

Meeting of the Greymouth Floodwall Joint Committee

Tuesday, 23 JULY 2024

10:00AM

**At the offices of the West Coast Regional Council, Greymouth
and**

Live Streamed via Council's Facebook Page:

<https://www.facebook.com/WestCoastRegionalCouncil>

A G E N D A **(Rarangi Take)**

Pg No.

- 1. Welcome (*Haere mai*)**
- 2. Apologies (*Ngā Pa Pouri*)**
- 3. Declarations of Interest**
- 4. Public Forum, Petitions and Deputations (*He Huinga tuku korero*)**
- 5. Confirmation of Minutes**
 - 5.1 May 2023 Minutes of the Greymouth Floodwall
Joint Committee
- 6. Review of Agreement.**

1-7

- 6.1 Greymouth Floodwalls Joint Agreement Review Update (*Tom Hopkins*)
verbal report.

Matters Arising

7. Reports

Annual Report	8-9
Financial Report	10-13
7.1 Impairment, Condition Assessment, Level of Service	14
7.2 Update on Kānoa Funded Greymouth Flood Protection Scheme Project	15-16
7.3 Covering report Cobden NBS project 2023.	17-25
7.4 Covering report Blaketown emergency works.	26-30

8. General Business

D. Lew
Chief Executive



Purpose of Local Government

The reports contained in this agenda address the requirements of the Local Government Act 2002 in relation to decision making. Unless otherwise stated, the recommended option promotes the social, economic, environmental, and cultural well-being of communities in the present and for the future.

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**Minutes of Greymouth Joint Committee Floodwall meeting held at GDC Council Chambers
Thursday 4th May 2023 commencing at 13.00**

Present: Mayoress T. Gibson, A. Gibson, T. Mora, A. Haymes, K. Perrin-Smith, P. Morris (GDC), P. Birchfield, C. Munn, P. Ewen, P. Haddock, B. Cummings, R. Vaughan (WCRC via Zoom).

In Attendance: A. Birchfield (WCRC), M. MacKinney (GDC) B. McMahon (Media), S. Kilkelly, L. Crozier (WCRC)

Welcome: Mayor Tania Gibson welcomed all and opened the meeting.

Apologies: H. Mabin

Moved (Haddock/Perrin-Smith) *that Ms Mabin's apology be accepted.*

Carried

Declarations of Interest: P. Haddock declared an interest in Page 8 of the Agenda.

Notification of Late Items: There were none.

Minutes: Moved(Cummings/Mora) *that the minutes of 13th October 2020 were a true and correct record*

Carried

Moved(Gibson/Mora)*That the minutes of 5th September 2022 meeting were a true and correct record*

Carried

Corrections to Minutes:

Cr Cummings pointed out that he was at the meeting on 5th September 2022 and was not an apology. Mayor Gibson moved that the minutes to be corrected to reflect that.

Mr Birchfield arrived at the meeting at 13.03pm and his apology was recinded.

Moved(T. Gibson/Mora) *that Cr Birchfield's apology be recinded and that the minutes reflect Cr Cummings attendance at the September 2022 meeting.*

Carried

Matters Arising:

Mayor Gibson raised a concern with the Agenda. GDC had initiated the meeting in September 2022 to discuss the gap in the Cobden residents seawall in case of an event. GDC did not receive the Agenda for the September 2022 meeting and the meeting was subsequently adjourned. Members then went to the seawall for a site visit. Since this date GDC has been trying to get this meeting re-convened.

Mayor Gibson said there were new elected councillors and members, and said that GDC staff had been unable to submit items for the agenda.

Ms Gibson stated the Committee would work through this meeting and suggested holding another meeting within a month to make sure items were being sorted.

Chair Haddock just wanted clarification on what Mayor Gibson referred to regarding the Agenda for the meeting in 2021 as he had been told it was held up via the firewall system from the Council.

Ms Vaughan advised that the process for agenda items is that they are brought from the CEO of each Council. The procedure is that elected members should advise their CEO any items that are required for the Agenda. Going forward, the CEO should advise these items following the notice of Meeting, to enable sufficient time for the agenda to be prepared.

Reports

Mayor Gibson referred to the **Annual Report** on Page 8 and Ms Birchfield took the meeting through that report, which was from 1 July 2021 to 30 June 2022, and asked for questions.

Chair Haddock noted at this time he had a declaration of Interest in the financials of Ms Birchfield's report for Equip Engineering.

Ms Birchfield said there was a file note related to the opening of the floodgates 17 July 2021, it had some interesting detail.

The financial report was taken as read. There was a recommendation for a maintenance rates strike as part of that report, and it was agreed to accept the reports.

That the annual and financial reports be accepted as a true and correct record; and that the Council recommend a maintenance rate strike for the 2023/2024 financial year of \$189,883 excluding GST and; that the Council recommend a loan repayment rate strike for the 2023/2024 financial year of \$219,849 excluding GST

Moved(Ewen/Cummings)

Carried

New River re-opening

Ms Birchfield took the report as read and stated it was for information purposes.

Moved(T. Gibson/Haddock) *that the New River report be received.*

Carried

Lower Cobden Flood Mitigation Options Report

The report was taken as read. It was highlighted that work had been done to create the Nelson Quay bund about 3-4 years ago. After the last event there had been a suggestion by Kurtis Perrin-Smith to widen the crest-width on the bund so potentially there could be a flood pump placed there.

