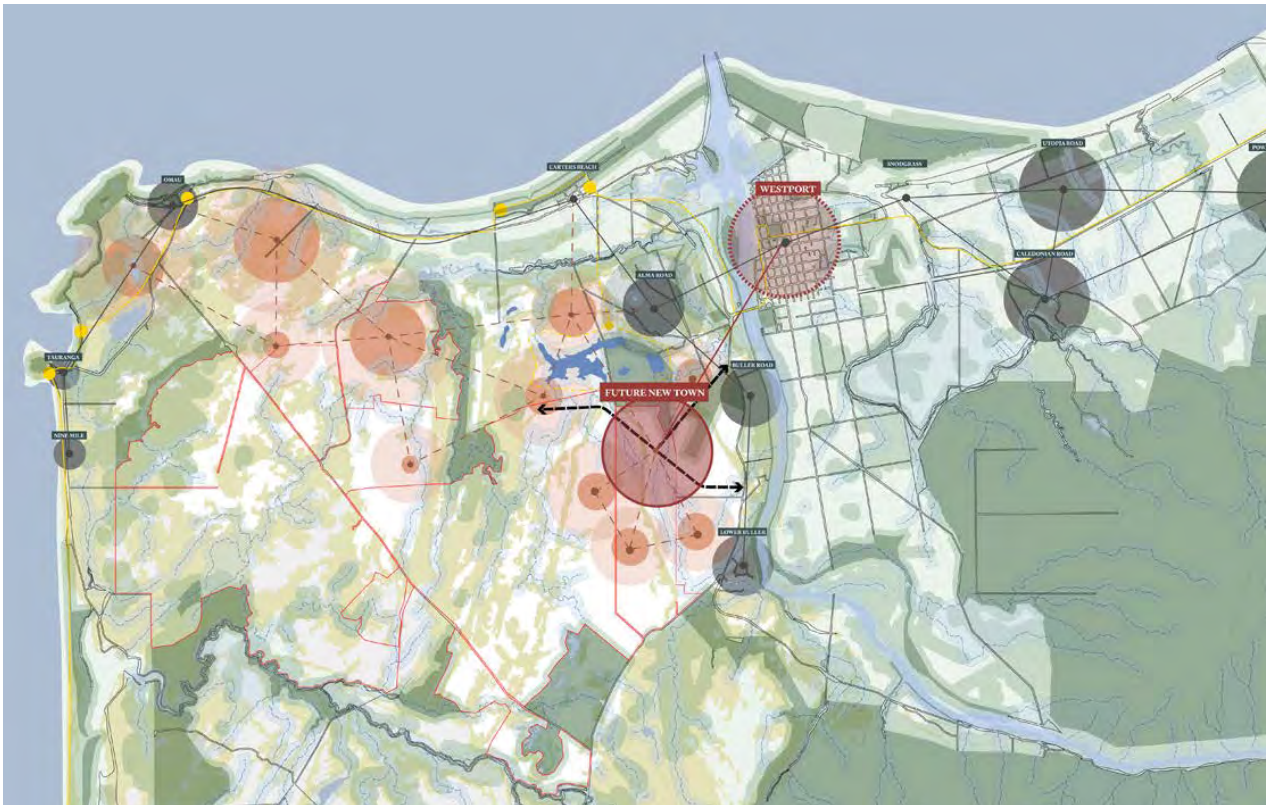
A Conceptual Scaffold



The Westport Way is part of the concept framework that helps us build on who Westport is, its DNA and personality. This influences every part of the Plan - settlement patterns, personas, language and identity, travel and proximity, daily routines. All are part of the Westport Way, created with a broad range of stakeholders from Westport's community.

Good growth happens when the community is deeply rooted in the place and the process, and invested in the outcomes.

And in this way a plan emerges, with ways to assess and analyse options, and to know what fits and what doesn't. It becomes obvious in a way, because it is familiar.

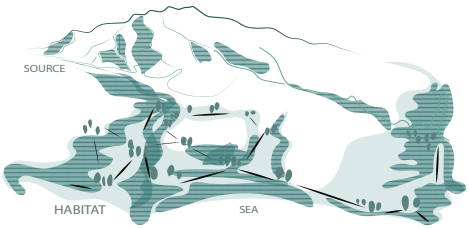
That is not to say intuition replaces rigour - which is critically important when dealing with the concept of home, people's lives and family history. Quite the opposite. But by maintaining a sense of familiarity, it is possible to navigate inevitable change, adapt and evolve as a community - without abandoning everything that is important and contributes to a sense of belonging.

The scaffold is built from todays familiar things - and reinterpreted for tomorrow. Settlements are not too big or small, they are never far from Westport or each other, or the water, whether it be river, lagoon, lake or sea. Settlements never merge or outgrow their landscape setting. They are varied and inclusive, there is something for everyone.

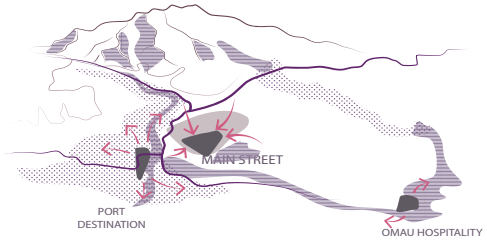
The Four Building Blocks

Four key moves have been tested throughout the master planning process, and still underpin the concept framework.

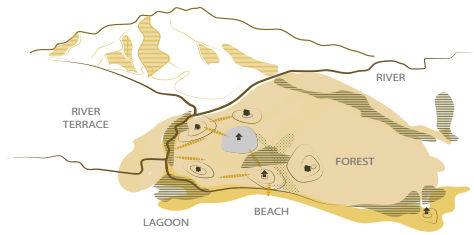
They provide four essential ingredients for spatial planning in Westport, and whilst the recipe for development will change, the ingredients will not. The 4 building blocks are:



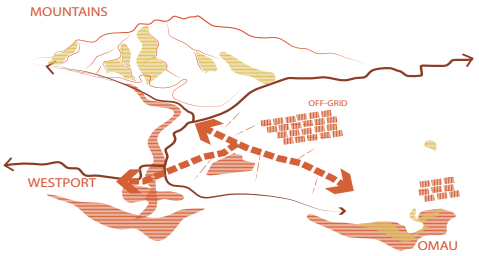
The Landscape
Creating a valued lowland landscape.



The Town As Anchor
Introducing A Service Town & Port Main Street.

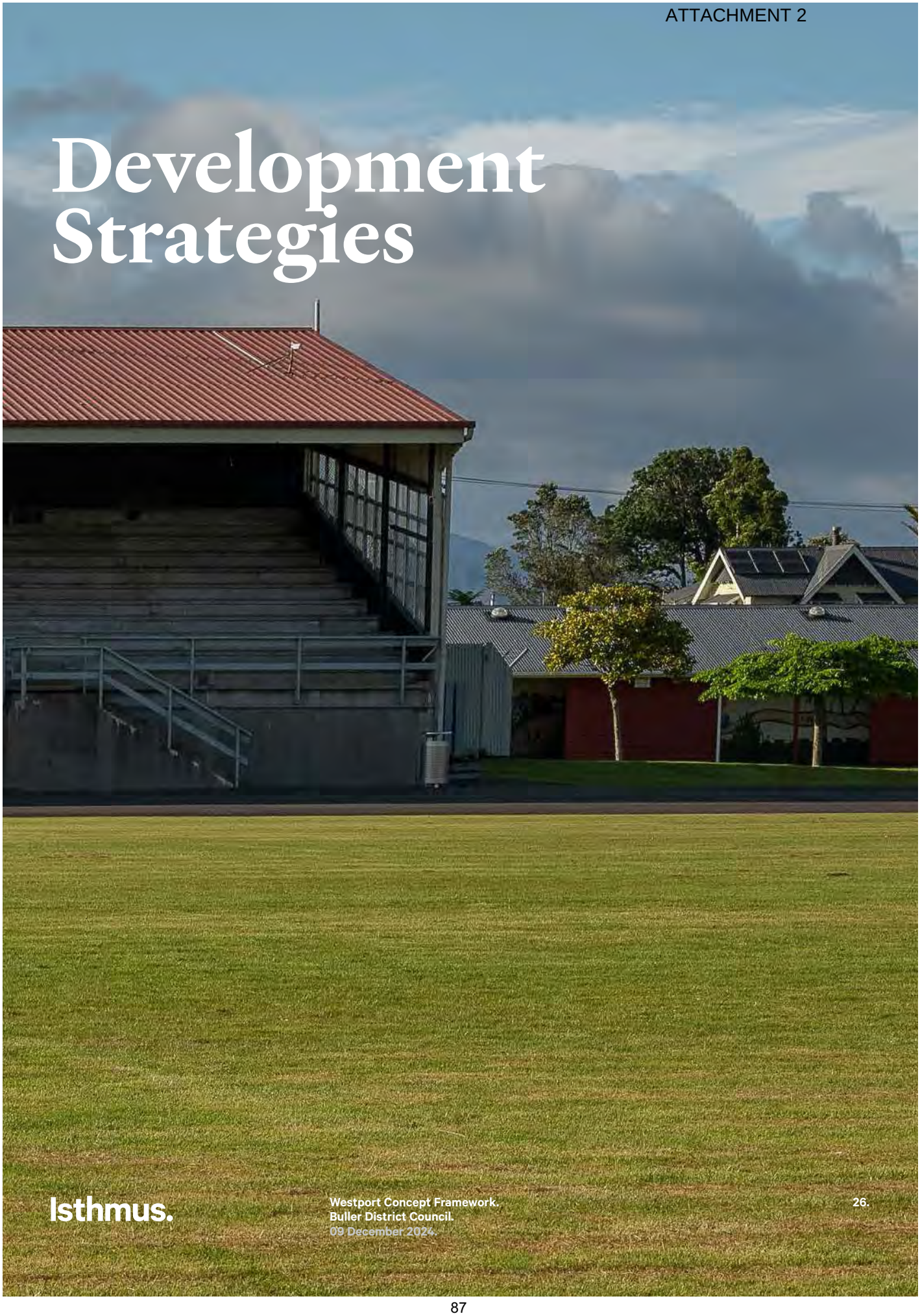


Settlement Choice
Ensuring Diverse Living Options.



The Infrastructure
Creating A Settlement Spine

Development Strategies



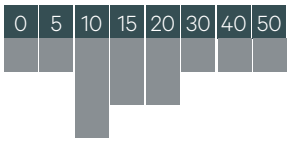
Development Strategies

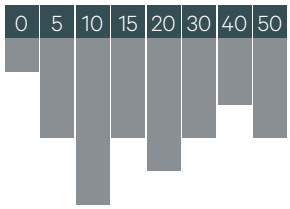
Development Strategies are important for actioning the plan, and making sure it is done the Westport Way, regardless of whether change is fast or slow, big or small.

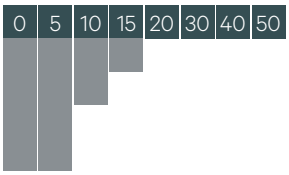
Development strategies describe our actions to evolve, adapt and grow in response to change, once we have acknowledged that change needs to happen. They include:

A. The Will To Start Now
B. Securing The Land
C. Westport Special Purpose Vehicle WSPV
D. A Campfire To Homefire Framework
E. Adaptive Pathways

	Westport.	The New Town.	Omau.
What timeframes are you thinking of when you look at this as something to work towards?	15-20 years (on average).	15-20 years (on average).	5 years (on average).







A. The Will to Start Now

The will to start now comes from a shift in mindset and having a shared purpose. During design week four we posed a series of scenarios around when we should get started. Not a single group voted to wait until there was no alternative (i.e. a disaster) to start planning a future new town whilst transforming Westport. A huge 95 percent voted to get on with it and only 5 percent of all group responses said take it slow.

Overall 43 percent said create a scaffold of infrastructure for the future, the pathways and roads needed for a new development. 38 percent said create something now, just start and others will follow. 14 percent are saying redirect the infrastructure spend towards a new centre.

While this is only a small sample of wider community perspectives, it signals that there is appetite for change now! There is energy to move the discussion further forward. It is rare to have such a clear and positive direction when facing change of this magnitude, and it is important that once the spark is there we do not let it go out as it will be almost impossible to reignite.

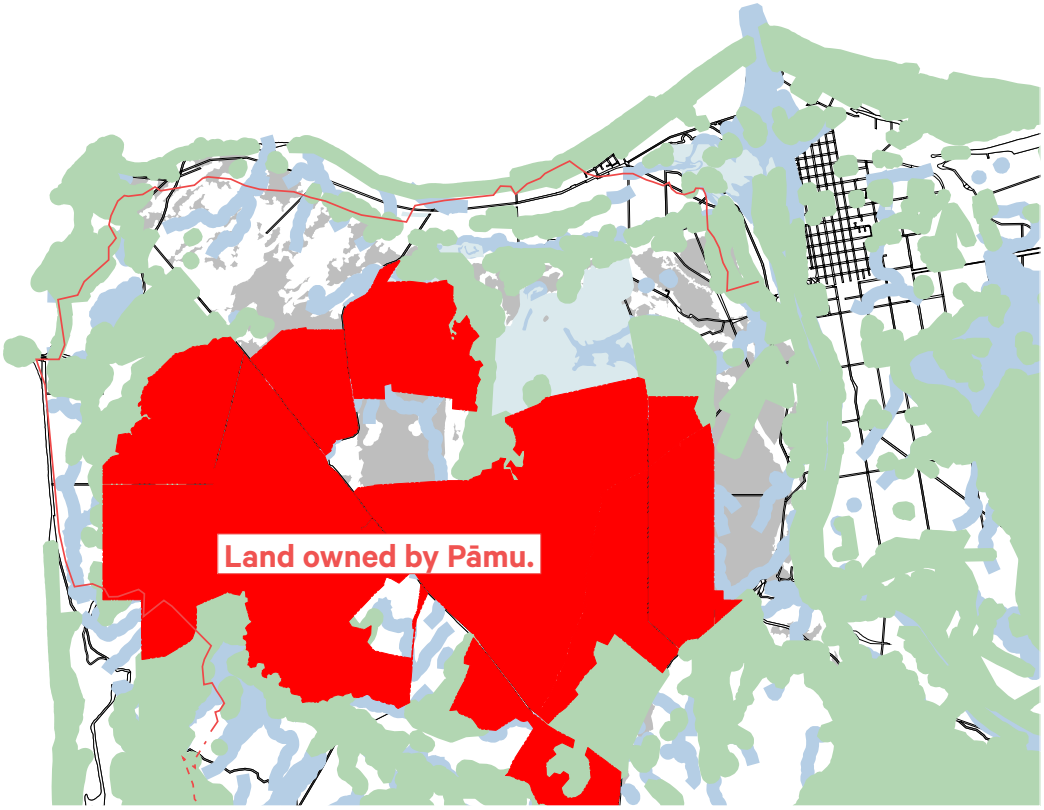
B: Securing the Land

The second development strategy involves securing safe ground for an intergenerational plan to be possible over time. It needs to be the first key milestone for the project- the first in a series of decisions as a 'good ancestor'. Many towns, settlements and suburbs throughout New Zealand will soon be facing the same challenge to find safer land.

Westport is in a unique and privileged position in this respect. The most viable land for development is "undeveloped Pamu estate" and it is crown owned, low intensity and low value. It is only a kilometre away from Westport and adjoins private land, allowing private investment to contribute to growth.

It has become clear through the master planning process that we need growth to enable relocation, i.e. an increase in population that attracts investment in key infrastructure. Publicly owned land provides slow burning capital, unlike private development that operates on tight profit margins.

Securing a portion of Pāmu land to rezone a future new town centre provides an opportunity for value to be captured by some combination of Crown, Council and private entity that is yet to be formed.



C: Westport Special Purpose Vehicle (WSPV)
The plan is not going anywhere without a mechanism to deliver it. It is recommended that a Westport Special Purpose Vehicle (SPV) is formed to deliver the Wider Westport Plan. This is not just a District or Regional Council project. It is not all Central Government or private investment either. It requires all of these agencies together in order to succeed. Setting up now will not only help secure land for future projects, it will also ensure that long term infrastructure spend is in the right place, and that short term infrastructure decisions consider the community's vision for the future to concentrate expenditure in the right places.

To optimise the significant investments needed, and to ensure a return on that investment, whether capital, social or within the environment, a new business structure must be established. There are a number of structures that can be considered. Currently there is no agreed model to take this project forward. Hobsonville Land Company is an example where HNZ acquired a former ministry of defence air force base to create housing. This has been a successful model that maintains a level of independence like a private company.

Westport can draw on successful examples, but it needs its own unique vehicle that is vision led, with "slow burning" capital for investment. Done well there is less wasted infrastructure spend in the short term. Done well private investment can be leveraged to increase financial and social returns to the community of Westport.

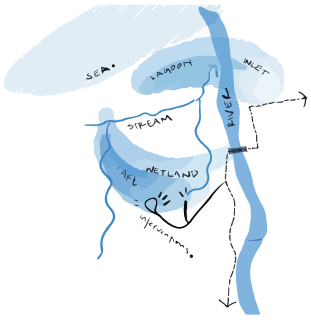
Below: Old New Zealand Defence Force Air Force Base at Hobsonville Point.

D: Campfire to Homefire

Campfire to homefire is a tactical land development strategy that imagines the future while starting now. By first creating a “Campfire” there is a place to have fun, play, walk, cycle, paddle, explore and learn, and experiment with events. A series of physical links and anchors draw people into the landscape with immersive experiences that already work - like the Kawatiri trail.

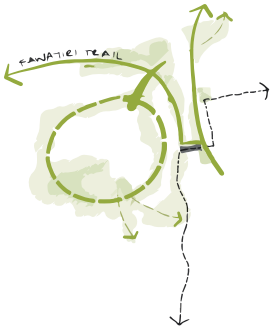
The first interventions may be small scale, temporary and immersive - laying the groundwork for community development.

Early interventions may also be experimental - like a pilot for sustainable living. These may be permanent from the outset and scaled to accommodate growth in future.



Experiential interventions.

Protect the network of waterbodies and attract first activities and events.



Tie a knot in the trail.

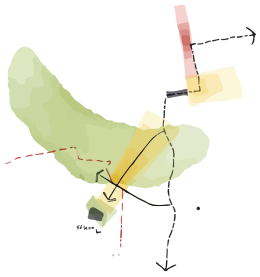
Loops in the landscape offer playful encounters and special moments.

References:
1. Spectacular Bird Watching and Wildlife Kayaking Trip. Trip Outside, https://tripoutside.com/browse/item:Spectacular_bird_watching_and_wildlife_kayaking_trip:i1ve5xgmsqwpskx6txd93k7at5ve5hgar9wfej6et4wfjkkcgq8y6n2v33z9u9x7.
2. Environment Hubs New Zealand. https://www.environmenthubs.nz/.
4 New Forest NZ. Facebook, https://www.facebook.com/newforestnz/.
5. Secret Spot Hot Tubs Rotorua. VisitorPoint, https://visitorpoint.co.nz/products/product/secret-spot-hot-tubs-rotorua.
6. Hosting the Perfect Corporate Marquee Event. Feast Magazine, https://www.feast-magazine.co.uk/hospitality-2/hosting-the-perfect-corporate-marquee-event-43302.
7. Matakana Village Farmer’s Market. Riparide, https://www.riparide.com/adventures/28027-matakana-village-farmer-s-market.
8. Hobsonville Point: The Airfields. Eke Panuku, https://www.ekepanuku.co.nz/neighbourhoods/hobsonville-point-the-airfields/.
9. https://www.youtube.com/watch?v=VwvB_dGpqDg
10. Housing Development Rasu Namai. Archello, https://archello.com/es/project/housing-development-rasu-namai

Campfire.

