



AGENDA

Infrastructure Committee Meeting Tuesday, 24 November 2020

Date Tuesday, 24 November 2020

Time following the Environmental Services Committee

Location Council Chamber
Timaru District Council Building
2 King George Place
Timaru

File Reference 1390840

Timaru District Council

Notice is hereby given that a meeting of the Infrastructure Committee will be held in the Council Chamber, Timaru District Council Building, 2 King George Place, Timaru, on Tuesday 24 November 2020, at the conclusion of the Environmental Services Committee meeting.

Infrastructure Committee Members

Cr Sally Parker (Chairperson), Cr Paddy O'Reilly (Deputy Chairperson), Cr Allan Booth, Cr Peter Burt, Cr Barbara Gilchrist, Cr Richard Lyon, Cr Gavin Oliver, Cr Stu Piddington, Cr Steve Wills and and Mayor Nigel Bowen

Quorum – no less than 2 members

Local Authorities (Members' Interests) Act 1968

Committee members are reminded that if you have a pecuniary interest in any item on the agenda, then you must declare this interest and refrain from discussing or voting on this item, and are advised to withdraw from the meeting table.

Erik Barnes
Contractor

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- 1 Apologies**
- 2 Identification of Items of Urgent Business**
- 3 Identification of Matters of a Minor Nature**
- 4 Declaration of Conflicts of Interest**
- 5 Chairperson's Report**

6 Confirmation of Minutes

6.1 Minutes of the Infrastructure Committee Meeting held on 13 October 2020

Author: Jo Doyle, Governance Advisor

Recommendation

That the Minutes of the Infrastructure Committee Meeting held on 13 October 2020 be confirmed as a true and correct record of that meeting and that the Chairperson's electronic signature be attached.

Attachments

- 1. Minutes of the Infrastructure Committee Meeting held on 13 October 2020**



MINUTES

Infrastructure Committee Meeting Tuesday, 13 October 2020

Ref: 1390840

**Minutes of Timaru District Council
Infrastructure Committee Meeting
Held in the Council Chamber, Timaru District Council Building, 2 King George Place, Timaru
on Tuesday, 13 October 2020 at 9.30am**

Present: Cr Sally Parker (Chairperson), Cr Paddy O'Reilly (Deputy Chairperson), Cr Allan Booth, Cr Peter Burt, Cr Barbara Gilchrist, Cr Richard Lyon, Cr Gavin Oliver, Cr Stu Piddington, Cr Steve Wills, Mayor Nigel Bowen

In Attendance: Group Manager Infrastructure (Andrew Dixon), Senior Programme Delivery Manager (Ashley Harper), Programme Delivery Manager (Lili Delwaide), Governance Advisor (Jo Doyle)

Public Forum

Lindy Graham the Principal of Craighead Diocesan School and the Chair of Aoraki Secondary Principals Association updated Council.

Challenges of 2020:

- Covid-19 and the effect on mental health, planning for an uncertain future
- Behaviour management, attendance and punctuality
- Increasing indicators of poverty and inequity
- Managing online behaviours
- Parents versus school jurisdiction
- Prevalence of ready available drugs, party pills etc
- Meeting needs of Immigrant communities
- Risk taking behaviours are increasing e.g. vaping is on the increase and is hard to track
- Cellphone use in school, not needed in class as more appropriate devices for the classroom
- Connectivity issues, highlighted over lockdown
- Road safety around schools at peak time.

This group covers 16 secondary schools from Mt Hutt to Waitaki who meet once a term. Most schools average between 400-600 students which is relatively small compared to city schools.

There is considerable choice for families in South Canterbury, and there is good retention of students to senior levels. Solid achievements are being recorded with NCEA results, cultural and sporting achievements.

Ideas for Council to support Students:

- Invite students to meetings to view and share the process to become more engaged, social studies classes in particular
- Wellbeing initiatives need assistance from the community, WAVE worked closely with schools, but their funding has been cut
- Breakfast programs, have been running in primary schools are due to roll out to some secondary schools
- Wellbeing websites
- Venture Timaru have run career nights in past, but less in recent years
- Environment is a topic this age group are passionate about, water safety, water health, and climate change

- Social functions, there isn't much to do for this age group, the 3 day festival was well used last year
- Youth Alley were meeting the needs of gender diverse youth
- Youth art awards, blue light discos, events that are alcohol free and well organised
- Cr Sally Parker used to meet young people in cafes
- Good people in the area looking out for young people, involving police and minimising access to drugs, alcohol and vaping
- Would Like to see more published about the successes of young people through the local paper.

1 Apologies

Resolution 2020/27

Moved: Cr Peter Burt

Seconded: Cr Steve Wills

That the apologies from Charles Scarsbrook, Neville Gould and Wayne O'Donnell be accepted.

Carried

2 Identification of Items of Urgent Business

There were no items of urgent business.

3 Identification of Matters of a Minor Nature

There were not matters of a minor nature.

4 Declaration of Conflicts of Interest

There were no conflicts of interest.

5 Chairperson's Report

Since the last Committee meeting, the Chairperson has attended Council Meetings, Workshops, Prime Ministers business lunch, the South Island masters games update and launch and met with members of the public regarding Showgrounds development.

Resolution 2020/28

Moved: Cr Barbara Gilchrist

Seconded: Mayor Nigel Bowen

That the Chairpersons report be received.

Carried

6 Confirmation of Minutes

6.1 Minutes of the Infrastructure Committee Meeting held on 1 September 2020

Resolution 2020/29

Moved: Mayor Nigel Bowen

Seconded: Cr Paddy O'Reilly

That the Minutes of the Infrastructure Committee Meeting held on 1 September 2020 be confirmed as a true and correct record of that meeting and that the Chairperson's electronic signature be attached.

Carried

7 Reports

7.1 Rangitata River Flood Protection Contribution

The Committee considered a report on the financial contribution to Environment Canterbury (ECan) for further flood protection works on the Rangitata River following the December 2019 Flood event

Cr Peter Burt advised a Conflict of Interest and would refrain from joining the discussion.

ECan have more work to protect the Rangitata River from another major flood event, stage one work has been completed, but the river is not yet back to where it was and is at risk from another event which would cause more damage to roads.

This is a staged approach and ECan are consulting with Iwi as they believe the river should still flow as it wants.

A Rangitata restoration working group has been set up and terms of reference have been agreed to ensure a process is in place to protect the river for future.

All other contributors have agreed and Timaru District Council is the last party to sign.

Resolution 2020/30

Moved: Cr Steve Wills

Seconded: Cr Barbara Gilchrist

That the Timaru District Council cost contribution to Environment Canterbury towards further flood protection works on the Rangitata River of \$59,000 excluding GST be approved.

Carried

7.2 Progress Report: Pareora Pipeline Renewal, Downlands Water Supply Scheme Upgrade and Winchester Geraldine Roundabout

The Senior Programme Delivery Manager and Programme Delivery Manager presented the Committee with the progress of three key infrastructure projects; the Pareora Pipeline Renewal,

the Downlands Water Supply Scheme Upgrade, and the Winchester/Geraldine Roundabout projects.

Pareora Pipeline Renewal

This morning at the Tenders and Procurement Committee Meeting, the contract for Section 1 of the pipeline renewal was awarded. Work will be commencing in the near future, this is a momentous occasion for this renewal.

A further report is being prepared for the procurement method for stage 2 and the design for section 3 is near completion.

Downlands Water Supply Scheme Upgrade

The river works at the intake were completed by the end of August, a decision is due shortly on the commissioning of the water treatment plant.

Stage 1 pipeline construction contract has been awarded and special fittings are being made.

Stage 2 is close to being tendered in the next few months.

Winchester/Geraldine Roundabout

The Group Manager Infrastructure reported that the construction of this project is currently being tendered.

Resolution 2020/31

Moved: Cr Sally Parker

Seconded: Cr Barbara Gilchrist

That this report be received and noted.

Carried

7.3 Government Policy Statement on Land Transport 2021-2031

The Committee was presented the final Government Policy Statement on Land Transport 2021/22 – 2030/31 (GPS 2021) and the funding implications for the Timaru District Council.

The Group Manager Infrastructure outlined the transport funding as presented in the Government Statement, and noted that Timaru District is operating as one of the most efficient organisations in our peer group.

Covid19 has had an impact with less vehicle usage and less revenue from road users.

The funding bid from Timaru District Council was aspirational but is well aligned with the proposal for the Long Term Plan.

The two State Highway one lane bridges in the Canterbury region are not a high priority in the programme, and political means through the mayoral forum is considered the best approach for approaching these upgrades.

Local roads projects are on the website with a map location showing the current and following year showing resurfacing.

Resolution 2020/32

Moved: Cr Paddy O'Reilly

Seconded: Cr Barbara Gilchrist

That the report be received and the funding implications noted.

Carried

8 Consideration of Urgent Business Items

There were no items of urgent business.

9 Consideration of Minor Nature Matters

There were not matters of a minor nature.

10 Exclusion of the Public

Resolution 2020/33

Moved: Cr Barbara Gilchrist

Seconded: Cr Richard Lyon

That the public be excluded from the following parts of the proceedings of this meeting on the grounds under section 48 of the Local Government Official Information and Meetings Act 1987 as follows:

General subject of each matter to be considered	Reason for passing this resolution in relation to each matter	Plain English Reason
11.1 - Public Excluded Minutes of the Infrastructure Committee Meeting held on 1 September 2020	s7(2)(b)(ii) - The withholding of the information is necessary to protect information where the making available of the information would be likely unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information s7(2)(i) - The withholding of the information is necessary to enable the Council to carry out, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations)	Commercial sensitivity To enable commercial or industrial negotiations

Carried

Resolution 2020/34

Moved: Mayor Nigel Bowen

Seconded: Cr Paddy O'Reilly

That the meeting moves out of Closed Meeting into Open Meeting.

Carried

11 Public Excluded Reports

11.1 Public Excluded Minutes of the Infrastructure Committee Meeting held on 1 September 2020

12 Readmittance of the Public

The Meeting closed at 10.09am.

.....

Chairperson

7 Reports

7.1 Patiti Point Coastal Erosion

Author: Andrew Dixon, Group Manager Infrastructure
Tracy Tierney, Group Manager Environmental Services

Authoriser: Andrew Dixon, Group Manager Infrastructure

Recommendation

That the Infrastructure Committee supports:

1. The continuation of the monitoring of the Patiti Point coastline for erosion and public safety be ensured through restricting access to affected area's.
2. The further investigation of the Timaru District coastline study with a risk and vulnerability assessment being undertaken and funded from current approved budgets.
3. Further data collection and studies on the effects of climate change for Timaru District are undertaken and funding provision for this be considered as part of the Long Term Plan 2021-31.

