



Pohara drainage improvements

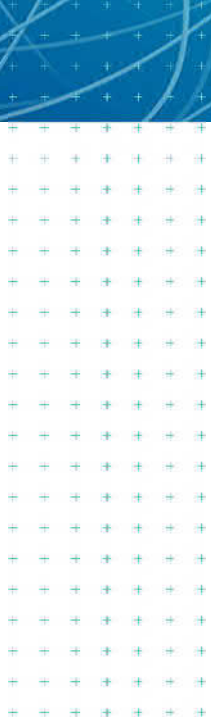
Resource consent application and Assessment of Effects on the Environment

Prepared for
Tasman District Council

Prepared by
Tonkin & Taylor Ltd

Date
July 2019

Job Number
871018.300.v2



Document Control

Title: Pohara drainage improvements					
Date	Version	Description	Prepared by:	Reviewed by:	Authorised by:
4 June 2019	1	Final for comment	A Meehan	T Ensor	M Foley
24 July 2019	2	Final for lodgement	A Meehan	T Ensor	M Foley

Distribution:

Tasman District Council	1 PDF copy
Tasman District Council (Client)	1 PDF copy
Tonkin & Taylor Ltd (FILE)	1 copy

Table of contents

1	Introduction	1
1.1	Overview of proposed works	1
1.2	Background	1
1.3	Applicant and property details	2
1.4	Overview of resource consent requirements	2
1.5	Consent duration	3
2	Environmental Setting	4
2.1	Site location	4
2.2	Site description	5
2.3	Ecology of the wider site	5
2.3.1	Freshwater ecology	5
2.3.2	Vegetation located within the wider site	7
2.3.3	Avifauna present within the subject site	8
2.3.4	Herpetofauna present within the subject site	9
2.4	Archaeology	9
3	Description of Proposed Works	10
3.1	Overview	10
3.2	Design criteria and objectives	11
3.3	Behind 14B Kohikiko Street	11
3.4	Bartlett Creek stopbank	12
3.5	Abel Tasman Drive culvert and stream works	12
3.6	Lansdowne Street fill	13
3.7	Lansdowne Street swale	13
3.8	59B & 59C Selwyn Street works	13
3.9	Stream widening and associated in-stream works	14
3.10	Boyle Street upgrade	14
3.11	Earthworks	14
3.12	Construction methodology	15
3.13	Archaeology	15
3.14	Ongoing maintenance	15
3.15	Consideration of alternatives	16
4	Resource Consent Requirements	18
4.1	Tasman Resource Management Plan	18
4.2	Permitted activities	21
4.3	Existing resource consents	22
4.4	Other consents and approvals required	22
5	Assessment of Effects on the Environment	23
5.1	Introduction	23
5.2	Positive effects	23
5.3	Adverse flooding effects	26
5.3.1	Description of the flood model	26
5.3.2	Quantifying the adverse flood effects in RMA terms	27
5.4	Construction effects	32
5.4.1	Erosion, sedimentation and dust effects	32
5.4.2	Construction noise	32
5.4.3	Traffic effects	32
5.5	Ecological effects	33
5.5.1	Effects on the freshwater environment	33

5.5.2	Effects on fish spawning habitat	34
5.5.3	Effects on the terrestrial environment	34
5.6	Landscape and visual effects (amenity)	35
5.7	Cultural and heritage effects	36
5.8	Summary of effects	36
6	Statutory Assessment	37
6.1	RMA assessment	37
6.1.1	Part 2 of the RMA	37
6.1.2	National Environmental Standards	37
6.1.3	National Policy Statements	38
6.1.4	Regulations	38
6.1.5	Tasman Regional Policy Statement 2001	38
6.1.6	Tasman Resource Management Plan	39
6.2	Sections 105 and 107	41
6.3	Other matters	42
6.3.1	Tasman District Council Long Term Plan 2018 – 2028	42
6.3.2	Reserves Act 1977	42
6.4	Notification assessment	42
6.4.1	Public notification	42
6.4.2	Limited notification	43
6.4.3	Section 95 conclusions	44
7	Consultation	45
8	Proposed Conditions of Consent	46
9	Conclusion	47
10	Applicability	48
Appendix A :	Consent Application Form	
Appendix B :	Certificate of Title	
Appendix C :	Planning Maps	
Appendix D :	Draft Construction Environmental Management Plan (CEMP)	
Appendix E :	Preliminary Design Drawings	
Appendix F :	Flood Difference Modelling Maps	
Appendix G :	Archaeological Assessment	
Appendix H :	Stormwater Modelling Report	

Schedule 4 Requirements

Schedule 4 of the RMA sets out the information required in an application for a resource consent. All relevant matters required to be included have been addressed in the assessments and descriptions in this AEE. The following table provides a summary of the information required in Schedule 4 and a quick reference to its location in this report.

Schedule 4 Item	Location within report
A description of the activity.	Section 3
A description of the site at which the activity is to occur.	Section 2
The full name and address of each owner or occupier of the site.	Section 2
A description of any other activities that are part of the proposal to which the application relates.	Section 4
A description of any other resource consents required for the proposal to which the application relates.	Section 4
An assessment of the activity against the matters set out in Part 2.	Section 6.1
An assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b). This must include: <ul style="list-style-type: none"> Any relevant objectives, policies, or rules in a document. Any relevant requirements, conditions, or permissions in any rules in a document. Any other relevant requirements in a document (for example, in a national environmental standard or other regulations). 	Sections 4 and 6
An assessment of the activity's effects on the environment that includes the following information: <ul style="list-style-type: none"> An assessment of the actual or potential effect on the environment of the activity. If the activity includes the discharge of any contaminant, a description of— <ul style="list-style-type: none"> The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and Any possible alternative methods of discharge, including discharge into any other receiving environment. A description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect. 	Section 5
<ul style="list-style-type: none"> Identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted. If the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved. 	Sections 6.4 and 7
An assessment of the activity's effects on the environment that addresses the following matters: <ul style="list-style-type: none"> Any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects. 	Section 5

Schedule 4 Item	Location within report
<ul style="list-style-type: none"> • Any physical effect on the locality, including any landscape and visual effects. • Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity. • Any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations. • Any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants. • Any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations. 	
<i>For applications involving permitted activities</i>	
<p>If any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)).</p>	Section 4.2

1 Introduction

1.1 Overview of proposed works

Tasman District Council (TDC) operates various stormwater networks in Golden Bay, including at Pohara. This stormwater network does not include Bartlett Creek (both upstream and downstream of the Ellis Creek confluence) which is listed as a private stormwater drain on TDC's planning maps. There are existing stormwater issues in Pohara which have previously resulted in the flooding of surrounding residential properties. These issues are exacerbated by the fact that some commercial buildings and house floor levels have been built at a level that may be flooded during high tides and extreme weather events.

As part of an extensive optioneering process TDC staff have selected a suite of measures to increase the level of service to properties within the Pohara West floodplain (i.e. west of Kohikiko Place). These measures are based upon hydrological and hydraulic modelling undertaken by Tonkin & Taylor Ltd (T+T). A number of improvements are proposed to be undertaken in Pohara to manage flooding from Bartlett and Ellis Creeks. The proposed works include:

- Earthfill bunds;
- Timber pole flood barriers;
- Vehicle access ramps;
- Culvert upgrades;
- Swale drains;
- Rock riprap creek bank protection; and
- Stream widening.

These improvements trigger the requirement for resource consent under the Tasman Resource Management Plan (TRMP) for the construction of structures both within and outside of a stream bed, earthworks, the damming and diversion of flood water and the discharge of contaminants to water. A number of other activities that are included as part of this proposal, including the ongoing maintenance and repair of these structures once lawfully established, are permitted under the TRMP. This is illustrated in more detail within Section 4 of this AEE.

This report has been prepared in fulfilment of section 88 of the Resource Management Act 1991 (RMA), and in accordance with T+T Project Agreement for Professional Services dated 27 February 2018.

1.2 Background

A significant rainfall event in 2011 caused debris flows, flooding and property damage in the Pohara area. Factors contributing to the issues include low lying land, low building floor levels and increasing residential development. Following the subsequent flooding issues, TDC engaged T+T to do extensive hydraulic modelling to help understand the flooding and drainage issues and inform council decisions on the issue. From the hydraulic modelling, TDC have identified drainage system improvements that will reduce the risk of flooding above habitable floor levels, and a range of improvement works have been identified by TDC that have been developed further. This work is outlined in more detail in Section 3 of the AEE below.

It should be noted that this proposal has gone through an extensive optioneering process to arrive at the proposed works package for which consent is now being sought. This optioneering is described in detail within the assessment of alternatives section of this AEE (Section 3.15).

The purpose of these works is to provide flood protection to existing properties in Pohara, in particular to properties where there is a risk of flooding of dwelling floors. It is noted that the new Special Housing Area (SHA) development at 82 Richmond Road is not the subject of these works and that this development is subject to a separate design process to attenuate and limit stormwater flows off the SHA to predevelopment levels.

1.3 Applicant and property details

Table 1.1: Applicant and property details

Applicant	Tasman District Council
Owner/occupier of application sites; Site addresses; Legal descriptions; and Certificate of Title references.	Various – see Section 2.1 of the AEE below
Council / Plans	Tasman District Council Tasman Resource Management Plan
Address for service during consent processing	Tasman District Council C/- Tonkin + Taylor PO Box 1009 Nelson 7040 Attention: Alastair Meehan Phone: 04 806 4964 Email: AMeehan@tonkintaylor.co.nz
Address for service during consent implementation and invoicing	Tasman District Council 189 Queen Street Private Bag 4 Richmond Nelson 7050 Attention: Kim Arnold Phone: 03 543 8577 Email: Kim.Arnold@tasman.govt.nz

We attach copies of the application form in Appendix A, a copy of the relevant Certificates of Title in Appendix B, relevant planning maps in Appendix C, a Draft Construction Environmental Management Plan (CEMP) in Appendix D, preliminary design drawings in Appendix E, maps showing the modelled flood height differences in Appendix F, the draft archaeological assessment in Appendix G and the relevant stormwater modelling report under Appendix H.

1.4 Overview of resource consent requirements

The works require consent from TDC for the following:

- Earthworks (Rules 16.10.2.1 and 18.5.2.1);
- The construction of structures (Rules 17.6.3.1 and 17.1.3.1);
- Work within the bed of rivers or streams (Rules 28.1.5.1, 28.1.3.1 and 28.1.6.1);
- The damming or diversion of flood waters (Rule 31.1.5);
- The discharge of contaminants to freshwater (Rule 36.2.2.3 and 36.2.2.4);
- Works within a Coastal Environment Area (Rule 18.11.2.1); and

- Take of groundwater associated with dewatering during instream works (Rule 31.1.2.5).

A number of other activities that are included in the proposal are permitted under the TRMP. The triggers for consent, along with those activities considered to be permitted under the plan have been identified in greater detail within Section 4 below.

Overall, resource consent is required from TDC under the TRMP as a discretionary activity.

1.5 Consent duration

The Council is seeking the following durations for the consents being sought, in line with section 123 of the RMA:

- An unlimited term for the resource consents for the land use consents for the earth bunds, timber walls and any other structure located outside of the bed of a river;
- A duration of five years for the construction and installation works, including the ancillary discharge consents associated with this construction work; and
- A duration of 35 years for the land use consents relating to the placement of structures (including rock armour and culverts) within the bed of the river.

2 Environmental Setting

2.1 Site location

The works will generally take place within the Pohara Township in Golden Bay, which is located approximately 10km northeast of Takaka, as illustrated in Figure 2.1 below. The physical works largely take place within those private properties listed below:

Table 2.1.1: List of properties within which physical works will take place, and their owners

Address	Lot Description	CT number	Owner(s)
82 Richmond Road	Lot 1 Deposited Plan 494605	724177	Richmond Pohara Holdings Limited
59B Selwyn Street	Lot 1 Deposited Plan 359341	241771	Daniel Jones Te Tau, Rosemary Anne Jones
59C Selwyn Street	Lot 1 Deposited Plan 20483	NL13C/720	Elizabeth Mary Lee, John Richard Crispin Lee, Jonathan George Rutherford Tidswell
85 Selwyn Street	Lot 19 Deposited Plan 9603	NL4C/1379	Brian John Win, Milnes Beatson Trustee Company Limited
89 Selwyn Street	Lot 17 Deposited Plan 9603	NL4C/1377	Brent Duane Sturm; Tracey Lorraine Sturm
97 Boyle Street	Section 132 Square 11	NL1A/771	Tasman District Council
Abel Tasman Drive	Part Section 8A Survey Office Plan 7960	NL10B/1189	Arnold Ashton Bartlett, Roger Coleridge Bartlett
23 Lansdown Street	Lot 1 DP 11360	NL6D/254	Hans Heinrich Walter Stoffregen, Ina Holst-Stoffregen

Physical works also take place in the following road reserves:

- Abel Tasman Drive; and
- Lansdowne Street (Paper Road).

TDC has sought landowner approval to undertake the works within private property under Section 181 of the Local Government Act.

The indicative area of the proposed flood protection works is shown in red on Figure 2.1 below.



Figure 2.1: Location plan.

2.2 Site description

The flood mitigation works will generally span from Kohikiko Place to the east through to Selwyn Street towards the west. Further works are also planned at Boyle Street, with the wider programme of works generally adjoining Bartlett and Ellis Creeks. The works will bisect Abel Tasman Drive, which is the main access road to the Pohara Township, by way of an existing culvert which is proposed to be upgraded as part of the nominated works. To the south of the streams within the catchment, the land use is predominantly rural in nature and used for pasture production. To the north of Bartlett Creek the land use is predominantly residential in nature.

The site is relatively flat and low lying in nature, and spans multiple plan zones, including the Rural 2, Residential and Recreation zones. The majority of the subject site is also located within the coastal environment area, which is defined as coastal marine area and land above the coastal margin that is affected by coastal processes, resources and issues, and all associated plants, animals and structure. It is noted that the presence of foredunes to the north of the proposed works, the flat and low-lying nature of the floodplain and the presence of tidal processes in the nearby Motupipi estuary all represent constraints upon the stormwater drainage network, which the proposed mitigations have needed to account for.

