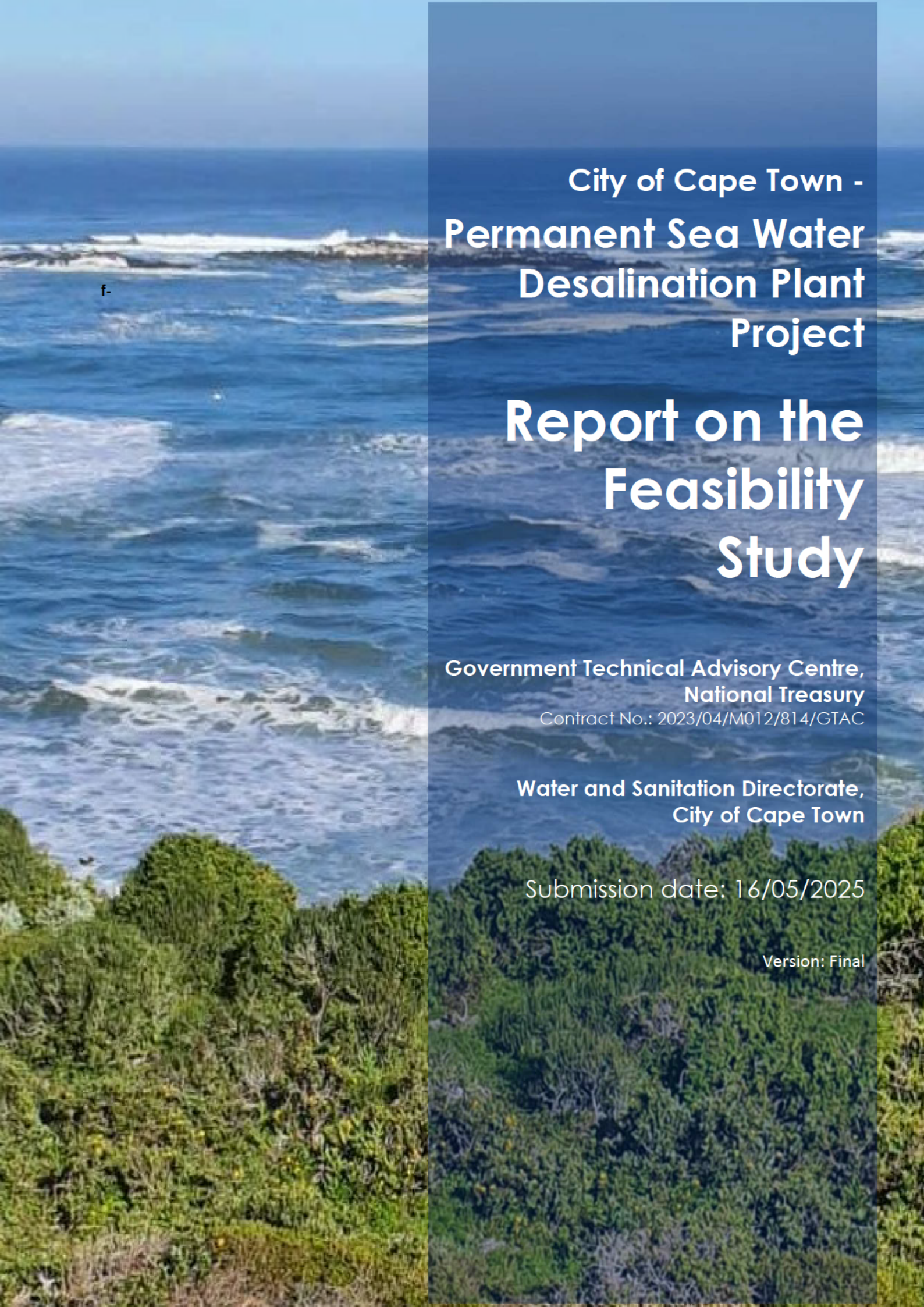

City of Cape Town -

Permanent Sea Water Desalination Plant Project

Report on the Feasibility Study

Government Technical Advisory Centre, National Treasury

Contract No.: 2023/04/M012/814/GTAC

Water and Sanitation Directorate, City of Cape Town

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Disclaimer

We, Mvuno Advisory (Pty) Ltd, together with our transaction advisor consortium members, are pleased to submit this Report on the Feasibility Study in accordance with our Transaction Advisory Contract with contract number 2023/04/M012/814/GTAC with the Government Technical Advisory Centre ("GTAC") in conducting a feasibility study for the City of Cape Town ("CCT" or "the City") for a permanent desalination plant. This Report on the Feasibility Study was prepared on the specific instructions of GTAC and CCT for the purpose stated above and should not be quoted, referred to or shown to any other parties (except as provided in our contract and provided that we assume no responsibility or liability whatsoever to third parties in the respect of the contents) unless so required by court order or a regulatory authority without our prior consent in writing.

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Abbreviations, Acronyms and Definitions

AOS	Assurance of Supply
BCR	Benefit/Cost Ratio
BFI	Budget Facility for Infrastructure
BEE	Black Economic Empowerment
BIF	Bid Initiation Form
B-BBEE	Broad-Based Black Economic Empowerment
B-BBEE Act	B-BBEE Act,53 of 2003
B-BBEE Codes	B-BBEE Codes of Good Practice, 2013
CBA	Cost Benefit Analysis
CBD	City's Business Hub
CFADS	Cash Available for Debt Service
CWDP	Coastal Waters Discharge Permit
CCT or the City	City of Cape Town
City IDP	Five-Year Integrated Development Plan – July 2022 – June 2027
CPGL	Contract Participation Goal
DAF	Dissolved Air Floatation
DEAT	Department of Environmental Affairs and Tourism
DSRA	Debt Service Reserve Account
DSRF	Debt Service Reserve Facility
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
EIA	Environmental Impact Assessment
EME	Exempt Micro Enterprise
ENPV	Economic Net Present Value
EPC	Engineering, Procurement and Construction
EPCM	Engineering, Procurement, Construction and Management
FY	Financial Year
FOG	Fats Oils and Grease
FTE	Full-Time Equivalent
GTAC	Government Technical Advisory Centre
IAP	Independent Advisory Panel
IDP	Integrated Development Plan
IRR	Internal Rate of Return
JIBAR	Johannesburg Interbank Average Rate
LLCR	Loan Life Cover Ratio
MFMA	Municipal Finance Management Act (Act 56 OF 2003)
MMRA	Major Maintenance Reserve Account
MMRF	Major Maintenance Reserve Facility
MSA	Municipal System Act 32 of 2000
MSP	Municipal Service Partnership
LTFP	Long Term Financial Plan
Municipal PPP Regulations	Municipal Public-Private Partnership Regulations
MVA	megavolt-amperes

NHR Act	National Heritage Resources Act
NPV	Net Present Value
NGO	Non-governmental Organisation
O&M	Operational and Maintenance
RGSF	Rapid Gravity Sands Filters
The Project	A permanent sea water desalination plant for the City of Cape Town
PP	Private Party
P&G	Preliminary & General
PIP	Port Industrial Park or Paarden Eiland
PPP	Public Private Partnership
PPPFA	the Preferential Procurement Policy Framework Act (Act 5 of 2000)
PPPFA Regulations	Preferential Procurement Regulations, 2022
PPP Guidelines	Municipal Service Delivery and Public Private Partnership Guidelines'
PPR Guidelines	Preferential Procurement Regulations, 2022
PSC	Public Sector Comparator
QSE	Qualifying Small Enterprise
RFP	Request For Proposal
RFQ	Request For Qualification
SA	South Africa
SAM	Social Accounting Matrix
SANS	South African National Standards
SCM	Supply Chain Policy
SDP	Site Development Plan
SDRs	Social Discount Rates
SGR	Stage Gate Review
SMMEs	Small, Micro and Medium Enterprises
SPV	Special Purpose Vehicle
SWRO	Sea Water Reverse Osmosis
TA	Transaction Advisor, being the Mvuno Advisory consortium
TNPA	Transnet National Ports Authority
TVR	National Treasury Views and Recommendations
URV	Unit Reference Value
USA	United States of America
USD	United States Dollar
VAT	Value Added Tax
VFM	Value for Money
Water Strategy	Our Shared Water Future: Cape Town's Water Strategy (2019)
WCWDM	Water Conservation and Water Demand Management
WCWSS	Western Cape Water Supply System
WSDP	Water Services Development Plan
WTOP	Willingness to Pay
Zutari	Zutari Proprietary Limited

Water volumes

kℓ: kilolitre = one thousand litres = 1 m^3
m^3: cubic metre = one thousand litres = 1 kℓ
Mℓ/day: mega litres (million litres) per day
Mℓ: million litres

1 Introduction

1.1 The Project

In the period of 2015 to 2017 Cape Town experienced a severe three-year drought, which led to the City developing the strategy document, "Our Shared Water Future: Cape Town's Water Strategy (2019)" (Water Strategy) which was approved by Council in May 2019. The strategy provides a roadmap to ensure sufficient water for all, with the objective of being more resilient to climate and other shocks with consideration given to the important yet complex relationships between water, people, the economy, and the environment.

The City's strategy to mitigate these risks includes the development of new and diverse water sources at scale, linked to an integrated surface system, which could include groundwater, water reuse and desalinated water, and to develop these cost-effectively and timeously to increase resilience and substantially reduce the likelihood of severe water restrictions in future. As part of the Committed Programme identified in the Water Strategy a need was identified for the development of a permanent sea water desalination plant yielding a minimum of 50 million litres per day (Mℓ/day) of desalinated water.

The Report on the Feasibility Study is for the design, finance, construction, operations, and maintenance of a permanent sea water desalination plant for the City of Cape Town (CCT or the City) (the Project).

1.2 Approach and Methodology

The Report on the Feasibility Study has been prepared with consideration to guidelines provided in the 'Municipal Service Delivery and Public Private Partnership (PPP) Guidelines' issued by National Treasury, which is aligned to the Municipal Public-Private Partnership Regulations (Municipal PPP Regulations), Municipal Systems Act 32 of 2000 (MSA) and the Municipal Finance Management Act 56 of 2003 (MFMA). All PPP projects require a feasibility study, as do those projects envisaging the provision of a municipal service by an external mechanism that is not a PPP.

In terms of the Municipal PPP Regulations, a full feasibility study needs to be undertaken for the Project to obtain National Treasury Views and Recommendations (TVR) I approval, prior to embarking on the procurement stage. This Report on the Feasibility Study needs to, for the procuring institution, demonstrate:

- Affordability;
- Significant risk transfer to the private party; and
- Value-for-money.

The Feasibility Study was developed as outlined in the Municipal Service Delivery and PPP Guidelines 2007.

This Report on the Feasibility Study was prepared during May 2025. The Feasibility Study commenced in June 2023, and the various Stages of the Feasibility Study were completed as detailed in Table 1-1.

Table 1-1: Feasibility Study Stages Completion Dates

Stage	Date Completed[1]
Stage 1 Needs Analysis	6 December 2023
Stage 2 Technical Solution Options Analysis	2 April 2024
Stage 3 Service Delivery Options Analysis and Stage 4 Service Delivery Interim Recommendation	27 February 2024
Stage 5 Due Diligence	28 June 2024
Stage 6 Value Assessment and Economic Valuation	5 May 2025
Stage 7 Procurement Plan	4 April 2025

The approach of this Report on the Feasibility Study is to summarise the work undertaken at the time and where relevant provide updates.

2 Stage 1 - Needs Analysis

2.1 Introduction

The Needs Analysis demonstrates that the project aligns with the City's strategic objectives and details the specific requirements and need for the Project, specifying the required resources, scope, objectives and required output of the Project. This forms an important foundation from which the further stages of the Feasibility Study are built on.

2.2 The Municipality's Strategic Objectives

2.2.1 Water Strategy

As stated in the Introduction, the City developed the Water Strategy which provides a roadmap to ensure sufficient water for all, with the objective of being more resilient to climate and other shocks with consideration given to the important yet complex relationships between water, people, the economy, and the environment.

Cape Town gets most of its water from rain-fed dams. The security of this supply relies on the probability of water use restrictions when rainfall is low. Up until now, Cape Town's water supply systems had a 98% level of assurance (based on historical rainfall records). In the context of climate change, assurance of supply set at this level and by looking backward (at past rainfall patterns to estimate future water availability) is unlikely to be adequate to reliably meet Cape Town's water needs going forward. If Cape Town continues on a water-wise path, the City's ability to restrict supply without substantial economic harm will be significantly compromised. Maintaining the current level of assurance of supply would be sensible only in a case where climate change is not a significant factor, and demand returns to pre-drought levels. Therefore, the City is aiming to increase the level of assurance from 98% to 99.5% (based on historical rainfall records) which will require a significant investment over the next ten years.

The primary cause of the Cape Town water crisis was low rainfall and most global climate models predict lower rainfall for the Cape Town region with more frequent low rainfall years. If the City does nothing, it will continue to be fully exposed to the risks that resulted in the water crisis. These risks are likely to increase and coupled with population and economic growth,

[1] Subject to consultation processes.

means that the risk of another severe water crisis will be much higher than in the past.

The City's strategy to mitigate these risks includes the development of new and diverse water sources at scale, linked to an integrated surface water system, which includes groundwater, water reuse and desalinated water, and to develop these cost-effectively and timeously to increase resilience and substantially reduce the likelihood of severe water restrictions in future.

The Water Strategy sets out the City's five commitments, making up the mission, in relation to its constitutional responsibilities to provide water services and manage the urban water environment.

The five commitments the City have made, are detailed in Table 2-1.

Table 2-1: Five Commitment in the Water Strategy

Commitment 1: Safe access to water and sanitation	Focus on improving access to water and sanitation in informal settlements
Commitment 2: Wise Use	Promoting water conservation through pricing incentives, regulatory incentives, active citizenship and network management
Commitment 3: Sufficient, reliable water from diverse sources	Surface, groundwater, water reuse and desalinated water. Build new capacity of approximately 300 million liters per day over the next ten years
Commitment 4: Shared Benefits from regional water resources	Optimise the economic, social and ecological benefits of regional water resources; reduce the risks; through collaborative processes.
Commitment 5: A water sensitive city	Optimal use of stormwater and urban waterways for the purposes of flood control, aquifer recharge, water reuse and recreation, based on sound ecological principles. Through new incentives and regulatory mechanisms as well as through the way the City invests in new infrastructure

From the scenario analysis undertaken, a committed water programme was developed and detailed in the Water Strategy for the period c. 2018 to 2027 (which timeframes were revised in the Water Outlook, March 2023 to extend the period to 2030). It comprised a number of interventions that include management interventions, surface water supply, as well as groundwater abstraction, reuse, and desalination (Committed Programme). The City is committed to increasing supply as detailed in Commitment 3 by building affordable new capacity of approximately 300 Mℓ/day over the next ten years (by 2030), and in suitable increments thereafter, in a way that is adaptable and robust to changes in circumstances.

As part of the Committed Programme a need was identified for the development of a permanent sea water desalination plant yielding a minimum of 50 Mℓ/day of desalinated water by 2026 which was updated to 2030 in the Water Outlook as stated above. **The City is in the process of updating the Water Outlook and the estimated timeframe for the Project. The Project timeframe is likely to be updated to indicate a first water date of 2031.**

The Water Strategy also identified the Adaptable Programme with the aim to plan schemes

that will be needed in the future, but for which an immediate implementation decision is not required, and it will allow the City to shift the adaptable programme forward or backward. The Adaptable Programme includes interventions in respect of groundwater, reuse, surface water and further desalination phases of c. 100 Mℓ/day (with a footnote stating this volume is subject to change) beyond 2030.

2.2.2 Integrated Development Plan

It is also a requirement in terms of Schedule 5 of the MSA, that a municipality develop an Integrated Development Plan (**IDP**) which defines and guides all municipal planning. The City has developed their "Five-Year Integrated Development Plan – July 2022 – June 2027" (**the City IDP**) which identifies the Project as part of its Water and Sanitation: Water resilience programme and names the accountable directorate as Water and Sanitation. Figure 2-1 depicts that IDPs strategic plan comprising the foundations that support the City's Vision of creating a City of Hope – the Projects falls within the City's vision to provide 'Basic Services' and 'A Resilient City'.