Purpose of Report

- 1 To provide the Infrastructure Committee with an update on the outcome of investigations on the erosion at Patiti Point and consider options for the future management of on-going coastal erosion, sea inundation and climate change effects.

Assessment of Significance

- 2 The Patiti Point erosion matter is considered of low significance in terms of Council's significance policy with the impact being low as this is a predominately recreational area.
- 3 However, the wider long term erosion issue and effects of climate change are considered of medium high significance. The number of ratepayers potentially affected by coastal erosion is relatively low but for those close to the coast the potential impact may be significant. There is likely to be high public interest in this issue and the effects of climate change.

Background

- 4 Patiti Point is a popular recreational area located at the end of South Street, Timaru. The southern end of Patiti Point is located to the east of the Caledonian Grounds. Patiti Point is a coastal headland and has always experienced some erosion of the loess cliffs on the coastline.
- 5 During 2019 there was a significant rate of erosion occurring at the southern end of Patiti Point that resulted in the loss of sections of the access road, walkway/cycleway and a substantial section of the car park at the southern end.
- 6 This has required the closure of cliff top road access, the relocation of sports club facilities and prompted considerable concern over the future viability of other nearby coastal assets. With

the access road closed permanently the coastal walkway was re-routed away from this site to ensure public safety.

- 7 At the meeting on 11 June 2019 the Infrastructure Committee considered future options in regard to the erosion.
- 8 On the 13th August 2019 a workshop was held with Council to further discuss the erosion issue, factors influencing this and potential options. Environment Canterbury officers and experts from the University of Canterbury were in attendance to provide advice. This workshop was followed by a public meeting that was very well attended.
- 9 It was agreed that further investigation work was required to better understand the erosion drivers and long term risks before any decision on the future management could be determined.

Discussion

- 10 Two pieces of investigation work were commissioned.

Localised Investigation of Patiti Point Erosion

- 11 The first was a localised investigation on contributing factors to the accelerated coastal erosion at Patiti Point that was undertaken by the University of Canterbury Geology department.
- 12 This research project aimed to provide a better insight and understanding into the erosion rates and changes occurring at Patiti Point. The focus of their research was to examine the coastal processes affecting the erosion rates at Patiti Point, Timaru. The two main objectives were:
 - 12.1 Determining what conditions were leading to accelerated cliff erosion over the last few years and
 - 12.2 To test some previous research which suggested that “pulses” or “slugs” of sediment moving northwards along the South Canterbury may be influence rates of erosion at particular locations.
- 13 Analysing beach profile data for the last 30 years (1990-2019) at Patiti Point there is a trend in reduction of beach sediment volume over time but with significant year-to-year variability. 2019 had the lowest volume over the nearly 30-year record.
- 14 It was noted that between 1999 and 2019, there were seven significant erosion events at Patiti Point. An analysis of offshore wave data showed wave direction as well as intensity and frequency increases erosion. Waves in a more easterly may be focussed through an easterly orientated deeper channel in the reef off Patiti Point tended to increase erosion of the cliff.
- 15 It was confirmed that the historic beach profile record between the Waitaki River and Timaru has continued to show northward moving pulses of higher than average and lower than average slugs of beach shingle up the coastline. This is cyclic and in recent years the volume has been less than average depleting the beach, reducing buffering of the wave energy and increasing erosion. Of note is that the report suggested that the next above average slug of sediment to move north to Patiti Point would arrive in late 2020 that would start replenishing the beach. This is occurring.
- 16 The frequency of storms also contributed to the depletion of the beach with insufficient depletion recovery between these events leaving the cliffs vulnerable to wave attack.

- 17 The University research did not undertake to project or forecast where the Patiti Point shoreline could reach at some future point in time. However, for future coastal management and planning considerations, determining future shoreline recession is an important consideration.

Long Term Erosion

- 18 The next stage was to understand the longer term implications of Coastal erosion. The future projected shoreline erosion at Patiti Point was included in the second much broader investigation of coastal erosion. The scope of this assessment covered from Pareora River in the south to the Rangitata River in the north.
- 19 The coastal hazard assessment was a joint Environment Canterbury and Timaru District Council project. Jacobs Consulting were engaged to undertake this work to model the long term erosion and sea inundation. The model uses historic and current shoreline process information and knowledge of the District's coastline (including the Canterbury University research) and map projected shoreline positions under a range of potential future sea level rise scenarios out to 2070 (50 years) and 2120 (100 years). The report is publically available on the Environment Canterbury website.
- 20 The results of this work were presented to a Council workshop on 28 July 2020.
- 21 In regard to Patiti Point the modelling has predicted that the erosion will continue in the future. Over a 50 year period the predicted erosion will be a further 12 to 35 metres and over a 100 year period the predicted erosion will be between 27 and 80 metres.
- 22 The outcome of this is that in the next 50 years the 'most likely' outcome will be the complete erosion of the extension of South Street that provides access along the cliff to the south with the cliff line projected to lie within the existing footprint of the South Canterbury Pistol Club facilities, Caledonian Grounds.
- 23 While the erosion is 'very unlikely' to reach the cycle track over this timeframe, it could be within 20 m of the south-east corner of the track under the 50-year highest sea level rise scenario.
- 24 The Patiti Point clifftop carpark & lookout will also 'most likely' be affected by erosion within a 50-year time frame.
- 25 Within 100 years, the cliff line is 'most likely' to lie within the current footprint of the cycle track at the south-east corner, and access to the Patiti Point clifftop carpark & lookout at will 'most likely' have been impacted by erosion.
- 26 The erosion at Patiti Point is not isolated or unique. There are a number of erosion and sea inundation risk areas that have been identified along the Timaru District Coastline as part of the broader study that will be of concern over the next 50 or 100 years. Area's of concern are Washdyke Lagoon, Seadown Coast, and Milford Huts area.

Options and Preferred Option

- 27 The Timaru District coastline erosion is predicted to continue with a high certainty. What is not certain is the rate of this erosion as there are a number of factors that contribute to this rate.

- 28 In regard to Patiti Point there are three options that can be considered as follows:
- 28.1 Continue to monitor the erosion and maintain public safety through restricting access to affected area's. The monitoring of Patiti Point would be continued by both profile surveying and collection of LiDAR and aerial imagery. This is the recommended option.
 - 28.2 Initiate a managed retreat of the area potentially affected by the erosion. This may involve relocating buildings and preventing further investment in the potential erosion zone.
 - 28.3 Investigate measures to stop the on-going erosion. This is likely to be very costly and technically challenging therefore is not recommended.
- 29 In regard to the long term Timaru District coastline erosion, options are:
- 29.1 Progress with the recommended next stage of investigations with a risk and vulnerability assessment of the affected coastline area's undertaken. The work is important for informing both the District Plan and the Long Term Plan. This should be progressed jointly by Environment Canterbury and Timaru District Council (both infrastructure and District Planning teams). This is the recommended option.
 - 29.2 Note the report and do not progress any further at this stage. This is not recommended as the effects of climate change need to be better understood and planned for to ensure the resilience of our communities in the future.

Consultation

- 30 There has been on-going consultation with the affected Patiti Point facilities owners and some have undertaken to relocate.
- 31 There will be community consultation required as part of the wider response to climate change issues in the future.

Relevant Legislation, Council Policy and Plans

- 32 Local Government Act 1974 – legislates Council's powers relating to temporary road closures.
- 33 Timaru District Council Infrastructure Strategy 2018-2068 – highlights emerging issues facing Council infrastructure due to climate change, including coastal erosion and inundation.
- 34 Timaru District Long Term Plan 2018-28 and Draft Long Term Plan 2021-31.

Financial and Funding Implications

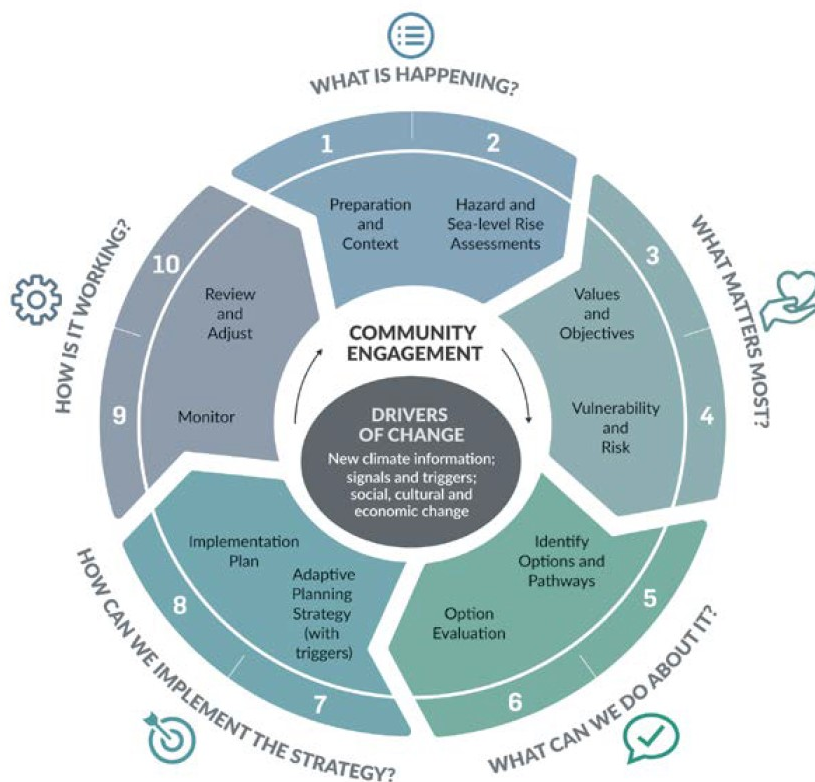
- 35 To date this project has been jointly funded by Timaru District Council and Environment Canterbury.
- 36 Further funding will be required for the next stages of the coastal study being the additional investigations recommended and a risk and vulnerability assessment. This can be funded from current approved budgets.
- 37 The long term effects of climate change on Timaru District will require additional resource and funding. This will be considered as part of the next Long Term Plan.

