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Listed below are the most commonly used grounds from the OIA.

<u>Section</u>	<u>Description of ground</u>
6(a)	as release would be likely to prejudice the security or defence of New Zealand or the international relations of the New Zealand Government
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6(c)	prejudice the maintenance of the law, including the prevention, investigation, and detection of offences, and the right to a fair trial
9(2)(a)	to protect the privacy of natural persons
9(2)(b)(ii)	to protect information where the making available of the information would be likely unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information
9(2)(ba)(i)	to protect information which is subject to an obligation of confidence or which any person has been or could be compelled to provide under the authority of any enactment, where the making available of the information would be likely to prejudice the supply of similar information, or information from the same source, and it is in the public
9(2)(ba)(ii)	to protect information which is subject to an obligation of confidence or which any person has been or could be compelled to provide under the authority of any enactment, where the making available of the information would be likely otherwise to damage the public interest
9(2)(f)(ii)	to maintain the constitutional conventions for the time being which protect collective and individual ministerial responsibility
9(2)(f)(iv)	to maintain the constitutional conventions for the time being which protect the confidentiality of advice tendered by Ministers of the Crown and officials
9(2)(g)(i)	to maintain the effective conduct of public affairs through the free and frank expression of opinions by or between or to Ministers of the Crown or members of an organisation or officers and employees of any public service agency or organisation in the course of their duty
9(2)(h)	to maintain legal professional privilege
9(2)(i)	to enable a Minister of the Crown or any public service agency or organisation holding the information to carry out, without prejudice or disadvantage, commercial activities
9(2)(j)	to enable a Minister of the Crown or any public service agency or organisation holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations)



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Management Case: Appendix X –Risk Management Policy and Risk Management Plan

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Author signature		Approver signature	
Name	Hugo de Vos	Name	Kirstin Fischer
Title	Risk Manager	Title	Alliance Business Case Lead

Security Classification

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Table of contents

ALR Risk Management Policy	4
ALR Risk Management Plan	5
1 Introduction.....	6
1.1 Background.....	6
1.2 Acronyms and Definitions.....	6
1.3 Project Description.....	6
1.4 Risk Appetite and Culture	7
2 Risk Management Plan.....	8
2.1 Objectives	8
2.2 Plan purpose.....	8
2.3 Scope.....	9
2.4 Applicability.....	9
2.5 Related Documents.....	9
2.6 Document Review	10
3 Roles and Responsibilities.....	11
3.1 Sponsors.....	11
3.2 Auckland Light Rail Limited Board	11
3.3 Auckland Light Rail Risk and Audit Sub-Committee	12
3.4 Risk Management Team	12
3.4.1 Head of Risk Management	13
3.4.2 Stage Risk Manager	14
3.5 Risk Owners.....	14
3.6 Delivery Team Personnel	15
3.7 Sub-consultants, Sub-contractors, and Suppliers	15
3.8 Stakeholders	15
4 Risk Management Process	16
4.1 Hierarchy of Risk.....	16
4.2 Risk Escalation	17
4.3 Risk Stage Supporting Activities	17
4.4 Risk Management Process	18
4.4.1 Scope, Context, Criteria.....	18
4.4.2 Risk identification.....	19
4.4.3 Risk Assessment	20

4.4.4	Risk Evaluation.....	23
4.4.5	Risk Treatment.....	24
4.4.6	Monitoring and Review.....	25
5	Risk Records and Reporting	27
5.1	Risk Registers	27
5.2	Risk Management Software.....	27
5.3	Risk Data Management.....	29
5.4	Risk Reporting System.....	30
5.5	External Reporting	31
5.6	Monthly Reporting	31
5.7	QRA Reporting.....	32
5.8	Risk and Change Management.....	33
5.9	Communication and Consultation	33
6	Issue Management.....	34
7	Opportunity Management	35
8	Quality Assurance	36
8.1	RMP Authorisation	36
8.2	Internal Audit.....	36
8.3	External Audit / Review.....	36
8.4	Training.....	36

Appendices:

- Appendix A Risk Threat Matrix
- Appendix B Risk Opportunity Matrix

Figures

Figure 1 - Auckland Light Rail Risk Management Plan.....	9
Figure 2 - Risk Hierarchy.....	16
Figure 3 - Risk Management Activities, Project Stage Lifecycle View.....	18
Figure 4 - Risk Management Process (ISO 31000).....	18
Figure 5 - Risk Appetite Scale	24
Figure 6 - Risk data and document framework	29
Figure 7 - Risk Management Portal Landing Page.....	30
Figure 8 - SharePoint Risk Register	30
Figure 9 - Digital Risk Capture Template / Form	31
Figure 10 - Interactive Risk Report	31
Figure 11 - Monthly Reporting Summary	32
Figure 12 - Monthly Reporting Detailed	32

Figure 13 - QRA risk output example.....32

Tables

Table 1 - Acronyms and Definitions.....6

Table 2 - Roles and Responsibility RACI11

Table 3 - Risk Escalation Table17

Table 4 - Risk Categories.....20

Table 5 - Threat Likelihood Rating (Developed from Z/44 Table 4.3)21

Table 6 - Opportunity Likelihood Rating (Developed from Z/44 Table 4.3)21

Table 7 - Threat & Opportunity Risk Matrix (Developed from Z/44 Table 4.6)22

Table 8 - Risk Treatment Matrix24

Table 9 - Risk Management Software System Minimum Requirements27

Table 10 - Risk Threat Matrix (Developed From Z/44 Table 4.4)1

Table 11 - Risk Opportunity Matrix (Developed From Z/44 Table 4.4).....4

DRAFT

ALR Risk Management Policy

Policy to be refined by the Risk and Audit sub committee and approved by the board prior to next stage initiation.

This document sets out the Auckland Light Rail's (ALR)'s policy on risk management. ALR recognises the importance of effective risk management at all levels of the project to ensure risk, is consistently and effectively managed in accordance with required standards and best practices.

Policy Statement

ALR's risk policy is to proactively manage identified risks to enhance their ability to deliver the project's key objectives. Risk management will be embedded into the Auckland Light Rail's ('Project') Delivery and Controls to ensure:

- The management of Project risk is clearly driven by the milestones of the Project and is actively incorporated into decision-making processes.
- Regular risk reviews are conducted to identify and manage risks effectively and efficiently.
- Adequate resources are allocated to manage risks within ALR's risk appetite and to support the development of a proactive risk management culture.
- Clear roles and responsibilities in relation to risk management are defined and risk managers are enabled and supported.
- There is the visibility of identified strategic and project risks, where required risks have mitigations/treatments and owners, action plans are defined, and risk managers are enabled and supported.
- A culture is developed that encourages a "fail-safe" environment where issues, risks, and opportunities are raised and shared as early as possible to enable the best chance of mitigation and corrective action plans.
- The risk management plan is aligned and integrated with the project's supply chain and sub-contractors.
- Ensure risks are managed to an "As Low as Reasonably Practicable" (ALARP) level.

Signed	
Date	
Position	

ALR Risk Management Plan

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1 Introduction

1.1 Background

The Auckland Light Rail (ALR) Board has committed to proactively manage risks that could impact the Project achieving its key objectives as set out in their Risk Management Policy.

This Risk Management Plan (RMP) describes the activities, governance, roles, responsibilities, and processes which are required to implement the Risk Management Policy ensuring ALR proactively manages risks effectively. It includes processes to identify, assess and mitigate risks where possible to an acceptable level, and to continually monitor risks throughout future stages as risks emerge or change.

This RMP has been developed in accordance with:

- ALR Risk Management Policy
- Waka Kotahi Risk Management Practice Guide Z/44
- AS/NZS ISO 31000 - Risk Management
- Waka Kotahi Cost Estimation Guide SMO14
- ALR Project Governance Plan
- ALR Project Management Plan

1.2 Acronyms and Definitions

Table 1 - Acronyms and Definitions

Abbreviation	Definition
ALR	Auckland Light Rail Limited, Crown Entity
AWHC	Additional Waitematā Harbour Connections
CoTS	Commercial of The Shelf
Risk Proximity	Timeframe to probable risk occurrence
RMP	Risk Management Plan
RTT	Risk Tolerance Threshold
QRA	Qualitative Risk Assessment
SQRA	Schedule Qualitative Risk Assessment

1.3 Project Description

Auckland Light Rail (ALR) will be an accessible, equitable, safe, and integrated transport system fit for a dynamic low carbon city. It will provide opportunities for large-scale transformation across Tāmaki Makaurau, unlock and redirect growth, create new jobs, improve economic productivity, provide new cultural connections, and deliver new homes and accessible centres.

Involving central and local government agencies and the private sector, ALR is part of something bigger and bolder, as it connects to the proposed Additional Waitematā Harbour Connections (AWHC) project and fully integrates across the city's transport network, with the potential to optimise land use within the communities it serves.

1.4 Risk Appetite and Culture

Risk Appetite provides the principles and guidance to manage the overall risks the Board sees as appropriate. The Risk Appetite is the amount of risk exposure, or potential adverse impact from an event, the Board is willing to accept and retain to meet the Project's key objectives. The Risk Appetite statement is updated as required by the Board from time to time.