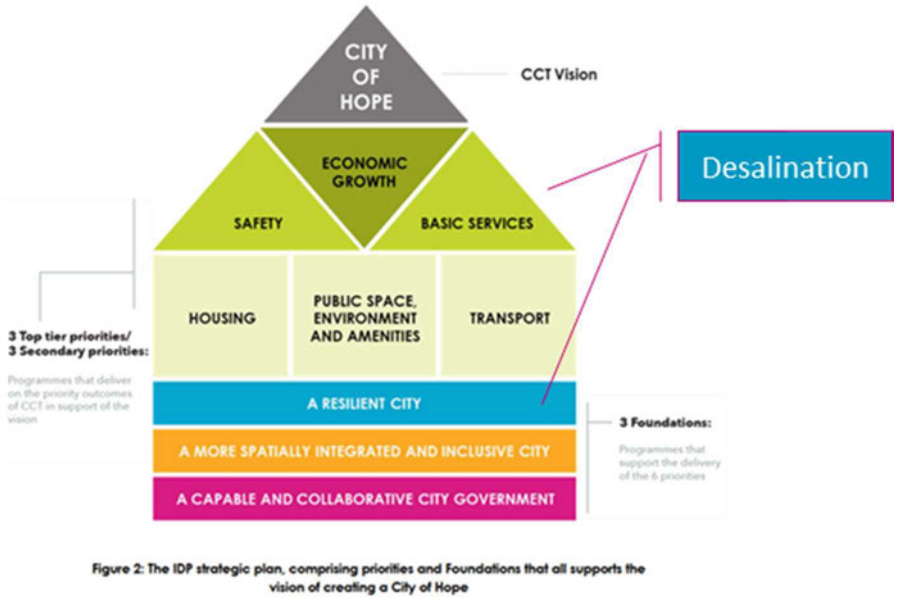

Figure 2-1: IDP strategic plan, comprising the foundations that support the City's Vision of creating a City of Hope

2.2.3 Water Services Development Plan and Water Outlook

In addition to the IDP and Water Strategy, the City has also issued the Water Services Development Plan[2] (WSDP) and the Cape Town Water Outlook[3] which is issued periodically to provide updates as to the status of the initiatives outlined in the Water Strategy.

The Water Outlook 2023 provides an Update on the Committed Water Programme and the commitment to develop an additional 300 Mℓ/day of water supply from diversified sources by

[2] Water Services Development Plan – IDP Water Sector Input Report FY2022/23 – 2026/27

[3] City of Cape Town, (2023); Cape Town Water Outlook – March 2023 – Edition 10; Bulk Water Branch, Bulk Services Department, Water & Sanitation Directorate. The Water Outlook is in the process of being updated, and indicative timelines show first water from desalination to be 2031.

2030. The Water Outlook 2023 identifies the Cape Town Harbour as a potential site for the Desalination Phase 1, stating that a feasibility study for a 70 Mℓ/day plant has been completed. It further states that a site near Atlantis and Melkbos has been considered.

The Water Outlook 2024 considered the work undertaken by the TA in the Stage 2 Technical Solution Options Analysis and reaffirmed the Cape Town Harbour (referred to as the Paarden Eiland or PIP site in the Feasibility Study) as the preferred site for the Desalination Phase 1.

As stated above, the City is in the process of updating the Water Outlook and the estimated timeframe for the Project. The Project timeframe is likely to be updated to indicate a first water date of November 2031.

The Stage 1 Needs Analysis Report, specified the intended phases in respect of the Committed Programme and Adaptable Programme as outlined in the Water Strategy and the draft Bulk Water Master Plan at the time (being December 2023), respectively, which guides the implementation timeframes to meet the required production volumes from desalination, which are set out in Table 2-2.

During the Needs Analysis phase, the City provided further definition by way of a letter from the Director: Bulk Services, confirming the requirement of a minimum of 50 Mℓ/day from desalination by 2030 as part of the Desalination Phase 1 identified in the Committed Programme.

The letter further states that pre-feasibility studies identified two sites, being Cape Town Harbour Port Industrial Park (PIP) site and Witzands site as potential feasible options. Based on the benefits and risks identified by the City, the PIP site has been prioritised for the development of Phase 1 desalination plant with an installed capacity of 70 Mℓ/day. The Witzands site has been identified as potential alternative.

In respect of the period beyond 2030[4], the City is in the process of updating their Bulk Water Masterplan which will provide more certainty on further phases, but current indications are that an additional 200 Mℓ/day will be required by 2040 which will be implemented in phases with the City aiming to install 60 Mℓ/day by 2035 and 140 Mℓ/day by 2040. The Witzands site has been identified as a potential site for the further phases and technical studies are underway for a maximum design capacity of 180 Mℓ/day. This would result in a total installed capacity of between c. 250 - 270 Mℓ/day by 2040 as indicated in the Table 2-2.

Table 2-2: Projected implementation phases - Committed Programme and Adaptable Programme

Estimated timeframe	Required minimum production	Water Strategy Programme
By 2030[5]	50 - 70 Mℓ/day	Committed Programme
By 2035	+ 60 Mℓ/day	Adaptable Programme
By 2040	+ 140 Mℓ/day	
Total by 2040	250 - 270 Mℓ/day	

[4] The Water Outlook is in the process of being updated, and indicative timelines show first water to be 2031

[5] The Water Outlook is in the process of being updated, and indicative timelines show first water to be 2031

2.2.4 Impact of the New Water Programme and the Desalination Project on tariffs

The Water Strategy outlined that the cost of adding the new water supply interventions will have to be considered in the water and sanitation tariffs to ensure in the long term the tariffs will reflect actual costs and provide signals for efficient water use. It is anticipated that the fixed charge will increase to cover the fixed costs and the tariff in respect of volume will be set at the cost of providing the new water supplied. The revenues will need to meet actual costs. A key objective of this Feasibility Study is to provide a reasonable estimate of the expected cost of supply and the impact this may have on the tariffs.

2.2.5 Alignment with Government and Municipal policy

The City IDP and WSDP seeks to ensure compliance with the National Water Act, Water Services Act, and the related regulations of National and City Policies, and together with the City's Water Strategy incorporate the Mission that aligns with the legislation regarding the provision of water services to consumers at large.

2.3 Output Specifications

The potential for production of potable water from sea water required further investigation in order to confirm that the proposed options are feasible and economically viable. Numerous studies have been conducted in recent years. A thorough review of all studies and information generated to date was undertaken and covered all related aspects, including those of a technical, environmental, social, legal, and financial/economic nature as well as an in-depth value assessment.

The technical studies undertaken informed further work undertaken in this Feasibility Study to determine:

- Ability to provide a reliable potable quality water supply meeting the required quantities
- Full project life cycle costs
- Affordability limits and whether the Project falls within those limits
- Development of an appropriate procurement framework with fair allocation of risk between parties
- Optimal value-for-money methods of delivery
- Ability to meet the required timeframes as stipulated in the Water Strategy and relevant other implementation documents like the WSDP.

The output specification and minimum standards for the Project were outlined in the Stage 1: Needs Analysis Report and are summarised below:

- Adequate volume – a minimum of 50 Mℓ/day required annually by 2030 (Updated to 2031 based on further work undertaken after concluding the Needs Analysis)in terms of the Water Strategy
- Adequate water quality – compliance with the South African National Standards (SANS) 241:2015 code
- Reliability of the service
- Affordability of the service in line with the City budget
- Acceptance by Interested and Affected Parties

3 Stage 2 - Technical Solution Options Analysis

3.1 Introduction

The Stage 2 Technical Solution Options Analysis considered a number of technical options that were identified to meet the City's need and output specification determined in the Needs Analysis. The technical solution options were evaluated against technical and financial parameters to determine the most viable technical solution at each of the sites identified.

The Technical Solution Options Analysis broadly followed three main steps:

- List all the technical solution options the municipality has considered
- Evaluate each technical solution option
- Select the best technical solution option

3.1.1 Overview of Bulk Water Supply

Currently, the primary source of water for the City is the Western Cape Water Supply System (WCWSS), a regional integrated surface water system. Surface water resources are limited and infrastructure such as dams are both prohibitively costly to construct and have significant adverse environmental impacts. The City plans to have a diversified water supply by 2040 such that 75% of water supply would be obtained from surface water sources, 11% from desalination, 7% from groundwater sources and 7% from water reuse (through the advanced purification of wastewater effluent).

The City has thus embarked on a strategy to improve surface water management. This will include:

- Management of the WCWSS
- Improved catchment management to reduce the growth of invasive alien vegetation
- Water Conservation and Water Demand Management (WCWDM)

In addition, the City is also paying attention to Ground Water Use and Recharge with particular attention being directed to the:

- Atlantis Aquifer
- Cape Flats Aquifer
- Table Mountain Group Aquifer
- Treated Wastewater Effluent
- Reuse

3.1.2 Desalination Site Consideration

In the period spanning 2018 to 2019, the City undertook Pre-Feasibility Studies (including an Environmental Screening Study[6]) with the aim to identify potential sites for the development of a seawater desalination plant. Preliminary site selection investigations were conducted for seven sites viz:

- Capricorn Park (near Muizenberg)
- Paardevlei (opposite Somerset Mall in Somerset West)
- Brooklyn (adjacent to Paarden Eiland)
- Koeberg (within Koeberg Holdings nuclear power plant property)
- the Cape Town Port Industrial Park (PIP) property (adjacent to Paarden Eiland)

[6] Environmental Screening Study for a proposed 100 to 150 megalitre/day desalination facility for the City of Cape Town –Phase 1: pre-feasibility study for terrestrial project components (Final report), Prepared by CSIR Environmental Services, Dated Sep 2019 prepared on behalf of iX Engineers.

- Salt River (the site now part of the current office development at the River Club)
- Witzands (next to the Witzands Water Treatment Plant)

This is diagrammatically shown Figure 3-1.

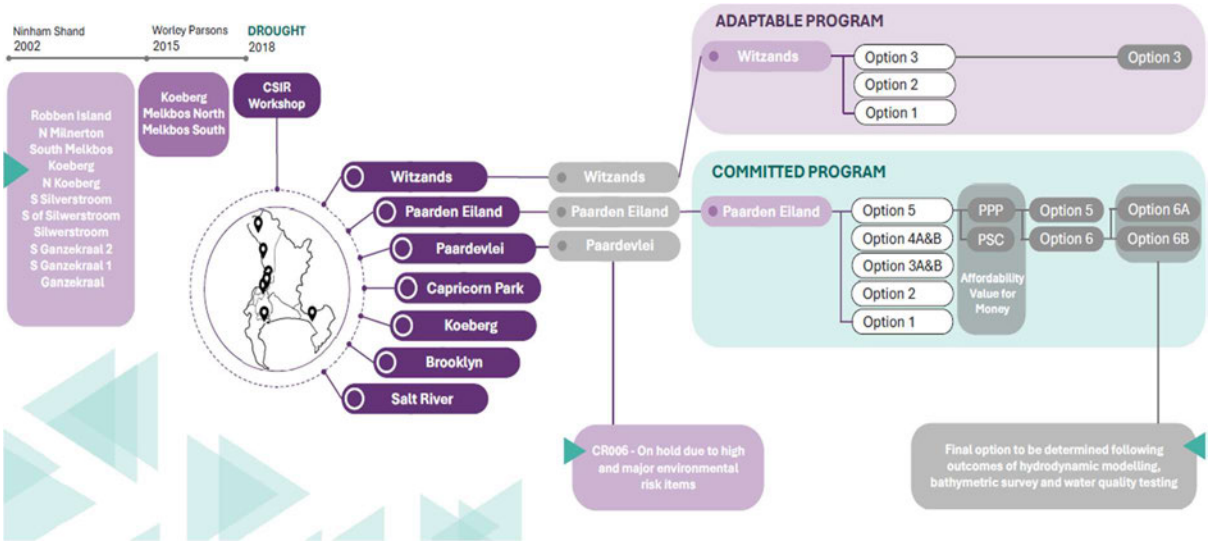

Figure 3-1: History of Options considered

Subsequently, Technical Feasibility Reports for both the PIP (Paarden Eiland) and Witzands Sites were undertaken in 2021 on the instruction of City of Cape Town's Bulk Water Branch. The Feasibility Reports were also subjected to further review in 2022. The review also offered the opportunity to align the key comparison indicators between the Paarden Eiland and Witzands sites while considering the different potential output volumes that can be accommodated at the sites. A cost estimate and design review considerations were reported on for both Paarden Eiland Site and Witzands Site. This choice has been informed by the facts that the Paarden Eiland site is preferable from an environmental perspective, ease of integration into the existing potable water system and land acquisition advantages.

3.2 Overview of the Technical Solution Options

3.2.1 PIP Site

The site for the proposed desalination plant is located on two flat portions of land at the western end of Paarden Eiland. One portion (owned by the City) to the west of Marine Drive (R27) and the other (owned by Transnet National Ports Authority (TNPA)) to the east of Marine Drive. The site is bounded by the N1 highway to the south and west, Marine drive to the north and by an existing stormwater canal to the east. The land previously under Transnet Property ownership was in the process of being transferred to the TNPA at the time of concluding the Needs Analysis. Subsequent to this the land ownership has now been transferred to the TNPA. Existing infrastructure on the site includes high mast navigational lights, a sub-station building and cooling water canals from the demolished former power station, the existing stormwater canal and existing access roads. It has been determined that a plant of 70 Mℓ/day could be accommodated on this constrained site.

The site locality is shown in Figure 3-2 PIP Site Locality.

Figure 3-2 PIP Site Locality

Table 3-1 lists the technical solution options at the PIP Site. It should be noted that Option 5 was recently refined with the pipeline localities being moved slightly northward. This option is referred to as Option 6.

Table 3-1: Technical solution options at the PIP Site

PIP Site	Option 1	Gravity flow from the Elliot Basin via an existing culvert
	Option 2	Pumped abstraction from Ben Schoeman Basin
	Option 3A and 3B	Offshore riser intake
	Option 4A and 4B	Offshore caisson intake
	Option 5	Offshore riser intake (modified Option 3)

3.2.2 Witzands Site

The proposed location for the desalination plant is near the City's Witzands Water Treatment Works at the intersection of the R27 and Dassenberg Road. This is approximately 6 km north-east of the Koeberg nuclear power station and inside the 16 km Urgent Protective Action Zone. The site is surrounded by the Witzands Aquifer Nature reserve. The footprint area required to accommodate a 180 Mℓ/day plant at this site is approximately 6.2 ha. The technical studies undertaken were on the basis of an installed capacity of 60 Mℓ/day per phase up to a total for three phases amounting to 180 Mℓ/day. Table 3-2 lists the technical solution options at the Witzands Site.

Table 3-2: Technical solution options at the Witzands Site

Witzands Site	Option 1	Original Site: Pipe route across Eskom-owned land
	Option 2	Fire Break Route (north of Eskom owned land)
	Option 3	Springfontein Route (north of Fire Break Route)

3.3 Evaluate each Technical Solution Option

3.3.1 Evaluation Methodology

The technical solution options identified for the PIP (Paarden Eiland) site (Table 3-1) and Witzands site (Table 3-2) was further evaluated in the Stage 2 Technical Solution Options Analysis and the outcomes are summarised in this Report on the Feasibility Study.

The focus of this analysis was firstly on the technical viability of each option. The following technical factors was evaluated for each of the options identified to determine whether it meets the output specifications. The evaluation criteria are outlined in Table 3-3.

Table 3-3: Technical Evaluation Criteria

Objective	Parameters analysed to determine whether the option meets the objective
Technical evaluation to determine the ability to reliably deliver the volume i.e. a minimum of 50 Mℓ/day by 2030[7] at the required water quality	- Abstraction and Brine discharge facilities - Desalination Technology - Site Issues - Desalination Site - Desalination Facilities - Constructability - Operation and Maintenance - Bulk Water Distribution - Power Requirements & Infrastructure - Environmental challenges - Social challenges - Land Rights Issues

On conclusion of the technical evaluation, technically viable options were then evaluated against financial criteria as outlined Table 3-4. Once a preferred option was determined at each of the sites, the possible implementation timeframes to meet the requirements of the Committed and Adaptable Programmes were also considered which is a critical input in respect of the proposed procurement strategy framework.

Table 3-4: Financial Evaluation Criteria

Objective	Parameters analysed to determine whether the option meets the objective
Financial implication and consideration	Stage 1 : Evaluation of technical solution options per site - Capital cost - Operating cost - Net Present Value (NPV) of projected capital repayment and escalated operational expenditure to determine the Unit Reference Value (URV) Stage 2 : Evaluation of implementation phases - NPV of projected capital repayment and escalated operational expenditure to determine the URV

Further to the technical and financial evaluation, there are some overarching criteria (detailed

[7] The Water Outlook is in the process of being updated, and indicative timelines show first water to be 2031

in Table 3-5) such as the legal considerations, Broad-Based Black Economic Empowerment (B-BBEE) objectives and socio-economic developmental impacts, market appetite, and PPP suitability which are not expected to differ materially between the technical solution options, and which are considered on a high level. These aspects were developed and considered further in Stage 3 – Service Delivery Options and Stage 5 – Project Due Diligence.

Table 3-5: Overarching considerations

Objective	Parameters analysed to determine whether the option meets the objective
Legal Consideration	- Regulatory compliance
B-BBEE objectives and socio-economic developmental impacts	- Consider options in respect of the B-BBEE Codes of Good Practice, 2013 (B-BBEE Codes) and Specific Goals
Market capability and appetite	- Is the project expected to be commercially viable and on what basis will there be market interest.
Early considerations of suitability for a PPP	- What are the opportunities for Risk Transfer - Value for Money - Affordability of the service in line with the City budget.

A key outcome of the analysis is to evaluate and confirm that the option recommended is aligned with the City's Water Strategy. The technical assessment looked to confirm how well the solution meets the output specifications specified in the Needs Analysis.

