

City Rail Link Interim Review

Phase 1: Preliminary Lessons Learnt Findings

Prepared for the New Zealand Infrastructure Commission, Te Waihangā

July 2023



Foreword

Te Waihanga, the New Zealand Infrastructure Commission has a focus on trying to create a deliberate “learning legacy” associated with New Zealand Government’s major infrastructure projects. Our view is that a major infrastructure project can only really be considered a success at the system level if its good practice, lessons learnt and innovation are collated and shared with future projects. This will help to raise the bar in industry and allow the showcasing the hard work and efforts of project teams.

We believe we can support enduring improvements in the way in which New Zealand delivers infrastructure by working with those within our largest projects to share knowledge and insight, through means such as case studies and technical papers providing lessons and recommendations to help others.

The New Zealand Government has recently announced an intention to invest over \$30 billion in mass rapid transport in New Zealand’s main cities over the coming decades. This is a scale of investment with few precedents in New Zealand’s history. By their nature they will also be some of the most complex – working in dense urban environments, needing to integrate with existing legacy assets and creating disruption to the communities and business which they are also trying to support.

There has never been a more important time to highlight and discuss the journey City Rail Link (variously CRL and the Project) has been on over the last decade. City Rail Link offers tremendous insights into the possible risks and opportunities arising from the programme of mass rapid transport projects currently under consideration including Auckland Light Rail, Let’s Get Wellington Moving and the Additional Waitemata Harbour Crossing.

In order to support the Government’s investment priorities, Te Waihanga has agreed with the Minister for Infrastructure that a significant focus of our 2022/23 work programme this year, will be to work with City Rail Link Limited (CRL) and the various parties associated with the CRL Project to understand what can be learnt that will inform both discussion on these projects and what they take to deliver, as well as hopefully informing future best practice.

The Reviewers

Graeme Joyce: Graeme has a background in large infrastructure projects and has undertaken over 150 Gateway Reviews across Australia and New Zealand, including many of Australia’s largest infrastructure projects including both heavy and light rail. Graeme’s combination of relevant New Zealand and Australian experience places him in a unique position to undertake a lesson-learnt review on City Rail Link. His experience will allow targeted questioning and comparison to other projects, and his experience on light rail projects will help ensure the information that comes out of the review is useful and informative for Auckland Light Rail, Auckland Second Harbour Crossing and Let’s Get Wellington Moving.

Peter Spies: has participated on project management boards on most of New Zealand’s largest infrastructure projects, including Waterview Tunnel, and provides depth of knowledge of the industry including governance, approvals, scope, commercial management, procurement and risk allocation. His experience will help ensure that the lessons learnt are fit for purpose for the New Zealand market.

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1. Background & Review Scope

1.1. Background – City Rail Link Project

The CRL Programme (which includes the CRL Project delivered by a special purpose Crown company - CRL and wider network improvements delivered by others) is one part of an integrated transport and land use plan for Auckland that includes major investments in motorway, arterial road and rail network upgrades. Rail investments such as doubletracking, network electrification and provision of new electric trains, have resulted in rapid rail patronage increases averaging 18% year-on-year for more than a decade (up to the Covid 19 pandemic). Auckland's population is expected to grow rapidly from about 1.57 million to 2.5 million people over the next 30 years. The CRL Project will provide the means to move a much larger volume of passengers more quickly and frequently - making public transport a more attractive travel option and helping free up Auckland's roads for those who need to use them.

The CRL Project is a key component to delivering Auckland Council's Auckland Plan, its City Centre Master Plan, and its Integrated Transport Programme.

The CRL Project, once fully completed, together with further rail network improvements and rolling stock increases, will:

- Allow trains to run in both directions through Waitemata Station (Britomart), doubling the number of trains on the network
- Allow for doubling of the number of people on trains to up to 54,000 plus an hour at peak times
- Facilitate doubling of the number of people living within 30 minutes travel of the city.

In this way, the CRL Project will facilitate a massive step-change in the rail system capacity including:

- Significantly improve customer service levels, better matching public transport demand and supply
- Expand the economic potential of the city, driving needed productivity increases by enhancing access to business and jobs
- Significant urban development, particularly for housing, is anticipated in all the station precincts in response to the enhanced transport provision.

The Auditor-General recently completed the Governance of the City Rail Link project review. This report is available here: <https://oag.parliament.nz/2022/city-rail-link>, which states:

“The CRL project is challenging. It is the country’s largest and costliest transport infrastructure project ever. It involves digging under central Auckland, moving existing underground stormwater piping and other utilities, and disruptive above-ground activity. The CRL project also includes the building of new stations and redevelopment of existing stations so they can accommodate longer trains.

In July 2017, the Government established City Rail Link Limited (CRL Ltd), a special purpose Crown company, to deliver the CRL project. CRL Ltd’s shareholders are the Crown (represented by the Ministers of Transport and Finance) and the Council. The Crown and the Council co-fund CRL Ltd and are also the CRL project’s Sponsors.

So far, the Sponsors have committed to investing about \$4.42 billion in CRL Ltd to deliver the CRL project. When they made that commitment, the Sponsors understood that there was a 50% chance that the CRL project would cost more. The Covid-19 pandemic has exacerbated this.

As well as the CRL project, Auckland Transport and KiwiRail Holdings Group (KiwiRail) are responsible for the wider network improvements needed to integrate the City Rail Link into the existing transport network in Auckland. These wider network improvements include new trains, removing level crossings, and the Wiri to Quay Park upgrade.

The budget for these wider network improvements is about \$1.11 billion. This brings the current total estimated cost of the work to enable the City Rail Link to start passenger services to about \$5.53 billion. These works will provide capacity for 27,000 passengers each hour during peak times.

Separate from the CRL project and the associated wider network improvements, Auckland Transport and KiwiRail have also signalled that, between now and 2036, additional investment of about \$7.5 billion in the Auckland Rail Network Development Programme could enable up to 54,000 passengers to travel through the City Rail Link each hour during peak times.”

1.2. Review Scope & Terms of Reference

The Lessons Learnt review is expected to be conducted in two Phases and include:

Phase 1 of this review seeks to extract learnings from delivery-to-date of the CRL Project which may be applicable for other tunnelled, rail, or large-scale infrastructure projects. The key focus of the review should be on practical learnings that will inform future decision making, policy development or project design to ensure that New Zealand realises greater value from its investment in major infrastructure projects. This Phase 1 Preliminary Lessons Learnt report provides a summary of the findings of Phase 1.

Phase 2 (if required) will investigate specific areas identified in Phase 1 as worthy of additional investigation. Phase 2 may also look at how the City Rail experience compares with similar projects internationally and where we might look for further learning to inform future projects. Phase 2 may use the same reviewers, however depending on the topics it may be more appropriate to use a different reviewer with specific knowledge in the ‘deep dive’ area.

1.3. Review Exclusions

The review was conducted at a time when particularly complex commercial considerations regarding the relationship with the Link Alliance were being conducted. This review did not consider or address those deliberations.

1.4. Review Approach

Te Waihangā has recommended that an interim review of the City Rail Link (CRL) project be undertaken to extract and share learnings from delivery-to-date of the project. This review has been endorsed by the Te Waihangā Board and has the support of the Minister for Infrastructure.

The review is to be carried out in collaboration with City Rail Link Limited (CRL) and all findings will be presented and discussed with CRL and Sponsors prior to publication.

The aim is for the review to be made publicly available to enable other large-scale infrastructure delivery entities and projects to inform best practice. The review to date has consisted of:

1. Consideration of relevant documents produced from Project initiation and through delivery of the Project to date, and
2. Interviews with key stakeholders from organisations including those listed in Appendix B.

The Findings and Recommendations of this review are potentially applicable to the planning development and delivery of any major project however they are aimed at future megaprojects in New Zealand. A definition of megaprojects by the Project Management Institute (PMI) is:

“Megaprojects, sometimes called “major programs”, are large-scale, complex ventures that typically cost more than 1 billion US Dollars, take many years to build, involve multiple public and private stakeholders, are transformational, and impact millions of people.”¹

The purpose of this Report is to identify key learnings that can be applied to future infrastructure megaprojects. It is not an assessment of the current City Rail Link initiative or the performance of City Rail Link Limited or any of the Sponsors.

1.5. About this Preliminary Lessons Learnt Findings report

During December 2022 work commenced on the Lessons Learnt report. It became obvious:

- Key interviewees that were required for the Review would not be available in a timely manner, notably representatives from Auckland Council, the City Rail Link Board and the Ministry of Transport
- There were a number of Key Findings and Recommendations that were consistently being raised by a review of the documentation provided and confirmed by interviewees
- Other megaprojects are being planned and are at various stages of development and would benefit from consideration of the findings and recommendations-as they were being raised by this review
- CRL, acting on behalf of the Sponsors and the Link Alliance, were involved in sensitive commercial negotiations which had the potential to delay publication of the Phase 1 report.

This report collates some of the key findings and recommendations arising for publication and consideration by key stakeholders. This report does not detail much of the history or reasons why situations arose that may have led to the findings and recommendations of this report. These may be further detailed in subsequent reports as appropriate.

The key lessons that have been found and are considered relevant to include in this Preliminary report are:

- Project Initiation
- Planning and development
- Property acquisition
- Procurement Strategy
- Governance (including Project and Programme management)
- Benefits realisation
- Life cycle costing, asset ownership and operations
- Stakeholder engagement and compensation.

Subsequent reports may provide additional information on these issues and may address other issues including:

- Sustainability and social outcomes

¹ Flyvbjerg B. (2014) What you should Know about Megaprojects and Why: An Overview. Project Management Journal, Vol 45 (April/May), Number 2. See <https://www.pmi.org/learning/library/what-you-should-know-megaprojects-11656>.

- Value capture
- Value engineering
- Procurement
- Contract interfaces
- Scope management
- Risk management
- Lessons learnt from tunnelling experience
- Identified areas of best practice.

2. Findings

2.1. Introduction

This report contains the key findings and, where considered appropriate, recommendation(s) and observations of the Phase 1 Lessons Learnt review.