Risk appetite statements are to be refined and developed with the ALR's Senior Leadership team and approved by the ALR Ltd Board. Periodic review of the appetite statements is to be done as required and scaled to the current lifecycle stage of the Project.

Setting of the appropriate risk appetite is a fundamental tool in establishment of the risk culture of the project organisation and project. The further definition of Risk Tolerance Thresholds (RTT)s are described as part of the risk management process in section 4.4.4.2.

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2 Risk Management Plan

2.1 Objectives

Managing risk and uncertainty is vital to the successful delivery of The ALR Project. It will be New Zealand's largest and most complex infrastructure programme, delivering an integrated approach to achieving both urban and transport outcomes and will create a step change in connectivity across large parts of the city allowing Auckland to thrive.

The objectives of the ALR Risk Management Plan (RMP) are to:

- Implement ALR's Risk Management Policy across the Project during all phases and stage.
- Support delivery through reducing the likelihood and potential consequences of events that could have a negative effect on the project.
- Increasing the likelihood and potential consequences of events that could have a positive effect on the project.
- Provide assurance to internal and external stakeholders that the Project understands its significant risks and is actively managing them.
- Improve decision making, planning and prioritisation by improving understanding of uncertainty and risk.

2.2 Plan purpose

This document sets out a structured RMP for the ALR Project, ensuring that risk and uncertainty are properly managed throughout the Project's lifecycle.

This RMP provides an integrative approach, including:

- **Risk Identification, Analysis, and Evaluation:** Detailing the process to be employed by the Project team to systematically identify, evaluate risks.
- **Risk Monitoring and Management:** Defining the process to continuously monitor and manage existing risks, changes to risks and emerging risks.

This document also details:

- Clarifications on the primary roles, duties, and responsibilities related to risk management within the Auckland Light Rail Project.
- The governance structure for risk management.
- Description of risk management interfaces.
- Summary of the risk escalation procedure.
- Procedure and process to conduct quantitative assessments (cost and schedule).
- An overarching view and explanation of the risk management procedure for subsequent phases with prescribed activities for completion.
- Presents guidance on managing critical interface between the Risk Management discipline and other areas such as Health and Safety, Change Control, and Contingency Management.

2.3 Scope

The scope of this Plan includes all risk management activities during design and construction, commissioning, and handover to operation, including any project defined workstreams and sub-consultants.



Figure 1 - Auckland Light Rail Risk Management Plan

2.4 Applicability

This Plan and all subsidiary plans that may arise apply to all Project personnel and all consultants, contractors, sub-consultants, and sub-contractors engaged on the Project.

2.5 Related Documents

The RMP forms part of the broader Project Management Plan, with related documents identified in Figure x below.



2.6 Document Review

This Plan is owned by the Head of Risk Management of Auckland Light Rail and will be reviewed at least every 3 months, at key milestones, beginning of new phases, significant changes in Project scope, or sooner as required.

Updates will be made as required and reissued. Where a review indicates the need for a major update to the Plan (material change in risk management practice or significant content changes), approval for the new Plan will be sought from the Auckland Light Rail Board.

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3 Roles and Responsibilities

Table 2, provides a Roles and Responsibilities RACI for the management of risk across the ALR Project. This table provides an overview of who is responsible (R), who is accountable (A), who needs to be consulted (C), and who needs to be kept informed (I) at each risk hierarchy level, details of the Risk Hierarchy system can be found in section 4.1, Hierarchy of Risk .

Table 2 - Roles and Responsibility RACI

Project Role	Risk Hierarchy		
	Strategic	Stage	Project
Sponsor			
ALR Ltd Board			
Audit and Risk Sub-committee			
Senior Leadership Team			
Head of Risk Management			
Stage Risk Manager			
Risk Owners			
Delivery Team			
Sub Consultants and Contractors			

RACI to be completed by Risk and Audit Committee with Endorsement from Board before Next Stage Start.

Definitions:

Responsible: Who is responsible for doing the actual work for the project task.

Accountable: Who is accountable for the success of the task and is the decision-maker. Typically, the project manager.

Consulted: Who needs to be consulted for details and additional info on requirements. Typically, the person (or team) to be consulted will be the subject matter expert.

Informed: Who needs to be kept informed of major updates. Typically, senior leadership.

3.1 Sponsors

The sponsors include the Crown (represented by the Minister of Transport, Minister of Finance and Minister of Housing), Auckland Council (represented by the Mayor and one other Councillor) and 3 Mana whenua representatives.

The sponsors are supported by the sponsors' representatives' forum (comprising the Ministry of Transport, Ministry of Housing and Urban Development, Treasury, Auckland Council and Auckland Transport).

The Project Planning and Funding Agreement dated October 2022 sets out:

- the roles and responsibilities of the Crown, other Sponsors and ALR Ltd in relation to ALR (including in relation to decision making); and
- assurance and monitoring arrangements in relation to ALR, including information sharing between ALR Ltd, the Sponsors and officials from Sponsor Related Organisations.

3.2 Auckland Light Rail Limited Board

In accordance with the Project Planning and Funding Agreement dated October 2022, the ALR Ltd Board is responsible for:

- Cultivating and supporting a proactive risk management culture across the Project.
- Establishing, in accordance with the risk appetite a Risk Tolerance Thresholds (RTT) as appropriate.
- Governance, statutory and financial powers, duties and responsibilities and contract specifications.
- Management of ALR project investment decisions and associated risk.
- Providing input into the Program's acceptable risk appetite.
- Guidance and consultation on escalated risks.
- Cultivating and supporting a proactive risk management culture across the Project.
- Providing visibility of risks to Sponsors that ALR is on-track and well-managed.
- Escalating risks and opportunities to Sponsors.

The Board is to keep its own risk register, facilitated and administrated by the Risk and Audit Sub-Committee, where strategic risks pertaining to the successful operations of the Auckland Light Rail Limited as a crown entity are tracked and mitigations are appropriately tasked.

3.3 Auckland Light Rail Risk and Audit Sub-Committee

The Board is responsible for risk management generally and delegates day-to-day responsibility of risk management to management. The purpose, authority and membership of sub-committee are described as in its charter. Within the charter it is specified that the sub-committee will oversee risk management.

In carrying out its risk management responsibilities, the Committee will:

- Ensure that management has established a risk management framework which includes policies and procedures to effectively identify, treat, monitor and report key operational and project risks;
- Review the procedures for identifying business risks and controlling their financial and operational impact on ALR Limited;
- Review management reports, the external auditor's report and any internal auditor's reports on the effectiveness of systems for internal control, financial reporting and risk management;
- Ensure that the Board reviews reports on the principal business risks (including any developments in relation to key risks) at least annually or more frequently as identified by the Committee or the Board;
- Review key insurance policy terms and cover adequacy and make recommendations to the Board for adoption of insurance cover.

3.4 Senior Leadership Team

The leadership team is responsible for:

- supporting the implementation of the Risk Management Plan;

- communicating significant risks to the Board, partnering agencies, Project team and relevant stakeholders as appropriate;
- applying effort to designing of controls to treat or mitigate identified risks, and ensuring the controls are either implemented or superseded by controls that are more relevant.
- monitoring the effective implementation of this RMP;
- allocating appropriate resource to undertake risk management and mitigation activities.

The project is led by the Chief Executive and each workstream has its own General Manager (GM) or Lead. The SLT includes the following:

- GM Te Tiriti Partnerships
- GM Communications and Relationships
- GM Corporate and Policy
- Head of Business Case and Consenting
- Head of Urban Strategy
- Head of Design & Delivery
- GM Land Development
- GM Commercial & Procurement

3.5 Risk Management Team

The risk management team is made up of Risk Managers and Analysts who support Risk Owners by:

- Establishing and controlling appropriate policies and procedures to ensure proper assessment and management of risk throughout the Project and Programme.
- Establishing and updating risk related processes.
- Facilitating the identification of risks through facilitated workshops, data analysis and risk activities..
- Informing management priorities by assessing risks impacts.
- Supporting the development of effective response plans to mitigate risks. Assist, where possible, to expedite those response plans.
- Monitoring performance on identified response actions; and informing decisions by providing qualitative and quantitative analysis of cost and schedule risks.
- Carry out a program-wide cost and schedule Quantitative Risk Assessment (QRA) to inform reporting of Target Outturn Cost and schedule confidence.
- Establishing and supporting risk reporting across the Project to ensure risk driven decision making.
- Continuous training to risk team members, risk owners, project stakeholders and sub-consultants and contractors.

3.5.1 Head of Risk Management

The Head of Risk Management will lead the Auckland Light Risk Management Team / Function, with responsibility for providing functional leadership in Risk Management across the Project, this includes:

- Responsible for implementation of Risk Management Plan.
- Developing, updating, and implementing Auckland Light Rail's Risk Management Plan.
- Determining competency standards for those involved in risk management and ensuring that training is available.
- Ensuring that risk management activity on Auckland Light Rail meets ISO 31000 and Waka Kotahi Z/44 standards.
- Leading assurance activities in Risk Management.
- Conducting the Auckland Light Rail Quantitative Risk (QRA) assessments while working with the assigned cost estimation teams.
- Ensure a lesson learnt process are implemented.
- Ensure risk training provided to project team members.

