Independent Review of Catastrophic Event Remediation Expenditures

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Executive Summary

Following the damage caused by Cyclone Gabrielle in February 2023, Firstlight Network intends to make an application to the Commerce Commission to reopen its default price quality path.

To support its application, Firstlight Network has sought an independent review of the actual expenditures incurred, and the forecast expenditures expected to be incurred, for mitigating and remediating the effects of Cyclone Gabrielle as a catastrophic event. The independent review was needed to analyse:

- if all projects (in Appendix B) were (and are) reasonably necessary to mitigate the effects of the catastrophic event;
- how it was determined that the projects were reasonably necessary to mitigate the effect of the catastrophic event;
- the reasonability of any particular judgments made by Firstlight staff when including (or excluding) an item or its associated value in (or from) appendix B; and
- any other matters arising.

The report structure follows the terms of reference. Section 2 describes which projects were (or are) necessary to mitigate Gabrielle's effects. Section 3 describes how the projects were assessed. Section 4 covers the reasonability of the judgements made about the projects. Section 5 considers other matters such as field service delivery arrangements, project delivery efficiency and cost reasonability, and Section 6 provides summary recommendations.

The analysis found that the costs in Appendix B were necessary to reasonably mitigate the effects of Cyclone Gabrielle as a catastrophic event except for the following items:

RY 2023 Opex or Capex Project	**Finding**	**Appendix B Recommendation**
Fault management fee	Would have been incurred if Gabrielle had not occurred	Exclude
Load Control Fault response	Could not be specifically linked with Gabrielle	Exclude
Age Replacement of 50kV ABS's	Likely contains betterment	Exclude
Replace Comms Equipment	Could not be specifically linked to Gabrielle	Exclude
Capital on-costs	Could have been applied to accommodate internal design and project management activities	To be noted

RY 2024 Opex or Capex Project	**Finding**	**Appendix B Recommendation**
Reinstatement of bridges (3x) and access tracks to towers that have washed away	Some of this activity would likely have to be expensed.	Reallocate a portion from capex to opex [redacted]

Structure C101 replacement (near Te Arai)	This project addition to the Te Arai project was Gabrielle remediation.	Insert new capital project item

RY 2025 Opex or Capex Project	**Finding**	**Appendix B Recommendation**
Access Tracks reinstatement	Some of this activity would likely be expensed.	Reallocate a portion from capex to opex [redacted]
Uncompleted projects rolled over from RY2024 to RY2025 not included in Appendix B.	Rakauroa F693, Waingake Rd C2152, Waingake H pole C2823, Matawai Rd F3078, and Tuakau Rd H1229 projects appear to be Gabrielle remediations that are rolling over from RY2024 into RY2025.	Review if these projects are possible additional capital project items for Appendix B.

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1 Introduction

Following the damage caused by Cyclone Gabrielle in February 2023, Firstlight Network intends to make an application to the Commerce Commission to reopen Firstlight Network's default price quality path. The Input Methodologies Determinations allow Electricity Distribution Businesses to be compensated for costs associated with remediation following a catastrophic event. Remediation costs include the costs of activities that are reasonably necessary to mitigate the effects of a catastrophic event but exclude network improvements.

1.1 Scope of the Review

As part of its application, Firstlight Network has sought an independent review of the actual expenditures incurred, and the forecast expenditures expected to be incurred, for mitigating and remediating the effects of Cyclone Gabrielle as a catastrophic event. The independent review was needed to analyse:

- if all projects (in appendix B) were (and are) reasonably necessary to mitigate the effects of the catastrophic event;
- how it was determined that the projects were reasonably necessary to mitigate the effect of the catastrophic event;
- the reasonability of any particular judgments made by Firstlight staff when including (or excluding) an item or its associated value in (or from) appendix B; and
- any other matters arising.

It was accepted that some judgment would be needed with the independent review because, for example, there could be cases where like-for-like asset replacement was not possible or where an asset's location must necessarily change because of Gabrielle.

1.2 Reviewer's Experience

As Reviewer, [redacted] has more than 35 years' experience within the electricity transmission and distribution sectors, and is experienced with electricity network planning, design and project delivery, having worked in these environments throughout his career. His experience with economic regulatory assignments began in the late 1990s with capital expenditure and valuation reviews of electricity distribution networks for the economic regulator in New South Wales, and network valuation reviews of many New Zealand electricity distribution networks. During the 2000's, he led the preparation of multiple Asset Management Plans and network valuations, presented at various regulatory hearings, and prepared submissions for the Commerce Commission's Gas Authorisation process. As chair of the EEA's Asset Management Group during the 2010's, he led the preparation of guides on asset health and criticality indicators and network resilience for the electricity supply industry, and as Chief Engineer within an electricity distribution company, he has overseen the preparation of technical standards covering all lifecycle stages of electricity distribution network assets.

1.3 Storm Magnitude

Cyclone Gabrielle was a major storm event that hit the North Island between around 12 February and 15 February 2023. Its impact drew comparisons with Cyclone Giselle in 1968[1] and Cyclone Bola in 1988[2]. Its financial impacts were estimated to be like those of the Christchurch 2011 earthquake[3]. Photographs taken by Firstlight Network staff showed the large extent of damage to roads, bridges, access tracks and overhead lines from flooding, forestry slash, silt and high winds, especially in the Mangahauini Valley, Hikuwai Valley, around Gisborne substation on Massey Road and Wairoa substation.