For the information of readers this review notes that there is significant confusion in nomenclature when describing the Project regarding the use of CRL, CRL Project and CRLL. Many documents and interviewees used the terms interchangeably however they are described and defined below:

- CRL (City Rail Link Limited) is a special purpose Crown company, established to deliver the CRL Project.
- The Project Sponsors and CRL entered into a Project Delivery Agreement (PDA) setting out respective obligations for the delivery of the CRL Project by CRL. The CRL Project is described in the PDA as a significant infrastructure project to enhance the capacity and performance of Auckland rail services and improve transport outcomes in Auckland and consists of:
 - *a 3.45 km twin tunnel underground metro rail link, connecting Britomart Station to the Western Line in the vicinity of the existing Mt Eden Station, doubling rail capacity into the Auckland City centre; and*
 - *two new underground stations, modification to Mount Eden station, modifications to the Western Line at the connection points, modifications at Britomart Station and modifications to the existing railway network.*
 - Confusingly the term CRL Project is also often used to describe the wider programme of works beyond these two elements. The wider programme of works that are required to ensure that the benefits of the investment can be realised are referred to as the CRL Programme or Programme in this report.
- The Programme of works includes:
 - The CRL Project being delivered by CRL
 - New trains to maximise operation
 - Level crossing removals
 - Maintenance, operation, and renewals
 - Roadside projects
 - Additional traction feed (West)
 - Resilience and asset maintenance programme - Integrated rail management centre and emergency management systems
 - Resilience and asset maintenance programme – Infill signalling
 - Infrastructure package – Electronic train control system Level 2
 - Wiri to Quay Park upgrade
 - Urban realm improvements.

It was evident that the confusion in nomenclature describing the project and the establishment of a Special Purpose Vehicle – CRL – by the Joint Sponsors to only deliver key elements of the Programme for a defined budget while leaving remaining elements to be funded and delivered by others has created challenges. There is no single entity accountable for overseeing and funding the delivery of the improvements needed to meet the objectives of the CRL Business Case. This has also meant that there is significant uncertainty as to the budget and likely actual cost of the CRL Programme.

Given that megaprojects are large-scale, complex ventures that take many years to build and involve multiple public and private stakeholders, it is critical that the peak governance entity established to oversee and deliver the works does not have a confusing/ambiguous name and that there is absolute clarity as to what they are accountable for – ideally for delivery of all the improvements needed to meet the objectives and benefits of the approved Business Case.

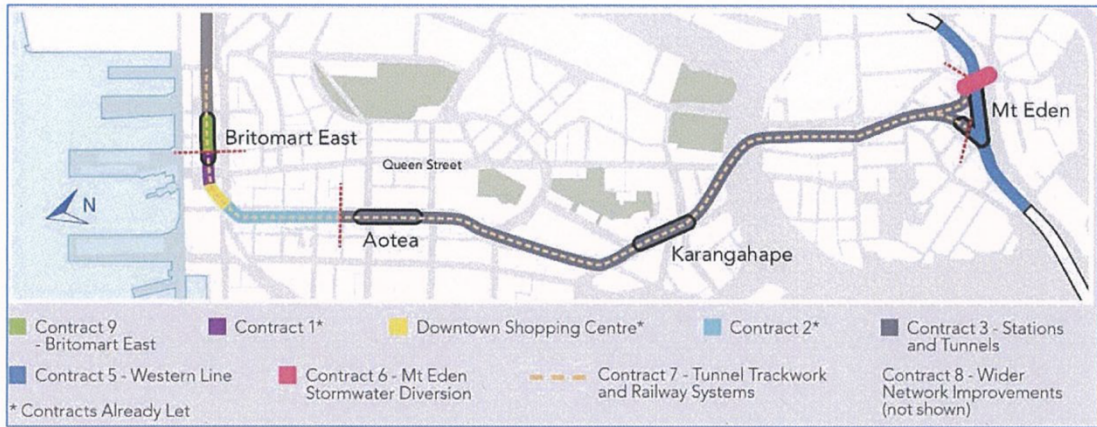


Figure 1: Scope and contract package as described in the Project Delivery Agreement (PDA)



Figure 2: Highlights how the CRL Project connects to and will form a part of the Auckland rail passenger network. The CRL Project connects to the stations at Waitematā Station (Britomart) and Maungawhau Station (Mt Eden) through new stations at Te Waihorotiu Station (Aotea) and Karanga-a-Hape Station (Karangahape).

CRL in partnership with Auckland Transport (AT), have formally adopted four te reo Māori names for the four stations.

The station names are:

- Maungawhau Station (Mt Eden)
- Karanga-a-Hape Station (Karangahape)
- Te Waihorotiu Station (Aotea)
- Waitematā Station (Britomart)

The ngā ingoa tuku iho (traditional names) were gifted by the CRL Ltd Mana Whenua Forum and honour the long-standing partnership the Forum's eight iwi have had with CRL since day one of the project in 2012.

2.2. Project initiation, Business Case and Project Development Agreement

2.2.1. General Findings

Auckland Transport (AT) prepared a business case for the City Rail Link in 2015 (the Business Case) which was endorsed by the Auckland Transport Board in 2016. This document was Auckland Transport's internal business case and documents that it was *"to facilitate the Gateway Review process prior to letting contracts for enabling works construction"*, and *"It is not a joint business case with government."* It is publicly available at <https://www.cityrailink.co.nz/crl-business-case>.

The Business case included, "The City Rail Link (CRL) is Council's top priority project to help achieve the Government's aims for higher economic productivity and the Auckland Plan vision of Auckland being the world's most liveable city." It contained five Objectives:

1. Improve transport access in and around the city for a rapidly growing Auckland. Future proof for expected growth
2. Improve the efficiency and resilience of the transport network of urban Auckland
 - a. Improve journey time, frequency and reliability of all transport modes
 - b. Maximise the benefits of existing and proposed investment in transport
 - c. Release the rail capacity constraint at Britomart
3. Significantly contribute to lifting and shaping Auckland's economic growth
 - a. Support economic development opportunities
 - b. Provide the greatest amount of benefit for cost
 - c. Enable a more productive and efficient City Centre
4. Provide a sustainable transport solution that minimises environmental impacts
 - a. Limit visual, air quality and noise effects
 - b. Contribute to the country's carbon emission targets
5. Contribute positively to a liveable, vibrant and safe city
 - a. Enhance the attractiveness of the city as a place to live, work and visit
 - b. Protect our cultural and historic heritage for future generations
 - c. Help safeguard the city and community against rising transport cost.

This Review notes that a subsequent sixth Objective appeared in some Project documents including the Stakeholder Alliance Participants Deed:

6. Deliver the CRL Project with a 'best for Auckland' approach.

It is unclear where this Objective arose or who endorsed it.

A Business Case prepared in accordance with The Treasury "Better Business Cases™" guidance has never been undertaken for the Project.

This Review highlights themes that would have been defined more clearly within a business case prepared within Treasury Better Business Case guidelines including but not limited to:

- **Funding:** the existing Business Case does not note that the Project is funded jointly by Council and the Crown
- **Governance:** the Business Case does not detail the governance arrangements that were introduced for the Programme. It was produced on the basis that the "Auckland Transport Board holds ultimate governance responsibility for the project". It also proposes, "a Steering Group (SG) has overall accountability for ensuring the project meets its objectives and delivers expected outputs".
- **Benefits and Benefits Realisation:** the definition of the benefits arising from the business case funding request and the process for realising the benefits is inadequate
- The Owner and Operator of the project would be defined
- The impact on the wider network and the Wider Network Impact Projects would have been better defined
- **Procurement:** the development of a procurement plan. It is noted that the use of an alliance procurement model was not considered in the Business Case.

The early phases of the Project and project development were fully funded by Auckland Council and developed by Auckland Transport. This included some physical works which commenced in the lower Downtown area to facilitate the construction of rail tunnels under the privately developed Commercial Bay linking into Waitemata Station (Britomart) and commencement of cut and cover works up Albert Street. These works were intended to ensure that the Downtown precinct area would have streetscape works completed ahead of the scheduled APEC 2020 summit in Auckland. The expected cost of the balance of the works was found to be in excess of funding available from Auckland Council.

In 2017 a decision was made to proceed on the Project with joint funding between the Crown and Auckland Council (Council). A PDA for the Project was developed between Council, the Crown, and City Rail Link Limited (CRL) to provide funding and management of the Project. It was executed in June 2017 and amended in 2019.

It describes the obligation of CRL and amongst other things detailed:

- *"The Parties record their shared expectation that the management, delivery and completion of the CRL Project, and the engagement between CRL and the Sponsors, will seek to be an exemplar model for the efficient and effective provision of public infrastructure through central and local government collaboration"*
- The Project budget, which was \$2.5B (2015) in the Business Case has been subject to various reviews and increased to \$3.4B (P50) in 2017 and \$4.419B in 2019.

- The funding mechanism which was to be provided 50% by Crown and 50% by Council.
- The Project completion date, which was 2022 in the Business Case, was altered to March 2024 in the 2017 PDA and December 2024 in the 2019 PDA update.
- *“This Agreement sets out:*
 - *the terms on which CRL is to deliver the CRL Project*
 - *the basis of Sponsor funding for CRL to deliver the CRL Project;*
 - *processes for Sponsor assurance in relation to delivery of the CRL Project; and*
 - *the key delivery objectives and other terms and conditions on which CRL is appointed to deliver the CRL Project.”*
- Specifically which assets of the CRL Project were to be delivered by CRL. (Refer to Appendix A of this report for a summary of the scope of CRL works.)

This review notes that the PDA did not specify how any additional works that were required to deliver an operational network beyond CRL works would be governed or funded.

Other Agreements were established to assist with the governance of the project, including:

1. A Delivery Partner Agreement between CRL, Auckland Transport and KiwiRail Holdings was executed in 2019 which set out how the Parties would work together to meet CRL obligations under the PDA.
2. A Stakeholder Alliance Participants Deed between CRL, Auckland Transport, KiwiRail Holdings and the Other Alliance Participants was executed in July 2019 which included, “the parties agree to work together in a manner so as to achieve the successful delivery of the Works under the Alliance.”

Interviewees provided critique of the decision to deliver the Project through the PDA, including:

- The PDA was overly legalistic with respect to terms and processes and did not recognise that it was an agreement between three publicly owned entities.
- The Default and Disputes clauses of the PDA were not normal provisions of an agreement between public bodies. Stakeholders considered that they were unnecessary, overly complex and not helpful for developing the culture of co-operation and positive decision making between government that is required and usually evident in a major project. It is noted that these were ultimately removed in the revised 2019 version.
- It failed to describe a Governance structure for the Project. It is noted that governance is not covered as a section within the PDA.
- It inadequately described the roles of key project participants Auckland Transport and KiwiRail in the Project.
- It failed to identify the entities that would own and operate the rail system upon completion. Many noted that it is usually the owner and/or the operator that should have the ultimate stake in assurance.
- The PDA was overly reliant on the role of Sponsors’ Representative, who under the PDA was, *“the primary point of contact and communication between the Sponsors and CRL for all purposes related to this Agreement, including communicating decisions of the Sponsors to CRL.”* While very complimentary of the individuals who were nominated to this role, interviewees confirmed that in reality most were public servants with Policy development

backgrounds and little experience in megaproject delivery. There was also substantial turnover in Ministry of Transport staff.

