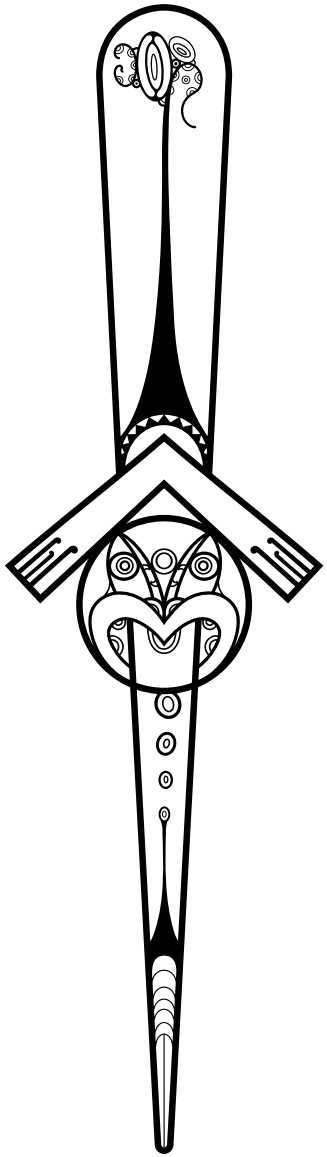
Our road to recovery - Tairāwhiti

Mihi



Hui te ora
Hui te mārama
Whano, whano haere mai te toki
o te ata huaki rangi
Haumi e
Hui e
Taiki e!

Tēnā koutou katoa,

Tangihia o tātou mate, rātou hinganga atu nei, e hingahinga mai na i runga i o tātou marae maha, tangihia rātou, haere ki te pūtahi nui a Rehua, ki te huinga o te kahurangi oti atu ai, koutou ki a koutou e moe, e oki.

Tēnā tātou ngā whakarerenga iho, ngā urupā o rātou mā, e kōkiri tonu nei ahakoa rā ngā pēhitanga o te wā, e whītiki tonu nei i roto i te pūranga paru, e whakarite nei kia ao ake te āpōpō.

Kia whakatinanahia e tātou te kōrero, Tūranga Ararau, Tūranga Makau-rau, Tūranga Tangata-rite. Rau atu ngā ara hei whai mā tātou, rau atu ngā makau hei hoa-haere mā tātou e tū tangata ai tātou, e tū rite ai tātou, Tūranga Tangata-rite.

Tēnā koutou katoa!

Economic Environment

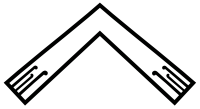
Manaia

Ko te mana tēnei o nga iwi o te Tairāwhiti
The mana that the people of Te Tairāwhiti hold.

Natural Environment

Te Rā

Ko te Tairāwhiti
The first place to see the sun.



Built Environment

Whare Āhuru

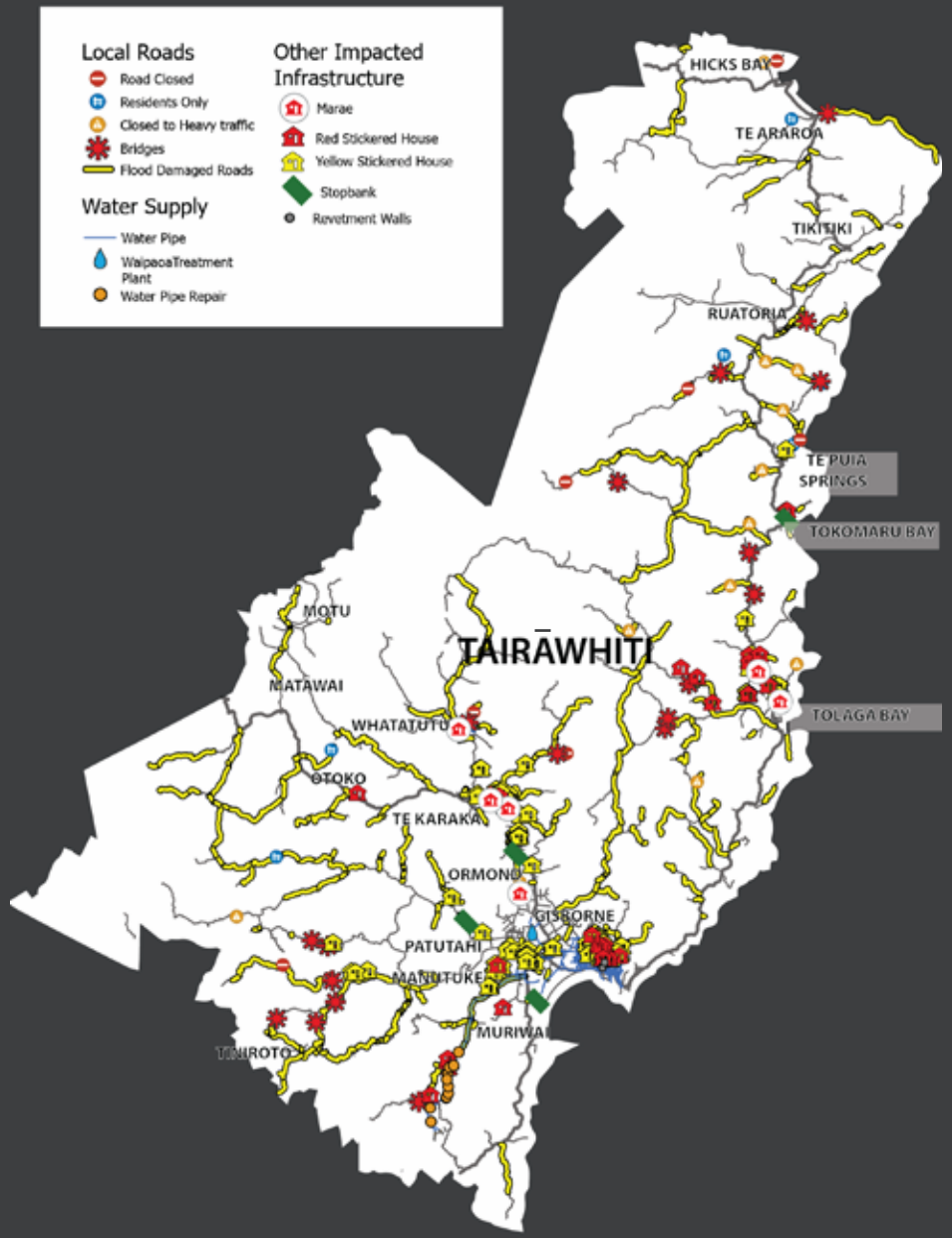
Ko ngā marae maha ēnei o te Tairāwhiti. Ko ngā whare hoki ēnei o te hunga noho ki tēnei rohe.
Marae across the Te Tairāwhiti region, an indicator of 'home', of safety of security. These are also homes in our region that house our people.

Social Environment

Tangata Rite

Ko ngā iwi maha, ko ngā konohi maha ēnei o te Te Tairāwhiti. He momo kōruru e karanga ana ki ngā iwi kia mau, kia tau, kia kaha
These are the people of Te Tairāwhiti, those who are resilient in hard times.

Our broken Tairāwhiti



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Event summary

Cyclone Gabrielle resulted in a State of National Emergency being declared on 14 February 2023. The National declaration was extended three times and then lifted for Tairāwhiti on the 14 March 2023.

The damage and impact of this event compounded the cumulative adverse impacts of Ex-Cyclone Hale (10 January 2023) and previous severe weather events since March 2022. As a result of eight previous weather events in the last 18 months Tairāwhiti has been in an on going state of recovery.

The damaging effects of Cyclone Gabrielle can be compared to the devastation caused by Cyclone Bola, which struck the region 35 years ago on 7 March 1988. The torrential rain of Cyclone Gabrielle triggered widespread river flooding, storm surge, high tides, and high waves across the coastal areas of the region, with the recorded rainfall accumulation exceeding levels documented during Cyclone Bola.

Tairāwhiti experienced substantial widespread damage to infrastructure, resulting in power, telecommunication and mobile networks being completely lost for several days. The roading network suffered extensive damage, bridges were completely swept away by floodwaters, landslides and roads collaped, causing the district to be isolated for several days and some communities being isolated for several weeks.

The ongoing effort to reinstate access across the region is vitally important and extremely challenging, particularly in remote locations. Many properties were flooded and high winds resulted in various levels of damage across the region. Rapid Impact Assessment (RIA) and Rapid Building Assessments (RBA) continue to be carried out across the district.

Given the broad geographical scope and consequences of this event on the Tairāwhiti rohe, people and economy, there is an urgent need for swift recovery efforts, without exacerbating environmental degradation or compromising public health.

