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**WHIRINAKI RESILIENCE PROJECT  
TECHNICAL FOCUS GROUP  
MEETING MINUTES - DRAFT**

**DATE** 28 July 2023  
**TIME** 1:00pm – 3:00pm  
**VENUE** Pan Pac Forest Products Ahuriri, Microsoft Teams

**IN ATTENDANCE**

Mark Smith - Resident	Geoff Huggett - Resident
Stan Evans - Resident	Daniel Gales - Resident (Esk Valley)
Jayde Demanser - Resident	Mel Swayn - Community Communications
Jacob Brownlie - Resident	Ted Roberts - Resident
Charlotte Drury - View Consultants	Edward Roberts - Resident
Kathryn Gale – NPDT (Teams)	Mary Martin - Petāne Marae
Kayla Thornton - NPDT (Teams)	Rosy Hiha - Petāne Marae
Maree Brown - Mana Ahuriri / Petane Marae (Teams)	Bronwyn Rewi - Petāne Marae / Landowner (Teams)
Barbara Smith - Petāne Marae (Teams)	Reece O'Leary - Pan Pac Forest Products
Kyle Russell - Waka Kotahi / NZTA	Stephen Daysh - Mitchell Daysh
Daniel Headifen – KiwiRail (Teams)	Anita Anderson - Mitchell Daysh
Matthew Brady - DoC	Martina Groves - PDP (Teams)
Tony Clifford - Pan Pac Forest Products	Ramon Strong - PDP (Teams)
Rob Nichol - Contact (Teams)	Eddie Beetham - T+T (Teams)
Justan Clark - Transpower	Richard Reinen-Hamill - T+T (Teams)
Graeme Hansen - HDC	James Winchester - Barrister (Teams)
Malcolm Miller - HBRC	Richard Munneke - NCC (Teams)
Phil Duncan - HBRC	

**Apologies:**

Paula Rewi - Petāne Marae / Landowner	Susie Young – HBRC
Tania Lund - Transpower	Nic Peet – HBRC
John Clark - Contact	Ross McLeod - HB Recovery Agency

**1. Introductions**

- Stephen noted that there were a few new members at the meeting and asked those people to introduce themselves and provided a background as to their interest / involvement in the project.

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## 2. Confirmation of previous meeting minutes

- The meeting minutes from Meeting 2 of the TFG held on 30 June 2023 were confirmed as a true and correct record of the meeting.

***Moved - Geoff Huggett***  
***Seconded - Matthew Brady***  
***Carried unanimously***

- The meeting minutes will be finalised and attached to the minutes of Meeting 3 (Attachment 1).

## 3. Community feedback

- Stephen provided a description of the TFG process and outlined the meeting programme and project objective.
- Stephen noted that the FAQ's are currently a work in progress requiring input from the Councils to complete them.
- The team has met with a number of stakeholders and community members since the previous TFG meeting. Reece noted that the team are happy to meet the community members or talk on the phone at any time to answer any questions.

## 4. Project Update

- Stephen summarised the Design Workshop held with the technical team on 12 July 2023 where the participants brainstormed ideas for resilience options for the project area.
- James Winchester has considered the concepts from a legal perspective and noted his opinion that consenting through a typical RMA process will not be feasible and that an Order in Council process will be necessary under the Severe Weather Emergency Legislation Act 2023. Stephen supported this high-level advice.
- Surveying the Bay has been undertaking ground surveying within the project area.
- PDP are about to start a build of a numerical hydraulic model of the lower reach of the Esk.
- Mark Roper (EcologicalSolutions Ltd) has been engaged as an ecologist for the project.
- Stephen also noted that mana whenua will be included as part of the evaluation team to provide a cultural values assessment.

## 5. Design workshop outcomes - Conceptual options

- Ramon presented the concepts (Attachment 2) developed at the Design Workshop. The modelling will enable the benefits (in the form of reduction in flood levels) for the different options to be quantified, noting the precision limits that will apply/the number of base assumptions required (primarily silt and debris load and the state of the river mouth).
- The concepts are a made up of non-structural and structural measures.
- Non-structural measures are focussed on the mouth, endeavouring to train or direct river energy toward the mouth and reduce the volume of debris that accumulates at the mouth,

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complemented by a structure or structures at the mouth that limit offsetting and concentrate river scour.

- Structural measures include stop banks (new, modified and extended) and changes to drainage / culverts.

#### **Base Concept - B1 and C1 - Upgrade stop bank and SH2 and SH2 Culvert**

- The base concept had been previously identified by the HBRC and would upgrade (reform) the existing Whirinaki stopbank and addresses the under capacity SH2 culvert.
- Daniel asked whether water would be directed toward the railway with an increase in the stopbank height. Ramon explained that under the base concept, the stopbank upgrade was focussed on reforming the stopbank and making it a more substantial structure, not increasing the height (which is another concept). He noted any potential exacerbation of hazards in other locations as a result of the structure would be considered but doesn't apply to this base concept.
- Maree asked whether water would pond on the western side of the stopbank. Ramon acknowledged that with would need to be considered as part of this concept and that this also largely preserved the status quo (the stopbank wasn't being raised with this option so wouldn't exacerbate flooding to the west).
- Reece noted that Ramon was presenting the concepts separately and that these would ultimately be packaged together - the potential impacts of these packages would be considered as opposed to each element in isolation.
- Richard noted that modelling provides a good opportunity to compare and understand the various effects of different concepts.

#### **A1 - Downstream realignment**

- Ramon explained that this concept involved the realignment of the lower reach of the river between SH2 and the river mouth. This would have the effect of harnessing the energy of the river and directing it at the mouth of the river to stop the mouth migrating/offsetting, and blocking.
- Bronwyn noted that the land immediately downstream from the SH2 bridge is Rewi land.

#### **A2 - Mouth and coastal works**

- Richard explained that the wave action at the beach moves gravel on to/along the beach, resulting in the movement or blockage of the river mouth.
- A management / non-structural response would involve physical works (diggers) to maintain a notch in the mouth to ensure the outlet remains open.
- A potential structural response would involve armouring / river control works or the creation of an armoured opening. Consideration of natural longshore drift and erosion of the shoreline would be included / managed.