3.3.2 Evaluation Outcome

Once the technical and financial assessments were conducted, a combined financial and technical scoring and ranking was undertaken where a weighting of 80 was allocated to the Technical Score assessed based on the technical evaluation criteria and 20 to the Financial Score based on the financial URVs that were calculated per site using the financial criteria listed in Table 3-4.

This evaluation resulted in PIP Option 5 and Witzands Option 3 being proposed as the optimal options for each of the sites.

3.3.3 Qualitative considerations

Further to the Technical and Financial evaluation, qualitative factors were also considered. Table 3-6 summarises the benefits and risks or disadvantages of each of the Sites.

Table 3-6: Benefits and Disadvantages of the PIP vs Witzands Sites

	PIP	Witzands
Benefits	- Site lies in close proximity to the CBD (City's Business Hub) - Full proposed injection volume can be incorporated into the existing bulk infrastructure - Electrical supply cables already in place - Better environmental conditions for marine infrastructure - No environmental impact on the land side of the Desalination Plant (no protected areas). - Minimal land stakeholders - Availability of a storage reservoir (Molteno) - Overall, less costly than Witzands - A desalination plant at the PIP Site will provide strategic water supply to the CBD and will protect the CBD from water supply failures. - The water demand models show that additional water will be required in the CBD by 2030[8]	- Adequate space available to accommodate an increase in capacity over time - More favourable water quality conditions (may change after further water quality tests, considering extreme algae blooms, etc.) - Land available for desalination plant - Can meet total water demand, provided the desalination plant and ancillary infrastructure are increased beyond the current capacity that have been used for comparison purposes - Development expected northwards along the West Coast will utilise the increased capacity. - Power can potentially be supplemented by solar
Disadvan-tages	- Site is constrained and unable to be upgraded to greater capacity in the future - Risk of contamination of water at abstraction sites owing to port activities / proximity of shipping movements (risk considerably reduced by selecting an abstraction point outside the harbour) - Plant downtime due failure, because of damage caused by contaminated water especially for emulsified oil events, could be long if replacement of costly membranes is not available - Potential damage to abstraction works due to shipping activity (risk considerably reduced by locating the abstraction point outside the shipping routes and anchorage areas) - Pumping at high head into aged pipeline	- New bulk water infrastructure is required to convey the injection volume to the existing bulk infrastructure network - The full Phase 3, and possibly partial Phase 2 injection volume cannot be accommodated in the system without the construction of an additional storage reservoir of minimum capacity 60Ml - Would require new electrical infrastructure to the proposed site (large electrical upgrade required) - The desalination plant would be at a greater distance from the source water - Expensive installation costs for marine pipelines - Complex shore crossing and higher cost of pumping of seawater to plant.

[8] The Water Outlook is in the process of being updated, and indicative timelines show first water to be 2031

	PIP	Witzands
	- Low-use winter demand may limit operation at capacity if further upgrades to neighbouring supply nodes or to Tygerberg Reservoir are not actioned - Possible archaeological sites present in the vicinity of proposed infrastructure - Harbour operations in future could change	- Possible archaeological sites present in the vicinity of the proposed infrastructure. - Large number of landowner (+-93 properties) to engage with on the pipe route for the required connection infrastructure (for Phase 3). Land negotiation for the pipe route will take a long time and could delay the project. - The area where the coastal infrastructure and desalination plant will be located is environmentally sensitive (pipe route to cross protected areas). The Environmental Impact Assessment (EIA) approval can take up to 2 years to obtain, if no appeals are received through the EIA process. The EIA process and environmental approvals could delay the project. - Unlikely to provide required water as early as 2030 considering landowner negotiations and environmental approvals. - Should Witzands be implemented without PIP, infrastructure upgrades will be required to improve supply assurance in the CBD (City's Business Hub) from Tygerberg Reservoir. - A large reservoir is required to accommodate the ultimate 180 Mℓ/day capacity of the desalination plant. The draft Bulk Water Master Plan indicated that a large reservoir of up to 400 Mℓ will be required to accommodate the ultimate capacity of the desalination plant and the demand in the area at the time. This large reservoir will be a significant cost to the City and was not considered as part of the URV costs of the project. The cost of a 400Ml reservoir can cost in the range of R 800 million. - As the Witzands site will be implemented in phases, this results in higher upfront capital cost and the full value of this investment will only be derived as further phases are implemented. As Phases 2 and 3 are part of the adaptable programme and the timing of these are not yet certain, this increases the financial risk. In addition, procuring a project in phases potentially adds to the complexity in the procurement as result of its uncertainty.

3.3.4 Overview of PIP Site - Option 5

The PIP Site Option 5 comprises twin concrete intake risers located on the seaward side of the North East wall of the Ben Schoeman Basin. In this option, the pipe alignment as well as that of the brine outfall are moved further away from the North East harbour wall, as a result of the future TNPA medium term plans for the Port of Cape Town. The overland pipework connects the landfall pump station to the desalination treatment facilities. The overall layout of the proposed option is shown in Figure 3-3.

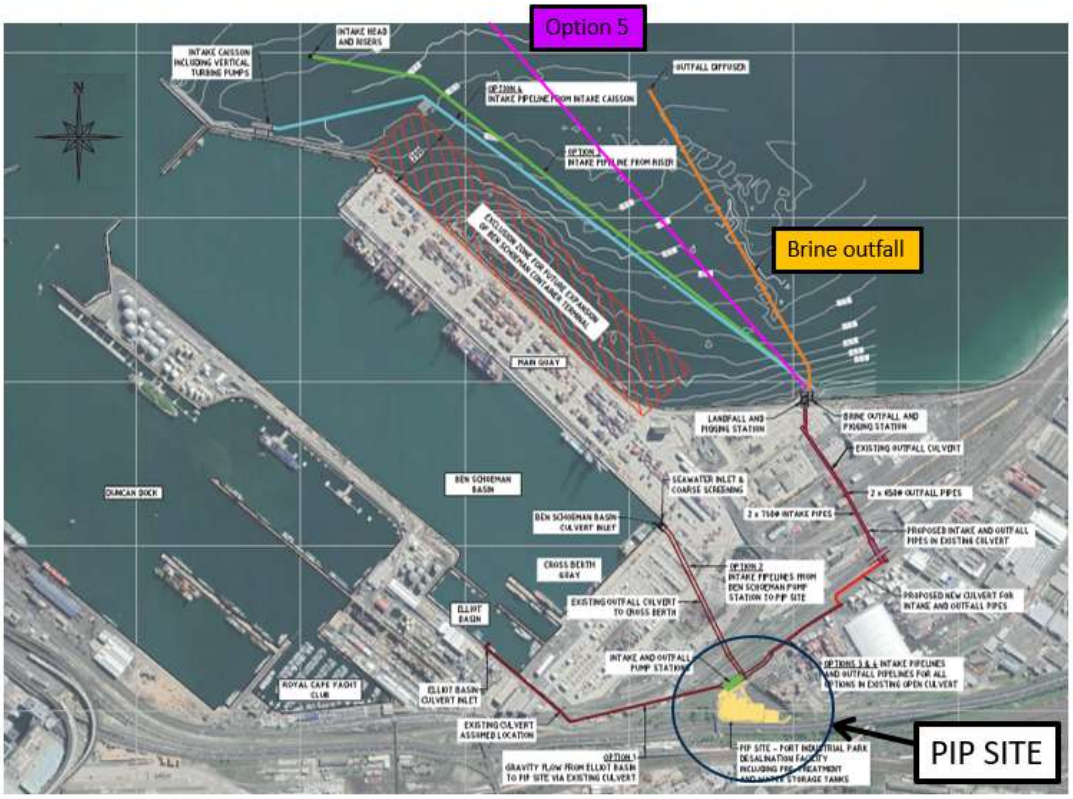

Figure 3-3: PIP Site -Option 5

3.3.4.1 Abstraction and Brine Return Facilities

From the risers, which are to house coarse screens, twin subsea pipelines will convey feedwater under gravity to a landfall intake pump station. From here feedwater will be pumped through twin onshore pipelines, to be located in an existing culvert, to the PIP Site. Twin outfall pipes, also located in the existing culvert, will convey brine and rejected product water from the PIP Site to the outfall holding tank at the landfall site. The twin brine marine outfall pipelines, with offshore diffusers, extends from the landfall site into the open ocean.

3.3.4.2 Desalination technology

The final desalination technology treatment unit process choices will depend on the outcomes of the comprehensive water quality sampling campaign which has been initiated.

The following concerns and risks are discussed in detail in Section 2.3.4 of the Technical Options Analysis Report and need to be highlighted:

- Dissolved Air Flotation (DAF) and Rapid Gravity Sand Filters (RGSF) loading rates: Overloading of the DAF and RGSF units can reduce the efficiency of removing suspended solids, algae, and organics.
- Fats, Oils and Grease (FOG) and Hydrocarbons: These along with hydrocarbons, pose a significant risk of membrane fouling in RO membranes.
- Boron: pH adjustment before RO (to enhance boron rejection), high boron rejection membranes or a second-pass RO stage may be necessary.
- Ultraviolet Advanced Oxidation: Reactive chlorine species under UV can produce by-products such as chlorate and chlorite.
- Disinfection: Managing residual levels to ensure both microbial safety and avoidance of over chlorination.

3.3.4.3 Site Issues

A number of issues relating to the site that need to be taken cognisance of are summarised below with details provided in Section 2.4.3 of the Technical Options Analysis Report:

- Condition of the existing culverts need to be assessed.
- TNPA owned land.
- The site being 100mm below 100-year floodline and is currently being redetermined.
- Confirmation that maximum building height of 18 m can be negated.
- The site is split by Marine Drive (R27) and provision is made (if and when it can be removed) to expand on the potable water storage capacity in that space in order to improve flexibility in operation.
- The condition of the existing 915-bulk pipeline has been the subject of numerous reports, and the pipeline is reported to be compromised, and final assessment must be done in terms of:
    - Corrosion
    - Surge
    - Pressure limitations
- Constructability concerns need to be well planned to address:
    - Outfall pipelines through the existing culverts.
    - Installation of marine pipelines and shore crossing requires significant marine temporary works.
    - Limited space for laydown areas within the PIP Site during construction.
- Power requirements and infrastructure can be summarised as follows:
    - Power requirements and infrastructure for the desalination plant will be of the order of 14.4 MVA to 15 MVA. It is recommended that a 33 kV intake substation and a 15 MVA 33/11 kV step down transformer yard be allowed for the site.
- Environmental and Social Challenges need to be taken cognisance of and include:
    - Compatibility with Strategic Planning & Management Instruments.
    - Encroachment into Environmentally Sensitive Areas (linked to marine environment, which are being assessed as part of the EIA).
    - Potentially Environmental Risks / Impacts (including risks to marine environment and vulnerability to climate change), which will be addressed as part of the EIA process.
    - Potentially Social Risks / Impacts (including risks to human uses of Table Bay and interference with shipping traffic), which will be addressed as part of the EIA process.
    - Potential internal and external cumulative impacts of infrastructure (including intake infrastructure as well as outfall pipeline and diffusers) that will be located within the marine environment.

- Regulatory Risks and Implications (need to apply for multiple Environmental Approvals, which is underway).
- Suitable Environmental Management Requirements / Way Forward if this Option is pursued.

3.3.5 Update post conclusion of the Technical Solutions Options Analysis

Subsequent to the completion of the Technical Solution Options Analysis, an amended intake option, denoted 'Option 6', was recommended by Zutari which entails a slight rotation of Option 5. This results in a shorter abstraction pipeline with the intake heads being located further away from the port entrance channel and the planned port expansion area. Similarly, the brine outfall will also be slightly shorter. As a minor cost reduction is expected with shorter pipelines, it was deemed acceptable to use the cost associated with PIP Option 5. Therefore, this Feasibility Study focussed on Option 5 being the preferred technical solution option at the time of conducting this study.

The impact of Option 6, subsequently proposed, needs to be fully explored for, inter alia, financial viability and value for money during the preparatory phase of procurement. This option provides even further distance from the planned port expansion activities, to help mitigate the deleterious effects on water quality from the port expansion construction activities. It is also located more remotely from the port entrance itself and further from navigation lanes. This is configured with an open intake riser and entails gravity driven abstraction to a landfall pumpstation via twin marine intake pipelines. Two alternative brine outfall diffuser locations are proposed as part of Option 6. The intake and outfall location must mitigate the risk of water quality deterioration during the planned TNPA port expansion, as well as the possibility of abstracting brine via the intake pipeline (short-circuiting). The intake and outfall locations shall be finalized once all of the EIA specialist studies have been undertaken, as well as the bathymetric survey and dispersion modelling - the latter two are underway (March 2025). Refer to Figure 3-4 for the proposed Option 6.

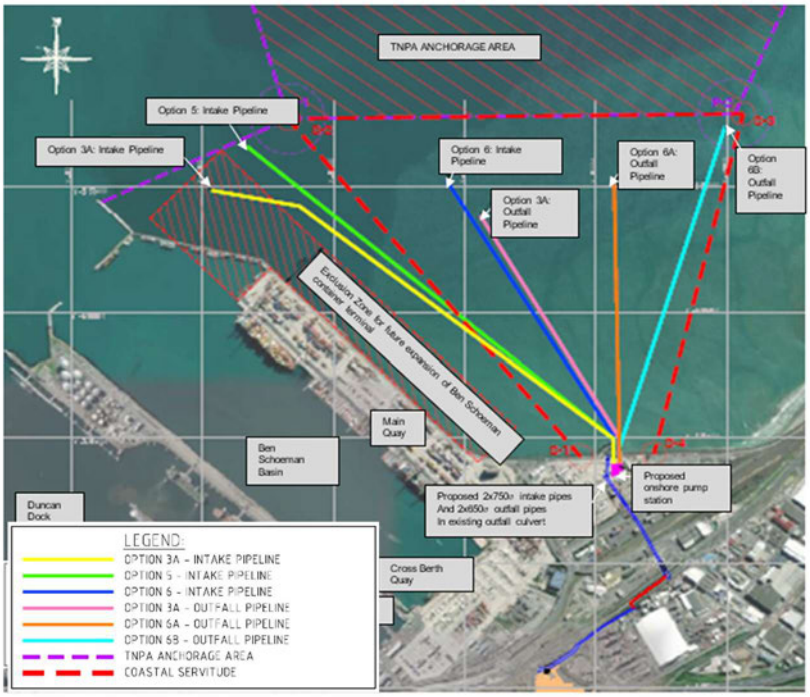

Figure 3-4: PIP Site – Option 6

3.3.6 Overview of Witzands Site –Option 3

The proposed desalination site is located at the intersection of the R27 (West Coast Road) and Dassenberg Road, adjacent to the Witzands Water Treatment Works, approximately 6 km north-east of the Koeberg Power Station. The site is level with access and has sufficient lay-by space during construction. The overall layout of the proposed options is shown in Figure 3-5.

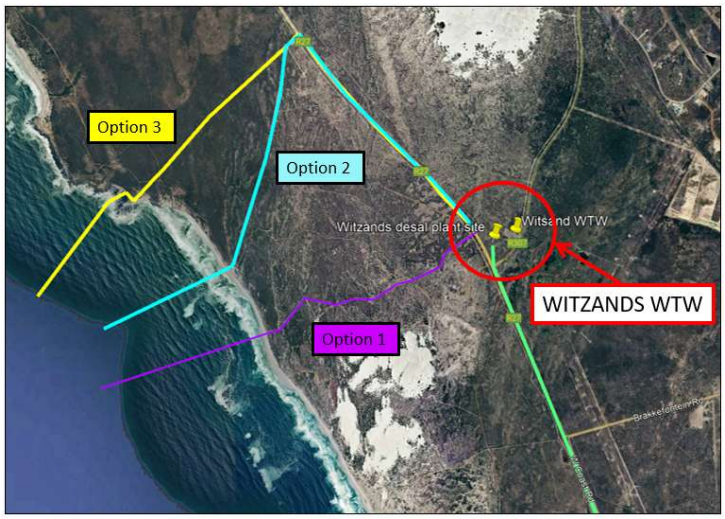

Figure 3-5: Witzands Site

Recently and subsequent to the completion of the Technical Options Analysis Report, further investigation has required minor route overland pipeline route changes to Option 3 to minimise traversing over private land. This is designated as Option 4.

The marine and landfall pipelines would lie outside of the northern boundary of Koeberg and hence out of Eskom jurisdiction. Servitudes across private land would be required. Owing to project time constraints, as informed by the Water Strategy, these routes were not explored extensively by the service provider.

3.3.6.1 Abstraction and Brine Return Facilities

Option 3 presents some attractive considerations from a land ownership perspective and from the location of a relatively flat area on the onshore profile with the sand cliff located only at 9 m above mean sea level. Nevertheless, the beach crossing area appears significantly rockier and with accessibility issues for the construction of the shore crossing coffer dam.

There is no bathymetry available for this site but from evaluation of aerial imagery it is expected that this option would have a higher probability of rock outcrops and reefs compared to Option 1 (e.g. base case).

