately 900mm or 1200mm in diameter, depending on whether or not a pump is used.

Once the alignment has been drilled, the pipe would be brought in on a barge and pulled into position. Rock would be brought in using a small excavator which would approach the site from Kiriwai Place to the east. The outfall would have a peak flow of approximately 1.9m^3/s. There would be a 10m wide, 20m long strip of rock riprap extending into the CMA for scour protection. Rock would be placed to ‘fan’ out from the outfall, directing stormwater directly out from the coastline. Excavators would be used at low tide.

Figure 5-1: Possible Outfall Alignments

5.1.3 Kiriwai Place / Percival Avenue

As described in Section 4.3, if the Levers Road and Elmes Place outfalls within Matua South do not proceed, works will be required to either upsize the existing 750mm outlet at Percival Avenue (4.6m^3/s) or construct a new box culvert (similar to that at Strange Grove) for diffuse discharge of stormwater to the grass reserve (5.73m^3/s) at Kiriwai Place. Works would include scour protection and rock to disperse stormwater flows, similar to the concepts discussed for Manuwai Drive and Strange Grove as required.

5.2 Matua South

As described in Section 4.2, up to two further outfalls are proposed in Matua South to relieve stormwater flows discharging into Matua North. These are;

- Scenario A: comprising 1 outfall at Sylvania Drive (5.75m^3/s)
- Scenario B: comprising 1 outfall at Sylvania Drive (2.98m^3/s) **AND** 1 outfall at Elmes Place (2.77m^3/s) **OR** Levers Road (2.77m^3/s)

5.2.1 Sylvania Drive

A new outfall at the end of Sylvania Drive would likely feed into the open trench that extends from the end of Sylvania Drive westwards to the salt marsh. An outfall in this location would likely be directional drilled to connect the existing upstream catchment to the open trench at the end of Sylvania Drive. The existing open trench is near the coast and is anticipated to have sufficient capacity for additional discharges from upstream.

5.2.2 Elmes Place or Levers Road

A new pipe could be directionally drilled under the public walkway from Elmes Place to the salt marsh area. Such an outfall would include a dissipation structure to slow the rate of water entering the salt marsh. An outfall in this area would be constructed in conjunction with new pipework upstream in the catchment to drain the southern slope of the catchment.

6 Reason for the Application

The rules from the TCP and regional plans that are relevant to the proposal are set out in Table 1 below.

Table 1 – Relevant Consenting Provisions

Rule	Activity	Status
Bay of Plenty Regional Water and Land Plan (RWLP)		
Rule 1	Any earthworks on slopes greater than 35 degrees. - The earthworks to install the outfall at Manuwai Drive will be on a slope.	**Discretionary**
Bay of Plenty Regional Coastal Environment Plan (RCEP)		
Rule 28	The maintenance or alteration of any structure in the coastal marine area. - The works to construct the Outfall at Manuwai Drive will require the staircase to be relocated.	**Permitted**
Rule 31	The erection of structures in the Coastal Management Zone (within the CMA) not expressly provided for or prohibited by other rules. - The outfalls are classified as structures.	**Discretionary**
Rule 50	Where a rule in this plan states that the erection, reconstruction, alteration, extension, demolition or removal of structures is a Discretionary Activity, then so is deposition on and disturbance of the foreshore or seabed for that purpose. - There will be some disturbance to the seabed as a consequence of construction of both outfalls.	**Discretionary**
Rule 89	The emission of noise within the coastal marine area of the Tauranga and Ohiwa harbours is a permitted activity, provided that the noise does not exceed the following conditions: Day Time – 55 dBA L10. The day time period is between 7.00 a.m. – 10.00 p.m. These noise restrictions will be abided by during construction works at both outfall locations.	**Permitted**
Operative Tauranga City Plan (TCP)		
Rule 5A.4.1	New stormwater reserves within a Category 2 Special Ecological Area (Matua Salt Marsh) in Matua South Proposal	**Restricted Discretionary**
Table 10A.1	New underground pipelines conveying stormwater in the Conservation Zone (on the coast at the end of Elmes Place and Sylvania Drive).	**Controlled**
Rule 12G.2.1	Provision of infrastructure to vest in the Council. - The proposed stormwater upgrades include new infrastructure to be vested in TCC.	**Controlled**
Rule 4C.2.1	Earthworks in the Road Zone - Much of the earthworks required will take place in the road zone to dig holes, from where directional drilling will take place to install stormwater pipes.	**Permitted**
Rule 4C.2.4	Earthworks within the Flood Hazard Plan Area not exceeding 500m^3 - Less than 500m^3 of earthworks will take place in the Flood Hazard Plan Area (Strange Grove outfall).	**Permitted**
Rule 4E.2.14	Construction Noise not exceeding the limits of NZS 6803:1999 Acoustics Construction Noise - Construction works will not exceed NZS 6803:1999	**Permitted**