3.5.2 Stage Risk Manager

Stage Risk Managers sit within the Risk Management Function. They will report to the Auckland Light Rail Risk Head of Risk Management and will be embedded in Stage Delivery Teams.

Stage Risk Manager responsibilities include:

- Ensuring that all teams within the Stage follow the RMP and notify Stage Risk Manager of any non-compliances.
- Ensuring that all teams within the Stage use the designated tools to maintain up-to-date risk data which is of suitable quality in accordance with the RMP, and alert significant errors.
- Ensuring that records are held to demonstrate risk management practices follow the RMP.
- Liaising with the Head of Risk Management to ensure continued alignment in approach with requirements.
- Supporting the team to update processes for any improvement or changes made to the RMP.
- Support with training and upskilling Stage Delivery Team members as required.

3.6 Risk Owners

Risk management is an essential part of good project management and is a central responsibility of all those working on the Programme. Risks should be managed by the party best placed to manage the risk and at the most appropriate level in the organisation.

The Risk Owner is the single person responsible for delivery of an element of work and who is responsible for managing the risks associated with delivering that work. The Risk Management Team provide support and guidance to the Risk Owner (responsible manager) in managing their risks. The Risk Owner's risk management responsibilities include:

- Maintaining the Project/Programme risk register in accordance with the RMP, for the scope and Project objectives for which they are accountable.

- Ensuring that risk management processes and activities outlined in this RMP are implemented and operate fully within their teams and make competent resource is available to ensure that risk management obligations are met.
- Ensuring that all other relevant parties and perspectives (Stage Managers, Project Managers, Contractors, stakeholders, and specialist(s) are appropriately engaged in the identification, assessment, and management of risks in their area.
- Treatments, controls and mitigation activities to ensure risk is appropriately managed are implemented.

3.7 Delivery Team Personnel

Delivery team personnel are responsible for:

- actively identifying and raising risks (threats and opportunities);
- accepting ownership of risks, where appropriate.
- undertaking assigned risk treatment activities.
- participating in reviews and workshops where requested.
- participating in risk training where the need is identified.

3.8 Sub-consultants, Sub-contractors, and Suppliers

Sub-consultants, sub-contractors, and suppliers to ALR Ltd will be expected to participate in risk management processes as appropriate to aid delivery, contractual and governance compliance. They will be expected to participate in risk workshops and reviews as required. This endeavours to facilitate a well-rounded participation of risk from all sponsors, ALR Board, delivery, and corporate support partners.

3.9 Stakeholders

ALR recognises the important role played by stakeholders as participants to successful Project delivery. Relevant stakeholders will be actively engaged at applicable stages of the risk management process to facilitate their input and contribution.

4 Risk Management Process

4.1 Hierarchy of Risk

A risk hierarchy has been established to ensure risk information is reported at the correct level and risk ownership assigned at the appropriate level of the project. Although the principles of risk management at ALR will be common, the mechanisms for managing risks in each level of the hierarchy may be different.

Risks will be managed through a tiered system of risk registers which closely reflects the organisation and accountability breakdown structure. The three levels in the risk hierarchy are:

1. **Strategic** – Risks that arise from externally-driven events and uncertainty relating to funding, market and economic factors, industry, and stakeholder relations.
2. **Stage** - Risks associated with coordination, interfacing, and integration of phases / stages. This also includes any significant risks which cannot be resolved within the projects. The Project level risks span both urban and transport Interventions, including non-infrastructure related interventions. This Includes risks to Auckland Light Rail's operational requirements and benefit realisation.
3. **Project** - Risks associated with delivering the current stage of the Project and future stages.

Establishing a hierarchy for managing risks ensures risks are managed at the most appropriate level in the organisation using an appropriate approach. Although the principles of risk management will be common, the mechanisms for managing risks in each level of the hierarchy may be different.

The description of Project stages and delivery workstreams are not documented here as it is anticipated that these will develop in subsequent stages of the Project.

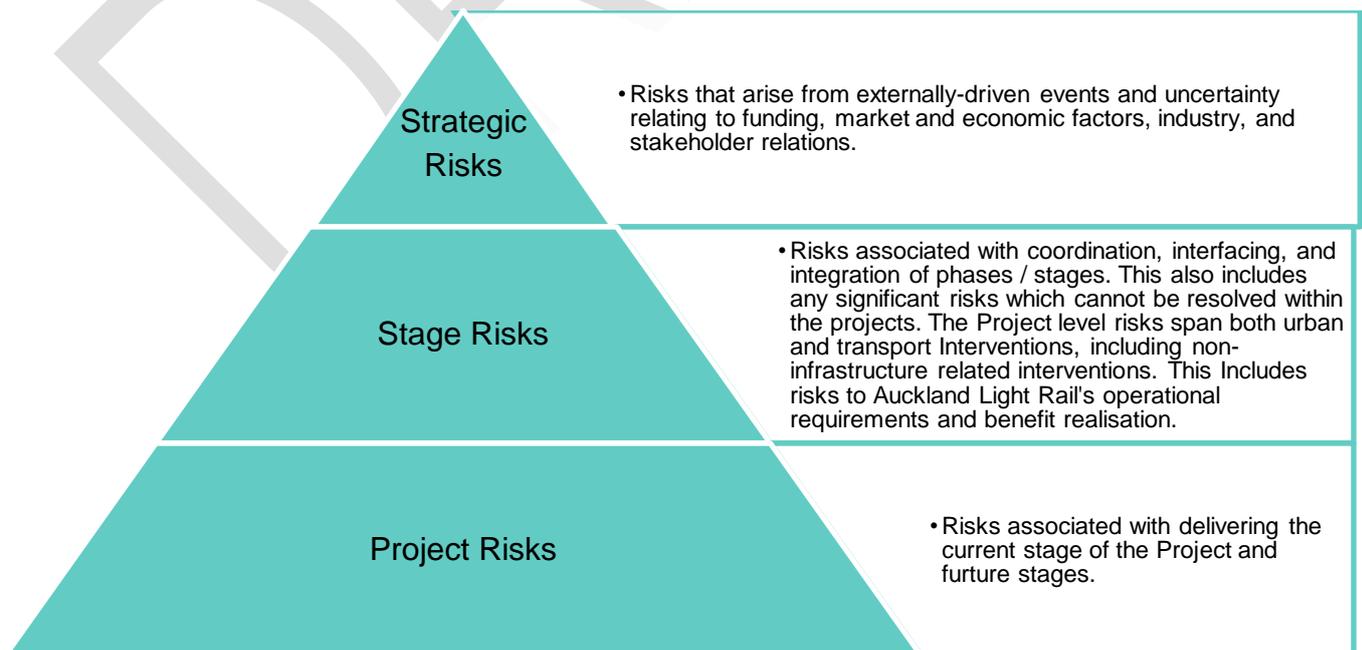


Figure 2 - Risk Hierarchy

4.2 Risk Escalation

Risks should be managed by the party best placed to manage the risk and at the most appropriate level in the Project governance structure.

Risks will be identified across the Project and in some situations will need to be escalated/de-escalated to a different workstream or management level for appropriate ownership and treatment. To support this process appropriate levels of risk management have been identified, based on the Project's governance structure and a clearly defined escalation/de-escalation pathway will be implemented by the Risk Manager. These levels and the associated escalation criteria are shown in Table 3.

Table 3 - Risk Escalation Table

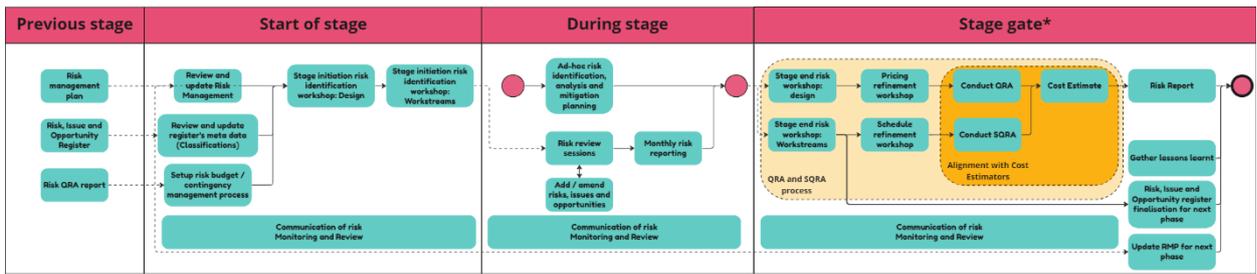
Management Level to Escalate to:	Escalate Project Risks when rating is:	Additional Escalation Criteria
Strategic ALR Ltd Board, Audit and Risk Sub-Committee	>= High	Risk has significant change or impact to scope, program, business case, sponsor workstream policies or ALR's reputation. The risk cannot be resolved without higher level of interventions. The risk is external from the Project and outside of the Project's control. The risk's occurrence or impact is significantly increasing. The risk is impacting multiple workstreams and is best managed at the Stage Leadership level.
Stage leadership Senior Leadership Team (ALR Ltd) & Stage Leadership	>= Medium	
Project leadership (Dependent on procurement strategy)	>= Medium	

A threat or opportunity is escalated by:

- The Risk Manager once the risk rating has exceeded the specified level as defined in **Error! Reference source not found.**
- A Risk Owner, Package Manager or Risk Manager if any of the addition escalation criteria identified in **Error! Reference source not found.**
- Once the need for escalation has been identified the Risk Manager needs to be notified.

