



# EXECUTIVE MEMO

## SUBMISSION TO EXCO

FROM:	
Stakeholder and Communications	
Research, Development and Innovation	X
Finance	
Corporate Services	

TO:	
TechManco	x
ManCo	
TopCo	
EXCO Direct	

Date of TopCo Meeting	
Date of EXCO Meeting	23/02/ 2026
Meeting Number	



For Approval	x
For Noting	

### **SUBJECT:** Approval of the Project's Terms of References

<p><b>1. Purpose</b> To request EXCO to approve the two (2) Terms of Reference documents as recommended by Tech Manco on 06 February 2026.</p>
<p><b>2. Background</b>  The approved RDI Standard Operating Procedure (SoP) provides for the Executive-RDI to approve RDI project documents which are part of the research plans previously approved by EXCO. All new initiatives which are not part of approved plan should be submitted to EXCO for approval (Section 3.16 of the RDI SOP)</p>
<p><b>3. Discussion / Motivation</b>  EXCO is requested to approve the ToRs and the advertisement of the following Terms of Reference (ToR):</p> <ol style="list-style-type: none"> <li>Undertaking a feasibility and scoping study for Douglas Weir in the Northern Cape Province (see TOR attached)</li> <li>Site Evaluation and Sanitation Technology Feasibility Study in Newpark Township, Siyancuma LM (ToR attached)</li> </ol>
<p><b>4. Source of Authority and legal requirements</b>  RDI SOP, Water Research Commission Act, Public Finance Management Act (PFMA), and Treasury Regulations.</p>
<p><b>5. Financial implications</b></p> <ul style="list-style-type: none"> <li>R 800 000.00 for feasibility and scoping study for Douglas Weir in the Northern Cape Province.</li> <li>R600 000 for the Site Evaluation and Sanitation Technology Feasibility Study in Newpark Township, Siyancuma LM</li> </ul>

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<b>6. Risks</b>	
N/A	
<b>7. Recommendation</b>	
For EXCO to approve the two (2) ToR as presented above.	
<b>Prepared by RDI Executive:</b>	Signature: _____ Date: _____
<b>Name: Stanley Liphadzi</b>	
<b>Recommended by Executive RDI</b>	Conditions / Comments: Recommended for Approval by EXCO
	Signature:  _____ Date: <u>19/02/2026</u>
<b>APPROVED BY EXCO</b>	<b>Conditions / Comments</b>
	Signature:  _____ Date: <u>Feb 24, 2026</u>
	Signature: <a href="#">Jennifer Molwantwa (Feb 24, 2026 19:31:31 GMT+2)</a> Date: _____



**Confidential**

# Executive Memo

## SUBMISSION TO EXCO

FROM:	
Stakeholder and Communication	
RDI	X
Finance	
Corporate Services	

TO:	
Tech Manco	X
TopCo	X
RDI Exec	X
EXCO	

Date: Tech Manco Meeting	06 February 2026
Date: TopCo Meeting	

For Approval	X
For Noting	

**SUBJECT: REQUEST FOR APPROVAL TO ADVERTISE TERMS OF REFERENCE (TOR) ON UNDERTAKING A FEASIBILITY AND SCOPING STUDY FOR DOUGLAS WEIR IN THE NORTHERN CAPE PROVINCE**



