Western Cape Government

Project Prefeasibility Report

1. Project Details

Project Name	Freight Rail Revitalisation Framework
Location	Across the Western Cape
Sector	Economic
Department	Department of Mobility
Project Owner	Deidre Ribbonaar
Project Manager	Deidre Ribbonaar

1.1 Background & Justification

Freight rail has historically played a critical role in supporting the Western Cape's agricultural, manufacturing, and extractive value chains. Over time, however, sustained underinvestment, declining infrastructure condition, operational inefficiencies, and institutional constraints have led to a significant deterioration in rail performance. As reliability declined, large volumes of rail-friendly freight shifted to road, resulting in higher logistics costs, increased congestion, accelerated road deterioration, higher accident risk, and rising greenhouse gas emissions. These impacts have been felt most acutely along strategic provincial corridors and in regions already shaped by historical spatial and economic inequality.

At the same time, Transnet's constrained financial position has limited its ability to rehabilitate branch lines and respond at the scale required to restore freight rail competitiveness. Without intervention, continued rail underperformance poses material risks to export competitiveness, food security, industrial resilience, and long-term economic growth in the province.

The Freight Rail Revitalisation Framework is justified as a strategic, evidence-based response to these challenges. Grounded in detailed freight-flow analysis and scenario modelling, the Framework identifies substantial rail-friendly demand that can be shifted back to rail, delivering significant transport-cost savings, externality reductions, and resilience benefits. By aligning provincial action with national rail reform, enabling private-sector participation, and prioritising high-impact corridors and terminals, the project provides a structured pathway to restore rail as a reliable, low-carbon backbone of the Western Cape's freight system, while delivering lasting economic, social, and environmental value.

1.2 Project Scope

The Freight Rail Revitalisation Framework comprises a province-wide programme of analytical, planning, and coordination activities to restore the performance and viability of freight rail in the Western Cape. The scope of work includes detailed freight-flow and scenario analysis; identification and prioritisation of high-impact branch and feeder lines; assessment of infrastructure condition, maintenance backlogs, and terminal requirements; and development of phased implementation pathways. It further encompasses alignment with national rail reforms, preparation of business cases for priority corridors, structuring of private sector participation opportunities, and coordination with municipalities, regulators, freight owners, and potential operators to enable bankable project development.

2. Objectives & Key Focus Areas

Objective	Key Focus Area

Restore High-Impact Freight Rail Corridors	• Prioritising Infrastructure for Maximum Impact • Addressing Climate Change & Sustainability
Enable Private Sector Participation in Freight Rail	• Enhancing Private Sector Partnerships • Innovation & Futures Planning
Shift Freight from Road to Rail to Improve System Resilience	• Prioritising Infrastructure for Maximum Impact • Addressing Climate Change & Sustainability

3. Project Timeline & Cost

Estimated Duration	30 Year(s) & 0 Month(s)
Estimated Start Date	01 Jul 2026
Estimated Cost	R 0

4. Project Stage-0 Submission & Approval

Submitted By	
Submitted On	
Signed By	
Approved On	

5. Environmental & Social Considerations

5.1 Environmental Considerations

- Environmental Authorisation Requirements
- Consolidation of Dispersed Storage & Efficient Use of Space
- Traffic-Induced Environmental Impacts
- Public Health & Environmental Health
- Environmental Compliance & Monitoring
- Greenhouse gas emissions and deforestation contributing to climate change
- Overuse of natural resources leading to scarcity and degradation
- Proper waste management to reduce pollution and health risks
- Sustainable water management to protect quality and prevent scarcity
- Preservation of ecosystem services like clean air, water, and climate regulation
- Land Use & Zoning Compliance

5.2 Social Considerations

- Impacts on Local Economic Activity
- Safety and Personal Security
- Protection of health and safety from environmental hazards
- Promotion of social equity and fair distribution of development benefits
- Engagement with stakeholders throughout the project lifecycle
- Fair labor practices including wages, hours, and working conditions

6. Regulatory & Environmental Approvals

6.1 National Level

- Department of Forestry, Fisheries and the Environment (DFFE): Responsible for environmental management, conservation, and protection in South Africa
- Rail Safety Regulator
- Transnet Rail Infrastructure Manager (TRIM)
- Transport Economic Regulator (TER)
- National Department of Transport (DoT)
- PSP Unit (with National Treasury alignment where required)
- National Environmental Management Act (NEMA): Governs environmental management and authorization processes, including Environmental Authorizations (EAs)
- Environmental Management Frameworks (EMFs): Strategic planning tools for land-use and environmental management decisions

6.2 Provincial and Local Levels

- Provincial Environmental Departments: Implement and enforce environmental regulations within provinces
- Provincial Transport Authorities / Regulatory Functions
- Western Cape Department of Environmental Affairs and Development Planning (DEA&DP)
- Municipal Environmental Management
- Municipal Planning Departments - Handle rezoning, land-use approvals, and integration into municipal Spatial Development Frameworks (SDFs).
- Western Cape Mobility Department (WCMD)
- Relevant Local or District Municipality
- Local Municipality / Provincial Roads Authority

6.3 Other Relevant Entities

- South African National Roads Agency SOC Limited (SANRAL)
- Eskom (or Municipal Electricity Providers) - power supply approvals and capacity confirmation
- Transnet National Ports Authority (TNPA) - coordination for rail-to-port interfaces
- South African Revenue Service (SARS) - customs and excise compliance
- Heritage Western Cape

7. Identify Key Stakeholders

7.1 Government

- Local Government
- Western Cape Government
- Department of Transport
- Department of Forestry, Fisheries and the Environment (DFFE)
- Transnet Rail Infrastructure Manager (TRIM)
- Private Sector Participation Unit (PSP Unit)
- Transport Economic Regulator (TER)
- Rail Safety Regulator (RSR)
- National Treasury (oversight of PPP/PSP)
- Municipal Planning, Engineering, Transport, and Environmental Units

7.2 State-Owned Entities

- **Transnet SOC Ltd**
  Parent SOE responsible for national freight logistics; provides strategic context and group-level coordination.
- **Transnet Rail Infrastructure Manager (TRIM)**
  Custodian and manager of the national rail network; responsible for infrastructure condition, access agreements,

tariffs, and capacity allocation under the Network Statement.