Other Considerations

- 38 The coastline erosion study is the first detailed investigation on the effects of climate change for Timaru District. It is only one piece of information and further data collection and studies

are required to gain a better understanding of climate change effects. This will ensure community resilience through adaptation of the effects which may involve some retreat or change.

- 39 This assessment is in line with the 2017 Ministry of Environment coastal hazard and climate change guidance for local government.
- 40 While the work to date isn't aimed at the development of Adaptive Planning Strategies, it could be, fitting into stage 2 of the 10 step process, as shown below, being the determination what the magnitude and extent of the hazard are with sea level rise.



- 41 The work is only one part of the climate change discussion. A wider strategy and plan is required to include other risk areas. The climate change strategy is proposed to be progressed through the Long Term Plan

Attachments

Nil

7.2 Marine Parade Road Safety Options

Author: Simon Davenport, Transportation Team Leader
Daniel Naude, Road Safety Coordinator

Authoriser: Andrew Dixon, Group Manager Infrastructure

Recommendation

That the Infrastructure Committee support the following:

1. The upgrade of the signage in advance of the beach activity zone on Marine Parade and consult on the creation of a 'gateway' to the beach activity zone.
2. Continue to engage with and encourage the Police to both monitor and enforce poor driver behaviour in the Marine Parade location.
3. Continue to monitor vehicle speeds on Marine Parade through regular traffic counts.

Purpose of Report

- 1 This report is to inform and seek feedback from the Infrastructure Committee about the best action to take to resolve perceived road safety issues on Marine Parade in a sustainable way.

Assessment of Significance

- 2 This matter is considered low significance under the Council's Significance Policy. However it has some significance for PrimePort Timaru, Port of Tauranga, Talley's and Sanford's who have business properties on the North Mole and the Timaru Yacht and Power Boat Club whose premises are at the northern end of Marine Parade.

Background

- 4 At the Infrastructure Committee meeting on 10 March 2020 when considering a report on road safety the committee members raised concerns about the road safety on Marine Parade. It was recommended by the committee that a report from Land Transport Unit be prepared for Council for a road safety plan for Marine Parade.
- 5 This road has a mixed recreation and business use. There is also visitors viewing the nightly penguins. Penguin watching along Marine Parade, on the North Mole has become popular with the community and visitors to Timaru over the past decade. A number of nights will have people gathering around dusk to see if they can view penguins returning from sea, to the rock seawall.
- 6 There are a very small minority of drivers on Marine Parade during the dusk penguin movement period are acting inappropriately, sometimes illegally. Concerns are continually raised that on some nights, the behaviour of some drivers going past at the location is inappropriate, or illegal. There have been reports of excessive vehicle speed and/or anti-social behaviour.
- 7 These reports have been passed on to the Police and requests made to them to increase their presence at the location. Unfortunately, to date the Police have not been able to have a consistent presence on Marine Parade at dusk.

- 8 Traffic speed data collected in late September 2019, to the north of the beach activity zone shows 85% of all vehicles were travelling less than 56.8 km/h for the two (2) hour dusk period over a seven (7) day week. Of the total number of vehicles during that two hour dusk period, 8% were exceeding a speed of 60 km/h.

Discussion

- 9 Marine Parade is classified as a Collector road under the current District Plan and is being proposed to be a District Arterial under the District Plan review that is currently being undertaken.
- 10 This proposed classification status change reflects the regional significance of Marine Parade as a freight route, servicing the Port of Tauranga, Talley's and Sanford's businesses; along with PrimePort Timaru operations.
- 11 Marine Parade also provides important recreational access to and from Caroline Bay, access to the Timaru Yacht and Power Boat Club and also access to the tip of the North Mole for recreational fishing.
- 12 As a result of these diverse and conflicting use requirements, there exists a distinct challenge to provide a road layout that caters for all users (community, visitors, and businesses, freight operators that includes pedestrians, cyclists, cars and trucks. A multi-use Marine Parade layout is desired.

Options and Preferred Option

- 13 A number of options have been considered. These options are detailed in Attachment 1.
- 14 The options explore a number of both engineering and regulatory measures to reduce vehicle speeds and improve road safety. The different access functions of Marine Parade and different road users provide limitations.
- 15 The recommended options for implementation are Options 3 and 4 that involve the installation of further signage and the construction of a road gateway in the vicinity of this signage. These measures would be in addition to continued speed and driver behaviour enforcement by Police.

Consultation

- 14 The Road Safety Coordinator has previously had conversations with members of the penguin group and gone out to meet with them at the location to observe.
- 15 Members of the, now two penguin groups have had a number of previous conversations with elected members and council staff.
- 16 The options presented would vary on consultation requirements. Some of the options would not require consultation (option 1 -3), some require limited consultation with affected businesses (option 4 and 5) and some would require extensive community consultation (options 6 to 9).

Relevant Legislation, Council Policy and Plans

17 Relevant Legislation and Council documents are as follows:

- Local Government Act 1974 and Amendment Act 2002
- Timaru District Council Long Tem Plan 2018-28
- South Canterbury Road Safety Strategy

Financial and Funding Implications

18 Options 3, 4 and 5 could be funded from current approved Council budgets.

19 Options 6 to 9 would require the allocation further funding.

Other Considerations

20 It should be noted that some of the concern expressed is related to the noise of certain passing vehicles, which affects the comfort and general experience for penguin watchers, during the evening dusk period. The noise of a vehicle does not necessarily align with inappropriate, or illegal speed.

Attachments

1. **Marine Parade Safety Options**  

Marine Parade Safety options

Option No.	Action	Commentary	Advantages	Limitations	Potential outcomes	Cost
1	Take no action	Retain existing lay-out	No cost	Concerns will not be addressed	Potentially on-going public concerns.	Nil
2	Request increased Police presence	Further discussion with the Police be held regarding increased presence	Drivers behave while police are present	The Police may not have sufficient resources to commit as often as desired.	Poor driver behaviour may resume as soon as police patrols depart	Nil
3	Upgrade advance signage	Install appropriate sign advising motorists of the beach activity zone.	More accurate signage advises and warns motorists of the beach activity zone	Research tells us that road signs are not read or registered by all road users	Measures will have some effects at improving road safety.	Low capital cost < \$1,000 Low ongoing maintenance costs
4	Create a 'gateway' to the beach activity zone	A 'gateway' is constructed in advance of the beach activity zone. The gateway would be positioned at the advance signage location.	A 'gateway' would define the beach activity zone ahead. Advance signage would be positioned more prominently and effectively.	A 'gateway' would reduce the existing carriageway width (For an approx. length of 10 metres)	Although effective at reducing initial speed through the gateway after it vehicle speed may increase. Consultation would also be required with North Mole property owners and freight vehicle operators	Medium capital cost \$1,000 to \$10,000 Low ongoing maintenance costs

Option No.	Action	Commentary	Advantages	Limitations	Potential outcomes	Cost
5	Speed control 'cushions'	Install raised rubber devices across the road in a row that require motorists to slow to traverse them. They can be laid out such that larger vehicles can straddle them.	Moderate, control and slow motorist speed without the need for enforcement	They are a permanent treatment, so will effect all motorists at all times.	Slower vehicle speeds but may cause disruption to heavy vehicles. Although these vehicles generally can 'straddle' the cushions there will be times that they have to pass over them. The braking and acceleration of vehicles may increase road noise.	Medium capital cost \$1,000 - \$10,000 Medium ongoing maintenance costs
6	Enhanced viewing area	The beach viewing area could be enhanced by widening the footpath	A larger area for people to view the beach, from the top of the rock seawall	Removal of kerbside parking A wider footpath having minimal use outside penguin viewing periods	The permanent removal of kerbside parking	High capital cost > \$10,000 Medium ongoing maintenance costs

Option No.	Action	Commentary	Advantages	Limitations	Potential outcomes	Cost
7	Speed limit reduction	A reduction to a 30 km/h speed limit, for the beach activity zone could be considered. This will require a bylaw amendment and consultation will be required. The current speed limit setting rules require the road to be engineered to the lower speed in conjunction with the reduction of the speed limit.	Converting the posted speed limit, for the beach activity zone would legally reduce vehicle speeds	A speed limit reduction would require regular enforcement to be effective	A speed limit reduction to 30 km/h would require the road to be built to align directly with the 30km/h speed limit – This would not be achievable whilst maintaining the road as a freight vehicle route.	High capital cost > \$10,000 Medium ongoing maintenance costs
8	Speed enforcement camera	Speed enforcement cameras are operated by police and will in the near future be operated by Waka Kotahi NZTA. Due to the low traffic volumes and potential low risk, it is unlikely that they would be approved for this location.	Offenders could be prosecuted	High cost relative to issue.	There are many other locations these cameras are needed but not deployed due to limited resources.	High capital cost > \$10,000 Medium ongoing maintenance costs
9	Number plate recognition camera	Have a security camera and signposting that a “safety” camera is operating in the area could potentially improve behaviour.	Identify potential poor driver behaviour	Ongoing cost and time to view the recordings. May not be able to prosecute offenders.	The camera will not pick up the speed of vehicles, but will record the incidents of risky behaviour. This tool is to identify risky behaviour for police to follow up.	High capital cost > \$10,000 Medium ongoing maintenance costs

7.3 Progress Report: Pareora Pipeline Renewal, Downlands Water Supply Scheme Upgrade and Winchester Geraldine Roundabout

Author: Ashley Harper, Senior Programme Delivery Manager
Lili Delwaide, Programme Delivery Manager

Authoriser: Andrew Dixon, Group Manager Infrastructure

Recommendation

That this report be received and noted.

Purpose of Report

- 1 The purpose of this report is to inform the Committee on the progress of three key infrastructure projects; the Pareora Pipeline Renewal, the Downlands Water Supply Scheme Upgrade, and the Winchester/Geraldine Roundabout projects.

Assessment of Significance

- 2 This matter is not significant in terms of the Significance and Engagement policy.

Discussion

- 3 Progress reports are attached for the Pareora Pipeline Renewal project, the Downlands Water Supply Scheme Upgrade project and the Winchester/Geraldine Roundabout project.
- 4 The 2020/21 budgets for the above projects are:
 - 4.1 \$8 million for the Pareora Pipeline Renewal;
 - 4.2 \$25.3 million for the Downlands Water Supply Scheme Upgrade (at 100%);
 - 4.3 \$2 million for the Geraldine / Winchester Roundabout.
- 5 The attached progress reports cover all aspects of the projects up until the 31st of October, 2020 except for the financials that cover the month of September only, unless indicated otherwise.
- 6 The progress reports include an overview of the project and its context as well as a detailed update on latest progress and current status.