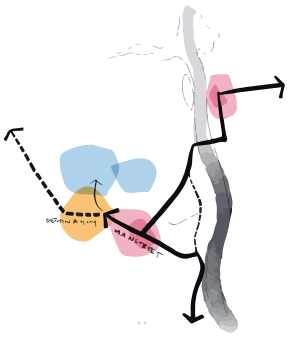
Over time more activities and anchor buildings will appear, places to eat and drink, bespoke accommodation, and bike and kayak hire facilities. All people can start to inhabit the place and see themselves living there in the future town. Action attracts partners who help grow opportunities over time.

A strategy like this allows us to move faster, but also to deepen the connection with a new location at a slower pace. These things matter - they ensure that there is a growing familiarity and desire to embrace change and new opportunities. Over time the capacity of early physical investment will increase, along with the benefits of multi-use community and event hubs, and greenways that connect and move water, wildlife and people.



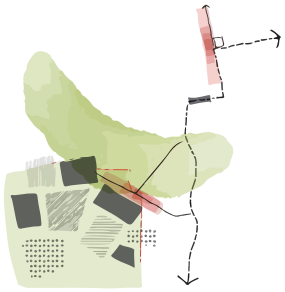
Create an anchor.

The first settler families and satellite learning facilities 'in the field'.



Mainstreet on way to destination.

Build energy with places to gather in the mainstreet and lake accommodation.



Controlled release.

Controlled release of land with room for growth and relocation, and green settlements.

5.

7.

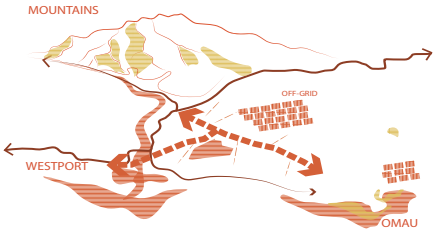
9.

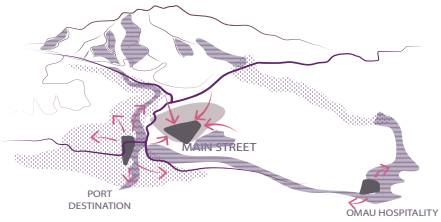
Homefire.

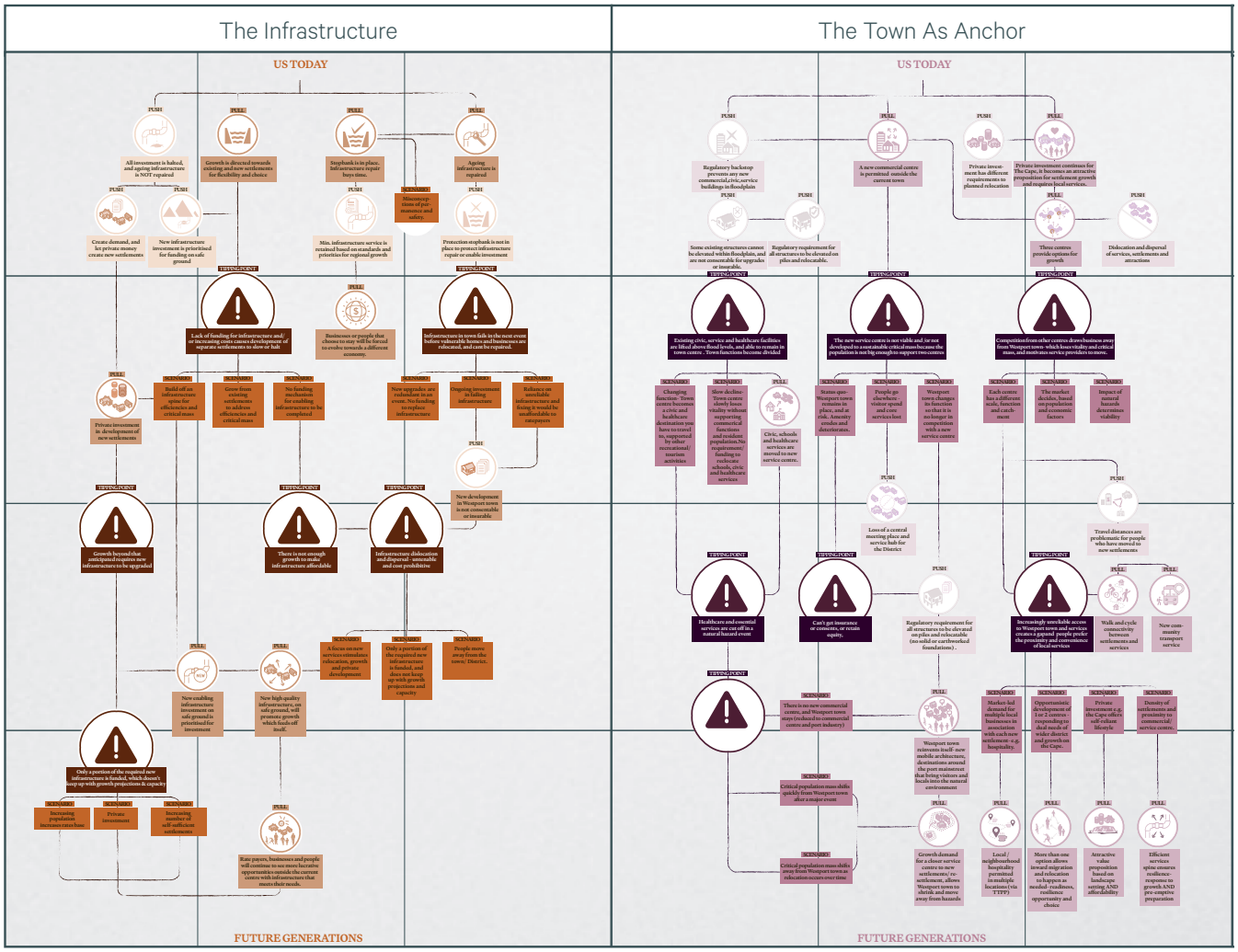
6.

8.

10.







E: Adaptive Pathways

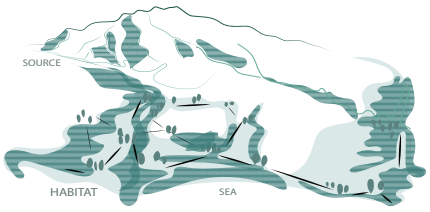
Being able to demonstrate the availability of land is of huge importance. Without this anchor the confidence to invest in the future is reduced and can be lost.

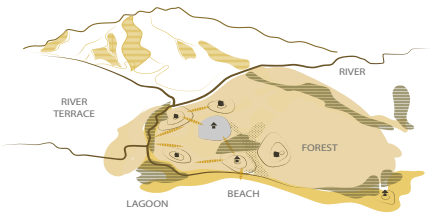
Projects with inspiring vision are lost because they lack the tangible elements that make them achievable. A vision galvanises people and generates momentum, but needs a delivery vehicle as the empowering agent for action.

The spark comes from existing natural and recreational assets built by the community.

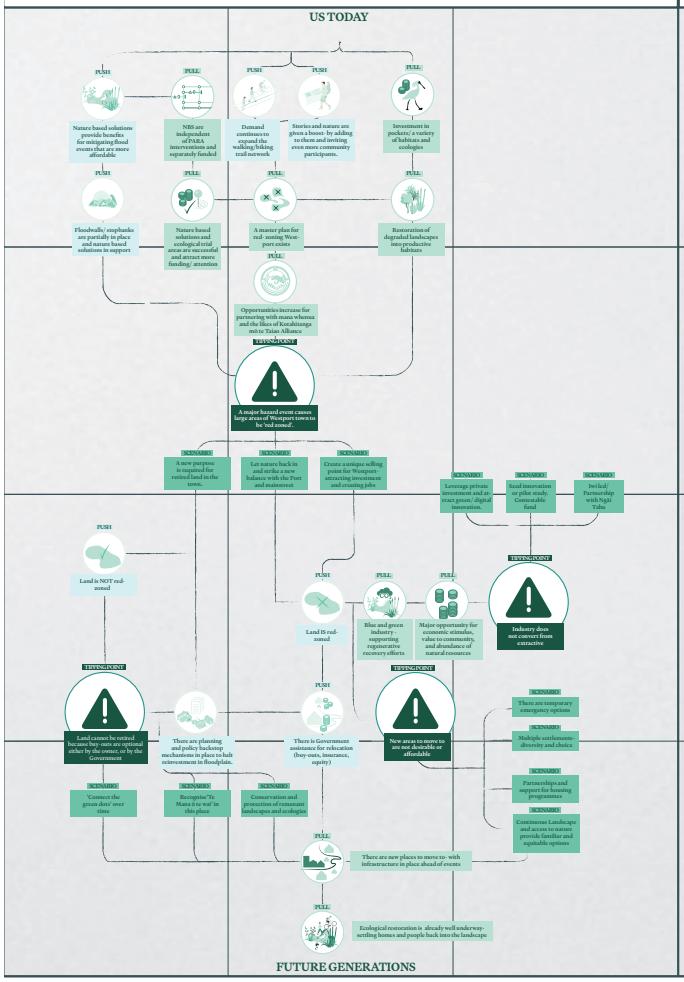
A small and growing flame of optimism can start modestly and grow quickly with more investment. But without the land nothing can happen. We cannot light a fire on land we don't control or light a fire and walk away.

It is clear that change will continue to occur, but some events will remain outside our control. They may be financial constraints or natural disasters or other things we don't yet know about. These events will create tipping points, forcing us to make choices between one scenario or another.

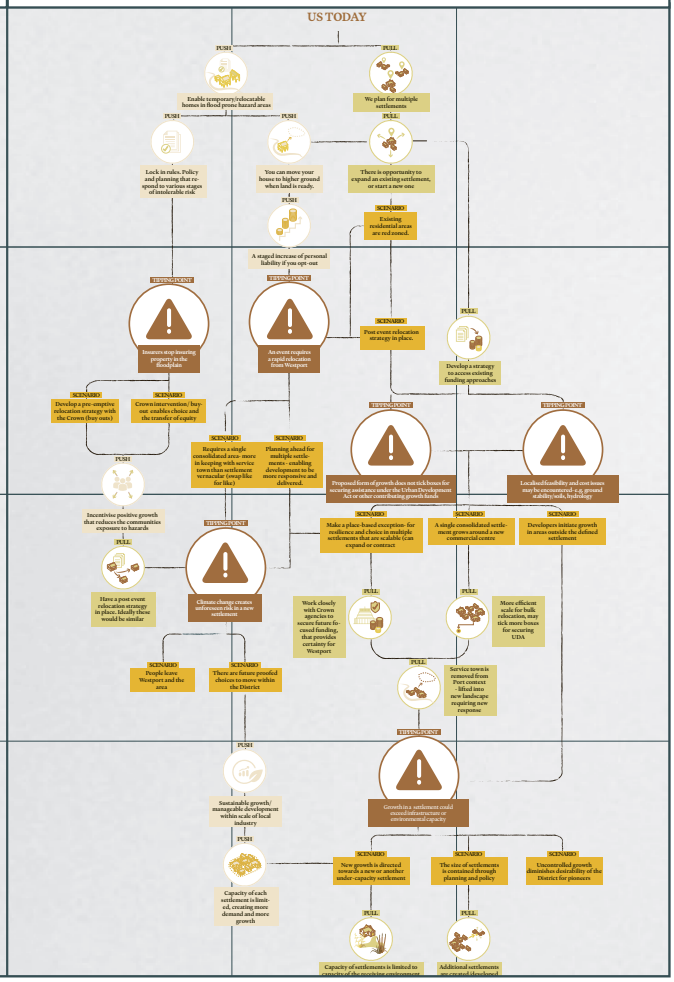




The Landscape



Settlement Choice

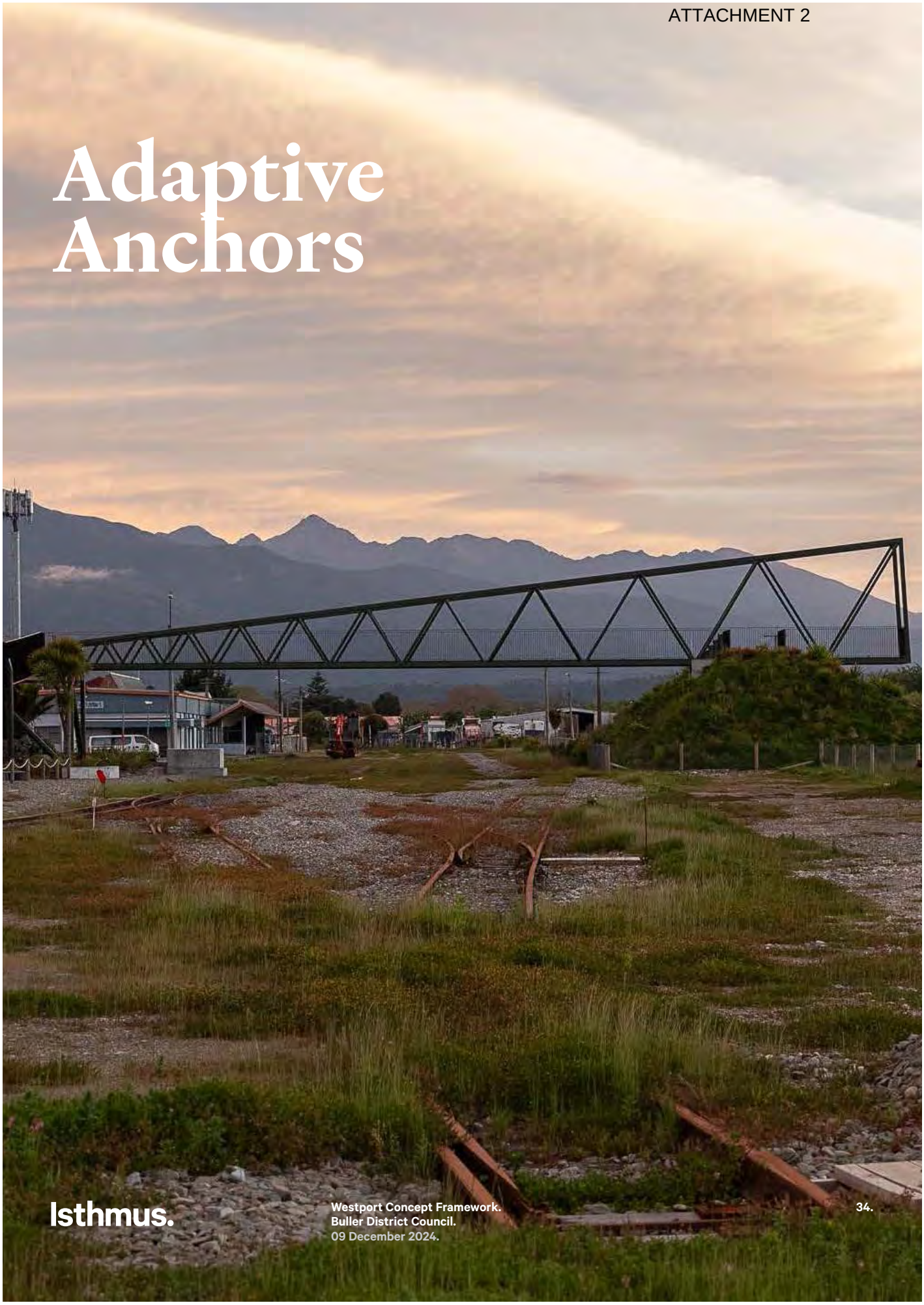


Design and planning tools need to allow for a range of possible outcomes, while still ensuring forward momentum. Growth and relocation is encouraged with pull factors, and push factors discourage maladaptation.

But this doesn't mean leaving things to chance. The parts of our master plan - vision, concepts and development strategies - set up a road map for the future, and the building blocks to achieve it.

The cumulative impact of hazards and risks cannot be directly mitigated without significant change to land use. With planning mechanisms such as the TTPP Regional Plan Review already underway, the master plan remains outside the planning process. It will require alternative methods to rezone and activate land use change. This project has also begun under one government, it is now administered under another. There is no doubt this creates complexity, but flexibility is essential without compromising the vision.

Adaptive Anchors



Adaptive Anchors

The Wider Westport Conceptual framework includes adaptive placemaking functions to consolidate activity. This is to both grow a new future town, whilst ensuring that Westport thrives.

The Plan covers two locations:

Westport.

Which is retained and reimagined. The main street, anchored by the port and industry.

This happens in two overlapping timeframes:
i) Main street reimagined (0-20 years)
ii) Evolving land use (10- 50 years+)

A Growing New Town.

Which is anchored by existing landscape features, a main street on the way to a destination.

i) Safe, attractive land
ii) A main street town
iii) Room for growth

Westport
Main Street Reimagined

Thriving town centres are a reflection of their community and the identity of the wider district they serve. Vitality comes from people, and the vital role the town plays in people's everyday lives.

If some built elements of a town can remain flexible and adaptive, its function can continue to reflect the needs of the community and harness the trends of retail, business, workplaces and hospitality. Whilst towns have a service function, they also have an important social function. This is certainly true of Westport's main street – a place where people meet and gather to work, socialise, eat and play. Westport is remote but it is also well connected.

Westport's main street needs to continue to thrive for as long as it can, at the same time evolving to support an even stronger port function. This is adaptive transformation, that is low investment and high value. There are 5 ideas for adaptive transformation in Westport.

High hopes' builds on hot spots of energy and activity that occupy localised high ground.

'**Cross cutting innovation**' identifies Lyndhurst St as an opportunity to concentrate energy and effort, showcase relocatable and reusable ideas and feature the port.

'**Laneway character**' is a shared space precinct adopting EPIC's ideas and attracting pop-ups and innovation, and tapping into port history.

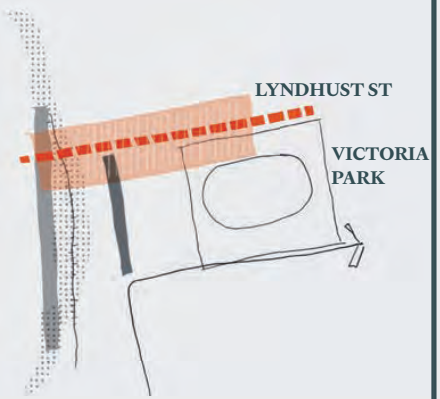
'**Threads of green**'- pulls the esplanade into Victoria park with trails and ecology.

'**Shades of blue**' comes in behind with resilient blue-green infrastructure that gives the water somewhere to go, and enhances the experience of being near the river.

#1. HIGH HOPES

- Build on buzz and hot-spots of activity.
- Buy time on localised high ground.
- Stop banks with viewing and recreational potential.
- Co-locate and share facilities with like-minded people.