<p><b>1. Purpose:</b></p> <p>To seek approval to conduct a feasibility and scoping study on the potential use and viability of the Douglas Weir in the Northern Cape Province. The study aims to assess the potential of the weir to meet and address local needs, identify possible social and environmental impacts, and determine how novel technologies and recent innovations can be profitably and sustainably implemented to benefit the surrounding communities.</p>
<p><b>2. Background:</b></p> <p>The study aims to assess the potential of the weir to meet and address local needs and enhance adaptation and resilience strategies by implementing recent innovations and addressing environmental challenges. The study is timely, given the recent designation of the Douglas Weir as a World Heritage Irrigation Structure (WHIS). While circumstances around the weir have changed significantly since its construction, the weir continues to play a vital role in supporting agriculture, water supply, and rural livelihoods. This recognition presents an opportunity to re-evaluate its legacy and future potential.</p> <p><b>Specific objectives include:</b></p> <ol style="list-style-type: none"> <li>1. To identify research gaps (grey literature, journal publications, reports, popular articles, etc.) not addressed by past research around the Douglas Weir area</li> <li>2. To recommend appropriate policy actions and research direction to address the impacts and opportunities identified in the study.</li> <li>3. To assess the evolving benefits that the Douglas Weir has provided to the local community and how these can be further harnessed for socio-economic development.</li> <li>4. To explore the implications of the WHIS designation, including potential for heritage tourism, investment attraction, and innovation in water and land management.</li> <li>5. To develop a replicable framework for evaluating the benefits and potential of other WHIS-designated sites across South Africa and beyond.</li> </ol>
<p><b>3. Discussion / Motivation:</b></p> <p>"Heritage dams" refers to dams that are culturally significant due to their historical, technological, or social importance, or to dams that are considered part of the water or agricultural or industrial, or architectural cultural heritage of a certain area. These structures are recognized as important examples of engineering, construction, or agricultural development history as they often made a major contribution to the expansion</p>

and progress or development of the area. The Douglas Weir situated on the Vaal River is the oldest weir in South Africa. It is now the first heritage water structure to be recognised by the International Committee on Irrigation and Drainage (ICID). Currently, the Orange-Vaal Water User Association (OVWUA) manages the water distribution in the area, including several canals and the Douglas weir for use to irrigate crops along both the Orange and Vaal Rivers. Agricultural activities in the OVWUA area include the cultivation of both permanent crops like pecans, citrus, and lucerne, as well as annual field crops like potatoes, grains, cotton, and onions. The region is a major agricultural area.

At the recent presentation of the Heritage Award to the Orange-Vaal Water User Association, the Minister of Water and Sanitation (DWS) requested that there be work on implementing strategies that the weir would benefit the wider community, including agrotourism and irrigation. This also includes improving surrounding livelihoods and developing an innovation hub with some agrotourism activities around this historic structure. The first stage of the study includes a detailed scoping feasibility study of the physical, environmental, social, technical, and economic attributes of the area. This will enable the development of a plan to formulate strategies for future development.

**4. Conclusion:**

The DWS requested further studies to be conducted to understand how the weir can further benefit communities in this water-scarce area by enhancing agrotourism and irrigation. This MEMO seeks EXCO to approve ToRs to seek a service provider to undertake a detailed scoping and feasibility study of the physical, environmental, social, technical, and economic attributes of the Douglas Weir to facilitate wider strategies to enhance the use of the weir for the benefit of the surrounding communities.

<b>Levy</b>		<b>Leverage</b>		<b>Levy + Leverage</b>	
<b>Budget available:</b>			<b>KSA:</b>		
<b>Submission by:</b> Sylvester Mpandeli		<i>Signature:</i>  <i>Date:</i> <u>28/01/2026</u>			
<b>Recommended/Noted by:</b> <b>TechManco</b> Sylvester Mpandeli		<b>Conditions / Comments:</b>  <i>Signature:</i>  <i>Date:</i> <u>12/02/2026</u>			
<b>Recommended/Noted by:</b> <b>Topco/Manco</b>		<b>Conditions / Comments:</b>  <i>Signature:</i> _____ <i>Date:</i> _____			
<b>Approved/Noted by:</b> <b>RDI Exec</b>		<b>Conditions / Comments:</b>			

Prof Stanley Liphadzi	
APPROVED/NOTED BY EXCO	<i>Signature:</i> _____ <i>Date:</i> _____
	<b>Conditions / Comments</b>
	<i>Signature:</i> _____ <i>Date:</i> _____

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## **TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT**

**THEME:** Water Use

**TITLE:** Scoping and feasibility study for Douglas Weir in the Northern Cape Province

**Aim:** The study aims to identify the viability, risks, and key issues requiring research, including evaluating technical, market, financial, and operational factors within the local context of the area served by Douglas Weir.