In its letter to potential applicants of the catastrophic event reopener of 20 October 2023, the Commerce Commission said that it accepted that Cyclone Gabrielle would likely meet the definition of catastrophic for some EDBs and set out criteria for making an application.

1.4 Ownership and Other Changes Post Gabrielle

Following Gabrielle, on 1 April 2023, Eastland Network changed ownership to become part of First Gas, now known as Clarus Group.

Following acquisition, First Gas migrated Eastland Network's incumbent SAP works management system into its Maximo works management system.

First Gas also moved its financial year end date from 31 March 2023 to 30 September 2023, a transition that involved an interim six-month reporting period between 1 April 2023 and 30 September 2023. Accordingly, the term Regulatory Year (RY) has been used to denote the reporting period from 1 April to 31 March.

1.5 Reliance

This report has been prepared by M W Consultants Limited for Firstlight Network as part of its application to the Commerce Commission to reopen its default quality path. It is not to be used or relied upon for any other purpose.

2 Project Necessity for mitigating Gabrielle's effects

This section of the report deals with the question of whether all projects (in Appendix B) were (or are) reasonably necessary to mitigate the effects of the catastrophic event.

2.1 RY2023 Opex and Capex Cost Items

Evidence was sighted that confirmed that the majority of the RY2023 projects were necessary to mitigate Gabrielle's effects without bringing betterment. The exceptions were:

[1] https://www.rnz.co.nz/programmes/the-detail/story/2018877538/cyclone-gabrielle-what-makes-this-storm-so-unique retrieved 17 June 2024.
[2] https://www.rnz.co.nz/news/national/484425/cyclone-gabrielle-damage-worse-than-bola-farmer retrieved 17 June 2024.
[3] https://www.bbc.com/news/world-asia-64940342, retrieved 17 June 2024.

1. The opex cost item “Fault management fee” was judged not to be related to Gabrielle as it comprised costs for staffing and maintaining the fault roster that would have been incurred anyway.
2. The opex item “Load Control Fault response” looks to have been associated with the load control plant being near end-of-life condition and should be excluded.
3. The capital project of “Age Replacement of 50kV ABS’s” was judged to comprise betterment as previous AMPs had stated that many of these items were already in poor condition.
4. The capital project “Replace Comms Equipment” could not be verified as being caused by Gabrielle.

2.2 RY2024 Opex and Capex Cost Items

It was found that all the cost items for RY2024 in Appendix B were reasonably necessary to mitigate the effects of Gabrielle and were achieved without providing betterment.

2.3 RY2025 Opex and Capex Cost Items

It was found that all the cost items proposed for RY2025 will be necessary to reasonably mitigate the effects of Gabrielle. Proposed expenditures for RY25 on towers, bridge replacement and flood remediation could underestimate the actual costs if out-of-region contractors are used. The proposed expenditures for access tracks, culverts and out of zone tree clearance should be regarded as provisional sums given that the specific sites for work had not yet been prioritised.

3 How it was determined that projects were reasonably necessary

This second section of the report deals with the question of how it was determined that the projects were reasonably necessary to mitigate Gabrielle’s effect as a catastrophic event.

3.1 RY2023 Opex and Capex Projects

The RY2023 line items had been set up as standard categories in Eastland Network’s SAP works management system several years before Gabrielle for financial reporting purposes against the Asset Management Plan[4]. It is understood that during the storm, Work Orders were assigned to the expenditure reporting categories without consideration of how they might be understood in a retrospective cost review some 16 months’ later.

Aggregate level cost information had been transferred into the new Maximo works management system when Eastland Network’s SAP system was replaced soon after change of ownership. It is understood that transactional level information held by SAP, such as photos and invoices pertaining to the Gabrielle response efforts in February and March 2023 was not able to be accessed. However, two spreadsheet records that had been maintained by project administrators during February and March 2023 provided a summary of the invoices received from some of the field contractors and these provided a pathway for assessing most of the projects. All the invoice and work order descriptors shown in the spreadsheets were found to be associated with mitigating Gabrielle’s effects and they could be linked with fault records in the “2023 Cyclone Gabrielle Faults Spreadsheet”. A sample of

[4] It was noted that the same names had also been used for many of the expense categories in the RY24 works plan.

paper file copies of invoices from February and March 2023 was compared with the spreadsheet line items, and all the invoiced amounts (excluding GST) and their associated work order numbers were found to match the spreadsheet line items. Six cost items in Appendix B were able to be matched directly with the paper and spreadsheet based records of work orders or invoices.

Some Appendix B project descriptors did not necessarily correspond with the actual nature of work that would have taken place as storm response activity. For instance, the RY2023 cost items "11kV Patrols & general maintenance" and "Zone Sub 4 Monthly Inspections & preventative maintenance" are Routine & Corrective Maintenance & Inspection activities and would normally be associated with non-Gabrielle response activities. However no evidence was seen of routine maintenance (or any kinds of work other than response efforts to Gabrielle) in the reviewed invoices.

The spreadsheet records did not include references to work by some contractors [redacted]. The RY2023 tower related projects were able to be confirmed against the fault list records that were used for administering the fault response, and against the tower risk assessment which itemised the work already completed.

The following tables show consideration of the necessity of each project for mitigating Gabrielle's effects.