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### **A3 Debris fence**

- Ramon described the concept of a debris fence on the north side of the Esk River upstream of the SH2 bridge. This would involve large steel columns approximately 5m in length driven into the ground to form a 2m high fence with wire rope capturing / preventing the spread of debris downstream during floods and blocking the mouth. It would also aid in directing flood flow toward the mouth.
- Tony asked whether there are New Zealand examples of effective debris fences. Ramon noted that there are others, however not at this scale. There was a debris fence built in the Matukituki River in the 1970s which was ineffective and subsequently removed (navigation hazard) - it was ineffective because it had minimal debris load. The concept of the debris fence in this context looks to harness the high debris load that the Esk has in flood.
- Rosy asked about the certainty of success of the structure compared to the 1970's example. Ramon noted that modelling would only go some way to demonstrate the effectiveness, however he is confident the structure would work. It would need to be structurally designed to resist the applied forces when the river was in high flood (e.g., Gabrielle) and it would be designed to be structurally strong. The fence could also be planted with a line of trees (potentially native) to provide aesthetics and help the function of the barrier.
- Phil suggested that it would be worthwhile to demonstrate what the debris fence would look like and how it would work, given that this is proposed to be located on private property.
- Maree asked where the build-up of debris would go. Ramon responded that debris fence would need to be cleaned and debris removed following a flood event. Maree was concerned about the potentially high maintenance requirements associated with the structure. Ramon noted that the HBRC would likely be involved in the associated maintenance, however this detail would need to be agreed. Ramon also noted that removing debris off the fence would be more efficient than removing it off the floodplain/ adjoining beaches.
- Dan noted that the HBRC had a sizable fund for river maintenance, however with a reduction of residents in the Esk Valley, industries may need to provide more funding.
- Edward noted that the debris fence (as shown) would intersect their land and that they had concerns as to whether they would be able to access and maintain their crops on both sides of the fence, however they did support the fence as a viable option.
- Ted noted that over 2000 tonnes of logs and debris had come down the valley in the cyclone so the fence would need to be designed to cope with this.
- Maree asked whose responsibility it would be for the maintenance and longevity of the fence, noting concerns related to the proximity of the fence to the coast in relation to its longevity. Ramon noted that the HBRC are most suited to this, however they do not have any statutory obligation and this would need agreement.

### **A4 - Upstream channel work**

- Ramon explained that realignment of the river channel directly above SH2 would also help concentrate flood flow toward the mouth of the river. The effectiveness of this is more limited than the downstream work particularly if the SH2 bridge remained in its current form.

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### **A5 - Whirinaki Drain improvement**

- Ramon noted that improvements to the Whirinaki drain to provide additional capacity for overland flow and would go hand in hand with enlarging the SH2 culvert upgrade.
- Rosy noted that consideration is needed for protection of the urupā to the west of the protection works.

### **B1-2 - Improve existing Whirinaki stopbank**

- Ramon explained that this concept would increase the height of the existing stopbank. A key consideration for this is what height is adequate and whether (in combination with some of the other measures) it would result in increased flood levels on the outside (the Esk River side) during flood events.

### **B3 - New stopbank extended from SH2 to sea and B5 New stopbank (shorter)**

- Ramon explained that a new stopbank on the eastern side of SH2 would aim to provide flood protection to the community north of the river and to Pohutukawa Drive which has a high level of flood risk exposure. Recent information has shown that it could be more manageable to extend the stopbank over SH2 than previously thought (the approach embankments would not need to be as extensive as first thought).

### **B4 - Extend Whirinaki stopbank along SH2.**

- Ramon explained that this was a variant to the extension of the existing stopbank over SH2, and involves a return alongside SH2 north towards the Contact, Transpower and Pan Pac sites.
- Phil asked whether this level of protection is aimed more toward the industrial sites, compared to the residential sites. Ramon noted that it was.
- Maree asked whether the cost is the key determination of which concepts would be undertaken, and whether all of them can be undertaken. Stephen responded that costs have been estimated for each concept and that these have been provided to councils and the government. Cost will be a factor when assessed against other values and issues in the multi-criteria assessment process when deciding on the favoured approach.
- Geoff asked whether SH2 at the drain will be upgraded if B4 is to occur. Reece responded that a suite of concepts will likely be chosen and so each concept should not be look at in isolation.
- Mark asked whether all residents within the whole area, would have targeted rates. It was noted that it would be the beneficiaries of the scheme that would need to contribute to costs.
- Bronwyn asked if there would be more consideration than just cost particularly where the land used for protection measures could be Māori land and whether the land would be taken through another process. Stephen responded that the assessment of the concepts would take into account a number of different factors including cultural values.
- Daniel asked if the size of the stopbank for B5 was known. Ramon noted that no design work had been undertaken but that it would likely be a similar standard to the existing Whirinaki stopbank.

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- Phil noted that for any of the chosen solution to progress it would need to include an understanding of the benefits, an agreement for land access, and funding.

#### **B6 - New stop bank on the south side**

- Ramon explained that a new stopbank on the southern side would be considered to offset any protection works to the north and provide protection to Bay View properties and the railway to the south. An additional variation to B6 not included in the figures could consider a stopbank that extends to the western side of SH2 and follows/merges with the railway line and that protects the substation close to the SH2/ SH5 intersection.

#### **Hinekatorangi Wetland**

- Ramon described the concept for the changes to the Hinekatorangi Wetland which would involve an upgrade to the existing culvert and the relocation of the outlet to sea.

### **6. Next steps**

- The project team are meeting with the new HBRC CEO (Dr Nic Peet) about the land categorisation process and programme on 4 August 23.
- Stephen noted that the project team is also working with lifeline agencies (Waka Kotahi, KiwiRail and Transpower) to ensure support and consistency through the government agencies.
- PDP's key focus for August is to build the hydraulic model.
- Multiple field work and desk top assessments will be progressed - surveying, ecology and cultural values.
- The next TFG meeting will be the options evaluation workshop and may run for an entire day. The option evaluations will involve Multi Criteria Decision Analysis.

### **7. Open Discussion**

- Reece noted that the project team will ask the HBRC to undertake updated communication with residents at their meeting on 4 August.
- Maree asked how the technical lead group will assess mana whenua interests. Stephen noted that he would like to convene a meeting and discussions with mana whenua, to gain a better understanding of mana whenua issues prior to the evaluation and decision making.
- Matt asked whether debris and sedimentation from the upper catchment had been considered. Stephen noted that an overarching river management programme for the future is being looked at. Matt asked whether the channelisation below the SH2 bridge would be permanent if the realignment went ahead. Stephen confirmed it would be.
- Geoff asked whether survey topographical maps are available for the area. Stephen noted that that information is being pulled together and it would be part of the project information used for the options assessment. Ramon noted that some information (e.g., post-Gabrielle aerial photographs) is available on the LINZ website.
- Rosy noted that with regard to their marae and urupā, their cultural perspective will be with Mana Ahuriri.

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- Bronwyn asked what information could be shared with the community and their own shareholders. Stephen responded that the meeting minutes would be provided with the presentation and that this could be shared, noting that the minutes would be in draft until they were confirmed at the next meeting.
  - Daniel asked whether KiwiRail are required to have an opinion on all of the various options by the September workshop. Stephen asked for best endeavours to make progress, given the urgency to complete the project.
  - Kathryn noted that hard engineering has been a main consideration as a response solution. She considered that preventative measures need to also be a part of the conversation not only response measures.
  - Martina noted that costs of maintenance need to be considered for any option progressed.

#### **8. Closing**

- Anita will send the confirmed minutes from TFG 2 following the meeting and will provide draft minutes including the presentation from this meeting on 2 August.
- Phil noted that it was important to emphasise that the concepts presented are completely unconstrained and not necessarily what would happen. They are the entirety of the thinking from the design workshop of the potential ideas that could provide some benefit and require further investigation.