Interviewees confirmed that it is, of course, the prerogative of Governments/Sponsors to make strategic investment decisions despite these not necessarily being supported by a robust business case and associated Benefit Cost Ratio or benefits realisation statement. Such decisions however cannot derogate the need for robust processes to deliver such a project/programme of works as effectively as possible and with appropriate oversight of key development steps and decisions. The Review has found that since the 2015 Business Case:

- Funding for the CRL Project has changed, and the Crown has agreed to provide 50% of the funds for the CRL Project
- The budget for the CRL Project has changed substantially
- The scope of the CRL Project / Programme has changed whereby the entirety of projects required to deliver the benefits expected of CRL has expanded substantially beyond the provision of a tunnel and stations
- The delivery timeframe for the CRL Project has changed
- Governance has changed including the introduction of the Stakeholder Alliance Participants Deed and the Delivery Partner Agreement.

Some jurisdictions consider that a Business Case is a Project's "Contract with Government", and if the requirements of that contract change significantly particularly regarding Cost, Time, Quality, Risk, and Governance then the Business Case should be reviewed, updated and Government endorsement sought for any change.

This Review notes that the Treasury "Better Business Cases™" guidance includes:

"If there are substantive changes you need to consider if the initiative still stacks up. In this case you're likely to need to go back to Cabinet with an update to the Detailed Business Case or to update the Implementation Business Case to demonstrate that the investment is still viable."

As detailed elsewhere in this report:

- Additional works to those identified in the original Business Case and PDA have been identified that are required to ensure that the Project Benefits are delivered. It is unclear how or why these projects were not identified or included. These "wider network improvements" outside those allocated to CRL in the PDA are currently estimated to be in excess of \$1.1 billion and include:
 - New trains to maximise operation
 - Level crossing removals
 - Maintenance, operation, and renewals
 - Roadside projects
 - Additional traction feed (West)
 - Resilience and asset maintenance programme - Integrated rail management centre and emergency management systems
 - Resilience and asset maintenance programme – Infill signalling

- Infrastructure package – Electronic train control system Level 2
- Wiri to Quay Park upgrade
- Urban realm improvements.
- The governance for the Project has changed substantially over time including identifying and/or better detailing the roles of CRL, Auckland Council, Auckland Transport, the Assurance Manager, Kiwi Rail and the Sponsors’ Representatives. The progressing of the Project through the PDA which in essence only details the requirements of Sponsors and CRL led to the requirement to develop additional governance, assurance and facilitation entities to assist in managing the Project. These include:
 - Sponsors Forum
 - Joint Sponsors Team
 - Assurance Manager: TSA Management
 - Project Control Group
 - Delivery Partner Steering Committee.

Interviewees considered that these entities were established as workarounds for an inadequately thought through and inappropriate governance structure determined by the PDA. Establishing suitable governance and management oversight has been time consuming and relied on significant good will by public officials attempting to work within their individual organisational constraints and mandates.

- Interviewees were complimentary of the willingness of all Public sector entities and individual representative to continuously work together to always evolve and improve the governance with an overall aim of providing the best outcome for New Zealand as a driver. Further, the Sponsor’s Representative role performed by the Auckland Council Sponsor's Representative, an experienced practitioner in the delivery of major and megaprojects, was consistently praised.
- The delivery of the Project has been impacted by the absence of an identified, documented and agreed Owner and Operator for the assets delivered by CRL. This included minimal and inadequate ability by Auckland Transport and KiwiRail as assumed Owners and Operators to influence essential whole of life considerations regarding capital expenditure (capex), standards and decisions that may be required to minimise operational expenditure (opex).

Despite the issues raised in this section, interviewees were generally complimentary that CRL is delivering assets in a timely manner and to an acceptable standard. All interviewees agreed that this would not have been achievable without the collaboration and support of the Sponsors, Auckland Transport and KiwiRail Holdings.

2.2.2. Major Finding: Foundation Documents

There is consensus that Auckland Transport had to start the CRL Project (specifically the Downtown CRL Project infrastructure) before the Commercial Bay development commenced. If the project had not started it would have precluded access into Waitemata Station (Britomart) in the future. The decision by Central Government to co fund the CRL Project with Auckland Council removed delivery responsibility from AT and transferred this to CRL.

The process of introducing the specific PDA used, which the Review Team were advised was a slightly modified version of the PDA used on CrossRail in the UK, as the foundation document for the Project was not universally supported by interviewees. The use of a PDA and precursor documents/plans on any future megaprojects should consider improvements to the obligations of entities as well as management and ownership of scope being delivered by multiple government entities.

This Lessons Learnt review has highlighted that there are likely to be significant impacts on project delivery if projects are commenced when key foundation documents are inadequately developed and/or understood.

In particular, inadequate detailing of the following issues has potential for the impacts noted:

- **Scope:** Transformational projects which seek to deliver objectives over and above the delivery of infrastructure, for example an improvement in liveability, vibrancy, or reduction in transport carbon emissions, need to have these objectives scoped with as much vigour and clarity as the infrastructure aspects of the project. In the case of the CRL Programme additional scope of in excess of \$1.1B (2017 estimate) has been identified that sit outside the agreed scope of CRL. There was a lack of clarity as to who was responsible for tracking and monitoring this work.
- **Budget:** If cost estimates (including contingency allowances) for the CRL Project are inadequate and/or produced based upon limited understanding of scope required, standards, delivery constraints and risks the budget will be exceeded. In the case of CRL works as at March 2023 the cost of the work is now estimated to be \$5.493B. This is a \$1.074B increase on the previous estimate of \$4.419 billion approved by the Sponsors in May 2019 and an increase of over 100% since the \$2.5B 2015 Business Case allocation.
- **Timeline:** Funding submissions should be supported by adequately researched and scrutinised timelines. The Business Case had a scheduled “completion in 2022/23”. At the time of this Lessons Learnt Review the expected completion date was unclear to interviewees having been impacted by a Black Swan event – Covid 19, as have other major projects underway. This was complicated by ongoing commercial discussions with Link Alliance.
- **Quality:** The quality that a project is delivered to, will of course have a direct impact on the cost and time to complete. It is important that sufficient detail is provided within technical specifications/ requirements for a reasonable estimate of cost to be made. A governance process is then required to manage and approve any changes in quality that happen over time. In the case of the CRL Project this was complicated because:
 - A project of this type, namely an underground rail project, had not been completed in New Zealand. This was further complicated by the transformational nature of the project as this was also the first large-scale integrated transport-urban development project in New Zealand.
 - The role of Owner and Operator of the project assets was not defined and agreed. The Owner and Operator have major stakes in quality and have a driver to minimise ongoing opex service and operations costs which are significant for underground Metros.
 - On the CRL Project the Review Team heard of additional scope and quality issues ranging from incredibly complex and expensive decisions such as the number of train-sets that the Project was designed for changing from six to nine through to ongoing discussions regarding number of toilets that should be on a platform and disability access issues.

2.2.3. Major Finding: Scoping

Major additional works outside the scope of CRL have been identified as being required to deliver the benefits for the CRL Project both as part of and since the Business Case was written. These should have been identified in the original Business Case and had responsibilities assigned in the PDA and/or other documents.

For future planned megaprojects the Treasury “Better Business Cases™” guidance material should be reviewed to ensure that funding proposals sign off that all related infrastructure requirements that may be required to achieve the benefits have been investigated and identified with funding sources nominated either concurrently or in the future as appropriate. The requirement to sign off on projects that are initiated through funding proposals other than The Treasury “Better Business Cases™” guidance should also ensure that all related infrastructure requirements that may be required to achieve the benefits have been investigated and identified with funding sources nominated.

2.2.4. Recommendations

Recommendation 1: Ensure that all high risk, high value projects have a Business Case(s) prepared and approved in accordance with The Treasury “Better Business Cases™” guidance or an equivalent foundation document that adequately details all key aspects of the project. The Business Case (or equivalent) needs to include all scope required to deliver the project’s benefits and objectives, or acknowledge where they are being delivered under a different or wider project or programme with responsibilities for this clearly identified and acknowledged by the relevant entity.

Recommendation 2: Where Sponsors appoint Sponsors’ Representatives, they need to have a process to ensure the individuals have the ability, sufficient skill and time availability to perform the designated role.

Recommendation 3: Ensure that the foundation document(s) for a project provide sufficient detail to allow decision makers to be fully informed on key areas including, budget, timeline, governance, role of Sponsors’ Representatives (or equivalent), scope and funding of any ancillary projects that are required to achieve project benefits, benefits realisation plan and the Procurement Strategy/plan. These foundation documents should be treated as “living documents” and updated as project knowledge, in particular with respect to standards, risks and opportunities grows.

These foundation documents should as a minimum include the following:

- Problem Statement
- Project Purpose
- Project Scope
- Benefits Realisation Plan (Work In Progress)
- Objectives and Deliverables Plan
- Project Governance Plan
- Options analysis
- Risk analysis
- Project Budget including basis of estimates and Risks & Contingency management
- Funding and financing models
- Project Schedule and Deliverables
- Evidence of stakeholder engagement and endorsement
- Standards and Guidelines Plan
- Planning Strategy
- Delivery and Procurement Strategy, including market assessment of capability and capacity.

Documentation should also be provided regarding the status and /or proposal regarding the delivery of the following which may happen over the life of the project:

- Organisation structure, Roles and Responsibilities
- Project Resources Plan
- Financial Management and Audit Plan
- Benefits Realisation Plan (Final)
- Property Strategy
- Stakeholder and Communications Plan
- Project Reporting Plan, Health and Safety Plan
- Design Management Plan
- Operations and Maintenance Strategy (identify ownership)
- Risk Management Plan and processes
- Post Completion Review Plan
- Change Management Plan
- Probity Plan
- RACI (Responsible, Accountable, Consulted, Informed) chart.