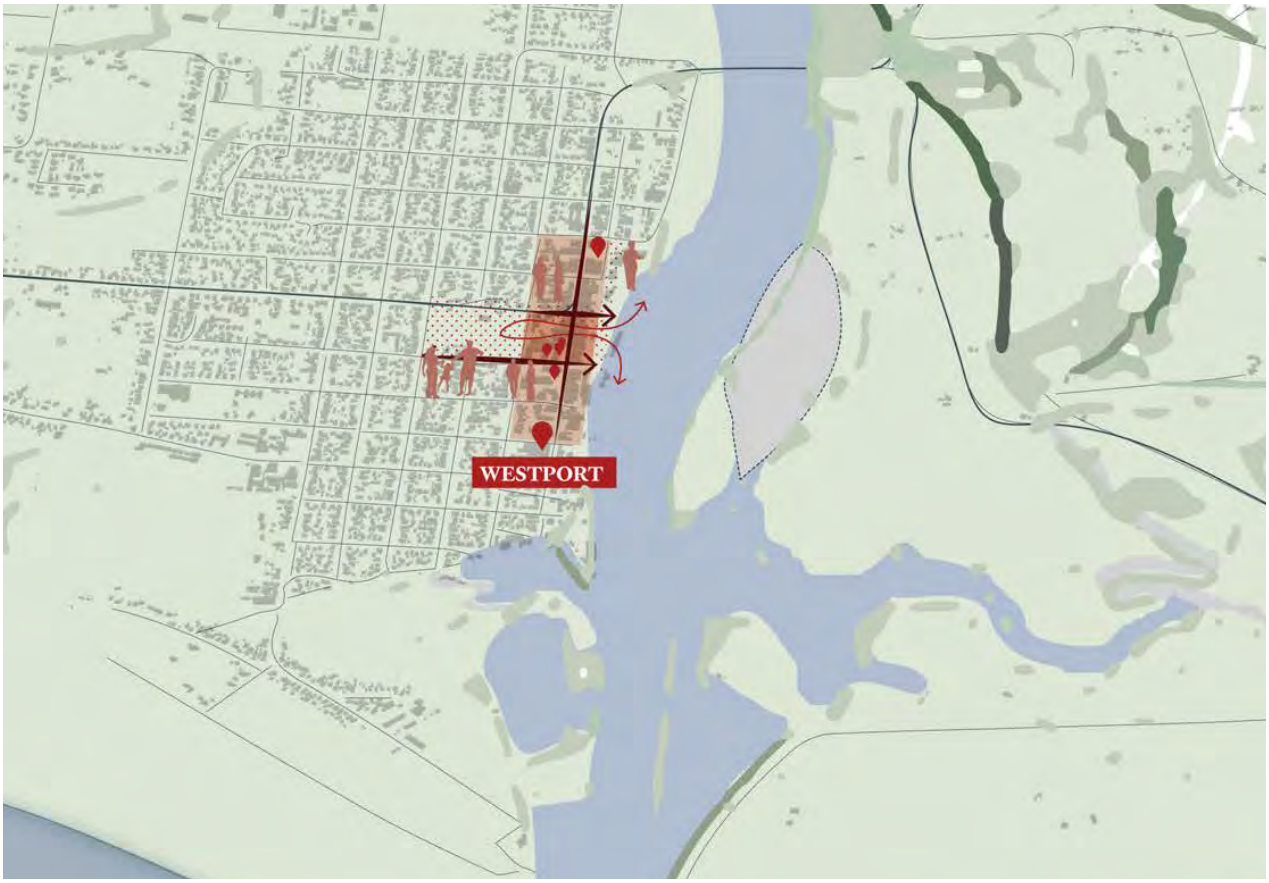
#2. CROSS CUTTING INNOVATION



- Leverage the Port.
- Harness and concentrate energy.
- Consolidate Main Street.
- Showcase ideas.
- Showcase relocatable, reusable, small and fun development.

#3. LANEWAY CHARA

Laneways, pop up activations. Character precinct leveraging port history.



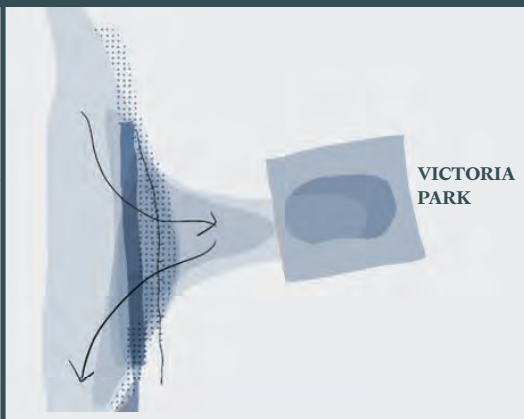
CTER

- Attract visitors with things to do.
- Make the most of latest investment.

#4. THREADS OF GREEN

- Gateway to town.
- Esplanade to Victoria Park.
- Pockets of coastal forest ecology.
- Join up trails.

#5. SHADES OF BLUE



Resilient blue-green infrastructure.
Water can get out.

- Treatment of stormwater.
- Experience the river.

Westport
Evolving Land Use

Westport must retain and build on its strategic strengths to survive and thrive as a river port town. The port has been and will continue to be central to the economic viability of Buller. It is embedded in the name WestPORT. The port is a lifeline for industry, and relies on it to remain operational. It is a strategic asset for the entire region and will be a critically important future asset as one of the adaptive anchors. The Wider Westport Plan proposes growth as a corner stone of the future, and the Port is an essential part of that future.

Work is underway to help future-proof port infrastructure, allowing existing port functions to remain. It also has potential for operational expansion in the future to utilise land-based infrastructure for berthage, boat storage and maintenance, providing the ability to leverage core industrial skills from the region. Adaptive reuse of warehouses, rail connections and main street access all provide desirable assets for a regional port. The port remains an important asset for loading and unloading of coastal trading or fishing vessels, and in disaster relief for critical supplies and equipment as needed.

Over time as the focus of the town moves from the current side of the river to the other side, the reimagination of land use in Westport becomes important to retain its value. Reuse of land as productive land becomes potentially viable and able to leverage the port for regional transport links. Income could be generated with blue-green carbon sinks, horticulture and aquaculture, innovation and research, and relocatable accommodation.

Isthmus.

Westport Concept Framewor
Buller District Council.
09 December 2024.

8.

A Growing New Town

Growth creates demand and the plan envisages capturing and directing future growth to safe land on the other side of the river. Early adopters for a future new town could well be those with strategic importance such as civil defence or a school moving to the site, or perhaps a destination facility for events or sports. The community can then see others investing in the place and confidence will grow.

Confidence in both public and private investment will grow mutually, and the main street will develop to support this. Over time people put down roots in the new, safe location. More homes will follow, with some moving from Westport to the safer side of the river.

The development potential of this land is based on 3 core anchors:

i) Safe, attractive land
The anchor of this strategy is to first acknowledge the viability of this land - as safe and elevated, then its desirability which leverages the experiential value of the lakes, and its closeness to Westport. By attracting people to this destination, we increase its perceived value, and the location itself becomes the anchor for the future.

ii) A main street town
To imagine a new future town centre and what it will look like, it is helpful to first understand the familiar things that already work in Westport's main street, and the things that don't work. Then recreate the experience sought by people who live in the area, and those who might come here. To ensure a town can survive and thrive, we can learn from the changes happening to town centres around Aotearoa, and embrace the opportunity we have here to build for the future from day one.

iii) Room for growth
With secured land we can start to adapt by placing anchors in the landscape, that invite activity and build investment confidence. People can imagine themselves and others living there. A homefire represents a future that is secure – for inward migration and upward relocation. House and land packages can keep pace with demand.

Adaptive Anchors
A Growing New Town


Welcome to
WESTPORT
67

Growth And Relocation

The growth, relocation and evolution of Westport and a future new town must work hand in hand, with a plan for both to generate value and a positive perception of wider Westport. While some new anchors have their own destination pulling power, the majority will rely on critical mass - both in terms of population proximity and demand, and co-location of activities for vitality and viability. There will be a tipping point when new civic, health and educational facilities need to be built and/or relocated to higher ground to protect these assets. Hospitality, retail and entertainment inevitably follow. Together both the old and the new towns will play a role that magnifies the importance of wider Westport's destination role on the Coast.

The following key principles are fundamental to the success of a future new town centre. It must be:

Key principles for success

1. Community Hub:
The centre of its community, feeling familiar to the Coast from day one.

2. Accessible:
Accessible by multiple travel modes - future-proofing all options into the future.

3. Socially Vital:
Vital and convenient to the wider community on a daily and weekly basis.

4. Flexible:
Functional and flexible for working, socialising and living, and a venue for connection.

5. Compact:
Compact and consolidated, ensuring that civic and commercial functions work in unison.

6. Mixed-Use:
Mixed use, bring together retail, hospitality, live-work opportunities and more...

7. Active:
Active day and night, with a lively main street and engaging spaces for visitors.

8. Walkable:
Walkable and bikeable with laneways and greenways.

9. Adaptive:
Adaptive, working in unison and designed to grow alongside Westport.

10. Sustainable:
Sustainable and environmentally responsible - offering smart ways to hold and treat water, and orientate to the sun.

Empowering Champions

Rising Tide

Our knowledge holders, have been essential to the development of this concept framework through involvement in design weeks over the last 8 months. They have brought knowledge to the table, and now carry knowledge about the process, the challenges, the opportunity and a way forward.

The participatory design process has generated positive discussion about how to not only cope with change, but own it, and harness its momentum to create a better future. Offering hope and choice means finding a way to equitably create opportunity and prosperity for everyone. This is the rising tide that lifts all boats.

Maintaining Momentum

To maintain momentum in this process, it is critical that there is continuing meaningful and collaborative conversation with community leaders - which include our youth. Each community voice that sees a positive future for the town is a champion for change. Collectively we can portray our potential to Aotearoa - which is vital for long term success. Each person involved in this participatory design process is influencing the narrative and how this might be shared with positivity. The conversation will continue and develop over time, and most importantly we are putting in place the building blocks to move beyond the why into the how and when. The time to be a good ancestor is NOW.

What Works

It is a good time to take stock and reflect on what has been successful so far, and how it has shifted the conversation toward action. This set of factors will no doubt unlock our next steps too.

The key to this is:

1 **Keep the rhythm.**
Design weeks embed markers in the process at a set cadence.

2 **Create space.**
Within design weeks there is time to build energy and momentum.

3 **On the ground.**
In the everyday roles, build knowledge with honesty and transparency.

4 **Experience it.**
Listening to a range of ideas and views to widen perspectives.

5 **Continue conversations.**
Hands-on interaction with the design process, one step at a time.

6 **Stay positive.**
Putting the shared vision and greater good above individual ideas.

7 **Be nimble.**
Using each milestone to inform the next, the narrative is evolving.

8 **Trust the process.**
The way we work together is the key to finding solutions.

9 **Translate.**
Translate into action to build momentum.

10 **Right vehicle, right time**
Build the next vehicle with the right structure to move forward.

Conclusion

Over the course of the five design weeks there has been a shift in mindset toward the potential of wider Westport in the future, and the role of being good ancestors with the decisions we make now. We have co-created an intergenerational Draft Master Plan. This said, there is still much to do.

This concept framework will continue to evolve as public engagement expands to include the wider community. It is flexible enough to adapt to changes over time. There is enough grounding and momentum to know what we need to do next, to secure seed funding and continue into spatial planning and delivery.

In the next couple of decades, we can grow a new town that doesn't compete with Westport - by enabling things that don't exist yet. These things add value to Westport as a destination and promote economic growth. There is a fine balance to ensure that Westport will continue to co-exist and thrive, but with some new thinking that supports the port industry and new jobs.

The Plan reflects the fact that if we start preparing for the future now the land will be ready when it is needed. It can seed opportunity for Westport to grow and prosper, and it can offer choice for relocation, over time.

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Land.
People.
Culture.
Isthmus.

THE WEST COAST REGIONAL COUNCIL

Prepared for: West Coast Regional Council & Buller District Council
Prepared by: Nichola Costley – Manager Strategy and Communications
& Westport 2100 Group (moved by Neal Clementson/seconded by Grant Weston)
Date: 28 September 2019
Subject: Westport 2100 – Recommendations of the Working Group

Purpose

To present the phase one recommendations of the Westport 2100 Working Group to Council to be included in future work programmes.

Background

The Westport 2100 Working Group was formed at the end of 2018 and met for the first time in March 2019.

The purpose of the Westport 2100 Working Group has been to engage with the Westport community and work together, with Council staff, to identify a pathway forward for the town for the benefit of future generations. This project has a long term focus and is to result in recommendations to the Buller District Council and West Coast Regional Council for future work programmes for civil defence, hydrology and operations.

The Group has also been required to:
- identify the work required to enhance the resilience, and protect, the Westport community;
- prioritise the projects within the work programme to deliver on this; and
- determine how this work could be funded and resourced.

Review of the Westport 2100 hazardscape

The Group has met monthly to review the hazardscape of the Westport 2100 area. This has included the risks associated with:
- fluvial flooding from the Buller River;
- coastal inundation;
- sea level rise and the increase in severe weather events;
- earthquake risk; and
- threat of tsunami.

There has also been discussion undertaken around:
- the Orowaiti overflow;
- build up of gravel and shingle bars in the Buller River;
- telemetry and warning systems;
- planning and zoning; and
- robustness of transport routes and other critical infrastructure.

Over this time the Group has drafted a series of short, medium and long term recommendations for the Councils to consider adopting into their future work programmes for civil defence, hydrology and operations. However, the Group also recommends that these be split into two phases as further investigative work is required on some matters to fully quantify the risk and to identify robust options for the medium to long term. Once this work has been completed, the Group can reconvene and provide further detailed recommendations around the management of risks associated with fluvial flooding, sea level rise and more severe and frequent weather events, potentially in the form of hard protection structures.

This two phased approach will ensure that those actions that can be undertaken quickly, or can commence now, can get underway and the Westport area can grow its resilience to hazards now.

Budget for future work

A specific budget was not established for the Westport 2100 Group as it was unknown what the Group may have required at the start of this process. Now that the recommendations have been identified, the costs of the various work streams can be calculated and funding of these considered.

The Group is proposing that several of the recommendations be funded through a targeted rate due to their importance in being accelerated to address immediate concerns. These include:
1. As per the NIWA flood forecasting roadmap, completion of the early warning system for the Buller River catchment to be operational by mid-2020

2. Modelling of above from mid 2020.
3. Completion of a study of islands and gravel bars from Martins Island to Organs Island with recommendations for gravel/aggregate management.
4. Development of a scheme which would provide protection from inundation by 1% exceedance flooding, taking into account the effects of sea level rise and the more frequent and severe weather events predicted.

Other work can be implemented through current work streams, dealt with through future Annual or Long Term processes, or considered by the rating district for funding.

Note that any future potential protection scheme would be consulted on with the community.

Recommendations of the Westport 2100 Group

Throughout the course of the Westport 2100 meetings, aspirations for the future of the wider Westport area that came through identified:

- Westport as a thriving and resilient town, knowledgeable about the hazards it faces with a community who is prepared in case of an event.
- Critical infrastructure is able to continue to undertake business as usual (BAU) in the case of an event
- In the short term, actions will seek to defend against flood risk, move towards adapting in the medium term, with a view towards providing for relocation through planning provisions in the long term.
- Local government, health, civil defence, the community and other stakeholders will work together to plan for their responses to an event at a community, organisational and individual level.
- Development of the Te Tai o Poutini Plan (TTPP) will incorporate clear direction for hazard mitigation and options for the future for the economic, social and cultural wellbeing of the wider Westport community.

To achieve these aspirations, the Westport 2100 Group have identified the following recommendations and highlighted whether they are to be undertaken during a phase 1 or phase 2 workstream.

The Westport 2100 Group has defined the timeframes as follows:

- Short term 18 months
- Medium term 18 months to 5 years
- Long term 5+ years

Table 1: Recommendations of the Westport 2100 Group

Timeframe	Action	Responsible agency	Potentially funded via	Phase
Evacuation plans and community preparedness				
Short	Complete the development of an evacuation plan for the Westport community, including robust triggers for evacuation and the process for warning dissemination.	CDEM	BAU budget	1
Short	As part of the evacuation planning process, confirm evacuation sites and the preparedness of those to receive evacuees.	CDEM	BAU budget	1
Short	Review and test health facility evacuation planning.	WCDHB		1
Short-medium	Evacuation plans are to be socialised and tested with the community.	CDEM	BAU budget	1
Medium - long	Evacuation plans are to be reviewed and updated following testing, implementation during an event, or when infrastructure upgrades or new information will result in changing timing of evacuation actions.	CDEM	BAU budget	1
Short – Medium - Long	Work with the community to build awareness and knowledge of the hazardscape and develop the resources to better prepare, and respond, to events.	CDEM	BAU budget	1
Forecasting and modelling				
Short	Accelerate the installation of the telemetry system for the Buller catchment (one outstanding asset)	WCRC	Rating district	1

Timeframe	Action	Responsible agency	Potentially funded via	Phase
Short-medium	Adopt the recommendations on the NIWA report –Flood forecasting roadmap for evacuation warnings and see that these are implemented in order to have the system operational within a year of commencing these.	WCRC	Rating district	1
Short - Medium	Recognising that accurate forecasting and impacts of rainfall accumulations can take several (5+) years, commence modelling as soon as possible to gain certainty of key information in the future.	WCRC	Rating district	1
Medium - Long	Review modelling data following the implementation of other mitigations (such as hard structures) as required.	WCRC	Rating district	2
Flood protection structures				
Short	Obtain expert advice as to the development of a scheme which would provide protection from inundation by 1% exceedance flooding, taking into account the effects of sea level rise and the more frequent and severe weather events predicted. This assessment would include: - the ability to utilise the current structures in place; - potential weak points in current structures and the feasibility to strengthen these in the short to medium term; - confirmation of the flow path of flood water and potential impact on Carters Beach - confirmation of the severity of flood that would impact the airport and its access routes. Advice would also include: - the viability of using the Orowaiti for flood mitigation.	WCRC	Rating district	1
Medium	Present an option to the Westport community for a flood protection scheme to defend against flood hazard.	WCRC	Rating district	2
Medium	Undertake development of flood protection scheme as per outcomes of community consultation.		Rating district	2
Note: The development of hard protection structures for Westport is complicated and any protection proposal will need to take into consideration the effects of both river flooding, sea level rise and coastal inundation to ensure the effects of another hazard are not exacerbated when defending against another.				
Other flood management – infrastructure, river and gravel				
Long	As part of the recommendation to obtain expert advice on the development of a flood protection scheme above, the assessment is to also recognise that flood management is more than just hard protection structures. Advice would also review options for alternative flood management infrastructure, such as: - establishing the viability, location and type of pump stations. For example diesel powered may be more advisable than electrical pump systems - upgrading the combined stormwater/sewerage systems - identifying other infrastructure upgrades that may assist.	WCRC/BDC	Rating district and BDC	2
Short	As part of the recommendation to obtain expert advice on the development of a flood protection scheme above, the assessment will also include a study of the gravel islands and bars from Martins Island to Organs Island with recommendations for gravel/aggregate management. The assessment will also review:	WCRC	Rating district	1

Timeframe	Action	Responsible agency	Potentially funded via	Phase
	- whether gravel is moving through the river - if there is a requirement for gravel extraction - whether the removal of gravel from Organ's Island would provide beneficial effects downstream - the effects of the gravel alongside the half tide wall - the requirement of any form of maintenance programme for the control of river gravel.			
Short – Medium	Outcomes of the recommendations identified above are to be built into the consideration of hard protection structures and river flow modelling for evacuation.	WCRC	Rating district	2
Critical infrastructure				
Ongoing	Advocate that new critical infrastructure is: - Fit for purpose - Sited in an appropriate location recognising risks of the area and their role and function within their community - Accessible to communities, and the vulnerable, during peacetime and adverse events.	Multi-agency		1
Medium-Long	Appropriate building standards are included within the TTPP recognising the various effects of the wider hazardscape. and the long term time frame anticipated before the One District Plan is operational	WCRC / BDC	BAU budget	1
Ongoing	Advocate for robust internal plans to be developed and maintained for all critical infrastructure facilities	Multi-agency		1
Notes: Critical infrastructure, such as health facilities, must be located within their community in order to provide services to the vulnerable, as well as being accessible to both its ancillary services such as pharmacies, and its workforce. The IFHC is anticipated to have a 50-year lifespan. At this time, there may be sufficient population elsewhere in Westport which could lead to a future relocation or upgraded protection measures..				
Protecting transport routes				
Short	Egress points and routes (road and rail) will be assessed, and if necessary surveyed, to check that they will be available and intact in the event of a major flood. This would also include: - The identifcation of low spots on the access routes, and the water levels whereby it becomes unpassable/unsafe. - Whether the bridge, and its approaches, are high enough, looking at potential flood modelling scenarios. - Review the effect river flows over the bridge approaches would have.	NZTA / BDC		1
Medium	Address any deficiencies, or work identified by the above action. Until these have been identified, budgeting and planning for these cannot be determined. However, these are a priority for the future. Note - Projects undertaken to address potential deficiencies would be assessed as part of any proposal to ensure that it would not exacerbate issues in other areas (e.g. would building up bridge approaches on each side create a "dam" forcing water into the town on the eastern side?	NZTA/BDC		1/2
Short	Current status of egress routes (point at which the route is compromised) is built into response and evacuation plans. Expected that this will change over time as they are improved	CDEM	BAU budget	1