RY2023 Opex Project Name	**Supporting Observation**
110kV Stations unplanned	Photographs showed extent of flooding at the 110kV substations.
400V OH Service Fuse Base & Carrier replacement	Match with WO 5015407
50kV Pole component replacement/maint	Fault record 9, 13, 45, 57
Comms Maintenance/Calibration	Fault record #3, communications system integrity has a high operational criticality.
11kV Patrols & general maintenance	Invoice evidence seen.
Comms Track Inspection & Maintenance	Reasonability for accessing communications sites for refuelling back up generators, checking/ replacing batteries..
Service Patrols/inspection & minor maint	Invoice evidence seen.
Zone Sub 4 Monthly Inspections & preventative maintenance	Photographs showed necessity for flood clean up operations at substations.
11kV Defect / Fault repairs	Invoice evidence was seen demonstrating that multiple 11kV fault repairs were undertaken.
11kV Storm Contingency	This category is allocated every financial period to accommodate unknown storm recovery costs. Costs during Gabrielle had been assigned to this category..
350 kVA genset truck costs	This cost item refers to a 350 kVA relocatable generator that was used at Tauwhareparae during Gabrielle.
400V Defect / Fault repairs	Invoices and Work Order entries sighted.
50kV Defect / Fault repairs	WO 5015402

50kV Fault response (incl Helicopter)	Evidence was seen that 50kV fault response including helicopter was undertaken during or following Gabrielle, such as WO 5015689.
65 kVA trailer generator costs	This cost item refers to 65 kVA relocatable generator sets that provided back up supply to the communities at Mata and Whatatutu during Gabrielle.
Comms Defect/Fault repairs	Evidence seen that communications system repairs were needed during and following Gabrielle including WO 5015849,
Faults management fee	This activity is a contract arrangement for maintaining and staffing the fault roster and would have been incurred independent of Gabrielle.
Gen1 Te Araroa fuel & oil	These projects are considered necessary to Gabrielle remediation. They were a necessary part of supply maintenance following the damage that occurred to the 50kV subtransmission network during Gabrielle (as evidenced from photographs and fault records) (reference to painting at Tolaga Bay comes from historical financial categorisation naming some years' ago - the cost item refers to service costs associated with operation during Gabrielle).
Gen1 Te Araroa service costs	
Gen2 Ruatoria fuel & oil	
Gen2 Ruatoria service costs	
Gen3 Mahia fuel and oil	
Gen4 Puha fuel and oil	
Gen5 Tolaga fuel and oil	
Gen5 Tolaga service costs & Paint	
Load Control Fault response	This cost item could not be verified as being related to Gabrielle and could be due to the plant's near end of life condition.
Rural CB Defect /Fault repairs	Match with Invoice 325564.
Zone Sub Fault response	Match with WO 5015867.
11kV Trees forced cutting	Invoice evidence demonstrated that vegetation work was undertaken during and following Gabrielle.

Table 1: Observations for RY2023 Opex Projects

RY2023 Capex Project Name	**Supporting Observation**
11kV Replacement 50 poles (fault & premature failure)	Evidence that 11kV poles were replaced during Gabrielle was sighted. This project item's name results from historical financial categorisation and does not reflect specific numbers of poles replaced.
Cable replacement, (fault, premature failure & rationalisation, 0.5km)	WO 5015433 showed evidence of underground work.
Network Line Extention/Upgrade/Fault Replacement (unplan 1km)	There is much evidence of pole and conductor replacement and line realignment which likely forms part of this project line.
Service Pillar Replacement (20pa)	Matched with WO5015433.
Unplanned Network Extention/Upgrade/Replacement Line 1km	Much evidence was sighted of pole and conductor replacement and line realignment which forms part of this project line.
Transformers Growth <100kVA	Near match with WO 5015847.
Age Replacement of 50kV ABS's	No evidence was found in faults list or Work Orders list for 50kV ABS. AMP indicates half of 50kV ABS population has H1 or H2 health. This project is likely to be betterment.

Replace Comms Equipment	Radios were replaced but their replacement's link with Gabrielle could not be confirmed.
Fault Replacement Line	Multiple evidences of pole and conductor replacement as a result of damage caused during Gabrielle.
GIS-TUI A Grillage/Foundation Replacement	Work undertaken by [redacted] to replace access tracks to GIS/TUI T11 and T142 and shoring up foundations to prevent tower failure. Associated with the note "Gisborne Towers" for Fault 71 in the Fault records and with Tower Risk assessment on T11 and T142 completed works. Figures 1 to 4 show photographs.
Replacement 50kV poles	Evidence was sighted of 50kV pole replacement in multiple locations because of Gabrielle.
Slip tower relocation and mitigation	Work undertaken by [redacted] associated with restoration of GIS/TUI T302 and T303 (refer to Figures 5 and 6).
TUI-WRA A Foundation/Grillage replacement	Work involved reinstating foundations and grillage on tower T205 near to Tokomaru Bay (refer to Figures 10 and 12) and replacing 3 50kV poles on the Waihi circuit.

Table 2: Observations for RY2023 Capex Projects

3.2 RY2024 Opex and Capex Cost Items

Job tracking yielded confidence that the Appendix B projects in RY2024 were associated with Gabrielle remediation, that the projects were necessary and that they did not involve betterment. The associated work scopes or invoices were not available for review in all cases, but all the projects could be tracked to Work Order level in Firstlight Network's Maximo works management system. The timings of the work orders were reviewed for consistence with Gabrielle mitigation activities. The relationships between the projects and the Gabrielle fault records and photographic evidence were followed demonstrating the linkage that each project with the mitigation of Gabrielle's effects.