Ki te ora te whenua
Ka ora te tāngata

ROADING NETWORK

3000 faults registered on local roads

More than **130** sites on state highways SH2, SH35 and SH38 needing repairs

200+ major drop outs

61 Bridge repairs or replacement

77 Bridges require slash removal

111 other structures damaged (retaining walls, river protection, stop banks)

POWER

Power network severed for parts of the region

WELFARE

24% of population required welfare support

230 households headed to friends and whānau

166 households evacuated to a Civil Defence centre

77 households required emergency accommodation

1.2k households required financial support

2.9k households required food support

588 households required medical support

CONNECTIVITY

5 days with out communication

9 Fibre connection breaks

152 cell sites down

WATER

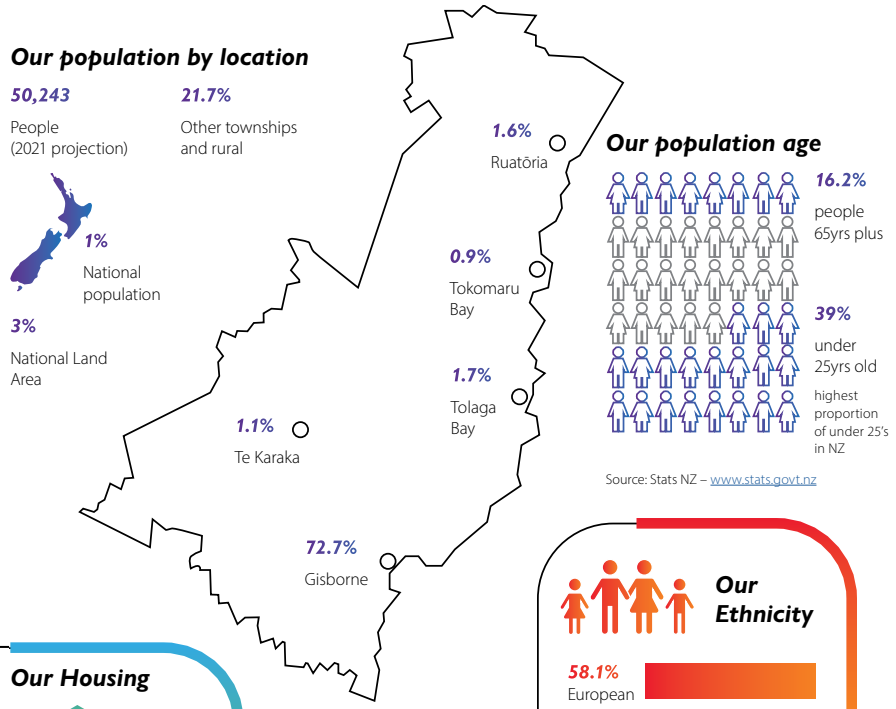
9 Breaks
In the pipeline to the main water supply

45 days to repair pipeline

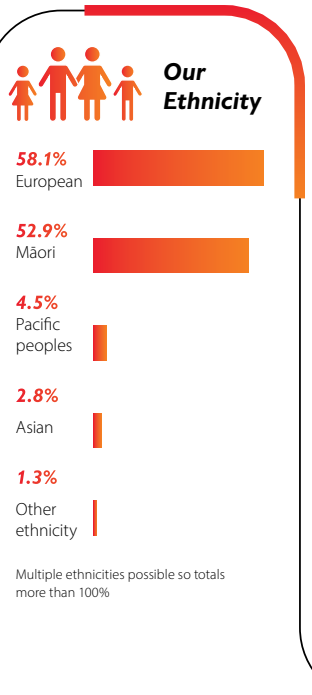
45 days severe water restrictions for Gisborne City

45 days until industries able to use full mains water

Introduction



Source: Stats NZ – www.stats.govt.nz



Multiple ethnicities possible so totals more than 100%

Our Housing

$840,000
National Median

$665,000
Tairāwhiti Median

7.3%
Tairāwhiti House Price Rise

2.4%
National Median House
Price Rise

(As of year on year May 2022)

Tairāwhiti is NZ's fastest rising
house market

Source: REINZ – www.reinz.co.nz

Our tangata whenua

4	Regional Iwi
70	Operational Marae
16%	Te Reo Māori Speakers
4x	National percentage of Te Reo Māori speakers

Tairāwhiti covers a vast geographical area on the East Coast of Aotearoa, with our rural and coastal communities amongst the most isolated in the country. These communities have been greatly impacted by eight recent weather events that have occurred in a relatively short timeframe, and their remoteness means the full spectrum of recovery implementation is challenging.

Cyclone Gabrielle struck Tairāwhiti on 13 February 2023, causing widespread damage to homes, businesses, and infrastructure across the region. The disaster has had a devastating impact on Tairāwhiti communities, leaving many residents displaced and struggling to access essential services.

In response to this disaster, a comprehensive recovery and resilience plan will be developed to support the community's efforts to rebuild and increase readiness for future disasters. The priorities for recovery are to address the immediate needs of affected communities, repair and explore resilience options for damaged infrastructure, and implement mitigation measures to reduce risks from future weather events. The recovery plan will focus on four environments; Built, Natural, Economic and Social.

The Office of Recovery Tairāwhiti will follow a Collective Impact (CI) framework that ensures support for our community is at the forefront of the implementation of recovery priorities. Community knowledge and expertise will drive the recovery plan and communities will be supported and empowered throughout the process. The CI framework will allow all participants' voices to be heard and will take into account diverse, varying, and potentially contradictory perspectives across the region and the four recovery environments.

This approach will ensure that the recovery plan reflects what is needed for whānau, community, businesses and the environment to rebuild, redevelop and increase resilience.

Full recovery is many years ahead of us but Tairāwhiti is moving into a new future that is resilient and centred on the collective aspirations of Tairāwhiti communities.

Our recovery

The Collective Impact (CI) framework is one that can bring cohesion to the recovery journey in Tairāwhiti.

To deliver a coordinated community-led recovery plan a framework is required to ensure all partners and stakeholders can align their thinking and efforts.

The CI framework has five conditions that provide the foundation for aligning collective agency effort.

A common agenda sets the collective recovery aspiration, we then understand what collective success looks like through shared measurements.

We identify what mutually reinforcing activities we already provide to achieve the common agenda.

Then we establish expectations and processes for continuous communication and create a backbone structure to provide cohesion to the many moving

A Tairāwhiti way of working

Whānau and community voices are central to successful recovery planning in Tairāwhiti.

The Tairāwhiti way of working is to be an evidence-based, culturally appropriate approach to whānau-centred engagement.

Whānau voice is used to inform systems change and pathways to self-determination with the least resistance.

The Tairāwhiti way of working will underpin the community engagement phase of recovery.

To understand and capture whānau priorities in this manner ensures recovery is considered in a holistic way.

The opportunity

Tairāwhiti is a geographically dispersed region with a large proportion of rural communites that are isolated.

These communites often feel forgotten and struggle to receive a level of service consistent with that provided in the city and surrounding areas.

Meaningful engagement and service provision based on whānau and community need is desperately needed.

The Tairāwhiti way of working will ensure any effort is guided by the voices that matter.

Collective agency collaboration and learning

Collective agency efforts at this scale are rarely co-ordinated. This removes the ability for any support or intervention for populations to be considered holistically.

There is an opportunity for the public sector to test working collaborativly when guided by meaningful engagement and collection of whānau and community voices.

The collective systems and processes required can be repurposed and scaled to respond to community needs in regular operations.

The co-ordination of agencies in this fashion provides a one stop shop type environment.

Regardless of entry point for whānau or community, the visibility across collective processes and systems maximises time and resources of whānau and services alike.

Next steps

A workshop for agency leaders will be held 2 May 2023 to design and develop the CI approach for recovery.

Workshops on the Tairāwhiti way of working will be held for those involved in the community engagement phase.

Once collectively aligned and with a clear engagement strategy, we will be able to develop an engagement plan.

Built environment

Built Environment Recovery

Building a resilient network is the big opportunity presented to Tairāwhiti. Building resilience into the infrastructure base at the recovery stage is often a marginal cost compared to retrofitting in the future, and the community can be confident heading into the future.

There are several things to consider when reading the Built Recovery programme:

- Roads and water assets still require assessment. This means there is an unknown quantum of damage, and the costs to remediate are broad estimates.
- Cost estimates have contingencies of between 50-100% depending on the uncertainties, risks and design development.
- A consequential OPEX cost associated with the rebuild is not factored into the estimates. This can have a significant impact on the overall rates burden.
- Winter conditions will slow work. Prioritisation of efforts to get through winter is the primary focus in the next six months.
- Sources of funding are not discussed here however, the shortfall between funded recovery (through insurance, NEMA, existing Council budgets etc) and the need for a resilient network cannot be covered by local funding sources.