4.3 Risk Stage Supporting Activities

For the succeeding project phases, the following risk activity framework should be followed in parallel to ISO 31000 risk process to ensure critical risk management activities are timely completed within subsequent project stages.



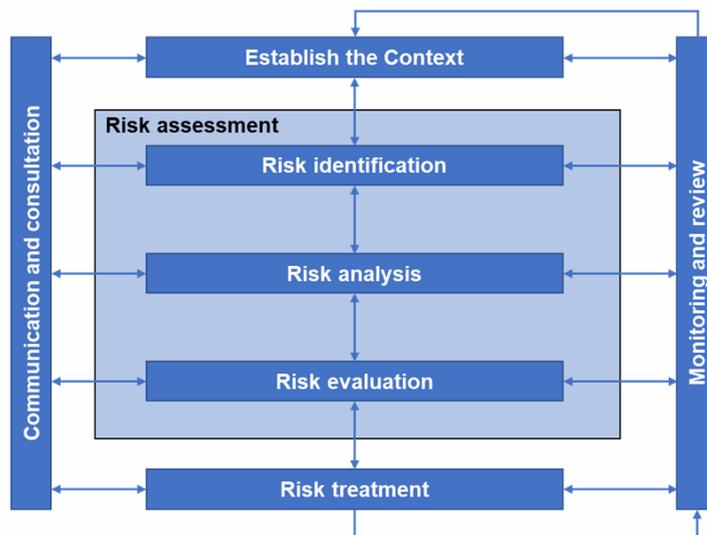
* QRA's are to be conducted at required cost and schedule estimation finalisations.

Figure 3 - Risk Management Activities, Project Stage Lifecycle View

4.4 Risk Management Process

The risk management process and activities will be conducted in accordance with the Waka Kotahi Minimum standard Z/44 - Risk management practice guide and AS/NZS ISO 31000.

The figure below summarises the key steps of the risk management process specified in AS/NZS ISO 31000:2018 and as applied within this project.



Source: Adapted from ISO 31000: Risk Management Guidelines

Figure 4 - Risk Management Process (ISO 31000)

This process is a systematic approach applicable to all aspects of contract delivery, from contract governance to task level activity. The remainder of this section details its application within the contract. This risk management process provides a systematic approach to managing risks and represents a generic process to be applied throughout the project. The risk management process is iterative and continuous, although formal reporting of risk will be on a regular basis as defined later in this document.

4.4.1 Scope, Context, Criteria

This step establishes the context in which the rest of the process will take place. Criteria against which risks will be assessed are established and the structure of the analysis is defined. It is also necessary to assign specific responsibility for the risk assessment process and risk treatment plans, establish time frames and budgetary allowances.

A clear understanding of the Project context is a pre-requisite for a comprehensive and robust risk process. Once understanding of the higher-level Project context has been established, consideration of a similar range of diverse context related issues needs to be repeated at the level appropriate to the risk assessment being undertaken to properly establish the risk context. Caution is needed to ensure that adequate time is invested at this stage.

The context against which risks may be identified is likely to exist in the following:

- Political, economic, social, technological, legal, and environmental change.
- Media representation of the Project and reputational impacts.
- Social Licence and perception of the Project.
- Client/contract objectives.
- Client or supplier-initiated contract change.
- Delivery programme.
- Potential for failure to achieve Performance Indicators (PIs).
- Estimating assumptions or uncertainties.
- Business, process, design, or construction change.
- Design outputs and assumptions.
- Construction working methods.
- Outputs from review/audit.

The criteria against which risk is to be assessed are as defined within the NZ Transport Agency Minimum Standard Z/44 – Risk management.

The risk management process on the Project will involve regular reviews and alignment with the Project's live Decision, Assumption, Exclusions, and Issues Registers.

4.4.2 Risk identification

Risk identification is the process of identifying and describing the events (threats or opportunities) that could affect the achievement of objectives for Auckland Light Rail Project.

At the identification stage, each identified risk should be fully described so that it can be effectively communicated and treated. When describing a risk, four elements must be documented:

1. **Risk Name:** A short description of the risk;
2. **Event:** The possible observable event or effect (what) that may occur to that will result in the risk being realised. It should also provide the context or circumstances (where and when) the risk may occur;
3. **Cause(s):** The potential hazards, sources or triggers (how and why) that could result in the risk event occurring. Include all possible causes so that appropriate treatment can be performed, thus reducing the likelihood or consequence of the risk; and
4. **Consequence(s):** Probable impacts that could transpire should the risk event occur. It is imperative to include all possible consequences, so that appropriate treatment can be assigned. For traditional risk assessments the consequences should be expressed in qualitative terms.

The following are some risk identification techniques that may be utilised:

- **Checklists:** Review of generic and/or activity specific risk themes.
- **Workshops/reviews:** formal multi-disciplinary forums that take the form of either 'blue sky' thinking or focused review of existing data. Participants are selected based on attendance requirements relative to maximising outcomes from the degree of involvement and time spent.
- **Interviews:** used on a selective basis to elicit information from specialist personnel.
- **Experience based reviews / Lessons Learned:** Review of previous projects and/or contracts undertaken.
- **Ad-hoc:** Delivery team identification of risks during contract execution.

To effectively manage and report project risks, several risk categories have been identified to ease risk classification during the identification step. The purpose of the risk categories is to help prompt identification of risks and identify patterns in risks identified per category. The identification process should not be limited only to the selection below, particularly with respect to the detailed risks.

Table 4 - Risk Categories

Risk Category	Description
Commercial	Risk associated with commercial terms of any relevant contracts e.g. design, construction and the service provider contract, pre and post award.
Delivery	Risk associated with the technical delivery of the project to the scope.
Environmental	Risk associated with managing environmental aspects of the project, including heritage sites and properties, contamination, groundwater, etc.
Land Acquisition	Risk associated with acquiring property for the corridor, and where required, land development.
Legal	Risks that could expose ALRL, or Sponsors, to legal proceedings.
Operations and Maintenance	Risks to the effective operation and maintenance of the network.
Rail Operations	Future rail operations, loss or disruption to future service, impact on customers and risk to revenue or cost.
Third Party Impacts	Impacts on third party services.

4.4.3 Risk Assessment

The risk assessment process is defined in Section 4.3 of the NZ Transport Agency Minimum Standard Z/44 – Risk management.

The Z/44 Standard sets out that the Auckland Light Rail Project is to adopt the 'advanced (quantitative) approach'. This is based on computer modelling of quantitative data, the software to be used is to comply with the following requirements detailed within Section 4.4.3.2.

The risk analysis process will involve a detailed consideration of the identified risk and its characteristics and will include defining and capturing in the appropriate Risk and Issues Register:

- Risk title, descriptions, causes and consequences.
- Risk status.
- Risk responsibility, such as: risk owner, risk managers, risk raiser.

- Current controls and effectiveness.
- The likelihood and consequences ratings given to the risk.
- Mitigations planned, and associated post mitigation likelihood and consequence ratings.
- Expected timeframe for when the risk will occur, or proximity.
- Any classification regarding important project classifications such as: sub-phase, section, discipline, workstream.
- Applicable comments to risk history.

Both quantitative and semi-quantitative methodologies will be applied when undertaking risk analysis. An overview of approach to these methodologies are provided below:

4.4.3.1 Semi Quantitative Risk Analysis

Semi quantitative risk analysis entails the classification of risk, threats, and opportunities, against a predetermined likelihood and consequence rating criteria. The criteria are predefined by the project and endorsed by the project leadership forum and / or board. Likelihood (**Error! Reference source not found.** and **Error! Reference source not found.**) and Consequence criteria (Table 10 and Table 11) are given to ensure calibration across risks and consequence types. The likelihood and consequence tables are combined to provide an integrated matrix, as shown in **Error! Reference source not found.**

Table 5 - Threat Likelihood Rating (Developed from Z/44 Table 4.3)

	Rare	Unlikely	Possible	Likely	Almost Certain
Likelihood <i>(applicable to Capital Projects)</i>	≤5%	>5% - 30%	>30% - 55%	>55% - 85%	>85%
Frequency <i>(applicable to M&O contracts)</i>	Less than once in 10 years	At least once in a period of >6 - 10 years	At least once in a period of >2 - 6 years	At least once in a period of >1 - 2 years	At least once in a period of 12 months

Table 6 - Opportunity Likelihood Rating (Developed from Z/44 Table 4.3)