#### **Meeting Close**

Minutes prepared by Anita Anderson

**Attachment 1: FINAL Minutes, TFG Meeting 2, 30 June 2023**

**Not Attached to Draft Version**



**Attachment 2: Meeting Presentation**



# Whirinaki Resilience Project

## Technical Focus Group Meeting 3



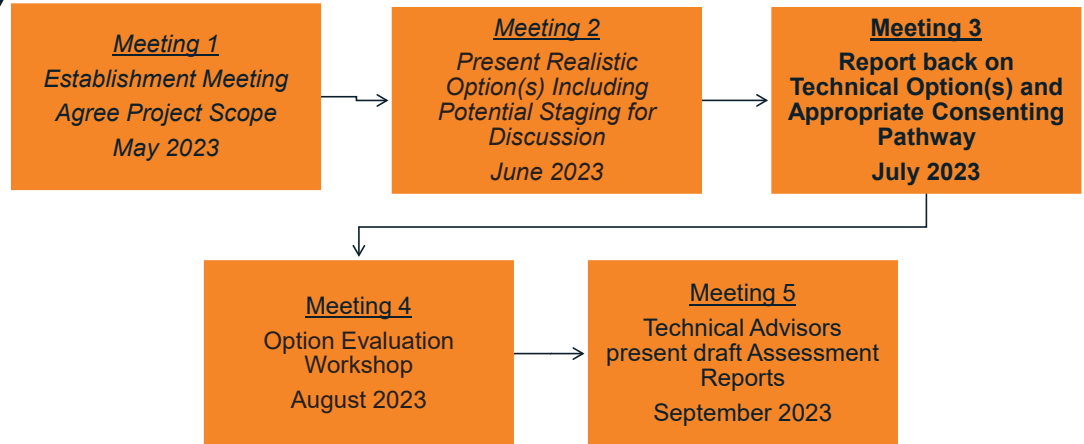
28 July 2023

### Agenda

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1. Opening and introductions
2. Confirmation of previous meeting minutes
3. Community feedback
4. Project Update
5. Design workshop outcomes - conceptual options
6. Next steps
7. Meeting close

## TFG Programme



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## July Project Update

1. Design Workshop 12 July - development of preliminary concepts
2. FAQ's work in progress – require input from HBRC / HDC
3. Lots of face-to-face community and stakeholder meetings
  - Petane Marae
  - Residents
  - Recovery Agency
  - Waka Kotahi
  - HBRC
4. Legal advice re Order in Council process - Severe Weather Emergency Recovery Legislation Act (SWERLA)
5. Surveying underway
6. Ecologist engaged

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# Design Workshop Preliminary Concepts