Timeframe	Action	Responsible agency	Potentially funded via	Phase
	or heights raised.			
Planning provisions and hazard information				
Short	Support the undertaking of LiDAR for the West Coast and particularly Westport and surrounding areas.	BDC / WCRC		1
Short – Medium – Long	Up to date hazard information is used to inform the development of the TTPP. This information is also to be recognised and adopted by the Buller District Council for inclusion on LIMs.	BDC / WCRC	BAU budget	1/2
Short – Medium	Recommend to the Buller District Council and West Coast Regional Council to be very considered in the decisions that are made around planning provisions for the future to take into account the effect and impact of hazards (bearing in mind the 2100 Group ceases to exist after 2020.)	2100 Group		1
Long	TTPP development to include: - zoning within the wider Westport area to avoid new development in hazard prone areas and provide more suitable areas for residential development - more stringent building restrictions within hazard areas to encourage organic relocation over time.	BDC / WCRC	BAU budget	1/2
Medium - Long	Consider location and development of community assets (including Reserves and Recreational assets) in areas not affected or threatened by climate change.	BDC	Future LTP/Annual Plans	2
Medium-Long	Recommend that the TTPP be clear on the decision making to be undertaken post-event in regards to declaring areas uninhabitable.	BDC / WCRC	BAU budget	1/2
Short – Medium – Long	Hazard information is conveyed to the community in easy to understand formats e.g. sliding scale of sea level rise see Greater Wellington example.	WCRC/BDC/ CDEM	BAU budget	1/2
Relocation				
Short – Medium – Long	It is possible that parts of Westport may not be able to remain in their current location in the future recognising the unpredictable effects of natural hazards, including climate change. The development of the TTPP provides an opportunity to start discussing options for the future as well as in other high level documentation for the District.	BDC/WCRC	BAU budget	1/2
Long	Consider the relocation of Westport as a long term outcome recognising that this may not occur for 50, 80, 100 or more years.	BDC / WCRC	BAU budget	1/2
Short	Update the cost estimates from the 2017 assessment report to potentially support the review for any form of partial or full relocation, as these cost figures did not reflect the effect of sea level rise and climate change. These figures should be spread over a long enough time frame that future generations will share in the financial burden and benefits.	WCRC	Rating district	2

Limitations

The Westport 2100 Group acknowledges that there are limitations to the recommendations they have put forward. It is likely that these will form many of the questions and concerns of the public. These include:

- *How do you implement a plan when you do not know with complete certainty what will happen?*

The Group appreciates that they are reliant on the best information that is available at the time when decisions, or in this case recommendations, are made. There is no data available to inform when the next significant flood, earthquake or storm surge will occur. There is no precise data on sea level rise, how much by when. As a result, it is critical that the CDEM planning, community preparedness and evacuation route protection be prioritised.

- *When considering hard protection structures, such as floodwalls, how much should be put in place, or spent on it, before the community decides no more?*

There will come a point where the cost is too high that the community will decide that they can no longer pay for protection. Alternatively, the hazard risk may increase to a level that the community can no longer live with. However, what those points will be are unknown at this stage. It would be wise to adopt an adaptive planning approach allowing us to change our actions as key environmental triggers occur.

- *Previous consultation work had been completed in 2017 on protection measures and nothing happened. Why do we have to do this again?*

This is a fair question. Several options were presented and the feedback received indicated a desire to do something, however there was no clear final outcome as to what sort of protection works should proceed. This was then followed by the storm surge from Ex-tropical Cyclone Fehi. Further work is required to take into effect the risk from flooding, storm surge and predicted sea level rise.

Next steps

The next steps of the Westport 2100 process are:

- Prior to the report being submitted for inclusion in Council meeting papers a summary document will be prepared for the public to outline where the Group has got to and the next steps.
- Report presented to the West Coast Regional Council and Buller District Council.
- Recommendations for phase 1 are implemented, including the further investigative work required to inform the recommendations in phase 2.
    Review the Westport 2100 Working Group membership recognising that there will be new elected members and that some current community representatives may wish to step down.
    Note some elected members who are standing down have indicated they would like to remain on the group. This would be beneficial in the retention of information gathered and help ensure continuity of the project.

The Westport 2100 Working Group will continue to have a role ensuring that the recommendations from phase 1 are put into place, advocating for various actions to take place and reviewing the further investigative work to take place and making recommendations for the phase 2 work.

Recommendations

That the West Coast Regional Council:

1. *Receives this report;*
2. *Adopts the phase 1 recommendations as identified in Table 1: Recommendations of the Westport 2100 Group, for inclusion in the Long Term Plan 2020-2023 and subsequent Annual Plans, unless they can be prioritised earlier in current business as usual budgets;*
3. *Establishes a rating district for the wider Westport area to accelerate recommendations to improve the resilience of the Westport community and to undertake the further investigative work required to inform the phase 2 work*.

Chris Coll
Chairman, Westport 2100 Group

Kawatiri – Deep and Swift

Proposal to Hon Nanaia Mahuta, Minister of Local Government

Co-Investment in Westport's Resilience

BULLER DISTRICT COUNCIL
Te Kaunihera O Kawatiri

THE WEST COAST REGIONAL COUNCIL

NGĀTI WAEWAE ARAHURA
TE RŪNANGA O NGĀTI WAEWAE

30 June 2022

Photo courtesy of Westport.nz

Foreword

Tēnā koe Hon Minister Mahuta. Greetings from the West Coast.

We welcome this opportunity to submit this proposal to you and the Government.

We are very grateful to you for the invitation to develop a case for co-investment. We have been thrilled with the level of the Government's financial, moral, and political support following the July 2021 flood event. We want to formally thank you, on the record, for that.

As we have developed this proposal, we note the event has adversely impacted the economic and social wellbeing of the community. While there has been tremendous scientific, engineering, and economic analysis undertaken in support of this proposal, there are still psycho-social impacts on our community.

As you will see, we have put the people of Westport at the heart of our thinking. The analysis shows that livelihoods and possibly lives are at stake, and we really need your assistance.

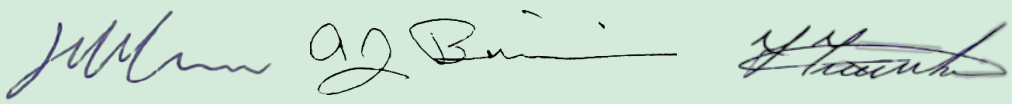
We believe we can also help you. We know there are similar challenges to those being experienced in Westport across the motu, and we are willing to be the blueprint community that tries some new ways of doing things, recognising that this is an opportunity for us both.

One thing is abundantly clear – neither Local nor Central Government can act alone here. We need to be collaborative from now on, or the issues will never be resolved. We have worked hard to deepen the relationship between the West Coast Regional Council and the Buller District Council, and we are keen to do the same with the Government.

We have also found that Westport has catalysed some strategic thinking with MBIE, Kāinga Ora, Kānoa, NEMA and DIA. More operationally, Waka Kotahi has been engaged and engaging, and KiwiRail has been at the table. In general, we have found that agencies and Crown Research Institutes are collaborating extensively to deal with climate adaptation.

We are realistic about the challenges that lie ahead, but we think that this proposal meets those challenges head on and is one that others might emulate. We hope that you think so too. This is not a *hand out* but rather a *hand up* as we address the future together.

Nāku noa, nā



Jamie Cleine
Mayor
Buller District Council

Allan Birchfield
Chair
West Coast Regional Council

Francois Tumahai
Chair
Te Rūnanga Ngāti Waewae

30 June 2022

Contents

Executive Summary

When it boils down to it, there are two simple questions that remain unanswered when it comes to flooding and climate related change:

- Who's going to pay?
- Who gets to decide?

We have an abundance of reports and guidelines from scientists, engineers, academics, and policy advisors that provide input, but still these questions remain unanswered. Everyone seems to have an opinion on what needs to be done, but until now it has been very difficult to navigate actually getting these things done.

Westport is not well-heeled. To use Government language, we are one of the most deprived communities in Aotearoa. We are the oldest population and have one of the lowest rates of disposable incomes in New Zealand. But we're here to stay – we're an established community with a rich history.

There are 4,600 people in Westport, and we need a hand. We realise that we are not the only ones faced with a similar prospect. We also realise that the cost of doing nothing is vastly more expensive than acting. The cost of last year's flood alone was double the total identified in this proposal.

So we welcomed Minister Mahuta's invitation for a co-investment proposal. This is potentially a circuit breaker, answering the two questions above and becoming a case study for others to emulate. Local Government cannot deal with this challenge on its own. Climate related flooding challenges our existing governance arrangements, funding mechanisms and statutory framework. It will therefore require close collaboration between Local Government, Central Government and Mana Whenua.

We are clear that the Westport community is at the centre of this process. Adaptation is not about flood protection structures and managed retreat – it is about people, families, their aspirations, and their legacy.

It is also about change. In developing this proposal, it became obvious to us that Westport cannot remain unchanged forever. Eventually the water will win – it is impossible to completely eliminate the risk of flooding in Westport. Equally, we realise we do not need to make all the decisions today. We can do some sensible things immediately and make sure the decisions we take today do not prevent future decision makers from making their own sensible decisions when the time comes.

What we are seeking

Ultimately, we think that over time as Westport grows, this growth needs to occur in low hazard areas. This could occur over the next 50 years. Land could be purchased today to enable future decision makers to be able to speed up or slow down decisions, depending on which climate scenario eventuates.

In the meantime, there is still considerable flood risk for the citizens of Westport. We are proposing some modest work to armour the riverbanks of the Buller River, and to construct some embankments and walls that will reduce (but not eliminate) flood risk. This will buy us time. We also think it makes sense not to put more people in harm's way. We intend to put in place a regulatory framework that restricts development in flood zones – but we need your help here.

We are proposing a four-pronged PARA approach (Figure 1), with each component enabling practical steps. These components are not alternatives. They are an interdependent strategic package of initiatives.

They do not all need to occur immediately. Many of these initiatives have already been canvassed with the people of Westport via the Westport 2100[1] and other work.

Figure 1: PARA Model - Westport's Resilience

Our cost profile is outlined in Table 1. But we do not see this as simply a cost. It might seem expensive, but it is vastly less expensive than doing nothing. Our analysis shows that this investment is likely to avoid $400m of damage to Westport buildings alone. That does not account for economic losses, the human cost or the damage to our national reputation if we do nothing.

We have commissioned Infometrics to undertake economic analysis. It states:

> *... the analysis in this report, …clearly shows that (the) stopbank option recommended by the Technical Advisory Group…is highly cost effective… the case for pursuing (this option) …could not be clearer.*

We see this as an investment in one of New Zealand's most longstanding communities, and we feel there could be massive co-benefits. Through relocation of growth, we could achieve positive housing outcomes by establishing more intensive, low energy homes that are connected to active transport, shops, parks, and resilient infrastructure. We think that this investment will pay back substantially when AF8 eventuates, resulting in less trauma, social and economic loss for all of us. And our planners are already thinking that embankments might double as cycleways – properly designed, they can also enhance inanga breeding areas and help to secure an old landfill along the estuary.

We acknowledge this proposal will test the existing funding and regulatory frameworks, and it will antagonise some in the community who do not wish to change. However, it is also an opportunity to showcase how small townships might address the climate challenge. The leaders of Westport are prepared to be bold and pragmatic in presenting this proposal, and we are looking forward to you joining us on our journey.

[1] The Westport 2100 Working Group was formed late in 2018. Its recommendations were forwarded to WCRC and BDC in September 2019. The purpose of the Group was to make recommendations about how best to enhance the resilience of the Westport community against the effects of fluvial flooding, coastal inundation, sea level rise, severe weather events, earthquake risk and the threats posed by Tsunami. The Group also discussed the Orowaiti overflow, gravel build-up, telemetry and warning systems, planning, and zoning and the robustness of critical infrastructure and transport routes.

Table 1 Cost Profile

The Ask			
Initiative	**Total Cost**	**Our Ask of Government**	**Comments**
Protect			
Westport ring-bank (Option B), plus Carters Beach	$19,550,000	$14,662,500	Year 1 (FY22/23) – planning and design Year 2-4 construction (75/25% split)
Organs Island reafforestation	$1,500,000	$1,125,000	Years 2-17 – 3 x 5-year tranches
Immediate works on the Buller riverbank	$3,300,000	$3,300,000	Years 0-2
Operational expenditure Buller riverbank	$3,000,000	$3,000,000	Years 3 -10
Operational expenditure over ten years on Westport ring-bank and Carters Beach	$3,500,000	$2,625,000	Years 3 -10[2]
Resource consents, owner agreement, Council project management, final design	$1,000,000	$750,000	Year 1
Contingency	$1,000,000	$750,000	
Avoid			
An Order in Council or other fast-tracking mechanism for TTPP resilience provisions			Minimal additional cost
Ability for BDC to align the Building Code with sensible flood resilience within the TTPP			Minimal additional cost
Retreat/relocate			
Invest in infrastructure at Alma Road			Live $18m IAF application
Development plan at Alma Road to ensure positive community outcomes	$250,000	$250,000	
Feasibility study into strategic land purchase at Alma Road or other resilient sites	$250,000	$250,000	
Adaptation Relief Fund to assist owners in areas like Snodgrass	$10,000,000	$10,000,000	Evaluation criteria to be developed
Accommodate			
CDEM capability	$500,000	$500,000	Over two years
Sea level monitor / tide gauge and GNSS	$250,000	$250,000	Via GNS and NIWA
Stormwater	$12,000,000	$8,000,000	Opex. @ 1-3%
TOTAL	**$56,100,000**	**$45,462,500**	

[2] Operational expenditure is phased in as assets come on-line. Generally operational expenditure funds would be accumulated as a flood damage reserve.

Context

The Big Picture

We have been following flood management developments around the world. There does not appear to be anywhere that is not affected by a changing climate. There are many, many places that have the same challenges as Westport.

According to Rockefeller's 100 Resilient Cities, average global flood-related losses will increase almost ten-fold to $52 billion by 2050. 40% of urban populations will be living with water stress by 2050.

Danang, Vietnam has a very similar profile to Westport

Surat, India is adjacent to a river like the Buller River

Aotearoa

Of course, you don't need to go to New Orleans to see trends with flooding. Flooding is the number one likely natural hazard in Aotearoa. New Zealand now faces, on average, one major flood event every eight months.[3]

About 675,000 (or one in seven) people across New Zealand live in areas that are prone to flooding, which amounts to nearly $100 billion worth of residential buildings that are at risk. The average annual cost of responding to flood events now exceeds $50m.

There are countless examples in New Zealand of flood resilience done well, and many others done poorly. While it didn't make international headlines, the failure of planning and infrastructure at Edgecumbe[4] was essentially the same thing that happened in New Orleans.

"New Orleans highlighted how the most vulnerable people are at risk, and the folly of relying on insurance and ignoring nature."

[3] Page 7, Central Government Co-investment in Flood Protection Schemes', Te Uru Kahika, January 2022.
[4] A major flooding event on 6th April 2017 breached the stopbank protecting Edgecumbe.

It is fortunate the recent floods in New Zealand have not yet resulted in a loss of life. It is only a matter of time before this changes. None of us wants that liability and responsibility.

While the emergency response structure enables flood warning and getting people to safety, the current 'after event' focus does not minimise future economic, financial, or human risk.

We think it is time to make some bold decisions that involve planning and infrastructure tools that, along with traditional flood defences, better secure the long-term future of places like Westport. A re-think is required, and we are supporters of the greater use of a multi-tool approach to building community resilience against the effects of flooding. This involves a move away from the current focus on insurance, alongside responding to and then attempting to recover from events. What we need is investment in resilience tools that are the fence at the top of the cliff, rather than the ambulance at the bottom.

This challenges the way we are currently set up, it challenges vested interests, and it challenges our legal framework. We are alive to these challenges. But we are also alive to the possibilities it brings, and we are willing for Westport to be a case study as we work together through this change. We are more vulnerable than most. While there is legislative change in the wind, time is not on our side, and we need to act swiftly and decisively.

Palmerston North dodges a bullet in 2004

Kawatiri 2021 – swift and deep

About Westport Kawatiri

The Coast and Coasters

The West Coast Region is New Zealand's least populated region, accounting for 0.7 percent of the population, but 8.5% of the land mass with 23,000 square kilometres. We have about 1.4 ratepayers for every square kilometre of land. More than 85% of that land is owned by the Crown.

When former Prime Minister Sir Geoffrey Palmer said …

> *sometimes it does us a power of good to remind ourselves that we live on two volcanic rocks where two tectonic plates meet, in a somewhat lonely stretch of windswept ocean, just above the roaring forties. If you want drama you've come to the right place …*

…he might well have been talking about the West Coast and its people. It is a wild place known for hard weather, and hard cases. Captain Cook called the headland *Foulwind* because the Endeavour was blown miles off course when he visited. The Māori name for Westport is *Kawatiri* – deep and swift.

Everyone knows that the Coast is a long, isolated region, hemmed in by the Southern Alps on one side and the angry Tasman Sea on the other. To survive and thrive on the West Coast you need something of a pioneer spirit. Māori and Pakeha came to the Buller in search of gold, coal, and pounamu. Extracting these treasures required hard work, persistence, a can-do attitude, directness, cunning and some might say, determination.

In more modern times, the same pioneer spirit has been required to flourish in fishing, dairy farming, mining, and cement manufacturing. Tourism pursuits such as mountain biking, surfing, tramping, and rafting are associated with the wet and wild reputation, and even the burgeoning arts community is of a specific coaster type.

That type is rugged but friendly, strong, and self-reliant. When you're isolated like us it teaches you the value of friendliness and hospitality, and of community resilience. We belong here - the proportion of people born overseas is 9%, compared with 27% nationally. There are 4,600 of us in Westport itself and 9,000 in the wider Buller District. Ahakoa he iti he pounamu - although we are small, we are of great value.

Te Rūnanga Ngāti Waewae

This project acknowledges the special status of Te Rūnanga Ngāti Waewae as tangata whenua and Treaty partners, and we have undertaken a collaborative approach to ensure Māori values and interests are protected and enhanced. From a Māori worldview, humanity is inseparable from the natural world. Land and its associated natural systems are connected to health through a variety of pathways, providing cultural, spiritual, social, and economic wellbeing. Māori environmental knowledge (mātauranga taiao) is characterised as a cumulative system of knowledge (mātauranga) and practice (tikanga) that has evolved through adaptive processes. Mātauranga and Te Ao Māori provide a unique source of expertise that can contribute to the management and mitigation of natural hazards in New Zealand.