- **Transnet Freight Rail (TFR)**
  Existing freight rail operator; relevant for transitional arrangements, interoperability, and operational coordination where applicable.
- **Transnet National Ports Authority (TNPA)**
  Manages port infrastructure and rail–port interfaces, particularly relevant for corridors linked to Cape Town and Saldanha Bay ports.
- **South African National Roads Agency SOC Ltd (SANRAL)**
  Coordinates where rail terminals and logistics hubs interface with national road infrastructure and freight access routes.
- **Environmental Management Inspectors (Green Scorpions)**
  Enforcement arm for environmental compliance during construction and operations (oversight role rather than project ownership).
- Eskom

7.3 Private Sector

- Construction Companies
- Engineering Firms
- **Freight Owners / Shippers (Demand Side)**
  Agricultural producers and exporters (fruit, grains, wine, agri-processing) Manufacturing firms (cement, FMCG, building materials, palletised freight) Mining and bulk commodity producers
- **Train Operating Companies (TOCs)**
  Existing private rail operators Prospective third-party operators entering under open-access reforms Operate freight services; invest in rolling stock; meet performance and safety standards.
- **Terminal & Intermodal Developers / Operators**
  Dry port and intermodal terminal developers Warehouse, cold-chain, and consolidation facility operators
- **Logistics & Supply Chain Service Providers**
  Logistics companies and 3PLs Freight forwarders and clearing agents Road haulage firms (as first/last-mile partners)
- **Rolling Stock & Rail Systems Providers**
  Rolling stock leasing companies Locomotive and wagon manufacturers/suppliers Maintenance, repair, and overhaul (MRO) providers
- **Private Investors & Financiers**
  Infrastructure funds and pension funds Commercial banks and lenders Impact and climate-focused investors
- **Professional & Advisory Services**
  Technical, legal, financial, and ESG advisors Transaction advisors for PSP/PPP structuring

7.4 Civil Society

- Civil society organizations advocating for community needs
- Non-Governmental Organizations (NGOs)
- Academic and Research Institutions
- **Unions - Labour & Workforce Organisations**
  Rail and transport worker unions Construction and infrastructure labour associations

7.5 Other Stakeholders

- **Security & Law-Enforcement Stakeholders**
  Private rail-security providers & SAPS - freight rail viability in South Africa is materially affected by theft, vandalism, cable theft, and personal security risks. Security coordination is critical for operational reliability, investor confidence, and O&M success.
- **Customs & Border Control Authorities**
  Customs & Excise - for export-oriented freight, bonded terminals, dry ports, and rail-to-port flows, customs clearance and compliance are critical to throughput, competitiveness, and terminal design.
- **Skills Development & Training Institutions**
  Rail revitalisation requires specialised skills in signalling, operations, maintenance, and safety. Skills pipelines directly affect long-term sustainability and localisation objectives.
- **Insurance & Risk Underwriting Sector**
  Insurance availability and pricing affect project bankability, especially where theft, climate risk, and operational disruption are material concerns.

8. WCG Sector Priorities

Outcomes	Social	Energy & Water	Economic	Technology	Ecological
Households have increased access to basic services and improved shelter			Medium Term 5-15 YRS		
Infrastructure investment drives spatial transformation and improves spatial resilience			Medium Term 5-15 YRS		
Investment in social infrastructure improves access to health, education, social development, and recreation opportunities			Medium Term 5-15 YRS		
Mobility systems and transportation corridors provide safe and efficient connectivity to opportunities, services, and facilities			Medium Term 5-15 YRS		

9. Infrastructure Type

9.1 Hard

Yes, hard infrastructure is directly applicable to this project.

Hard infrastructure refers to the **physical, tangible assets** required to move freight.

In this project, hard infrastructure includes:

- Rail track, branch lines, and feeder lines
- Signalling systems, sidings, yards, and depots
- Intermodal and freight terminals
- Supporting assets such as drainage, security fencing, and electrification (where applicable)

The Framework explicitly targets the **rehabilitation and revitalisation of degraded rail assets** and the development of terminals to enable modal shift from road to rail. These investments restore physical capacity, reliability, and connectivity across the freight network.

9.2 Soft

Yes, soft infrastructure is also directly applicable to this project.

Soft infrastructure refers to the **institutional, regulatory, financial, and governance systems** that enable physical infrastructure to function effectively.

In this project, soft infrastructure includes:

- National rail reform (third-party access, Network Statement, economic regulation)
- Private Sector Participation (PSP) frameworks and procurement models
- Governance coordination across national, provincial, and municipal spheres
- Business cases, feasibility studies, and investment structuring
- Digital systems for access, monitoring, and performance management

As a **framework project**, a substantial part of the value lies in creating the *rules, institutions, incentives, and coordination mechanisms* that make long-term rail revitalisation viable.

9.3 Critical

Yes, critical infrastructure is also directly applicable to this project.

Critical infrastructure refers to systems that are **essential to economic functioning, public safety, and national resilience**.

Freight rail qualifies as critical infrastructure because it:

- Underpins export competitiveness and food security
- Supports strategic value chains (agriculture, mining, manufacturing)
- Reduces dependency on vulnerable road networks
- Plays a key role in climate resilience and emissions reduction
- Is vital for economic continuity during disruptions (floods, unrest, fuel shocks)

The Framework explicitly positions freight rail as a **strategic backbone of the provincial and national logistics system**, making it unequivocally critical infrastructure.