The picture of resilience in the built environment is coming to light. At this stage, resilience investment needs to be clarified, but the opportunities are considerable. However, we can say that the direct opportunity cost [1] of not investing in resilience now is $1Bn.

1 The direct opportunity cost is limited to the additional capex that would be required if the resilient infrastructure investment is delayed to a future date rather than incorporating now as part of the rebuild.

Our estimated funding required to become a safe, connected and resilient community

	Immediate funding required to be safe and connected		Long term resilience funding required
Category	Spent to date ($M)	Forecast Spend ($M)	Additional cost ($M)
** Core Response (silt, recovery, LTP, risk assessment)	2.3	25.2	-
** Emergency Coordination Centre	-	-	0.8
** Communication on Wheels	-	-	$1
** Transport – GDC	17.2	305–420	200-400
** Blue Highway	-	-	12.4
** Water	2.8	32.4	73.0
** Flood Protection	-	39.8	-
** Stormwater & Wastewater	0.2	3.8	-
** Solid Waste	-	2.5	49.4
** Community facilities - Cemetery and reserves	-	2.7	2.3
** River sports storage		0.5	8.4
Transport – Waka Kotahi	3.3	Unknown	Unknown
Power	-	6.8	embedded in forecast spend
Chorus	-	-	-
Total	**25.8**	**534**	**548**

** Gisborne District Council bid.

Built environment

Transport

The destruction of critical transport infrastructure has resulted in the isolation of some rural communities, creating a challenge to provide essential services and emergency support. Also, disrupted access has created both a social and economic impact for both primary producers and the wider supply chain.

Local Roading Network

The local roading network suffered significant damage with over 3000 sites and over 180 roads affected. The rebuild for the transport network is focused around four workstreams; Repair or replacement of 61 bridges; Tiniroto Road at the Hangaroa Bluffs; Dropouts and retaining wall repairs; Silt removal and slash removal.

If building back a resilient network is the plan, then an additional $200 - 400M is needed. If the resilience needs to be incorporated later, there will be an additional $310M to retrofit in capital works alone, not to mention the risk of lost productivity and future recovery costs if the assets fail again.

	Rough order costs ($M)
Response and Recovery - full reinstatement	$320-430
Additional to building in resilience (if done now)	$185-390
Additional to building in resilience (if done later)	$310

$17.2M spent to date on local roads

State Highways – Waka Kotahi

The state highways sustained critical damage at over 130 sites across SH2, SH35 and SH38.

Waka Kotahi can only estimate the costs of recovery or building resilience into the network once the Programme Business Case (PBC) has advanced long list options to the point of pricing. This is anticipated in May 2023 and budget implications will be addressed through Transport Budgets.

Priorities identified are:

- Fast track (8-12 week) Programme Business Case (PBC).
- Project Alliance has been formed.
- Integrated planning with GDC and other key stakeholders.
- Planning to feed into Collective Impact Methodology.
- The initial use of foam bitumen to lift the resilience of SH2 north of Gisborne is the initial investment of $9M and will commence in May 2023.

Built environment

Water

Safe Water Supply

The cyclone caused significant damage to the city's primary water supply system, which resulted in a critical water shortage for both city residents and industry. This has had both a local and national impact on the economy.

In response to the damage, the team has repaired the pipeline in eight locations, however, the network remains incredibly vulnerable, and there is concern that the system could sustain more damage through the winter.

To date $2.8M has been spent on response and restoring main water services. There is a need to develop a resilient solution, this is an additional $73M but if this is undertaken now there is a likely saving of >$10M from avoiding sunk cost repairing the existing line.

Flood Protection

The flood protection network was severely damaged, leaving many residents without proper drainage and facing the risk of flooding during future rain events. The Council needs to urgently develop a plan to repair and rebuild the flood protection system to ensure the safety and well-being of its residents, as well as invest in new schemes to prevent further damage to public and private property.

The impacts of the cyclone across the flood management system is from reduced capacity in the channels due to siltation, woody debris build up at structures and stop banks that have either failed or are no longer fit for purpose.

The natural environment workstream has a critical link to the built environment workstream because of the future risk to infrastructure due to unstable sediment and woody debris in the catchment.

To date, the response costs have been included elsewhere but include removal of woody debris and silt. The investment needed to restore damaged stop banks and accelerate flood protection projects, so the flood management system is resilient and fit for purpose is $39.8M as shown below:

	Rough order costs ($M)
Catchment and river modelling	$0.5
Stop bank assets with breaches or significant erosion	$4.3
Stop bank raising and creation on critical rivers, e.g. Waipaoa western side upgrade	$35

Built environment

Stormwater and wastewater

The urban stormwater and wastewater systems did not suffer significant damage, however there are system vulnerabilities and limitations. These are generally around the ability of the systems to function during a storm, recover quickly after a storm, and the increased operating costs of dealing with higher-than-usual contaminant loads. Following storms the emergency sewer valves invariably have to be opened which results in discharges into waterways. This is not an ideal situation going forwards.

Recovery and rebuild is estimated to cost $4M and consists of the following:

- Remediation of lands from the overflow of the Te Karaka Oxidation Ponds
- High wastewater flows caused a large number of tomos to form (>30)
- Costs associated with increased use of contractors dealing with significantly increased requests for service
- Stormwater sumps, fallen trees and streambank slumps

Solid waste

There are two critical aspects to the solid waste recovery - Tokomaru Bay transfer station and how to manage the significant volume of woody debris that remains unstable within the catchments. Current plans are to relocate the transfer station to prevent flooding in weather events. The preferred option for woody debris is to install processing facilities that are owned and operated by GDC in collaboration with community partners

	Rough order costs ($M)
Relocate transfer station Tokomaru Bay	$2.6
Woody Debris processing	$49.4

"Infrastructure lays the foundation for our people, places, te taiao and businesses in Tairāwhiti to thrive."

Built environment

Emergency Coordination Centre (ECC)

The Tairāwhiti Emergency Coordination Centre (ECC) is under construction and programmed to be completed by the end of 2023. It will be the regional headquarters to manage any disaster situation for Tairāwhiti and will be the communications centre for Civil Defence Emergency Management (CDEM) groups outside our region and Government agencies.

The site is close to the hospital, a helipad will be built on land outside of the flood and tsunami inundation zones. Given the regional and national importance of the Tairāwhiti ECC and the consistent weather events impacting our region, the ECC needs more resilience in the construction and technical equipment. The short fall to complete and make the ECC resilient will cost approximately $800k.

Communication on Wheels (CoW)

Communication on Wheels (CoW) is a portable cell tower that is easily deployed and retrieved. It includes a cellular antenna, transceiver device, battery, and other necessary equipment required to provide a stable wireless mobile network as needed.

All these platforms are mounted over vehicles such as trucks or trailers, which makes the entire setup portable or, as they say, "on-wheels." Given the regional isolation of Tairāwhiti and communication loss during the recent weather events, the need has arisen for six CoWs, to be purchased and regionally placed to provide a stable wireless mobile network during network outages. To provide a stable wireless mobile network it will cost up to $1M.

Blue Highway

Access to the coast north of Gisborne is vulnerable to severe weather events.

Providing a sea-bound route offers an alternative mode of transport in the event of disrupted access where emergency response is critical. Further, restoring this network of wharfs provides an ongoing tourism opportunity to the region.

The project involves repairing and restoring wharfs at Hicks Bay, Port Awanui, Tokomaru Bay and Tolaga Bay. The total cost, including capital upgrades and ongoing consequential opex, is estimated at $12.4M (escalated to 2023 costs). Details are contained in Tairāwhiti Wharves Strategic Assessment & Indicative Business Case (February 2019).

Built environment

Power

The loss of power significantly impacted the community, with many homes and businesses left without electricity for an extended period.

First Light Network thoroughly understands the scope and scale of their rebuild and recovery efforts. These predominantly include reconnecting isolated communities and repairing main feed lines. Where opportunity for incorporating resilience exists, First Light Network is leveraging these into designs.

In total, the recovery programme has been grouped into 11 key activities detailed in the Appendix #1. These range in criticality from low to high, short to long term and with an estimated rebuild cost of 6.8M.

Chorus

Chorus is the biggest network provider in the Hawke's Bay-Gisborne area. During the cyclone, the Napier to Gisborne core fibre connection sustained five direct breaks and from Gisborne to Opotiki another four fibre breaks. All damage required immediate repair to restore services which took five days to complete. Some of the bigger overlays (2km's plus) required helicopter assistance.