Attachments

1. Pareora Pipeline Renewal Progress Report November 2020  
2. Downlands Water Supply Scheme Upgrade Progress Report November 2020  
3. Winchester-Geraldine Roundabout Progress Report November 2020  

KEY PROJECT

Pareora Pipeline Renewal

Progress report – Issue 3 – November 2020



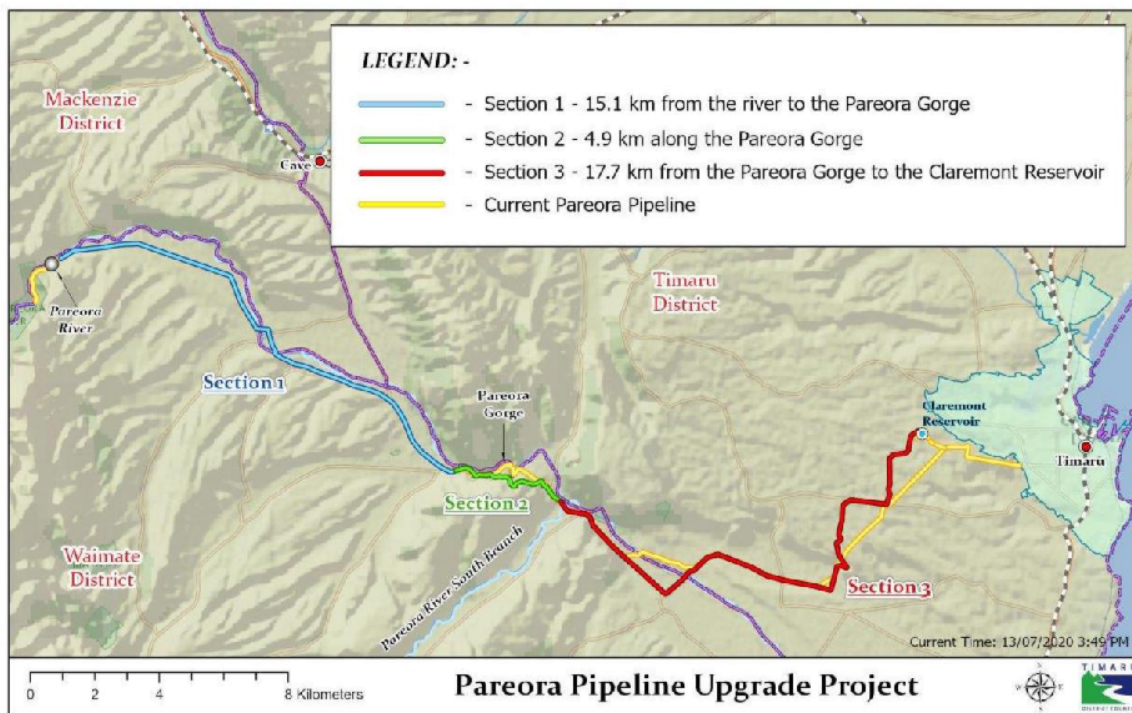
OVERVIEW

The Pareora pipeline is a critical component of the Timaru water supply, providing the bulk transfer of raw water from the Pareora River intake to the Claremont water treatment plant and storage reservoirs. This source provides approximately 60% of water consumed in the Timaru supply on an annual basis.

The existing Pareora pipeline, installed in the 1930s, is in very poor condition in some sections. It passes through some unstable land in the Pareora Gorge, and is a significant risk to the communities' water supply if it were to fail.

In addition, the existing pipeline has a history of leakage and increasing maintenance requirements. Through the adoption of the Long Term Plan 2018-28, Council has approved the renewal of the Pareora Pipeline. Approximately 37km of pipeline needs to be replaced with a nominal 500mm diameter pipe.

For procurement purposes, the pipeline is divided onto 3 sections, as shown on the map below.



PROJECT TEAM

Project Sponsor: Andrew Dixon - **Project Lead:** Grant Hall - **Project Manager:** Selwyn Chang

\$20.9M

Total 2018-2028 LTP Budget

\$1.6M

Spent (as of 30/10/2020 - 2020/21 Budget \$8M)

Design **100%** Completed

KEY PROJECT

Pareora Pipeline Renewal

Progress report – Issue 3 – November 2020



PROJECT UPDATE

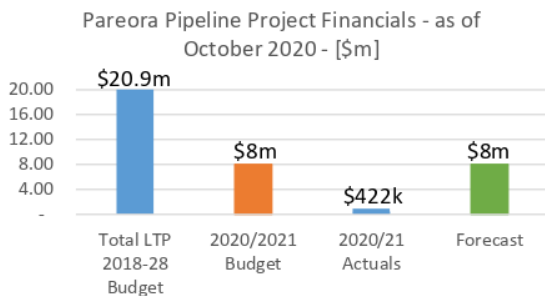
- Section 1 has been awarded to Rooney Earthmoving Ltd on October 20, 2020. Construction is planned to start in January 2021.
- Investigations for alternative technology, i.e. suitability of lining, have been completed and confirmed the suitability of the lining methodology for Section 2. This section will be awarded following direct negotiation with the preferred supplier.
- Section 3 is currently on the market and the tendering period closes on the 22 of January 2021.

Project Stage		Status & Estimated Duration	Completion Date
Investigations	✓	Completed	
Consenting and Approvals	🚧	All roading authorisations and private land entries have been negotiated and agreed. The Archaeological Authority for Section 1 has been granted. The application for Archaeological Authority for Section 3 has been lodged. The application for resource consent has been lodged for Section 1 and will be lodged for Section 3 in November. The consenting and approvals requirements for Section 2 are dependent on the methodology.	2020
Design	✓	Design is completed for Sections 1 and 3. Section 2 requires minimal design as the lining technology will be used.	Oct 2020
Tendering	🚧	Section 1 has been awarded. Section 3 is currently on the market (closes on 22/01/2021). Direct negotiation for Section 2 will start in November 2020.	Aug 2020 – Dec 2020
Construction	📅	Estimated duration: Section 1 – 40-45 weeks; Section 2 – 12-15 weeks (with liner), Section 3 – 40-50 weeks	Sep 21 – Dec 21
Commissioning	📅	Will follow construction.	

LEGEND: ✓ Completed 🚧 In progress 📅 Not yet started

PROJECT FINANCIALS

The project is funded by loan, within the Urban Water Supply financial accounts. The loan in turn will be financed by urban water supply ratepayers via the Uniform Annual Charge for urban water.



PROJECT RISKS

CONSENTING – Some consenting application are still ongoing, there is a risk that potential request for additional information may delay the project.

KEY PROJECT

Downlands Water Supply Scheme Upgrade

Progress report – Issue 3 – November 2020



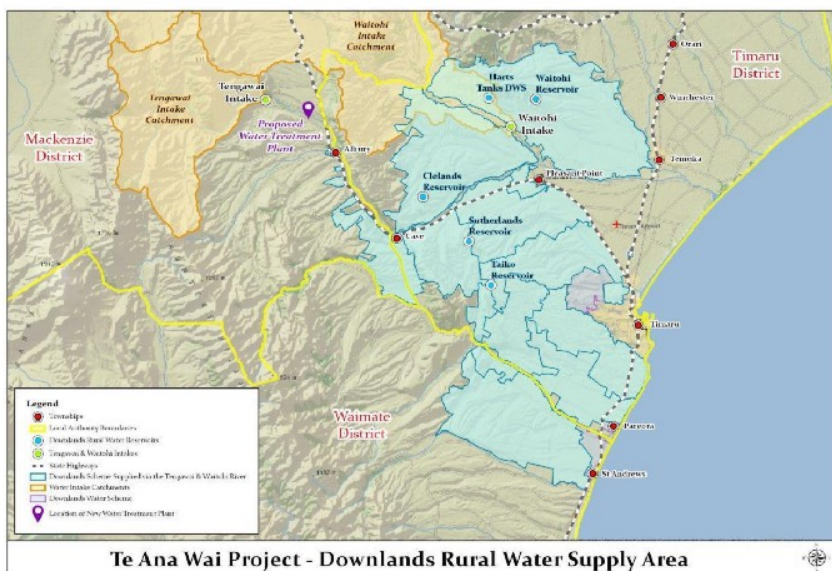
OVERVIEW

Timaru District Council manages the Downlands Water Supply Scheme on behalf of the Timaru, Waimate and Mackenzie District Councils.

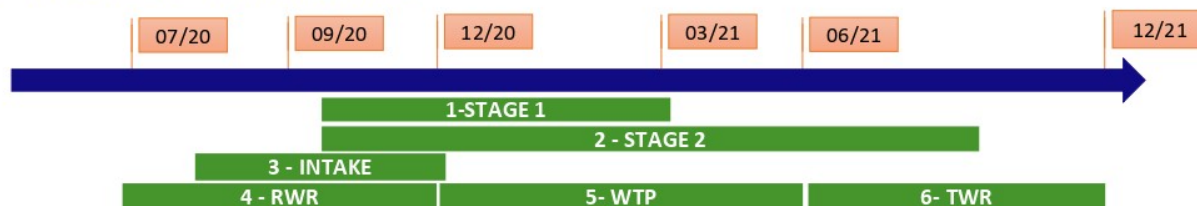
The Downlands Rural Water Supply currently supplies stock and drinking water to over 2,500 properties. The scheme dates back to the 1930s, and no longer complies with the Drinking Water Standards for New Zealand 2008 (Revised 2018) (DWSNZ). Parts of the asset are close to end of life. In addition the available supply is currently fully allocated.

The Scheme upgrade was approved as part of the 2018-2028 Long Term Plan, and it is now reaching the end of the design and consenting phase. The project comprises the 6 contract work packages listed below:

- Trunkmain Upgrade**
- 1 Stage 1 – 3.5km from Cave to Davison Road
- 2 Stage 2 – 15.3km from Cave to WTP
- Te Ana Wai Intake Upgrade**
- 3 New Pump station, new galleries, refurbishment of existing galleries and upgrade of 110m AC section of raw water pipe.
- Te Ana Wai Water Treatment Plant**
- 4 Raw Water Reservoirs
- 5 Water Treatment Plant
- 6 Treated Water Reservoir



PROJECT TIMELINE



PROJECT TEAM

Project Sponsor: Andrew Dixon - Project Lead: Grant Hall - Project Manager: Octa

\$26M

Total 2018-2028 LTP Budget

\$1.83M

Spent in 2020/21 as of 30 September 2020

95% Design
2% Construction
Completed

KEY PROJECT

Downlands Water Supply Scheme Upgrade

Progress report – Issue 3 – November 2020



RECENT PROGRESS

Intake – Design is complete. Construction of the in-river works is complete, with the balance of the work now being tendered. Construction is scheduled from December 2020 to April 2021.

