Chorus Submission:

Strengthening the resilience of New Zealand's critical infrastructure system

8th August 2023

CHORUS

Introduction

1. This submission is provided by Chorus in response to the Department of Prime Minister and Cabinet's discussion document *Strengthening the resilience of Aotearoa New Zealand's critical infrastructure system*, dated June 2023.

2. Chorus is a wholesale-only provider of telecommunications services and is one of New Zealand's largest communications infrastructure companies. We manage assets that make up the fibre network serving New Zealand's urban areas and the legacy copper network. Our assets include cables, ducts, poles, network buildings, network electronics and IT systems.

3. This submission is not confidential.

4. Please refer to the Appendix for Chorus' answers to selected questions asked in the discussion document.

Summary

5. Chorus agrees with the intent to strengthen critical infrastructure in New Zealand. We broadly support a coordinated approach to government support for infrastructure investment; as always, the challenge is to make sure the policy and regulatory decisions are effective and proportionate. This submission focuses on potential avenues to achieve the stated aims in more efficient ways, leveraging existing incentives and regulation and allowing for voluntary processes where suitable.

6. Our competitive commercial environment and regulatory settings mean that Chorus already has a strong interest in ensuring our infrastructure is resilient and reliable. We have an ongoing long-term programme of resilience investments, including a planned (but subject to regulatory approval) step-up in resilience expenditure. We expect our long-term programme to improve the resilience of our fibre services to more than 1 million premises over the next decade. Our investment plans and service quality outcomes are subject to Commerce Commission scrutiny, which should give comfort that we are investing at an appropriate level.

7. The principles and criteria proposed as decision-making tools in the discussion document are mostly sound. However, Chorus disagrees with the proposed principle to "set minimum standards in areas where market forces do not deliver optimal levels of resilience". This is because minimum standards are a potential outcome from this process. For the consultation process to be robust and credible, potential outcomes that are subject to debate should not be specified as a principle at the outset. We would also support an additional criterion of 'cost efficiency' to use when assessing different options.

8. Chorus has concerns with the unqualified statements that "enhancing resilience will save New Zealand money in the long run." While this can often be true, it will not be true in every instance. It is more accurate to say that "prudent and efficient enhancements to resilience will save New Zealand money in the long run". Resiliency investments suffer from diminishing returns and there will come a point at which the

costs are not outweighed by the benefits. Government should not fall into the trap of assuming all resilience investments are sensible, prudent and should be funded, not least because the costs of any excessive infrastructure builds will likely fall on consumers who may not be willing or able to pay. In the case of telecommunications this could, for example, work against any government objectives to enhance digital inclusion.

9. We generally agree with the principle that beneficiaries of the increased investment should pay for it. However, we question the assumption that shareholders will benefit from increased investment in resilience. Assuming businesses are rational, they will already invest up to the point at which shareholders are expected to benefit from those investments. Ultimately, it may be necessary for government to co-fund infrastructure for resilience purposes where there is no commercial case to make the investment. Another approach is for government to increase the incentives for asset owners to invest more in resilience.

10. In terms of improved information sharing on resilience between government and asset owners, we agree there is value in key parties having a clear and shared view of important assets and their risks and vulnerabilities. We are not aware of any failure to provide asset information on a voluntary basis where that is needed, so there may not be any need for regulation. If information reporting is required by regulation, it is essential that any requirements are clearly defined, that any data will be used for its stated purpose, and will not duplicate other regulatory reporting arrangements already in place.

11. In relation to the option of introducing minimum standards, it is not clear whether any potential new standards would be higher than the regulatory standards that we are already required to meet. If minimum standards are to be introduced, we support a proportionate approach where they are applied to those companies who are not currently regulated, or to those companies where there are grounds for concern that they are under-investing in resilience. A blanket approach where the standards are applied to all irrespective of current performance would create compliance costs for those asset owners who are already investing at appropriate levels, with the risk that those costs are passed through to end-users without delivering any actual improvements in resilience.

12. We agree with the discussion document that there is currently no clear accountability for the resilience of the infrastructure system within government. Our preference is to retain current regulatory settings where they exist and focus new requirements on sectors where there is no existing regulatory framework. Thus we would prefer the Commerce Commission to retain responsibility for overseeing Chorus' resilience expenditure and quality standards, while any new regulator could focus on currently unregulated sectors.