Recommendation 4: As a guide to assist future megaprojects the Sponsors, Sponsors’ Representatives and CRL should request the Delivery Partners Steering Committee to review and document the practical application of the PDA and document what clauses and provisions were useful in completing the project and those considered to have hindered/frustrated the project.

Recommendation 5: The Phase 2 of this Lessons Learnt Review should investigate and recommend how key elements of a megaproject including governance, scope, life cycle costing including capex and opex considerations, cost, procurement, time, quality and risk should be considered, monitored and regularly reviewed through a process of defined Stage Gate “review points” and how well the process for seeking Sponsors’ approval for changes has worked.

Recommendation 6: Ensure that all funding proposals for high value high risk projects confirm and sign off that all related infrastructure requirements that may be required to achieve the benefits have been investigated and identified with funding sources for these nominated, to the extent possible at the time.

2.3. Planning and Development

2.3.1. General Findings

In August 2012 AT lodged six Notices of Requirement (NoRs) with Auckland Council to designate land for the construction, operation and maintenance of the CRL, including the protection of subterranean works. In February 2014, following public submissions and a hearing, independent commissioners recommended that the six NoRs be confirmed. The concerns raised by a relatively small number of submitters primarily related to the management of construction impacts in particular locations. Most submitters recognised that once built, the CRL will benefit Auckland and did not dispute the need for the project. It is however noted that the construction impacts have been greater than may have been assumed by submitters or more likely that tenants of buildings impacted by the works were not sufficiently aware of what the actual impacts on their business would be. The period of time that passed between designating the project and works commencing has also meant that there could have been changes in tenancies and people that may have been informed as to the NoRs.

In April 2014 AT gave notice of its decision to accept the commissioners’ recommendation. Six appeals were subsequently lodged with the Environment Court, five of which were settled through mediation and one proceeded to a hearing. This was dismissed and the six designations were confirmed in November 2015.

Responsibility for the CRL designations has been transferred from AT to CRL through the PDA.

A number of resource consents have been granted for the construction of different stages of the CRL, in relation to activities such as earthworks, disturbance of contaminated land, the taking and diversion of groundwater, stormwater management, and discharges to air. Resource consents have also been granted for operation of CRL, in relation to stormwater management and discharges to air. The conditions of the various resource consents specify how any adverse environmental effects associated with construction and operation of CRL are to be managed. This includes the preparation of a number of Management Plans for construction related effects once the actual design is sufficiently advanced and construction effects are known.

2.3.2. Major Finding: Timings of Notices of Requirement and Resource Consents

The timeframe between securing the NoRs (lodged in August 2012, secured in November 2015) and the award (July 2019) of the substantive Tunnelling and Stations package (C3) followed by detailed design before any physical works commenced did create a challenge. NoRs and Resource consents for an extremely complex project had to be secured without an understanding of the likely methodology that the successful consortium would bring to the project. It is also inevitable that there are changes in specifications and standards over time, particularly for matters relating to systems and operations where technology changes/obsolescence occurs. This required assumptions to be made on very preliminary designs and a level of conservatism creating the risk that subsequent Outline Plan of Works and Resource consent management plans would require substantial effort to support the proposed methodology. Early funding certainty would have allowed for shorter timeframes and improved overall efficiencies.

2.3.3. Recommendations

Recommendation 7: A planning strategy cannot be developed in isolation and needs to be considered in conjunction with property acquisition, procurement (design and physical works) and delivery strategies to reflect the risks and opportunities associated with various procurement strategies and models.

Recommendation 8: If early works/enabling works are being considered as part of a Procurement Strategy (recommended) then these should form part of the overall consenting strategy.

Recommendation 9: A proactive philosophy of securing Outcome based conditions should be pursued where possible to allow contracting consortia to innovate and develop solutions that comply within the outcomes.

Recommendation 10: Early engagement with the Designating and consenting authority/s is essential to understand any resourcing constraints that they may have as well as discussions with respect to Outcome based conditions and subsequent Management plan processes when in construction phase to ensure and demonstrate compliance.

Recommendation 11: For megaprojects explore opportunities for the project Sponsors to provide the necessary funding to the Authority/Council to establish an appropriately sized team to support the planning process both through the initial NoR/Consenting phases but also for the subsequent and more time critical Outline Plan of Works (OPW)/Management plans phase.

2.3.4. Additional Observations

Observation: Project sponsors and consenting authorities should explore opportunities to jointly accept recommendations from certain specialists with respect to specialisations with limited resources in NZ, (noise, vibration EMF etc.) rather than the additional cost and time of separate independent experts resulting in professional disagreements on relatively minor points.

Observation: Procurement strategies should consider opportunities for the contracting consortium to provide input across critical issues/proposed conditions before these are finalised. This was a philosophy adopted for the Waterview Tunnels project where the EPA Call in process was followed. The physical works tender process ran in parallel with the Board of Enquiry closing 6 weeks after the Conditions were granted allowing time for these to be further considered and priced by the bidding Consortia.

2.4. Property Acquisition

2.4.1. General Findings

Land acquisition for the CRL was solved progressively and predominantly on a “willing seller willing buyer” basis within the Designated and consented envelope. Early property acquisition for the CRL Project undertaken by Auckland Transport included commercial and residential entire property acquisitions required for stations and construction areas which necessitated the relocation of some businesses. Successful agreement was reached with Precinct Properties to carry out construction of tunnels underneath, and in conjunction with, the 39 level Commercial Bay development. Cut and cover work up Albert Street was undertaken within existing Road Reserve by entry agreements between officers of Auckland Council, Auckland Transport and the Crown, with road stoppings and a legalisation process to follow.

With the establishment of CRL and funding certainty for the remaining works came the reality of needing a well-developed and resourced property strategy to acquire the remaining land interest. Those interests included substrata titles, surface occupations for construction lay-down areas, easements, covenants and business relocations comprising a mixture of public and private ownership.

The CRL Property Team has been highly successful in their task of acquiring the necessary land interests and at no stage was entry for construction impacted.

The subsurface engagements were supported by the creation of over 80 highly customised site-specific landowner engagement packages that was a new approach in New Zealand and at a greater volume and level of complexity. This was a significant step-up in depth, quality and detail of engagement from the recently completed Waterview motorway tunnels which were primarily low-density single-dwelling residential homes vs the built-up urban environment the CRL is located in. It also differed from the Central Interceptor project currently underway as that infrastructure is installed under a different statutory regime and does not require a fee simple ownership in land that is customary to road and rail projects.

The team remained vigilant to changes in approach by the Minister and Governor-General, with proactive support given to Land Information New Zealand (LINZ) with those transitions and briefings provided as required. An emerging experience requiring process flexibility was the requirement for the Minister responsible for signing off statutory notices to be satisfied not only of the necessity for the land/substrata, but also that the need for the land was imminent. The main C3 tunnelling and station works alliance was awarded prior to full land acquisition and CRL had to manage the risk of acquiring the subsurface land before the tunnel boring machine (TBM) arrived – a ‘just in time’ approach to compulsory land acquisition. This compares to the more traditional approach typically seen on motorway projects where all or substantially all of the land was acquired before works commenced.

To achieve this outcome, they deployed a team with varied, but complementary, skillsets which evolved over the progressive acquisition phases. They defined and streamlined multiple processes (technical, statutory and engagement) and directly collaborated with suppliers and relevant authorities early to ensure defect reduction/elimination.

2.4.2. Major Finding: Property Acquisitions

The CRL Team made step changes in the way suppliers were procured and influenced how processes are shaped and delivered. Suppliers were identified within firms on their skill and ability to function effectively in the delivery chain dynamic and selected by competitive tender. They were given clearly defined tasks and mobilised to deliver high quality outputs as a result of defining and commoditising the work output for consistency and efficiency. The clarity and understandability of information/outputs was as important between suppliers in the workflow as it was for the landowners and their agents.

Quality assurance was inherent in the integrity of those processes and ensured continuing effectiveness and accountability. This was necessitated by the complexity and volume of material required to support well-informed negotiations with landowners and the remote supplier work force.

High-quality communication materials provided the platform for robust engagement with landowners and their professional advisors across a range of disciplines (geotechnical, structural, planning, valuation, legal). It was important to build trust and understanding of the acquisition processes and the technical requirements (particularly for redevelopment sites) among landowners and their advisors and to shape the conversations to keep focus, reduce distraction and empower them with knowledge. The engagement process evolved to meet the landowners' needs and challenges that arose during these negotiations.

Several innovations assisted with closing out acquisitions willingly. A process to provide Section 176 Resource Management Act consents in advance was implemented and ultimately resulted in reducing uncertainty for landowners, increasing their confidence to proceed with the sale of the land. Additionally, the development of a non-binding facilitated mediation process utilising a High Court judge and valuer proved invaluable to negotiations. This was initiated in a commercial complex business relocation and taken through to 30+ more routine subsurface interests and other construction requirements including canopy and ramp removals. This mediation model has subsequently been adopted by LINZ for other agencies to utilise.

2.4.3. Recommendations

Recommendation 12: CRL should document their learnings regarding property acquisition on the Project, including:

- The mediation model adopted by LINZ
- The process to develop a property strategy that aligns with the Planning and Procurement strategies for megaprojects from the onset
- Status and recommendations regarding industry capability for the scale and technical complexity of urban projects
- The need for the property acquisition role to have ongoing interaction with internal project teams to ensure land definition can be optimised and justified.

The document should be used by Government, Councils and Te Waihanga and shared across New Zealand megaprojects.

2.4.4. Additional Observations

Observation: The footprint to be acquired for a megaproject needs to be thoroughly investigated, requirement well demonstrated and capable of withstanding challenge. Ideally in urban areas this footprint should be as small as possible for the physical works needed and associated construction

requirements (site establishment, laydown yards etc). It is however recognised that other project/programme desired outcomes may require additional land for non-transport function reasons that will need to be justified through the Designation process.

Observation: For tunnel projects the proposed land use above the tunnel needs to be understood and allowed for both in the tunnel design as well as protection covenants.

Observation: A highly efficient process supported by good technical advisors defining boundaries and constraints requires property specific engagement at least 12-15 months before the land is impacted by construction. *A poorly developed and resourced process will take substantially longer with potential to impact construction entry or acquisition budget if compensation cannot be closed out.*

2.5. Procurement Strategy

2.5.1. General Findings

Development of a Procurement Strategy on a Megaproject is one of the most critical pieces of work and one which will have lasting ramification for the project and the construction industry. It is vital that the Procurement Strategy be developed by appropriately skilled and experienced personnel.

