Western Cape Government

Project Infrastructure Planning

1. Project Details

Project Name	Karwyderskraal Waste Facility
Location	Overberg
Sector	Social
Department	Department of Environmental Affairs and Development Planning
Project Owner	Richard Bosman
Project Manager	Richard Bosman

1.1 Background & Justification

Background and Justification

The Karwyderskraal Regional Landfill Facility is a **Class B regional waste disposal site** owned and operated by the **Overberg District Municipality (ODM)**. It has served the waste disposal needs of Overstrand, Theewaterskloof and Cape Agulhas Municipalities since **2002** and forms a critical component of the district's solid waste management system. The facility's permitting history reflects compliant, long-term operation under evolving environmental legislation, with its initial permit issued in **2000**, amended in **2002**, **2005** and most recently **2018** to align with the National Environmental Management: Waste Act norms and standards.

1. Background

1.1 Regional Importance of the Facility

Karwyderskraal is the **only regional landfill** serving three municipalities, with waste transfer stations in place to support regional operations. The landfill diverts a significant portion of organics through composting but still receives over **53,000 tonnes of general waste annually**, with increasing trends (12.3% year-on-year as of 2024).

1.2 Historical Development and Capacity Status

Four disposal cells (Cells 1-4) have been constructed and filled progressively since operations began:

- **Cell 1 (2002-2005)**
- **Cell 2 (2005-2011)**
- **Cell 3 (2015-2019)**
- **Cell 4 (2019-present)** with remaining airspace **178,620 m3** (Oct 2024 survey) and projected to reach capacity by **Nov 2026** at a 3% growth rate.

Failure to commission **Cell 5A by October 2026** will result in complete landfill closure for waste acceptance, creating an urgent infrastructure requirement for uninterrupted service delivery across the district.

1.3 Strategic and Legislative Context

Under the Municipal Structures Act, district municipalities must operate regional waste disposal sites serving multiple local municipalities, regulate disposal activities, and ensure compliance with environmental standards. The IDP for 2025/26 identifies **solid waste management and regional infrastructure** as a key district responsibility and strategic priority, emphasising environmental sustainability and service continuity for the Overberg region.

In addition, the Waste Licence conditions require the ODM to divert **100% of organic waste by 2027**, necessitating the planned **Organic Waste Diversion Plant** and expansion of the composting site that form integral components of the Cell 5 development package.

2. Justification for Cell 5A Development

2.1 Impending Airspace Shortage and Service Continuity Risks

Cell 4 will reach capacity by **late 2026**, and without construction of Cell 5A, there will be **no legal disposal airspace** for the district. Overfilling is prohibited by licence conditions, making new cell development a regulatory and operational imperative rather than a discretionary project.

2.2 Regional Demand and Growing Waste Volumes

Three local municipalities currently depend on Karwyderskraal, with Cape Agulhas recently added through a 2024 SLA. Waste volumes are increasing due to both population growth and the closure of smaller, non-compliant local landfills, as highlighted in the IDP's environmental and infrastructure assessments.

2.3 Environmental Compliance and Risk Mitigation

The design of Cell 5 complies with the Class B liner standards of the 2013 Norms & Standards, incorporating:

- Composite liners
- HDPE geomembranes
- Leachate drainage systems
- Groundwater and stormwater protection measures

These are required to prevent contamination of sensitive downstream ecosystems such as the Botrivier Lagoon, as confirmed by the geotechnical, geohydrological and water quality monitoring assessments.

Long-term monitoring shows **no significant deterioration** in groundwater quality since 2002, and the continued protection of this aquifer requires uninterrupted, engineered containment capacity for future waste streams.

2.4 Alignment with Strategic Planning (IDP, WCIF 2050, G4J)

The project supports:

- **District IDP 2025/26** priorities on waste management, environmental resilience and infrastructure development.
- **WCIF 2050** principles of sustainable infrastructure, climate resilience and integrated regional systems.
- Provincial **Growth for Jobs (G4J)** strategy through green economy transitions (organic waste diversion, engineered regional waste capacity).

2.5 Economic and Operational Justification

Cell 5 provides **1.5 million m3** of airspace, securing 14-15 years of regional disposal capacity based on updated master planning, population growth and increasing regional waste generation.

The regional shared-services model is cost-effective, reduces duplication of infrastructure, and ensures stable revenue streams through SLAs. The landfill's strong audit performance (98.97% compliance in 2024) further supports continued investment in well-managed waste infrastructure.

2.6 Consequences of Not Proceeding

If Cell 5A is not constructed:

- ODM will breach waste licence conditions.
- Municipalities will have **no compliant regional landfill**, causing operational disruption and environmental violations.
- Waste may need emergency diversion to distant landfills at significant financial and environmental cost.
- Non-compliance with the Waste Act, Municipal Structures Act and IDP obligations becomes unavoidable.