The projects related to 110kV lines, namely "Install emergency Tower bypass T142, T140 & T102", "Geotech reinstatement of foundations (4x)", "Assessment of at risk Tower T102, T142 & 1 other Tower" and "Reinstatement of bridges (3x) and access tracks to towers that have washed away", were found to be consistent with the outcomes of the tower risk assessment titled "110kV Tower transmission Risk October 5th 2023". The timings of the expenditures associated with these projects was consistent with their known delivery stages. None of the towers identified as needing mitigation from Gabrielle had been listed as at-risk in Eastland Network's 2021 Asset Management Plan[5], with the conclusion that they were not preplanned projects.

[5] Table 144 of Eastland Network's 2021 AMP describes active slips near towers T31, T126, T132, T118, T44 and T8. GIS/TUI T31 is included in the October 2023 risk assessment but is assigned low risk and recognized as a pre-Gabrielle slip.

It was noted that Firstlight Network had excluded the Kopuaroa and Te Arai pole replacement projects on the grounds that they provided betterment through improved resilience to storm effects. These projects could have potentially mitigated several faults that occurred during Gabrielle, and they were accelerated following Gabrielle, but they had already been planned prior to Gabrielle.

3.3 RY2025 Opex and Capex cost items

A series of project cost estimations provided the information to review the scopes of each of the forecast projects for RY2025 listed in Appendix B. The scopes for each of the tower reinstatement projects were compared with the required risk mitigations described in Firstlight Network's 110kV Tower Transmission Risk assessment undertaken in October 2023. The risks of tower failure had been assessed as "High" risk, "Intermediate" risk and "Moderate" risk levels. The project objectives are to reduce the risk levels by fulfilling the recommended actions and next step recommendations described in the risk assessment report.

RY2025 Capex Project Name	Assessed Risk	Recommendation
T11 Tower reinstatement	Intermediate risk – a vertical slip face of 12 metre depth within 1.5 metres of tower footing occurred during Gabrielle due to erosion from a stream below (refer to Figures 1 and 2).	Relocate GIS/TUI T11 tower to nearby site and install tower foundation tie beams.
T142 Tower reinstatement	Intermediate risk – major slips above and around tower with cracks in ground across the tower foundations occurred on a scarred hillside as a result of Gabrielle (refer to Figures 3 and 4).	Geotechnical survey, planting and relocation of one circuit to a new structure on ridge.
T302 Tower reinstatement	Moderate risk – ground movement on hillside below the tower on a hillside near Gisborne substation due to Gabrielle (refer to Figure 5).	Ongoing tilt monitoring. Relocation of one circuit to new structure on nearby ridge.
T303 Tower reinstatement	Intermediate risk – several slips below and beside the tower occurred during Gabrielle (refer to Figure 6).	Full foundation reinstatement with drainage and retaining wall.
T13 Tower reinstatement	High risk – Ground movement on south side of tower has exposed the bored piles on A and B legs during Gabrielle (refer to Figure 7).	Locate new site for tower relocation and undertake site civil works.
T102 Tower reinstatement	Intermediate risk – Land slip north of tower exposed 2 metres of bored pile on B leg during Gabrielle. Previous mitigations installed in 2022 failed (refer to Figures 8 and 9).	Locate and divert unidentified water sources and identify future tower relocation options.
B139 Bridge replacement	Enabling work for accessing Tower T142. This previous bridge completely washed away during Gabrielle (refer to Figure 13).	Deploy a replacement bridge.

Table 3: Tower Risk and Remedial Actions

The recommended actions from Firstlight Network's Tower Risk assessment are summarised in Table 3 above and these are considered reasonable. Recommendations range from identifying future sites for relocating towers, retaining tower foundations, installing drainage to protect the tower foundation and planting for erosion protection. Some of the proposed work is contingent on restoration of access tracks, culverts and bridges. Tower photographs provided by Firstlight Network are shown in the Appendix.

The scopes for the reinstatement of towers GIS T11 and GIS T142 recognise that the work at tower GIS T11 is planned to occupy two years (RY2025 and RY2026) and that work at GIS T142 has partially already been completed.

Photographs confirmed that flooding occurred inside the Gisborne 110/50kV and Wairoa substations and affected the integrity of the switchgear. Flooding at both these substations was identified as fault 84 in the fault records. The work proposed in RY2025 to mitigate the effects of flooding at these sites includes geotechnical assessment and the construction of drainage systems and retaining walls and is considered reasonable.

The scopes for the projects to reinstate access tracks and culverts should be regarded as provisional in that proposals are to reinstate an estimated 80 sites and 40 culverts. The reinstatement work needs to be completed to provide adequate future access to the towers that support the critical subtransmission circuits but a detailed plan showing the timing for the reinstatement of each site was not available for review.

The proposed opex allocation for "Out of Zone tree clearance" had been forecast for RY2024 but had not been done. From one perspective, out of zone tree clearance might possibly be considered as betterment, but it is noted that trees are not Firstlight Network assets, they have an adverse impact on supply reliability during storms, and that MBIE is currently working on changes to the Electricity (Hazards from Trees) Regulations 2003 likely to be helpful for Firstlight Network to undertake its Out of Zone tree clearance activities. An allowance for additional vegetation work is considered reasonable although it was not possible to confirm which subtransmission or distribution feeders this work would focus on.