2.3 Ecology of the wider site

2.3.1 Freshwater ecology

The project area is located within or adjacent to Ellis, Bartlett and Clifton Creeks in Pohara, Golden Bay. The creeks are low-elevation, low-gradient and flow into the eastern arm of the Motupipi Estuary approximately 100 m downstream of the Ellis and Clifton Creek confluence, with a saltmarsh environment located approximately 300 m further downstream of this confluence.

Due to the management of land surrounding the project area, all of the above creeks have limited or no riparian vegetation. They have also been heavily modified via mechanical excavation which has reduced available habitat for native fish species.

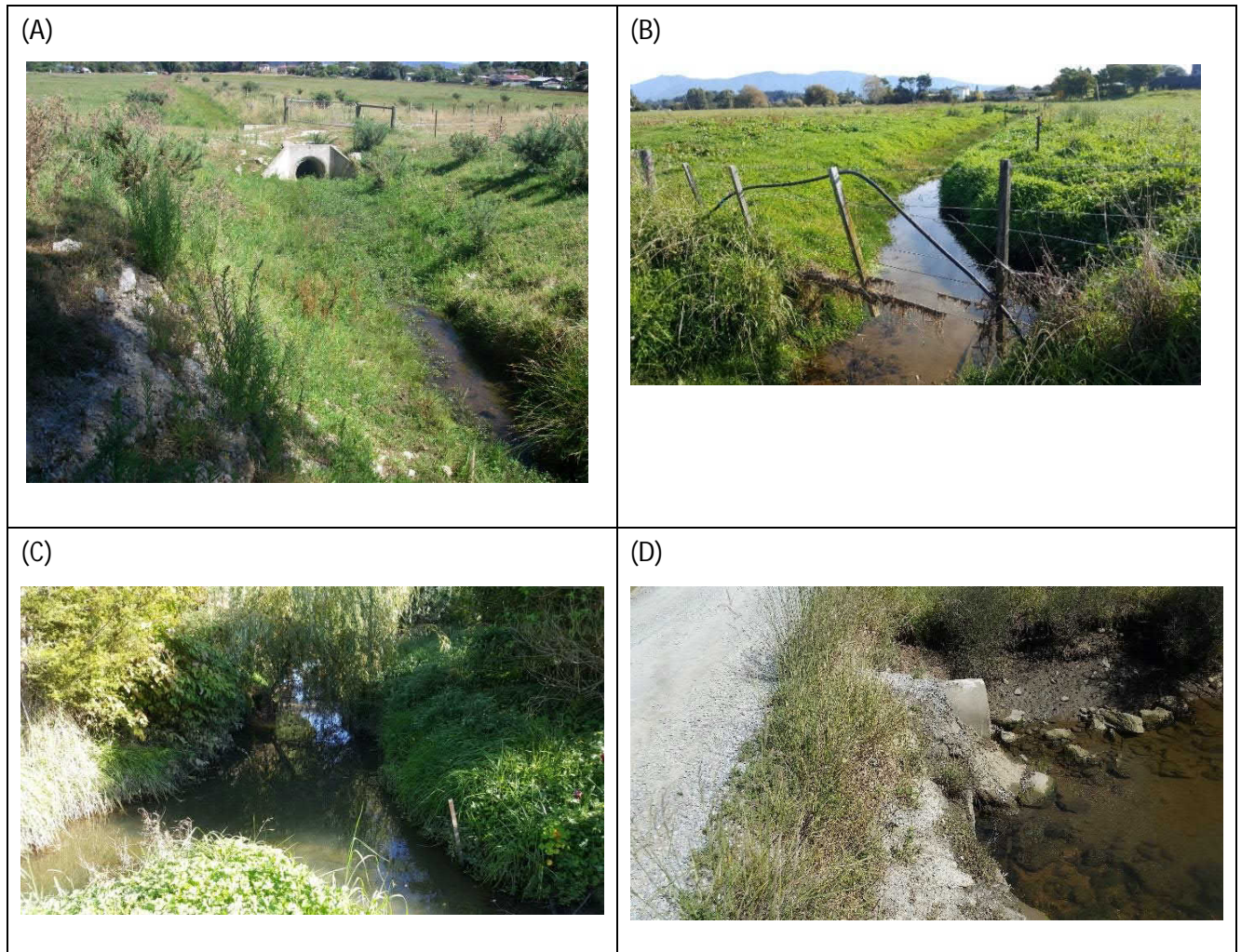


Figure 2.2: Indicative photographs of the freshwater environment within the proposed works area. Images show:

- (A) Bartlett Creek looking downstream towards the proposed Kohikiko Place works;
- (B) Bartlett Creek downstream from the proposed Abel Tasman Driver culvert;
- (C) Clifton and Ellis Creek confluence at the Selwyn Street (West) works, looking upstream; and
- (D) The existing culvert at the Boyle Street upgrade site.

2.3.1.1 Macroinvertebrates

There are currently no TDC State of the Environment monitoring sites for macroinvertebrates in the catchment that the project area is located within, therefore information about the macroinvertebrate communities in the project area is not known.

2.3.1.2 Fish

A diverse range of freshwater fish species are found in the flood protection works catchment. The species present include giant kokopu (At risk – declining), which is considered rare in the Tasman region and inanga (At risk – declining). Other fish species present include redfin bully (At risk – declining) and banded kokopu (Not threatened). Longfin eels (At risk – declining) and shortfin eels (Not threatened) have also been recorded in the catchment.

Kākahi (freshwater mussels) and koura (freshwater crayfish) have been recorded in the Ellis Creek. Both species are classified as *At risk – declining* under the New Zealand Threat Classification.

Many native New Zealand freshwater species move between the freshwater and marine environment as part of their life cycle. Because of the project area being located in low-elevation, low-gradient reaches and the proximity and connectivity of these reaches with the coastal environment, all of the above fish species are likely to be present.

2.3.2 Vegetation located within the wider site

The project site is ecologically diverse and dominated by the habitat types outlined below.

2.3.2.1 Modified salt marsh shrublands, rushlands, sedgeland and succulent herbfields (Boyle Street upgrade area)

The saltmarsh consists of degraded estuarine vegetation, with lower intertidal vegetation still largely intact. Species in the area include salt marsh ribbonwood, *Juncus* spp. and *Carex* spp. Harakeke/flax (*Phormium tenax*) can be found at the edges of the saltmarsh (Figure 2.3).

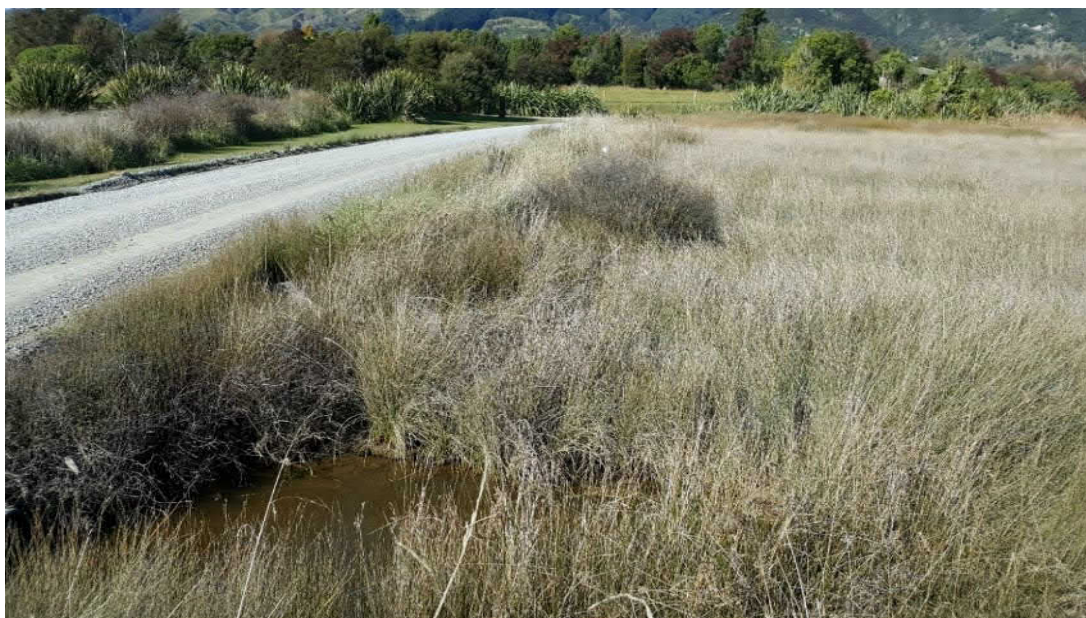


Figure 2.3: Modified salt marsh shrublands, rushlands, sedgeland and succulent herbfields at proposed Boyle Street upgrade.

2.3.2.2 Mixed native/exotic planted vegetation (Proposed Selwyn Street West works)

A number of planted native and exotic trees are growing adjacent to the Bartlett Creek at Selwyn Street West (Figure 2.4). Native species include *Coprosma* spp., lemonwood, kānuka, māhoe, mānuka, tōtara and harakeke/flax. A number of invasive plant species are also present such as willow, tradescantia, arum lily, onion weed and nasturtium. *Kunzea ericoides/robusta* have recently been classified as *Threatened – nationally vulnerable*. Mānuka has been classified as *At risk – declining*.



Figure 2.4: Riparian vegetation at Selwyn Street (West) works site.

2.3.2.3 Pasture grass (Proposed Bartlett Creek Bund)

The pasture grass present within the project site is dominated by rank pasture grass, and includes some native tutu, *Carex* and *Juncus* species (Figure 2.5). No threatened native plant species are likely to be present within this project area.



Figure 2.5: Bartlett Creek looking downstream from outlet of existing Abel Tasman Drive culvert. Location of Bartlett Creek bund (west) can be seen at right hand side of photograph.

2.3.3 Avifauna present within the subject site

Native wetland birds may be present within the salt marsh estuary located at the Boyle Street work area. These may include New Zealand dabchick (At risk – recovering), pūkeko, white-faced heron, banded dotterel (Threatened – nationally vulnerable), South Island pied oystercatcher (At risk – declining) and South Island fernbird (At risk – declining). Other native estuarine species in the area

but unlikely to be present within the project area include Australasian bittern (Threatened – nationally critical), banded rail (At risk – declining), marsh crake (At risk – declining), black swan, Australasian shoveler, New Zealand scaup and paradise shelduck.

Species potentially present within mixed native/exotic vegetation at Selwyn Street West works area include kereru, scared kingfisher, welcome swallow, New Zealand fantail, grey warbler, silvereye, bellbird and tūi.

Rank pasture grass (i.e. around the proposed Bartlett Creek Bund) is unlikely to provide habitat for native New Zealand bird species, however, exotic bird species are likely to be present, such as Eurasian skylarks and house sparrows.

2.3.4 Herpetofauna present within the subject site

Considering the presence of mixed/exotic planted vegetation at the proposed Selwyn Street West works, the common skink is the sole herpetofauna species that could potentially be present within the project area. Their preferred habitats are scrublands, grasslands or rock piles with crevices and are protected under the Wildlife Act (1953).

2.4 Archaeology

The New Zealand Archaeological Association ArchSite database does not show any recorded archaeological sites in the immediate vicinity of the proposed flood mitigation works. Two burial sites are recorded on the waterfront near the subject site(s) (N25/96, N25/126). Archsite also identifies several recorded archaeological sites (burials, fire pits, middens) to the north of the proposed earth bund alignment. The area also borders, but is not identified as being within, a cultural heritage precinct in the TRMP (as per the Cultural Heritage Sites map AF16).

3 Description of Proposed Works

3.1 Overview

This application relates to the construction, ongoing maintenance and repair of a number of flood protection improvements proposed to be undertaken in Pohara. This work will provide greater protection to properties from the flooding of Bartlett and Ellis Creeks. The proposed works, working from upstream to downstream include:

- Upgrade the culvert adjacent to 14B Kohikiko Street to alleviate flooding in extreme events to Kohikiko Place properties. This includes:
 - Upgrade of existing 900 mm diameter culvert to be replaced by twin 1350 mm diameter culverts. Culverts to be embedded to allow for fish passage;
 - New headwall to be constructed;
 - Local channel widening to accommodate the new culverts;
 - Quarry access road to be raised over culverts;
 - New timber pole flood barrier along 14B Kohikiko Street property boundary along with new earthfill embankment; and
 - Formation of preferential overland flowpath in the event of culvert blockage.
- Establishing the Bartlett Creek stopbank between 17 Selwyn Street and 14B Kohikiko Street to alleviate flooding to properties along Abel Tasman Drive and Selwyn Street. This includes:
 - Construction of earth bund along northern side of Bartlett Creek;
 - Access ramps over bund to allow for ongoing farm access to fields; and
 - New 450 mm diameter culvert with flap gate to be installed underneath bund to connect Bartlett Creek with the swale that runs along the western side of Abel Tasman Drive.
- Upgrade of the Abel Tasman Drive culvert to alleviate flooding to properties along Abel Tasman Drive. This involves:
 - Upgrade of 1350 mm diameter culvert with new 4 m by 1.3 m box culvert. Culvert to be embedded to allow for fish passage; and
 - Stream channel widened locally upstream and downstream of culvert. Upstream and downstream channel to be protected with rock armour.
- Raising of a low area on Lansdowne Street adjacent to 59 Selwyn Street. This involves:-
 - Placement of hard fill / road metal /seal of up to 200 to 300 mm height.
- Lansdowne Street swale to divert flows to Clifton Creek and alleviate flooding to properties along Selwyn Street. This involves:
 - Minor reshaping and grading of paper road located between Ellis Creek and Clifton Creek.
- 59B and 59C Selwyn Street works to alleviate flooding to these properties. This involves:
 - New timber pole flood barrier and new earthfill embankment.
- Ellis and Clifton Creek confluence widening to reduce water levels in the stream and help alleviate flooding to properties further upstream in Selwyn Street. This will include:
 - Channel widened to increase capacity; and
 - Installation of rock rip rap to provide erosion protection upstream and downstream of confluence.

