Metro Systems Assurance and Engineering Manager

Position Description

Team	Metro	**Location**	Auckland / Wellington
Reports to	General Manager – Metro Systems Assurance		
Role type	Permanent	**Job family**	Engineering / Assurance
Direct reports	Systems Assurance Engineers and specialist assurance roles, as established. Expected 2-4 staff members.		

About Us

KiwiRail's Role in Aotearoa New Zealand

KiwiRail connects communities, customers and regions through rail and ferry services. Our purpose, Stronger Connections, Better New Zealand, reflects the contribution we make to a safe, resilient and sustainable transport system.

Our Workplace

Safety, health and wellbeing are our highest priority. Our values guide how we work with each other, our customers, partners, communities and stakeholders.



About the Role

Purpose of the role

The Systems Assurance and Engineering Manager leads the day-to-day operation of the Metro Systems Assurance function across the Auckland and Wellington Metro networks. The role implements the Metro Systems Assurance Strategy and Framework and provides independent, evidence-based assurance across operations, maintenance, assets, capital projects, suppliers and technical and organisational change.

Set multi-year priorities for independent assurance across Auckland and Wellington Metro within the framework set by the GM. Be accountable to Metro governance for assurance coverage across operations, assets, suppliers and change, including any material gaps.

The role integrates systems engineering, engineering assurance, technical assurance, lifecycle assurance and continuous improvement to provide governance with a coherent view of system integrity, safety, reliability, operational readiness, control effectiveness, residual risk and evidence limitations. It acts as a constructive link between frontline teams, Professional Heads and technical authorities, Asset Management, Infrastructure Engineering, Quality, Operations, Maintenance and Project Delivery, ensuring operational experience and performance evidence inform assurance priorities and improvement recommendations.

The Systems Assurance and Engineering Manager works in close partnership with the Metro Quality Manager to ensure that Systems Assurance and Quality operate as complementary but distinct functions within the integrated Metro assurance model. The Quality function owns the Quality Management System, audit and verification programme, non-conformance processes and structured evidence generation. The Systems Assurance function uses this evidence, together with operational, engineering, asset, project and risk information, to evaluate control effectiveness, identify systemic and lifecycle risks, form independent system-level assurance conclusions and provide governance insight. The Systems Assurance and Engineering Manager does not direct the Quality function unless specifically delegated by the General Manager: Metro Systems Assurance, but is responsible for coordinating assurance priorities, avoiding duplication, identifying evidence requirements and ensuring Quality findings are appropriately integrated into the Metro assurance position.

The role is deliberately separate from first-line maintenance, asset and project delivery accountability. Delivery and asset-owning functions remain accountable for engineering decisions, technical approvals, maintenance strategies, budgets, work delivery, asset performance and risk ownership. The Systems Assurance and Engineering Manager owns the assurance programme, independent evaluation, system-level assurance opinion, improvement facilitation, governance reporting and escalation. This boundary preserves independence while enabling the role to catalyse practical improvement.

Key Challenges

- Maintaining sufficient independence to provide objective assurance while building trusted relationships with delivery, engineering and operational teams.
- Integrating diverse and sometimes incomplete evidence across disciplines, regions, lifecycle stages, suppliers and organisational interfaces.
- Influencing improvement without taking over first-line ownership of maintenance, engineering, project or asset performance outcomes.
- Challenging senior or established positions where evidence does not support the claimed level of safety, readiness, compliance or control effectiveness.
- Prioritising assurance effort across a broad risk portfolio within constrained resources and competing operational and project demands.
- Translating complex technical and systemic matters into clear governance advice and practical decisions.

Key Relationships

Relationship	Key parties
Internal	General Manager: Metro Systems Assurance; Chief Metro Officer and Metro Leadership Team; Metro Quality Manager and Quality & Assurance Leads; Asset Information and Process Improvement Lead; Operations, Maintenance, Asset Management, Infrastructure Engineering and Project Delivery leaders; Professional Heads, technical authorities and subject matter experts; Safety, Risk, Regulatory, Commercial and Finance functions.
External	Auckland and Wellington metro service operators and transport authorities; regulators; suppliers and contractors; independent assessors; project organisations; industry forums and specialist advisers.

What you will do to contribute

Key Accountabilities

Systems assurance framework and programme	• Implement, maintain and continuously improve the Metro Systems Assurance Framework, lifecycle assurance approach, assurance planning methodology and supporting procedures. • Develop and lead a risk-based, integrated assurance programme across business-as-usual operations, maintenance, projects, suppliers and change, avoiding duplication with first-line controls and Quality activities. • Define proportionate assurance scopes, criteria, lifecycle gates, evidence requirements, independence expectations and reporting methods. • Maintain a consolidated Metro assurance position covering key claims, evidence, findings, residual risks, dependencies, assumptions and limitations. • Support implementation of enterprise risk, assurance and change requirements within Metro and contribute to the development of the KiwiRail Systems Engineering and Systems Assurance framework and community of practice.
Independent systems, safety and engineering assurance	• Provide independent assurance that systems, assets, maintenance and operational arrangements remain safe, compliant, integrated and fit for their intended purpose. • Assess whether engineering governance, standards, maintenance regimes, competency arrangements, inspection and testing controls, asset information and technical decisions are supported by credible and traceable evidence. • Integrate specialist technical findings and authoritative input from Professional Heads, technical authorities and subject matter experts into coherent system-level assurance conclusions. • Challenge gaps in control effectiveness, evidence, interface management, configuration management, requirements management and verification and validation. • Commission or lead targeted technical assurance reviews and independent investigations for high-consequence, novel, complex or systemic matters.