**Purpose:**

The study aims to assess the potential of the weir to meet and address local needs, identify possible social and environmental impacts, and determine if the development can be profitably and sustainably implemented with available resources.

The study is timely, given the recent designation of the Douglas Weir as a World Heritage Irrigation Structure (WHIS). While circumstances around the weir have changed significantly since its construction, the weir continues to play a vital role in supporting agriculture, water supply, and rural livelihoods. This recognition presents an opportunity to re-evaluate its legacy and future potential.

**Specific objectives:**

1. To identify research gaps (grey literature, journal publications, reports, popular articles, etc.) not addressed by past research around the Douglas Weir area
2. To recommend appropriate policy actions and research direction to address the impacts and opportunities identified in the study.
3. To assess the evolving benefits that the Douglas Weir has provided to the local community and how these can be further harnessed for socio-economic development.
4. To explore the implications of the WHIS designation, including potential for heritage tourism, investment attraction, and innovation in water and land management.
5. To develop a replicable framework for evaluating the benefits and potential of other WHIS-designated sites across South Africa and beyond.

**Rationale:**

"Heritage dams" refers to dams that are culturally significant due to their historical, technological, or social importance, or to dams that are considered part of the water or agricultural or industrial, or architectural cultural heritage of a certain area. These structures are recognized as important examples of engineering, construction, or agricultural development history as they often made a major contribution to the expansion and progress or development of the area. As water is vital for all livelihoods, the storage of water in dams has always brought revitalisation and growth to an area or region. Some heritage dams may not be currently being used for their original purpose of supplying water, but may have been preserved or repurposed for public enjoyment and educational uses.

The Douglas Weir situated on the Vaal River is the oldest weir in South Africa, having been constructed in 1890-91. It is now the first heritage water structure to be recognised by the ICID and awarded as a "World Heritage Irrigation Structures" as it met the requirement of being more than 100 years old. It was originally designed to irrigate about 364 ha, although it was destroyed soon after completion, and the new weir was built as a diversion water scheme - build of a masonry wall about 399 meters long and 3.6 meters thick, on a solid rock foundation. The weir then links the Atherton farm on the north bank with St. Clair on the south bank, roughly 8 kilometres upstream on the Vaal River from the village of Douglas.

Currently, the Orange-Vaal Water User Association (OVWUA) manages the water distribution in the area, including several canals and the Douglas weir for use to irrigate crops along both the Orange and Vaal Rivers. Agricultural activities in the OVWUA area include the cultivation of both permanent crops like pecans, citrus, and lucerne, as well as annual field crops like potatoes, grains, cotton, and onions. The region is a major agricultural area focused on irrigated farming due to the availability of water from both the Vaal and Orange Rivers.

At the recent presentation of the Heritage Award to the Orange-Vaal Water User Association, the Minister of Water and Sanitation, Ms Pemmy Majodina, challenged the local and scientific community to use this historic and cultural structure innovatively. This could bring improvement to the livelihoods of the local people by improving the water and sanitation services in the surrounding areas and the development of agrotourism activities. It is to address this challenge that a proposal is made to engage with the surrounding communities and formulate a project driven from the grassroots to improve the livelihoods and develop an innovation hub with some agrotourism activities around this historic structure.

As the first stage in this process, a detailed scoping feasibility study of the physical, environmental, social, technical, and economic attributes of the area should be conducted. An evaluation of the potential of the area will enable a development plan to be formulated by the local communities and recommendations to be made for future development.