A consent duration of 35 years is sought for the Regional consents. Resource consent is required overall as a **Discretionary Activity.**

Appendix 12B: Performance Standard, Stormwater of the TCP is currently subject to Proposed Plan Change 1. The Plan Change proposes alterations to the standards to make the minimum and maximum parameters more robust to ensure that infrastructure vested in Council is delivered effectively and to a high standard. Plan Change 1 is currently undergoing the further submission phase which closed on 6 December 2013.

The proposal will be designed in accordance with both Appendix 12B in its current form and Proposed Plan Change 1.

Consents required by the TCP are overall considered to be Restricted Discretionary in Matua South and Controlled in Matua North.

7 Alternatives Considered

The locations identified in Figure 1-1 have been identified as being the most appropriate and effective locations to drain the Matua catchment, as the locations are near where the major flooding issues are occurring. These locations are also situated where it will be relatively straightforward to connect them to the existing stormwater networks further up the catchment, with regards to landownership, topography and constructability.

7.1 Matua North

For Matua North six previous options were considered to address the flooding issues in Matua, as discussed in Section 4.1 of this report. The previous options were considered unsuitable by TCC because of the large number of properties that the alignments would have had to pass through.

7.2 Matua South

Graeme Dohnt, Stormwater Technical Advisor at Tauranga City Council has provided the following comments on the constructability of an outfall from Elmes Place, Sylvania Drive and Levers Road.

7.2.1 Elmes Place Outfall

This alignment appears to be straight forward but will prove to be very difficult to construct. The pipe size will be approximately 1200mm in diameter. Because of the depth to invert, approximately 13 mettres, it will need to be horizontally directional drilled (400) and with a number of very tight corners to navigate there is no surety that a contractor will be able to complete this section without resorting to partial open cut methods. If this happens there will be major disruption to residents.

7.2.2 Sylvania Drive Outfall

This will involve a open cut method for parts of Levers Road then horizontally directional drilled when depths to invert exceed 4 metres. The intersection of Levers Road / Sylvania Drive will require open cut as there will need to be a 90 degree change in direction. This is a long pipe length alternative and cost to construct will most likely be prohibitive.

7.2.3 Levers Road Outfall

This alignment has been considered in the past and was discounted due to what appeared to be difficulties to construct and meet owners expectations. Modern construction techniques now make this viable but will require careful onsite management to meet owners and neighbours expectations. It is the shortest route from the low point on Levers Road that causes flooding in the lower reaches of Warrington Street.

8 Assessment of Environmental Effects

8.1 Positive Effects

All scenarios will address the flooding issues in the Matua Catchment. In Matua North there will be an additional maximum flow capacity of up to 13.3m^3/s. This will contribute to the health and social wellbeing of the residents of Matua by reducing flooding on their land and property and will contribute to TCC's objective as a territorial authority to improve the wellbeing of its ratepayers by providing adequate services to avoid flooding effects.

Similarly, the additional outfalls in Matua South will alleviate flooding and stormwater discharge to Matua North with additional maximum capacity of up to 5.75m^3/s (depending on the scenario chosen).

The overall positive effects of both scenarios are considered to be significant.

8.2 Visual Effects

There is the potential for the outfalls to cause adverse effects on visual amenity. Man-made structures can be considered to modify and compromise the 'naturalness' of the coastal environment.