Further to the discussion, Ms Birchfield provided some background information. It was recommended:

Moved(Haddock/Cummings) *That the modification of the existing bund is approved in combination with a trial test pit to assess the suitability of the Cobden Domain for conversion to the flood water storage area for retention, at a cost of approximately \$2,500*

Carried

Chair Haddock asked Mr Perrin-Smith how effective he thought the modification in terms of retention would be. Ms Birchfield answered and said that Matt Gardner's report that was done about 4-5 years ago modelled with different depths to what they could dig it out to and said that would only be a 5 year retention and said that it would be maximum 5 year return period flood. Mr Haddock asked if that would give the residents of lower Peel Street area some relief, to which Ms Birchfield agreed that it would give them some help, but would not help in the 20, 30 or 50 year events.

Mr Perrin-Smith added that the option for the flood pump in that lower area is only effective until the topping of that sacrificial bund area, once the water level got to that point then the pump would no longer be a solution.

IRG Update – Greymouth Floodwall

Scott Hoare referred to the upgrade of the stopbanks from the Cobden and Mawhera Quay sides, and when they were bought in to the project and after the initial review looked at doing some additional survey and modelling in regard to impact from Sawyers Creek.

They had completed the preliminary design and are waiting on feedback from GDC. There is a meeting scheduled for next week to take on that feedback for the final design, and put that out for tender, and complete the resource consent amendment requirements.

Chair Haddock asked how long the feedback would take to get back to the WCRC as he said they were keen to get that project started. Mr Perrin-Smith said that GDC had committed to providing those final comments by close off tomorrow and would take them to the meeting next week.

General Business

Deed of Transfer – Greymouth Floodwall

The purpose of the paper was to confirm to agree to transfer the assets.

Mr Munn referred to Item 3 and the need to provide further documents. It was raised that there needed to be an operating plan between the two agencies and a list of the assets tabled, and where the point of changes occurs between the two Councils.

Cr Mora asked if that would include the assets like the pump stations and everything related to the Floodwall mitigation.

This was a matter of where that point of change occurred and what was actually being transferred. Mr Munn understood that the pumping stations were not being transferred as they were a District Council asset, but needed to know where that point of change will occur whether it be at the floodwall gate or further along.

Chair Haddock's understanding was that the deed of transfer had been on-going for a few years and that it would be prudent to get it signed, and clarification on what was transferred needed to be set out as well as he understood that the pumping stations were not to be transferred as Regional Council had no mandate for stormwater.

There was discussion around this and it was agreed clarification was needed.

There had been on-going discussion around the maintenance of the facilities through the management agreement and there was on-going discussion around the renewal of those flood pump facilities that were created at the time of the floodwall scheme, and funded by the Catchment Board at the time. There was still conversation to be had to work through that aspect.

Chair Haddock expressed that WCRC would like to have this item sorted out soon as well.

TTPP – Natural Hazard Variation

The report was taken as read. This was information that affected this committee as it affected the Cobden, Greymouth and Blaketown areas. Ms Vaughan referred to Page 22 of the relevant maps and pointed out the increased flooding area in the Cobden map is quite substantial.

The maps had been re made now that the LIDAR information was available and gave more certainty of ground level. NIWA were able to re-model what they considered coastal inundation areas for the whole of the West Coast. A variation would be made to proposed Te Tai o Poutini Plan, that would be notified for public input and was scheduled to happen in the last quarter of this year.

The committee should re-consider these maps as part of the variation but is actually a change to the Plan.

Mayor Gibson said GDC had issues with the maps as they did not take into account the GDC Flood protection, and needed the next step to be done and the modelling around that, as it affected any commercial development in the CBD.

Ms Vaughan said the maps were modelled on a 1metre sea level rise which was in the Government guidance in the terms of planning documents. Ms Vaughan went on to explain that the modelling was done on an inundation basis or “bath tub” modelling as it was known and gave an explanation of this, and said that in the NIWA account the floodwall was included in the 1metre inundation scenario.

Mayor Gibson said that at the TTPP meetings they were told it wasn't included in the maps and Ms Vaughan re-iterated that it was an inundation model and it showed where the damage would happen if the sea level rose 1metre, in a 100 year scenario.

There was more discussion around accepting the maps, and what the coastal inundation meant. Explanation around the modelling, it was a scenario from a 1metre sea level rise. Ms Vaughan explained that it was a flag to the Planners that more investigation was warranted for any potential development, she said it didn't stymie development, just added another layer to the risk awareness, residential, industrial or commercial.

Cr Mora said that he accepted the LIDAR modelling as it gave Council an indication of where the level may be if that was to happen (1m sea level rise) and the TTPP would take that into account in terms of what it might limit to what would happen in an area, but did the TTPP take into account the mitigations like the floodwall in The Plan.

Ms Vaughan responded that the risk would be assessed – and that would happen twice. It would happen when the variation occurred as to what provisions go in The Plan from this report and it would happen again at Resource consent level, and explained the onus would be on an applicant to show what the risk would actually be if they wanted to do anything in an area that the TTPP has flagged.

Cr Cummings asked if the 1m sea level rise was from a cyclone or climate change. Ms Vaughan said that it was modelled on a storm surge and/or climate change.