3.3.6.2 Desalination Technology

The final desalination technology treatment unit process choices will depend on the outcomes of the comprehensive water quality sampling campaign, which is yet to be completed. However, the following concerns and risks need to be highlighted:

- Dissolved Air Flotation (DAF) and Rapid Gravity Sand Filters (RGSF) loading rates
- Fats, Oils and Grease (FOG) and Hydrocarbons
- Boron

- Ultraviolet Advanced Oxidation
- Disinfection
- Radioactivity

These risks are discussed in detail in Section 2.10.2.2 in the Technical Options Analysis Report.

3.3.6.3 Site Issues

In Option 3, the pipeline corridor is swung north-west of Option 2 (Alternative 1), moving the pipelines even further from Eskom boundaries. Servitude negotiations would be required with private property owners.

The site issues are described in detail in Section 2.12.3 of the Technical Options Assessment Report. The site issues that need to be taken cognisance of are as follows:

- Constructability
- The seawater intake pump station is located at an eroding sand cliff.
- Space constraints for equipment at the eroding sand cliff.
- On-bottom pipeline analysis informs that the required ballast for 1:100yr stability is not practical and therefore the pipelines would need to be trenched.
- Operation and Maintenance costs can still be optimised and need to be considered.
- Power requirements and infrastructure for the desalination plant will be as follows:
  - Phase 1: 14.43 MVA.
  - Phase 2: Increase to 28.86 MVA.
  - Phase 3: Increase to 43.3 MVA.
- Environmental and Social Challenges were considered in the Technical Solution Options Analysis stage. The Environmental Criteria are summarised below:
  - Compatibility with Strategic Planning & Management Instruments.
  - Encroachment into Environmentally Sensitive Areas.
  - Potentially Significant **Environmental Risks / Impacts**.
  - Potentially Significant **Social Risks / Impacts**.
  - Potential Cumulative Impacts.
  - Regulatory Risks & Implication.
  - Suitable Environmental Management Requirements / Way Forward if this Option is to be pursued.

3.4 Recommended Technical Solution Options

After consideration of the multi-criteria evaluation, the preferred technical solution option for each of the PIP and Witzands Sites were determined to be:

- PIP Site (Paarden Eiland) - Option 5[9]
- Witzands Site - Option 3

It was determined that to meet the Committed and Adaptable Programme requirements, both sites would need to be developed. However, to evaluate the optimal site to meet the requirements of the Committed Programme (e.g. 50 – 70 Mℓ/day by 2030[10]), a multi criteria analysis was undertaken. A financial analysis of the phases was undertaken together with a consideration of qualitative factors. A number of different implementation phases were

[9] Subsequent to the completion of the Technical Solution Options Analysis, an amended intake option, denoted 'Option 6', was recommended by Zutari which entails a slight rotation of Option 5.

[10] The Water Outlook is in the process of being updated, and indicative timelines show first water to be 2031

investigated. In considering the technical and financial analysis, as well as the qualitative factors, the recommended technical solution option and phasing approach was deemed to be the scenario as presented in Table 3-7.

Table 3-7: Summary outcome of the Technical Solution Options Analysis

Estimated timeframe	Required minimum production	Proposed phasing	Production
By 2030[11]	50 - 70 Mℓ/day	PIP Option 5[6]	70 Mℓ/day
By 2035	+ 60 Mℓ/day	Witzands Option 3 Phase 1	60 Mℓ/day
By 2040	+ 140 Mℓ/day	Witzands Options 3 Phase 2 and 3	120 Mℓ/day
Total by 2040	250 - 270 Mℓ/day		250 Mℓ/day

The recommended outcome is aligned with the City's Water Strategy and meets the output specification. The focus of further sections of this Feasibility Study is on the Committed Programme, which is PIP (Paarden Eiland) Option 5[12].

4 Stage 3 - Service Delivery Options Analysis and Stage 4 - Section 78(2) Recommendation

The Stage 3 Service Delivery Options Analysis considered internal and external service delivery mechanisms as set out in the MSA. Section 77 of the MSA requires a municipality to review and to decide on the appropriate mechanism to provide a municipal service under a list of events.

4.1 Summary Outcome of the Internal Mechanisms Considered

The analysis undertaken in respect of the internal legislated institutional options provided for in Section 76(a) of the MSA has indicated potential challenges in conducting the Project through an internal service delivery mechanism:

- Constraint in the capacity currently available in the City's organizational structures.
- If the City decides to implement the Plant on an internal basis then an external experienced operator will have to be outsourced for at least 3- 5 years to enable the City 's team operate this plant internally.
- The Project involves unconventional and specialized expertise, which may be difficult for the City to attract, and unlikely to have on board.
- The procurement and supply chain processes could potentially impact on the efficient operation of the plant, especially in instances when emergency parts or action is required.
- The City has not currently planned to fund the Project through its internal resources.

It is unlikely that any internal service delivery mechanism can be successfully deployed. The completed Feasibility Study has proven that an external delivery mechanism is desirable from a value assessment and value for money evaluation. The external mechanism is, therefore, the recommended outcome of the study.

[11] The Water Outlook is in the process of being updated, and indicative timelines show first water to be 2031

[12] Subsequent to the completion of the Technical Solution Options Analysis, an amended intake option, denoted 'Option 6', was recommended by Zutari which entails a slight rotation of Option 5.

4.2 Summary Outcome of the External Service Delivery Mechanism Evaluation

The external service delivery mechanism options were discussed with management. The consensus view was that the external service delivery mechanism should include both the design construction, finance and operating and maintenance of the Project. Various permutations were considered specifically in respect of the period of the operating and maintenance contract.

Whether different municipal entities, other organs of state, community-based organizations etc. will be appropriate to consider as viable options. The unanimous view was that the other entities would have similar or less capacity and skill to undertake the Project and therefore were not considered viable options. The possibility of an alliance model (currently employed in Australia and the USA) whereby the contractual responsibilities can be pooled and shared between private and public sector was explored during the due diligence phase and was regarded as an inappropriate mechanism for South Africa as it is mostly used in developed countries, if used at all.

The recommended external delivery option, therefore, is likely to be some form of a PPP including the design, construct, finance, operate and maintain of the Project. In consultations, a shorter period of operation was considered e.g. three to five years (also for the internal mechanism option). However, considering international precedent and the likelihood that this external party would have to fund the Project, it is our recommendation to consider a longer period of operation and maintenance of 20 to 25 years. This longer contractual period was compared with the internal option and more fully dealt with in the Value Assessment section.

The external service delivery mechanism will have to be approved by Council and a procurement process designed to identify the preferred consortium and such a consortium be contractually engaged. The Project will require an approved budget based on a clear understanding of affordability. This affordability process will have to be done in conjunction with a comprehensive risk assessment process and with the costing of the risks. The contractual agreements with the private sector will allocate these risks between the City and the external entity, to the party best placed to manage the risks. The final test is the determination of Value for Money where the PSC model will be compared to the external mechanism to demonstrate which option will offer the City with the best value.

4.3 Recommendations

Section 78(1) requires the City to assess its ability to implement the Project through an internal service delivery mechanism.

From this report, it was therefore recommended that the Council, as part of Stage 4 of the Feasibility Process, approves the Section 78(2) resolution of the MSA. This Council Resolution **"C 76/03/24"** titled "**Approval For a Section 78(2) Decision in terms of the Municipal Systems Act, 32 Of 2000, For the implementation and operation of the City's First Permanent Desalination Plant"**, was taken during February 2025 to further consider an external service delivery mechanism.

5 Stage 5 - Due Diligence

The Stage 5: Due Diligence Report aimed to uncover any issues in the preferred technical solution (PIP Site – Option 5[13]) and Service Delivery option that may significantly affect the proposed Project and considered legal issues, site enablement issues, as well as BEE and other socio-economic issues. The Due Diligence report considered primarily the points below.

5.1 Legal issues

The legal issues considered are:

5.1.1 The legal competence of the City to implement the Project.

The project considered the Constitution of South Africa Constitution of the Republic of South Africa, 1996, Municipal Systems Act 32 of 2000, Municipal Finance Management Act, 56 of 2003 and Water Services Act , 108 of 1997 in order to determine that the City has legislative competence to undertake the Project as it amounts to the provision of a municipal service in terms of the MSA and water services in terms of the Water Services act.

5.1.2 Performance of the Municipal Function by a Private Party

Section 120 of the MFMA provides that the City may enter a PPP only if the City can demonstrate that the PPP agreement will:

- provide value for money
- be affordable
- transfer significant risk to the private party

Contracts longer than three years imposes a 60-day period where various approvals must be obtained. Section 120 of the MFMA requires a feasibility study to be completed prior to engaging the Private Party. Various other legislation and regulations are required to be complied with before a City can pursue a PPP e.g. the Municipal Asset Transfer Regulations, the MSA, the Water Services Act, Intergovernmental Relations Framework Act and Council approved Water Strategy.

The City has a statutory obligation to ensure the provision of water services to communities in a sustainable manner and has the right to administer water and sanitation services including potable water supply. Furthermore, the MSA and Water Services Act place an obligation on the City to ensure that water and sanitation services are provided to its community.

5.1.3 Regulatory Matters – Legal constraints

The question reviewed is if any legal issue/s exists that may have a bearing on the Project in respect of the proposed technical option.

Water specific legislation provides that the City must do the following:

a) Disclose its intention to enter into an agreement with a Private Party.
b) Provide this Private Party with authority to act as a water services provider.
c) PPP agreement provisions be regulated by the Water Services Provider Contract Regulations.
d) Regulations will regulate the scope of the contract, each parties' obligations

[13] Subsequent to the completion of the Technical Solution Options Analysis, an amended intake option, denoted 'Option 6', was recommended by Zutari which entails a slight rotation of Option 5.

regarding the Water use license required, performance targets and indicators (with method by which the service provider is to receive payments) and performance monitoring.

e) Usage of Water in general, requires authorization and specifically obtaining a Water Use license. This is a requirement per the National Water Act. However, the National Water Act does not apply to use sea water to produce potable water, resulting in a Water Use License not being required.

5.1.3.1 Construction related matters

The provisions of the Construction Industry Development Board (CIBD) Act do not find application during the Feasibility Phase and will become applicable once the Project transitions into its procurement phase. In this regard, the Act will be considered during the preparation of the procurement documents for the Project.

5.1.3.2 Environmental Law matters

There are activities that are listed in the EIA Regulations that require environmental authorisation in terms of the National Environmental Management Act (Act No. 107 of 1998) prior to the start of any physical activity including site preparation and any activity on the site in furtherance of a listed activity but excluding any activity required for the purpose of an investigation or feasibility study as long as such investigation or feasibility study does not constitute a listed or specified activity.

Based on the listed activities triggered, a Scoping and Environmental Impact Reporting Process needs to be undertaken to support the application for Environmental Authorisation.

The Project also requires the following approvals in terms of the environmental regulatory framework and authorisation of water uses in terms of the National Water Act (Act No. 36 of 1998):

- National Environmental Management Act (Act No. 107 of 1998) - Environmental Authorisation.
- National Environmental Management: Integrated Coastal Management Act (Act No. 24 of 2008) - Coastal Waters Discharge Permit and coastal use permits on coastal public property.
- National Water Act (Act No. 36 of 1998) - authorisation of water uses.
- National Water Services Act (Act No. 108 of 1997) - approval to operate as a water services provider.
- National Heritage Resources Act (Act No. 25 of 1999) - acknowledgement of the Notification of Intent to Develop and comment on the Heritage Impact Assessment as part of the EIA process by Heritage Western Cape and SAHRA, and permit for the demolition of a structure older than 60 years.

5.1.3.3 Other considerations

There are additional points that need to be considered over and above the environmental matters:

- Various considerations are given to the Societies for the Prevention of Cruelty to Animals Act, National Heritage Resources Act, Integrated Coastal Management Act, Waste Act , integrated licensing and permits.
- There are activities that are listed by the EIA Regulations that require environmental authorisation prior to the start of any physical activity including site preparation and any activity on the site in furtherance of a listed activity, but excluding any activity

required for the purpose of an investigation or feasibility study if such investigation or feasibility study does not constitute a listed or specified activity.
- A CWDP is required for the Project in terms of the Coastal Management Act.
- It is anticipated that a Waste Management Licence in terms of the Waste Act will not be required for the Project.
- Comment and approval of the Heritage Impact Assessment by relevant heritage authorities in terms of the NHR Act must be obtained.

5.1.3.4 Commercial aspects for consideration

The commercial and financing considerations include the funding structure, payment obligations by the City, and any other enablers to advance the bankability of the Project. Some of the key considerations are included below:

- The Project will be financed on a project finance basis as detailed in Figure 8-1: Commercial and funding structure, which details key contractual structures that would enhances the bankability. The South African capital and debt market is considered sufficient to fund the size of this Project.
- The City operates a self-insured system and has an external insurance policy to cover catastrophic events.
- The South African landscape offers a track record of successful large infrastructure projects that will provide comfort to foreign investors. Some examples include:
  - The Renewable Energy Independent Power Producers Procurement Programme.
  - Gautrain's successfully concluded its PPP process, which is coming up for re-concession in 2026.
  - Passenger Rail Agency of South Africa closed their metro fleet replacement programme.
- South Africa has not had any PPP failures or terminations to date which is testimony to the robustness of the actual PPP process and the investment landscape in South Africa.

5.1.3.5 Procurement matters

A number of additional procurement specific matters and new relevant legislation were considered for purposes of the due diligence report and key points are summarised below:

- Municipal SCM Regulations and the City SCM policies including the 2025 amendments to the City SCM Policy contains nothing which will prohibit the procurement of the Project.
- The new Municipal PPP Regulations will not cause any interference with the implementation of the Project.
- Similarly, amendments as proposed by the National Water Amendment Bill will not impact the Project.
- The Water Services Amendment Bill will introduce regulation around permits and licenses, time procedures as regards validity, renewal, operating validity.
- A revised norm and standards for tariff setting seeks to guarantee predictability of tariffs for specific circumstances.

5.1.3.6 Site enablement issues

This section seeks to establish whether the City has the requisite rights to the Project Site and relevant pipeline route and to pass all these rights to the Private party to execute the Project. The site enablement issues of the due diligence as discussed in this section must be read with

the Project Challenges in section in 8.4 of the Procurement Plan. The site enablement considerations are summarised below:

- The Project Site is comprised of a land portion owned by TNPA, and another land portion owned the City.
- The optimum long-term securing of this land is currently in progress and will be secured before this Project goes to market.
- An inspection was performed on all the erven applicable to this Project in terms of the certificate of consolidated title, TNPA is the recognized owner of this portion of Project Site, so far as the Project Site is constituted by the erven consolidated in the certificate of consolidated title and transferred into the ownership of TNPA. According to the certificate of consolidated title, there are no restrictions of a legal nature that would impede the implementation of the Project.
- Having considered the Deed of Grant the City was granted ownership it is noted that erven, stipulated therein are under the ownership of the City, therefore so far as the erven constitute the Project Site or part thereof, the City has ownership of same. The Deed of Grant does not contain restrictions of a legal nature that would impede the implementation of the Project.
- Administrators' approvals, rates clearance certificates and various other registration documentation were obtained with relevance to the project site.

Figure 5-1 provides an overview of the site.

Figure 5-1: PIP (Paarden Eiland) Site

5.1.3.7 Pipeline routes

The pipelines/culverts will ultimately traverse five portions of land, with the new culvert section along Marine Drive falling on two erven. In the circumstance, and the City would need to obtain servitude rights from TNPA in order to use a portion of the TNPA Servitude and canal / culvert to install and operate the water conveyance systems required for the Project. Therefore, in relation to the portion of the land owned by TNPA, the City would rely on the rights granted to it by TNPA in terms of the leasing of TNPA owned land to seek the requisite servitude rights from TNPA.

The pipeline routes are indicated in Figure 5-1.

5.1.3.8 Land claims

A letter was addressed by the TA Team and sent to the Office of the Regional Lands Commissioner for Western Cape, enquiring if any land claims have been lodged with respect to the land parcels constituting the proposed Project Site. The response confirmed that no land claims appeared in the database as at April 2024 of the Regional Lands Commissioner.

5.1.3.9 Zoning

It is the advisor's view having considered the Zoning Scheme Extract that the TNPA owned land needs to be rezoned to enable the undertaking and implementation of the Project. This view is premised on the fact that the primary uses of the current zoning is not aligned with Primary Uses of the zonings that would be required to implement the project. For the matter of subdividing and consolidating before the zoning is recorded the detailed due diligence investigation of the sites and properties must be read together with the Project challenges in the Procurement plan.

5.1.3.10 Site acquisition

A leasing option (99-year long term lease) with a potential option to purchase at the end between TNPA and the City is well advanced. If the City resolves to conclude a long lease agreement in respect of the Project site, such agreement(s) must be registered against the title deed of the relevant leased land.