	Rare	Unlikely	Possible	Likely	Almost Certain
Likelihood <i>(applicable to Capital Projects)</i>	≤5%	>5% - 15%	>15% - 25%	>25% - 35%	>35%
Frequency <i>(applicable to M&O contracts)</i>	Less than once in 20 years	At least once in a period of >16 - 20 years	At least once in a period of >10 - 16 years	At least once in a period of >5 - 10 years	At least once in a period of 5 years

Table 7 - Threat & Opportunity Risk Matrix (Developed from Z/44 Table 4.6)

		Threat					Opportunity						
		Insignificant	Minor	Moderate	Severe	Extreme	Extreme	Severe	Moderate	Minor	Insignificant		
Likelihood	Almost certain	L	M	H	C	C	C	C	H	M	L	Almost certain	Likelihood
	Likely	L	M	H	C	C	C	C	H	M	L	Likely	
	Possible	L	M	M	H	C	C	H	M	M	L	Possible	
	Unlikely	L	L	M	M	H	H	M	M	L	L	Unlikely	
	Rare	L	L	L	L	H	H	L	L	L	L	Rare	
		Consequence											

4.4.3.2 Quantitative Risk Analysis (Cost and Schedule)

Auckland Light Rail will conduct Quantitative Risk Assessment (QRA) to evaluate the aggregate exposure of the identified risks on the cost and schedule to prioritise risks and inform the risk management process. The QRA activities are to be done during project phases as described in section **Error! Reference source not found.** This includes:

- QRA's for cost estimate finalisations as required.
- Schedule QRA support to support schedule development.
- Cost and schedule QRAs for stage finalisation.

QRA should:

- Make a robust and accurate assessment of Auckland Light Rail's risk exposure using representative models that accurately reflects the nature of the risk.
- Identify the key risks which affect the cost and schedule.
- Create a transparent record of the assessment which supports the published outputs and facilitates subsequent phases of the risk management process.

Cost and schedule QRAs will be undertaken on a project and stage basis to support investment decisions, project change and options appraisals where risk may be a factor and to understand changes in risk exposure during the project lifecycle.

As part of the procurement process, cost and schedule QRAs should also be conducted on significant contracts prior to contract award to ensure that risk transfer through contracts is well understood and cost effective.

4.4.3.3 Risk Contingency in Estimates

Risk contingency management needs to be aligned and incorporated into the Commercial Management Plan

For contingency calculations, the approach to be applied will follow that stipulated in section 4.4.3 above and will be in accordance with section 5 of NZ Transport Agency Minimum Standard Z/44 – Risk management and Cost Estimating Manual SM014. Contingency data will be presented through Summary Risk Analysis Reports.

Contingency is the specific allocation of additional cost required in addition to the Base Estimate to manage the identified risk. Time contingency may also be applied in developing

the schedule to allow for uncertainty related to the duration of project activities. To the extent that potential delays impact costs, this should be captured in the cost contingency.

Contingency is defined at two separate levels:

- P50 – a 50 percent probability that the corresponding cost value will not be exceeded.
- P95 – a 95 percent probability that the corresponding cost value will not be exceeded.

The level of exposure on a project is directly linked to the p-value, which may be covered in whole or in part by the Contingency.

Throughout each stage contingency provisions needs to be managed and tracked against occurring risks, threats and opportunities. This management includes:

- **Contingency allocation.** Process to determine if contingency is warranted to be spent and meets the required criteria.
- **Alignment with Change Control process:** Ensure that alignment with the project's change control process to appropriately amend project scope, cost and schedule due to the contingency allocation.
- **Access and approval:** Clear approval process needs to be in place. May involve approval by project director and or board.
- **Monitoring and tracking:** Monitoring and Tracking of contingency spend to ensure resources are appropriately managed in alignment with the governance structure. Alignment with commercial team crucial in the monitoring and tracking of contingency spending.

Reporting and Communicating: Monthly reporting to be included in the project reporting framework to ensure visibility of contingency spending.

4.4.4 Risk Evaluation

4.4.4.1 Prioritisation

Risk evaluation will be used to determine which risks are to be treated, and to define the prioritisation for treatment.

Each risk will be rated for both current and treated exposure and ranked within the risk register by its current exposure risk rating. To facilitate the ranking of risks the risk rating matrix provided in NZ Transport Agency Minimum standard Z/44 – Risk management will be used. For reference, this is reproduced in the figure shown below.

4.4.4.2 Risk Tolerance Threshold

To aid in risk treatment prioritisation a Risk Tolerance Threshold (RTT) will be agreed upon with the ALR Ltd. Board. Risks with an exposure below the established RTT will be given a 'live-parked' status. These risks will be monitored but will not be treated unless escalated due to other contributing factors as specified in 4.2. When a change in exposure occurs the need for treatment will be re-evaluated.

The establishment of an RTT will aid the delivery team to focus resource effort on those risks likely to have the greatest negative impact on the contract (and positive impact with respect to opportunities).

4.4.4.3 Risk Appetite Scale

Figure 5 provides a Risk Appetite Scale to provide context from which to set out Risk Appetite Statements:



Figure 5 - Risk Appetite Scale

Note:

- **Zero Tolerance** - means everything possible must be done to avoid the risk following the 'As Low As Reasonably Practicable' (ALARP) principle.
- **Low** - means risk averse and only willing to accept a low amount of uncertainty
- **Medium** - means willing to accept an amount of uncertainty and manage the impacts and outcomes
- **High** - means willing to expect and accept uncertainty and the possibility of failure.

4.4.5 Risk Treatment

4.4.5.1 Risk Treatment Matrix

The type of treatment to be applied to risk will be selected from the following:

Table 8 - Risk Treatment Matrix

THREAT	OPPORTUNITY
Avoid - Identifying actions to eliminate the threat such as withdrawing from the activity	Exploit – Requires commitment of resources to increase the likelihood that the opportunity is realised
Reduce - Taking action to reduce the likelihood or consequence of the threat to an acceptable level.	Enhance – Used to increase the probability and/or positive impacts of an opportunity typically achieved by identifying and maximising key drivers of the opportunity.
Fall-back - Putting in place a fall-back or contingency plan of actions that will be taken to reduce the consequence of the threat should the uncertain (risk) event occur.	
Transfer - A third party takes on responsibility for some of the financial impact of the threat e.g., insurance	
Share - Where the risk is shared with another party e.g., in a contract where both parties share the gain if costs are less than planned	
Accept - Retaining the threat by informed decision if the risk level is tolerable	Reject – A conscious and deliberate decision is taken to not enhance or exploit the opportunity. Willing to take advantage of the opportunity if it comes along but not actively pursuing it.

Cost/benefit analysis can be used to decide which treatment actions are best implemented from the range of options available.

Risk owners will be responsible for the management of treatment actions against owned risks, including the allocation of resource, conduct of cost/benefit trade off and integration within the Project.

Where the mitigation of a risk best sits with an owner not in the impacted workstream, a mitigation owner may also be appointed, but the risk owner will remain responsible for the management of the treatment actions.

See Section 6 regarding Issue Management.

4.4.5.2 Fallback

For each risk with 'live' status, the risk owner will evaluate the requirements for Fallback action, both proactive and reactive, ensuring incorporation of the same in resourcing and programming. Proactive Fallback activity against identified risks will be recorded in the risk register as a treatment action.

4.4.6 Monitoring and Review

4.4.6.1 Process Monitoring and Review

Monitoring of the application of risk processes, good practice, and compliance to contractual requirements for risk management will be carried out by the Risk Manager. Where deviations are identified (from within the delivery team) the Risk Management Team will instigate corrective actions.

Additionally, the Risk Management Team will conduct a review of risk management at bi-monthly intervals throughout the course of the Project. The review is intended to identify and confirm:

- Contractual compliance.
- Compliance with this RMP.
- Delivery of good risk management practices.

Outcomes from the review will be made available to the delivery team and notified to the client in the regular report following the conduct of the review.

4.4.6.2 Risk Monitoring and Review

The Risk Management Team will monitor Project delivery, raising identified risks on the risk register for review and notification to the client (in accordance with NZ Transport Agency Minimum Standard Z/44 – Risk management).

The Risk Manager will be responsible for monitoring the content of the risk register to ensure the currency of data and the identification and notification of risk owners requiring to update owned data.

On a Project level, risk reviews will be conducted to ensure the ongoing validity of risks identified, exposure levels, and progress and effect of associated treatment actions. Risk reviews will be attended by such members of the delivery team as deemed appropriate by the Head of Risk Management to maximise outcomes.

Risk owners will be responsible for ongoing monitoring and review of owned risks, the conduct and effectiveness of associated treatments, and the currency of related data.

4.4.6.3 Risk Management Review

The Risk Management Review to be held quarterly will be led by the Head of Risk Management and will advise on, assist, make recommendations and report, as the context requires, to the Auckland Light Rail Board to facilitate:

- Establish and control appropriate policies and procedures to ensure that there is proper assessment and management of risk throughout the Programme.
- Understanding the performance of Auckland Light Rail's risk management process, the risk profile of the project and its movement over time.

- Understanding, reviewing, and monitoring of the Quantitative Risk Assessment and the level of Risk Exposure relative to the Contingency Provision.
- Evaluate the risk to the proposed schedule as assessed by the Schedule Quantitative Risk Assessment.
- Risk contingency budget status and current risk treatment spend.
- Understanding, reviewing, and monitoring any other risk areas considered appropriate.