**Deliverables:**

The outputs of such a feasibility study will be a set of proposed developments that can be implemented in the near future to benefit the communities and bring attention to the Douglas Weir as a Heritage site. These recommendations will bear the endorsement of the

local government and community leaders, as they will have been a vital part of the project. Such developments based on the resources of irrigated agriculture will bear testimony to the potential of agriculture to not only increase food production but also improve the economic condition of nearby communities and farmers. Key deliverables will include:

1. Provide recommendations on products and services that will be part of an overall development plan for the municipality and include a marketing and awareness campaign, construction of agrotourism infrastructure, development of model agroecological farming and food processing activities, as well as a living lab for educational purposes
2. Popular articles in farmer magazines, conference papers, and scientific articles in published journals;
3. Annual progress and capacity building reports;
4. Final integrated research report

**Impact Area:**

1. Inform farming and policy decision-making;
2. Develop new products for economic development;
3. Drive sustainable development solutions;
4. Enhance human capital development;
5. Empower local communities;
6. Promote transformation and redress.

**Time Frame: 12 months**

START: 1 April 2026

END: 31 March 2027

**Total Funds Available:**

	WRC
2026/27	R800 000
Total	R 800 000



# EXECUTIVE MEMO

## SUBMISSION TO EXCO

FROM:	
Stakeholder and Communications	
Research, Development and Innovation	X
Finance	
Corporate Services	

Date of TechManco Meeting	06/02/2026
Date of EXCO Meeting	23/02/ 2026
Meeting Number	

TO:	
TechManco	
ManCo	
TopCo	
EXCO via TechManco	x

For Approval	x
For Noting	

**SUBJECT: SUBJECT: Request for approval to advertise Terms of Reference (ToR) through the panel of experts for Site Evaluation and Sanitation Technology Feasibility Study in Newpark Township, Siyancuma LM**

### 1. Purpose

The purpose of this memo is to seek EXCO to approve the ToR with a budget of R600 000 and to advertise the ToR once approved. The ToR seeks a service provider to undertake a detailed feasibility study to verify technical constraints, assess socio-economic affordability, and ultimately identify a sustainable, climate-resilient, and water-efficient sanitation technology tailored to the unique physical and financial constraints of the New Park community.

### 2. Background

Siyancuma Local Municipality faces a critical public health and environmental crisis in the New Park Township, an informal area undergoing formalization, where approximately 1,268 households lack any formal sanitation, leading to widespread open defecation and faecal contamination of the Bosman Canal via stormwater runoff. Compounding this, the settlement relies on severely constrained water supply (daily tank refills), making conventional centralized sewerage systems infeasible, while high poverty levels challenge long-term operational sustainability. Therefore, a comprehensive feasibility study is urgently required to verify technical constraints, assess socio-economic affordability, and ultimately identify a sustainable, climate-resilient, and water-efficient sanitation technology tailored to the unique physical and financial constraints of the New Park community.

### 3. Discussion / Motivation

At the recent presentation of the Heritage Award to the Orange-Vaal Water User Association, the Minister of Water and Sanitation (DWS) requested that there be work on implementing strategies that the weir

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would benefit the wider community through the implementation of strategic initiatives to ensure the historic weir generates broader community benefits. Parallel to this regional development goal, the Siyancuma Local Municipality is facing a critical public health and environmental crisis in New Park Township. This informal area, currently undergoing formalization, sees approximately 1,268 households without formal sanitation facilities. The resulting widespread open defecation has led to severe faecal contamination of the Bosman Canal via stormwater runoff, necessitating an integrated approach that aligns the Minister's vision for water-based economic growth with urgent, innovative sanitation interventions.

**4. Source of Authority and legal requirements**

RDI SOP, Water Research Commission Act, Public Finance Management Act (PFMA), and Treasury Regulations.

**5. Financial implications**



- Site Evaluation and Sanitation Technology Feasibility Study in Newpark Township, Siyancuma LM ToR with a budget of R600 000

**6. Risks**

N/A

**7. Recommendation**

For EXCO to approve the ToR and its advertisement.