5.1.3.11 Environmental, Geotechnical, Structural and Town planning matters

Various other specialist studies and compliance matters are underway:

- There is an EIA process underway that will verify the environmental sensitivities and constraints associated with the site. The EIA process is nearing the end of the Pre-Application Scoping Phase and currently encompasses 13 specialist reports (listed below) at varying levels of detail. Notably the Visual Statement is now being upscaled into a Full Visual Impact Assessment. Specialist Reports:
- Agricultural Statement, Aquatic Biodiversity Statement, Civil Aviation Statement, Defence Statement, Green House Gas Inventory, Health Risk Statement', Heritage Impact Assessment, Marine Scoping Assessment, Noise Screening Assessment, Social Impact Assessment. Terrestrial Biodiversity Statement, Traffic Impact Assessment, Visual assessment.
- Limited geotechnical studies were conducted on the TNPA-owned portion of the PIP site. The proposed future investigations will better inform the assumptions made to date with respect to construction costs.
- The recent ZAA Engineering Projects & Naval Architects/iX Engineers project construction costing, which was subsequently updated by Zutari, expressly noted the inclusion of culvert refurbishment and repair costs.
- Relocation of navigation lights at the PIP Site requires adequate planning and execution to ensure these are removed and reinstated in a separate location prior to the construction phase of the desalination plant.
- The PIP Site is split by Marine Drive (R27), which results in a complex site arrangement. For this particular Project, it has been confirmed that a Site Development Plan (SDP) would be required. An SDP must illustrate the detailed aspects of the proposed development. This is necessary in terms of land use approval and zoning provisions.

5.2 Labour

This is a green field Project with the result that there are no existing City staff that would have to transfer to the private party by operation of law. Over time, as the concession period is operational, degrees of skills transfer will take place to the City staff that may remain involved with the project e.g. project contractual management. The private party will provide the entire staff complement required to fulfil their obligations per the concession agreement.

In the event that any City employees are affected by the Project at commencement of the Project, then section 197 of the Labour Relations Act, 66 of 1997 ("LRA"), which regulates the transfer of contracts of employment, may become applicable.

5.3 B-BBEE and other socio-economic issues

In formulating the targets for the Project, the following regulatory provisions and policies were considered:

- The City's SCM Policy
- Preferential Procurement Regulations, 2022 implementation guideline for specific Goals (PPR Guidelines)
- Preferential Procurement Policy Framework Act, 5 of 2000 (PPPFA) and its Preferential Procurement Regulations
- B-BBEE Act,53 of 2003 (B-BBEE Act)
- B-BBEE Codes and the relevant sector codes, namely the Construction Sector Code, 2017, (Relevant Sector Codes)
- Municipal Service Delivery Guidelines: Code of Good Practice for BEE in Public-Private Partnerships
- National Development Plan 2030
- New Growth Path Plan Framework
- Local Procurement Accord

Taking into consideration the socio-economic conditions of the City in line with the proposed B-BBEE targets, the Project could address, inter alia, the following socio-economic factors:

- Localised production of goods and services.
- Localisation of the City economy and development of the City based Small, Micro and Medium Enterprises (SMMEs) and suppliers through subcontracting and enterprise development. This may also have the indirect result of job creation for black people, youth and women, people with disabilities and people living in the rural areas, townships or under-developed areas and would contribute.
- Advancement of Qualifying Small Enterprise (QSEs), Exempt Micro Enterprise (EMEs), black women owned enterprises, enterprises in the supply chain of the private party/concessionaire and construction and operations contractors, as well as other enterprises in local communities.
- Encouraged contracting with locally based companies to increase economic growth within the City.

5.4 Chapter 11, Part 1 of the MFMA

5.4.1 Chapter 11, Part 1 of the MFMA regulates the supply chain management of municipalities

The City has an SCM policy in place, which is consistent with the provisions of Chapter 11, Part 1 of the MFMA. The Project cannot be undertaken in contravention of the City's SCM Policy. The Project must comply with the City's SCM Policy and in doing so, will comply with the

provisions of Chapter 11, Part 1 of the MFMA.

It is our view that the implementation of the Project would not necessitate any amendment of the SCM Policy to cater for the procurement of the Project. According to how the policy is drafted, so long as the implementation of the Project complies with the relevant provisions of the MFMA and the MSA, then the Project is implemented in a manner consistent with the City's SCM Policy.

6 Stage 6 - Value Assessment

6.1 Objective of the Value Assessment

The Feasibility Study will form the basis for the City's investment decision and must demonstrate whether the PPP delivery option is affordable, transfers appropriate technical, operational and financial risk to the private party and demonstrates value for money.

The aim of the Municipal PPP Regulations' Value Assessment is to determine and/or assess:

- The Project's affordability i.e. whether, given its existing commitments, the City's budget can accommodate the cost of the Project over its full term.
- How appropriately the Project transfers risks to the private sector i.e. the extent to which risks can be suitably transferred from the City to the private party.
- That the Project presents value for money i.e. a private party can assume certain roles currently performed by the City, so as to ensure a net benefit to the City, in terms of cost, price, quality, quantity, risk transfer, etc.

6.2 Type of Value for Money Assessment

The Municipal PPP Guidelines states that depending on the nature of the project and the capacity of the municipality, either a full value assessment or a simplified value assessment can be undertaken. Based on the guidelines for when a simplified or full value assessment must be conducted, it was decided to undertake a full value for money assessment, which was undertaken in line with the Municipal PPP Guidelines.

6.3 Base PSC and External Reference Financial Models

6.3.1 Introduction

The Base PSC Financial Model represents the full costs to the City of delivering the Project according to the specified outputs via the preferred technical solution option using conventional public sector procurement. The base PSC costing includes all capital, operating and funding costs associated with the Project.

The External Reference Financial Model is the hypothetical private party bid to deliver the specified outputs from the private party's perspective. Comparing the risk-adjusted PSC Financial Model with the risk-adjusted External Reference Financial Model will enable the City to assess whether service delivery by the City or by a private party yields the best value for money for the City.

6.3.2 Capital Cost

The capital cost is broken down into two main categories being the cost in respect of a) the SWRO plant and b) the marine works. The capital cost is materially consistent with that presented as part of the Stage 2: Technical Solution Options Analysis Report for the PIP Site -

Option 5. Where changes were made these are noted as a footnote. The base cost is escalated, and the USD components are converted at forward exchange rate curves in the Financial Models. The same base capital cost has been utilised for the base PSC and External Reference Financial Models as outlined in Table 6-1, with exception of the design cost included in Preliminary and General (P&G's).

Table 6-1: PSC Financial Model Base Capital Cost

Construction Capital (Base Date June 2023)	PSC Financial Model	External Financial Model
Capital Cost SWRO Plant (excl. Marine Works)	(ZAR'000)	(ZAR'000)
Sub-Total Capital Cost SWRO Plant including Contingencies	2 953 754	3 095 220
Marine Works		
Sub-Total Marine Works including Contingencies	1 849 660	1 849 660
Total Capital Cost including Contingencies	**4 803 414**	**4 944 881**
Capital Cost per Mℓ/day[14]	68 620	70 641

6.3.3 Development and other Cost to be incurred by the City

In addition to the Project base capital cost, a provision for development cost has been made in respect of both the PSC and External Reference Financial Models. In addition, in respect of the External Reference Financial Model provision has been made for labour expenses and other outsourced services as detailed in Section 6.3.3.2.

6.3.3.1 Development Cost – PSC Financial Model

In addition to the Project base capital cost, the City has, in its LTFP, provided for some development cost that will be incurred in respect of activities that will need to be undertaken by the City during the detailed design, procurement and the construction phases, as detailed in Table 6-2. These development costs have been classified as capital and operational expenditure.

Table 6-2: PSC Financial Model - Development cost (ZAR '000)

Development Cost (Base Date June 2023)	Concept to Procurement Phase	Construction Phase	Operational Phase		
	Dec 2025 - Mar 2029	Apr 2029 - Nov 2031	Year 1	Year 2	Year 3 +
Total Development Cost	**67 365**	**104 190**	**5 000**	**5 000**	**-**

6.3.3.2 Development and other City Cost – External Reference Financial Model

During the Value Assessment phase, the City, together with the TA, have determined several costs that the City would need to incur to ensure it has created the appropriate budget provision for the required activities and management of the Project. The cost also includes a provision for a Project and Contract management team to ensure the City has the human resource capacity to successfully manage all the phases of the project assuming an external

[14] Based on 70 Mℓ/day peak capacity

service delivery mechanism is adopted.

As outlined in the Value Assessment, the City will need to provide for the following expenditure:

- Development cost that will be incurred in respect of developmental activities that will need to be undertaken by the City.
- Labour expenses to allow the City to manage the PPP.
- Outsourced services to manage some aspects on the project.

The cost associated with the above mentioned has been summarised in Table 6-3. The City needs to make the necessary provision for the cost in the LTFP.

Table 6-3: City Project Cost (ZAR'000)

Development Cost (Base Date June 2023)	Procurement Phase	Construction Phase	Operational Phase		
	Dec 2025 - Mar 2029	Apr 2029 - Nov 2031	Year 1	Year 2	Year 3 +
Total	**26 000**	**67 400**	**12 367**	**12 367**	**7 367**

6.3.4 Operating Cost

Table 6-4 summarises the operating cost (including maintenance but excluding replacement cost) estimated for the Project and Table 6-5 the replacement cost and frequency. The cost is materially the same as that utilised in the base PSC Financial Model except for in the labour cost.

Table 6-4: Base Operating Cost (excluding replacements)

Operating Cost (Base Date June 2023)	PSC Financial Model (ZAR'000)	External Reference Financial Model (ZAR'000)
Electricity	205 587	205 587
Chemicals	80 942	80 942
Membrane replacement[15]	18 745	18 745
Labour	21 132	13 758
Water Quality Analysis	5 000	5 000
Maintenance	68 980	68 980
Insurance	33 400	33 400
Lease cost [16]	215	215
Total Operating Cost excluding replacements	**434 001**	**426 627**

[15] Zutari estimated the cost at ZAR 27.1 million. This estimate was reviewed by the TA technical team and amended based on ZAR 9 635 per membrane x 6 485 membranes amounting to ZAR 62 482 975 plus ca. 20% installation cost amounting to ZAR 74 979 570. Membranes are replaced between every 3 to 5 years, which has been confirmed by the IAP. Assuming a 4-year replacement cycle the annual cost amounted to ZAR 18.745 million.

[16] Zutari' s estimated costs did not include lease cost. This lease cost was sourced from a valuation report with document reference "ACT14164 - Portion of RE Erf 15201 Cape Town_ Amended" which was prepared by CCT's external valuers with the valuation effective date of 27 June 2024.

Table 6-5: Replacement Cost

Replacement Cost (Base Date June 2023)	ZAR'000	% foreign currency	Replacement frequency
Mechanical	394 100	70%	12 Years
Electrical	198 067	33%	17 Years
Control and instrumentation	49 520	100%	10 Years
Civil	33 206		50 Years
Building	312 685		30 Years
General and site	127 685		30 Years
Mechanical components of Marine Works	96 504	60%	12 Years
Electrical, Control and instrumentation components of Marine Works	80 420	60%	17 Years
Civil components of Marine Works	1 431 476	60%	50 Years

6.3.5 BEE costs

Direct BEE costs are the costs of achieving the Project's identified B-BBEE objectives or targets. The PPPFA provides for a ceiling on the price premium to be paid for B-BBEE in the supply of goods and services contracted through conventional procurement. In quantifying the potential impact on cost as result of the targets, other PPP projects were considered and based on these benchmarks an assumption of 3.13% of revenue (which in the PSC model is assumed to be the total cost to the City) was deemed appropriate in respect of the targets identified.

6.3.6 Indirect Costs

Should an internal services delivery mechanism be selected, the operational expenditure would need to include indirect costs associated with all internal support services rendered to the line function department. Indirect costs include those associated with all the intra- and interdepartmental interfaces and functions within the Water and Sanitation Directorate. It also includes other City directorates and departments that are supportive to water and sanitation management, e.g. corporate finance and legal services. However, the entanglement of internal services makes it difficult to differentiate between direct and indirect costs of a service and complicates the ability to calculate the real operational costs for the purposes of quantifying them as part of a water tariff.

The City has undertaken an analysis to determine the percentage of costs that could be attributed to indirect costs in respect of internal support services which indicated the cost to be between 7 – 9% of operating cost. This assumption was utilised, at 8% of the Project operating cost (excluding the cost of electricity), to determine the indirect cost that will be attributed to the Project. No indirect cost has been provided for in the External Reference Financial Model

6.3.7 Timing Assumptions

6.3.7.1 Operational period

For the purposes of the Value Assessment, an operations period of 20 years post completion of the construction period has been recommended and assumed. This assumption was used in both the PSC and the External Reference Financial Model for comparative purposes.

6.3.8 Production Assumptions

Table 6-6 presents the production assumptions utilised in the base model.

Table 6-6: PSC Financial Model production assumptions

Production assumptions		
Installed capacity	Mℓ/day	70
Estimated down time	%	10%
Availability	%	90%
Estimated Annual production assuming 365 days per annum[a]	Mℓ/annum	22 995

[a] Financial model calculations based on actual days and availability per annum.

6.3.9 Macro-economic Assumptions - Escalation

The Capital Cost provided in Table 6-1 is escalated in the financial model at 7% for the ZAR component and 2.1% for the USD component. The Operating Cost is escalated as detailed in Table 6-7.

Table 6-7: Escalation rates

Operating Cost (Base Date June 2023)	Escalation rate
Electricity	11% reducing to 6% in 2030
Chemicals	12%
Membrane replacement	6%
Labour	7%
Water Quality Analysis	7.5%
Maintenance-mechanical	7.5%
Maintenance-electrical	7%
Maintenance-Control and instrumentation	7%
Maintenance-Civil	5%
Maintenance-building	7%
Maintenance-general & site	6%
Maintenance-Marine works	5.5%
Insurance	6%
Lease cost	6%
USD inflation	2.1%

6.3.10 Macro-economic Assumptions – Foreign Exchange Rates

The USD ZAR foreign exchange rate was sourced from Bloomberg for the period 2024 to 2033 as depicted in Figure 6-1. From 2034 an inflation differential between SA and USD Consumer Price Index (CPI) was applied.

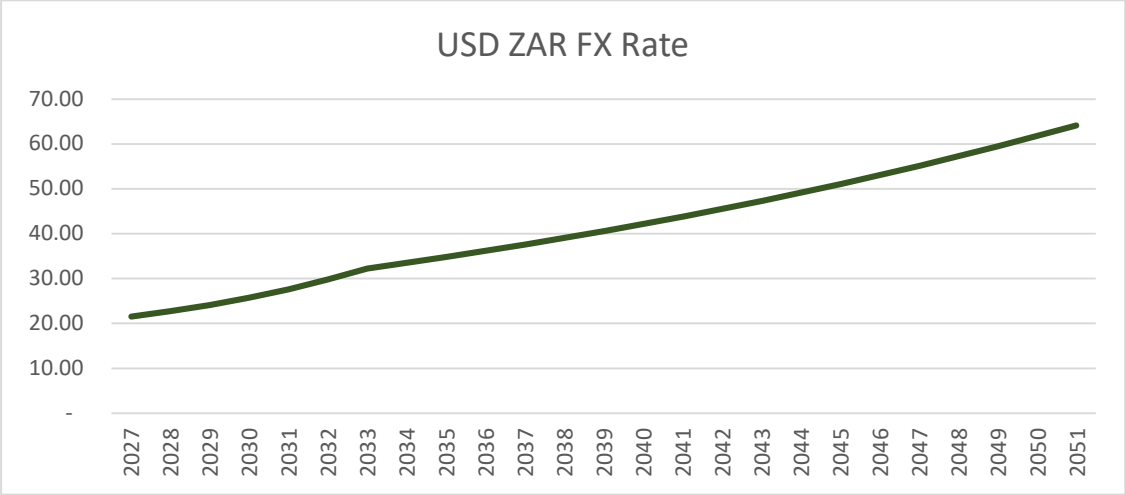

Figure 6-1: USD ZAR foreign exchange rate (Source: Bloomberg)

6.3.11 Macro-economic Assumptions – Interest Rates

The base interest rate assumed during the construction period is the 1-month JIBAR rate of 7.46% and for the operating period the 6-month JIBAR rate of 7.75% both sourced from Bloomberg (Feb 2025).

6.3.12 Discount Rate

The 20 year South African Government bond yield of 11.76% (19 Feb 2025) was utilised as the discount factor to apply to the nominal cost in both the PSC and External Reference Financial Model to arrive at the NPV. In choosing this discount rate consideration was given to the fact that the project is fully funded by debt and a 20-year period was chosen in order to match the term of the PPP under consideration which was also utilised for the PSC model for comparative purposes.

6.3.13 Funding Assumptions

6.3.13.1 PSC Financial Model

The PSC financial model assumes that the Project construction capital cost will be funded through debt raised by the City from both development finance institutions and commercial banks with a 15 year repayment period. Margins ranging from 3.2 to 3.55%. The cost of funding assumed for the PSC Financial Model is slightly higher than that assumed for the External Reference Financial Model as 100% of the Project required capital is assumed to be funded by debt which increases the risk to lenders.