- Boyle Street culvert upgrade to improve the discharge of flood waters and, dependent on tidal and storm conditions, also help reduce water levels in the stream . This will include:
 - Installation of two additional 1200 mm diameter concrete culverts;
 - Stream widened locally to accommodate new culverts; and
 - Rock armour to be installed to provide protection.

Initial estimates have indicated that the proposed works will involve approximately 350 m³ of excavation/cut and 2,500 m³ of fill. These volumes remain subject to change through the later design phases and the construction phase of the project but are likely to be in this order.

3.2 Design criteria and objectives

Due to the constraints and difficulties of alleviating flooding issues within an area of existing development within a low lying coastal settlement, TDC directed a pragmatic approach to ensure the design criteria is feasible. The specific criteria and objectives are summarised below:

- Flood levels are based on hydraulic modelling with the following input parameters: - 1% AEP present day rainfall event (approximately a 2% AEP year 2100 rainfall event);
- Present day tidal levels used (no allowance for sea level rise);
- Bunds and flood walls upstream of Abel Tasman Drive have a minimum freeboard of 250 mm, as adopted by TDC;
- Bunds immediately downstream of Abel Tasman Drive (protecting existing properties at 1,3, 7, 9 and 17 Selwyn Street) have crest level at the 1% AEP flood level (i.e. no freeboard), as specified by TDC, in recognition of the difficulty in providing greater level of service;
- Bunds and floodwalls near the confluence of Ellis Creek and Clifton Creek (Selwyn St West bunds protecting 59a, 59b and 59c Selwyn Street) have between 0 and 100 mm freeboard above the 1% AEP flood level, as specified by TDC;
- Vehicle access ramps to have a maximum gradient that varies between 1:6 to 1:10; and
- Minimise the impact on ecology and the environment:
 - Where existing culverts are being replaced fish passage has been provided for and designed in accordance with the New Zealand Fish Passage Guidelines 2018. This includes positioning culvert inverts below existing bed level, with increase in pipe size where necessary; and
 - Disturbance of stream beds has been minimised.

3.3 Behind 14B Kohikiko Street

TDC propose to upgrade the existing culvert and construct a flood protection wall/bund and vehicle access ramp that will merge with the Bartlett Creek stopbank to prevent overflows from the stream to Kohikiko Place properties. The stream comes fairly steeply down the hill before turning a bend and flattening out adjacent to Kohikiko Place.

The existing 900 mm diameter culvert is to be replaced with two 1350 mm diameter concrete culverts. The new culverts will be installed in general accordance with the NZ Fish Passage Guidelines with the invert embedded to provide a substrate to promote fish passage.

A flood protection wall will be constructed to protect 14B Kohikiko Place and adjacent properties from flooding. The flood protection wall is approximately 0.4 m high and 10 m long. Integrated with the flood protection wall and Bartlett Creek stopbank a vehicle access ramp is to be constructed over the new culverts.

Associated items of work include a new concrete inlet and outlet structure and local channel widening at the inlet and outlet to accommodate the new culverts and an overland flow path in the event of culvert full or partial blockage.

3.4 Bartlett Creek stopbank

TDC proposes to construct an earth bund along the northern side of Bartlett Creek, between 17 Selwyn Street and 14B Kohikiko Place, Pohara. The bund is proposed to be located on the northern side of Bartlett Creek to act as a stopbank.

The bund between 14B Kohikiko Place and Abel Tasman Drive has a total length of approximately 365 m and will have a design top of bund level varying from 5.7 mRL at the upstream end to 4.7 mRL at Abel Tasman Drive. Existing ground level in this area varies, and to meet the design level the bund height will vary between approximately 0.4 m and 1.4 m above the existing ground level. The edge of the bund will be at least 4 m from the banks of Bartlett Creek, to ensure that adequate access is maintained along its length for maintenance purposes.

The bund between Abel Tasman Drive and 17 Selwyn Street has a total length of approximately 107 m, and will have a design top of bund level of 4.6 mRL. To meet this design level, the bund height will vary between approximately 0.1 m and 1.0 m above the existing ground level. The edge of the bund will be at least 2 m from the adjacent property boundaries to the north.

The bunds will have a crest width of at least one metre, and the slopes of the bunds will be approximately 1:3. The bunds will be constructed of fill material that has adequate strength, stability and seepage characteristics. Topsoil will be removed from the footprint of the bund prior to construction to give suitable foundation conditions and the bunds will be finished with topsoil and grass.

The bund will have two access ramps up and over the bund to allow ongoing farmer access to paddocks:

- The first access point is in the field east of Abel Tasman Drive with access across the stream over an existing culvert then the access ramp over the bund; and
- The second access point is from Abel Tasman Drive up and over the bund immediately to the West of Abel Tasman Drive.

Local rainfall and runoff behind the bunds remains similar to existing and will be dealt with as follows:

- East of Abel Tasman Drive:
 - There is an existing hook shaped (on plan) open channel which collects runoff from most of the area bounded by Abel Tasman Drive, Kohikiko Place and the proposed bund. This drains to the north east to a drain under Kohikiko Place; and
 - In addition there is a swale drain alongside Abel Tasman Drive which discharges through a pipe into the creek. The bund will be built above the pipe and the drain and pipe will continue to discharge to the creek.
- West of Abel Tasman Drive:
 - The ground level behind the bund will be graded, as part of the bund construction so that runoff falls towards the existing drainage swale along Abel Tasman Drive.

3.5 Abel Tasman Drive culvert and stream works

Bartlett Creek is currently culverted beneath Abel Tasman Drive. TDC proposes to replace the existing 1350 mm diameter culvert with a 4 m wide and 1.3 m high box culvert that crosses the

width of Abel Tasman Drive. The stream channel would be widened at the upstream and downstream approaches to the culvert, and the channel downstream of the culvert would be protected with rock armour. The new culvert will be installed in general accordance with NZ Fish Passage Guidelines with the invert embedded to provide a substrate to promote fish passage.

A new 450 mm diameter culvert will be installed beneath the bund on the downstream side, to connect Bartlett Creek with the swale that runs along the western side of Abel Tasman Drive.

It is considered that blockage of the new culvert on Abel Tasman Drive is a low risk due to the following factors:-

- The steeper upper catchment area, which is at the highest risk of slips and slope stability and being the source of sediment is upstream of the existing flood detention dam, approximately 300 m upstream of Kohikiko place. The existing dam is likely to act as a sediment retaining pond during extreme rainfall events and reduce the risk of large amounts of sediment being transported further downstream to the Abel Tasman culvert; and
- In the event of sediment being transported down Ellis Creek and blocking the Ellis Creek culvert at Abel Tasman Drive then sediment laden water that overflows across the fields to Bartlett Creek is likely to drop the sediment onto the fields before it reaches Bartlett Creek, similar to what happened in the December 2011 event.

3.6 Lansdowne Street fill

Lansdowne Street is a paper road which runs in a south-westerly direction back from the coast, and intersects Ellis Creek and Clifton Creek at approximate right angles. The north eastern end of Lansdowne road provides access from Selwyn Street to numbers 59, 59A, 59B and 59C. The proposed works include raising a low area of the road by around 200 to 300 mm over a length of approximately 20 m.

3.7 Lansdowne Street swale

The proposed works include the establishment of a secondary flow path, in the form of a swale drain, designed to take flood overflows from Ellis Creek into Clifton Creek to the south. This will involve localised lowering of Ellis Creek's southern bank by approximately 100 – 200 mm to form a side spill weir, and the excavation of a swale drain to connect the two water bodies. The swale will be shaped to a low point in the centre of the paper road so that flow is preferentially along the swale to Ellis creek rather than to 59A Selwyn Street.

In addition existing gates which close across Lansdowne Street and have the potential to catch debris in a flood event will be altered or relocated to avoid this risk of blocking the proposed swale drain.

3.8 59B & 59C Selwyn Street works

TDC propose to construct flood protection for the properties at 59B and 59C Selwyn Street to reduce flood risk. The works will comprise a timber pole flood protection wall and earth bunding. The length of the flood protection works is approximately 270 m and the height varies up to a maximum of 1 m (approximately). The design level for the top of the wall / bund varies between 3.8 mRL at the upstream end and 3.2 mRL at the downstream end. At the upstream end the wall extends along the boundary between 83 and 85 Selwyn Street (wall is in 85 Selwyn Street) to meet the 3.8 mRL contour.

The work will include approximately 20 m of earth bund and include raising the access track to Number 59B and 59C. The bund will be up to approximately 1 m height and will generally be of similar construction as the Bartlett Creek stopbank above. Where the bund raises the access track

the bund will have a 1 in 10 gradient to the top of the bund to allow for vehicle access. The bund will be finished with road metal on the access road and grassed elsewhere. On the north side of the access track a timber retaining wall will be built, within 59B Selwyn Street, to reduce the footprint and intrusion on Number 83 and 85 Selwyn Street.

Because of the lack of space for an earth bund it has been discussed with the owners that a timber pole flood wall will be built to provide flood protection for most of the remainder of the approximately 250 m length of wall. This will minimise the footprint required for the flood protection works which are in some areas located close to dwellings and in other areas used to minimise the impact on the landowner's use of their land. Where possible at the west end of 59C Selwyn Street the timber pole wall is to be built in the paper road rather than in private property. At this west end there will also be an approximately 20 m length of earth bund to better tie in with existing landscaping and the owner's requirements.

A timber stairway will be provided across the timber wall to allow 59C to continue to access the southern triangle of land in their property.

Local rainfall and runoff behind the bunds will be dealt with as follows:-

- The existing drain pipe from 89 Selwyn Street which discharges to the creek via an easement in 59B Selwyn Street is reported to be blocked and this will be replaced by a new sump and pipeline from 89 Selwyn Street;
- A new stormwater pipe will be provided from 87 Selwyn Street to drain 85 and 87 Selwyn Street. The pipe will be located under the proposed earth bund;
- Drainage pipes with flap valves will be provided at low points along the timber pole wall; and
- A larger drain pipe will be located at the northern apex of 59C Selwyn Street to drain the small catchment that drains to this point.

3.9 Stream widening and associated in-stream works

It is proposed to undertake widening works at the confluence of Ellis and Clifton Creeks in order to open up the hydraulic restriction in this area. By doing this the water level is reduced at this point and further upstream along Selwyn Street.

The right bank of the creek will be armoured with rock rip-rap to protect the bank opposite the entry of Clifton Creek which has been prone to erosion. This has been raised as an item of concern by the landowners at 59C Selwyn Street.

3.10 Boyle Street upgrade

TDC propose adding an additional two 1200 mm diameter culverts under the Boyle Street crossing. Associated works are required to protect the embankment, inlet and outlet with concrete filled bags or rock armour.

The additional culverts will provide extra hydraulic capacity and, dependent on tidal level and storm conditions, will reduce flood water levels.

3.11 Earthworks

The earthworks required relate largely to the establishment of the earthen bunds. Initial estimates indicate this may involve approximately 350 m³ of excavation, and 2,500 m³ of fill, however the exact volumes remain subject to confirmation during the detailed design process. The deposition of fill will be largely related to the establishment of the bunds which will act as stop banks, while the excavation results largely from the stream widening and excavation of the overflow swale drain along Landsdowne Street.

3.12 Construction methodology

A detailed description of the proposed construction methodology has been identified within the Draft CEMP contained in Appendix D, which identifies how the various construction works will be undertaken and the associated effects managed. It is noted that no contractor(s) has yet been appointed to undertake the works and therefore the CEMP cannot yet be finalised. Accordingly a condition of consent has been volunteered requiring the consent holder to submit the final CEMP to council for certification at least 10 working days prior to the commencement of the works.

3.13 Archaeology

The Heritage New Zealand Pouhere Taonga Act 2014 requires an archaeological authority to be obtained for works that may modify an archaeological site. This includes both known and previously unrecorded sites where there is evidence of pre-1900 human activity.

The subject site looks to be adjacent to, but outside of the Cultural Heritage Precinct (as identified on special planning map AF16-17). No known archaeological sites have been identified as being located within the area of proposed works. The applicant will nonetheless be seeking an archaeological authority from Heritage NZ concurrently with the consent application. This will set out the requirements for undertaking the works, and for managing any accidental discoveries of artefact materials. Any requirements stipulated by the archaeological authority will be included into the final CEMP prior to it being submitted to TDC for certification.

3.14 Ongoing maintenance

The proposed works will have ongoing maintenance requirements typical for these types of assets including:

- Inspecting and clearing debris from culvert inlets and channels;
- Controlling vegetation growth on stopbank banks; and
- Maintenance of timber pole walls and wall drainage pipes.

The ongoing maintenance of the proposed stop bank and structures are considered to be permitted activities under the following TRMP Rules, subject to compliance with the relevant permitted activity standards:

- 16.10.2.1 – Excavation of a stopbank for the purposes of stopbank reconstruction or maintenance;
- 28.1.6.1 – Disturbance of the bed of a river (including excavation, drilling or tunnelling) associated with the repair of any lawfully existing river protection work;
- 31.1.3.1 – Diversion of water for the maintenance, repair, extension or removal of a lawfully existing structure; and
- 36.2.2.4 – Discharges associated with an activity within the bed of a river.

It is anticipated that the future maintenance and repair works will be able to meet these permitted activity standards. Notwithstanding this however, and in an effort to provide for the ongoing operation of the protection once lawfully established, consent is also being sought for any ongoing maintenance and repair works that may not meet these relevant permitted activity standards.

The stopbanks along Bartlett Creek have been set back at least 4 m from the creek to allow for vehicle maintenance access and with 1 in 3 bank slopes to allow for grass cutting and weed control.

The required construction on private property and the associated maintenance and repair will need to be determined by mutual agreement between the property owners and TDC. These assets could

either be gifted to the owner or could be maintained by TDC, but this requires further consideration. This may require easements to be obtained in the future.

3.15 Consideration of alternatives

The Council has developed the proposed flood mitigation works through an extensive options assessment. This has included consideration of performance and efficiency of the proposed flood mitigation works, integration of landowner preferences, consideration of the associated environmental, social and cultural effects, amendments following the input of technical experts, consideration of the practicality of works and the Council's Engineering Standards.