Cr Haddock said he had no problem in accepting the recommendation in report, what he did worry about was the potential of it stopping any further development in the town.

Cr Mora asked Ms Vaughan what assurances the Committee would have when the TTPP considered this information and would it take into account mitigations on what the level of risk is. Ms Vaughan replied that they were bound to under the RMA to take those factors (including mitigation) into

account. It would be an assessment of risk against the impact on the social, cultural and economic well-being.

Moved(T. Gibson/A. Gibson)*that the report is received; and consider this additional information in light of any decision making for the Greymouth Floodwall Project*

Carried

Jellyman Park

Mr Perrin-Smith asked for this item to be put on the Agenda to encourage and continue discussion from the Committee following the adjournment of the previous meeting.

Mayor Gibson stated that the GDC made the resolution that it was the WCRC mandate to fix the problem at Jellyman Park and did have a site visit to discuss this.

Ms Gibson added that there had been a delay of 8 months since the site visit and a longer period before that, and residents would want an update on what was happening.

There was discussion that at the site meeting the WCRC donated rock and that was to be placed to fix the hole in the wall, and had that been done. Mayor Gibson replied that GDC had never received anything official from the Regional Council stating the donation of the rock in question, she had heard it discussed at meetings, but no resolution or no letter had been received.

Chair Haddock said his understanding was that as the Floodwall was owned by the Grey District Council he felt it was not the Regional Councils mandate, they were happy to donate rock to fill the gap in the wall but GDC should carry out the work.

Cr Cummings said that this had been talked about since he was elected to Council, he wanted to see a resolution that WCRC took over the floodwall and put it in a rating district, close the door and fix it.

Mr Munn said that the Terms of Reference for this Committee did not include that wall, so the TOR would have to be addressed as well.

Chair Haddock said that would be a matter for the WCRC to consider at their meeting and could not be a decision that could be made here.

Mayor Gibson said at the end of this meeting she wanted a date for another meeting within a month to make sure things were moving ahead.

The scope of the proposed change would have to be considered by the Committee and then changes to the TOR would have to go back through the whole committee – it was suggested that a date be set today for the next meeting then specify what needed to be discussed, whether it be TOR or wider. The Local Government Act would have to be taken into account and she thought it might trigger the Significance and Engagement policies of both Councils, and that would have to be discussed as well.

Cr A Gibson thought that Council's did road, sewage and water and the Regional Council did stop banks. Mayor Gibson said that from the Grey District Council perspective they believed it is the responsibility of the Regional Council for flood protection to protect private property.

Cr Mora thought there was two options, extend the Terms of Reference so that the floodwall would continue and extend along the cobden foreshore, Jellyman Park, where the dumpsite was re-walled

and along to the end of Domett Esplanade and make that the responsibility of the Committee, or the other options was Cr Cummings one, that the GDC hand over the responsibility to the WCRC.

Chair Haddock suggested that both CE's work together to come up with a resolution before the next meeting in a month, and added that it wasn't the WCRC mandate to look after all the coastal inundation.

Mr P Morris replied and said in the WCRC's Long Term Plan it was a responsibility taken over from Catchment Boards under the LGA and unless there was an agreement between the WCRC and a district Councils to transfer the obligation, and there had been none. He said was more than happy to sit down with Ms Mabin and nut out the situation and put a proposal to this group. This was the stance that GDC had taken from day one – he thought it was clear that it was the WCRC responsibility, even though GDC had the consent, but they can allow use of the consent to repair the asset.

There was more to and from discussion around the rock, and at the end Mayor Gibson moved the following:

Moved(T. Gibson/P. Haddock) *that the CEO of the GDC and WCRC work on arranging a meeting to come to a clear recommendation for a solution to the gap on the Cobden Coastline to protect the residents affected in 2022; and that this meeting be no longer than one month away*

Moved(T. Gibson/P. Haddock)

Carried

The IRG Project on the Greymouth Riverwall being put forward to Government for funding and they expected to hear on the 18th of May or earlier and thought that some funding could be available and could have more influence going forward.

Chair Haddock thought that this Committee had approved a co-funding of \$650,000 at a previous meeting.

Mr Munn added that MFE had invited applications for up to \$500,000 for environmental projects more around investigations and no local contribution, 16th of June is when the applications close.

Domett Esplanade Flooding

Mr K Perrin-Smith said this item was a continuation from the previous discussion around the Cobden gap and didn't have anything to add.

Mayor Gibson referred to the maps and report on the Agenda and said they had been presented before, and felt it was something they had to move on as well.

Moved(T. Gibson/Cummings) *that the report is received again*

Carried

Mayor Gibson said that was the end of the Agenda and re-iterated the need for the second meeting to be had within a month, and asked if there was anything more for discussion.

Cr Ewen referred to Mr Perrin-Smith as he mentioned the possibility of a pump on the raised bund at Nelson Quay, in 2020 he thought Council was moving to having a permanent generator at the pumping station in Johnson Street, and asked had that progressed.

Mr Perrin-Smith said whilst there was no permanent building on-site there was a mobile generator stationed there working, and discussion centered around the buildings and progression in that area.

Meeting closed at 1.58pm.