10. Project Stage-1 Submission & Approval

Submitted By	
Submitted On	
Signed By	
Approved On	

11. Geo Location

Geo Location	
Latitude	
Longitude	

12. Procurement Planning

- **Phased, PSP-led procurement planning approach**
  The project adopts a phased, PSP-led procurement planning approach, with detailed procurement plans to be developed at corridor and project level following feasibility studies and market sounding. 1) Framework-Based Procurement Planning The project is positioned as a programme/framework, not a single procurement. Procurement planning is corridor- and project-specific, developed after feasibility. 2) Private Sector Participation (PSP) / PPP-Oriented Planning Procurement is aligned with the PSP Framework, rather than traditional public works contracting. Anticipated procurement models include: - concessions, - service-area contracts, - terminal operating agreements, - asset maintenance and availability-based contracts. 3) Phased Procurement Strategy Phase 1: Feasibility studies, business cases, market sounding Phase 2: Packaging of bankable projects Phase 3: Competitive procurement of operators/investors Phase 4: Contract management and performance monitoring 4) Market-Sounding–Led Planning Early engagement with potential operators and investors is explicitly referenced to inform procurement design before issuing tenders.

13. Procurement Action

- **Procurement Planning**
- **Preferential Procurement Regulations (2022)**
- **Sustainable Public Procurement (SPP)**

14. Social Impact

15. Property Availibility

Has the land for the site been identified?: Yes
Remarks: Property availability is implicitly addressed through the use of existing rail servitudes and anticipated terminal development sites. Detailed confirmation of land availability will be undertaken at corridor and project level during feasibility and project formation.

16. Project Stage-2 Submission & Approval

Submitted By	
Submitted On	

Signed By	
Approved On	

17. Background & Justification

Freight rail has historically played a critical role in supporting the Western Cape's agricultural, manufacturing, and extractive value chains. Over time, however, sustained underinvestment, declining infrastructure condition, operational inefficiencies, and institutional constraints have led to a significant deterioration in rail performance. As reliability declined, large volumes of rail-friendly freight shifted to road, resulting in higher logistics costs, increased congestion, accelerated road deterioration, higher accident risk, and rising greenhouse gas emissions. These impacts have been felt most acutely along strategic provincial corridors and in regions already shaped by historical spatial and economic inequality.

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18. Economic and Social Justification

- **Poverty reduction**
  By lowering logistics costs and improving access to markets, the project supports income stability in agriculture- and industry-dependent communities, particularly in rural and peri-urban areas.
- **Job creation**
  Direct employment is created through rail rehabilitation, terminal development, operations, maintenance, and security, with indirect jobs generated across logistics and supply chains.
- **Inclusive growth**
  The framework enables participation by SMEs, regional producers, and new rail operators, broadening access to economic opportunities beyond dominant incumbents.
- **Reducing inequality**
  By revitalising infrastructure in historically underinvested regions, the project helps correct spatial and economic inequalities rooted in apartheid-era planning.
- **Improving access**
  Reliable rail services improve access to domestic and export markets for producers located far from ports and major road corridors.
- **Stimulating Local Economic Activity**
  Revitalised rail corridors stimulate regional economies by anchoring agricultural processing, manufacturing, and logistics activities.
- **Financial Sustainability Through Diversion and Efficiency**
  Modal shift from road to rail delivers sustained cost savings, lower externalities, and more efficient freight movement.
- **Alignment with Provincial Economic Strategies**
  The project aligns with WCIF 2050, provincial logistics priorities, and export-led growth strategies.
- **Protecting Public Health and Environmental Quality**
  Reduced truck traffic lowers accident risk, noise, emissions, and air pollution along key corridors.
- **Improving Social and Environmental Equity**
  Benefits accrue disproportionately to communities historically burdened by heavy vehicle traffic and infrastructure neglect.
- **Meeting a Critical Public Service Obligation**
- **Supporting Community Trust and Transparency**

Structured stakeholder engagement and regulatory oversight build confidence in delivery and operations.

- **Job Creation, Skills Development and Local Participation**
  The project supports rail-specific skills development, contractor participation, and localisation of services.
- **Alignment with Provincial Economic Strategies**
- **Economic Stability & System Reliability**
- **De-risking Public Development**
- **Job Creation and Economic Multipliers**
- **Long-Term Financial Benefits**
- **Alignment with Green Finance**
- **Community Empowerment**
- **Gender Inclusion**
- **Improved Livelihoods**
- **Social Equity and Inclusion**
- **Enhanced Quality of Life**

19. Geographic Coverage

19.1 Regions

- City of Cape Town
- Cape Wineland
- West Coast
- Overberg
- Garden Route
- Central Karo

19.2 Municipalities

District	Municipalities

19.3 Communities

District	Communities

20. Sector-specific analysis

- **Inadequate transportation infrastructure**
  Declining rail infrastructure and branch-line degradation are core problems the project seeks to address.
- **Limited digital connectivity**
  Rail operations are constrained by manual systems; digital rail management and monitoring are identified enablers.
- **Technology & Regulatory features**
  Open-access rail reform, economic regulation, safety oversight, and digital systems are central to delivery.
- **Governance and Compliance Risk**
  Fragmented institutional roles, regulatory reform, and PSP implementation create governance complexity.
- **Operational instability and disruption risk**
  Rail unreliability, vandalism, climate events, and road dependency pose systemic operational risks.
- **Safety and roadworthiness challenges**
  Heavy truck dependence increases accident risk and accelerates road deterioration.

- **Overtrading and route congestion**
  Key road corridors experience congestion due to freight diversion from rail.
- **Dependence on a single dominant mode following rail decline**
  Road freight dominance is a direct consequence of rail underperformance.
- **Sector Characteristics**
  The sector is capital-intensive, network-based, highly regulated, and strategically important to export-oriented value chains.
- **Drivers of Demand**
  Demand is driven by agricultural exports, bulk commodities, long-distance palletised freight, cost efficiency, and reliability needs.
- **Market Size and Growth**
  More than **7.3 million tonnes of rail-friendly freight** have been identified, with long-term growth tied to exports and regional production.
- **Competitive Advantage**
  Rail offers lower cost per tonne-kilometre, reduced emissions, higher safety, and greater resilience compared to road freight.
- **Economic Impact**
  The project delivers **R4.4 billion in transport-cost savings**, **R2 billion in externality reductions**, and strong multiplier effects.
- **Risks and Challenges**
  Key risks include infrastructure condition, security, regulatory transition, private sector confidence, and implementation sequencing.

