



Prefeasibility Executive Summary Report

Project Details

Project Name	Smart and Sustainable Infrastructure for Future Cities
Location	Bergrivier Local Municipality
Sector	Social
Department	Department Of Infrastructure
Project Owner	Poonam Yawalkar
Project Manager	Poonam Yawalkar

Project Scope

The Scope of Work outlines the key activities, tasks, and deliverables required to plan, design, and implement smart and sustainable infrastructure for future urban development. The project scope includes the following components:

1. Baseline Assessment & Data Collection

- Analyse existing infrastructure systems, including transport, energy, water, waste, ICT, and public services.
- Conduct site surveys, environmental assessments, and socio-economic studies.
- Identify gaps, inefficiencies, constraints, and opportunities for improvement.

2. Smart Infrastructure Planning

- Develop an integrated master plan for smart mobility, utilities, buildings, and public spaces.
- Identify smart technologies such as IoT, smart meters, sensors, automation, and digital twins.
- Propose data management frameworks, cybersecurity measures, and connectivity requirements.

3. Sustainability & Resilience Design

- Incorporate renewable energy systems, energy-efficient design principles, and low-carbon materials.
- Integrate climate resilience measures including flood management, heat mitigation, and disaster preparedness.
- Evaluate environmental impacts and propose mitigation strategies.

Justification

Urban centres across the world are experiencing rapid population growth, increased economic activity, and rising pressure on existing infrastructure systems. Traditional infrastructure models are no longer sufficient to meet the evolving needs of modern cities, particularly in the face of climate change, resource scarcity, congestion, and environmental degradation. As cities expand, the demand for efficient transport networks, reliable utilities, sustainable energy systems, and resilient public services continues to intensify.

Smart and sustainable infrastructure presents a transformative opportunity to address these challenges. By integrating digital technologies—including IoT sensors, real-time data platforms, artificial intelligence, and automation—with green and energy-efficient design principles, cities can significantly improve operational efficiency and environmental performance.

Investing in smart and sustainable infrastructure is justified because it enables:

- **Optimised resource management** (energy, water, waste)
- **Reduced operational and maintenance costs** through predictive monitoring
- **Improved mobility and reduced congestion** via intelligent transport systems
- **Resilience to climate risks** such as heatwaves, floods, and extreme weather
- **Enhanced quality of life** for residents through safer, cleaner, and more accessible urban spaces
- **Support for economic growth and innovation**, attracting investment and skilled talent

This approach aligns with global sustainability commitments, including the UN Sustainable Development Goals (SDGs), and national priorities for low-carbon, climate-resilient development.

Sector Specific Analysis

- **Lack of access to water**

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- **Limited digital connectivity**

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- **Other_1**

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Market Size And Demand Analysis

1] Total Addressable Market (TAM)

- **Population served by a transport corridor**

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- **Households needing water access**

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2] Served Available Market (SAM)

- **Location**

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- **Capacity**

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- **Are there any envisaged Operational constraints?**

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3] Demand Forecasting

- **Projections of usage over time**

- **traffic volumes**

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- **energy consumption**

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2] Project Status & Implementation

Regulatory & Environmental Approvals

Project Type	New Project
Project Size	Small to Medium - Below 30 Mill

State-Owned Entities

Name	Engagement Strategy
Development Bank of Southern Africa (DBSA)	The DBSA is a leading development finance institution focused on accelerating infrastructure development across South Africa and the broader Southern African region. The bank provides funding, technical assistance, and project preparation support for initiatives in transport, energy, water, sanitation, ICT, and urban development. DBSA's mandate is to promote sustainable socio-economic growth and improve the quality of life by enabling infrastructure-led development.
Industrial Development Corporation (IDC)	The IDC is a national development finance institution dedicated to supporting industrial capacity, economic diversification, and job creation. It provides funding for manufacturing, mining, green industries, agro-processing, and strategic infrastructure. The IDC plays a major role in supporting transformational and high-impact projects that stimulate innovation, competitiveness, and inclusive economic growth.
Eskom	Eskom is South Africa's state-owned electricity utility responsible for the generation, transmission, and distribution of electrical power. It is one of the largest utilities in Africa and plays a critical role in national energy security. Eskom provides technical expertise, grid integration support, infrastructure investment, and operational capabilities essential for energy planning, renewable energy deployment, and large-scale infrastructure development.