West Coast Regional Council – Greymouth Rating District

Annual Works Report on Rating District Assets

1. Maintenance works carried out from 1 July 2022 to 30 June 2023

Aug 2022 Paul Smith Earthmoving Ltd - Check and clear knife gate at Cobden Cut	\$2,500.00
Sept 2022 Equip Engineering Ltd Make - 2 pins for gate	\$387.72
Jan 2023 Harry Speirs Contracting - Spraying of floodwalls	\$3,860.00
Jun 2023 Liddell Contracting - Retentions	\$9,577.11

Total Maintenance Works for the 2022 / 2023 Financial Year: \$16,324.83

2. Capital works carried out from 1 July 2022 to 30 June 2023

April 2023 Paul Smith Earthmoving Ltd - Repair rock slumping at Blaketown	\$9525.71
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Total Capital Works for the 2022 / 2023 Financial Year: \$ 9,525.71

3. Consultancy works from 1 July 2022 to 30 June 2023

Land River Sea Consulting Ltd – Grey River Flood Modelling	\$5,035.00
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Total for the 2022 / 2023 financial year \$ 5,035.00

4. Other expenditure from 1 July 2022 to 30 June 2023

Advertising	\$961.87
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Total for the 2022 / 2023 Financial Year: \$ 961.87

5. Future works to be carried out from 1 July 2023 to 30 June 2024

As a result of an inspection in August 2023, the following works were identified:

A. Spraying, and removal of vegetation from floodwall	\$5,000.00
B. Upgrade of Range Creek floodgate	Ongoing
C. Repair slumped sections of rock riprap at Blaketown	\$38,000.00
D. Allow for unforeseen works	40,000.00
E. Cross section survey (3 yearly)	\$6,500.00
F. Adjust/deepen diversion channel and top up rock spur at Coal Creek	\$26,000.00
G. Open the New River/Saltwater outlet as required	\$6,000.00

Subtotal proposed maintenance work for the 2023 / 2024 Financial Year: \$143,500.00

6. Proposed Rates for 2024 to 2025 Financial Year

General Maintenance rate	\$129,839.00
Engineer cost recovery	\$40,814.00
Prudent Reserve contribution	\$0.00
Infrastructure insurance cover	\$19,246.00

The council recommend a maintenance rate strike for the 2024 / 2025 financial year of \$189,899 excluding GST.

The council recommend a loan repayment rate strike for the 2024 / 2025 financial year of \$290,399 excluding GST. (\$217,214 for 2009 upgrade works and \$73,185 for IRG project)

This target balance for the 'prudent reserve' for this rating district is \$400,000 as agreed by council. It is likely the current reserve will only cover a portion of the actual cost of the potential damage that could occur.

7. General

Range Creek Culvert

The stopbank at Range Creek will be raised as part of the Grey Floodwall Upgrade works. The project to automate the floodgate was put on hold until the final construction drawings for the site were confirmed. These have now been confirmed and additional survey data to provide detail for layout plans is underway.

Grey Floodwall Upgrade Project

An update of the project will be provided at the Annual Meeting.

Vegetation Clearance

The design calculations for the Greymouth Flood Protection Scheme are based on having Cobden Island cleared of vegetation. Council proposes to tender for the removal of large trees and scrubs from the island in the 2024-2025 financial period.

Greymouth Floodwall spraying project

When designed and built in 2008-2009, the Grey Floodwall suffered from defects. The main defects being spalling and cracking of the concrete panels and reduced effective cover to reinforcing steel due to design faults. The repair of the spalled and cracked sections of the floodwall, including both the joints and concrete panels, was completed in 2022. The next step is to improve the effective cover to the reinforcing steel and therefore ensure the durability of the floodwall by the application of an appropriate product onto the concrete to increase its watertightness and strength.

It is proposed that this work will be tendered in the 2024-2025 financial period.

The cost to undertake the work is likely to be in the range of \$250,000-\$300,000. Noting that the project is still at a very early stage and no firm estimates are available at this time.

West Coast Regional Council
Merged Greymouth Maintenance Rating District Reserve Account
For the 12 Months to 30 June 2023

		Merged Rating District 2022/23 Full Year	Merged Rating District 2021/22 Full Year
Opening Balance		84,248.03	1,531.19
Less prudent reserve distributions:			
Coal Creek		(103,303.59)	
New River / Saltwater Creek		(8,232.53)	
Revised Opening Balance		(27,288.09)	
Add Incomings:			
Internal interest income / (expense)	130.65		529.97
Rates	255,417.11		187,027.46
Total Incomings		255,547.76	187,557.43
		228,259.67	189,088.62
Less Outgoings:			
Advertising	(961.87)		-
Aircraft Hire	-		(2,081.25)
Capital Expenditure	(9,525.71)		-
Contractors and Consultants	(16,324.83)		(32,338.64)
Insurance	(18,814.00)		(18,391.00)
Other Consultants	(5,035.00)		(7,314.00)
Staff Time	(39,897.00)		(39,000.00)
Surveyors	-		(5,715.70)
Total Outgoings		(90,558.41)	(104,840.59)
Closing Balance		137,701.26	84,248.03

Merged Greymouth Maintenance Rating District (effective 1 July 2022) comprised the following:

1

- Greymouth Floodwalls Rating District Reserve Account
- Coal Creek Rating District Reserve Account
- New River / Saltwater Creek District Reserve Account

**West Coast Regional Council
 Greymouth Floodwall Upgrade Loan Repayment Rating District Reserve Account
 For the 12 Months to 30 June 2023**