Since 2009 a series of flooding assessments have been undertaken for the Pohara area, in response to frequent flooding complaints from landowners following rainfall events. The issue of flooding was highlighted again when the area was hit by the extreme rainfall events that occurred across the upper South Island – but in particular, Golden Bay, between the 13th and the 15th of December 2011. The event caused widespread damage and deposition of material, and council acted to understand the cause of, and explore ways to rectify the effects associated with the flooding. Since this point a substantial degree of work has been done to understand the flood risk and the potential mitigations. The work to date has included the following:

- 1 July 2009 – Pohara subdivision flooding investigation (MWH)
Assessment and reporting following reports of flooding on farmland behind 734 to 762 Abel Tasman Drive;
- 2 June 2012 – Pohara catchment stormwater – issues and options assessment (MWH)
Assessment and reporting following December 2011 storm event, focusing on issues relating to the capacity of the existing network and presenting a range of mitigation options that could be considered;
- 3 February 2014 - Ellis Creek Modelling – model build and flood hazard mapping report (T+T)
Detailed hydrological and hydraulic modelling of the Pohara catchments and floodplain, to assess the existing stormwater network for present day and future design storm events, allowing for the effects of climate change. The model was subsequently used to assess the existing network under a range of storm scenarios, and to undertake preliminary assessment of the effectiveness and impact of various possible flood mitigation measures;
- 4 November 2016 – Pohara stormwater modelling – drainage network improvement options report (T+T)
In 2015/2016, Council used the hydraulic model identified above to develop and test a range of network improvement options over a range of storm events. A large number of options were considered, including piping of flows from Catchment F into Catchment E, and piping of flows from the existing detention dam directly to the coast. Any options with obvious flaws (excessive cost and/or minimal benefit) were discarded. The result was the development of four improvement option sets, developed in consultation with landowners and Council engineering staff (five options in total, including the 'do nothing' option). The key objective for any mitigation measure was a reduction in the number of flooded floors and sections in design storm events. The model was used to assess the performance of each option, and Council's benefit-valuing (scoring) system was used as a basis for the cost/benefit analysis. This analysis was included in the November 2016 options report (Appendix H); and
- 5 November 2016 to present – option selection and refinement for consent design
Council selected the 'Option 4' set of improvements as clearly having the greatest benefit/cost ratio, and also the greatest overall benefit, particularly for larger events and future climate scenarios.

This option set was then developed further, informed by further discussions with landowners. This included a public presentation in Golden Bay on 27 August 2017. Further modelling was carried out as part of this process to determine the performance and impact of each component of this option set, which led to the refinement of the option set as follows:

- Abel Tasman Drive upgraded to a 4 m x 1.3 m box culvert, rather than simply flaggating the existing 1350 mm diameter culvert. This was adopted by Council after modelling a number of culvert upgrade options in an effort to prevent the present day 1% AEP flood level from rising above the state highway road level. The advantage of this is that no road reprofiling is required to avoid 1% AEP flooding onto and then tracking down the state highway towards Totally Roasted Café;
- Kohikiko culvert upgrade (opposite 5 Kohikiko Place) was removed from improvements set. This was on the basis that modelling showed that the improvement would be of relatively low benefit when combined with bunding along Bartlett Creek. The original intention of this upgrade was to allow floodwaters from the west of Kohikiko Place to pass to the east, but the inclusion of the Bartlett Creek bund significantly reduced floodwaters passing into this area from the upstream catchment. In addition, the effects on properties to the east were unacceptable to property owners;
- Confluence widening details changed following landowner discussions;
- Boyle Street culvert upgrade changed to two additional 1200 mm diameter culverts, based on further modelling that showed that more significant upgrades did not significantly reduce flooding any further, and that the benefit of any improved capacity would be expected to diminish over time as the sea level rose.

Ultimately the process identified above involved an iterative process which has spanned a number of years and involved a significant degree of community and expert input. These inputs have led to the design of the option for which consent is now being sought (as detailed in sections 3.1 – 3.11 of the AEE above).

4 Resource Consent Requirements

4.1 Tasman Resource Management Plan

The requirements for resource consents are determined by the rules in the TRMP. The rules which apply are determined by the zoning of the site, any identified notations in the plan and the nature of the activities proposed. The wider application site can be identified on planning maps 10, 51, 76 and 77, and the zones, areas and overlays deemed relevant to the subject site are identified in Table 4.1 below:

Table 4.1: Zoning and planning notations

Zoning/planning limitation	Location
Area maps	
Road Area	Abel Tasman Drive and Selwyn Street are located in the works area.
Coastal Environment Area	Applies to the majority of the works area.
River	Bartlett Creek flows east-west generally parallel to the proposed earth bund. Ellis Creek located approximately 150 m south-west of this, flowing to a confluence with Bartlett Creek west of the Pohara township, near Selwyn Street.
Zone maps	
Residential zone	Applies to the residential properties to the north of the proposed earth bund, including along Selwyn Street.
Rural 2 zone	Applies to the location of the proposed earth bund.
Recreation zone	Applies to the location of the replacement culvert on Boyle Street.
Special maps	
Roading hierarchy – as per Map 165	Abel Tasman Drive (Distributor Road) Boyle Street (Access Road) Selwyn Street (Access Place)
Water management zone - Takaka	Refers to the catchment in which the proposed works are located, and applies to entire area of proposed works.
Land Disturbance Area 1	Land Disturbance Area 1 comprises all dry land in the region, including the proposed works site.
Key definitions	
Building	<i>Any structure (as defined in the Act) or part of a structure whether temporary or permanent, movable or immovable, including accessory buildings but does not include:</i> ... <i>(d) structures that are both less than five square metres in area and less than 1.2 metres in height, except where such structures are for the purposes of damming, diverting, taking, or using water;</i>
Mauri	<i>Means a special power which makes it possible for everything to move and live in accordance with the conditions and limits of its existence. Everything has mauri, including people, fish, animals, birds, forest, land, seas and rivers; the mauri is that characteristic which permits these living things to exist within their own realm and sphere.</i>

Zoning/planning limitation	Location
Structure	<i>Any building, equipment, device, or other facility made by people and which is fixed to land; and includes any raft.</i>
Wairua	<i>The spiritual value or essence, soul, quintessence - spirit of a person or thing which exists beyond death.</i>

The resource consent requirements for the proposed works are determined by a combination of zone based and district wide rules contained within the TRMP. The chapters deemed to be relevant to the proposed works include:

- Chapter 16 – General Rules;
- Chapter 17 – Zone Rules;
- Chapter 28 – Rules for activities in the beds of rivers and lakes;
- Chapter 31 – Rules for the take, diversion, use or damming of Water; and
- Chapter 36 – Rules for Contaminant Discharges.

The rules identified as relevant to the activities proposed as part of this application include those included in Table 4.2 below:

Table 4.2: Resource consents required under the TRMP

Activity	TRMP rules	Comment
Construction of structures in the Rural 2 zone	Rule 17.6.3.1 The construction of or alteration to a building in the Rural 2 zone is permitted subject to permitted activity conditions.	The timber flood protection near 59B & 59C Selwyn Street is considered to be a 'building' under the TRMP. The timber protection wall will therefore require consent as a restricted discretionary activity as it is located within 5 metres of an internal property boundary, and within 8 metres of a river with a bed width of less than 5 metres (as per condition 17.6.3.1(j) – Setbacks). Rule 17.6.3.4 identifies the matters over which TDC has reserved discretion.
Construction of structures in the Residential zone	Rule 17.1.3.1 The construction of or alteration to a building is a permitted activity that may be undertaken without a resource consent, if it complies with the following conditions.	As noted above, the proposed timber wall at 14B Kohikiko Street meets the definition of 'building' under the TRMP. The wall will require resource consent as a restricted discretionary activity, as it is located within 4.5m of the road boundary, 25 m of a rural zone boundary, and within 8 m of the top of a bank of a river between 1.5 – 5 m in width (as per conditions 17.1.3.1(q), (u) and (v). Rule 17.1.3.4 identifies the matters over which TDC has reserved discretion.
Earthworks / land disturbance	Rule 16.10.2.1(d) Earthworks within 10 metres of the top of a river bank are	Earthworks within 10 metres of a river bank are limited to less than 20 m ³ in area, must be open for less than four days, and must not raise or lower the level of the land. As the works cannot comply with these

Activity	TRMP rules	Comment
	permitted subject to permitted activity conditions.	conditions, consent will be required as a restricted discretionary activity. Rule 16.10.2.2 identifies the matters over which TDC has reserved discretion.
	Rule 18.5.2.1 Earthworks within Land Disturbance Area 1 are permitted subject to permitted activity conditions.	The earthworks activity must not raise the level of land as it may result in damming or diversion of floodwaters. As the proposed activity is to construct a bund / stop bank for flood protection, it will likely dam and divert floodwaters and therefore requires consent as a controlled activity.
Structures in the bed of a river (culvert)	Rule 28.1.5.1 Culverts in the beds of rivers are permitted subject to permitted activity conditions.	The proposed replacement culverts will be larger than the existing culvert, and the width of the river bed exceeds 3 metres, therefore placement of the proposed culvert under Abel Tasman Drive requires consent as a controlled activity. Rule 28.1.5.2 identifies those matters that council may impose conditions upon.
Placement of rock rip-rap at the Ellis Creek confluence, and widening of the confluence	Rule 28.1.3.1 Structures in the bed of a river are permitted subject to permitted activity conditions.	The proposed placement of rock rip-rap at the confluence of Ellis Creek will exceed 2 m ² and therefore these works require consent as a discretionary activity.
	Rule 28.1.6.1 Disturbance of the bed of a river is permitted subject to permitted activity conditions.	The proposed widening of the confluence of Ellis Creek does not meet the permitted conditions and is not associated with maintenance of existing river protection works, therefore these works require consent as a discretionary activity.
Damming and diversion of flood waters	Rule 31.1.5 Damming and diversion of flood waters is permitted subject to permitted activity conditions.	As the proposed bund will dam and divert flood waters and will be constructed after 3 November 2001 and is not located within the Richmond Intensive Development Area, consent to dam and divert flood waters will require resource consent as a restricted discretionary activity.
Discharge of sediment-laden water to freshwater resulting from land disturbance	Rule 36.2.2.3 The discharge of water containing sediment or debris is permitted subject to permitted activity conditions.	As the proposed works may result in the discharge of sediment laden water to freshwater that cannot meet the permitted activity standards, the activities will require resource consent as a discretionary activity.
Discharges arising from activities in the bed of a river	Rule 36.2.2.4 The discharge of contaminants into water arising from an activity carried out in the bed of a river is permitted subject to permitted activity conditions.	As the proposed works may result in the discharge of contaminants to freshwater that cannot meet the permitted activity standards, the activities will require resource consent as a discretionary activity.
Works within Coastal Environment Area	Rule 18.11.2.1 Any land use is a permitted activity subject to permitted activity conditions.	The proposed works include construction of a structure that meets the definition of a building in the Plan, therefore the proposed works within the Coastal

Activity	TRMP rules	Comment
		Environment Area require consent as a controlled activity.
Dewatering associated with the instream construction	Rule 31.1.2.5 The take, diversion or use of water not otherwise provided for in the identified rules is a restricted discretionary activity, subject to compliance with a number of PA conditions.	Rule 31.1.2.5 identifies permitted activity standards, including identified water allocation limits for each Water Management Zone. The proposed works are within the Takaka Water Management Zone and no allocation therefore exists (as per Figure 31.1F), subject to policies 30.1.3.12 to 30.1.3.16. The works are therefore considered to require consent as a restricted discretionary activity.

Overall, resource consent is required under the TRMP as a discretionary activity.

4.2 Permitted activities

Table 4.3 below sets out the activities that are permitted under the TRMP that form part of this proposal. Further detail regarding the methodologies for ensuring compliance with the relevant permitted activity standards can be found within the Draft CEMP in Appendix D.

Table 4.3: Permitted activities relevant to the proposed activity

Proposed activity	TRMP rules	Comment on compliance
Earthworks: discharge of dust	Rule 36.3.2.1 The discharge of any contaminant to air is permitted provided the discharge is not visible beyond the property boundary and does not result in any objectionable deposition beyond the property boundary. Rule 17.6.2.1 (Rural 2 zone) No offensive and pervasive dust or odours to be discernible in a Residential zone.	Earthworks associated with the construction of the earth bund and timber wall is a permitted activity provided dust is contained to within the property boundaries.
Temporary construction works	Rule 16.8.2.1 Temporary activity ancillary to construction work is permitted subject to permitted activity conditions	The temporary activities associated with the works are permitted as the activity will be limited to the duration of the project or 12 months (the lesser period), any associated buildings will be moveable, and it complies with the transport rules (16.2).
Construction noise	Rule 16.8.2.1A Temporary activity that complies with the NZS Construction Noise Standard.	Permitted activity provided the construction noise standards are complied with.
Ongoing maintenance of the proposed structures and stopbank once the works are lawfully established	Rules: 16.10.2.1 – Excavation of a stopbank for the purposes of reconstruction or maintenance 28.1.6.1 – Disturbance of the bed of a river associated with the repair of existing river protection	Permitted activity subject to compliance with a number of permitted activity standards.

Proposed activity	TRMP rules	Comment on compliance
	31.1.3.1 – Diversion of water for the maintenance, repair, extension or removal of a lawfully existing structure 36.2.2.4 – Discharges within the bed of a river	

4.3 Existing resource consents

Resource consent was granted in October 2017 for construction of two bore holes for investigation into the upgrade of the pump station and wastewater main (RM171039).

Furthermore, resource consent was granted for the upgrade of a pump station and wastewater rising main along Abel Tasman Drive in 2017. This consent application identified the future requirement for flood mitigation works, and accounted for the likely design of these future flood protection works in the design of the upgrade works relating to the pump station and wastewater main.

All other resource consents required for the flood mitigation works identified above are proposed as part of this application.

4.4 Other consents and approvals required

TDC is currently seeking private landowner approval to undertake works on private property. TDC will also seek an archaeological authority concurrently with this application.

5 Assessment of Effects on the Environment

5.1 Introduction

The following assessment identifies and assesses the types of effects that may arise from the proposed works. This assessment also outlines the measures that the applicant proposes to avoid, remedy or mitigate any potential adverse effects on the environment.

