



Western Cape
Government

FOR YOU



Department of Infrastructure

Western Cape Infrastructure Implementation Plan 2050

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Foreword

The vision of the Western Cape Infrastructure Framework 2050 (WCIF 2050) is to enable infrastructure-led growth and investment in the Western Cape that creates sustainable, equitable, and resilient communities. It serves as the overarching framework that establishes the long-term vision, principles, and structure for infrastructure planning and development in the Western Cape. Its core focus lies in advancing spatial transformation, promoting resilient infrastructure, and adopting an integrated approach to governance and the modernisation of the public sector.

The Western Cape Infrastructure Strategy 2050 (WCIS 2050) translates the WCIF 2050 into a comprehensive set of strategic thrusts flowing into specific governance mechanisms, stakeholder engagement strategies, infrastructure sector priorities, and monitoring systems. It bridges the high-level aspirations of the WCIF 2050 and the more immediate priorities outlined in the Western Cape Government's Provincial Strategic Plan (PSP) as this relates to the transversal focus areas of Spatial Transformation, Infrastructure and Mobility. The strategies in the WCIS 2050 address thematic priorities across the social, energy and water, economic, technology, and ecological infrastructure sectors, helping to ensure equitable growth and sustainable development in the Western Cape.

This document – the Western Cape Infrastructure Implementation Plan 2050 (WCIIP 2050) – operationalises the WCIS 2050 by detailing actionable and phased infrastructure projects. This includes incorporating a stakeholder-driven approach, an infrastructure project pipeline and project prospectuses, tools for financing infrastructure projects, and a clear approach to managing risks. Through annual reviews, the WCIIP 2050 helps to ensure adaptability to emerging challenges while responding to the needs of the PSP portfolios. It responds to the PSP's focus on spatially transformed infrastructure, helping to ensure projects enhance equitable access to economic opportunities, public services, and recreational spaces for all residents of the Western Cape.

We heartily encourage all stakeholders in the public, private, community and academic sectors to engage with the high-level content of the WCIF 2050, the WCIS 2050 that gives this content strategic shape, and the WCIIP 2050 that maps out key implementation steps for the short term. The road ahead may be long and uncertain, but we have methodically worked through all the key issues with experts and a range of key stakeholders. We now have a clear sense of where we are going, what is negotiable and what is not, and how we will get there. We are committed to learning by doing, and to keep improving our work. We invite you to join us on this journey.

Our future depends on it!



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CHAPTER 1

Executive summary

The Western Cape Infrastructure Implementation Plan 2050 (WCIIP 2050) is a comprehensive framework designed to operationalise the strategic priorities of the Western Cape Infrastructure Framework 2050 (WCIF 2050) and the Western Cape Infrastructure Strategy 2050 (WCIS 2050). Together, these documents aim to address critical socio-economic challenges through sustainable infrastructure development across the province. By leveraging Panoptic Principles, the WCIIP 2050 aligns strategic goals with actionable projects, fostering resilience, equity, and innovation.

At its core, the WCIIP 2050 integrates international, national and provincial policy directives, including the Sustainable Development Goals (SDGs), National Development Plan (NDP), and the Provincial Strategic Plan (PSP). It focuses on spatial transformation, infrastructure resilience, and multi-sectoral collaboration. The document emphasises a phased approach to infrastructure development, structured across short-, medium-, and long-term timelines to address immediate needs while ensuring future sustainability.

The WCIIP 2050 employs a sector prioritisation matrix to identify and focus on the following critical sectors: Social, Energy and Water, Economic, Technology, and Ecological infrastructure. This matrix aligns with four key outcomes: households have increased access to basic services, enhanced social infrastructure, spatial transformation and resilience, and efficient mobility systems. These priorities ensure infrastructure investments contribute to the province's broader goals of equitable development and climate adaptability.

Stakeholder engagement and partnerships form the foundation of the WCIIP 2050. Drawing insights from extensive consultations, the plan promotes inclusive decision-making, fostering collaboration among public agencies, private entities, and local communities. Public-Private Partnerships (PPPs) are redefined to emphasise equitable risk-sharing and value creation, ensuring infrastructure projects are socially inclusive and financially viable.

A four-step process guides the development of a bankable, investor-ready pipeline of infrastructure projects. This begins with identifying existing pipelines, prioritising projects based on strategic alignment and feasibility, conducting rigorous evaluations using the Panoptic Principles, and packaging them into cohesive investment-ready portfolios. This systematic approach reduces risks and enhances the reliability of infrastructure initiatives. The WCIIP 2050 incorporates robust financing models, addressing South Africa's unique fiscal challenges. By blending traditional and alternative funding mechanisms, it will mobilise private capital and mitigate public sector financial burdens. Innovative financing tools will ensure that the province's infrastructure projects achieve sustainable, long-term benefits.

Monitoring and evaluation (M&E) frameworks are embedded throughout the WCIIP 2050 to track project performance, ensure compliance with governance standards, and promote continuous improvement. These frameworks emphasise transparency, accountability, and adaptive management, aligning with the Panoptic Principles and facilitating evidence-based decision-making.

In conclusion, the WCIIP 2050 represents a transformative approach to infrastructure planning and delivery in the Western Cape. By integrating strategic foresight, stakeholder collaboration, and innovative financing, the WCIIP 2050 positions the province to address current socio-economic challenges while building resilient, sustainable infrastructure systems for future generations.

CHAPTER 2

Introduction

CURRENT SOCIO-ECONOMIC CONTEXT

The WCIIP 2050 directly responds to the pressing socio-economic conditions that shape the Western Cape's immediate and medium-term infrastructure needs. Globally, the moderated inflation and steady growth projections of 3.2% in 2024 and 3.3% in 2025 provide a foundation of cautious stability¹. However, challenges like geopolitical tensions, volatile commodity prices, and supply chain issues necessitate robust, adaptable infrastructure investments within the Western Cape. These conditions demand an implementation approach that can swiftly adjust to fluctuations in both global markets and local needs.

Nationally, with South Africa's growth outlook set at a modest 1% in 2024 and 1.4% in the medium term², infrastructure planning must be precise and responsive. The WEF's Global Risks Report reflects major risks for the country, including energy and water shortages, economic slowdown³, and high unemployment – all critical factors that the WCIIP 2050 addresses through immediate action and investment in infrastructure resilience and efficiency. The WCIIP 2050 includes targeted infrastructure interventions to create a stable environment for both businesses and communities.

Furthermore, the SAICE 2022 Infrastructure Report Card underscores substantial challenges within South Africa's infrastructure, assigning an overall rating of D, which signals widespread risk of failure in critical services like energy, water, and transportation – issues that are acutely felt in the Western Cape⁴. The report calls for a proactive shift towards preventative and predictive maintenance, especially relevant for the Western Cape, where infrastructure must not only support rapid population growth, but also withstand increased strain from climate risks. To stabilise and sustain infrastructure, SAICE recommends bolstering security measures to combat theft and vandalism, which are essential for protecting the Western Cape's infrastructure investment and ensuring resilient, sustainable service delivery.

Within the Western Cape, the forecasted economic growth of 1.3% in 2024 and 1.8% in 2025 highlights the importance of a practical, impact-driven infrastructure rollout to combat high youth unemployment and accommodate the region's growing population. The WCIIP 2050 prioritises quick-to-deploy, labour-intensive projects to immediately address socio-economic challenges.

The WCIIP 2050 supports the provincial economy by creating jobs, stabilising essential service delivery, and ensuring that infrastructure investments directly contribute to long-term regional resilience. Importantly, the Constitutionally identified priority groups Women, Youth, the Elderly, and Persons with Disabilities, are emphasised as part of achieving inclusive infrastructure growth and development.

POLICY ALIGNMENT OF THE WCIIP 2050**INTERNATIONAL AND REGIONAL ALIGNMENT**

The **Sustainable Development Goals (SDGs)** are the blueprint to achieve a better and more sustainable future for all. Goal 9 seeks to build resilient infrastructure, promote sustainable industrialisation and foster innovation. Economic growth, social development and climate action are heavily dependent on investments in infrastructure, sustainable industrial development and technological progress.

Agenda 2063, implemented by the New Partnership for Africa's Development (NEPAD), is Africa's blueprint and master plan for transforming Africa into the global powerhouse of the future. It is the continent's strategic framework that aims to deliver on its goal for inclusive and sustainable development. Its goals include a high standard of living, quality of life and wellbeing for all citizens, transformed economies, environmentally sustainable and climate resilient economies and communities, and world class infrastructure.

NATIONAL ALIGNMENT

For the WCIIP 2050, strategic sector priorities are translated into actionable projects, closely aligned to the National Development Plan (NDP) and the National Infrastructure Plan (NIP) 2050's focus on effective infrastructure delivery and streamlined governance structures, as set forth in the Framework for Infrastructure Delivery and Procurement Management (FIDPM). The WCIIP 2050 also operationalises the WCIS 2050's alignment with SPLUMA's (Spatial Planning and Land Use Management Act)⁶ spatial requirements, ensuring that municipal and provincial spatial frameworks are harmonised to prioritise critical infrastructure needs.

Furthermore, the WCIIP 2050 integrates principles from the Government Immovable Asset Management Act (GIAMA)⁷, ensuring efficient management of infrastructure assets across their lifecycles. In addition, the WCIIP 2050 leverages partnerships with the private sector, in alignment with national regulations, to enable diversified funding streams and robust project delivery, thereby accelerating the achievement of sustainable infrastructure goals in the Western Cape. This approach supports a comprehensive, adaptive, and outcomes-driven infrastructure implementation strategy that aligns with national and provincial priorities, laying the groundwork for resilient and equitable development in the Western Cape.

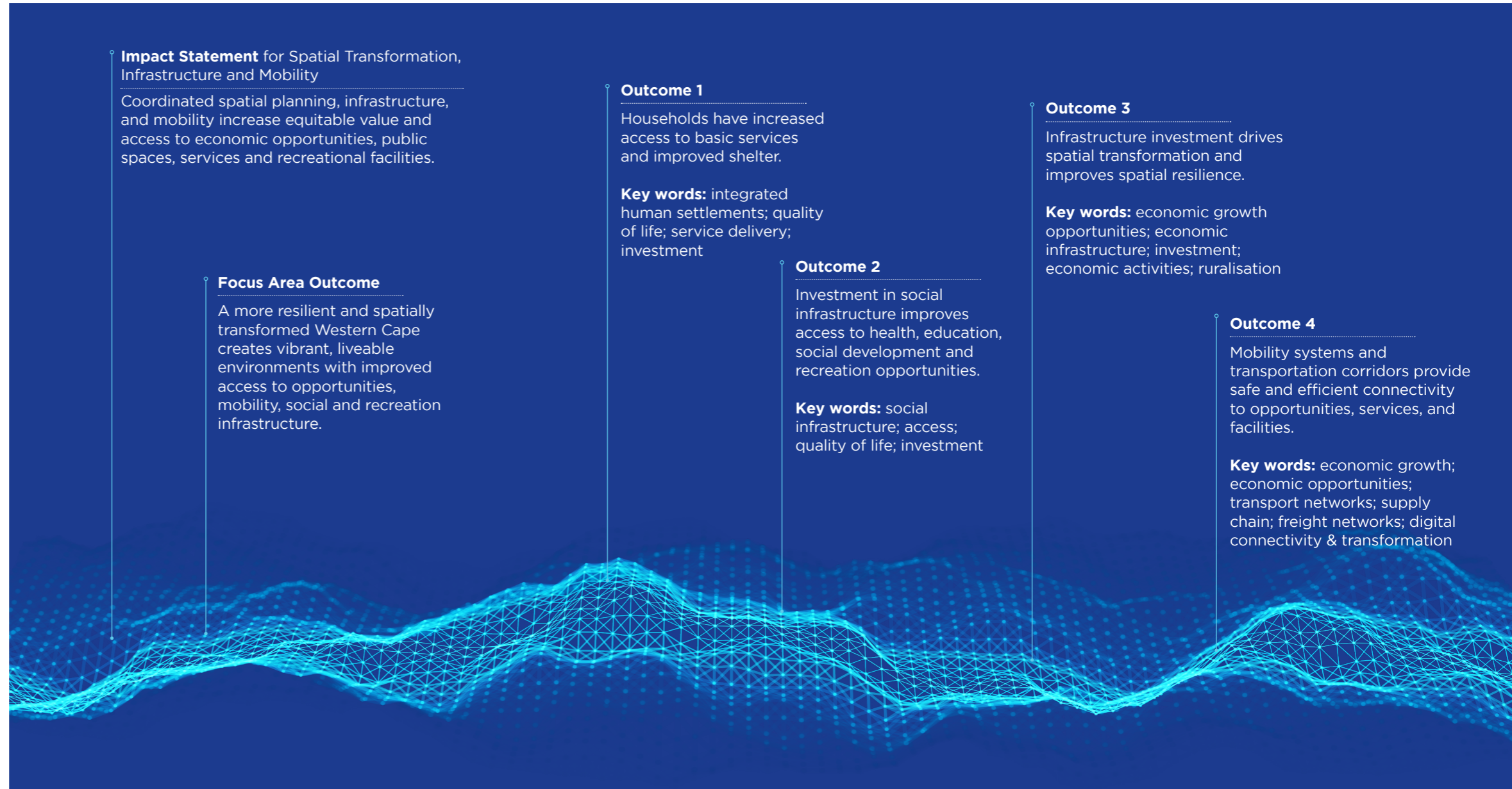
PROVINCIAL ALIGNMENT

Provincial Strategic Plan (PSP) 2025-2030

The **Provincial Strategic Plan (PSP)** sets out the integrated strategic goals and priorities of the Western Cape Government (WCG) for the next five years (2025-2030). **Spatial Transformation, Infrastructure and Mobility** is the first transversal focus area across the following four portfolios in the PSP: **Growth for Jobs; Safety, Wellbeing & Dignity, and Innovation, Culture, & Governance**. The second transversal focus area across the four portfolios is Resource Resilience. Central to these is the shared commitment to a "people-centred impact," enabling economic opportunities and enhancing the quality of life for all Western Cape residents.

Growth for Jobs (G4J) Strategy

Officially approved by the provincial cabinet on 19 April 2023, the WCG has launched the Growth For Jobs (G4J) Strategy.



The purpose of G4J is very clear - to enable a thriving private sector that attracts investment capable of creating jobs and lifting our citizens from poverty to prosperity. By 2035, and through seven core focus areas, the G4J Strategy is determined to transform the provincial economy into a jobs-rich, thriving, sustainable, and diverse economy that is growing between four and six percent. Priority Focus Area 6 (PFA 6) in the G4J Strategy is Infrastructure and the Connected Economy. The WCIIP 2050 ensures the delivery of the infrastructure projects in PFA 6.

Western Cape Ecological Investment Infrastructure Framework (EIIIF)

The WCIIP 2050 operationalises the EIIIF by mapping out actionable steps for investment in ecological

infrastructure, including water source protection and invasive species management. By establishing clear responsibilities for ecological maintenance and resilience-building initiatives, the WCIIP 2050 will ensure ongoing ecological health, which is essential for climate adaptation and the sustainable development of the Western Cape. The WCIIP 2050 prioritises collaboration with public and private sectors to secure funding and resources for these ecological infrastructure projects.

Western Cape Spatial Development Plan (WCSDP)

The WCIF 2050 aligns with the Western Cape Spatial Development Plan by addressing the spatial inequalities created by historical legacies and prioritising infrastructure that promotes equitable spatial transformation. By planning infrastructure in

a way that improves access to economic centres and essential services, the WCIS 2050 and WCIIP 2050 seek to create balanced growth across urban and rural areas. This approach directly supports social cohesion and equitable economic opportunities, fostering a more inclusive future across the Western Cape.

Western Cape Climate Change Response Strategy (WCCRS)

The Western Cape Climate Change Response Strategy aims to make the Western Cape province a climate-resilient and net-zero emission region by 2050, focusing on transitioning to a low-carbon economy while adapting to the impacts of climate change through collaboration between public, private, and civil society sectors. It incorporates

the latest climate science and aims for an equitable and inclusive approach to climate action. Its focus areas are responding to the climate emergency, transitioning to net-zero emissions, reducing climate risks, and building resilience.

Western Cape Land Transport Frameworks

The Provincial Land Transport Framework (PLTF) is a provincial requirement flowing from the National Land Transport Act (Act No. 5 of 2009) (NLTA), which states in Sections 11(1)(b)(i) and (ii) that the WCG is responsible for “*Formulation of provincial transport policy and strategy, within the framework of national policy and strategy, ... planning, coordination and facilitation of land transport functions in the province, and preparing the Provincial Land Transport Framework*”.

MUNICIPAL ALIGNMENT

Integrated Development Plans (IDPs)

Integrated Development Plans (IDPs) are a cornerstone of municipal governance in South Africa, serving as a five-year strategic plan that guides development and service delivery at the local level. It provides a structured approach to addressing the needs of communities while ensuring that municipal resources are used efficiently and effectively. The significance of the IDP Framework lies in its ability to coordinate planning and resource allocation. By integrating various development initiatives and fostering collaboration among stakeholders, the framework ensures that municipal efforts are directed toward sustainable and inclusive growth.

Municipal Spatial Development Frameworks (MSDFs)

Municipal Spatial Development Frameworks (MSDFs) are strategic planning tools that guide spatial development and land-use management within a municipality. They form a critical component of the IDPs and align with broader regional, provincial, and national development strategies.

Municipal Finance Management Act (MFMA)

The Municipal Finance Management Act (MFMA) of 2003 is a South African law that aims to improve financial management in local government. The MFMA’s goal is to ensure that municipalities can deliver services sustainably.

Capital Expenditure Framework (CEF)

The Capital Expenditure Framework (CEF) is a structured plan used by municipalities to outline its long-term investment priorities for infrastructure projects, aligning them with strategic development goals and spatial planning objectives, essentially providing a roadmap for managing capital spending on assets like buildings, roads, and utilities over a set period, ensuring financially viable and timely infrastructure decisions are made based on available funds and priorities.

AN INTEGRATED MODEL FOR DELIVERY

The **PSP’s** portfolios, namely Growth for Jobs, Safety, Wellbeing & Dignity, and Innovation, Culture & Governance, are directly supported by the strategic and operational focus areas of the WCIF 2050, WCIS 2050, and WCIIP 2050, which together ensure a cohesive infrastructure growth and development approach. At its core, the PSP adopts **Spatial Transformation, Infrastructure, and Mobility** as a transversal function, ensuring the integration of physical and social infrastructure to create a “people-centred impact” that improves the quality of life for Western Cape residents^{6,7}. The PSP’s impact statement underscores the importance of coordinated spatial planning and infrastructure development to increase equitable value and access to economic opportunities, public services, and recreational facilities for all citizens.

The **WCIF 2050** serves as the overarching framework that establishes the long-term vision, principles, and structure for infrastructure planning and development in the Western Cape. Its core focus lies in advancing spatial transformation, promoting resilient infrastructure, and adopting an integrated approach to governance and public sector modernisation. The WCIF 2050 draws its influence from both international strategic principles, such as those of the UN, World Bank, and OECD, as well as national shaping priorities, including the National Development Plan (NDP), National Infrastructure Plan (NIP 2050), and the Spatial Planning and Land Use Management Act (SPLUMA). Its impact statement emphasises the creation of a flexible, innovative, and inclusive infrastructure framework that aligns the diverse needs of people, businesses, and the natural environment.

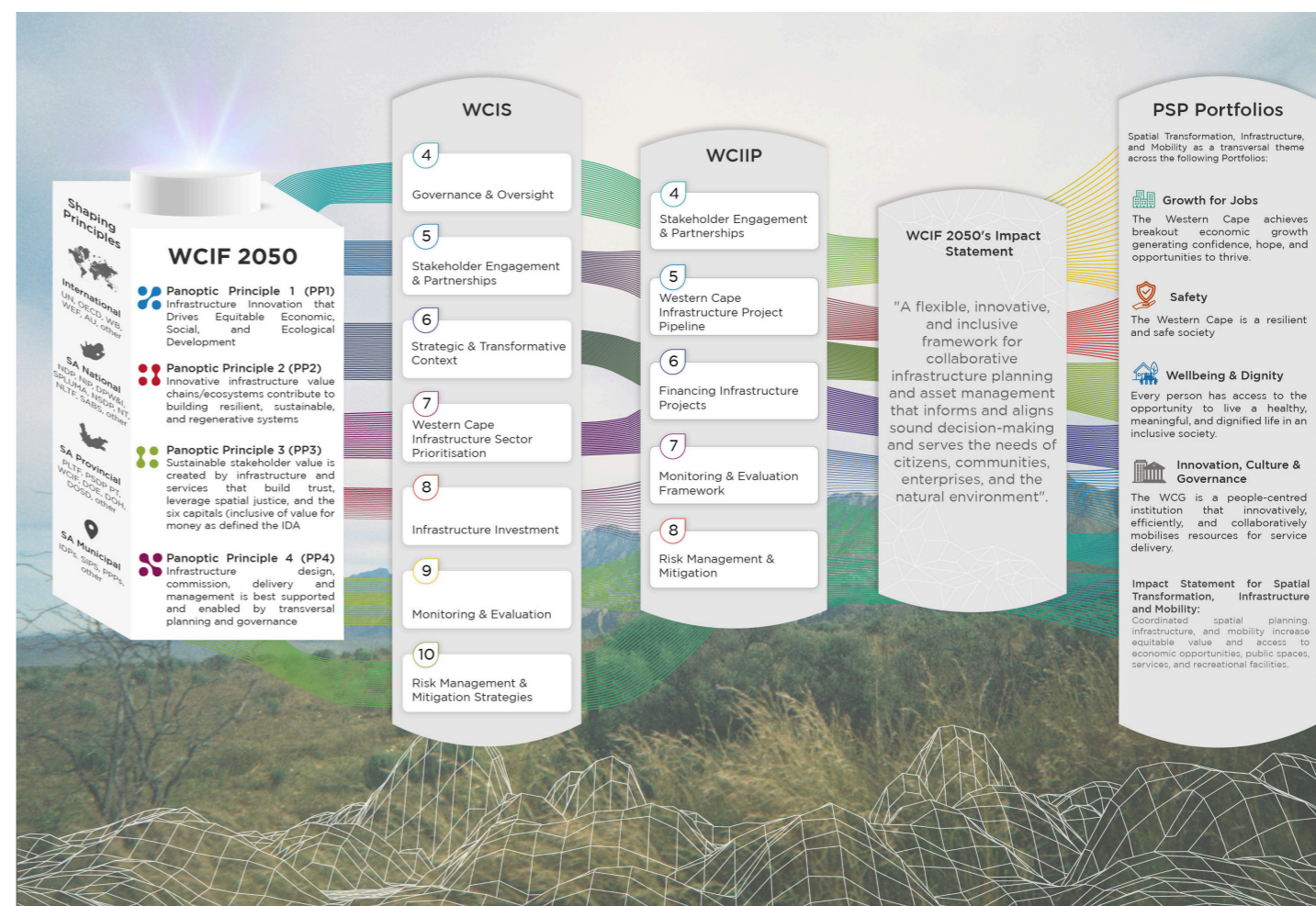


Figure 1: Infrastructure as a transversal function

Building on this, the **WCIS 2050** translates the WCIF 2050’s vision into a comprehensive set of strategic thrusts flowing into specific governance mechanisms (Chapter 4), stakeholder engagement & partnerships (Chapter 5), infrastructure sector priorities (Chapter 7), and monitoring systems (Chapter 9). It bridges the high-level aspirations of the WCIF 2050 with the more immediate priorities outlined in the Provincial Strategic Plan (PSP) as it relates to the transversal focus area of Spatial Transformation, Infrastructure and Mobility. The WCIS 2050 ensures that its strategies address thematic priorities across Social, Economic, Energy and Water, Technology, and Ecological infrastructure sectors, ensuring equitable growth and sustainable development in the Western Cape.

The WCIIP 2050 then operationalises the WCIS 2050 by detailing actionable and phased infrastructure projects, with an initial primary focus on the short-term (up to 2030).

This includes incorporating a stakeholder-driven approach (Chapter 4), infrastructure project pipeline (Chapter 5), financing infrastructure projects (Chapter 6), and risk management (Chapter 8). Through annual reviews, the WCIIP 2050 ensures adaptability to emerging challenges while responding to the needs of the PSP portfolios. It responds to the PSP’s focus on spatially transformed infrastructure by ensuring that projects enhance equitable access to economic opportunities, public services, and recreational spaces for all residents.

THE WCIF 2050, WCIS 2050 AND WCIIP 2050

The **WCIF 2050** sets the broad vision, the **WCIS 2050** defines specific strategic priorities, and the **WCIIP 2050** translates these into actionable projects. Table 1 demonstrates how the infrastructure user communities may obtain the required integrative, transversal and networked value of methods, tools and practices. This view reflects the consistency and integrative direction that the WCG is encouraging into the future.

	WCIF 2050 (Framework)	WCIS 2050 (Strategy)	WCIIP 2050 (Implementation)
Purpose	The WCIF 2050 is designed to guide the life-cycle management of infrastructure in the Western Cape, by synthesising policy and legislative directives as well as citizen-centric and eco-centric priorities.	The WCIS 2050 serves as a comprehensive strategic navigation model, as directed by the foundational principles of the WCIF 2050. It provides key strategic thrusts advancing the PSP priorities, while contextualising the actions detailed in the WCIIP 2050.	The WCIIP 2050 directs implementation as directed by the sector priorities identified in the WCIS 2050.
Guidelines	The WCIF 2050 is grounded in clear science and data. It integrates global, regional, national, provincial and local policies into a unified set of Panoptic Principles (universal) . These Principles flow from the Framework into the Strategy and then into Implementation, thereby offering consistent integrative Practice value to all stakeholders.	<ul style="list-style-type: none"> • Harmonisation (policy & prescript ideals). • Integration (of critical design from planning to asset disposal). • Strategic Planning (phasing of priorities and projects across time horizons). • Navigation (M&E) (measuring the implementation of the WCIF 2050). • Risk (the focus of high-level strategic and integrative risks (e.g. Cascading & Integrative risks)). 	<ul style="list-style-type: none"> • Embeds critical policy design. Project pipeline prioritisation model to improve project design, planning and implementation. • Enabling integrative tools, utilising planning frameworks from the NT and DPME, which is mapped to the logic model framework. The WCIIP 2050 platform is designed to serve the public sector as a trusted repository, facilitating seamless communication and data sharing to foster the development of “communities of practice”.
Tools & Aids	The WCIF 2050 draws on research grounded in open systems science, integrating scientific methods with practical applications and innovative tools to foster empathetic collaboration. This approach bridges theory and practice, enabling dynamic and inclusive solutions to complex challenges.	<ul style="list-style-type: none"> • The WCIS 2050 provides strategic thrusts designed to guide focused and impactful delivery. • The WCIS 2050 identifies sector priorities to align and direct stakeholder efforts effectively. • The WCIS 2050 introduces a strategic navigation model 	<ul style="list-style-type: none"> • The WCIIP 2050 offers user-friendly templates that simplify adoption, editing, updating, and online submissions, thereby supporting self-regulation and efficient workflows. • The WCIF 2050, WCIS 2050, and WCIIP 2050 artefacts leverage platform technologies to provide ubiquitous access, enhancing both “ease of business” and “ease of government” for all stakeholders.

Table 1: WCIF 2050, WCIS 2050 and WCIIP 2050 – moving from the Framework to Strategy to Implementation

The **WCIF 2050** emphasises a comprehensive, systems-based approach to infrastructure development. It is a living framework that is dynamic and evolving, remaining adaptable to changing circumstances over time. The Framework is designed to be regularly updated, reviewed, and refined in response to emerging challenges, new data, policy shifts, technological advancements, and societal needs.

The **WCIS 2050** is a critical evolution in the journey to realise the vision and overarching strategic objectives set out in the WCIF 2050, serving as the strategic blueprint to guide infrastructure growth and development in the Western Cape over the next three decades. As the next step, the WCIS 2050 transforms the broad, aspirational framework of the

WCIF 2050 into a targeted strategy that defines clear sector priorities and milestones across the short, medium, and long term. This will ensure that infrastructure investment is aligned with the Western Cape’s long-term goals of sustainability, equity, and resilience, and also responsive to immediate and emerging challenges.

The **WCIIP 2050** serves as the operational roadmap for translating the strategic priorities of the WCIS 2050 into tangible, actionable projects across Social, Energy and Water, Economic, Technology and Ecological sectors. It bridges the gap between immediate action and long-term vision, ensuring that each project contributes to the overarching goals of sustainability, equity, and resilience outlined in the WCIF 2050. Designed as a phased approach,

the WCIIP 2050 will prioritise the first five years of implementation while allowing for annual reviews to ensure adaptability and responsiveness to emerging challenges and opportunities.

The **WCIF 2050, WCIS 2050 and WCIIP 2050** have been expressly designed to facilitate integration of vital policy directives and operational compliance factors (see Figure 2). It is a critical systems-oriented design that adopts a comprehensive, multi-layered structure and a set of tools that provide unique value for infrastructure growth and development in the Western Cape.



Figure 2: WCIF 2050, WCIS 2050 & WCIIP 2050 Alignment

As illustrated in *Figure 2*, alignment takes places at the following four levels:

- At the **Policy level**, it supports core internal initiatives (e.g. SDG17) and is deeply anchored in both international mandates and South Africa’s national frameworks, such as the NDP 2030, prioritising redress and equitable access at the national policy level.
- At the **Strategic level**, the focus is on inclusive, smart, and sustainable growth through innovative frameworks, including the Mission-Oriented Innovation Model and the King IV guidelines, which foster integrated decision-making processes.

- At the **Tactical level**, it aligns environmental, social, and governance (ESG) priorities with responsible resource utilisation and the creation of shared value, ensuring a balanced approach to development.
- At the **Operational level**, it focuses on the practical implementation of strategies, with an emphasis on project management, service delivery, disaster management and disaster risk reduction, and continuous improvement, ensuring the efficient execution of initiatives.

Underpinning these levels are critical factors of production, namely land, human capital, financial capital, technology, and entrepreneurship, which ensure that the WCIF 2050, WCIS 2050 and WCIIP 2050 integrate inclusivity, intelligence, and sustainability. This integrated approach promotes systemic, transformative change that advances socio-economic growth and development while addressing inequality and fostering long-term resilience. ●

CHAPTER 3

WCIS 2050 and WCIIP 2050

SYNOPSIS OF THE WCIS 2050

EXECUTIVE SUMMARY

The **Western Cape Infrastructure Strategy 2050 (WCIS 2050)** presents a transformative blueprint for infrastructure development in the region, positioning it as a catalyst for economic growth, social equity, and environmental resilience. Built upon the foundational WCIF 2050, the WCIS 2050 aligns with international and national priorities while addressing the unique challenges of the Western Cape. These challenges include spatial inequality, rapid urbanisation, and the escalating impacts of climate change. Through the integration of innovative and adaptive principles, the WCIS 2050 outlines a pathway for sustainable and inclusive growth and development, complemented by actionable plans articulated in the WCIIP 2050.

Central to the WCIS 2050 is a comprehensive governance model designed to ensure strategic alignment, accountability, and stakeholder inclusivity at every stage of infrastructure planning and delivery. The governance structures of the Infrastructure Ministerial Committee (IMC), the Infrastructure Technical Committee (ITC), and the Regional Planning Governance (RPG) Committee play pivotal roles in overseeing infrastructure planning and implementation. These structures are reinforced by the adoption of Panoptic Principles and Communities of Practice, which foster transparency, collaboration, and adaptive decision-making⁷. Through these mechanisms, the strategy addresses challenges by combining proactive risk scanning with inclusive governance approaches.

Stakeholder collaboration lies at the heart of WCIS 2050's success. Extensive engagement with provincial departments, municipalities, private sector entities, and community representatives will ensure that the WCIS 2050 reflects a wide array of perspectives and priorities. Partnerships between the public and private sectors aim to balance profitability with social advancement, fostering a resilient infrastructure ecosystem. The WCIS 2050's focus on equitable collaboration will ensure that all stakeholders contribute to and benefit from infrastructure investments.

The WCIS 2050 employs transformative approaches to address infrastructure challenges, leveraging concepts such as value chain innovation, strategic leverage points, and a Theory of Change. These tools, informed by a comprehensive SWOT analysis, guide the development of strategic thrusts that target gaps in governance, investment, and resilience. Adaptive systems thinking underpins the strategy, enabling it to tackle interconnected challenges across the priority infrastructure sectors: Social, Energy and Water, Economic, Technology, and Ecological. This holistic approach ensures long-term sustainability and adaptability in the face of evolving needs.

Infrastructure investments in the WCIS 2050 are guided by the Western Cape Infrastructure Sector Prioritisation Matrix. To address funding constraints, the WCIS 2050 prioritises resilience-focused investments, creating diverse funding streams and promoting financial sustainability across infrastructure projects. These alternative financing models will provide the flexibility needed to bridge the significant infrastructure funding gap while ensuring long-term impact.

The WCIS 2050 also incorporates a robust monitoring and evaluation framework to track progress and ensure alignment with its objectives. A dedicated risk management system addresses vulnerabilities such as ageing infrastructure, climate risks, and socio-economic disparities. Through proactive feedback loops and adaptive strategies, the WCIS 2050 will ensure that the Western Cape remains resilient and responsive to emerging challenges, paving the way for a sustainable and equitable future by 2050.

WCIS 2050'S CHAPTER HIGHLIGHTS AND KEY POINTS OF EMPHASIS

Chapter 4: Governance and Oversight

Effective governance is the cornerstone of public sector accountability, extending beyond service delivery to encompass societal impact, ethical conduct, and value for money. The WCIS 2050 outlines a comprehensive governance structure designed to address these priorities through clearly defined roles, robust internal and external accountability mechanisms, and adherence to legislative and regulatory frameworks like the King IV Framework. Governance structures, including the Infrastructure Ministerial Committee (IMC) and the Infrastructure Technical Committee (ITC), ensure strategic oversight and operational coordination, while emphasising principles such as transparency, intergovernmental cooperation, and stakeholder engagement to align infrastructure initiatives with long-term societal goals.

The IMC leads executive oversight, supported by the ITC's technical expertise and the Regional Planning Governance (RPG) Committee's focus on regional integration. This tiered structure enables seamless alignment across government levels and sectors, addressing challenges in infrastructure planning and implementation through risk management, performance monitoring, and stakeholder participation. Advisory panels and Communities of Practice (COPs) further enhance inclusivity, innovation, and shared ownership in decision-making processes.

By embedding accountability, adaptability, and stakeholder engagement at every stage of infrastructure development, the WCIS 2050 governance model fosters transparency and continuous improvement. Through integrated risk management, strategic alignment, and performance oversight, it ensures that infrastructure initiatives address current challenges while preparing for

future needs. This forward-looking governance approach positions the WCG as a leader in sustainable infrastructure development, delivering long-term economic, social, and ecological benefits to its residents and stakeholders.

Chapter 5: Stakeholder Engagement and Partnerships

The WCIF 2050 and WCIS 2050 place stakeholder engagement and partnerships as foundational principles in its approach to deliver inclusive, innovative, and sustainable infrastructure in the Western Cape. Stakeholder engagement, shaped by extensive consultations through the Infrastructure Framework Review (IFR) 2021, ensures the diverse needs of stakeholders (ranging from government entities to private sector actors and local communities) are integrated into infrastructure planning and implementation. This ecosystem-based approach views stakeholders as interconnected partners, fostering collaboration to create shared value and align infrastructure initiatives with regional and national goals. Key challenges are addressed through strategies like multi-stakeholder platforms, systemic holism, and collaborative governance.

Equitable partnerships are another cornerstone of the WCIF 2050 and WCIS 2050, with an emphasis on transcending traditional transactional models to foster transformative collaboration. Public-private partnerships (PPPs) are redefined to promote equitable risk-sharing, reinterpret value-for-money metrics, and establish robust legal and regulatory frameworks. These partnerships aim to harmonise the public sector's mandate for inclusive growth and development with the private sector's innovative capacity and profitability. The incorporation of Panarchic governance and Panoptic Principles further enhance these partnerships by promoting adaptive, resilient, and forward-thinking approaches to infrastructure development that balance financial viability with societal advancement.