		2022/23 Full Year	2021/22 Full Year
Opening Balance		447,525.41	400,002.37
Add Incomings:			
Internal interest income / (expense)	9,554.00		7,917.02
Rates - Loan	297,846.61		221,762.71
Total Incomings		307,400.61	229,679.73
		754,926.02	629,682.10
Less Outgoings:			
Loan Interest	(30,261.79)		(31,417.22)
Loan Principal	(154,923.00)		(150,739.47)
Total Outgoings		(185,184.79)	(182,156.69)
Closing Balance		569,741.23	447,525.41

**West Coast Regional Council
 New River / Saltwater Creek District Reserve Account
 For the 12 Months to 30 June 2023**

	2022/23 YTD
Opening Balance	8,232.53
Add Incomings:	
Internal interest income / (expense)	-
Rates	-
Total Incomings	-
	8,232.53
Less Outgoings:	
Contractors and Consultants	-
Staff Time	-
Total Outgoings	-
Closing Balance	8,232.53

MEMORANDUM

Subject: Impairment of Rating District infrastructure assets and the associated implications for the Community, Rating Districts, and Regional Council?

Impairment is **unexpected damage** to the asset (e.g. *unscheduled damage due to a flood*), whereas depreciation is based on expected / scheduled wear and tear over the useful life of the asset based on either the straight-line or diminishing value methods.

Impairment can occur because of an unusual / one-time event (e.g. *flood event or earthquake*), and/or damage that impacts an asset (e.g. *the potential impact of climate changes leading to flood protection assets no longer being fit for purpose from a design or level of service perspective*).

Generally accepted accounting principles (GAAP) and PBE IPSAS 21: Impairment of Non-Cash-Generating Assets require **assets be tested for impairment regularly** (i.e. *WCRC complete impairment testing annually*) to ensure the asset values recorded on Councils balance sheet are not overstated. Impairment exists when an asset's fair value is less than its carrying value (or book value) on the balance sheet.

A summary of implications to WCRC due to a flood protection asset impairment event follows:

1. There would be no impact to rating district financials in the event of impairment nor would there be any more or less rates required because of it. There are however accounting impacts at an all of Council level, but no impact to rate or funding requirements *in the first instance*. There could be flow on impacts around restoring assets back to fit for purpose state.
2. It would impact Council books with asset values would go down, and there would be an accounting 'loss' that would potentially make it appear Council was in the red at the end of the financial year but would cost no cash or outgoings. It is purely an accounting book loss.
3. Impairment event could trigger a capital investment decision needed if asset levels of service are to be remediated back to a fit for purpose state, and that *would* require money from community, or the repayment of debt should the RD agree to major works on their assets. That would be no different to current practices today about levels of service (LOS) with community even without impairment. Same process would apply.
4. Impairment would impact on the community around what (LOS) they are going to accept (and Council would maintain) from their assts going forward, and any downward change in LOS should be formally documented and agreed in writing. This would be the most real world significant and strategic impact to Council and RD from a risk perspective if an impairment event were to happen.
5. The implications for a RD not accepting a Council proposal to remediate the assets back to acceptable LOS would heighten the risk to Council as it relates to their legislative duties of care around river management and flood protection. It is uncertain what sort of legal defence the Council could offer by allowing communities to drop levels of service knowing that the impact could be significant to life and property in the event of a flood scenario.
6. There would likely be insurance implications to Council assets (premiums go up due to heightened risk or become uninsurable), but also could impact private property holders who may be suddenly considered now in a high-risk area if the flood protection assets are no longer deemed fit for purpose (particularly pertinent considering the insurance retreat is already well documented elsewhere given climate change assumptions).
7. There could be impacts to planning and consents for various activities at a Regional Plan or District Council level that may no longer allow building or development in affected areas. This could impact property market values significantly and create a strong drag effect on economic development.

MAWHERA QUAY IRG UPDATE

PROJECT	Franz Josef Stopbanks Phase One	DATE	14/07/2024
SUBJECT	RD Meeting Update		
ISSUED BY	Scott Hoare	WCRC IRG Programme Manager	
ISSUED TO	Tom Hopkins	West Coast Regional Council	
FILE / REF No.	15408		

Introduction

The purpose of this report is to provide an update and overview of the Greymouth Stopbanks portion of the Infrastructure Resilience Group (IRG) project.

PROJECT OVERVIEW

- The project start was delayed due to resolving disparities between the design and existing resource consent to raise the Stopbanks.
- The upgrade works were tendered in September/ October 2023 to four contractors. On completion of the tender analysis all four prices received were over the initial project construction budget. A value management exercise was undertaken in parallel with exploring areas for reduction in scope. A recommendation was put forward in December 2023 to WCRC to proceed the construction of the full scope of Stage 1 & 3.
- There is insufficient funding to complete all the remaining stages 2,4 & 5. These stages will require a reduction in scope or additional funding to complete. WCRC requested these be considered as part of the Before The Daluge 2.0 funding for climate resilience projects.
- Works commenced on Stage 3 of the Stopbanks at ANZAC Park working back towards Stage 1.
 - Top Soil was stripped and in preparation for compaction of new bulkfill.
 - An unidentified water pipe was uncovered and Notified to Grey District Council (GDC), work in this area was put on hold until the pipe could be isolated and capped off outside of the Stopbank.
 - Potential Coal Tar was also uncovered, and works were put on hold and testing undertaken to determine potential contamination. The testing determined that the material need to be disposed of at an approved disposal site or potentially encapsulated. Instruction was given to the contractor to investigate approved disposal sites and provide associated disposal costs. Through the investigations no suitable disposal sites have been identified and instructions are being prepared for the contractor to encapsulate the material.
 - During this delay the contractor has completed the remaining works excluding the road and has left site and is intending to relocate to Stage 1 working back to the port while instructions as received.