Moving forward the plan is to ensure all immediate repairs are robust enough that they will be left operational for the medium term while resilience options are explored. Long term upgrades will be aligned with the reconstruction of road bridges and pavements, therefore a high level of co-ordination is necessary to ensure a dig-once approach is achieved. Most of the fibre cable aligns with state highways, although some align with local roads due to legacy alignments.

Chorus has also been thinking about how to ensure it's network is resilient. This has included moving the network at the Tokomaru Bay Bridge to a fully aerial solution, so it is independent of the bridge structure. It is also providing diversity for the Gisborne circuits. Dense Wavelength-Division Multiplexing (DWDM) equipment is being retrofitted on the East Cape fibre route, so the alternative is available for traffic in case of disruption to the Gisborne to Napier cable. Completion of this work is anticipated in May 2023.

Built environment

Community facilities - Cemetery and reserves

Council-owned reserves and facilities are important places of connection, recreation and biodiversity. During the Cyclone seven reserves sustained severe damage that will require investment in repair and remediation before they are safe for community use.

A waterway restoration project of $1.5M is required to fence, plant and conduct predator control on the waterways that damaged the reserves and facilities to aid in the prevention of damage from future weather events. The playground at the Botanical Gardens is situated on the bank of the Taruheru River and to provide resilience for future flood events it will need to be moved at a cost of $800k. Burials at Taruheru Cemetery, Gisborne's main cemetery, are currently on hold due to groundwater issues following the Cyclone. A programme of repair and remediation is required to ensure that the cemetery, home to over 20,000 internments, meets the community's needs and safety requirements.

River water sports storage

Waka Ama, kayaking and rowing are popular local sports which utilise Anzac Park and their current facilities are ageing, or not fit for purpose. Anzac Park was inundated with silt from the Waimata River which caused large scale damage to water sports facilities and equipment. A proposed facility that is flood-resilient, safe and located outside the flood zone is proposed at a cost of $8.4M as part of a resilience package that recognises the link between community connection and physical and mental wellbeing.of co-ordination is necessary to ensure a dig-once approach is achieved.

Natural environment

Natural Recovery Environment

The sustained heavy rain over the three days of the cyclone saw the region receive just under 100mm and many areas received rainfalls exceeding 200mm. Four localities had rainfalls above 500mm. The worst affected parts of the region were from Te Puia south, with damage observed over an area greater than 4,000 km² and the impacts on the natural environment were severe.

The storm caused widespread severe flooding, river channel changes, landslides and landslide dams, and the mobilisation of large woody debris which resulted in multiple cascading impacts. Quantifying those impacts and finding solutions to the issues that arise is a complex task that will take several years.

Natural Environment Data

The early focus of the Natural Environment workstream is centred around working with MBIE, and LINZ to ensure the acquisition of the spatial data necessary to inform the recovery in the natural environment.

Satellite imagery was obtained which confirmed areas of priority to capture aerial imagery which has now been largely completed. Further data is required to inform the next steps to ensure that robust and informed decisions are made. This information is key to supporting the Built, Economic and Social Environments of recovery as those functions require accurate and credible information to inform the overall recovery process.

Priorities are understanding and establishing the:

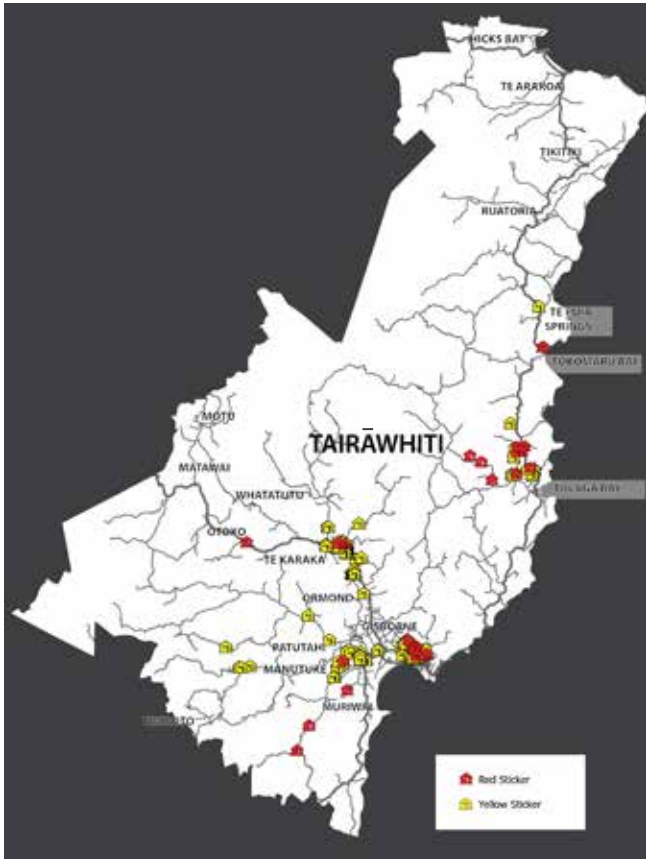
- future risks from flooding and riverbank erosion.
- area and volume of soil lost from hill country farms.
- area of forestry lost due to landslides and the cost of this to the community including future potential damage to infrastructure and the natural environment.
- volume of sediment deposited on the flood plains and the impact this will have on agriculture and horticulture as well as future flood risk.
- risk to the Gisborne City water supply from landslides.
- risk to communities from landslide dam breach.

The total costs needed to undertake the investigations is estimated at $3.6M.

Natural environment

Managed retreat

Council initially undertook high-level rapid assessments of houses following Cyclone Gabrielle. In parallel to the ongoing rapid housing assessments, a desk-top exercise has been completed which overlays the consideration of risk posed by landslides, natural hazard layer, liquefaction risks and aerial imagery. This work will inform detailed assessments and zoning of areas, if repair and/or rebuild is considered or whether retreat is the safest option.



Once determinations are made, community consultation will be required. In some cases swift action may be required in order to prevent impacts from future weather events.

Further assessments are needed to understand the impacts of the cumulative effects of the eight weather events over the last 18 months.. The below table highlights the most important assessments required which will enable analysis of the interdependencies between the natural environment, and the built, economic and social environments.

	Immediate funding required to be safe and connected		**Long term resilience funding required**
Category	Spent to date ($M))	Forecast Spend ($M)	Additional cost ($M)
Spatial Data Acquisition	$0.2	$0.18	-
Flood Risk Assessment	$0.1	$0.28	$0.05
Provision of a new flood model	-	$0.54	$0.5
Landslides and sediment generation	$0.1	$0.21	$0.04
River erosion impacts	$0.1	$0.25	-
Analysis of large woody debris	$0.05	$0.1	$0.3
Improved real-time weather nowcasting	-	$0.05	$0.2
Impacts on Kai moana, Mahinga kai and biodiversity	$0.4	$0.8	$0.1
Total		**$2.41**	**$1.19**

Natural environment

Ongoing reviews, and updated information and provisions under the Resource Management Act will ensure future developments are not placed in high-risk areas.

This work contributes to the Cyclone Gabrielle Recovery Taskforce led by Sir Brian Roche. However in order to reach the outcomes being requested additional resource provision is required.

While certain decisions are being made, there has been no community engagement, or whānau involvement in the discussions to date. It is a priority to ensure the views of insurance, EQC, Council and communities are captured to reach a safe and acceptable outcome for either repairing, rebuilding, or retreating.

Silt Removal

As a result of the cyclone, silt was deposited around and underneath homes that sit on piles or concrete ring foundations in areas affected by flooding. Affected areas include Te Karaka, Inner Kaiti, Mangapapa, Manutuke, Waipaoa, and Tolaga Bay.

A total of 127 homes have registered with Council for silt removal and the maximum number of homes which may require silt removal is 231. It is estimated that on average it will take two days to complete silt removal from each house using a combination of manual and mechanical methods at an average cost of $10,000 per house (only residential). The cost provision of silt removal under homes is included in the built environment core response forecast spend total.

Climate Change, Resilience and Adaptation

Over the last 18 months, Tairāwhiti has been reminded of the vulnerability posed by natural hazards and how risks will increase as the climate changes. There is a programme of work underway to better understand natural hazards in the region and the risk posed to the natural, built, economic and social environments because of climate change. To fast track this programme of work there is a need to prioritise place-based adaptation planning.

Alongside this we need to consider how built infrastructure and land development can adapt to a changing climate. This includes the incorporation of nature-based infrastructure such as dune systems and wetlands to increase resilience to a changing climate.