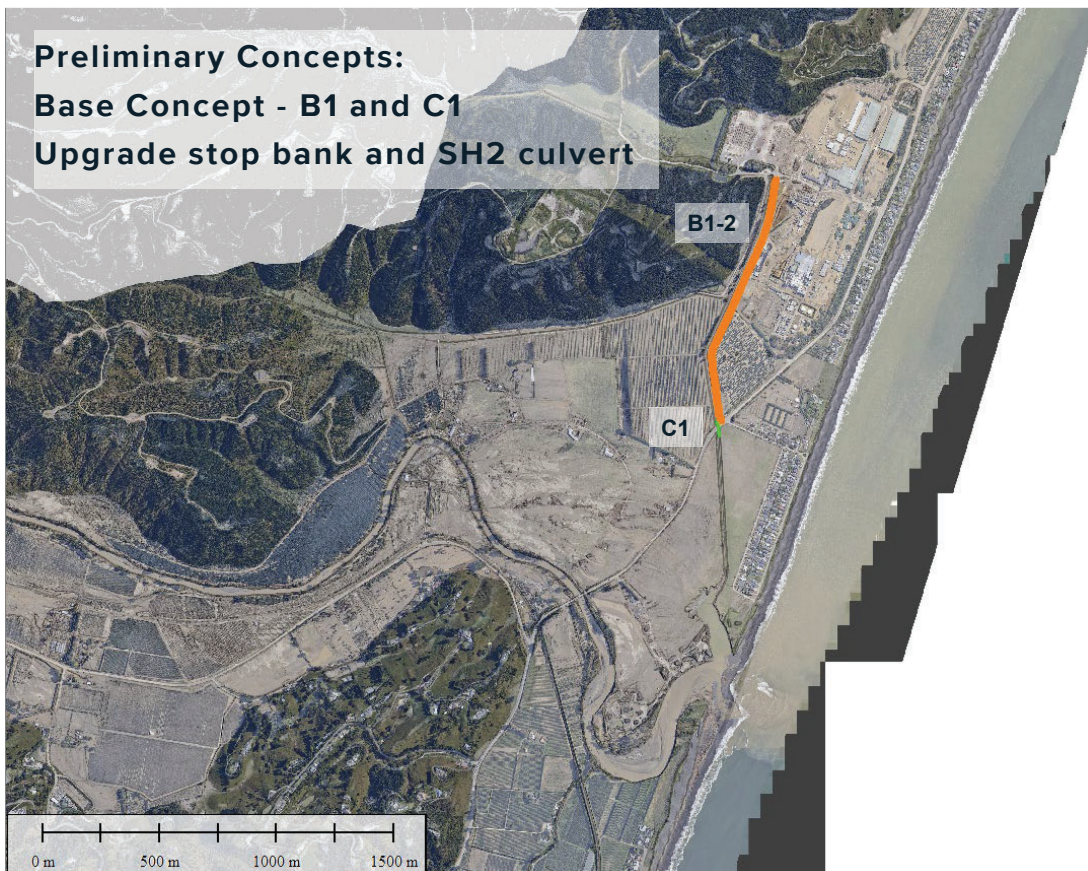
## Esk River & Whirinaki Drain

BASE CONCEPT FOR MODELLING

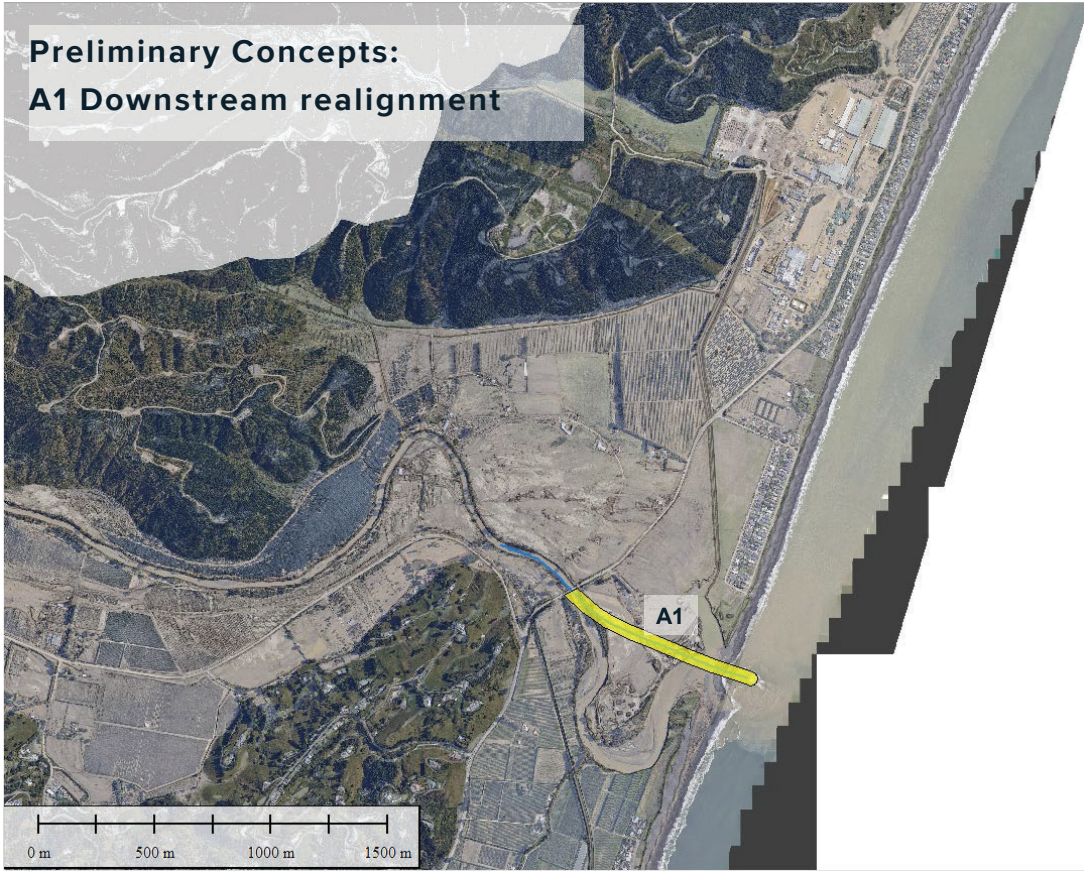
	A	B	C
	River Works	Stopbank Works	Other Improvements
1	Esk River channel enlargement/ realignment - Downstream of SH2	Improvements to existing Whirinaki stopbank - no change in height	Whirinaki Drain SH2 culvert improvements
2	Esk River Mouth and Coastal Works	Improvements to existing Whirinaki stopbank to SH2 - increase height	TBC Railway - KiwiRail
3	Debris Fence(s) - Upstream of SH2	New stopbank to Coast - Pohutukawa Drive across Evans Land	TBC State Highway - Waka Kotahi
4	Esk River channel realignment - Upstream of SH2	Improvements to and extension of existing Whirinaki stopbank around Lifeline Utility / Industrial properties - Upstream of SH2	
5	Increase capacity of Whirinaki Drain - Downstream of SH2	New shorter North Shore Road / Pohutukawa Drive Stopbank - Downstream of SH2	
6		Stopbank - southern side of Esk River (Bay View)	

Whirinaki Resilience Project

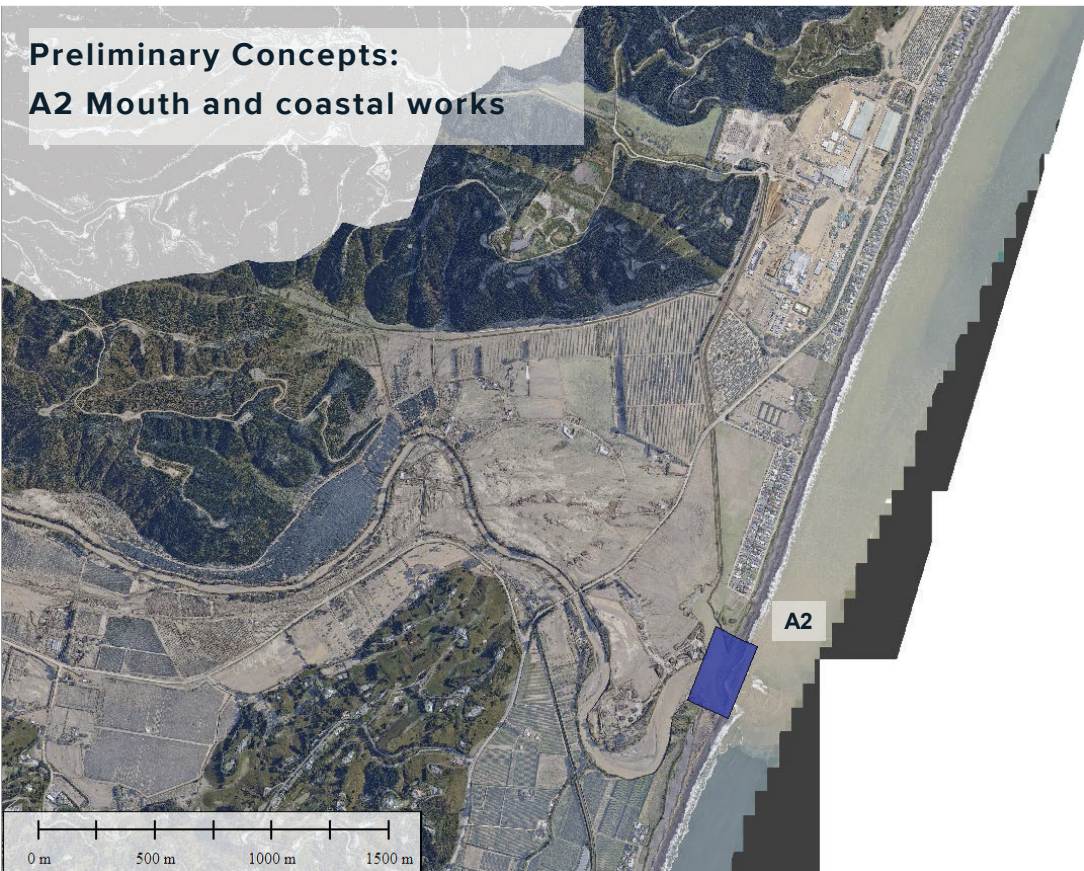
Preliminary Concepts:  
Base Concept - B1 and C1  
Upgrade stop bank and SH2 culvert