3.4 Consideration of Project Alternatives

Firstlight Networks has a history of applying alternative solutions and has a clear mindset to explore them[6]. There is evidence that alternative solutions were applied during the Gabrielle storm response and as part of remediation activities:

A large proportion of the projects in Appendix B relate to tower reinstatement and the reinstatement of access tracks and bridges for accessing the towers. The towers support circuits essential for supplying the Tairāwhiti and Wairoa regions with electricity and they traverse remote rural terrain. Alternatives of relocating towers, ensuring their foundations are well drained and installing retaining and guy arrangements have been considered in the work scopes for each tower related project. Firstlight Network has already demonstrated its propensity to use diesel generators to reduce the peak loads carried by the 110kV circuits,

[6] The alternative solution mindset is a feature of the Asset Management Policy and Strategy (Section 1.4 of the 2023 Asset Management Plan) - the use of alternatives to lines to deliver (network) security at least cost.

but using generators as an alternative to reinstating the storm damaged existing towers for anything other than short term preplanned work is considered neither feasible nor practical.

Other projects relate to pole replacements and realignments. In the main, conventional pole and conductor replacements are considered a practical way of restoring electricity supply following storm damage. Firstlight Networks has used utility grade CCA treated softwood poles as an alternative type from prestressed concrete. They give useful torsional strength while being light enough to be carried to remote locations without specialist helicopters. A [redacted] unit installed to supply the Arakihi radio site (Hokoroa) in the vicinity of Tauwhareparae is another example of an alternative technology used in lieu of replacing damaged lines and poles amongst forest plantations.

4 Reasonability of Particular Judgements

The following section considers the reasonability of particular judgements made by Firstlight Network staff when including or excluding an item in Appendix B.

The review confirmed that the judgements made about the projects listed in Appendix B were good, although a small number of points were noted and these are described in the sections 4.1, 4.2 and 4.3.

4.1 RY2023 Opex and Capex Cost Items

Fault management has critical importance for restoring the supply to consumers during major events. However, the opex cost item “Fault management fee” represents a regular payment for ensuring the fault roster is adequately staffed and it was considered that this fee would have been paid whether or not Gabrielle occurred.

The opex item “Load Control Fault response” involved a need to reset the Load Control plant but the reason for its reset was not able to be identified. According to the 2023 Asset Management Plan, the Gisborne plant has reached its the end of life and is suffering regular failures. The plant’s condition was therefore considered to be the reason for this cost item.

Insufficient supporting information was available to verify that the project titled “Age Replacement of 50kV ABS’s” was required to mitigate the effects of Gabrielle. While it is considered that the replacement of the 50kV ABS could have been triggered by a need to operate them, half of the 50kV ABS population is described in the 2021 Asset Management Plan as having H1 or H2 health and it is considered that these items would need replacement anyway.

Insufficient supporting information was available to verify that the capital project “Replace Comms Equipment” was caused by Gabrielle. It was found that the project involved replacing radio equipment, but the reason for replacing the radios could not be identified.

4.2 RY2024 Opex and Capex Cost Items

The RY2024 project “Reinstatement of bridges (3x) and access tracks to towers that have washed away” is proposed to be fully capitalised. Photos demonstrated many instances where access bridges had been completely washed away and needed replacement. These would be reasonable to capitalise, as would work to completely rebuild access tracks.

However, capitalisation is less clearcut in situations where existing access tracks need work (either major or minor) to restore their functionality, while reinstatement of access tracks that are not owned by Firstlight Network would be expensed[7]. Consequently, it is recommended that a portion of this project, say 20%, should be considered as opex rather than capital expenditure.

Two remedial jobs involving pole and conductor replacement at Kopuaroa and Te Arai had been excluded from the RY2024 list in Appendix B on account of them also providing resilience improvements to move them from exposed areas prone to landslips. Investigation of these projects confirmed their exclusion was appropriate. The jobs had already been included in the scheduled works programme and had been accelerated because of Gabrielle's damage. It was found that a part of the Te Arai project, namely the replacement of Structure C101 (pole and ABS), was a project addition resulting from damage due to Gabrielle and this project addition should be included amongst the projects in Appendix B.

Capitalisation of the "Assessment of at risk Tower T102, T142 & 1 other Tower" was judged to be appropriate as it was part of a work-in-progress design review. It would be usual to expense tower risk assessments if they are used for go/no-go consideration of remedial work necessity.

4.3 RY2025 Opex and Capex Cost Items

It was noted that some projects that had been planned to be undertaken in RY2024 had not been completed and could potentially be associated with mitigating the effects of Gabrielle. These projects will likely be rolled over into RY2025 but had not been included amongst the Appendix B project list. They include the following projects but they have not been reviewed for their inclusion as Gabrielle storm mitigations:

- Rakauroa Rd F693- a pole replacement to a new location that has been delayed for Council liaison [redacted]
- Waingake Rd C2152 – pole replacement to new location at lower risk [redacted].
- Waingake H pole C2823 – pole replacement to new location at lower risk [redacted].
- Matawai Rd F3078 – pole replacement to new lower risk location [redacted]
- Tuakau Rd H1229 – pole replacement to lower risk location [redacted].