Programme/ Initiative	Purpose	Immediate funding required to be protected and connected ($M)
Water resilience programme	$50k currently funded	0.25
Nature based infrastructure research		0.5
Wetland creation		1.5
Sand dune rehabilitation		0.5

Natural environment

Jobs for Nature (J4N)

In 2020 following COVID-19, Jobs for Nature (J4N) provided a significant investment in employment and biodiversity outcomes across Tairāwhiti. Twenty projects were funded with a total $65M investment over three years.

J4N has strengthened and enhanced organisational capability, capacity, infrastructure, and networks and following Cyclone Gabrielle there is an opportunity to build on these foundations to realise even greater value. Investment in the continuation of J4N within Tairāwhiti will position our region to respond to climate change with Tairāwhiti-based solutions that achieve sustainable benefits and value for future generations.

Programme/ Initiative	Purpose	Cost
J4N	Continuation of 20 J4N projects to refocus on recovery for the next 3-5 years.	$65M

J4N projects have been at the forefront of response and recovery following Cyclone Gabrielle. The benefits of established and highly skilled teams within communities that are at risk from weather events and disasters has been proven during Cyclone Gabrielle with the mobilisation of J4N teams in welfare, silt clearing, welfare, and community engagement. There is a risk that the funding for the existing J4N projects will come to an end without certainty of future funding opportunities. An investment in the continuation of J4N will secure employment, retain skills within the region, contribute to the restoration of biodiversity and te taiao with a focus on climate action and response. The continuation of J4N funding will have multiple social, cultural, economic, and environmental benefits and will support recovery.

Economic environment

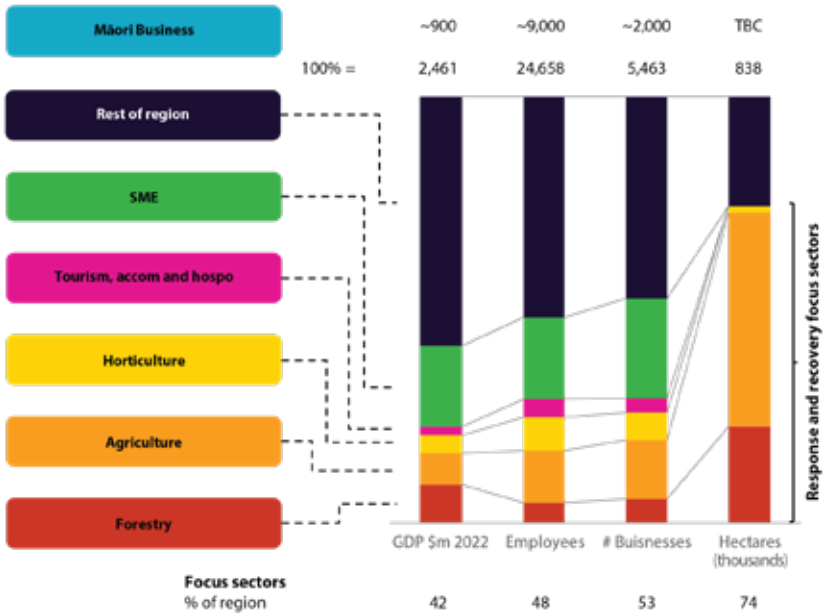
Economic Recovery

Economic Recovery is focused efforts on five response and recovery sectors of the economy: Forestry, Agriculture, Small-to-medium sized enterprises (SME), Tourism / Accommodation / Hospitality.

The sectors were identified in early, post-Gabrielle, discussions with stakeholder groups as having experienced significant loss and representing a large proportion of the business economy and land use in Tairāwhiti.

In total, the five sectors represent ~42% of the regional GDP ($1Bn), around half the number of employees and businesses (~12,000 and 3,000 respectively) and 74% of the land in the region (622,000 hectares).

A snapshot of the Tairawhiti economy and land use



Māori business was explored as a specific sector however challenges with consistently identifying the Māori economy in isolation of the sector data precluded their quantitative inclusion in each segment. Very preliminary estimates of the size of the Māori business economy are included here however further work is required to both define these businesses and quantitatively estimate key metrics.

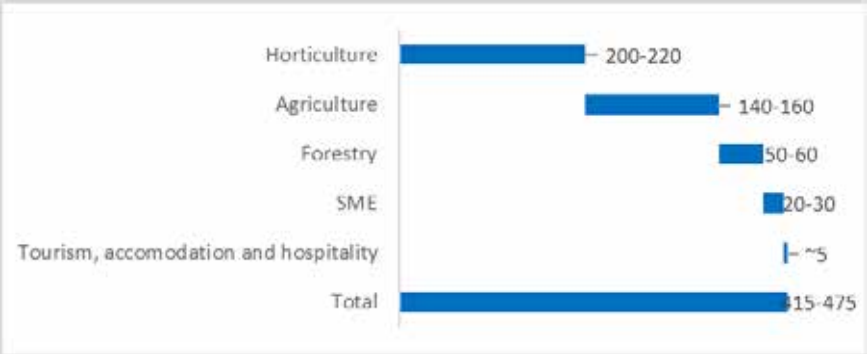
Economic environment

Total direct losses are estimated to be $400-500M over 3-5 years

Economic losses resulting from Cyclone Gabrielle were estimated for the focus sectors. Estimates are based on changes to business-as-usual revenues (price and volume) and / or operating costs (price and volume based) and one-off costs e.g. clean up or infrastructure replacement. These losses considered both immediate losses but also the longer-term economic impacts. Total losses are estimated at $415-475M over the next 3-5 years.

Losses for Tourism/Hospitality/Accommodation, Māori business and SME are based on self-stated losses sourced from Cyclone Gabrielle grant applications. The question asked, "What is the expected total loss of income your business will incur within the time period of 14 February 2023 to 31 March 2023?" was answered by 793 grant applicants. Māori business is not included in the chart as it isn't additive and is estimated be a subset of $20-30M amongst these sectors.

Horticulture, agriculture and forestry groups were formed with support of Trust Tairāwhiti to represent their business communities. Loss estimates for these sectors are based on analysis undertaken by these sector groups and aggregated by Trust Tairāwhti.



Economic environment

Losses were characterised across ten different 'loss types' which were common in many cases e.g. FY24 crop loss impacted all land based sectors. For each loss type, where relevant to that sector, sector representatives estimated the costs their sector would bear e.g. the number of km of fencing lost and the cost of reinstatement, the cost of lost trees or forgone earnings from logging. Loss estimates spanned 5+ financial years e.g. immediate clean-up of silt in FY23/24 versus perennial crop loss that might flow into future years.

Loss	Description	Rough order costs ($M)
Access to cash	Inability to pay for or receive monies needed for a business e.g. electronic payments not accepted in cafes e.g. The failure of cash and ATM systems was cited in surveys as an issue however has not been quantified here.	Not estimated
Immediate Clean-up	Removal of silt, water, slash, replacement of damaged stock and materials. Forestry and Ag referenced slash issues while silt seems a bigger problem for horticulture.	$20-25
Crop/stock loss from event	Losses immediately from the weather event or immediately thereafter e.g. rot from water. May include quality downgrade e.g. moving from export to domestic quality. Forestry, perennial and seasonal crop losses caused by flooding, silt damage, slash or slips. Still high uncertainty around the scale of loss across price and volume.	$80-90
Cost super-inflation	Higher costs incurred in order to overcome constraints and keep operating e.g. paying for trucked in water for vegetable processing. Higher costs were seen particularly in freight which was tightly constrained. In some cases this was price gouging and in others simply higher input costs e.g. longer distances, using a helicopter to access sites instead of a bike.	$40-50
Volume impacts from upstream/downstream value chain constraints	Inability to provide a product or service due to other value chain issues e.g. freight companies lose revenue as no logs available to move; manufacturers lacking water to operate; abattoir closed due to lack of animals, processor losses e.g. packhouse or mills who simply did not have enough stock. Logging crews unable to get to work or get trucks out of the forest to port. Includes loss of connection (roads, flights).	$50-60
Infrastructure loss within the business	Fencing, trellis, physical resilience (e.g. damage to banks) and extends to private roads and culverts that are damaged or destroyed. This was primarily fencing loss, on-farm roads and culverts.	$25-30
Perennial crop productivity capacity loss	Trees, vines, lands, water changes mean future crops [more generic term] are at risk or damaged. Yield losses to orchards and processors as perennial yield returns to 100% across hectares impacted for apples, grapes, citrus and kiwifruit. Losses extend to 2030 in some case but captured in this time.	$120-130
Annual crop replant loss	Annual crops cannot be planted in time due to constraints e.g. land, infrastructure, labour, finance. Primarily loss of productive grass / grazing land in agriculture. Productivity loss of income driven by the land slip area 9.5% (FY24), 4.8% (FY25) and 2.5% (FY26)	$80-90
Productive land use loss or heightened	Land may be operable now but have heightened real or perceived risk about its are ongoing use. These losses have not been quantitatively estimated but are considered real and materials in some cases.	Not estimated
Funding	Inability or difficulty to retain or gain banking finance of acceptable terms. No response from banks to questions around balance sheet and loan book robustness. This is considered to be a risk that warrants further exploration.	Not estimated

Social environment

Social Recovery Environment

Recovery in the social environment encompasses the safety and wellbeing, health and welfare of the community, individually and collectively.