Actual and potential effects on the environment have been identified as including:

- Positive effects;
- Flooding effects;
- Construction effects;
- Ecological effects;
- Landscape and visual effects; and
- Cultural and heritage effects;

An assessment is provided below.

5.2 Positive effects

Overall the proposed flood mitigation works are considered to have a positive effect on the wider Pohara community, particularly for those properties which have been modelled to experience the most significant adverse effects under the current 1% AEP baseline. The proposed works will improve the capacity of the local stormwater network, and thereby reduce the flooding risk within the catchment. This is expected to include an increased degree of personal safety, lowered risk of associated property damage and loss (and the financial costs that accompany this damage), and a reduced risk of disruption to both personal and civic life as a result of flooding. The Pohara floods in 2011 showed the damage that a significant flood event and the resulting debris flows can cause, and as a result a key driver for TDC in selecting a preferred suite of flood mitigation measures was to achieve a reduction in the number of flooded floor during designed storm events.

The works are expected to reduce flood levels by over 0.5 m for some properties to the east of Abel Tasman Drive and is considered to contribute to a community which is better able to manage the significant risks associated with an identified natural hazard. This is consistent with the requirement of Section 6(h) of the RMA to manage the significant risks from natural hazards.

In total we have identified 59 properties modelled to experience a reduction in flood levels as a result of the proposed flood works, which have been identified in Table 5.1 below.

Table 5.1: Properties modelled to experience a reduction in flood levels as a result of the proposed works

Properties modelled to experience a decrease in flood levels	
Address	Maximum modelled flood height decrease (approximate)
809 Abel Tasman Drive	-0.48m
822 Abel Tasman Drive	-0.03m
818 Abel Tasman Drive	-0.03m
814 Abel Tasman Drive	-0.03m
812 Abel Tasman Drive	-0.03m
810 Abel Tasman Drive	-0.03m
800 Abel Tasman Drive	-0.26m
798 Abel Tasman Drive	-0.25m
796 Abel Tasman Drive	-0.25m
794 Abel Tasman Drive	-0.25m
792 Abel Tasman Drive	-0.25m
790 Abel Tasman Drive	-0.24m
788 Abel Tasman Drive	-0.08m
786 Abel Tasman Drive	-0.14m
784 Abel Tasman Drive	-0.14m
782 Abel Tasman Drive	-0.18m
782A Abel Tasman Drive	-0.33m
780 Abel Tasman Drive	-0.4m
776 Abel Tasman Drive	-0.43m
774 Abel Tasman Drive	-0.47m
766 Abel Tasman Drive	-0.24m
762 Abel Tasman Drive	-0.53m
756 Abel Tasman Drive	-0.54m
752 Abel Tasman Drive	-0.54m
750 Abel Tasman Drive	-0.54m

748 Abel Tasman Drive	-0.54m
746 Abel Tasman Drive	-0.41m
744 Abel Tasman Drive	-0.34m
742 Abel Tasman Drive	-0.37m
734 Abel Tasman Drive	-0.33m
3 Richmond Road	-0.03m
11 and 11A Richmond Road	-0.03m
82 Richmond Road	-0.57m
5 Kohikiko Place	-0.52m
15A Kohikiko Place	-0.47m
16 Kohikiko Place	-0.15m
18 Kohikiko Place	-0.08m
19 Kohikiko Place	-0.45m
20 Kohikiko Place	-0.1m
21 Kohikiko Place	-0.45m
22 Kohikiko Place	-0.07m
23 Kohikiko Place	-0.45m
26 Kohikiko Place	-0.05m
28 Kohikiko Place	-0.05m
9 Watino Place	-0.01m
11 Watino Place	-0.01m
16 Watino Place	-0.02m
1 Selwyn Street	-0.3m
3 Selwyn Street	-0.29m
5 Selwyn Street	-0.05m
59 Selwyn Street	-0.03m
59A Selwyn Street	-0.11m
59B Selwyn Street	-0.33m
59C Selwyn Street	-0.28m
85 Selwyn Street	-0.35m

87 Selwyn Street	-0.35m
89 Selwyn Street	-0.35 m
91 Selwyn Street	-0.33m
93 Selwyn Street	-0.28m
95 Selwyn Street	-0.27m
97 Boyle Street	-0.03m
23 Lansdowne Street	-0.06m
Lots 4 & 5 DP 304980	-0.03m

A detailed description of the flood model, along with the identified actual and potential adverse effects associated with the works is further included in sections 5.3 – 5.8 below.

5.3 Adverse flooding effects

The proposed works involve the construction of stop banks, in-stream works (including rock rip-rap and channel widening) and the establishment of hard flood protection structures and a secondary flow path. Broadly speaking these works are anticipated to reduce the most significant adverse effects associated with a 1% AEP flood event by improving the capacity of the existing stream and reducing the extent of breaches from the existing stream channel. The flood effects have been based upon the flood modelling undertaken by T+T, and details of the model are described below.

5.3.1 Description of the flood model

The full model build details for the original modelling are set out in the 2014 T+T report, with the changes to this base model are outlined in the 2016 T+T report (Appendix H). The current model has run with a present day 1% AEP design storm and present day tide. This storm has 12 hour duration with two-hour minimum duration storm nested within.

Confidence in the modelling results is dependent on a number of factors including:

- The accuracy of the survey data (LiDAR) used to represent the ground surface and channels. LiDAR data used in this study was captured in 2015, and provided with a 90% confidence limit of ± 0.10 m. LiDAR accuracy is typically more accurate in open areas, and less accurate in heavily vegetated areas. Spot heights of above ground features (e.g. buildings, trees) are removed, and ground levels are interpolated from adjacent ground levels. This can cause localised errors. Further, the modelling uses a rectilinear 2 m by 2 m grid, which it further interpolates/simplifies the LiDAR ground model. There is therefore less confidence in modelled flood depths than the accuracy of the LiDAR information, and hence modelled flood depths less than 50 mm have been ignored for the purposes of this study;
- The accuracy of the hydrology is dependent on availability of rainfall and flow records, and robustness of the design flows estimated from these records. In particular, confidence in the estimates used are limited by the period and proximity of rainfall gauges and records. There are no TDC-monitored hydrological gauges in this catchment. Therefore, in accordance with best practice, flow estimates are based on the national rainfall database (NIWA HRDS v3) which is extrapolated from the nearest rainfall gauges;
- Actual rainfall patterns are highly variable in time and with location and cannot easily be predicted. The design storm has conservatively assumed a 'nested' storm profile, occurring

over the whole catchment simultaneously. A nested 24 hour rainfall pattern maximises rainfall intensities by incorporating selected short duration totals within those needed for longer durations at the same probability level;

- The response of the catchment to the rainfall which is dependent on a large number of factors including ground cover, soil type, ground slope, how saturated the ground is etc. The model is based on standard parameters to reflect these different characteristics however there is no river gauging to be able to calibrate the rainfall with actual runoff; and
- Ability to calibrate and validate the model using historical flood events. The December 2011 rainfall event totals were applied to the model, and the resulting modelled flood map compared with observed flooding extents. The good match between modelled and observed flooding gives good confidence in the modelling results for flows of events of this magnitude.

The uncertainty around the hydrological inputs to the modelling work (peak flows and flow hydrographs) results in uncertainty in assigning a particular annual exceedance probability to a particular flow event. However, there is less uncertainty around the hydraulic parameters used in the modelling, and therefore, for the assessment of options, we can have high confidence that for a given flow and water level we will see the benefit demonstrated when compared with other options.

5.3.2 Quantifying the adverse flood effects in RMA terms

As a result of the proposed works we have identified 34 properties which are modelled to experience an increase in the flood levels. These properties are generally located to the west of Abel Tasman Drive, with the identified flood depths based upon the Difference Depth (Post – Existing) map layer produced by T + T. A map which shows the physical extent of the flood extent and depths have been appended to this AEE as Appendix F.

Table 5.2 below identifies these properties, along with the maximum depth of the additional flood extent associated with each. It also provides a qualitative assessment of the extent of the flood effects for each property in RMA terms for the purpose of a notification assessment.

The assessment recognises that such an undertaking is innately subjective. Accordingly, this assessment has taken what we believe to be a conservative approach in assessing the significance of the modelled flood effects in RMA terms. In making this determination the following factors have been considered:

- 1 The frequency with which the modelled effects are likely to occur;
- 2 The physical extent of the additional flooding in relation to the size of the property;
- 3 The location of the additional flooding in relation to any dwelling, accessory building, access way or outdoor living space directly adjoining the dwelling; and
- 4 The depth of the additional flooding in terms of modelled maximum depth and depth in relation to the FFL of any dwelling or accessory building (where known).

It should be noted, for all properties identified below, the model has been based on a 1% AEP flood event. A 1% AEP event represents an event with a 1% forecast chance of occurring in any given year and is also referred to as a “1 in 100 year” event. Clearly there exists a degree of uncertainty with regards to the actual frequency with which any such event will occur, which is further compounded by the impacts associated with climate change. Despite this uncertainty it is statistically reasonable to expect that such an event will occur infrequently. This point underpins the subsequent assessment of adverse flood effects below.

Given the likely infrequent nature of the expected flooding it is suggested that, provided that the property meets the following criteria, the effects associated with the flooding can be considered less than minor:

- 1 The extent of the additional modelled flood shall not extend into the footprint of the dwelling, nor any accessory building onsite (regardless of whether the flood extent is modelled to exceed the FFL);
- 2 The extent of the additional flooding shall not extend over a portion of the property in the event of a 1% AEP event which exceeds 20% of a properties area. It should be noted that this has been estimated by sight rather than physically measuring the extent of the flood difference upon each property; and
- 3 The modelled flood depth shall not preclude a land-use that could be reasonably expected to occur over the affected portion of land during a 1% AEP flood event.

In light of the above assessment criteria, this report identifies 21 properties that could be identified as being subject to minor adverse effects as a result of this proposal. Those properties have been identified in the table below:

Table 5.2: Properties modelled to experience an increase in flood extent during a 1% AEP event as a result of the proposed works

Properties modelled to experience an increase in flood levels			
Address	Maximum modelled flood depth increase (approximate)	Comment(s)	Corresponding level of adverse effects
97 Boyle Street	+0.06m	This parcel constitutes the Clifton Recreation Reserve. The land operates as a recreation reserve with no private property, buildings or dwelling anticipated to be affected. The additional flood extent is clear of the existing golf club buildings. Spatial extent of the additional flooding is less than the ~20% threshold identified above. Associated flood depths are low (circa 5.5 cm)	Less than minor
23 Lansdowne Street	+0.10 m	Property is located near the confluence of Bartlett and Clifton Creek. Spatial extent of the additional flooding is less than the ~20% threshold identified above. Flood extent located to the north of the existing dwelling and accessory buildings. While a maximum modelled flood depth difference of approximately 10 cm has been identified, this is limited to the northern extent of the site adjoining the stream. No flood difference located within the building footprint.	Less than minor
97 Selwyn Street	+0.05m	Property is to be protected by flood bund (refer to Table 5.1). Increases in modelled flood height relate to localised ponding caused by rainfall directly on the area behind the flood bund and will be alleviated by the installation of drain points in the wall.	Less than minor
89 Selwyn Street	+0.12m	Property is to be protected by flood bund (refer to Table 5.1). Increases in modelled flood height relate to localised ponding caused by rainfall directly on the area behind the flood bund and will be alleviated by the installation of drain points in the wall.	Less than minor
83 Selwyn Street	+0.12m	Spatial extent of the additional flooding is greater than the ~20% threshold identified above and located in the southern extent of the site, clear of the existing dwelling and accessory buildings. The maximum modelled flood depth at this location is 3.724 mRL, whereas the ground height at the building is 4.788 mRL (From TDC building footprint layer, converted to NVDEL1955). The extent of the water level is therefore not anticipated to encroach on the building footprint. Given the relative depth, the area of the flood extent in proportion to the land parcel's size, and proximity to the existing dwelling and outdoor living space the adverse effects are considered to be minor.	Minor
81 Selwyn Street	+0.11m	Spatial extent of the additional flooding is greater than the ~20% threshold identified above and located in the southern extent of the site, clear of the existing dwelling and accessory buildings. Flood depth at the location of greatest increase is 3.72 mRL. Ground height at the building is 5.05 mRL (From TDC building footprint layer). The extent of the water level is not therefore anticipated to encroach on the building footprint. Given the relative depth, the area of the flood extent in proportion to the land parcel's size, and proximity to the existing dwelling and outdoor living space the adverse effects are considered to be minor.	Minor
79 Selwyn Street	+0.11m	Spatial extent of the additional flooding is greater than the ~20% threshold identified above and located in the southern extent of the site, clear of the existing dwelling and accessory buildings. The extent of the water level is not anticipated to encroach on the building footprint. The modelled flood level is 3.692 mRL while the ground height at the building is 4.926 mRL (From TDC building footprint layer). Given the relative depth, the area of the flood extent in proportion to the land parcel's size, and proximity to the existing dwelling and outdoor living space the adverse effects are considered to be minor.	Minor
77 Selwyn Street	+0.11m	Spatial extent of the additional flooding is greater than the ~20% threshold identified above and located in the southern extent of the site, clear of the existing dwelling and accessory buildings. The extent of the water level is not anticipated to encroach on the building footprint. The modelled flood level is 3.691 mRL while the ground height at the building is 5.572 mRL (From TDC building footprint layer). Given the relative depth, the area of the flood extent in proportion to the land parcel's size, and proximity to the existing dwelling and outdoor living space the adverse effects are considered to be minor.	Minor