8.2.1 Matua North

a. Scenario 1

Scenario 1 includes two separate outfalls. To mitigate effects on visual amenity, the 1m x 1.5m box culvert at Strange Grove, will be designed to extend only a short distance into the coastal marine area (CMA). Most of the culvert is likely to be buried under ground. It will appear similar to the outfall shown in Figure 8-1, however there will be a shorter 'wing-wall' on either side of the outfall and loose rock will be placed around the edges of the wing-walls. Rock will also be laid out from the outfall on the bottom to form an apron that will be slightly lower than the beach level. The dynamic nature of the coast will result in sand being flushed out of the outfall, revealing the rock apron after storm events. Over time, the sand will fill back up around the outfall, covering the rock apron until it is flushed out again by the next storm event. Accordingly, the natural character of the environment will be modified by the establishment of the outfall, however the loose rock will help to shroud the outfall and soften the manmade character of the outfall, and the size and nature of the outfall, being only partially exposed, also reduce the visual effects.

If the Levers Road and Elmes Place outfalls within Matua South do not proceed, there will also be additional works required at either Percival Avenue or Kiriwai Place. If Percival Avenue is selected, the existing 750mm outfall will be upgraded (4.6m^3/s). As there is already an outfall in this location, the visual effects of upgrading it are assessed a s less than minor.

If Kiriwai Place is selected, a box culvert will be dug and would have similar visual effects to the one at Strange Grove, described in Section 5.1.1 of this report. The Kiriwai Place outfall would have a maximum peak flow of 5.73m^3/s.

Figure 8-1 Example Shaw Place Outfall, Matua, Tauranga

The outfall at Manuwai Drive will be similar to the one located at Strange Grove, however the pipe will be smaller than the box culvert (between 900mm – 1200mm in diameter). A rock apron will also be established along the bottom of the outfall and loose rock will also be placed around the sides of the wing walls, similar to the outfall shown in Figure 8-1.

It is considered that because of the short extent of the outfalls from the coastal edge, the fact that most of the pipes are buried, the inclusion of rock around both of the outfalls and the already modified character of both sites, the adverse visual effects of outfalls under Scenario 1 will be less than minor.

Figure 8-2: Example Outfall, Bureta Road, Tauranga

b. Scenario 2

As for Scenario 1, there will be a box culvert and / or an open channel outfall constructed at Strange Grove similar to the outfall shown in Figure 8-2. Under this scenario, the capacity would be increased and the house at 11 Strange Grove would be removed. This channel cemented with rock rip rap laid from the end of the outfall, into the harbour a distance of 20m. There would be a less than minor adverse visual effect associated with removing the existing house and creating an open channel. However, as part of Scenario 2, there would be no outfall at Manuwai Drive. Therefore, there will be no visual effects in Manuwai Drive. as part of Scenario 2. For this reason, there would be fewer visual effects from Scenario 2 compared with Scenario 1.

From a visual perspective, Scenario 2 is the preferred option, as there would be no outfall from Manuwai Drive.

If the Levers Road / Elmes Place outfalls are not selected, again from a visual perspective, Percival Avenue is preferred over Kiriwai Place, as there is an existing outfall that can be upgraded, rather than constructing a new outfall at Kiriwai Place.

8.2.2 Matua South

a. Scenario A

The outfall at Sylvania Drive will appear similar to the example shown in Figure 8-1. This outfall will connect to the open drain at the end of Sylvania Drive, shown in Figure 3-6. The existing drain is modified in character and therefore the visual effects of connecting another outfall into this drain are considered less than for outfalls on the coast. The pipe and outfall will be below ground level and will be mostly hidden from view although it would be within the Matua Salt marsh area. The visual effects of the outfall from Sylvania Drive are considered less than minor.

b. Scenario B

This scenario will have an outfall from Sylvania Drive and an outfall from either Elmes Place or Levers Road.

The outfall from Elmes Place will be similar in design to the one shown in Figure 8-3. The outfall from Elmes Place would emerge on the coast near the bottom of the public walkway from Elmes Place. An outfall in this location would be outside the Matua saltmarsh which is considered to be less of a visual effect than an outfall within the Salt Marsh (as per Scenario A above). However, an outfall from Elmes Place would be more visible to the public, as it will be beside the public walkway. The character of the coast in this location is modified and in this context, visual effects of the outfall are considered no more than minor.

An outfall from Levers Road would also appear similar to the outfall at Rewarewa Place, shown in Figure 8-3. This outfall will extend from Levers Road, underground to the harbour in the south. It will emerge on the coast, beside the Matua salt marsh. This area is considered to have moderate to high amenity value. This coastal area is surrounded by dwellings, some of which are located on the edge of the shore, which has created a man-made character around the salt marsh. The effects of an outfall in this context will be no more than minor.