Raw Water Reservoir – Construction is expected to resume in December. Land Designation is proceeding with the issuing of the decision made by the Commissioner following the hearing and the appeal period due to expire mid-November 2020.

Water Treatment Plant – The Design & Construct Contract has been awarded to Marshall Pall Consortium. Design is progressing with a HAZOP Workshop completed. Commissioning of the new WTP is still on track for June 2021.

Treated Water Reservoir – A Performance Specification for Design & Construct contract has been received, and the procurement strategy will be presented to the Tenders and Procurement Committee on November 24, 2020.

Stage 1 Pipeline – Construction due to start in December.

Stage 2 Pipeline – Consenting is underway. Tendering for construction is in progress with construction planned from January 2021 through June 2021.

	Trunkmain		Intake	WTP			
	Stage 1	Stage 2		RWR	TWR	WTP	
Prelim. Investigations	✓	✓	✓	✓	✓	✓	Not started
Consenting	✓		✓				In progress - behind
Design	✓	✓	✓	✓			Warning
Procurement	✓	✓		✓		✓	Awaiting Sign-Off
Construction							Completed
Commissioning							

PROJECT FINANCIALS

\$8.9m has been committed to date but planning delays have meant the rate of expenditure is slower than what was planned.

PROJECT RISKS

CONSENTING – Resolution of the Land Designation Hearing is expected to result in construction resuming in December, to the Intake and Raw Water Ponds. The Water Treatment Plant should start on site in February.

CASHFLOW - The Planning delays have prevented planned construction expenditure. Contractor resource availability once planning issues are resolved will determine whether the original timeframes can be maintained.

KEY PROJECT

Winchester / Geraldine Roundabout

Progress report – Issue 3 – November 2020



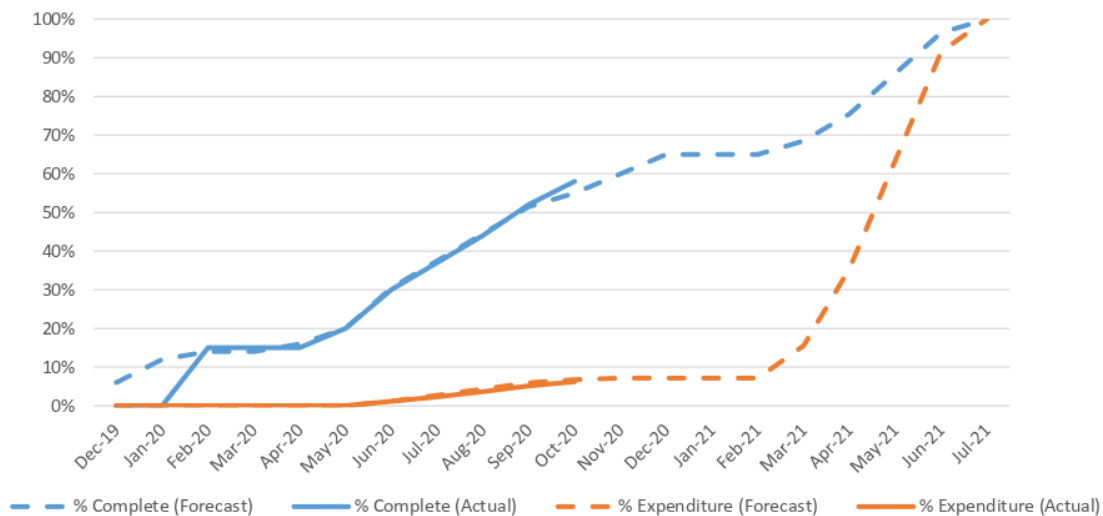
OVERVIEW

Winchester-Geraldine, Coach, Tiplady, and McKenzie Roads intersect approximately 6km south of the Geraldine Township. This intersection has been identified as a high risk intersection by NZ Transport Agency. This outcome correlates with the high vehicle crash history at this intersection - in the last ten years there have been eight injury-causing crashes, with three of them resulting in serious injuries. As a result, this intersection has been identified as high-risk and in need of upgrading. Through the Safer Networks Programme (SNP) it has been determined that the best treatment for this site is the installation of a rural roundabout. Due to the SNP category, this work is being funded at 75% by NZTA and 25% by TDC.

PROJECT UPDATE

- Detailed design is complete.
- Tender documents are currently on Tenderlink, closing on November 5. A report for the Tenders and Procurement Committee is expected to be presented on November 24, 2020.
- A communication plan has been developed and communication is underway with the property owners in the vicinity.

Winchester-Geraldine, Coach, Tiplady, and McKenzie Roads Intersection Upgrade - Progress Tracking



PROJECT TEAM

Project Sponsor: Andrew Dixon - **Project Manager:** Adam Ward

\$2M

Total 2020/21 Annual Plan Budget

\$156k

Spent to Date (as of 31 October 2020)

58%

Completed (as of 31 October 2020)

7.4 Canterbury Land and Water Regional Plan – Notified Plan Change 7**Author:** Ashley Harper, Senior Programme Delivery Manager**Authoriser:** Andrew Dixon, Group Manager Infrastructure**Recommendation**

That this report be received and noted.

Purpose of Report

- 1 To brief the Infrastructure Committee on the progress and status of the Environment Canterbury developed Plan Change 7 to the Canterbury Land and Water Regional Plan.

Assessment of Significance

- 2 This issue is not significant in terms of Timaru District Council's (TDC) Significance and Engagement Policy however some of the outputs from this Regional planning process may have implications for a range of Timaru District Council functions.

Discussion

- 3 Plan Change 7 (PC7) is the domain of Environment Canterbury and has been on foot for more than 3 years. PC7 covers a very wide range of matters relevant to the Timaru District Council and to the wider South Canterbury Community. Implementation of the Canterbury Water Management Strategy (CWMS) was the major consideration in identifying issues, involving the community and offering solutions for incorporation into the notified version of PC7.
- 4 The main issues in PC7 that affect the TDC as a utility services provider are associated with the provision of Community Drinking Water and Reticulated Stormwater Systems.
- 5 PC7 was publicly notified by Environment Canterbury on the 20 July 2019, with submissions closing on the 13 September 2019. TDC made a comprehensive submission of over 100 pages and further (cross) submissions were made on the 5th of December 2019. Expert evidence for the hearing has subsequently been prepared by staff and the consultant planner, and submitted in accordance with the hearing schedule.
- 6 In particular the TDC submission focused on;
 - Changing and improving environmental standards
 - Escalating requirements for resource consents
 - Insufficient protection for the Pleasant Point and Seadown water supply abstractions
 - Providing for growth
 - Critical habitats for Threatened Indigenous Freshwater Species
 - Adaptive Flow Management, particularly in relation to the Opihi River and the excellent work that the Adaptive Management Working Group has carried out.
- 7 The hearing process was slowed by the pandemic and was finally convened in late September. It is being held in both Christchurch and Timaru over 5 weeks within a 10 week window. The

TDC submission was heard by the panel of 3 Commissioners on the 2nd of November. The ECan website has been extensively utilised and gives full visibility of submissions, further submissions, evidence, reports, and the hearings timetable which is updated very regularly.

- 8 No timeline has yet been announced for when the decisions of the Commissioners will be made but it should be noted that the decisions can only be appealed on points of law, to the High Court.

Attachments

Nil

7.5 Government 3Waters Reforms Stimulus Package - Progress Report at 5th November 2020**Author:** Ashley Harper, Senior Programme Delivery Manager**Authoriser:** Andrew Dixon, Group Manager Infrastructure**Recommendation**

That this report be received and progress noted.

Purpose of Report1 To inform the Infrastructure Committee of progress towards implementing the Governments 3Waters Reforms Stimulus Package. This reporting mechanism was agreed at the 22nd September meeting of Council.

Assessment of Significance

- 2 The information relating to project contained in this report are not significant, however collectively the matters could result in significant changes to the governance and management of Sewer, Stormwater, and Potable water within the Timaru District in the medium term.

Discussion

- 3 On the 11th of August Council agreed to sign a Memorandum of Understanding (MoU) with Government and thereby participate in the Government 3Waters sector reforms. By signing the MoU Council will receive \$6.86m of stimulus funding for new projects.
- 4 This initiative is gathering momentum, on a number of fronts, as follows:
 - 4.1 Delivery Plan (DP). The DP was submitted before the 30th September deadline, with 16 projects prioritised, and 5 projects on the contingency list. Further information to clarify a number of matters was provided in October and again earlier this month. Formal approval from the Department of Internal Affairs (DIA) is expected prior to the Committee meeting. In the intervening time all projects are being progressed by allocating project managers, committing design resources, and determining procurement methods. The 31 March 2021 deadline to commence physical works will be met.
 - 4.2 Request for Information (RFI). On Tuesday the 27th of October a formal RFI was received from the DIA seeking a large volume of information about the 3 waters activities. The provision of this information is a commitment under the MoU. The information required is effectively a 'deep dive' into everything that is known with respect to the 3Waters activities. The information needs to be provided by the 1st of February 2021. A project plan has been prepared and work has commenced.
 - 4.3 Staff resourcing. To deliver the \$6.86m stimulus package and to meet the MoU commitments over the next 17 months additional internal and external resourcing is required. The cost of this resource is to be met from the stimulus package funding and the recruitment process for the fixed term staff positions is well advanced.
- 5 The Government 3Waters reform proposals are now accelerating and with challenging deadlines requires significant organisational commitment.