Discussion

Chorus' approach to resilience investments

13. We agree with the Government that safe, resilient, affordable infrastructure is essential for our well-being and prosperity, and the risks to infrastructure are growing and need to be prudently managed. We broadly support a coordinated approach to government support for infrastructure investment; as always, the challenge is to make sure the policy and regulatory decisions that flow from this approach are effective and proportionate.

14. As the largest Local Fibre Company and the owner of New Zealand's copper network, Chorus owns and operates critical telecommunications infrastructure. The majority of New Zealanders rely on the Chorus networks to communicate, and these lines of communications must be as resilient as possible. Having a reliable network is also essential to be able to retain customers in the face of competition from other telecommunications networks (eg fixed wireless and satellite). Consequently, Chorus has a strong interest in ensuring our infrastructure is resilient and reliable – this is not just our view, the Commerce Commission has reached a similar conclusion.[1]

15. Our fibre network is regulated by the Commerce Commission under Part 6 of the Telecommunications Act, meaning we already have strong regulatory scrutiny of our resilience investments. The Commission reviews whether our planned expenditure is prudent and efficient and sets mandatory quality standards that we must meet (or face prosecution and financial penalties). The quality standards include availability of fibre services, so our investment in a resilient fibre network is an important component of meeting our regulatory standards.

16. Also, our network was designed and built in accordance with the requirements set by the Crown in the Ultra-Fast Broadband (UFB) contract, which specified resilience requirements which the Crown judged to be prudent and efficient. In particular, the Crown's UFB contract required that no more than 3000 or 5000 customers, depending on the location, can be impacted by a single element failure. In accordance with this, we built significant redundancy and back-up elements into our network architecture.

17. Chorus has recently received feedback from our customers that network reliability is their top priority for investment and an area they regard as 'non-negotiable'. We have listened to that feedback and assessed our network's resilience requirements following the impacts of Cyclone Gabrielle. Our future investment plans (for the next 4 years) are subject to Commerce Commission approval, but are likely to include a significant increase in resilience expenditure.

18. Longer-term, Chorus has a programme of resilience investments which we are already implementing and which we expect to improve the resilience of our fibre services to more than 1 million premises over the next decade. These include investments to:

[1] Fibre Input Methodologies Final Reasons Paper, 13 October 2020, paragraph 2.332.2. https://comcom.govt.nz/__data/assets/pdf_file/0022/226507/Fibre-Input-Methodologies-Main-final-decisions-reasons-paper-13-October-2020.pdf

- add diverse fibre routes from our exchanges to our end-users, so if one route is damaged alternatives are available
- improve route diversity from our exchanges to our larger mesh sites
- improve the ability of our major exchange buildings to withstand earthquakes
- better utilise existing fibre cables so we can offer services in different directions through them
- purchase mobile exchanges, which can be used to quickly restore supply following the (very rare but high impact) loss of a major exchange building
- manage the risk associated with the loss of an exchange building by limiting the number of people served by any one exchange.

19. Chorus' approach to resilience investment is to identify the full list of investments that would notably improve resilience and prioritise them in terms of number of customers who benefit, and the cost of each project. While in an ideal world, we might complete all these projects very quickly, in reality our scope to invest is restricted by funding constraints, field service resources, customer willingness-to-pay and regulatory approvals.

20. If the government was interested in accelerating any of these projects, we would be happy to discuss funding options.

21. Also, for resilience investments to be effective they must be taken up and relied on. This depends on decisions by consumers rather than by infrastructure providers. For example, Chorus has a programme of rolling out dual fibre paths to communities so if one cable is lost the town will not lose supply. However, retail service providers (RSPs) do not always choose to use both routes. An RSP could choose to only buy access over one of the routes to a community and thus their customers are not protected by the dual path even where the infrastructure is in place.

22. There seems to be an assumption underpinning the discussion document that the current and planned level of resilience investment by infrastructure owners in New Zealand is insufficient. We hope the discussion above shows this is not true in all cases, and there are existing safeguards in particular where sectors are already subject to price-quality regulation by the Commerce Commission. We are not aware of any perfect metric to identify the optimal level of resilience, and this is something views will differ on (taking account of the impact of service loss, as well as the costs associated with more up-front investment). However, Chorus already makes substantial investments in the resilience of our assets and has strong incentives to continue to do so.