For the CRL Project this required skills and experience including:

- Developing a Procurement Strategy for a Megaproject
- A detailed understanding of the key construction elements including tunnelling, railway station, rail track and rail systems integration
- The integration of key construction elements into a complex rail network
- An appreciation of the NZ construction industry context.

Interviewees advised that very few people exist in New Zealand who have these attributes and qualifications. Therefore, serious thought should be given as to the process and people required to develop Procurement Strategies on future megaprojects.

Given the transfer of the project from AT to CRL in 2017 the Review Team have not been able to sight documentation providing the background and rationale behind the Procurement Strategy and procurement models originally proposed but which have subsequently been modified primarily as a result of market circumstances.

With Designation certainty secured but funding remaining a challenge it would appear that the desire became to commence and deliver the project through a number of independent packages with the then AT managing and carrying associated interface risks leading to the use of smaller value packages. The project was also viewed as two separate (and assumed) unrelated activities:

1. The heavy civils and building infrastructure associated with tunnels and stations and
2. The Systems, Integration testing and commissioning associated with train signalling and fire life safety (FLS) systems for an underground metro tunnels and stations.

No conscious consideration was given as to ownership and operation of the CRL Project but the existing practice in Auckland of AT owning “above track” and KiwiRail “below track” was assumed although no interaction with KiwiRail appeared to have taken place. More recently asset ownership and operation has been considered by all parties and an in-principle agreement has been formed and shared. In the future however megaprojects involving multiple ownership should address issues of

asset valuation and accounting treatment as early as possible in the development of the project to avoid any ongoing distractions.

Works commenced on smaller packages in the Downtown precinct while AT did carry out further market engagement on a Procurement Strategy that described 6 remaining packages with the intention that these would be Measure and Value or Design and Construct type packages and take a discipline-based approach to maximise the opportunity to secure market interest in the Project. While no documentation was sighted it is understood that the advice provided by the market showed concern about the desire to create a number of separate contracts with interface risk and associated specific commercial impacts as well as the suitability of non-collaborative contracting forms for complex works. There was general industry support for an alliance model with appropriately developed risk allocation.

Despite industry feedback AT continued with their contract packaging strategy and commenced with a procurement process seeking Registrations of Interest (ROIs) for Packages C3 and C7 using the Design and Construct form of contract for C3 and Alliance for C7. C3 had three ROIs and a shortlisting exercise was undertaken with the intent of identifying two consortia to take through the final stage of an Interactive D&C tender process. The shortlisting exercise resulted in two preferred consortia announced with planning progressing for the final procurement stage.

This was a time of great uncertainty with project estimates increasing, Central Government considering its position and ultimately plans to establish CRL as a Special Purpose Vehicle (SPV). A further issue was that one of the two preferred consortia - a consortia led by Fletchers - advised that they were withdrawing. Various reasons were given including apparently that they would only proceed under a more collaborative alliance model while officially their ongoing commercial issues on vertical builds including the Christchurch Justice precinct, SkyCity convention centre led to Fletchers retreating from the building market.

Following an Alliance procurement process the C7 package was awarded to RCR Tomlinson and WSP/Opus to deliver the rail tracks, signalling, overhead lines, control system rooms, communication and building works in October 2018. Unfortunately, RCR Tomlinson was placed in a trading halt on November 12, put into administration shortly after and CRL advised that they would be unable to meet their contractual obligations and the Alliance terminated.

For C3 Fletchers withdrawal was accepted and the 3rd placed consortia invited to become the 2nd shortlisted consortia. It was also decided to amend the procurement model from D&C and an extensive exercise was undertaken to adopt NZTA's Waterview tunnels Alliance documentation to a format considered suitable for CRL. A competitive alliance interactive tender process was undertaken leading to the selection of the Link Alliance in July 2019.

CRL were as a result of the C7 termination given the opportunity to negotiate with the C3 consortia to create a single integrated alliance which might have been the preferred model but for the project's history including Sponsors specifying in the PDA that these were to be separate packages.

It would however appear that this has created some suboptimal outcomes. Having gone through an extensive procurement process selecting in particular the C3 consortia based on their skills and response to the requirements of the C3 package CRL commenced negotiations to incorporate works that would not be considered core business of the C3 Non-Owner Participants. While all parties involved attempted to set up separate workstreams to allow C3 to progress while negotiating C7 scope it can only be assumed that the critical early stage forming of an Alliance team was impacted by the pressure of commercials to negotiate C7 works into the C3 package which was ultimately achieved, and a Variation agreement signed in 2020.

2.5.2. Major Finding: Development of Procurement Strategy

Inadequate consideration was given to the development of a cohesive Procurement Strategy as part of the Planning (Designation and consenting) process and decision making appeared overly focussed on emerging issues such as commencing works around and under the Commercial Bay development. Funding uncertainty/concerns as well as a traditional mindset of smaller heavily managed contracts led AT to develop a 10-package Procurement Strategy. Following procurement works commenced on the first 3 packages and shortlisting had commenced on the C3/C7 packages by the time Central Government became involved, a Sponsors Forum formed, the CRL SPV created and the PDA signed.

It would appear that despite substantial input of all parties involved in drawing up the PDA to define specific obligations and remedies, the parties elected to accept the AT Procurement Strategy including the proposed D&C form of contract for C3 and locked these into CRL's deliverables. As a result the CRL project team were faced with dealing with the resulting challenges including amending contract forms mid procurement process and having to integrate the C7 Systems, Integration, Testing and Commissioning works into the C3 Tunnels and station works which were amended to an Alliance procurement and delivery model.

The overall Alliance package created was the largest single contract ever procured in NZ and did not have the benefit of a robust development process from the onset.

CRL have been obliged to address issues as they arise such as integrating C7 into C3 and carrying out project critical works out of sequence to that envisaged in the PDA or Business Case to avoid complicated rework at a later stage (Waitematā Station (Britomart) east, 6-9 Car). These and other issues have unfortunately created distractions to resources that were essential for ensuring effective oversight and management of the Link Alliance works.

2.5.3. Recommendations

Recommendation 13: Megaprojects require well developed Procurement Strategies undertaken by appropriately skilled and experienced people, with the Planning and Property strategies fully aligned and integrated. The strategy needs to address utility relocations/early works packages as well as the preferred procurement models (M&V, D&C, alliance, PPP) to reflect the scale complexity and likely market appetite (local and international) to participate in the process.

Recommendation 14: Market interest in the development of megaprojects with respect to timing, packaging and procurement models is high. This is best managed through a formalised market sounding/engagement process that should fully detail interaction with project members.

Recommendation 15: Procurement strategies should be reviewed/reconfirmed at defined project Stage Gates to ensure that earlier assumptions remain valid and continue to align with Consenting and Property acquisition outcomes. Project Governance should also be reviewed/reconfirmed if procurement strategies change.

2.6. Governance

2.6.1. General Findings

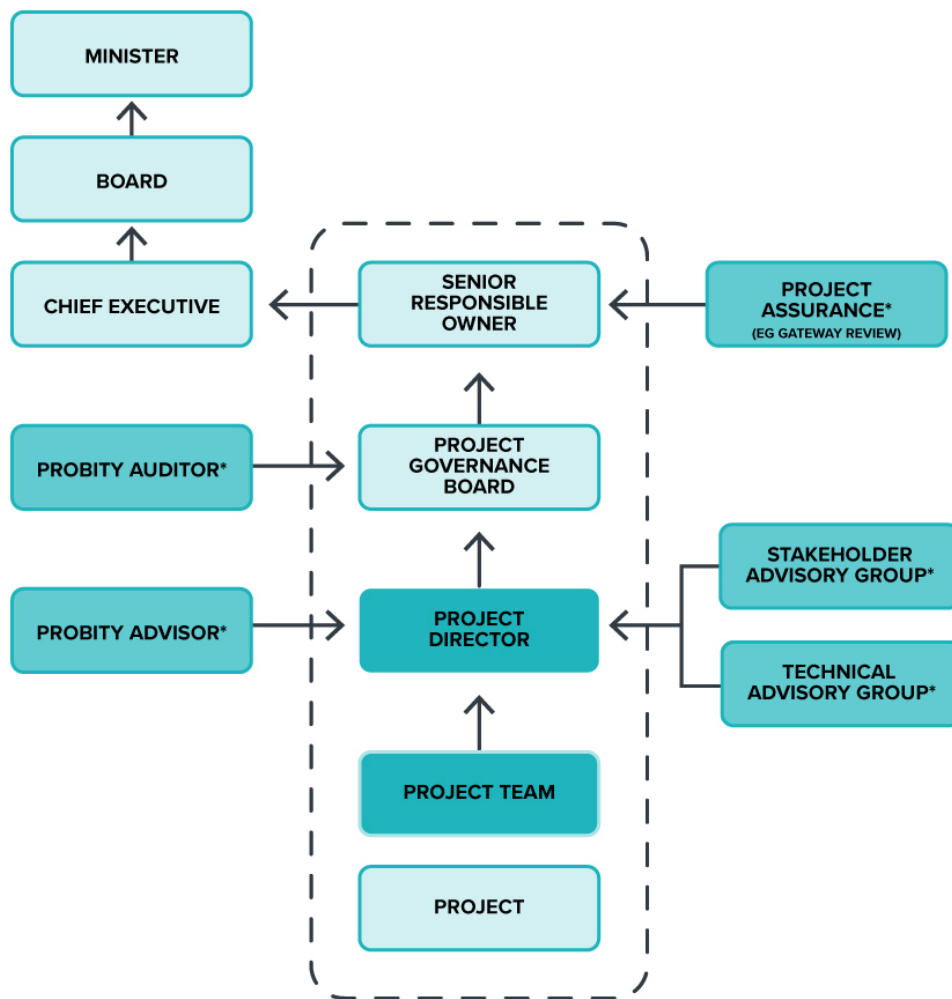
Project governance at its simplest is the management framework within which project decisions are made. It should provide a decision-making framework that is logical, robust and repeatable in governing a project.

International best practice, Te Waihangā, and the Treasury policy requires that crucial roles in project/programme governance require clear identification with roles and accountabilities specified. Key roles can be summarised as:

- Sponsors; the entity(ies) responsible for initiating and funding the Project
- Steering Committee/ Project or Programme Board: key decision-making entity. Usually established as a combination of key stakeholders and on transport projects could contain delivery representative, asset owners, operators, sponsors' representatives
- Secretariat to the Steering Committee. Potentially a Project Management Office or similar
- Activities, Projects and Project Managers
- Process for independent assurance.