21. Approval Bodies

21.1 Provincial Government Departments

- Department Of Infrastructure
- Provincial Treasury
- Department of Mobility
- Department of Environmental Affairs and Development Planning
- Western Cape Government
- Department of Economic Development and Tourism
- Local Government
- City of Cape Town – Local planning, building plan approval
- Municipal Planning, Engineering, Transport, and Environmental Units
- Department of Transport
- Department of Forestry, Fisheries and the Environment (DFFE)
- Department of Public Works and Infrastructure (DPWI)
- National Treasury (oversight of PPP/PSP)
- Transnet Rail Infrastructure Manager (TRIM)
- Private Sector Participation Unit (PSP Unit)
- Transport Economic Regulator (TER)
- Rail Safety Regulator (RSR)

21.2 Public Entities and Regulatory Bodies

- Western Cape Provincial Treasury
- Department of Transport
- Municipal Building Control & Planning Authorities
- Municipal Traffic & Transport Authorities
- Provincial Regulatory Authority (Transport)

21.3 Specialized Committees and Boards

- Municipal Planning Committees
- Provincial Treasury PPP Committee (where applicable)
- Fire Safety Review Committees or Building Control Advisory structures
- Heritage-related advisory bodies

22. Enviornmental Considerations

22.1 Projections of usage over time

- **traffic volumes**
  Traffic volume projections are central to demand forecasting for the Freight Rail Revitalisation Framework. Forecasts are based on identified rail-friendly freight currently moving by road, with projections showing progressive increases in tonne-kilometres as infrastructure reliability improves and services are reinstated. Short-term volumes are driven by anchor shippers on priority corridors, while medium- and long-term growth reflects expanded corridor coverage, improved terminal throughput, and growing export demand. Traffic growth is phased to align with rehabilitated capacity rather than assumed market capture.

- **energy consumption**
  Energy consumption projections are closely linked to traffic volumes and modal shift. As freight transitions from road to rail, overall energy use per tonne-kilometre declines, even as absolute rail energy consumption increases over time. Demand forecasts therefore reflect rising rail energy use alongside net reductions in system-wide fuel consumption. Over the medium to long term, improved operating efficiency, better train utilisation, and potential future electrification or cleaner traction technologies further moderate energy growth relative to freight volumes.

- **Phased Operational Capability**
  Demand projections are explicitly aligned to phased operational capability. Initial phases assume limited service frequencies, conservative scheduling, and constrained terminal operations, resulting in modest early uptake. As operational capability improves, through restored track condition, enhanced signalling, terminal upgrades, and experienced operators, usage ramps up accordingly. This phased approach ensures that demand forecasts remain realistic and deliverable, avoiding over-estimation and allowing traffic volumes to grow in step with proven operational performance.

- **Regulatory Readiness and Approval Throughput**
  Projections of usage over time are sensitive to the pace of regulatory readiness, including access agreements, safety certification, and economic regulation approvals. Faster approval throughput enables earlier service commencement and higher short-term uptake, while delays push demand growth into later years. Demand scenarios therefore incorporate regulatory-linked milestones, with conservative, base, and accelerated cases reflecting different approval timelines. This ensures that projected usage is grounded in realistic regulatory pathways rather than assumed immediate market access.

- **Capacity Constraints**
  Capacity constraints are a defining factor in demand forecasting. Usage projections are capped by available track condition, axle-load limits, siding lengths, terminal handling capacity, and port interfaces. The framework assumes that latent demand exceeds current capacity, meaning growth is unlocked only as constraints are progressively addressed. This results in stepped increases in usage over time, with each phase of infrastructure investment enabling a corresponding increase in traffic volumes rather than continuous unconstrained growth.

- **Past Infrastructure Projects**
  Historical performance of past rail and logistics infrastructure projects informs usage projections by providing empirical evidence of demand recovery timelines following rehabilitation. These precedents demonstrate that demand does not return instantly but builds as reliability, service consistency, and market confidence are restored. The framework applies these lessons to temper early forecasts and shape realistic ramp-up curves, ensuring that projections reflect observed behaviour rather than theoretical mode-shift potential.

- **Economic Growth Forecasts**
  Long-term usage projections are anchored to provincial and national economic growth forecasts, particularly in agriculture, agri-processing, manufacturing, and exports. As output in these sectors grows, underlying freight demand increases, supporting sustained rail usage beyond initial modal shift. Economic growth forecasts therefore inform baseline demand expansion in the medium to long term, while short-term growth remains dominated by structural recovery and operational improvements rather than macroeconomic expansion alone.

- **Carbon Neutrality Goals**
  Carbon neutrality goals and emission reduction targets shape long-term demand projections by reinforcing rail’s competitiveness relative to road freight. As climate policy tightens and carbon costs rise, demand forecasts assume increasing preference for lower-emission transport modes. This results in stronger long-term rail uptake, particularly for high-volume, long-distance freight, with projections reflecting policy-driven demand reinforcement in addition to economic fundamentals.

- **Population Growth**
  While freight rail does not directly serve households, population growth indirectly influences demand by driving increased food consumption, manufactured goods demand, and export volumes. Over time, population growth supports higher production and distribution activity across the province, which is reflected in gradual upward adjustments to freight demand projections. This effect is secondary to industrial and export drivers but contributes to long-term baseline growth in rail usage.

- **Economic Development Zones**
  Economic Development Zones and industrial nodes play a direct role in shaping future freight demand. Projections account for increased freight generation from zones focused on manufacturing, processing, and export activities, particularly where rail access is available or planned. As these zones mature, usage projections show higher, more stable demand linked to concentrated industrial output, reinforcing the strategic importance of connecting development nodes to revitalised rail corridors.