- The relocation of Power Poles in Stage 3 with the Stopbank is underway with Electronet design and engineering review. This Section of Stage 3 will be worked on in parallel with Stage 1.

Regards



Scott Hoare

WCRC IRG Programme Manager

021 242 0455

scott@inovo.nz

7.3 Nature Based Solutions Project – Cobden

Author	P. Birchfield Area Engineer
Authorizer	T. Hopkins Group Manager–Catchment Management
Public Excluded	No

Report Purpose

To update the Joint Committee on the Cobden Nature Based Solution Project

Recommendations

It is recommended that the committee resolve to:

1. *Receive the report.*

Issues and Discussion

Background

In April 2023 the Ministry for the Environment reallocated \$5m of Jobs for Nature funding to support local government to invest in resilience planning. The intent was that that would help mitigate impacts against future severe weather events using a nature-based solutions lens. The request was sent to the River Managers Special Interest Group members to apply for. This was not a publicly contestable funding opportunity given the scope of work and amount of funding that was available.

The scope of the proposed projects would be nature-based solutions that are defined as ‘actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits.’

The Ministry were looking for projects which scope what types of nature-based solutions would provide the most effective, and cost-effective flood mitigation to a region. The funding would not be for physical works but would instead be for work

such as feasibility studies to use hydrodynamic modelling (and other modelling techniques) to test a series of mitigation techniques against several weather event scenarios. The proposals did not need to be limited to only green-infrastructure mitigations, as an integrated approach with grey-infrastructure often provides improved benefits. The intent is that findings will be able to support Council's resilience planning in the future as well as help leverage funding.

The Ministry wanted a national distribution of projects and allocated \$300,000 (100% grant) per Council, but possibly up to \$500,000 if not all Councils apply. The proposals had to be submitted by 16 June 2023, and completed before June 2025.

West Coast Regional Council put forward two proposals; the Cobden Flood Attenuation and Wetland Project (\$198,000), and the Multi-benefit Approaches to Building Westport's Flood Resilience Project (\$200,000 with additional BDC co-funding). Both projects were approved by the Ministry.

The intent is that findings would be able to support Council's resilience planning in the future as well as help leverage future funding opportunities for physical works.

The Ministry were also aware that whilst natural ecosystems can play a role in mitigating flood risk, just like traditional infrastructure they can exacerbate risk when they become degraded or are badly designed.

Concurrent with the individual projects the Ministry of Business, Innovation and Employment (MBIE) commissioned a review of current literature with the aim to avoid duplication of effort between local government authorities in evaluating the benefits to assist in the cost efficiency of the projects. NIWA were engaged by MBIE to provide the literature review of both national and international literature on the use of nature-based solutions in flood mitigation and associated guidance for how such measures may be implemented in New Zealand. The objectives for the report are:

1. Present an overview of the state of knowledge and concepts of nature-based solutions for flood management within a New Zealand context.
2. Provide literature-based guidance on the time needed for different nature-based solutions to become fully-functioning and methods to assess the minimum size for them to function effectively.
3. Provide literature-based evaluation of the strengths, weaknesses, opportunities, and threats associated with different nature-based solutions approaches.
4. Identify environmental, social, cultural, and economic co-benefits associated with nature-based solutions and examples of where traditional knowledge has been used in the past.

Two workshops have been held with all regional project managers and stakeholders. The final report titled '*Nature-based solutions for flood management*' is an excellent resource for practitioners. It is not yet available on the Council's website but can be accessed here:

<https://campaign.waikatoregion.govt.nz/assets/2419-TSDC191-Nature-based-solutions-for-flood-management.pdf>.

Current situation

Presently, when heavy rain occurs in Cobden's Range Creek catchment whilst the Grey River is high, water backs up into the Aromahana Lagoon, causing floodwaters to inundate nearby properties (on a 1 year ARI). Additionally, in larger (2 - 3 year ARI) rain events, stormwater exceeds the capacity of the upgradient Range Creek channels and flows overland towards the lagoon, flooding upstream properties.

This project seeks to return the Cobden Domain to its previous state as a tidal lagoon with native habitat and create upstream attenuation areas to reduce the impact of flooding on infrastructure and properties. Specifically, three potential detention or wetland areas are proposed. This would form part of the ecological restoration of the wider Aromahana Lagoon and Range Creek catchment.