By embedding stakeholder engagement and partnerships into every stage of the infrastructure lifecycle, the WCIF 2050 and WCIS 2050 establish a dynamic, inclusive, and adaptable governance framework. Through transparency, collaboration, and innovation, the WCIF 2050, WCIS 2050 and WCIIP 2050 set a benchmark for creating infrastructure ecosystems that empower all stakeholders, fostering trust, ownership, and shared responsibility for sustainable growth.

Chapter 6: Strategic and Transformative Context

Central to the WCIS 2050 is the recognition of the complex dynamics within **Global and Extended Value Chains (GVCs and EVCs)**. The WCIS 2050 highlights how market asymmetries and power imbalances can influence infrastructure outcomes. By addressing these challenges, the WCIS 2050 aims to foster equitable partnerships and improve the interconnected roles of public and private sector actors, emphasising citizen-centric and context-appropriate solutions. This integrative approach ensures that infrastructure planning reflects the shared priorities of stakeholders, balancing economic growth with societal advancement.

The **SWOT analysis** identifies key strengths, weaknesses, opportunities, and threats in the Western Cape's infrastructure ecosystem. Strengths include its prioritisation within government frameworks and its alignment with the province's recovery plan, while challenges include fragmented planning, deteriorating infrastructure, and capacity gaps in technical and managerial competencies. The WCIS 2050 addresses these issues by promoting innovation, streamlined processes, and coordinated efforts across all levels of government and stakeholders.

The WCIS 2050's **Theory of Change and Logic Model Framework** provide a structured and actionable roadmap for achieving transformative outcomes. These tools link resource allocation, activities, and outputs to long-term goals such as households having increased access to basic services, improved spatial resilience, and enhanced mobility. The WCIS 2050 emphasises continuous learning and adaptability, allowing for iterative improvements based on real-world challenges and opportunities. This ensures the alignment of infrastructure strategies with the province's socio-economic objectives.

Key **strategic thrusts** underpinning the WCIS 2050 include addressing capacity gaps, fostering public-private partnerships, ensuring regulatory compliance, and integrating empathetic and critical design practices. By encouraging innovation and building rare skills such as climate-resilient design and advanced materials engineering, the WCIS 2050 seeks to equip stakeholders with the tools and knowledge needed to navigate a rapidly evolving infrastructure landscape. These thrusts are critical for fostering trust, enabling collaboration, and driving

systemic transformation across the infrastructure value chain.

Chapter 7: Western Cape Infrastructure Sector Prioritisation Matrix

The **WCIF 2050** establishes a scientifically grounded framework, synthesising global and national directives to anchor the prioritisation process. The **WCIS 2050** integrates insights from the WCG's provincial departments, creating a **sector prioritisation matrix** that aligns priorities with the WCG's broader outcomes. The **WCIIP 2050** operationalises these priorities by applying a panoptic scoring model to identify and refine projects into an **investment-ready Bankable Project Portfolio**. This ensures that projects comply with legal, technical, and financial standards, enabling seamless transitions from strategic planning to actionable implementation while fostering public-private collaboration. Together, the WCIF 2050, WCIS 2050, and WCIIP 2050 represent a cohesive and adaptive system that bridges strategic vision, sector-specific prioritisation, and implementation-readiness.

The **Western Cape's Infrastructure Sector Prioritisation Matrix** forms a strategic framework for driving infrastructure planning, spatial transformation, and mobility development in alignment with the WCIF 2050, WCIS 2050, and WCIIP 2050. This matrix integrates inputs from the WCG's provincial departments to prioritise the social, energy and water, economic, technology, and ecological infrastructure sectors, while focusing on achieving four critical outcomes: households have increased access to basic services, enhanced social infrastructure, spatial transformation and resilience, and efficient mobility systems. Organised across short-, medium-, and long-term timelines, the matrix offers a dynamic roadmap for creating a sustainable and inclusive infrastructure ecosystem.

The phased timeline approach ensures that infrastructure transformation progresses effectively. In the short-term (1-5 years), the focus is on addressing urgent needs and laying the foundation for future growth, supported by innovative financing models. The medium-term (5-15 years) builds on these gains by scaling investments and refining policies to enhance impact. The long-term (15-30 years) envisions a fully integrated, sustainable infrastructure ecosystem capable of meeting the

province's evolving needs. This structured approach ensures that the WCG adapts to challenges while maintaining a clear focus on ecological integrity and socio-economic equity.

Chapter 8: Infrastructure Investment

The WCG's infrastructure investment strategy, as articulated in the WCIF 2050, WCIS 2050, and WCIIP 2050, adopts a forward-looking, transformative approach that aligns with global best practices and local priorities. The WCIS 2050 integrates critical insights from the Infrastructure Futures Scenarios for South Africa, emphasising innovation, whole-system thinking, and social value creation. By embedding these principles into infrastructure planning and development, the WCG ensures that investments address immediate needs while fostering resilience, sustainability, and long-term societal benefits.

Central to this strategy is the incorporation of social value into infrastructure planning and investment. This approach aims to maximise public expenditure's economic, social, and environmental impact by prioritising outcomes such as employment creation, social cohesion, and access to essential services. Drawing inspiration from global precedents, such as the UK's Public Services (Social Value) Act of 2012, the WCG will embed social value into procurement frameworks and decision-making models. This will ensure that infrastructure projects contribute to economic growth and societal benefits.

The WCIS 2050 defines economic development and growth through a systems perspective that balances quantitative expansion with qualitative societal improvements. This holistic approach emphasises the importance of governance in fostering inclusive, sustainable development. Infrastructure investments are positioned as catalysts for innovation, resilience, and equity, enabling communities and firms to expand their capacities and contribute meaningfully to the economy. This dual focus on economic growth and development ensures that infrastructure serves as a driver of inclusive societal growth and development.

Given the significant funding gap in infrastructure, the WCG will leverage innovative financing models. These alternative funding mechanisms will mobilise private capital and reduce reliance on traditional funding sources. The WCG's integrated approach combines social value, innovative financing, and systems-based economic development to drive

sustainable infrastructure growth and development. Through the operationalisation of these principles in the WCIIP 2050, the WCG aims to deliver measurable, inclusive benefits for communities (with a focus on Women, Youth, the Elderly and Persons with Disabilities) and address infrastructure funding challenges.

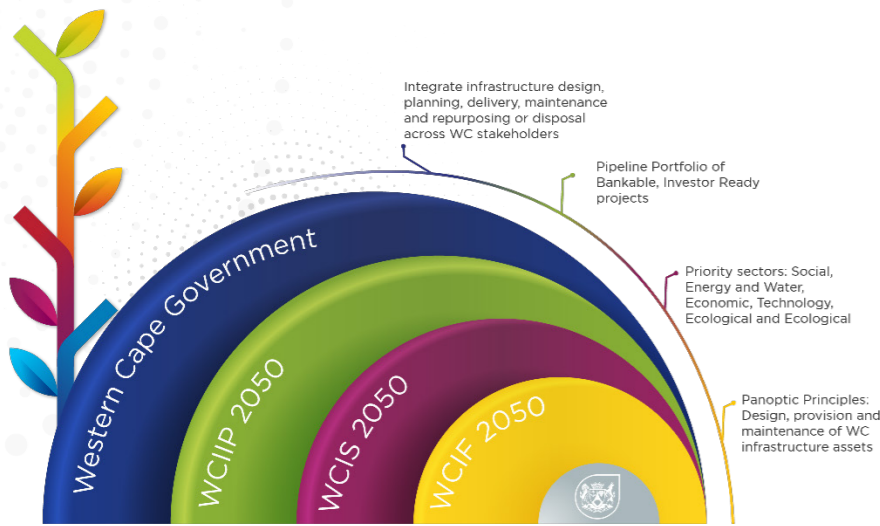
STRUCTURING THE WCIIP 2050

WCIIP 2050: IMPLEMENTATION OF THE FRAMEWORK AND ITS STRATEGIES

The **WCIIP 2050** is designed to operationalise the vision of the **WCIF 2050** by translating the strategic themes of the **WCIS 2050** into a structured, actionable plan. This plan is underpinned by and aligned with the WCG's Infrastructure Logic Model and Theory of Change (see WCIS 2050, Chapter 6). The implementation process integrates critical methodologies, such as Critical Futures Thinking¹ and Systems-Oriented Design^{2,3}, ensuring a cohesive progression from the Framework (WCIF 2050) to the Strategy (WCIS 2050), and ultimately to the Implementation Plan (WCIIP 2050), as depicted in Figure 1.

These integrated linkages are intentionally crafted to demonstrate to Stakeholders how their individual strategies are both guided and reinforced by these key artefacts. The trilogy of artefacts – the WCIF 2050, WCIS 2050, and WCIIP 2050 – serve as a foundational structure to ensure alignment with legal mandates, promote sound governance, and support the WCG's overarching vision.

The WCIIP 2050 is deliberately structured to avoid duplication or unnecessary effort for its stakeholders. Rather than competing with operational planning, it complements and supports it by providing guidance and tools derived from its foundational artefacts, the WCIF 2050 and WCIS 2050. The WCIIP 2050's primary value lies in offering tools that integrate both "best-practice" methodologies and novel-practice approaches to address value chain chokepoints that often undermine even the most well-conceived plans^{1,4,5}. These tools provide strategic advantages and leverage by optimising both physical and intellectual assets, thereby fostering the development of dynamic capacities through synthesis, foresight, and integration^{1,4,5}.



WCIIP 2050

Applies the panoptic scoring model to refine the Prioritised Projects pipeline into a Bankable Project Portfolio. It offers assurance for projects to meet all policy-prescribed criteria, enabling them to be classified as investment-ready. The Bankable Project Portfolio represents a carefully curated suite of projects that comply with legal, technical, and financial standards, providing clarity and confidence to investors and financiers.

WCIS 2050

The Western Cape Infrastructure Sector Prioritisation Matrix is an integral part of the overall strategic framing. It integrates long-term spatial transformation, infrastructure development, and mobility across the key sectors, Social, Energy and Water, Economic, Technology, and Ecological. Each of these sectors contain unique contexts and conditions which guide their respective prioritisation programming that spans three timelines (short-term up to 2030, medium-term up to 2040, and long-term up to 2050).

WCIF 2050

Scientific, data driven framework, guided by Panoptic Principles, to govern the WCG's infrastructure ecosystem. Anchored as primary layer that integrates legal and policy directives across all levels of governance, from international to local or municipal contexts (e.g., SDGs, NDP, NSDF, King IV and ESG criteria). The Panoptic Principles serve as a comprehensive synthesis of global and national imperatives as the foundation for WCG's sustainable infrastructure planning and decision-making.

Figure 1: Connecting research, policy and strategies into action plans (WCIIP 2050)

The value of Critical Futures Thinking lies in its ability to transcend current ideological categories by introducing alternative ways of knowing, thereby fostering robustness and innovation. This approach challenges conventional perspectives, enabling stakeholders to envision transformative possibilities and solutions¹.

Systems-Oriented Design (SOD), on the other hand, is a powerful tool for addressing complexity by creating shared, holistic understandings of problem situations. SOD is particularly valuable in systems practice as it enhances systemic design and offers significant contributions to the WCIIP 2050 by^{2,3}:

- Building a deeper understanding of systems and their broader environmental contexts.
- Supporting rapid learning and adaptation.
- Uncovering “unknown unknowns,” thereby mitigating unforeseen risks.
- Facilitating integration across silos and disciplines, breaking down barriers to collaboration.
- Engaging a diverse range of stakeholders, including citizens, in meaningful ways.
- Enabling the retention and organisation of large volumes of data and insights for better decision-making.

Together, these methodologies equip the WCIIP 2050 with the tools necessary to navigate complexity, foster innovation, and enhance systemic resilience.

WCIIP 2050: BINDING INFRASTRUCTURE STRATEGIES TO OPERATIONAL PLANS

As highlighted in the WCIS 2050, systemic tools are essential for fostering both self-development and self-regulation. These tools go beyond traditional project management tools, which were originally designed for simpler, less complex contexts¹⁻⁵. However, systemic tools remain relatively new and underutilised, often perceived as research-oriented⁶ and inaccessible. This perception, coupled with their limited availability and application^{1,6}, has constrained their adoption. As a result, implementation efforts frequently rely on outdated tools and models, hindering the ability to address the complexities and dynamics of modern challenges effectively.

The WCIIP 2050 aims to intentionally link individual and collective leadership capabilities with the organisational knowledge and learning capacities needed for the future^{1,4,6}. By doing so, the WCIIP 2050 fosters practices of open innovation, emphasising broader and deeper search patterns that enable stakeholders to navigate and adapt to the constant changes in project contexts.

This approach is vital for the WCIIP 2050 as it seeks to establish networked communities capable of forming flexible value chain partnerships that can respond effectively to rapid shifts in project environments. These partnerships may include

diverse stakeholders such as suppliers, local communities, complementors, regulators, standards bodies, educational and research institutions, and others.

Furthermore, the WCIIP 2050 underscores the importance of prioritising the ongoing reconfiguration and development of project-level implementation processes, as illustrated in Figure 2.

This dynamic and adaptive approach ensures that the WCIIP 2050 remains responsive to evolving challenges and opportunities, reinforcing its role as a catalyst for sustainable and innovative infrastructure growth and development.

As illustrated in Figure 2, open innovation stands in contrast to closed innovation, which relies on traditional approaches that assume innovation occurs solely within the boundaries of an individual agency. Open innovation, on the other hand, embraces the free flow of ideas and innovation across various boundaries, including organisational, sectoral, and disciplinary divides. This approach aligns with the principles of the WCIF 2050, fostering collaboration and creativity by leveraging diverse perspectives and resources to drive impactful and sustainable solutions.

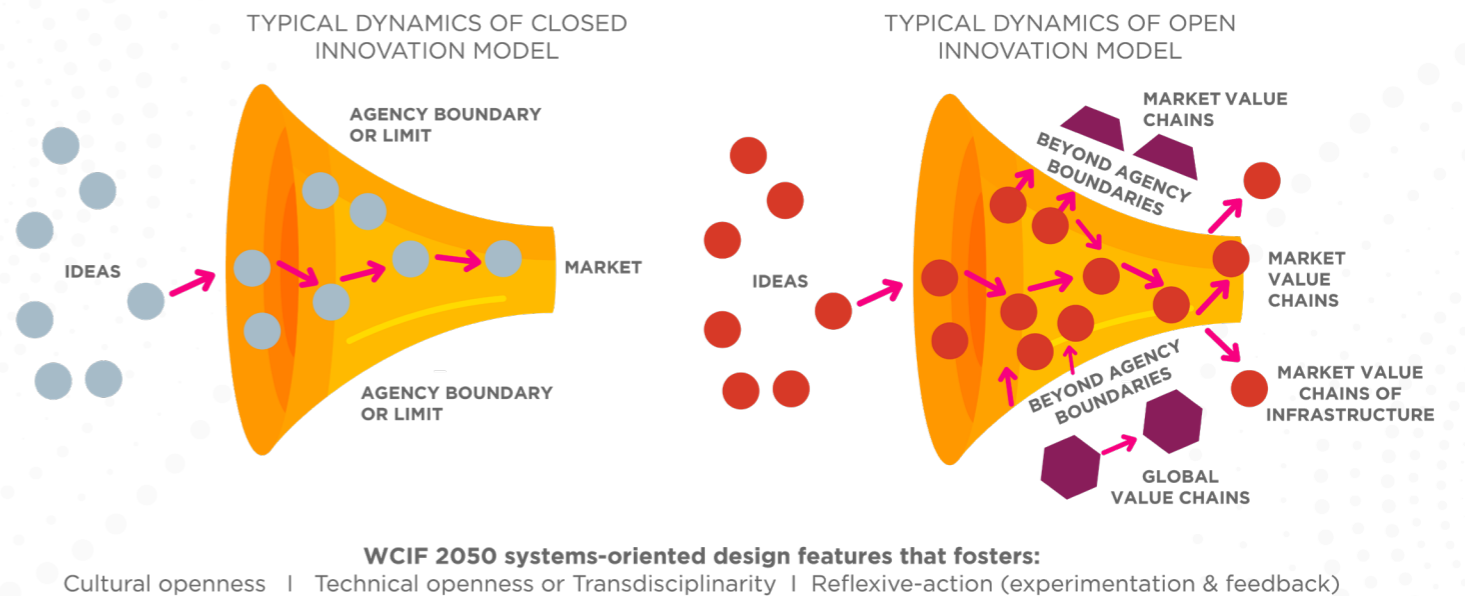


Figure 2: WCIIP 2050 and open innovation value

WCIIP 2050: MOVING FROM NAVIGATION TO IMPLEMENTATION

The preceding sections establish the connection between strategy crafting and execution through systemic navigation. This involves adopting a scientific framework that integrates the art of strategy with infrastructure design and implementation into a seamless, continuous process. By aligning execution more coherently with the WCG's policies and strategies, this approach strengthens the overall effectiveness of implementation efforts.

This methodology, introduced as the mission-oriented approach in the WCIF 2050, is further refined in the WCIS 2050's “Transversal Strategy Crafting and Execution” model (WCIS 2050, Chapter 3). This model emphasises cross-cutting collaboration and integration, ensuring that strategy development and implementation are dynamic, interconnected, and responsive to complex challenges.

The WCIF 2050's Transversal Strategy Crafting and Execution model, as detailed in the WCIS 2050, demonstrates how strategic planning efforts should

seamlessly integrate with tactical and operational planning processes. This model was purposefully designed to ensure alignment with the institutional planning frameworks of the South African public sector.

By harmonising strategic management³⁻⁶ with compliance to policy directives, the WCIS 2050 fosters the adoption of innovative practices that enhance coordination and alignment across governance structures. This approach to transversal integration emphasises the critical balance between maintaining compliance with policy and advancing dynamic, forward-looking strategic management. Such a balance is essential for driving sustainable growth and transformation within the Western Cape’s infrastructure ecosystem, as illustrated in Figure 3.

It is important to note that the strategy crafting activities are represented on the left-hand side (LHS) of Figure 3, corresponding to strategic planning processes, while the right-hand side (RHS) of Figure 3 illustrates the execution of these strategies. The WCIIP 2050 focuses primarily on the RHS of Figure

3, which is elaborated upon in the sections below. This focus models how individual public sector strategies translate into synchronised actions for the Western Cape’s infrastructure requirements. These actions flow systematically into departmental Annual Performance Plans (APPs), Annual Operational Plans (AOPs), and Annual Reports (ARs). Through this process, the WCIIP 2050 links existing public sector planning prescripts from the WCIF 2050 and WCIS 2050 into its design, as depicted in Figure 3.

By synthesising and aligning both policy and planning protocols with South Africa’s public sector requirements, the WCIIP 2050 ensures the creation of virtuous cycles of innovation and collaboration. These cycles are critical to achieving the forward-thinking design goals set out in the WCIF 2050.

Referring to Figure 3, the LHS of the loop represents strategy crafting activities, encompassing fundamental steps 1 to 5. This phase is typically supported by tools such as SWOT, PESTEL, the 12-Lever Framework, CLA, and others, which enhance the effectiveness of the strategy development process. Conversely, the RHS of the loop, focuses on

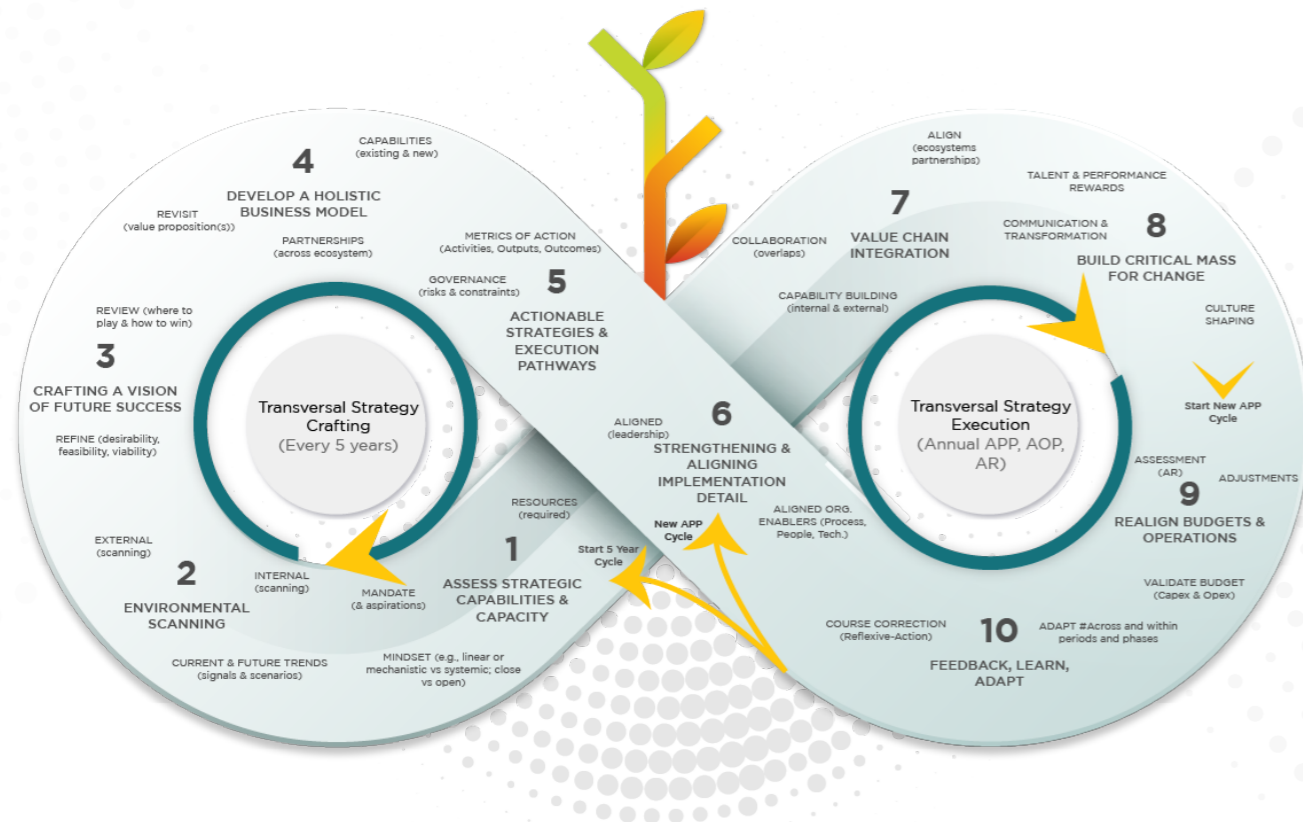


Figure 3: WCIS 2050 – Transversal Strategy Crafting and Execution



implementation activities, or strategy execution. This phase includes activities 6 to 10, supported by tools like systems analysis, systems synthesis, and systems integration to ensure effective operationalisation of strategies.

These cycles – strategy crafting and execution – are interconnected by structured review mechanisms that promote continuous improvement and alignment. These reviews are conducted at intervals prescribed by the National Treasury (NT) and the National Department of Planning, Monitoring and Evaluation (DPME), ranging from monthly and quarterly reviews to annual and five-year cycles.

The periodic reviews, conducted monthly, quarterly, annually, and every five years, serve as critical mechanisms for integrating feedback into continuous, reflexive-action loops as demonstrated in Figure 4. These reviews enable the adaptation and refinement of plans based on real-time insights and lessons learned from ongoing projects, ensuring responsiveness to the evolving conditions and shifting priorities of the WCG.

This cyclical and adaptive approach creates a dynamic feedback environment where strategy development and execution remain consistently aligned and optimised. By fostering this continuous alignment, the process ensures that plans are not only flexible and responsive but also positioned to achieve sustainable, long-term success.

In summary, the WCIS 2050 seeks to advance harmonisation, integration, and innovation within the governance frameworks of South Africa's public sector. Its approach is anchored in the Transversal Strategy Crafting and Execution model, which outlines a systematic process to ensure strategies are not only developed but effectively implemented. The core navigational steps of this model are:

1. **Assess Strategic Capabilities & Capacity** – This step involves reflecting on internal strengths, resources and voices, essential for co-creating and embedding relevant strategies into organisational mindsets and daily operations.
2. **Environmental Scanning** – This entails an authentic and comprehensive review of internal and external trends and patterns, encompassing the mandate, purpose, and aspirations in the context of critical uncertainties.
3. **Crafting a Vision of the Future Success** – This step focuses on developing a clear, desirable,

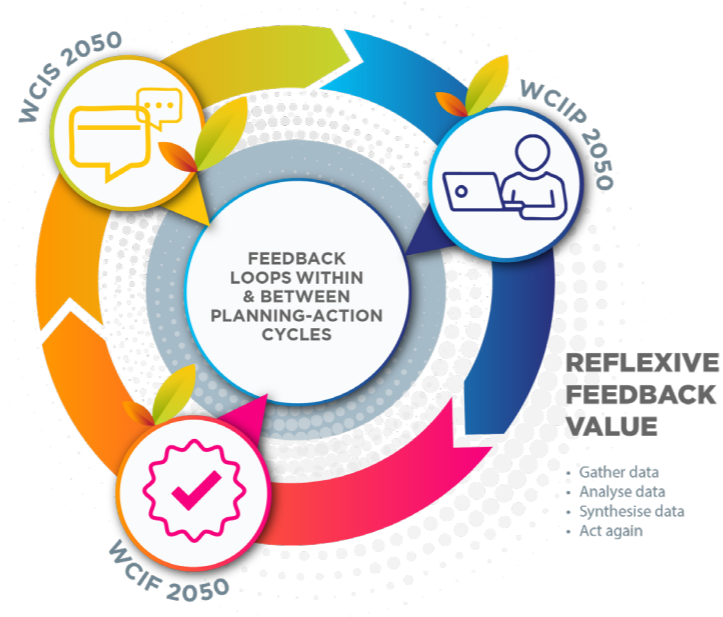


Figure 4: Feedback and its core implementation value

and viable vision of success. By considering plausible scenarios, it helps determine “where to play” (specific markets, industries, or sectors) and “how to win” (defining actions for success in the chosen areas).

4. **Develop a Holistic Business Model** – This involves understanding the ecosystem capabilities and partnerships required to execute the strategies, acknowledging the interconnectedness and dependencies within the Western Cape's infrastructure system.
5. **Actionable Strategies and Execution Pathways** – This step translates strategies into actionable plans that are ready for execution.
6. **Strengthening and Aligning Implementation Detail** – This involves aligning delivery units to implement the plans effectively, ensuring proper coordination and accountability.
7. **Value Chain Integration** – This refers to aligning key value chain actors at the project level, ensuring that all relevant stakeholders are integrated and working towards common goals.
8. **Build Critical Mass for Change** – This focuses on addressing performance, change, and cultural factors that are crucial for successful execution and aligning current capabilities with future needs.
9. **Re-align Budgets and Operations** – This step includes adjusting budget planning cycles and implementing corrective actions based on the evolving needs of the strategy.

10. **Feedback, Learn and Adapt** – This final step emphasises the importance of using feedback from various phases (monthly, quarterly, annually, or every five years) to inform adjustments and continuous improvement across the entire process.

This structured and iterative approach ensures that strategies developed in the WCIS 2050 are dynamic, adaptive, and positioned for sustainable impact across South Africa's public sector infrastructure ecosystem. Implementation is carried forward through the WCIIP 2050, which operationalises these strategies by aligning them with actionable pathways, value chain integration, and project-level execution. The WCIIP 2050 ensures that strategies are translated into coherent and practical plans, supported by tools and methodologies designed for effective delivery. Through structured feedback loops and continuous adaptation, the WCIIP 2050 fosters alignment with evolving priorities and ensures that the strategies achieve their intended outcomes. ●

CHAPTER 4

STAKEHOLDER ENGAGEMENT & PARTNERSHIPS

STAKEHOLDER ENGAGEMENT

INTRODUCTION

Stakeholder engagement is a cornerstone of the WCIF 2050 and WCIS 2050, serving as a critical process for identifying, analysing, planning, and implementing collaborative actions with diverse stakeholders. It plays a central role in strategic planning by facilitating a deeper understanding of stakeholders' needs, interactions, and the impact of their actions on achieving the WCIF 2050's goals. This focus on engagement ensures alignment and fosters a collaborative infrastructure ecosystem across the Western Cape.

To ensure inclusivity and transversal relevance, the WCIS 2050 deliberately categorised stakeholders to reflect the diverse representation within the Western Cape's infrastructure ecosystem. Citizen-centricity and inclusivity is prioritised, ensuring that all voices and needs are embedded in strategic planning. It emphasises building trust, achieving consensus, and facilitating collective service delivery.

The WCIF 2050, WCIS 2050, and WCIIP 2050 provide practical tools and guidance for implementing effective stakeholder engagement strategies. By leveraging digitalised formats and advanced communication techniques, the concept of "artefacts-of-action" ensures trusted, neutral, and actionable communication that drives alignment and collaboration across the Western Cape infrastructure ecosystem.

BUILDING AN INCLUSIVE INFRASTRUCTURE ECOSYSTEM

Stakeholder engagement is the process of identifying, analysing, planning, and implementing actions to collaborate or integrate with stakeholders. It is central to strategic planning since it facilitates:

- Understanding stakeholders' needs and timing.
- Understanding how stakeholders are interacted with.
- Understanding how stakeholder plans and actions impact the WCIF 2050's goals.

The development of the WCIF 2050 was built on a foundation of extensive stakeholder engagement sessions conducted over several years, with the primary goal of achieving alignment across the Western Cape's infrastructure delivery ecosystem⁵⁹. This large-scale initiative sought to capture critical, infrastructure-specific stakeholder inputs through interactive and focused engagement sessions held over a 24-month period⁵⁹.

The resulting engagement model is visually represented in the high-level stakeholder map depicted in Figure 1, highlighting the intricate connections that link and bind all layers of stakeholders influencing the infrastructure value chain in the Western Cape. This map emphasises the collaborative approach required to address the complex, interdependent nature of the region's infrastructure ecosystem.



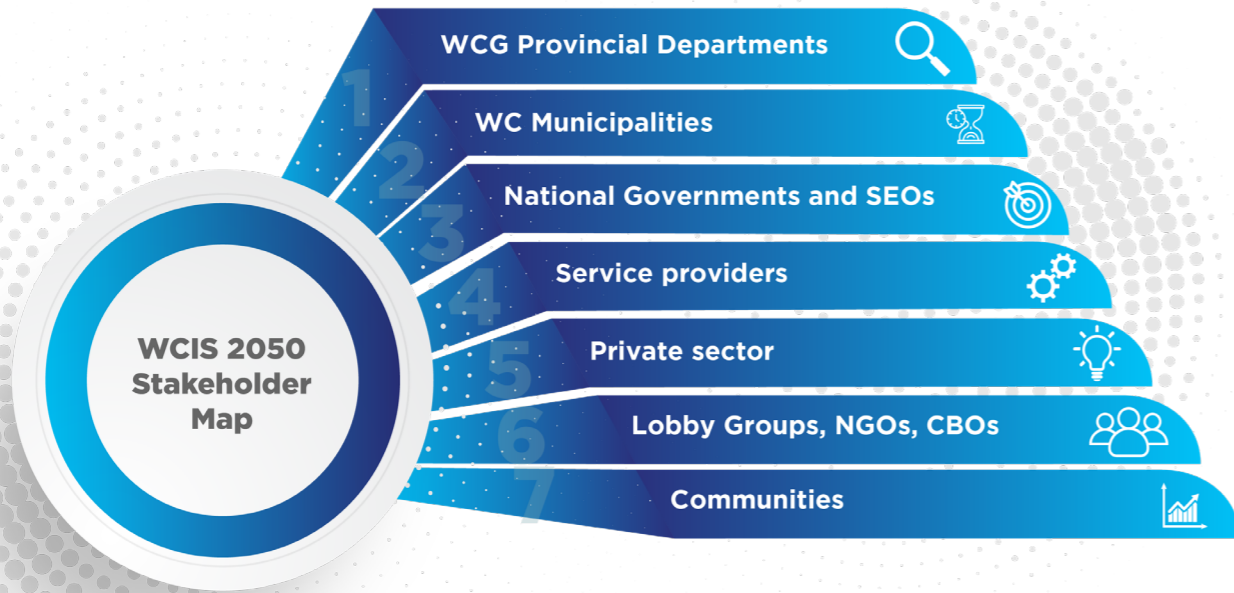


Figure 1: Basic layers of stakeholders impacting the infrastructure ecosystem

The WCIF 2050 and WCIS 2050 deliberately structured the stakeholder categories to ensure transversal relevance and broad representation across the Western Cape’s infrastructure ecosystem. This intentional design reflects a commitment to fostering collaboration across diverse sectors and stakeholders. Furthermore, the WCIF 2050 and WCIS 2050 place a strong emphasis on both citizen-centricity and inclusivity, ensuring that the voices and needs of all stakeholders were incorporated into the strategic framework. A summary of these stakeholder value dynamics is presented in Figure 2.

While the value of each stakeholder group is unquestionable, the value map highlights the complex and challenging task of managing a diverse array of needs, desires, and expectations. This commitment reflects the WCG’s strategic intent to integrate these diverse voices and priorities into infrastructure planning and delivery. Despite the inherent challenges posed by multi-party dynamics, the WCG remains steadfast in its pursuit of inclusive, collaborative, and citizen-centric infrastructure solutions.

DRIVERS OF STAKEHOLDER ENGAGEMENT

The WCIS 2050 chapter on Stakeholder Engagement and Partnerships (WCIS 2050, Chapter 5) highlights

the critical role stakeholder engagement has across a range organisational contexts, including: (a) value creation²⁻⁴; (b) strategic planning and decision-making⁵⁻⁷; (c) innovation⁸⁻¹⁴; (d) learning and knowledge creation¹⁴⁻¹⁶; (e) accounting and reporting^{17,18}; (f) corporate social responsibility and sustainability¹⁹⁻²²; and (g) politics and democratic principles^{10,26,31,38,39} of stakeholder engagement.

The stakeholder engagements undertaken during the development of the WCIF 2050⁵⁹ reflect striking similarities to existing research, which identifies key sources of disagreement among stakeholders⁴⁵. These disagreements often arise from factors such as: prior history of conflict or cooperation; an incentive for stakeholders to participate; power and resource imbalances; leadership; and institutional design.

While the volume research and practice data may initially appear overwhelming, touching on numerous facets of communication and collaboration, deeper systemic patterns emerge upon closer examination. These patterns underline fundamental elements critical to authentic collaborative stakeholder engagement, which include⁴⁵: commitment toward shared understanding; face-to-face dialogue; and trust building tools and platforms.