Management of change and lifecycle assurance	• Lead second-line assurance of Management of Change, ensuring changes are clearly defined, risk assessed, authorised, implemented, verified and transitioned into operation. • Provide assurance across requirements, interfaces, safety justification and SFAIRP demonstration, testing, commissioning, operational and maintenance readiness, competence, asset information and handover. • Advise decision-makers on the adequacy of change evidence, residual risk and conditions required before acceptance, without assuming technical authority or accountable-owner responsibilities. • Ensure lifecycle assurance extends from concept and design through delivery, operation, maintenance, modification and retirement.
Capital projects and project-to-BAU integration	• Lead Metro assurance planning and independent reviews for major capital projects and programmes, proportionate to complexity, novelty and risk. • Assess the adequacy of systems engineering, integration, assurance, safety, testing, commissioning, asset acceptance and operational readiness arrangements. • Provide governance visibility of project readiness, outstanding evidence, integration risk, residual risk, dependencies and conditions for proceeding. • Ensure lessons from operations, maintenance and previous projects are incorporated into project assurance and that handover evidence is credible, complete and usable by accountable BAU functions.
Assurance-driven continuous improvement, reliability and technology	• Use assurance findings, incident learning, frontline insight, asset condition, reliability trends, repeat failures and quality information to identify systemic weaknesses and improvement opportunities. • Lead or facilitate cross-functional improvement initiatives where a system-level response is required, while retaining implementation and outcome ownership with the accountable delivery function. • Promote more preventative, predictive and risk-based approaches to maintenance and asset management through evidence-based recommendations and assurance of resulting changes. • Evaluate whether proposed technology, automation, condition monitoring, analytics and digital workflow initiatives have clear requirements, appropriate controls, lifecycle support and demonstrable benefits. • Monitor whether agreed corrective and preventive actions address root causes and deliver sustained improvement, escalating ineffective or overdue responses.
Asset information, data and assurance insight	• Work with Quality, Asset Information and Asset Management functions to strengthen data governance, information quality, traceability, configuration integrity and analytical capability. • Integrate asset, assurance, quality, maintenance, operational and risk information to identify emerging threats, leading indicators and cross-discipline trends. • Ensure governance reporting distinguishes verified evidence, analysis, assumptions, professional judgement, uncertainty and material evidence gaps. • Use system-level insight to inform assurance priorities and provide independent input to investment and improvement decisions without owning budgets or renewal programmes.

Supplier, competency and engineering governance assurance	• Develop and maintain risk profiles for critical suppliers and contractors, considering the safety and operational significance of their activities, capability, competency, quality performance, process conformance and effectiveness of key controls. • Use supplier risk profiles to prioritise targeted assurance activity and support the progressive introduction of a proportionate, risk-based supplier assurance programme. • Assess whether engineering and maintenance competency arrangements, including role requirements, authorisations, assessment, supervision, records and ongoing assurance, are clearly defined, adequately controlled and operating effectively. • Provide independent assurance over selected engineering governance arrangements, including compliance with applicable standards, technical review and approval processes, competency requirements, evidence and the implementation of required controls. • Work with the Quality function, accountable contract owners, Professional Heads and technical authorities to coordinate assurance activity, avoid duplication and ensure relevant audit, performance and technical evidence is integrated into the Metro assurance position. • Identify and escalate material weaknesses in supplier performance, competency assurance or engineering governance, and monitor whether accountable owners implement effective corrective actions supported by credible closure evidence.
Investigations, learning and frontline engagement	• Lead or commission independent investigations and learning reviews where events, trends or weak signals indicate potential system or control failure. • Apply systems thinking and contemporary safety approaches to understand interactions between people, technology, processes, interfaces and organisational conditions. • Maintain visible engagement with frontline maintenance and operational teams so assurance reflects work as performed and field-generated concerns are captured, assessed and escalated. • Promote sharing of lessons and effective practices across Auckland and Wellington and test whether improvements are embedded and sustained.
Governance, stakeholder and regulatory support	• Provide concise, decision-ready reporting and independent advice on system integrity, readiness, control effectiveness, residual risk, emerging themes and evidence limitations. • Maintain traceability between assurance claims, evidence, findings, accountable owners, decisions, conditions, actions and closure records. • Build constructive relationships with Metro leaders, operators, rail partners, regulators, suppliers, project organisations and enterprise functions. • Support the General Manager with Railway Safety Case, regulatory engagement, enterprise systems assurance initiatives and industry forums as delegated. • Escalate material, systemic or unresolved safety, integrity, reliability or compliance risks through the appropriate governance route.