Te Rūnanga o Ngāti Waewae is based at Arahura, a short distance from Hokitika on the West Coast. Te Rūnanga o Ngāti Waewae has assessed this proposal and has found no major roadblocks to any of the proposed options. Te Rūnanga o Ngāti Waewae wishes to remain part of the decision-making process going forward and has identified the need for consideration of Māori land blocks around Westport at the appropriate time.

Our Economy

Like other provincial centres, the Buller population is older than for the rest of New Zealand, with the average age at 47 compared with 39. The population has been shrinking in the 15-64 age bracket, with a flow on effect to the younger age group. People generally earn less than elsewhere in New Zealand. The mean income is $77,000 which is around 68% of the national mean at $113,000 (Figure 2) .[5]

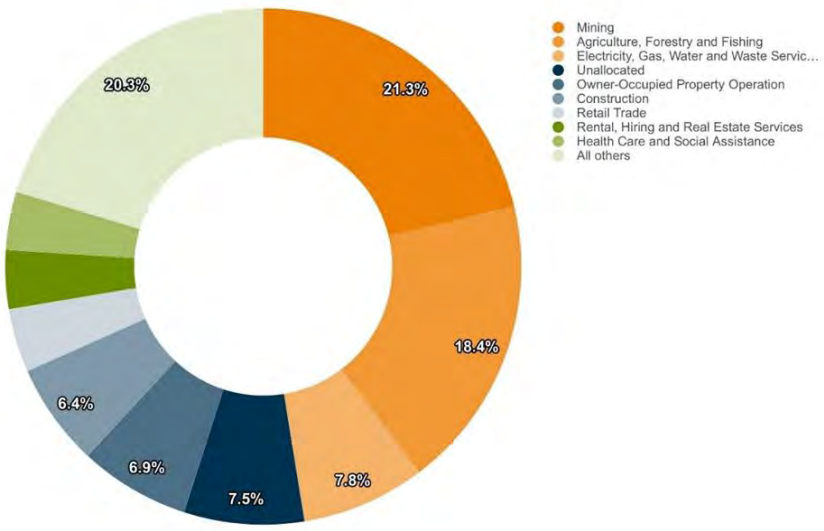
Figure 2 - Mean household income in Buller District compared to the rest of New Zealand[6]

Perhaps unsurprisingly then, Infometrics analysis indicates most of the economic trends have been negative with a decline in GDP of 4.2% pa over the decade. In other words – the district has not kept pace socio-economically with the rest of New Zealand.

Currently 39.7% of people work in the mining and agriculture industries, although the picture is distorted by the lack of tourists in 2020 and 2021[7] (Figure 3).

[5] Real Options Analysis of Strategies to Manage Risks to Westport from Climate Change, Infometrics June 2022.
[6] Infometrics Report: *Real Options Analysis of Strategies to Manage Risks to Westport from Climate Change,* June 2022.
[7] Also, tourism is not an identified industry in the national accounts (it is captured under 'other' in the pie chart displayed in Figure 3).

Figure 3 - Buller District Council – economy (Source: Infometrics)



The Buller District Council (BDC) submission on the draft National (climate change) Adaptation Plan drew upon data compiled by Local Government New Zealand to suggest:

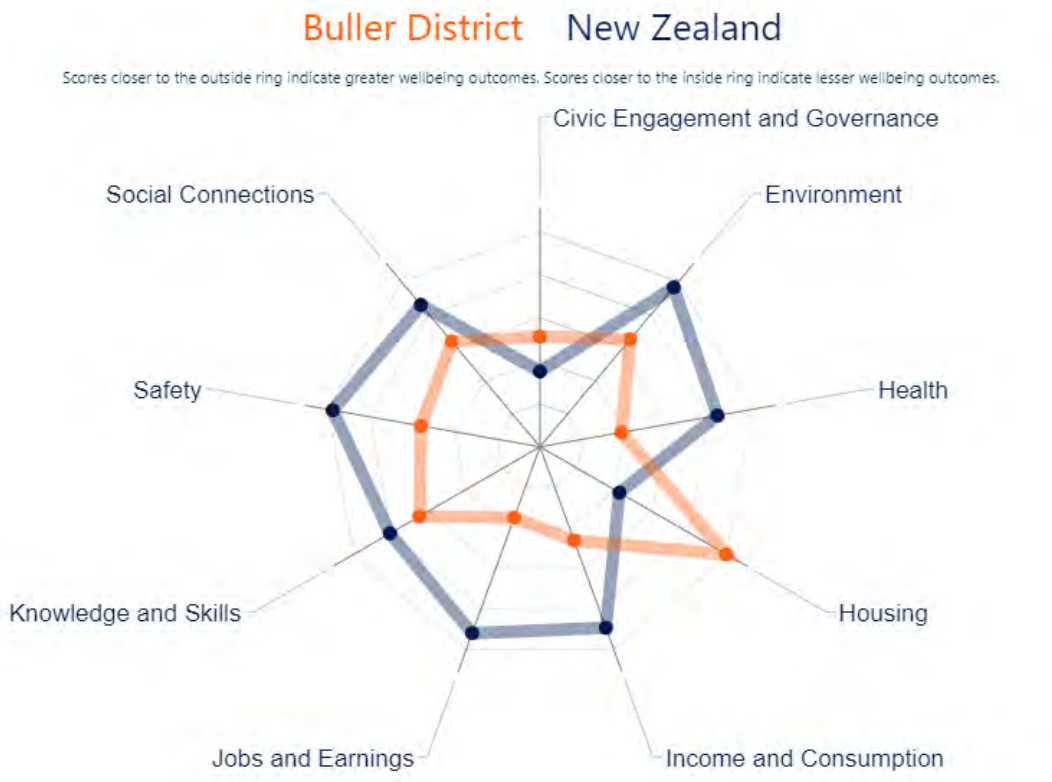
- The Buller District is the most deprived in the South Island with an overall deprivation index of 9 (where 10 is the most deprived).
- Urban Westport is ranked in the 92nd percentile for deprivation nationally.
- Buller district has the lowest household income level in New Zealand.

The Infometrics wellbeing framework shows how Buller performs on a range of measures relative to all New Zealand. In two areas - housing, and civic engagement and governance, Buller performs relatively well.[8] Despite a long-term trend of underperformance, Westport has an underlying economic viability. The Buller economy grew 15% in the year to March 2022, making it the second fastest growing territorial authority, although this was from a low base. Consumer spending was up 10% in the year to March 2022, running above the strong inflation rate of 6.9% in the same quarter.

Tourism expenditure has grown 9.8% over the past year, reflecting strong domestic visitor numbers that has offset the loss of international tourists. The Infometrics analysis suggests that tourism has both the existing economic mass and the potential to dominate economic growth in Westport and Buller over the next five years. Westport deserves investment in resilience building to help make this suggestion a reality.

[8] The housing measure is a combination of measures of home ownership, household crowding, housing affordability, and rental affordability. Civic engagement and governance are based on the turnout rates for local and general elections. The general picture, however, is of a region that has a lower level of wellbeing than the rest of New Zealand.

Figure 4 - Wellbeing framework (Source: Infometrics)



High commodity prices for the primary sector have also helped during the pandemic. The district dairy pay-out was forecast to grow by $24m in the 2021/2022 season, to a total of $150m.

Our housing market was strongly affected by the floods in 2021 and 2022, with house values falling 8.3% in the March 2022 quarter. But at the same time, new dwelling consents are up 94% in the year to March 2022, reflecting both the flood rebuild and renewed interest in the district that predates the flood. Non-residential consents have also been strong, growing 148% to reach $35m over the 12 months to March 2022.

We know that Westport is attractive to investment in tourism and in other industries. Although coal mining is a sunset industry, bituminous coal for steel production is found only on the West Coast, while further gold mining and rare earth mining (elements essential to electric vehicles) are also possibilities for the future.

We note the Crown has more than $1bn[9] in assets in Westport and will be a major beneficiary of resilience initiatives. The Crown does not pay rates.

Infometrics modelling indicates that tourism has both the existing economic mass and the potential to dominate economic growth in Westport and Buller in the medium term. We are positive about our economic future and have been actively working to improve both our economy and the wellbeing of our community.

[9] Page 32, Central Government Co-investment in Flood Protection Schemes, Te Uru Kahika, January 2022

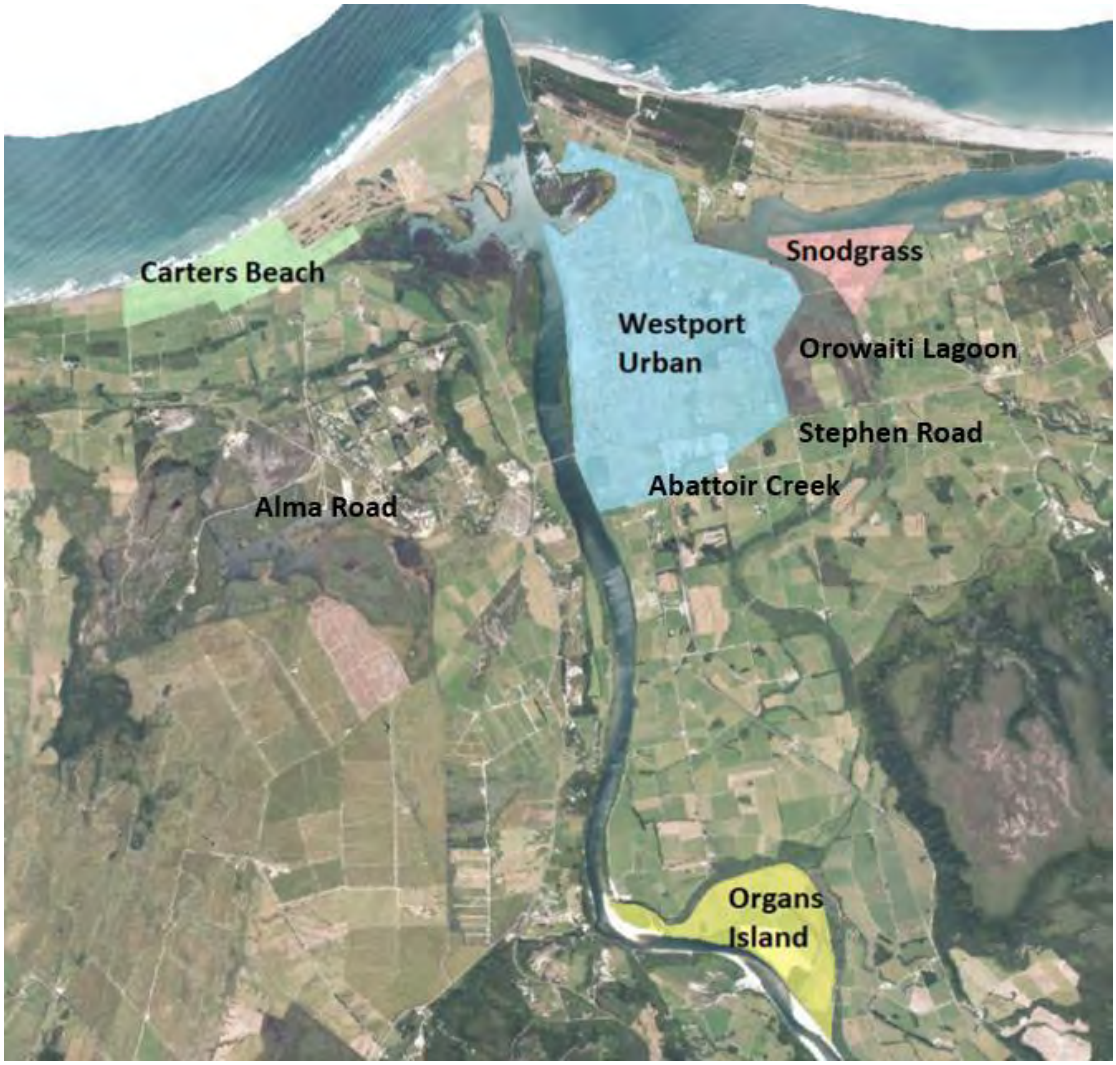
Welcome to Westport

In this proposal we will refer to some key areas of Westport (Figure 5):

- Carters Beach suburb (244 properties) includes wetlands, the airport, and a golf course. It already has rock revetment to help manage sea erosion around the airport.
- Westport urban (2,000 properties) is the main commercial and residential centre for the Buller District. It sits directly between the Buller River and the Orowaiti lagoon.
- Snodgrass Rd is a low-lying part of Westport that has been developed relatively recently, with a cluster of around 35 homes.
- Organs Island is not inhabited however it is a key piece of upstream reserve land that is owned by the Crown, but currently grazed by a local farmer.

This map contains the geographic scope of the project. Sea level rise is a factor and an input for modelling. There are resilience co-benefits from some of the investments (for liquefaction for example) but other than these co-benefits, other natural hazards are out of scope. They have, however, been considered in designing proposed flood risk mitigation structures.

Figure 5 – Westport and surrounds



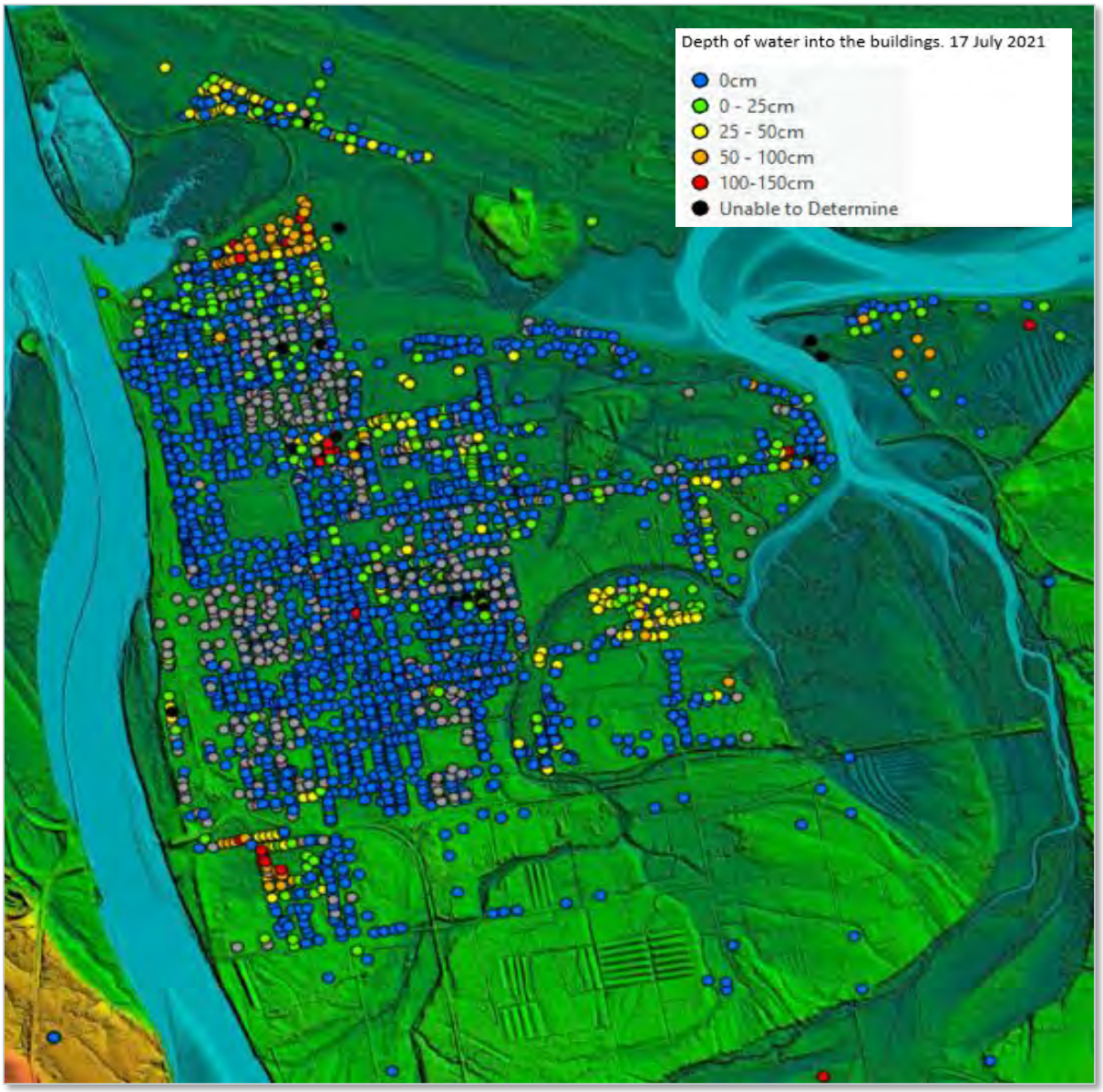
Flooding and Westport

The Buller River is the most powerful in New Zealand, with peak flows estimated at 12,700m³/s in 1926[10], which is almost double any other recorded in New Zealand.[11] As a comparison, the mean flow of the Buller River is 454 cubic metres per second. The Buller catchment is very large.[12] The river passes through a small flood plain to discharge through a very confined exit (Figure 6).[13]

Figure 6 - The Buller River Catchment

[10] Flood modelling of the Buller River, Westport, NIWA.
[11] Flood flows on the Buller River were the largest of any NZ river recorded in almost a century | Stuff.co.nz.
[12] The headwaters of the Buller River are located in the Tasman District. This means that management of flood warning has been via a partnership between NIWA, Tasman District Council and WCRC.
[13] We gratefully acknowledge the assistance of Matthew Gardner of Land River Sea Ltd and Gary Williams of G&E Williams Consulting who prepared most of the Figures used throughout this Business Case.

Figure 7 – Flood depths, Westport, July 2021



Flooding has occurred throughout Westport's history. Major destructive events were recorded in 1873, 1926, 1970, and Cyclone Fehi in 2018 caused further flooding.

The town is also exposed to coastal flooding, and flood events are exacerbated by high tides surging up the Buller River and into the Orowaiti Lagoon. With sea levels expected to rise by at least 1m in the next century, impacts from this will be accentuated. Further to this, rising seas increase groundwater levels, exacerbating flooding for low lying coastal areas.

In July 2021 and February 2022, the district experienced further large flood events.

Heavy rainfall from 15 July 2021 to 18 July 2021 caused significant flooding with the Buller River having a peak flow of 8900 cubic metres per second (Figure 7). This is the largest gauged river flow ever recorded in New Zealand. The flow breached Westport's flood defences, with 826 properties and over 2,000 people requiring

evacuation. Three separate civil defence welfare centres were established to support displaced people in need of emergency accommodation.

A total of 563 houses were damaged (with 71 homes deemed unsafe for ongoing occupation) representing 23% of the town's housing stock. The Insurance Council of New Zealand puts the insurance claims for the West Coast flooding from July 2021 at $88m to date (not all claims are settled).[14]

Figure 8 - Flood waters at the Buller Bridge, July 2021

While Westport was still in recovery mode, a second heavy rainfall event, from 1-4 February 2022, saw a further State of Local Emergency declared in the District, with people in at risk areas again evacuated. There was widespread local flooding with substantial damage in infrastructure and inundation of homes. On 9-10 February access to Westport was cut off, and water supply infrastructure was damaged.

The Government saw the plight of Westport people, and NEMA – supported by other agencies - was quick to provide response and recovery relief.

[14] Cost of natural disasters – ICNZ, June 2022

Climate Change and Westport

Changes to the intensity and frequency of climate change-induced flood events is the biggest natural hazard challenge New Zealanders face. Climate change will substantially increase the severity and frequency of the risk of flooding. This will cause higher levels of damage and more frequent damage to the land and assets located behind existing flood protection structures and to adjacent communities. There will be associated increases in social, cultural, and environmental costs.