Private Entities

Name	Engagement Strategy
Construction Companies	Construction companies are responsible for executing physical works related to infrastructure development. Their scope includes site preparation, civil works, building construction, installation of utilities, and implementation of smart infrastructure components. These companies ensure that designs are translated into completed structures that meet quality, safety, and regulatory standards. They play a critical role in project delivery, cost control, and timely execution.
Engineering Firms	Engineering firms provide specialist technical expertise across civil, structural, electrical, mechanical, environmental, and digital engineering disciplines. Their responsibilities include feasibility studies, detailed designs, technical specifications, system integration planning, and construction supervision. They ensure that infrastructure solutions are technically sound, compliant with regulations, and aligned with sustainability and smart-city objectives. Engineering firms also support risk assessments, quality assurance, and performance testing.
Financial Institutions	Financial institutions support project development by offering funding, investment products, loan facilities, guarantees, and financial advisory services. These institutions help structure viable financial models, assess project bankability, and ensure long-term financial sustainability. Their involvement may include project finance, public–private partnership (PPP) funding, capital investment, and risk mitigation instruments. They play a key role in enabling affordable and sustainable infrastructure delivery.

Civil Entities

Name	Engagement Strategy
Civil society organizations advocating for community needs	Civil society organizations (CSOs) play a vital role in representing the interests, concerns, and priorities of local communities. These groups advocate for inclusive development, equitable access to services, environmental protection, and social well-being. Their engagement ensures that infrastructure planning and implementation reflect community needs, cultural considerations, and social impacts. CSOs also contribute to transparency, accountability, and participatory decision-making by facilitating dialogue between citizens, government entities, and project developers.

Name	Engagement Strategy
Other_1	Their involvement may include project finance, public–private partnership (PPP) funding, capital investment, and risk mitigation instruments. They play a key role in enabling affordable and sustainable infrastructure delivery.

Other Stakeholders

Name	Engagement Strategy
Local Development Finance Institutions (DFIs)	Local DFIs provide financing, technical expertise, and advisory support for infrastructure and economic development projects within South Africa. Their role includes offering concessional loans, blended finance, guarantees, and project preparation facilities. By supporting sustainable and socially beneficial initiatives, DFIs help bridge funding gaps, de-risk large projects, and ensure long-term financial viability. They are key partners in enabling inclusive growth and infrastructure-led development.
Sustainable Infrastructure Development Symposium - South Africa (SIDSSA)	SIDSSA is a national platform established to coordinate, promote, and accelerate strategic infrastructure projects across South Africa. It brings together government, private sector, DFIs, investors, and technical experts to align infrastructure priorities with national development goals. SIDSSA supports project pipeline development, investment mobilisation, and policy alignment, ensuring that sustainable, resilient, and economically impactful infrastructure projects receive visibility and support. The platform plays a crucial role in shaping infrastructure investment strategies for the country.
Other	A customizable category for additional stakeholders, institutions, or partners relevant to the specific project. This may include sector-specific agencies, research institutions, or private investors depending on the project needs.
Other_1	Another placeholder intended for project-specific entities such as innovation hubs, regional development agencies, technology partners, or international organizations that may support project planning, implementation, or financing.

3] Governance, Policy & Enabling Environment

Legal And Regulatory Framework

- Procurement and Supply Chain Management
 - Preferential Procurement Policy Framework Act (PPPFA)
 - Use of the Western Cape Supplier Evidence Bank (WCSEB)
 - Other
 - Other_1
- Other
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- Environmental and Land Use Planning
 - Western Cape Land Use Planning Act (LUPA)
 - Environmental Impact Assessment (EIA)
 - Other_1
- Public Finance and Governance
 - Public Finance Management Act (PFMA)
 - Other
 - Other_1
- Health and Social Services
 - National Health Act
 - Provincial health regulations
 - Other_3
- Education
 - South African Schools Act

- Other
- Other_1
- Transport and Infrastructure
 - Western Cape Road Traffic Act
 - Related transport regulations
 - Other_2
- Human Settlements and Housing
 - Housing Act
 - Provincial housing frameworks
 - Other
 - Other_1
- Economic Development
 - Tourism
 - Enterprise development
 - Other

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Governance Policies

- National Development Plan (NDP)
- Relevant Integrated Development Plans (IDPs)
- Budget Facility for Infrastructure (BFI)

Current Planning Phase

Sr	Phase Name	Description
1	Initiation The project initiation phase is the first stage of turning an abstract idea into a meaningful goal. In this stage, you need to develop a business case and define the project on a broad level. In order to do that, you have to determine the need for the project and create a project charter. The project charter is an important document consisting of details like the project constraints, goals, appointment of the project manager, budget, expected timeline, etc. Project managers can utilize background removal tools to create clean, professional-looking project visuals and presentations. Once you have the project goals and project scope, identify key project stakeholders—the people who are to be involved in the project. Create a stakeholder register with the roles, designation, communication requirements, and influence.	
2	Design During the planning stage, the scope of the project is defined. There is a possibility of changing the scope of the project demands it but the project manager must approve the change. Project managers also develop a work breakdown structure (WBS), which clearly visualizes the entire project in different sections for the team management. A detailed project timeline with each deliverable is another important element of the planning stage. Using that timeline, project managers can develop a project communication plan and a schedule of communication with the relevant stakeholders.	