6.3.13.2 External Reference Financial Model

A common PPP Project Finance structure is assumed for the Project where the private party would take equity in a Special Purpose Vehicle (SPV) which would design, finance, build and operate and maintain the Project through all phases, through the concession period. The commercial and funding structure is presented in Figure 8-1: Commercial and funding structure.

Table 6-8 details the capital structure and gearing ratio utilised in the External Reference Financial Model.

Table 6-8: External Reference Financial Model Capital Structure

Capital structure	
Debt	75%
Equity	25%
Target Nominal Post Tax Equity IRR	
Blended Equity IRR	18%

It has been assumed that the debt and equity drawdowns are done on a pro-rata basis. It is assumed debt will be raised from both development finance institutions and commercial banks with a 15 year repayment period. Margins ranging from 3.1 to 3.3%.

6.4 Risk Adjusted PSC and External Reference Financial Models

6.4.1 Risk Assessment Matrix Construct

A comprehensive risk assessment was undertaken in an excel based risk matrix, which was inserted as a worksheet into the respective financial model, being the PSC Financial Model and External Reference Financial Model and the risk allocated to the nominal cashflows in the respective period in which the risk is estimated to occur.

6.4.2 Risk Impacts PSC Financial Model

The cost of each main category of risk has been calculated in nominal and real terms. Discounting has been applied to nominal, per period, expected risk impacts at 11.76% (20-year ZAR bond yields – 19 February 2025).

The total risk impact is calculated at R 33,5 billion in nominal terms, or 48.5% of the total cost to the City. Discounting this figure amounts to an estimated R 5,3 billion.

6.4.3 Project Cashflows Base vs Risk Adjusted PSC Financial Model

Figure 6-2 presents the nominal cashflow of the pre and post Risk Adjusted PSC Financial Model over the operational period. The spikes in 2043 and 2048 represent key equipment capital replacement costs. Debt is repaid in the middle of 2046 which results in the reduction in cost in 2047.

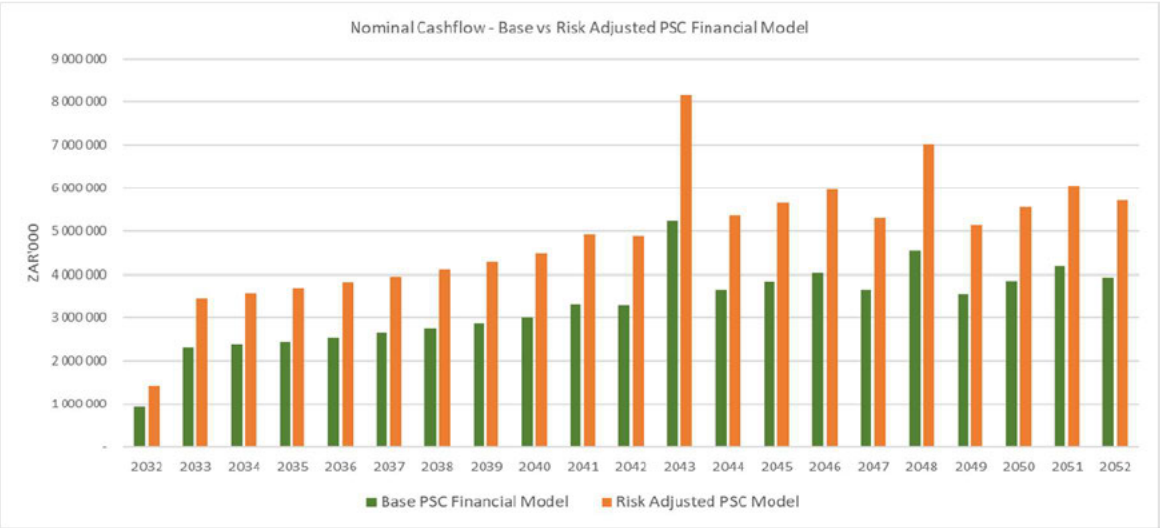

Figure 6-2: Base vs Risk Adjusted PSC Financial Model Nominal Cashflows (ZAR'000)

Table 6-9 represent the nominal and NPV cashflow of the expected risk adjusted cost to the City of proceeding with the Project through an internal mechanism. The nominal cashflow of the Risk Adjusted PSC Financial Model is estimated at R 102.5 billion, and in real terms estimated at R 16 billion.

Table 6-9: Risk Adjusted PSC Financial Model – Impact on Nominal and NPV cashflows as at Feb 2025

	Nominal (ZAR)	NPV (ZAR)
Pre-Risk adjusted PSC Financial Model	69 048 773	10 736 404
Risk	33 465 736	5 276 676
Risk adjusted PSC Financial Model	**102 514 510**	**16 013 081**

The risk adjustment represents approximately 48.5% of the Pre-Risk total nominal value and 32.7% of the Risk adjusted total nominal value.

6.4.4 Risk Impacts External Reference Financial Model

The cost of each main category of risk has been calculated in nominal and real terms. Discounting has been applied to nominal, per period, expected risk impacts at 11.76% (20-year ZAR bond yields – 19 February 2025).

Adding the total retained risk impact cost to the unitary payment that the City would have to pay under an external service delivery option, as well as other costs the City would be responsible for to manage the Project, amounts to the total Risk Adjusted External Reference Financial Model nominal cashflows.

In nominal terms, the nominal cashflow of the Risk Adjusted External Reference Financial Model is estimated at R87,2 billion, and in real terms estimated at R 13,2 billion. Table 6-10 represent the expected risk adjusted cost to the City of proceeding with the Project through an external mechanism. It can be seen that significant risk has been transferred to the private party and the retained risk by the City is minimal compared to the PSC Financial Model.

Table 6-10: Risk Adjusted External Reference Financial Model – Impact on Nominal and NPV cashflows as at February 2025

Risk category	Nominal (ZAR'000)	Real (ZAR'000)	% of Total (Real)
Unitary Charge	79 969 062	11 741 894	88.8%
Risk retained by the City – Operating Cost	4 838 657	642 350	4.9%
Risk retained by the City – Capital Cost	1 819 868	681 174	5.1%
Development and Management Cost	606 625	164 559	1.30%
Total	**87 234 212**	**13 229 977**	**100.0%**

Figure 6-3 presents the annual risk adjusted nominal cashflows for the External Reference Financial Model.

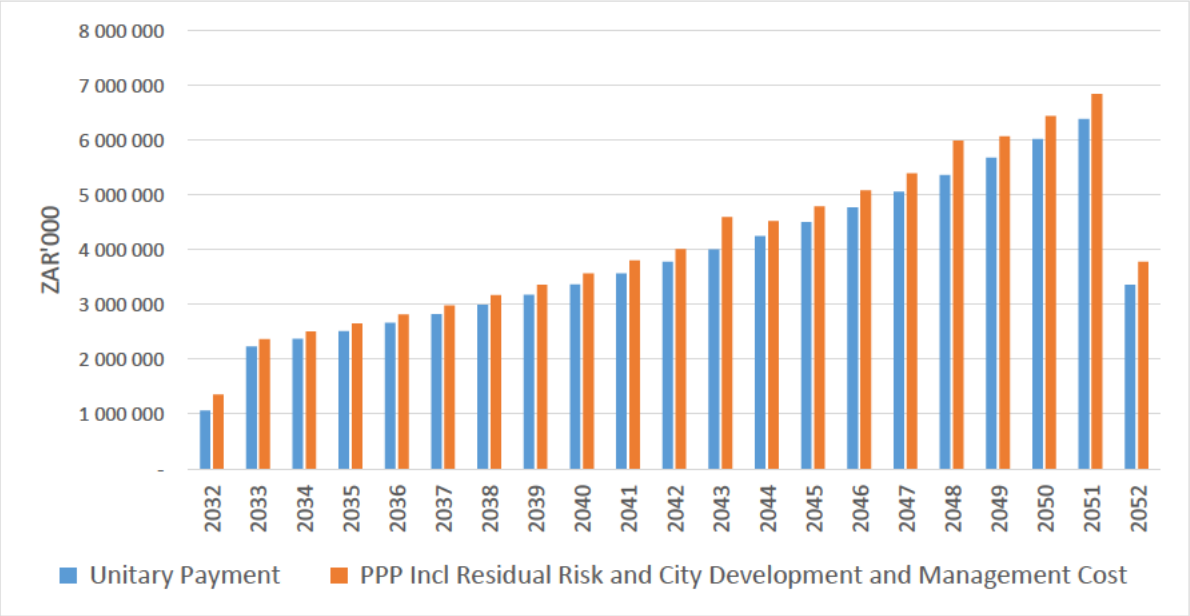

Figure 6-3: Risk adjusted Nominal Cashflows - External Reference Financial Model

6.5 Establish the Initial Indication of Value for Money

6.5.1 Approach

Value for money is considered at this stage by comparing the risk-adjusted PSC Financial Model to the Risk-Adjusted External Reference Financial Model on an NPV basis, utilising the same discount rate of 11.76%. The Initial Value for Money calculation is presented in Table 6-11

Table 6-11: Risk Adjusted PSC vs Risk Adjusted External Reference Financial Model NPV cashflows as at February 2025

	Nominal (ZAR'000)	NPV (ZAR'000)
Risk Adjusted PSC Financial Model	102 514 510	16 013 081
Risk Adjusted External Reference Financial Model	87 234 212	13 229 876
Value for Money achieved	15 280 297	2 783 104

6.6 Demonstrate Affordability

A proposed PPP project may provide value for money but be unaffordable. Value for money is a necessary condition for an external option, but not in isolation. If a project is unaffordable, it undermines the municipality's ability to deliver other services and it should not be pursued. Affordability is the most important driving constraint in all PPP projects.

The affordability of the Project is largely driven by:

- The impact on the end user water tariffs.
- The City's credit worthiness and ability to stand behind a long-term PPP contract.
- The economic impact and user's willingness to pay for water.

This analysis cannot be undertaken for the desalination Project alone but also needs to consider all the large capital projects being investigated by the Water and Sanitation Directorate.

6.6.1 Cost of the Project to the City

Figure 6-3 provides an output of the projected annual cashflows of the External Reference Financial Model if the Project will be undertaken through a PPP procurement model, for which the City needs to make provision in their LTFP. This was utilised as basis for the City to determine the impact on end used tariffs and the resultant affordability assessment.

6.6.2 Impact on Water Tariffs and Affordability to End Users

Utilising the projected cashflows, the City has undertaken a detailed assessment of the impact of this Project, as well as other capital projects planned, to determine the collective impact on water tariffs. The work undertaken by the City in evaluating the affordability includes the consideration of the Water Demand and Supply outlook.

In undertaking the assessment of the impact of this Project as well as other projects, the City utilises a detailed costing model that considers all the components that form part of the Bulk, as well as the end user, water tariffs. The actual impact of the direct cost was then considered against a number of factors that include the likelihood of restrictions and the impact on the local economy due to restrictions, to ensure the City achieves a balance between water security and affordability.

The City is in the process of updating the Water Outlook and the work undertaken emphasises that any delays in implementing the Committed Programme will increase the probability of imposing water restrictions, even in a non-drought condition, and water reuse and desalination are critical to ensure the long-term water security of Cape Town.

6.6.3 Water Demand and Supply

The City produces an annual publication, the Water Outlook, which looks at the projected water demand curve across a number of scenarios. The Water Outlook and Water Strategy forms the basis upon which capital projects are planned. The Water Outlook 2024 reaffirmed the need for the Committed Water Programme and the commitment to develop an additional 300 Mℓ/day of water supply from diversified sources.

The likelihood of restrictions in the short to medium terms exist due to concerns surrounding aging infrastructure and possible changes to raw water quality. Therefore, water reuse and desalination are critical to ensure water security in the water supply system.

A number of supply and demand scenarios were evaluated to determine at what point demand exceeds supply to determine whether any of the planned capital projects could be delayed or to guide how the capital projects could be staggered to facilitate an acceptable increase in water tariffs.

The three figures below depict the various water sources indicating when new water projects will start producing new water against the water demand at a 2% and 2.5% growth in water demand. Growth typically tracks population growth, which various forecasts show as between approximately 1.8 and 2.25%. Under a 2 – 2.5% growth in water demand the City will reach their allocation from the WCWSS in two years' time. Figure 6-4 presents a 1:50 Assurance of Supply (AOS) or level of supply assurance Figure 6-5 shows a 1:200 AOS or level of supply assurance, Figure 6-6 superimposes climate change, as per the Water Strategy, where demand exceeds supply.

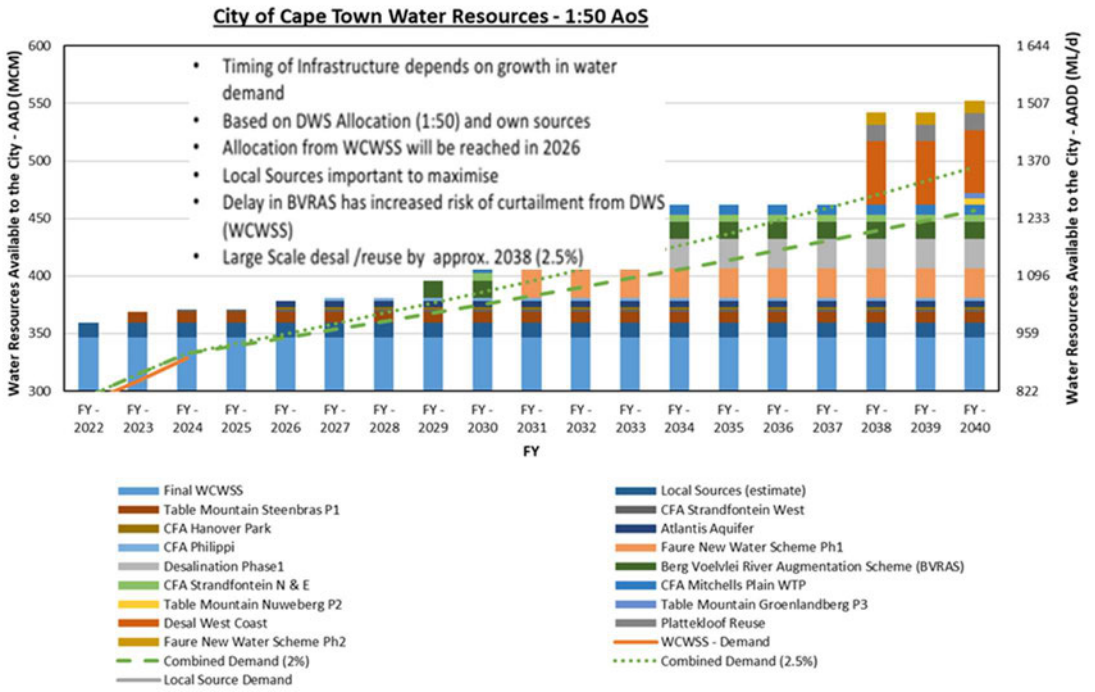

Figure 6-4: City Water Resources up to 2040 - 1:50 AOS

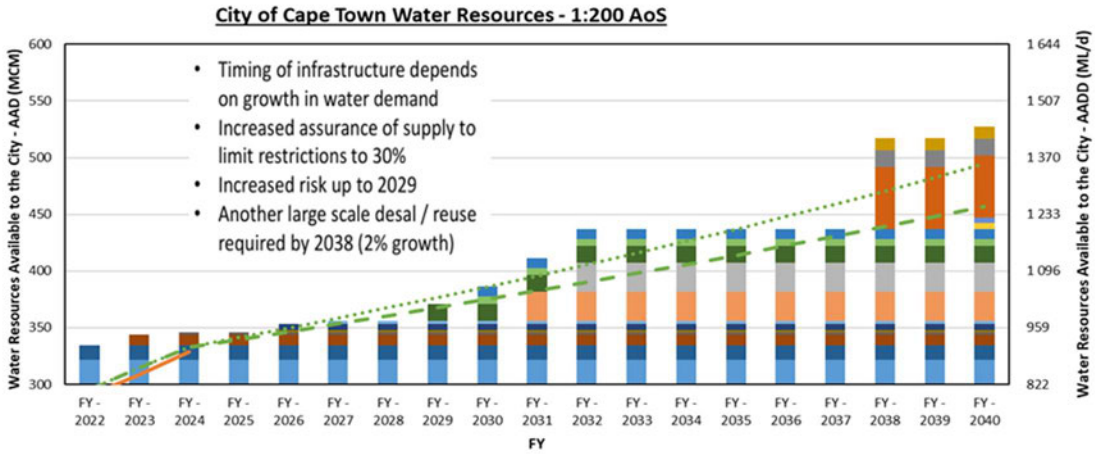

Figure 6-5: City Water Resources up to 2040 1:200 AOS (Legend as per Figure 6-4)

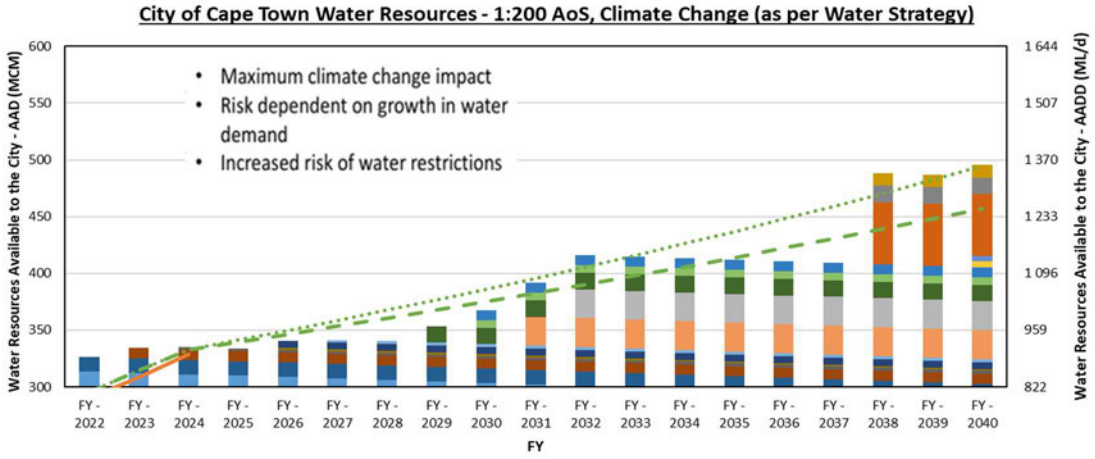

Figure 6-6: City Water Resources up to 2040 1:200 AOS with Climate Change Impact (Legend as per Figure 6-4)

Figure 6-4, Figure 6-5 and Figure 6-6 demonstrate that the Desalination Project cannot be delayed beyond 2030 to 2032. It is however acknowledged that water security and affordability require careful managements and therefore detailed financial analysis has been undertaken.