Attachments

Nil

7.6 Peel Forest Closed Landfill Management Plan

Author: Vincie Billante, Acting Climate and Sustainability Manager

Authoriser: Andrew Dixon, Group Manager Infrastructure

Recommendation

That the Infrastructure Committee approves:

1. Additional unbudgeted funding of \$500,000 to mitigate any further potential erosion of the closed Peel Forest landfill adjacent to the Rangitata River by:
 - (a) Commencing river engineering works to direct the main river channel away from the bank and forming a vegetated buffer at the base of the terrace;
 - (b) Recap the landfill area at the top of the cliff to cover exposed rubbish and remove exposed rubbish on the terrace face.
2. That the additional expenditure required for the landfill mitigation capital works be funded by loan.
3. The development of the long-term management plan for the closed Peel Forest landfill site and other closed landfills to reduce further risk exposure to be considered in the 2021-31 Long Term plan.

Purpose of Report

- 1 This report is to inform Council of the historical issues with Peel Forest closed landfill and present options to mitigate the short and long-term risks of further exposure of landfill material due to erosion of the river terrace by Rangitata River.

Assessment of Significance

- 2 This matter is considered of medium significance in terms of the Council significance policy. A significant erosion event resulting in the landfill being breached would have a high community interest and environmental harm.

Background

- 3 The Peel Forest landfill operated from the site at the end of Dennistoun Road atop a gully adjacent to the Rangitata River from sometime in the mid-1960s until about 2004, when the Council formally closed it as a landfill. According to ECan Listed Land Use Register (LLUR) in 2005, the landfill measured 0.4ha with a fill volume of approximately 20,000m³ to a depth of 5m. Natural contours in the area direct surface runoff over the landfill through the gully to the Rangitata River banks, 10m below in a sheer drop.
- 4 It has previously been noted that there was an erosion risk being adjacent to the Rangitata River should a major flood event occur.
- 5 Council has monitored the closed landfill site to varying degrees through site visits, photos and monitoring the surface water in the Rangitata River for contaminants coming from any leachate of the landfill. The only reported contamination for most of the ten years of monitoring from 2010 onwards has been incidences of rubbish appearing on the ground

surface at the top of the landfill (where the neighbour grazes horses) and the occasional breach of rubbish falling down the gully.

- 6 On 9 December 2019, the Rangitata River experienced a one in 20 year flooding event, creating a flow of 2,200m³/s which caused erosion of the toe of the terrace resulting in the failure of the cliff face exposing surficial rubbish and debris within 0.5m of the surface. This was subjected to inspections by Council officers and environmental consultants to carry out preliminary investigations. It was identified through test pitting that the edge of the eroding terrace was still approximately 10m from the primary landfill area, with rubbish present within the surficial layer of topsoil only.
- 7 Preliminary works were undertaken in December 2019 to pull back some of the rubbish within the surficial soil layer (0.5m depth) from the edge of the cliff, and picking up the loose rubbish that had fallen down on to the river bed.
- 8 Over the past ten months, various complaints have been received from the neighbours, Bert and Pennie How (loose rubbish debris) and also from the Department of Conservation (DOC) about the situation at Peel Forest landfill. DOC's concern is the release of rubbish into the Rangitata River, as this issue has experienced a heightened awareness due to DOC's experience of managing the Fox River breach and the subsequent national media coverage in 2019.

Discussion

- 9 Specialist consultants, Pattle Delamore Partners (PDP), were commissioned to investigate various options available to mitigate or eliminate the risk of further breaches at Peel Forest closed landfill. This includes looking at river engineering actions (independently sources from an external river engineering firm, Christenson Consulting) within the southern channel of the Rangitata as well as dealing with the landfill contents ten metres above the river.
- 10 PDP and Christenson Consulting has identified a range of options that include minor mitigations such as channel excavations and planting vegetation to act as a buffer to full excavation and removal of all the closed landfill contents and refilling/replanting the area with virgin soil. The cost estimates of the options range from \$500,000 to \$5million, which indicates the complexity in the work required for each option.
- 11 The immediate threat to address is the risk of erosion during future flood events, particularly over the summer months as there has been reported increases in flood events throughout the country. Doing some work within the river itself to address minor flood events and reduce the risk of washouts is considered a prudent and proactive approach to mitigate the risk of further erosion and potential exposure of the main landfill area.
- 12 It is important to note that any minor works done to mitigate anticipated effects from flood events would not completely remove the risk of future erosion and failure of the cliff face to expose the landfill waste during significant events. Removal of the landfill waste in its entirety is the only option to eliminate the risk. However, this option has its own inherent risks of exposure during the waste removal and is the most expensive of the options investigated.
- 13 In light of the Fox River landfill breach from 2019, the Ministry for the Environment has worked with many local authorities, Tonkin & Taylor, LGNZ, and DOC on developing a risk assessment matrix to help assess the over 200 known closed landfills near waterways throughout the country, with the intent to help develop some kind of guidelines to assist territorial authorities

in managing these in future. At this stage, the risk assessment matrix is available for use for small landfills (under 15,000m³) but there is no guidance from the work currently happening.

Options and Preferred Option

- 14 In regards to the Peel Forest landfill, the following options are available:
- 15 **Option One: Status Quo.** Continue to monitor the Peel Forest landfill for leachate/surface water run-off, and respond to any further exposure of surficial rubbish by arranging for litter clean-ups as needed. This is a low cost option.
- 16 This option does not address the risk of exposure of the primary landfill area that may result in contaminants entering the Rangitata River (which would greatly impact the mahinga kai and our relationship with Arowhenua Runanga), and create more grievances from the neighbouring landowners.
- 17 **Option Two: Minimal Channel Work in the Rangitata.** This option is to help redirect the southernmost channel to the main channel through excavations of the riverbed and creating gravel groynes that form a graduated terrace on the bank of river closest to the landfill gully where the breaches have occurred. It also includes planting the groynes on the bank with at least 8m of willow trees to act as a sacrificial barrier for future flood events. It is estimated to cost between \$400,000 - \$500,000. This option will only be effective for relatively small scale flood events, not major catastrophic ones. This addresses the immediate needs to mitigate potential flooding from the Rangitata River and further erosion of the cliff face and terrace of the gully where the landfill is located (see Attachment 3). This is the recommended option.
- 18 **Option Three: Do rock groyne work in the Rangitata.** This option involves constructing a sacrificial buffer through the placement of four large rock groynes (750 tonnes each) of large boulders (at least 1.2m in diameter) along the bank of the terrace where the breach occurred. Additional channel work and planting of willows in the area will be required. The cost estimate of this option is \$1.5 million. In times of extreme flooding there is a risk of having to reconstruct these to repair any breaches or movement of the rocks. A concern about this solution is the chance of movement in times of extreme flood events that damage could be caused to bridges downstream with the large boulders being carried within the stream currents. This option is not recommended at this stage until further analysis is carried out for the risk to roading infrastructure, and to see how the channel works and willow planting hold up to weather events in the interim to help determine the need for permanent river works solution. (See Appendix 4).
- 19 **Option Four: Recap Landfill to cover rubbish material and tidy up site.** This option is one to address the landfill area itself and not the river terrace below. As this landfill appears not to be properly capped in 2004 when it was closed, recapping this appropriately will ensure the landfill contents will be contained within the ground (unless a major natural disaster occurs). This would also involve further pulling back of material from the cliff edge that has been exposed. It will also give some certainty to the community that the rubbish will not surface and be released into the environment, potentially going into the waterways and out to sea. Estimates of this option are around \$100,000. This is recommended to be done in conjunction with Option Two.
- 20 **Option Five: Remove all landfill contents and relocate to Redruth.** Completely removing the risk and liability to Council of the main landfill area being exposed and entering the Rangitata River, but would be extremely costly, increase the exposure risk to site workers, and potentially creating more of an environmental risk due to exposure of contaminants within

the landfill. Any disturbance of this material may create an additional environmental hazard which would require a major response and clean-up. Additionally, moving the 20,000m³ volume of rubbish to Redruth would effectively shorten the life of that landfill, and just move the problem elsewhere. This option is not recommended.

Consultation

- 21 To commence the work required for the immediate threat of minor flood events and tidying up the landfill site itself, the consultation to be carried out is with the major stakeholders, namely ECan, DOC, the neighbours to the landfill, and manu whenua.
- 22 For the larger project for the Closed Landfill Management Plan this project would be consulted as part of the LTP 2021 – 31.

Relevant Legislation, Council Policy and Plans

- 23 Addressing the existing risk of further landfill breach into the Rangitata River aligns with Council's obligations in:
 - 23.1 s42 of that Waste Minimisation Act 2008: *Territorial authorities to encourage effective and efficient waste management and minimisation.*
 - 23.2 s10 of the Local Government Act 2002: *The purpose of local government is (a) to enable democratic local decision-making and action by, and on behalf of, communities; and (b) to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future.*
 - 23.3 s15 of the Resource Management Act 1991: *No person may discharge any contaminant into water.*
- 24 This also aligns with Council's goals and objectives in the Waste Minimisation and Management Plan and the Levels of Service (2) Protection of the Environment from Waste.

Financial and Funding Implications

- 25 There is no funding allocated for the mitigation works in the current approved budget.
- 26 Additional funding of \$500,000 is requested to do the minimal river works required to mitigate the minor flood risks, and to do the recapping and tidy up of the landfill area itself at the top of the cliff and gulley.
- 27 Current legislation does not allow for Waste Levy funding to be used to address closed landfills.
- 28 The additional funding required is recommended to be funded from loan. The financing of this loan over 10 years is approximately \$20,000 that can be sufficiently funded through current activity revenue. Alternatively the Contingency fund may be used. This has an available balance of approximately \$1.3 million.




Other Considerations

- 29 There are 36 known closed landfills under Council jurisdiction within the Timaru District. Many of these are adjacent to waterways, but level of risk of these landfills being eroded and waste being exposed and entering these waterways is not known.
- 30 Currently Council is monitoring six of these closed landfills within the district, but this is mainly for impacts of leachate and stormwater runoff. No management plan exists that outlines the

specific actions to take if any of these landfills are exposed through erosion, or require any remediation if leachate is discovered to be entering the waterways causing an adverse effect.

- 31 Closed landfills are an issue for every territorial authority (and for Central Government) in New Zealand. Fox River landfill breach highlighted the issue due to the prominence in the public arena, and showed the lack of adequate planning for this issue at all elves of government.
- 32 A good starting point for the Council would be to commission a risk assessment of the known landfills in the district, some of which could be done through a desktop exercise and site walkover, and then have a report showing the risk status of the closed landfills.
- 33 This report can then be used as a basis to develop a robust Closed Landfill Management Plan, which would outline the monitoring programme but also the mitigation and remediation programme, with costings, of each landfill should action need to be taken. The recommendations of this report highlights the need for Council to address the larger issue of having a sound management plan for the 36 closed Council landfills currently identified within the district, including conducting a risk assessment and having a staged approach to the management of those landfills identified as posing the highest risk of being eroded/exposed.
- 34 Timaru District Council has the opportunity to front-foot this issue by addressing the imminent risk of a known landfill breach within its own district and take a proactive approach to managing the issue including Peel Forest. This would capitalise on Council's reputation as being a leader in waste management at a national level.

