

Seadown Drain and Stopbank Realignment – Resource Consent Application and Assessment of Environmental Effects

Canterbury Regional Council Rivers Section

May 2026

Environment Matters Limited

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Author	Myles McCauley
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Reviewed by	Jolene Irvine, Chris Fauth
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Application for resource consents under the **Resource Management Act 1991**.

Applications are made for seven resource consents related to the realignment of the Seadown Main Drain and stopbank, Washdyke. An assessment of environmental effects is attached, which includes the matters required by the fourth schedule of the Resource Management Act 1991.

Applicant name	Canterbury Regional Council – Rivers section
Applicant contact	Jolene Irvine Canterbury Regional Council jolene.irvine@ecan.govt.nz 027 706 5332
Consultant	Environment Matters Limited Myles McCauley myles@environmentmatters.co.nz 022 367 5486
Contact during processing	Applicant contact Please copy correspondence to consultant
Application site details	Seadown Drain between Aorangi Road and Waitarakao Washdyke Lagoon, at or about map reference NZTM 1461390, 5087385
Territorial Authority	Timaru District Council
Resource consent applications	Canterbury Regional Council: Five consents, under sections 9, 13, 14 and 15 Timaru District Council: Two consents, under section 9
Contact for compliance monitoring	Applicant
Is applicant an Environment Canterbury staff member?	Yes
Invoice method	CRC: Internal applicant. Journal from p051060 (Rivers Permissions), Contact Jolene Irvine. TDC: By invoice after lodgement.
The applicant is not a natural person, and has been the subject of an abatement notice and infringement notice(s) under the Resource Management Act 1991, as described in the application.	
Applicant signature	 Leigh Griffiths General Manager Hazards 11 May 2026

1 Introduction

The Canterbury Regional Council (CRC) owns and manages flood protection and control works throughout the Canterbury region. They are managed using rating districts where targeted rates contributions fund the installation, operation and management of flood infrastructure.

The Seadown Drainage District is the rating district for drainage from the land north of the Waitarakao Washdyke Lagoon (Waitarakao). A network of drains and watercourses roughly perpendicular to the coast conveys water to the Seadown Drain, which flows southwest from Beach Road, through Phillips Lagoon, to Waitarakao. A stopbank lies generally on the seaward side of the drain, and its primary purpose is to protect the drain from coastal processes. A schematic of the scheme is shown in Figure 1.



Figure 1: Schematic of Seadown drainage system. The Seadown Drain/coastal stopbank is dotted, other drains are shown as blue, purple and green lines, yellow lines are stopbanks. (Base image source: Canterbury Maps)

The Seadown Drainage District has four objectives:

1. Maintain the drainage system to provide efficient and economic drainage.
2. Prevent sea water flooding of the low-lying coastal belt.
3. Maintain the cross-section shape and grade of the drains as built.
4. Minimise the impact of coastal erosion on the efficient operation of the drainage system.



The Seadown Drain and stopbank are close to the coast, where rapid coastal recession is occurring. For much of the length of the drain, the mapped boundary of the coastal marine area (CMA) is approximately 150 m seaward of it. However, the inland margin of the beach generally abuts the stopbank along this stretch of the drain. Coastal erosion is recorded to be on average 1-2 metres per year but occurs intermittently in response to coastal storm events. Sections of the existing stopbank are at significant erosion risk, and a high likelihood of seawater and beach gravels overwashing into the drainage network already exists during significant storms. The existing system is under direct pressure from coastal erosion, and it is estimated that—assuming the continuation of current trends—the stopbank may continue to provide protection only for the next 10-15 years. However, this timeframe could be shortened in the event of a major coastal storm or series of closely timed smaller storms.

To protect the integrity of the drainage system, including the maintenance of flows into Waitarakao, it is necessary to realign the drain and stopbank, moving them inland. The realignment will occur over the entire 7.1 km length of the drain shown in Figure 1; however, the north part of the project requires investigation and design that are unlikely to be completed before mid to late 2026. That would be too late for consenting of the full realignment in time for works to commence in the 2026-2027 construction season.

Therefore, the applications are being staged. These applications are for the stretch of the drain between a point just upstream of the discharge point into Waitarakao, and the northeastern corner of the Timaru District Council (TDC) wastewater treatment ponds, as shown in Figure 2. Future applications will be made for Phase 2, realignment of the northern section to end at Phillips Lagoon. Other resource consents have already been obtained:

- From the CRC for the installation of a culvert at Aorangi Road (culvert installation completed in March 2026).
- From the TDC to disturb contaminated soil during the realignment project, under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS).

Phase 1 will be delivered first, but both phases are being planned concurrently and the overall realignment is one project. The staged consenting approach assumes that, at the north end of Phase 1, the realigned drain will temporarily turn east into the existing system (which will later be realigned to continue the overall Phase 1 route). However, it is possible that Phase 2 will be consented during the Phase 1 works, and when Phase 1 reaches its northern extent the realignment may carry on directly into Phase 2.

The realignment will include four main components.

1. Excavation of the new Seadown Drain.
2. Deposition of a new coastal stopbank seaward of the new drain.
3. Deposition along some of the alignment of a new inland flood protection bank, inland of the new drain.
4. The retirement of the old drain and stopbank system.





Figure 2: Proposed drain realignment (blue dashed line), existing alignment (orange line, the existing stopbank is just seaward of this), new stopbank (yellow dashed line), and new inland bank (black). (Base image source: kastorworks Limited)

2 Resource consent applications

The following applications are made under the Resource Management Act 1991 (RMA) (more detail is provided in section 7 of this application).

1. Short term section 9 land use consent for construction works (CRC).
2. Long term s 9 land use consent specific to works in the CHZ (CRC).

3. Short term s 9 land use consent for construction works (TDC).
4. Long term s 9 land use consent for utilities in wetlands, and the presence of the realigned drainage system on TDC land (TDC).
5. Short term s 13 land use consent for construction activities including the deposition of material for the main diversion (CRC).
6. Short term s 14 water permit for main diversion and other s14 activities near wetlands (CRC).
7. Short term s 15 discharge permit for construction discharges (CRC).

For both councils, the most restrictive activity status is **non-complying**.

3 Other permissions

The land at the south end of the realignment is part of a Department of Conservation (DOC) reserve and a concession is needed for works in it. An application is being prepared.

That land is also subject to a Takutai Moana Act application for Customary Marine Title (CMT). The application is by Ngāi Tahu Whanui (MAC-01-13-002) and is for a large part of the South Island's coastline. Ngāi Tahu Whanui has been notified of these applications, and its views have been sought.

The processing planner will be kept informed of progress on both matters.

4 Background

4.1 Mandate for flood protection and drainage works

The CRC has a role in mitigating the risk and consequences of flooding within the Canterbury Region to protect life and property, and to enable the regional economy to continue functioning during and after natural events. Flood protection and drainage activities are carried out under the Local Government Act 2002 (LGA), the Soil Conservation and Rivers Control Act 1941 (SCRCA), and the Land Drainage Act 1908, in accordance with the RMA.

The CRC has a statutory function under the SCRCA to minimise and prevent damage by floods and erosion. It also has powers under that Act to maintain and improve defences against water. Under the LGA, CRC must also ensure that the infrastructure it provides is of good quality and appropriate for present and anticipated future circumstances.

These Acts place an obligation on the Regional Council to ensure that its flood protection and drainage schemes are well maintained and fit for purpose.

4.2 Our Waitarakao

Waitarakao is a significant geomorphologic, ecological, and cultural feature. The lagoon is in decline as its area reduces, with consequential wildlife and ecological impacts. The Our Waitarakao project is a partnership between Environment Canterbury, Te Rūnanga o Arowhenua, the Department of Conservation (DOC) and TDC. The project's vision is "*To restore the mauri of Waitarakao for everyone*"¹ and it has the following outcomes:

¹ Our Waitarakao: Waitarakao Washdyke Lagoon Catchment Strategy, page 4.



1. *Ecological revitalisation or restoration achieves and sustains thriving, healthy functioning ecosystems.*
2. *Increase mahika kai to enable customary harvest of food and resources that were traditionally gathered from the area, ki uta ki tai.*
3. *Resilience planning reduces the environmental, social, cultural, and economic impacts of natural hazards.*
4. *The community is informed about, and involved in, the restoration of the mauri of the Waitarakao catchment.*
5. *Enable the community to appropriately interact with the catchment.*²

The project's guiding document is the Our Waitarakao: Waitarakao Washdyke Lagoon Catchment Strategy.³ The strategy breaks the above outcomes down into objectives and sets out methods by which they will be achieved. Several of the objectives and associated approaches apply to this project, some of those for Outcome 3 being directly relevant.

- Objective 2 anticipates that the next generation of stopbank and drain will consider its effect on lagoon longevity
- Objective 3 anticipates that the relocation will affect waterbodies and will include appropriate environmental enhancement.
- Outcome 3 objectives:
 - Objective 8: *"Coastal hazard defences meet the needs of the affected community and allow for healthy ecosystems."*
 - Objective 9: *"The Seadown Drainage Scheme meets the needs of the community and ecosystems, including mātaītai."*
 - Objective 10: *"Increase flood attenuation for flood protection and environmental purposes throughout the catchment."*
 - Objective 11: *The risk of flooding from the Ōpihi River now and in the future is understood and planned for.*

The proposed realignment project is an important and clearly-anticipated part of the community's vision for the area, and will be undertaken to be consistent with the outcomes and objectives of Our Waitarakao. Our Waitarakao has provided a letter in support of the applications, which is included in Appendix 1.

4.3 The Flood Protection and Drainage Bylaw 2013

The Canterbury Regional Council Flood Protection and Drainage Bylaw 2013 (the bylaw), prepared under the LGA and in accordance with the SCRCA, provides for the ongoing management and efficient operation of flood protection and flood control works that are owned or controlled by the CRC.

Section 7 of the bylaw (Land Entry) gives CRC full powers, rights and authority to enter onto land to inspect, maintain and repair defences against water owned or operated by the Council. This entry is subject to notice periods, except in the event of an emergency. The CRC works closely with landowners for access, only relying on these provisions if an access arrangement cannot be agreed.

² ibid

³ <https://www.ecan.govt.nz/document/download/?uri=5582565>



4.4 Canterbury Regional Council resource consents

CRC holds several resource consents to install the culvert at Aorangi Road (now completed), and for works in fish spawning areas, which are potentially relevant to the proposal and summarised in Table 1.

Table 1 CRC relevant resource consents

Consent number	Expiry date	Brief description
Culvert consents		
CRC261733	16/1/2031	To use land for earthworks (excavation)
CRC261734	16/1/2031	To use land for works in the bed of a modified watercourse (temporary liner installation)
CRC261735	16/1/2031	To take water for dewatering purposes
CRC261736	16/1/2031	To discharge construction-phase stormwater and to discharge dewatering water
CRC261753	Unlimited	To use land for the installation of a structure in the Coastal Hazard Zone 2
Spawning consents		
CRC175009	22/2/2038	To use land (riverbed) for flood protection works.
CRC175010	22/2/2038	To divert water for the purpose of undertaking works as authorised under resource consent CRC175009.
CRC175011	22/2/2038	To discharge sediment to water associated with the works authorised by consent CRC175009.

The global spawning consents include spawning areas in the works area (shown in Figure 6). This project includes works in the inanga spawning area which will occur under the spawning consents and are exclude from these applications.

4.5 The Code of Practice for Defences Against Water

The Canterbury Regional Code of Practice for Defences Against Water and Drainage Schemes (CoP) was developed to ensure that activities related to the installation, maintenance, use, and removal of defences against water and drainage scheme infrastructure are carried out in a way that avoids, remedies, or mitigates adverse environmental effects. It provides a framework for enabling the efficient and effective operation, maintenance, repair, and upgrading of flood protection and drainage assets while safeguarding ecological, cultural, and recreational values.

This CoP has been designed to align with the purpose of the Resource Management Act (RMA) and the objectives and policies of the Canterbury Land and Water Regional Plan (CLWRP). It establishes principles for managing environmental impacts, including maintaining instream and riparian habitat values, minimising sediment deposition, protecting flood capacity, ensuring erosion control, and incorporating environmental enhancements where possible.

Key considerations include preventing adverse effects on waterways, maintaining flood infrastructure integrity, and ensuring that activities do not reduce flow capacity or exacerbate flood



risks. The CoP outlines engagement processes, including with tangata whenua which are incorporated to address cultural matters. Site-specific planning for each task ensures the implementation of engagement and environmental protection best-practice.

By adhering to the CoP, local authorities and network utility operators can obtain certification to undertake flood protection and drainage works efficiently while maintaining environmental and infrastructure resilience. The CoP is one requirement of delivering defence against water works as a Permitted Activity (PA) under rule 5.138 of the CLWRP.

4.6 The National Policy Statement for Infrastructure

The National Policy Statement for Infrastructure 2025 (NPSI) is a recent NPS that has the objective of enabling well-functioning infrastructure that supports communities, now and in the future, which is delivered efficiently while managing adverse effects from or on infrastructure. The policies of the NPSI are discussed in section 11.2 of this application, but it is noted here that the NPSI provides strong high-level endorsement of this proposal.

5 The site and affected environment

5.1 General characteristics

Seadown Drain receives water from low-gradient terrain between it and the main south railway line, north of Washdyke. No significant natural topographic features are present and the maximum elevation in the system is approximately 13 m above sea level (ASL) along the railway line. The drain itself is essentially level, and its hydrology is head driven (i.e. flow is provided by water pressure rather than gravity).

The environment through which the network passes is open land with a rural character but on its west side, particularly in the stage 1 area there are industrial activities, a shooting complex and council infrastructure including Timaru's public wastewater treatment facilities. To the east is the beach and Pacific Ocean. The nearest residential dwelling to the works is approximately 750m distant, on Aorangi Road.

5.2 Tangata Whenua values

The drain and wider area are in the takiwā of Te Rūnanga o Arowhenua. The Seadown drain and Waitarakao are mātaihai reserves, and Te Rūnanga o Arowhenua is, via Aoraki Environmental Consultancy (AEC), engaged with the applicant in managing the proposed realignment.

Waitarakao was an integral part of the extensive network of kāinga nohoanga (settlement) and kāinga mahinga kai (food gathering places) located throughout South Canterbury. The number of important pā sites, kāika, and nohoaka established in the area along the coast is a testament to the abundance and availability of kai.

Waitarakao was a renowned kāinga mahinga kai (food-gathering area) for local Ngāi Tahu, with foods gathered there including tuna (eels), inaka (whitebait), patete (fish), and kōareare (the edible rhizome of raupō).

A small Arowhenua fishing camp was located at Waitarakao in the early 1800s, and an eeling camp was established near the lagoon in the 1900s in which rūnanga would reside while gathering kai.

The coastal travel route of Kāi Tahu between lakes Wairewa and Waitarakao was once the equivalent of State Highway One for manawhenua, connecting the settlements of Te Pātaka-o-



Rākaihautū Banks Peninsula with coastal kāika to the south. The route extends in a continuous line of uniform sand and gravel, unbroken by headland or bay, from the shores of Wairewa in the north to Waitarakao in the south.

Canterbury Maps also identifies the adjacent beach as a Rūnanga sensitive area, and the area in which the realignment will occur is in a Mātaitai Protection Zone.

As discussed earlier, part of the realignment area is subject to a Takutai Moana Act application for CMT. Ngāi Tahu Whanui has been notified of these applications, and its views have been sought.

The works area is a Site and Area of Significance to Māori (SASM) under the Proposed Timaru District Plan (PTDP). The entire works area is under the Wāhi Tūpuna overlay and is in SASM3 (Caroline Bay -Te Aitarakihi - Smithfield -Washdyke (including creeks feeding this area.)) The PTDP provides the following definitions:

Wāhu Tūpuna:

Broader geographical areas/ cultural landscapes that hold significant value to Kāi Tahu due to the concentration of wāhi tapu or taoka values, or the importance of the area to cultural traditions, history or identity.

SASM3 (from PTDP SCHED6):

Important area for food gathering and processing. It includes wai puna, mahika kai, kāika nohoaka/ kāika mahika kai, pa and tauraka waka. The importance of customary fishing in this area is recognised by establishment of the adjacent Te Ahi Tarakihi Mātaitai under the Fisheries (South Island Customary Fishing) Regulations 1999.

All of the land over the footprint of and east of the existing drain is under the Wāhi Taoka overlay (SASM-3b). This overlay applies to the existing drain and stopbank and within it, works will occur only in the small areas where the new infrastructure will tie into the existing system at the upper and lower ends of the phase 1 area. However, the retirement of the existing drain will also occur within this overlay.

Wāhi Taoka is defined in the PTDP as:

Resources, places and sites treasured by Manawhenua. Wāhi taoka is the term used to refer to such places where they are land-based and wai taoka is used to refer to waterways.

SASM3b (Waitarakao) is defined in PTDP SCHED6 as:

The lagoon is a highly significant mahika kai, and supported associated kāika. It also has important value for taoka species. Waitarakao Reserve at the mouth of the lagoon was granted as a fishing easement in 1868, and the Waitarakao Mātaitai established under the Fisheries (South Island Customary Fishing) Regulations 1999) recognises the area's continuing importance for customary fishing. The area is also a bird sanctuary under Department of Conservation stewardship.

5.3 Coastal processes and shoreline retreat

Coastal erosion is the primary driver for this proposal. A report (The coastal report, attached as Appendix 2) has been prepared by CRC Coastal Science staff which summarises current and historical coastal processes and the historical drivers for these.

A key element in the present-day coastline configuration is the development of Timaru Harbour (and associated breakwater) which started in 1878. The breakwater has interrupted sediment flow and reduced the supply of material to the coast north of Timaru. The beach in front of Waitarakao



has retreated 400 m since the 1880s, and Milford Lagoon at the mouth of the Ōpihi River is also retreating.

In addition, the coastline appears to be subsiding slowly, at an average rate of 1.48 mm/y along the stretch between Timaru and the Ōpihi River. The report estimates that overall, in the next 45 years, sea level rise is predicted to be 0.2 – 0.6m. In 100y (to 2120), the amount of sea level rise is predicted to be 0.4 – 1.3m. This is shown in Figure 3.

The most optimistic scenario from modelling puts the 2070 coastline landward of the existing stopbank and mostly landward or superimposed on the proposed one, and:

“it is highly likely that the existing stopbanks will in places be incorporated into the beach and potentially rendered ineffective within the next 15 to 20 years.”⁴

In addition to general sea level rise and land subsidence, inundation due to storm events is also predicted to move inland. Modelling has been carried out but does not include the proposed realigned stopbank or the inland flood protection bank, so may not provide an accurate reflection of future scenarios. Figure 4 indicates the predicted extent of future inundation.



Figure 3: Bands of projected future shoreline positions in 2070 (yellow) and 2120 (red) (Source: coastal report Figure 2)

⁴ Coastal report p 7





Figure 4: Extents of modelled inundation around under a 1-in-100 year storm event in 2070 (yellow) and 2130 (red) (Source: coastal report Figure 3)

5.4 Planning zones and overlays

Tangata whenua overlays are discussed in section 5.2.

5.4.1 Environment Canterbury

The site is:

1. In the Ōrāri Temuka Ōpihi Pareora (OTOP) water zone, which is specifically managed by Section 14 of the CLWRP.
2. Mostly within Coastal Hazard Zone (CHZ) 2, but generally landward of CHZ 1 and entirely landward of the Coastal Marine Area boundary (Figure 5).
3. In the Unconfined and Semiconfined Aquifer Zone.
4. Within the Seadown Drain mātaītai reserve.
5. At its south end, partly in the inanga Spawning Zone (Figure 6). No salmon spawning or critical habitats are mapped in the works area.



Figure 5: The CMA boundary (blue dashed line), and Coastal Hazard lines 1 (yellow) and 2 (pink). (Source: Canterbury Maps.)



Figure 6: Inanga spawning zone (Base map source: Canterbury Maps).

5.4.2 Timaru District Council

The Timaru District Plan was made operative in 2005. A proposed plan is in process and decisions were released on 19 March 2026. For the moment, both plans must be considered.

Operative Timaru District Plan

The site is:

1. Mostly zoned Rural 3 (Coastal), except where the alignment nears the southern TDC wastewater ponds and the land is zoned Ind H.
2. Mostly seaward of the Coastal Inundation Line and the 100 Year Coastal Erosion Line.
3. Potentially just in contact with Transitional Highly Productive Land, where the realignment crosses Aorangi Road and enters the shooting complex site.
4. On the eastern edge of the Washdyke Industrial Expansion Area where it crosses the northern Hilton Haulage site.
5. Within a designation related to the wastewater treatment plant (WWTP) and ponds, between the northern Hilton Haulage site and the north extent of the proposed works.

Proposed Timaru District Plan

The project area is:

1. Within Sites and Areas of Significance to Māori (SASM) as discussed in section 5.2 of this report.
2. Zoned:
 - a) Natural Open Space (NOSZ) at its southern extent.
 - b) General Industrial (GIZ) for most of the realignment from the Paul Smith site to Aorangi Road.
 - c) General Rural (GRUZ) across the shooting complex.

The zones are shown in Figure 7 below.

3. Within or partly within the following key overlays, areas or designations:
 - a) Coastal erosion overlay (mostly within).
 - b) Coastal environment overlay (mostly within)
 - c) Seawater inundation overlay (entirely within)
 - d) Flood assessment area (entirely within).
 - e) Coastal high natural character overlay (over the existing drain but terminating on its west bank).
 - f) A designation for TDC's wastewater plant and ponds (between the northern Hilton Haulage site and the north extent of the proposed works).
 - g) Washdyke Industrial Expansion Precinct (PREC3) and associated Development Area where it crosses the northern Hilton Haulage site.
 - h) Height Specific Control Area overlay from the southern extent to Aorangi Road. In that area, Building and structure heights must not exceed 35m above ground level.
 - i) Major Hazard Facilities SHF-16 (Hilton Haulage/Southern Proteins Limited) and SHF-17 (TDC Milliscreen Plant).
 - j) Versatile Soils overlay from Aorangi Road north.



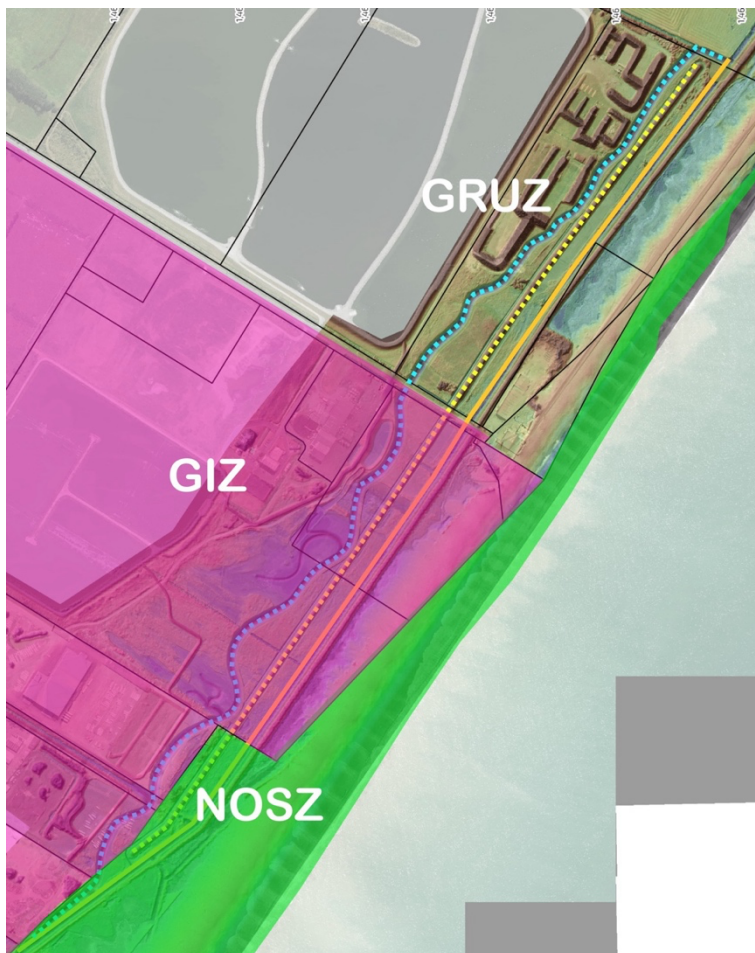


Figure 7: PTDP zones overlain on project extent

5.5 Landowners and neighbouring activities

Figure 9 shows the legal descriptions of the land parcels on which the works will take place, and key neighbouring lots. Table 2 shows the owners and occupiers of the land parcels. Individual landowners/occupiers and the status of consultation with/approval by those parties at the time of lodging these applications, are discussed in more detail following Table 2.