22.2 Informed by

- **historical data**
  Demand forecasting is informed by historical freight movement data across rail and road modes, including past rail volumes, corridor utilisation, commodity flows, and observed modal shifts following infrastructure decline or recovery. Historical data provides a baseline for understanding latent demand, seasonality, and corridor-specific performance. It also enables calibration of realistic recovery trajectories, avoiding assumptions of immediate demand return and ensuring projections reflect observed freight-owner behaviour in response to service reliability and infrastructure condition.
- **growth trends**
  Forecasting incorporates growth trends in key freight-generating sectors such as agriculture, agri-processing, manufacturing, and export logistics. These trends reflect both historical output growth and forward-looking sector projections, allowing demand estimates to scale over time beyond initial modal shift. Growth trends ensure that demand forecasts capture structural increases in freight volumes linked to economic expansion rather than treating demand as static once rail services are restored.
- **policy targets**
  Demand projections are informed by national and provincial policy targets related to freight logistics reform, emissions reduction, modal shift, and economic competitiveness. These targets shape scenario assumptions by influencing infrastructure investment priorities, regulatory reform timelines, and market behaviour. Policy-aligned forecasting allows demand projections to reflect not only market fundamentals but also the directional impact of government commitments to decarbonisation, resilience, and logistics efficiency.
- **Stakeholder Engagement Data**
  Engagement with freight owners, logistics operators, regulators, and municipalities informs demand forecasting by validating assumptions on volumes, service requirements, pricing sensitivity, and operational constraints. Stakeholder inputs help distinguish committed, near-term demand from aspirational or contingent volumes, improving forecast credibility. This qualitative data complements quantitative models by grounding projections in actual market intent and readiness rather than purely theoretical modal-shift potential.
- **Operational Phasing Assumptions**
  Demand forecasting is explicitly shaped by operational phasing assumptions that reflect staged infrastructure rehabilitation, regulatory approvals, and service ramp-up. Usage projections are aligned with what can be delivered operationally at each phase, ensuring demand only increases as capacity, reliability, and service frequency improve. This approach avoids front-loading demand and supports realistic, bankable projections linked to implementable milestones.
- **Other**
  Other – Capacity and Regulatory Constraints:

  In addition to the above, demand forecasting is informed by capacity and regulatory constraints, including track condition, terminal throughput, access pricing, and safety certification timelines. These constraints define the upper bounds of achievable demand at any point in time and are integral to producing conservative, credible forecasts that align with real-world delivery conditions.

23. Social Considerations

23.1 Inclusive Economic Development

- Encourages job creation through public procurement and infrastructure projects
- Local economic participation and value-chain inclusion
- Supports SMMEs, women- and youth-owned enterprises

23.2 Public Participation and Equity

- Ensures community involvement in planning and decision-making
- Promotes equitable access to services and opportunities
- Transparency and stakeholder trust-building

24. Investment Needs

24.1 Infrastructure Development

- Digital and Operational Infrastructure
- Archival Storage Infrastructure

24.2 Agriculture and Agri-processing

- Agro-logistics and cold chain infrastructure.
- Export-oriented agricultural market access and competitiveness

24.3 Green Economy

- Low-Carbon and Resource-Efficient Mobility
- Resource efficiency through consolidation and digitisation
- Digitisation-Enabled Environmental Efficiency
- Climate Resilience and Adaptation Support
- Green Finance & ESG Alignment
- Green Innovation and Technology Development

24.4 SMME and Entrepreneurship Support

- Enterprise Participation through Inclusive Procurement
- Lowering Barriers to Market Entry
- Access to Shared Infrastructure
- Market Validation and Credibility
- Regional and Spatial Inclusion of Enterprises
- Creation of rail-linked local service markets

25. Policy Incentives

25.1 Sector-Focused Incentives

- Agri-processing: Support for infrastructure, logistics, and export readiness.
- Inclusive Infrastructure Development
- Gender-Responsive Procurement
- Youth Empowerment
- Public-Private Partnerships (PPP)
- Economic Inclusion
- Freight logistics and export competitiveness incentives
- Freight logistics and export competitiveness incentives

25.2 Investment Ecosystem Support

- Western Cape Infrastructure Pipeline / DOI support
- Provincial Treasury PPP and project preparation support
- WCIF 2050 Panoptic Evaluation framework
- Development finance institution (DFI) technical assistance
- National PSP and rail reform support mechanisms
- National PSP and rail reform support mechanisms

25.3 National Incentives Accessible in the Western Cape Via the Department of Trade, Industry and Competition (DTIC)

- Indirect DTIC Alignment (Not Incentive-Based) [around inclusive economic participation, formalisation of informal sectors, SMME participation through procurement and concessions]
- ational rail reform and open-access policy enablement

25.4 Investment Summits: Hosted by the Premier to connect investors with opportunities and funding partners

26. Scale And Complexity

26.1 Total Addressable Market (TAM)

- **Population served by a transport corridor**

The freight rail corridors prioritised under the Freight Rail Revitalisation Framework indirectly serve a large and diverse population across the Western Cape, including rural farming communities, peri-urban settlements, and metropolitan labour markets. While freight-focused, these corridors underpin employment, food security, and economic activity that support **millions of residents** through agricultural production, manufacturing, logistics, and export supply chains. Reliable rail freight reduces pressure on roads used by the general population, improves safety and air quality, and enhances access to jobs and markets across regions shaped by historic spatial inequality.