Specific project outcomes and benefits include:

- the feasibility to store and detain floodwaters in a distributed manner within the Range Creek catchment and prevent flooding, through;
 - hydraulic modelling of the catchment under various rainfall, tidal, river flow and climate change scenarios to assess flood mitigation,
 - conceptual design of wetland and detention basin depths, bund heights and extents,
 - evaluating upstream and downstream hydraulic effects and required infrastructure upgrades
- opportunities to restore the urbanised Range Creek channels to improve flood capacity, improve riparian corridors and support biodiversity. Including concept design of:
 - stream naturalisation, planting and ecological enhancement
 - hydraulic capacity improvements
 - mitigating in-stream scour and sedimentation
- opportunities to improve stormwater discharge quality, through;
 - consultation and co-design with Ngati Waewae
 - integration of stormwater treatment and wetlands

- opportunities to incorporate cultural narratives and passive recreation within a Landscape Masterplan for the area.
- improve community resilience, by
 - investigating options for passage of upgradient floodwater and secondary flows to prevent flooding
 - considering emergency access and pumping options
 - engage with, and draw upon the existing volunteer base and environmental advocacy in the catchment

A flood mitigation study was undertaken in 2013 identifying 10 options for flood mitigation at Cobden. Building on this work, in 2017 NIWA hydrological modelling supported the concept of a wetland and bund to mitigate surface flooding. A temporary bund was constructed adjacent to the Cobden Domain to test its effect on mitigating surface flooding. The result was some protection from storm-surge coastal inundation, however localised stormwater flooding has continued to occur.



Figure 1: Cobden site locality, catchment features and proposed basins

This proposal seeks to build on the previous recommendations and will be undertaken in three phases:

Phase 1: Project Establishment

Establish the Project Working Group (PWG), preferably with representatives from Ngati Waewae, Grey District Council and Cobden Aromahana Sanctuary and Recreation Areas (CASRA). The PWG will oversee project scope, intent and consideration of stakeholders. An initial round of iwi and community consultation

meetings will be undertaken to gain feedback on perceived issues and opportunities.

Phase 2: Site Suitability and Data Collection

This phase involves data gathering from a variety of sources to establish any constraints on the proposed site locations and provide data for hydraulic modelling and feasibility design, including;

- Geotechnical investigation to categorise existing soils and identify potential hazards at the proposed locations. Groundwater level monitoring to inform potential storage depths.
- Land contamination preliminary (PSI) and detailed (DSI) site investigations to identify if any contaminants of concern are present in soils, and suitability of material for re-use.
- Topographical and drone survey (building on existing data), and stream channel cross sections to inform modelling.
- Further hydrological monitoring within Range Creek, if required
- Preliminary earthworks modelling, including the creation of proposed 3-D surfaces for each detention area to support hydraulic modelling.
- High level review of resource management and consenting considerations to identify constraints which could affect the proposal.
- Terrestrial and freshwater ecological assessments to characterise the existing state and aspirations for the catchment.

A summary of this phase will be reported back to the PWG, and a second round of iwi and community engagement to share learnings and gain input on aspirations and direction.

Phase 3: Hydraulic Modelling and Feasibility Design

Building on previous work, a hydraulic model including 1-dimensional and 2-dimensional elements will be built to assess the flood inundation and storage capacity of the proposed detention basins and wetlands. This will assess various rainfall durations and recurrence intervals and varying tidal, river flows conditions and climate change scenarios. Four potential pond configurations are modelled for 1yr, 5yr and 10yr and then with different bund configurations.

In conjunction, stormwater concept designs will integrate water quality treatment, stream naturalisation and channel conveyance improvements to mitigate capacity constraints and provide ecological enhancement. Earthworks 3-D modelling will be further refined to consider bund heights, storage volumes, secondary flow paths and emergency provisions.

A landscape masterplan will be prepared incorporating recreational, cultural narrative, plant selection, and material palette considerations, based on direction from Iwi, Councils and community groups throughout the project.

A preliminary geotechnical report, planning scoping report, and preliminary site investigation reports have been completed and are currently being reviewed. Both the middle basin and lower basin have no potential contaminants detected above SCS values (recreational), but the middle basin did have higher lead concentrations in a corner of the site, likely due to the presence of a former building on the site. Remediation of the shallow soil may be required to reduce the risk of lead contamination of stormwater.

Landscape master planning is underway, and the hydrological base model is in the verification phase to ensure the model represents real flood events. A summary of this phase will be reported back to the Project Working Group. Following this, a second round of iwi and community engagement will be undertaken to share learnings and gain input on aspirations and direction. The estimated completion date of the project is *August 2025*.

Costs and Benefits

This project is externally funded, costs to council relate to in-kind council staff support and associated overheads.

Benefits of Conducting the NBS Feasibility Studies

1. Informed Decision-Making
 - a. The projects intend to provide data-Driven Insights: The feasibility studies will provide comprehensive data on the potential effectiveness, costs, and benefits of different nature-based solutions (NBS), allowing for more informed decision-making.
 - b. Risk Assessment: The feasibility studies intend to identify potential risks and challenges, helping to mitigate them before implementation.
2. Cost-Effectiveness
 - a. The studies intend to avoid unnecessary expenses by evaluating the various options, the council can avoid investing in solutions that may not be effective or viable.
3. Stakeholder Engagement
 - a. The projects intend to build consensus through engaging stakeholders early in the process, helping to build support and address concerns before full-scale implementation.
 - b. Community Input is prioritised through incorporating local knowledge and preferences, this increases the likelihood of community acceptance and cooperation.
4. Strategic Planning

- a. The projects will help council to prioritise which projects are implemented based on their feasibility, benefits, and costs.
 - b. A Long-Term Vision may be enabled, providing a roadmap for phased implementation, aligning with broader regional planning and sustainability goals.
5. Funding and Policy Support
 - a. The feasibility studies may be used to secure funding from government grants, private investors, and international agencies for implementation.
6. Technical Validation
 - a. The studies will provide a scientific and technical foundation for the proposed NBS, enhancing credibility and legitimacy.