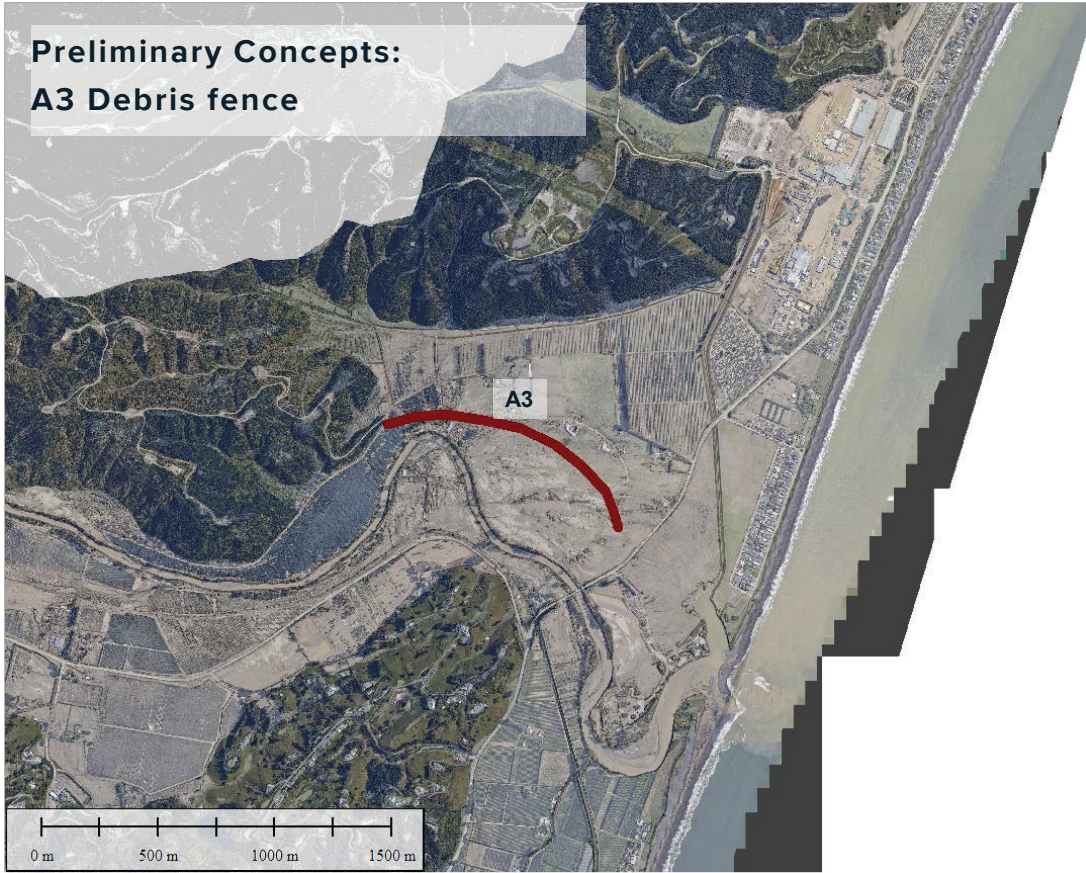
**Preliminary Concepts:  
A1 Downstream realignment**



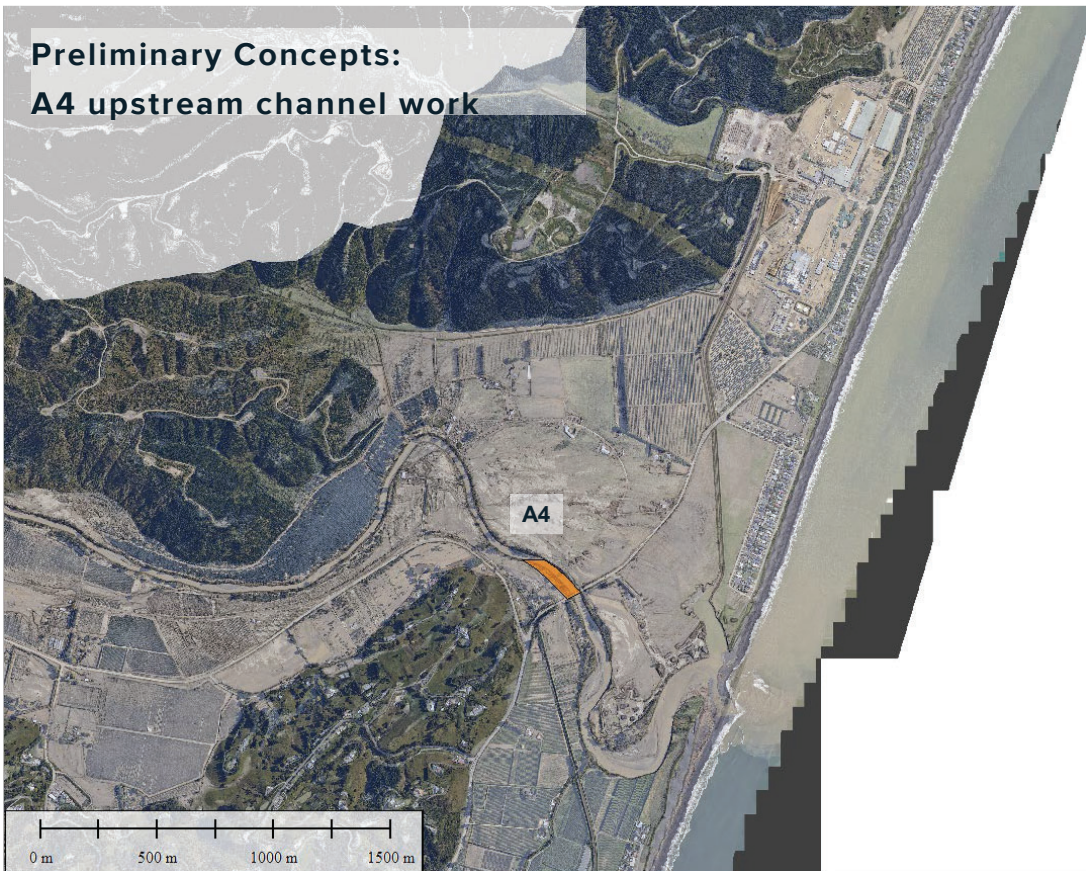
**Preliminary Concepts:  
A2 Mouth and coastal works**



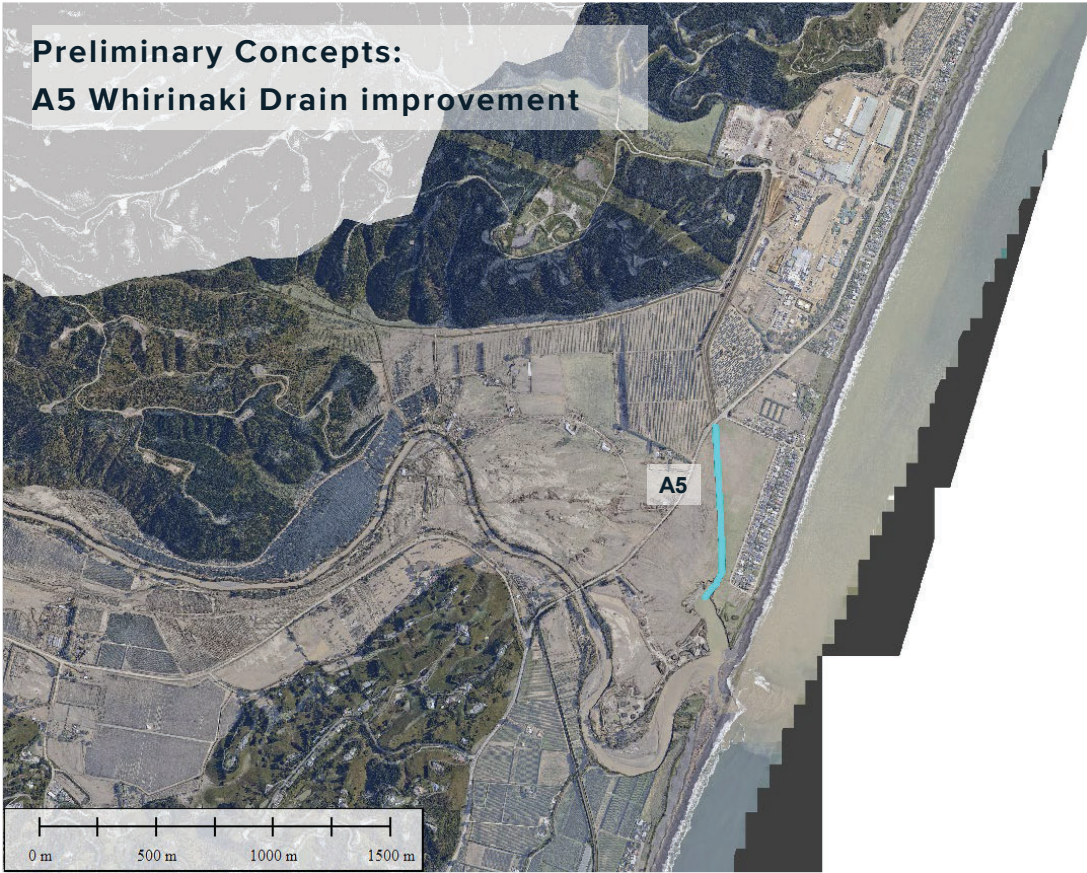
**Preliminary Concepts:  
A3 Debris fence**