The proposed capitalisation of the RY2025 project "Access Tracks reinstatement" implies that all work proposed on access tracks will involve building new tracks that will be owned by Firstlight Network. While it is understood that many access tracks will need to be completely rebuilt, it seems unlikely that rebuilding would apply to all proposed access track work. It would be appropriate to expense work that relates to the repair of existing Firstlight Network access tracks, or any work done on access tracks that are owned by third parties.

[7] By way of example, approaches towards access tracks are described in pages 124 and 125 of Transpower NZ 2023 Asset Management Plan in which often access tracks are owned by the landowners and work is expensed.

The extent of capitalizable access track work is unclear at this time, but it would be fair to plan for a portion of the work to be expensed, say 30%.

5 Other Matters Arising

5.1 Work Execution Efficiency

Firstlight Network is in a rural part of the country and often does not have access to the larger contract workforces available to other networks. During Gabrielle, response efforts were hampered by limited access from damage to roads and access tracks. Conversely, work often proceeds quickly during storms because the objectives are focussed, staff are given autonomy, and the work has heroic elements.

Demonstrating work efficiency during storm response activities can be problematic - there is often limited real time information about the state of the network, limited human resource availability amongst operations staff, project managers and field switchers, and often constrained access routes with damaged roads and tracks. Whilst in theory, calling bids job by job would be a way of showing efficient work delivery, there are practical reasons why this is not done in a storm response. There are also strategic reasons for limiting this approach – calling tenders job by job can provide competitive efficiencies in the short run, but in the long run, they tend to curtail investment in staff development, training and plant.

Firstlight Network has contract field service arrangements established to provide effective work delivery with mid- and long-term efficiencies. The following sections describe the field work delivery arrangements and their cost reasonableness.

5.2 Field Work Delivery

The field contract arrangements have been established to ensure effective work delivery within a provincial region. Firstlight Network has pre-agreed contract arrangements with a range of different approved contractors that provide for efficient storm response and assure that field service provision has medium and long run efficiencies. The pre-agreed contract arrangements help to ensure that contractor personnel awareness of Firstlight Network's technical standards and health and safety requirements, and help accommodate training and apprenticeships[8] amongst an otherwise limited resource pool in Te Tairāwhiti and Wairoa areas.

Two local external contractors, [redacted] provide on-standby 24/7 fault response capabilities and other field services. A range of single person contractors are available who can provide Low Voltage fault response. The external contractors have a total of 15 competent switchers, and at any time two are Gisborne based, one is Wairoa based and one is Coast based. Two local contractors provide helicopter services, and four contractors provide vegetation and arborist services. Diesel fuel for the embedded generators at zone substations is provided by two fuel filling contractors. If additional resourcing is needed, Firstlight Network can call upon out-of-district contractors [redacted]

[8] Section 13.5.2 of Firstlight Network's FY23 AMP describes investment training programmes given to local contractors, consistent with a long-run view for contractor sustainability.

Firstlight Network also employs around eight people internally who have the field-based competencies to oversee and provide technical advice to the external field contractors when needed. All the work detailed in Appendix B was undertaken by external contractors and costs associated with internal staff during RY2023 were not included amongst the costs applied for in the reopener application.

Materials are sourced through electrical wholesalers, which is a common contracting practice that helps to reduce contractor inventory holdings.

Firstlight Network operated a manual Excel based fault log during and following the storm to help coordinate supply restoration activities. This is consistent with the storm response coordination efforts of many other distribution networks. Supply disruptions affected the operation of SCADA communication systems, which needed fuel delivery for their backup generators. Response activities were hampered by the scale of damage to roads and line access tracks, and this meant that helicopters needed to be used to undertake inspections and to transport personnel and materials between areas. In this context, a sophisticated distribution management system may not have provided much benefit over manual administration.

While it was noted that some jobs proposed for RY24 had been delayed on account of their contingency on Waka Kotahi completing road realignments, evidence suggests that Gabrielle response and remediation work was delivered as efficiently as it could have been given the circumstances.

5.3 Cost Reasonability

Review of the unit rates applied to labour, materials and plant showed that they were consistent with other contractor rates and invoice samples showed that unit rates were either applied in accordance with the scheduled rates or at lower rates.

A review of invoices indicated some instances where hourly rates for helicopters were 15% lower than the standard scheduled rates. Conversely some instances were seen where large helicopters capable of lifting were used for patrol purposes, but this is considered to reflect limited helicopter availability and evidence was seen of multiuse such as line patrol followed by materials or passenger pick up.

In RY2024, a 10% capital allocation on-cost was applied to all capital projects reflecting the capitalisation internal costs associated with design and project management. For the RY2025 projects, allowances for design and project management were built into the cost estimates instead of on-cost application. The RY2025 project cost estimates had a planning level accuracy with an estimated 50% probability of exceedance and were derived from approved civil contractor rates. The cost estimates noted a risk of cost escalation from using out of region civil contractors.

The capital projects in RY2023 did not contain any additional on-cost covering the allocation of internal design or project management time. At face value, applying a capital on-cost for

RY2023 could have been reasonable [redacted].

6 Summary Recommendations

It was found that the costs in Appendix B were necessary to reasonably mitigate the effects of Cyclone Gabrielle as a catastrophic event apart from the following recommendations to exclude items, consider other items for inclusion, or recategorize cost items.