73 & 75 Selwyn Street	+0.10m	Spatial extent of the additional flooding is greater than the ~20% threshold identified above and located in the southern extent of the site, clear of the existing dwelling and accessory buildings. The extent of the water level is not anticipated to encroach on the building footprint. The modelled flood level is 3.728 mRL while the ground height at the building is 5.180 mRL (From TDC building footprint layer). Given the relative depth, the area of the flood extent in proportion to the land parcel's size, and proximity to the existing dwelling and outdoor living space the adverse effects are considered to be minor.	Minor
71 Selwyn Street	+0.09m	Spatial extent of the additional flooding is less than the ~20% threshold identified above and confined to a small portion of the south-western extent of the section. It will remain clear of the existing dwelling and any accessory buildings. The depth of the modelled flood level is relatively low and the water level is not anticipated to encroach on the building footprint, nor is it expected to dominate the rear of the section in a 1% AEP event. The modelled flood level is 3.731 mRL while the ground height at the building is 5.180 mRL (From TDC building footprint layer).	Less than minor
67 Selwyn Street	+0.05m	Spatial extent of the additional flooding is less than the ~20% threshold identified above and confined to a small portion of the south-eastern extent of the section. It will remain clear of the existing dwelling and any accessory buildings. The depth of the modelled flood level is relatively low and the water level is not anticipated to encroach on the building footprint, nor is it expected to dominate the rear of the section in a 1% AEP event. The modelled flood level is 3.765 mRL while the ground height at the building is 5.318 mRL (From TDC building footprint layer).	Less than minor
65A Selwyn Street	+0.05m	Spatial extent of the additional flooding is less than the ~20% threshold identified above and confined to a small portion of the south-western and south-eastern extents of the section. The flood level has a relatively low depth, however this directly adjoins the building platform with a minor overlap to the south-western corner of the dwelling. The maximum modelled flood depth at this location is 3.80 mRL, whereas the surveyed floor level is 3.98 mRL. The modelled water level is 0.18 m below the surveyed floor level and the modelled water level does not therefore encroach on the building footprint.	Minor
63 Selwyn Street	+0.04m	Spatial extent of the additional flooding is less than the ~20% threshold identified above and located in the southern extent of the site. The extent of the flooding looks to overlap with an existing building onsite. The surveyed floor level for the dwelling is 4.73 mRL. The modelled water level is 0.8 m above the surveyed floor level. Therefore these works are not likely to result in flooding to the building. The maximum modelled flood depth at this location is 3.8 mRL, whereas the surveyed floor level of the accessory building is 3.90 mRL. The modelled water level is 0.1 m below the surveyed floor level. These works are not likely to result in flooding of the accessory building in the event of a 1% AEP event.	Minor
61 Selwyn Street	+0.05m	Spatial extent of the additional flooding is less than the ~20% threshold identified above and located in the southern extent of the site. No dwelling is currently located onsite, but there is a possibility that the extent of the flooding could overlap with a future building onsite.	Minor
Pt Sec 5A SO 7960	0.10m	Large allotment to the south east of Selwyn Street. Does not currently appear to be a building located on the property. Spatial extent of the additional flooding is greater than the ~20% threshold identified above.	Minor
59A Selwyn Street	+0.05m	Spatial extent of the additional flooding is less than the ~20% threshold identified above and is located well clear of the existing dwelling and accessory buildings. The maximum modelled flood depth at this location is 3.76 mRL, whereas the surveyed floor level of the accessory building is 4.03 mRL. The modelled water level is 0.27 m below the surveyed floor level. These works are not likely to result in flooding of the accessory building in the event of a 1% AEP event.	Less than minor
59B Selwyn Street	+0.12m	Property is to be protected by flood bund (refer to Table 5.1). Flood height increase of up to 0.12m along the driveway (shared with 59C Selwyn). Spatial extent of the additional flooding is greater than the ~20% threshold identified above.	Minor
59C Selwyn Street	+0.12m (driveway) +0.08m (building platform)	Property is to be protected by flood bund (Refer to Table 5.1). Spatial extent of the additional flooding is less than the ~20% threshold identified above. The modelled flood height increase overlaps with the building platform but is anticipated to remain below the FFL. The surveyed floor level of building is 3.30 mRL while the modelled flood level at the building is 3.26 mRL. The modelled water level is 0.04 m below the surveyed floor level. These works are not likely to result in flooding of the accessory building in the event of a 1% AEP event. Modelled flood height increases up to 0.08 m along the north-western boundary, this is caused by rainfall directly on the area behind the flood bund and will be alleviated by the installation of drain points in the wall. Modelled flood height increase up to 0.12 m along the driveway (shared with 59B Selwyn).	Minor

55 Selwyn Street	+0.07m	Currently no building located on the property, however the extent of additional flooding is significant in area (in relation to the parcel size).	Minor
53 Selwyn Street	+0.08m	Spatial extent of the additional flooding is greater than the ~20% threshold identified above with moderate flood depths. The flood extent increase at this location is modelled to remain clear of the building footprint. The greatest increase in these flood heights is 4.05 mRL. Ground height at the building is understood to be 4.78 mRL (From TDC building footprint layer) which means the water level is not anticipated to rise above the FFL. The surveyed floor level of the basement is 3.80 mRL. Which is lower than the LiDAR therefore no flooding is shown on within the building case. Unsure if water is able to get into the basement.	Minor
51 Selwyn Street	+0.09m	Spatial extent of the additional flooding is less than the ~20% threshold identified above with moderate flood depths. It is located in the southern extent of the site across the accessway, and will remain clear of the existing dwelling. The extent of the water level is not anticipated to encroach on the building footprint. The modelled flood level is 4.285 mRL at the largest flooding depth while the ground height at the building is 5.965 mRL (From TDC building footprint layer).	Less than minor
49 Selwyn Street	+0.08m	Spatial extent of the additional flooding is less than the ~20% threshold identified above and confined to a small portion of the southern extent of the section. No dwelling is currently located onsite.	Less than minor
37 Selwyn Street	+0.08m	Spatial extent of the additional flooding is less than the ~20% threshold identified above and confined to a small portion of the southern extent of the section. It will remain clear of the existing dwelling and any accessory buildings. The maximum modelled flood depth at this location is 4.61 mRL, whereas the ground height at the building is 5.57 mRL (From TDC building footprint layer, converted to NVD1955). The modelled water level is 0.96 m below the ground level at the building footprint and the modelled water level does not therefore encroach on the building footprint.	Less than minor
33 Selwyn Street	+0.08m	Spatial extent of the additional flooding is less than the ~20% threshold identified above and confined to a small portion of the southern extent of the section. There is currently no dwelling located onsite.	Less than minor
33B Selwyn	+0.12m	Spatial extent of the additional flooding is less than the ~20% threshold identified above and confined to a small portion of the southern extent of the section. The maximum modelled flood depth at this location is 4.45 mRL, whereas the ground height at the building is 4.78 mRL (From TDC building footprint layer, converted to NVD1955). The modelled water level is 0.34 m below the ground level at the building footprint and the modelled water level does not therefore encroach on the building footprint.	Less than minor
27 Selwyn Street	+0.13m	Spatial extent of the additional flooding is less than the ~20% threshold identified above with moderate flood depths. It is located in the southern extent of the site. No building is currently located on the site, and the additional flood extent appears clear of any future building platform.	Less than minor
Sec 10A TN OF Clifton	+0.13m	Spatial extent of the additional flooding is greater than the ~20% threshold identified above with moderate flood depths.	Minor
Pt Sec 6A SO 7960	+0.14m	Spatial extent of the additional flooding is greater than the ~20% threshold identified above with moderate flood depths.	Minor
Pt Sec 7A TN OF Clifton	+0.14m	Spatial extent of the additional flooding is greater than the ~20% threshold identified above with moderate flood depths.	Minor
Sec 8A TN OF Clifton	+0.14m	Spatial extent of the additional flooding is greater than the ~20% threshold identified above with moderate flood depths.	Minor
82 Richmond Road	+0.48m	Right bank to be protected by proposed stopbank. Spatial extent of the additional flooding is less than the ~20% threshold identified above and is over farmland adjacent to the left bank. No dwelling is currently located onsite.	Minor

5.4 Construction effects

5.4.1 Erosion, sedimentation and dust effects

The proposed works will involve undertaking earthworks in close proximity to a water body, along with in-stream construction works and the construction of flood protection structures. This work has the potential of generating erosion, sedimentation and dust effects which could impact water and air quality. To manage these potential effects the CEMP sets out an Erosion and Sediment Control Plan, with the identified sediment and erosion control measures required to be in place before works begin. A draft version of the CEMP is attached in Appendix D, with the final CEMP provided to Council for certification prior to works commencing. A condition of consent to this effect is volunteered below.

The CEMP will identify a range of measures to avoid, remedy or mitigate the potential adverse erosion, sedimentation and dust-related effects. This may include:

- The construction of silt fences as required;
- Staging the earthworks to minimise the area of exposed soil as much as is practicable;
- The utilisation of an onsite, portable water supply to reduce the significance of adverse dust effects;
- Stabilising erodible surfaces;
- The utilisation of filter socks; and
- Implementing contingency measures when adverse weather is predicted.

Provided the applicant implements the control measures described within the ESCP, and any other relevant measures to be identified within the CEMP it is considered that any adverse erosion, sedimentation or dust effects will be less than minor.

5.4.2 Construction noise

The works will require the use of standard construction machinery, including excavators and trucks. Construction hours will be limited to 7:00 am to 6:00 pm Monday to Saturday, with no works to take place on Sundays and public holidays, unless required due to extenuating circumstances. Construction noise will comply with the relevant construction noise limits in the New Zealand Standard NZS 6803: 1999 '*Acoustics-Construction Noise*' to ensure that effects on all nearby properties are acceptable.

With the adherence to those measures identified within the CEMP, including meeting the relevant noise standards and limiting the hours of operation, the adverse effects on construction noise are expected to be less than minor.

5.4.3 Traffic effects

Abel Tasman Drive is listed as a distributor road, and links Pohara with the wider Tasman district. The proposed construction works are anticipated to involve a moderate volume of heavy vehicle movements along Abel Tasman Drive and other connecting roads, as well as works which both adjoin and bisect the road (in the form of an upgraded culvert underneath the roadway).

The successful contractor will be responsible for development of the Traffic Management Plan (TMP) and management of traffic within the project area, which will include Temporary Traffic Management (TTM) measures. The TMP will form part of the CEMP submitted to council for certification prior to the start of the works and will follow good practice traffic management

solutions. This remains subject to input from the successful contractor(s) and subsequent certification from TDC but may include:

- Preparation of a Site Specific Temporary Traffic Management Plan (SSTMP);
- Utilising Temporary Traffic Management practices (TTM) when undertaking works on the Abel Tasman Culvert; and
- Timing the works to avoid the busy summer period.

It is considered that, with the appropriate traffic management measures in place through the TMP, any adverse traffic effects associated with this proposal will be less than minor.

5.5 Ecological effects

5.5.1 Effects on the freshwater environment

5.5.1.1 Effects on freshwater habitat

Potential for adverse effects on freshwater habitat associated with the proposed flood protection works relate to:

- Temporary construction impacts associated with earthworks; and
- Temporary disturbance of the river bed and banks during culvert replacement and channel widening.

Stream works will be undertaken between October and April during low flow conditions. The effects of sedimentation will be appropriately managed by implementing standard erosion and sediment controls and using best practice principles of working in a dry isolated environment.

The implementation of a comprehensive stream works methodology and appropriate sediment control measures using standard best practice (as outlined in the draft CEMP in Appendix D), is considered sufficient to reduce the potential magnitude of effects to a low overall effect.

This is considered to equate to less than minor adverse effects on the freshwater habitat.

5.5.1.2 Effects on fish

Potential for adverse effects on fish associated with the proposed flood protection works relate to:

- Instream disturbance during construction; and
- Fish passage through culverts in Bartlett Creek underneath Abel Tasman Drive, adjacent to Kohikiko Place, Ellis Creek and under Boyle Street.

The peak migration period for fish species found in the flood protection works catchment is between March and November. Due to the diversity of fish species present in the Ellis Creek catchment, fish will be migrating up or downstream most times of the year and therefore a short-term effect on fish species is anticipated. Stream works will be undertaken between October and April, avoiding the majority of the peak migration period and thereby reducing potential adverse effects. In addition, during instream works fish will be captured and relocated out of the work area.

Fish passage is an important consideration in culvert design, due to the migratory nature of a number of New Zealand's native fish. In line with current minimum fish passage design standards, the replacement culverts at Kohikiko Place and Abel Tasman Drive will be of low gradient and as close as possible to the streambed slope, at a gradient of approximately 2% and 0.16% respectively. The replacement culverts at these locations will be embedded by at least 25% under the invert of the creek bed, allowing movement of sediment through the culvert, thus maintaining instream habitat for fish moving through the structure.

At Abel Tasman Drive, the existing 1350 mm diameter round culvert will be replaced with a 4 m wide box culvert. Flows will therefore be spread across a wider base, presenting an increased possibility of water levels falling below the minimum depths required for fish passage. Embedding the culvert by 25% of culvert height to retain substrate is expected to avoid this by increasing water depth within the culvert.

The replacement culverts will be of similar length to the existing culverts at Kohikiko Place (approximately 8 m) and Abel Tasman Drive (approximately 13 m). These lengths are not expected to restrict fish passage, and the presence of giant kokopu and banded kokopu upstream of these culverts suggest that they are not currently restricting fish movement upstream and downstream. The additional culverts at Boyle Street will be of similar length to the existing culverts, at approximately 4.5 m, and are therefore not expected to pose restrictions to fish passage.

Through the inclusion of the above culvert design features and timing the works to avoid peak fish migration periods, the level of effects in relation to fish passage is expected to be very low.

This is considered to equate to less than minor adverse effects on fish.

5.5.2 Effects on fish spawning habitat

Potential for adverse effects on fish spawning habitat associated with the proposed flood protection works improvements relate to:

- The permanent widening of the channel and placement of rock riprap at the confluence of Ellis and Clifton Creeks.

Given the project areas close proximity to the sea, the proposed widening and riprap installation at the Ellis Creek and Clifton Creek confluence will occur in an area which could potentially be used by inanga for spawning. The placement of riprap at the confluence will result in an approximately 10 m loss of potential inanga spawning habitat.

Works will be undertaken in the drier seasons, between October and April. This timing would therefore largely avoid the peak spawning period for inanga, banded kokopu and giant kokopu, which spans from March to July for all three species.

The bankside riprap forming part of the proposed works at the Ellis and Clifton Creek confluence will be planted in order to restore spawning habitat for inanga.