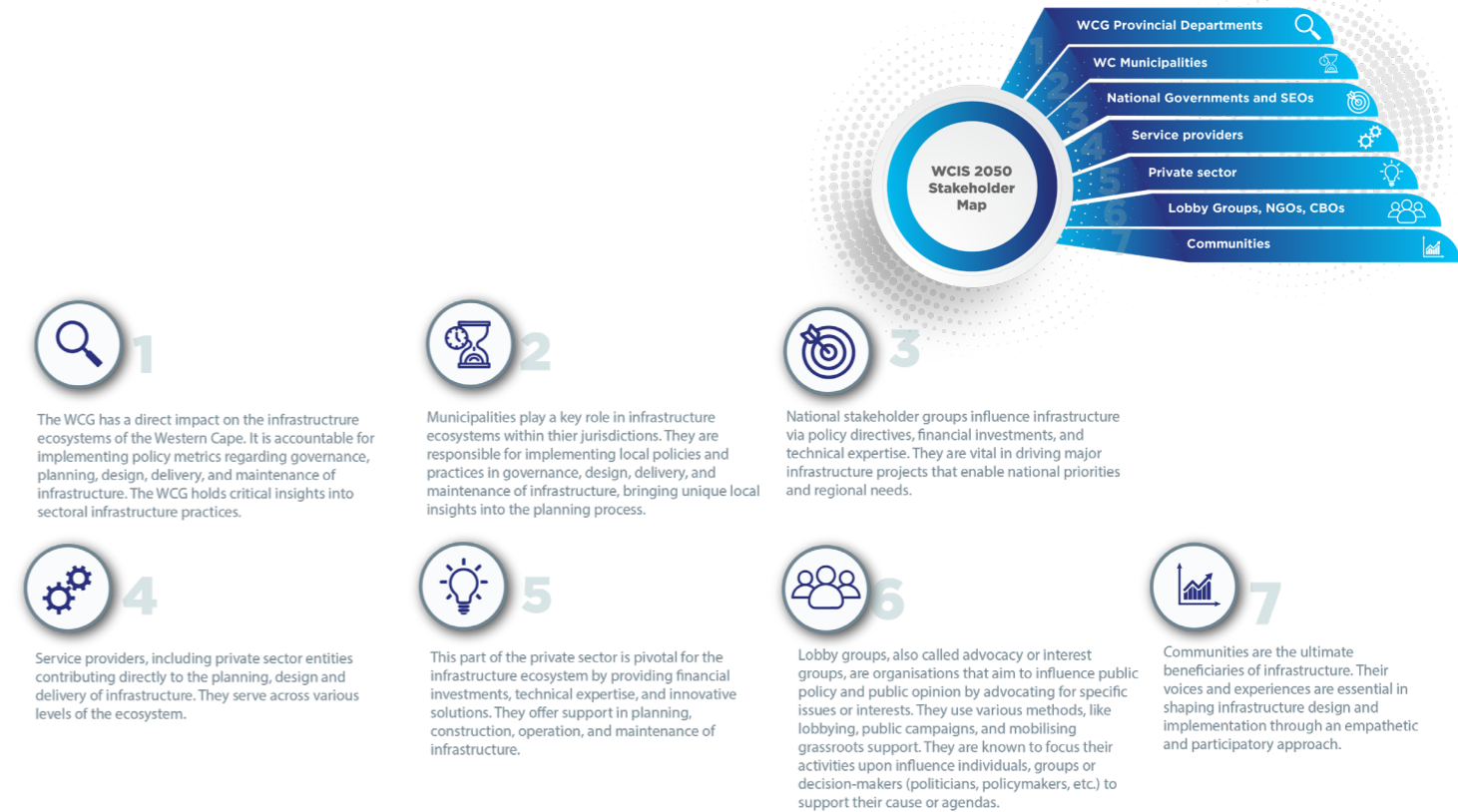


Figure 2: Stakeholder value across the infrastructure ecosystem

These insights have been synthesised into the Stakeholder Implementation Driver Mapping presented in Figure 3. This mapping integrates current insights from the WCIF 2050 and data from the WCIS 2050, distilling them into the foundational features that drive authentic and effective stakeholder engagement models.

Implementing the core stakeholder drivers of the WCIIP 2050

Evidence from research and practice suggests that stakeholder engagement must prioritise factors that are critical for fostering meaningful collaboration and achieving desired outcomes. These factors include⁴⁴:

1. Urgent or high priority.
2. Be of substantive disagreement among parties.
3. Have a necessary requirement for inter-agency cooperation.

Furthermore, the WCIS 2050 stakeholder engagement strategies must address key challenges, including⁴³:

- **Multi-Stakeholder Platforms:** These platforms are essential for convening diverse experts and stakeholders from various disciplines, enabling them to collaboratively address complex problems by sharing knowledge, expertise, and intellectual property. Such platforms are critical

for tackling the multi-dimensional nature of infrastructure ecosystems, where interconnected challenges require integrated solutions.

- **Systemic Holism:** Adopting Whole-of-Government and Whole-of-Society models is vital to overcoming divisions and silos that often hinder progress. A holistic approach fosters integration, enhances coordination, and ensures responsiveness across the entire ecosystem, allowing stakeholders to work together seamlessly toward shared goals.
- **Collaborative Governance:** Extensively cited in research, collaborative governance reduces adversarial approaches in policymaking and implementation by fostering consensus-driven, inclusive decision-making processes. This approach promotes mutual understanding and trust among stakeholders, ultimately enhancing the effectiveness and sustainability of governance frameworks.

Despite the inherent fragmentation in approaches to stakeholder engagement, most research and practice converge on a balanced combination of moral, strategic, and pragmatic perspectives^{1,38-42}. This integrated view aligns seamlessly with the foundational principles of the WCIF 2050, its overarching strategy articulated in the WCIS 2050, and its practical implementation framework outlined

Common stakeholder engagement weaknesses:

- Lack of incentive for stakeholders to participate
- Power and resource imbalances
- Leadership
- Institutional design

Critical value of stakeholder engagement:

- Value creation
- Strategic planning and decision-making
- Innovation
- Learning and knowledge creation
- Accounting and reporting
- Corporate social responsibility
- Politics and democratic principles

Vital features:

- Commitment toward shared understanding
- Face-to-face dialogue
- Trust building tools and platforms



Figure 3: Core drivers of stakeholder engagement from both research and practice

in the WCIIP 2050. Together, these frameworks embody a holistic approach that emphasises ethical considerations, strategic alignment, and practical adaptability in fostering meaningful and effective stakeholder engagement.

Foundations rooted in moral aspects, such as the principles of justice and equity enshrined in the South African Constitution, and strategic aspects aligned with the WCG’s priorities, are designed to be implemented through a pragmatic approach. The WCIS 2050 introduced one such mechanism, a robust Public-Private Stakeholder Toolkit⁴⁶, developed to bridge these moral and strategic foundations with actionable, practical tools. This toolkit serves as a critical resource for fostering collaboration, ensuring alignment, and addressing the complex challenges within the infrastructure ecosystem.

This model was recently developed for the UK public sector to address all phases of the stakeholder implementation process⁴⁶. Its design emphasises simplicity and accessibility, ensuring seamless adoption and application across a wide range of stakeholder groups. As depicted in Figure 4, the model effectively accommodates diverse needs while promoting collaboration and engagement throughout the implementation process.

The following section provides guidance on the type of infrastructure-related details that could be incorporated under each of the six steps articulated in the model. By leveraging the core principles of the model, stakeholders can ensure a comprehensive approach that fosters collaboration and innovation within the Western Cape’s infrastructure stakeholder ecosystem.

It is important to emphasise that this model serves as an implementation guide for all stakeholders and can be tailored to meet the specific needs of different groups. The steps presented here act as a foundational framework, designed to assist and remind stakeholders of the critical aspects requiring diligence and focus under each phase of the model.

Drawing on stakeholder insights from the WCIF 2050 and WCIS 2050, the following practical implementation steps are offered to guide all stakeholders in fostering trust, collaboration, and mutual excellence in infrastructure delivery:

Engagement Objective

- Build trust.
- Collaborate and innovate in critical areas.
- Achieve mutual infrastructure delivery excellence.

Stakeholder Identification

- Reference the critical stakeholder map to ensure inclusivity.



Figure 4: Integrated Stakeholder Model Bridging Research and Practice Value⁴⁶

Identify key stakeholders essential for addressing context-specific challenges.

Engagement Approach

- Approach interactions authentically.
- Demonstrate sincerity in all engagements.

Engagement Strategies

- Conduct face-to-face meetings where possible.
- Utilise virtual or technology-based methods when appropriate.

Engagement Plan

- Tailor each engagement plan to meet its specific objectives and context.
- Highlight critical aspects and outline strategies to overcome identified challenges.

Engagement Outcomes

- Document agreed outcomes tailored to each engagement plan and interaction.
- Record areas of consensus and formal agreements.
- Escalate unresolved issues for higher-level intervention.

These steps, illustrated in Figure 5, represent the central elements necessary to build trust and facilitate collective service delivery across the Western Cape’s infrastructure value chain. By following this structured approach, stakeholders can enhance alignment, collaboration, and accountability throughout the implementation process.

WCIIP 2050: SPECIAL NOTE ON COMMUNICATION

The WCIIP 2050 places strong emphasis on strengthening all forms of stakeholder engagement, as outlined in the preceding section. To support this, it is essential to share insights into communication techniques and tools that enhance stakeholder collaboration in increasingly networked societies. These tools and techniques are poised to become integral to Industry 4.0, where advanced networked technologies such as the Internet of Things (IoT) play a pivotal role. By leveraging evolving communication protocols, IoT connects disparate infrastructure devices, firms, individuals, and processes, fostering seamless interaction and collaboration across complex ecosystems⁴⁸.

The evolving perspective in qualitative Public Relations (PR) increasingly integrates linguistic insights as essential to modern social communication practices⁴⁷. This approach moves beyond traditional PR to attach equal importance to ideology, power, and identity, emphasising how these elements shape organisational communications. It highlights how stakeholders frame narratives uniquely to influence various social actors, thereby shaping and controlling public discourse.

The research calls for diligence, as linguistic power significantly impacts discourse, ideology, and communication⁴⁸, while corporate power often infringes upon legitimate democratic processes⁴⁹. This shift reinforces the importance of authentic, truthful communication while cautioning against corporate strategies designed to subtly manipulate public perceptions and behaviours through calculated messaging^{50,51}.



Figure 5: WCIIP Stakeholder implementation guidance

These insights reveal global trends in the political economy, where power dynamics heavily influence communication content, shaping societal narratives. The communications industry has identified three critical challenges in this context⁵¹:

1. Freedom of Media and Speech

Abuse of these freedoms include practices like censorship, suppression, spreading misleading information, and fostering hate speech, which undermine trust and transparency.

2. Media Literacy and Education

Public relations providers, media outlets, and journalists must maintain authentic independence to foster critical journalism and communications that serve society responsibly.

3. Artificial Intelligence (AI) and Media Ethics

While AI tools can automate communication tasks, they often lack the nuanced understanding of human behavior, raising ethical concerns about their application in media and PR.

These challenges highlight the need for a fundamental shift toward communication strategies that prioritise authenticity, democratic values and ethical practices, ensuring that communication serves as a tool for societal empowerment.

Knowledge of strategic communication is invaluable for enhancing strategy development⁵², as communication theory views communication as a continuous, dynamic process of meaning construction. This process is interactive, participatory, and operates across all levels, making it both omnidirectional and diachronic (spanning historical contexts).

Strategic communication emphasises the interplay between external and internal arenas, where meaning is constantly presented, negotiated, and reconstructed. This approach highlights the importance of fostering engagement and collaboration across stakeholders, ensuring that strategies are not only well-articulated but also widely understood and supported.

Strategic communication, in this context, is conceptualised as a feedback-driven process designed to ensure the effective implementation of strategies⁵². It facilitates reflexive action by testing strategic decisions through continuous loops or cycles of action and adjustment. This iterative approach enables organisations to purposefully align their communication efforts with their mission, ensuring clarity, coherence, and adaptability⁵²⁻⁵⁴.

In communication theory, three primary lenses are often used to conceptualise meaning construction⁵²:

1. Communication as a One-Way Process

In this perspective, the sender constructs meaning and attempts to convey it to the receiver, with the assumption that the meaning developed by the receiver aligns with the sender’s intent.

2. Communication as a Two-Way Process

This lens views communication as an interactive process where two or more individuals collaboratively construct new meanings. It emphasises dialogue, mutual understanding, and shared interpretation.

3. Communication as an Omnidirectional Diachronic Process

Here, communication is seen as a continuous and multidirectional process focused on the ongoing development of meaning over time. This approach highlights the dynamic, evolving nature of meaning construction across historical and contextual dimensions.

Within the context of the WCIF 2050 and WCIS 2050, classic strategy emphasises “leading”⁵⁵⁻⁵⁷ through rational, long-term planning, while systemic strategy focuses on ongoing navigation as a continuous, adaptive process^{53,58}. Authentic, holistic communication practices play a critical role in shaping organisations and societies while simultaneously being influenced by societal evolution as a dynamic, reciprocal practice⁵³.

Addressing these aspects requires thoughtful, in-depth discussion and collaboration with key WCG stakeholders to identify and implement desired communication improvements. To support this, the WCIF 2050, WCIS 2050, and WCIIP 2050 will be provided in digitised formats, embodying the concept of “artefacts-of-action”. These digital tools are designed to facilitate neutral, trusted, and reliable communication, ensuring alignment and fostering collaboration within the Western Cape infrastructure ecosystem.

CONCLUSION

Stakeholder engagement and strategic communication are vital to achieving the collaborative and citizen-centric goals of the WCIF 2050, WCIS 2050, and WCIIP 2050. These frameworks collectively emphasise the importance of aligning stakeholder interactions with the broader objectives of the WCG’s infrastructure ecosystem. By adopting structured approaches to engagement and communication, the WCG is well-positioned to

address the complexities of modern infrastructure delivery while fostering inclusivity and collaboration.

The implementation guidance outlined in the WCIIP 2050 demonstrates the value of integrating stakeholder engagement with practical communication strategies. This ensures that diverse voices are not only heard but also actively shape the planning and delivery processes. The inclusion of multi-stakeholder platforms, systemic holism, and collaborative governance as core principles underscores the commitment to creating a dynamic infrastructure ecosystem that transcends silos and promotes shared ownership of outcomes.

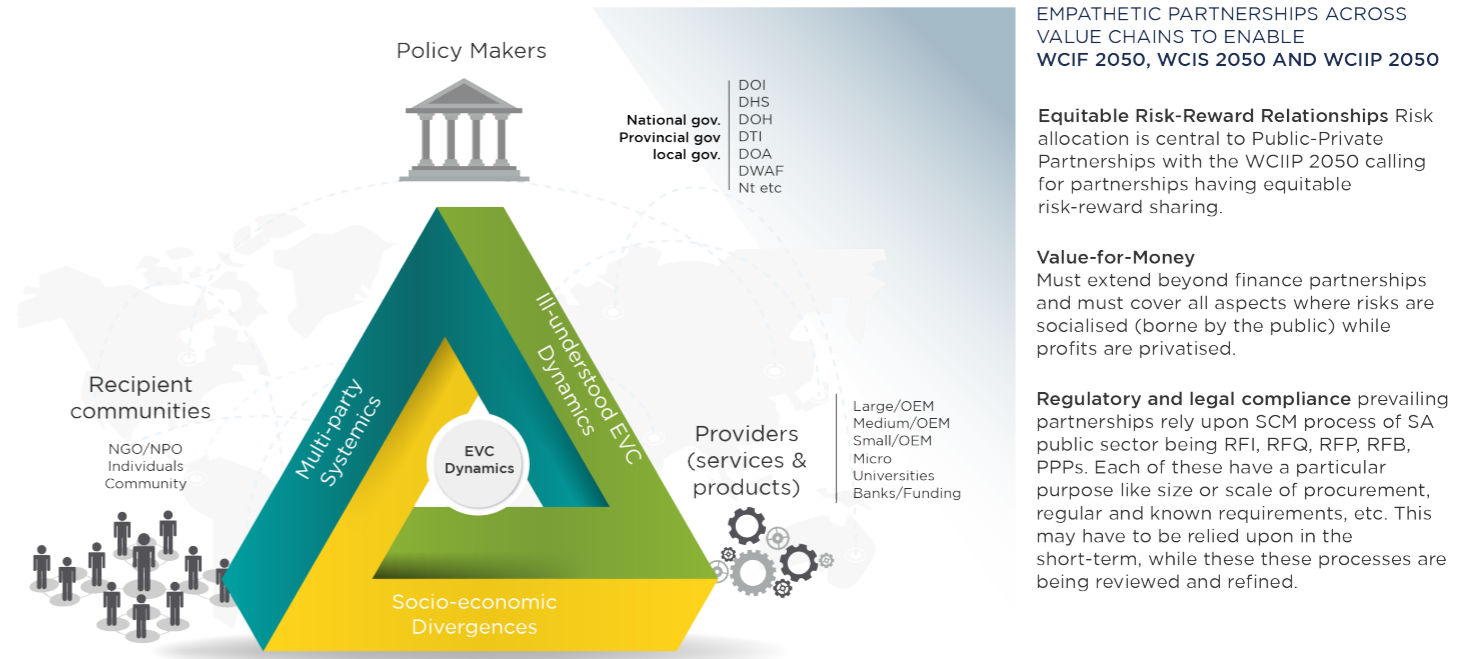
The adoption of digitalised formats for the WCIF 2050, WCIS 2050, and WCIIP 2050 represents a significant step forward in advancing communication and collaboration. These “artefacts-of-action” provide a trusted and neutral platform for disseminating information and coordinating efforts across the infrastructure value chain. By leveraging Industry 4.0 technologies such as the Internet of Things (IoT) and advanced communication protocols, these tools enhance connectivity and facilitate seamless interactions across stakeholders, infrastructure devices, and processes.

PARTNERSHIPS

INTRODUCTION

Partnerships are a cornerstone of South Africa’s NDP 2030 and the WCG’s WCIF 2050 and Growth for Jobs Strategy, which advocate for equitable public-private collaborations to build sustainable and inclusive societies. These strategies emphasise leveraging the complementary strengths of both the public and private sectors.

Aligned with these policy directives, the WCIF 2050 and WCIS 2050 build its implementation framework (WCIIP 2050) on the principle of innovative partnerships that transcend traditional transactional or monetary arrangements. While acknowledging the essential role of finance in infrastructure development, the WCG emphasises transformative partnerships that foster shared capacities, co-creation, and mutual value generation. This progressive approach highlights the need to integrate value chains that demonstrate how economic growth and profitability are inherently tied to inclusive development.



EMPATHETIC PARTNERSHIPS ACROSS VALUE CHAINS TO ENABLE WCIIP 2050, WCIS 2050 AND WCIIP 2050

Equitable Risk-Reward Relationships Risk allocation is central to Public-Private Partnerships with the WCIIP 2050 calling for partnerships having equitable risk-reward sharing.

Value-for-Money Must extend beyond finance partnerships and must cover all aspects where risks are socialised (borne by the public) while profits are privatised.

Regulatory and legal compliance prevailing partnerships rely upon SCM process of SA public sector being RFI, RFQ, RFP, RFB, PPPs. Each of these have a particular purpose like size or scale of procurement, regular and known requirements, etc. This may have to be relied upon in the short-term, while these processes are being reviewed and refined.

The long-route-of-accountability (Panarchy), reflects in global value chain (GVC) or extended value chain (EVC) research respectively highlighting the interplay between Policymakers-Providers-Recipient groups that are conflict ridden and ill-understood, and contributes to divergent socio-economic developmental outcomes

Figure 2: Partnerships extending into the value chain of infrastructure

The WCIIP 2050 advances fair and authentic partnership models that are thoughtfully designed and reflexively developed, as detailed in the WCIF 2050. These partnerships aim to deliver mutual benefits through equality, sustainability, and shared objectives, reflecting a holistic vision for infrastructure development that aligns with the province’s broader socio-economic and environmental goals. By promoting such partnerships, the WCG seeks to establish mechanisms that drive growth and foster resilience and equity across society.

Figure 1 illustrates the partnership qualities that the WCG aims to cultivate across its infrastructure ecosystem. These qualities are informed by both global and local data, as outlined in the WCIF 2050 and WCIS 2050.

The following key elements define the WCG’s approach to fostering robust and equitable partnerships:

1. Addressing Inequitable Risk-Reward Relationships

Risk allocation is central to Public-Private Partnerships (PPPs). However, traditional PPP models often unfairly transfer excessive or inappropriate risks to the public sector, leading to systemic failures in critical infrastructure areas such as energy, water, rail, and health. The WCIIP 2050

advocates for partnerships that ensure equitable risk-reward sharing. This approach promotes balanced accountability and ensures that risks are distributed in a manner that aligns with each partner’s capacity and contributions, mitigating potential infrastructure failures.

2. Reinterpreting Value-for-Money

The concept of value-for-money, a fundamental tenet of PPPs, has been subject to misuse. In many cases, public risks are socialised while profits are privatised, leading to imbalanced partnerships. The WCIIP 2050 prioritises partnerships that extend the notion of value beyond mere financial metrics. It calls for partnerships that deliver tangible and inclusive benefits to all stakeholders, emphasising long-term societal and environmental gains over short-term financial outcomes.

3. Enhancing Regulatory and Legal Compliance

Existing partnership models in South Africa often rely on public-sector Supply Chain Management (SCM) processes, including Request for Information (RFI), Request for Quotation (RFQ), Request for Proposal (RFP), Request for Bid (RFB), and traditional PPP frameworks. Each of these tools serves a specific purpose, such as addressing project size, procurement scale, and recurring requirements. While the WCIIP 2050 acknowledges the necessity of these tools in the short term, it also highlights the importance of iterative refinement. Collaborative

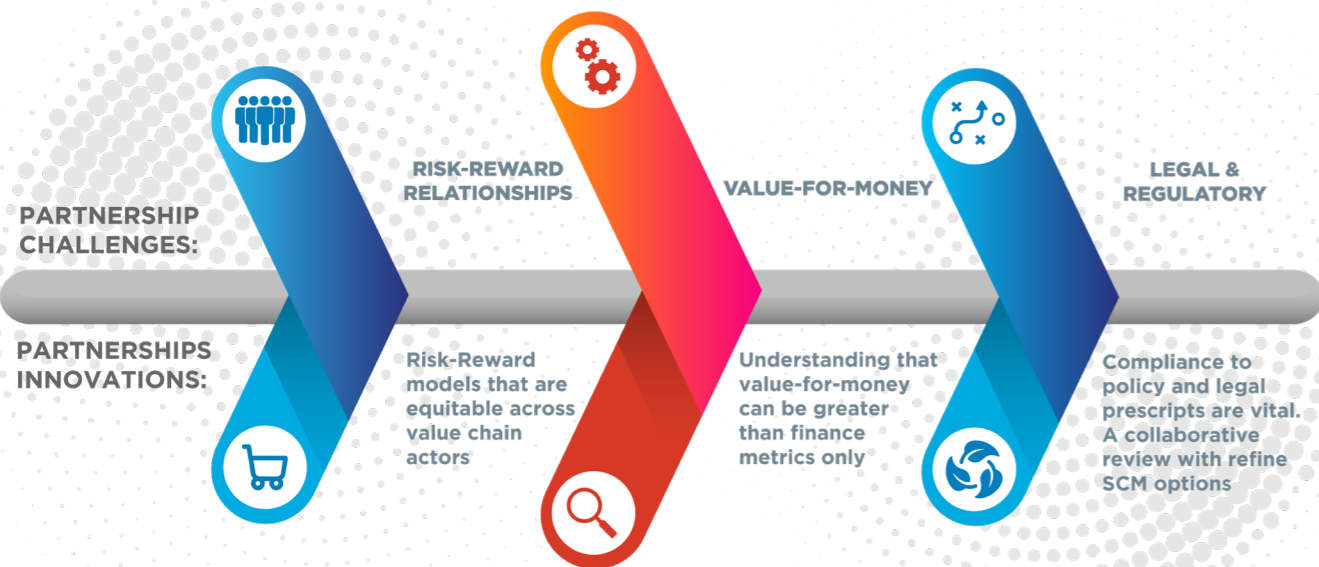


Figure 1: Synthesises partnership challenges and innovations



efforts will focus on harmonising accountability, ensuring fairness, and enhancing transparency within these frameworks. Such refinements aim to strengthen governance, streamline risk-sharing mechanisms, and establish robust systems for contract resolution and stakeholder alignment.

By embracing these foundational partnership principles, the WCIIP 2050 outlines immediate strategies for creating shared value in partnerships. Simultaneously, it outlines a path for continuous improvement through future iterations, ensuring the WCG's partnerships remain innovative, resilient, and aligned with its vision for inclusive and sustainable infrastructure development.

WCIIP 2050 PARTNERSHIP NEEDS ACROSS THE INFRASTRUCTURE VALUE CHAIN

The WCIF 2050 emphasises the importance of differentiation to address the unique contexts and needs of its diverse stakeholders while maintaining the overarching goals of inclusive and sustainable development. This inherent flexibility is designed to foster trusted partnerships, enabling the WCIF 2050 and WCIS 2050 to effectively leverage their adaptive capacities to navigate a broad range of possibilities. At its core, this approach adheres to the principles of transversal governance, ensuring alignment with foundational strategic goals while accommodating dynamic stakeholder relationships. By embedding empathy within the stakeholder dynamics of the infrastructure ecosystem, the WCIIP 2050 acknowledges that effective partnerships require a nuanced understanding of diverse perspectives and priorities.

The WCIIP 2050 emphasises the importance of collaboratively refining risk-sharing partnership models through ongoing stakeholder engagement. While the current reliance on Supply Chain Management (SCM) prescripts provides a functional interim framework, the WCIIP 2050 highlights the necessity of advancing these prescripts to deliver more effective, equitable, and resilient partnerships in the near term. These refinements will address value chain intricacies, ensuring that enduring partnerships are thoughtfully designed and sustainably built.

Furthermore, the WCIIP 2050 reminds all WCG stakeholders that the WCIF 2050 represents a journey of iterative improvement and a steady, long-term commitment to advancing infrastructure strategy and governance. By continuously refining partnership models and governance frameworks, the WCG seeks to create an ecosystem that balances immediate needs with the long-term vision of fostering inclusive growth, resilience, and shared value creation across the province.

CONCLUSION

This chapter, like other core chapters (e.g. Risk, Finance, SCM) in the WCIIP 2050 will require more in-depth and detailed reviews in subsequent refinement engagement sessions that will include all WCG stakeholders. This journey will necessitate future iterations to ensure the level of robustness envisioned in the WCIF 2050, while effectively addressing and aligning with the priorities of the WCG. ●

CHAPTER 5

WESTERN CAPE INFRASTRUCTURE PROJECT PIPELINE

INTRODUCTION

WCIF 2050 – Establishes a scientifically grounded framework, guided by Panoptic Principles, to govern the Western Cape’s infrastructure ecosystem. The WCIF 2050 is anchored in a primary layer prioritisation process that integrates legal and policy directives across all levels of governance, from international to local or municipal contexts. The Panoptic Principles distill diverse viewpoints on prioritisation, synthesising insights from a range of sources that include the SDGs, NDP, NSDF, King IV and ESG criteria. The Panoptic Principles serve as a comprehensive synthesis of global and national imperatives, creating a robust foundation for sustainable infrastructure planning and decision-making.

WCIS 2050 – The Western Cape Infrastructure Sector Prioritisation Matrix is a key part of the strategic framing that integrates long-term spatial transformation, infrastructure development, and mobility across the key sectors, Social, Energy and Water, Economic, Technology, and Ecological. Each of these sectors contain unique contexts and conditions which guide their respective prioritisation programming.

These sectors are aligned with four critical outcomes, derived from the PSP and WCIS 2050, which are focused on households having increased access to basic services, enhancing social infrastructure for equitable access to health, education, social development and recreation

opportunities, driving spatial transformation for resilient and connected communities, and ensuring safe and efficient mobility systems. Spanning three timelines (short-term up to 2030, medium-term up to 2040, and long-term up to 2050), the Western Cape Infrastructure Sector Prioritisation Matrix forms the basis of a secondary layer of prioritisation and ensures a phased approach to achieving foundational improvements, scaling up investments, and fostering sustainable, transformative development. By linking infrastructure planning with these outcomes and sectors, the matrix serves as a cohesive tool to guide investment, policy, and project prioritisation, addressing urgent needs while promoting sustainability and resilience across the province.

WCIIP 2050 – Acts as the third layer of prioritisation, applying the panoptic scoring model to refine the prioritised project pipeline into a **Bankable Pipeline Portfolio**. This process ensures that projects meet all policy-prescribed criteria, enabling them to be classified as investment-ready. The Bankable Pipeline Portfolio represents a carefully curated suite of projects that comply with legal, technical, and financial standards, providing clarity and confidence to investors and financiers. By doing so, the WCIIP 2050 ensures a seamless transition from strategic prioritisation (the Western Cape Infrastructure Sector Prioritisation Matrix) to actionable investment opportunities (the Bankable Pipeline Portfolio), fostering greater collaboration between the public and private sectors in delivering sustainable infrastructure outcomes.

Together, the WCIF 2050, WCIS 2050, and WCIIP 2050 form an integrated approach that bridges strategic vision, sector-specific prioritisation, and implementation-readiness. These three policy documents are positioned as artefacts-of-action to enable the WCG to address both immediate infrastructure needs and long-term resilience, by ensuring projects align to growth, development and ecological priorities. This cohesive system positions the WCG to address both immediate infrastructure needs and long-term resilience, ensuring that projects align with the region’s sustainability objectives and attract meaningful investment.

BUILDING A BANKABLE, INVESTOR-READY INFRASTRUCTURE PROJECT PIPELINE

The WCIF 2050 has been meticulously designed to align seamlessly with existing policy prescripts, ensuring it delivers integrative value and fosters trust and collaboration across the Western Cape’s infrastructure ecosystem. This alignment is essential for creating a unified approach to prioritisation and establishing a robust Western Cape investor-ready pipeline of projects. This approach also means that there should be smoother progress for these projects through the stage gates.

The WCIF 2050 explicitly emphasises its value by demonstrating clear support for strategic decision-making and project readiness. The mapping in Figure 1, along with its supporting sub-sections, provides a detailed overview of how the foundational framing of the WCIF 2050, its strategic directives outlined in the WCIS 2050, and the implementation mechanisms defined in the WCIIP 2050 collectively form cohesive layers of support for all infrastructure stakeholders within the Western Cape.

The process illustrated in Figure 1 outlines a systematic approach to reducing risks and enhancing project reliability at every stage, ultimately delivering an investment-ready portfolio of projects for the Western Cape. This structured process leverages existing project pipelines and transitions them through progressively refined steps to establish a comprehensive, bankable Pipeline Portfolio. Each step is guided by clear criteria and priority gates aligned with policy prescripts, ensuring strategic coherence and readiness for investment.

The process comprises **four Steps**:
1. Existing Pipelines: This initial step focuses on identifying projects in existing pipelines (National, Provincial, Municipal and Private Sector). A critical action at this step is scanning

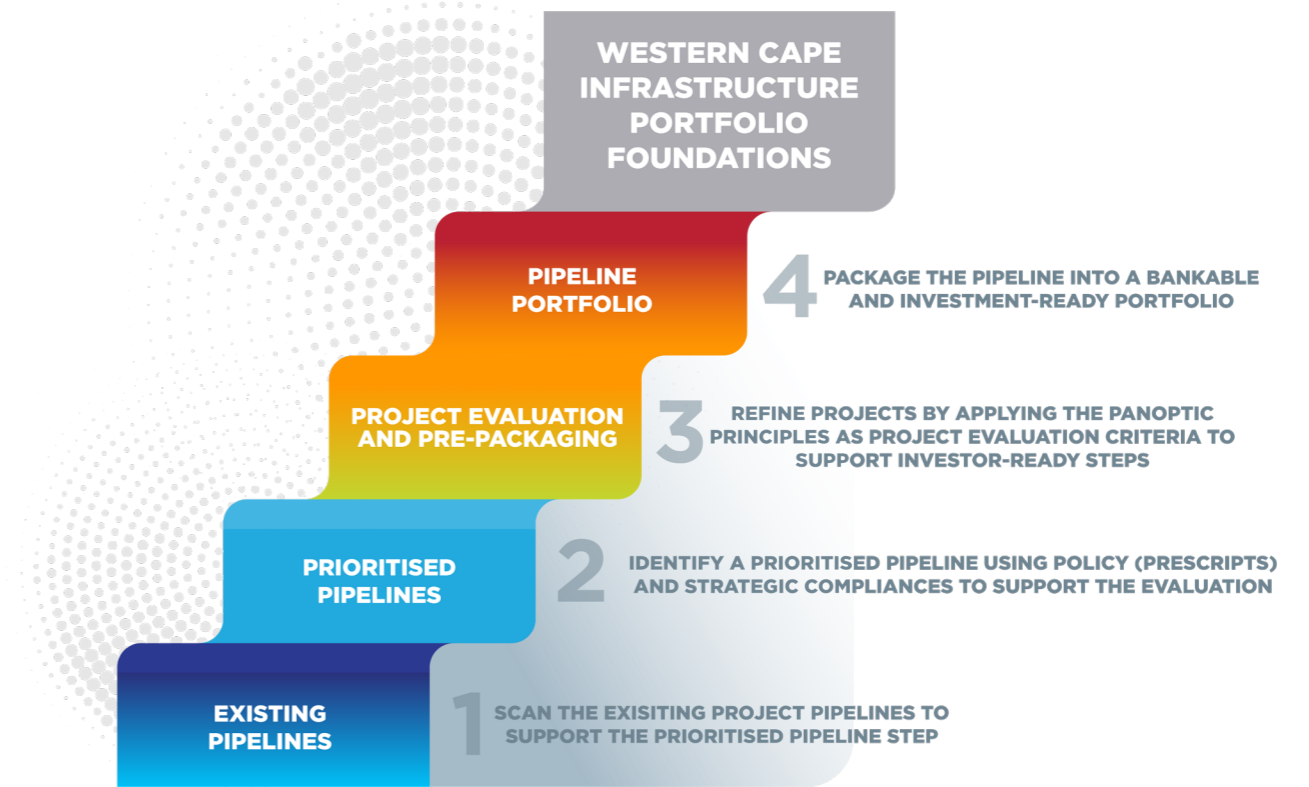


Figure 1: Foundations of the Western Cape Infrastructure Project Pipeline

the existing pipelines to identify projects that will be on the prioritised pipeline over the short-, medium- and long-term.

2. **Prioritised Pipeline:** This step lists the prioritised projects that align with the Western Cape Infrastructure Sector Prioritisation Matrix. Projects that will be listed on the Prioritised Pipeline need to take into account maintenance backlogs and deteriorating assets.
3. **Project Evaluation and Pre-Packaging:** This step applies the Panoptic Principles as evaluation criteria, ensuring that statutory and policy fundamentals are adhered to. The process refines the projects further, improving their readiness and robustness for progression.
4. **Pipeline Portfolio:** At this final stage, the prioritised projects are packaged into a “Bankable and Investment-Ready Portfolio”. This portfolio represents a cohesive set of projects strategically designed to attract investment and meet the infrastructure needs of the province.

STEP 1: EXISTING PIPELINES - SCAN EXISTING PROJECT PIPELINES

The first step is to gather and consolidate existing project pipelines spanning **National, Provincial, Municipal, and Private-sector** levels. Although these pipelines typically evolve independently within their respective spheres and are in a constant state of flux,

it is both feasible and beneficial to view them on a single virtual platform accessible to all stakeholders. This unified repository of infrastructure projects will enhance transparency and collaboration, and also provides a solid foundation for subsequent, more in-depth evaluations.

Typical actions under Step 1:

- **Data Gathering:** Collect project information from multiple sources (government portals, development bank databases, provincial and municipal lists).
- **Data Standardisation:** Ensure project data (scope, status, funding needs) is presented in a uniform format for easier comparison. The desired data science model intends to use both “warm data and cold data” points to build trust and efficacy into WCG information.
- **Initial Categorisation:** Group projects by sector (social, energy and water, etc.) and by respective development stages (conceptual, feasibility, detailed design, under construction).

This initial scanning phase provides an overview of the infrastructure landscape. By systematically collating data, stakeholders can pinpoint gaps, overlaps, and emerging opportunities. This foundational source becomes the launchpad for a structured prioritisation process (see Figure 1.1).