Leadership and capability	• Lead a capable, independent and pragmatic Systems Assurance team with clear priorities, consistent methods and strong professional standards. • Build capability in systems engineering, systems assurance, safety assurance, engineering assurance, investigation, risk management, asset information and analytical disciplines. • Coach stakeholders in evidence-based decision-making, proportionate assurance, risk transparency and clear accountability. • Develop succession and professional development pathways and foster a culture of collaboration, learning, constructive challenge and continuous improvement.

Decision Making and Authority

- Set and prioritise the Systems Assurance work programme within approved strategy, delegations, risk appetite and resources.
- Determine which risks take priority when the two networks have competing assurance needs. Allocate the delegated assurance budget and specialist resources accordingly, escalating material exceptions to the GM.
- Determine the scope, depth, methods, evidence and independence requirements for assigned assurance reviews and investigations.
- Require access to information and accountable-owner responses necessary to form an assurance opinion.
- Issue, qualify, withhold or escalate assurance opinions and recommend conditions or further work before decisions are made.
- Escalate material risks, ineffective controls, inadequate evidence, conflicts of interest and overdue or ineffective responses.
- Commission specialist assurance support within approved delegations.
- The role does not approve engineering designs or maintenance strategies, exercise technical authority unless separately delegated, direct maintenance crews, own asset reliability targets or budgets, close delivery actions without evidence, or accept operational risk for another accountable owner.

Success Measures

- A risk-based integrated assurance programme operates across BAU, projects, suppliers and change.
- Governance receives timely, defensible and evidence-based visibility of system integrity, control effectiveness, residual risk and evidence limitations.
- Assurance activities are independent, proportionate, traceable and avoid duplication with delivery controls and Quality audits.
- Material findings have named accountable owners, proportionate actions and credible closure evidence, with overdue or ineffective responses escalated.
- Management of Change, capital project and operational readiness decisions are supported by complete and credible assurance evidence.
- Cross-discipline reliability, asset information and control themes are identified early and translated into practical improvement recommendations.
- Repeat issues and systemic weaknesses reduce through sustained corrective and preventive action led by accountable owners.
- Supplier and specialist engineering assurance is targeted to risk and provides clear governance insight.
- The Systems Assurance team develops capability, consistency and succession while remaining lean and focused on high-value outcomes.

Physical Demands and Nature of Work

This role is both office and site based and may require travel, attendance at operational locations and occasional work outside normal business hours. The position description reflects the current intent of the Metro Systems Assurance

operating model and may be refined as the function matures, provided the separation between delivery ownership, technical authority, Quality verification and independent Systems Assurance is preserved.

About You

Knowledge and experience

- Significant experience in systems assurance, safety assurance, engineering assurance, asset management or risk within a complex, safety-critical and asset-intensive environment.
- Demonstrated experience leading multidisciplinary assurance programmes across operations, maintenance, projects and organisational change.
- Strong understanding of lifecycle assurance, systems engineering, Management of Change, safety case principles, risk management, SFAIRP and evidence-based decision-making.
- Experience leading assurance reviews, technical investigations, audits or independent assessments and communicating defensible conclusions to senior leaders and governance forums.
- Demonstrated people leadership and the ability to build a pragmatic, high-performing technical team.
- Strong stakeholder influence, professional judgement, written communication and presentation skills.

Desirable

- Chartered Professional Engineer status, eligibility for chartership or an equivalent recognised professional credential.
- Rail or other transport infrastructure experience, including metro operations, maintenance and project interfaces.
- Knowledge of New Zealand rail regulatory obligations and organisational safety case environments.
- Familiarity with EN 50126, EN 50128 and EN 50129 principles, ISO 9001, ISO 55001, supplier assurance and contemporary safety science.
- Experience with asset information, analytical dashboards, digital evidence systems, condition monitoring or technology-enabled assurance.

Ways of working / work-related qualities

- Independent and courageous: provides objective challenge and escalates material issues while remaining constructive.
- Systems-focused: looks across interfaces, lifecycle stages and organisational boundaries rather than treating findings in isolation.
- Pragmatic and proportionate: directs assurance effort to matters that most affect safety, integrity, reliability and governance decisions.
- Evidence-led: distinguishes fact, analysis, assumptions, professional judgement and uncertainty.
- Collaborative without becoming embedded in delivery: works closely with accountable teams while preserving second-line independence.
- Improvement-oriented: converts assurance insight into learning and sustained system improvement rather than compliance activity alone.

Other requirements

- Current and valid New Zealand Driver Licence.
- Ability to travel between Auckland and Wellington and attend operational sites.
- Ability to meet KiwiRail safety, health and fitness-for-work requirements applicable to the role.

Qualifications

- Relevant tertiary qualification in engineering, systems engineering, safety, asset management or a related discipline, or equivalent relevant experience.

KiwiRail

CREATING STRONGER CONNECTIONS

KiwiRail