Te Waihanga "Major Infrastructure Project Governance Guidance" (refer [4190498 ITU-Project-Governance-Guidance.pdf \(tewaihanga.govt.nz\)](#)) includes an Indicative Project Governance Structure for Major Projects.

Figure 3 Te Waihanga: Indicative Project Governance structure



Characteristics of a successful governance structure include:

- Single point of accountability
- Issue management and resolution
- Information distribution and clear communication
- Outlines roles, relationships, and responsibility among project stakeholders.

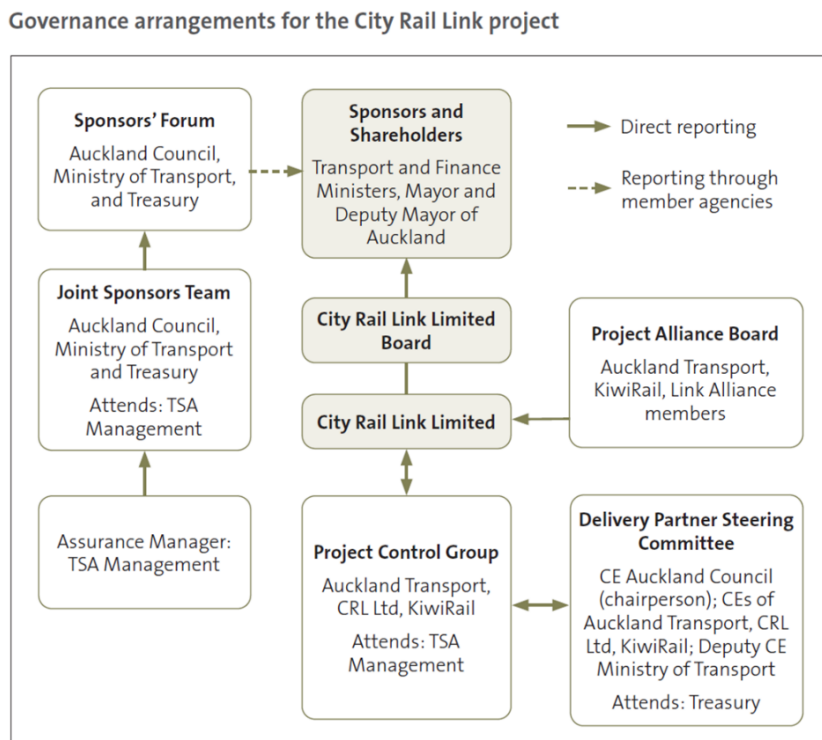
It is also noteworthy that megaprojects typically have a development and delivery lifespan of somewhere between 10-20 years and potentially even longer (High Speed 2 in UK at least 30 years) while CRL is in excess of 10 years at this point. Given the timescales involved in such projects, no single person can be truly accountable for delivery over such a timeframe. Therefore, the governance structure needs to withstand change in Sponsors, officers and personnel and remain stable throughout and not be subject to constant changes in direction.

In delivering the CRL Programme challenges included the complexity of securing public funding commitments from the joint Sponsors (Crown and Council). Any governance structure would have had to consider this joint-sponsor role. However the Programme has been delivered without the roles of Senior Responsible Owner, Programme/Project Governance Board, or Project/Programme Director identified in Figure 3.

In conducting the Lessons Learnt Review the Review Team were cognisant of the recent Auditor-General’s report “Governance of the City Rail Link project” and its findings and recommendations.

It included a diagrammatic representation of the Governance of the City Rail Link project.

Figure 4: Auditor-General depiction of Governance of the City Rail Link project



Note: Auckland Transport and KiwiRail staff provide technical and operational support to the CRL project. For example, they are members of various working groups related to the Link Alliance, such as the Project Control Group (shown on the chart above), the Technical Control Group, Rail Safety Case Working Group, and Operational Readiness Management Group.

CRL Ltd also has a client-contractor relationship with firms delivering those works that are outside the Link Alliance’s scope.

Feedback was received that this structure does not fully reflect the current governance structure however this structure appears to document the entities within the Project and it is noted it does not resemble best practice in governance for a programme of works.

Interviewees consistently advise that the governance structure:

- Does not provide suitable oversight on the several projects and other streams that are currently occurring
- The CRL Board has a singular focus on delivery of the works described in the PDA (primarily the Link Alliance’s works) as this is its mandate
- CRL nor any other entity seemingly has a mandate to consider the overall CRL Programme and ancillary works

- Through necessity and good practice and behaviour by public officers, interaction between CRL, AT and KiwiRail has occurred through co-operation and the formation of various working groups with unclear mandates or clearly delegated authorities (e.g. financial and technical approval/acceptance)
- There was little understanding or indication of acceptable interaction with Eke Panuku to further the Transit Orientated Development and Urban Realm benefits assumed in the Business Case. Interviewees confirmed that CRL were originally given this mandate partly in the PDA, and more explicitly through direction from Sponsors. CRL made the case for transferring these responsibilities to Eke Panuku and Kainga Ora because they did not feel best placed to investigate or manage these benefits, despite their responsibility to do so.

2.6.2. Major Finding: Establishment and evolution of Governance

The governance structure for the delivery of CRL is complex and has evolved over time as the need for additional projects beyond CRL scope have been acknowledged and funded. There is now essentially a programme of projects being delivered and the governance of the Programme management is not agreed or mutually understood by all interviewees.

A governance structure should have been established at project initiation that provided for single point accountability for Day 1 operations and had suitable management skills, experience and delegated authority over all elements that were required to achieve project benefits.

A governance structure should also ensure financial accountabilities for all agencies involved in 'approvals' (additional scope requests should be paid for by the agency that requests it).

2.6.3. Recommendations

Recommendation 16: For future projects ensure that all associated projects that are required to address an identified Problem(s) and achieve desired Benefits are identified at project initiation and appropriate Programme Management governance structures are established.

Recommendation 17: The governance entity overseeing high risk projects/programmes needs to be empowered to:

- Be adequately skilled and resourced
- Meet regularly to provide oversight of the whole programme of works
- Have a process to ensure they receive reports from management on cost, time, quality and how risks are being managed and mitigated
- Record key decisions including relevant background
- Provide subsequent reports to Ministers/Sponsors.

Recommendation 18: In high value/ high risk projects formalise within the Terms of Reference of the peak governance body regular independent reviews of the governance structure and associated Terms of Reference and an annual review and reporting to sponsors of the suitability of all governance entities.

Recommendation 19: As part of Stage Two of this Review investigate international best practice with respect to Programme Management structures and management oversight, review and reporting regimes for integrated urban transport projects/programmes.

2.7. Benefit Realisation

2.7.1. General Findings

Stakeholders consider that the CRL Programme has not had sufficient focus on the achievement of Benefits. The 2022 Auditor-General report found that, *“Planning for benefits realisation needs to be prioritised. During this audit, my staff observed that there was confusion about which agency is responsible for planning, managing, and reporting progress in achieving the benefits of the CRL project in the context of the wider Auckland transport network”*.

The Treasury guidance material for Investment Logic Mapping (ILM) includes advice on the Benefit Management Plan (BMP). It advises that the BMP specifies the benefits an investment is expected to deliver, and the evidence that will be required to prove the benefits have been realised. This information is captured in the form of a BMP which includes:

- a description of the expected benefits
- realisation targets and dates
- supporting KPIs, Metrics and Measures
- identification of the benefits’ owner and a description of their accountabilities
- a benefit map, and
- mechanisms for reporting and monitoring realisation, including post project closure.

Refer: <https://www.treasury.govt.nz/information-and-services/state-sector-leadership/investment-management/better-business-cases-bbc/bbc-methods-and-tools/investment-logic-mapping>

The Business Case economic analysis included conventional transport benefit categories associated with the CRL that have been included in the economic evaluation including:

- Travel time benefits (for both public transport and general road users)
- Decongestion benefits
- Vehicle operating cost reduction benefits
- Additional public transport user benefits
- Reliability improvement benefits
- Health benefits from walking
- Emission reduction benefits
- Residual value of the infrastructure.

In addition to the conventional transport benefits, the wider economic benefits associated with agglomeration were also estimated.

CRL developed a *CRL Benefits Realisation - Feb 2018 Final for GWR* report. It was developed *“to establish the framework and methodology to identify, analyse and report the benefits of the City Rail Link (CRL).”*

It identified the following forms of benefits:

1. Transport Benefits
2. Travel Time Savings
3. Economic Benefits
4. Development Benefits
5. Sustainability Benefits – Operational Phase.

The document:

- Inadequately identifies who owns the benefits
- Which benefits (if any) are ascribed to CRL
- Does not specify the benefits that are expected through delivery
- It details in next steps, “An annual monitoring process will collect required data, compare against baselines and report findings once CRL is operational.”

The Auditor-General report, “Governance of the City Rail Link project” found that:

“During this audit, my staff observed that there was confusion about which agency is responsible for planning, managing, and reporting progress in achieving the benefits of the CRL project in the context of the wider Auckland transport network. In my view, this is concerning for a project of this significance.”

The City Rail Link’s benefits need to be defined and quantified further, responsibilities need to be assigned, and suitable measures need to be agreed on.”

And,

“We also found that there was confusion about who is responsible for ensuring that the benefits of the City Rail Link are progressively realised until 2036. In our view, the benefits need to be better defined, updated, and quantified. In response to our concerns, Sponsors’ officials have clarified responsibility for realising benefits and intend to complete a benefits realisation plan in early 2023.”

Interviewees supported the Auditor-General’s findings. The responsibility for delivery of benefits has become unclear and suffers from the delivery of various elements of the overall programme being managed by different entities.

Interviewees also advised that many of the benefits relating to rail travel e.g. Travel Time will;

- Rely on activities by several entities, notably capex and opex decisions being decided by CRL, AT and KiwiRail and the final owner and operator of the network once they are nominated and agreed
- Will not be apparent until sometimes years after the network commences operations.

Interviewees advised that the expected urban realm and economic uplift associated with a mega rail project will rely on works being delivered by CRL and Eke Panuku Development Auckland, the council-controlled organisation that delivers urban regeneration in Tāmaki Makaurau (Auckland) and the private sector.

There was no process cited of measuring or assigning responsibilities for achieving these urban realm benefits.