Community recovery is most effective at the local level with active participation of communities using local expertise drawn from whānau voice and collective experience.

For recovery efforts to be successful, informed community engagement that is supported by a coordinated approach is vital to achieving outcomes:

- Putting whānau and communities at the centre of the system.
- Timely and accurate information sharing that respects the privacy and dignity of whānau and communities.
- Improving the collective understanding of the diverse needs and issues of our communities and ensuring the right service at the right time.

Ensuring government agencies are joined up, connected and working as one will be another key piece of work in the social environment.

Housing Stickers
30 reds
202 yellow
14 imminent risk
182 whānau registered for Temporary Accommodation Service

2 schools with significant damage
14 schools with access issues

Marae clean ups are underway
$200k each to 2 marae to focus on silt removal and clean up
3 Marae under assesment

127 homes requested silt removal
100 completed

Mayoral Relief fund figures
$2.4m public donations received / $1m from central govt
$2.120 allocated to date

3.0% increase in those receiving a main benefit post cyclone
80% on a main benefit are Māori
9219 people received civil defence payments = $7m

Decline in GP visits post cyclone

Increased heightened negative behaviours in 11 and 12 year olds.

162 displaced whānau contacted
- Mental wellbeing concerns
- Financial concerns
- Insurance not moving fast enough

80% Family harm increase post cyclone
March 2022 266
March 2023 422

Social environment

Social Wellbeing Funding

In the wake of Cyclone Gabrielle, we have a responsibility to ensure that communities can participate meaningfully in the recovery process. Anxiety, fear, isolation, and mental health factors all present barriers to individual's and community's abilities to engage with recovery. Communication and engagement with communities will be vital to overcome these barriers and prioritise community voice and wellbeing within the recovery. Community engagement must be tailored to the needs of the relevant communities and be fit for purpose.

The proposal for the welfare stream is to facilitate and fund initiatives and projects which are focussed on building connected and empowered communities. A collaborative approach that engages with existing networks and local organisations is the model that will allow reach into communities that might otherwise not engage with the recovery process. This will involve work with trusted local partners and community leaders on projects driven by community voice and need.

Examples of potential projects and initiatives are community gardens, sports tournaments and events, Matariki celebrations, preparedness workshops, skill sharing sessions and table talk sessions.

Programme/Initiative	Purpose	Cost
Social Wellbeing Recovery Fund within the Office of Recovery Tairāwhiti	Support welfare needs of individuals and whānau. Ensuring information and services are accessible across government agencies and service providers.	$2M per annum

" I am struggling with a bit of anxiety about what the future looks like, we feel like 'sitting ducks' - we need to know what is being done to help us make decisions and live our lives without fear."

Tairāwhiti resident

Social environment

Community Connection and Support

Anecdotal evidence from whānau is there is a feeling of hopelessness associated with a lack of progress and support.

To rebuild community and help facilitate equitable outcomes across those affected there will be an ongoing need for community connectivity and navigation. Mitigation of the ongoing stress of cleaning up properties as well as being disconnected from their homes and communities, will be essential to recovery. Navigation across the social environment will help whānau recover across health, education, employment and housing.

This can be met through an expansion or continued support of the Ministry of Social Development's Community Connectors who were stood up during COVID-19 to support in a similar way.

Programme/Initiative	Purpose	Cost
Community Connection Service	The Community Connection service supports the welfare needs of individuals and whānau. Community Connectors navigate and connect individuals and whānau to various services available following the impacts of the recent floods and Cyclone Gabrielle.	$1.7 M per annum for the provision of 10 dedicated FTEs and a discretionary budget of $50,000 per FTE
Lottery Emergency Natural Disaster Relief (ENDR) Fund (DIA)	Lottery funding with local decision-making to support communities and community groups with immediate response and early recovery activities	$1M

Social environment

Cultural impacts and cultural cohesion

Six Tairāwhiti Marae have been severely impacted by the event. Te Puni Kokiri is in the process of funding five marae who have been impacted by Cyclone Gabrielle detailed in the table below:

Marae identified with damage	
Puketawai in Kaiaua	Received $200k to support clean up, repairs and silt removal.
Mangatuna in Uawa	Received $200k to support clean up, repairs and silt removal.
Te Wainui in Whatatutu	Being assessed
Takipu in Te Karaka	Being assessed
Rangatira in Waikohu	Being assessed

An emphasis for recovery will be understanding what resilience looks like for marae, urupā, wāhi tapu, sites of significance, pātaka kai and mahinga kai. These marae will need support to wānanga what recovery and readiness for any future events looks like for them and to continue their cultural practices.

Although current assessments of marae may have indicated that they are not impacted physically by the event, there will be a component of readiness that needs to be addressed and supported as part of recovery.

Programme/ Initiative	Purpose	Cost
Cultural Cohesion Recovery Fund	Fund to meet the bespoke needs of marae during recovery to not only restore and recover but empower and enable to plan for the future of their natural and cultural environment and disaster management.	$1.5M for 70 operational marae across Tairāwhiti

Social environment

Housing

Housing supply continues to be a complex issue in Tairāwhiti. This issue existed prior to Cyclone Gabrielle and the impact of the cyclone on more than 300 homes has exacerbated the issue. Tairāwhiti has a robust housing plan for the region. Our recovery will work in with established strategies, groups and functions to support already established aspirations and goals of the community.

As at 27 April 2023 there were 177 whānau registered with the Temporary Accommodation Service (TAS) with Ministry of Business Innovation & Employment (MBIE). From 1 May 2023 TAS will be charging part payment for those who require temporary accommodation. MSD will be able to provide an accommodation supplement. We know this is causing anxieties and stresses and that navigating the return home or into sustainable long term homes may be a drawn out process for some whānau.

The Ministry of Housing and Urban Development (MHUD) has repurposed existing funding through Toitū Tairāwhiti to use part of their Whai Kāinga Whai Oranga prototype funding to build and deliver 100 temporary homes for impacted whānau. This provides immediate housing to whānau whose houses were directly impacted by the event.

Housing Stickers

Programme/ Initiative	Purpose	Cost
Housing Navigation Services	Support welfare needs of individuals and whānau as they transition from temporary housing into more sustainable long term housing.	$600k to support 5 FTE to support existing providers.
Whare Awhina Project (immediate temporary housing proposal from iwi through Toitū Tairāwhiti Housing Limited)	Provide immediate housing for affected whānau. Central Government has supported the proposal to use part of Whai Kāinga Whai Oranga prototype funding to build and deliver 100 temporary homes. working closely with Toitū Tairāwhiti to support this delivery.	$10 - $12M

Social environment

Education

Priority areas for recovery for the Ministry of Education (MOE) include:

- remediation of schools and kura property
- support for Early Childhood Education and Kohanga Reo
- school and kura leadership support for rural schools
- psycho-social support in schools.

MOE has noted an increase in disruptive behaviour in schools post-cyclone. It has started a programme of support for staff and students which includes trauma informed training, identifying emerging issues and providing ongoing training to support psycho-social recovery.

To ensure schools are able to continue to support staff and students, recovery will likely need counselling support in all schools and kura in Tairāwhiti.

Programme/ Initiative	Purpose	Cost
Psycho-social support	Additional counselling for students, whānau and staff	TBC
Remediation of schools and kura	Fix damaged property for minimum of 2 schools	TBC
Support for Early Learning and Kohanga Reo	Funding support to cover costs not covered by insurance for Early childhood and Kohanga Reo learners	TBC
School and kura leadership support	Leadership advisor to support rural Principals of Rural and East Coast schools	TBC

Social environment

Health

Te Whatu Ora is developing it's own recovery planning which will support regional recovery in Tairāwhiti.

During Cyclone Gabrielle the medical supply chain was impacted which meant access to medications and other health resources worsened from an already poor baseline. As part of recovery and preparedness, planning considerations will be given on how to hold and distribute medications for the provision of acute services, long term patients and at home care to ensure sufficient regional supply.