Key features are:

1. The three industrial blocks at the southern end, which the realignment will be close to or across.
2. A proposed new stormwater pond to be built by TDC adjacent to the southern wastewater pond (blue shaded polygon in Figure 2).
3. The two wastewater treatment pond complexes owned by TDC, one on either side of Aorangi Road (Figure 8).
4. The TDC WWTP at the northeastern corner of the southern wastewater pond (Figure 8).
5. The industrial land owned by Farm Brands New Zealand Limited (FBNZ) known locally as South Canterbury By-Products which has stormwater treatment infrastructure extending in the adjacent TDC land.
6. The Seadown Shooting Complex between the northern wastewater ponds and the existing stopbank, owned by TDC but occupied/used by shooting clubs.



Figure 8: Locations of TDC northern and southern wastewater ponds and wastewater treatment plant (WWTP). Base image source: Canterbury Maps.

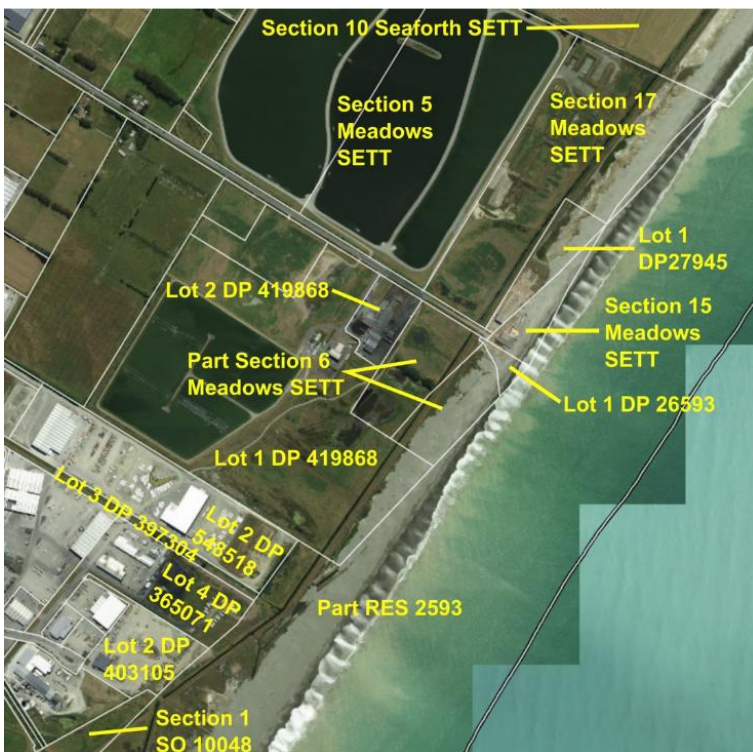


Figure 9: Legal descriptions of direct and adjacent lots (Base image and information source: PTDP)



Table 2: Land parcel details

Parcel ID	Owner	Occupier	Notes
Section 10 Seaforth SETT	Kelliher		Farmland where northern connection will occur
Section 5 Meadows SETT	TDC	TDC	Wastewater ponds
Section 17 Meadows SETT	TDC	Gun clubs	Shooting complex
Lot 1 DP27945	G B Ladbrook	G B Ladbrook	Derelict buildings
Section 15 Meadows SETT	G B Ladbrook		
Lot 1 DP 26593	Crown	Department of Conservation	Adjacent
Lot 2 DP 419868	Wallace Group Limited Partnership	FBNZ	Stormwater system on neighbouring land
Part Section 6 Meadows SETT	TDC		Empty land and beach
Lot 1 DP 419868	TDC	TDC	Wastewater ponds and future stormwater basin
Lot 2 DP 548518	Hilton Haulage	Hilton Haulage	Industrial land
Lot 3 DP 397304	TDC	TDC	No 1 drain
Lot 4 DP 365071	Quarry Capital	Hilton Haulage	Industrial land
Lot 2 DP 403105	Paul Smith Earthmoving	Paul Smith Earthmoving	Industrial land
Section 1 SO 10048			Adjacent
Part RES 2593	Crown	Department of Conservation	Reserves Act wildlife reserve

5.5.1 The Department of Conservation

The Department of Conservation (DOC) owns reserve land on which the southern 500 m (approximately) of realignment will take place. This land is part of the broader DOC wildlife reserve that incorporates Waitarakao, and it is unused exotic grassland that sits beyond the natural wetted extent of the lagoon and dynamic lagoon margin.

DOC is familiar with the proposal, and is a partner in Our Waitarakao. DOC has been consulted with on the applications and has provided written support (Appendix 1). A concession is required from DOC for activities in the reserve land, and an application for this is currently being prepared. Works cannot occur on that land without the concession in place and given that, along with DOC's support of the proposal, DOC is not considered to be an affected person for these applications.

5.5.2 Timaru District Council

The TDC owns most of the rest of the land on which works will occur, including the shooting complex land (discussed separately below). It also owns the adjacent wastewater ponds, WWTP, Aorangi Road and proposed stormwater pond. TDC will be potentially affected by the proposal in several ways.

Significant consultation has occurred with TDC. A range of staff across water, roading, infrastructure, planning, and other functions have been regularly updated or met with during the development of this project. The project has been raised at a TDC Senior Leadership Team meeting as well as updated regularly within the "Our Waitarakao" implementation and Steering



Groups both of which have TDC membership. This project provides a significant material benefit to TDC and the resilience of key infrastructure. Interacting regularly with key TDC staff throughout has been a beneficial element of the project. TDC has provided written approval of these applications (Appendix 1).

Extensive excavation and deposition will occur for the new drainage system, along with abandonment of the pre-existing drain. This will occur on land that is currently empty and mostly unused (with specific exceptions such as the FBNZ stormwater pond).

The embankments of the proposed stormwater pond and existing wastewater ponds will provide a western barrier for floodwater in a large event. Where these embankments are not present, an artificial inland flood control bank will be built, south and east of the WWTP to connect these higher points and provide a further defence against flooding to the industrial area (refer Figure 2 and section 6).

A new box culvert has been installed on the new alignment, where it passes under Aorangi Road. Excavations, dewatering and roading modifications were required for this and these activities were consented separately.

5.5.3 Paul Smith Earthmoving

Paul Smith Earthmoving Limited (PSE) owns and occupies the site immediately adjacent to the southern part of the realignment. PSE's northeast and eastern boundaries will be reinforced as part of the inland flood protection bank (Figure 10).

Extensive consultation has occurred with PSE, and written approval is attached in Appendix 1.

5.5.4 Hilton Haulage Limited

Hilton Haulage Limited (HHL) occupies two land parcels adjacent to the southern part of the realignment. The realigned drain will be across the southeastern parts of these two land parcels and the inland bank will be built on the inland side of the new drain. The inland bank and drain will dogleg from the HHL land around the corner of PSE's site as shown in Figure 10.

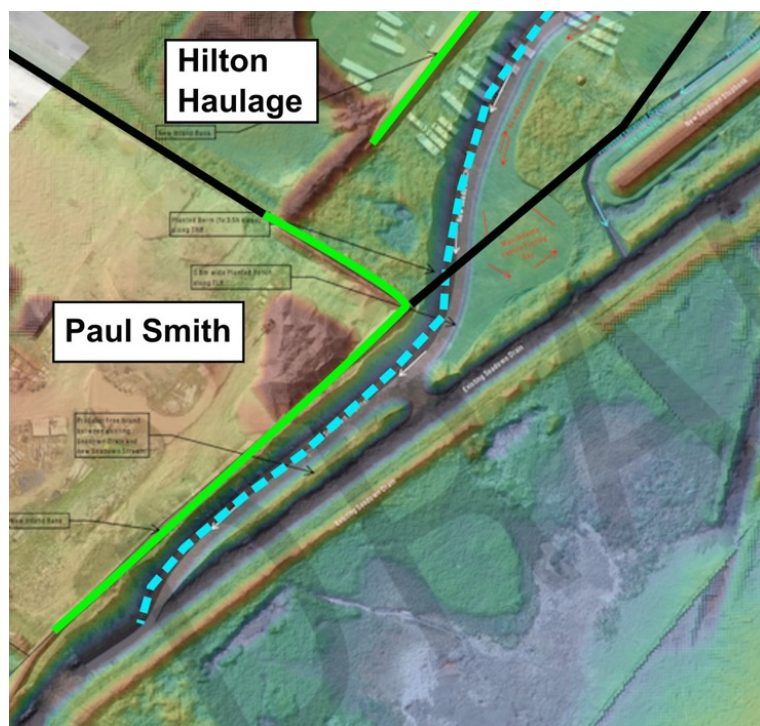


Figure 10: Paths of inland bank (green line) and new drain (blue dashed line) at the boundary of Hilton Haulage and Paul Smith Earthmoving properties. Property boundaries are shown in black. (Base image source: kastorworks Limited)

The southern land parcel is owned by Quarry Capital Limited and managed by HHL. The northern parcel is owned and occupied by HHL.

On the northern parcel, the new drain will lie east of HHL's existing stormwater retention basin that takes water from some of the HHL site. At present, that basin has consent only for its construction (CRC185925) and its discharge is allowed by TDC's consent for the Washdyke Industrial Expansion Zone discussed in section 5.13.2 of this application.

Discharges currently occur to land via a simple weir in the pond's southeastern embankment, which maintains an appropriate maximum stormwater retention level in the pond. The proposed inland bank will incorporate this pond wall, and the current discharge location will be retained but will be augmented with an additional gate structure to maintain functionality after the pond wall height is changed. The rebuilt weir will maintain the same pond functionality/weir height for stormwater management but will include a higher level gate or similar that can be shut off (thereby filling in a low point in the inland bank). This would only be used in the event of an extreme flooding event.

The realignment will also pass through an area where HHL stores, on behalf of Fire and Emergency New Zealand, damaged vehicles that are subject to crash investigations. This fenced area will be relocated by HHL to a position inland of all realignment project works.

Extensive consultation has been undertaken with HHL, and discussions have occurred regarding potential written approval. However, while they are supportive of the project, HHL (and Quarry Capital) have chosen to not provide written approval at this stage of the process. An email summarising HHL's position is attached in Appendix 1.

5.5.5 Farm Brands New Zealand Limited

FBNZ owns a rendering plant on Aorangi Road and holds Resource consent CRC176637 (attached in Appendix 3) to discharge stormwater from the site via a first flush treatment pond and subsequent retention basin, before final discharge via a swale to the Seadown Drain.

The pond and basin are both on TDC land southeast of FBNZ's boundary. The new drain will pass through the current location of the retention basin, and the first flush pond will be immediately landward of the inland bank (which will be on TDC land at this location).

The applicant proposes to reconfigure the retention basin system so it achieves the same outcomes as the existing system. The basin will be re-dug between the new drain and the inland bank, and a new swale built running southwest into the pit wetland area (Figure 11). The stormwater system will not change practically from that which is currently installed, and the proposal has the agreement of FBNZ.

FBNZ supports these applications and has provided written approval of them.



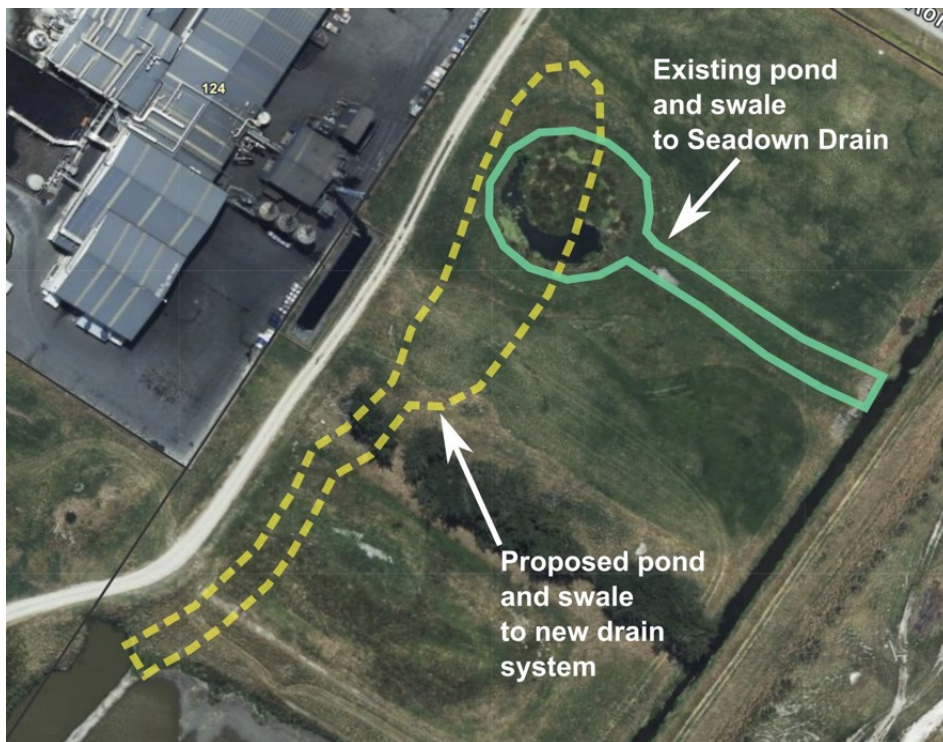


Figure 11: Schematic of FBNZ retention basin replacement

5.5.6 Seadown Shooting Complex

The shooting complex, on TDC land, is one of the largest in the South Island and is a significant facility. It has been extensively developed by the clubs that use it, primarily by the formation of bundled ranges. The realignment will cross the site and one of the range bunds has been modified to optimise the alignment. There will be disruptions to the shooting complex during construction, but on completion, existing infrastructure and operations will not be impacted.

Contaminated soil is present at the shooting complex and a separate consent under the NESCS has been obtained from TDC.

The applicant has had extensive discussion with range representatives who are generally happy with the proposal and have provided written approval of them (Appendix 1).

5.5.7 Mr Gavin Ladbroke

Mr Ladbroke owns the land at the end of Aorangi Road where two derelict buildings are located. During construction, Aorangi Road will be closed for a short time but following that, when the road will be closed except for keyholders, Mr Ladbroke will be granted vehicle access. He has expressed informal support of the applications but given the very small impact of the project on his land, he is not considered to be an affected person.

5.5.8 Farm land north of the shooting complex

Phase 1 will terminate at the north end of the shooting complex and limited construction activity will occur in the bed of no 2 drain which is on the farm land to the north. The drain is a Rivers Section asset and the area of private land on which works will occur is very small.

The landowner is aware of the project but is not considered to be an affected person.

5.6 Freshwater flooding

The wider plains area north of Washdyke is exposed to flooding, due both to rainfall events and large storms causing breakout from the Ōpihi River. When flooding occurs, the existing stopbank ponds floodwaters on its landward side, and while not its primary purpose the Seadown Drain helps channel this water toward Waitarakao. In the Washdyke area these floodwaters are directed southward to the lagoon, and the realignment works will alter the dynamics of this flow by displacing ponded/low velocity floodwater further inland than the existing stopbank does. Hydraulic modelling has been undertaken for the existing and proposed drain/stopbank configurations under a variety of flood scenarios, and a report is attached as Appendix 5.

Figure 12 and Figure 13 are model outputs of the existing stopbank configuration, illustrating how for two scenarios (a 20-year annual return interval (ARI) rain event, and a 200-year ARI breakout of the Ōpihi River), the coastal stopbank has a substantial effect on the distribution of floodwaters.

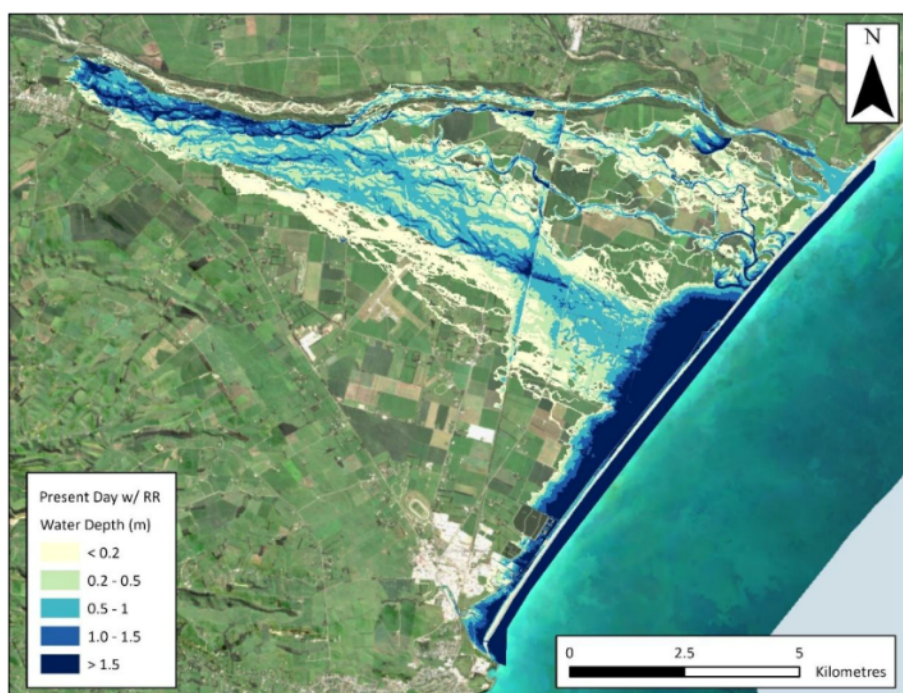


Figure 12: Maximum modelled water depth - present day stopbank configuration, 200-year ARI Ōpihi River breakout (source: hydraulic modelling report Figure 12a)

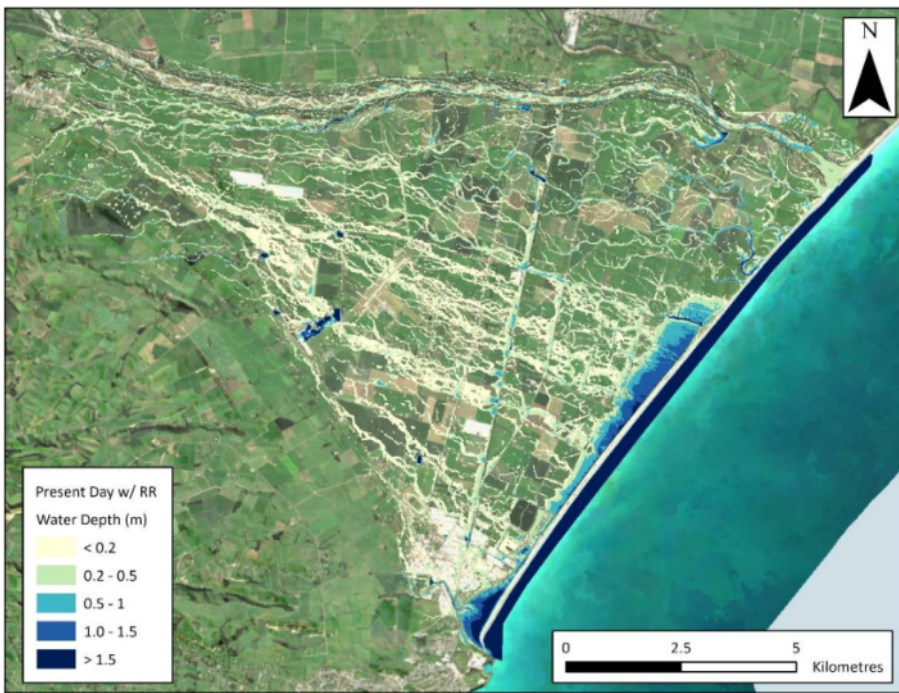


Figure 13: Maximum modelled water depth - present day stopbank configuration, 20-year ARI rainfall (source: hydraulic modelling report Figure 14)

5.7 Infrastructure

The existing and proposed drains, stopbanks and associated structures are or will be key infrastructure assets and are “specified infrastructure” under the National Policy Statement for Freshwater Management 2020 (NPS-FM) and by reference the Resource Management (National Environmental Standards for Freshwater Management) Regulations 2020 (The NESF). The NPS-FM definition includes:

- (d) any public flood control, flood protection, or drainage works carried out:*
 - (i) by or on behalf of a local authority, including works carried out for the purposes set out in section 133 of the Soil Conservation and Rivers Control Act 1941; or*
 - (ii) for the purpose of drainage by drainage districts under the Land Drainage Act 1908*

Several other infrastructure features are present in or near the site.

TDC’s wastewater pipelines run under the east embankment of the southern wastewater ponds, through the WWTP, and under the northern ponds. These pipes will not be affected by the works.

A TDC water supply pipeline runs parallel to the wastewater line at the southern wastewater pond. This is also unlikely to be affected

Several existing drains cross the works area and are discussed later in this application.

TDC’s wastewater ponds and WWTP have already been briefly described. They will potentially be affected, primarily where their embankments are to be incorporated into or used as the inland flood protection bank, and consultation on this matter is under way.

A group of buildings is located on the beach at the end of Aorangi Road. They are not in use and their future is uncertain. They will not be accessible during some of the works, but as the site is derelict it is considered that their owner will not be affected by the temporary loss of access.

Access will be reinstated to the landowner on completion of these proposed works.

Aorangi Road crosses the realignment and the existing drain passes under it in twin culverts. These culverts will be left in place when the existing drain is retired and a new culvert to accommodate the realignment under Aorangi Road has been installed with separate consents. Aorangi Road level will be raised, as well as the access points to FBNZ and the Shooting complex, to connect the inland bund.

Aerial low voltage power lines run down the road and terminate at the buildings at the end of the road. These are owned by Alpine Energy, and the supply ends at the pole at the entrance to the shooting complex. Alpine Energy plans to remove the existing redundant lines hardware between a pole just west of the shooting complex entrance and the last pole which is near the location of the existing coastal stopbank before works commence. An agreement to achieve this is being finalised.

A high voltage (11 kilovolt (kV)) underground power line runs through the section of the works area adjacent to FBNZ, and under the pit wetlands before turning to the west (Figure 14). Environment Canterbury, TDC and Alpine Energy are in communication and working together to find an alternative location/route for the underground line that will enable and be consistent with realignment works. The relocation is in design and planned to occur prior to or concurrent with construction.



Figure 14: Alpine Energy 11kV cable location (yellow line).

Stormwater assets owned by FBNZ and Hilton Haulage have already been discussed.

5.8 Climate

The proposal does not include any aspects that are reliant on, or constrained by climate parameters, other than ensuring that the works are undertaken during conditions which will not hamper them or exacerbate impacts in ways that cannot be managed or mitigated day to day. Therefore, a detailed description of climate is not considered necessary.

5.9 Surface water

The area is low lying with relatively high groundwater. Surface water is abundant and takes three main forms.

1. Wetland areas with a variety of origins and values.
2. The existing drain, running north-northeast to south-southwest.
3. Tributaries to the drain, generally flowing from the west-northwest.

While the drains and tributaries have the form and function of artificial watercourses, the Seadown area is known to have historically been characterised by wetlands and natural surface waterbodies (discussed in more detail later in this report). This bears on the status of the drains as discussed later in this application.

Two technical assessments have been prepared for the overall realignment project, describing the freshwater ecology and wetland vegetation of the waterbodies. The reports are attached to this application as Appendix 6 and Appendix 7.

Instream Ecology Limited, 2025 describes the freshwater ecology of the waterbodies and assesses the effects of the Phase 1 proposal on them (the ecology assessment).

Environment Canterbury scientist Jean Jack has made an investigation of wetlands in the project area (Jack, 2026 – the wetland assessment). The investigation is an assessment of the potential effects of the works on the wetlands and includes an appended delineation report where the wetlands have been mapped and characterised using information gathered during field visits.

5.9.1 Wetlands

The wetlands in Phase 1 which are mapped in the wetland assessment are shown in Figure 15 and Figure 16 below. They are:

1. The long strip of the existing Seadown Main Drain inland from the coast.
2. A small (40 m long) wetland within the shooting complex, not visible on Figure 15.
3. A small circular pond adjacent to the SCBP site, which is a constructed stormwater retention basin taking water from that site.
4. A complex of wetlands between the southern TDC wastewater ponds and the existing drain alignment (the Washdyke to Aorangi Road pit derived wetlands).