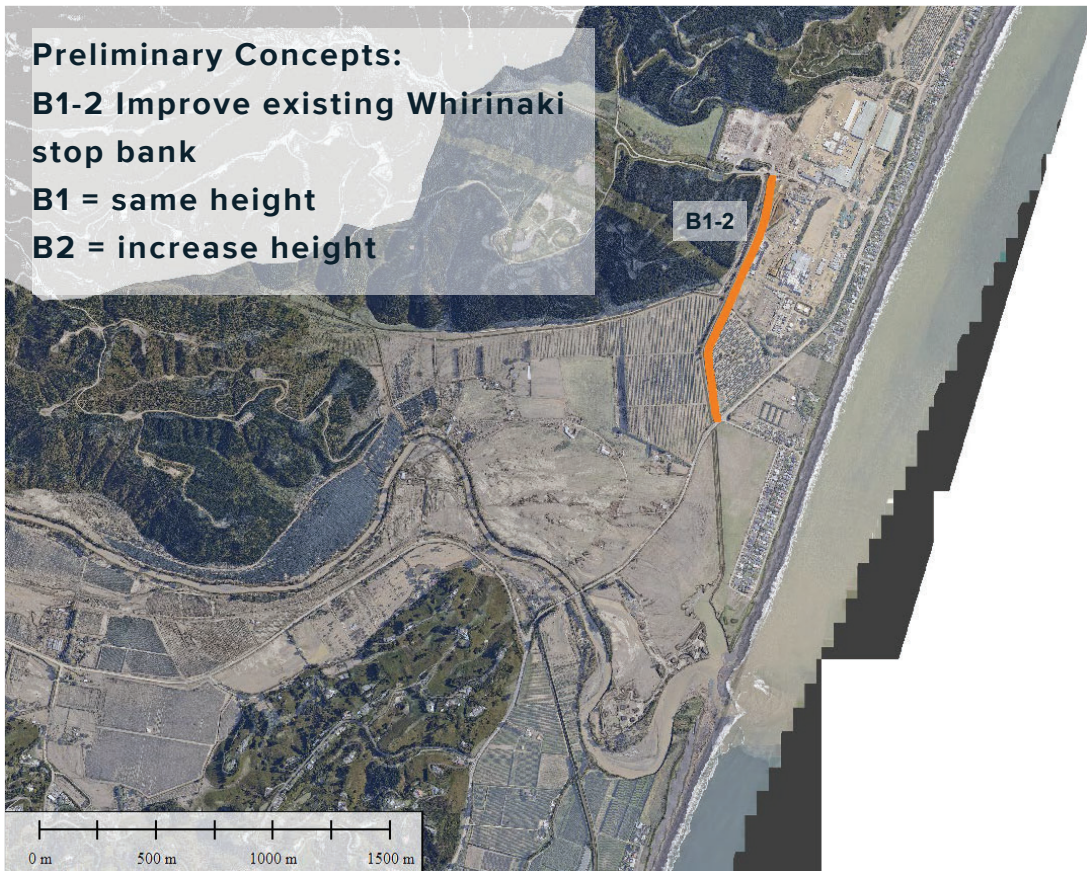
**Preliminary Concepts:  
A4 upstream channel work**



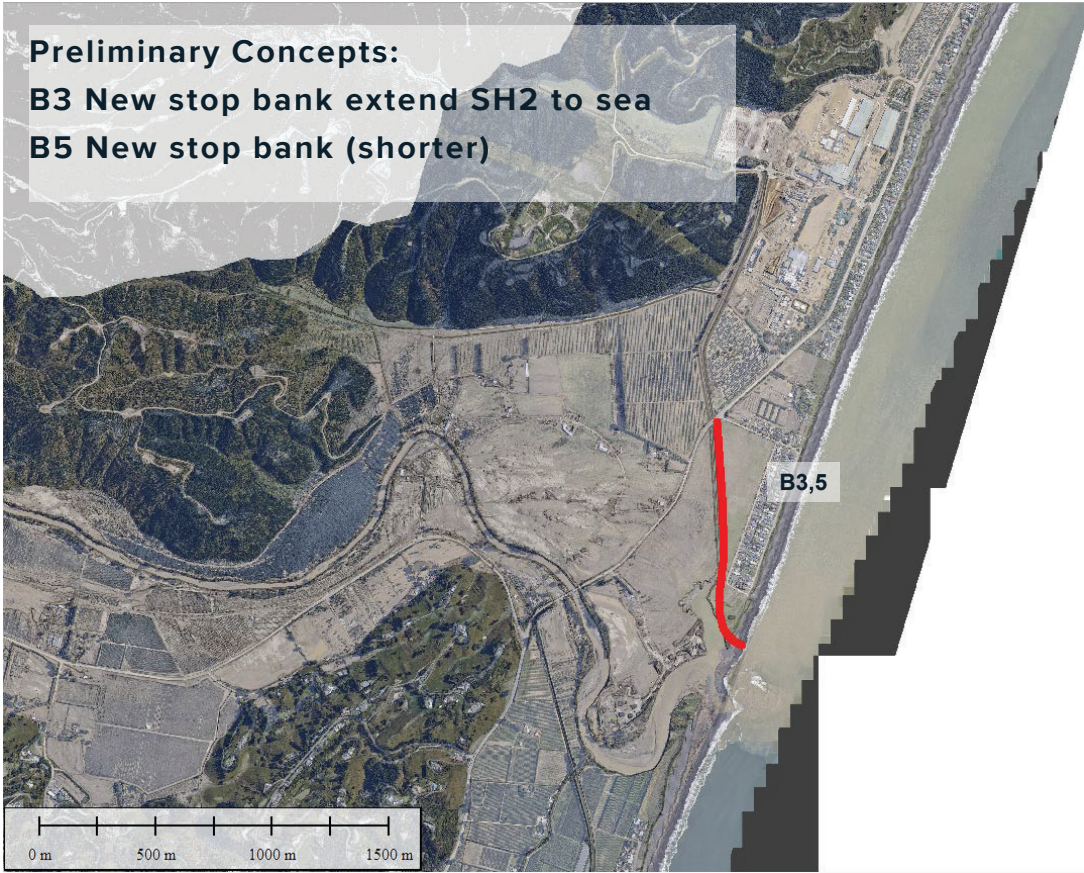
**Preliminary Concepts:  
A5 Whirinaki Drain improvement**