From a visual perspective, Scenario A will have the least visual effects on the coast.

However, if Scenario B were selected, it is considered that an outfall from Elmes place would have less visual effects than an outfall from Levers Road, as it would avoid the Matua salt marsh.

Figure 8-3: Example Outfall, Rewarewa Place, Tauranga

8.3 Water Quality and Ecological Effects

The discharges from the catchment will be incorporated into Tauranga City's Comprehensive Stormwater Consent (CSC) 66823.

Stormwater can pick up contaminants prior to being discharged to the sea which have the potential to cause adverse effects on water quality and ecology in the CMA.

As the Matua Catchment is predominantly composed of suburban residential properties, contaminants will be from roofs, yards and roads in the area. The contaminants in the water will therefore be similar to what is already being flushed out to sea from the rest of the discharges along the coast. It is considered there will be less than minor effects on the existing ecological quality of Tauranga Harbour, as noted in Section 3.5 of this report. TCC will manage the ecological effects through the TCC Stormwater Bylaw pollution prevention initiatives and its longterm stormwater and marine receiving environment monitoring programmes (Refer to Appendix C for the most recent marine receiving environment monitoring carried out).

The potential water quality and ecological effects of all outfall locations are considered less than minor.

8.4 Hydrology / Scour Effects

The stormwater flows from the proposed outfalls have the potential to scour the beach and erode the coastline, especially during heavy rainfall events.

The level of scour will vary from outfall to outfall, depending on stormwater volumes. Figure 8-4 shows the channel that has formed at the Bureta outfall. Where large outfalls are proposed (flow rates of around $5m^3/s$ – $10m^3/s$), channels similar to this are anticipated to form on the beach.

Smaller outfalls (flow rates of around $2m^3/s$ – $3m^3/s$) will have a corresponding smaller effect on beach scour. The effects from smaller outfalls (900mm and 1200mm pipes) are anticipated to cause similar scour effects to that shown in Figure 8-1.

To avoid potential scour effects, the proposed outfall structures will include rock aprons on the bottom to avoid scour of sand on the 'floor' of the outfall.

Any scour damage that may occur in the harbour would happen instead of the flooding problems upstream. It is considered that the increased scour effects would be preferable to the flooding which is damaging residents properties.

It is considered that the design of the outfalls and the use of rock will slow down stormwater velocities and avoid scour to the extent that hydrology and scour effects will be less than minor.

Figure 8-4: Stormwater Scour, Bureta Road

8.5 Tangata Whenua Effects

Ngai Tamarawaho has prepared a CIA to assess the cultural effects of the proposal.

Ngai Tamarawaho supports the proposal, on the condition that cultural and environmental values are properly considered and provided for. In particular, the Ngai Tamarawaho / TCC protocols covering accidental discovery and earthworks are to be applied. The project is within an area of cultural and historical interest. The CIA also recommends:

- An archaeological authority be sought from Heritage New Zealand;
- Ngai Tamarawaho to provide an earthworks monitor at the four 'harbour sites' (Manuwai Drive, Strange Grove, Kiriwai Place and Percival Avenue) and only for the initial removal of top soil where the surface has not been previously modified;
- Ngai Tamarawaho be consulted on the creation of any reserves associated with outfalls and be given the opportunity to suggest traditional names to preserve their traditional association with the land; and
- Native plants or fruit trees be used in any new reserves that require boundary planting.
- Furthermore Ngai Tamarawaho is concerned with water quality in the harbour and requires sediment traps during construction and operation of outfalls;
- Ngai Tamarawaho requests that discharge arrangements provide for the dissipation of stormwater flows, possibly with rock riprap arrangements;
- Ngai Tamarawaho seeks assurance that there will be no long-term negative impact on biodiversity at discharge points;
- Ngai Tamarawaho requests regular updates during the construction phase of the project.

These measures, requested by Ngai Tamarawaho shall be adopted by TCC. Ongoing stormwater monitoring will continue, as part of the Citywide Comprehensive Consent (CSC 66823) in order to determine the long-term effects on biodiversity in the receiving environment.