Figure 15: Mapped wetlands in Phase 1 project area (Source: extract from wetland assessment Figure 10)

The existing Seadown Drain

The existing drain is assessed as being a natural inland wetland for the purpose of the NESF and NPS-FM (A “NPSF wetland” in the terminology of the wetland assessment). It is a significant local water body.

The main drain:

*“...presents a highly homogenous habitat consisting of a 2-4m width of shallow water with associated floating and emergent vegetation such as azolla, duck and oxygen weed (*Lemna disperma*; *Elodea spp.*). Riparian margins are dominated by exotic grasses including cocksfoot (*Dactylis glomerata*), couch (*Elytrigia repens*) and at the water’s edge floating sweetgrass (*Glyceria spp.*).*

The waterbody offers some habitat to waterfowl; however, its primary value is its significant contribution of water to the ecologically important habitat of Waitarakao / Washdyke Lagoon. For this reason, it is considered ecologically significant.”⁵

This drain will clearly be severely impacted by the proposal as it will be abandoned and eventually will naturally fill in. However, other than at the points where the realignment ties into it at the northern and southern ends, no works will occur in the existing watercourse. The outlet where the drain enters Waitarakao is also expected to be retained without works.

The shooting complex wetland

A very small wetland has been delineated in the shooting complex as shown in Figure 16. It is composed of exotic grasses and is not ecologically significant. It is identified as not being an NPS-FM wetland but requires consideration under general RMA provisions such as regional plans (an RMA wetland). This wetland is between the proposed drain and stopbank and will be affected by the works.

⁵ Wetland assessment page 8-9





Figure 16: Shooting complex wetland (Source: extract from wetland assessment Figure 7)

The FBNZ pond

This small wetland (referred to in the wetland assessment as the “retention pond wetland”) is part of FBNZ’s stormwater discharge system as discussed in section 5.5.5 of this report. It is constructed, is not considered to be ecologically significant and is assessed to be an RMA wetland. This wetland is immediately adjacent to the proposed drain realignment and will be reshaped to work with the proposed new alignments while retaining all its current functionality.

The Washdyke to Aorangi Road wetlands

The group of larger wetlands south of the FBNZ pond was previously unmapped and has been created by excavation activities related to the TDC wastewater ponds approximately 15 years ago. While they are artificial, they were not deliberately constructed as wetlands and are identified as being NPS-FM wetlands. They are referred to in the wetland assessment as the “pit-derived wetlands” and are described as follows⁶:

*“Set within a series of cut drains and exotic grassland dominated by couch (*Elytrigia repens*) and cocksfoot (*Dactylis glomerata*), the isolated wetland extents present areas of open water and *Juncus* rushland. Areas of raupō (*Typha orientalis*) and crack willow (*Salix fragilis*) also occur. Other native wetland species occurring include bachelor’s button (*Cotula coronopifolia*), giant rush (*Juncus pallidus*), sharp spike sedge (*Eleocharis acuta*), and swamp sedge (*Carex virgata*).*

Given the reduced extent of indigenous vegetation within the Low Plains context, the areas of raupō vegetation are considered ecologically significant.”

⁶ Wetland assessment page 7



This wetland complex will also to be incorporated into the new drain alignment and they will be directly and substantially impacted during and after construction works.

5.9.2 The existing Seadown Drain

The Seadown Drain is approximately 5 - 6m wide, with water 0.2 - 0.4m deep and has typical baseline flow of approximately 0.2 – 0.4 m³/s. The water level in the drain at average flows is approximately 0.9 – 1.1m above sea level. The invert and approximate bed width of the drain channel will be replicated with the new drain and the design baseflow condition of the new drain will be very similar to the existing one.

The current Seadown Drain position dates from a realignment inland that occurred, in response to coastal erosion, in the mid 1980s. It is a key feature of the Seadown Drainage Scheme with maintenance requiring regular weed clearance by machine.

The Seadown Drain has much of the form and function of an artificial watercourse. However, the wetland assessment states:

“While the habitat is highly modified to function as a drain it may be considered a modified natural watercourse rather than an artificial waterbody based on the likely occurrence of natural wetlands and waterways prior to its construction. Evidence for this however is limited as construction of the drain (c.1930s) pre-dates available aerial imagery. Supporting the view that it is modified rather than artificial is the understanding that prior to construction of the Seadown Drain the area inland of the coastal beach barrier would not have had a permanent outlet and would have experienced long periods of inundation as impounded freshwater backed up behind the coastal beach barrier. Additionally, aerial imagery shows historic channels leading into the Seadown Drain, supporting the assumption that at least parts of the existing drain were constructed through pre-existing wetland areas.”⁷

The Wetland Assessment describes the drain as being a natural inland wetland for the purpose of the NPS-FM (A NPS-FM wetland). It states that the drain:

“...presents a highly homogenous habitat consisting of a 2-4m width of shallow water with associated floating and emergent vegetation such as azolla, duck and oxygen weed (Lemna disperma; Elodea spp.). Riparian margins are dominated by exotic grasses including cocksfoot (Dactylis glomerata), couch (Elytrigia repens) and at the water’s edge floating sweetgrass (Glyceria spp.).

The waterbody offers some habitat to waterfowl; however, its primary value is its significant contribution of water to the ecologically important habitat of Waitarakao / Washdyke Lagoon. For this reason, it is considered ecologically significant.”⁸

The Ecological Assessment describes the drain as having a soft sediment bed with degraded conditions for invertebrates, with invertebrate monitoring showing:

“...degraded conditions for invertebrates with recent invertebrate monitoring in 2023 recording Quantitative Macroinvertebrate Community Index (QMCI) scores of 3.3 and 3.9 (Instream Consulting Limited 2024). These scores are below the QMCI national bottom-line of 4.5 in the National Policy Statement for Freshwater Management (NPS-FM). The LWRP Freshwater Outcome for Spring-fed Plains Urban waterways is a QMCI value of 3.5.”⁹

⁷ Wetland assessment page 26

⁸ Wetland assessment pages 8-9

⁹ Ecological assessment page 4



The drain is home to several species of native fish, dominated by common bully, īnanga, elvers and freshwater shrimp. Low numbers of longfin eel, upland bully and redfin bully have also been measured. The Ecological Assessment states that the likelihood is high that shortfin eel are abundant in the drain and it states that:

“Overall, Seadown Drain supports a reasonable diversity of native fish due to its proximity to the coast and suitable depth and flow characteristics. Combined, these factors suggest there is considerable potential for ecological enhancement.”¹⁰

5.9.3 Tributary drains

Several tributaries enter the Seadown Drain as shown in Figure 17. From north to south they are:

1. The Seadown Drain Number 2 (part of the CRC network), which flows down the north side of the wastewater ponds to meet the Seadown Main Drain at the Phase 1 tie-in point.
2. Two drains on Aorangi Road one of which also carries Opuha Water Ltd Levels Irrigation carriage water during irrigation season.
3. The Seadown Drain Number 1 between two Hilton Haulage properties (part of the CRC network)

The following advice was provided by CRC water quality scientist Shirley Hayward¹¹

...I consider that the drain on the north side of Aorangi Road is an artificial roadside drain. It was dry and perched above Seadown Drain at the time of my visit in January 2026.

The drain on the south side of Aorangi Road is groundwater fed (and also receives OWL by-wash) and therefore is classified as a modified natural watercourse. Similarly, the No. 1 Drain and Seadown Drain are groundwater fed, modified natural watercourses.

On this basis, the northern Seadown Drain No 2 is also assumed to be a modified natural watercourse.

All of these tributaries will be affected by the realignment and the nature of these effects is discussed later in this report.

Several other small ditches and drains are also present throughout the area. However, they are indistinct, intermittent and carry little flow. They are considered to not be streams, and have little if any ecological value.

¹⁰ Ecological assessment page 5

¹¹ Email to Jolene Irvine, 13 April 2026





Figure 17: Seadown Drain (in blue) and tributary drains (green). (Base image source: Canterbury Maps.)

The ecological assessment provides the following description of these drains:

Seadown Drain No.1 is a main tributary feeding into Seadown Drain within the Phase 1 project area (Figure 7) [omitted from this quote]. The drain has comparable riparian and aquatic habitat characteristics to Seadown Drain. Its QMCI scores are below the national bottom line and recent fishing and eDNA data showed lower numbers of fish with no additional species to those recorded from Seadown Drain. The main notable differences to Seadown Drain are that it is narrower (< 3 m), shallower (ca., 0.3 m) and is intermittent in its upstream reaches, thus reducing its habitat potential for fish.

Two other notable tributaries feeding into Seadown Drain within the Phase 1 project area are open drains at Aorangi Road and Seadown Drain No.2 at the northern extent of the industrial area and treatment ponds (Figure 7). These are both highly modified lowland drains, and it is reasonable to infer that they have similar ecological values to Seadown Drain No. 1.¹²

5.9.4 Habitats

As discussed earlier, the lower part of the works area is in inanga spawning habitat as defined in the CLWRP. The implications of this are discussed later in this report.

¹² Ecological assessment page 6



5.9.5 Monitoring equipment

There are two monitoring installations in the project area.

CRC flow recorder

A CRC flow recorder is installed in the Seadown Drain approximately 80m downstream from Aorangi Road, and several water permits are limited by minimum flows based on the data from that recorder. The consents are discussed further in section 5.13.1. This flow recorder will not function once the existing drain is retired and work is under way to establish both an interim approach to measuring and managing minimum flows, and a new flow recorder site and regime once the entire realignment is complete.

A temporary recorder has been located at the north end of the works area and running in parallel with the existing one, with the intent of establishing a flow relationship; however, that location is to be abandoned due to site issues, and a new temporary site will be established further north.

Potential interim methods of managing minimum flows could include:

- The use of a temporary flow recorder, if a good relationship between its data and those from the existing site can be established.
- The use of groundwater levels at nearby piezometric wells.
- Using gauged flows only.

A science memorandum explaining this is attached in Appendix 8 and has been supplied to consent holders who are monitored using data from the existing recorder.

Aorangi Environmental Consultancy

Aorangi Environmental Consultancy operates a water quality monitoring site in the Number 1 drain close to the realignment route. The realignment will affect this device and it is to be relocated. The relocation will be a collaborative process between the CRC and AEC, and is currently under discussion.

5.10 Terrestrial ecology

5.10.1 Vegetation other than wetlands

The entire works area is highly modified and adapted to human use, and vegetation values are low. The site has been assessed by both Greg Stanley (CRC Team Leader Braided River Revival) and Jean Jack (CRC Team Leader Land Ecology). Other than in wetlands, the area is mostly covered by rank exotic grass, woody herbs and shrubs

5.10.2 Birds

Limited information is available regarding avifauna in the realignment area and no formal surveys have been undertaken. Anecdotal information indicates that the coastal wetlands are used by waders, terns, cormorants and waterfowl while the existing Seadown Drain and more inland wetlands are likely to be used by pukeko and kahu. Waitarakao itself has substantial avifauna values.

A formal bird survey will be undertaken before the works commence.



5.11 Groundwater

5.11.1 Groundwater conditions

Groundwater is shallow in the area, and the drainage scheme intercepts and conveys it as well as surface runoff. Groundwater data shown in Canterbury Maps indicate that the flow direction is from the northwest toward the coast. Given the groundwater depth, and the wet and low lying nature of the area, it is assumed that shallow groundwater in the project area is hydraulically connected to nearby surface water bodies.

An initial geotechnical investigation of the realignment area has been undertaken (The geotech assessment - Tonkin and Taylor, 2025, attached to this report as Appendix 9). This included six test pits ranging from 2 to 3m deep. A summary is provided in Table 3.

Table 3: Summary of test pits and water depths

Test Pit	Depth m BGL	Depth m RL (approx.)	Water
01	3	-0.65	Wetness noted but not standing water
02	3	2	Upwelling seepage at base of TP
03	2.5	-0.65	None.
04	2	-1.5	Seepage from side wall but no standing water.
05	2.1	0.55	None
06	2	0.75	Saturated at 1.5m BGL (1.3m RL), standing water in pit.

A substantial groundwater assessment has been made by WGA Limited (the groundwater assessment). The main aim of that study is to assess potential changes to groundwater levels in the area resulting from the realignment. It is more focussed on the entire realignment (including Phase 2) but it contains information relevant to these applications and is attached to this application as Appendix 10.

The groundwater assessment states that:

- Groundwater near the coast has a median depth of 1.8 m below ground level
- Regional groundwater flow is toward the southeast
- Soils in the area have a low permeability and it appears that rainfall recharge of groundwater is not substantial.



5.11.2 Nearby wells

Canterbury Maps indicates that there are ten wells marked as being active within approximately 100 m of the proposed realignment (Table 4).

Table 4: Known active wells within approximately 100 m of realignment (source: Canterbury Maps)

Well number	Status	Depth (m BGL)	Screen or take depth (m BGL)	owner	Use/notes	Consent
BZ19/0514	Active	4		CRC	Water level observation	
K39/0274	Active	2.5		TDC	Water level observation	
BZ19/0515	Active	3.5		CRC	Water level observation	
K39/0001	Active	12.7		Sand and Spray Ltd	Comm/ind and domestic. Derelict buildings on beach.	SCY690321 terminated
K39/0258	Active	42	Screen 39-42	FBNZ	Domestic	CRC176639
K39/0257	Active	43	Screen 33-36 and 39-42	FBNZ	Domestic	CRC176639
BZ19/0513	Active	3.5		CRC	Water level observation	
K39/0024	Active	10		TDC	Spray irrigation up to 1 ha, 4.9 l/s, 160 m ³ /d	CRC183605
K39/0279	Active	2.5		TDC	Water level observation	
K39/0278	Active	2.5		TDC	Water level observation	

Of the wells shown above, none are considered to be sensitive to the proposed realignment, for the following reasons.

1. Those owned by “CRC” are shallow investigation bores drilled for this realignment project.
2. The three TDC wells are for observation only.
3. K39/0001 is no longer in use.
4. The two FBNZ wells, K39/0257 and 0258, are screened at substantial depths and unlikely to be affected by the construction works or the realignment itself.
5. Well K39/0024, a small shallow take for irrigation approximately 90 m from the new drain alignment, has the potential to be affected by the realignment; however, a technical assessment by WGA Limited (along with a commentary from the design engineer, kastorworks Limited) indicates that it will not be, as discussed in section 8.9 of this application.

K39/0024 and the two FBNZ wells are shown in Figure 18.





Figure 18: Locations of FBNZ and TDC wells (base image source: Canterbury Maps)

5.12 Drinking water

There are no CRC Community Drinking Water Supply Zones in or near to the project area. However, the PTDP identifies drinking water protection areas related to four bores as shown in Figure 19. The eastern area is related to derelict buildings and is unlikely to be in use.



Figure 19: PTDP drinking water protection areas; pale blue circle is 50 m buffer from bore, dark blue 100 m (Source: TDC planning maps).

5.13 Existing resource consents

Several existing resource consents are potentially applicable to or affected by this proposal.

5.13.1 Water permits referring to the Seadown Drain

Five resource consents for takes of water are tied to flows in the Seadown Drain and one other permit has conditions that may be affected by the proposed realignment.

CRC040517.1 (Kelliher) is a surface water take from the Seadown Drain or an unnamed tributary drain. The consent appears to be out of date, as the map reference provided for the take from the Seadown Main Drain is, when mapped, on the previous alignment (which is now in the active beach/tidal area) which was replaced by the current one. It is assumed water can be taken from the unnamed tributary drain. This resource consent has no minimum flow condition.

The following four consents are groundwater takes which must cease when the flow at a specified location in the Seadown Drain falls below 150 litres per second as estimated by the CRC.

- CRC260299 (Kakahi Farm Ltd, Trounce)
- CRC260285 (Kakahi Farm Ltd, Trounce)
- CRC202277 (Brosnahan and O'Connor)
- CRC251495 (Kelliher)
- CRC202942 (Phillips Farming)

This Phase 1 proposal will impact these consents as it will dewater Seadown Drain at the flow recorder that provides the data from which the restrictions are managed. The CRC has an agreed approach to address this issue, which is discussed in more detail in Section 8.13 of this application.

5.13.2 Other consents

Consents held by the applicant for works in inanga and salmon spawning areas, and by FBNZ for the discharge of stormwater, are discussed earlier in this application. Works for this project will occur under and be subject to the spawning consents, and potential adverse effects on inanga therefore do not require specific assessment in this application.

As shown in Table 4 and Figure 18, FBNZ holds CRC176639, for the take of water for domestic use and commercial and industrial use from two bores, and TDC holds CRC183605, to take groundwater from well K39/0024 for spray irrigation. Neither of these consents are tied to flows in the Seadown Drain.

Also discussed earlier, Hilton Haulage holds consent CRC185925, a land use consent for the construction of its stormwater pond, and CRC190823 for discharges to air from that work. Construction is complete and the consents do not include operational conditions, so they have no implications for this proposal.

TDC also holds:

- CRC242246, a discharge permit for seepage the northern wastewater ponds adjacent to the shooting complex. This consent includes water quality monitoring in the existing Seadown Drain and this is discussed further in section 8.12.3 of this application. The consent is attached in Appendix 3.
- CRC190249, for construction phase and operational stormwater discharges from the Washdyke Industrial Expansion Zone (WIEZ) (Figure 20 below). The new TDC stormwater pond adjacent to HHL is allowed by that consent, as will be the eventual discharges from



the pond on HHL's own land. The discharges from the WIEZ shown on Figure 20 will occur into the new drain once the works are complete, and CRC and TDC staff are working collaboratively to ensure that the realignment is compatible with the consent.

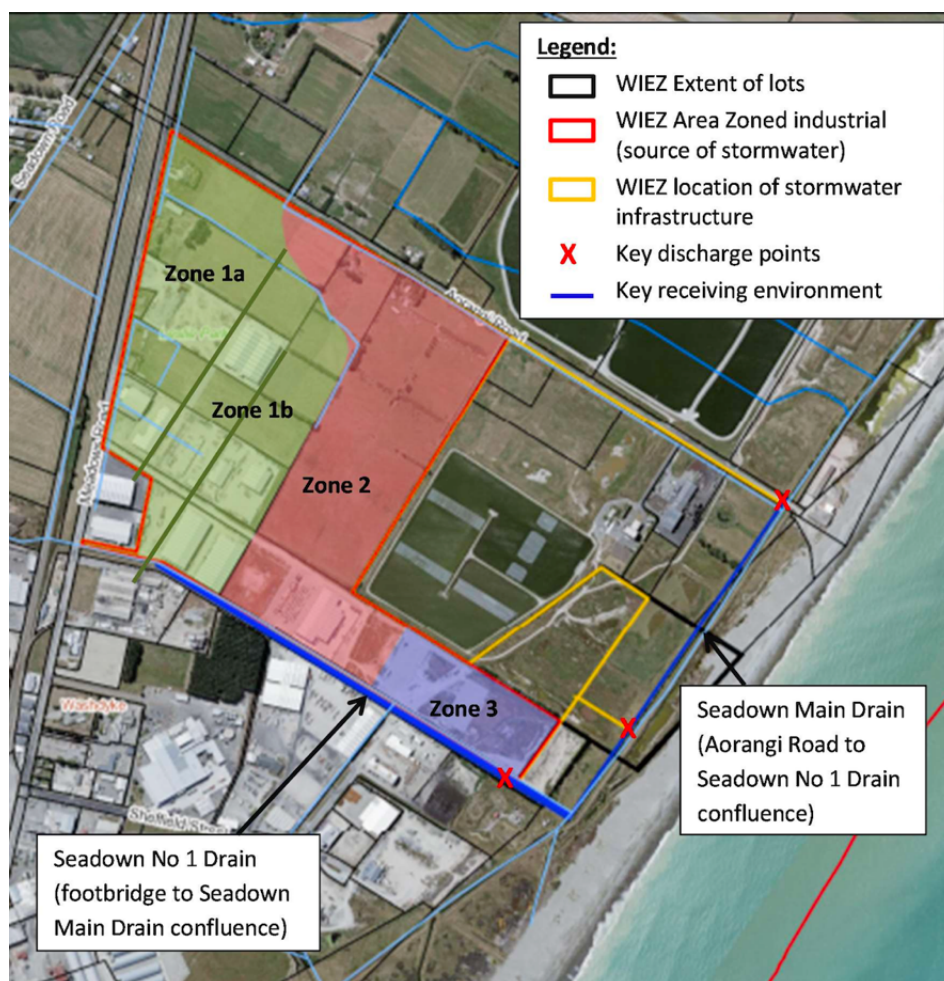


Figure 20: The Washdyke Industrial Expansion Zone (Source, plan CRC190249A, attached to CRC consent)

5.14 Site contamination

5.14.1 Site assessment and characteristics

Several areas of contaminated land have been identified along the proposed realignment. Davis Ogilvie & Partners Limited (DOP) has prepared preliminary and detailed site investigations (PSI and DSI) and the DSI is attached to this application as Appendix 11.

A number of land parcels are identified as having had activities on them that are on the hazardous activities and industries list (HAIL). In addition, specific activities are known to have occurred at several other locations. Those identified by the DSI are shown in Figure 21 below.

DOP has assessed contamination in the area using visual observations, soil sampling and test pit excavation. Key contamination issues are:

1. Area A: Contaminated soil in the shooting complex bunds derived from shooting, and some residual contamination from the soil itself which was imported. This soil is being disturbed at the westward bend on the alignment approximately half way down the shooting complex land parcel.

2. Also Area A: Soil underlying a stockpile of used tyres. The tyres have now been removed by the land owner/occupier to accommodate the alignment, but the soil will be disturbed.
3. Area B: The FBNZ circular stormwater pond.
4. Area C: Damaged vehicle storage site at HHL.
5. Area D: Soil stockpiles at HHL.
6. Area E: Soil stockpiles at PSE.



Figure 21: HAIL sites and locations of known contamination (Source: DSI Figure 13)

DOP has undertaken field investigations and Figure 22 summarises the results. Other than lead-contaminated soil at the shooting complex, the risk from contamination is low and “*could be addressed with minimal remedial / site management earthworks during construction.*” (DSI page 55).

When contaminated soil investigations were initially undertaken, the proposed drain alignment was assumed to go through the existing shooting complex bunds. The DOP advice was that the shooting complex soil poses some risk and the DSI concludes at pages 55 and 56 that:

The lead soil contamination is unlikely to be a significant risk to health for those using the ranges based on the limited duration of exposure, however any amount of lead exposure can be detrimental to human health and exposure should be minimised as much as possible. The extent of contamination should be established for assistance with the drain route planning and to assist with assessing the risk posed to the gun range users.

The soil within the exterior of the bunds (i.e. not facing the firing ranges) appears to have come from nearby sites where soil was stripped for recent developments. Analysis of the soil from the exterior of the bunds indicates that it has not been impacted by the gun range activities and meets background criteria and could be re-used on site or disposed of as cleanfill.

The current proposed alignment now avoids any disturbance of the bunds. Reconfiguration of one section of bunding has already occurred to accommodate the realignment. This realignment was only completed after DOP undertook subsequent additional sampling and no contaminants were identified at concentrations above background levels.. The soil is suitable for re-use at the site and has been validated and retained.

Table 16: Conceptual Site Model				
Location	Contaminants of concern	Potential exposure route and pathways	Receptor	Risk to receptors?
Area A	Seadown Shooting Complex Section 17 Meadows SETT	Metals (lead, antimony, arsenic, copper, zinc, tin, and nickel)	Human receptor (inhalation and/or dermal) Transport by overland flow (rainwater or seasonal water flow) and/or advection/dispersion/dissolution	Unacceptable. Contaminants of concern are present at concentrations above applicable guideline values for human health and protection of aquatic receptors. The soil within and adjacent to the tyre stockpile contains zinc above background but at concentrations that meet land use standards.
Area B	Wastewater ponds Part Section 6 Meadows SETT	Biological hazards, metals, PAHs	Human receptor (inhalation and/or dermal) Transport by overland flow (rainwater or seasonal water flow) and/or advection/dispersion/dissolution	Acceptable. No visual or olfactory evidence of contamination and analytes all below land use standards.
	Byproducts factory Lot 2 DP 419868	Hydrocarbons (particularly PAHs), arsenic	Transport by overland flow (rainwater or seasonal water flow) and/or advection/dispersion/dissolution Human receptor (dermal, kai moana consumption, and/or inhalation) Potential ecological receptors (including but not limited to: terrestrial vegetation, wildlife)	Acceptable. Exposure pathways incomplete.
Area C	Hilton Haulage Site Lot 2 DP 548518	Metals, BTEX petroleum hydrocarbons and PAHs (particularly lube oils)	Transport by overland flow (rainwater or seasonal water flow) and/or advection/dispersion/dissolution Human receptor (dermal, kai moana consumption, and/or inhalation) Potential ecological receptors (including but not limited to: terrestrial vegetation, wildlife)	Overall acceptable risk. Some surficial hydrocarbon staining and contamination is present but the risk to human health and ecological receptors is acceptable. Should the proposed drain alignment pass through this area, the surface topsoil (0.1m) would require remediation.
Area D	Stockpiles Lot 4 DP 365071 (72 Sheffield Street only)	Heavy metals and asbestos	Human receptor (inhalation and/or dermal) Transport by overland flow (rainwater or seasonal water flow) and/or advection/dispersion/dissolution	Acceptable. Contaminants of concern are present at concentrations below adopted guideline values.