CRL consistently advised that they are not responsible for the development outcomes for CRL nor for managing the benefits realisation process. The Delivery Partner Steering Committee has allocated responsibility for developing a benefits realisation plan to the Ministry of Transport.

2.7.2. Major Finding: Benefits Management and Realisation

This review finds that the identification, allocation, tracking and process for realisation of benefits should be improved for megaprojects, especially for ancillary and non-built aspects of these projects.

2.7.3. Recommendations

Recommendation 20: Megaprojects should be established with:

- Identification of the Benefits Realisation Plan and process as a programmed, resourced and budgeted activity for the megaproject and all required ancillary projects and non-built aspects needed to achieve the overarching project benefits.
- Governance structures that enable the development and management of an agreed comprehensive benefits realisation plan with clearly defined and quantifiable Benefits
- Clear responsibility for managing benefits realisation including which agencies have responsibility for defined deliverables
- Clear accountability for co-ordinating reporting on realisation of benefits over time.

2.8. Lifecycle Costing, Asset Ownership and Operations

2.8.1. General Findings

As detailed throughout this report a major issue identified through the document review and interviews is the importance of identifying associated operational and ownership issues at project initiation that may impact on scope, standards setting and achieving the proposed project benefits. At the time of project initiation decision makers should be informed on fundamental issues such as:

- Who will own the asset?
- Who will operate the asset?
- How will the assets created integrate with existing assets?
- How will decisions be made regarding the quality of individual components and the consideration and trade off/relationship between capex and opex?
- What operational restrictions/interfaces does the proposed initiative present?
- Are there any associated system requirements and/or upgrades that will be required to achieve the benefits?
- How will any associated system requirements and/or upgrades be managed and funded?
- Is the initiative a stand-alone project or is it part of a programme of projects?
- Who has responsibility for monitoring and ensuring that any system/projects requirements or upgrades are being delivered by the relevant agency?

2.8.2. Major Finding: The roles of the Owner and Operator

The delivery of CRL has been hampered by the roles of owner and operator not being agreed and documented. AT and Kiwi Rail have participated in the project in these roles “in good faith” however the necessary responsibilities and accountabilities of an owner and operator are unclear. There were also a number of examples provided where AT as assumed operator had significant concerns with respect to the suitability of equipment being provided and the long term opex impacts associated with this but no ability to direct changes.

2.8.3. Recommendations

Recommendation 21: At project initiation ensure that all issues relating to asset ownership, operation, associated system/project requirements necessary for system integration and the requirement for the initiative to be considered as part of a programme are documented and presented to decision makers.

2.9. Stakeholder Engagement and Compensation

2.9.1. General Findings

Interviewees confirmed that the need to consult early with the community and ensure ongoing and meaningful engagement has never been more important on major projects. As expected on a project of this scale, significance and importance, extensive stakeholder engagement and communications have occurred. Significant events and activities as identified in the Business Case have included:

- *“A consultation and communication strategy prepared to guide the engagement process for the CRL from early 2012 through to the securing of the designation.”, and*
- *“Consultation with directly affected landowners within the designation footprint began on 2 July 2012.”*

Early works on the Project had significant impact on businesses particularly in Albert Street. Establishment of the Project had not given adequate consideration to this and there was no compensation contemplated when CRL was established and the PDA implemented. The PDA is virtually silent regarding Stakeholder engagement expectations. It gives CRL the following obligations:

- *“Sponsors would expect the Delivery Strategy to include plans, documents, strategies and policies in relation stakeholder engagement”.*
- *Schedule 3 Clause 3.1 (o) “the construction of CRL Project Works shall aim to minimise disruption to existing services, adjacent land owners and affected transport users.”*

In 2021, project Sponsors – Auckland Council and the NZ Government – announced the creation of a \$12 million ex gratia Targeted Hardship Fund (THF) to support small businesses experiencing genuine hardship from major and sustained City Rail Link construction disruption surrounding the Te Waihorotiu Station (Aotea), Karanga-a-Hape Station (Karangahape) and Maungawhau Station (Mount Eden) sites (within the C3 Affected Area).

Interviewees were complimentary of the implementation of the THF and considered that full consideration of the impacts of a project on the business and community should occur prior to implementation and that forms of compensation should be considered and funded within project approvals. The Project has evolved its thinking regarding impacts on businesses, there is a general expectation that property values will receive significant value uplift from the implementation of major transport initiatives such as CRL. However, impacts on business occur at a number of levels and are potentially different for each category of stakeholder:

- Property Owners: may be landlords only and any impact on their tenants may not cause them hardship. They can be expected to receive the greatest value capture from the eventual completion of the project.
- Owner-Occupier businesses: they may suffer significant impact for the duration of the Project but expected to receive significant boost in property values at the completion of the project
- Business owners as tenants; may suffer significantly in business turnover for the duration of a project and potentially not receive any uplift at the completion.

Interviewees consider that each of these categories could and should be considered most properly and potentially in a simpler manner prior to the commencement of a project. For example, many of the business owners in Albert St may have been able to have been relocated and/or compensated in a more commercially acceptable manner if their individual needs had been looked at prior to commencement of the works. Failure to address the issue of business interruption appeared to:

- Increased reputational risk for the Project
- Caused a potentially negative attitude to the consideration of compensation when it was implemented
- Potentially increased the commercial requirement for compensation after a negative impact had occurred.

Interviewees confirmed that there are significant international examples of how compensation may be appropriate on similar mega urban projects including in Seattle, Sydney and Bordeaux.

Interviewees were proud of CRL's Mana Whenua Forum. The CRL 2017-18 annual report states, *"CRL is proud of its collaborative working relationship with the eight iwi represented in its Mana Whenua Forum. The role of the forum is to: provide input into the design of the CRL stations and the development of the project's many management and delivery work plans, work collaboratively around built heritage and archaeological matters, undertake kaitiakitanga responsibilities associated with the project, including monitoring and assisting with discovery procedures and providing input of Māori mātauranga (knowledge) in relevant stages of the project. The forum meets monthly and has additional workshops on design, consents, sustainability and other matters. Iwi narratives have directly influenced the station designs - both the internal structure and the external appearance."*

It was noted that the sophistication and understanding of the interface of Iwi with major projects has developed significantly in recent years. CRL are developing a Mana Whenua case study which will be published and shared. [Note this Case Study was published by CRL in June 2023].

Interviewees advised that a lesson from the Project was the need for a dedicated team for Mana Whenua engagement. Ideally fluent in Te Reo but cultural competence is important. They confirmed that trust and honesty are critical to the relationship and there is a need to involve senior people who are engaged for the long term, and what level of engagement needs to happen at what level (e.g. Rangitira to Rangitira -level at highest), and what role they should play in overall project governance, not just during the construction phase. It was noted that along with the CRL Mana Whenua Forum, both AT and Waka Kotahi have established Māori engagement frameworks and other major projects including Auckland Light Rail and the Second Harbour Crossing projects also are seeking to establish Māori engagement frameworks. Some interviewees raised the concept that due to finite resources amongst Iwi and projects and with an aim to establish consistency the role of an Auckland Māori project framework should be investigated.

City Rail Link Limited Statement of Intent for Financial Years 2022 – 2025, includes, *"CRL Ltd has established three key communication principles for its interaction with external parties:*

- *Proactive Communication*
- *Language and Style*
- *Responsiveness”*

It includes:

“Target Areas

- *Create compelling content regarding the project and its progress*
- *Increased public participation through events, community liaison group meeting, stakeholder presentations and site tours*
- *Positive partnership with iwi through the Mana Whenua Forum and sub-groups*
- *Effective management of the THF*

Measures

- *Track and report on media/social media coverage and output*
- *Organise campaigns and events*
- *Complete Mana Whenua Forum partnership case study and make this publicly available as an industry tool for lessons learnt and best practice*
- *Efficient processing of applications under the THF”*

Requirements on CRL specified within their Statement of Expectations include Community and Stakeholder Engagement Outcome of, *“Deliver a high level of communications and engagement”*. With a performance measure and target of:

- *“Increased public participation through events (target 8) and site tours (target 25)*
- *Build positive profile of the Project with videos (target 10), social media (target at least 5 posts a week), proactive media releases (target 25) and community newsletter (target 12)*
- *Responsiveness (target 2 working days response to public enquiries)”*

Stakeholders and communications are one of the five key reporting headlines within the Link Alliance monthly report and one of the six Key Result Areas for the Alliance.

2.9.2. Major Finding: Management of business and community impacts

Full consideration of the impacts of a project on business and community should occur prior to implementation and be considered at the time of funding deliberations. The forms of compensation for differing stakeholders who may be negatively impacted should be considered and funded within project approvals. The governance of any form of compensation should also be considered and endorsed.

2.9.3. Major Finding: Iwi engagement

The proliferation of major projects in Auckland and the need to adequately consult with Māori should be explored and the benefits of establishing an Auckland Māori project framework should be investigated.

2.9.4. Recommendations

Recommendation 22: The forms of compensation/ex-gratia payments for differing stakeholders who may be negatively impacted should be considered and funded within project approvals. The governance of any form of compensation/ex- gratia payments should also be considered and endorsed.

Recommendation 23: The “Better Business Cases™” guidance materials and other Government policies should be reviewed to ensure they give consideration and potential for compensation/ex-gratia payments to be paid to impacted stakeholders on future major urban projects.

Recommendation 24: Consult with Iwi regarding the options for improved processes for consulting with Māori on upcoming major projects in Auckland recognising the number of different projects and the diversity and cultural needs of iwi.

Appendix A: CRL Scope

“Schedule 2: Project Scope” of the PDA details the scope of the CRL works as essentially consisting of the tunnel and station works of the CRL Project definition, namely:

- a 3.45 km twin tunnel underground metro rail link, connecting Britomart Station to the Western Line in the vicinity of the existing Mt Eden Station, doubling rail capacity into the Auckland City centre; and
- two new underground stations, modification to Mount Eden station, modifications to the Western Line at the connection points, modifications at Britomart Station and modifications to the existing railway network.

It details these Wider Network Improvements which were in CRL scope:

Contract C8 - Wider Network Improvements

The additional infrastructure requirements to enable the CRL train plan and deliver the benefits of the CRL (above those assumed in the do minimum network) are:

- Henderson Station additional platform and turnback siding allowing terminating services at the additional platform.
- Otahuhu Station additional platform and turnback siding allowing terminating services at the additional platform.
- Newmarket crossover.
- Strand crossover.