On a quarterly basis, the Risk Management Team will conduct a review of the suitability of the Risk Management Plan and the capability and competence of the programme to deliver it and will report their findings to the Auckland Light Rail Board through the review forum.

4.4.6.4 Stage Gate Risk Review

These meetings will be chaired by the Stage Risk Manager and will be attended by the Stage Management / Leadership Team or their delegates. The purpose of the meeting is to:

- Review the high priority Stage Risks.
- Review the risk responses and evaluate their effectiveness.
- Review the risk contingency budget and overall risks costs as modelled by cost QRA's.
- Review the risk adjusted scheduled as modelled by the SQRA.
- Endorse the high priority Stage risks for inclusion in the periodic reporting.
- Endorse the active risk file and calculated risk contingency for progress to succeeding phase.

4.4.6.5 Project / Work Packages Governance

Each delivery stage will put in place appropriate mechanisms to review risk management performance of individual work packages and tasks.

5 Risk Records and Reporting

All risk reporting is to align with the Project Reporting framework, which is referenced within the Project Management Plan. A standard format for risk reporting within the project has been developed and are to be reviewed periodically for suitability. An example can be found in this section below.

5.1 Risk Registers

The following risk registers needs to be maintained to efficiently support the project in alignment with the defined risk hierarchy (Section 4.1):

- Board risk register as described in section 3.2 and 0.
- Stage risk register – Programme view of the risks impacting current and future stage gates.
- Project risk register – Short- and medium-term risks impacting activities in delivering the current project stage and deliverables.

All risks need to be recorded as described by Waka Kotahi's Z/44 requirements. Furthermore, traceability between risks hierarchy levels needs to be kept by proper risk ID referencing.

5.2 Risk Management Software

A risk management software system will be procured at the start of each Project stage and setup to assist and facilitate the risk management process. The configuration of such a system is key to the optimal usage of the system. During configuration risk management activities may need to be done in parallel until the system is configured, tested and implementation activities are completed. Open risks from the previous phase of the project needs to be evaluated and included as an initial load into the risk register.

It is recommended that the risk management software system meets the following minimum requirements:

Table 9 - Risk Management Software System Minimum Requirements

Title	Description	Importance
Centralized Data Storage	A centralized repository for storing and organizing risk-related data such as risk registers, assessments, mitigation plans, monitoring activities and user comments and progress tracking.	High
Risk Assessment Templates and Customisation	Pre-built risk assessment templates or the ability to customise assessment templates to fit the specific needs of the current or succeeding stages.	High
Risk Identification and Recording of custom attributes / classifications	Forms to facilitate the identifying and recording risks, including capturing risk descriptions, categories, likelihood, impact, risk owners, and other relevant custom attributes / classifications.	High

Risk Register and Tracking	Comprehensive risk registers to list identified risks, their status, and associated actions or mitigation measures, enabling progress tracking and updates.	High
Risk Assessment and Analysis Tools	Able to conduct risk assessments and analysis, including automated calculations of risk metrics, risk heat maps, and charts.	High
Tracking of expected risk contingency in relation to total risk cost.	Provide a high-level overall assessment of the expected risk cost value which include, assessment of consequence, likelihood, and mitigation costs.	High
Risk Mitigation Planning and Monitoring	Ability to development, tracking, and implementation of risk mitigation plans, with features to capture mitigation measures, assign responsibilities, and monitor effectiveness.	High
Reporting and Visualisation	Generate risk reports, dashboards, and visualisations, allowing for customized report generation, trend analysis, and graphical representations of risk data.	Medium
Collaboration and Communication	Facilitate collaboration and communication among project team members and stakeholders, allowing for real-time updates, comments, and notifications of risk elements.	Medium
Security and Access Control	Robust security measures to safeguard sensitive risk-related data, with user access controls and permissions to control data access and modification. Integration with Microsoft 365 Single-Sign-On would be required.	Medium
Licensing affordability	Risk licensing needs to provide easy affordable access for all project participants to raise and view risks.	Medium
Audit Trail and Compliance	Maintenance of an audit trail of changes made to risk information, ensuring traceability and compliance with relevant regulations and standards.	Medium
Integration with Project Management Tools	Integration with other project management tools, such as scheduling, budgeting, and resource management software, to ensure alignment between risk management and other project activities.	Low

It is important to realise that the benefits of using fit for purpose software to manage the risk management process and associated data includes:

1. **Centralised and Secure Data Management:** Centralized storage and management of risk-related data, including risk registers, assessments, mitigation plans, and monitoring activities. This eliminates the need for manual record-keeping and ensures that all relevant information is easily accessible, up-to-date, and securely stored.
2. **Improved Collaboration and Communication:** Collaboration among project team members by providing a platform for real-time sharing, updates, and feedback on risks and risk management activities. It enables effective communication and

coordination among stakeholders across different locations, ensuring that everyone has access to the same information and can actively participate in the risk management process.

3. **Efficient Risk Assessment and Analysis:** Streamline the risk assessment and analysis process with pre-built risk assessment templates, calculations of risk metrics (e.g., likelihood, impact), and visualization tools to better interpretation of risk data.
4. **Enhanced Risk Monitoring and Reporting:** Systematic and regular monitoring of risks by providing reminders, notifications, and tracking mechanisms. This enhances the risk update cadence regarding status. Automated reporting allows for the generation of customised reports, dashboards, and visualizations. This helps project stakeholders stay informed about risk trends, progress, and the effectiveness of risk mitigation efforts.
5. **Integration with Project Management Processes:** Risk management software can be integrated with other project management tools, such as scheduling, budgeting, and resource management software. This integration enables seamless coordination between risk management and other project activities, ensuring that risk considerations are embedded into the overall project planning and execution.
6. **Data Analysis and Decision Support:** Advanced data analysis, such as risk simulation, scenario modelling, and predictive analytics. This enables the project team to gain insights into the potential impacts of risks, test different risk mitigation strategies, and make informed decisions based on data-driven analysis.
7. **Audit and Compliance:** Traceable and auditable record of risk management activities, which is crucial for compliance purposes and internal or external audits. It ensures transparency, accountability, and support for regulatory requirements and standards.

5.3 Risk Data Management

Risk data is not limited to risk records in registers, but also includes current and future iterations of this Risk Management Plan, other risk mitigation plans, QRA reports and associated memos.

All related risk records are to be managed in the risk management software system, with documents stored in the provided common data environment as specified by the Project Management Plan. All Project document management policies will apply to risk data and associated risk management documents.

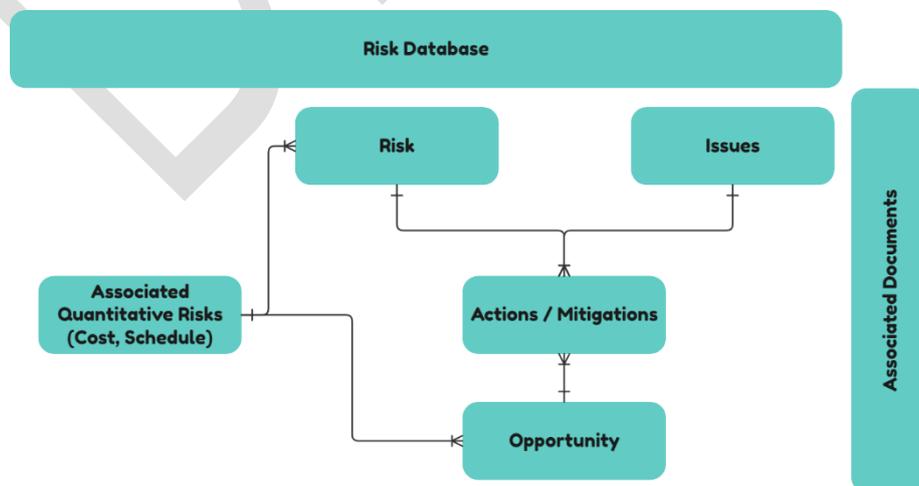


Figure 6 - Risk data and document framework

5.4 Risk Reporting System

Continually updated reporting as part of the Risk Management Software implemented will continually drive key reporting metrics to all stakeholders across the project ensuring a transparent view of risk.

Below is an indication of a custom risk management system developed for the business case stage of the project within Microsoft SharePoint, Power Apps and Power BI. The succeeding project phases will need to review the Risk Management Software requirements defined in section **Error! Reference source not found.** with the needs of the project with available products on the market, of the custom or Commercial Off the Shelf (CoTS) type.

Welcome to ALR's Risk Management platform.
Here you will find all project risks, issues and related actions identified as part of the risk management process.

Log a new risk
To log a new risk, complete the following form:
[Log a new risk](#)

Risk management plan
The risk management plan provides the framework within which risk management is conducted.
[ALRL Risk Management Plan V2 PUBLISHED](#)

Reports and Registers

[Risk register reports](#) [Risk Register](#) [Issue Register](#) [Action Register](#)

My risk reports

[My Draft Risks as Risk Owner](#) [My Open Risks as Risk Owner](#) [My Closed Risks as Risk Owner](#)

Risk Matrix 5x5
All qualitative risk assessment as provided for in the Risk registers are rated against the applicable risk matrix as provided for below. The Matrix include Likelihood probability and Consequence descriptions.