The studies will identify innovative approaches and technologies that can be applied to future flood resilience in Cobden.

Considerations

Implications/Risks

The Nature Based Solutions Modelling projects aim to provide human well-being, ecosystem services, resilience, and biodiversity benefits whilst addressing flood resilience in the Westport and Cobden communities. The implications and risks associated with the NBS projects are listed below:

Implications

Environmental Implications

- **Enhanced Biodiversity:** NBS can promote biodiversity by restoring and maintaining natural habitats.
- **Ecosystem Services:** Improved ecosystem services such as water filtration, carbon sequestration, and soil stabilization may be provided for within these projects.
- **Climate Change Adaptation:** NBS can help buffer the impacts of climate change, such as increased rainfall and rising sea levels, by using natural barriers and improved land management practices.

Social Implications

- **Community Engagement:** Involving local communities in the planning and implementation stages intends to increase the awareness and support for environmental initiatives.
- **Improved Well-being:** Access to green spaces and healthier ecosystems can improve mental and physical health.

- Cultural Value: Preserving natural landscapes can maintain and enhance cultural heritage and identity.

Economic Implications

- Cost Savings: NBS can potentially reduce long-term costs associated with flood damage and maintenance of traditional infrastructure.
- Tourism and Recreation: Enhanced natural areas can boost local tourism and recreation opportunities, providing economic benefits to the region.
- Job Creation: Implementation and maintenance of NBS can create jobs in conservation, land management, and eco-tourism sectors.

Potential Risks

Scope Risks

- Overlap with other Projects: There is a risk that Nature Based Solutions don't complement existing or proposed new hard-engineered flood protection and stormwater management infrastructure. This risk will be managed by robust assessment of the technical feasibility of the proposed solutions, including peer review by West Coast Regional Council's Chief Engineer. Funding will only be sought for implementation if technical feasibility is established.

Resourcing Risks

- Funding: Securing adequate funding for implementing the NBS plan once the feasibility study is complete may be challenging. Initial costs might be high, even if long-term savings are anticipated. Community expectations on the project are to be managed to ensure it is well communicated that the project is feasibility related and operational costs are not currently funded.
- Expertise and Capacity: The council may need to invest in building internal capacity or hire external experts to design and implement effective NBS.

Cost Risks

- Initial Investment: The upfront cost of conducting the feasibility study and implementing NBS can be substantial. The MFE grant includes funding for related research and planning but does not account for construction or restoration efforts.

Economic Uncertainty: The anticipated economic benefits, such as increased tourism or reduced flood damage costs, may not materialize as expected, affecting the cost-benefit ratio.

Significance and Engagement Policy Assessment

There are no issues within this report which trigger matters in this policy.

Financial implications

Current budget

\$198,000.00

Future implications

This project is externally funded by MfE, the WCRC supports the project through in-kind contributions including staff time and related overhead costs.

Results of the project may be used to inform future operations for flood resilience and therefore impact the Council's Long-term Plan. This may have future financial implications which are unknown at this stage.

7.4	Blaketown Emergency Works
Author	P. Birchfield Area Engineer
Authorizer	T. Hopkins Group Manager Catchment Management
Public Excluded	No

Report Purpose

To update the Joint Committee on the work undertaken at Blaketown in April 2023.

Recommendations

It is recommended that Council/the Committee resolve to:

1. *Receive the report.*

Issues and Discussion

Background

During an inspection of the floodwall on 19 April 2023 it was noted that there were several slumps evident along the front face of the floodwall by the Blaketown Clubrooms. The slumped sections appeared to have recently occurred. One of the impacted sites had a pothole formed at the top of the batter slope while the others were slumps/drop-outs. This section of the floodwall around Mclean Park had been identified as a potential seepage flowpath in historic reports. Slumps and drop-outs can be related to rock riprap movement but the pothole did not appear to be related to any changes in the batter slope.



Photo 1: Slumped area



Photo 2: Pothole

Current situation

Council organised for a local approved contractor Paul Smith Earthmoving Ltd to undertake emergency repairs the following week. As part of the repairs the dig out would be overseen by Council staff and Joe Turner from Davis Ogilvie and Partners Ltd, to try to assess the cause of the damage and whether the impacted areas may be wider than what was indicated.

On 27 April 2023 a 20-tonne excavator was used to dig out and repair the impacted sites. There was no indication that the slumps or pothole had spread further, and the dig out repairs were completed and supplemented with AP65 where required as some of the batter material was unconsolidated, soft and muddy.

The slumped sections were then topped up with rock riprap from Inchbonnie Quarry.



Photo 3: Partial repair showing loose material present



Photo 4: Picking rock off the truck deck. Rubber matting and ply for road surface protection.



Photo 5: Placing rock using thumb.



Photo 6: Completed repair.



Photo 7: Placed rock riprap

Considerations

Financial implications

Cost of the Work

The pre-quote estimate was \$50,000. The final cost of the work was \$37,216.

Future implications

The repaired sites will be regularly monitored for any changes.

It was noted that the full length of rock riprap along this section of the floodwall is likely to require a top-up of rock this year.