- **Data sources**
  - **Demographic**
    Demographic demand analysis for the Freight Rail Revitalisation Framework draws on provincial and national datasets that describe population distribution, labour markets, and economic activity along key freight corridors. Core sources include Statistics South Africa census and community survey data, municipal Integrated Development Plans (IDPs), and Spatial Development Frameworks (SDFs). These are complemented by the Western Cape Freight Demand Model, which links demographic and economic activity to freight generation, employment patterns, and regional production nodes rather than direct household service demand.
  - **Geographic**
    Geographic demand forecasting for the Freight Rail Revitalisation Framework is informed by spatial datasets that map freight origins, destinations, and corridor characteristics across the Western Cape. Key sources include GIS-based rail network data from Transnet/TRIM, municipal and provincial Spatial Development Frameworks (SDFs), land-use zoning maps, and port-interface data for Cape Town and Saldanha. These are integrated with the Western Cape Freight Demand Model, which spatially allocates freight flows by commodity, corridor, and node to assess modal-shift potential and infrastructure prioritisation.
  - **Economic**
    Economic demand forecasting for the Freight Rail Revitalisation Framework is grounded in sectoral and macroeconomic data that describe production, trade, and logistics activity across the Western Cape. Key sources include provincial economic accounts, sector output and export data for agriculture, manufacturing, and mining, port throughput statistics, and national freight logistics indicators. These datasets are integrated through the Western Cape Freight Demand Model, which translates economic output, commodity flows, and growth scenarios into forecast freight volumes, modal-shift potential, and corridor-level investment demand.
  - **Environmental and Biodiversity Data**
    Data Sources Related to Environmental and Biodiversity Data
    Environmental and biodiversity considerations informing demand forecasting for the Freight Rail Revitalisation Framework draw on national and provincial spatial environmental datasets. Key sources include Environmental Management Frameworks (EMFs), biodiversity sensitivity maps from CapeNature and SANBI, National Land Cover datasets, and climate-risk and floodplain mapping. These datasets are used to screen priority corridors and terminal locations, identify environmentally constrained areas, and inform phased investment sequencing, ensuring that freight demand forecasts are aligned with environmental capacity, compliance requirements, and long-term ecological sustainability.
  - **Land Use and Spatial Planning Data**
    Data Sources Related to Land Use and Spatial Planning Data
    Demand forecasting for the Freight Rail Revitalisation Framework is informed by land-use and spatial planning datasets that define where freight-generating activities are located and how they are expected to grow. Key sources include municipal Spatial Development Frameworks (SDFs), Integrated Development Plans (IDPs), zoning schemes, and provincial spatial strategies, including WCIF 2050. These datasets are used to identify production nodes, logistics zones, and terminal catchments, ensuring that freight demand projections align with planned land-use patterns and long-term spatial development objectives.
  - **Climate and Carbon Data**
    Climate and carbon-related demand forecasting for the Freight Rail Revitalisation Framework draws on national and provincial greenhouse gas emissions inventories, freight emissions factors by mode, and climate-risk datasets. Key sources include South Africa's National Greenhouse Gas Inventory, transport-sector emissions benchmarks, provincial climate-response strategies, and climate-hazard mapping (flood, heat, and fire risk). These datasets are used to quantify emissions reduction from modal shift, assess climate resilience of corridors, and align freight demand scenarios with long-term decarbonisation pathways.
  - **Regulatory and Compliance Data**
    Data Sources Related to Regulatory and Compliance Data
    Demand forecasting for the Freight Rail Revitalisation Framework is informed by regulatory and compliance datasets that shape network access, operational feasibility, and investment timing. Key sources include national rail policy instruments, TRIM's Network Statement, economic regulation and access-pricing frameworks (TER), rail safety requirements (RSR), and environmental approval triggers under NEMA and EIA Regulations. These regulatory inputs are used to test realistic operating scenarios, phase demand uptake, and ensure that forecast freight volumes are aligned with legally permissible access, capacity, and compliance conditions.
  - **Socio-Economic and Development Data**

Data Sources Related to Socio-Economic and Development Data
Socio-economic demand forecasting for the Freight Rail Revitalisation Framework draws on datasets that capture employment patterns, income distribution, production intensity, and regional development dynamics along freight corridors. Key sources include Statistics South Africa census and labour-force data, provincial socio-economic profiles, municipal IDPs, and sector development strategies for agriculture, manufacturing, and mining. These are integrated with the Western Cape Freight Demand Model to link socio-economic activity to freight generation, assess distributional impacts, and ensure demand projections reflect inclusive growth and spatial development priorities.

26.2 Served Available Market (SAM)

- **Location**
  The served available market for the Freight Rail Revitalisation Framework is geographically anchored in the Western Cape's inland production regions, rural branch-line catchments, and port-facing corridors. Key locations include agricultural zones such as Ceres, Elgin, and Vredendal; industrial and logistics nodes around Worcester and George; and export gateways at Cape Town and Saldanha Bay. These locations fall within practical rail catchments where freight densities, distances, and terminal access make rail services commercially viable, defining a province-wide, location-specific market suitable for phased rail reactivation.

- **Capacity**
  The served available market for the Freight Rail Revitalisation Framework is constrained and enabled by available rail capacity across branch lines, feeder corridors, terminals, and port interfaces. Current capacity is limited by infrastructure condition, maintenance backlogs, and operational reliability rather than underlying demand. The Framework identifies that, with targeted rehabilitation and improved access arrangements, existing corridors can accommodate millions of tonnes of additional freight annually. Phased capacity restoration—through track upgrades, terminal throughput improvements, and operational reforms—allows demand to be progressively unlocked without requiring wholesale network expansion.