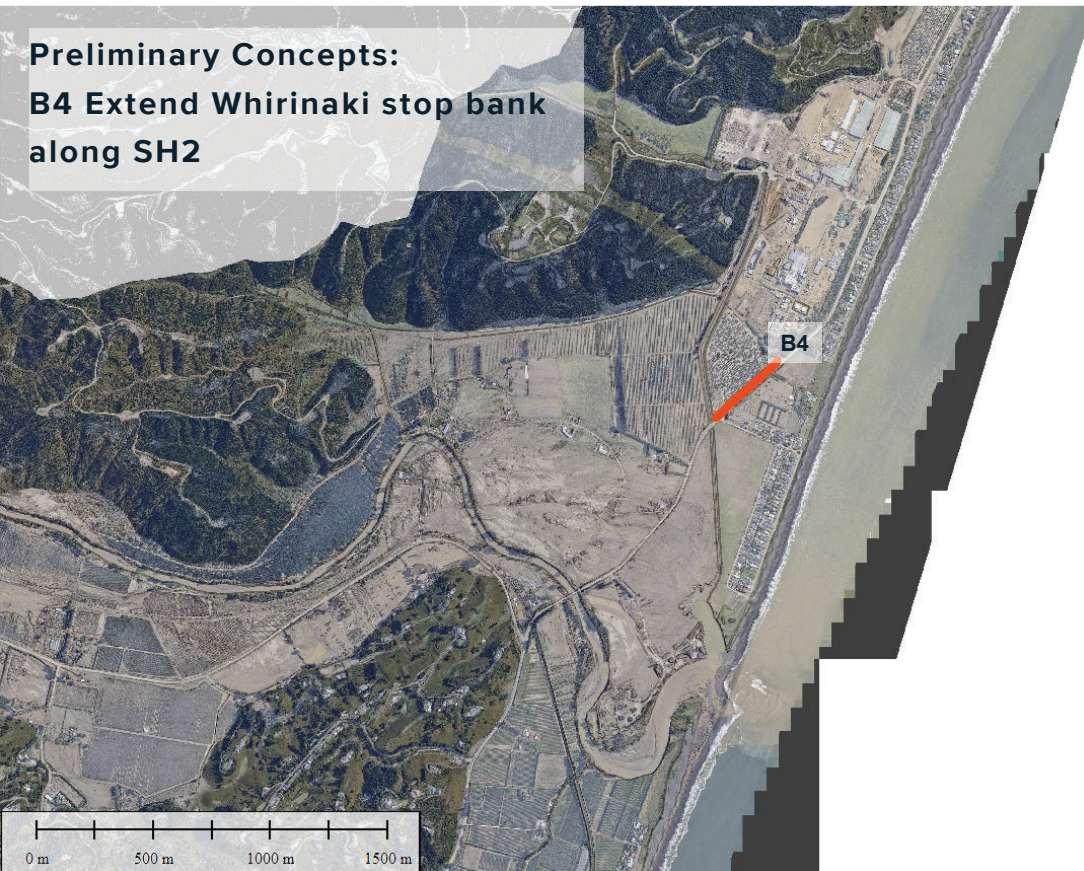
**Preliminary Concepts:  
B1-2 Improve existing Whirinaki  
stop bank**  
B1 = same height  
B2 = increase height