The Public Health focus is on healthy homes. Assessments and advice on cleaning of mould will reduce mould build up. That is, use of dehumidifiers and chemicals like 'damp rid' and encouraging ventilation. However, there is significant hesitancy from whānau that having homes assessed will result in them being displaced. A healthy home campaign will be prioritised alongside the built environment workstream as some of the houses need significant retrofitting to make them warm and dry, to meet the healthy homes standards.

There is also a drive from the community for training in first aid, use of defibrillators and use of first aid trauma kits.

The psycho-social impacts due to stress of personal and financial loss, job insecurity and hopelessness caused by damage and loss will require additional support for communities impacted.

The psycho-social response is a holistic approach and will be informed by local knowledge and supported by All of Government. Over the next 24 months Te Aka Whai Ora and Te Whatu Ora will work with Tairāwhiti iwi and providers in the development and delivery of a short, medium and long-term psycho-social recovery response as part of the overall welfare response.

The number of displaced people and households with yellow and red stickered houses as well as financial hardship will place pressure on already crowded households and the potential associated with communicable disease e.g. respiratory illnesses. COVID-19 cases may increase in the coming winter season as well as ongoing issues of gastroenteritis, skin infections, leptospirosis from post- cyclone clean up.

Social environment

Employment

MSD is responsible for activating and administering Civil Defence Payments during and immediately post disaster. As of 15 April 2023, 9,219 people received Civil Defence Payments in Tairāwhiti totalling $7M.

MSD has noted some Tairāwhiti benefit trends and numbers since the event. Benefit numbers for Tairāwhiti have increased 5.4% since the event. Benefit numbers are significantly higher for Māori in Tairāwhiti in comparison to European. 80% of those on a main benefit are Māori.

It is hard to comment on trends as Tairāwhiti has been dealing with the impacts of COVID-19 prior to Cyclone Gabrielle and this has impacted the workforce in different ways. Benefit numbers had been trending downwards but we have seen an increase since the event.

Initiatives, including support from MSD, are focussed on clean-up efforts and ensuring employers and workers are supported with existing products and services, as well as allocating resources to enable frontline staff to engage directly with people in their communities.

As the clean-up ends and we move into the recovery and rebuild phases, MSD will play a key role in providing employment support to impacted industries. It will use new and existing products and services to help support those at risk of becoming long-term beneficiaries or are disadvantaged in the labour market.

The focus of the table to the right will allow affected industry and business to retain, develop and move into a stable environment to support recovery.

Programme/ Initiative	Purpose	Cost
Employment, Retention, and Training	Upskill and support personnel, specific to better build construction/infrastructure and community based social and health services post- cyclone Gabrielle.	$10M
Enhanced Taskforce Green (ETFG)	Local councils may engage with Work and Income to make appropriate arrangements for Enhanced Task force Green (ETFG) workers and supervisors to assist with clean-up projects.	TBC Potential inhouse costs: - Wages - PPE - Hire of light equipment - Administration
Skills for Industry	Skills for Industry partnerships can be quickly established and pivoted to support recovery efforts, particularly gaps and upskilling the labour market space. This supports deployment and new labour supply to quickly build capacity within industry.	May be supported by aforementioned funding
Regional Skills Development HUB	Jobs and Skills Hubs are a no-cost recruitment and training facilitation service to support construction and infrastructure sectors. They support major projects which improve employment and skills outcomes for communities through close collaboration between government agencies, employers and industry partners.	TBC

Our summary

The cornerstone for our recovery programme is the importance of community-led recovery plans through our Collective Impact framework. Collective Impact places whānau, hapū, iwi and community at the centre of engagement and ensures that communities lead conversations that determine how they wish to live their lives. In all four environments, Collective Impact will determine future plans. Collective impact involves commitment, coordination and collaboration across our Tairāwhiti public sector community.

In supporting community-led recovery plans, Council focus is on ensuring safe, protected, and connected communities.

Safe and protected communities supports communities to be prepared for further events, reduces risk factors which make people vulnerable such as the risk of future flooding or protecting our water supply. When communities are connected whānau are able to fully participate, engage, communicate and be healthy.

Prioritising our mahi within environments in the short to medium term is our focus while we develop and implement our collective impact approach. Our future mahi will evolve as those community plans are developed.

Tairāwhitis' long-term resilience cost for all environments is summerised in the tables to the right. This paints a picture for Government on what costs are likely to be. Our "build back better" will not occur without significant investment in all environments.

Collective Impact	Immediate funding required to be safe, protected and connected ($M)	Resilience ($M)	New Funding required ($M)
Community Engagement	0.5	-	0.5

Built Environment	Immediate funding required to be safe, protected and connected ($M)	Resilience ($M)	New Funding required ($M)
Total funding requested for Built Environment	534	547	1Bn

Natural Environment	Immediate funding required to be safe, protected and connected ($M)	Resilience ($M)	New Funding required ($M)
Total funding requested for Natural Environment	5.16	66.2	71.4

Social Environment	Immediate funding required to be safe, protected and connected ($M)	Resilience ($M)	New Funding required ($M)
Total funding requested for Social Environment	15.8	-	15.8

A detailed breakdown for each environment is included in the following pages.

Our funding requests

Built	Immediate funding required to be safe, protected and connected ($M)	Funding required for resilience ($M)
** Core response (silt, recovery, LTP, risk assesments)	25.2	-
** Emergency Coordination Centre	0.8	
** Communication on Wheels	1	
**Transport (GDC)	305 - 420	200 - 400
** Blue highway		$12.4
** Water	32.4	$73
** Flood Protection	39.8	
** Stormwater / Wastewater	3.8	
** Solid Waste	2.5	49.4
** Community facilities - Cemetery and reserves	2.7	2.3
** River water sports storage	0.54	8.4
Transport - Waka Kotahi	unknown	unknown
Power	$6.8	embedded in forecast spend
Chorus	-	-
Total	$534	$547

** Gisborne District Council bid.

Natural	Immediate funding required to be safe, protected and connected ($M)	Funding required for resilience ($M)
** Spatial Data Acquisition	0.18	-
** Flood Risk Assessment	0.28	0.05
** Provision of New Flood Model	0.54	0.5
** Landslides and sediment generation	0.21	0.04
** River Erosion Impacts	0.25	-
** Analysis of Large Woody Debris	0.1	0.3
** Improved real-time weather nowcasting	0.05	0.2
** Impacts on Kai Moana, Mahinga Kai & Biodiversity	0.8	0.1
** Water Resilience Programme	0.25	-
** Nature based Infrastructure Research	0.5	-
** Wetland Creation	1.5	-
** Sand Dune Rehabilitation	0.5	-
Jobs for Nature	-	65
Total	5.16M	66.2M

Social	Immediate funding required to be safe, protected and connected ($M)
Social Wellbeing Recovery Fund with ORT	2
Community Connection Service	1.7
Cultural Cohesion Recovery Fund	1.5
HUD/MSD Housing Navigation Services	0.6
MSD Employment, Retention and Training	10
Total	15.8

Appendix #1

Built environment activities

TOPIC *Infrastructure type and Sub-category*	DESCRIPTION *Criticality* *(*Low, ** Medium, *** High)*	COST $ *(M = Million)*	TIMEFRAME *Completion time (Short, Medium, Long)* *Resilience Opportunity (Y = Yes)*		CONSEQUENCES
Local Roads					
Initial Response	To reopen roading network to a patched state where normal activities are returned and functioning ***	60	Short	Y	Major restraints for heavy freight and reconnecting communities
S1 Bridge repairs/replacement	Investigations, designs and optioneering to restore bridge assets to pre -Gabrielle levels ***	160	Long	Y	Major restraints for heavy freight and reconnecting communities
S2 Silt removal	Rebuild roadside drainage network to pre-Gabrielle levels ***	20	Short	TBC	Environmental management and restoring drainage networks
S3 Dropouts and retaining structures	Rebuild roading network to pre-Gabrielle levels **	105	Medium	Y	Restraints for heavy freight and communities
S4 Tiniroto Road	1400m of Tiniroto road in a narrow gorge was undermined and river protection works compromised, **	50	Medium	Y	Major restraints for heavy freight and reconnecting communities
S5 Catchment slash removal	Investigation to remove remaining wood debris in catchments (project not eligible for Waka Kotahi funding) ***	95	Medium	TBC	Restored assets at risk of repeat damage if District has a reoccurring Gabrielle type event.
Water Supply					
Waingake Water Supply	Waingake water supply pipeline and pipe bridge reinstatement ***	11	Short	TBC	Major - main water supply to Gisborne City
Waingake Water Treatment Plant	Add new prefiltration and sludge management system to existing treatment plant ***	7	Short	Y	Major - If heavy rain causes Waingake River to dirty, may need return to Extreme water restrictions
City water supply increased operational costs	Opex costs associated with running Waipaoa Water Treatment Augmentation Plant at full capacity ***	2	Short	TBC	Major - main water supply to Gisborne City
City alternative water supply review/research	Review/case for alternative water supply to vulnerable 40km water supply pipeline ***	0.7	Medium	Y	Potentially Major if/when equivalent cyclone to Gabrielle (or worse) were to occur
City alternative water supply	Resilience improvements and/or alternative water supply to vulnerable 40km water supply pipeline ***	73	Short	Y	Potentially Major if/when equivalent cyclone to Gabrielle (or worse) were to occur