Recent Westport flood events are a salient reminder of this. Climate change will also shift the area of geographical risk of floods and make new areas, not presently affected by such events, more susceptible to floods.

There are many uncertainties around climate change predictions for the Buller Catchment. It is generally accepted that peak rainfall intensities are likely to increase, and sea level will rise. The main effects of climate change on Westport are expected to be increased rainfall and runoff from the Buller River catchment, along with an increase in bed load volume due to more landslip materials entering the river.[15]

The viability of industry located at flood-prone locations and the potential for disruption to business is further affected by the increased risk to infrastructure such as road and rail bridges that service these premises. Westport is not alone in the challenges it faces. Significant Central and Local Government owned infrastructure is exposed to sea level rise[16].

The recently released research published by NZ SeaRise[17] shows that, in many places throughout New Zealand, rising sea levels - due to climate change, will impact as soon as 2040, rather than 2060. This is because land subsidence (and in some instances – uplift) is now being factored into predictions. This means Local and Central Government's time to react is effectively being squeezed.

Climate change warms the air. Warm air carries more moisture (8% per degree). The Tasman Sea is also warming. As a result, we can expect more intense rainfall more often.[18] Increased rainfall will increase erosion, increase river flows, and potentially cause more gravel deposition. As a result, rivers are likely to widen. Research[19] suggests:

- There was 10% higher rainfall in the July 2021 event due to climate change than would have been the case without climate change.
- There may be 9-19% more rainfall by 2100.
- There may be a 11-25% increase in the 1% AEP[20] flood flow at Te Kuha by 2100.[21]

This does not mean that we can wait until 2100. We are living this here and now, and we are more vulnerable than most. Families are worried about their safety and their immediate futures. As decision makers, none of us will be forgiven if we fail to act swiftly and decisively. We realise that legislative change is in the wind, however time is not on our side, and we cannot wait. The worst thing we can do is to do nothing.

[15] Gravel bed load movements from the catchment will also increase due to more intense rainfall and greater flood flows. Natural deposition rates at the river mouth will increase due to the rise in average sea level.
[16] LGNZ submission on the draft National Adaptation Plan, June 2022.
[17] Te Tai Pari O Aotearoa, May 2022.
[18] Stone D.A., Rosier S.M., Bird L., Harrington L.J., Rana S., Stuart S., Dean S.M. (2022) The effect of experiment conditioning on estimates of human influence on extreme weather. Weather and Climate Extremes 36(September 2021):100427.
[19] https://doi.org/10.1016/j.wace.2022.100427.
[20] AEP is the probability of a flood event occurring in any one year.
[21] Zammit C. (2022) Climate change impact on peak discharge and bank-full flow duration at Te Kuha Stream: An analysis of Te Kuha streamflow gauging station under different warming scenarios and for different return periods and durations, NIWA Client Report 2022038CH.

Other Natural Hazards

Sea level rise

By the year 2090, the mean sea level and the coincidence of peak tides and large river flows is expected to increase. These effects all combine to imply that today's 0.01 AEP (annual event probability of 1:100 years) magnitude storm event will become much more frequent.

Westport survey and sea level rise measurement devices provide uncertain benchmark data about the rate of sea level rise. This is because of the influence of waves, their short record and the possibility of local subsidence affecting the Westport Harbour quayside. The main point we note is that sea levels are higher[22] now than they were at the time of the 1926 and 1970 floods[23].

Liquefaction

Liquefaction records[24] for the area show that during previous seismic events, large areas of Westport are vulnerable to liquefaction due to its location on the Buller River flood plain. This plain consists of loose, fine river sediments.

Liquefaction vulnerabilities present an acute risk given the Alpine Fault has a high probability (estimated at 75%) of rupturing in the next 50 years[25]. This rupture is expected to produce one of the largest (if not the largest) earthquakes since European settlement in New Zealand. If this occurred, it would likely cause widespread damage.

The most vulnerable area is likely to be around the northern end of Westport near the Orowaiti Lagoon. This area experienced liquefaction during the 1968 earthquake[26]. We also note that liquefaction in Westport occurred during events previously considered too small to cause liquefaction (i.e., less than a Magnitude 6 earthquake). This means that during large seismic events (i.e., greater than a Magnitude 7 earthquake) liquefaction could potentially impact the entire town.[27]

Coastal accretion

Port construction and the rock groynes constructed to protect the mouth of the Buller River have caused significant coastal gravel build-up to occur on either side of the river mouth. This build-up has prevented the Orowaiti River from exiting to the sea at its historic exit point (Figure 9).[28]

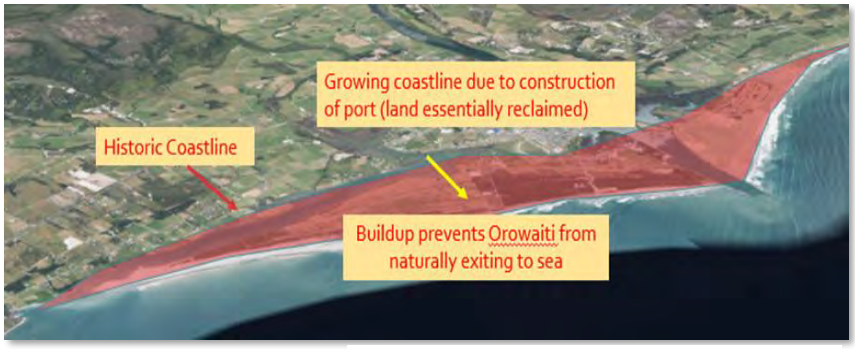


Figure 9 - Coastal Accretion

[22] Pers. Comm. Matthew Gardner, Land River Sea Consulting Ltd.
[23] We can see strong merit in placing a sea-level-rise measuring device off the coast at Westport. We address this suggestion later in our proposal.
[24] Liquefaction Records for Buller District to March 2011.pdf (wcrc.govt.nz).
[25] Alpine Fault / Major Faults in New Zealand / Earthquakes / Science Topics / Learning / Home - GNS Science.
[26] Liquefaction Records for Buller District to March 2011.pdf (wcrc.govt.nz).
[27] As will become apparent later in this report, the risk of liquefaction has been considered by the Technical Advisory Group (TAG) as part of the recommendations they have made about the design, composition, and alignment of the proposed embankment.
[28] Image sourced with thanks to Matthew Gardner Land River Sea Consultants.

Strategic Alignment

Our proposal aligns with several areas of Central and Local Government strategy.[29] We draw attention to these because they add context and evidence to demonstrate a clear alignment between our request and the existing policy settings.

Alignment with Local Government Aspirations

Flood resilience investment aligns strongly with the strategic intentions of the BDC and WCRC, as well as national policies. We also have a strong desire to collaborate with Te Runanga o Ngāti Waewae throughout the process. This section demonstrates how investment into flood reliance aligns with our statutory obligations and the aspirations of our local community.

BDC

BDC's proposed activities are documented in the 2021-31 Long-term Plan (LTP), a ten-year plan reviewed in partnership with the community every three years. The LTP 2021-2031 sets out the Council's goal as -
To promote the well-being of our local communities.

In achieving Council's goal its mission is -
To serve the residents of the Buller district, conscious of their needs, by providing facilities and services and creating an appropriate environment to progress development while preserving the distinctive natural environment, as well as cultural and historical environments.

In preparation for the LTP, an Environmental Improvement and Prosperity Strategy was developed. It seeks to create community wellbeing through five domains – socio-economic prosperity, affordability, climate change preparedness, environmental sustainability, and district revitalisation. Opportunity exists to advance the five domains through recovery and resilience building, thereby assisting in the creation of a thriving community. The strategy is imbedded within and guides the LTP's outcomes, activities, planning and prioritisation.

Investment in natural hazard management is directly linked with the following community outcomes and associated goals, as outlined in the Council's LTP:

- Social – our communities are vibrant, healthy, safe, and inclusive.
- Affordability – our communities are supported by quality infrastructure, facilities and services that are efficient, fit for purpose, affordable and met our current and future needs.
- Environment – our distinctive environment and natural resources are healthy and values.

WCRC

In its 2021-2031 LTP, WCRC identifies the following community outcomes for the West Coast region, which are supported by various council activities:

- Economy - a thriving, resilient and innovative economy is promoted, which creates many opportunities for growth, wealth generation and employment.
    - Flood warning services and flood protection works help the economy by ensuring business confidence in investing in flood protected areas. Protection works also increase property values in affected areas.
- Environmental - the high quality and distinctive character of our environment is retained.

[29] See Appendix three

- Safety - a region that is a safe place to live, with a strong community spirit and cohesion.
    - The Council's flood warning service and the flood protection works assist with community safety in areas protected by those services, during flood events.
    - Civil defence work is primarily concerned with community safety in a major emergency event.

Flood Protection Schemes

There is a general view in Local Government that the current model for funding flood protection needs an overhaul. To fund expensive flood mitigation works, most councils now top up funds, from targeted rates on property owners in areas of high flood risk. Some councils, such as Auckland Council, pay for flood protection entirely from general rates.

Council-run flood risk mitigation schemes do not benefit everyone equally, with property owners in less affluent communities like Westport being less likely to join voluntary funding schemes. We have many anecdotes of low-income ratepayers having to pay their rates at $5 per pay because they simply cannot afford to pay more than that. The current model of funding flood risk mitigation is no longer sustainable.[30]

A report by Te Uru Kahika[31] [32] outlines how regional councils are seeking Central Government co-investment in 'fit-for-the-future', risk-aligned, climate change resilient and environmentally sensitive flood protection schemes. This sought-after outcome was viewed as a necessary response to the increased magnitude and frequency of climate-change-induced flood events - exactly what we are seeing here at Westport.

Councils are seeking a national shift in Central Government attention from disaster relief and rehabilitation towards necessary 'top-of-the-cliff' mitigation of flood risks. Te Uru Kahika argues this is achievable if Central Government was to agree to co-invest in flood protection schemes, such as that proposed for Westport.

The Te Uru Kahika report noted that flood protection schemes have been some of the best value public investments ever made in New Zealand. The report also noted that addressing contemporary New Zealand-wide challenges would require a step-change in both the volume and type of investment in flood risk management.

The report envisaged the greater use of a 'multi-tool'[33] approach to building community resilience against the effects of flooding is required. This included a reference to the need for more focus on the more effective use of improved planning tools - to define where and how development occurs.

For the past three decades, Crown-owned and related assets have received flood protection at a cost to regional and targeted local ratepayers, with little contribution from the Crown. These protected Crown assets include rail and road infrastructure, the conservation estate and related assets, communication and electricity transmission infrastructure, some airports and education and health facilities.[34]

The cost of flood events may be counted not just in terms of the cost of replacing or restoring privately owned buildings and overcoming other property losses. There are also other tangible costs. These include the number of hours or days businesses cannot operate at full production and the cost of disruptions to the functionality of Crown assets.

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[30] See draft 'Funding and Financing for flood protection – progress to date' (Local Government briefing, LG202100747, 17 June 2021).
[31] Te Uru Kahika is a collection of 16 regional and unitary authorities that have been working together on a wide range of matters. They are charged with managing land, air, and water resources, supporting biodiversity and biosecurity, providing for regional transport services, and building more resilient communities in the face of climate change and natural hazards.
[32] Central Government Co-investment in Flood Protection Schemes (January 2022).
[33] This is explained in more detail later in the proposal. A multi-tool approach is encompassed in the PARA framework. We also explain this framework later in our Business Case.
[34] Economist Julian Williams has estimated the capital value of Crown assets in Westport to be more than $1 billion. This research is referenced in the regional council's substantive Te Uru Kahika 2022 report.

In addition, flood costs have both an immediate and sometimes an on-going effect on people's lives. This includes the effect on the willingness and ability of the residents affected by flooding to continue to live and invest in areas subject to flooding. Westport knows this problem all too well.

To avoid a worst-case flood disruption scenario, the Te Uru Kahika report called for scaled-up Central Government and regional council investment in flood protection schemes.[35] The overriding reason offered for this co-investment was to create resilient communities and sustain economic enterprise. We strongly support this request and the rationale underpinning it.

The Te Uru Kahika report clearly noted that flood protection schemes are nationally important. They are viewed as underpinning the integrity of public and private assets and lifelines and provide resilience and security to communities and their investments. The report concludes that Central Government co-investment in flood protection schemes is vital because it:

- Is fiscally responsible and fair to make such investments.
- Reflects Treasury's Living Standards Frameworks.
- Is supportive of wellbeing and social inclusion and is likely to reflect equity / ability to pay considerations.[36]
- Is supportive of job creation, protective of previous regional economic development investments and contributes to the desire to lift the future productive potential of the regions.
- Contributes to the security of access routes (rail and road) and the communication infrastructure that is vital for commerce and community functionality.
- Reflects international obligations, as recognised by New Zealand signing the UN Sendai Risk Management Protocols.
- Directly protects significant crown assets such as hospitals, schools, infrastructure etc.
- Contributes to investment opportunity costs – that is, it provides investment with the confidence required to want to invest in the future of their area.
- Diminishes the risk of escalating insurance premiums, the reduction in the uptake of private insurance and the associated risk of insurance companies refusing to provide insurance cover in flood risk areas – leaving the Government as the 'bottom of the cliff ambulance.'
- Contributes to the environmental and water quality expectations of our communities and iwi / Māori partners.
- Provides for resilience and adaptation against the effects of climate change-induced 'above-design' storm events.

We see strong sense in all the above reasons for Central Government to consider co-investing in flood risk mitigation at Westport. There are 367 flood risk mitigation schemes throughout New Zealand. The Westport flood risk mitigation scheme should bring the number to 368.

[35] Te Uru Kahika requested Central Government to contribute $150m per annum to the $200m currently committed by the regional sector.

[36] Equity and ability to pay considerations are likely to be one of the many important elements considered in designing the detail of a Central Government co-investment programme.

Alignment with Government's Infrastructure Plan

The government's Thirty-Year Infrastructure Plan records the average annual costs of responding to flood events now exceeds $50m. While necessary, the Plan notes – and we agree, this is sub-optimal expenditure compared to preventative investment. As such, it does not minimise future risk to the community or Central Government and Crown assets. This 'after event' focus means government bears an excessive unfunded future liability in its fiscal accounts.

The Plan also notes the severity of the consequences of not securing and enhancing the integrity and service levels of existing flood protection structures, and the community resilience role they play, increases every day. The fiscal consequences for government of not proactively investing at the top of the cliff are growing at a similar rate.

Alignment with advice from the Productivity Commission

The Productivity Commission enquiry into Local Government funding and financing[37] selected flood protection schemes as an example of a function deserving of a 'stepped-up' co-investment-focused-arrangement between central and Local Government.

The terms of reference for the Productivity Commission's enquiry, as issued by the Ministers of Finance and Local Government, noted that:

- Local authority debt has grown steadily since 2006 to the point where some councils are now coming close to their covenanted debt limits.
- One of the major factors influencing local authority debt is the cost of adapting communities and infrastructure to mitigate risks and hazards associated with climate change.

The Commission favoured the 'benefit principle' as the primary basis for deciding who should pay for Local Government services. In this regard, the Commission noted – with more than passing interest to Westport that '*some local assets and their associated services could benefit… national interests. In these cases, the benefit principle points to shared funding with a contribution from Central Government'*.

In addition, the Commission identified four key areas where the existing funding model is insufficient to address cost pressures:

- Supplying enough infrastructure to support rapid urban growth.
- Adapting to climate change.
- Coping with the growth of tourism.
- The accumulation of responsibilities placed on Local Government by Central Government.

All four of these identified areas support the need for co-investment by Central Government in flood protection schemes, such as that proposed for Westport.

In addition, the Commission suggested the Government should more clearly specify the role that may be played by Waka Kotahi[38] in assisting those councils such as WCRC and BDC, who are facing significant threats to the viability of roads and bridges from climate change. We need these parties to join us as we seek to overcome the exacerbation of flood risks because of the narrowing of river channels by bridge structures and related embankments. The Orowaiti and Buller River bridges are cases in point.

[37] Productivity Commission, Local Government Funding and Financing, 30 November 2019.

[38] Government may also provide aid to parties affected by flood events within the terms and conditions defined in the On-Farm Adverse Event Recovery Policy administered by the Ministry for Primary Industries.

Alignment with RMA Reform

The need for a comprehensive approach to flood risk management is clearly encompassed in the reform of the RMA programme, and especially the Climate Adaptation Act. The Climate Adaptation Act is to be developed next year, but it will come too late for Westport. Even today, as we attempt to address resilience through Te Tai Poutini Plan, we cannot prevent development in flood zones. We are working on it, but we are finding that, right now, we cannot avoid more people and property being put in harm's way. We hope our frustrations can help to inform the Act.

We noted wryly that Westport is a case study referenced in the draft National Adaptation Plan (NAP). Frankly, Westport is the case example of the NAP being actioned. We welcome the opportunity provided by Central Government to test and refine emergent adaptation policy. In anticipation, we are now actively applying a more comprehensive approach to flood protection than in the past.

We think that our experience to date has given us a sound understanding of what constitutes good governance and decision making around climate adaptation decisions. Our Westport experience will also inform other themes currently under consultation in the draft National Adaptation Plan, such as the intersection with the insurance sector. Through necessity, we have found ourselves making the long anticipated hard calls on who pays for adaptation and who benefits in the absence of a policy framework, while also attempting not to create winners and losers (although to be honest this almost seems unavoidable). We have found that published guidelines are not of much practical use.

Alignment with government's previous shovel-ready funding decisions

In 2021, regional councils received $217m toward 55 shovel ready flood protection projects. These projects had a total cost of $313m. Funding was provided at a 75% ratio for projects in those regions viewed as having comparatively high levels of deprivation.

This funding was part of Central Government's Covid recovery programme. A central / regional governance oversight arrangement is in place to provide governance to the delivery of the 55 projects. This is the 'IRG Kānoa Climate Resilience Flood Protection Programme.'[39]

There are many more projects needed throughout New Zealand of the type co-funded by the government in 2021. The proposed Westport flood protection scheme may well have been included in this programme but, at the time, it was not regarded as shovel ready. We are now shovel ready.

[39] This governance arrangement is suited to application to the Westport flood protection scheme.

Alignment with recent Cabinet policy decisions

The foundation for DIA's refreshed thinking about the funding models that may be applied to future flood protection investment was recorded in a July 2020 Cabinet paper *Improving Resilience to Flood Risk and Supporting Covid-19 Recovery.* This Cabinet paper noted:

- Current funding arrangements for flood protection infrastructure were established over 30 years ago and they are no longer considered sustainable or consistent with delivering outcomes in line with (the) proposed framework and principles.
- Subject to further work, Central Government's funding approach to building resilience should consider the benefit principle, fairness, and intergenerational wellbeing.
- Officials will work with Local Government to develop a revised funding model for flood protection, based on the proposed framework and principles, which would be implemented over the longer term.

The proposed principles[40] referenced in the Cabinet paper's appendix, state an intention to:

- Target action where national assets and national interests warrant Central Government intervention and funding.
- Intervene in projects where there is a significant economy of scale or time constraints, distributional concerns, to protect health and safety, and to protect kaitiakitanga.

We are strongly of the view that Cabinet's principles will be more than adequately satisfied by co-investment in a flood protection scheme at Westport.

[40] As included in Appendix B of the July 2020 Cabinet paper.

Our Story So Far

The Westport community will struggle to sustain another event, physically, psycho-socially, and financially. We are anxious and uncertain about the future, during a time of growth for the town. We are not in a position to invest heavily in flood resilience, and so we were very grateful to be invited to participate in a ground- breaking collaborative process that could see co-investment in Westport's long-term flood resilience. We welcome the opportunity to become a model for other small communities facing similar climate related challenges.