Figure 22: DSI conceptual site model (Source: DSI Table 16)



5.14.2 National Environmental Standards for contaminants in soil

The DSI identified the need for a resource consent from TDC under the NESCS. That consent has been granted and is attached as Appendix 12.

Site activities will be undertaken in accordance with that consent, and an associated Contaminated Land Management Plan (CLMP).

5.15 Archaeological values

No archaeological sites are identified by the New Zealand Archaeology Association in the project area (as shown in Canterbury Maps). Neither are any identified in the Canterbury Maps Ngāi Tahu layers.

6 Description of the proposed activity

6.1 Introduction

The project has six main elements.

1. A new stopbank, located between the existing and new drain alignments.
2. A new drain channel.
3. A new flood protection bank inland of the new drain.
4. Retirement of the previous drain and stopbank system.
5. Ancillary elements such as access tracks, localised drainage, and maintenance benches
6. Ecological restoration (primarily vegetation).

The general approach to the works will be to install the new drain and other works “offline” (i.e. not in flowing water) to the maximum extent possible. In practice this means that the connections of the new drain into the existing system will be the last phases of work. Once the offline excavations have been completed as far as possible, the southern connection into the existing drain channel just north of the lagoon will be excavated. The final connection at the northern end of the stage 1 area, that will divert most of the flow to the new system, will occur last. Stopbank construction will occur throughout.

However, this does not mean the excavations will be dry, due to the shallow groundwater conditions. The excavations will fill with water which will initially contain construction-derived sediment. This will be confined to the excavation areas but will require careful management when the realignment is finally connected.

Five aspects have informed the design.

1. Given land use constraints, the system is designed to be as far as possible from the shoreline and maximise the time available before coastal erosion forces a further realignment.
2. The drain is designed to carry at least the same flow as the existing one, while maintaining water levels in Phillips Lagoon.
3. The stopbank system is designed to be resistant to coastal inundation, but to fail seaward in the event of a major flood from the Ōpihi River, which would direct water between the stopbank and inland flood protection bank. Potential Ōpihi River flooding is discussed further in section 5.6 of this report.



4. The system is designed to be resistant to Ōpihi River flooding on its western (landward) side to protect commercial activity, property, and infrastructure in that area. This will be achieved by building the new inland bank where necessary, between already elevated existing infrastructure. The ability for large river floods to break out through the coast-side stopbank, before it could overtop or breach the inland bank, is a critical aspect of this resilience.
5. The realignment will cross several wetland areas, and the system is designed to offset that loss, and to increase the ecological values of the area both by incorporating wetland areas, installing a vegetated drain berm, and other planting.

Figure 2 earlier in this application provides an overview of the proposal. Larger scale drawings are provided in Appendix 13, and selected extracts from them are shown in this section. Figure 23 below shows some key features related to the proposal.



Figure 23: Selected features discussed in this application

6.2 Overview of project components

6.2.1 Stopbank

The new stopbank will be located a minimum of approximately 50m inland from the existing drain. North of Aorangi Road the stopbank will typically be around 3 metres high and at least 13 metres wide (toe to toe). South of Aorangi Road the stopbank will typically be around 2 – 2.5 m high and at least 10 m wide. Almost all of the stopbank will be built from site-derived excavated material; less than 5% of the total fill will be imported and this will be clean natural material.

6.2.2 Drain realignment

Construction of the new drain and associated infrastructure will involve several phases of work. It is possible that the work will not be sequential but undertaken at several locations at the same time.

In general, the drain itself will require simple excavation to the design depth and width, and removal of the excavated material, which will be stockpiled to dry by gravity and then used in the new stopbank. The width and depth will vary along the new line, ranging from a simple channel, to wider areas where wetland development will occur.

In two areas, visible in Figure 23 west of the WWTP and the proposed TDC stormwater pond, existing wetland areas will have new channels cut into them. These channels will enable water to move into and out of the wetland areas in response to water level changes, and have been designed so that they do not drain those areas, but will relieve ponding in them and assist with long term health.

The drain will have a planting berm on its western side and a maintenance access strip on its east side. The east side will also feature a smaller, lower-level planting step to provide further channel shading and habitat, but not impede future maintenance. Figure 24 below shows a representative cross section of the drain.

The new drain will have a design invert of 0.5m RL, consistent with the existing drain. This will require a relatively deep cut in some areas but generally the drain invert will be between 2-3 m below typical existing ground levels beyond our designed berm and track areas.

At Aorangi Road, a new culvert has been installed for the realigned drain under the consents described earlier.

Extensive areas are set aside for potential future ecological restoration and recreational development. This is discussed further later in this application.

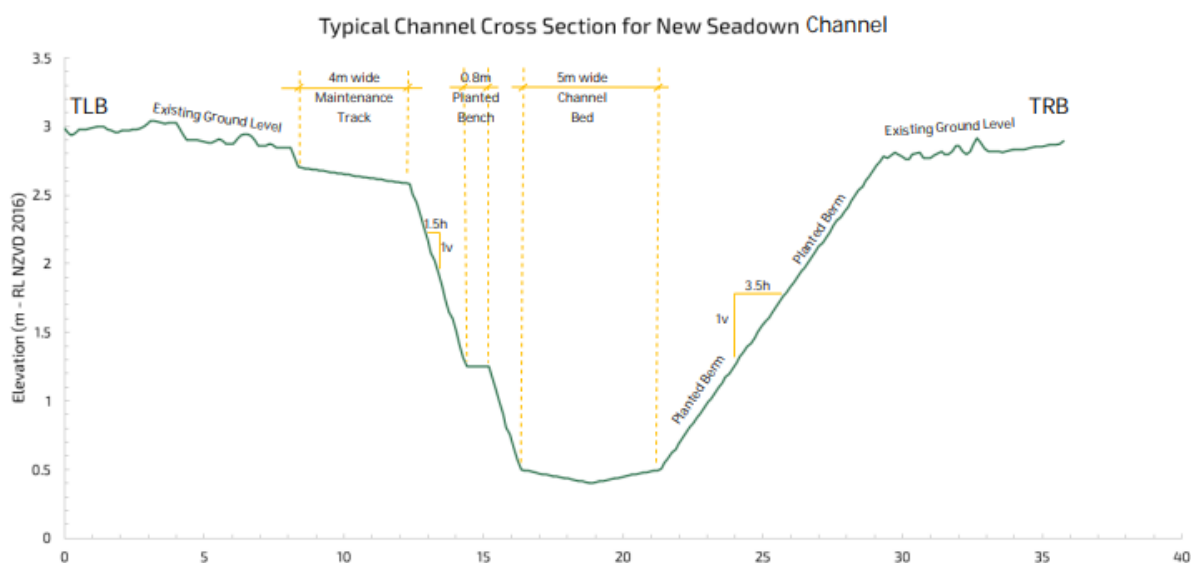


Figure 24: Representative drain cross section (Source: kastorworks Limited)

6.2.3 Inland flood protection bank

The existing stopbank's function is to protect the drain from coastal inundation, by preventing seawater and coastal sediment from washing into the drain during storm events. However, its presence at the coast also acts to deflect and pond flood waters from the Ōpihi River north of the site, preventing the discharge of this water to the beach environment. These waters pond landward of the stopbank before slowly draining southward to Waitarakao. The new stopbank will alter these flood flows primarily by deflecting/ponding freshwater flooding 50 m further inland than previous. Part of this proposal is the installation of the inland flood protection bank landward of the drain to protect the adjacent industrial areas from Ōpihi River flood water. In places, existing infrastructure will provide this protection and no new bunding is necessary, but the inland bank fills gaps, ensuring a contiguous and effective defence.

The crest of the inland bank is higher than the new coastal stopbank on the principle that in the low-frequency, but potentially high impact, outcome of deep flooding from a major Ōpihi River breakout reaching the Washdyke Industrial Area (as last occurred in March 1986) the coastal stopbank will overtop and release water away from industry before any risk of breaching or overtopping of the inland bank occurs.

Figure 2 indicates with a black line where the new inland bank will be built. A brief north to south summary follows.

1. At the shooting complex, the existing east wall of the northern TDC wastewater ponds will be used and new bunding is not required. The shooting complex itself will be protected from coastal inundation, but would be flooded by an extreme river flooding event. This reflects the pre-existing situation and the design of the site is such that the effect of flooding will be relatively minor. The majority of site works are simple earth bunds and ranges that are likely to avoid significant damage in the case of near-ponded freshwater inundation. The Seadown Shooting Complex representatives have been consulted with through the design and understand and accept this situation.

2. At FBNZ Byproducts and the WWTP, new bunding will be built which will tie in with the east wall of the southern wastewater treatment ponds. This includes raising the road.
3. The walls of the southern wastewater treatment ponds, and the proposed TDC stormwater pond will be sufficient and no bunding is required in that area.
4. New bunding will be built along the east side of the industrial properties south of the wastewater treatment ponds. This will be inside the Hilton Haulage properties and along the boundary of the Paul Smith property.
5. Bunding will be built on either side of the lower reach of Number 1 drain. This avoids the need to install any instream structure to prevent water entering the industrial area through backflow up this side drain.
6. At the south end, the new inland bank will connect with existing higher ground.

The height and width of the bank will vary depending on natural ground levels on its alignment but its average height will be between 1 and 1.5 m above ground and its width will be 6 – 10 m.

The inland bank will be built of the same material as the coastal stopbank, originating from excavations at the site. Where the inland bank “ties” into existing or future stormwater and wastewater infrastructure this will occur without any sub-surface disturbance or changes to the geotechnical parameters of that infrastructure and with agreement of those asset owners.

Where the inland bank crosses and incorporates part of Aorangi Road, construction will meet best practice roading standards and will occur in consultation with, and the necessary approvals from TDC. The bank will be higher than the existing road surface; therefore, the roadway will be modified at a gentle 1 vertical to 10 horizontal gradient to ramp up to the level of the bank, and then descend eastward as it crosses the new culvert. New entranceways to FBNZ’s east access point and to the shooting complex will be installed as part of this work at the same gentle gradients ensuring safe access with good visibility.

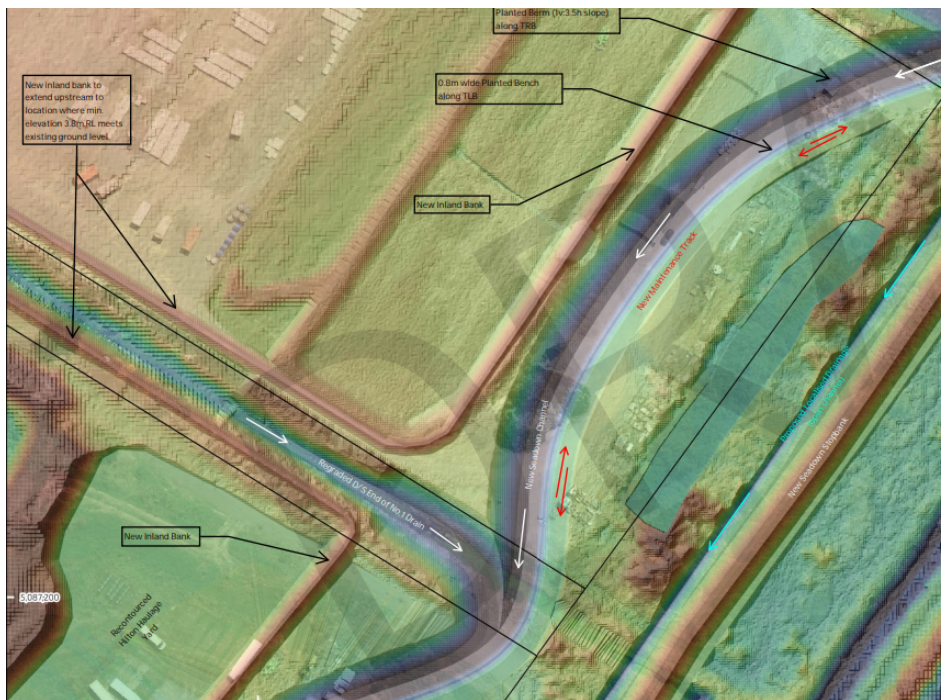
The inland bank will also be penetrated to allow existing swales and waterways to discharge to the realigned drain. This is likely to occur at three locations at each of which a culvert or pipe will be placed under the inland bank and appropriate back-flow protections will be installed to prevent low-frequency freshwater flooding backflow. At No.1 Drain, structures will not be used to manage the potential for backflow inundation. Instead, the inland protection bund will be carried inland up both sides of that drain until it ties into higher ground above the expected flooding levels. In this way a more natural and unimpeded character can be maintained for this major inflow while still ensuring flood protection goals are met.

However, it is noteworthy that only one of the culverts is in a drain identified as being a river under s13 of the Resource Management Act (refer section 5.9.3 of this application). All others are not. This matter is discussed further in section 7.

6.2.4 Localised drainage channels

Several small shallow channels will run along the inland side of the new stopbank and periodically discharge into the drain. These channels will relieve local surface ponding and at three locations they will discharge into the drain via culverts. These culverts will not be placed in the beds of rivers.





- Offline excavation of new Seadown Channel section ([Section 3](#)) between Downstream Wetland Area and Pits Wetland Area allowing for minimum 20m buffer between offline excavation and connection points;
- Offline excavation of new Seadown Channel section ([Section 4](#)) between Pits Wetland Area and By-Products circular stormwater wetland allowing for minimum 20m buffer between offline excavation and connection points;
- Deconstruction of existing By-Products' circular stormwater pond and construction of new By-Products' elongated stormwater pond complete with vegetated discharge swale as per design;
- Construction of inland raised track/inland SB and related drainage works. This work will also tie in with TDC development of their proposed stormwater pond system as detailed in design;
- Offline excavation of new Seadown Channel section ([Section 5](#)) between newly developed By-Products elongated stormwater pond and southern Aorangi Road drain allowing for minimum 20m buffer between offline excavation and connection points;
- Offline excavation of new Seadown Channel section ([Section 6](#)) between northern Aorangi Road drain and upstream end of Rifle Range allowing for minimum 20m buffer between offline excavation and connection points;
- **MILESTONE** - this will result in a completed offline Stage 1 Seadown Channel with excavations gradually reducing in moisture content along the eastern side of the maintenance track.
- Cut openings of downstream end of offline [Section 1](#) (resulting in creation of predator free island) and allow hydraulics to normalise and settle;
- Begin construction of downstream end of new Coastal Stopbank;
- Cut opening of upstream end of [Section 1](#), fish out coastal section of No.1 Drain, and backfill for stopbank construction (No.1 drain will now be discharging through the new Seadown Channel);
- Continue progressive construction of new Coastal Stopbank;
- Cut opening of downstream end of offline [Section 2](#) and allow hydraulics to normalise and settle;
- Continue progressive construction of new Coastal Stopbank;
- Excavate low graded channels through Downstream Wetland area as per design;
- Cut opening of upstream end of [Section 2](#) and allow hydraulics to normalise with Downstream Wetland Area;
- Continue progressive construction of new Coastal Stopbank;
- Perform any shaping required on Downstream Wetland Area following hydraulic normalisation;
- Cut opening of downstream end of offline [Section 3](#) and allow hydraulics to normalise and settle;
- Continue progressive construction of new Coastal Stopbank;
- Excavate low graded channels through Pits Wetland area as per design;
- Cut opening of upstream end of [Section 3](#) and allow hydraulics to normalise with Pits Wetland Area;
- Continue progressive construction of new Coastal Stopbank;



- Perform any shaping required on Pits Wetland Area following hydraulic normalisation, including the integration of the newly developed vegetated swale discharging from the new elongated By-Products' stormwater pond;
- Cut opening of downstream end of offline [Section 4](#) and allow hydraulics to normalise and settle;
- Continue progressive construction of new Coastal Stopbank;
- Cut opening of upstream end of [Section 4](#) and allow hydraulics to normalise;
- Continue progressive construction of new Coastal Stopbank;
- Cut opening of downstream end of offline [Section 5](#) and allow hydraulics to normalise and settle;
- Continue progressive construction of new Coastal Stopbank;
- Cut opening of upstream end of [Section 5](#), fish out southern drain along Aorangi Road, and backfill for stopbank construction (Irrigation release will now be discharging through the new Seadown Channel);
- Open downstream end of the recently installed Aorangi Road Culvert ensuring substrate is as per design within the culvert;
- Open upstream end of the recently installed Aorangi Road Culvert and divert northern drain along Aorangi Road into new Seadown Channel;
- Cut opening of downstream end of offline [Section 6](#) and allow hydraulics to normalise and settle;
- Continue progressive construction of new Coastal Stopbank;
- Road raising at Aorangi Road and entrances to By-Products and Rifle Range upgraded;
- Construction of Aorangi Car Park and all required drainage, fencing, and gates;
- Finishing works on Stage 1 and planting program can commence. Stabilisation, through hydroseeding, will occur continuously at the end of each stage; and
- **MILESTONE** - At this time, the Stage 1 extent of the new Seadown Channel will be flowing with springing ground water and inputs from No. 1 Drain and Aorangi Road south drain but will still be closed off to upstream flow north of the Rifle Range. The last step in Stage 1 will be to excavate the opening between the existing Seadown Drain and the upstream end of the newly excavated Seadown Channel (i.e., upstream end of [Section 6](#)) to allow upstream flow into the new system. At this time as well the existing Seadown Drain can be blocked off at this location and the vehicle turning bay installed as per the design.

Regarding the final point, this step assumes that the Phase 2 realignment is not consented and ready to commence. If it is then the works will likely follow on directly, and the diversion will not be required.



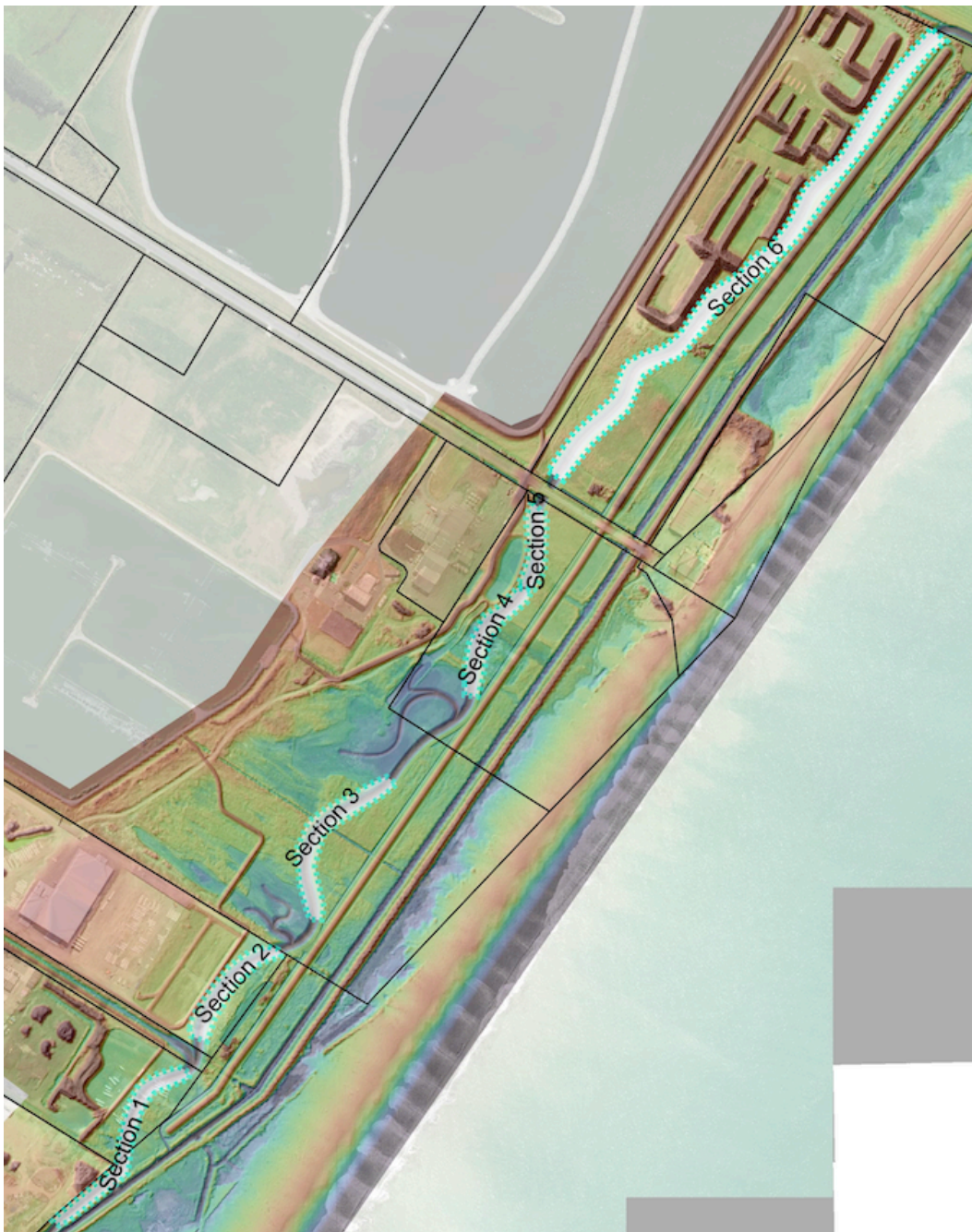


Figure 26: Indicative order of works (Source: kastorworks Limited)

6.2.6 FBNZ pond reconfiguration

The FBNZ pond is just west of sections 4 and 5 on Figure 26. Its reconstruction will generally consist of the following

1. Water in it will be pumped out and discharged to the existing drain (this discharge is allowed by FBNZ's existing resource consent). The floor of the pond is above local groundwater level so the pond will not be recharged other than by rainfall.
2. The soil in the pond floor will be sampled and removed, and either re-used, encapsulated on site, or disposed of. This will occur under the NESCS consent and SMP for the project.
3. The pond will be excavated to its new shape, existing pipework and infrastructure will be replaced, and the new discharge swale dug as generally shown in Figure 11.

4. The pond will be connected to the new alignment.

These works, and the consequential temporary disconnection of the pond from FBNZ's stormwater system are unlikely to take long and it is anticipated they will occur during dry conditions. If rainfall occurs then the site stormwater will discharge either via the existing system, to land in the area of the pond, or into the new alignment, depending on when in the process this occurs. If needed, a temporary disposal system can be constructed.

6.2.7 Retirement of existing system

The existing stopbank will be kept but not formally maintained. It provides protection and will continue to do so after the realignment has occurred. Eventually, damage through erosion and storm events will cause the stopbank to cease to function. Remnants of the previous stopbank can still be seen along the beach and it is envisaged that this will be the fate of the existing structure.

Similarly, the existing drain will not be filled. Once the realignment is complete and the new drain is connected to the system, the existing drain will be cut off from its inflow which will pass into the new system. This will not occur instantaneously: flow into the existing drain will progressively reduce as it is diverted into the new channel. The existing channel will continue to hold water, as it intercepts groundwater and rainwater, and the drain will stay connected at its southern end to allow fish movements. Fish will naturally migrate out of the channel into either the lagoon or the new drain.

Long term, the existing drain will reduce to a wet area and eventually fill. In the first instance, limited maintenance or intervention will occur. It will be monitored and managed for invasive weeds, declining dissolved oxygen or stranded fish. Depending on progress over the first two to three years, parts of the drain may be actively remediated (for example by fishing out and filling if they become isolated). However, it is envisaged that in general the system will naturally fill with plants, organic material and sediment.

The possibility of filling the drain has been investigated and is not preferred or practical, primarily due to the logistics and expense in fishing it out in its entirety and relocating the populations to the new system. Allowing the system to natural adjust will also prolong wetland values.