6.1 RY2023 Opex and Capex Cost Items

RY 2023 Opex or Capex Project	Finding	Appendix B Recommendation
Fault management fee	Would have been incurred if Gabrielle had not occurred	Exclude
Load Control Fault response	Could not be specifically linked with Gabrielle	Exclude
Age Replacement of 50kV ABS's	Likely contains betterment	Exclude
Replace Comms Equipment	Could not be specifically linked to Gabrielle	Exclude
Capital on-costs (Note 1)	Could have been applied to accommodate internal design and project management activities	To be noted

Note 1: Capital on-costs had not been applied to accommodate internal design and project management overheads. [redacted]

6.2 RY2024 Opex and Capex Cost Items

RY 2024 Opex or Capex Project	Finding	Appendix B Recommendation
Reinstatement of bridges (3x) and access tracks to towers that have washed away	Some of this activity would likely have to be expensed.	Reallocate a portion from capex to opex [redacted]
Structure C101 replacement (near Te Arai)	This project addition to the Te Arai project was Gabrielle remediation.	Insert new capital project item (Note 2)

Note 2: The replacement of structure C101 (pole and ABS) was an addition to the Te Arai project that was Gabrielle remediation [redacted]

6.3 RY2025 Opex and Capex Cost Items

RY 2025 Opex or Capex Project	Finding	Appendix B Recommendation
Access Tracks reinstatement	Some of this activity would likely have to be expensed.	Reallocate a portion from capex to opex ([redacted]

Uncompleted projects rolled over from RY2024 to RY2025.	Rakauroa F693, Waingake Rd C2152, Waingake H pole C2823, Matawai Rd F3078, and Tuakau Rd H1229 projects appear to be Gabrielle remediations.	These projects are possible additional capital project items (Note 3).

Note 3: Some uncompleted projects rolling over from RY2024 into RY2025 look as if they could meet the criteria for inclusion in Appendix B. These projects include Rakauroa F693, Waingake Rd C2152, Waingake H pole C2823, Matawai Rd F3078, and Tuakau Rd H1229 [redacted].