**Preliminary Concepts:**  
**B3 New stop bank extend SH2 to sea**  
**B5 New stop bank (shorter)**



**Preliminary Concepts:**  
**B4 Extend Whirinaki stop bank along SH2**

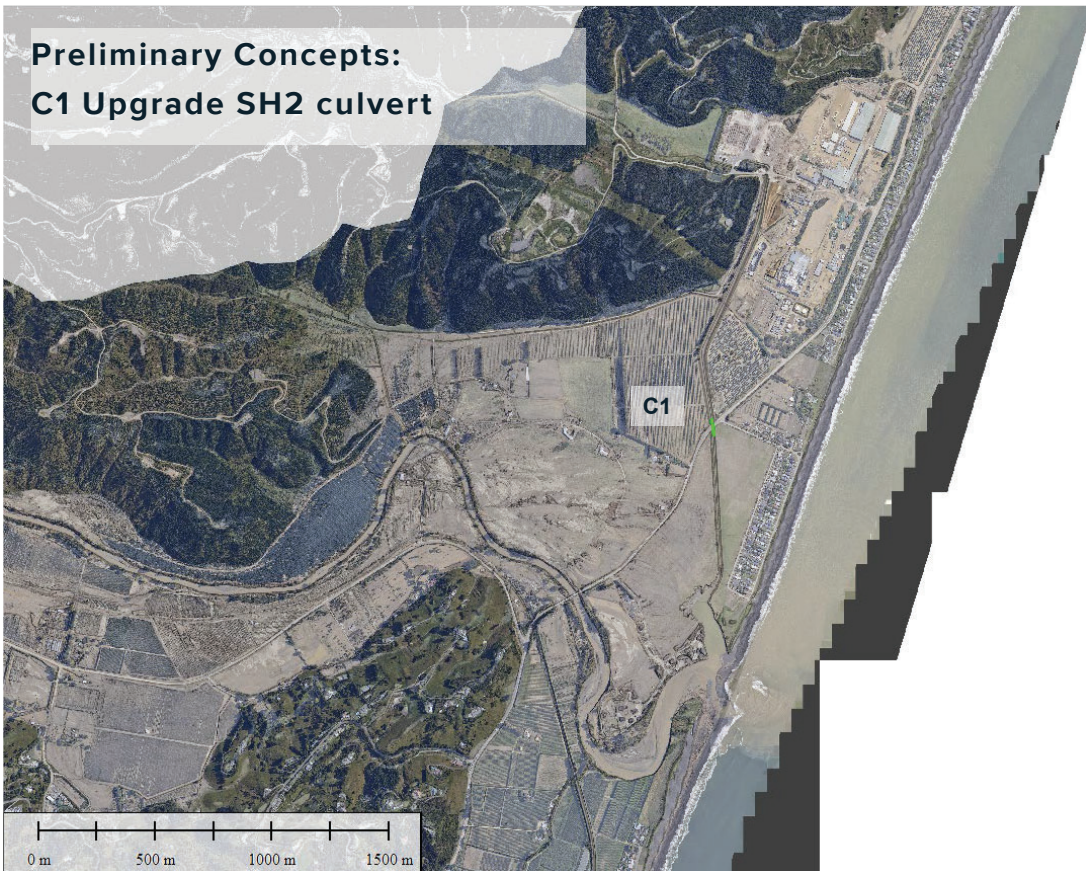




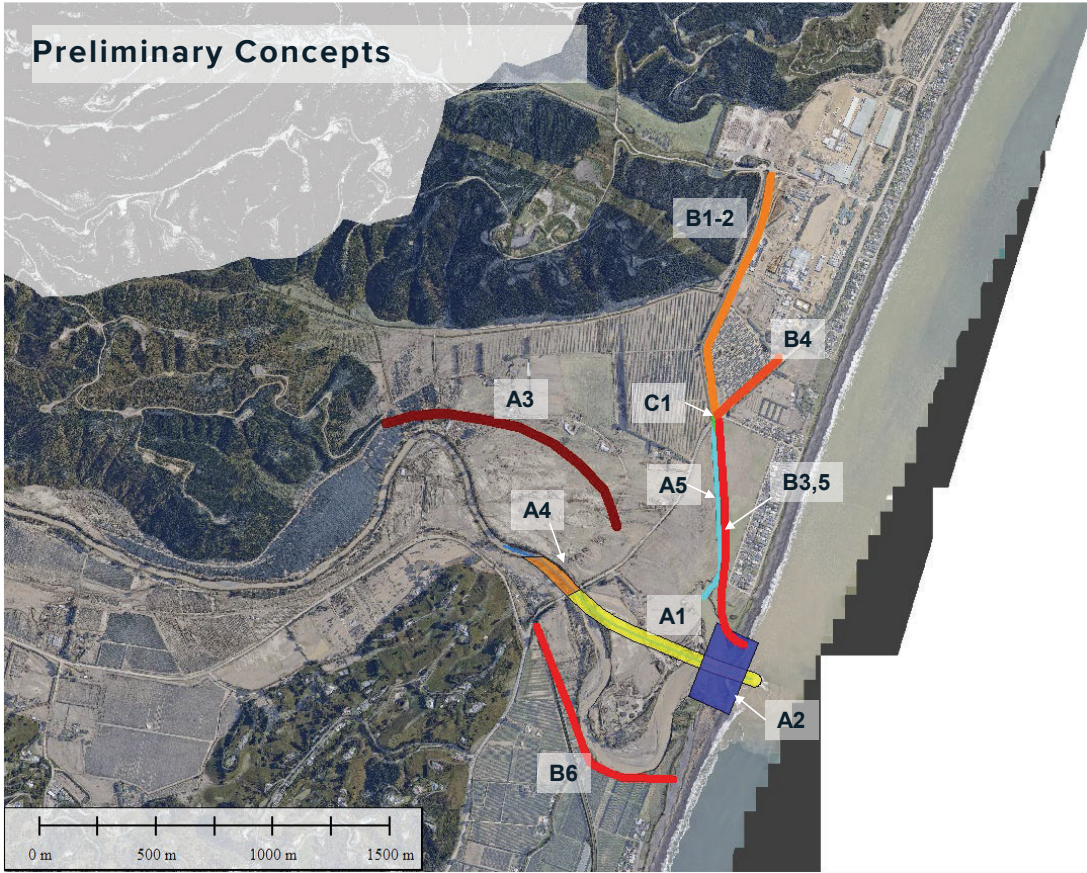
**Preliminary Concepts:  
A6 New stop bank on south side**



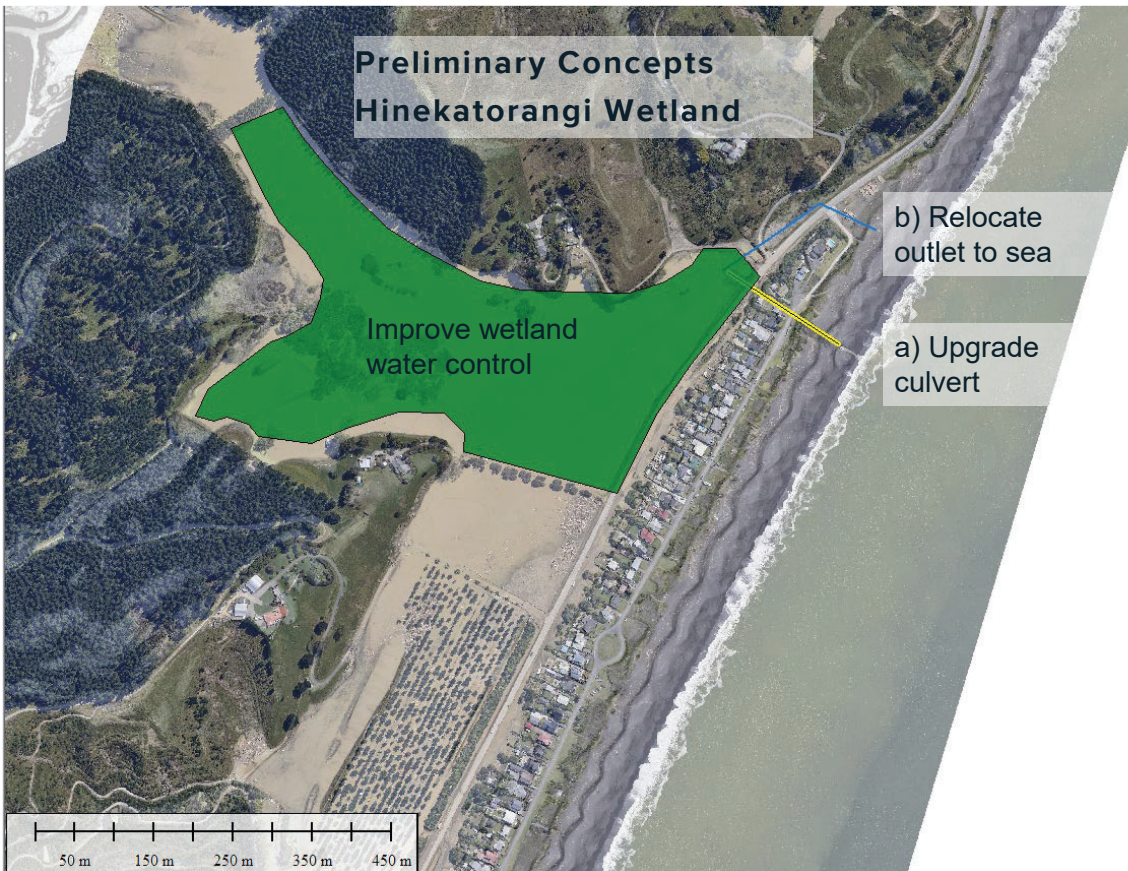
**Preliminary Concepts:  
C1 Upgrade SH2 culvert**



# Preliminary Concepts



# Preliminary Concepts Hinekatorangi Wetland



## Next Steps

1. Project team meeting with new HBRC CEO Dr Nic Peet re land categorisation process and programme - 4 Aug 23
2. Progress work regarding lifelines - SH2, Railway, Transpower Switchyard
3. Technical workshop with Waka Kotahi, KiwiRail and relevant Technical Experts
4. Modelling of concepts - August
5. Field work / desktop assessments - Surveying, Ecology
6. TFG 4 - Options Workshop 1 Sept 23

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## Multi Criteria Decision Analysis - Example

		Criteria								
		1	2	3	4	5	6	7		
		Economic Viability	Natural Character Landscape and Historic Heritage	Public Access and Recreational Values	Maori Cultural Values	Ecological Values	Effects on Other Land Owners / Resource Users and Local Residents	Technical Viability	Total Raw Score	Ranking
Option 1	Raw Score									
	Comments									
	Weighting									
	Weighted Score									

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