The realignment project includes funding for the monitoring and management of the existing drain.

6.2.8 Restoration

Restoration planting is a key aspect of the project. Budget and resources are allocated to establish a minimum of 2 hectares of indigenous planting within the Phase 1 area including the stream berm, planted step, and wetland areas. This planting will occur within the project timeframes and the applicant is committed to ensuring the ongoing maintenance of these plantings beyond project completion, until they are self-sustaining. A revegetation concept is attached to this application as Appendix 14.

In addition, areas outside the immediate drain and wetland footprints have the potential to be remediated and replanted with indigenous vegetation. The vegetation on the land through which the realignment will pass is currently generally of low quality and the CRC, through the Our Waitarakao programme, is investigating further funding opportunities to support the establishment of additional indigenous vegetation within the wider area. There is an opportunity for approximately 7 hectares of indigenous vegetation planting within the Phase 1 area.

Apart from the above, all areas disturbed by earthworks will as a minimum be grassed.



6.2.9 Stabilisation phase

Following construction, the realigned drain will enter a commissioning and stabilisation phase, which will involve more frequent inspection and responsive maintenance than the long-term operational phase. Any bank, bed, or vegetation adjustments and repairs to maintain the designed system are considered to be within the scope of this application. After this stabilisation phase the system will transition to routine maintenance.

6.3 Drain tributaries

Figure 27 shows the locations where the realignment project contacts other waterbodies. Table 5 provides a discussion of those locations and activities.



Figure 27: Locations of contact points between drain realignment and waterbodies (Base image source: kastorworks Limited)

Table 5: Discussion of contact points between drain realignment and waterbodies

Number	Location	Description
1	North end of Phase 1	Realigned drain intercepts existing number 2 side drain which flows down north side of shooting complex (part of the CRC network). This will be the final connection to the new system and when it occurs, water from both the existing Seadown Drain and the no 2 drain will enter the new alignment.
2	Aorangi Road	The two existing drains which flow into the Seadown Drain , one on either side of the road, will flow beneath the raised road profile and the inland bank and then directed into the realignment via flap gates. This will occur via an existing culvert under FBNZ's eastern accessway, which will be extended, and a new culvert in the north drain. The pre existing reaches between the realignment and the existing drain will be redirected as per the design plans.
3	FBNZ	FBNZ's existing retention pond is being incorporated into the alignment. This pond is part of FBNZ's consented site stormwater system, and the system is being reconfigured to accommodate this change.
4	Area southeast of the TDC wastewater ponds	a) Existing wetland areas will be incorporated into the realignment, with restoration and enhancement. b) Small swales running toward the existing drain will directly enter the realignment.
5	Drain between Hilton Haulage site and proposed TDC stormwater pond	This drain will be piped under the new inland bank and discharge into the realigned drain.
6	Hilton Haulage stormwater pond	The existing weir outlet from the east side of the pond will remain but be reconfigured.
7	Number 1 drain	The drain will discharge into the realigned drain. Banks will be constructed on either side of Number 1 drain in the lower reaches to ensure any Ōpihi flood waters are contained. No other backflow prevention devices are needed.
8	Small drain between Paul Smith and Hilton Haulage	The drain is already piped under an existing local bund. It will be piped under the inland bank and discharge into the realigned drain.
9	South end of Phase 1	The new drain and stopbank converge on the existing system and will be connected to it partway through the works.



7 Resource consent requirements

Resource consent applications are made to the CRC and TDC. The planning framework is complicated, and in many cases evaluating the proposal against permitted activity (PA) rule requirements leads to conclusions that are open to interpretation. However, the overall activity status is **non-complying**, and every effort has been made to ensure that all realistic effects have been assessed.

This section of the application summarises consent requirements, with a systematic rule evaluation attached as Appendix 15.

7.1 Applicable planning documents

Rules governing the proposal are contained in:

- the NESF
- the regional rules section of the CLWRP
- the Regional Coastal Environment Plan (RCEP)
- the OTDP and
- the PTDP.

No applicable rules are contained in section 14 of the CLWRP (Orari-Temuka-Ōpihi-Pareora).

7.2 Wetlands

In the project area, some wetlands are self-contained areas and not associated with natural watercourses (for example the pit derived and FBNZ treatment wetlands), and others effectively are rivers (the existing drain). In defining consent requirements, the former are considered to fall under s9 of the RMA, while the latter are covered by s13. However, all applicable potential effects are assessed in this application.

As discussed earlier, the wetland assessment identifies some wetlands as “NPS-FM wetlands” (natural inland wetlands, subject to the NESF), and others as “RMA wetlands”, not subject to the NESF and NPS-FM but still wetlands and subject to regional and district plans. A summary is provided in Table 6.

Table 6: Wetland status summary

	RMA section	Natural inland wetland	RMA wetland
Existing Seadown Drain	13	Yes	Yes
Shooting Complex wetland	9	No	Yes
FBNZ pond	9	No	Yes
Pit derived wetlands	9	Yes	Yes



7.3 Definitions

When evaluating resource consent requirements for this proposal, it is important to note several key aspects of the project, and definitions.

1. The CLWRP defines a **defence against water** as:

...any structure or equipment, including any bund, weir, spillway, floodgate, bank, stopbank, retaining wall, rock or erosion protection structure, groyne, vegetation (including anchored tree protection) or reservoir, that is designed to have the effect of stopping, diverting, controlling, restricting or otherwise regulating the flow, energy or spread of water, including floodwaters, in or out of a waterbody, artificial watercourse, or artificial lake. For the purposes of this definition, dams are excluded.

2. The existing drain and some tributaries are identified as being **modified natural watercourses**. Therefore, section 13 of the RMA requires consideration in those cases. However, the proposed realignment will be constructed into existing non-river land, and works associated with that will be governed by section 9 and not by section 13. Once the drain system is connected and becomes live, it will become a modified natural watercourse.

3. The drainage system (including stopbank and inland bank) is **specified infrastructure** under the NPS-FM and by reference the NESF. The definition includes:

(d) any public flood control, flood protection, or drainage works carried out:

(i) by or on behalf of a local authority, including works carried out for the purposes set out in section 133 of the Soil Conservation and Rivers Control Act 1941; or

(ii) for the purpose of drainage by drainage districts under the Land Drainage Act 1908

4. The drainage system is **regionally significant infrastructure** under the PTDP.

5. The removal of water from the existing drain into the realignment is considered to be a diversion rather than a take and discharge under the CLWRP, which states that diversion:

means the deflection of water from its natural course, but remaining within the bed or the banks of the water body, or artificial lake or artificial watercourse. For the purpose of this Plan and unless the diversion is the result of a lawful permanent re-alignment of the bed of a surface water body, taking water from the bed of any watercourse, even if only for a short distance before it is returned, is considered a take and discharge.

This activity is the lawful re-alignment of the bed of a surface water body.

6. The definition of “**vegetation clearance**” in the CLWRP excludes:

(b) clearance for the establishment or maintenance of utilities or structures;

and

(f) clearance by, or on behalf of, the Canterbury Regional Council for the purposes of maintaining the flood-carrying capacity of a river; or

7. A **network utility operator** is defined in section 166 of the RMA as including a person who “(e) undertakes or proposes to undertake a drainage or sewerage system;”. By extension it is assumed that “network utility” includes a drainage system. This includes the stopbank, which has the purpose of protecting the drain, and the inland bank, which is part of the system installed to protect neighbouring properties.



8. In the OTDP:

- **Utility service** includes *Water and irrigation races, drains, channels, pipes and necessary incidental equipment, including water intakes.*
- **Public utility** includes flood protection works. As discussed, the stopbank is not a flood protection asset, but protects the drain from coastal processes.

9. All wetlands fit the definition of **significant indigenous vegetation** under the OTDP.

10. A stopbank is assumed to fit the definition of **structure**.

11. The PTDP definition of **natural hazard mitigation works** is:

means structures and associated engineering works to prevent or control the impacts of natural hazards and includes both soft engineering natural hazard mitigation works and hard engineering natural hazard mitigation works, retaining walls, stop banks, and flood protection works. Retaining walls not required for a hazard mitigation purpose are excluded from this definition. Raised building floor levels and raised land which are required to be raised to meet the requirements of a flood assessment certificate are excluded from this definition.

7.4 National Environmental Standards for freshwater

7.4.1 Construction of specified infrastructure

Regulation 45 of the NESF applies to the construction of specified infrastructure. The following proposed activities are a **discretionary activity** under regulations 45(1) to (5).

- Vegetation clearance and earthworks or land disturbance within, or within a 10 m setback from a natural inland wetland (regulations 45 (1) and (2)), and earthworks within or within a 100 m setback (45 (3)).
- The taking, use, damming, diversion or discharge of water within, or within a 100 m setback from a natural inland wetland (45 (4) and (5)).

Regulation 45(6) requires that before these consents can be granted, the consent authority has:

(a) satisfied itself that the specified infrastructure will provide significant national or regional benefits; and

(b) satisfied itself that there is a functional need for the specified infrastructure in that location; and

(c) applied the effects management hierarchy.

It is considered that the consent authority can be satisfied on points a and b. Extending the life of the drainage system has a clear regional benefit, and there is a need for its realignment (refer section 8.1 of this application). The application of point c is at the discretion of the consent authority but the applicant's view of this matter is discussed later in this application.

7.4.2 Culverts and flap gates

Regulation 71 applies to the placement and use of culverts in the beds of rivers.

Three culverts will be placed under the inland bank in existing drains which are not identified by CRC surface water scientists as being rivers. A further three will discharge localised drainage water into the new main drain and also are not being placed in riverbeds. Regulation 71 does not apply to these culverts.



One existing culvert in the Aorangi Road South Drain will be extended, and a manually controlled gate will be placed on it for backflow protection. This drain is identified as a river; however, Regulation 60 of the NESF states that Subpart 3 (fish passage) of the NESF does not apply to:

an existing structure, meaning a structure that was in the river or connected area at the close of 2 September 2020, and including any later alterations or extensions of that structure:

The culvert is an existing structure, and its extension does not require a consent under the NESF. Regulation 74 applies to passive flap gates. Several are to be installed but none are in s13 waterways and no NESF consents are required. The gate being installed in Aorangi Road South Drain is a manual structure and is not captured by the NESF.

7.5 Canterbury Land and Water Regional Plan

The CLWRP is the applicable CRC plan. Several groups of rules potentially apply to the proposal. However, interpretation is not straightforward and in some cases it is not easy to establish consent requirements, or to establish why a rule is not applicable. The potentially applicable areas, and conclusions regarding activity status are discussed below.

7.5.1 Drainage water

These applications are for the re-alignment of part of an existing drainage system, which will not otherwise be altered. It is considered to be permitted under CLWRP drainage rules (Table 7).

7.5.2 Construction phase stormwater

A resource consent for these discharges is required under rule 5.94B, as a **restricted discretionary activity**. The matters of discretion are:

- 1. The actual and potential effects of the discharge on the quality of surface water, aquatic ecosystems, Ngāi Tahu cultural values; and*
- 2. The actual and potential effects of the discharge on the quality and safety of human and animal drinking water; and*
- 3. The actual and potential adverse environmental effects of the quantity of water to be discharged on the banks or bed of a waterbody or on its flood carrying capacity, and on the capacity of the network to convey that discharge; and*
- 4. The potential benefits of the activity to the applicant, the community and the environment.*

7.5.3 Structures, diversion, discharges

Rules 5.135 to 5.141 potentially apply, predominantly regarding the beds of rivers. The interaction between these rules and the proposed realignment is complex, given the mix of artificial and modified natural watercourses and the nature of the works which often does not mesh tidily with the rules. As a result, interpreting permitted activity rules is complex and potentially subject to disagreement.

The aspects of the work which most relate to these rules are:

- The permanent diversion of drainage water from the existing to the new drain. This is being achieved by the deposition of material into the existing drain. While not a structure as such, it is assumed to be one for simplicity.
- Activities taking place in two s 13 tributaries to the drain, where the inland bank will cross them (including the extension of the existing culvert in the Aorangi Road south side drain).



These activities are considered to be **discretionary activities** under the following rules.

- 5.1401A *The placement, installation, erection, reconstruction, alteration or removal of any structure, excluding dams, on, in or under the bed of a lake or river, and including any associated excavation, disturbance, diversion and discharge in the bed of a lake or river, or any diversion or discharge in an artificial watercourse, that does not comply with Rules 5.135 to 5.141 is a discretionary activity.*
- 5.141B *Where not classified by any other Rule in this plan, the diversion or discharge of water and contaminants as a result of the excavation and disturbance of a river or lake bed, or the establishment of a structure or defence against water, is a discretionary activity.*

7.5.4 Wetlands

Rule 5.162 applies, as several wetlands will be reduced effectively to nothing during the construction of the proposed realignment, before being restored and enhanced. This is a **non-complying activity**:

Reducing the area of a wetland by the taking, use, damming or diversion (including draining) of water or other means, including vegetation clearance, cultivation, burning or earthworks, except as provided for in Rule 5.161 is a non-complying activity.

7.5.5 Earthworks and vegetation clearance in riparian areas

These rules apply only to earthworks around wetlands, given the definitions of river and vegetation clearance. It is arguable whether they apply to the proposal, given that wetland effects are predominantly addressed by rule 5.162. However, some works may occur where existing wetlands are not – or not fully – to be incorporated into the new drain alignment. For completeness, it is assumed that the activity is **restricted discretionary** under rule 5.169:

Vegetation clearance and earthworks outside the bed of a river or lake or adjacent to a wetland boundary but within:

- (a) 10 m of the bed of a lake or river or a wetland boundary in Hill and High Country land and land shown as High Soil Erosion Risk on the Planning Maps; or*
- (b) 5 m of the bed of a lake or river or a wetland boundary in all other land not shown as High Soil Erosion Risk on the Planning Maps or defined as Hill and High Country; and any associated discharge of sediment or sediment-laden water in circumstances where sediment may enter surface water that does not comply with one or more of the conditions in Rules 5.167 or 5.168 is a restricted discretionary activity.*

The exercise of discretion is restricted to the following matters:

- 1. For forest harvesting, the harvesting method, location of haulage and log handling areas, access tracks, and sediment control; and*
- 2. The actual and potential adverse environmental effects on soil quality or slope stability; and*
- 3. The actual and potential adverse environmental effects on the quality of water in rivers, lakes, or artificial watercourse, or wetlands; and*
- 4. The actual and potential adverse environmental effects on areas of natural character, outstanding natural features or landscapes, areas of significant indigenous vegetation, indigenous biodiversity and significant habitats of indigenous fauna, mahinga kai areas or sites of importance to Tangata Whenua; and*



5. *The actual and potential adverse environmental effects on the banks or bed of a waterbody or on its flood carrying capacity; and*

6. *The actual and potential adverse environmental effects on transport networks, neighbouring properties or structures.*

In practice, the consent requirement is only triggered by works occurring in an inanga spawning habitat, so only that matter requires assessment, via matter 4 above.

7.5.6 Earthworks over aquifers

Consent for a **restricted discretionary activity** is required under rule 5.176. The matters for discretion are:

1. *The actual and potential adverse environmental effects on the quality of water in aquifers, rivers, lakes, wetlands; and*

2. *Any need for remediation or long-term treatment of the excavation; and*

3. *The protection of the confining layer and maintaining levels and groundwater pressures in any confined aquifer, including any alternative methods or locations for the excavation; and*

4. *The management of any exposed groundwater; and*

5. *Any adverse effects on Ngāi Tahu values or on sites of significance to Ngāi Tahu, including wāhi tapu and wāhi taonga.*

7.5.7 Disturbance of the bed

For the avoidance of doubt, the proposal includes disturbance and reshaping of the bed and banks of modified watercourses. Initially this occurs where the new channel connects with the waterways classified as modified, and also within the new channel once water flows through it during the stabilisation phase. Consent is required for a **discretionary activity** under rule 5.6.

7.6 Other Canterbury Regional Council plans

7.6.1 The Regional Coastal Environment Plan

The proposal is largely outside the RCEP, as all activities are landward of the CMA. However, much of the site will be in Coastal Hazard Zone 2 and the Natural Hazards chapter of the RCEP applies.

The installation of the stopbank (a structure) is a permitted activity under rule 9.1. However, the proposed drain realignment is a **restricted discretionary activity** under Rule 9.2

The matters for discretion are:

a. *whether the activity is likely to exacerbate coastal erosion; and*

b. *whether the activity is likely to lead to adverse effects from natural hazards on any other property, (where property has the same meaning as in Section 2 of the Building Act 1991);*

c. *provision for the removal of any structure or parts of any structure that are rendered unusable through coastal erosion*

Given that the site is not within the CMA, this activity requires a s9 land use consent, not a coastal permit.



7.7 Timaru District Council

Both the operative and proposed (March 2026 decisions version) TDPs apply.

7.7.1 The Operative Timaru District Plan

The applicable section of the OTDP is that for the R3 zone where the main area of the site is located. The site also encroaches on two small areas of land that is zoned IND H, one of which is part of the Washdyke Industrial expansion area. However, no specific rules regarding these areas apply to the proposal.

The following consent requirements are assessed to apply:

The establishment or upgrading of utility services (Rule 1.8) within 200m of the CMA boundary, or 10m of rivers, is a **discretionary activity** under Rule 3.10. This is a construction related rule.

“Drainage works” other than those affecting wetlands (Rule 1.14) are a discretionary activity under Rule 3.10. This applies to the entire area of works. This is interpreted to be a construction-related rule.

Utility services in the wetlands are a **discretionary activity** under rule 3.4. This is a long-term matter related to the ongoing presence of the drain system in wetland environments.

Vegetation clearance within the wetlands is a **non-complying activity** under rule 4.1.

The drainage, reclamation or infilling of wetlands is a **non-complying activity** under rule 4.2.

7.7.2 The Proposed Timaru District Plan

The rules in the PTDP have legal effect. Three zones and several overlays apply to the site, and consent requirements are summarised below according to these.

General Rural Zone

no rules apply specifically. In this case, Rule GRUZ-R31 applies and makes **discretionary** any activities not otherwise listed in the chapter.

General Industrial Zone

No rules apply specifically. In this case, Rule GIZ-R6 applies - *Any other activities, including associated buildings and structures not otherwise listed in this chapter.* The activity status is **non-complying**.

Natural Open Space Zone

- Rule NOSZ-R5 makes the stopbank (a structure) a **discretionary activity** in the context of the chapter.
- Rule NOSZ-R8 makes activities not otherwise listed a **discretionary activity**.

Natural Hazards chapter

The maintenance, repair, replacement and upgrading of regionally significant infrastructure in three applicable overlays is a **restricted discretionary activity** under Rules NH-R7 1 and 2. The matters for discretion are, for NH-R7 1:

1. *any adverse effects arising from locating the regionally significant infrastructure in this location; and*
2. *[sic] and*
3. *the effectiveness and potential adverse effects of any proposed mitigation measures; and*
4. *alternative locations for the regionally significant infrastructure*



5. *any positive effects of locating the regionally significant infrastructure at this location*
6. *the ability for the regionally significant infrastructure to be efficiently recovered after a hazard event*
7. *the operational need or functional need for the activity to be established in this location*

For NH-R7 2:

1. *any impacts on natural elements, processes and patterns, and landforms; and*
2. *the extent to which the building or structure has a functional need or operational need for its location; and*
3. *the extent of any positive benefits that will result from the proposal; and*
4. *the extent to which the proposal creates natural hazard risks on adjacent properties and any risk to human life; and*
5. *the risk to the building or structure taking into account:*
 - a. *the nature of the building, structure or activity, including its materials and ability to be relocated;*
 - b. *the anticipated lifespan of the building, structure or activity*
 - c. *the level of uncertainty of the projected future shoreline, including whether the erosion is very likely within a medium term as opposed to more uncertain over a longer-term period.*

Coastal Erosion chapter

Rule CE-R5 applies to earthworks in the Coastal High Natural Character overlay. This is a very small area at the north end of the realignment where the existing drain is to be blocked off. The activity status is **discretionary**.

Rule CE-R8 applies to the maintenance and upgrade of regionally significant infrastructure in the Coastal Environment Overlay. The PA condition cannot be complied with and the activity status is **restricted discretionary**, with restriction limited to:

1. *any adverse impacts on the identified matters contained in CE-P3, CE-P4, CE-P5, CE-P6 and CE-P9; and*
2. *the extent to which the building or structure has a functional need or operational need for its location; and*
3. *the extent of any positive benefits that will result from the proposal*

The identified policies in (1) are:

CE-P3 Coastal natural character matters

CE-P4 Kāti Huirapa values

CE-P5 Restoration or rehabilitation of natural character

CE-P6 Maintain and/or enhance the quality of the coastal environment

CE-P9 Preserve the natural character qualities of areas with coastal high natural character

Sites and areas of significance to Māori

As discussed earlier in this application, the entire works area is under the Wāhi Tūpuna overlay, and the existing drain and the land east of it are under the Wāhi Taoka overlay.

The proposed earthworks are a **restricted discretionary activity** under SASM-R1 1 (entire works area under the Wāhi Tūpuna overlay). The matters for discretion are:



1. *whether Te Rūnanga o Arowhenua has been consulted, the outcome of that consultation, and the extent to which the proposal responds to, or incorporates the outcomes of that consultation; and*
2. *the proposal's consistency with the values identified in SCHED6 – Schedule of Sites and Areas of Significance to Kāti Huirapa; and*
3. *the potential adverse effects, including on sensitive tangible and/or intangible cultural values; and*
4. *whether there are alternative methods, locations or designs that would avoid or mitigate the impact of earthworks on the values associated with the SASM; and*
5. *the appropriateness of any mitigation measures proposed, including the need for an accidental discovery protocol; and*
6. *the extent to which the proposed activity provides an opportunity to recognise Kāti Huirapa culture, history and identity associated with the SASM, and any potential to:*
 - a. *affirm the connection between mana whenua and place; or*
 - b. *enhance the cultural values of the SASM; or*
 - c. *provide for the relationship of Kāti Huirapa with their taoka; or*
 - d. *maintain or enhance the ability of Kāti Huirapa to access and use the SASM commensurate with the scale and nature of the proposal; and*
7. *where the earthworks will remove indigenous vegetation, the nature of any effects on mahika kai and other customary uses; and*
8. *in respect of network utilities, the extent to which the proposed network utility has functional needs or operational needs for its location; and*
9. *for regionally significant infrastructure, the extent of any local, regional or national benefits, including the potential impact on the wellbeing, health and safety of people and communities if the work is not undertaken.*

Note: Limited notification of Te Rūnanga o Arowhenua is likely to be required under this rule.

Noise chapter

Rule Noise-R4 applies to construction noise. A noise assessment has not been made (for reasons described later in this application, primarily the location of the works) and the activity status is **restricted discretionary**. The matters for discretion are:

1. *the level, hours of operation, duration and characteristics of the noise; and*
2. *proximity and nature of nearby activities and the adverse effects they may experience from the noise; and*
3. *the existing noise environment; and*
4. *effects on amenity values and anticipated character of the receiving environment; and*
5. *effects on health and well-being of people; and*
6. *any noise reduction measures; and*
7. *the practicality of mitigating noise.*



7.8 Permitted activities

Several activities are either permitted or are excluded from rules due to definitions or project aspects.

The Canterbury Air Regional Plan includes Rule 7.32 related to the discharge of dust from construction activities. The proposal complies with the applicable conditions and the activity is permitted under that rule as long as a dust management plan is prepared and implemented.

Permitted activities in the other applicable plans are summarised in the following tables. It is acknowledged that all permitted activities may not be included, however, the following are the key rules identified during preparation of this application.

Table 7: CLWRP permitted activities

CLWRP Rule	Discussion
5.77 Discharges from a drainage system	Although the main drain and stopbank locations are changing, the overall system (extent, inputs etc) is not and it can comply with the requirements of this rule.
5.79 Discharges from the maintenance of artificial watercourses	The ongoing maintenance of the new drain and stopbank can comply with this rule.
5.138 Defences against water	This applies where the inland bank crosses two s 13 waterways
5.145 refuelling in the bed of a lake or river.	Any refuelling will occur away from open water bodies.
5.159 Enhancing, restoring or creating wetlands	This activity is required after construction to restore the wetland environments that existed previously. The conditions of the rule can be complied with.
5.163 vegetation in lake and river beds	The rule itself, while it does not use the expression “vegetation clearance” in its title, does so in several conditions and the definition of that term excludes the drain and stopbank as they are utilities. Irrespective of this, the conditions of this rule can be complied with.
5.167 Vegetation clearance in riparian areas	This rule and others relating to vegetation clearance do not apply due to the definition discussed earlier in this section.