6.6.4 Tariff Modelling

The City has developed detailed tariff models which allow them to set their bulk water and end user tariffs at levels that ensure that the revenue derived from water services are sufficient to cover the operating cost of providing this service.

A number of scenarios were run by the City considering various options in phasing in the Project and other capital projects to ensure water security and impact on the water tariffs are balanced and optimised for full cost recovery. This included scenarios utilising assumptions including the projected cost of the Project as detailed in the Value Assessment Report, growth in demand, new water produced by planned projects, capital expenditure budget from other projects, macroeconomic assumptions and expected collection rate.

The tariff model assumed that the Faure New Water Scheme would start operating in the year Financial Year FY2029/30, and that this desalination Project would start operating Nov 2031 (FY2031/32); and the upgrade of the Cape Flats Wastewater Treatment Works project in FY2030/31. Timelines are provisional and under review and may be subject to change. The impact (additional funding requirement) of all of the projects referred to is approximately R4 billion per annum on a cumulative basis.

A series of indices were generated, which provide a consistent baseline for comparison, allows for calculation of water tariff changes over any time period and captures the cumulative effects of water tariff changes.

To ensure that there is a balance between surpluses and deficits on an annual basis, smoothing of the water tariffs have been performed with the aim of ensuring that tariff increases passed onto consumers are done on an affordable basis as far as practically possible. For example – where the City implements a modified water tariff higher than the required tariff then it would generate a surplus, if it implemented a modified water tariff lower than the required tariff it will generate a deficit. The water tariff is adjusted in every financial year to balance the surpluses or deficits created to ensure the impact on end users remain affordable and stable.

The projected baseline and modified scenarios reflected below offered the most optimal short to medium term balance between managing water risk and affordability. The average scenario reflects the average water tariff adjustments over the period.

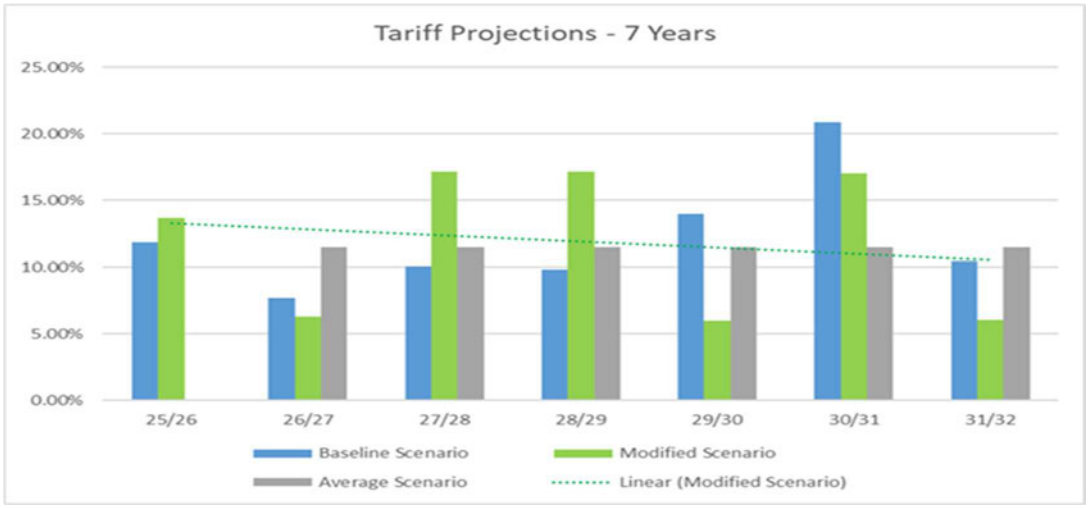

Figure 6-7: Tariff Projections over a 7-year period

The analysis then also took a longer-term view to 2041 that included further new water project requirements in the late 2030's. The projected baseline and modified scenarios reflected in Figure 6-8 offered the most optimal long-term balance between managing water risk and affordability.

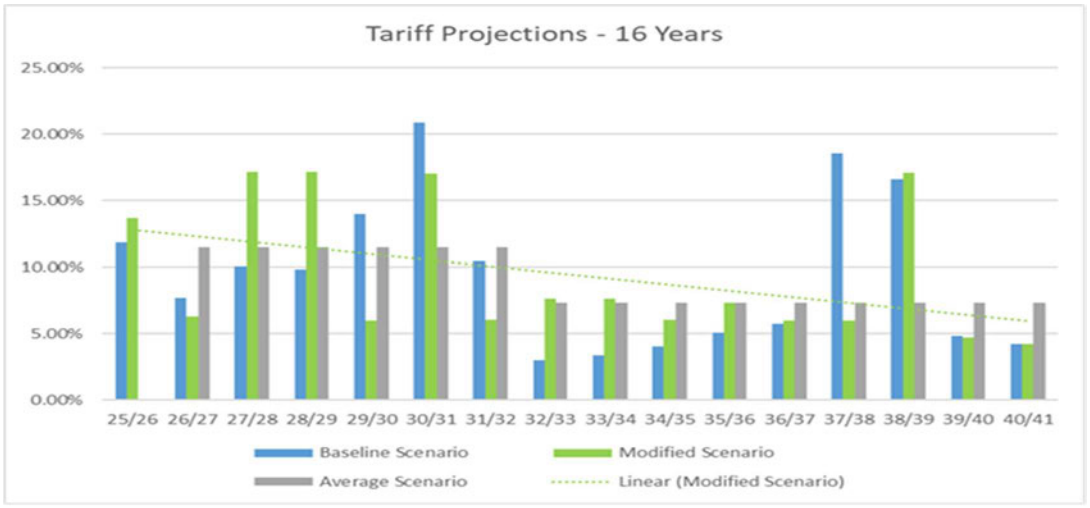

Figure 6-8: Tariff Projections up to 2041

It can be seen that the City would initially require a higher water tariff increase in the short to medium term in order to meet its commitments in respect of implementing the envisaged projects. Consideration should be given as to whether an annual average increase in water tariffs would not be more acceptable to users, as per the Average Scenario shown in Figures 6-9 and 6-10.

6.6.5 Creditworthiness of the City

The City's financial standing and ability to stand behind a long-term PPP agreement has not been tested with potential bidders or lenders. It was recommended by the TA that a market sounding be undertaken during the feasibility phase, however GTAC advised that this not be undertaken.

It is recommended that a market sounding be undertaken during the procurement phase to

gather views from lenders as to the level of credit enhancements that may be required.

This will also assist in informing the potential impacts on the City's balance sheet as a result of the Project. The finding should be considered against the other PPP projects that are being investigated by the City and there will need to be consistency in how these projects are treated and in respect of the credit enhancements offered. The City should also explore whether combined market soundings can be undertaken in respect of all projects being developed.

The City should also commence in exploring credit enhancements like the BFI facility. The World Bank in consultation with National Treasury is also investigating the feasibility of a Credit Guarantee Vehicle and the Western Cape Government should ideally facilitate engagement with the World Bank in this regard to determine if there is potential to utilise this facility in providing guarantees to the City for this, and other, PPP projects.

6.6.6 Economic Impact of Restrictions and Willingness to Pay

The affordability assessment cannot be undertaken without also considering the economic impact of water restrictions on households and businesses, and their willingness to pay to avoid these water restrictions and therefore absorb the proposed tariff increases.

In this regard, the Stage 6: Economic Valuation was undertaken to assess these factors by expanding the financial assessment to include an assessment of the economic costs and benefits of implementing the project and is further expanded on in Section 7 of this Report on the Feasibility Study.

The economic benefits of water resilience for households are typically monetised through Willingness-to-Pay ("WTOP") studies where households are surveyed and asked how much they would be willing to pay for a secured supply of potable water.

The Economic Valuation included an analysis of households' level of WTOP, using upper and lower bound WTOP assumptions based on a review of the current WTOP literature. At the time of the City's water crisis tariffs increased significantly due to reduction of volumetric usage and the City's reduced ability to cross-subsidise tariffs at lower usage. In addition, the benefit of water security on businesses was also included in the assessment. This estimation was undertaken based on a review of the economic sectors and their level of reliance on water as an input into production at various levels of water restriction.

An assessment of the costs and benefits of the construction and operation of a desalination plant to augment water supply for the City has revealed a strong case for economic viability. The Project is economically viable for all the PPP procurement scenarios, across all three climate/water demand scenarios, as well as at different levels of WTOP.

The PSC procurement option yields economic viability for the medium and high climate/water demand scenarios, however this option delivers lower overall economic benefit due to the higher costs associated with additional risk for the public sector. However, in the case where there is low water demand and gradual climate change, combined with low levels of WTOP by households, the benefit/cost ratio is economically unviable. This indicates that the net benefit of implementing the Project through a PSC procurement model poses a risk of the Project becoming economically unviable should demand and WTOP be lower than expected.

It should be noted that the above does not take the drive for increased resilience into account. Increased resilience will still be a qualitative benefit in all cases.

6.7 Make the procurement choice

The NPV of the External Reference Financial Model versus the PSC Financial Model shows that the Project offers the City Value for Money if developed as an external mechanism as it will result in a lower net present cost to the City (greater value for money) than a standard or internal procurement strategy.

Based on the work undertaken in respect of the affordability, a careful balance is required in respect of water security and affordability. The City has undertaken a robust assessment which has provided the estimated tariff increases that would need to be implemented over the next ten years. Stakeholder management and communication with water users are going to be critical to ensure that water users have a full understanding of the drivers of the tariff increases to mitigate the risk of water users refusing to pay.

During the procurement stage, bids received will be compared against the Preferred Financial Reference Model to determine value for money. The procurement period includes the comprehensive evaluation of the external bids received which includes a final value for money report where all final outcomes (financial, commercial, technical etc.) are compared with the original anticipated outcomes. It is important to still be able to determine value for money and affordability at that stage before entering into the contract. The Procurement Phase Value Assessment Report is also submitted to National Treasury and Council prior to entering into the PPP agreement.

7 Stage 6 - Economic Valuation

7.1 Purpose of this Section

The Economic Valuation for the Project provides an outline of the financial and non-financial benefits of the Project. A Cost Benefit Analysis (CBA) methodology is used to estimate the financial and economic benefits of constructing a desalination plant to augment water supply to the City. The Economic Valuation aims to assess the economic viability of the Project for the two procurement options by using a CBA as the methodological tool to undertake this assessment. The results of the CBA provide decision-makers with information on the potential economic impact of implementing the Project, and hence the economic viability of the Project.

7.2 Socio-economic Context

The CCT is the second largest metropolitan municipality in South Africa, comprising of a population of over 4 million residents. The population is dominated by youth, with over 50% of the population being under the age of 34 years old and a median age of 31 years old.[17] Unemployment poses a significant challenge in the City, with only 55.3% of the working age population being employed. Employment is predominantly within the formal sector, accounting for 80.6% of employment in 2023. With respect to access to water, 85.4% of households have access to piped water inside the home, with 7.3% accessing piped water

[17] Statistics South Africa. 2022. *Census*

from their yard, and 5% using taps on community stands or through communal taps. [18]

Between 2015 and 2017, the City experienced a three-year drought and avoided a near-catastrophic "Day Zero" scenario by reducing water consumption by 40%. The City is characterised by a high degree of climate variability and uncertainty, whereby rainfall patterns are highly variable, and droughts and floods occur frequently. These factors, together with temperature changes and wind variability, impact on water availability. To mitigate against water availability challenges, the City has embarked on the implementation of its Water Strategy which seeks to boost water resource availability to ensure that demand can be met. The construction of a desalination plant forms part of the strategy to enhance availability and diversify water sources, this strategy is explained within the Needs Analysis section of this report.

7.3 Methodology

This study uses a CBA framework and methodological approach to assess the economic viability of constructing a desalination plant to augment water supply to the City. National Treasury's Infrastructure Planning and Appraisal Guideline of 2022 was used as the basis for the methodological approach for this study.

Figure 7-1 provides an overview of the costs and benefits that were used within the CBA, together with the indicators that will be used to assess the economic viability of implementing the Project. The costs include the capital and operating costs associated with the construction and operation of the plant and the benefits include the quantification of water security that could be realised by water users (including households and businesses) as well as the revenue that will be generated from the operation of the plant.

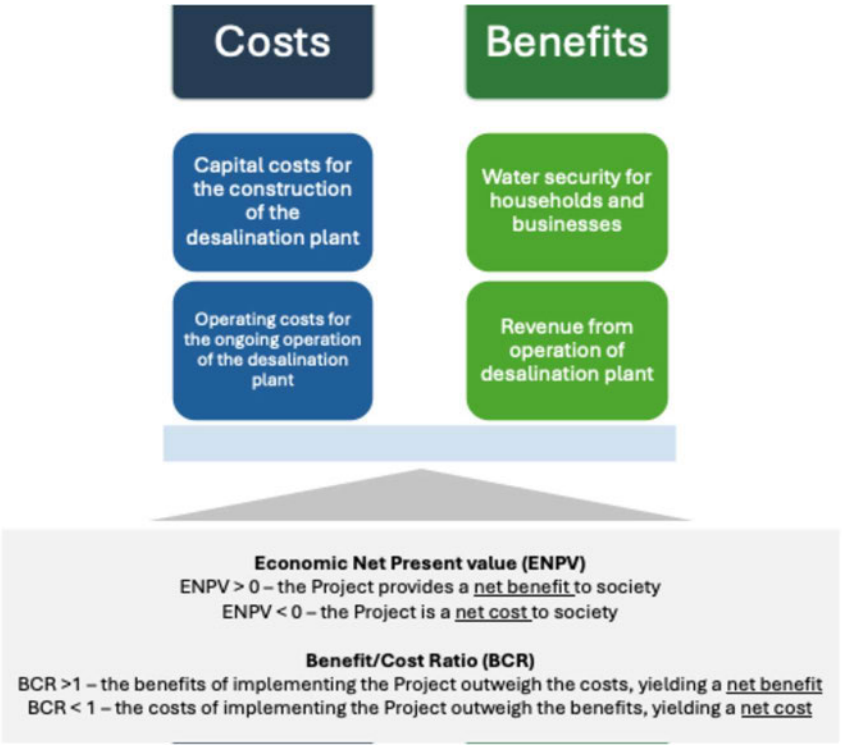

Figure 7-1: Cost Benefit Analysis Framework

[18] Statistics South Africa. 2022. *Census*

The CBA has been designed using a range of different scenarios, as follows:

- Two procurement options (as outlined in the Value Assessment).
- Three scenarios relating to different levels of water restriction based on water resource availability that incorporates water demand scenarios and climate change patterns.
- Two sensitivity scenarios using different levels of WTOP for the estimation of the resilience benefits that could accrue to households; three sensitivity scenarios using different Social Discount Rates (SDRs); and one scenario that accommodates a delay in BVRAS.