<b>Prepared by Advisory Senior Research Manager: Name : Dr Valerie Naidoo</b>	Signature: _____ Date: 13/01/2026
<b>Recommended by Tech Manco</b>	Signature:  _____ Date: 06/02/2026
<b>Submitted by Executive: RDI</b>	Signature:  _____ Date: 19/02/2026
<b>Approved BY EXCO</b>	<b>Conditions / Comments</b>
	Signature: _____ Date: _____



## TERMS OF REFERENCE FOR TECHNOLOGY EVALUATION SERVICE PROVIDER

<b>Theme</b>	<b>KSA 9: Advisory</b>
<b>PROGRAMME</b>	<b>SASTEP</b>
<b>TITLE</b>	<b>Site Evaluation and Sanitation Technology Feasibility Study in Newpark Township, Siyancuma LM</b>

### Objectives:

- Verify and refine the baseline settlement data provided by the municipality (occupancy, service connections, service strain).
- Conduct necessary technical and social assessments to fully understand the site's constraints and the community's needs and capacity.
- Identify and evaluate appropriate sanitation technology options, prioritising decentralised, climate-resilient (WESS), and user-paid models suitable for the settlement's characteristics.
- Engage key stakeholders to secure alignment on planning and identify potential financing and grant opportunities for implementation (Hold meetings with Department of Water and Sanitation, Water Partnership Office at DBSA on grant opportunities, Department of Human Settlements on grant opportunities and Local Municipality on budgets available).
- Produce a final Feasibility Report recommending a preferred sanitation technology (after consultation with technical experts which WRC will facilitate) and a pathway for securing implementation funding.

### Background:

Since the advent of democracy in 1994, the South African government has undertaken significant efforts to address service delivery backlogs and improve access to basic services. However, the implementation of conventional solutions has consistently struggled to meet the needs of marginalized communities, particularly those residing in informal settlement areas who may be indigent or fall within a low income bracket. This challenge is now exacerbated by the effects of climate change. The changing climate increases existing vulnerabilities in these communities through phenomena such as the rising frequency and intensity of extreme weather events (droughts and floods), rising sea levels, and unpredictable changes in rainfall patterns. These climatic shifts disrupt established service delivery models and elevate the risk of widespread service disruptions. The inherent characteristics of these communities further complicate the issue; the topography and high density of settlements often make it difficult to deploy traditional service delivery approaches. For example, flooding events can swiftly damage essential infrastructure, interrupt water and sanitation services, and cause community displacement. Conversely, droughts lead to severe

water scarcity, which cripples sanitation services and escalates the risk of waterborne diseases.

According to a report by the United Nations Human Settlements Programme (UN-Habitat), rapid urbanization, often intensified by climate-induced displacement, places immense strain on municipalities and water service agencies attempting to deliver basic sanitation services. The report highlights that municipalities frequently become overwhelmed by the increasing demand resulting from rapid urbanization, compounded by the additional pressures of climate change. The costs and logistical difficulties associated with providing free basic sanitation services become particularly evident in informal settlements. These settlements are often situated in highly climate-vulnerable areas, such as floodplains or coastal zones, and are expected to be more susceptible to climate change impacts while simultaneously lacking necessary long-term capital expenditure (CAPEX) investments. As a result, municipalities often deploy temporary or ad-hoc solutions, such as chemical toilets and container-based sanitation systems. While these solutions offer immediate relief, they come with substantial drawbacks. They are expensive to maintain, lack long-term sustainability, carry the potential for environmental harm due to inadequate waste treatment, and frequently face poor acceptance from users because of limited functionality and hygiene concerns (UN-Habitat, 2020).

To address this, the WRC's South African Sanitation Technologies Enterprise Programme (SASTEP) has championed the demonstration and adoption of innovative solutions, such as Water-Efficient Sanitation Systems (WESS). These technologies aim to improve climate resilience and adaptation as well as strengthen municipalities' emergency disaster response. The technologies were tested in schools, and informal settlements in Johannesburg water, eThekweni and City of Cape Town to assess them for functionality, safety, performance, user acceptance and climate resilience. The data will assist SASTEP and the municipalities to develop approaches and a baseline for future large-scale roll-out to address sanitation challenges in these communities. Siyancuma Local Municipality faces a critical public health and environmental crisis in the New Park Township, an informal area undergoing formalization, where approximately 1,268 households lack any formal sanitation, leading to widespread open defecation and faecal contamination of the Bosman Canal via stormwater runoff. Compounding this, the settlement relies on severely constrained water supply (daily tank refills), making conventional centralized sewerage systems infeasible, while high poverty levels challenge long-term operational sustainability. Therefore, a comprehensive feasibility study is urgently required to verify technical constraints, assess socio-economic affordability, and ultimately identify a sustainable, climate-resilient, and water-efficient sanitation technology tailored to the unique physical and financial constraints of the New Park community.