Built environment activities

Waipaoa Treatment Plant	Upgrade infiltration galleries, intake and air scour system to fix issues associated with using turbid river water ***	3.5	Short	Y	Major - Waipaoa Treatment Plant needed to operate 24/7 at maximum capacity to supply Gisborne post Gabrielle
Te Karaka rural area	Upgrade of Te Karaka water intake bores to infiltration gallery **	0.3	Short	Y	Medium - Insufficient water supply from current rain tanks
Nelson Rd bore emergency works	New pipework for connection to Leaderbrand bore *	0.4	Short	Y	Low - Water difficult to treat
Waingake access roads and fords reinstatement	Restoration of access roads and fords to Waingake water pipeline and assets ***	1	Short	Y	Major - access critical to repair Waingake pipeline and pipe bridges
Community Water Supply Resilience	Four new additional water reservoirs and pumps **	3	Medium	Y	Medium - loss of water from Waingake Treatment Plant leaves community
Te Arai swing bridge resilience	Replace vulnerable treated water supply pipeline over Te Arai Swing bridge and route under Te Arai river ***	2	Medium	Y	Major - loss of main water supply to Gisborne City
Ruatoria treated water supply	Create a treated water supply top up facility **	1.5	Medium	Y	Medium - treated water supply for Ruatoria before and during Gabrielle type event
Te Karaka Oxidation Ponds	Remediation of lands from overflow of TK Oxidation Ponds **	0.3	Short	TBC	High - health issues associated with oxidation pond material
Lytton Rd Tomos	High wastewater flows caused Tomos to form under Lytton Rd ***	2	Short	TBC	High - health and transport issues associated with 2 tomos and broken wastewater pipe at Lytton Rd roundabout
Wastewater - Increased operational costs	***	0.3	Short	TBC	High
Urban Stormwater0.4					
Stormwater increased operational costs	Costs associated with increased contractor use dealing with significantly increased RFS numbers *	0.4	Short	TBC	Low
Stormwater network repairs	Stormwater sumps, fallen trees, streambank slumps ***	0.8	Short	TBC	High - returning network to existing levels of service
Flood Management					
Telemetry OPEX	Catchment and river modelling **	0.5	M	TBC	Medium - need to better prepare for future Gabrielle type events
Fixing damaged stop bank assets	Stop bank assets with breaches or significant erosion ***	4.3	M	TBC	Major - failure of stopbanks during significant event

Accelerated Flood protection areas	Stop bank raising and creation on critical rivers, eg Waipaoa western side upgrade ***	23	Short	Y	Major - loss of life and significant loss of property
State Highways – Waka Kotahi					
Initial response	***	3.25	Short	TBC	
State highway recovery	***	3.25	Short	TBC	
State highway resilience	Foam bitumen stabilisation of 12km of SH2 north of Gisborne to improve reliability of the route. Contributes to resilient networks. ***	9	Short	TBC	Continual pavement failures through this route are having impacts on system performance.
Chorus					
Initial response	Direct buried fibre cable, damaged in 5 locations between Wairoa and Napier, and 4 locations between Gisborne and Opotiki Temporary repairs are in a position that they are robust and fit for purpose until the roading is repaired. ***	Self-insured - no cost provided	Short	Y	Major disruption to communications channels. Isolation for communities and industry.
Permeant reinstatement	Permeant is aligned with roading reconstruction	Self-insured - no cost provided	Long	Y	
BAU reconnections	Localised areas of countryside where network connectivity is disrupted. His is an ongoing effort for recovery and is within BAU capacity.	Self-insured - no cost provided		TBC	
Power					
Power	Currently we have a few areas where we have restored power but there is no road access, i.e. Bushy Knoll Road and Paparatu. We now have a fault in one of those areas that we need to get to fix but only way in is Helicopter. Who pays? What would normally happen is we would drive there and fix it, if it is a network fault we pay, if it is private the person pays. We would not fly to fix a normal fault and now we do not have bridges is this something CD will pick up? This is for both Gisborne and Wairoa. **	0.02	Medium	TBC	Delays to minor repairs or high cost to undertake minor repairs
Resilience Planning	East Cape Road, we have 25 connections out there. We have got them connected but the lines run out along the coast road and every time we have a storm, we loss those lines. We need to work with the community there to look at some other options. Will be long term. *	1	Long	Y	Potential loss of service during mild to moderate storm events

Built environment activities

Ihungia Network Link	We have a major network link around the Ihungia road which runs up to the Mata Road and back down to Toko. There is significant forestry in this area, and we need to work with Forest and landowners to look at the corridors as trees are coming down everywhere, we will look at some realignments to protect our lines. Again, this is a long-term issue and will take time, we are hoping we get some support from the current tree regulation review to help. **	0.5	Medium	Y	Potential loss of service during moderate storm events
Power	North of Toko we have 1 km of line in the gorge there where the road has been washed away. We are working with NZTA and local landowner to realign this line out of the road and away from the river. This will occur in the next 1 to 2 weeks. ***	0	Short	TBC	Loss of service to community and industry
Tower Reinforcement	Reinforcement of the tower structures behind the toko substation. A temporary fix has occurred, but more sheet piling will be undertaken to secure that tower. The issue here is the river is taking the land and there may need to be a long-term solution developed to move it out of the rivers way. ***	2	Short	Y	Loss of service to community and industry
Power	South of Toko and North of Tolaga - issue 1 One is a realignment of poles to enable the placement of the bailey bridge at Hikuwai. We have a plan and that will happen next week. We have to move 4 to 5 poles and are also working with Chorus to let them put their fibre on the poles also. ***	0	Short	TBC	
Power	South of Toko and North of Tolaga - issue 2 The second site is a rebuild of our 50kv line which provide the power to the coast. A number of poles have been washed away. One positive is 3 months ago we converted the old 110kv line which runs up the coast to Toko to a 50kv line. This meant when the other 50kv line got washed out we still had power to the coast. This was a resilience plan we already had. ***	0.15	Short	TBC	Limited-service level due to reduced capacity
Power	Hokoroa road we have an internal radio comms site. The lines are down again due to trees and this site is running on its backup generator (all our comms sites have permanent back up). For this site we will be installing a standalone power solution (Base Power renewable energy systems provide standalone systems. | Base Power) to power this site permanently and will not repair the line. These units are what we are looking at through the region as an alternative in some cases. ***	0.4	Short	Y	Loss of communication both Radio and our automated switching ability across our Network

Built environment activities

Power	Our main transmission line from Tuai to Gisborne has a number of large landslides near our towers. Work is happening to secure a couple of the worst sites and then our risk management plan will be updated to ensure the ongoing risk is managed. It needs to be noted these lines are the only power feed for the region and have been managed this way since we have owned them. There is no greater risk today than there was before the event but we now just need to monitor an bit more often. ***	3	Long	Y	Potential loss of service during moderate storm events
Power	Wairoa we also have some realignment issues to deal with, considerable forestry related damage that will require realignments or alternative plans. **	0.01	Medium	TBC	Delays to minor repairs or high cost to undertake minor repairs
Power	The private service main that runs down to the water pump for the Te Puia hospital is always impacted by trees falling. There needs to be a long term solution worked through wit the tree owners to remove this risk ***	0.2	Medium	Y	Hospital has no water, they have to run a generator
Blue Highway					
Blue Highway	Repair and restoration of wharfs at Hicks Bay, Port Awanui, Tokomaru Bay and Tologa Bay. This provides an alternative transport route in emergency response situations. Details are contained in Tairāwhiti Wharves Strategic Assessment & Indicative Business Case (February 2019). Cost estimates increased with design (15%), contingency (40%) and escalation (15%pa for 4 years)**	13	Medium	Y	No alternative route in case of emergency.