Extract from Schedule 2 of the PDA

The Urban Realm requirements of CRL were limited to “reinstatement of the urban realm in modern equivalent form”:

Urban Realm

The CRL designation conditions require the reinstatement of the urban realm in modern equivalent form to all areas affected by the works.

Council’s Auckland Development Office (ADO) and BDO have identified enhanced specifications for urban realm and universal access elements beyond the agreed CRL scope. These will be funded by separate AC budgets and the Auckland City Centre Advisory Board (ACCAB) have already endorsed spending \$20 million from the City Centre Targeted Rate towards achieving a higher quality reinstatement of Albert St.

Public art is built into the reference design scope (\$1.5m). Additional requests for artwork, including requests from AC public arts group, will be required to be self funding.

Extract from Schedule 2 of the PDA

Any rail network improvements beyond those specified were an exclusion from CRL scope:

Exclusions from CRL Scope

The following are not included within the scope of the CRL:

- Additional trains.
- The Auckland network third traction sub-station.
- The provision of the Northern Regional Control Centre (NRCC).
- Rail network improvements beyond the items listed under Contract C8
- Seismic upgrading to 100% of code requirement of the CPO building at Britomart.
- General maintenance equipment for the project.
- Remedial and deferred maintenance.
- SkyCity and NDG development connections, on the basis that they will be wholly funded by the outside parties.
- Fitting out of commercial tenancies.

Extract from Schedule 2 of the PDA.

Appendix B: Organisations Consulted in Conducting the Review

Interviews were held with representatives from the following organisations during the conduct of this review:

Organisation

City Rail Link Limited

Link Alliance

The Treasury

Auckland Transport

KiwiRail

Office of the Auditor-General

Business and Community Representatives

Auckland Light Rail

TSA – Sponsors' Assurance Manager

The following organisations were also consulted in preparing the final version of this document:

Organisation

City Rail Link Limited

Ministry of Transport

The Treasury

Auckland Council

Appendix C: Documents Reviewed

The Review Team were given access to numerous documents to inform them on the history and status of the Project. They are thankful for the generous contribution from CRLL in particular for the open manner in which they made relevant Project documents available.

The commentary in this report has been informed by the following key documents:

Document Name

Assurance Reports

CRLL Board Reports

Business Cases

CRL Annual Reports

CRL DPSC Meeting records

Finance Reports

Gateway Review Reports

Link Alliance Monthly Reports

Recent ORAG Meeting Minutes

PAB Minutes

PCG notes

Project Delivery Agreement

Project Delivery Reports

RSCWG Minutes

Statements of Intent

Statements of Performance

TCG Meeting Minutes

Appendix D: High-Level Timeline of Events

The following high-level timeline details activities and milestones relevant to this review:

Date	Activity
2010	First business case for the City Rail Link prepared for KiwiRail and the Auckland Regional Transport Authority.
Early 2012	A consultation and communication strategy prepared to guide the engagement process for the CRL from early 2012 through to the securing of the designation
July 2012	Consultation with directly affected landowners within the designation footprint begins.
August 2012	Auckland Transport lodges six Notices of Requirement (NoRs) with Auckland Council to designate land for the construction, operation and maintenance of the CRL, including the protection of subterranean works.
2012/13	Ministry of Transport completes a review of the business case. The review also involves the Treasury and Waka Kotahi New Zealand Transport Agency (Waka Kotahi)
2013	The Government commits to a joint business case with the Council for the City Rail Link. The CRL project is intended to begin in 2017 and start construction in 2020.
February 2014	Following public submissions and a hearing, independent commissioners recommended that the six NoRs be confirmed.
April 2014	Auckland Transport gives notice of its decision to accept the commissioners' recommendation regarding the NoRs.
November 2015	Following appeals lodged with the Environment Court, the six designations were confirmed.
2015	The Auckland Transport Alignment Project (ATAP), including CRL, is set up. ATAP represents the Council and the Government's joint plan to maximise opportunities from Auckland's population growth
2015	Auckland Transport prepares another business case for the City Rail Link for the Council. This business case leads to the Council allocating \$2.5 billion to Auckland Transport to start early works for the City Rail Link. Completion date 2022.
2015	Auckland Transport begins early works in preparation for the City Rail Link.
November 2015	Following appeals lodged with the Environment Court, the six designations were confirmed.
December 2015	Cabinet authorises the Ministers of Finance and Transport to enter into negotiations with the Council to formalise the Government's commitment to provide funding for the City Rail Link.
2016	The Business Case for the City Rail Link is endorsed by the Auckland Transport Board.
2016	The Government decides that it will establish CRL Ltd to deliver the CRL project and fund it equally with the Council.
June 2017	A Project Development Agreement (PDA) for the Project is executed between Council, the Crown, and City Rail Link Limited (CRL) to provide funding and management of the Project. PDA notes completion date of March 2024. P50 costs updated to \$3.4B.
1 July 2017	The Government establishes City Rail Link Limited (CRL Ltd), a special purpose Crown company, to deliver the CRL project. CRL Ltd's shareholders are the Crown (represented by the Ministers of Transport and Finance) and the Council. The Crown and the Council co-fund CRL Ltd and are also the CRL project's Sponsors.
February 2018	CRL developed a <i>CRL Benefits Realisation report "to establish the framework and methodology to identify, analyse and report the benefits of the City Rail Link (CRL)."</i>
2018	Sponsors approve CRL Ltd's adoption of an alliance model.
October 2018	Following an Alliance procurement process the C7 package is awarded to RCR Tomlinson and WSP/Opus to deliver the rail tracks, signalling, overhead lines, control system rooms, communication and building works.
November 2018	RCR Tomlinson was placed in a trading halt on November 12, put into administration shortly after and CRL advised that they would be unable to meet their contractual obligations and the Alliance terminated.
April 2019 - June 2019	Sponsors' committed investment in the CRL project is increased to allow for increased scope (to allow nine-car station platforms), construction costs, and contingency in the CRL project's budget. Joint committed investment in the CRL project is now \$4.42 billion (at P50).
19 July 2019	Alliance contract entered into with the Link Alliance for tunnelling and stations.
2019	PDA update includes completion date of December 2024.

Date	Activity
2019	The Delivery Partner Steering Committee is set up as a forum for senior managers to co-ordinate their works.
August 2020	Auckland Transport and KiwiRail estimate that they will need to invest a further \$7.5 billion to enable the rail network's maximum passenger capacity to gradually increase to 54,000 passengers through the City Rail Link each hour during peak times. The timing of these investments will depend on the increase in passenger demand and how Auckland Transport decides to cater for it.
October 2020	Variation Agreement signed with the Link Alliance to now include rail systems.
June 2022	The Office of the Auditor-General's Report notes that the wider network improvements required for Day 1 (but which are outside of the CRL project's scope) are currently estimated at \$1.11B.

Appendix E: Glossary

Term	Definition
Assurance Manager	The Assurance Manager provides independent deliverability advice. TSA Advisory act as the Sponsors' Assurance Manager for the City Rail Link project.
Auckland Rail Development Programme	A joint Auckland Transport and KiwiRail investment plan.
Auckland Transport (AT)	Auckland Transport is responsible for all the region's transport services, from roads and footpaths, to cycling, parking and public transport. Auckland Transport is an Auckland Council entity.
Auditor-General	The Controller and Auditor-General is an Officer of the New Zealand Parliament responsible for auditing public bodies.
B	Billion
Business Case	The Auckland Transport business case prepared for the City Rail Link in 2015.
Capex	Capital Expenditure are funds used by a company to acquire, upgrade, and maintain physical assets such as property, plants, buildings.
Council	Auckland Council is the local authority that is responsible for all local government decisions and responsibilities in the Auckland region. They are the co-funder (with the Crown) for the CRL project
City Rail Link Limited (CRL)	CRL is a special purpose Crown company owned by the Crown and Auckland Council. The company has full governance, operational and financial responsibility for the CRL, with clear delivery targets and performance expectations.
CRL Project	Described in the PDA the CRL Project consists of: <ul style="list-style-type: none"> • a 3.45 km twin tunnel underground metro rail link, connecting Britomart Station to the Western Line in the vicinity of the existing Mt Eden Station, doubling rail capacity into the Auckland City centre; and • two new underground stations, modification to Mount Eden station, modifications to the Western Line at the connection points, modifications at Britomart Station and modifications to the existing railway network.
Governance	Governance is the management framework within which project decisions are made. It should provide a decision-making framework that is logical, robust and repeatable in governing a project.
KiwiRail	KiwiRail Holdings Limited is a State-owned enterprise that owns and maintains the national rail network infrastructure in addition to operating a rail freight, ferry, property and tourism business.
Link Alliance	The Link Alliance is a consortium of seven companies, including CRL Ltd, which are delivering the main stations and tunnels for the CRL project. The Link Alliance comprises City Rail Link Ltd (CRL), Vinci Construction Grands Projets S.A.S, Downer NZ Ltd, Soletanche Bachy International NZ Limited, WSP New Zealand Limited, AECOM New Zealand Limited and Tonkin + Taylor Limited

Megaproject	A large-scale, complex initiative that typically costs more than 1 billion US Dollars, takes many years to build, involves multiple public and private stakeholders, are transformational, and that have an impact on millions of people.
Metro	An underground electric railway system.
Opex	Operating Expenditure (Opex) is an expense that is related to a business's core operations.
P50 Estimate	Statistically, P50 represents the confidence level of a cost not being exceeded. A P50 value has a 50% probability that it will be met or exceeded.
Procurement Strategy	<p>A Procurement Strategy documents how the Project/Programme will run its procurement function. The Procurement Strategy should include:</p> <ul style="list-style-type: none"> ● an overview of the governance framework ● supplier engagement plan ● capability development plan ● contract management planning strategy, and ● procurement activity plan
Project Development Agreement (PDA)	The Agreement developed between Council, the Crown, and City Rail Link Limited (CRL) to provide funding and management of the Project.
Review Team	The Review Team for this Phase 1 Lessons Learnt review consists of two independent expert reviewers supported by Te Waihangā resources as required.
Sponsors	The Project Sponsor is responsible for the overall success of the project. City Rail Link Limited (CRL Ltd) is a special purpose Crown company, established to deliver the CRL project. CRL Ltd's shareholders are the Crown (represented by the Ministers of Transport and Finance) and the Council. The Crown and the Council co-fund CRL Ltd and are also the CRL project's Sponsors.