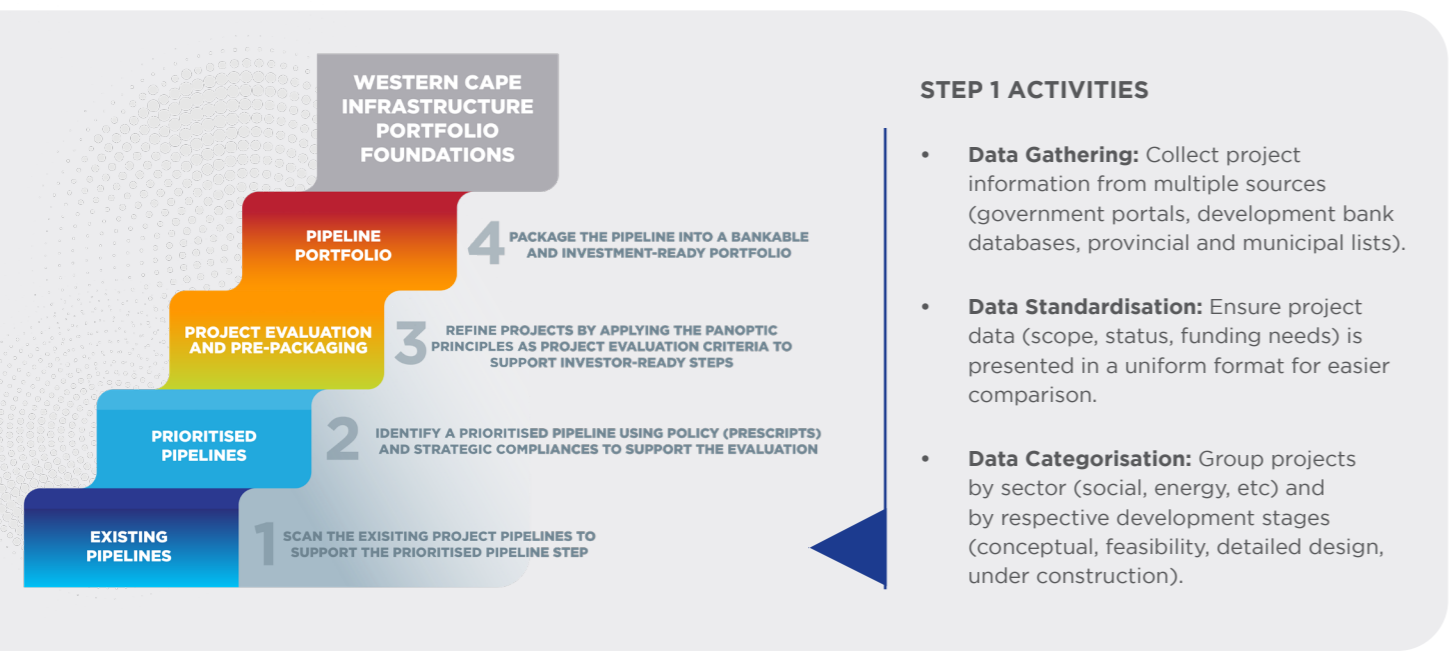


Figure 1.1: Step 1 activities of the four-step foundation building process

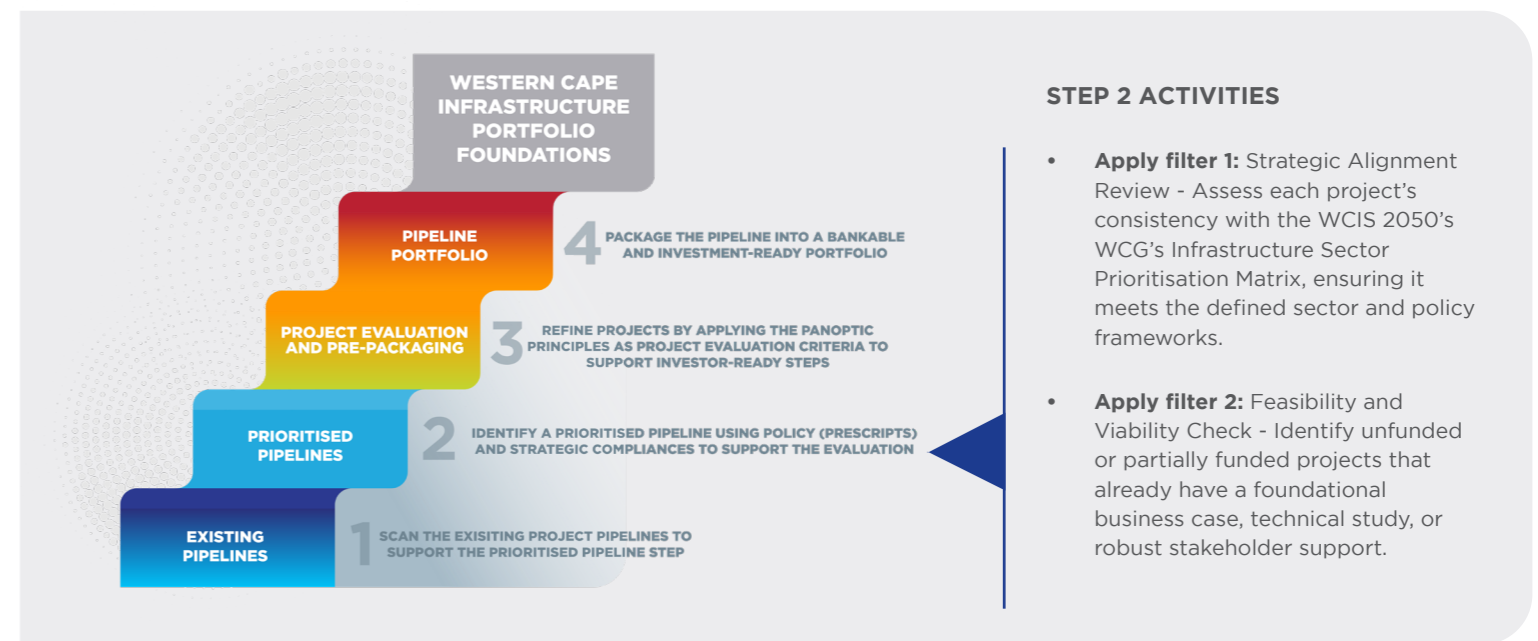


Figure 1.2: Step 2 activities of the four-step foundation building process

STEP 2: PRIORITISED PIPELINE - IDENTIFY A PRIORITISED PIPELINE

The second step is to use the inputs from the first step and proceed to build a list of projects based on the following two filters:

- a. Alignment with the WCIS 2050’s Western Cape Infrastructure Sector Prioritisation Matrix (WCIS 2050, Chapter 7). Projects that will be listed on the Prioritised Pipeline need to take into account maintenance backlogs and deteriorating assets.
- b. Feasibility and viability check, including funding status.

Typical actions under Step 2

- **Filter 1:** Strategic Alignment Review – Assess each project’s consistency with the WCIS 2050’s Western Cape Infrastructure Sector Prioritisation Matrix, ensuring it meets the defined sector priorities and policy frameworks.
- **Filter 2:** Feasibility and Viability Check – Identify unfunded or partially funded projects that already have a foundational business case, technical study, or robust stakeholder support. This level must include basic due diligence. The due diligence will be modelled upon existing planning requirements (e.g., FIDPM | IDMS, MIG, UIDF, NT, etc.) to ensure “ease-of-doing-government” and reduce repeat work.

By applying these filters targeting projects aligned with the Western Cape Sector Prioritisation Matrix and confirming they are unfunded or partially funded, resources are concentrated on the most

strategically relevant and high-impact opportunities. This step narrows the pool into a curated list, the “Prioritised Pipeline” (see Figure 1.2), which can then be rigorously assessed for further development and investment readiness in Step 3.

STEP 3: PROJECT EVALUATION AND PRE-PACKAGING - Refine the Projects by Applying the Panoptic Principles as Project Evaluation Criteria

Following Step 2, Step 3 introduces a pivotal phase in the project pipeline where each proposed initiative undergoes detailed evaluation and prioritisation. This step leverages the project data to generate a refined and prioritised list, using the sub-elements of the Panoptic Principles as critical evaluation criteria. At this stage, compliance with policy and prescripts serves as the primary driver for determining whether a project is eligible to proceed to the next step.

The detailed evaluation at Step 3 ensures that projects are not only viable but also aligned with broader governance objectives. By grounding the assessment in the Panoptic Principles, this stage integrates a multi-dimensional perspective, considering economic, social, environmental, and operational factors to holistically evaluate the value and impact of each project.

Mapping the Panoptic criteria

The following Panoptic Principles and their associated sub-criteria form the backbone of this prioritisation:

PANOPTIC PRINCIPLES AND ITS SUB-CRITERIA INFORMING PROJECT EVALUATION

Principle 1: Infrastructure innovation that drives equitable economic, social, and environmental development.		Relevant prescripts linked to principle & sub-criteria	Direct links to prescribed public sector infrastructure models	Weighted criteria questions for scoring
PP1.1	Infrastructure Design and Material Innovation: Integrate prescribed planning frameworks to promote innovation in infrastructure design, and infrastructure material use aligned to national and local development goals.	NT, MTEF, NDP, NIP, NSDF, NLTF, WCSDF 2035, MSDF, PLTF, PSP 2025-2030, G4J, WCIF 2050, WCEIIF, CC response strategy, Green BCSA, SABS, BSA, NDC, CCA 2024, JTF,	<ol style="list-style-type: none"> Framework for infrastructure delivery and procurement management (FIDPM) is a delivery component of the Infrastructure Delivery Management System (IDMS) from NT; Municipal Infrastructure Grant (MIG) model; Urban Integrated Development (UIDF) model; WCG Infrastructure Governance model (WCIFG); Infrastructure Investment match-making model (PT: IIMM); Infrastructure Delivery Value Chain (DEA&DP: IDVC model); Infrastructure strategy and implementation navigation (DOI: ISAIN) 	Does the project offer clear evidence of compliance to design innovations pertaining to key planning prescripts and construction material use across the 3 spheres of government?
PP1.2	ICT Innovation: Promote innovation in ICT to enhance ease of doing business and government processes, driving economic and governance efficiencies.	NDP, SITA, G4J, WCIF 2050, PSP 2025-2030, PLTF.	<ol style="list-style-type: none"> Framework for infrastructure delivery and procurement management (FIDPM) also called Infrastructure Delivery Management System (IDMS) from NT; Municipal Infrastructure Grant (MIG) model; Urban Integrated Development (UIDF) model; WCG Infrastructure Governance model (WCIFG); Infrastructure Investment match-making model (PT: IIMM); Infrastructure Delivery Value Chain (DEA&DP: IDVC model); Infrastructure strategy and implementation navigation (DOI: ISAIN) 	Does the project offer clear evidence of compliance to ICT innovations and/or efficiencies like ease-of-doing-business and/or ease-of-doing-government?
Principle 2: Innovative infrastructure value chains / ecosystems contribute to building resilient, sustainable, and regenerative systems.		Relevant prescripts linked to principle & sub-criteria	Direct links to prescribed public sector infrastructure models	Weighted criteria questions for scoring
PP2.1	Resilient Infrastructure Design and Risk Mitigation: Align infrastructure design with resilience principles to address climate change, sustainability, and regenerative practices. It must also address water, energy, and disaster management through proactive risk mitigation strategies and policies.	WCIF 2050, PLTF, NDC, CCA 2024, JTF, WCCCRS, WCEIIF, Green BCSA.	<ol style="list-style-type: none"> Framework for infrastructure delivery and procurement management (FIDPM) is a delivery component of the Infrastructure Delivery Management System (IDMS) from NT; Municipal Infrastructure Grant (MIG) model; Urban Integrated Development (UIDF) model; WCG Infrastructure Governance model (WCIFG); Infrastructure Investment match-making model (PT: IIMM); Infrastructure Delivery Value Chain (DEA&DP: IDVC model); Infrastructure strategy and implementation navigation (DOI: ISAIN) 	Does the project offer clear evidence of innovations that foster resilience and regenerative aspects of the infrastructure value chain; and are there risk mitigation strategies in place?
PP2.2	Infrastructure Planning for Systemic Alignment: Integrated and collaborative planning ensures alignment across spatial, economic, and environmental systems, serving as the foundation for sustainable infrastructure value chains and ecosystems.	NT, MTEF, NDP, NIP, NSDF, NLTF, WCSDF 2035, MSDF, PTLF, PSP 2025-2030, G4J, WCIF 2050, IUDF, IDWRP, EPWP, GPS (DEA&DP 2024).	<ol style="list-style-type: none"> Framework for infrastructure delivery and procurement management (FIDPM) also called Infrastructure Delivery Management System (IDMS) from NT; Municipal Infrastructure Grant (MIG) model; Urban Integrated Development (UIDF) model; WCG Infrastructure Governance model (WCIFG); Infrastructure Investment match-making model (PT: IIMM); Infrastructure Delivery Value Chain (DEA&DP: IDVC model); Infrastructure strategy and implementation navigation (DOI: ISAIN) 	Does the project offer clear evidence of alignment, integration and collaboration across the WC infrastructure ecosystem?
PP2.3	Localised Resource Utilisation: Reduce socio-ecological costs by sourcing inputs locally and minimising resource transportation needs (this includes consideration of Biodiversity Offsets).	NDC, CCA 2024, JTF, Green BCSA, King IV, WCIF 2050, WCCCRS, WCEIIF.	<ol style="list-style-type: none"> Framework for infrastructure delivery and procurement management (FIDPM) also called Infrastructure Delivery Management System (IDMS) from NT; Municipal Infrastructure Grant (MIG) model; Urban Integrated Development (UIDF) model; WCG Infrastructure Governance model (WCIFG); Infrastructure Investment match-making model (PT: IIMM); Infrastructure Delivery Value Chain (DEA&DP: IDVC model); Infrastructure strategy and implementation navigation (DOI: ISAIN) 	Does the project offer clear evidence of innovations that foster resilience, sustainable and regenerative aspects in the infrastructure and project value chains at a local level?

Principle 3: Sustainable stakeholder value is created by infrastructure and services that build trust, leverage spatial justice, and the six capitals (inclusive of value for money as defined by the IDA).		Relevant prescripts linked to principle & sub-criteria	Direct links to prescribed public sector infrastructure models	Weighted criteria questions for scoring
PP3.1	Geolocation relative to Spatial Zones: Align infrastructure development to counter spatial inaccessibility via equitable access, capacity building and knowledge management of spatial justice.	SDG's, NDP, NIP, SPLUMA, NSDF, WCSDF 2030, PSP 2025-2030, MSDF, WCIF 2050, PLTF, GPS, State of Development Planning Report and Spatial Performance Report (DEA&DP 2024), RPG-TWG, DEA&DP (Development Planning Report + Spatial Performance Report 2024). (All planned interventions (projects & programmes) to be geo-located & spatially represented, including their expenditure to be expressed spatially).	<ol style="list-style-type: none"> Framework for infrastructure delivery and procurement management (FIDPM) is a delivery component of the Infrastructure Delivery Management System (IDMS) from NT; Municipal Infrastructure Grant (MIG) model; Urban Integrated Development (UIDF) model; WCG Infrastructure Governance model (WCIFG); Infrastructure Investment match-making model (PT: IIMM); Infrastructure Delivery Value Chain (DEA&DP: IDVC model); Infrastructure strategy and implementation navigation (DOI: ISAIN) 	Does the project offer clear evidence of sustainable stakeholder value fostering trust in the context of spatial justice and improved access to infrastructure?
PP3.2	Public Value and Spatial Justice Innovations: Deliver equitable public value while addressing spatial inequities through innovative projects, fostering inclusive planning & development, with a focus on WYPD.	NSDF, WCSDF 2030, MSDF, WCIF 2050, MOIP, PLTF, GPS, DEA&DP (Development Planning Report + Spatial Performance Report 2024).	<ol style="list-style-type: none"> Framework for infrastructure delivery and procurement management (FIDPM) also called Infrastructure Delivery Management System (IDMS) from NT; Municipal Infrastructure Grant (MIG) model; Urban Integrated Development (UIDF) model; WCG Infrastructure Governance model (WCIFG); Infrastructure Investment match-making model (PT: IIMM); Infrastructure Delivery Value Chain (DEA&DP: IDVC model); Infrastructure strategy and implementation navigation (DOI: ISAIN) 	Does the project offer clear evidence of innovations to counter spatial inequalities, to promote inclusive planning and development?
PP3.3	Partnerships and Localisation Compliance: Effective partnerships that demonstrate innovation regarding Risk-Reward sharing; And the use of localised value chains to deliver socio-economic benefits, trust, and stakeholder equity.	NT, MTEF, NDP, NIP, NLTF, PLTF, NSDF, PSDF, MSDF, PSP 2025-2030, G4J, WCIF 2050, BSA, SABS.	<ol style="list-style-type: none"> Framework for infrastructure delivery and procurement management (FIDPM) also called Infrastructure Delivery Management System (IDMS) from NT; Municipal Infrastructure Grant (MIG) model; Urban Integrated Development (UIDF) model; WCG Infrastructure Governance model (WCIFG); Infrastructure Investment match-making model (PT: IIMM); Infrastructure Delivery Value Chain (DEA&DP: IDVC model); Infrastructure strategy and implementation navigation (DOI: ISAIN) 	Does the project offer clear evidence of desired Partnership models favouring equitable Localised value chain development and risk-sharing?
Principle 4: Infrastructure design, commission, delivery and management is best supported and enabled by transversal planning and governance.		Relevant prescripts linked to principle & sub-criteria	Direct links to prescribed public sector infrastructure models	Weighted criteria questions for scoring
PP4.1	Funding, Financing and Budget Governance and Compliance: Compliance with provincial, national and international financial and budgetary frameworks to ensure funding sustainability and fiscal discipline.	NT, MTEF, NDP, NIP, PT, G4J, WCIF 2050.	<ol style="list-style-type: none"> Framework for infrastructure delivery and procurement management (FIDPM) is a delivery component of the Infrastructure Delivery Management System (IDMS) from NT; Municipal Infrastructure Grant (MIG) model; Urban Integrated Development (UIDF) model; WCG Infrastructure Governance model (WCIFG); Infrastructure Investment match-making model (PT: IIMM); Infrastructure Delivery Value Chain (DEA&DP: IDVC model); Infrastructure strategy and implementation navigation (DOI: ISAIN) International Financial Reporting Standards (IFRS) 	Does the project offer funding and financing governance frameworks (financial model, etc.) and PFMA and MFMA budgetary compliances ; and taking into consideration the IFRS when necessary?
PP4.2	Socio-economic Compliance: Adherence to socio-economic planning frameworks and policies, aligning infrastructure projects with growth development priorities and policy objectives as part of effective governance and transversal planning (also take into consideration decommissioning and repurposing).	NSDF, WCSDF 2030, MSDF, WCIF 2050, PLTF, MOIP, G4J.	<ol style="list-style-type: none"> Framework for infrastructure delivery and procurement management (FIDPM) also called Infrastructure Delivery Management System (IDMS) from NT; Municipal Infrastructure Grant (MIG) model; Urban Integrated Development (UIDF) model; WCG Infrastructure Governance model (WCIFG); Infrastructure Investment match-making model (PT: IIMM); Infrastructure Delivery Value Chain (DEA&DP: IDVC model); Infrastructure strategy and implementation navigation (DOI: ISAIN) 	Does the project offer clear evidence of alignment of socio-economic growth and development priorities required by transversal planning prescripts?

Table 1: Panoptic Principles – Criteria Definitions and Alignment to Policy Prescripts



Typical actions under Step 3

- **Scoring Framework:** Use the Panoptic rating system to score and measure project alignment with each Panoptic Principle and its sub-elements.
- **Due Diligence:** Perform technical, financial, environmental, and risk analyses, including cost-benefit assessments (ties to Panoptic rating system). The basic due diligence will be modelled upon existing planning requirements (e.g., FIDPM | IDMS, MIG, UIDF, NT, etc.) to ensure “ease-of-doing-government” and reduce repeat work.
- **Stakeholder Consultation:** Gather input from public agencies, private sector actors, and local communities (with a focus on Women, Youth, the Elderly and Persons with Disabilities) affected by the identified project to validate findings and update score of project parameters.
- **Gap Analysis:** Any scoring shortcoming will automatically identify areas for improvement (e.g. enhanced climate resilience measures, stronger local partnerships, clearer socio-economic compliance).

This step in the evaluation journey (see Figure 1.3) identifies each project’s strengths and weaknesses. By applying the Panoptic Principles, projects are

assessed for their financial viability and their long-term societal impact, which dovetails policy and statutory compliance. A strong score or performance in this stage confirms all governing aspects are satisfactorily met. This then feeds into the final step to increase investor confidence and foster strategic partnerships, positioning the Western Cape to deliver on its economic growth targets.

STEP 4: PIPELINE PORTFOLIO - Package the Pipeline into a Bankable and Investment-Ready Portfolio

The rigorous assessments conducted in Step 3 will allow for the commencement of Step 4, which is to land projects in the Bankable and Investment-Ready Project Portfolio that will be presented to potential financiers and partners.

Typical actions under Step 4:

Project Enhancement Plans: Incorporate findings from the gap analysis in Step 3 (e.g., refine financial models, fortify risk mitigation strategies).

- **Compliance Assurance:** Ensure documented alignment with regulatory approvals, local governance structures, and environmental standards.

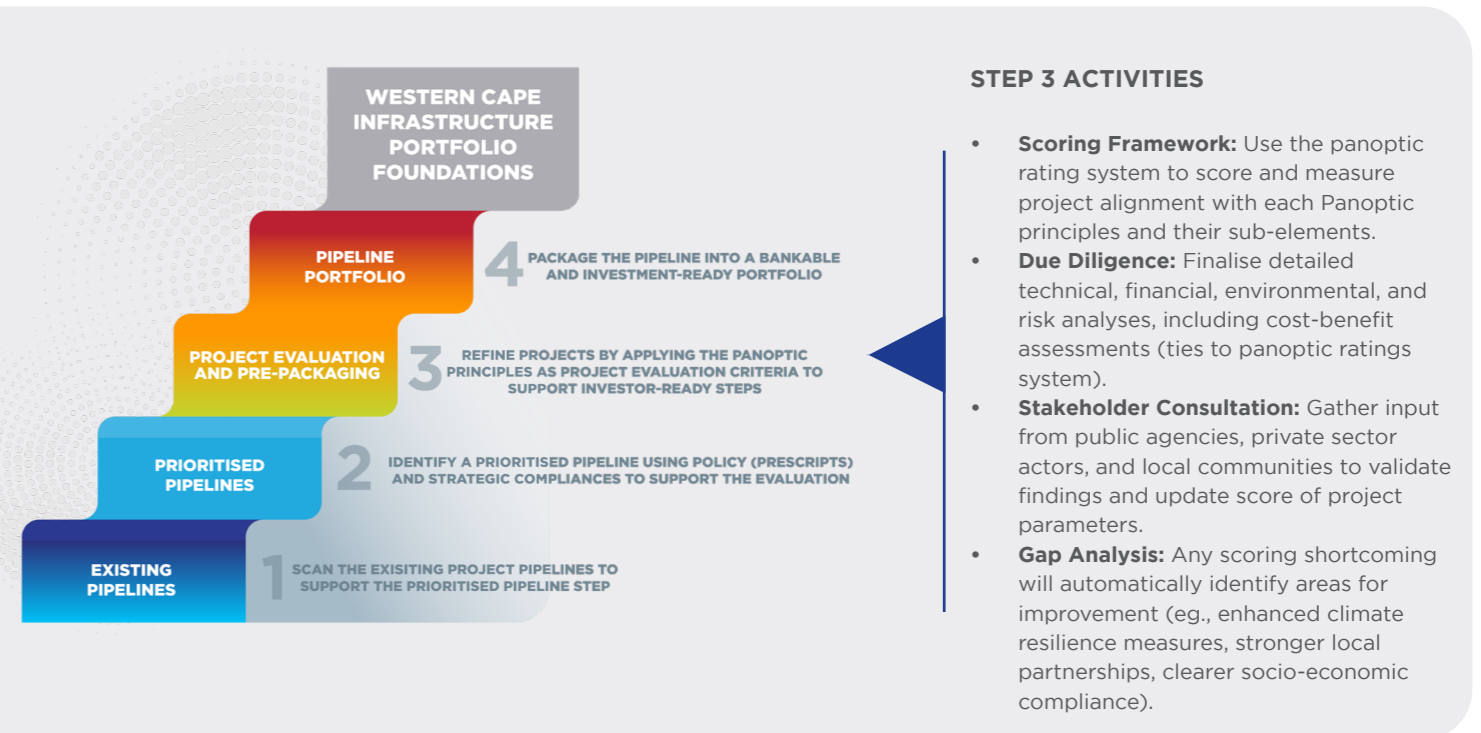


Figure 1.3: Step 3 activities of the four-step foundation building process

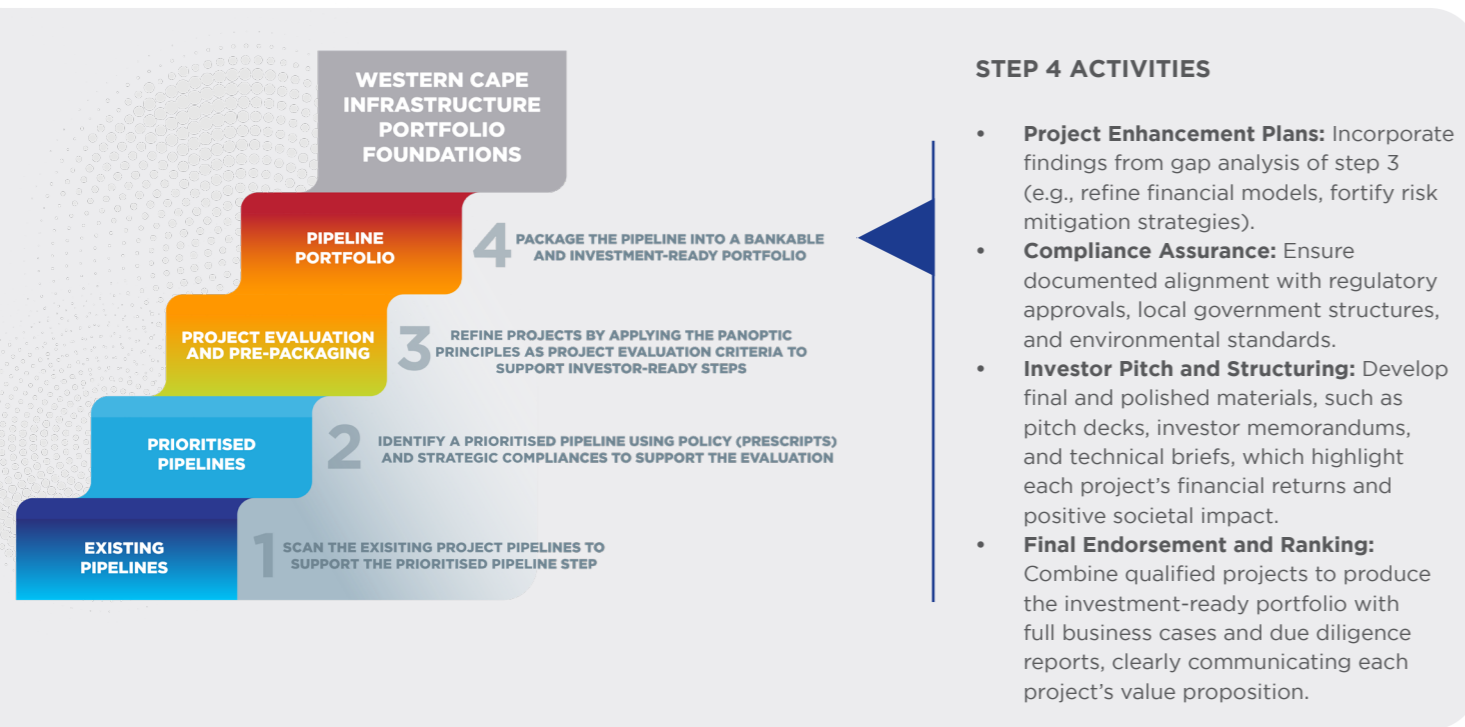


Figure 1.4: Step 4 activities of the four-step foundation building process

- **Investor Pitch and Structuring:** Develop polished materials, such as pitch decks, investor memorandums, and technical briefs, which highlight each project's financial returns and positive societal impact.
- **Final Endorsement and Ranking:** Combined qualified projects to produce the investment-ready portfolio with full business cases and due diligence reports, clearly communicating each project's value proposition.

By the end of Step 4, the WCG will have verified and certified a range of projects (see Figure 1.4). The value in building such certified investment-ready projects will serve all stakeholders equally well. Very importantly, such a certified pipeline of projects will be presented in a professional, transparent manner that appeals to investors, lenders, and development finance institutions. This refined Pipeline Portfolio represents a credible, practically implementable, and financially secure set of opportunities ready for immediate engagement and financing.

GOVERNANCE OF THE WESTERN CAPE INFRASTRUCTURE PROJECT PORTFOLIO

PATHWAY TO AN INVESTMENT-READY PIPELINE PORTFOLIO

The process outline for building an investment-ready pipeline portfolio (Figure 1) provides a structured approach for reducing risks and enhancing the reliability of projects, culminating in an investment-ready infrastructure portfolio for the Western Cape. It transitions projects through four critical steps, each aligned with policy prescripts and guided by clear criteria to ensure strategic coherence and investment readiness:

1. **Existing Pipelines:** Projects are identified from existing pipelines, which involves scanning and selecting projects for progression.
2. **Prioritised Pipeline:** Selected projects are aligned with the Western Cape Infrastructure Sector Prioritisation Matrix.
3. **Project Evaluation and Pre-Packaging:** Projects are evaluated using the Panoptic Principles to ensure compliance with statutory and policy requirements.
4. **Pipeline Portfolio:** Refined projects are consolidated into a "Bankable and Investment-Ready Portfolio", designed to attract investment and meet the region's infrastructure needs effectively.

WCG'S WCIF 2050 GOVERNANCE MODEL

The prioritisation of projects is shaped significantly in the WCIF 2050, as outlined in Chapter 11, which introduced the WCG Governance Model. This framework has been further refined and expanded in the WCIS 2050, particularly in Chapter 4.5, where the model is structured into four key stages comprising eight interconnected steps:

1. **Authority to Approve:** This stage includes:
 - **Step 1: Guidance** – Establishing a clear strategic direction to ensure alignment with overarching goals.
 - **Step 2: Appraisal** – Evaluating the preliminary viability and relevance of projects within the strategic context, laying the groundwork for effective decision-making.
2. **Consistency in Project Packaging:** This stage ensures a systematic and rigorous approach to project evaluation through:
 - **Step 3: Independent Review** – Subjecting projects to unbiased scrutiny to validate their readiness and alignment with the WCG's objectives.
 - **Step 4: Selection** – Finalising a prioritised list of projects that meet both strategic and compliance criteria, ensuring coherence with the WCIS 2050.
3. **Infrastructure Implementation, Management, and Maintenance:** This phase focuses on operational execution and lifecycle management:
 - **Step 5: Implementation** – Overseeing the efficient execution of projects in accordance with approved plans.
 - **Step 6: Adjustments** – Incorporating adjustments to address unforeseen challenges and optimise outcomes.
 - **Step 7: Operations** – Ensuring the sustained functionality and effectiveness of infrastructure assets through robust operational management.
4. **Continuous Feedback:** Embedded throughout the governance model is:
 - **Step 8: Remediation via Feedback** – A mechanism to provide ongoing insights and course corrections, enhancing project performance and ensuring alignment with evolving priorities.

This holistic governance model ensures that every project is subjected to a robust framework of strategic alignment, rigorous evaluation, and adaptive management, fostering accountability and transparency.

MONITORING AND EVALUATION

Similarly, the **WCIS 2050** (Chapter 9) outlines a comprehensive framework for **Monitoring and Evaluation (M&E)** of infrastructure initiatives through the **Infrastructure Ministerial Committee (IMC)**⁷, aimed at enhancing coordination among WCG stakeholders. This approach situates M&E processes at a meta-level, ensuring alignment with provincial policies such as the PSDF², G4J Strategy³, PLTF⁴, and WCIF 2050⁵. These policies collectively address key institutional challenges, which include:

1. **Budgetary Process Demands and Austerity:** Navigating fiscal constraints while ensuring sufficient funding for critical infrastructure.
2. **Weak Planning, Coordination, and Integration:** Overcoming fragmented approaches to enhance strategic alignment and operational synergy.
3. **Misaligned Needs:** Bridging gaps between infrastructure demand and stakeholder priorities.
4. **Diverse Project Selection Criteria:** Streamlining criteria to prevent inconsistencies that could lead to infrastructure failure.
5. **Prioritisation Challenges:** Establishing robust mechanisms to rank projects effectively and equitably.

The systemic risk filters highlighted in WCIS 2050 (Chapter 10) provide a means to address these challenges, partially mitigating risks by undergoing the four-step process to build the **Investment-Ready Pipeline Portfolio**. This layered approach ensures that infrastructure projects are evaluated and refined to meet compliance, strategic relevance, and stakeholder alignment, reducing the likelihood of systemic failures.

Additionally, Chapter 7 of the **WCIS 2050** highlights the importance of **sector prioritisation** as a cornerstone of effective infrastructure planning. It introduces the concept of a virtuous loop, a dynamic feedback system that enhances the functionality of prioritisation models by leveraging the trilogy of artefacts, the WCIF 2050 (strategic framing), the WCIS 2050 (strategic priorities), and the WCIIP 2050 (implementation readiness). This interconnected system ensures that infrastructure initiatives are well-conceived and well-executed, fostering sustainable development, strategic alignment, and enhanced coordination across all levels of governance.

Synthesising Governance and Prioritisation for Sustainable Infrastructure Delivery

The extracted narratives are reiterated to reinforce stakeholder understanding of the scale and magnitude of the WCG’s infrastructure commitment and vision. This ensures a collective appreciation of the transformative approach embodied in the WCIF 2050, WCIS 2050, and WCIIP 2050. The four-step process to build the Investment-Ready Pipeline Portfolio must be interpreted within this broader strategic context, emphasising their importance as mechanisms for aligning infrastructure initiatives with the overarching goals of sustainability, inclusivity, and resilience.

To cement the transversal value of governance, a comprehensive mapping is provided to illustrate how the prioritisation layers are synthesised within the governance framework. This mapping clarifies the structured approach that underpins decision-making, ensuring that infrastructure projects are systematically evaluated, aligned with strategic priorities, and refined into an investment-ready pipeline.

The mapping also emphasises the critical connections between governance processes, prioritisation models, and infrastructure outcomes, creating a cohesive system that ensures impactful, transparent, and accountable infrastructure delivery. This dynamic interaction is designed to foster confidence among stakeholders, demonstrating that every step of the prioritisation process is purpose-driven and aligned with policy mandates.

This synthesis is visually demonstrated in Figure 2, which provides a detailed representation of the interplay between governance, prioritisation, and implementation. By doing so, the map offers stakeholders a clear and actionable roadmap that ties strategic vision to operational execution, reinforcing the WCG’s commitment to delivering infrastructure projects that drive economic growth, enhance social equity, and ensure environmental sustainability.

CONCLUSION

The WCIF 2050 concludes with a robust and integrative strategy designed to address the multifaceted challenges of infrastructure planning, prioritisation, and implementation. Through the interplay of WCIF 2050, WCIS 2050, and WCIIP 2050, a coherent system for aligning strategic vision with sector-specific priorities and implementation readiness is established. This layered approach ensures that infrastructure projects are strategically aligned and packaged to be bankable and investment-ready.

The prioritisation process, structured into four key steps, systematically reduces risks and enhances project reliability. By transitioning from existing pipelines to a refined, bankable Pipeline Portfolio, this approach ensures that projects meet both policy-prescribed criteria and practical investment requirements. The application of the Panoptic Principles in the evaluation process introduces a multidimensional perspective, encompassing economic, social, environmental, and operational factors, which strengthens the foundation of the investment-ready portfolio. Additionally, the governance model outlined in the WCIS 2050 reinforces strategic alignment, rigorous evaluation, and adaptive management, fostering accountability and transparency across all infrastructure initiatives.