8.6 Construction Effects

8.6.1 Overall Project Methodology

During construction, there is the potential for adverse effects to occur from disturbance of the seabed from contractors and machinery, fuel leakages from machinery and spills from material such as grout or concrete.

To avoid potential construction effects, tracked vehicles will access each site at low tide, to avoid stirring up sand and sediment in the water. All equipment and tracked vehicles will be refuelled off-site to avoid the potential for fuel leaks. All construction equipment and materials will be cleaned and removed from site each day before the tide comes up. The rock that will be moved into place around each of the outfalls wing-walls will be largely free of sediment.

The contractors that are awarded the project will be required to develop a Site Management Plan (SMP) and an Erosion and Sediment Control Plan (ESCP). The latter will incorporate procedures to avoid construction effects on the CMA and land.

8.6.2 Matua North

The box canal dug for the outfall at Strange Grove will be dug in segments and then the bottom concrete panels will be inserted to reduce the surface area of exposed soil. The SMP and ESCP will be submitted to BOPRC for approval prior to works commencing.

Public access to the staircase at Manuwai Drive will be disrupted during construction, as the staircase will have to be closed to the public and shifted to the side to make way for the outfall pipe. This will be temporary and upon completion of works, the staircase will be open to the public once more, albeit in a slightly different location.

During construction of the outfall at Manuwai Drive, there is the possibility of instability on the slope as earthworks will be carried out at the base of the slope to install the pipe to link to the outfall. It is considered the potential for slope instability from earthworks at Manuwai Drive will be low as the hole will be drilled from Manuwai Drive and upon completion of drilling, the pipe will be inserted which will stabilise the horizontal hole.

An outfall from Kiriwai Place / Percival Avenue would be similar to the box culvert at Strange Grove. This would be dug in sections and temporary coffer dams would be installed to 'seal' the excavation channel and prevent inundation of the area during construction. Once complete, the coffer dams would be removed.

8.6.3 Matua South

The construction methodology for Scenarios A and B would be similar and would likely be directional drilled. The pipe could be floated from Bay Street on a barge and pulled up through the drilled hole to the top of the hill.

Scenario A would be difficult to construct because water would have to be collected from Areas 1, 2 and 3 (shown on Figure 1-1) and piped along Levers Road and down Sylvania Drive. The topography of this route is undulating and would horizontal directional drilling approximately 6 – 8m deep at the intersection of Levers Road and Sylvania Drive. This scenario is expected to be the most difficult to construct.

Directional drilling from Levers Road may require road closures of Levers Road which would require detours around Matua Road, Mahoe Street and Smiths Road. Standard traffic control measures will be adopted by the contractor to manage these effects.

Once the pipe is in place, a trench will be excavated from the pipe to the sea. A concrete pipe will be inserted in the trench with a sealed manhole at the bottom of the drilled hole. At the end of the concrete pipe, a bubble-up chamber will be installed with a 'scruffy dome' emerging at ground level. This arrangement will help to slow the rate of water discharge and reduce scour. From the scruffy dome, the stormwater would flow across the ground toward the harbour. Rocks will be laid to slow the rate of water flow.

Excavators and / or tracked vehicles will be able to access the outfall locations for Scenarios A and B via the public walkways from the end of Sunny Bay Road or from the end of Elmes Place.

A stormwater pipe would be installed along Sylvania Drive by open trench excavation. The pipe to be installed along Sylvania would be no larger than 1m in diameter. The pipe would then discharge into the existing open trench drain towards the Matua Salt Marsh (shown in Figure 3-6). This outfall would include a concrete wingwall and the drain would be lined with reno mattresses (10m length of the drain, 3m upstream and 6m downstream) and rock would be placed on the drain edges to a height of 1.5m.

8.6.4 Overall Construction Effects

As the tracked vehicles will only be used at low tide and because the rock will be free of sediment, it is considered that sediment disturbance effects on the harbour will be less than minor.

The contractors will be required to develop an SMP to the satisfaction of BOPRC and works will be timed to avoid the winter season and therefore overall construction effects will be avoided and mitigated to be less than minor overall.

8.7 Archaeological Effects

If outfalls are constructed at Manuwai Drive or Strange Grove, there is a possibility of encountering archaeological sites or artifacts associated with the Matuaiwi Pa. From the archaeological report, the other possible outfall locations are not considered to have as high a likelihood of affecting any recorded archaeological sites.