- **Which of the following criteria is being used to support this analysis in terms of Segmentation?**
  - **Region**
    The served available market is strongly segmented by region, reflecting the spatial distribution of freight-generating activities across the Western Cape. Priority regions include inland agricultural production areas (e.g. Ceres, Elgin, Vredendal), secondary industrial centres (Worcester, George), and port-facing corridors linked to Cape Town and Saldanha Bay. Regional segmentation is critical because freight volumes, distances to ports, infrastructure condition, and terminal access vary significantly by region, directly influencing rail viability, service design, and phased investment prioritisation.
  - **Service level**
    Market segmentation by service level distinguishes freight demand based on reliability, frequency, transit time, and handling requirements. High-volume bulk commodities and export agriculture require predictable, scheduled rail services linked to port windows, while palletised and mixed freight demand more flexible terminal-based services. The Framework uses service-level segmentation to identify corridors where rail can competitively meet shipper expectations, ensuring that only freight with suitable service requirements is included in the served available market.
  - **Travel Purpose & Network Role**
    The served available market is segmented by travel purpose and network role, distinguishing long-haul, port-bound freight from shorter regional distribution movements. Rail is prioritised for freight performing a strategic network role—moving high volumes over longer distances between production zones, terminals, and ports—rather than short, local deliveries. This segmentation ensures that rail capacity is focused on freight movements where it delivers maximum economic, environmental, and system-wide benefits.
  - **Regulatory risk, user type, maturity**
    Segmentation by regulatory risk and user type differentiates between established freight owners with mature logistics operations and emerging users facing higher regulatory or operational uncertainty. Exporters, large agri-processors, and bulk producers represent lower-risk, anchor demand, while smaller or new entrants may require phased onboarding. This segmentation supports realistic demand forecasting by aligning served market assumptions with regulatory readiness, access arrangements, and the maturity of potential rail users.
  - **Geographic Segmentation**
    Geographic segmentation focuses on rail catchment areas defined by distance to rail infrastructure, terminals, and ports. The served available market includes locations within economically viable rail radii, where first- and last-mile road distances do not erode rail's cost advantage. This approach ensures that demand forecasts reflect practical geography rather than theoretical freight volumes, anchoring the market in locations where rail can operate competitively.
  - **Development Impact Segmentation**
    The project segments the market by development impact, prioritising corridors and regions where rail revitalisation delivers disproportionate economic and social benefits. This includes rural and peri-urban areas affected by historic underinvestment, where improved logistics access can unlock growth, employment, and resilience. Development impact segmentation aligns the served market with provincial spatial justice and

inclusive growth objectives, not only commercial demand.

- **Socio-Economic Segmentation**
  Socio-economic segmentation considers the role of freight rail in supporting employment, income generation, and value chains across different communities. The served available market prioritises freight flows that underpin labour-intensive sectors such as agriculture and manufacturing, particularly in regions with higher unemployment and limited economic diversification. This ensures that demand forecasting reflects both economic volume and socio-economic importance.
- **Carbon and Climate Segmentation**
  The served available market is segmented by carbon intensity and climate impact, prioritising freight flows where modal shift from road to rail delivers the greatest emissions reduction and resilience benefits. High-volume, long-distance road freight with significant carbon footprints is prioritised for rail capture. This segmentation aligns demand forecasting with climate objectives, ensuring that capacity is allocated where environmental returns are highest.

26.3 Demand Forecasting

- **Projections of usage over time**
  - **traffic volumes**
    Traffic volume projections are central to demand forecasting for the Freight Rail Revitalisation Framework. Forecasts are based on identified rail-friendly freight currently moving by road, with projections showing progressive increases in tonne-kilometres as infrastructure reliability improves and services are reinstated. Short-term volumes are driven by anchor shippers on priority corridors, while medium- and long-term growth reflects expanded corridor coverage, improved terminal throughput, and growing export demand. Traffic growth is phased to align with rehabilitated capacity rather than assumed market capture.
  - **energy consumption**
    Energy consumption projections are closely linked to traffic volumes and modal shift. As freight transitions from road to rail, overall energy use per tonne-kilometre declines, even as absolute rail energy consumption increases over time. Demand forecasts therefore reflect rising rail energy use alongside net reductions in system-wide fuel consumption. Over the medium to long term, improved operating efficiency, better train utilisation, and potential future electrification or cleaner traction technologies further moderate energy growth relative to freight volumes.
  - **Phased Operational Capability**
    Demand projections are explicitly aligned to phased operational capability. Initial phases assume limited service frequencies, conservative scheduling, and constrained terminal operations, resulting in modest early uptake. As operational capability improves, through restored track condition, enhanced signalling, terminal upgrades, and experienced operators, usage ramps up accordingly. This phased approach ensures that demand forecasts remain realistic and deliverable, avoiding over-estimation and allowing traffic volumes to grow in step with proven operational performance.
  - **Regulatory Readiness and Approval Throughput**
    Projections of usage over time are sensitive to the pace of regulatory readiness, including access agreements, safety certification, and economic regulation approvals. Faster approval throughput enables earlier service commencement and higher short-term uptake, while delays push demand growth into later years. Demand scenarios therefore incorporate regulatory-linked milestones, with conservative, base, and accelerated cases reflecting different approval timelines. This ensures that projected usage is grounded in realistic regulatory pathways rather than assumed immediate market access.
  - **Capacity Constraints**
    Capacity constraints are a defining factor in demand forecasting. Usage projections are capped by available track condition, axle-load limits, siding lengths, terminal handling capacity, and port interfaces. The framework assumes that latent demand exceeds current capacity, meaning growth is unlocked only as constraints are progressively addressed. This results in stepped increases in usage over time, with each phase of infrastructure investment enabling a corresponding increase in traffic volumes rather than continuous unconstrained growth.
  - **Past Infrastructure Projects**
    Historical performance of past rail and logistics infrastructure projects informs usage projections by providing empirical evidence of demand recovery timelines following rehabilitation. These precedents demonstrate that demand does not return instantly but builds as reliability, service consistency, and market confidence are restored. The framework applies these lessons to temper early forecasts and shape realistic ramp-up curves, ensuring that projections reflect observed behaviour rather than theoretical mode-shift potential.
  - **Economic Growth Forecasts**
    Long-term usage projections are anchored to provincial and national economic growth forecasts, particularly in agriculture, agri-processing, manufacturing, and exports. As output in these sectors grows, underlying freight demand increases, supporting sustained rail usage beyond initial modal shift. Economic growth forecasts therefore inform baseline demand expansion in the medium to long term, while short-term growth remains dominated by structural recovery and operational improvements rather than macroeconomic expansion alone.
  - **Carbon Neutrality Goals**

Carbon neutrality goals and emission reduction targets shape long-term demand projections by reinforcing rail's competitiveness relative to road freight. As climate policy tightens and carbon costs rise, demand forecasts assume increasing preference for lower-emission transport modes. This results in stronger long-term rail uptake, particularly for high-volume, long-distance freight, with projections reflecting policy-driven demand reinforcement in addition to economic fundamentals.