PAA phase	Construction phase
Threat Matrix 5x5	tbc
Opportunity Matrix 5x5	tbc

Figure 7 - Risk Management Portal Landing Page

ID	Risk Description	Risk Type	Risk Category	Risk Consequence	Risk Rating (H, M, L)	Current Risk Co.	Current Risk Lik.	Current Risk Co.	Current Risk Lik.	Current Control
10	High	...	...	...	...	...
11	Medium	...	...	...	...	...
12	Low	...	...	...	...	...
13	High	...	...	...	...	...
14	Medium	...	...	...	...	...
15	Low	...	...	...	...	...
16	High	...	...	...	...	...

Figure 8 - SharePoint Risk Register

Figure 9 - Digital Risk Capture Template / Form

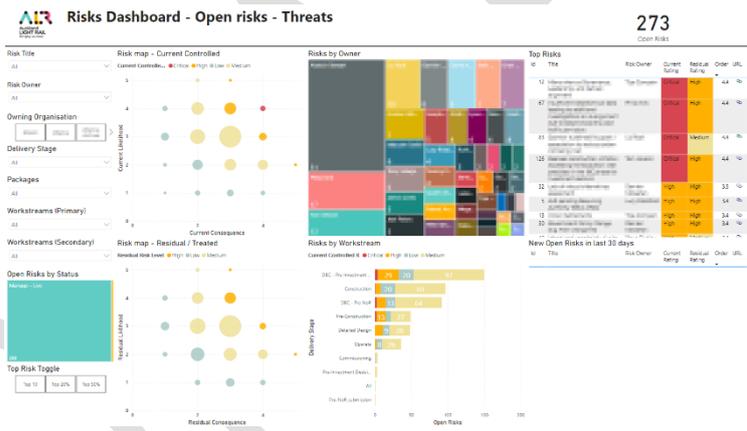


Figure 10 - Interactive Risk Report

5.5 External Reporting

Any risk reporting needs to be part of a formal document review and approval process and only released on instruction from the board. Distribution is also to be controlled.

5.6 Monthly Reporting

Reporting on key risks and risk management performance will be a standard part of project performance reporting. This is to be defined in conjunction with the Project's Project Management Office (PMO) on the reporting requirements.

Example of current risk reporting as part of the Business Case Alliance are provided below for reference.

5.8 Risk and Change Management

In collaboration with the Change Manager and Commercial Manager, risk will be integrated within the change management process to ensure risk associated with any change is clearly identified, managed, and mitigated. This process is outlined in the Change Management Plan.

5.9 Communication and Consultation

The key to effective risk management is proactive communication and consultation. The Risk Management Team will ensure that a collaborative approach is taken by the delivery team regarding liaison with both internal and external stakeholders. By maintaining timely and open communications the delivery team will ensure a value adding flow of risk related information occurs between all parties with a vested interest in successful contract delivery.

Superior stakeholder consultation will enable the establishment of context, identification of risks and changes to these, and aid in identifying and evaluating options for the treatment of risk whilst demonstrating a customer-delivery focussed ethos.

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6 Issue Management

Issues management focuses on managing the impact and resolution of events once they have occurred, are occurring or are more than likely to occur. Issues can be the eventuation of risk or be events that have not been previously identified. As risks eventuate or other issues are identified at a project level these must be recorded on the Project Issues Register.

The monitoring and review process will cover all aspects of the issue management process. The purpose is to:

- Ensure management actions and steps to treat the issue are effective and efficient.
- Validate ratings and make changes as required.
- Assess where additional intervention and management treatment may be required.
- Identify changes in assumptions, constraints, and actions.
- Identify any lessons learned that could be applied to future packages across the Project.
- Close out issues that are no longer relevant or current.

An issue ceases to be relevant and will be archived when:

- It no longer exists.
- It is not current, or it has changed.
- Its management controls and treatments have been effective, meaning that the issue is either no longer a threat or has been effectively managed so that it is no longer an issue.

7 Opportunity Management

Opportunities are ideas and innovations generated to help enhance a project's chances of success or even provide benefits in addition to those originally intended. Opportunities will be identified through the same process applied for risks, as previously described. Once an opportunity has been identified, it will be qualitatively assessed through the risk management process to determine its' veracity.

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8 Quality Assurance

8.1 RMP Authorisation

This RMP is maintained by the Head of Risk Management and approved for issue by ALR Ltd Audit and Risk Sub-Committee. The Plan will be reviewed periodically, updated and re-issued as deemed necessary.

8.2 Internal Audit

Risk management will be internally audited to evaluate compliance with the requirements of the Quality Management Plan.

8.3 External Audit / Review

ALR Ltd Audit and Risk Sub-Committee may, where it identifies a need for independent audit/review, engage an external resource to evaluate risk management. The Head of Risk Management will facilitate requirements for audit/review aiding as required.

8.4 Training

The Head of Risk Management will establish a programme of risk management training for the project team as and when it's needed. Most training will be completed during risk reviews and risk identification sessions.

The objectives of the training will be:

1. to provide an overview and impart an understanding of risk management concepts, processes, and benefits, and:
2. to provide an overview of the requirements around managing the Project's risks for each stage.

Appendix A Risk Threat Matrix

Table 10 - Risk Threat Matrix (Developed From Z/44 Table 4.4)

Risk Threat Matrix						
	Likelihood percentage description	Consequence				
		Insignificant	Minor	Moderate	Severe	Extreme
Almost Certain	>85%	Low	Medium	High	Critical	Critical
Likely	>55% - 85%	Low	Medium	High	Critical	Critical
Possible	>30% - 55%	Low	Medium	Medium	High	Critical
Unlikely	>5% - 30%	Low	Low	Medium	Medium	High
Rare	<5%	Low	Low	Low	Low	High
Consequence Descriptions						
Rating Scale:		Insignificant	Minor	Moderate	Severe	Extreme
Reputation	Stakeholders	Disruption to stakeholder relationship, and/or Loss of route availability of a routes.	Disruption to stakeholder relationship slowing progression of site specific activity, and/or Loss of route availability.	Disruption to stakeholder relationship slowing progression of regional activity, and/or Loss of strategic route availability.	Disruption to stakeholder relationship slowing progression of regionally strategic activity, and/or Loss of route availability of a national strategic route.	Disruption to stakeholder relationship slowing progression of nationally strategic activity, and/or Loss of route availability of a national strategic high volume route.
	Public/Media	Local media coverage for 1 day. Interest mitigated	Local media coverage for 2-5 days Official information request. Negative feedback from Minister.	Short term (days) media coverage Parliamentary/Ministerial questions or 3rd party investigation.	Sustained media coverage (weeks) Possible Ministerial inquiry leading to loss of Ministerial confidence/formal enquiry by OAG or statutory agency	Sustained national and/or international media coverage Intervention by Minister required, possibly leading to loss of Ministerial confidence. Commission of Inquiry instigated.
	Legal/Compliance	Breach managed at a management level.	Breach with letter from authority requesting action.	Breach with legal rebuke /abatement notice/restrictions	Individual prosecution	High profile prosecution(s) with potential for custodial sentence.
Performance	Delivery	Programme slippage resulting in late delivery by less than 2 week(s)	Programme slippage resulting in late delivery by between 2 and 3 weeks.	Programme slippage resulting in late delivery by between 3 and 5 weeks.	Programme slippage resulting in late delivery by between 5 and 11 weeks.	Programme slippage resulting in late delivery longer than 11 weeks.
	Cost (% of Phase)	Negative financial impact of less than 2.5%	Negative financial impact between 2.5% and 5%	Negative financial impact between 5% and 10%	Negative financial impact between 10% and 25%	Negative financial impact of more than 25%
	Health & Safety	Injury requiring short-term first-aid care and no absence from the workplace	Injury requiring short term medical treatment and	Injury requiring medical treatment or lost time of 1 day to three weeks	Serious injury (injuries) requiring specialist medical	Loss of life, permanent disability or injury, or multiple serious injuries.