The archaeological report (Appendix D) makes the following recommendations to avoid effects on archaeological sites or artifacts:

1. Obtain an authority from Heritage New Zealand for the proposal
2. Archaeological monitoring by a suitably qualified archaeologist should be carried out during earthworks to determine if archaeological features are encountered.
3. If archaeological sites are encountered, works must stop until investigation and recording are carried out by Heritage New Zealand
4. If koiwi tangata (human remains) are encountered, no further modification of the site shall occur until tangata whenua and the Trust have been advised and their responses received
5. Archaeological survey cannot always detect sites significant to Maori and tangata whenua should be consulted regarding the possible sites and recommendations of the report.

An authority application has been lodged to Heritage New Zealand for the proposal. No works will commence until the authority has been obtained. It is proposed that an archaeologist is present to observe earthworks in order to identify any archaeological sites that may be encountered. If any sites are encountered, works will cease and Heritage New Zealand will be notified. If koiwi tangata are uncovered, Heritage New Zealand and Ngai Tamarawaho will be alerted and works will cease until recommendations are received from both. The archaeological report was sent to Ngai Tamarawaho to review and facilitate the production of their CIA.

With the adoption of the recommendations in the archaeological assessment, the potential archaeological effects are considered to be less than minor.

Scenario 2 will have a lower risk of affecting artifacts near the Matuawai Pa, as there will be no outfall at Manuwai Drive, which is approximately 50m from the Matuawai Pa.

9 Consultation

9.1 Tangata Whenua

9.1.1 Ngai Tamarawaho

A meeting was held on the 12th of May 2014 at Huria Marae with Buddy Mikaere (Ngai Tamarawaho) and Jotham Alex (Planner) present. The proposal was presented to Mr. Mikaere and a copy of the draft resource consent was supplied. Mr. Mikaere indicated that a CIA would be required. Mr. Mikaere was subsequently commissioned to prepare a CIA.

Another meeting was held on the 10th June 2014 at TCC. The intention of this meeting was for TCC to update Mr. Mikaere and Mr. Alex on the scale of the project, which was expanded from two possible outfall locations to seven.

A site visit was carried out on the 25th June 2014. Mr. Mikaere prepared the CIA with recommendations from Ngai Tamarawaho, as set out in Section 8.5 above. The requests of Ngai Tamarawaho will be incorporated into the proposal.

9.1.2 Ngati Ranginui and Ngai te Rangi

A letter was also sent out to Ngati Ranginui and Ngai te Rangi, advising these groups of the proposal. These letters were sent out during the week ending 5 September 2014. Feedback from these groups will be provided to BOPRC following lodgement if received.

9.2 Stakeholders

Letters were sent to the following stakeholders in May 2014, notifying them of the proposal for up to two outfalls:

- Fish and Game
- Forest and Bird
- Toi Te Ora
- Department of Conservation

No responses were received from these groups. Subsequently, another letter was sent out to these stakeholders during the week ending 5 September 2014 to inform them of the updated proposal, including Matua South Scenarios. No response has been received at the time of lodgement.

9.3 Residents

A letter was posted to residents of Matua North[1] on the 26th of May 2014 notifying them of the initial proposal. The scenarios under consideration at that time were Scenario 1 and Scenario 2 only. 7 responses were received from this earlier proposal, 6 respondents supported either Scenario and 1 respondent stated they would write a reply when the resource consent is notified.

[1] Residents of Kings Ave, Manuwai Drive, Weka Street, Takapu Street, Smiths Road, Eaton Crescent and Matua Road were sent a copy of the first letter.

Residents of Matua Peninsula were also sent similar letters to notify them of the proposal. The letters were posted during the week ending 5 September 2014. At the date of lodgement, no responses had been received.

If any responses are received from stakeholders or residents after lodgement, the applicant proposes sending these to Council during the notification process.

9.4 Notification

The applicant requests that this application is notified pursuant to Section 95A(2)(b) of the Resource Management Act 1991 (RMA).

10 Opinion on Legislation and Planning Documents

The proposal is assessed against the objectives and policies of the relevant statutory documents in Table 2 below. Refer to Appendix E for the complete text of the objectives and policies for each policy and plan.