- **Population Growth**
  While freight rail does not directly serve households, population growth indirectly influences demand by driving increased food consumption, manufactured goods demand, and export volumes. Over time, population growth supports higher production and distribution activity across the province, which is reflected in gradual upward adjustments to freight demand projections. This effect is secondary to industrial and export drivers but contributes to long-term baseline growth in rail usage.
- **Economic Development Zones**
  Economic Development Zones and industrial nodes play a direct role in shaping future freight demand. Projections account for increased freight generation from zones focused on manufacturing, processing, and export activities, particularly where rail access is available or planned. As these zones mature, usage projections show higher, more stable demand linked to concentrated industrial output, reinforcing the strategic importance of connecting development nodes to revitalised rail corridors.

- **Informed by**
  - **historical data**
    Demand forecasting is informed by historical freight movement data across rail and road modes, including past rail volumes, corridor utilisation, commodity flows, and observed modal shifts following infrastructure decline or recovery. Historical data provides a baseline for understanding latent demand, seasonality, and corridor-specific performance. It also enables calibration of realistic recovery trajectories, avoiding assumptions of immediate demand return and ensuring projections reflect observed freight-owner behaviour in response to service reliability and infrastructure condition.
  - **growth trends**
    Forecasting incorporates growth trends in key freight-generating sectors such as agriculture, agri-processing, manufacturing, and export logistics. These trends reflect both historical output growth and forward-looking sector projections, allowing demand estimates to scale over time beyond initial modal shift. Growth trends ensure that demand forecasts capture structural increases in freight volumes linked to economic expansion rather than treating demand as static once rail services are restored.
  - **policy targets**
    Demand projections are informed by national and provincial policy targets related to freight logistics reform, emissions reduction, modal shift, and economic competitiveness. These targets shape scenario assumptions by influencing infrastructure investment priorities, regulatory reform timelines, and market behaviour. Policy-aligned forecasting allows demand projections to reflect not only market fundamentals but also the directional impact of government commitments to decarbonisation, resilience, and logistics efficiency.
  - **Stakeholder Engagement Data**
    Engagement with freight owners, logistics operators, regulators, and municipalities informs demand forecasting by validating assumptions on volumes, service requirements, pricing sensitivity, and operational constraints. Stakeholder inputs help distinguish committed, near-term demand from aspirational or contingent volumes, improving forecast credibility. This qualitative data complements quantitative models by grounding projections in actual market intent and readiness rather than purely theoretical modal-shift potential.
  - **Operational Phasing Assumptions**
    Demand forecasting is explicitly shaped by operational phasing assumptions that reflect staged infrastructure rehabilitation, regulatory approvals, and service ramp-up. Usage projections are aligned with what can be delivered operationally at each phase, ensuring demand only increases as capacity, reliability, and service frequency improve. This approach avoids front-loading demand and supports realistic, bankable projections linked to implementable milestones.
  - **Other – Capacity and Regulatory Constraints:**

    In addition to the above, demand forecasting is informed by capacity and regulatory constraints, including track condition, terminal throughput, access pricing, and safety certification timelines. These constraints define the upper bounds of achievable demand at any point in time and are integral to producing conservative, credible forecasts that align with real-world delivery conditions.

26.4 Size

Project Type	New Project
Project Size	Mega - Total of R1 Bill or more

27. Challenges

27.1 Financial Complexity

The Freight Rail Revitalisation Framework presents significant financial complexity due to its scale, phased nature, and multi-actor delivery model. Capital requirements span track rehabilitation, signalling, terminals, security, and enabling systems across multiple corridors, with costs varying widely based on asset condition and scope. Revenue recovery is gradual, as demand ramps up over time, creating early-stage funding gaps that must be bridged through blended finance, public co-investment, or risk-sharing mechanisms. Financial structuring is further complicated by the need to align public affordability, value-for-money requirements, and private return expectations under PSP/PPP frameworks. Uncertainty around access pricing, regulatory timelines, and long-term maintenance liabilities adds to investor risk, requiring robust business cases, conservative assumptions, and flexible financing structures to ensure bankability and fiscal sustainability.

27.2 Operational Complexity

The Freight Rail Revitalisation Framework involves substantial operational complexity arising from the need to restore, coordinate, and manage rail services across multiple corridors, operators, and interfaces. Operations must be re-established on infrastructure that has experienced long periods of underutilisation or disruption, requiring careful sequencing of rehabilitation, testing, and service commencement. The introduction of third-party operators under open-access arrangements adds complexity in scheduling, slot allocation, safety management, and performance monitoring. Effective coordination is also required between rail operations, terminal handling, first- and last-mile logistics, and port interfaces. Additional challenges include managing security risks, ensuring consistent service reliability during phased roll-out, and building operational capability and confidence among freight users while systems and governance arrangements mature.

27.3 Technical challenges

The Freight Rail Revitalisation Framework faces several interrelated technical challenges, primarily linked to the condition, configuration, and operability of the existing rail network. These include aged and degraded track infrastructure, signalling systems that are obsolete or non-functional on some branch lines, and deferred maintenance that limits axle loads, speeds, and service reliability. Technical uncertainty also arises from incomplete or inconsistent asset condition data, requiring detailed inspections and validation before rehabilitation can be designed and costed. Integrating rehabilitated branch lines with mainline operations, terminal interfaces, and port systems presents additional complexity, particularly under emerging open-access arrangements. Security-related damage, climate exposure (flooding, heat stress, and washaways), and the need to phase works while maintaining limited operations further compound technical risk and require careful engineering, sequencing, and asset-management planning.

28. Phases

29. Project Stage-3 Submission & Approval

Submitted By	
Submitted On	
Signed By	
Approved On	