Principles and Criteria

23. The discussion document sets out the proposed principles and criteria that will underpin this work programme.

24. Chorus mostly agrees with the principles that are proposed, in particular:

- that critical infrastructure owners and operators are best placed to understand and manage the risks facing their organisations, but government has a responsibility to partner with industry; and
- Resilience should be enhanced at the least cost to businesses, consumers, and government.

25. However, Chorus does not agree with the principle proposed in paragraph 8(c)(iii) – where setting minimum standards in areas where market forces do not deliver the optimal level of resilience is described as a principle. This is because:

    - Minimum standards are a potential solution or outcome from this process – specifying a potential outcome could be seen as prejudging the outcome of this consultation
    - Setting minimum standards that can apply across multiple sectors of the economy in a way that is both meaningful and cost-effective is likely to be challenging and should be subject to debate, rather than baked into the process from the start as a principle to be adhered to.

26. The discussion document proposed three criteria for assessing options which will be used to test each option considered as part of this reform programme:

    - How well does the option enhance infrastructure resilience?
    - How does the option change regulatory burden and regulatory certainty across the community?
    - How does the option change the regulatory system's complexity?

27. Chorus agrees these are valid criteria. We recommend adding one more: "How cost effective and affordable is the option relative to other options"; while this is implicit in some of the other criteria, we see value in making it a core criterion given the potential cost impacts on New Zealanders of increased investment in infrastructure across all sectors that are included in this process.

Costs and beneficiaries of resilience investment

28. The discussion document states that the costs of increased investment in resilience will save money in the long run, as the costs will be more than offset by a reduction in expenses and asset values associated with infrastructure outages and failures. It notes that, in the short-term, the investment will come at a cost and this cost is best borne by the beneficiaries of the investment, which is suggested to be a mixture of shareholders, employees, customers, and government.

29. Chorus has concerns with the unqualified statements that "enhancing resilience will save New Zealand money in the long run."[2] While this can often be true, it will not be true in all cases. It is more accurate to say that "prudent and efficient enhancements to resilience will save New Zealand money in the long run".

30. Resiliency investments suffer from diminishing returns and there will come a point at which the costs are not outweighed by the benefits. Government should not fall into

[2] Discussion document, summary box on page 11, with a similar sentiment expressed in paragraph 64.

the trap of assuming all resilience investments are sensible, prudent and should be funded. In some cases it will be better to invest in preparedness for responding following an event (which Chorus is doing through our mobile exchanges, for example).

31. We generally agree with the principle that beneficiaries of the increased investment should pay for it. However, we question the assumption that shareholders will benefit from increased investment in resilience. Assuming businesses are rational, they will invest up to the point at which shareholders are expected to benefit from those investments. If the government is to set rules that require firms to invest beyond that point, it has no basis for claiming that net benefits will accrue to the businesses, their employees or their shareholders. Ultimately, it may be necessary for government to co-fund infrastructure for resilience purposes where there is no commercial case to make the investment.

32. For Chorus specifically, the Commerce Commission sets our 'regulatory cost of capital', which determines the returns our shareholders can make on their investment in Chorus. This is set at a point which the Commission believes is the best estimate of our cost of capital. Any move to reduce the level of returns received by our shareholders below the estimate set by our regulator would likely mean our investors would have a much reduced commercial incentive to continue investing in Chorus (whether in our resilience assets or other asset types) as they would have better investment options elsewhere. The Government needs to be careful in applying resilience policy not to conflict with other decisions and create an environment that is highly unfavourable to further investment.

33. A better approach would be to increase the incentives for asset owners to invest more in resilience. For Chorus, this could be achieved by making the regulated returns on investment more attractive and in line with the expectations of our investors (eg by increasing our regulatory WACC to improve investment incentives).

34. More generally, the discussion document[3] highlights that a significant portion of the cost of infrastructure failure falls on the government, and not just in relation to infrastructure that is owned by the government. As such, it would be efficient for the government to invest, up to a point, to mitigate its risks and support investments that are socially optimal but commercially unviable. There seems to a strong case that, as a core beneficiary of such investment and to reduce the cost impacts on the general public, government should consider contributing to increased resilience investment at a level that reflects its own expected benefits.

35. Under Chorus' regulatory model, we have the opportunity to recover the costs of our investment from our customers (the telecommunications retailers, who then pass those costs through to their end-users). Any regulatory requirements that increase our investment obligations will ultimately flow through into higher prices for broadband and voice services.