7 Appendix: Tower and Bridge Photographs

Figure 1: Gisborne/ Tuai Tower T11

Figure 2: Gisborne/ Tuai Tower T11 Close to Leg D foundation

Figure 3: Gisborne/ Tuai Tower T142 in March 2023

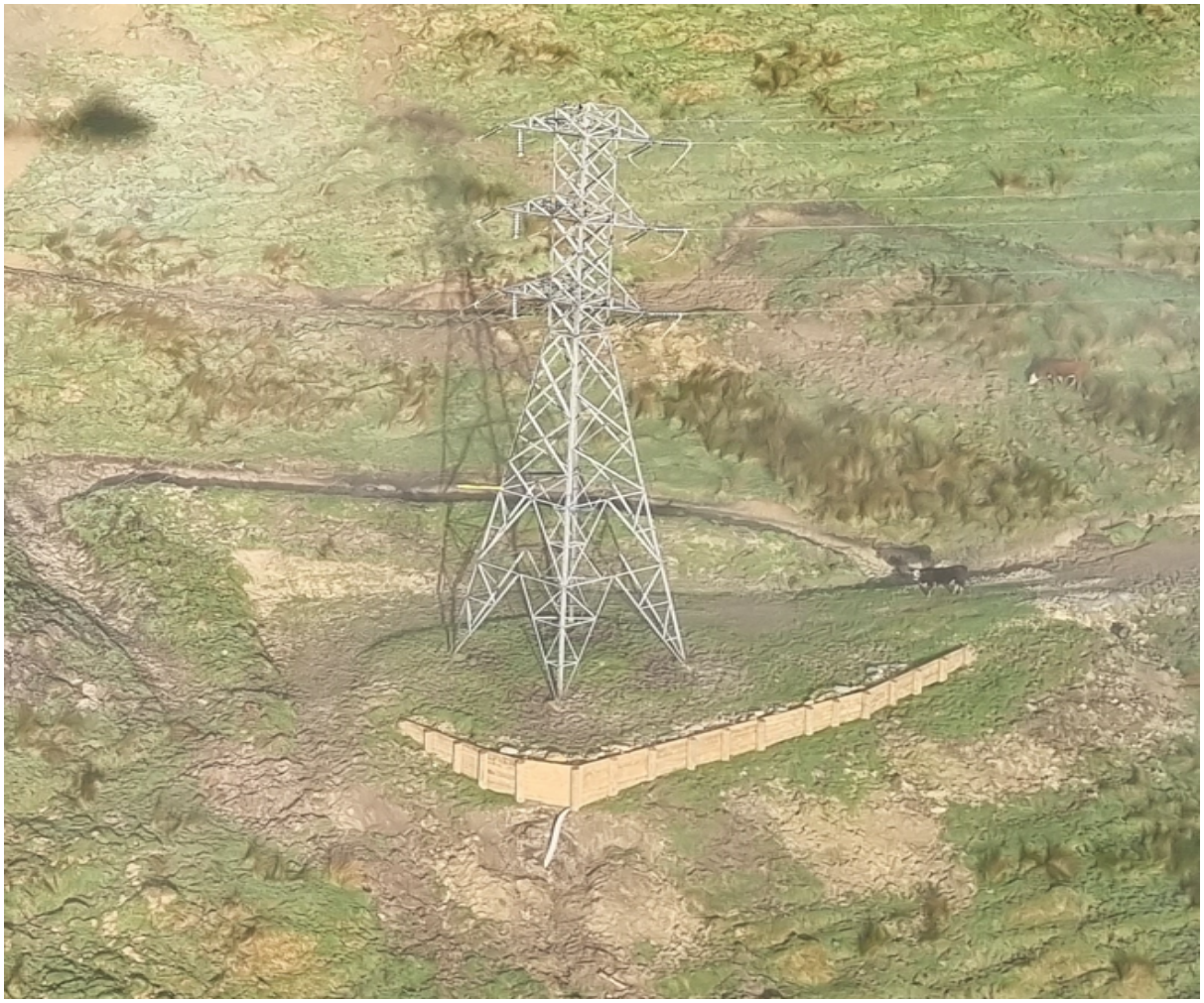

Figure 4: Gisborne/ Tuai Tower T142 in June 2023

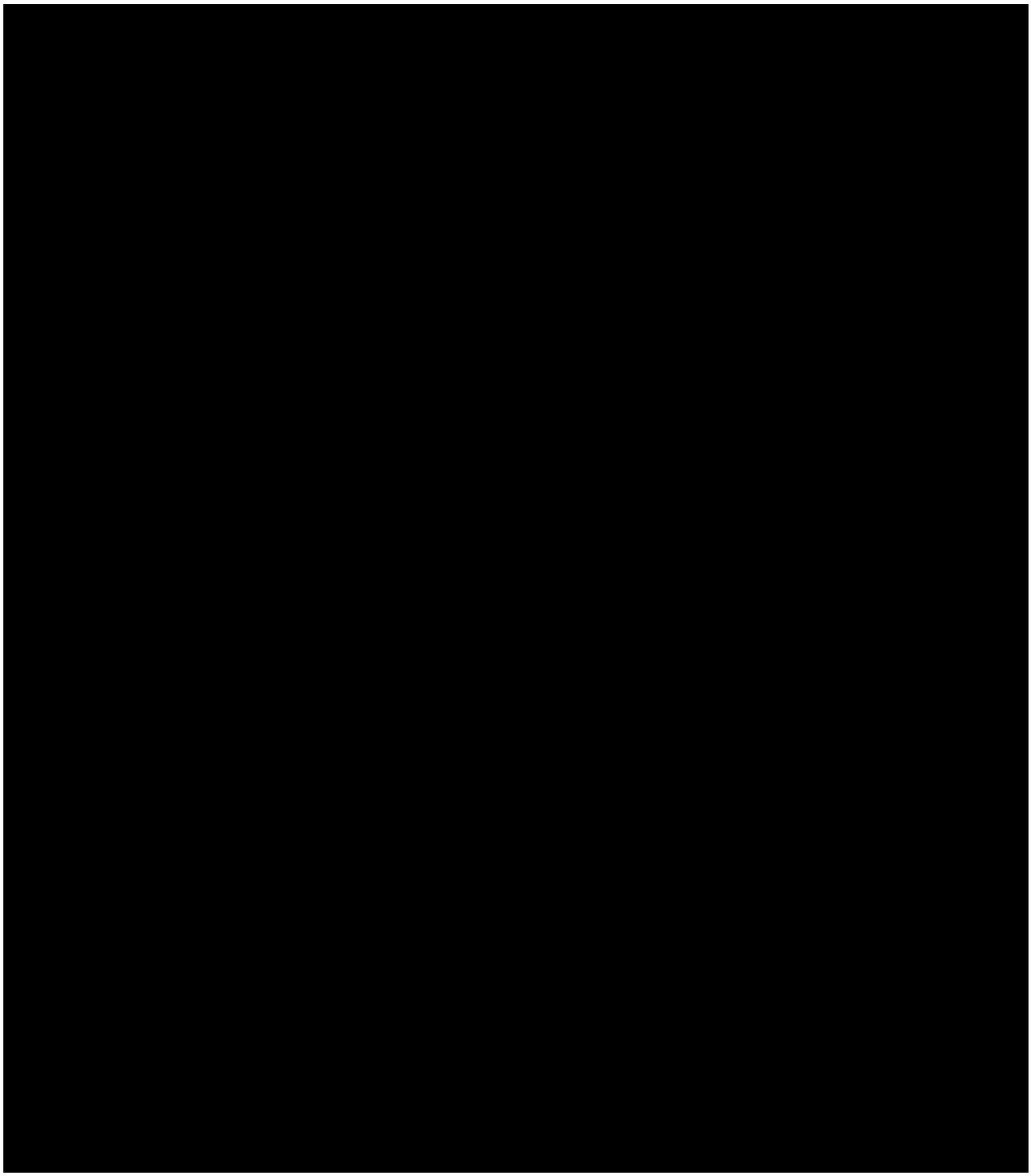

Figure 6: Gisborne/ Tuai Tower T303

Figure 7: Gisborne/ Tokomaru Bay Tower T13 in July

Figure 8: Gisborne/ Tokomaru Bay Tower 102 in February 2023

Figure 9: Gisborne/ Tokomaru Bay Tower 102 in June 2023

Figure 10: Gisborne/ Tokomaru Bay Tower T205 in March 2023

Figure 11: Gisborne/ Tokomaru Bay Tower T205 in March 2023

Figure 12: Gisborne/ Tokomaru Bay Tower T205 in September 2023

Figure 13: Bridge B139 completely washed away