Things for us to address

It was made clear to the Councils that in order to win Government support, several factors needed to be satisfactorily addressed:

- A Steering Group should oversee proposed resilience initiatives.
- An integrated package of initiatives outlining Council(s) involvement should be displayed.
- Value for money should be demonstrated.
- Robust costing processes need to be applied.
- A clear plan of action should be defined.
- Outline why current policy and funding levers are insufficient.
- Describe why Buller is an urgent and compelling case.
- Describe how the proposal supports government goals in climate adaptation, community resilience, and resource management reform.

We recognised early that good governance would be the key to producing a positive outcome. The Buller Recovery Steering Group formalised its Terms of Reference (see Appendix two) and put in place a recovery work programme (Figure 10) and risk register - overseen by regular Steering Group meetings, to provide assurance that tasks were on track.

Better Business Case

The Steering Group was aware that Treasury's Better Business Case (BBC) framework is the accepted model for investment by Central Government. We have embraced the principles of this BBC framework, and we have attempted to address the challenge we face though a BBC lens.

An overview of the five BBC elements follows, together with a brief description of what we have done to satisfy these elements.

- **Strategic case**: the alignment of the need for change with wider national and sectoral priorities, goals, policy decisions and programmes, district equivalents of these matters, the scope of the project, the challenge to be addressed and the benefits sought – *we have addressed these matters in the previous 'strategic fit' section of our proposal.*
- **Economic case**: the critical success factors, the process applied to move from a long list of options to a preferred set of options, the economics of preferred options and the cost / benefit of these options - *we have provided details about what a flood risk resilient Westport community may look like at various points throughout our proposal. We started with a long list of options and reduced this to a preferred short list, and we have applied cost-benefit assessment to various intervention options.*
- **Management case:** the approach to be applied to deliver on the preferred set of options and the plan to allow for that delivery – *the last part of our proposal provides details about governance, management, timeline, and other things guiding the delivery of our proposal.*
- **Commercial case:** the procurement strategy and the ability of the market to meet needs - *we outline our proposed approach to procure the products and services we need in one of the latter sections of our proposal.*
- **Financial case**: a high-level assessment of the affordability of the short-listed options and possible funding sources – *we have already provided information about the socio-economic status of the*

Westport community. Details about our proposed co-investment / cost sharing arrangements are summarised at the end of each part of our proposal.

The conclusion part of our proposal provides a summary spreadsheet displaying how we have satisfied the above guidelines.

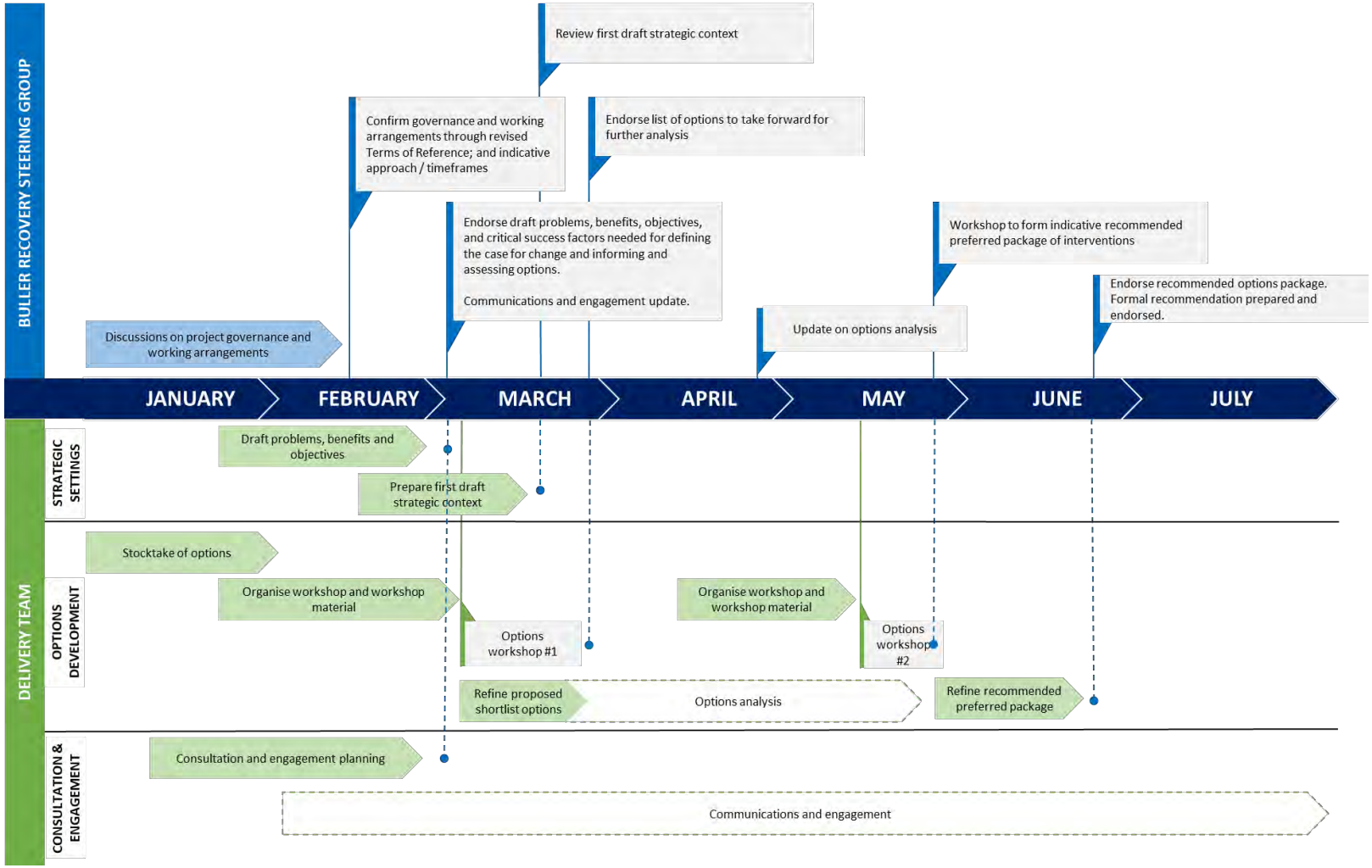
Critical success factors

Our proposal is underpinned by a set of strategic settings that the Steering Group agreed early in the preparation of our Business Case.[41] They include the project's Critical Success Factors. The settings also incorporate the following objectives, against which all options were assessed:

- Reduce the risk of flooding from severe weather events on the Westport community, recognising and providing for the likely impacts of climate change.
- Avoid increasing or transferring flood risk to other areas within the Buller catchment or wider region.
- Improve the ability of the Westport community to prepare for, continue functioning during and after, and recover quickly from flooding events.
- Minimise the long-term financial burden of flood mitigation and protection on the Buller community.

[41] We list these in the later 'protect' part of our proposal.

Figure 10 - Work programme

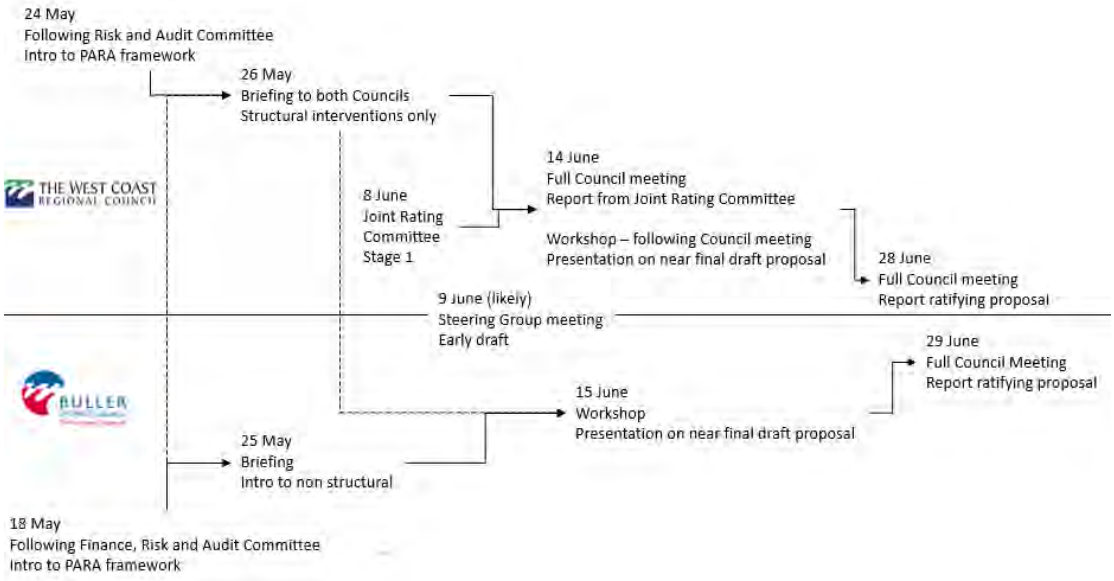


Communication

One of the key challenges with central and local collaboration is the synchronisation of respective democratic processes. The team carefully designed the process below to ensure integration between the Steering Group, Councils and Ngāti Waewae, to give the best chance of success.

Another one of our key challenges has been the synchronisation of communication around this process. No decisions have yet been taken. No decisions can be taken until funding is approved or otherwise. Nevertheless, a level of detail is required in order to provide robust costing and to demonstrate value for money. There is naturally a high level of interest in this detail. We could not in good conscience undertake decision making around the proposal in secret. At any rate, we do not consider that there is any reason under the Local Government and Official Information and Meetings Act for us to withhold information about this proposal. We have all fully engaged in this process (Figure 11).

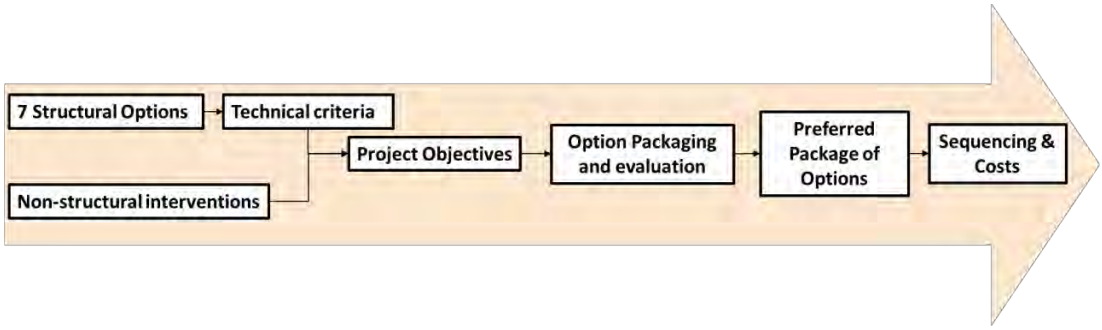
Figure 11 - Local Government democratic process



The engine room for developing the detail of our proposal is the process below. We co-opted the input of a wide range of stakeholders to develop a long list of interventions to grow Westport's flood resilience. Some of these were hard structures, others were non-structural interventions. We put these options through a series of technical and strategic evaluation criteria to distil the options down to the package presented in this proposal. This was a complex undertaking that did not sit comfortably within a traditional multi-criteria evaluation framework.

Process Overview

Figure 12 - Process Overview



We knew we would need both rigour and integrity around this process. We allocated senior internal resources from both Councils, and we engaged experts to provide technical inputs. This included:

- Establishment of a Technical Advisory Group (TAG) of senior experts to provide guidance around the structural options. The work of the TAG drew on the Westport 2100[42] work previously completed, and other local knowledge.
- Enlistment of two TAG members, Gary Williams from G & E Williams Consultants and Matthew Gardner from Land River Sea Consulting Ltd[43], to provide wider advice to decisions makers and, in the case of Matthew, to provide scientific advice to the wider public.
- Infometrics[5] provided high level economic analysis.
- WCRC and NIWA rainfall and river flow monitoring data.
- NIWA provided some detailed loss modelling using the RiskScape model.
- Poutini Environmental provided guidance around local Mana Whenua concerns and aspirations.
- Tonkin Taylor provided some technical advice and frameworks for the options evaluation.
- Government departments were very forthcoming with advice and assistance, in particular MBIE, DIA, NEMA and Waka Kotahi.
- Landmark Lile Ltd provided a report on the consent-ability of structural options.[44]
- A report was prepared by HenleyHutchings on the 'strategic fit' between the scheme options and national, regional, and local policy and contextual matters.[45]

[42] Among other things, the Westport 2100 Group recommended formation of the Westport Rating District Joint Committee and the development of the flood protection scheme detailed in the WCRC Long-Term Plan 2021-31.
[43] This modelling covered the effects of different flood frequency / magnitude scenarios and the flow management opportunities arising from more than seven different flood risk mitigation options. The modelling also considered the effects of a full range of future climate change scenarios.
[44] Advice was provided by Landmark Lile Limited, Resource Management Consultancy, Nelson.
[45] 'Strategic Fit' HenleyHutchings, June 2022

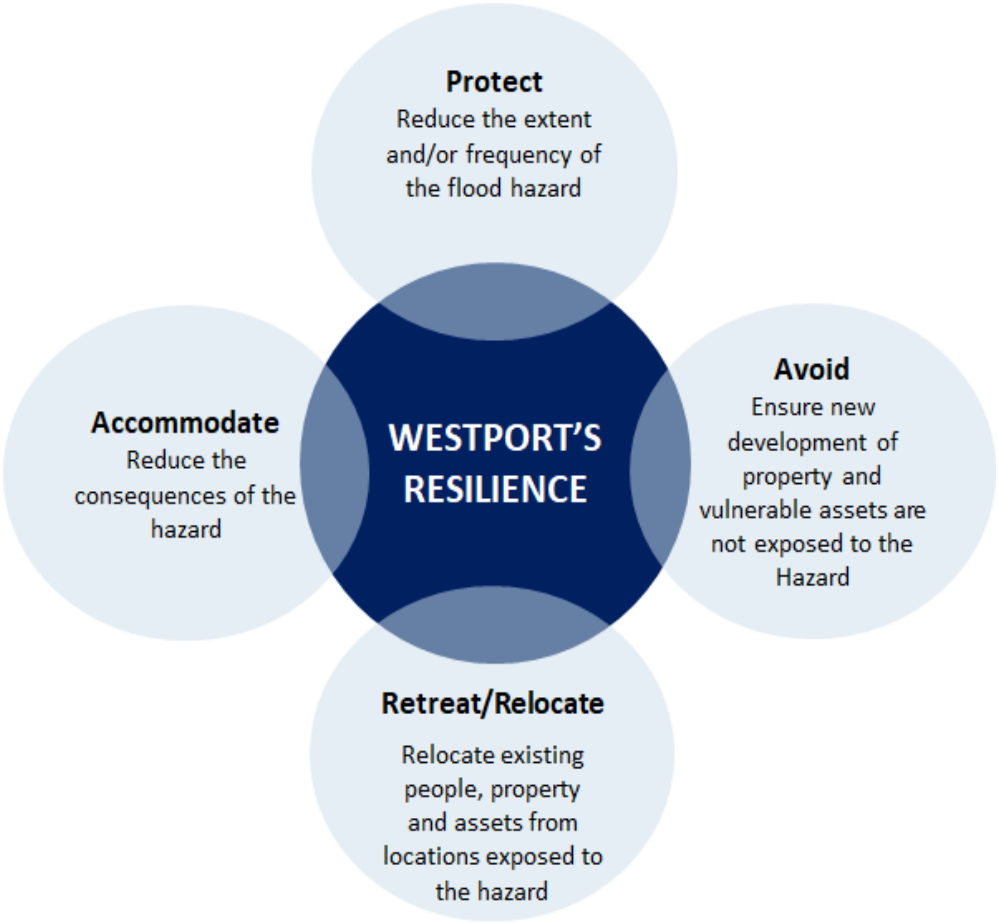
Planning Principles

We realised early on that there is no silver bullet for Westport. We have therefore been working hard on expectations to make sure key stakeholders and the wider public are aware of this. In addition, there are some obvious constraints, dependencies and tasks that need to be carried out. In this regard, we have used the following principles to guide expectations:

- *We cannot protect every single bit of Westport*. It is simply not feasible or affordable.
- *It is unlikely that we will be able to build our way out of this forever*. While it makes sense in the short term to build some embankments and structural defences, in the long term the reality is that we are unlikely to be able to afford or will want to do this forever – a range of adaptation options will be necessary.
- *We can't eliminate all the risk*. In agreeing on the structural solutions, we need to be very clear that embankments and other structural defences won't 'solve the problem'. Far from it – and no engineer will ever give a guarantee that the structures won't be overtopped – especially with more climate related weather events now certain.
- *We don't have to do everything tomorrow*. Proposed measures to avoid, retreat, and accommodate Westport flood risks will be delivered in an ordered sequence – some in the short term; some over the next 25-50 years.

Our Proposal – The PARA Model

We have embraced the PARA model for our proposal.



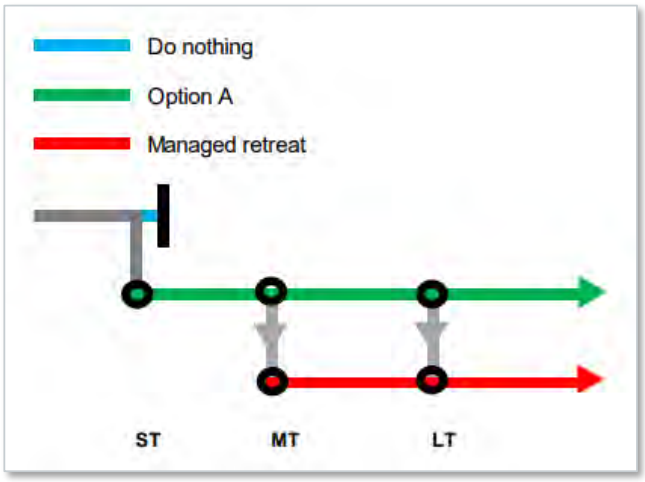
The model is adopted from overseas and has been utilised by both NEMA, DIA and the Ministry for the Environment. It is commonly used for managing sea level rise and flood risk to communities. The model appealed to us because:

- This is a logical and robust way of categorising the complex range of tasks that are required to manage climate related issues. It broadly aligns with the four Rs of CDEM[46]. It reflects the application of what we see as a necessary 'multi-tool' approach.
- It shows how resilience is not the domain of a single organisation. One of the challenges with achieving true resilience is the need to integrate across organisational boundaries and to find compromise.
- There is a range of co-benefits available from investing in resilience. The model provides for this to be brought into relief.

[46] Reduction, Readiness, Response, Recovery.

- Not everything has to happen at the same time. Often there is a temptation to 'solve' the problem by making all the decisions today. In fact, there is a range of short (ST), medium (MT) and long-term (LT) options available (Figure 13). Some decisions can be deferred until further knowledge is available. Adaptive pathways should be applied. This is covered in more depth later in the proposal.

Figure 13 - Adaptive Pathways (Source: Infometrics)

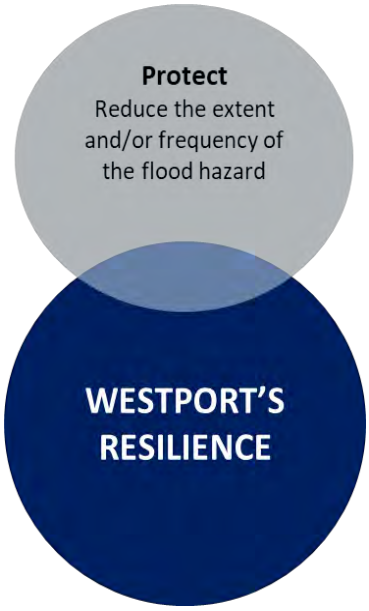


PARA highlights the interdependence between various decisions and helps decision makers to ensure an integrated package of initiatives is applied. It shows that decisions taken today must not prevent future decision makers from making their own sensible decisions. We have thought about our mokopuna and future generations as we have developed this proposal. Each facet of PARA, and its related flood resilience proposals, is described in detail in the following sections of our proposal.