36. Industry experience is that consumers can often be unwilling to pay for such investments. If all asset owners across all critical infrastructure sectors are required to

[3] For example, Discussion Document, paragraph 26.

increase their investment levels at the same time, the cost implications for those who use all of the services may be unmanageable.

37. The discussion document[4] raises the prospect of direct government support for more vulnerable New Zealanders, to ensure resilience does not reduce their access to critical services. This appears to suggest some form of transfer payments to those groups to mitigate any higher prices they would face for key services. That is one way to mitigate the price impact.

38. Another way is for government to co-fund resilience investments itself, which would mean the asset owners would not need to increase their prices so much as they would not face such high costs (for companies regulated by the Commerce Commission such as Chorus, the value of any such contribution by the government is automatically deducted from the value of the assets we recover from our customers, so the flow-through to prices would be automatic).

Information sharing

39. We agree there is value in authorities and asset owners having a clear and shared view of important assets and their risks and vulnerabilities.

40. As a first point, we are not aware of any failure to provide asset information on a voluntary basis where that is needed. Regulation should be applied when it is needed, not as the first step when the information can be gathered under existing processes.

41. If information reporting is required by regulation, it is essential that any requirements are clearly defined and coordinated so it is clear what needs to be provided and what it will be used for.

42. Given the broad goals being set out in the discussion document and the large number of firms captured by the definition of a critical infrastructure entity, Chorus has some concerns about the scale of the task being proposed. The volume of information being gathered could be very large. We note the ambitious aim to create a:

> "real-time national view of the dependencies and interdependencies between critical infrastructures to inform an assessment of how service disruptions are likely to cascade across the infrastructure system (and which infrastructures are the most important to protect)."

43. While such a tool may be of value, it is not yet clear it can be delivered. We would not support government setting regulations that require industry to provide the information needed to support this tool without first being certain that it can be built and will achieve its intended purpose. In general, information must only be required where there is a high degree of confidence that it will be used for the intended purpose.

[4] Paragraph 68(c).

44. It is also critical that any information gathered is stored securely and confidential information is not shared with competitors. Industry support for this process will be dependent on assurances of confidentiality and secure data storage.

45. Finally, Chorus is already required to provide annual reports on the number and condition of our fibre assets.[5] There are also existing security reporting obligations under TICSA. It is important that different regulatory reporting requirements are aligned, as multiple competing requests for the same information creates material and unnecessary costs and confusion. Businesses should not be required to provide the same or similar information again (potentially in a different format, with different criteria) for this purpose when the information is already available.

Minimum standards and additional investment

46. The discussion document seeks views on whether minimum resilience standards (which could be principle-based or process-based) should be introduced for all critical infrastructure. It is suggested that this would help to overcome potential under-investment in making infrastructure resilient, and that minimum standards would help prevent "weakness in one entity adversely impacting the entire infrastructure system".

47. It is important to acknowledge that many asset owners are making substantial investments in resilience, and it should not be assumed that current levels of investment are inadequate.

48. As discussed above, Chorus is already making substantial investments in infrastructure and has a multi-year programme of further improvements. We have incentives to invest to ensure our assets are resilient to meet our customers' expectation of a reliable fibre service and avoid losing market share to competing technologies. It seems that under-investment is more prevalent in publicly owned assets where the competitive and regulatory pressures are weaker.

49. Also as discussed above, Chorus and some other utilities are also already subject to regulatory oversight of our expenditure (including resilience) and minimum service quality standards, which include ensuring availability of service. It is not clear whether any potential new standards would be higher than what we are already required to meet.

50. If minimum standards are to be introduced, we support a proportionate approach where they are applied to those companies who are not currently regulated, or to those companies where there are grounds for concern that they are under-investing in resilience. A blanket approach where the standards are applied to all irrespective of current performance would create compliance costs for those asset owners who are already investing at appropriate levels without creating actual improvements for customers and the general public.

51. It is difficult to comment further at this stage as it is very unclear how the minimum standards would be specified and what impact they might have. If they are too prescriptive, they will stifle innovation and may lock in obsolete practices and

[5] Schedule 10a: https://company.chorus.co.nz/file-download/download/public/2545

methods. They would also need to be tailored specifically for each industry which involves a level of complexity that should not be understated. In contrast, if the minimum standards are too high level, they will not achieve anything. We would need to better understand how the standards might be defined and what they would require before assessing the potential costs and benefits.