Monitoring and Evaluation (M&E) frameworks further bolster the WCG’s infrastructure strategy by providing mechanisms for continuous improvement and alignment with overarching policy objectives. By addressing systemic risks and fostering cross-sectoral coordination, these frameworks ensure that infrastructure initiatives are both efficient and responsive to evolving socio-economic and environmental needs. The synergy between governance, prioritisation, and M&E frameworks positions the WCG to deliver transformative infrastructure projects that drive economic growth, enhance social equity, and ensure environmental sustainability. Together, these elements create a roadmap for impactful and accountable infrastructure delivery, ensuring the province’s infrastructure ecosystem is equipped to meet both present and future challenges.

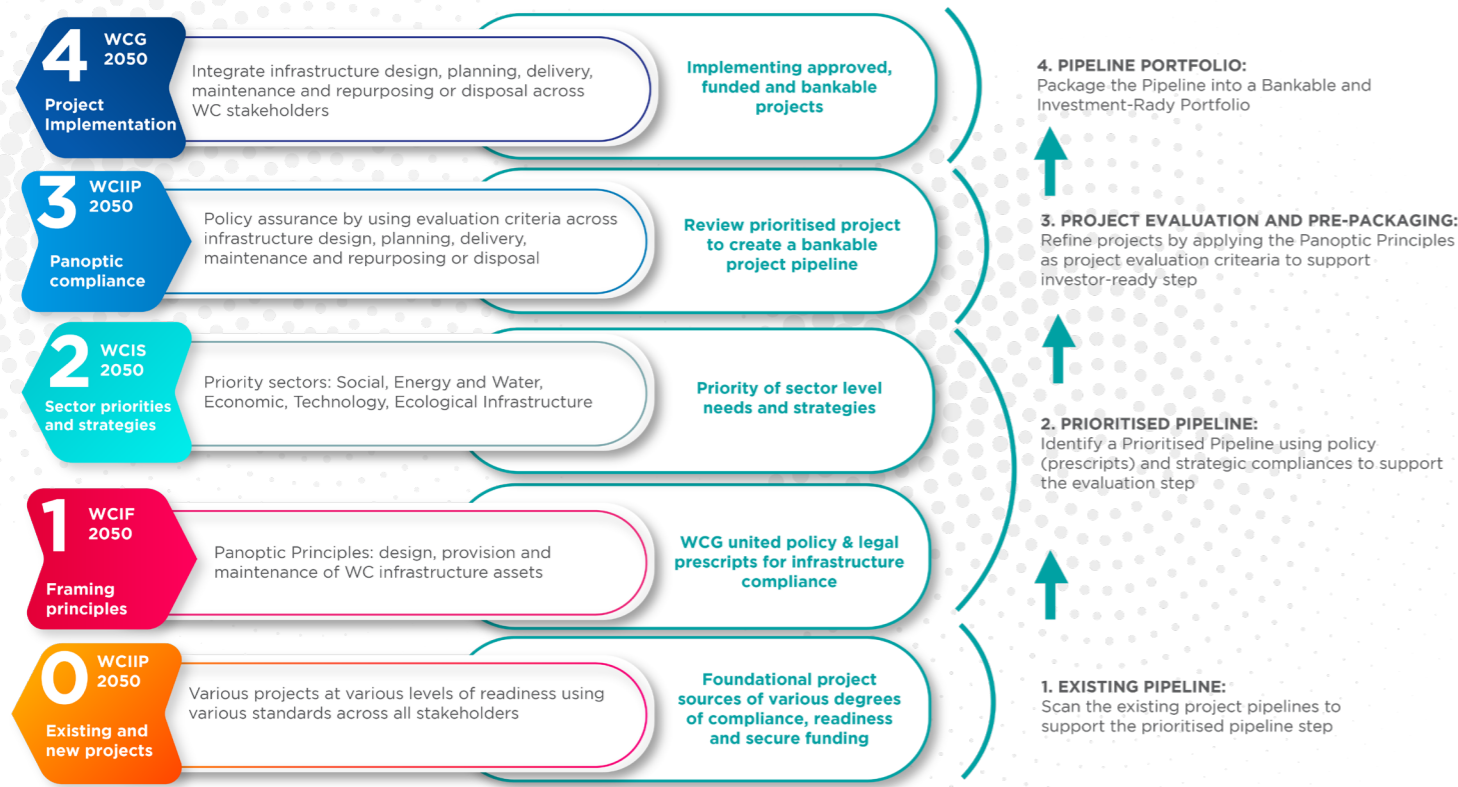


Figure 2: WCG infrastructure pipeline foundations



CHAPTER 6

FINANCING INFRASTRUCTURE PROJECTS

INTRODUCTION

The WCIF 2050 (Chapter 9) emphasises the impact of constrained finances on the infrastructure sector, underscoring the importance of adapting to a pressurised fiscal environment. To navigate these challenges, it is crucial that investment strategies align with the Panoptic Principles and the Western Cape Infrastructure Sector Prioritisation Matrix (WCIS 2050, Chapter 7), ensuring effective implementation of the WCIS 2050 and WCIIP 2050.

THE WCIF 2050 AND A COMMON FINANCING NARRATIVE FOR THE WCG

The UN makes specific recommendations for governments to successfully mobilise resources in terms of³:

- a. **common narrative** that refers to ensuring agencies complement rather than compete with each other, since competition actually “increased transaction costs and fragmentation”. The preparation of a common fund mobilisation strategy will enable agreement on priority areas for resource mobilisation and how to approach partners.
- b. **common effort**, that refers to finding resources to cover the funding gap (e.g. where innovative financing mechanisms are notoriously complex), whilst also noting the indivisible nature of SDGs; and
- c. **common instruments**, for instance trust funds or joint programmes to drive integrated, cross-sectoral models.

DIFFERENCES BETWEEN FUNDING INFRASTRUCTURE AND FINANCING INFRASTRUCTURE

One way to understand the difference between funding and financing is that funding is the act of providing resources, while financing is the act of structuring financial flows to achieve a result. In other words funding is how taxpayers or citizens ultimately pay for infrastructure usually via tax revenues of the State and usually does not pay it back¹. Financing is how owners of infrastructure, lend the money to build infrastructure and require repayments¹.

Funding – the act of providing resources to finance infrastructure project needs. It can be in the form of money, effort, or time. It is seen as being “free of charge”, as there is no requirement to pay it back. Funding is only provided by governments, but also argued to occur via organisations (incentivised via tax write-offs).

Financing – The act of structuring financial flows to achieve a desired result, which involves providing capital (money) to organisations with the expectation that it will be repaid. This can come from various sources, such as banks, venture capitalists, or the community, with the capital amount being repaid along with interest. In the context of infrastructure, **public sector financing** refers to the process by which governments or public entities mobilise and allocate financial resources to fund the development, maintenance, and operation of public

UN (ESCAP)	FUNDING	FINANCING
SOURCES	TAXATION: Government taxation income SUBSIDIES: Providing subsidies to SIE's and selected industries USER FEES: Tarriff charges, Toll fees, etc. OTHER REVENUES: Capturing land value; Commercial activities	PUBLIC FINANCING DOMESTIC AND FOREIGN: Government budget Public borrowing International grants (borrowing) PRIVATE FINANCING DOMESTIC AND FOREIGN: <ul style="list-style-type: none"> • Infrastructure companies • Commercial banks • Institutional investors
	COUNTRY GDP RATIO RELATIVE TO INFRASTRUCTURE 8% OF GDP: Ideal ratio that countries needs for infrastructure 5% of GDP: Ideal percentage spend for infrastructure for country 15% PS: Seek 15% public sector efficiencies	

Table 1: UN table of funding and financing of infrastructure¹⁴

infrastructure. This includes critical facilities and services such as roads, bridges, schools, hospitals, water supply, and energy systems that are essential for the functioning of society.

However, it is important to note that not all forms of public sector financing require repayment. For example, investment partnerships may involve government contributions that are 'in kind' rather than through direct financial payments. Additionally, mechanisms like **Impact Bonds** are structured to cost the government no more than their current outlay, yet they guarantee increased performance by leveraging additional contributions from other funders, creating a win-win scenario for all parties involved. These alternative financial instruments can provide flexibility and efficiency in funding infrastructure projects without the traditional repayment burden.

The United Nations¹⁴, uses the same definitions as reflected in Table 1 articulating the options under both these categories. The report also notes countries are to strengthen their infrastructure funding and financing by¹⁴: (a) Increasing GDP tax ratio to 4% for infrastructure spend; (b) Improving public expenditure efficiency by 15%; and (c) Strengthen PPPs to finance 10% via private sector.

OPTIONS FOR FINANCING PUBLIC INFRASTRUCTURE

There are three broad ways to finance infrastructure¹, through public or private financing. These options operate differently depending if infrastructure is

publicly owned (e.g., rail networks), compared to privately owned infrastructure (e.g. mobile operators). Not all privately financed infrastructure is privately owned since publicly-owned infrastructure can be privately financed.

- Public finance** - Public finance for infrastructure comes from either taxation or public borrowing (bonds). Public finance for infrastructure projects will appear on the public sector balance sheet in measures of public sector net debt.
- Private finance** - Private financing for public infrastructure projects involves government borrowing money from private investors to pay for specific projects. Also called project finance, it is usually where a project-specific company is set up to deliver a particular infrastructure project. This company borrows the money and ensures designing, building, operating and maintaining of the asset. In these cases investors often have managerial responsibilities in the company or special purpose vehicle (SPV).
- Blended finance** - A blend of public and private financing.

A common approach in project procurement is the Private Finance Initiative (PFI), also known as public-private partnerships (PPPs), which serves as an alternative procurement method¹. It is where investors like private finance, banks, insurers, pension funds, and private equity firms provide the financing. The types of investors keen to finance infrastructure projects depend upon their risk profile (see Table 2).

STAGE	PLANNING	GREENFIELD	BROWNFIELD	
Activity	Development	Construction	Early operations	Operations
High-risk appetite: private equity	Interest likely			
High-risk appetite: banks	Interest unlikely for most projects			
Low-risk appetite: institutional equity	Interest very unlikely			

Table 2: Risk versus interest of private financing in public infrastructure¹

	BENEFITS	DRAWBACKS
PUBLIC FINANCE	Lower costs: Government can borrow more cheaply than the private sector because of lower risk. Lower procurement costs since fewer private parties are involved. Flexibility: Departments retain greater flexibility over future maintenance costs by retaining control of the asset.	Competition for spending may lead to underinvestment: Limited budgets imply projects must compete against other priorities. Raising taxes and public borrowing are politically contentious. Investment in infrastructure may be delayed when decisions are driven by short-term electoral politics. Red tape: Financing infrastructure through public finance can take a long time since it must go via a review process. Cost and time overruns: Inefficient management in the public sector leads to cost and time overruns.
PRIVATE FINANCE: PUBLICLY OWNED INFRASTRUCTURE	Cost and time overruns are less likely: Private sector and investor controls are seen as more efficient. Off-balance sheet: If sufficient risks are transferred to the private sector, privately financed infrastructure does not add to standard measures of public sector debt, which may be politically beneficial. Lower whole-life costs: Can incentivise for 'whole-life costing' i.e. to invest more in the early stages in order to minimise later operational costs and reduce the total cost of infrastructure over the lifecycle.	Higher financing costs: Project-specific companies have higher borrowing costs compared to gilt borrowing; Procurement costs: Private finance contracts require detailed and costly specification. Limited evidence of the benefits of risk transfer: Mixed views and little evidence of lower cost overruns. Inappropriate risk allocation: Some risks are borne more efficiently by the public sector (e.g., inflation, policy regulatory, reputation and 'catastrophe' risks). If investors are willing to take some of these risks, it will come at a significant cost. Contractual inflexibility: The public sector gives up a degree of flexibility in order to reduce financing costs, which could be a drawback.
PRIVATE FINANCE: PRIVATELY OWNED INFRASTRUCTURE	Transferred responsibility: In theory, responsibility for investment in infrastructure is transferred to the private sector. Lower Financing costs than other forms of private Finance: Regulated companies typically have borrowing costs above gilts but below other private finance.	High financing costs: Financing is still more expensive than gilt borrowing. Contractual inflexibility: Contracts with private lenders reduce flexibility. Mixed evidence of private ownership benefits: Privatisation, particularly in industries that are natural monopolies, does not minimise prices or improve customer service.

Table 3: Traditional financing mechanisms for public infrastructure¹²

Insights from the UK Government's research highlight that investor interest typically peaks in brownfield projects. This presents a challenge recognised by the WCIF 2050, as these projects often involve significantly reduced uncertainty during key stages of infrastructure design, planning, delivery, and maintenance. Achieving a level of near-certainty is crucial, as investors prefer low-risk opportunities. For the WCIIP 2050, this underscores the importance of improving the design, planning, and construction phases of the project pipeline. By reducing uncertainties and managing risks effectively, the WCIIP 2050 can attract more private sector participation, ensuring that infrastructure projects are both financially viable and strategically aligned with long-term development goals.

Additionally, there is a need to reduce reliance on external parties for infrastructure design and planning in order to lower the cost of infrastructure projects and, consequently, the cost of infrastructure finance. This can be achieved by promoting disciplines related to infrastructure design and planning, expanding apprenticeship opportunities within government, and retaining qualified apprentices once they complete their training. This approach will strengthen local capacity and reduce overall project costs, contributing to more sustainable and cost-effective infrastructure development. Furthermore, by reducing uncertainties and managing risks effectively, the WCIIP 2050 can attract more private sector participation, ensuring that infrastructure projects are both financially viable and strategically aligned with long-term development goals.

Table 3 provides valuable insights from UK Government research¹, highlighting the benefits and drawbacks of various financing options available for public infrastructure. These insights are critical for the WCIIP 2050, as they offer a framework to structure financing mechanisms effectively. By incorporating these lessons, the WCIIP 2050 can ensure that its financing models are well-designed, addressing potential challenges and maximising the benefits of each financing approach. This approach will help ensure that the WCIIP's infrastructure projects are both financially viable and aligned with long-term development goals^{1,2}.

Basic project preparation for successful development financing includes²: (a) Projects to align with Public sector policies; (b) Governments to have a

well-articulated pipeline of projects to meet SDG goals; (c) Governments to have a financing process linked to pipeline projects for investment; and (d) Governments need financing strategies for project pipelines to achieve their goals.

As highlighted by the social target and risk profiling, it is clear that "more money alone won't do the job". This means that addressing the barriers related to both the quantity and quality of infrastructure investment is essential³. To overcome these barriers and build sustainable infrastructure, the following four interlinked strategies must be pursued³:

1. **Collectively address fundamental price distortions**, such as subsidies and improper pricing, particularly in sectors like fossil fuels and carbon emissions.
2. **Strengthen policy frameworks and institutional capacities** to ensure the development of the right policies and enabling conditions that encourage investment in viable infrastructure pipelines, while also reducing high development and transaction costs, it is essential to address the key issue of PPP delays, which often stem from high transaction costs. Innovative finance mechanisms, while typically associated with higher transaction costs due to their novelty, may still prove worthwhile from a cost-benefit perspective. This occurs because they can lead to lower capital costs and other service delivery innovations and efficiencies, making them valuable in the long run.
3. **Transform the financial system** to ensure the scale and quality of investment needed, by unlocking private sources of capital, such as long-term debt finance and institutional investor capital, to accelerate the greening of the financial system.
4. **Ramp up innovation** through research and development (R&D) to improve investor cost efficiencies and enhance accessibility to funding for infrastructure projects.

These interconnected actions will ensure that infrastructure investments are not only sustainable but also efficiently financed and aligned with global development goals.

The same research predicts that the Global South will account for approximately two-thirds of global infrastructure investment, amounting to around

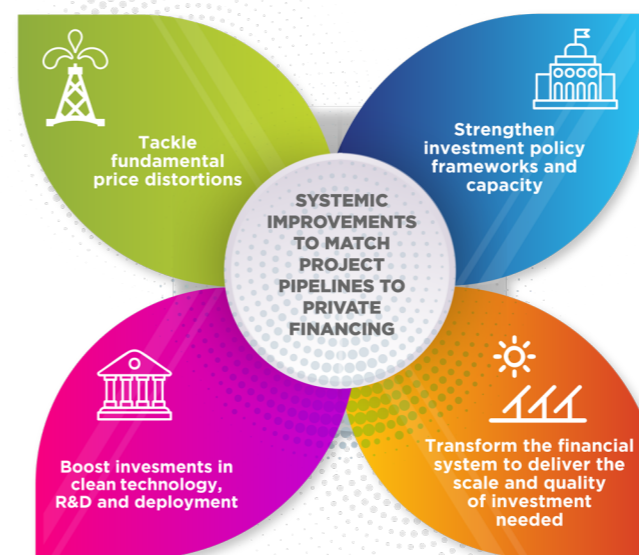


Figure 1: Systemic improvements to match project pipelines to private financing³

US\$4 trillion per year. This presents a unique opportunity to build sustainable infrastructure that can "leapfrog" the inefficient, sprawling, and polluting systems of the past"³. This trend is recognised in the WCIF 2050, which makes these principles foundational to the region's infrastructure strategy. The greater the alignment with the Panoptic Principles, the more effectively the infrastructure project pipeline can support South Africa's development goals, as outlined in the NDP, while also contributing to global targets such as the SDGs. By adhering to these principles, the WCIF 2050 ensures that infrastructure investments are both sustainable and aligned with broader international development objectives.

CURRENT GLOBAL PATTERNS FOR SOURCING CLIMATE BASED INFRASTRUCTURE FINANCE

The majority of global capital flows (72%) targeting climate change are raised through public finance or governments of countries⁸, with only 20% coming from private finance⁸. In developing countries, this pattern is particularly evident, where domestic resources significantly outweigh external development finance⁹. However, it is important to note that the cost of capital from external development finance is often lower, as these funds are typically provided through concessional loans. While the initial concessional rate may be around

6%, there are often conditions or performance outcomes that need to be met to reduce the rate further, potentially down to 4%. While the cost of capital may be lower, it is essential to consider the higher administrative and reporting burdens associated with these loans. This is an important factor for us to keep in mind as we consider our approach to financing infrastructure projects. Also for consideration is that Adaptation finance makes up just 12% of the total, which may mean that the Western Cape has more need for adaptation than mitigation³².

Both public and private domestic sources of capital are essential for fostering sustainable infrastructure investment, underscoring the need for policy alignment to optimise these resources. While external finance (both public and private) can play a catalytic role in stimulating domestic investment, it requires strong domestic leadership and bold policy reforms. These reforms, as highlighted in the WCIF 2050, are crucial to creating an enabling environment that maximises the potential of both domestic and external financial resources for sustainable infrastructure development.

In developing and emerging economies, public resources¹¹ finance 60-65% of the cost of infrastructure projects. However, public investments are often limited by inadequate fiscal revenues, which are compounded by low taxation rates, challenges in tax collection, and restricted access to debt financing. In contrast, advanced economies contribute approximately 40% of total infrastructure financing, a figure that has diminished largely due to the global economic crisis.

There are several inherent challenges in financing infrastructure, particularly when it comes to scaling up and targeting both domestic and international public finance. One major obstacle is guiding and increasing private finance flows to complement public resources. Several barriers hinder private investment in infrastructure, primarily driven by the complex interactions between finance, policy, and institutions (see Figure 3). These barriers must be addressed to unlock greater private sector involvement. Furthermore, ensuring that infrastructure projects are sustainable adds additional layers of complexity, requiring careful planning, policy alignment, and long-term investment strategies to meet both immediate and future development needs.

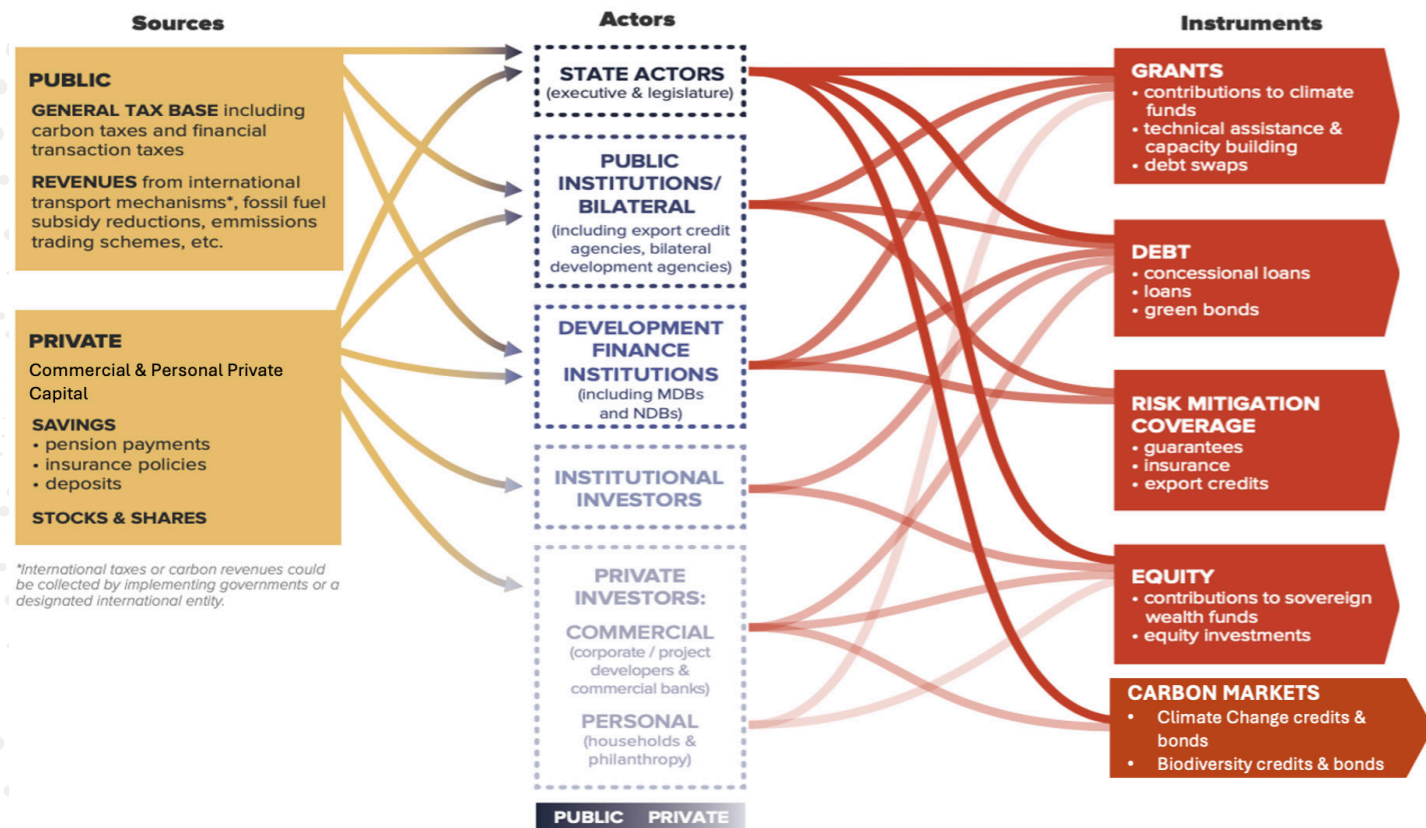


Figure 2: Global landscape of project financing^{3,11}

OPERATING MODELS IN PROJECT FINANCE

Infrastructure projects involve both public and private sector partners. Such public-private partnerships (e.g., PPP) vary widely in organisational forms, depending on local contexts (e.g. laws, project, experience of actors) as detailed in Figure 3.

Depending on the arrangements, the responsibilities and activities of the SPV within the PPP will vary, particularly regarding risk transfer between parties, investment responsibilities, and asset ownership control across project stages, as detailed in Table 4.

A key element of the WCIIP 2050 is ensuring that risks are allocated fairly, as one of the primary causes of project failure is an imbalanced risk-return trade-off⁵ across project pipelines¹². Best practices and recent research suggest that project owners should retain “sufficient but not excessive” risks. If too much risk is placed on project owners, it diminishes the adjusted risk-return outcomes, while overloading financiers with risk can make projects financially unfeasible⁵. It is also crucial that risks are shared

with the public sector host department, as they are typically a central stakeholder in infrastructure projects. Transparent and equitable allocation of risk and reward, along with effective risk management, allows project teams to respond to unforeseen risk events. While the balance of risk-reward may vary from one project to another, the WCIIP 2050 must ensure that agreements governing Special Purpose Vehicles (SPVs) and project companies uphold citizen-centric and ecological imperatives, as outlined in Figure 4. This approach guarantees that infrastructure projects are not only financially viable but also socially and environmentally responsible.

Current global trends, such as government stimulus programmes, the recalibration of infrastructure needs, extreme weather events, and the ongoing digitisation of the public sector, are expected to drive infrastructure investments⁶ and open up new opportunities across the WCIIP 2050’s priority infrastructure sectors. In response to these trends, the World Bank offers several key policy recommendations for improving infrastructure financing⁷:

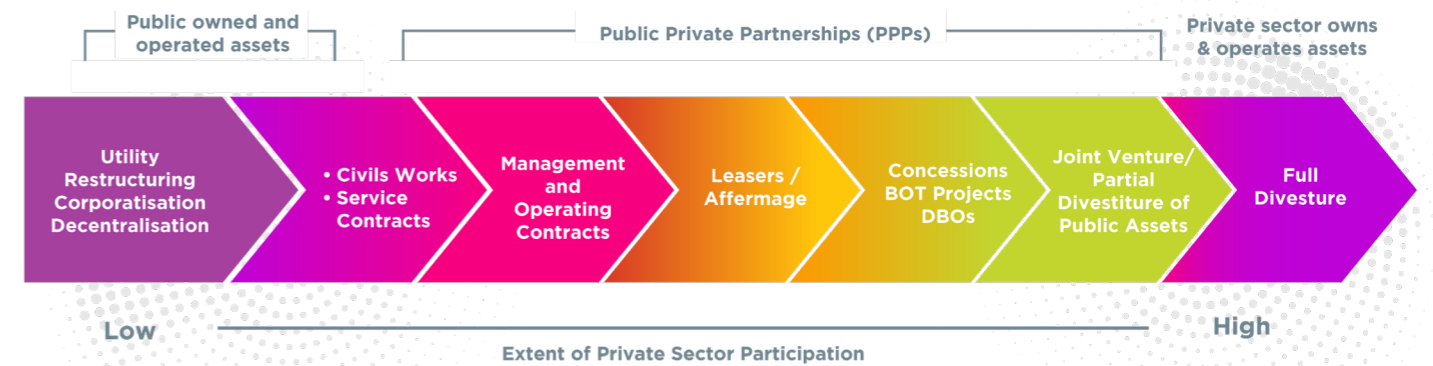


Figure 3: Range of operating models in public infrastructure⁷

- Enhance and strengthen finance for crisis preparedness to ensure resilience against future shocks.
 - Implement fiscal and debt management reforms in countries facing debt distress, helping them manage their financial obligations more effectively.
 - Improve monitoring mechanisms to assess the impact of private capital mobilisation (PCM), ensuring that investments are efficiently targeted and impactful.
 - Intensify efforts to mobilise climate finance, emphasising the need for investment in sustainable infrastructure that addresses climate change challenges.
- These recommendations are crucial for ensuring that infrastructure projects not only meet current needs but also contribute to long-term sustainability and resilience.

NAME	DEFINITION	RELEVANCE
Build-Operate-Transfer (BOT)	BOT is a model in which the public sector grants a private company the right to develop and operate a facility or system for a certain period (the 'Project Period'). The company operates it commercially during this period, after which the facility is transferred back to the public authority. The public authority is the sole or one of the owners of the SPV and thus provides some financing.	Suited to projects involving significant investment and operating content, widely used in infrastructure projects. BOT projects are often initiated by governments or relevant authorities.
Service Contract	Where governments outsource specific service provision to a private company (e.g., design, construction, maintenance or operation of infrastructure), while financing comes from within government.	Suited to small scale projects within a well-established service sector.
Build-Own-Operate-Transfer (BOOT)	A variation of BOT, where a private company finances, operates and owns the project for the project period, after which the facility is transferred to the authority (often at no cost).	Suited if government has a large infrastructure financing gap. Initiators of such projects can also be commercial project sponsors.
Build-Own-Operate (BOO)	A variation of BOT - where the SPV retains ownership of the asset into perpetuity and can sell it to another investor; possibly also in a fully private deal without involvement of public authorities (thus not considered a PPP).	Suited if to local circumstances, where for example no public partner would be required, or where the public authority does not require to re-take ownership.
Rehabilitate-own-operate (ROO) and Rehabilitate-own-operate-transfer (ROOT)	Used for rehabilitation of existing infrastructure but otherwise similar to BOO or BOOT.	Suited for capacity upgrading (e.g. roads).
Design-Build-Finance-Operate (DBFO)	The private sector provides assets, finance (debt and equity) for construction and operation. The public authority pays for the asset on completion and for the services provided - considered an “output- focused contract”.	Suited to a wide range of infrastructure projects like road, rail, airports, and social infrastructure projects such as hospitals, schools, convention centres etc.

Table 4: Type, definition and relevance of various infrastructure operating models³⁻⁵

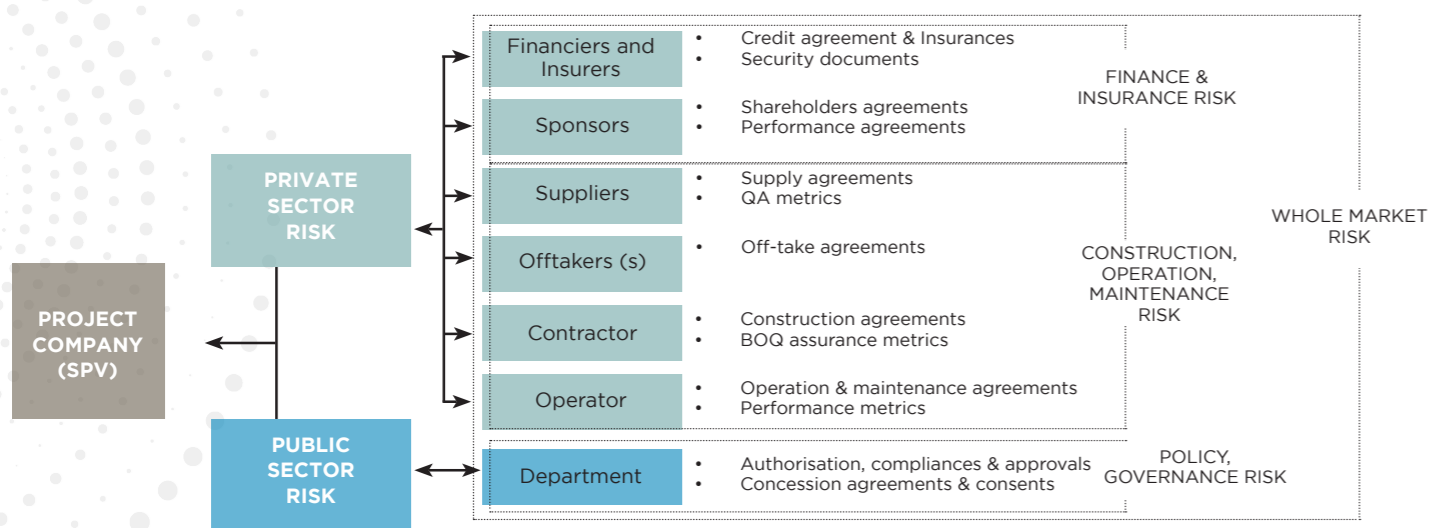


Figure 4: Risk-reward aspects to design equitable partnerships¹⁶

Current global trends, such as government stimulus programmes, the recalibration of infrastructure needs, extreme weather events, and the ongoing digitisation of the public sector, are expected to drive infrastructure investments⁶ and open up new opportunities across the WCIF 2050's priority infrastructure sectors. In response to these trends, the World Bank offers several key policy recommendations for improving infrastructure financing⁷:

- Enhance and strengthen finance for crisis preparedness** to ensure resilience against future shocks.
- Implement fiscal and debt management reforms** in countries facing debt distress, helping them manage their financial obligations more effectively.
- Improve monitoring mechanisms** to assess the impact of private capital mobilisation (PCM), ensuring that investments are efficiently targeted and impactful.
- Intensify efforts to mobilise climate finance**, emphasising the need for investment in sustainable infrastructure that addresses climate change challenges.

These recommendations are crucial for ensuring that infrastructure projects not only meet current needs, but also contribute to long-term sustainability and resilience.

TRADITIONAL AND ALTERNATIVE INFRASTRUCTURE FINANCING IN SOUTH AFRICA

TRADITIONAL PUBLIC FINANCING FOR INFRASTRUCTURE IN SOUTH AFRICA

In South Africa, infrastructure projects have historically been funded primarily through the public sector, with several key sources of financing:

- Public Financing:** Government bodies invest directly from their budgets or borrow funds. This is often constrained by fiscal limitations and competing priorities.
- National Grants:** These include grants through mechanisms like the Division of Revenue (DORA), which carry specific conditions for infrastructure funding.
- Municipal Infrastructure Grants (MIG):** Aimed at local governments, MIG helps fund essential services like water, electricity, and refuse removal.
- Intergovernmental Transfer Grants:** These grants are provided by one government sphere to another for targeted infrastructure initiatives.
- Service Charges:** Revenue generated through user fees or tariffs plays a critical role in local government infrastructure financing.

Examples include:

- Tolling:** User fees collected from toll roads, bridges, and transit systems.

- Service Tariffs:** Fees for utilities like water and electricity, which ensure stable revenue for infrastructure development.

These financing methods reflect the primary sources of public infrastructure funding in South Africa, as illustrated in Figure 5, which outlines the associated conditions and mechanisms.

FUNDING REQUIREMENTS AND INFRASTRUCTURE GAPS

To meet the infrastructure needs outlined in the National Development Plan (NDP)²⁹, which targets 30% gross fixed capital formation by 2030, South Africa requires an additional R140 billion annually for the next seven years. This means that between 16 to 20 megaprojects must be delivered each year. However, both the public and private sectors are currently lagging behind in meeting these targets, necessitating alternative financing strategies to close the gap.

ALTERNATIVE INFRASTRUCTURE FINANCING STRATEGIES

Given the funding shortfall, several alternative financing mechanisms must be explored, including:

- Funding from Development Banks:** Institutions like the DBSA provides funding for infrastructure projects.
- Private Finance:** A range of financial instruments are available, such as:

- Loans:** Commercial loans, syndicated loans (from multiple banks), and bridging finance.
- Bonds:** Infrastructure bonds, including municipal bonds and green bonds, which focus on funding environmentally sustainable projects. Local governments may issue bonds for projects like roads, schools, and public utilities. Green Bonds is a subset of infrastructure bonds, green bonds specifically fund environmentally friendly projects, such as renewable energy, energy efficiency, and climate resilience infrastructure.
- Subordinated Loans and Hybrids:** Instruments that combine debt and equity, or loans that are repaid after senior debt.
- Equity Finance:** Private investors, such as infrastructure funds or investment banks, may provide capital in exchange for ownership interests in high-return sectors like energy or telecommunications.
- Project Finance:** Traditional public-private partnerships (PPPs), Special Purpose Vehicle (SPV) loans, and shortfall guarantees to support the design, construction, and operation of projects.
- Crowdfunding and Community Financing:** Small-scale infrastructure projects or those focused on local needs (such as schools, local roads, or water systems), particularly in rural or underdeveloped areas, may be financed through community-based mechanisms or crowdfunding.