			workplace absence less than one day		treatment or lost time greater than three weeks	
Environmental	Small scale pollution or other environmental damage is localised with no resultant effects. Contained locally.	Minimum pollution or other environmental damage. Short term effects only.	Pollution or other environmental damage at a localised level, with medium term effects.	Significant and widespread pollution or other environmental damage, with long term effects.	Permanent pollution damage or other environmental damage	
	No lasting detrimental effect on the environment i.e., harm, nuisance, noise, fumes, odour or dust emissions of short term duration.	No lasting detrimental effect on the environment i.e., harm, nuisance, noise, fumes, odour or dust emissions of short term duration.	Serious discharge of pollutant or source of community annoyance within general neighbourhood that requires remedial action. Can be fully remediated.	Long term detrimental environmental or social impact i.e., chronic &/or significant discharge of pollutant. There will be some ongoing impact.	Extensive detrimental long term impacts on the environment and community i.e., catastrophic &/or extensive discharge of persistent hazardous pollutant.	
Environmental Sustainability	<u>Embodied Carbon</u> : Very minor negative impacts on the embodied carbon footprint.	<u>Embodied Carbon</u> : Potential minor negative impacts on the embodied carbon footprint.	<u>Embodied Carbon</u> : Potential to contribute to a moderately higher embodied carbon footprint.	Potential to contribute to a relatively higher carbon footprint.	Potential to contribute to a significantly higher carbon footprint.	
	<u>Enabled Carbon</u> : Very minor negative impacts on the enabled carbon footprint.	<u>Enabled Carbon</u> : Potential minor negative impacts on the enabled carbon footprint.	<u>Enabled Carbon</u> : Potential to contribute to a moderately higher enabled carbon footprint.			
	<u>ISCA</u> : Limits the achievement of IS Credits, including mandatory credits.	<u>ISCA</u> : Potential to limit the achievement of IS Credits, including mandatory credits.	<u>ISCA</u> : Potential to limit the achievement of multiple IS Credits, including mandatory credits.			
	<u>Water</u> : Very minor increases in portable water consumption.	<u>Water</u> : Potential to create minor increases in portable water consumption.	<u>Water</u> : Potential to create moderate increases in portable water consumption.			
	<u>Waste</u> : Very minor increases in waste consumption.	<u>Waste</u> : Potential to create minor increases in waste consumption.	<u>Waste</u> : Potential to create a moderate increases in waste consumption.			
Māori Outcomes	Māori outcomes are fully embedded. Minor/short term adverse comments from a key Māori partner. Positive Treaty audit response. Close alignment with Te Rautaki Huanga Māori and Ngā Pūtanga Māori.	Māori outcomes are almost embedded. Localised key Māori partner concern. Minor Treaty audit recommendations. Minor misalignment with Te Rautaki Huanga Māori and Ngā Pūtanga Māori.	Māori outcomes are moderately embedded. Adverse criticism by a key Māori partner, short term damage to relationships with a key Māori partner. Moderately adverse Treaty audit recommendations. Moderate misalignment with Te Rautaki Huanga Māori and Ngā Pūtanga Māori.	Māori outcomes are partially embedded. Adverse criticism by 2 or more key Māori partners, with short term relationship damage. Adverse Treaty audit recommendations. Major misalignment with Te Rautaki Huanga Māori and Ngā Pūtanga Māori.	Māori outcomes are minimally embedded. Lasting adverse criticism by key Māori partners, with full breakdown of relationships. Significantly adverse Treaty audit recommendations. Severe misalignment with Te Rautaki Huanga Māori and Ngā Pūtanga Māori.	

	Social Sustainability	Minimal loss of access to basic necessities and valued social infrastructure assets in a local neighbourhood. Minimal impact on community wellbeing. No or minimal effort to remediate the impact.	Minor loss of access to basic necessities and valued social infrastructure assets in a local neighbourhood. Minor impact on community wellbeing. Up to one week to remediate the impact.	Moderate loss of access to basic necessities and valued social infrastructure assets in a local neighbourhood. Moderate impact on community wellbeing. Up to 6 months to remediate the impact.	Moderate loss of access to basic necessities and valued social infrastructure assets in multiple neighbourhoods. Moderate impact on the wellbeing of multiple communities. Up to one year to remediate the impact.	High loss of access to basic necessities and valued social infrastructure assets in multiple neighbourhoods. High impact on the wellbeing of multiple communities. Permanent impact that cannot be remediated.
	Customer Experience	Insignificant interruption to service delivery but there is no impact on customer experience and quality of service.	Minor interruption to service delivery with minimal impact on customer experience and quality of service resulting in an increase in complaints from the community and/or reduction in customer experience.	Moderate interruption to service delivery with moderate impact on customer experience and quality of service, resulting in an increase in complaints from the community, reduction in experience and/or assets not useable for 48 hrs to 6 days.	Major interruption to service delivery with major impact on customer experience and quality of service, resulting in an increase in complaints from the community, reduction in experience and/or assets not useable for 7 - 14 days.	Extreme interruption to service delivery with extreme impact on customer experience and quality of service, resulting in an increase in complaints from the community, reduction in experience and/or assets not useable for more than 14 days.

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Appendix B Risk Opportunity Matrix

Table 11 - Risk Opportunity Matrix (Developed From Z/44 Table 4.4)

Risk Opportunity Matrix						
		Consequence				
	Likelihood percentage description	Insignificant	Minor	Moderate	Severe	Extreme
Almost Certain	>85%	Low	Medium	High	Critical	Critical
Likely	>55% - 85%	Low	Medium	High	Critical	Critical
Possible	>30% - 55%	Low	Medium	Medium	High	Critical
Unlikely	>5% - 30%	Low	Low	Medium	Medium	High
Rare	<5%	Low	Low	Low	Low	High
Consequence Descriptions						
Rating Scale:		Insignificant	Minor	Moderate	Severe	Extreme
Reputation	Stakeholders	Perceived enhancement to ALRL reputation from non-recorded supplier/partner feedback	Perceived enhancement to ALRL reputation from non-recorded regional stakeholder feedback and/or improvement of route availability	Enhancement to ALRL reputation from recorded regional stakeholder feedback and/or improvement of route availability	Enhancement of stakeholder relationship likely to lead to improved implementation of the ALRL project and/or improvement of route availability	Enhancement of stakeholder relationship very likely to lead to improved implementation of the ALRL project and/or major improvement of route availability
	Public/Media	Perceived enhancement to ALRL reputation arising from an absence of negative media coverage.	Enhancement to ALRL reputation from positive industry media coverage.	Enhancement to ALRL reputation from regional media coverage likely to lead to recognition for the Senior Leadership Team.	Enhancement to ALRL reputation from positive international or national media coverage likely to lead to recognition from ALRL Board.	Enhancement to ALRL reputation from positive international or national media coverage likely to lead to recognition from Minister.
	Legal/Compliance	N/A	N/A	N/A	N/A	N/A
Performance	Delivery (TOC1)	Programme advancement resulting in early delivery by less than 0.5 weeks.	Programme advancement resulting in early delivery by between 0.5 and 1 weeks.	Programme advancement resulting in early delivery by between 1 and 1.5 weeks.	Programme advancement resulting in early delivery by between 1.5 and 3 weeks.	Programme advancement resulting in early delivery by more than 3 weeks.
	Cost (% of Phase)	Positive financial benefit less than 2.5%	Positive financial benefit between 2.5% and 5%	Positive financial benefit between 5% and 10%	Positive financial benefit between 10% and 25%	Positive financial benefit more than 25%
	Cost (TOC1)	Positive financial benefit of less than \$0.75 M.	Positive financial benefit between \$0.75 M to \$1.5 M.	Positive financial benefit between \$1.5 M to \$3 M.	Positive financial benefit between \$3 M to \$7.5 M.	Positive financial benefit more than \$7.5 M.
	Health & Safety	Demonstrates compliance with Health & Safety practice.	Demonstrate industry leading application of Health & Safety best practice.	Demonstrate a number of enhancements to Health & Safety best practice.	Demonstrate Health & Safety innovation likely to lead to changes in national standards.	Demonstrate Health & Safety innovation likely to lead to changes in international standards.
	Environmental	Demonstrates compliance with environmental practices.	Demonstrate industry leading application of environmental best practice.	Demonstrate a number of enhancements to environmental best practice.	Demonstrate environmental innovation likely to lead to changes in national standards.	Demonstrate environmental innovation likely to lead to changes in international standards.

						changes in international standards.
	Environmental Sustainability	<p>Embodied Carbon: Carbon footprint related to embodied carbon emissions is consistent with the baseline.</p> <p>Enabled Carbon: Carbon footprint related to the enabled emissions is consistent with the baseline.</p> <p>ISCA: Potential to contribute to the achievement of at least on IS Credits, that is specified to be mandatory by the client.</p> <p>Water: Potential to create very minor reduction in portable water consumption.</p> <p>Waste: Potential to create very minor reduction in waste consumption.</p>	<p>Embodied Carbon: Potential to contribute to a minor reduction in embodied carbon footprint.</p> <p>Enabled Carbon: Potential to contribute to a minor reduction enabled carbon footprint.</p> <p>ISCA: Potential to contribute to the achievement of at least on IS Credits.</p> <p>Water: Potential to create minor reduction in portable water consumption.</p> <p>Waste: Potential to create minor reduction in waste consumption.</p>	<p><u>Embodied Carbon</u>: Potential to contribute to a moderate reduction in embodied carbon footprint.</p> <p><u>Enabled Carbon</u>: Potential to contribute to a moderately reduction enabled carbon footprint.</p> <p><u>ISCA</u>: Potential to contribute to the achievement of multiple IS Credits, including mandatory credits.</p> <p><u>Water</u>: Potential to create moderate reduction in portable water consumption.</p> <p><u>Waste</u>: Potential to create moderate reduction in waste consumption.</p>	Potential sustainability innovation that highly contributes to a reduction in carbon footprint.	Potential sustainability innovation that significantly contributes to a reduction in carbon footprint.

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