Attachments

1. **Appendix 1: Evaluation of Remedial and Management Options** [↓](#) 
2. **Appendix 2: Option Two - Minor River Works** [↓](#) 
3. **Appendix 3: Option Three - Major River Rock Groynes Works** [↓](#) 

Appendix 1: Evaluation of Remedial and Management Options			
Option	Description	Advantages/Benefits	Disadvantages/Limitations
1	<p>Do Nothing/Status Quo <i>Baseline</i></p> <p>This scenario does not consider any intervention or corrective action to be carried out and essentially leaves the site as is. This provides a baseline for assessment of the options.</p>	<ul style="list-style-type: none"> • No capital costs. • Will not create additional environmental footprint generated by any remedial activity. • No disturbance of waste (i.e. no increased risk to human health associated with the disturbance of the material). • Will not use up air space within the existing Landfill (Redruth). Possible quantity of 20,000 m³ of material. • Lower carbon footprint with no transportation of material required. 	<ul style="list-style-type: none"> • Likely ongoing erosion of river terrace and subsequent slope instability terrace leading to waste exposure and waste material entering the environment (river & ocean). • Possible high clean-up cost in the event of a future river terrace erosion incident that exposes the primary waste filled areas (particularly the main landfill pit). • Negative visual and amenity values from exposed waste material accumulating at toe of river terrace and being washed downstream during flood events (including during minor ongoing exposure). • Public perception/media attention as to why Council has done nothing if a risk of future exposure was identified. • Potential human health and environmental risks and liability will remain (including ongoing monitoring of the risk level).

<p>2</p>	<p>Waste Removal and Disposal</p> <p>Source Removal</p> <p>This approach involves the removal of the source material for disposal off-site via consented/authorised landfill facilities. This would involve the excavation and transportation of all of the landfill material and underlying impacted material (associated with leaching) to a suitable facility. This would not involve any earthworks in the river bed.</p> <p>There is an estimated 20,000 m³ of landfill material identified that would require removal (level of underlying natural soils impacted unknown at this stage). Perched water present in the main landfill pit would also require removal/disposal.</p>	<ul style="list-style-type: none"> • Removal of source material thereby removing future risks and liabilities (human health, environmental and aesthetic risks and physical hazards) if the area was eroded in the future. • Will allow the area to be reinstated and more suitable for use (current area soft and hummocky with some visible waste protruding through the ground surface). • Higher level of certainty that regulatory requirements can be met. • No future monitoring, maintenance or mitigation costs. 	<ul style="list-style-type: none"> • Capital cost for complete removal and disposal as standalone option will be significant (likely prohibitive to this being a viable option). • Will require extensive disturbance and excavation of potentially highly contaminated material therefore creating increased risk to site workers and general public during remedial activities. • Will be required to be backfilled (approximately the same volume removed although the areas could be redesigned to some degree). • Introduces additional stakeholder in the consultation process (landfill operator and communities along the route of disposal facility for off-site disposal). • High consumption of resources, energy and environmental footprint (a large number of trucks on the road to transport material away and for backfilling). • Will use up air space within the existing landfill (Redruth) reducing its long-term capacity for servicing the Timaru area.
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<p>3</p>	<p>Waste Removal and Disposal</p> <p>Source Redistribution</p> <p>Moving the waste to another disposal location close to or within the existing site boundaries. This option would involve the complete excavation of the waste material and underlying impacted material (associated with leaching) for disposal in a more suitable location away from the river terrace.</p>	<ul style="list-style-type: none"> • Removal of source material from the high-risk area for further erosion thereby removing the level of risk and liability (human health, environmental and aesthetic risks and physical hazards). • Will allow the area to be reinstated and more suitable for use (current area soft and hummocky with some visible waste protruding through the ground surface). • Reduced disposal costs (i.e. no landfill gate rate applied). • Can adopt improved/modern encapsulation methods including using HDPE liners, leachate collection, etc. • Cut to fill can be neutral (i.e. encapsulation area cut the same as the backfill material required at the current landfill area). • Reduced transport costs and vehicle movement on the roads (i.e. road safety) if located in relative close proximity in comparison with disposal to an existing consented landfill. 	<ul style="list-style-type: none"> • Transfers the waste material to a different location and the risks/liabilities associated with it, although provided the material is taken to a more suitable location would result in a net benefit. • Would require a significant area to construct this cell and require public consultation. • Likely to require purchasing of land to accommodate the landfill cell. Area could be repurposed following encapsulation, but may have limited use. Limited ongoing financial value to council. • Ongoing management/monitoring costs associated with the encapsulation cell (effectively another landfill to manage, including leachate collection/disposal depending on its design). • Likely consenting issues – essentially constructing a new landfill. • Additional work required in selecting a suitable disposal area far enough from the river to ensure the location will not be affected by long-term river erosion. Assessment of effects to other receptors would also be required (i.e. groundwater users, etc).
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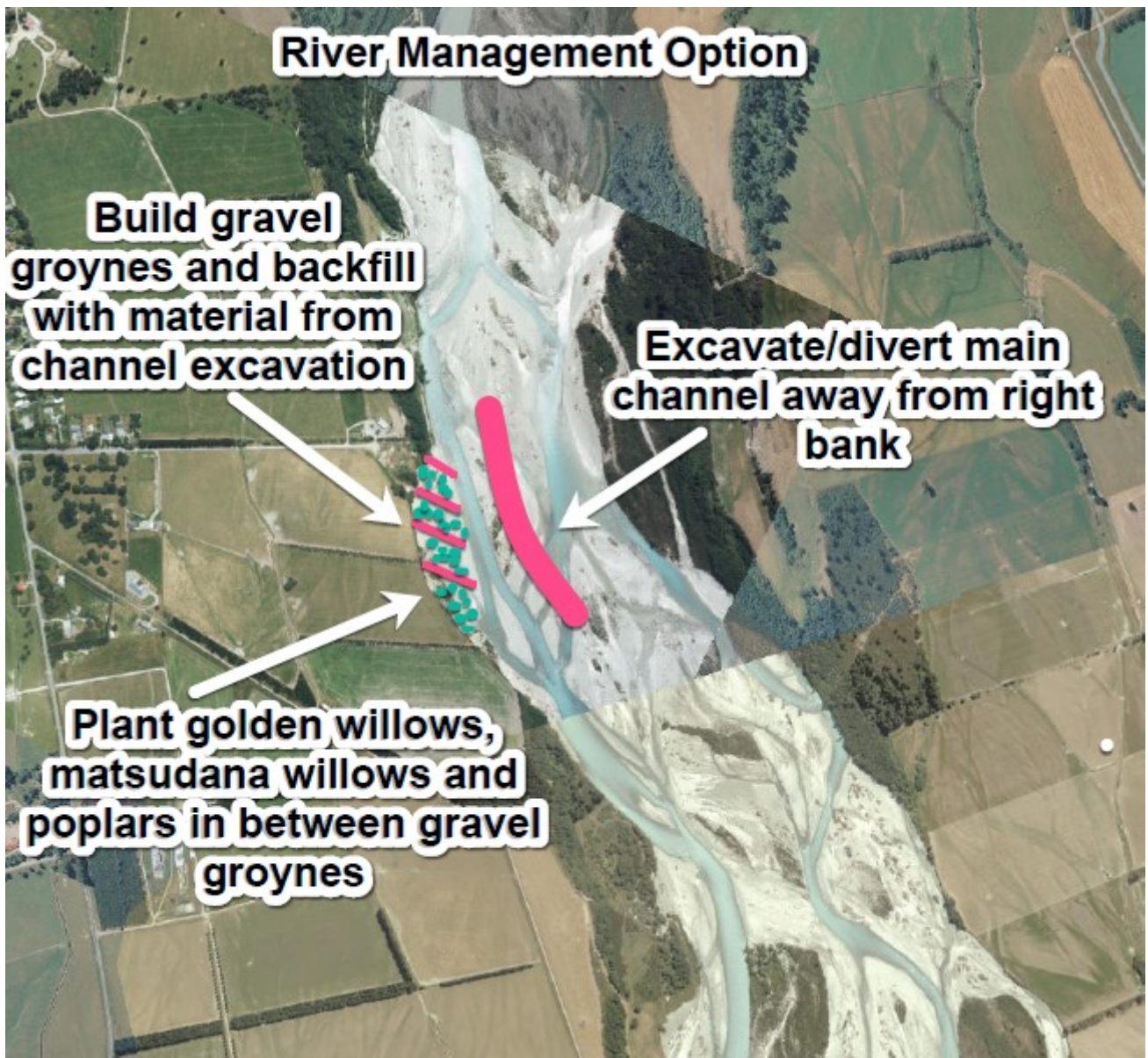
<p>4 (Note: Recommended Option)</p>	<p>River Fill Terrace Erosion Protection Systems (Hard Engineering) This approach involves the use of engineered erosion protection.</p> <p>River Terrace Toe Protection & Channel Excavation A relatively low cost approach to managing the erosion at this site would be to undertake river management works in the form of channel excavations to divert the main channel away from the right bank and planting of a vegetated buffer at the base of the terrace (See Appendix 2). The channel excavations would include cutting a large channel extending upstream and downstream of Dennistoun Road that generally ties-in with the upstream and downstream channel with a meander form that also generally reflects that natural form of the river. The material excavated from the channel excavation could be placed in the form of gravel groynes on the river bed directly adjacent to the eroding terrace. As part of this gravel groyne construction this area could also be reshaped to be graded from</p>	<ul style="list-style-type: none"> • No disturbance of waste (i.e. no increased risk to human health associated with the disturbance of the material). • Will not use up air space within the existing Landfill (Redruth). Possible quantity of 20,000 m³ of material. • Lower carbon footprint with no transportation of material required. • Provides a high level of erosion protection at the toe of the river terrace thereby locally reducing erosion at the toe of the terrace cliff and improving overall stability and protecting landfill above. • Small slips/spoil from any future terrace erosion will be retained on the formed lower terrace and act as additional temporary ‘sacrificial’ erosion protection. • Could be combined with partial removal of waste to minimise costs and increase buffer between current edge and waste material (option 5) • Use of natural materials to blend in with surrounding environment (area planted with trees for added protection and allow for river edge 	<ul style="list-style-type: none"> • Waste materials will continue to remain in-situ and present an ongoing liability, although the level of risk would be lowered through remedial works on toe of terrace (in comparison to option 1). Limited future land use opportunities of the landfill area other than light grazing of animals (existing). • River erosion protection can alter the fluvial geomorphology of that stretch of river and may result in other undesired effects further downstream. Will require further site-specific information (e.g. hydrodynamic processes, geomorphology and sediment budget) to inform detailed design. • The existing failure model involves slipped terrace material being retained at the toe of the terrace until the next flood event. This slip material provides temporary erosion protection to the toe of the terrace but is likely to be removed during the next flood event. Access to place erosion protection could include excavation (partial or full) of this material prior to placing rock armouring (risk of failure during the works). • Capital cost could be high depending on design/system chosen. • Potentially limited local resources of hard rock available depending on the chosen design.
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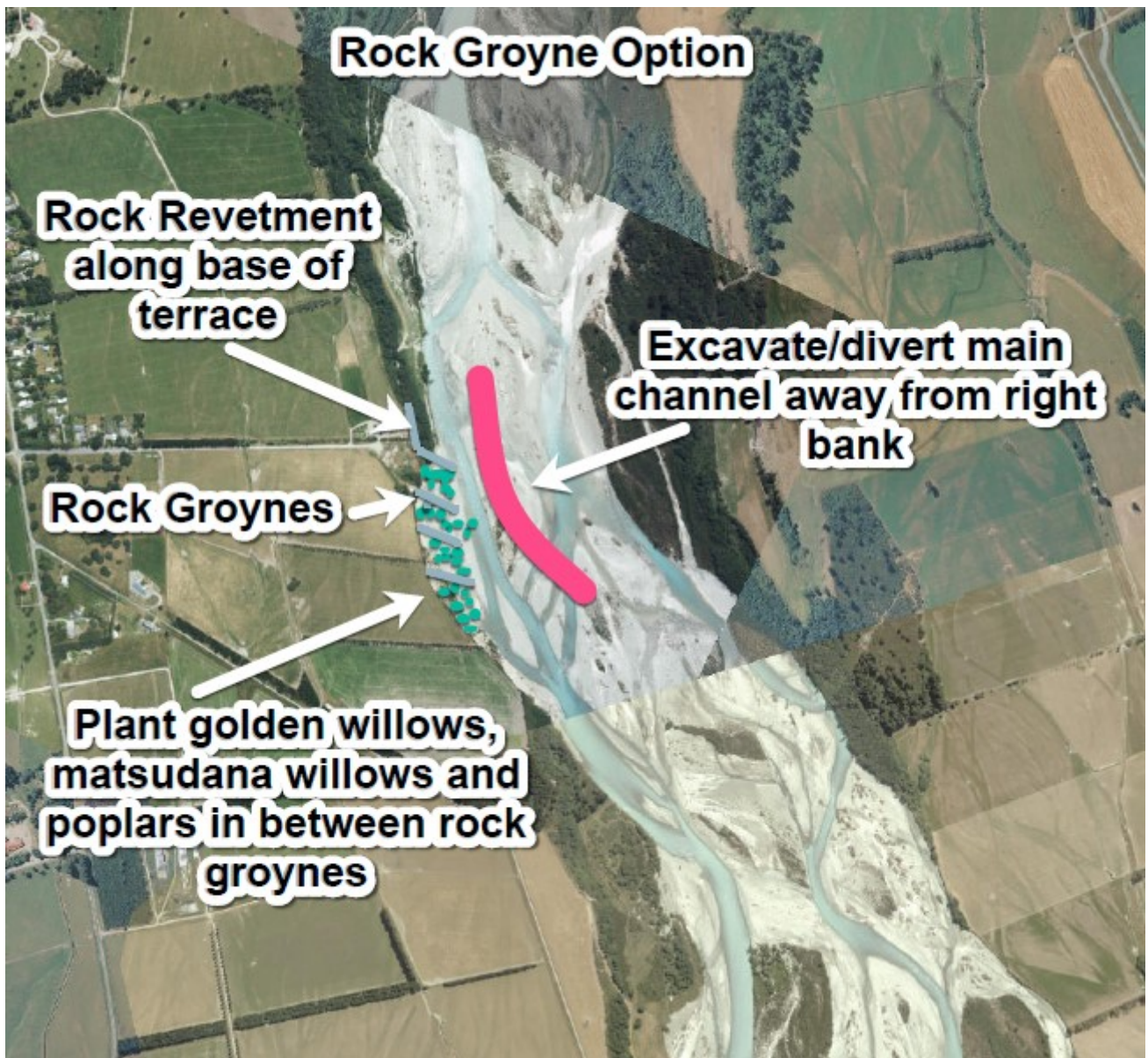
	<p>the terrace down to the channel edge. The construction of the gravel groynes and the reshaping of this area of river bed would reduce the likelihood of this area being eroded by smaller floods but larger floods would likely overwhelm these works and the main channel could again migrate up to the terrace base.</p> <p>Further reinforcement of this area would be beneficial through the establishment of a vegetative buffer of willows and poplars. Tree planting is typically undertaken during winter to reduce water stress during establishment.</p> <p>The success of the vegetated buffer would be highly dependant on the subsequent flood activity following planting, especially within the first five years. There would likely need to be with further channel works to try and keep the main channel away from the trees while they establish..</p>	<p>management such as lopping or laying of felled trees).</p> <ul style="list-style-type: none"> • Less emissions, energy requirement and environmental footprint during construction phase. • The planting of golden and matsudana willows as well as poplars in-between the gravel groynes would provide the potential for futher reductions in the risk of future erosion. • It is possible to undertake these works under existing Environment Canterbury river works provisions. 	<ul style="list-style-type: none"> • It is highlighted that this is a highly mobile reach of the Rangitata River and that a small to moderate flood could fill in the excavated channel and the main channel could again migrate towards the base of the right bank terrace threatening to erode the landfill material. • Depending on flood events, will likely require on-going maintenance of the river edge and planting.
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<p>4a</p>	<p>As option 4 the idea is to form a river gravel terrace (toe protection), however in this instance sheet piling can be used to retain gravels between the toe of the slope and sheet piles.</p>	<ul style="list-style-type: none"> • As Option 4. • More durable than the rock armoured terrace. • Less on-going maintenance than Option 4. 	<ul style="list-style-type: none"> • As option 4. • Construction of gravel terrace with additional steel sheet piles into riverbed. Disturbance of riverbed environment, heavy machinery transporting along river. • Poor aesthetics and not keeping with the natural environment. • Flood waters may still erode edges with washout in-front of sheet piles possible leading to stability issues of sheet piles in future. Risk from washout and lose of passive support can be rectified with inclusion of more engineered options such as dead man options. • Expensive
<p>4b</p>	<p>Protection of Existing Terrace Face Combination of designed meshed and shotcrete placed over the river terrace face to provide protection of the terrace walls and minimise/reduce further erosion.</p>	<ul style="list-style-type: none"> • No disturbance of waste (i.e. no increased risk to human health associated with the disturbance of the material). • Will not use up air space within the existing Landfill (Redruth). Possible quantity of 20,000 m³ of material. • Lower carbon footprint with no transportation of material required. • Limited maintenance. 	<ul style="list-style-type: none"> • Waste materials will continue to remain in-situ and present an ongoing liability, although the level of risk would be lowered through remedial works (in comparison to option 1). Limited future land use opportunities of the landfill area other than light grazing of animals (existing). • Expensive as involves rope access to place material, anchoring in to face, installation of horizontal drains, mesh and concrete shotcrete. Limited and difficult access (highly unstable walls)