Subject to the works being undertaken in line with those mitigation measures outlined above the level of effects upon inanga spawning habitat is expected to be low.

This is considered to equate to less than minor adverse effects on the fish spawning habitat.

5.5.3 Effects on the terrestrial environment

5.5.3.1 Effects on the terrestrial habitat

Potential for adverse effects on terrestrial habitat associated with the proposed flood protection works relate to:

- Loss of approximately 8 m² (4 bunds of approximately 2 x 1 m areas which intercept salt marsh) of salt marsh habitat for the Boyle Street culvert works; and
- Loss of approximately 160 m length of mixed native/exotic planted vegetation for the Selwyn Street stop banks. Selected trees will be kept as agreed on site with landowners. Where possible, the removal of kānuka and mānuka will be avoided.

The magnitude of effects of the vegetation clearance is expected to be low. Threatened species are likely not naturally occurring and may have been planted, while the density of kānuka and mānuka plants at the site is low. Accordingly the level of adverse effects upon the terrestrial habitats is expected to be low.

This is considered to equate to less than minor adverse effects on the terrestrial habitat.

5.5.3.2 Effects on avifauna

Potential for adverse effects on avifauna associated with the proposed flood protection works relate to the disturbance to bird breeding should they be nesting in the area prior to construction. By undertaking works outside of breeding season (September – February), or undertaking a check for nesting birds prior to works, it is expected the magnitude of effects on avifauna to be negligible. This will result in an overall level of effect that is low.

The ecological value of bird species present in the mixed native/exotic and pasture habitat is low due to the low quality habitat and likely absence of threatened bird species. We note that the potential effects resulting from vegetation clearance will be mitigated by either undertaking works outside of bird breeding season (September – February), or by undertaking a check to ensure no active bird nests are present during vegetation clearance. If bird nests are found, works are only to be commenced once the birds have fledged, or the nest has naturally been abandoned. With these mitigation measures in place the overall level of effect is considered to be very low.

This is considered to equate to less than minor adverse effects on avifauna.

5.5.3.3 Effects on herpetofauna

Common skinks may be effected by the removal of vegetation. Native herpetofauna including common skinks are protected under the Wildlife Act (1953).

The mixed/exotic plantings at Proposed Selwyn Street West is the only area in which native common skinks are expected to be present. The overall ecological value of lizard species present is low in the mixed native/exotic vegetation, due to the likely absence of threatened lizard species. The likely overall level of effect has therefore been identified as very low.

This is considered to equate to less than minor adverse effects on herpetofauna.

5.5.3.4 Overall ecological effects

The ecological effects associated with this proposal, subject to the construction management practices and design amendments identified, will be less than minor.

5.6 Landscape and visual effects (amenity)

Construction of the proposed stop bank will involve the deposition of fill to create several earthen bunds on land adjoining the streams. The bunds will have a total length of several hundred metres, a maximum height of up to 1 m above the existing ground level, a crest width of at least one metre, and batter slopes of approximately 1:3. The construction of these bunds will permanently alter the landscape within the immediate vicinity of the works area.

However, the land within and adjoining the subject site(s) is already heavily modified. To the southern side of the subject sites the predominant land use is pasture production used for livestock grazing, while land to the northern side of Bartlett Creek the predominant land use is residential. Due to the current use and historic management of land surrounding the project area all of the creeks within the project area have limited or no riparian vegetation, and have been heavily modified. This is clearly evident in those photos contained in Section 2.3 of the AEE above.

Following completion of the works the exposed earthworks (including the stop bank) will be hydroseeded and monitored to ensure that full grass cover is established. A condition has been volunteered to this effect. The planting of the bankside riprap at the confluence of Ellis and Clifton Creeks to improve the inanga spawning habitat is also expected to result in minor improvements for visual amenity.

Considering the highly modified nature of the existing environment and those mitigations proposed regarding hydroseeding of the bund following completion, it is anticipated that any adverse landscape and visual effects associated with the proposal will be less than minor.

5.7 Cultural and heritage effects

The RMA requires that particular attention is given to the relationship of Māori with their ancestral lands, water, sites, wāhi tapu and other taonga. This requirement is reflected in Chapter 10 of the TRMP.

A number of known sites of cultural and historical significance are located within Pohara, as reflected the *Archsite* mapping tool. No specific sites (wāhi tapu or otherwise) have been identified as being located within the area of proposed works. The proposed works also look to be located adjacent to, but outside of the Cultural Heritage Precinct (as identified on special planning map AF16-17). The proposed works area is not located within an area subject to a statutory acknowledgement.

Notwithstanding this, the applicant has agreed to seek an archaeological authority from Heritage NZ concurrently with the application for resource consent. It is anticipated that any requirements stipulated by the archaeological authority (i.e. accidental discovery procedures) will be incorporated into the final CEMP for approval by council prior to the undertaking of any works. In light of this it is anticipated that any adverse heritage effects will be less than minor.

The TRMP also requires that adverse effects of development upon the mauri (life-supporting capacity) and wairua (spiritual value) of waterbodies are avoided, remedied or mitigated. The ecological effects assessment and associated report are considered relevant to any consideration of the effects of this proposal upon the mauri and wairua of the waterbody, as the concepts are intrinsically linked to ecosystem health. Subject to the works being undertaken in line with the volunteered mitigations (including the preparation of a CEMP, timing the works to avoid spawning and providing for fish passage in the culvert designs) the effects upon freshwater are considered to be less than minor.

5.8 Summary of effects

Overall, with the mitigation described above in place, the proposed works are anticipated to have an environmental effect which will be predominantly less than minor. Those adverse effects relating to the additional adverse flooding effects on certain properties however are considered to result in a proposal with effects that are in some instances minor (but no more than minor).

The rationale for taking such a position has been illustrated in Section 5.3 above, and the implications of this assessment upon the notification assessment is identified in section 6.4 of the AEE below.

6 Statutory Assessment

6.1 RMA assessment

Section 104 of the RMA sets out the matters to which a consent authority must have regard to, subject to Part 2 of the RMA, when considering an application for resource consent. These are:

- Any actual and potential effects on the environment of allowing the activity (refer Section 5 above);
- Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity;
- Any relevant provisions of:
 - A national environmental standard;
 - Other regulations;
 - A national policy statement;
 - A New Zealand coastal policy statement;
 - A regional policy statement or proposed regional policy statement; and
 - A plan or proposed plan.
- Any other matter the consent authority considers relevant and reasonably necessary to determine the application.

6.1.1 Part 2 of the RMA

Part 2 of the RMA sets out the purpose and principles of the Act. The purpose of the RMA is to promote the sustainable management of natural and physical resources.

This proposal is considered to be broadly consistent with Part 2 of the RMA, as particularised in the assessment against the relevant provisions of the regional plans and higher order planning documents below.

The works are proposed in order to manage the significant risk presented by a natural hazard, whilst also being undertaken in such a way so as to protect historic heritage from inappropriate use and development, minimise the adverse effects upon the natural vegetation and habitats of indigenous fauna and maintain and enhance existing amenity values and environmental quality.

6.1.2 National Environmental Standards

There are currently six national environmental standards in effect as regulations under the RMA to consider. These relate to:

- Air quality;
- Sources of human drinking water;
- Telecommunications facilities;
- Electricity transmission;
- Assessing and managing contaminants in soil; and
- Plantation forestry.

None of these National Environmental Standards are considered relevant to this proposal.

6.1.3 National Policy Statements

Currently there are four national policy statements in force under the RMA:

- The New Zealand Coastal Policy Statement 2010;
- The National Policy Statement on Electricity Transmission 2008;
- The National Policy Statement on Renewable Electricity Generation 2011; and
- The National Policy Statement on Freshwater Management 2011.

The National Policy Statement on Freshwater Management and the New Zealand Coastal Policy Statement are of potential relevance to this application. The relevance of each will be explored in more detail below.

6.1.3.1 National Policy Statement for Freshwater Management

The National Policy Statement for Freshwater Management (NPS-FM) sets out the objectives and policies for freshwater management under the Resource Management Act, and is considered relevant to this proposal, which will involve discharging contaminants to, and diverting, freshwater. We consider that this proposal will be broadly consistent with the objectives and policies of the NPS-FM relating to both water quality and water quantity, in particular Policy A3 which relates to the imposition of conditions to discharge permits.

The AEE and associated CEMP illustrates the manner in which the works will be undertaken to avoid, remedy or mitigate adverse effects on the life-supporting capacity of the waterways, and a series of conditions have been volunteered to this effect.

6.1.3.2 New Zealand Coastal Policy Statement 2010

A consent authority, when considering an application for resource consent, must, subject to Part 2 of the Act, have regard to any relevant provisions of the New Zealand Coastal Policy Statement (NZCPS). The NZCPS contains policies in order to achieve sustainable management of natural and physical resources in relation to the coastal environment.

Importantly, it is worth noting that Policy 1 of the NZCPS defines coastal environment broadly, and includes areas where coastal processes, influences or qualities are present. While the proposed works will be undertaken landward of the MHWS the NZCPS remains relevant to this application, as the TNRP identifies the subject site(s) as being located largely within the Coastal Environment Area. The proposed works are consistent with the NZCPS, including in particular Policy 11 (Indigenous biological diversity), Policy 17 (Historic heritage identification and protection) and Policy 23 (Discharge of contaminants).

6.1.4 Regulations

There are no regulations considered relevant to this proposal.

6.1.5 Tasman Regional Policy Statement 2001

The Tasman Regional Policy Statement 2001 sets the strategic direction for sustainable resource management in the region. The proposal to undertake flood mitigation works is considered to be generally consistent with the relevant objectives and policies of this policy statement, including the following objectives relating to the maintenance and enhancement of flood mitigation, water quality and habitat conservation, which are considered to be particularly relevant to this proposal:

General Objective 1: Maintenance and enhancement of the quality of the Tasman District environment.

Land Resource Objective 6.6: Maintenance and enhancement of flood mitigation, habitat conservation, water quality, recreational and public access values and opportunities of riparian lands.

River and Lake Objective 8.1: Maintenance of the stability and efficiency of rivers and floodway lands to carry floodwaters or sediment.

River and Lake Objective 8.1: Maintenance and enhancement of natural and other instream values of rivers, lakes and streams.

6.1.6 Tasman Resource Management Plan

The TRMP is the Council's combined Regional and District Plan. Tasman District Council are undertaking a rolling review of the plan provisions.

This application seeks resource consent under the Rules set out in Table 4.2 above. An assessment of the application under the themes of relevant objectives and policies is provided in Table 6.1 below. The proposed works are considered consistent with the relevant objectives and policies of the TRMP.

Table 6.1: TRMP Objectives and Policies

Key Theme	Relevant objectives and policies	Comment
Water quality and biodiversity	Objectives 10.1.2 and 33.1.2.1 Policies 33.1.3.2, 33.1.3.5, 33.1.3.6 and 33.1.3.7	The TRMP identifies a general policy direction to maintain water quality, to protect indigenous biodiversity and to avoid, remedy or mitigate the effects associated with the discharge of contaminants to freshwater. The discharge of contaminants associated with this proposal are associated with the construction of the flood protection works. The applicant has prepared a Construction Environmental Management Plan (CEMP), which will identify how the effects associated with the construction works are mitigated and includes the works being undertaken using appropriate sediment control methods. A condition has been volunteered requiring that the final CEMP will be submitted to TDC for certification at least 10 working days prior to works starting. It is considered that this mitigation will ensure that the proposal is broadly consistent with the objectives and policies relating to water quality and discharges.
Natural character of riparian margins	Objective 8.2.2 Policies 8.2.3.12 and 8.2.3.17	The TRMP identifies a policy direction to maintain the physical resources contained within the riparian margin, and to encourage the restoration and enhancement of riparian areas where the natural character has been degraded. The proposed works will involve the disruption of the riparian margins in the form of creating earthen bunds to act as stop banks. As identified in the effects assessment above, it is considered that the natural character of the riparian environment has already been heavily modified, with large portions of the streams in question being directly adjoined by pasture or residential land-use. The proposed works are not expected to further degrade the

Key Theme	Relevant objectives and policies	Comment
		riparian margin, in in some areas the application has volunteered remedial planting (i.e. adjoining rock rip-rap – as identified in the ecological assessment). For this reason it is considered that this application remains consistent with these objectives and policies of the TRMP to maintain the physical resources contained within the riparian margin, and provide a degree of enhancement when that character has been otherwise degraded.
Heritage	Objective 10.2.2 Policies 10.2.3.2 and 10.2.3.3	The applicant will be seeking an archaeological authority from Heritage NZ concurrently with the consent application. This will set out the requirements for undertaking the works, and for managing any accidental discoveries of artefact materials. Any requirements imposed by this archaeological authority will then be included into the CEMP for final approval by TDC. This is considered to be consistent with the objectives and policies of the TMRP relating to the protection of both historic and cultural heritage.
The relationship of Māori and their culture and traditions with rivers and lakes	Objective 27.2.2 Policies 27.2.3.1 and 27.2.3.2	<p>The applicant has proposed a suite of mitigation measures to protect the stream from adverse effects, which have been detailed above. This includes construction management procedures to reduce environmental effects, including upon water quality and biodiversity.</p> <p>Wairua refers to the spiritual essence of a thing, while Mauri relates to the special power which makes it possible for things to operate in accordance with its own existence. For waterbodies these concepts are considered to be innately related (albeit not limited) to ecosystem health. The imposition of those mitigations identified above is considered to mitigate the adverse effects associated with the Mauri and wairua of the waterbody. Accordingly the proposed works are considered to be in accordance with the objectives and policies of the TRMP relating to Māori relationships with rivers and lakes.</p>
Adverse off-site effects	Objective 5.1.2 Policies 5.1.3.9 and 5.1.3.11	<p>The TRMP sets a policy direction to avoid, remedy or mitigate the adverse effects associated with:</p> <ul style="list-style-type: none"> • Noise and vibration; • The discharge of contaminants to land, air or water; • Odour; • ... • Vehicle movements; • Buildings; and • Structures and temporary activities. <p>Beyond the boundaries of the site which generates the effect.</p> <p>The applicant has volunteered a draft CEMP which identifies operational methods to mitigate many of the effects occurring during construction, and the structures</p>