Accountabilities and structure

52. We agree with the discussion document that there is no clear accountability for the resilience of the infrastructure system within government. There is already a lack of clarity between the boundaries of this consultation process, the emergency management bill that is currently before Parliament, and the ongoing responsibilities of existing regulators such as the Commerce Commission.

53. Our preference is to retain current regulatory settings where they exist and focus new requirements on sectors where there is no existing regulatory framework. Thus the Commerce Commission would retain responsibility for overseeing Chorus' capital expenditure and quality standards, while any new regulator could focus on currently unregulated sectors.

54. We would not support an additional regulator or agency also having authority to regulate our investment activities – this would create unnecessary duplication and confusion and generate substantial costs.

55. In terms of industry accountability for resilience outcomes, we agree with the assessment that the "primary responsibility for determining what level of resilience is appropriate and investing to deliver on this rests with critical infrastructure owners and operators." This is correct, but we do not agree it is a problem. It is entirely appropriate for the asset owners to take responsibility for assessing appropriate levels of resilience. Asset owners have the best knowledge of the assets, of their risk profile and of ways to mitigate the risks. The government's role should be to oversee and ensure appropriate incentives are in place for asset owners to invest appropriately.

Appendix: Response to selected questions

Key question	Chorus' response
What do you think the government should do to enable greater information sharing with, and between, critical infrastructure owners and operators?	Government should first promote voluntary information sharing and identify any gaps that emerge. Regulation would preferably only be applied where voluntary information sharing is ineffective. Any new requirements should build on existing reporting regimes. Chorus and many other infrastructure providers already have significant information reporting requirements, and it makes logical sense to avoid as much duplication as possible in reporting systems. Industry would be more comfortable sharing information where there are clear systems and processes in place to ensure confidential information is securely stored.
Would you support the government having the ability to set, and enforce, minimum resilience standards across the entire infrastructure system? If so what type of standard would you support (eg requirement to adhere to a specific process or satisfy a set of principles)?	There is insufficient information available at this time on how these standards would be set and their cost implications to reach a clear view. If minimum standards are too prescriptive, they will stifle innovation and may lock in obsolete practices and methods. They would also need to be tailored specifically for each industry which involves a level of complexity that should not be understated. In contrast, if the minimum standards are too high level, they will not achieve anything.
Would you support the government investing in a model to assess the significance of a critical infrastructure asset, and using that as the basis for imposing more stringent resilience requirements?	The 'real-time' model being contemplated seems highly ambitious. The government may be better placed to first develop a more achievable assessment of critical infrastructure assets. Any such model would need to be highly adaptive and be able to handle an extremely large number of scenarios, due to range of type and severity of event alongside the rapid developments in technology. These factors all make it very challenging to predict the impacts of any one incident. We would be interested to see analysis demonstrating that the intended model could be detailed and dynamic enough to be useful, while also being workable. The stringency of resilience requirements should take account the current regulatory settings and level of investment as well as an asset's criticality.

Key question	Chorus' response
What criteria would you use to determine a critical infrastructure asset's importance?	We expect this would include: • the importance of the services provided by the asset to New Zealand's economic and social wellbeing. • the number of New Zealanders relying on services provided by the asset. • the number and criticality of other assets that rely on the asset.
Do you think there is a need for a government agency or agencies to have clear responsibility for the resilience of New Zealand's critical infrastructure system? If so: do you consider that new regulatory functions should be the responsibility of separate agencies, or a single agency? do you consider that an existing entity should assume these functions or that they should be vested in a new entity? how do you see the role of a potential system regulator relative to sectoral regulators?	There would be benefits in clarifying the responsibilities that agencies have for the resilience of New Zealand's critical infrastructure system. However, the regulatory functions should be (where possible) assigned to existing regulators. For example, it makes sense for the Commerce Commission to act in this capacity for telecommunications industry. Where this is not possible, such as for unregulated critical infrastructure providers, it is more logical for them to be regulated by a new agency, or existing agency with new responsibilities. If there are too many new regulatory agencies in New Zealand, the regulatory environment becomes unnecessarily complex and may undermine coherent planning and/or hinder response times in emergency situations.