Table 2: Assessment of Bay of Plenty Regional Policy Statement

Subject	Comment
Treaty of Waitangi / Tangata Whenua	
Operative RPS Objective 5.3.1(a), Policy 5.3.1(b)(v), Objective 5.3.2(a), Policy 5.3.2(b)(ii), Policy 5.3.2(b)(iv)	Consultation was carried out with Ngai Tamarawaho and the recommendations are set out in the CIA. The recommendations of Ngai Tamarawaho will be adopted in the proposal.
Proposed RPS Objective 12, Policy IW3B, Objective 13, Policy IW 3B, Policy IR 4B, Policy IW 6B, Policy IW 2B, Policy IW 5B	
New Zealand Coastal Policy Statement Objective 3, Policy 2	
Operative Bay of Plenty Regional Policy Statement 1999 Objective 5.3.1(a), Policy 5.3.1(b)(v), Objective 5.3.2(a), Policy 5.3.2(b)(ii), Policy 5.3.2(b)(iv)	
Regional Coastal Environment Plan 2003 Objective 8.2.2, Policy 8.2.3(a), Policy 8.2.3(b), Policy 8.2.3(c), Objective 18.2.2, Policy 18.2.3(d)	
Regional Coastal Environment Plan 2014 Objective 12, Objective 14, Objective 15, Policy IW 1, Policy IW 5, Policy IW 8	
Consultation	
Operative RPS Policy 5.3.3(b)(ii), Policy 5.3.3(b)(iii)	Consultation has been carried out, as set out in Section 8 of this report on behalf of TCC as the stormwater asset manager. Ngai Tamarawaho prepared a CIA to identify cultural effects and proposed mitigation measures. Letters were sent out to stakeholders and residents, as noted in Section 9 of this report.
Proposed RPS *Objective 14, Policy IR 4B, Policy IW 6B*	
Operative Bay of Plenty Regional Policy Statement 1999 Policy 5.3.3(b)(ii), Policy 5.3.3(b)(iii)	
Land	
Operative RPS Objective 6.3.1(a), Policy 6.3.1(b)(i), Policy 6.3.1(b)(ii), Policy 6.3.1(b)(iii)	The pipe and culvert leading to each outfall will be underground, which will enable the land above to be used for other purposes, which addresses these objectives and policies.
Operative Bay of Plenty Regional Policy Statement 1999 Objective 6.3.1(a), Policy 6.3.1(b)(i), Policy 6.3.1(b)(ii),	

Subject	Comment
Policy 6.3.1(b)(iii)	
Regional Water and Land Plan 2008 Objective 9, Objective 19, Policy 24, Policy 32	
Coast	
Operative RPS Objective 9.3.1(a), Policy 9.3.1(b)(i), Policy 9.3.1(b)(ii), Policy 9.3.1(b)(iii), Policy 9.3.1(b)(iv), Policy 9.3.1(b)(v)	For the reasons outlined in Section 7 of this report, the proposal is considered to be consistent with these objectives and policies.
Operative Bay of Plenty Regional Policy Statement 1999 Objective 9.3.1(a), Policy 9.3.1(b)(i), Policy 9.3.1(b)(ii), Policy 9.3.1(b)(iii), Policy 9.3.1(b)(iv), Policy 9.3.1(b)(v)	
Water Quality	
Operative RPS Objective 9.3.2(a), Policy 9.3.2(b)(i), Policy 9.3.2(b)(ii)	The quality of the stormwater discharged is anticipated to be relatively good, as the catchment is largely made up of suburban residential dwellings. Runoff will therefore mostly be from roofs and yards. As noted in Section 3 of this Report, the existing water quality of the harbour is good. The proposal will redistribute existing stormwater flows. There will be minimal effects on stormwater quality however there will be new outfalls to discharge it.
Proposed RPS *Objective 27, Policy WL 1B*	
Operative Bay of Plenty Regional Policy Statement 1999 Objective 9.3.2(a), Policy 9.3.2(b)(i), Policy 9.3.2(b)(ii)	
Regional Coastal Environment Plan 2003 9.2.2 Objective, Policy 9.2.3(b), Policy 9.2.3(c)	
Regional Coastal Environment Plan 2014 Objective 7	
Access	
Operative RPS Objective 9.3.3(a), Policy 9.3.3(b)(i)	During construction, access will be affected at Manuwai Drive, however this will be temporary, while the staircase is being relocated. The public will still be able to access this part of the beach from the north, at Kiriwai Place.
Proposed RPS Objective 22, Policy IW 2B, Policy MN 5B	
New Zealand Coastal Policy Statement Objective 4, Policy 18, Policy 19	
Operative Bay of Plenty Regional Policy Statement 1999 Objective 9.3.3(a), Policy 9.3.3(b)(i)	
Regional Coastal Environment Plan 2003 Objective 7.2.2, Policy 7.2.3(a)	
Regional Coastal Environment Plan 2014 Policy RA 2, Policy RA 3, Policy RA 4	