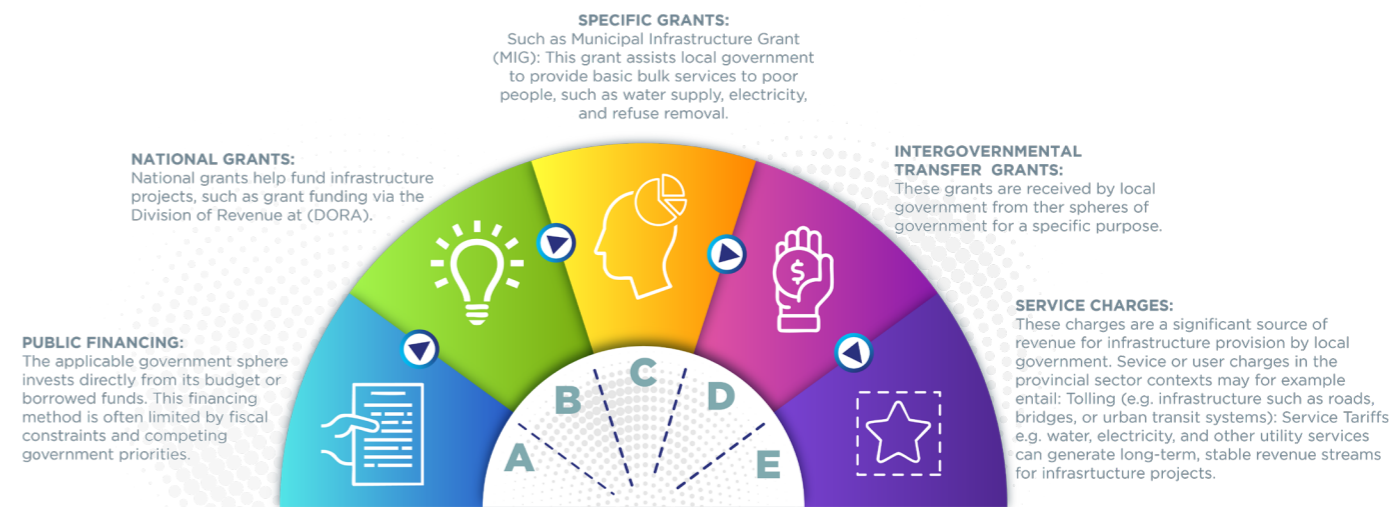


Figure 5: SA public sector funding landscape

- **Foreign Direct Investment (FDI):** Investment from foreign sources, particularly in sectors such as energy, transport, and telecommunications, can provide not only capital but also technology and management expertise.
- **Concessional Finance:** Concessional funding to support projects that aim to tackle climate resilience and sustainability:
 - » *Development Finance Institutions (DFIs).* Developing countries often attract foreign direct investment for infrastructure development, particularly in sectors that can yield high returns, such as energy, transport, and telecommunications. DFIs can bring not only capital but also advanced technology and management expertise to a project.
 - » Development Agencies (DFIDs) may provide grants and technical assistance.
 - » Social Investment Funds.
 - » Climate Finance. As infrastructure development increasingly includes resilience to climate change and environmental sustainability, many developing countries access climate finance through mechanisms like the Green Climate Fund (GCF), the Global Environment Facility (GEF), or carbon markets. These funds can be used to finance green infrastructure projects such as renewable energy, water management, and climate-resilient urban infrastructure.
- **Blended Finance:** Blended finance, a strategy that combines concessional financing with private capital, is a key mechanism to de-risk

infrastructure projects and make them more attractive to investors. Through instruments like guarantees or subordinated debt, this approach helps to reduce the risk of failure or low returns, making projects more viable for private investment. The World Bank suggests blended finance could be a way to improve risk-adjusted returns by mobilising private capital to close infrastructure financing gaps³¹. The same report cites that governments are seeking to use blended finance for scaling innovative infrastructure delivery by de-risked solutions to combine limited public funds to maximise private capital investment. When combined with strategic use of government resources and technical support, blended finance can play an instrumental role in increasing private investments in infrastructure³¹.

Accommodating alternative infrastructure funding mechanisms requires a shift in how transactions are structured and executed. The WCIF 2050 and WCIS 2050 emphasise the importance of pursuing strategic partnerships with the private sector to secure innovative, mutually beneficial financing solutions for infrastructure projects. This collaborative approach leverages private sector expertise and capital, and also fosters sustainable, long-term investment in critical infrastructure, ensuring both financial viability and public value.

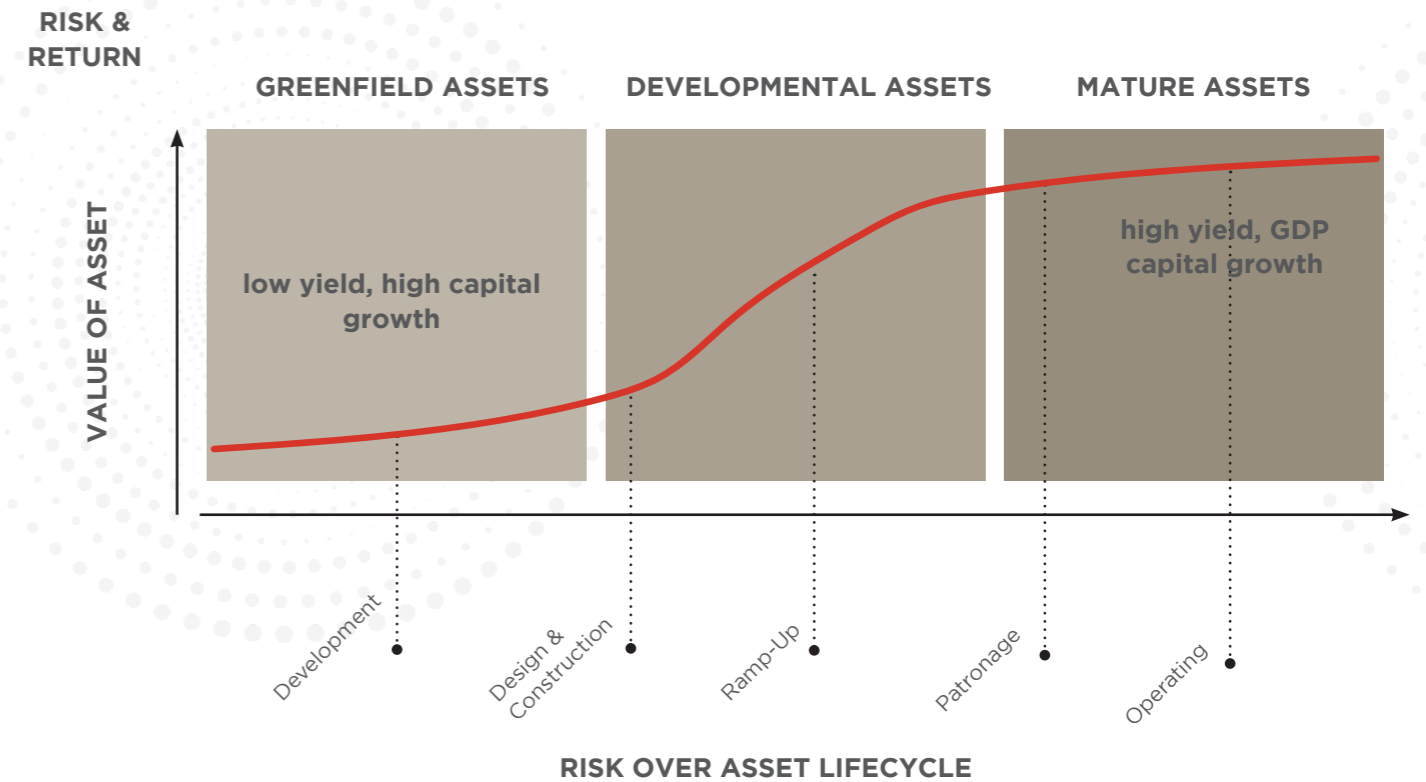


Figure 7: Risk and return profile asset finance

CHALLENGES ASSOCIATED WITH FINANCING INFRASTRUCTURE

Due to the constraints placed on borrowing within the intergovernmental infrastructure system, provinces face significant limitations in leveraging their assets to raise finance for critical infrastructure investments. One of the primary bottlenecks in closing the infrastructure gap is securing sufficient funding and expertise to support the full lifecycle of infrastructure projects, spanning project preparation, planning, implementation, and post-construction maintenance. This is also especially true for ecological infrastructure which has long timeframes.

The WCIS 2050 and WCIIP 2050 provide strategic financial insights to ensure that infrastructure investment decisions across the WCG are efficient, consistent, and aligned with long-term goals. By

adopting this approach, the strategy will maximise the value derived from infrastructure spending while ensuring substantial social and economic returns, ultimately fostering sustainable development.

However, infrastructure transactions face several additional challenges. These include complexities in financing public infrastructure, difficulties in aligning stakeholders, navigating lengthy procurement processes, and managing the risks associated with large-scale projects. Addressing these issues is crucial to overcoming the barriers that currently hinder effective infrastructure delivery, ensuring that projects not only meet immediate needs but also contribute to long-term economic growth and community resilience.

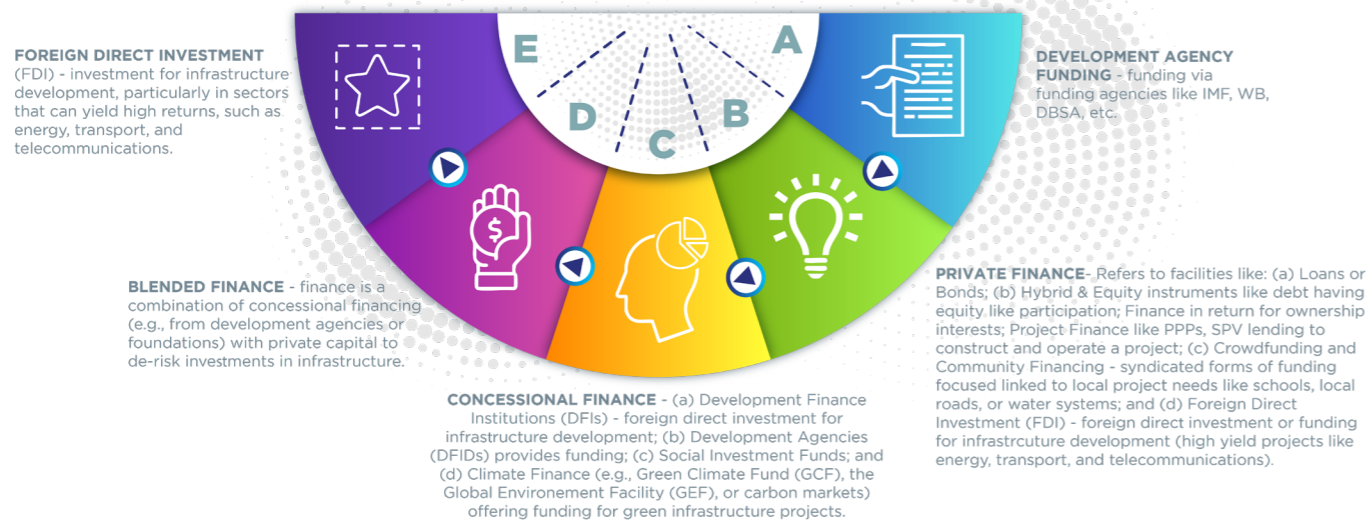


Figure 6: Alternative funding mechanisms

Infrastructure transactions face various other challenges³⁰:

- 1. Long Lead Times and High Upfront Costs:** Infrastructure financing projects have long lead times and high upfront costs. An overall shortage of finance early on in the transaction process hampers the success rate of bringing infrastructure projects to market.
- 2. Capital Intensity of Mega Projects:** Large or mega infrastructure projects are often too capital intensive and may be beyond the reach of a single private financier.
- 3. Damage to infrastructure:** Costs and time delays due to vandalism, security and land invasions.
- 4. User Fees and Public Benefit:** Many infrastructure projects serve the public good, and users cannot always pay the fees required to make the projects financially viable for private investors. This challenge also plays a role in the balancing of transaction outcomes with private sector needs while meeting public needs.
- 5. Complex Transaction Structures:** Releasing public infrastructure assets for transaction purposes can be complicated, requiring multiple stakeholders and complex contracting arrangements. This means that public infrastructure projects in general are not ready for the market within a short period of time.
- 6. Policy and Political Risk:** International investors require policy and political certainty when investing in a foreign jurisdiction. This risk may be increased by negative public opinion on foreign investment.
- 7. Internal Capacity Challenges:** The lack of internal capacity to prepare infrastructure projects for market readiness poses a significant risk to successful project delivery. To address this, the WCG will need to explore partnerships with organisations like ISA and other international development partners to provide long-term technical assistance. This support will be critical in helping the WCG finance project preparation and build the necessary skills to move each project in the pipeline toward financial close, ensuring a robust and sustainable infrastructure project pipeline.

LOCAL GOVERNMENT AND PROVINCIAL POLICY AND LEGISLATIVE PROVISIONS IMPACTING INFRASTRUCTURE PROJECT FINANCING AND EXISTING CAPABILITY

The Municipal Finance Management Act (MFMA) of 2003 is a South African law that aims to improve financial management in local government. The MFMA's goal is to ensure that municipalities can deliver services sustainably. The MFMA allows municipalities to borrow money to fund capital projects and infrastructure. The MFMA's policy framework aims to ensure that municipalities borrow responsibly and that all municipalities have access to resources to provide basic services.

Section 66 of the Public Finance Management Act (PFMA) places important limitations on provincial borrowing, aligning it with the provisions of the Borrowing Powers of Provincial Governments Act, 1996 (Act 48 of 1996). These provisions restrict borrowing to capital expenditure and bridge financing, thereby limiting the ability of provincial governments to access funds for large-scale infrastructure investments. Under the PFMA, borrowing must occur within strict limits and is subject to approval by the National Treasury. This ensures that borrowing aligns with national fiscal policy and guidelines, reinforcing the principle of fiscal responsibility. Provincial governments are required to exercise stringent control over public finances, ensuring that infrastructure investments are fully financed within their approved budgets and without undue reliance on borrowing that could jeopardise the province's fiscal health.

Provincial governments must also adhere to the public debt management framework set by the National Treasury, which includes thorough documentation and reporting requirements for all borrowing arrangements. The PFMA mandates compliance with the Public Debt Management Act, 2022 (Act 15 of 2022), ensuring that infrastructure financing is managed transparently and aligns with the broader public debt strategy.

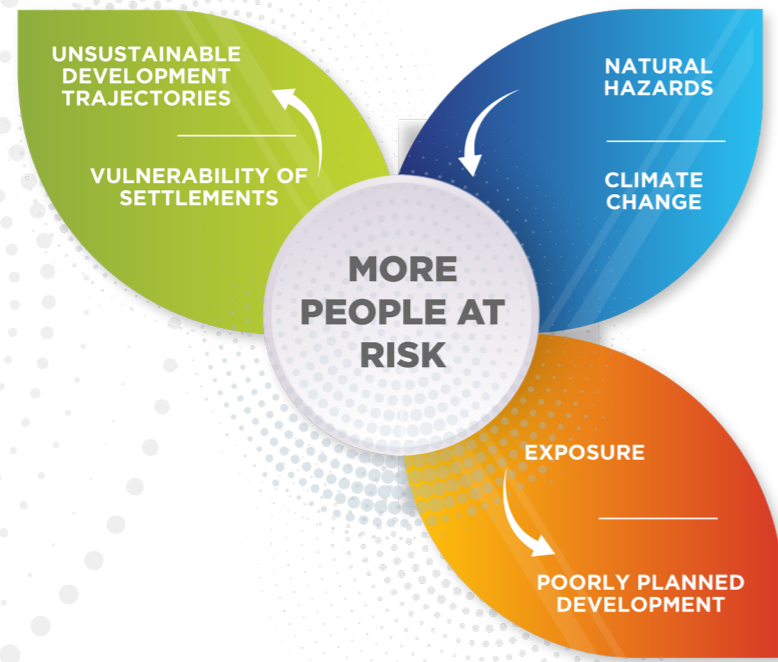


Figure 8: South African District Development Model (DDM)

Public-Private Partnerships (PPPs), as defined by the National Treasury, are regulated under **Traditional Treasury Regulation 16**, issued under the PFMA. PPPs have become one of the most common methods for financing infrastructure projects in developing countries, enabling governments to leverage private sector efficiency, capital, and expertise while mitigating the immediate fiscal burden on the public sector. In these arrangements, the private sector typically takes on the construction, operation, and maintenance of infrastructure, while the government provides the necessary assets. All PPPs must pass through a four-phase approval process: feasibility study, procurement, value-for-money assessment, and the final PPP agreement. Additionally, PPPs are subject to regulatory tests to ensure compliance, with revenue guarantees (e.g., tolls, service fees) serving as a key aspect of the regulatory framework.

It is also important to note that the Public Procurement Act, 2024 (Act 28 of 2024) is expected to significantly impact infrastructure procurement once enacted, further shaping the legal landscape for infrastructure financing.

As outlined in the WCIF 2050, the allocation of funds for infrastructure within the WCG addresses challenges in various sectors, including roads, health, education, human settlements, and public works. A strategic investment response to these

challenges require effective management of competing priorities and clearly defined roles and responsibilities for infrastructure custodians and users, as outlined in the Government Immovable Asset Management Act, 2007 (Act 19 of 2007).

EXISTING CAPABILITY IN THE WCG

Furthermore, the investment strategy needs to be aligned with the District Development Model (DDM) to maximise value in local government infrastructure.

The **South African District Development Model (DDM)**, as illustrated in the diagram, emphasises the critical need to address risks associated with unsustainable development, vulnerability of settlements, and exposure to natural hazards, which collectively place more people at risk. The DDM is designed to provide an integrated and collaborative approach to infrastructure development at the district level, focusing on sustainability and long-term resilience.

The DDM seeks to reduce risks by aligning government efforts across national, provincial, and local levels. It incorporates lessons from the international community, focusing on sustainable development, inclusive growth, and improving service delivery. In the context of infrastructure financing, the DDM encourages strategic collaboration to mitigate risks that arise from unsustainable development

trajectories and poorly planned settlements, both of which can exacerbate vulnerabilities in the face of climate change and natural hazards. The DDM emphasises the importance of addressing these risks through holistic and inclusive planning, which directly contributes to the long-term success of infrastructure projects.

The Joint District and Metro Approach (JDMA) is a framework that allows the three spheres of government in the Western Cape to work together to develop strategic, developmental, and planning priorities. The Western Cape Government (WCG) endorses the JDMA as part of the DDM.

The JDMA process involves:

- **Alignment and support:** The Municipal Economic Support unit of the WCG supports local policy positions, plans, and delivery linked to the JDMA.
- **Catalytic projects:** The WCG works with municipalities to implement projects that benefit local businesses.
- **Public and private sector coordination:** The WCG builds coordination between the public and private sectors to strengthen local business ecosystems.
- **District JDMAs Implementation plan:** The District Municipalities lead the implementation plan, identifying priorities to be addressed through the JDMA process.

By leveraging the JMDA, the Western Cape can optimise infrastructure financing and deliver projects that meet the needs of local communities while fostering long-term growth and resilience. Tied to this, another emerging financial support tool relates to how the WCG are already interfacing and working with Investment South African (ISA) and the Development Bank of Southern Africa, regarding project preparation activities that may be supported and aided by these agencies. Costs for pre-engineering activities, be they pre-feasibility studies, assessments, pre-planning project documents, etc., are central to facilitate project preparation in the early stages.

TIMING THE FINANCING OF INFRASTRUCTURE

Getting the timing right for infrastructure financing is important considering the early project preparation stages contain the higher risks and greater need for specialists, see equity finance

coming mostly from sponsors (e.g., construction companies, or governments). Raising affordable capital is challenging since sponsors may not have the budget whilst contractual and regulatory uncertainty may deter private investors. Investors could use syndication for a comparative advantage since they have the expertise to monitor projects, and if needed, restructure the financing.

The public sector plays a key role in driving down risks and costs of finance at this stage. These capabilities include³ better alignment to policies, boosting domestic resources, expanding fiscal space for public investment, increasing capacity for PPP administration, and the deployment of sustainable procurement rules.

Given the high risks at the project preparation stage, and because it also takes place well before any revenue streams are realised, it is not the ideal time to bring private, especially non-local, investors onboard³. There are benefits to involving the private sector early as it provides incentive to build partnership efficiency and avoid costly overruns.

Importantly, for several reasons, early-stage funding across countries is often most effectively provided through government finance. While foreign direct investment (FDI) and Development Finance Institutions (DFIs) play a crucial role during both the early and operational phases of a project, government finance is typically essential at the outset. This is due to the higher risks and uncertainties during the project preparation phase, where public sector financing can provide stability and attract further investments³.

In other words, since the design to construction phase is riskiest, this should ideally be supported via public finance. Governments can also make a difference by adopting a strong, uniform price signal as it drives scaling up private finance by reducing risk. This also favours localisation financing, since most infrastructure projects generate local-currency revenues, making external finance in foreign currencies riskier. In a public sector strategy, once projects are operational and its costs and revenues are more certain, the default risk is reduced, making refinancing possible. Ownership can shift from governments, banks and construction companies to investors with specialised expertise in operating and managing the asset. This strategy sees the asset itself being securitised and sold as bonds to the private sector with the capital being recycled back

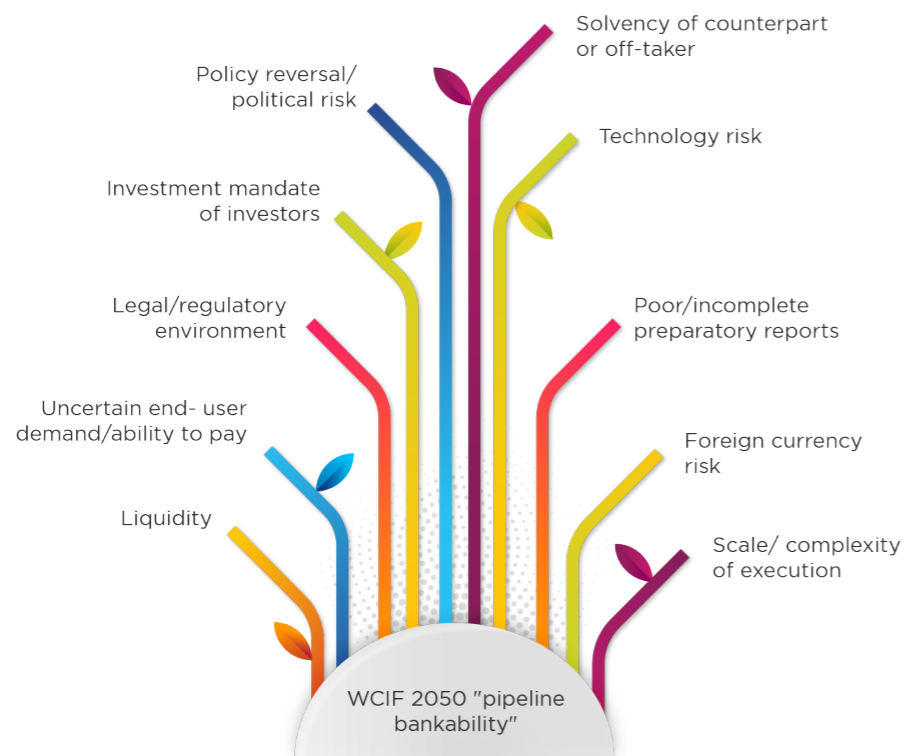


Figure 9: Building project pipeline bankability^{3,12}

to finance new infrastructure investments³. However, Provincial Governments cannot issue bonds, as this is currently only an option for municipal and national governments in the South African context.

MAKING INFRASTRUCTURE PROJECTS BANKABLE

In emerging economies direct foreign investments (DFIs) can play a key role in both the early and operating stages. DFIs can bring convening power that reduces the perceived risks that can be used to obtain innovative instruments to crowd in private sector finance³. This is central to the WCIS 2050's financing strategy as it is designed to ensure the lowest cost of financing to build a reliable and bankable project pipeline¹², as illustrated in Figure 9.

Building a reliable and bankable project pipeline is at the core of the WCIIP 2050. The objective is to secure the lowest possible cost of financing, while ensuring the development of market-ready projects that can attract long-term investments. International DFIs offer relatively low-cost capital due to their favourable loan interest rates, making them an attractive option for financing. Additionally, the foreign exchange risk can be mitigated by partnering with a local investment bank, which assumes the FX risk, further improving the project's

financial viability. This is particularly important as the WCIIP 2050 is designed to ensure the successful identification, preparation, and delivery of bankable infrastructure projects, as depicted in Figure 9.

The WCIF 2050, WCIS 2050 and WCIIP 2050 recognise the power of collaborating and sharing limited resources between provincial government and local government. This partnership is essential in creating an improved understanding of financing, and funding models that are harmonised and adaptable, contributing to the development of bankable and market-ready project pipelines¹². This support is also necessary since it provides programme managers the ability to understand long-term financing⁵ so as to better prepare project pipelines coherently.

A key tool in building bankable projects is the Municipal Infrastructure Investment Framework (MIIF), which quantifies the funding requirements for different municipal services, classified into high, medium, and low-capacity categories. By assessing the levels of capital and operating expenditures relative to available finance, the MIIF allows municipalities to make informed decisions and plan more effectively, ensuring that projects are feasible and financially sound.

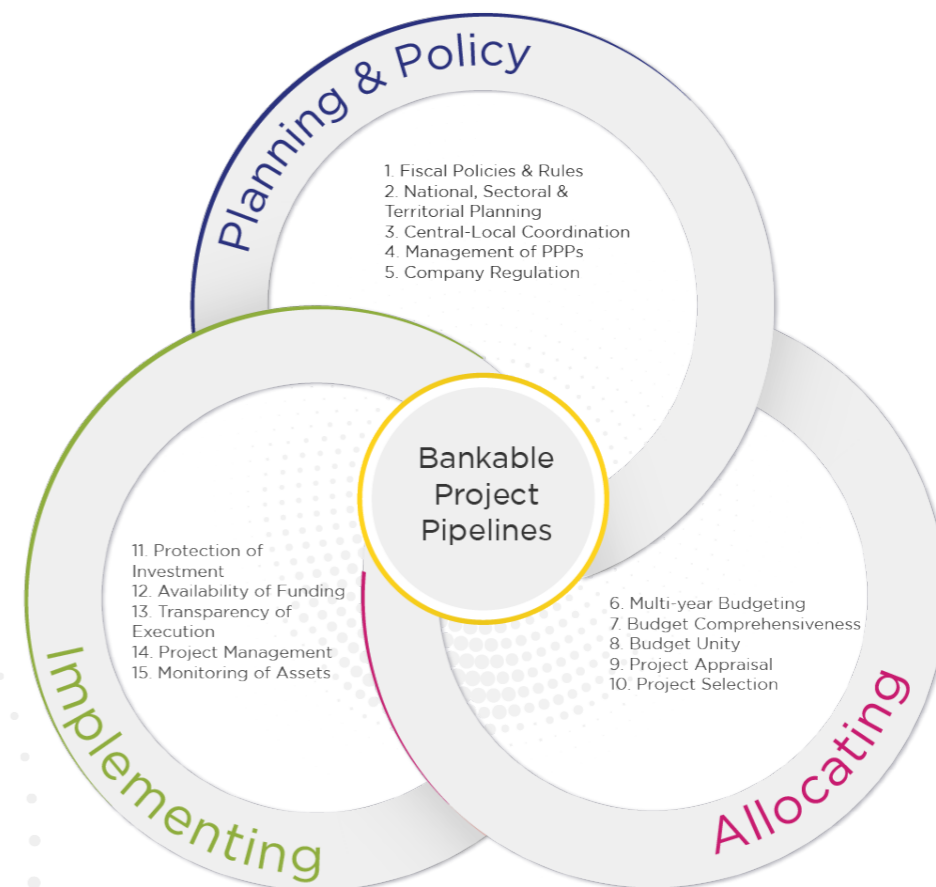


Figure 10: Public sector capabilities to build bankable project pipelines¹⁵

Based on insights from international research, including IMF research¹⁵, the WCIIP 2050's financing strategy supports the WCIF 2050 vision and is an integral component of achieving long-term infrastructure goals. As depicted in Figure 10 below, significant improvements in the framework's processes and practices will enhance the ability to create a pipeline of bankable projects that align with market demands and investor expectations.

The WCIS 2050 is informed by the WCIF 2050's Panoptic Principles, which require its consistent migration into the WCIIP 2050, i.e., its implementation or practices at project level. This approach is informed by lessons learned from multilateral agencies such as the IMF, World Bank, and the OECD^{15,7}, combining their expertise with the most aggressive infrastructure delivery data in modern history³. This approach helps to create robust governance structures for infrastructure financing and partnerships, ensuring equitable risk-return sharing across all project stakeholders.

Effective risk management and allocation are central to the success of infrastructure projects. The public sector, as a key player in public infrastructure, must assume its fair share of risk, while also ensuring that risks are not excessive. Proper risk allocation ensures that projects are resilient and capable of responding to unforeseen challenges, thus maintaining financial stability throughout their lifecycle.

Risks should also be allocated with the public sector managers since they are a key party in public infrastructure projects. This way, sound risk allocation and its management allows projects to react to unexpected risk events⁵. Flowing from these strategic insights of infrastructure financing and partnerships, Figure 11 illustrates how each phase of the infrastructure ecosystem has similar risks that require mitigation planning⁵.

The infrastructure financing ecosystem is made up of various stakeholders, each with distinct roles and responsibilities. These parties, which include⁵ shareholders, lenders, grantors, contractors, input

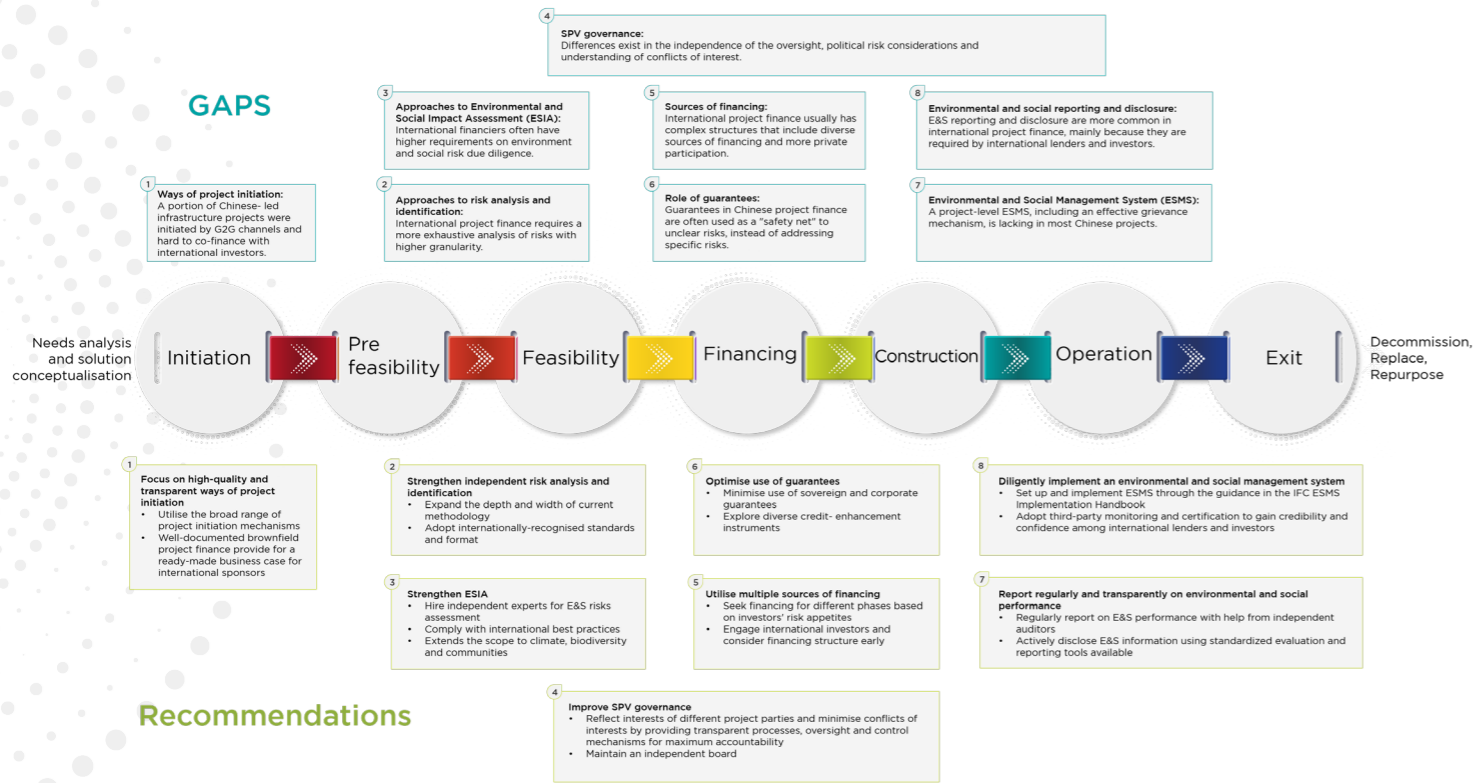


Figure 11: Public finance gaps requiring mitigation⁵

suppliers, operators, and off-take purchasers, must all work in tandem to ensure the financial success and sustainability of the project. By identifying potential finance gaps and implementing mitigation strategies, the project finance process can remain flexible and adaptable to changing economic conditions.

By integrating these approaches into the infrastructure development process, projects can be structured in a way that ensures their financial viability, making them attractive to investors and capable of meeting the long-term needs of the community.

CONCLUSION

The financial challenges facing infrastructure development in South Africa are complex, particularly within a constrained fiscal environment. The WCIF 2050, through its focus on strategic financial insights and alignment with the Panoptic Principles, seeks

to create an adaptive framework that supports the effective implementation of the WCIS 2050 and WCIIP 2050. The emphasis on collaboration across provincial and local governments, coupled with a common financing narrative, ensures that resources are mobilised efficiently, minimising transaction costs and fragmentation. This collaborative approach, which encourages leveraging both public and private sector contributions, is critical to building sustainable and bankable infrastructure projects that will meet the nation's long-term development goals.

The distinction between funding and financing is essential for understanding how infrastructure projects are supported. Funding typically refers to the allocation of resources without repayment obligations, often through public means like taxation or grants. In contrast, financing involves structuring financial flows to achieve project goals, often through loans, bonds, or private investments. As South Africa seeks to meet its infrastructure needs outlined in the NDP, alternative financing mechanisms, such as

borrowing and blended finance, play an increasingly important role. These strategies provide the flexibility needed to bridge the significant funding gaps while addressing the need for sustainable, climate-resilient infrastructure.

Despite the potential for alternative financing strategies, numerous challenges remain in aligning financing options with infrastructure projects. These include long lead times, high upfront costs, and the complexities of structuring PPPs and other project finance arrangements. Effective risk management and equitable risk-sharing are fundamental to ensuring the success of these projects. The WCIS 2050 and WCIIP 2050 highlight the importance of creating robust governance structures that ensure that risks are managed transparently and that public sector involvement remains central in mitigating the risks that come with large-scale infrastructure investments. This approach helps ensure that projects can attract private sector capital while remaining resilient to unforeseen challenges.

In conclusion, making infrastructure projects bankable is a critical component of ensuring the successful delivery of sustainable and resilient infrastructure. The integration of strategic financial insights, as outlined in the WCIS 2050 and WCIIP 2050, ensures that projects are not only financially viable but also aligned with long-term development goals. By focusing on effective risk management, equitable risk allocation, and leveraging public-private partnerships, the WCG can build a robust pipeline of bankable infrastructure projects that attract both domestic and international investment. This collaborative approach, guided by the Panoptic Principles, ensures that infrastructure projects are structured to meet the needs of communities (especially Women, Youth, the Elderly and Persons with Disabilities) while achieving both financial returns and significant social, economic and environmental benefits. ●



CHAPTER 7

MONITORING AND EVALUATION FRAMEWORK

INTRODUCTION

The WCIF 2050 Monitoring and Evaluation (M&E) strategy establishes a comprehensive and operational framework to address systemic challenges in infrastructure planning and delivery, ensuring alignment with the WCG’s broader strategic objectives. This strategy emphasises integration, harmonisation, and collaboration to mitigate issues such as fragmented planning, misaligned roles, and inefficiencies in service delivery. The inclusion of Communities of Practice (COPs) and advisory panels provide an inclusive platform for diverse stakeholders to engage across the infrastructure lifecycle, fostering innovation, trust-based partnerships, and shared accountability.