		<ul style="list-style-type: none"> • Will reduce smaller erosion/slips that occur on the upper section. 	<ul style="list-style-type: none"> • Will still require some level of toe protection as will have limited protection when in direct contact with water. Water could get into and behind the shotcrete and cause the concrete to spall (fail). • Poor aesthetics and not keeping with the natural environment.
<p>4c</p>	<p>Rock Groyne Option</p> <p>If a more robust solution is required from the outset then a more engineered solution in the form of rock groynes could be considered (See Appendix 3).</p> <p>With this option it would still be beneficial to do the initial channel works in a similar manner as proposed for the river management option to reduce the risk during the construction period. For rock groynes to be successful in this reach of the Rangitata River they would need to be constructed from large diameter ($D_{50} > 1.2$ m diameter), robust, well-graded rock.</p> <p>If a rock source can economically be secured it is likely that at least four 750 tonne groynes would be required as well as a length of rock revetment at the base of terrace upstream of the</p>	<ul style="list-style-type: none"> • As Option 4. • Much more robust solution that could withstand flood events (but not major floods). 	<ul style="list-style-type: none"> • Expensive. • Potential implications for infrastructure downstream in major flood events, large boulders causing damage to roads or bridges • It is understood through conversations with Environment Canterbury River Engineering staff that this type of rock can be difficult to source in the large quantities that would be required for groynes of this size. • These works would likely require a resource consent as they would be beyond what is allowed by the Environment Canterbury permitted river works.

	<p>upper most groyne and behind the existing band of willow trees. It is also suggested that the same vegetated buffer as the river management option is established between the groynes to reduce the velocity of floodwaters during large floods when the groynes are being overtopped.</p>		
5	<p>Waste Relocation & River Terrace Erosion Protection Systems</p> <p>Combination Options 2 and 4 and involves pulling back shallow surficial waste from 5 m from the terrace crestline and reinstating this area. Establishment of a low-lying terrace at the toe of the main river terrace.</p>	<ul style="list-style-type: none"> • As Option 4. • In keeping with natural environment. • Can invoke good community engagement and consultation process by showing some level of waste removal carried out. • Will allow a portion of the area to be reinstated and more suitable for use (current area soft and hummocky with some visible waste protruding through the ground surface). 	<ul style="list-style-type: none"> • As Option 4. • Increased consumption of resources, energy and environmental footprint compared to option 2 (i.e. no removal), but the removal of some material from close to the crestline will provide a larger buffer zone.





8 Consideration of Urgent Business Items

9 Consideration of Minor Nature Matters