Table 8: OTDP permitted activities

OTDP Rule	Discussion
1.8 Establishment of utility services	Permitted outside the setbacks discussed above
1.11 Vegetation clearance outside of wetlands	
1.19 Utility services not within wetlands	No performance standards apply and the activity is permitted
3.6 Public utilities	The stopbank is not a flood protection asset but protects the drain from coastal inundation. It is part of the utility service, not a public utility.



OTDP Rule	Discussion
6.16.2.3 Structures near a Regional Council stopbank	The new stopbank is a structure but is a public utility and therefore excluded from the rule.

Table 9: PTDP Permitted activities

PTDP Rule	Discussion
GRUZ-R10 conservation activities	This rule relates to activities for planting, restoration etc following the realignment works
ECO-R1 indigenous vegetation clearance in the Coastal Environment	Indigenous vegetation clearance in riparian margins in the coastal environment is permitted for the maintenance, repair or replacement of regionally significant infrastructure
CE-R3 Planting of indigenous vegetation	Permitted for conservation, restoration, natural hazard mitigation works or enhancement
CE-R7 Land disturbance in the coastal environment area and coastal high natural character area overlays	
SASM-R3 Vegetation clearance	Complies with conditions PER-3 and PER-7
NOSZ-R3 Planting of vegetation	All vegetation will be indigenous.
EI-R4 Vehicle access tracks for network utilities	Comply with all conditions

7.9 Other consents

As discussed earlier, a separate consent has been issued by TDC under the NESCS. No other consent applications are necessary.

7.10 Summary of consent requirements

The following consent applications are made.

1. A short term section 9 land use consent for construction works (CRC).
2. A long term section 9 land use consent specific to works in the CHZ (CRC).
3. A short term section 9 land use consent for construction works (TDC).
4. A long term section 9 land use consent for utilities in wetlands, and the presence of the realigned drainage system on TDC land (TDC).
5. A short term s13 land use consent for construction activities including the deposition of material for the main diversion (CRC).
6. A short term section 14 water permit for main diversion and other s14 activities near wetlands (CRC).
7. A short term section 15 discharge permit for construction discharges (CRC).

For both councils, the most restrictive activity status is **non-complying** and it is assumed that the applications will be bundled on that basis.



7.11 Consequences if Phase 2 commences

If Phase 2 of the realignment commences directly after Phase 1, then the final diversion of the existing drain may not occur until Phase 2 has commenced, or once the entire project is complete and it would occur at the head of the system at Phillips Lagoon, rather than at No 2 drain. In that case, the applicable consent (s14 water permit) could be surrendered, as the other construction activities that it authorises would have been completed. The ultimate diversion would be consented as part of Phase 2. Changes to the long term s 9 consents would also likely be required.

8 Assessment of environmental effects

Applications are made for restricted discretionary, discretionary and non-complying activities.

The following potential effects are assessed:

- Functional and operational need
- Positive effects
- Ngāi Tahu values
- Freshwater flooding
- Contaminated land
- Aquatic ecology
- Terrestrial ecology
- Avifauna
- Ground and surface water quantity
- Diversion of water
- Groundwater quality
- Surface water quality
- Other consent holders
- Natural hazards
- Effects of earthworks
- Traffic and road networks
- Noise
- Visual amenity
- Presence of utilities
- Excavation in the coastal hazard zone
- Effects on the coastal environment
- Scale of the activity and site coverage



8.1 Functional and operational need

The NESF and OTDP require demonstration or assessment of the functional and/or operational need for the infrastructure at its location.

The overall drainage scheme facilitates and protects productive rural land uses in the scheme area, and the impact of its absence would be substantial. It is considered that this demonstrates a functional need.

The realignment route has been selected to extend the lifespan of the system as long as possible given site constraints. Locating it closer to the existing scheme (and the coast) would reduce the return from the works and would not be viable. Not realigning the drain would mean the loss of the system in the foreseeable future, which is not acceptable. The aim is to locate the drain as far as possible away from the coastal hazard, to maximise the life of the asset, and that is proposed. There is a functional need to locate the drain and stopbank as proposed.

8.2 Positive effects

The key potential positive effect is to prolong the life of a key drainage asset. However, the realignment also has the following benefits.

1. The new Aorangi Road box culvert provides improved fish passage compared with the previous twin-pipe configuration.
2. The new culvert can carry more flow which improves the capacity of the system.
3. The existing wetlands, which have relatively low values, will be improved.
4. The wider area around the drain is to be actively enhanced which will increase biodiversity and amenity.
5. Flood protection will be improved for the properties west of the realignment, particularly FBNZ, HHL, PSE and TDC.

8.3 Ngāi Tahu values

8.3.1 General statement

The following section has been prepared in partnership with Aoraki Environmental Limited.

The association of Te Rūnanga o Arowhenua to the Waitarakao/Washdyke area is acknowledged in section 4.2 of this application. Of particular significance is its history for mahinga kai in the Taitarakihi and Waitarakao mātaihai reserve areas and along Washdyke Creek. The significance of this area is recorded in the PTDP through the area being recognised in SASM-3 and SASM-3b. SASM-3 being a Wāhi Tūpuna and SASM-3b a Wai Taoka.

Te Rūnanga o Arowhenua considers that waterbodies in Waitarakao are degraded and the Seadown Drain's focus on primarily being to convey water adds to this degradation. While the waterway is used by indigenous species there is little habitat type or variability for species.

Arowhenua supports the realignment of the Seadown Drain. While the primary purpose of the realignment is to protect the integrity of the of the drainage system, the proposed new drain offers considerable opportunities for providing varied habitat for indigenous species and still providing these species with connectivity to habitats within the wider catchment and maintaining the requirement to drain land. Arowhenua further recognises the importance of maintaining connectivity through the realignment to the lagoon and that there are limited options for alternative locations.



Arowhenua, through AEC has been involved in the development of the realignment alongside Environment Canterbury. This includes considerations of matters including how mahinga kai species are managed when water flow is stopped in the retired Seadown Drain.

No cultural impact assessment has been prepared for this application, rather comments and considerations of Arowhenua are incorporated into this AEE and supporting documents.

Given the area was extensively used by Arowhenua there is a possibility of discovery of artifacts and so an accidental discovery protocol has been included as a part of consent conditions.

8.3.2 Matters for discretion in Rule SASM-R1 1

The above statement indicates Arowhenua support for the applications. Given that, extensive evaluation against the matters for discretion is not considered to be necessary, but a brief assessment is provided below.

1. Extensive consultation has occurred and the proposal incorporates its outcomes. Many of these are outside of consenting.
2. The values identified in PTDP SCHED6 are quoted in section 5.2 of this application. The application and associated consultation accounts for these values.
3. The primary effect on cultural values relates to mahinga kai and the existing drain's status as a mataitai reserve. Arowhenua is fully conversant with the plans for the drain including its reinstatement, and is engaged with managing fish populations during the retirement of the existing system.
4. Alternatives are discussed elsewhere in this application and they are limited given the location and type of works required. Construction will be undertaken to minimise adverse effects on cultural values, particularly sensitive fish populations.
5. Appropriate mitigation and management of the works are proposed and the CRC's Rivers Environmental Advisors have a good relationship with Arowhenua.
6. It is considered that Kāti Huirapa values have been recognised and affirmed. Opportunities for the enhancement of cultural values in the area will be explored during restoration activities following completion of the project. No access will be lost because of the realignment.
7. The potential effects of the removal of indigenous vegetation (which is restricted to the wetland areas) has been discussed during consultation and will be compensated for by restoration activities.
8. The system has a functional and operational need for its location as discussed elsewhere in this application.
9. The drainage system is regionally significant and the consequence to the local community of it not being present would be substantial.

Overall, it is considered that the potential effects on Ngāi Tahu values are less than minor.

8.4 Freshwater flooding

The project – particularly the realignment of the stopbank and installation of the inland flood protection bank – will alter the dynamics of flooding in the area. A flood assessment using hydraulic modelling has been undertaken by CRC scientist Daniel Ward and is attached to this report as Appendix 5.



The flood assessment uses the Mike21 2-dimensional model to assess the effect of the realignment, expressed as water depths and velocities. It investigates a number of scenarios of which the key ones are:

1. Present day stopbank configuration:
 - a. 200 year ARI breakout scenario from the Ōpihi River.
 - b. 20 year ARI rainfall event (considered to be a moderate event).
2. Proposed stopbank configuration:
 - a. 200 year ARI Ōpihi breakout scenario.
 - b. 20 year ARI rainfall event.

Specific input and model configurations are described in the main report, but key parameters are summarised below.

1. Ōpihi River flood flows are based on data from the Saleyards Bridge recorder (site 69650).
2. Measured water levels at Waitarakao (site 69801) were used to initialise the model.
3. Rainfall data were obtained from the High Intensity Rainfall Data System (HIRDS) version 4, for a location at Timaru Airport.
4. Climate change is included.
5. The topographic data inputs are existing LIDAR records on a mesh with varying resolution depending on location (the finest being 5 m² in the stopbank and lagoon areas).
6. River breakout hydrology was calculated assuming that 20% of the 200 year ARI flow spills onto the floodplain. A 24-hour hydrograph was used.
7. The critical storm duration for the catchment is 12 hours.
8. Existing culverts and structures were included.

The assessment also included a run without the rifle range bunded area, but that is not included in this summary.

The key outcomes of the modelling are discussed in the following sections.

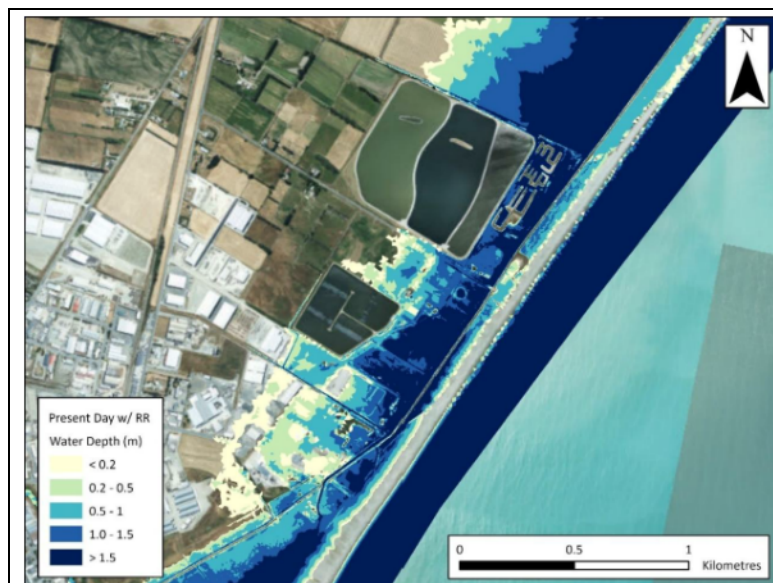
8.4.1 Ōpihi River breakout

Key figures from the flood assessment are shown in Figure 28.

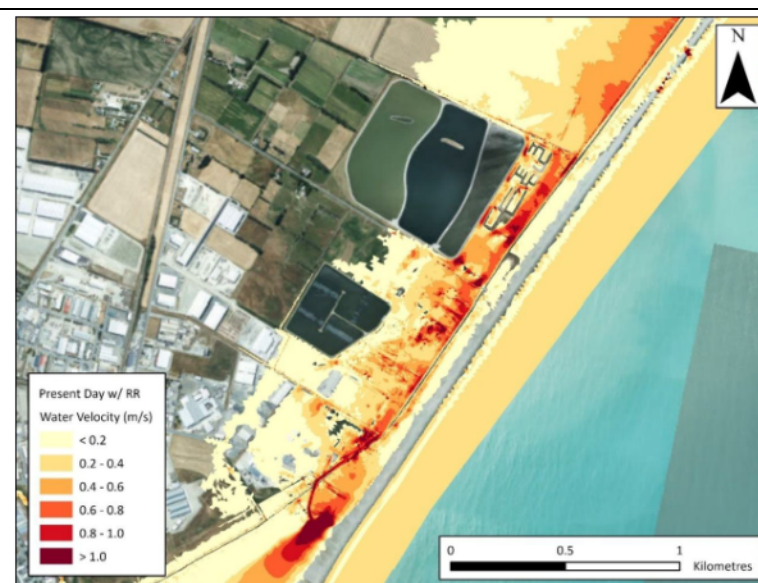
Under the existing drain configuration, the maximum depth behind the coastal stopbank is reached after approximately 13 hours, before it is overtopped. The peak breakout flow is estimated at 1,050 cubic metres per second (m³/s) of which 870 m³/s reaches the stopbank and the balance is returned to the river system. A higher breakout flow is not anticipated to worsen the situation in the Stage 1 area as the stopbank has been overtopped.

Under the proposed configuration, the same basic flooding pattern occurs although the proposed inland flood protection bank has a clear effect in keeping floodwaters off the land to its west. The effect of the realigned drain is also apparent in focussing the velocity more tightly than under the existing situation.

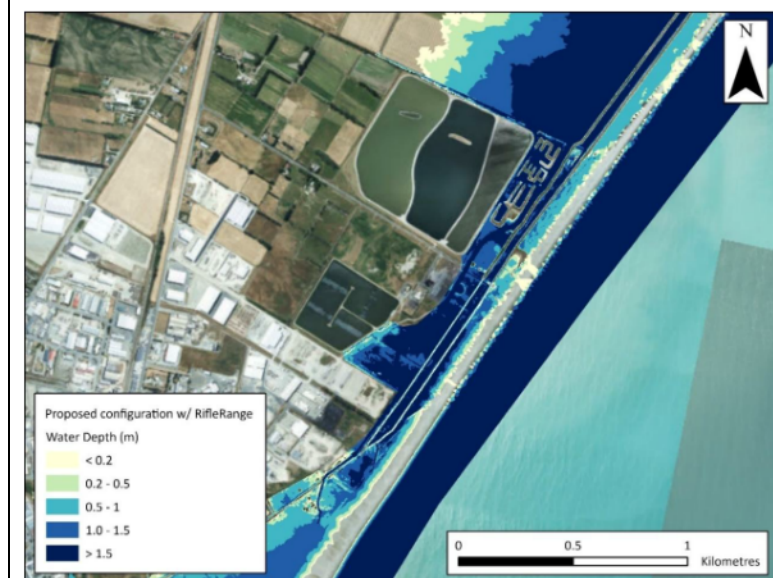




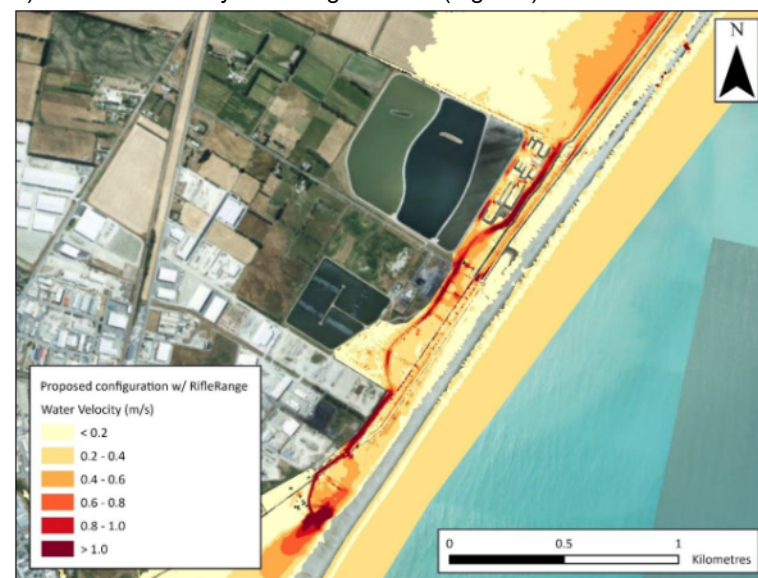
a) Maximum depth – existing situation (Fig 13a)



c) Maximum velocity – existing situation (Fig 13b)



b) Maximum depth – proposed situation (Fig 18a)



d) Maximum velocity - proposed situation (Fig 18b)

Figure 28: Flood assessment model predictions for Ōpihi breakout (figure references in brackets are those in the flood assessment)



8.4.2 Twenty year ARI rainfall event

Figure 29 shows key figures from the flood assessment. Velocities were not modelled for this scenario, and the results indicate that during this scenario, drainage from the floodplain towards Waitarakao is largely confined to Seadown Drain with limited flow directly to the shooting complex due to higher ground levels and vegetation cover, reducing drainage from the floodplain.

Under the proposed scenario, lower maximum water levels (~100 mm) are predicted on the floodplain north of the wastewater ponds, compared to the present-day configuration. This translates to a less inundation, due to increased conveyance through the proposed drain. Overflows occur from the drain, but they remain within the undeveloped area. The proposed configuration provides greater drainage of the flood plain for small to moderate sized events, when the scheme is not overwhelmed by excess flows.

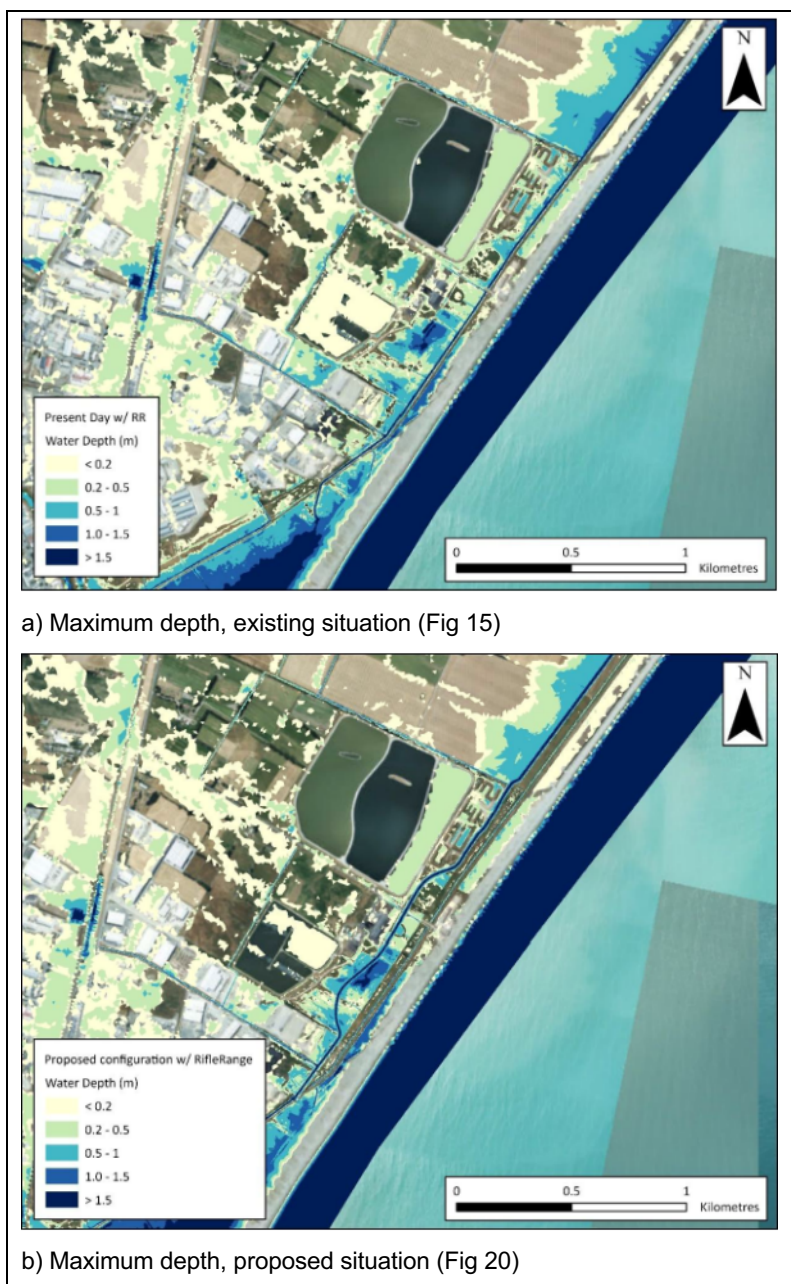


Figure 29: Flood assessment model predictions for 20 year ARI rain event (figure references in brackets are those in the flood assessment)

8.4.3 Summary

The proposed realignment is predicted, under the modelled scenarios, to focus Ōpihi breakout flows more into the drain system, and reduce flood impacts in the adjacent land to the west. It is also predicted to reduce surface flooding during small to moderate rainfall event.

8.5 Contaminated land

Contaminated land disturbance has two main potential effects.

Contaminants in soil can be transported to and cause adverse effects in other receiving environments. Examples include contaminated construction stormwater runoff into surface or groundwater, and passive discharges from undisturbed areas of contamination. These potential discharges are assessed in sections 8.11 and 8.12 of this application but are informed by the following discussion.

Contaminated soil can also create effects on human health or the environment via direct exposure or through the secondary pathways such as crop growing. Where this soil is disturbed, these potential effects are governed by the NESCS and a separate consent has been obtained from TDC under those regulations. Disturbance of contaminated land will be governed by that consent, including the use of a CLMP during site works (the CLMP is currently in draft).

Current knowledge of site conditions indicates that soil disturbance can occur over most of the works area without restriction. However, the draft CLMP identifies that three locations require more attention.

1. The vehicle compound at HHL includes site soil that is contaminated by hydrocarbons in a shallow layer and which will require excavation, containment and capping.
2. Soil adjacent to the shooting complex require further investigation and may need specific management during the works
3. The existing FBNZ stormwater basin/pond also requires further investigation before its future use can be determined.

The draft CLMP states that the off site disposal of contaminated soil does not appear necessary, but if it becomes so then the soils will be tested and disposed of appropriately.

These investigations and future handling of site soils under the NESCS are separate from these consents.

The draft CLMP also includes environmental controls to be implemented at the site.

Measures regarding air contaminants are outside the scope of consenting (air discharges are a permitted activity) but they will be incorporated into the dust management plan to be prepared in compliance with the applicable rule.

The recommended measures for controlling erosion and sediment runoff will be incorporated into the overall site environmental management plan.

8.6 Aquatic ecology

Effects on aquatic ecology can come about from direct habitat impacts such as bed disturbance, the alteration of flow paths and the closing of sections of waterways; or due to the discharges from construction works, which have an impact on water quality. This section addresses the first effect. The effects of discharges into waterways are assessed in section 8.12.



8.6.1 Effects due to construction and drain retirement

The Ecological Assessment considers potential effects on freshwater ecology from the proposed works. The key potential adverse effects are sediment production and fish stranding and the Ecological Assessment concludes that “*these potential effects are short-term and readily mitigated using best practice construction methods*”¹³. Instream Ecology has provided a further letter on the first matter, and water quality impacts are discussed in section 8.12 of this application.

With regard to fish populations, the Ecological Assessment states that straightforward mitigation is available by keeping the old drain open at its south end, and relocating populations as necessary during the works (supported by a Fish Management Plan prepared by suitably qualified experts and representatives of Arowhenua Rūnanga). It is not envisaged that all fish would be removed, but that enough would be to ensure population of the new drain. The bottom end of the existing drain will remain connected to allow fish to leave it as flows drop.

Although a Fish Management Plan has not been prepared at the time of lodging this application, CRC Rivers Environmental staff advise that the following general approach will apply.

- An adaptive approach will be taken throughout the project, based on day to day construction methods, local conditions and actual fish populations encountered at the time.
- The existing drain will be cut off slowly, over a period of approximately one week, and fish populations will be monitored during that time.
- After termination of flow into the existing drain, it will not be practical to remove the entire existing population due to the size of the waterbody. The drain will progressively lower and it is expected that the fish in it will leave it in favour of the new system or downstream. The drain will not be disconnected at its downstream end.
- Small scale fish relocation may be necessary at times and this will be undertaken as needed in accordance with accepted conditions and protocols.
- Rūnanga representatives will be involved with this work management.
- The drain water will likely be monitored for dissolved oxygen content and temperature, at least once per week but probably daily during the first week.
- The side drains largely do not have significant populations and are degraded environments. If fish relocation is required this will occur as needed during the works.
- Overall, the adverse effect on fish populations is expected to be small.