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3	Develop During the planning stage, the scope of the project is defined. There is a possibility of changing the scope of the project demands it but the project manager must approve the change. Project managers also develop a work breakdown structure (WBS), which clearly visualizes the entire project in different sections for the team management. A detailed project timeline with each deliverable is another important element of the planning stage. Using that timeline, project managers can develop a project communication plan and a schedule of communication with the relevant stakeholders.	
4	Implement During the planning stage, the scope of the project is defined. There is a possibility of changing the scope of the project demands it but the project manager must approve the change. Project managers also develop a work breakdown structure (WBS), which clearly visualizes the entire project in different sections for the team management. A detailed project timeline with each deliverable is another important element of the planning stage. Using that timeline, project managers can develop a project communication plan and a schedule of communication with the relevant stakeholders.	

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5	Handover During the planning stage, the scope of the project is defined. There is a possibility of changing the scope of the project demands it but the project manager must approve the change. Project managers also develop a work breakdown structure (WBS), which clearly visualizes the entire project in different sections for the team management. A detailed project timeline with each deliverable is another important element of the planning stage. Using that timeline, project managers can develop a project communication plan and a schedule of communication with the relevant stakeholders.	
6	Monitor & Evaluate During the planning stage, the scope of the project is defined. There is a possibility of changing the scope of the project demands it but the project manager must approve the change. Project managers also develop a work breakdown structure (WBS), which clearly visualizes the entire project in different sections for the team management. A detailed project timeline with each deliverable is another important element of the planning stage. Using that timeline, project managers can develop a project communication plan and a schedule of communication with the relevant stakeholders.	• Project managers can develop a project communication plan and a schedule of communication with the relevant stakeholders.

Policy Incentives

1. Sector-Focused Incentives

- a. Agri-processing: Support for infrastructure, logistics, and export readiness.
- b. Green Economy: Incentives for renewable energy, water efficiency, and waste-to-energy projects.

- c. Technology and Innovation: Support for ICT hubs, fintech, and digital startups.
- d. Tourism and Film: Rebates and grants for film production and tourism infrastructure.

2. Investment Ecosystem Support

- a. Municipal Investment Readiness Programme: Helps municipalities prepare for and attract investment.
- b. Sector IQ: Provides data-driven insights to guide investment decisions.
- c. Film Incentive Scheme: Assesses and supports the impact of film-related investments.

3. Business Support and Facilitation

- a. Site selection assistance
- b. Regulatory guidance
- c. Market intelligence
- d. Access to government incentives
- e. Investment Summits: Hosted by the Premier to connect investors with opportunities and funding partners

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

- a. 12I Tax Allowance: For industrial projects.
- b. SEZ Incentives: For businesses in Special Economic Zones.
- c. Export Marketing and Investment Assistance (EMIA): Supports international marketing efforts.
- d. Black Industrialists Scheme: Funding and support for black-owned manufacturing businesses.

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

4] Financial Requirements & Funding Strategies

Project Guestimate

Estimated Cost	R 7,000,000,000
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5] Delivery Mechanism & Procurement Strategy

WCG Sector Priorities

Outcomes	Social	Energy & Water	Economic	Technology	Ecological
Households have increased access to basic services and improved shelter	Short Term 1-5 YRS (Up to 2030)		Short Term 1-5 YRS (Up to 2030)	Medium Term 5-15 YRS (Up to 2040)	Medium Term 5-15 YRS (Up to 2040)
Infrastructure investment drives spatial transformation and improves spatial resilience		Short Term 1-5 YRS (Up to 2030)	Long Term 15-30 YRS (Up to 2050)	Short Term 1-5 YRS (Up to 2030)	Short Term 1-5 YRS (Up to 2030)
Investment in social infrastructure improves access to health, education, social development, and recreation opportunities	Medium Term 5-15 YRS (Up to 2040)	Medium Term 5-15 YRS (Up to 2040)			Long Term 15-30 YRS (Up to 2050)
Mobility systems and transportation corridors provide safe and efficient connectivity to opportunities, services, and facilities	Medium Term 5-15 YRS (Up to 2040)			Short Term 1-5 YRS (Up to 2030)	Short Term 1-5 YRS (Up to 2030)

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- **Develop**

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- **Implement**

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- **Handover**

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- **Monitor & Evaluate**

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1] Phase-1

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