This constitutes a critical municipal service risk.

Conclusion

The development of **Cell 5A at Karwyderskraal** is **urgently required** to ensure regional waste disposal capacity, maintain environmental protection, comply with statutory obligations, and support sustainable development across the Overberg District. The need is well-documented in engineering reports, environmental assessments, and strategic district planning instruments, with a hard deadline of **October 2026** for commissioning to avoid service disruption.

1.2 Project Scope

This project proposes the next phase of development of the existing Karwyderskraal Landfill Facility viz.:

. Construction of the next disposal cell (Cell 5A);

. Construction of a new Organic Waste Diversion Plant;

. Extension of the composting facility; and

. Extension of Entrance Road.

2. Objectives & Key Focus Areas

Objective	Key Focus Area
Ensure Continuous Regional Waste Disposal Capacity	• Prioritising Infrastructure for Maximum Impact • Strengthening Municipal Infrastructure
Comply with National Environmental Legislation & Waste Licence Conditions	• Prioritising Infrastructure for Maximum Impact • Strengthening Municipal Infrastructure • Enhancing Private Sector Partnerships • Innovation & Futures Planning • Addressing Climate Change & Sustainability
Reduce Environmental Impact & Enhance Pollution Control	• Strengthening Municipal Infrastructure • Addressing Climate Change & Sustainability
Support the District’s Organic Waste Diversion Targets	• Prioritising Infrastructure for Maximum Impact • Strengthening Municipal Infrastructure

Objective	Key Focus Area
Advance Regional Waste Management Efficiency	• Prioritising Infrastructure for Maximum Impact • Strengthening Municipal Infrastructure
Align with District Strategic Planning & Provincial Infrastructure Frameworks	• Prioritising Infrastructure for Maximum Impact • Strengthening Municipal Infrastructure • Enhancing Private Sector Partnerships • Innovation & Futures Planning • Addressing Climate Change & Sustainability
Promote Environmental and Social Sustainability	• Prioritising Infrastructure for Maximum Impact • Strengthening Municipal Infrastructure • Enhancing Private Sector Partnerships • Innovation & Futures Planning • Addressing Climate Change & Sustainability
Strengthen Operational Reliability, Monitoring & Long-Term Stability	• Innovation & Futures Planning

3. Project Timeline & Cost

Estimated Duration	1 Year(s) & 8 Month(s)
Estimated Start Date	31 Mar 2025
Estimated Cost	R 80.195M

4.Project Stage-0 Submission & Approval

Self Approved By: **Richard Bosman**

Self Approved On: **28 Dec 2025 10:52:31 AM**

Submitted By	
Submitted On	
Signed By	
Approved On	

5. Environmental & Social Considerations

5.1 Environmental Considerations

- Air, water, and soil pollution from industrial and agricultural activities
- Environmental Authorisation Requirements
- Greenhouse gas emissions and deforestation contributing to climate change
- Overuse of natural resources leading to scarcity and degradation
- Loss of biodiversity due to habitat destruction and fragmentation
- 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

- Respect for human rights including labor, land, and indigenous rights
- Assessment of community impacts such as displacement and livelihood loss
- Protection of health and safety from environmental hazards
- Preservation of cultural heritage sites and artifacts
- 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
- Support and compensation for involuntary resettlement

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
- South African National Biodiversity Institute (SANBI): Plays a leading role in biodiversity management and research
- Environmental Management Inspectors (EMIs): Responsible for compliance and enforcement of environmental regulations
- 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
- Municipalities: Play a role in environmental management, especially in land-use planning and development applications

6.3 Other Relevant Entities

- Environmental Assessment Practitioners Association of South Africa (EAPASA): Voluntary certification body for Environmental Assessment Practitioners
- Councils for the Built Environment Professions (CBEP): Regulates professions involved in the built environment
- Wildlife and Environment Society of South Africa (WESSA): Non-profit organization involved in environmental conservation and education

7. Identify Key Stakeholders

7.1 Government

- Department Of Infrastructure
- Provincial Treasury
- Local Government
- Department of Environmental Affairs and Development Planning

7.2 State-Owned Entities

7.3 Private Sector

- Construction Companies

- Engineering Firms
- Financial Institutions

7.4 Civil Society

- Civil society organizations advocating for community needs

7.5 Other Stakeholders

8. WCG Sector Priorities

Outcomes	Social	Energy & Water	Economic	Technology	Ecological
Investment in social infrastructure improves access to health, education, social development, and recreation opportunities	Long Term 15-30 YRS				

9. Infrastructure Type

9.1 Hard

9.2 Soft

9.3 Critical

10. Project Stage-1 Submission & Approval

Self Approved By: **Richard Bosman**

Self Approved On: **28 Dec 2025 11:01:48 AM**

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