At its core, the M&E framework distinguishes between monitoring and evaluation processes, recognising their complementary roles in assessing project inputs, outputs, and outcomes. By incorporating key performance metrics, such as financial sustainability, timeline adherence, stakeholder engagement, and environmental compliance, the framework ensures a systematic approach to tracking and enhancing project performance. It integrates meta-level monitoring strategies that align the WCIF 2050 and WCIS 2050 with provincial policies like the PSDF, PLTF, and G4J. These transversal strategies address gaps in traditional departmental M&E models by promoting cross-sectoral collaboration, learning, and resource optimisation, ensuring that all stakeholders effectively contribute to the infrastructure ecosystem.

Furthermore, the inclusion of the Theory of Change and Logic Model Framework allows the WCG to map clear pathways for achieving long-term goals while

fostering iterative learning and adaptability. This approach shifts the focus from outputs to outcomes and impacts, ensuring that infrastructure projects align with the WCG’s strategic objectives for resilience, inclusivity, and sustainability. By delivering long-term social, economic, and environmental benefits, the M&E framework reflects the WCG’s commitment to sustainable development while supporting effective governance and fostering organisational learning.

MONITORING AND EVALUATION FRAMING

The progress of the field of M&E in South Africa has been a comparatively recent phenomenon. It has been suggested that part of the reason is the slow development of programme evaluation in South Africa, as well as the particular political and selective use of social science research pre-1994 during the Apartheid era. In the last 20 years of South African history, there has been a huge increase in the number, scope and quality of evaluations conducted¹. As a modern constitutional state, South Africa has various M&E frameworks and monitoring structures across the different spheres of government. These include a ministry responsible for M&E, the Government-wide M&E System (GWMES), adopted by the 2005 national government as a cross-cutting framework to look at monitoring and evaluation of the activities of all departments in government, which was followed by various evaluation frameworks such as the National Evaluation Plan¹, not to mention a variety of legislatively mandated reporting requirements to the various treasuries, executive and auditing bodies.

The purpose of this chapter is however not to reiterate the various M&E functions already in existence in the WCG, but to provide an M&E framework applicable to the transversal and integrated infrastructure

MONITORING AND EVALUATION ARE TWO SEPARATE ACTIVITIES TAKING PLACE AT DIFFERENT STAGES OF A PROGRAMME

MONITORING:	EVALUATION:
<ul style="list-style-type: none"> Routine collection and analysis of information to track progress against set strategies and plans. Include processes, compliance, financial, organisational and situational monitoring. Reports comparisons, differences, similarities between datasets. 	<p>A systematic assessment of a programme/project outcomes and impact against programme policy, design, implementation and results.</p> <p>It may include evaluation of:</p> <ul style="list-style-type: none"> The entire intervention - Systemic Evaluation (End of Programme); or Parts of an intervention - Process Evaluation Outcome Mapping Mid-term assessment.

Table 1: Difference between monitoring and evaluation

activities as foreseen in the WCIS 2050 and to describe how this M&E framework will interact with the infrastructure governance structure as foreseen in Chapter 4 of the WCIS 2050. The WCIS 2050 (Chapter 9) highlighted the key aspects for M&E decision making, being participatory, holistic, critical, realistic, learning based, accountable and complex.

A monitoring and evaluation system is a set of organisational structures, management processes, standards, strategies, plans, indicators, information systems, reporting lines and accountability relationships which enables government to discharge their M&E functions effectively. In addition to these formal managerial elements are the organisational culture, capacity and other enabling conditions which will determine whether the feedback from the M&E function influence the organisation’s decision-making, learning and service delivery². Monitoring and evaluation are two complementary but distinct processes within a M&E framework.

Monitoring involves collecting, analysing, and reporting data on inputs, activities, outputs, outcomes and impacts as well as external factors, in a way that supports effective management. Monitoring aims to provide managers, decision makers and other stakeholders with regular feedback on progress in implementation. Key M&E concepts results, and provides early indicators of problems that need to be corrected. It usually reports on actual performance against what was planned or expected³. Evaluation is a time-bound and periodic exercise that seeks to provide credible and useful information to answer specific questions to guide decision making by staff,

managers and policy makers. Evaluations may assess relevance, efficiency, effectiveness, impact and sustainability. Impact evaluations examine whether underlying theories and assumptions were valid, what worked, what did not and why. Evaluation can also be used to extract crosscutting lessons from operating unit experiences and to determine the need for modifications to strategic results frameworks⁴.



Figure 1: M&E as part of organisational management

M&E frameworks are tailored to specific purposes and programme outcomes, embedding them into an organisation’s structure and operations as part of its standard activities. They should function as comprehensive, operational tools that drive effective delivery, adaptability, and compliance of infrastructure projects, aligning with the strategic objectives of the WCIF 2050 and the sector priorities of WCIS 2050. By focusing on operational efficiencies, project-level impact, and adherence to governance standards, the M&E Framework must ensure that the infrastructure projects support the province’s economic, social, and environmental priorities.

The M&E Framework is designed to track project performance, provide actionable insights, and foster accountability, ultimately ensuring that all projects meet both short-term objectives and long-term regional development goals. Refer to Figure 1.

There are different types of monitoring based on the purpose and timing of the proposed assessment⁶ as set out in Figure 2.

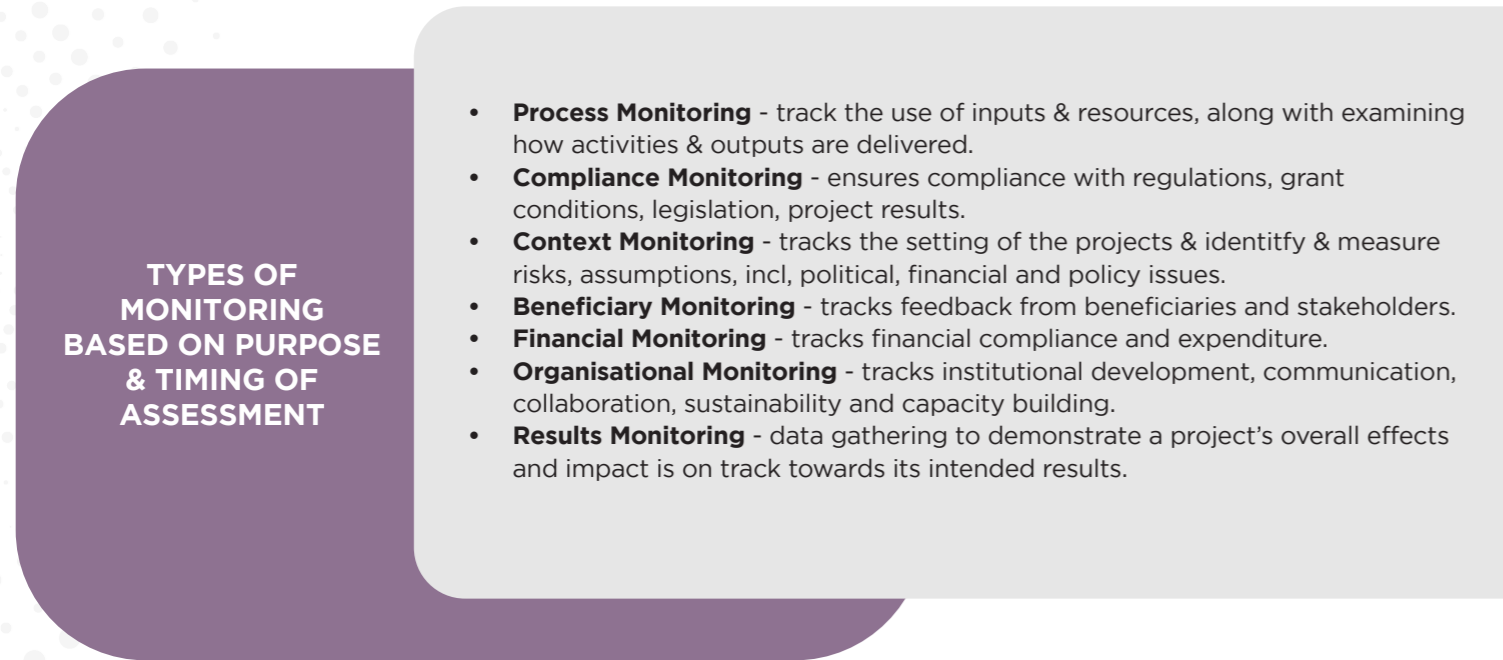


Figure 2: Monitoring Types

Evaluation activities vary based on monitoring requirements and can be either prospective or retrospective.

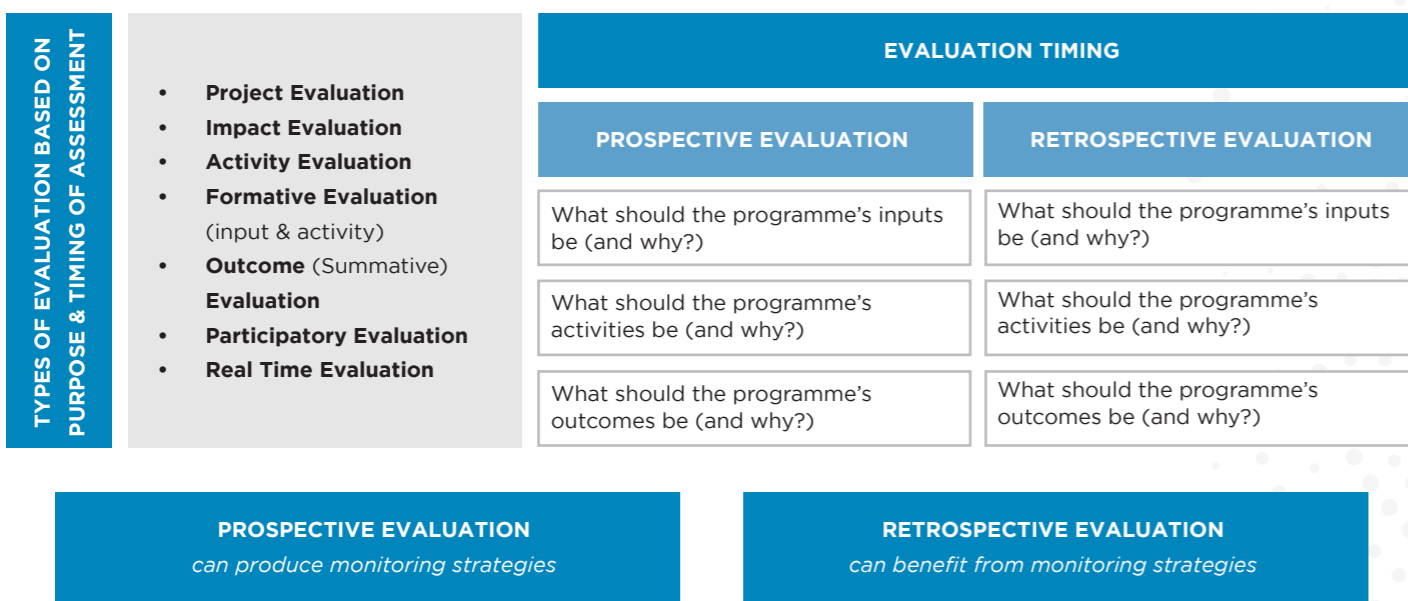


Figure 3: Evaluation types and timing

The M&E Framework is designed to address the specific needs of infrastructure implementation within the WCG, providing a roadmap for effective project planning, execution, and evaluation. The M&E framework has the following purpose:

KEY FOCUS AREA	EXPLANATION
1. Operational Efficiency	The M&E Framework emphasises efficient resource utilisation, ensuring that projects are completed within the allocated budget and timeframes. This objective is central to achieving cost-effective infrastructure development that maximises the return on investment.
Adherence to Project Timelines	Timely delivery of infrastructure projects is essential for meeting the province's developmental targets. The Framework includes specific time-based indicators that monitor project progress against planned milestones, enabling early intervention if delays occur.
Stakeholder Satisfaction	Stakeholder engagement and satisfaction are key priorities, as infrastructure projects have a direct impact on communities. The M&E Framework includes metrics for tracking stakeholder feedback, engagement quality, and overall satisfaction, fostering an environment where community needs are heard and addressed.
Compliance with Quality Standards	Ensuring infrastructure quality is critical for project longevity and user safety. The M&E Framework sets quality benchmarks for various project components, ensuring that construction materials, methodologies, and processes meet provincial and national standards. By addressing these objectives, the M&E Framework will ensure that infrastructure projects are completed on time, within budget, and to high-quality standards, ultimately contributing to the Western Cape's sustainable development goals.
2. Detailed Project-Level Indicators	To track project performance comprehensively, the M&E Framework will use specific, measurable indicators that reflect each phase of the infrastructure project lifecycle. These indicators provide a granular view of project progress, enabling targeted interventions when necessary.
Financial Performance Metrics	Cost control is essential for efficient project delivery. Financial metrics include budget adherence, cost overruns, and expenditure rates. Monitoring these indicators will ensure that projects remain financially sustainable, reducing the risk of funding shortfalls that could impact project completion.
Timeline Compliance	Each project phase, from planning and design to construction and final inspection, will be monitored against specific timelines. These metrics include indicators like percentage of project milestones met on schedule, delays in phase transitions, and estimated completion time versus actual progress. Early warning signals are generated if a project deviates significantly from the planned timeline, allowing for timely corrective actions.
Stakeholder Engagement Metrics	Effective stakeholder engagement is vital to gaining community support and ensuring project success. Metrics such as the number of stakeholder meetings, participation rates, community feedback ratings, and stakeholder satisfaction scores provide insights into how well the project aligns with public expectations and community needs.
Environmental Compliance	Environmental indicators track adherence to environmental regulations and sustainability practices, such as waste management, emissions reduction, and biodiversity protection. These metrics ensure that projects minimise negative environmental impacts, supporting the WCIIP 2050's commitment to eco-friendly infrastructure development.
Social Impact & Accessibility	Metrics related to social impact assess whether projects enhance accessibility, inclusivity, and social equity. Indicators include proximity to underserved communities, provision for disabled access, and the equitable distribution of project benefits. These metrics will ensure that infrastructure projects contribute positively to reducing social disparities.
Safety & Quality Compliance	Safety metrics evaluate adherence to occupational health and safety standards, ensuring that construction sites are managed responsibly and that completed infrastructure is safe for public use. Quality compliance metrics will ensure that construction meets or exceeds specified standards, preventing the need for costly repairs or replacements in the future. These detailed indicators will enable precise tracking of each project's operational performance, financial health, and social impact, by ensuring that a well-rounded evaluation supports successful project outcomes.

KEY FOCUS AREA	EXPLANATION
3. Compliance with Governance Standards	To maintain public trust and ensure ethical project management, the WCIIP 2050's M&E Framework is embedded within broader provincial and national governance structures, with specific alignment to the Public Finance Management Act (PFMA) and Municipal Finance Management Act (MFMA).
Transparent Budgeting & Financial Reporting	Projects are required to adhere to strict budgeting protocols, with all expenditures documented and publicly reported. This transparency will ensure that funds are allocated and utilised responsibly, thereby minimising the risk of financial mismanagement.
Ethical Resource Allocation	Compliance with governance standards includes fair and ethical procurement practices, ensuring that all suppliers, contractors, and partners are selected through competitive and transparent processes. This prevents favouritism, reduces costs, and ensures that resources are allocated effectively.
Alignment with Legal Requirements	The M&E Framework includes regular compliance checks to ensure that projects meet all regulatory standards, including environmental regulations, construction codes, and labour laws. Compliance with these standards is mandatory, and any deviations are reported and addressed promptly to avoid legal repercussions.
Risk Management and Audit Processes	The M&E Framework includes provisions for periodic audits and risk assessments. These processes help identify potential risks early in the project cycle, allowing project managers to implement risk mitigation strategies. Regular audits will provide an additional layer of oversight, promoting accountability and adherence to governance standards. By embedding governance compliance into the M&E Framework, the WCIIP 2050 reinforces a culture of accountability, integrity, and transparency, ensuring that projects are executed responsibly and in line with public expectations.
4. Integration of Feedback Loops	A defining feature of the WCIIP 2050's M&E Framework is its use of continuous feedback loops to enhance adaptability and responsiveness.
Feedback Collection at Each Phase	Feedback is collected at key project stages, planning, implementation, and post-completion, allowing for timely adjustments. This approach will ensure that projects remain aligned with evolving community needs, stakeholder expectations, and regulatory requirements.
Community & Stakeholder Engagement	Feedback from local communities (especially Women, Youth, the Elderly and People with Disabilities), end-users, and stakeholders is gathered through surveys, town halls, and focus groups. This input will provide valuable insights into public perceptions and concerns, and will enable project teams to make informed adjustments that enhance project relevance and support.
Adaptive Management	The feedback-driven approach will enable adaptive management, where projects are dynamically adjusted based on real-time input. This includes recalibrating timelines, reallocating resources, or revising project scopes to better meet on-the-ground realities. Adaptive management will enhance resilience, enabling projects to respond effectively to unforeseen challenges or changes.
Post-Implementation Evaluation	After project completion, feedback loops are used to evaluate the project's long-term impact and success. This stage will include gathering input on infrastructure usability, community satisfaction, and areas for improvement, and will provide valuable lessons for future projects. By incorporating feedback loops at multiple stages, the WCIIP 2050's M&E Framework will promote a culture of continuous learning and improvement, and ensure that infrastructure projects remain relevant, adaptable, and effective over time.

KEY FOCUS AREA	EXPLANATION
5. Capacity-Building Initiatives	Effective monitoring requires skilled personnel who can apply the M&E Framework rigorously and effectively.
Training Programmes for Municipal and Provincial Staff	Training would need to be provided on monitoring methodologies, data analysis, and reporting practices to ensure that all personnel involved in project oversight are equipped with the necessary skills. This training needs to include workshops on using digital tools, interpreting data, and applying feedback to improve project outcomes.
Skill Development in Data Management	Given the increasing reliance on data-driven decision-making, the WCIIP 2050 supports skills development in data collection, management, and analysis. Personnel need to be trained to use software for tracking project metrics, to ensure efficient and accurate data handling throughout the project lifecycle.
Mentorship and Peer-Learning Programmes	The WCIIP 2050 advocates for the use of mentorship programmes and peer-learning opportunities where experienced project managers share insights and best practices with newer staff. This knowledge exchange promotes a deeper understanding of M&E practices and will strengthen monitoring capabilities at all levels of government.
Continuous Improvement Culture	Capacity-building initiatives foster a culture of continuous improvement by empowering staff to identify inefficiencies, propose solutions, and implement improvements. This approach promotes accountability and enhances the overall effectiveness of the M&E Framework. These initiatives ensure that municipalities and provincial departments are well-prepared to implement the M&E Framework effectively, and it will foster a sustainable and accountable project monitoring culture.
Transparency and Reporting	Transparency is a core principle of the M&E Framework, and regular reporting is essential for building public trust and ensuring stakeholder engagement.
Scheduled Reporting to Stakeholders	Progress reports are generated at designated intervals and shared with stakeholders, providing updates on financial performance, project milestones, and any deviations from the initial plan. These reports will foster transparency and keep stakeholders informed and will reinforce public confidence in the project's progress.
6. Public Accessibility of M&E Reports	Key reports need to be made publicly accessible via a website and other communication channels. This openness will allow community members, advocacy groups, and the media to monitor project progress, increasing transparency and accountability.
Real-Time Dashboard Access	The M&E Framework needs to include real-time dashboards accessible to key stakeholders. These dashboards will provide live updates on project status, including budget use, timeline adherence, and community feedback. The use of digital dashboards allows for instantaneous reporting and better-informed decision-making.
Annual Performance Reviews	Annual reviews summarise project outcomes, lessons learned, and areas for improvement. These reviews need to be shared with provincial authorities, municipalities, and other stakeholders, as it will enable comprehensive reflection on successes and challenges encountered. Through these reporting mechanisms, the M&E Framework will ensure that project developments remain transparent, building trust among stakeholders and supporting informed public oversight.

Table 2: Purpose of the M&E framework

If the M&E framework is overlaid with the infrastructure governance structure the various monitoring and evaluation functions within the infrastructure governance structure can be highlighted. The WCIS 2050 explains and provides a detailed infrastructure governance model.

Figure 4 provides a detailed functional description of the tasks and activities of each functionary within the infrastructure governance structure. Through the various peer, public participation and consultation structures within the infrastructure governance model, beneficiary monitoring can be accommodated as part of the structure's monitoring activities.

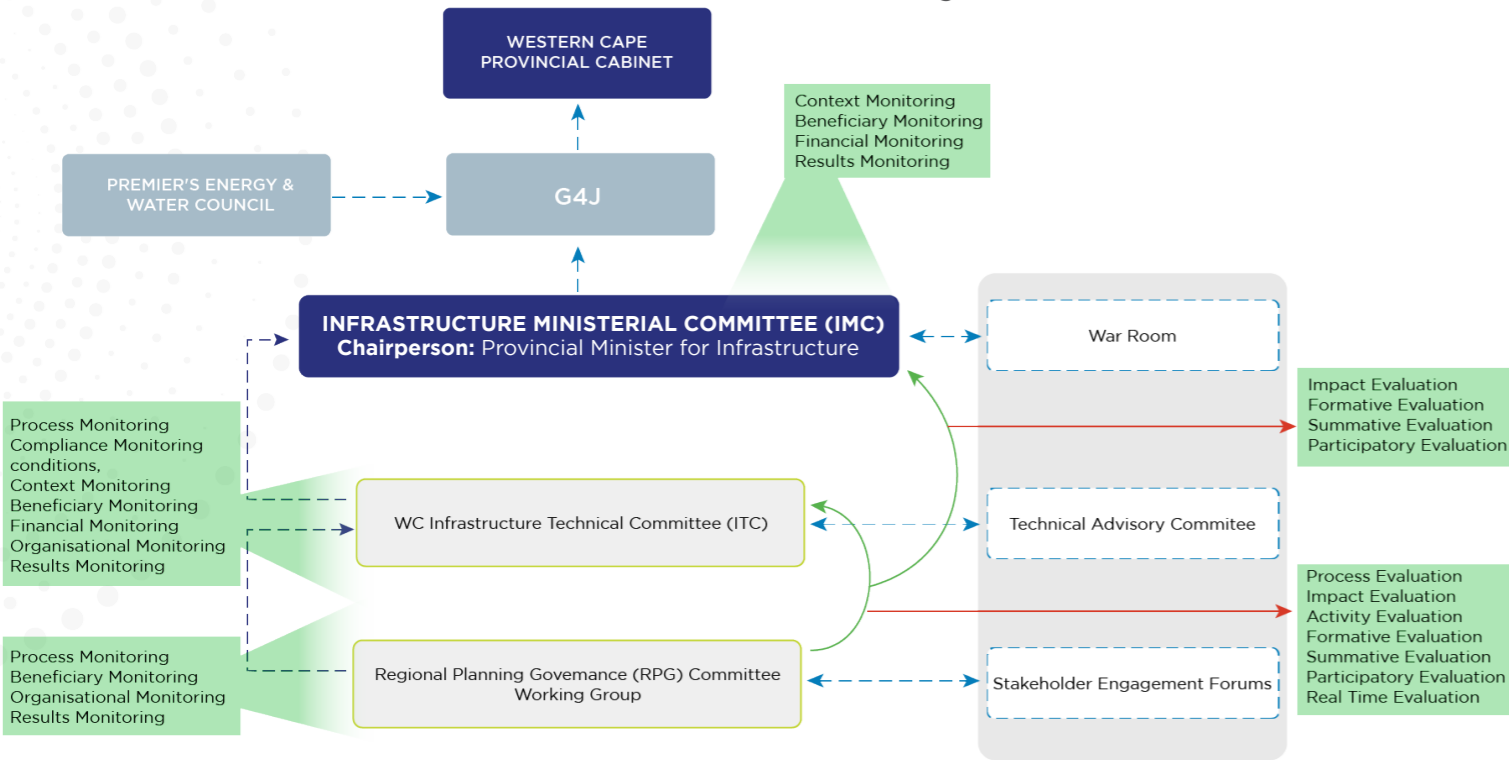


Figure 4: Infrastructure governance model task description

	AUTHORITY TO APPROVE	CONSISTENCY IN PROJECT PACKAGING	INFRASTRUCTURE IMPLEMENTATION, MANAGEMENT & MAINTENANCE
Governance & management		ITC RPG	RPG Depts. Munics. Other
Activities	Guide, Appraise, Feedback (see 1, 2+8 in governance model)	Review, Select, Feedback (see 3, 4+8 in governance model)	Implement, Adjust, Operate, Feedback (see 5, 6, 7+8 in governance model)
Tools & Aids	<ul style="list-style-type: none"> Prescribe compliance Centralised Policy prescripts Panoptic principles Prioritisation model Gigamap driving Futures-oriented infrastructure-as-a-service for WCG 	<ul style="list-style-type: none"> Policy & prescript validation Formats validation Panoptic principles validation Document variance Gigamap driving Futures-oriented infrastructure-as-a-service for WCG 	<ul style="list-style-type: none"> Prescribed formats and management of Asset level M&E Gigamap driving Futures- oriented infrastructure-as-a-service for WCG

Figure 5: Infrastructure Governance Activities

CONCLUSION

The M&E Framework is an operationally focused system that supports the effective, accountable, and adaptive implementation of infrastructure projects across the Western Cape. By integrating detailed project-level indicators, governance standards, feedback loops, capacity-building initiatives, and transparent reporting, the Framework provides a comprehensive approach to infrastructure monitoring. This M&E Framework will ensure that projects align with the province's strategic objectives and it will foster a responsive and resilient approach to infrastructure development that can adapt to changing conditions and stakeholder needs over time. Through this robust framework, the WCIIIP 2050 supports a vision of sustainable, equitable, and high-quality infrastructure that meets the long-term needs of the Western Cape.



CHAPTER 8

RISK MANAGEMENT AND MITIGATION

INTRODUCTION

The WCIF 2050 emphasises the importance of addressing systemic risks associated with Critical Infrastructure Systems (CIS) through adaptive and resilient design strategies. Recognising the increasing uncertainties and interdependencies of infrastructure systems, the WCIS 2050 proposes risk governance strategies that span the entire lifecycle of projects, from conception to decommissioning. These strategies ensure that infrastructure systems are resilient, sustainable, and responsive to dynamic challenges. Through extensive stakeholder consultations, the WCIS 2050 integrates diverse perspectives into detailed risk management protocols, addressing global risks such as climate-induced disasters while aligning with sustainability, equity, and resilience goals.

The WCIS 2050 expands traditional risk management by incorporating sector-specific and systemic risks into a cohesive infrastructure risk architecture. It addresses critical gaps in governance, planning, funding, partnerships, cascading risks, and technology by fostering equitable public-private partnerships (PPPs), innovative funding models, and integrated risk management tools. By embedding risk evaluation mechanisms, such as the sector priorities and project evaluation matrices derived from the Panoptic Principles, the framework ensures that infrastructure projects align with strategic priorities and undergo rigorous risk assessment. These measures strengthen resilience, reduce vulnerabilities, and enhance the capacity of infrastructure systems to withstand and adapt to challenges.

In addition to mitigating specific risks, the WCIS 2050 emphasises the importance of de-risking the implementation of the WCIIP 2050. Through robust governance structures, tools, and models, the WCIS 2050 aligns infrastructure planning and implementation with long-term goals of sustainability, equity, and resilience. This integrative approach not only addresses immediate infrastructure challenges but also prepares the Western Cape’s infrastructure ecosystem for future demands, ensuring that it continues to serve as a driver of economic growth, social equity, and environmental sustainability.

INTEGRATED INFRASTRUCTURE RISK MANAGEMENT

As a country, South Africa needs to spend between R4.8 and R6.2 trillion on transport, water and sanitation, basic education, and Technical and Vocational Education and Training from 2022 to 2030 to get close to its SDGs. This is equivalent to spending between 8.7% and 11.2% of Gross Domestic Product (GDP) per year on average¹. The Western Cape is not excluded from this infrastructure backlog. This backlog presents itself as a real and urgent risk to sustainable economic growth in the Western Cape. This backlog remains so immense that it is impossible for the public sector to fill it without a contribution from the private sector².

The WCIS 2050 identifies the multifaceted risk profile associated with infrastructure delivery in the province. These risks span both systemic and project-specific challenges, including insufficient investment, limited local government capacity, misaligned infrastructure planning, and evolving environmental conditions.

Additionally, project-level risks such as corruption, extortion, and community resistance further complicate effective infrastructure implementation. To mitigate these challenges, the WCIS 2050 advocates for integrated risk management measures, leveraging robust governance structures and innovative solutions to enhance infrastructure planning, execution, and sustainability across the Western Cape.

The WCIS 2050 identifies the complex integrated risk profile associated with infrastructure delivery in the Western Cape. The risk profile for infrastructure is cross cutting and includes both project-based risks and systemic-based risks.

On a systemic level, the WCG has identified various systemic and sector associated risks as well as project-based risks to the successful implementation of infrastructure projects in the Western Cape:

SYSTEMIC AND SECTOR ASSOCIATED RISKS	PROJECT BASED RISKS
Overall lack of infrastructure investment into the Western Cape economy	Intimidation, violence, and extortion hampering the successful execution of infrastructure projects
Local government capacity to respond to infrastructure procurement needs	Community action hampering the successful execution of infrastructure projects
Lack of sector specific aligned infrastructure planning and investment	Limited capacity to address infrastructure project specific planning and execution challenges
Water infrastructure projects not adequately aligned with projected population and economic growth projections	
Infrastructure planning and execution not aligned with changing environmental conditions and disaster risk profiles	

Mitigating these risks will require integrated risk management measures to be deployed to mitigate risk as explained in Table 2. Risks have been rated according to a risk rating methodology (risk Matrix), ranking risks as Low, Medium, High or Extreme. The vertical axis provides the key indicating the likelihood of the occurrence, while the horizontal axis provides for rating the consequence of the risk occurrence to evaluate the overall identified risks:

Rating	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain - controls unsatisfactory to mitigate the risk	HIGH	HIGH	EXTREME	EXTREME	EXTREME
Likely - controls inadequate to mitigate the risk and require improvement	MEDIUM	HIGH	HIGH	EXTREME	EXTREME
Possible - controls reasonable / adequate to mitigate the risk but may still require improvement	LOW	MEDIUM	HIGH	EXTREME	EXTREME
Unlikely - controls robust and adequate to mitigate the risk	LOW	MEDIUM	MEDIUM	HIGH	EXTREME
Rare - controls strong to mitigate the risk	LOW	LOW	MEDIUM	HIGH	HIGH

Table 1: Risk rating table

	RISK	RISK RANKING	EXPLANATION	MITIGATION	ROLE PLAYERS
A	Systemic & sector risk				
1	Overall lack of infrastructure investment into the Western Cape economy	HIGH	The continuous under delivery in infrastructure projects creates social pressure and limits economic growth and direct revenue collection through for example taxes.	<ul style="list-style-type: none"> Attend to a single data base for a cross sector and provincial combined infrastructure needs analyses to create an infrastructure pipeline with funding needs. Prioritise budget allocations and requests for critical and catalytic infrastructure projects identified as part of execution ready projects in the pipeline via the evaluation matrix indicated in Chapter 5 of the WCIIP. Prepare market ready infrastructure project offerings to the private sector as part of the partnership and stakeholder engagement activities foreseen in Chapter 4 of the WCIIP. Enhance intergovernmental collaboration to package and co-participate in infrastructure development projects. Build capacity in the DOI and the wider WCG to prepare and negotiate ready for market infrastructure project offerings. Review and enhance policy environment to enable and support alternative infrastructure financing models and infrastructure transaction fast tracking. 	Provincial Treasury. Build capacity at IMC & ITC secretariat level and DOI to manage and prepare infrastructure pipeline (assisted by war room and technical advisory committee). Prepare robust and stable stakeholder engagement and facilitation platforms to enhance infrastructure project collaboration and co-creation.
2	Local government capacity to respond to infrastructure procurement needs	HIGH	Absence of true integrated and coordinated infrastructure planning. Resource constraints (Human, ICT & system wide) to attend to infrastructure project initiation and implementation.	<ul style="list-style-type: none"> Review and enhance the WCG's capacity to collect, evaluate and model infrastructure data to assist with integrated infrastructure planning and delivery risk management. Create and resource specialist infrastructure capacity within the WCG to assist local government with infrastructure procurement. 	DLG, DOI, PT

	RISK	RISK RANKING	EXPLANATION	MITIGATION	ROLE PLAYERS
A	Systemic & sector risk				
3	Lack of sector specific aligned infrastructure planning and investment	HIGH	Non-aligned infrastructure planning and investment strategies across infrastructure sectors.	<ul style="list-style-type: none"> Enhance the policy environment and embed and expand the functions of infrastructure co-ordination planning and oversight bodies such as the IMC, ITC and RPG in the WCG planning and budgeting processes. Review and enhance the WCG's capacity to collect, evaluate and model infrastructure data to assist with integrated infrastructure planning and delivery risk management. 	IMC, ITC, RPG, DOI
4	Water infrastructure projects not adequately aligned with projected population and economic growth projections	MEDIUM	Infrastructure planning and execution associated with natural resources such as water are not adequately aligned with the population and economic growth strategies and projections for the WCG.	<ul style="list-style-type: none"> Enhance the policy environment and embed and expand the functions of infrastructure co-ordination planning and oversight bodies such as the IMC, ITC and RPG in the WCG's planning and budgeting processes to ensure coordinated infrastructure planning. Review and enhance the WCG's capacity to collect, evaluate and model infrastructure data to assist with integrated infrastructure planning and delivery risk management. Enhance investment in ecological infrastructure, green energy and natural resource saving projects (such as water catchment protection). 	DOI, DEDAT, DOA, DEA&DP, DLG
5	Infrastructure planning and execution not aligned with changing environmental conditions and disaster risk profiles	MEDIUM	Infrastructure cannot withstand increased environmental conditions such as flooding. Infrastructure planning is not aligned with increased infrastructure maintenance and construction required due to disasters.	<ul style="list-style-type: none"> Review and enhance the WCG's capacity to collect, evaluate and model infrastructure data to assist with integrated infrastructure planning and delivery risk management. Review and enhance planning criteria, methodologies and designs associated with infrastructure planning to enhance infrastructure need responses to changing environmental conditions. 	DOI, DOA, DEA&DP, DLG

	RISK	RISK RANKING	EXPLANATION	MITIGATION	ROLE PLAYERS
B	Project-Based Risks				
1	Intimidation, corruption, violence, and extortion hampering the successful execution of infrastructure projects	HIGH	<ul style="list-style-type: none"> Corruption & extortion associated with infrastructure procurement (such as the "construction mafia") reduces the public and private sector's trust in the public sector to deliver on infrastructure projects. Vandalism, theft and unlawful occupation. Delays in infrastructure project delivery lead to increased infrastructure cost. 	Strengthen participation on existing platforms at provincial and local government levels.	IMC, ITC, RPG, DOI

	RISK	RISK RANKING	EXPLANATION	MITIGATION	ROLE PLAYERS
B	Project-Based Risks				
2	Community action hampering the successful execution of infrastructure projects	MEDIUM	<ul style="list-style-type: none"> Delays in infrastructure delivery reduce the public and private sector's trust in the public sector to deliver on infrastructure projects. Delays in infrastructure project delivery lead to increased infrastructure cost. 	Strengthen community consultation structures to streamline exchange of information between infrastructure delivery teams and the local community.	RPG, DOI
3	Limited capacity to address infrastructure project specific planning and execution challenges	HIGH	Unaddressed infrastructure project planning and execution risks cause project delays and increases project costs.	<ul style="list-style-type: none"> Strengthen infrastructure project teams' resources and introduce additional training to identify and address project risk throughout the infrastructure project life cycle by adhering and implementing project management risk techniques such as the PMBOK™. Review and enhance the WCG's capacity to collect, evaluate and model infrastructure data to assist with integrated infrastructure planning and delivery risk management through real time data analyses, dashboards and risk early warning systems. Develop specific response plans/SOPS for pre-identified risk types encountered during implementation which are critical for maintaining project integrity. Review procurement policies and SOPs to address procurement challenges and methods associated with infrastructure projects. Formalise project and risk reporting into infrastructure governance structures such as the RPG and ITC. Implement quality assurance programmes and certification for infrastructure projects such as ISO 9001. 	DOI, RPG, ITC, IMC
2	Unsuccessful implementation of new technology	MEDIUM	Risk of new technology failing in local conditions and the costs of R&D.	Local innovation testing platforms and partnerships with Universities for technology and innovation testing.	DoTP, DOI, RPG, ITC, IMC

Table 2: Integrated Risk Management

CONCLUSION

Risk management and mitigation are essential components for the successful execution of infrastructure projects across the Western Cape. By focusing on pre-implementation risk assessments, continuous monitoring, targeted response plans, and capacity-building, the WCIIP 2050 will ensure that projects can withstand and adapt to challenges throughout their life cycles. The integration of digital tools, real-time reporting, and stakeholder engagement fosters accountability, transparency, and responsiveness. Risk Management in the WCIIP 2050 will support projects in meeting quality and timeline requirements, preparing for unforeseen events, and enhancing the Western Cape's capacity to deliver infrastructure that is safe, resilient, and sustainable. Through structured risk management, the WCIIP 2050 will advance the WCIF 2050's vision for inclusive and equitable development. ●



CHAPTER 9

CONCLUSION

INTRODUCTION

The Western Cape Infrastructure Implementation Plan 2050 (WCIIP 2050) represents a transformative and holistic approach to infrastructure development, integrating strategic vision, sector prioritisation, and readiness for implementation. Anchored in the WCIF 2050 and WCIS 2050, the WCIIP 2050 emphasises adaptability, inclusivity, and resilience as core tenets of its framework. This tri-layered system seeks to align global, national, and provincial imperatives, offering a structured pathway for addressing the pressing socio-economic and environmental challenges facing the Western Cape.