The drain will be monitored at least annually; if any reaches of it have become disconnected and isolated they will be surveyed for fish and identified populations relocated.

8.6.2 Fish passage

The bulk of the realignment will provide no barriers to fish passage once it is connected and operational.

No culverts or backflow prevention structures require NESF consents; however, some are being installed in small s 9 swales. There are all small swales and ditches which will be ephemeral and are unlikely to support significant fish populations.

A manual flap gate will be installed on the extended culvert within the Aorangi Road south drain. This does not require NESF consent. The flap gate will only be manually closed to minimise

¹³ Ecological Assessment p8



flooding during a significant flood event where the Ōpihi River has breached or is likely to breach its stopbank and flood south.

While the backflow structures will impede fish passage during high flow events, this will be during unusual high flows, temporary and likely to have an adverse effect which is negligible or less than minor.

8.6.3 Inanga spawning

As discussed earlier, potential effects in inanga are managed by resource consents CRC175009, 175010 and 175011 and therefore these effects do not require consideration in this application.

8.7 Terrestrial ecology

The site has been assessed for terrestrial values by both Greg Stanley (CRC Team Leader Braided River Revival) and Jean Jack (CRC Team Leader Land Ecology). Other than the Wetland values identified by Ms Jack, and discussed further below, there are no other noted terrestrial ecology values that require protection. The area of works is mostly covered by rank exotic grass. Disturbed land above the water mark will be initially restabilised with grass to reduce sediment run off, to provide quick growing replacement habitat and edge shading to the new channel. The project includes a minimum of 2 ha of indigenous plantings which will focus on the areas closest to the new channel. The established grass will be spot sprayed where required to enable the indigenous planting. Indigenous plants will be locally sourced species suitable for the environment and will be maintained for at least three years, until they are self-sufficient.

8.7.1 Wetlands

The works will alter three existing wetlands (the previous drain alignment, the retention pond wetland and the pit-derived wetlands).

The realignment of the drain through the retention pond and pit wetlands will lower water levels in them by approximately 1 m, as these levels are higher than those in Phillips Lagoon, the source of the drain. This will result in some loss of wetland open water extent and the pit wetlands will change from reliance on groundwater and surface water to additional inputs from the drain system including occasional inundation during high flow events. The Seadown Drain will lose its inflow as discussed elsewhere in this application.

The wetland assessment assesses the potential effects of the proposed realignment on these wetlands and provides recommendations for management and mitigation in conjunction with the freshwater ecology assessment. The potential effects have been assessed by considering the value of the wetlands, and the magnitude of effects. The values are described in the delineation report appended to the wetland assessment, and the magnitudes of effect have been assessed using the guidance descriptions of the Environmental Institute of Australia and New Zealand (EIANZ), which includes descriptors ranging from negligible through to very high.

The four wetland areas have a combined area of approximately 3 ha

Of the four affected wetlands, two – the Seadown Drain and the pit-derived wetlands - are considered by the wetland assessment to be ecologically significant. The wetland assessment states that overall, the realignment will result in the loss of approximately 0.6 ha of the existing 3 ha of wetland within the phase 1 project area.

Seadown Drain

The realignment will remove flowing water from the existing drain and pass it down the new one. As part of this process, there will be a period of approximately two years when the new system



must stabilise and develop a weed community and ecological populations. The wetland assessment considers that the adverse effect of this will be temporary and of a low level and the realignment will “*restore a similar extent and maintain the key value of this habitat – its function to support via water flows and connectivity the ecologically significant habitat of the Waitarakao/Washdyke Lagoon.*”¹⁴ However, this function will be temporarily impaired until the realignment works are complete.

The wetland assessment concludes that:

*These effects are considered of low magnitude on the values of the Seadown Drain wetland and would result in a temporary and low level of effect.*¹⁵

Pit-derived wetlands

Approximately 0.5 ha of the existing 2.14 ha footprint of the wetland will be lost, including an area of raupo, which the wetland assessment considers to be a moderate to high magnitude effect. The pit-derived wetlands will be connected to the realignment and designed for variable water levels to rise and full over wetland vegetation. The area of indigenous vegetation will increase, but the area of open water may decrease. However, the wetlands are considered to have a low level of ecological significance and the potential effect is assessed as low.

Other wetlands

The retention pond wetland is described in the wetland assessment as having “*negligible ecological value*”¹⁶. This pond will be replaced with a similar, but larger feature. Although the magnitude of the effect is described as moderate to high, the overall effect is described in the wetland assessment as very low.

The wetland assessment states that the small shooting complex wetland will be permanently lost, but that the wetland has negligible ecological value and the overall level of effect is low to very low.

Management of effects

The wetland assessment acknowledges that some loss of wetland area will occur due to design necessity. It assumes that the following measures will occur:

- Remediation of some of the lost wetland area will be achieved by 2 ha of new planting, although an area of shallow water will not be replaced.
- Areas of higher ecological value such as Raupo wetland are being avoided by construction where possible.
- Raupo recolonises easily and will re-establish into areas of shallow water created during the works.
- Sediment discharges into existing wetland areas will be minimised.
- Habitat connectivity will be maintained or disrupted only temporarily.
- Remediation planting directly adjacent to water bodies will largely only occur once the system has stabilised, particularly regarding water levels. However, planting of the berms of the new drain will occur immediately.
- The existing Seadown drain will be left and is expected to naturalise with wetland values.

¹⁴ Wetland assessment p13

¹⁵ Ibid p 13

¹⁶ Ibid p 14



Summary

The wetland assessment summarises the effects (after the application of management measures) and the management measures in the following table.

Table 10: Summary of effects on wetland features and effects management (Source: wetland assessment Table 1)

Ecological Feature	Level of Effect Prior to Effects Management	Effects Management	Level of Effect Post Effects Management
Seadown Drain wetland	Low (temporary)	Mitigation measures as per Burrell (2025); Remediation. Drain habitat & connectivity reinstated with realigned channel.	Negligible
Rifle range wetland	Very Low	Remediation. 2-7 ha planting addresses the 0.01ha loss of existing extent.	Negligible
Retention pond wetland	Very Low	Remediation. 2-7 ha planting addresses the 0.05ha loss of existing extent.	Negligible
Pit-derived wetland	Low	Mitigation measures as per Burrell (2025); Remediation. 1.6 ha planting - allowing for remaining wetland space as open water address the 0.5ha loss of existing extent.	Negligible

Overall, effects on wetland values are anticipated to be less than minor.

8.8 Avifauna

The realignment area appears to have low avifauna values. However, a formal survey had not been undertaken at the time of preparing this application and the potential presence of significant species cannot be eliminated. Some works are likely to occur during nesting seasons.

A bird survey will be undertaken before works commence, under a standard template used by the CRC. The survey will, if necessary identify exclusion areas for construction operators or other mitigation practices needed.

It is anticipated that the final area, following restoration and improvement planting, will provide substantially improved bird habitat in comparison to the current environment which is dominated by open grassland.



8.9 Ground and surface water quantity

The realignment of the drain has the potential to affect groundwater levels in the area around it, and possibly impact surface water bodies and nearby groundwater users.

WGA Limited (the groundwater expert for the project) made a preliminary assessment of this potential effect¹⁷ and states:.

We have simulated the proposed Stage 1 drain configuration, as requested, to assess the potential for groundwater inflow.

The model simulation uses drain cells along the proposed drain alignment, which allows groundwater to enter the drain should groundwater head exceed the drain stage. The drain stage was conservatively set at 0.9 m RL at the upper end of the proposed drain, and 0.6 m RL at the lower end of the proposed drain, where it enters Washdyke Lagoon. The drain stages for intermediate points along the drain alignment have been calculated using a simple linear interpolation applied between those two end points. A uniform hydraulic conductivity of 3.1 m/day was applied to the drain bed, based on the calibration of the larger groundwater model.

The results indicate an increased discharge of groundwater to the drain of approximately 11 L/s, or about 1% of the total simulated flows in the drain. The maximum simulated drawdown was 0.1 m (see attached). Note that these results are based on steady state models, which mean they represent long-term outcomes.

This conclusion is supported by the more detailed Groundwater Assessment, which indicates drawdowns of 0.03 to 0.05 m in wells along the Phase 1 realignment.

It is also noteworthy that as discussed in section 5.11.2 of this report, only one well (K39/0024, a small shallow take for irrigation, approximately 90 m from the new drain alignment) is potentially sensitive to changes in groundwater level due to the realignment. TDC owns that bore and it has provided written approval of these applications. Two other nearby active domestic takes (from wells K39/0257 and 0258) are from deep screens and not expected to be affected by the proposal. FBNZ owns those bores and has also provided written approval.

The above assessment discussions indicate that the effects on neighbouring groundwater users—including these three wells—and surface water bodies are likely to be less than minor or negligible.

8.10 Diversion of water

Water will be diverted in three s 13 waterways – the existing drain (diverted into its new alignment), the No 1 drain, and the drain on the south side of Aorangi Road. Other small drains, which are not identified as natural but modified rivers/watercourses, will also be diverted, but these drains are shallow, ephemeral and generally have very low values, and effects on them are anticipated to be negligible.

8.10.1 Diversion out of the existing drain, and drain retirement

This diversion will be permanent and has two components. The first is the deposition of material into the existing drain to form the diversion, and the second is the loss of water input to that drain.

The deposition of material will occur over a small area of the drain footprint, approximately a 30 m length, and will block the drain completely. This will be one of the last stages of the project and that area of the drain bed will be lost. The area of the diversion will form a turning bay for maintenance

¹⁷ Email from WGA to Chris Fauth (CRC) 9 March 2026



vehicles. A discharge of sediment will occur into the drain but as discussed elsewhere in this assessment the effects of this are likely to be less than minor.

Once blocked, the water level will reduce, but inputs will still occur from groundwater seepage and rainfall and the drain will stay connected to the system at its downstream end. None of the current side drains that feed the existing drain will continue to do so—they will all be routed into the new drain system inside the new stopbank.

Impacts on fish populations are assessed elsewhere in this application but in brief, fish are expected to move out downstream. This will be monitored and managed by CRC staff and rūnanga.

The drain will be retired with management by CRC and Arowhenua Rūnanga. It will support fish populations but is too big for manual fish relocation over its entire length. With time, it is expected to fill with sediment and plant life and eventually reduce to a wet area rather than a watercourse. Monitoring will continue during this time and an important component will be to ensure that fish are removed from areas that become isolated from the downstream exit.

8.10.2 Diversion of side drains

The number 1 drain, and the Aorangi Road south side drain, will be permanently directed, on their existing alignments into the new Seadown Drain and will be cut off from the existing drain. This will occur during the applicable stages of construction as discussed in section 6.2.5. The previous drain reaches between the new and existing main drain alignments will either be abandoned (No 1 drain) or partly abandoned with some of the reach to be regraded and connected to the new drain via localised drainage channels (the Aorangi Road Drain).

The key effect of the side drain diversions will be the loss of some riverbed. As already discussed, the drains do not have high ecological value and fish populations can easily be managed under a Fish Management Plan.

8.11 Groundwater quality

Much groundwater is likely to be exposed during construction, effectively forming surface water bodies. Similarly, areas of surface water are closely connected to groundwater in the area, given its low lying and wet nature. Discharges to surface water are likely to pass quickly to groundwater.

Given this close linkage, a specific discussion of groundwater quality impacts is not provided in this section. Instead, surface water quality effects are assessed and it is considered that given the following conclusions, impacts on groundwater are likely to be less than minor.

8.12 Surface water quality

Effects on surface water will primarily result from construction earthworks and the associated discharge of sediment. Other effects could occur because of:

- The disturbance of contaminated land (including the accidental discovery of contaminated material).
- Movement of the drain closer to the TDC wastewater ponds and WWTP.
- Construction equipment operation and malfunction.

8.12.1 Sediment discharges from earthworks

Earthworks will occur predominantly in areas that fall under section 9 of the RMA, as the realignment will occur off line and the existing drainage water will be diverted into the system as



the final construction step. At this time, the new drain will effectively become a section 13 waterbody.

The works will occur under an Erosion and Sediment Control Plan (ESCP) which will be prepared and implemented in accordance with the Erosion and Sediment Control Toolbox for Canterbury (ESCT)¹⁸.

Section 13 earthworks

Works in the beds of rivers will occur:

1. Where the realigned drain ties into the existing main drain and No 2 drain at the north extent of the project. At the end of works, the main drain will be isolated by depositing fill into it. This area will become a turning bay for maintenance vehicles.
2. Where the realigned drain crosses the existing Aorangi Road south drain, where the inland bank will be built across the road, and the existing culvert extended.
3. Where the realigned drain crosses the existing No 1 drain where the inland bank will be built up the sides of the drain.
4. At the southern extent of the works where the new drain ties into the existing system. This area will be completed approximately halfway through the project.
5. During the stabilisation phase to repair any erosion issues within the new Seadown drain after water has been diverted into it.

Sediment discharges will occur into the waterways, and mitigation and management will be required. The waterways all currently flow into the existing drain and during the works they have the potential to be conduits of sediment.

Instream Ecology Limited has provided a technical assessment of the potential effects on freshwater ecology of these works, and recommended mitigation strategies (The sediment report, attached in Appendix 16). The sediment report states that the following methods are important for avoiding and mitigating sediment discharges from the works.

- The proposal to build the alignment offline from the existing system.
- Keeping a 20 m buffer between then works and the tie in points. However, on further discussion it has been agreed that this buffer could be reduced to 5 m and this is reflected in the suggested conditions attached to this application.
- Sequential construction up the alignment with avoidance of wetlands and side drains.
- Opening the lower tie in early, and the upper tie in at the end of the project, to maximise hydraulic normalisation, settling of sediment, and the movement of aquatic life to the new channel.
- Hydroseeding new banks as quickly as possible, to stabilise them.
- Keeping a macrophyte community in the drain downstream of where the new system will tie in to it.
- Potentially using silt curtains if this is required and practicable.

¹⁸ <https://esc.canterbury.co.nz>



The sediment report goes on to state that

*the ecological effects of sediment generation caused by the proposed works will most likely be small, with any sediment effects being localised and of short duration*¹⁹

It states that the existing environment is characterised by a fine sediment floor, meaning that the species are already tolerant of this material. In addition, the existing environment includes periodic influxes of sediment from maintenance operations, which while not ecologically desirable is the reality of the situation.

The sediment report cites an example that its author was involved with, the realignment of a reach the Cashmere Stream in Christchurch, which was similar to this proposal. It states:

Approximately 800 m of Cashmere Stream was

*relocated into a new alignment as part of the Te Kuru Wetlands restoration and flood resilience. project. As with the proposed Seadown Drain construction scheduling, water was gradually introduced first to the downstream end of the new Cashmere Stream alignment, before diverting all flow into it. I was present when flow was transferred to the new alignment and observed that the water cleared quickly, following an initial slug of dirty water. Ecological monitoring one year after the realignment found that the old and new alignments had comparable invertebrate and fish communities.*²⁰

The sediment report concludes that:

*In summary, I consider that the proposed construction methodology should minimise potential for sediment discharges to waterways, that any potential effects would be less than those that occur as part of routine waterway maintenance, and therefore aquatic ecosystems are unlikely to be adversely affected by the construction activities beyond a localised, short- term disturbance.*²¹

The sediment report recommends the following monitoring²² (wording verbatim but some formatting altered):

1. Daily checks for potential erosion of project areas that could result in sediment entering wetlands and drains.

These checks should be made by the contractor and any potential sediment sources to waterways isolated and remediated to prevent further erosion and sediment discharges.

2. Weekly checks of grass establishment in hydroseeded areas.

If the grass strike rate is inadequate, assess why and remedy (e.g., install irrigation and/or sow additional grass).

3. Sample water clarity or turbidity immediately prior to each tie-in.

Clarity or turbidity in each new section should be no more than 35% greater than within the downstream section it is being exposed to.

If the clarity/turbidity difference is greater than 35%, then the tie-in must be delayed until the difference is within 35%.

¹⁹ Sediment report p 3

²⁰ Sediment report p 4

²¹ Sediment report p 4

²² Sediment report p 4 - 5



The clarity or turbidity measurement may be made by the contractor, using a SHMAK clarity tube or calibrated turbidity meter, and provided they have had adequate training and provided that there is a follow-up audit of their methods.

The training, monitoring programme, and audit would need to be done by someone with experience taking and interpreting water quality measurements.

The 35% clarity/turbidity difference is consistent with receiving water standards for Spring-fed – plains water quality class waterways in the Canterbury Land and Water Regional Plan. There is no clarity receiving water standard for coastal lakes in the plan.

If the clarity difference exceeds 35%, then the new section of offline waterway shall not be tied into the existing channel until the clarity or turbidity difference drops below 35%.

Section 9 earthworks

Most of the earthworks will fall under s 9 of the RMA. However, some will occur in existing small swales that are not assessed as being rivers. In addition, extensive works will occur in existing wetlands.

The section 9 swales will be managed as discussed above for s 13 drains, where this is necessary. Most are small and ephemeral (likely dry during works) and carry very little if any ecological value. Works in them will have very little impact. All will be assessed prior to the commencement of works, and managed if necessary, in the same manner as the larger waterways discussed above.

Effects on wetlands are discussed earlier in this application.

Potential discharges into Waitarakao

It is approximately 150 m from the southern extent of the works to Waitarakao. Most of the works are occurring further up the system, but those near the lagoon could discharge sediment into it. The most likely source would be the connection of the lower end of the new drain to the existing system and it is anticipated that under the worst scenario, visible sediment from the works could be present in the lagoon for up to 24 hours following key works. All practicable efforts will be made to reduce sediment discharges during that period and it is noted that:

- The lagoon is shallow and subject to sediment fluctuations due to wind action.
- Sediment is also regularly introduced from tributaries.

Sediment from the works is likely to be very similar to that from those natural sources, and will be an infrequent occurrence during the construction period. Therefore, the adverse effect is considered to be less than minor.

8.12.2 Contaminated land disturbance

Effects related to the NESCS, although outside the scope of these applications, are discussed in section 8.5. However, the disturbance of soil, primarily during construction, could lead to impacts on water bodies. The CLMP indicates that site soils are largely suitable for re-use without any restriction, but some areas require additional management such as isolation and capping. It also recommends measures to control runoff, stating:

*Earthworks shall be undertaken in accordance with the Sediment Control Guidelines (2019). Compliance with the procedures set out in this guideline should be sufficient to manage the risks from sediment and erosion during the excavation works given the small scale.*²³

²³ CLMP p 21



The recommended measures are summarised in the CLMP prepared by a Suitably Qualified Expert and are all standard approaches consistent with current guidance (for example the ESCT). These measures will form part of the overall sediment management strategy at the site to be incorporated into an overall site environmental management plan.

It is considered that the presence of mostly uncontaminated soil at the site, management of soils in accordance with the NESCS and the CLMP, and the use of standard sediment control measures will ensure that the adverse effects of the discharge of contaminated soil into surface water will be less than minor.

Although unlikely, the accidental discovery of contaminated material during construction is a possibility, and standard consent conditions are suggested for this.

8.12.3 Timaru District Council wastewater pond seepage

Resource consent CRC242246 for the newer northern ponds allows the seepage of contaminants from them at a maximum discharge rate of five litres per square metre per day, with associated monitoring conditions including surface water quality sampling in Seadown Drain. It is worth noting that there are no consequential actions required based on available results from those water quality samples. No seepage discharge consent exists for the southern ponds.

The drain is being shifted closer to the ponds, with the possibility that the concentrations of contaminants in the drain could increase by moving the drain closer to the source.

TDC has provided written approval of the applications.

8.12.4 Other contaminants

Construction activities have the potential to discharge contaminants from accidental occurrences such as spills, burst hydraulic lines, leaks from engines, etc. Equipment is likely to be refuelled at the site but this will occur away from any surface water bodies and no consent is required for that activity.

As far as practical, excavation will occur from the banks of water bodies to minimise machinery operation in water. Accidental discharges will be managed via standard consent conditions for earthworks, and it is considered that this effect will be less than minor or negligible.

Accidental contaminant discoveries are also managed under the NESCS consent.

8.13 Other consent holders

8.13.1 Consents tied to flow recorder

Work is currently under way within the CRC to establish a new permanent flow recorder site in the Seadown Drain, determine the relationship of it—and interim sites—to existing data, and assess the impacts of this on consent holders. Those consent holders include ones that currently hold permits with minimum flow conditions tied to the Seadown Drain, and potentially others whose status might be altered by changing the drain's location.

The only potential effect on these consent holders in Phase 1 of the project appears to result from changes to how compliance with minimum flows will be measured. Work, including interim compliance strategies is under way to resolve this and the consent holders are not considered to be affected person for these Phase 1 applications.

As discussed in section 5.9.5, a CRC science memorandum explaining the work that is under way to resolve this is attached in Appendix 8 and has been supplied to consent holders who are monitored using data from the existing recorder.



8.13.2 Farm Brands New Zealand Limited

As discussed earlier in this application, the stormwater system that is subject to FBNZ's discharge permit will be affected by the realignment. However, to recap, the applicant proposes to reconfigure the system so its design and layout remain consistent with the requirements of the consent, an approach that has the approval of FBNZ and the CRC's compliance section. FBNZ has provided written approval of these applications.

The earthworks for this reconfiguring will occur during the realignment when it has reached the FBNZ area. There will be some disruption to FBNZ's stormwater discharge system during that period; however, the works will take a relatively short time the existing pipework will largely not be impacted, and an interim discharge point can easily be provided at the time. It is also noteworthy that the pond sees very little use as a stormwater device and the water in it is a mixture of ground and rainwater.

FBNZ's consented water takes are discussed elsewhere in this application and it is considered that the proposal will have no adverse effects on them.

8.13.3 Hilton Haulage Limited

The works will cross some of HHL's land and affect some of its infrastructure and related consents. This has been discussed extensively with HHL and is occurring with its agreement and support. However, HHL has not provided written approval of these applications (refer Appendix 1).

8.13.4 Timaru District Council

TDC is potentially affected by several aspects of the proposal of which the main consented one relates to seepage from the wastewater ponds, discussed in section 8.12.3.

Active and regular communication and engagement with TDC has occurred during project planning and resource consent preparation. As discussed, TDC has provided written approval of the applications.

8.14 Natural hazards

The new stopbank will provide the drainage system with extended protection from coastal encroachment, and the inland bank will provide flood protection to the neighbouring industrial land in the event of a large Ōpihi River flood. These are considered to be positive effects.

PTDP Rule NH-R7 requires evaluation against several other natural hazard outcomes. Most are addressed elsewhere in this application but the outstanding matters are assessed below.

1. The ability for the regionally significant infrastructure to be efficiently recovered after a hazard event.

Maintenance of the existing system after large events has been possible throughout its life and there is no reason to consider that additional difficulties will arise after the realignment. However, it is noteworthy that the new stopbank is designed as a coastal protection measure, not a freshwater flood barrier, and the intent is that in a large Ōpihi flood it would be breached and release floodwaters to the sea. Repairs would be required and this is factored into the ongoing management of the asset. The inland bank will be more resilient to flooding, and repairs are anticipated to be straightforward. No additional issues arise with the new drain.



2. the extent to which the proposal creates natural hazard risks on adjacent properties and any risk to human life.

As discussed earlier, the realignment potentially increases flood potential over the land to its west, and the inland bank is proposed to address this. The effect is also mitigated by the potential for the stopbank to breach during large flood events and this effect is considered to be less than minor. No risk to human life is envisaged during the foreseeable operation of the new asset, that does not already exist in the current situation.

3. the risk to the building or structure taking into account:
 - a. the nature of the building, structure or activity, including its materials and ability to be relocated;
 - b. the anticipated lifespan of the building, structure or activity
 - c. the level of uncertainty of the projected future shoreline, including whether the erosion is very likely within a medium term as opposed to more uncertain over a longer-term period.

This matter is already addressed. The key threats are from coastal erosion and Ōpihi River breakout flood events; the assets are robust, simple and straightforward to repair/maintain, and the project is initiated in response to shoreline retreat.

8.15 Effects of earthworks

Sediment discharges from earthworks have already been assessed. This section considers the matters specified by Rule 5.176 of the CLWRP, and no other potential effects are considered to be applicable.

1. *The actual and potential adverse environmental effects on the quality of water in aquifers, rivers, lakes, wetlands;*

Addressed elsewhere in this application.