Protect

Reduce the extent and/or frequency of the flood hazard

Protect



Approach

The focus of this part of our Business Case is on proposed Westport structural and nature-based flood risk mitigation measures.

The WCRC has investigated flood mitigation scheme options since the mid-2010s. The first significant step toward a solution took place in 2014. A Buller Working Group was formed as a joint working committee of BDC and WCRC. The Group consulted with the community and investigated a wide range of potential mitigation options. This included considering the options of clearing the Orowaiti overflow and dredging the Buller and Orowaiti Rivers. External experts provided advice to the Group.

In 2017, the Group put forward five flood risk mitigation options to the community. These options included the ring-bank options described in the WCRC 2021-31 Long Term Plan (LTP), as well as a cut to the sea at the Orowaiti River mouth.[47]

The next significant step was formation of the Westport 2100 Working Group (2018). The recommendations of this Group were forwarded to WCRC and BDC in September 2019. With this background work in mind, the draft 2021-31 WCRC Long-term Plan (LTP) included two choices for flood risk mitigation:

- Development of partial stopbanks and a flood wall scheme at an estimated cost of $3.4m or;
- Development of an extensive stopbank and flood wall scheme at an estimated cost of $10.2m.[48]

[47]There was no clear pathway forward identified through this consultation.
[48] These were preliminary estimates based on limited pricing information, without contingency factored in. Construction price index and the inflation occurring since these costs were first estimated has caused these base costs to increase, along with more rigorous modelling and engineering analysis.

The majority (71%) of those who submitted on the draft LTP supported the $10.2m choice.[49] This decision was subject to further investigation of adverse effects.

Following the floods in July 2021, the Minister and senior officials from DIA requested us to consider the following aspects of the structural (or protect) elements:

- Contributions that may be made by WCRC and BDC.
- Scale and nature of Central Government support.
- Robust costing processes.
- Effects of climate change.
- Value-for-money.
- Steps / stages for moving forward.

With these matters in mind, a Technical Advisory Group (TAG) was established by WCRC (December 2021). The role of the TAG was to satisfy the matters raised by the Minister / DIA and identify preferred flood risk mitigation structural and nature-based options.

Seven options (and permutations of these options) were considered by the TAG. The TAG also considered the influence of climate change scenarios on the options.

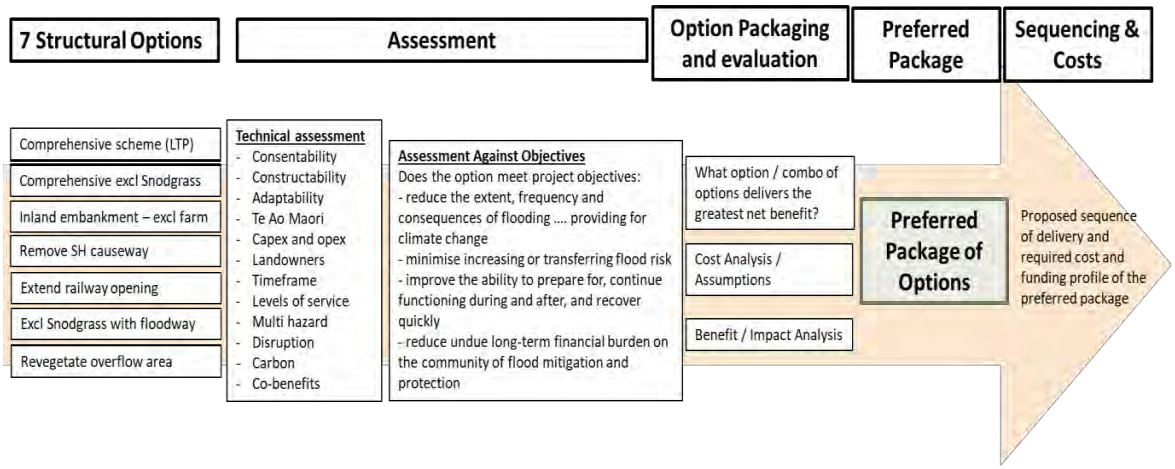
The work of the TAG was informed by the external advice identified under the *Process Overview* section of this report (p30). This advice was augmented by further detailed modelling carried out by Land River Sea Consulting Ltd[50], and flood risk mitigation, design and costing advice provided by G & E Williams Consultants. This work was indispensable, and Matthew Gardner and Gary Williams are to be commended for the quality and integrity of the advice they have provided through this process.

The TAG was also influenced by the reports from NIWA and Infometrics which described the damage likely to be caused and the cost of avoiding that damage – as the basis for determining the likely benefit of proposed flood risk mitigation scheme options.

In order to meet its objective, the TAG followed the process outlined in Figure 14.

[49] This percent is based on submissions from within the Westport Rating District.
[50] This modelling covered the effects of different flood frequency / magnitude scenarios and the flow management opportunities arising from more than seven different flood risk mitigation options. The modelling also considered the effects of a full range of future climate change scenarios.

Figure 14 - Process applied by the TAG



The TAG brought together the findings of all this work, together with other technical assessment criteria, as well as the objectives and critical success factors defined by the Steering Group. This enabled TAG to recommend a preferred package of structural and nature-based measures (as outlined shortly) to mitigate the effects of Westport flood risks. The TAG's recommendations were then considered by the Westport Rating District Joint Committee, the Buller Recovery Steering Group, WCRC and BDC.

Options

The seven core structural options, and permutations of these options, were as below:

OPTION 1 — Comprehensive scheme (as described in the WCRC 2021-31 LTP, $10.2m scheme)

Extensive ring-bank[51], including Carters Beach and the Snodgrass area.

OPTION 2 — Comprehensive scheme – but excluding the Snodgrass area

Extensive ring-bank, including Carters Beach, but excluding the Snodgrass area.

OPTION 3 — Inland Embankment - excluding southern farmland

Reduced area of ring-bank by excluding the southern area of farmland but including the Carters Beach and Snodgrass area.

[51] Ring-bank means the entire ring of protection around Westport. Embankment refers to an individual earthen component of the overall scheme. Walls refers to the proposed wood and earth structures (single and double) to be used mostly in the urban parts of Westport. Together all structural elements are referred to as the Westport Flood Risk Mitigation Scheme. NB we prefer to not use the term 'protect' because it creates a false sense of absolute security from flood risks.

OPTION 3A – Further shortening the inland length of ring-bank around Westport

Further limit to the length of the inland extent of the ring-bank around Westport so that it more closely abuts existing urban areas.

OPTION 4 — Remove State Highway causeway

Extensive ring-bank, including Carters Beach and Snodgrass area, with removal of the State Highway causeway, near the bridge crossing of the Orowaiti Estuary.

OPTION 5 — Extend Railway opening

Extensive ring-bank, including Carters Beach and Snodgrass area, with an extended opening (100 m) in the Railway embankment at Stephen Rd.

OPTION 6 — Exclude Snodgrass with floodway

Extensive ring-bank, including Carters Beach, excluding the Snodgrass area but including a Snodgrass floodway.

OPTION 7 — Revegetate overflow area near Organs Island

Extensive ring-bank, including Carters Beach and the Snodgrass area, with revegetation of the Organ's Island overflow area.

Figure 15 – Temporary stopbank at Snodgrass Road

Modelling

The above options were modelled for the estimated 20, 50 and 100-year flood flows, based on the historical record of the height and extent of the effect of these flows. They were also modelled for the estimated flows and sea level changes expected for the climate change scenarios of RCP6 and RCP8.5. In addition, this modelling took account of the different flood risks posed by the Buller / Orowaiti rivers and the effects of embankment alignment and revegetation changes on the flood flow split (the 'hydraulic effect') between the Buller main channel and the Orowaiti overflow.

Technical assessment

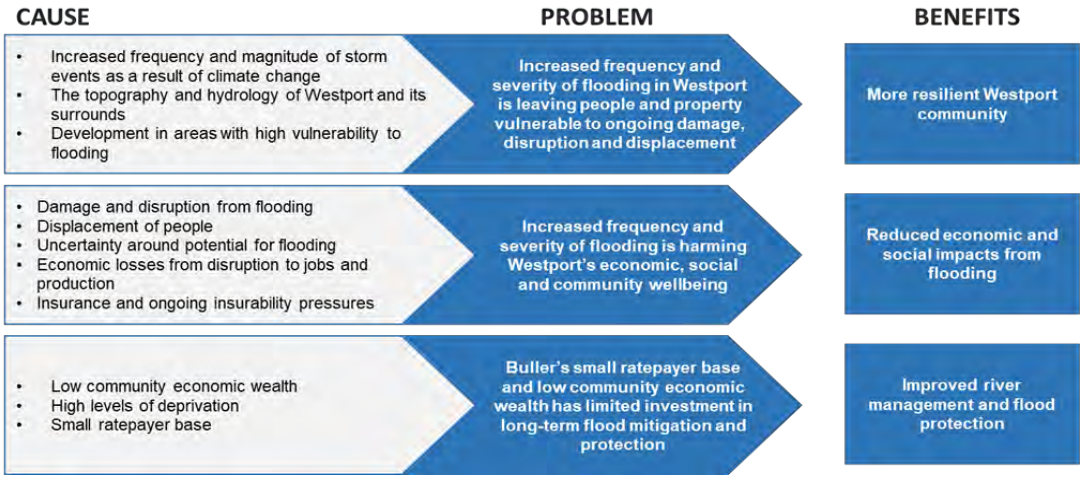
Each option was modelled extensively, and then tested against a set of technical assessment criteria.[52] This assessment was assisted by two site visits, numerous TAG meetings, and the consideration of the expert input reports. The core technical assessment criteria considered included:

- **Consent-ability**: Environmental effects and the ability to obtain resource consents.
- **Constructability**: Design practicality and suitability for site specific conditions.
- **Adaptability**: Capacity for adjustment to cater for future changes to climate-change-induced flood frequency or magnitude.
- **Te Ao Māori**: Compatibility with te mana o te wai and Māori world view.
- **Landownership**: Property status and likely landowner willingness to accommodate.
- **Timeframe**: Staging and total length of time for construction.
- **Levels of service**: Magnitude and frequency of flood flow / sea level rise able to be mitigated.
- **Multi-hazard**: Capacity to address non-flood hazards such as liquefaction and earthquakes etc.
- **Disruption**: Degree to which construction and operation may disrupt usual functioning of economy and community.
- **Co-benefits**: Ability to provide additional community, amenity, and ecological gains.

Assessment Against Project Objectives

Following technical assessment, options were evaluated against the objectives of this proposal, the challenge to be resolved (Figure 16) and the critical success factors as determined by the Buller Recovery Steering Group:

Figure 16 - Challenge to be resolved (as defined by the Buller Recovery Steering Group)



[52] These technical assessment criteria were defined with the assistance of DIA.

The critical success factors that are essential for the successful delivery of this project include:

- **Strategic fit:** How well the option meets agreed objectives and service needs, how well the option aligns with WCRC and BDC strategies and plans and how well the proposals align with wider national and governmental objectives or directions.
- **Value for money:** How well the option maximises the return on investment (benefits over costs).
- **Capacity and capability to deliver:** How well the option matches the ability of agencies and service providers to deliver it and how well the option appeals to suppliers.
- **Affordability:** How well the option meets likely availability of funding and how well it matches other funding constraints.
- **Achievability:** How well the option is likely to be delivered in the current environment and how well the option matches the level of skills required for successful delivery.

Service levels

We have agreed the Westport flood risk protection scheme should have a service level[53] expectation sufficient to protect Westport from flows arising from flood events occurring up to a 100-year ARI / RCP6[54] future climate scenario.

The decision to support the RCP6 level of service across the full length of the ring-bank was a 'line call'. Despite the additional cost of construction (an extra $1.5m), constructability challenges and despite the additional 0.6m+ height, the RCP6 *climate change aware* option is our preferred choice. A key benefit is the cost of avoided damages to Westport buildings. By applying the higher level of service at all locations, this will be close to $400m compared to $200m for the 1:100 historic regime level of protection.[55] Other benefits include: avoiding inflationary costs; and decreasing community anxiety / increasing confidence and wellbeing because of the higher level of service.

The costs and benefits of applying just a 1:100 level 'historic climate regime' level of service to the lower Orowaiti part of the scheme were carefully considered. Our early thinking – now overridden by the RCP6 decision, saw the benefits of applying this level of service to this part of the ring-bank to be:

- Less dangerous nature of flooding from the Orowaiti river and estuary compared to the Buller River.
- Reduced cost compared to the complete 'ring-bank' RCP6 flood mitigation option.
- A general desire to not extend flood mitigation structures into the estuary, and thereby associated reduced environmental impacts and reduced consent-ability challenges.[56]
- Comparatively constrained footprint available for construction at this location.
- Increased impacts on local amenity values due to an average height increase of the stopbanks / walls by 0.6m adjacent to the estuary.
- Availability of the longer-term option of upgrading the proposed structure to a higher standard if that is desired.

[53] 'Service level' means the flood mitigation expectations to be provided by the embankment structures.
[54] 'ARI': Annual Return Interval. 'RCP' – Representative Concentration Pathway' with RCP6 representing one potential 'middle of the range of probability' future scenarios for climate change (NB this scenario is based on an expectation of greenhouse gas concentrations increasing for a time and then stabilising).
[55] NIWA Riskscape report, May 2022.
[56] Advice to this effect was provided to the TAG by Landmark Lile Limited, Resource Management Consultancy, Nelson.

Preferred Structural Option

In summary terms, our favoured Westport flood protection scheme is as follows:

1. Rock lining repair works for bank protection near O'Conor Home (two sections) and Organs Island.
2. A combination of concrete wall, single board walls and double earth filled walls, with the use of each being selected to best suit site specific circumstances.
3. Embankments and walls with alignment, heights, and other design parameters to reflect the results of modelling and hydrological effectiveness research carried out by Land River Sea Consulting Ltd, and design considerations put forward by G & E Williams Consultants.
4. Extension of the flood risk mitigation at Carters Beach to the east to include houses along Schadick Avenue and to provide additional flood risk resilience to additional houses and the critical lifeline utility services provided by the airport.[57]
5. Revegetation of a relic Buller River meander near Organs Island.

Details about our favoured Westport flood risk mitigation scheme follow.

Westport Ring-Bank Options

We initially considered three 'ring-bank'[58] wall and embankment options[59] for the inland area surrounding the urban part of Westport. The first ring-bank alignment was that as notified as part of the WCRC LTP. This is the yellow line on Figure 17. The second was shorter than the LTP option but still extended inland to encompass rural land (Option A). The third option was closer to existing urban development (Option B on Figure 17). Options A and B provided similar levels of service and had roughly the same hydraulic / flow management benefits.[60]

We reviewed the option discussed in the LTP reasonably early on and found that it was comparatively more expensive, and it diverted significant additional flow volume down the Orowaiti in a 100-year ARI / RCP6 event and therefore adversely impacted downstream landowners. It also provided protection to a relatively large area of farming as opposed to the desired focus on areas of urban development. For these reasons we did not proceed with the LTP option, which we also note, had not previously been subject to rigorous engineering analysis.

Options A and B have pros and cons:

- **Cost differences** – Option B is $1.5m cheaper than Option A because it is about 1.5km shorter. It therefore has higher cost-benefits.
- **The number of road, stream and drain crossings** – Option B reduces the number of stormwater and other 'interface' structures required at their junction with the proposed embankment. It will also reduce the net volume of rural-sourced stormwater to be managed within the embankment structure.
- **Managing the extent of urban intensification within the protected area** – Option B provides a reduced area within which urban intensification could be incentivised'.[61]
- **Rural residential** – Option B provides flood risk mitigation to 15 fewer dwellings and implement sheds and four fewer landowners than Option A.

[57] The 244 properties at Carters Beach have a net capital value of about $81m (information supplied by J. Bell WCRC). The Carters Beach flood mitigation structures are estimated to cost $1.7m for the section immediately around the beach and $2.25m for the length extending past the Westport Airport (information supplied by G & E Williams Consultants – both at RCP6). This information suggests the cost benefit of investment at this location is attractive.
[58] Ring-bank is a generic term used to describe the structure proposed for around the town of Westport.
[59] Both options will provide the same service level.
[60] Not as much work was undertaken on the alignment, footprint and on the hydraulic characteristics of Option B compared to the other two options. Refinements will be required when funding is secured, and detailed 'project' design work is undertaken.
[61] Having a flood protection structure may create a possible 'misplaced sense of protection' from flood risks.

- **Affected landowners** - Option B may cause minor raised floodwater levels above floor levels for some upstream rural landowners.

While both options A and B are live, and require further analysis, in our view option B is marginally cheaper and better aligned with the overall intent of this proposal. It also aligns with the aspirations recorded in the following sections of our Business Case, where intensification within the ring embankment is discouraged. We therefore recommend proceeding with Option B.

Figure 17 - Showing LTP alignment, Option A, and preferred Option B alignment

Buller Riverbank erosion protection

The main risk of breach of the Westport and Carters Beach ring-banks would likely be lateral erosion of the riverbanks by floodwaters in the Buller River channel. While Carters Beach is less at risk, as it is behind the large wetland and subject to less erosion pressure, managing the Buller River is, in the long-term, the most challenging flood risk task we face. Re-instating / strengthening this protection is the most critical / urgent part of Westport's flood risk mitigation at the moment.

We estimated the cost of bank protection work to fix the breaching and displacement of rock in the bank lining at Organs Island during the July 2021 flood event, to be $1.7m. Bank erosion work at O'Conor Home will cost $0.92m. A second stage of additional work at O'Conor Home will cost a further $0.68m for a total of $3.3m to bring the protection back to a pre-flood level.

The extent of the above-mentioned works is known – it is future bank protection repair works that are more uncertain. We know there may be other old bank rock protection works that are covered by vegetation. These could fail in future flood events. Protection at these sites will be required if the current Buller River alignment is to be maintained. If this protection does not occur there is a risk that lateral bank erosion would undermine the Westport ring-bank.

Importantly, a longer-term Buller Riverbank protection renewal programme is now required. The initial assessment of our experts is that this would cost at least $300,000 per annum. For a ten-year period, this would be $3.0m. Our request to Central Government is that all the costs of the next ten years of Buller Riverbank protection – including the $3.3m of immediate works, be met by Central Government for a total of $6.3m.[62]

Revegetation of a relic Buller River meander near Organs Island

The area of land on the true right of the Buller River near Organs Island includes a 'relic' channel of the Buller River.[63] We propose this area be revegetated as a wide area of indigenous riparian forest.[64] This would be established over three phases of five years each (Figure 18). When revegetated, this area would provide flood protection by acting as a filter and moderator of flood overflows down the Orowaiti River.

An important river management benefit of this proposal is that, as this vegetation is established, the hard control of the Buller River rock lining could be relaxed. The river would be given more space to move in a natural way, prior to its entry into the sharp bend downstream at the valley-side bluff. This revegetation will also generate co-benefits for indigenous flora and fauna and carbon sequestration.

[62] We address the cost of maintaining the Westport ring-bank and Carter's Beach embankment later in this report.
[63] This land is currently administered by LINZ and leased for grazing. The lease comes up for renewal in June 2022. WCRC is liaising with LINZ. This is a relic Buller River Meander area.
[64] See Figure 14 in the attachment prepared by G & E Williams Consultants.