The WCIIP 2050 emphasises a collaborative approach to stakeholder engagement. Through Communities of Practice (COPs) and structured consultation processes, the plan ensures that diverse voices, including communities, private sector entities, and government departments, are represented in infrastructure decision-making. This inclusivity fosters trust, strengthens partnerships, and aligns infrastructure delivery with the needs and aspirations of the province's residents.

A key achievement of the WCIIP 2050 is its ability to translate long-term strategic priorities into actionable projects through its Bankable Pipeline Portfolio. By employing the Panoptic Principles, WCIIP 2050 will ensure that projects meet compliance and technical standards, and will also deliver tangible social, economic, and ecological benefits. This integrated pipeline offers a scalable mechanism for fostering public-private partnerships, enhancing investor confidence, and ensuring that infrastructure projects remain viable and impactful.

Additionally, the WCIIP 2050 will address the critical financing challenges inherent in infrastructure development. By distinguishing between funding and financing mechanisms and leveraging innovative

approaches such as blended finance and public-private partnerships, the WCIIP 2050 will address existing resource gaps. This strategic alignment ensures the long-term financial sustainability of projects while enabling swift responses to emerging demands and opportunities.

Central to the WCIIP 2050's success is its robust governance model, which incorporates innovative monitoring and evaluation (M&E) frameworks. These frameworks ensure accountability and performance tracking across the entire infrastructure lifecycle, from planning to execution. By fostering continuous learning and adaptation, the M&E strategy underscores the WCIIP 2050's commitment to iterative improvement and alignment with the WCG's broader objectives of equitable growth and sustainability.

The WCIIP 2050 places significant emphasis on risk management, recognising its critical role in ensuring the successful delivery of infrastructure projects across the Western Cape. The WCIIP 2050 outlines a structured approach to address systemic, sectoral, and project-specific risks, incorporating mechanisms for proactive risk identification, mitigation, and governance. This robust risk management approach will enhance project reliability and investor confidence.

In conclusion, the WCIIP 2050 provides a blueprint for a resilient, inclusive, and sustainable infrastructure ecosystem in the Western Cape. Through its integrative and adaptive framework, the plan not only addresses immediate infrastructural gaps but also positions the province as a leader in sustainable development. By fostering innovation, enhancing governance, and ensuring equitable access to infrastructure, the WCIIP 2050 serves as a critical tool for achieving the Western Cape's vision of economic growth, social equity, and environmental stewardship by 2050. ●

Glossary, acronyms and abbreviations

Adaptation

Any adjustment in natural or human systems in response to actual or expected environmental (including climatic) stimuli that moderates harm or exploits beneficial opportunities.

Adaptive System

A system capable of adjusting and evolving in response to changes in its environment, recognising the interconnected and dynamic nature of infrastructure.

Artificial Intelligence (AI)

Refers to the simulation of human intelligence processes by machines, especially computer systems. It involves creating algorithms and models that enable machines to perform tasks that typically require human-like cognitive functions such as reasoning, learning, problem-solving, perception and language understanding.

Asian Infrastructure Investment Bank (AIIB)

A multilateral development bank established in 2016 to address the growing infrastructure needs in Asia. Its primary goal is to promote economic development, enhance connectivity and support sustainable infrastructure projects across the Asian region, thereby contributing to the overall economic growth and poverty reduction in member countries.

Annual Performance Plan (APP)

A key management and planning document used by government departments, organisations or institutions to outline their strategic objectives, goals and targets for a specific fiscal year. It serves as a roadmap that guides the activities and performance of the organisation throughout the year, ensuring alignment with the overall strategic vision and priorities.

Annual Report (AR)

A comprehensive document produced by an organisation, typically at the end of its financial year, that provides detailed information about its activities, financial performance, achievements and challenges over the past year. It serves as a tool for communicating with stakeholders, including shareholders, investors, employees, customers and the public, to provide transparency and accountability.

Annual Operational Plan (AOP)

A detailed, short-term tactical document that outlines the specific actions, initiatives and resources required

to achieve the strategic objectives of an organisation during a particular fiscal year. It translates the broader goals and priorities set in the organisation's long-term or strategic plan into actionable steps, focusing on operational efficiency and effectiveness.

Bankable Infrastructure

Infrastructure projects that are financially viable and attractive to investors due to their compliance with recognised standards and minimal ESG risks.

Best Practice

Established methods and techniques that have been proven to achieve desired results efficiently and effectively, typically applied in stable and predictable contexts.

Biophilia

The desire to connect, or seek connections with nature and other living things.

Biophilic Design

The concept of integrating natural elements into infrastructure design to enhance the wellbeing and health of communities.

Blended Finance

A financial approach that combines public and private funds to support infrastructure projects, often including concessional funding to attract private investment.

Brazil, Russia, India, China, South Africa (BRICS)

An intergovernmental organisation that consists of Brazil, Russia, India, China and South Africa.

Broadband Infrastructure

High-speed internet infrastructure that provides fast, affordable and reliable internet connectivity, crucial for digital inclusion and the functioning of modern societies.

Build Capacity Using Research Evidence (BCURE)

A programme aimed at enhancing the use of research evidence in decision-making within governments and other public sector organisations. The initiative focuses on improving the capacity of policymakers and public servants to understand, access and apply research evidence in their work, particularly in the areas of governance, public policy and service delivery.

Glossary, acronyms and abbreviations

Capital Expenditure

Spending on long-term assets, such as infrastructure projects, which provides future benefits and is recorded separately from operational expenditure.

Chaotic Contexts

Situations with numerous interlocked and dynamic interactions leading to unpredictable outcomes, necessitating emergent and novel practices.

Climate Change Adaptation Framework (CCA)

A strategic approach developed by the Western Cape Government to address the impacts of climate change on the region. The framework focuses on how the province can adapt to the changing climate by implementing policies, strategies and actions that reduce vulnerabilities, build resilience and ensure sustainable development in the face of climate-related challenges.

Circular Economy

An economic system aimed at eliminating waste and the continual use of resources through reusing, remanufacturing and recycling based on closed-loop systems.

Citizen-Centric

Ensuring that citizens and their communities are at the centre of design and solution processes for infrastructure projects.

Critical Infrastructure Systems (CIS)

Refers to the essential physical and virtual assets, systems and networks that are fundamental to the functioning of a country, economy or society. These systems are vital for maintaining national security, public safety, economic stability and the wellbeing of citizens.

Collaborative Infrastructure Planning

A strategic approach that involves multiple stakeholders in the planning and decision-making process for infrastructure projects.

Communities of Practice (COPs)

Groups of people who share a concern or a passion for something they do and learn how to do it better through regular interaction.

Complex Adaptive Systems (CAS)

Infrastructure systems characterised by numerous interacting components that adapt and evolve over time, similar to natural ecosystems.

Contingency Reserve Fund (CRF)

The BRICS-led Contingency Reserve Fund.

Criteria-Based Methods

Approaches that use predefined criteria to evaluate and prioritise projects based on their ability to meet objectives.

Commercial Value Capture (CVC)

Often associated with mass transit, its application extends to a wide range of infrastructure sectors, including tourism, energy, waste management, telecommunications, biochar and composting.

Data Governance

The management of data availability, usability, integrity and security within an organisation. It involves setting policies, procedures and standards to ensure data quality and compliance with regulations.

Department of Economic Development and Tourism (DEDAT)

The Western Cape Government department whose primary role is to drive and support economic growth, job creation and tourism in the province. The Department focuses on fostering a business-friendly environment, promoting investment, supporting local industries and enhancing the region's tourism sector.

District Economic Alignment Project (DEAP)

A strategic initiative aimed at aligning economic development efforts across the various districts in the Western Cape to ensure a more coordinated, inclusive and regionally focused approach to economic growth and job creation.

Department of Agriculture (DOA)

The Western Cape Government department responsible for supporting and promoting agricultural development in the Western Cape province of South Africa. This includes enhancing the agricultural sector's sustainability, productivity and competitiveness, while also ensuring the provision of services to farmers and rural communities.

Glossary, acronyms and abbreviations

Department of Infrastructure (DoI)

The Western Cape Government department responsible for planning, delivering, and maintaining infrastructure, as well as managing provincial roads, public works, and human settlements. Formerly known as the Department of Transport and Public Works (DTPW) and the Department of Human Settlements (DHS).

Department of Local Government (DLG)

The Western Cape Government department responsible for supporting and overseeing the local government sector. Its core mandate is to promote effective governance, service delivery and development at the municipal level, ensuring that local governments have the capacity and resources to provide essential services to their communities.

Development Bank of Southern Africa (DBSA)

A development finance institution focused on large-scale infrastructure projects in South Africa and the broader Southern African region.

Department of Environmental Affairs and Development Planning (DEA&DP)

The Western Cape Government department responsible for safeguarding the natural environment of the Western Cape for future generations while sustainably developing the province's landscape. Its core mandate is to enable a resilient, sustainable, quality and inclusive living environment for all by improving urban and rural areas through enhanced management of land, an enhanced climate change plan, and better living conditions for all.

Digital Economy

An economy that is based on digital computing technologies. It encompasses all economic activities that use digital information and knowledge as key factors of production.

District Development Model (DDM)

The District Development Model aims to improve the coherence and impact of government service delivery with focus on 44 Districts and 8 Metros across South Africa as development spaces that can be used as centres of service delivery and economic development, including job creation.

Digital Inclusion

Efforts to ensure all individuals and communities, including the most disadvantaged, have access to and can effectively use information and communication technologies (ICTs).

Disaster Management Centres (DMCs)

Specialised facilities or units within a government or organisational structure that are responsible for coordinating disaster management efforts before, during, and after a disaster. Their primary purpose is to ensure a swift and organised response to emergencies, mitigate disaster risks and enhance overall community resilience to disasters.

Department of Planning, Monitoring and Evaluation (DPME)

A national government department responsible for overseeing the planning, monitoring and evaluation of government policies, programmes and projects. Its primary role is to ensure that the country's national development plans and government strategies are effectively implemented and that progress is monitored to achieve the desired outcomes.

Department of Transport and Public Works (DTPW)

The Department of Public Works and Infrastructure (DPWI) is a national government department responsible for managing and overseeing public infrastructure, government buildings, and public works projects.

Digital Transformation

The process of integrating digital technologies into all areas of a business or organisation, fundamentally changing how they operate and deliver value to customers.

Development Finance Institutions (DFIs)

Specialised financial institutions established by governments or international organisations to provide financing for projects and initiatives that promote economic development, particularly in sectors or regions that may not attract sufficient private investment.

Engineering and Built Environment (EBE)

An academic and professional field that encompasses a wide range of disciplines concerned with the design, construction and maintenance of infrastructure, buildings and other physical environments.

Glossary, acronyms and abbreviations

European Central Bank (ECB)

The central bank for the eurozone.

Ecosystem

The physical environment and the community of living organisms living in a particular area.

Ecological Infrastructure

Naturally functioning ecosystems that deliver valuable services to people, such as water and climate regulation, soil formation and disaster risk reduction. Examples include healthy mountain catchments, rivers, wetlands, coastal dunes, and nodes and corridors of natural habitat.

Ease of Doing Business (EODB)

The set of policies, regulations and practices that a government implements to make it easier, faster and less costly for businesses to start, operate and grow within a country or region.

Environmental, Social and Governance (ESG)

A set of aspects, including environmental issues, social issues, and corporate governance that can be considered in investing.

Expanded Public Works Programme (EPWP)

A South African government initiative aimed at job creation through public infrastructure projects.

Feedback Mechanism

Processes through which stakeholder engagement provides continuous input, allowing the infrastructure system to learn, adapt and improve.

Foreign Direct Investment (FDI)

Investment from foreign sources, particularly in sectors such as energy, transport, and telecommunications, can provide not only capital but also technology and management expertise.

Framework for Infrastructure Delivery and Procurement Management (FIDPM)

A 2019 framework focused on governance to support infrastructure delivery, replacing the Standard for Infrastructure Procurement and Delivery Management, guiding infrastructure procurement by various government tiers.

Food Poverty Line (FPL)

The minimum amount of money required to afford basic food items that provide the necessary daily caloric intake to maintain health. It is a benchmark used by policymakers and researchers to measure extreme poverty, where individuals or households are unable to meet even their most basic food needs.

Gigamap

A comprehensive visual representation of the process and information that informed the development and summarises the WCIF 2050 in an infographic.

Governance

The framework of rules, relationships, systems, and processes within and by which authority is exercised and controlled in infrastructure projects.

Government-Wide Monitoring and Evaluation System (GWMES)

A national government framework to monitor, assess and improve the performance of public sector programmes and projects. Its primary aim is to track the effectiveness and efficiency of government interventions, ensuring that public policies and service delivery meet their intended goals and contribute to national development objectives.

Government Immovable Asset Management Act (GIAMA)

South African legislation (Act No. 19 of 2007) outlining the responsibilities of custodians and users of immovable assets, emphasising efficient asset management and alignment with service delivery and social development objectives.

Government-as-a-Platform (GaaP)

A vision for government structures where digital platforms are used to streamline and enhance the delivery of public services, making them more efficient, transparent and citizen-centric.

Green Building

A building that, in its design, construction, or operation, reduces or eliminates negative impacts on the climate and natural environment, preserving natural resources and improving quality of life.

Glossary, acronyms and abbreviations

Green Climate Fund (GCF)

A global financial mechanism was established to assist developing countries in their efforts to combat climate change. It was created under the United Nations Framework Convention on Climate Change (UNFCCC).

Gross Domestic Product (GDP)

A measure of the total value of all goods and services produced within a country's borders during a specific time period.

Global Environment Facility (GEF)

An international partnership and financial organisation established in 1991 to address global environmental challenges that funds projects and programmes in developing countries to tackle critical environmental issues, such as biodiversity loss, climate change, land degradation, pollution of international waters, and the depletion of the ozone layer.

Global Evaluation Initiative (GEI)

Uses communication tools to facilitate community participation and engagement, aiming to foster transformative monitoring and evaluation.

Growth for Jobs (G4J) Strategy

A strategy focusing on infrastructure and connected economy to support job creation and economic growth in the Western Cape.

Global Public Goods (GPGs)

Global public goods are goods, services, or resources that are widely available and beneficial across countries, regions, or even globally, and whose benefits are non-excludable and non-rivalrous.

Global Value Chains (GVCs)

Also known as Extended Value Chains (EVCs), these serve as platforms for diverse agents to interact, articulate their respective demands, experiment, co-learn, foster collective action, coordinate, build capacities, and enhance business linkages.

Human Settlements

Infrastructure projects aimed at developing residential areas with adequate access to services such as transportation, economic and social facilities.

Inequality

The unequal distribution of wealth, income, opportunities and resources within a society. In South Africa, this often reflects the enduring effects of apartheid-era policies.

InfraGov

The Infrastructure Governance Assessment Framework introduced by the World Bank to assist countries in optimising infrastructure investments and achieving better outcomes.

Infrastructure

The fundamental facilities and systems serving a country, city, or area, including transportation, communication, power plants and schools. It is crucial for economic growth, development and quality of life.

Infrastructure Delivery Management System (IDMS)

A framework for managing the planning, procurement and delivery of infrastructure projects to ensure efficiency and compliance.

Integrated Development Plans (IDPs)

A cornerstone of municipal governance in South Africa, serving as a five-year strategic plan that guides development and service delivery at the local level.

Infrastructure System

The complex network of interacting stakeholders, processes and systems involved in infrastructure development and management.

Infrastructure Life-Cycle Asset Management

Managing infrastructure assets throughout their entire life cycle, from planning and construction to maintenance and decommissioning.

Infrastructure Standards

Set guidelines and norms that dictate the design, construction and operation of infrastructure projects, aimed at ensuring safety, efficiency, and sustainability.

Infrastructure Value Chain

The sequence of activities involved in the development, management and maintenance of infrastructure projects, from planning to execution.

Glossary, acronyms and abbreviations

Infrastructure-as-a-Service (IaaS)

A model where infrastructure is provided as a service, allowing organisations to outsource their infrastructure needs to a third-party provider, which manages and maintains it.

Information and Communication Technology (ICT)

A broad term that integrates both information technology (IT) and communication technologies. It encompasses the technologies and tools used to handle information and enable communication and includes the hardware, software, networks and systems that facilitate the storage, retrieval, sharing and transmission of data.

Internet of Things (IoT)

Refers to a network of interconnected physical devices, vehicles, appliances and other objects that are embedded with sensors, software and other technologies to collect, exchange and act on data over the internet. These devices can communicate with each other and with centralised systems, enabling automation, monitoring, and enhanced functionality.

Intergovernmental Panel on Climate Change (IPCC)

An international body conducting regular reviews and producing reports on the status of climate change. The Sixth Assessment Review (AR6) recognises the interdependence of climate, ecosystems and biodiversity, and human societies.

Innovative Revenues for Infrastructure (IRI)

Funding tool that leverages revenue generated from infrastructure assets.

International Organisation for Standardisation (ISO)

An international body that develops and publishes standards to ensure quality, safety, efficiency and interoperability of products and services across the globe.

Infrastructure Ministerial Committee (IMC)

Chaired by the Minister of Infrastructure and comprises a core group of executive leaders, allowing for targeted contributions, strategic alignment and efficient decision-making in the planning and implementation of infrastructure initiatives.

International Monetary Fund (IMF)

A global financial organisation established in 1944 to promote international monetary cooperation, ensure financial stability, facilitate international trade and reduce poverty worldwide. It is headquartered in Washington, D.C. and operates as a specialised agency of the United Nations, although it is an independent entity.

Infrastructure Framework Review (IFR)

Initiated in 2021, it played a vital role in refining the WCIF 2050's stakeholder engagement strategies.

Infrastructure Technical Committee (ITC)

Responsible for operational execution and coordination on an administrative level chaired by the Head of Department of Infrastructure.

Joint District and Metro Approach (JDMA)

A framework that allows the three spheres of government in the Western Cape to work together to develop strategic, developmental and planning priorities.

Just Transition

The shift towards a low-carbon, climate-resilient economy and society, and ecologically sustainable economies and societies which contribute toward the creation of decent work for all, social inclusion and the eradication of poverty.

Just Transition Framework (JTF)

A framework outlining policy measures and commitments from various social partners to minimise the social and economic impacts of the climate transition, aiming to improve the livelihoods of those most vulnerable to climate change.

King IV Report (King IV)

A report on Corporate Governance for South Africa, which was released in 2016 by the King Committee on Corporate Governance. It is a set of guidelines and principles designed to help organisations adopt ethical, effective and sustainable governance practices. The King IV Report focuses on the governance of companies, non-profit organisations and other types of entities in South Africa, but its principles are widely applicable and have been adopted internationally.

Glossary, acronyms and abbreviations

Land Value Capture (LVC)

An urban planning and economic concept that refers to the process of capturing the increase in land value (or “land rents”) that occurs due to public investments, infrastructure developments or other government actions. This increased value is then used to fund public projects, infrastructure, or social programmes.

Maintenance

The preventative, reactive and predictive upkeep necessary to keep infrastructure in good working order and extend its useful life.

Meta-Level Evaluation

An initial evaluation stage used to make broad decisions about project viability and resource allocation.

Monitoring and Evaluation (M&E)

The systematic process of tracking the performance of infrastructure projects and assessing their outcomes against the set objectives and goals.

Multi-Criteria Decision Analysis (MCDA)

A method for evaluating and prioritising projects based on multiple criteria, providing a comparative basis for decision-making.

Municipal Finance Management Act (MFMA)

South African legislation (Act No. 56 of 2003) that regulates financial practices and accountability at the municipal level.

Municipal Infrastructure Grants (MIG)

Refers to financial assistance provided by central or national governments to local or municipal governments to support the development, maintenance and upgrading of infrastructure at the local level. These grants are typically targeted at improving basic services and infrastructure in municipalities, particularly in developing regions or underserved areas.

Municipal Spatial Development Framework

Strategic planning tools that guide spatial development and land-use management within a municipality.

Nationally Determined Contribution (NDC)

South Africa’s pledge to reduce greenhouse gas emissions, contributing to global efforts to keep the increase in the average temperature well below 2°C, with aspirations to limit the increase to 1.5°C above pre-industrial levels.

National Disaster Management Centre (NDMC)

Its tasks include coordinating disaster management at a national level.

National Development Plan (NDP)

South Africa’s long-term plan, aiming to eliminate poverty and reduce inequality by 2030, with infrastructure investment as a critical enabler for inclusive and sustainable economic growth.

Non-Governmental Organisation (NGO)

A non-profit organisation that operates independently from government control or influence. They are typically driven by a social, humanitarian or environmental mission and aim to address various issues such as poverty, human rights, education, health, environmental protection, and disaster relief.

Non-Profit Organisation (NPO)

An organisation that operates for purposes other than generating profit for its owners or shareholders. Its primary goal is to serve the public interest or a specific community by addressing social, cultural, environmental, or humanitarian issues and any income generated is reinvested into its activities, programmes or services.

National Infrastructure Plan 2050 (NIP 2050)

A strategic framework aimed at boosting investment and coordinating infrastructure development in South Africa.

National Spatial Development Framework (NSDF)

A framework guiding spatial development planning in South Africa to address past inequities and support economic growth and development.

National Land Transport Framework (NLTF)

Part of South Africa’s legislative framework for managing and coordinating land transport at national, provincial and local levels, providing strategic guidance for planning, funding, and implementing transport systems throughout the country, including in the Western Cape.

Novel Practice

Innovative methods used in complex and contested situations where traditional best practices may not apply, particularly useful for addressing unique local needs.

Glossary, acronyms and abbreviations

Organisation for Economic Cooperation and Development (OECD)

An international organisation founded in 1961 to promote policies that improve the economic and social wellbeing of people around the world. It provides a platform for governments to discuss and coordinate policies, share experiences, and collaborate on solutions to global economic, social, and environmental challenges.

Original Equipment Manufacturer (OEM)

A company that manufactures components or products that are then marketed and sold by another company under its own brand name. OEM pricing typically involves the cost of products, parts or equipment that are supplied by the manufacturer to another company, which then incorporates these products into their own offerings or sells them as-is.

Panarchic Governance

A governance model that emphasises adaptability, interconnectedness and resilience across different levels of governance. It aims to harness the public good potential of digital technologies and ensure sustainable infrastructure development.

Panarchy

A framework for transversal governance ensuring data-driven practices while guarding against false methodological superiority.

Panoptic Principles (PPs)

The foundational principles guiding the Western Cape Infrastructure Framework (WCIF) 2050 to ensure inclusive, innovative and resilient infrastructure development.

Partnership for Evidence and Equity in Responsive Social Systems (PEERSS)

A collaborative initiative that focuses on improving social systems through evidence-based practices and fostering equity. Its goal is to create and support systems that are more responsive to the needs of diverse communities, particularly those that are historically underserved or marginalised.

Prioritisation Models

Frameworks or tools used to rank projects based on various criteria, such as benefits, costs and risks.

Project Scoping

Defining the objectives, deliverables and constraints of a project to determine its feasibility and scope.

Project Support Facilities

Structures or institutions designed to assist with the preparation, planning and management of infrastructure projects to ensure effective use of funds and resources.

Provincial Strategic Plan (PSP)

The Western Cape Government’s 5-year strategic plan outlining its vision and objectives over the next five years for the period 2025 to 2030.

Project Focus Area (PFA)

Refers to a specific domain, region or aspect within a project that is prioritised for attention and resources - the part of the project where efforts are concentrated to achieve certain objectives, outcomes or deliverables.

Private Finance Initiative (PFI)

A method of financing public infrastructure projects through a partnership between the government and private sector companies.

Public Finance Management Act (PFMA)

South African legislation (Act No. 1 of 1999) ensuring fiscal accountability and compliance with financial management practices in government departments and entities.

Provincial Land Transport Framework (PLTF)

A strategic management tool for the Western Cape Mobility Department, outlining the vision, objectives, and policies related to land transport in the region. It includes current public transport strategies, sector strategies, and associated financial, monitoring, and institutional arrangements.

Public-Community Partnerships

Collaborations between government entities and local communities or civil society organisations to address local development needs.

Glossary, acronyms and abbreviations

Project Preparation Facility (PPF)

An initiative designed to assist local governments, municipalities and other stakeholders in the Western Cape region of South Africa in preparing and developing infrastructure projects. It provides financial and technical support to help these entities prepare projects that are ready for implementation, with a focus on improving the quality, efficiency and sustainability of public infrastructure.

Public Private Partnership (PPP)

A contractual arrangement between a public authority and a private sector entity for providing public infrastructure or services, where both parties share risks and responsibilities.

Public Sector Risk Management Framework (PSRMF)

Designed primarily to support the implementation of National Treasury (NT) regulations, with a strong emphasis on financial management controls and internal auditing, but with limited focus on transversal infrastructure risk management.

Provincial Spatial Development Framework (PSDF)

A strategic planning tool used by provincial governments to guide land use, spatial development and growth across a region. It provides a framework for making decisions about how land and resources should be used and developed in the future, aiming to promote sustainable, balanced, and equitable growth within the province.

Resilience

The capacity of social, economic (human), and environmental systems to cope with a hazardous event, trend, or disturbance, maintaining their essential function, identity, and structure, and adapting, learning, and transforming in response.

Resilient Infrastructure

Infrastructure designed to withstand and adapt to extreme weather events, climate change and other disruptions.

Resilient Infrastructure Value Chains

Infrastructure systems harmonised with ecological imperatives to build resilience and sustainability.

Regional East African Community Health Policy Initiative (REACH-PI)

A collaborative effort aimed at improving health systems and policies across the East African region. The initiative is designed to strengthen health policy development and implementation, improve access to quality healthcare services, and address regional health challenges.

Research, Monitoring and Evaluation (RM&E)

Tools used to create a holistic framework.

Return on Investment (ROI)

A measure of the profitability or financial return of a project relative to its costs.

Risk Assessment

Evaluating potential risks and their impact on a project or programme to inform decision-making.

Risk Management

The identification, assessment, and prioritisation of risks followed by coordinated efforts to minimise, monitor, and control the probability or impact of unfortunate events.

Request For Bid (RFB)

A formal solicitation process used by organisations, governments or businesses to invite vendors or contractors to submit competitive bids for a specific project, service or procurement. It outlines the requirements, specifications and criteria for the project or service and is commonly used in public procurement and contracting processes.

Request For Information (RFI)

A formal process used by organisations to gather information from potential suppliers or service providers before proceeding with a more detailed procurement process, such as issuing a Request for Proposal (RFP) or Request for Bid (RFB). It is typically used to learn more about the capabilities, solutions and qualifications of vendors and helps the organisation make informed decisions about the next steps in the procurement process.

Glossary, acronyms and abbreviations

Request for Quotation (RFQ)

A formal document used by organisations to request price quotes for specific products, services or projects from potential suppliers or vendors. It outlines the detailed requirements, quantities and specifications for the goods or services needed and suppliers respond with a cost estimate. They are typically used when the buyer has a clear understanding of the product or service requirements and is seeking competitive pricing.

Rehabilitate-Own-Operate (ROO)

A project delivery model in which a private entity takes over an existing asset or infrastructure, rehabilitates or upgrades it, and then owns and operates it indefinitely.

Regional Planning Governance (RPG)

The Regional Planning Governance (RPG) Committee will report into the ITC to serve as a senior management-level technical working group dedicated to facilitating the coordination, integration and implementation of regional infrastructure and planning initiatives across the Western Cape.

Risk Transfer

In PPPs, the allocation of project risks to the party best able to manage them, which can lead to more efficient risk management.

Silver Dividend

The economic contributions of an ageing population, particularly affluent retirees, who can support economic growth through their spending and investments.

Six Capitals

A framework incorporating financial, manufactured, intellectual, human, social and relationship, and natural capitals to ensure comprehensive value creation, including value for money as defined by the International Development Association (IDA).

Service Delivery Improvement Plan (SDIP)

A strategic framework developed by government agencies or organisations to enhance the quality, efficiency and accessibility of public services. The plan outlines specific actions, resources and strategies aimed at improving how services are provided to the public and ensuring that service delivery meets the needs and expectations of citizens.

Spatial Justice

The principle of equitable distribution of infrastructure and resources to address past spatial imbalances and improve access for all communities.

Small and Medium-Sized Enterprise

It refers to businesses that fall within a specific range in terms of size, revenue and number of employees, as defined by various regional or national standards. SMEs are a vital part of the global economy, contributing significantly to employment, innovation, and economic growth.

Strategic Plan (SP)

A formal document or framework that outlines an organisation's long-term goals, objectives and the strategies to achieve them. It serves as a roadmap for decision-making, guiding the organisation toward its desired future while aligning resources, priorities and efforts.

Spatial Planning and Land Use Management Act (SPLUMA)

South African legislation (Act No. 16 of 2013) setting principles and procedures for infrastructure investment in priority areas, ensuring coordinated and sustainable development.

Special Purpose Vehicle (SPV)

A legally separate entity created by a parent company or organisation for a specific, well-defined purpose. Also known as a Special Purpose Entity (SPE), it is often established to isolate financial risk, manage specific projects or hold assets.

Spatial Transformation

The process of changing the physical and social landscape of a region to achieve more equitable distribution of resources and services.

Stakeholder Engagement

The process of involving individuals or groups who have an interest in or are affected by infrastructure. The process of involving individuals or groups who have an interest in or are affected by infrastructure projects, ensuring their needs and expectations are considered throughout the project lifecycle.

Glossary, acronyms and abbreviations

Systems-Oriented Design (SOD)

A powerful tool for addressing complexity by creating shared, holistic understandings of problem situations.

State Owned Enterprises (SOEs)

Entities owned or controlled by the government, providing public goods or services.

Supply Chain Management (SCM)

Refers to the coordination and management of all activities involved in the production and delivery of goods and services, from the acquisition of raw materials to the final product delivered to consumers. It encompasses the planning, sourcing, production, logistics and distribution of products, ensuring that the right goods are delivered at the right place, at the right time and at the right cost.

Sustainable Development Goals (SDGs)

A collection of 17 global goals set by the United Nations to address global challenges and achieve a better and more sustainable future for all by 2030.

Sustainable Infrastructure

Infrastructure designed and operated in a way that ensures economic, social and environmental sustainability, aiming to meet the needs of the present without compromising future generations.

Sustainable Infrastructure Development and Finance Facility (SIDAFF)

A facility focused on providing technical support and expertise to towns in the Western Cape for accessing funding and developing infrastructure projects.

Systems View

An approach that considers the interconnectedness and interdependence of various components within an infrastructure system.

Strength, Weakness, Opportunity and Threat (SWOT) Analysis

A strategic planning tool used by organisations to evaluate their internal strengths and weaknesses, as well as external opportunities and threats. It helps businesses, governments and other entities assess their current position and formulate strategies for improvement, growth and risk management.

Theory of Change (TOC)

Framework used in intervention monitoring, providing a structured method for understanding how specific interventions contribute to long-term change.

Terms of Reference (ToR)

A document that outlines the scope, objectives, deliverables and responsibilities for a specific project, committee or task. It serves as a detailed guide for all parties involved, providing clarity on the expectations, roles, and procedures that need to be followed.

Transversal Governance

Integrated, cross-disciplinary planning and management of infrastructure projects to ensure comprehensive and effective governance.

Triple Bottom Line

An evaluation framework considering three dimensions: economic, social, and environmental sustainability.

Triple-Helix Model

A framework for innovation involving collaboration between the public sector, private sector and academia.

Two-Dimensional IPF Approach

An approach using two indices (social-environmental and financial-economic) to prioritise projects, plotted on a Cartesian plane.

United Nations (UN)

An international organisation founded in 1945 after World War II with the aim of promoting peace, security, cooperation and development among its member countries. It was created to prevent conflicts, address global challenges and promote human rights, sustainable development, and humanitarian aid.

Value-for-Money

A principle ensuring that the investment in infrastructure provides the best possible outcomes in terms of cost, efficiency, and effectiveness over its lifecycle.

Volatile, Uncertain, Complex, and Ambiguous (VUCA)

Describes the challenging and unpredictable nature of infrastructure planning and decision-making.

Glossary, acronyms and abbreviations

Western Cape Climate Change Response Strategy (WCCCRS)

A strategy updated in 2023 to address the global climate emergency, providing policy direction for a green, low-carbon economic recovery and mitigating climate-related risks in the Western Cape.

Western Cape Ecological Investment Infrastructure Framework (EIIIF)

A framework guiding public and private sector decision-makers on investing to promote the resilience of the Western Cape's ecological infrastructure, addressing risks such as water security threats and rangeland degradation.

Western Cape Economic Inclusion and Investment Fund (WCEIIF)

An initiative established by the Western Cape Government to promote economic growth and inclusion in the region. The fund aims to support businesses, particularly small and medium-sized enterprises (SMEs), that contribute to inclusive economic development by addressing barriers to growth and enhancing opportunities for historically disadvantaged individuals and communities.

Western Cape Government (WCG)

The provincial government of the Western Cape, South Africa, responsible for regional governance and development.

Western Cape Government Project Preparation Facility (WCG PPF)

A facility that helps develop and prepare investment-ready infrastructure projects in the Western Cape, aiming to build a credible project pipeline.

Western Cape Infrastructure Framework 2050 (WCIF 2050)

A strategic framework outlining the principles, priorities, and objectives for infrastructure provision in the Western Cape region by the year 2050.

Western Cape Infrastructure Strategy 2050 (WCIS 2050)

Infrastructure Strategy informed by the WCIF 2050.

Western Cape Infrastructure Implementation Plan 2050 (WCIIP 2050)

Implementation plan for the WCIS 2050.

Western Cape Infrastructure Delivery Management System (WCIDMS)

A system that integrates with FIDPM, guiding infrastructure delivery and procurement processes within the Western Cape.

Western Cape Spatial Development Framework (WCSDF 2035)

A strategic planning document developed by the Western Cape Government to guide spatial planning and land-use decisions in the region. The framework provides a long-term vision for the development and management of land, infrastructure and resources in the province, aiming to promote sustainable growth, economic development, environmental protection and social equity.

Youth Dividend

The economic benefit that can arise from having a large, youthful population, provided there are adequate opportunities for employment, education and development.

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