2. *Any need for remediation or long-term treatment of the excavation; and*

Effects due to the presence of contaminated soil are assessed earlier. The site will be managed in accordance with a TDC NES Soil consent and a CLMP, and the nature of the contamination known to be present indicates that potential adverse effects from residual contamination are likely to be less than minor. No remediation or long term treatment appears to be necessary.

3. *The protection of the confining layer and maintaining levels and groundwater pressures in any confined aquifer, including any alternative methods or locations for the excavation;*

The geotech assessment (Appendix 9) includes drilling logs from three boreholes along the realignment route. The drill logs each show a layer of surface material underlain by relatively uniform sandy gravels with no indication of artesian flow. While groundwater is shallow in the area, it appears that it is not under upward pressure, and that the risk of damaging artesian aquifers is very low.

In addition, excavations for the installation of the new Aorangi Road box culvert did not encounter artesian conditions in groundwater.

Although the risk is considered to be very low, a consent condition is included to manage the effects of unanticipated aquifer penetration.

4. *The management of any exposed groundwater;*



Groundwater will be exposed by the excavations. The potential effects of discharges are assessed earlier in this application, and no other adverse effects appear likely

5. *Any adverse effects on Ngāi Tahu values or on sites of significance to Ngāi Tahu, including wāhi tapu and wāhi taonga.*

Addressed elsewhere in this application

8.16 Traffic and road networks

Aorangi Road receives a small amount of traffic use. It will generally remain open during the works period, but occasional closures may be required, primarily when the road surface is raised in the area of the culvert, and new accessways installed for the shooting complex and FBNZ.

Road closures and works will be undertaken in consultation with TDC and specific permissions obtained at the time. Without these permissions, the specific works could not proceed and it is not considered necessary to define exact requirements, or to obtain the permissions at this stage.

Once the realignment is complete, Aorangi Road will be closed other than to authorised traffic, from near the new culvert to its current termination at the beach. This is with the agreement of TDC and will assist in reducing vehicle damage to the beach. Access will be via a locked gate or similar restriction. Car parking is likely to be provided at the shooting complex to enable foot access to the beach.

8.17 Noise

Consent is required under the PTDP as an RDA, and the matters of discretion are:

1. *the level, hours of operation, duration and characteristics of the noise; and*
2. *proximity and nature of nearby activities and the adverse effects they may experience from the noise; and*
3. *the existing noise environment; and*
4. *effects on amenity values and anticipated character of the receiving environment; and*
5. *effects on health and well-being of people; and*
6. *any noise reduction measures; and*
7. *the practicality of mitigating noise.*

The existing noise environment is relatively quiet with the loudest source typically being the ocean unless shooting or episodic industrial noises are occurring. Consent is required due to the absence of a noise assessment. For the following reasons, such an assessment is not considered necessary, but if the circumstances change then one could be carried out.

- The noise emitted from the activities will be typical of earthworks in soft material, and the works will occur only during standard construction hours.
- The receiving environment has a very low sensitivity to noise. The adjacent land that is not open and unused is industrial, used for wastewater treatment, or forms the shooting complex. The nearest dwelling is 750 m away.
- The activity will be temporary and the area is not intensively used by people (particularly given that Aorangi Road will be closed some of the time).

No noise reduction or mitigation measures are proposed and the potential adverse noise effect is considered to be less than minor.

The OTDP requires in Performance Standard 5.18 that in the R3 zone:



Noise levels shall not exceed 50dBA L10 at the notional boundary of the nearest household unit on any other site between 7.00am and 10.00pm on any day, and 40dBA L10 and 70dBA Lmax at all other times, unless specific noise levels are provided for the activity elsewhere in the District Plan.

The method of measurement for construction noise is specified in General Rule 6.21.

Given the distance of 750m to the nearest dwelling, it is highly unlikely that these noise criteria will be breached.

8.18 Visual amenity

The realignment is occurring in an area where a drainage system is part of the environment. The new system will be consistent with this.

The existing area is open grassland with relatively low inherent visual amenity but expansive coastal views to the east. The view to the west is industrial in nature in the foreground but opens up to wider views to the mountains. The realigned system will not alter these views but will introduce additional infrastructure elements. The drain will be sinuous and have the appearance of a natural waterway, but the stopbank will be more obtrusive, although it will be positioned west of an existing stopbank which is already a substantial visual feature. The inland bund will be immediately adjacent to industrial or utility areas and is likely to have little visual impact.

The finished drain will be planted along its length, and new indigenous wetland plants will be included in the existing wetland areas where needed. It is envisaged that community planting will continue, but that is outside the scope of these applications.

Considering these factors, the potential adverse effect on visual amenity is likely to be less than minor.

8.19 Presence of utilities

The system will be installed into wetland areas and across land where a consent is required for this purpose (including land zoned G1Z, where a non-complying activity status is triggered).

8.19.1 Wetlands

The presence of the utility in wetland areas is likely to make a long term difference to their hydrology by introducing moving water which is subject to raising and lowering in response to inputs to the drainage system. The system is likely to be different to that currently experienced by the wetlands and it is possible that vegetation patterns will change with time. However, the amount of wetland vegetation present in the area will increase substantially and the net effect is considered to be positive.

8.19.2 Other land including that zoned G1Z

This aspect of the proposal is one of the triggers for a non-complying activity status. Most of the realignment works are on open land owned by TDC. This land is not set aside for future development, and it has very low value as industrial-zoned land. The presence of the drainage system is already a part of the environment across the entire area, and has been for many decades.

However, at the western side, the inland bank will be constructed around the FBNZ property and tie into existing TDC wastewater infrastructure. Further south, the inland bank will be built on the boundaries of land owned by HHL, Quarry Capital and PSE. The drain realignment will also cross land owned by HHL and Quarry Capital.



All parties potentially affected by these works are aware of the need for them, and the positive effects it will have. The proposal will improve the flood resilience of the developed GIZ area. Written approvals have been provided and the effects are assessed as less than minor or negligible.

8.20 Excavation in the coastal hazard zone

RCEP Rule 9.2 retains discretion over the following matters.

- a. whether the activity is likely to exacerbate coastal erosion; and*
- b. whether the activity is likely to lead to adverse effects from natural hazards on any other property, (where property has the same meaning as in Section 2 of the Building Act 1991);*
- c. provision for the removal of any structure or parts of any structure that are rendered unusable through coastal erosion.*

It is reiterated that this consent is required for the excavation of the drain, not the installation of the stopbank (a structure).

8.20.1 Exacerbation of coastal erosion

It is not anticipated that the new drain will exacerbate coastal erosion. The stopbank, while not itself requiring consent under the RCEP is part of the wider drain system which does require consent. The stopbank's purpose is to protect the drain from coastal erosion and overwash and is not anticipated to exacerbate coastal erosion.

Coastal erosion has not yet reached the existing alignment, but the coastal report states that the existing system is likely to provide some protection for the next 10 – 15 years after which, until approximately 2050, the existing stopbank will be increasingly threatened and compromised. Following that it is anticipated that the existing stopbank will be incorporated into the beach profile and the new one will be providing the main protection for the drain. The proposal is to respond to the impacts of coastal erosion, and is not anticipated to exacerbate it.

8.20.2 Adverse effects from natural hazards on any other property

The above statements apply in this regard. The drain, which requires consent under the RCEP, is protected by the stopbank. This system will mitigate the impacts of coastal erosion and therefore is mitigating natural hazards on other properties. The new stopbank will tie to existing systems at its northern and southern ends and at these locations, the situation will be the same after as before the realignment. Therefore, coastal erosion effects will not be intensified at the ends of the realignment.

8.20.3 Removal of structures rendered unusable through coastal erosion

The main structure being installed is the stopbank, which does not require consent and will naturally erode as the sea encroaches. This is occurring with the previous stopbank which is still visible in the beach profile in many locations. It will be several decades at least before the system is compromised to the point that it is unusable. However, removal is not practicable or beneficial and instead it is envisaged that the existing drainage assets will be overrun by coastal processes as is occurring with the older alignment.

As this aspect is outside of the consent requirement, no conditions are required.



8.20.4 Conditions

It is recommended that the consent granted for this activity:

- describes the location of the system including in relation to the coastal hazard lines in place at the time of granting the consent and
- Includes a condition requiring that the drainage system does not exacerbate coastal erosion on neighbouring properties.

8.21 Effects on the coastal environment

8.21.1 Water

Freshwater inflows will continue to enter Waitarakao at the same point and in the same amount, and discharge to the coast at the same location. No changes to the lagoon are anticipated.

Construction discharges are occurring some distance from the lagoon and will be temporary and highly localised. No sediment inputs to the lagoon are anticipated as a result of the works.

8.21.2 Natural character in the coastal environment

No works are proposed on the coastal side of the beach crest.

The realignment will increase the amount of drainage infrastructure present in the coastal environment, given that the old system is being retired in place. The PTDP coastal high natural character overlay applies just over the existing drain and east of it to the beach, but does not extend into the realignment area, which is an area of open grassland and does not have extensive natural character values. The realignment will not be visible from the beach until coastal erosion eliminates the existing beach profile and stopbank, and it is considered that the realignment, including construction activity, will not have an adverse effect that is less than minor.

Restoration and rehabilitation of natural character will be achieved by the planting and restoration works that will occur after the realignment is complete, and it is considered that this will enhance the character of the coastal environment compared with the current situation.

8.21.3 Kāti Huirapa values

Kāti Huirapa is represented in Timaru by Te Rūnanga o Arowhenua. Effects on Arowhenua, and consistency with the Iwi Management Plan of Kāti Huirapa are assessed elsewhere in this application.

8.21.4 Natural elements and landforms

The existing terrain is generally flat other than for the beach profile, existing stopbank and drain, and the TDC wastewater pond structures. The realignment project will add similar features but these are consistent with the existing environment which, as already stated, does not have high values.

8.21.5 Access to the coastal area

During construction, beach access from Aorangi Road will be closed and impassable. Once the works are complete, vehicle access to the beach will be restricted via a locked gate at the new culvert, with a new car park to be installed, but foot access will be available at all times. TDC is in agreement with this configuration, which will add approximately 120m of walking for public access at this location. While the restriction on vehicle access may be an adverse effect for a small number of users, this is likely to be offset by the positive effect on the beach environment brought about by the cessation of vehicle use.



8.22 Scale of the activity and site coverage

This evaluation primarily relates to the status of the stopbank as a structure. It has been designed to have a minimal footprint while structurally sound for its intended purpose, and there is little scope to reduce this. The existing stopbank is being abandoned and while removing it would lessen the overall footprint of the scheme, leaving it in place provides substantial additional protection from coastal processes, and the cost would be prohibitive.

Given the nature of the area and the fact that land drainage assets have been a feature of it for many decades, it is considered that the scale of the proposal and its site coverage lead to effects that are less than minor.

9 Conclusion

For its size, the project is relatively complex, but this is largely in matters of detail, and the overall concept is simple and straightforward to manage. All potential adverse effects are considered to be less than minor and can be avoided, mitigated or remedied.

10 Consideration of alternatives

The primary alternative to this proposal is to do nothing, in which case the drainage system would cease to function when coastal processes finally prevail. The realignment is considered to be positive for the local community, and retaining the status quo is not realistic.

Substantial effort has been put into designing a realignment that will provide environmental benefit by restoring and enhancing wetlands, and planting indigenous vegetation where none was formerly present. The proposed drain has a sinuous footprint for ecological and amenity reasons. The alternative to this approach would be to realign the drain strictly in accordance with engineering needs with a straight cut and functional vegetation as far as could be achieved. A deliberate decision has been made to not pursue this approach.

11 Assessment of statutory documents

11.1 Section 104 of the Resource Management Act

11.1.1 Matters to consider

Section 104(1) of the RMA sets out the matters which a consent authority must have regard to when considering an application for resource consent, as follows:

- (1) *When considering an application for resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to –*
 - any actual and potential effects on the environment of allowing the activity; and*
 - (ab) 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; and*
 - any relevant provisions of*
 - (i) a national environmental standard;*
 - (ii) other regulations;*
 - (iii) a national policy statement;*



(iv) a New Zealand coastal policy statement:

(v) a regional policy statement or proposed regional policy statement:

(vi) a plan or proposed plan; and

any other matter the consent authority considers relevant and reasonably necessary to determine the application.

11.1.2 Compliance history

Section 104 (2EA) states:

When considering a resource consent application, a consent authority may have regard to any previous or current abatement notices, enforcement orders, infringement notices, or convictions under this Act received by the applicant, if the applicant is not a natural person or, if the applicant is a natural person, received by the applicant within the previous 7 years.

The applicant has received one abatement notice, and two infringements for the matters described below. While each non-compliance is a serious concern for the applicant, and immediate actions were in place to respond to each event, these must be viewed in the context and scale of works completed by the applicant. Approximately 800 jobs are completed by the applicant in and near waterways throughout the Canterbury every year.

1. Abatement notice PE254212: instructed to avoid, remedy, or mitigate any adverse effects on aquatic life arising from the collection and removal of cut weed from the Huritini/Halswell Canel (issued following self-reported failure of equipment), 04/08/2025.
2. Infringement EN5C/1765: discharged contaminants, namely sediment laden water into Knights Stream while undertaking maintenance of flood and erosion works (removal of earthquake derived liquefaction), 08/08/2013.
3. Infringement PE174996: discharge contaminants, namely sediment, into Bowyers Stream while undertaking flood protection work, 09/02/2018.

Section 104 (6A) states:

A consent authority may decline an application for a resource consent if the applicant has a record of significant non-compliance with a requirement of this Act—

(a) that is ongoing or repeated; and

(b) that, if the applicant is not a natural person, has been or is the subject of an enforcement order or a conviction under this Act or, if the applicant is a natural person, has been or is the subject of an enforcement order or a conviction under this Act within the previous 7 years.

It is considered that there is nothing in the applicant's compliance history which, given the applicant's function and the circumstances under which it operates, should affect the consent authority's decision on these resource consent applications. In particular, there is no basis for declining the applications under s104 (6A).

11.1.3 Sections 104B, 104C and 104D

Section 104B sets out how a consent authority may determine an application for **discretionary or non-complying activities**, as follows:

After considering an application for a resource consent for a discretionary activity or non-complying activity, a consent authority—

(a) may grant or refuse the application; and

(b) if it grants the application, may impose conditions under section 108.



Section 104C sets out how a consent authority may determine an application for **restricted discretionary activities**, as follows:

(1) When considering an application for a resource consent for a restricted discretionary activity, a consent authority must consider only those matters over which—

(a) a discretion is restricted in national environmental standards or other regulations:

(b) it has restricted the exercise of its discretion in its plan or proposed plan.

(2) The consent authority may grant or refuse the application.

(3) However, if it grants the application, the consent authority may impose conditions under section 108 only for those matters over which—

(a) a discretion is restricted in national environmental standards or other regulations:

(b) it has restricted the exercise of its discretion in its plan or proposed plan.

Section 104D sets out particular restrictions for **non-complying activities**, as follows:

(1) Despite any decision made for the purpose of notification in relation to adverse effects, a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either—

(a) the adverse effects of the activity on the environment (other than any effect to which section 104(3)(a)(ii) applies) will be minor; or

(b) the application is for an activity that will not be contrary to the objectives and policies of—

(i) the relevant plan, if there is a plan but no proposed plan in respect of the activity; or

(ii) the relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or

(iii) both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.

(2) To avoid doubt, section 104(2) applies to the determination of an application for a non-complying activity.

It is considered that after consideration of s104, the applications can be granted with effects managed by appropriate conditions. In particular, the adverse effects on the activity will be minor, satisfying s 104D(1)(a).

11.2 Assessment of relevant planning instruments

Tables showing compliance with national instruments (policy statements and national environmental standards) and applicable plan policies are attached in Appendix 17. No substantial non-compliances are identified and a summary of key points is provided below.

1. The National Policy Statement for Infrastructure is strongly supportive and provides guidance to decision makers.
2. The proposal is not inconsistent with the policies of:
 - The New Zealand Coastal Policy Statement.
 - the National Policy Statement for Freshwater Management.
 - The Canterbury Regional Policy Statement.
3. The proposal is consistent with most applicable policies of the Iwi Management Plan of Kāti Huirapa, but cannot meet some, particularly:
 - No more drainage of wetlands.



Some wetland drainage is necessary for this project, but these are not high value areas and subsequent restoration planting will compensate for any loss that is incurred. It is likely that ultimately, wetland areas will be improved.

- No spraying of chemicals near rivers.

Very limited spot spraying will be undertaken by hand during replanting, for individual weeds and to keep some plantings clear. None will be required during construction.

- Breeding areas remain undisturbed.

Some disturbance of inanga spawning habitat will occur, but that does not form part of this application and will be managed under other existing consents.

4. The proposal is largely consistent with the policies of the CLWRP; however, compliance with some cannot be achieved:

- Policy 4.43, requiring that any diversion of water from wetlands is temporary.
- Policy 4.81, requiring that effects on wetlands are temporary.

However, policy 4.82 enables the modification of wetlands if:

the modification is necessary, and necessarily has to be in that location to provide for the installation, upgrading or maintenance of infrastructure and any significant effects are offset by other improvements to or expansion of the same or another wetland

5. The proposal is consistent with the applicable policy of the RCEP.
6. The proposal is consistent with, or if inconsistent, to a very small extent, with the applicable OTDP and PTDP policies.

11.3 Part 2 of the Resource Management Act

The Supreme Court decision *R J Davidson Family Trust v Marlborough District Council* [2018] NZCA 316, states that decisions on resource consents must have regard to the provisions of Part 2 of the RMA (Purpose and Principles) where it is appropriate to do so. In this case, the applicable planning documents vary widely in age and it is appropriate to evaluate the applications against Part 2 (subss 5-8).

Section 5 of the RMA states that the RMA's purpose is to:

promote the sustainable management of natural and physical resources.

It is considered that the proposal is consistent with s 5.

Section 6 (Matters of National Importance) requires that the following matters are recognised and provided for:

(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:



(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:

(f) the protection of historic heritage from inappropriate subdivision, use, and development:

(g) the protection of protected customary rights:

(h) the management of significant risks from natural hazards.

Where applicable, the application assesses these matters and the conclusion is that the effects will be less than minor. The matters in s 6 are recognised and provided for.

Section 7 requires that regard is had to:

(a) kaitiakitanga:

(aa) the ethic of stewardship:

(b) the efficient use and development of natural and physical resources:

(ba) the efficiency of the end use of energy:

(c) the maintenance and enhancement of amenity values:

(d) intrinsic values of ecosystems:

(e) [Repealed]

(f) maintenance and enhancement of the quality of the environment:

(g) any finite characteristics of natural and physical resources:

(h) the protection of the habitat of trout and salmon:

(i) the effects of climate change:

(j) the benefits to be derived from the use and development of renewable energy.

The application considers these applicable section 7 matters and no issues are identified.

Section 8 relates to the Treaty of Waitangi

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

Extensive consultation has been undertaken with Te Rūnanga o Arowhenua and Aoraki Environmental Consultancy, both of which are actively engaged with the proposal.

11.4 Sections 105 and 107 of the Resource Management Act

Section 105 of the RMA states:

(1) If an application is for a discharge permit or coastal permit to do something that would contravene section 15 or section 15B, the consent authority must, in addition to the matters in section 104(1), have regard to—

(a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and

(b) the applicant's reasons for the proposed choice;

(c) any possible alternative methods of discharge, including discharge into any other receiving environment.



This application has considered these matters.

Section 107 of the RMA states that the consent authority must not grant a discharge permit allowing a discharge of a contaminant or water into water, in circumstances which may result in that contaminant entering water, if after reasonable mixing the contaminant discharged is likely to give rise to all or any of the following effects in the receiving waters:

- (c) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:*
- (d) any conspicuous change in the colour or visual clarity:*
- (e) any emission of objectionable odour:*
- (f) the rendering of fresh water unsuitable for consumption by farm animals:*
- (g) any significant adverse effects on aquatic life.*

It is considered that none of these are likely to occur because of the proposed discharges. Limited, short term discharges of sediment may occur but these are unlikely to be substantial and it is anticipated that their effects will be negligible or less than minor.

11.5 Notification and grant/refuse

11.5.1 Notification assessment

Public notification

Section 95A of the RMA set out the steps that a consent authority must undertake when determining whether to publicly notify an application for a resource consent. An assessment is set out in the following table.

Table 11: public notification assessment

Step	Comment
Step 1 Mandatory public notification in certain circumstances	Public notification is not requested. Public notification is not required under section 95C. The applications do not include the exchange of recreation reserve land. Therefore, public notification is not mandatory.
Step 2 Public notification precluded in certain circumstances	No rules or NESs preclude public notification. The applications do not include controlled activities or a boundary activity. Therefore, public notification is not precluded.
Step 3 Public notification in certain circumstances	No rules or NESs require public notification. The potential adverse effects on the environment are less than minor in accordance with section 95D. Therefore, public notification is not required.
Step 4 special circumstances	No special circumstances are identified that warrant public notification. Therefore, public notification is not required.

Limited notification

Section 95A(9)(b) of the RMA requires that if a consent authority does not publicly notify an application it must decide whether to limited notify it under the provisions of Section 95B. An assessment against Section 95B is set out in the following table.



Table 12: limited notification assessment

Step	Comment
Step 1 Certain affected groups and affected persons must be notified	No groups are identified as affected that have protected customary rights or customary marine titles. The activity is not on or adjacent to, and will not affect a statutory acknowledgement. Therefore, there are no groups or persons that must be notified.
Step 2 Limited notification precluded in certain circumstances	No rules or NESs preclude limited notification. The applications are not for controlled activities under a district plan. Therefore, limited notification is not precluded.
Step 3 Certain other affected persons must be notified	The activities are not boundary activities. The activities have been assessed as having adverse effects that are less than minor. Some persons considered to be potentially affected have provided written approval; however, this has not been received from Te Rūnanga o Arowhenua or HHL. Arowhenua is affected primarily because activities are taking place in a SASM, and due to the existing Seadown Drain being a Mātaitai reserve. HHL is potentially affected as the works cross its land. Therefore, limited notification cannot be discounted, but given the extent of consultation that has occurred with Arowhenua, AEC and HHL during project planning and the preparation of these applications, the applicant is confident that this notification will ultimately not be required.
Step 4 special circumstances	No special circumstances are identified that warrant limited notification. Therefore, limited notification of the applications is not required.

Notification summary

After evaluation of Sections 95A and 95B of the RMA, it is considered that these applications can likely be processed without notification, subject to discussions with Te Rūnanga o Arowhenua, AEC and HHL during processing.

11.5.2 Grant/refuse

It is considered that these applications can be granted under section 104, section 104B and sections 105 and 107 of the RMA.

12 Consultation

Consultation has been extensive and is discussed throughout this application. Of the persons identified as potentially adversely affected by the proposal, most have provided written approval but two—Te Rūnanga o Arowhenua and HHL—have not. Works will occur on DOC land; DOC has provided written support (but not a full written approval) and the works cannot occur on that land without a concession. Therefore, for the purpose of s 95B DOC is not considered to be an affected person.

As discussed, Ngāi Tahu Whanui has been notified of the application as it is an applicant for CMT in the Takuai Moana area.



13 Consent duration

The following durations are requested.

1. short term construction consents (CRC s 9, s 13, s 14 and s 15, TDC s 9)

Ten years

This duration is requested because, although construction is expected to take 2 seasons, the project is substantial and subject to externalities, primarily the impact of large weather events, and possible funding perturbations.

In addition, the system will take some time (possibly several years) to stabilise following the principal works. During this time some additional works may be required for repairs and modifications to ensure the system is operating as designed. These works could be carried out under the consents applied for here.

2. Long term consents (CRC s 9, TDC s 9)

Unlimited duration

14 Suggested consent conditions

Suggested resource consent conditions are attached to this application in Appendix 18.



Appendix 1 Written approvals and statements of support

Appendix 3

Consents held by others

**Appendix 4 Statement from CRC compliance section regarding
FBNZ stormwater discharge**

Appendix 5: Hydraulic modelling advice

Appendix 6: Ecology assessment

Appendix 7: Wetland advice

Appendix 8: Seadown Drain minimum flow alternatives

Appendix 9: Geotechnical factual report

Appendix 10: Groundwater assessment

Appendix 11: Detailed site investigation

Appendix 12: TDC NESCS land use consent 102.2025.147.1

Appendix 13: Design drawings

Appendix 14: Revegetation concept

Appendix 15: Rule assessment and consent requirements

Appendix 16: Sediment report

Appendix 17: Policy Assessment

Appendix 18: Suggested Consent Conditions