### **Technologies categories**

There are 4 innovative options available subject to geo-technical evaluation that could be used:

1. Water efficient sanitation system (WESS) (modular and water recycling system option) (communal only)
2. A loowatt type innovative container based system (exploring a user paid service model for sustainability), (household)
3. Innovative pourflush toilets for greywater reuse at HH level subject to space and geotechnical evaluation of site
4. DEWATS (Decentralised wastewater treatment system with a wetland but this will require continuous water supply unless water is recycled to a storage tank for reuse)

### **Rationale:**

The SASTEP platform supports technology and commercial partners with the commercialization of viable sanitation technologies and with matchmaking with investors to foster the local manufacturing and

promote an industrialized sanitation sector in South Africa. The platform provides critical technology evaluation, validation, and assessment of sanitation technologies to ensure functionality, performance, safety, and user-acceptance. The platform also provides enterprise development support to innovators, entrepreneurs and SMMEs. This includes developing market intelligence and policy advocacy that helps translate viable sanitation technologies to the marketplace.

**Deliverables:**

- 1) Inception Report
- 2) Geotechnical analysis report and Social analysis report (number of people per household, income levels , age of informal settlement, leadership structure, sample demographics) (sample and desktop analysis)
- 3) A technology match making report. Based on water availability, density and, DHS plans for housing, and availability of a suitable centralised works which is not overloaded, match a listed technology based on
  - a. Suitability (based on sustainably managing the whole value chain – from toilet to safe disposal)
  - b. Density
  - c. Water availability
  - d. Centralised wastewater availability (WWTW must not be overloaded as per Green Drop to be considered as a sewer or disposal option)
  - e. Sewer availability
  - f. Performance (full recycle advantageous)
  - g. Cost comparison (life cycle analysis).
- 4) Final Feasibility Report recommending a preferred sanitation technology based on sustainability principles (value and not just cost) and a pathway for securing implementation funding (with stakeholder engagement feedback).

**Time Frame:**

*Recommended 4-6 months maximum*

Evaluation Criteria

1. Methodology/Approach
2. Expertise (CV's) in similar work
3. Previous experience in such work (3 links)
4. Timelines and Deliverables
5. Budget

Notes:

The project team are requested to use existing research reports as part of desktop analysis.


# 5.2.1 Approval of the Project's Terms of References

Final Audit Report

2026-02-24

Created:	2026-02-24
By:	Ndileka Radebe (ndilekaR@wrc.org.za)
Status:	Signed
Transaction ID:	CBJCHBCAABAackAHyK1-BoJ-AbNq6BGL2368xjP3Z0Xg

## "5.2.1 Approval of the Project's Terms of References" History

-  Document created by Ndileka Radebe (ndilekaR@wrc.org.za)  
2026-02-24 - 9:34:46 AM GMT
-  Document emailed to Jennifer Molwantwa (jenniferm@wrc.org.za) for signature  
2026-02-24 - 9:35:39 AM GMT
-  Email viewed by Jennifer Molwantwa (jenniferm@wrc.org.za)  
2026-02-24 - 5:31:15 PM GMT
-  Document e-signed by Jennifer Molwantwa (jenniferm@wrc.org.za)  
Signature Date: 2026-02-24 - 5:31:31 PM GMT - Time Source: server
-  Agreement completed.  
2026-02-24 - 5:31:31 PM GMT