Key Theme	Relevant objectives and policies	Comment
		(particularly those within the bed of the stream) have been designed to mitigate the effects upon fish passage. In light of this mitigation, it is considered that this proposal is consistent with the TRMP's objectives and policies relating to adverse off-site effects.
Amenity	Objective 5.2.2 and Policy 5.2.3.6	<p>The TRMP seeks to maintain and enhance amenity values (both on site and within the wider community) throughout the district.</p> <p>The site over which the works are proposed is not considered to have particularly high visual, landscape or recreation amenity values. A more detailed description of the likely effects upon amenity is contained in Section 5 of the AEE above. Subject to the works being undertaken in accordance with the mitigations identified above, the works will result in the maintenance of amenity values.</p> <p>For this reason the works are considered consistent with the policy direction set within the TRMP.</p>
Land disturbance	Objective 12.1.2 and Policy 12.1.3.2	<p>The TRMP seeks to avoid, remedy or mitigate the adverse effects associated with land disturbance, including those effects associated with sedimentation of waterways and the damage to the beds of rivers.</p> <p>The applicant will prepare a Construction Environmental Management Plan (CEMP), which will identify how the effects associated with the land disturbance will be mitigated. This will include an Erosion and Sediment Control Plan, which will ensure the works are undertaken using appropriate sediment control methods. This CEMP will be provided to council for approval prior to the undertaking of any land disturbance works. It is considered that this mitigation will ensure that the proposal is broadly consistent with the objectives and policies relating to land disturbance.</p>
Natural Hazards	Objective 13.1.2 and Policy 13.1.3.10	<p>The TRMP identifies that protection works to mitigate the risks associated with natural hazards should be considered in certain cases, as illustrated by points (a) to (e) of Policy 13.1.3.10.</p> <p>The identified criteria are considered relevant to this proposal, which involves flood protection works to mitigate the flood risk to nearby residential properties and infrastructure. These works are being proposed to protect nearby residential properties from the risks of flooding. It is therefore considered that this proposal is consistent with the policy direction set forth in the Natural Hazards section of the TRMP.</p>

6.2 Sections 105 and 107

Sections 105 and 107 are relevant to applications for discharges under section 15. Section 105 requires the consent authority to have regard to the nature of the discharge and the sensitivity of the receiving environment, the applicant's reasons for the proposed choice and possible alternative methods of discharge. These matters have been addressed throughout this report, particularly in

Section 2 which describes the receiving environments, Section 5 which assesses the effects on the environment, and Section 3.15 which addresses potential alternatives.

Section 107 restricts the granting of discharge permits in certain circumstances, namely if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- Any conspicuous change in the colour or visual clarity;
- Any emission of objectionable odour;
- The rendering of fresh water unsuitable for consumption by farm animals; and
- Any significant adverse effects on aquatic life.

The effects of the discharge are considered in Section 5 above. Overall it is concluded that the discharge would meet the tests set out in section 107(1)(c) to (g).

6.3 Other matters

6.3.1 Tasman District Council Long Term Plan 2018 – 2028

The preparation of a Long Term Plan (LTP) is a requirement under the Local Government Act 2002, and contains information about the range of activities and services the council intends to provide to meet the region's needs, along with an explanation of expenditure and funding associated with them. The LTP for 2018 -2028 was adopted in June 2018, and took effect from 1 July 2018.

The works proposed for the Pohara area have been identified within the *Pohara, Ligar Bay and Tata Beach Settlement Area Report 2018*.

It is important to note that this report identifies the risk that low lying areas of Pohara face from flooding of fresh water and localised high intensity rainfall (Section 2.3). The report then goes on to identify the issues around Ellis Creek (Section 2.4) and plans for stormwater improvements to alleviate flooding of the neighbouring properties (Section 5.1). This application is therefore considered consistent with the LTP.

6.3.2 Reserves Act 1977

The proposed upgrade of the Boyle Street culverts is located within the Clifton Recreation Reserve at 97 Boyle Street. This parcel of land is held as a reserve and administered by Tasman District Council, and is home to the historic Clifton Cemetery and the 9-hole Takaka Golf Course.

The proposed works located within the reserve are considered broadly consistent with the Reserves Act 1977, which grant the administering body of a recreation reserve powers to temporarily enclose or prohibit access to part of a reserve to undertake improvement works.

6.4 Notification assessment

6.4.1 Public notification

Section 95A of the RMA is relevant when a consent authority is considering whether a consent application should be considered with or without public notification.

Section 95A identifies a four step process. In relation to these steps we note the following:

- The applicant does not request public notification of the application;
- There is no rule or national environmental standard that precludes or requires public notification of this application;
- An assessment of effects on the environment is provided in Section 5 of this AEE report. This assessment concludes that the adverse effects on the environment are likely to be no more than minor;
- The application is not for any of the activities identified in section 95A(5)(b) (i.e. a controlled activity, subdivision of land or a residential activities, a boundary activity, or an activity prescribed in section 360H(1)(a)(i)); and
- No special circumstances are considered to exist in relation to the application.

Based on this assessment, we consider that this proposal meets the tests of the RMA to be processed without public notification.

6.4.2 Limited notification

For applications that are not publicly notified, under section 95B, the consent authority must determine whether to give limited notification of an application to any affected parties. Section 95B identifies a four step process. In relation to these steps we note the following:

- The application does not need to be notified to any parties under section 95B(4). The proposed change will not affect any customary rights;
- The proposed activity is not on or adjacent to, or does not affect, land that is the subject of a statutory acknowledgement;
- The proposed change will not affect any customary rights;
- There are no applicable rules or national environmental standards precluding limited notification; and
- No special circumstances are considered to exist in relation to the application that warrant notification of the application to any other persons not already determined to be eligible for limited notification.

Section 95E(1) states that a consent authority must consider a person to be an affected person if the activity's adverse effects on the person are minor or more than minor (but not less than minor). In line with the effects assessment undertaken above, there are a number of properties identified as likely to experience minor additional flooding effects as a result of this application.

As such, the following persons are considered to be affected by the proposed activity:

- 83 Selwyn Street;
- 81 Selwyn Street;
- 79 Selwyn Street;
- 77 Selwyn Street;
- 73 – 75 Selwyn Street;
- 65A Selwyn Street;
- 63 Selwyn Street;
- 61 Selwyn Street;
- Pt Sec 5A SO 7960;
- 59B Selwyn Street;
- 59C Selwyn Street;

- 55 Selwyn Street;
- 53 Selwyn Street;
- Sec 10A TN OF Clifton;
- Pt Sec 6A SO 7960;
- Pt Sec 7A TN OF Clifton;
- Sec 8A TN OF Clifton; and
- 82 Richmond Road.

6.4.3 Section 95 conclusions

Following the steps set out in sections 95A and 95B, we consider that the application should not be publicly notified, but should instead be subject to limited notification of those properties identified above.

7 Consultation

Iwi consultation has been undertaken via the local iwi representation group Manuwhenua ki Mohua (MKM) from the early feasibility/conceptual phase of the project and will continue throughout the project. A draft of this AEE and consent application has been presented to MKM. An appropriate iwi monitor will be engaged during excavation of areas of known sensitivity or significance to iwi.

TDC will also seek an archaeological authority concurrently with this application. Iwi input will be required as part of the application for archaeological authority.

TDC is currently seeking private landowner approval to undertake works on private property. Table 7.1 summarises the status of landowner discussion.

Table 7.1: Land owner discussion status

Landowner name	Affected party approval status
John & Elizabeth Lee	Signed
Brian Win	Signed
Rosemary Jones & Danny Te Tau	Not yet signed
Ina & Hans Stoffregen	Not yet signed
Arnold & Roger Bartlett	Not yet signed
Richmond Pohara Holdings Ltd	Not yet signed
Various remaining land owners	Not required

8 Proposed Conditions of Consent

- 1 The Project shall be undertaken in general accordance with the information provided by the Consent Holder in the application dated June 2019;
- 2 Where there is conflict between the documents listed in (1) above and these conditions, these conditions shall prevail;
- 3 The consent holder shall ensure that a copy of this consent and all documents and plans referred to in this consent, are kept on site at all times, and presented to a TDC officer on request;
- 4 All works shall be carried out in general accordance with condition 1 and the management plans referred to in this application;
- 5 The consent holder shall prepare a Construction and Environmental Management Plan (CEMP) that outlines:
 - a Key staff responsibilities and contact details, including emergency contact details;
 - b Construction methodologies and construction timeframes;
 - c Traffic management practices;
 - d Stream works methodologies;
 - e Mitigation measures for those effects arising from construction of the works, including noise, dust, erosion and sediment discharge controls and traffic;
 - f Procedures and mitigation measures for effects on flora and fauna;
 - g Procedures regarding environmental complaints;
 - h Compliance monitoring; and
 - i Corrective action.
- 6 The CEMP shall be submitted to the Manager, Consents at Tasman District Council at least 10 working days prior to the commencement of works to which the management plans relate for certification that the CEMP addresses the matters outlined in Condition 5;
- 7 The consent holder may make minor amendments to the management plans at any time. Minor amendments refers to any amendment where the adverse environmental effects arising from that amendment are equivalent or less than those that would arise in the absence of such an amendment;
- 8 Any material changes proposed to the management plans shall meet those requirements established in condition (5) of this consent. A material change refers to any amendment which remains in general accordance with condition (1), but does not qualify as a minor amendment under condition (7);
- 9 The consent holder shall take all reasonable steps to ensure that, during any temporary diversion of water, any fish within the works area are found, captured and relocated into a clear flowing section of the stream, upstream from the affected works area;
- 10 All instream works shall be carried out in the active channel between 1st October and 30th April (inclusive), so as to avoid works during the key recruitment migration period for native fish species;
- 11 Works along Abel Tasman Drive shall not occur during the peak summer period between 16 December – 14 February;
- 12 All earthworks not being worked for a period exceeding three months, and all completed earthworks areas (including the proposed bund) shall be grassed as soon as is practicable. The consent holder shall monitor the areas subject to being grassed to ensure that full ground cover is achieved.

9 Conclusion

This AEE report has been prepared on behalf of Tasman District Council to accompany a resource consent application to undertake a suite of flood protection works within the Pohara Township. These works require resource consent from Tasman District Council as a discretionary activity under the Tasman Resource Management Plan (TRMP).

This AEE report draws the following conclusions:

- The works are consistent with Part 2 of the Resource Management Act 1991;
- The works are consistent with the relevant objectives and policies of the TRMP; and
- The works will have adverse environmental effects on the environment that will be no more than minor.

In accordance with the notification assessment undertaken above, we respectfully request that this resource consent application be processed on a limited-notified basis. The parties that we consider affected for the purpose of notification have been identified in section 6.4 of the AEE above.

10 Applicability

This report has been prepared for the exclusive use of our client Tasman District Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by:

Authorised for Tonkin & Taylor Ltd by:


.....
.....

Alastair Meehan
Planner

Mark Foley
Project Director

Technical review undertaken by Tim Ensor (Principal Planner) on 15 May 2019

24-Jul-19

p:\871018\871018.3000\issueddocuments\final aee july 2019\final aee for lodgement 23- 7 -19.docx

Appendix A: Consent Application Form

Form 9 - Application for Resource Consent

To: Tasman District Council

- 1 Tasman District Council apply for the following type(s) of resource consent:
 - a The take, use or diversion of groundwater;
 - b The take, use or diversion of surface water;
 - c Discharge permit;
 - d Land disturbance; and
 - e Land use.
- 2 The activity to which the application relates (the *proposed activity*) is for a series of flood protection works within and adjoining Bartlett, Ellis and Clifton Creeks;
- 3 The works will generally take place within the Pohara Township in Golden Bay, which is located approximately 10 km northeast of Takaka. A more detailed description of the site can be found within Section 2 of the AEE;
- 4 The full name and address of each owner or occupier of the sites to which the application relates can be found within the AEE, and are summarised as follows:

Address	Lot Description	CT number	Owner(s)
82 Richmond Road	Lot 1 Deposited Plan 494605	724177	Richmond Pohara Holdings Limited
59B Selwyn Street	Lot 1 Deposited Plan 359341	241771	Daniel Jones Te Tau, Rosemary Anne Jones
59C Selwyn Street	Lot 1 Deposited Plan 20483	NL13C/720	Elizabeth Mary Lee, John Richard Crispin Lee, Jonathan George Rutherford Tidswell
85 Selwyn Street	Lot 19 Deposited Plan 9603	NL4C/1379	Brian John Win, Milnes Beatson Trustee Company Limited
89 Selwyn Street	Lot 17 Deposited Plan 9603	NL4C/1377	Brent Duane Sturm; Tracey Lorraine Sturm
97 Boyle Street	Section 132 Square 11	NL1A/771	Tasman District Council
Abel Tasman Drive	Part Section 8A Survey Office Plan 7960	NL10B/1189	Arnold Ashton Bartlett, Roger Coleridge Bartlett

23 Lansdown Street	Lot 1 DP 11360	NL6D/254	Hans Heinrich Walter Stoffregen, Ina Holst- Stoffregen
--------------------	----------------	----------	--

- 5 The application includes a number of permitted activities. These are identified in section 4.2 of the attached AEE;
- 6 No additional resource consents are needed for the proposal to which this application relates;
- 7 I attach an assessment of the proposed activity's effect on the environment that—
- a Includes the information required by clause 6 of Schedule 4 of the Resource Management Act 1991; and
 - b Addresses the matters specified in clause 7 of Schedule 4 of the Resource Management Act 1991; and
 - c Includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.
- 8 I attach an assessment of the proposed activity against the matters set out in Part 2, section 104(1)(b) and clause 2(2) of Schedule 4 of the Resource Management Act 1991.

Contact details

Contact person: Tonkin + Taylor (C/- Alastair Meehan)

Email address: AMeehan@tonkintaylor.co.nz

Telephone: (04) 806 4964

Postal address: Level 4, 2 Hunter Street, Wellington 6011

Yours sincerely,

PP



Alastair Meehan

Planner

4-Jun-19

t:\nelson\projects\871018\871018.3000\issueddocuments\final aee and easement may 2019\appendices\appendix a - form 9 4 june 2019.docx