Subject	Comment
Ecosystems	
New Zealand Coastal Policy Statement Objective 1, Policy 1, Policy 11, Policy 22, Policy 23	As noted in Section 7 of this report, the effects from the construction and operation of the outfalls on the harbour and its ecosystems will be less than minor.
Natural Character	
New Zealand Coastal Policy Statement Objective 2, Policy 13 *Regional Coastal Environment Plan 2003* Objective 4.2.2, Policy 4.2.3(b), Policy 4.2.3(f)	As discussed in Section 7 of this report, the outfalls will extend a short distance from the coastal edge and will be shrouded by rock to maintain the natural character of the coast.
Use and Development	
New Zealand Coastal Policy Statement Objective 6, Policy 6, Policy 20 *Regional Coastal Environment Plan 2014* Objective 24, Objective 25, Objective 38	The outfalls are important to the wellbeing of the residents of Matua and are essential to enable adequate drainage of the Matua Catchments. The use of tracked vehicles is necessary in this instance to install the rock around the outfalls. If this is undertaken at low tide, the effects are considered to be less than minor, (Section 7).
Occupation	
Regional Coastal Environment Plan 2003 Objective 12.2.2, Policy 12.2.3(a)	The discharges will extend a small length into the CMA and will not impede public access, except during construction.
Structures	
Regional Coastal Environment Plan 2003 Objective 13.2.2, Policy 13.2.3(e), Policy 13.2.3(g), Policy 13.2.3(h), Policy 13.2.3(i), Policy 13.2.3(j), Policy 13.2.3(k)	The outfalls will be located in modified environments. They will be designed to be suitable in their respective environments and the rock aprons will direct stormwater flows out from the structures to avoid coastal erosion.
Disturbance, Deposition and Extraction	
Regional Coastal Environment Plan 2003 Objective 14.2.2(a), Policy 14.2.3(a), Policy 14.2.3(c), Policy 14.2.3(f)	The works will take place at low tide to avoid deposition into the harbor. Tracked vehicles will be required to install the rock, however no spoil will be deposited in the CMA.
Natural Heritage	
Regional Coastal Environment Plan 2014 Objective 4, Policy NH 1	The proposal is considered to be consistent in the context of the existing environment, which is modified in character. It is considered the outfalls will be consistent with the existing built environment of Matua. The quality of the water discharging from the outfalls is not anticipated to have any effect on kaimoana.
Infrastructure	
Tauranga City Plan 2013 Objective 12G.1.1, Policy 12G.1.1.2, Policy 12G.1.3.1	The outfalls will be designed in accordance with TCC standards. They will meet the requirements of their purpose to drain the Matua Catchment. There are no known geotechnical issues in the areas where the outfalls are proposed. There will not be any grates included on the outfalls

Subject	Comment
	to avoid blockages. They are in areas reasonably easy to access for maintenance purposes and will enable the rest of the stormwater network to operate more effectively by allowing additional discharge points to drain the Matua Catchment.

11 Conclusion

This report has been prepared to support an application for resource consent by TCC to construct new stormwater outfalls in Matua. The findings of the assessment of environmental effects in Section 8 of this report have found the adverse effects of the proposal to be less than minor. In reaching this conclusion on effects, consultation was carried out with tangata whenua to understand their views on the proposal. The proposal has also been assessed against the relevant statutory documents and this assessment has found the proposal to be consistent with the objectives and policies of these.

The applicant requests full public notification of this application in accordance with Section 95A(2)(b) of the Act.