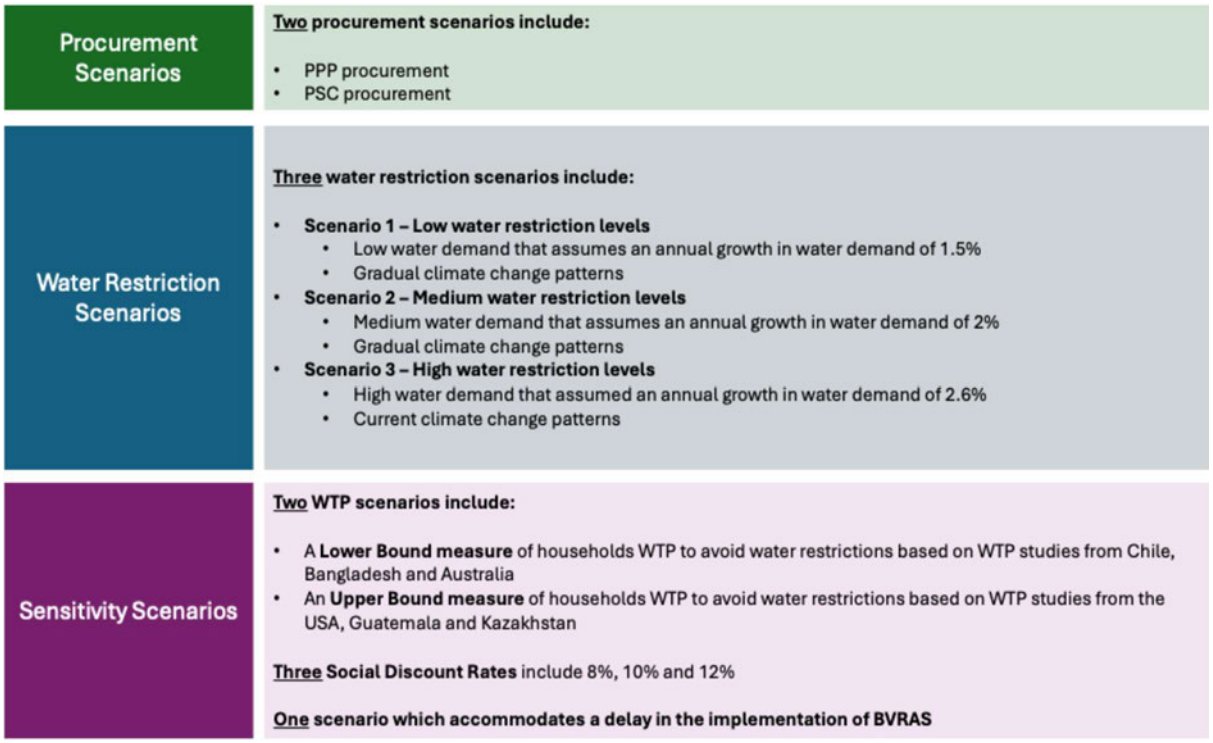

Figure 7-2: Scenario Design for the CBA

It is important to note that the baseline scenario is not modelled as a separate scenario. In this instance, the baseline scenario represents the case where the desalination plant is not built. This would result in a lower quantity of water available for consumption by households and businesses. For this CBA, the baseline scenario is embedded within the existing scenarios by quantifying the impact of water restriction days with and without the desalination plant. Therefore, capturing the economic benefits that would result from the additional water availability that is enabled through the desalination plant. The additional water that is available enables greater water security for households and businesses. This benefit is quantified for the three water restriction scenarios that are described above.

7.4 Results of the Cost Benefit Analysis

A summary of the CBA results for the PPP and PSC procurement models are provided in Table 7-1 and Table 7-2 respectively. This consolidates the analysis of both costs and benefits of the implementation of the Project. The results show that implementing a desalination plant to augment water supply to the City yields a net benefit across both the PPP and PSC procurement scenarios.

Table 7-1 provides the CBA model results for the PPP procurement scenario (using the Lower Bound WTOP measure). The costs over the period amount to R18.8 billion, with the benefits ranging between R18.1 billion for the low water restriction scenario to R44 billion for the medium

water restriction scenario, and R81 billion in the high-water restriction scenario. Across all three water restriction scenarios, the project yields a net benefit, with BCRs all exceeding 1.

Table 7-1: Summary of CBA Results for the PPP Procurement Scenario, Net Present Values, 2029 to 2051

Costs (R billion, NPV)						
Capital expenditure	R	6,5				
Operating expenditure	R	12,3				
Total Cost (R billion, NPV)	**R**	**18,8**				

Benefits (R billion, NPV)						
Revenue	R	7,89				
Resilience Benefits						
Resilience Benefits	**Scenario 1 Low Water Demand & Gradual Climate Change**		**Scenario 2 Medium Water Demand & Gradual Climate Change**		**Scenario 3 High Water Demand & Current Climate Change**	
Household Resilience Benefits (using Lower Bound WTP)	R	10,1	R	22,1	R	24,5
Business Resilience Benefits	R	8,0	R	21,9	R	56,5
Sub-total	**R**	**18,1**	**R**	**44,0**	**R**	**81,0**
Total Benefit (R billion, NPV)	**R**	**26,0**	**R**	**51,9**	**R**	**88,9**
Net Benefit/Cost	**R**	**7,2**	**R**	**33,1**	**R**	**70,1**
Benefit/Cost Ratio		**1,38**		**2,76**		**4,72**

Source: TA CBA Model. (2025)

Table 7-2 provides the CBA model results for the PSC procurement scenario (using the Lower Bound WTOP measure). The costs over the period amount to R27.9 billion, with the benefits ranging between R18.1 billion for the low water restriction scenario to R44 billion for the medium water restriction scenario, and R81 billion in the high-water restriction scenario. The project yields a net benefit, with BCRs exceeding 1 for the medium and high-water restriction scenarios. It is important to note that in the case of medium and high-water restrictions, the economic benefits alone, in the absence of the revenue generated from the plant, still exceed the financial costs of constructing and operating the plant. It is important to note, the BCR at the level of low water restrictions is 0.93, therefore yielding a net cost and making the project economically unviable. For the medium and high-water restriction scenarios, the net benefit could be compromised in the case that demand is lower than envisioned in these scenarios, and if households WTOP is also lower than estimated in this study.

Table 7-2: Summary of CBA Results for the PSC Procurement Scenario, Net Present Values, 2029 to 2051

Costs (R billion, NPV)		
Capital expenditure	R	9,5
Operating expenditure	R	18,4
Total Cost (R billion, NPV)	**R**	**27,9**

Benefits (R billion, NPV)		
Revenue	R	7,89

Resilience Benefits						
Resilience Benefits	**Scenario 1 Low Water Demand & Gradual Climate Change**		**Scenario 2 Medium Water Demand & Gradual Climate Change**		**Scenario 3 High Water Demand & Current Climate Change**	
Household Resilience Benefits (using Lower Bound WTP)	R	10,1	R	22,1	R	24,5
Business Resilience Benefits	R	8,0	R	21,9	R	56,5
Sub-total	**R**	**18,1**	**R**	**44,0**	**R**	**81,0**
Total Benefit (R billion, NPV)	**R**	**26,00**	**R**	**51,94**	**R**	**88,92**
Net Benefit/Cost	**R**	**(1,89)**	**R**	**24,05**	**R**	**61,03**
Benefit/Cost Ratio		**0,93**		**1,86**		**3,19**

Source: TA CBA Model. (2025)

In addition to the WTOP sensitivity analysis that is described above, a sensitivity analysis using two additional SDRs has been assessed to check the robustness of the model. The SDR assumption of 10% was used as the main SDR given that this is the guidance provided by the National Treasury. Two additional SDRs, of 8% and 12% were used to further test the model's robustness. These two additional SDRs are based on a lower and upper ranges advised within the World Bank's 2016 report titled *Discounting Costs and Benefits in Economic Analysis of World bank Projects*. Table 7-3 provides a summary of the Benefit/Cost Ratios across the two procurement scenarios and the three water demand and climate scenarios. The sensitivity analysis reveals the robustness of the model because the ultimate results of the CBA analysis maintain the level of economic viability across each procurement and water demand scenario, ultimately indicating that the project is viable across all three levels of discounting, with the largest economic resilience gains being evidenced for the medium and high-water demand and climate change scenarios.

Table 7-3: Benefit/Cost Ratios for 8%, 10% and 12% SDRs for PPP and PSC Procurement Scenarios, 2029 to 2051

Water Demand and Procurement Scenarios	Social Discount Rates		
PPP Procurement Scenario	**8%**	**10%**	**12%**
Scenario 1 - Low Water Demand and Gradual Climate Change	1,44	1,38	1,32
Scenario 2 - Medium Water Demand & Gradual Climate Change	2,90	2,76	2,61
Scenario 3 - High Water Demand & Current Climate Change	5,00	4,72	4,44
PSC Procurement Scenario	**8%**	**10%**	**12%**
Scenario 1 - Low Water Demand and Gradual Climate Change	0,97	0,93	0,90
Scenario 2 - Medium Water Demand & Gradual Climate Change	1,96	1,86	1,77
Scenario 3 - High Water Demand & Current Climate Change	3,37	3,19	3,01

Source: TA CBA Model. (2025)

Note that the CBA Model uses nominal prices as this aligns with the modelling of the cashflows from the Financial Model for this Project. Nominal prices are therefore applied to the

calculation of economic benefits in order to ensure consistency across both the costs and benefits. In the case of using nominal prices, a 12% discount rate would be more aligned to our expectations of the quantum of costs and benefits to be realised by the Project because a higher SDR would account for the inflationary part of the escalation which would incorporate the time value of money. Despite the use of the 10% SDR as our base assumption for discounting, the use of an 8%, 10% or 12% SDR does not have an impact on the outcome of the model, and rather, confirms the robustness of the underlying model.

An additional sensitivity is the delay on the implementation of BVRAS by 5 years. Table 7-4 provides a comparison of the BCRs for the PPP and PSC scenarios across the three water demand and climate scenarios. The results reveal similar results in economic viability whether BVRAS is delayed or not. In the PPP scenario, the BCR remains above 1 for all three water demand scenarios, whereas, for the PSC, the project is viable in the case of low demand when BVRAS is delayed by 5 years.

Table 7-4: Benefit/Cost Ratios for No Delay and 5-year Delay of BVRAS for PPP and PSC Procurement Scenarios, 2027 to 2050

PPP Procurement Scenario	No BVRAS Delay	With BVRAS Delay
Scenario 1 - Low Water Demand and Gradual Climate Change	1,38	2,31
Scenario 2 - Medium Water Demand & Gradual Climate Change	2,76	4,04
Scenario 3 - High Water Demand & Current Climate Change	4,72	6,63

PSC Procurement Scenario	No BVRAS Delay	With BVRAS Delay
Scenario 1 - Low Water Demand and Gradual Climate Change	0,93	1,56
Scenario 2 - Medium Water Demand & Gradual Climate Change	1,86	2,73
Scenario 3 - High Water Demand & Current Climate Change	3,19	4,48

Source: TA CBA Model. (2025)

**Note: these calculations are based on an SDR of 10%*

7.5 Impact on Employment

The construction of the desalination plant is a significant undertaking that will enable the creation of short-term employment for people from the local community. It is important to note that many of these jobs will require a range of skills including unskilled, semi-skilled and skilled individuals. In addition, the actual operation of the plant once constructed, will also provide employment opportunities. The employment associated with the operation of the plant will be long-term, permanent employment and will also require unskilled, semi-skilled and skilled employees.

In addition, there will also be an impact on employment through the water security that is enabled for businesses. As businesses are more water secure, economic activity will be enabled, therefore, employment within these businesses will also be enabled.

The following job impacts are for the case with no BRVAS delay, medium water demand and medium climate scenario as well as PPP procurement option. It should be noted that these estimates are full-time equivalent (FTE) jobs. During the construction phase, approximately 31,157 jobs will be supported. During the operations phase, approximately 11,876 jobs will be supported through the expenditure from the operations of the permanent desalination plant, whereas 70,408 jobs will be supported through the resilience provided to businesses through enhanced water security. Table 7-5 provides a breakdown of the jobs supported through

direct, indirect and induced impact.[19]

Figure 7-3: Summary of Employment Impact, 2029 to 2051

Source: CCT, 2022, Macroeconomic Impact Assessment Model (MEIA) developed by Conningarth Economists

The jobs created during the construction phase are temporary in nature and are realised only for the construction period.

Table 7-5: Job Creation During Construction Period, 2029 to 2031

	Direct impact	Indirect impact	Induced impact	Total impact
Impact on skilled employment	4,317	89	342	4,748
Impact on semi-skilled employment	16,494	296	973	17,763
Impact on unskilled employment	8,013	133	500	8,646
Total impact on employment (FTE)	**28,823**	**519**	**1,815**	**31,157**

Source: CCT. (2022). Macroeconomic Impact Assessment Model (MEIA) developed by Conningarth Economists

The operational phase relates to the continuous operation of the project and the employment opportunities created during this phase are permanent in nature. The table shows the total number of FTE jobs created.

[19] **Direct** employment impact refers to jobs that are supported through the direct expenditure. **Indirect** employment impact refers to jobs that are supported through the supply chains of the businesses that benefit from the direct spending on the Project. **Induced** employment refers to jobs that are supported through the income impact that is created from those employed either directly or indirectly as a result of the Project.

Table 7-6: Job Creation During Operations Period, 2031 to 2051

	Direct impact	Indirect impact	Induced impact	Total impact
Impact on skilled employment	706	1,149	681	2,537
Impact on semi-skilled employment	940	1,539	835	3,314
Impact on unskilled employment	2,318	2,517	1,190	6,026
Impact on employment (FTE)	**3,964**	**5,205**	**2,706**	**11,876**

Source: CCT. (2022). Macroeconomic Impact Assessment Model (MEIA) developed by Conningarth Economists

The economic activity that is enabled by providing businesses with additional water security is measured through the costs that are avoided by the avoiding water restrictions. The jobs that are supported are estimated in Table 7-7.

Table 7-7: Job Creation Through Business Resilience, 2031 to 2051

	Direct impact	Indirect impact	Induced impact	Total impact
Impact on skilled employment	12,111	5,299	3,621	21,030
Impact on semi-skilled employment	18,786	8,259	5,179	32,223
Impact on unskilled employment	10,172	4,025	2,957	17,154
Impact on employment (FTE)	**41,069**	**17,583**	**11,757**	**70,408**

Source: CCT. (2022). Macroeconomic Impact Assessment Model (MEIA) developed by Conningarth Economists

7.6 Qualitative Benefits

The CBA model has provided a quantitative assessment of the costs and benefits associated with constructing and operating a desalination plant with a 70 Mℓ/day capacity. The benefits that have been quantified are based on international best practice for the quantification of water resilience benefits. Two important aspects of such qualitative benefits include:

- **Enabling ongoing property development.** Water availability is an important factor to consider with respect to ongoing property development in the City. Within the urban setting, should water supply be constrained, ongoing property development could be hampered as this could increase water demand. This is specifically relevant in the case of property development that enables dense housing development as well as industry that is characterized by high water usage.
- **Enabling ongoing economic activity.** Water availability is a key input into production and economic activity for many sectors. Ensuring availability of water and avoiding significant water restrictions will have a cross-cutting impact on all economic sectors. This will have a direct impact on economic sectors that use water as an input into production directly, such as agriculture and manufacturing, but also has a significant impact on sectors such as tourism. The latter impact was evidenced by the negative impact on the tourism sector because of the 2017/18 drought. The economic activity that is enabled through providing water security will also have an impact on the retention and creation of jobs.

7.7 Outcome of the Economic Valuation

An assessment of the costs and benefits of the construction and operation of a desalination plant to augment water supply for the City has revealed a strong case for economic viability. The Project is economically viable across all three climate/demand scenarios for the PPP scenario, as well as at different levels of household WTP and with a delay in the implementation of BVRAS. The Project provides benefits to households and businesses through enhanced water security and enables a mitigation measure for unforeseen water supply constraints.

It is important to note that the PSC procurement option delivers lower overall economic benefit due to the higher costs associated with additional risk for the public sector. For the PSC procurement scenario, the Project is only economically viable in the case of medium and high water demand scenarios. However, in the case where there is low water demand and gradual climate change, combined with low levels of WTOP by households, the benefit/cost ratio is economically unviable. This indicates that the net benefit of implementing the Project through a PSC procurement model poses a risk of the Project becoming economically unviable should demand and WTOP be lower than expected.

8 Stage 7 - Procurement Plan

8.1 Required Approvals

8.1.1 Regulatory Approvals

The key regulatory approvals required after receiving TVR I approval are:

- TVR IIA: The complete set of procurement documents, both in their draft form (for bidder participation) and the final versions completed by the City, thereafter, must be submitted by the City's accounting officer to the National Treasury and the relevant Provincial Treasury to solicit their views and recommendations.
- TVR IIB: Prior to initiating negotiations with the appointed preferred bidder, the City must obtain the views and recommendations of National Treasury and the relevant Provincial Treasury and prepare the value assessment report demonstrating value for money.
- TVR III: The City's submission for TVR III should be a continuation of the value assessment report. It establishes the final negotiated project costs, the value for money, the final terms of the PPP agreement and the contingent liabilities that will be incurred by the City.
- Section 33 of the MFMA - The recommendation following the Value Assessment is that the Project be procured through an external delivery mechanism in the form of a PPP. The PPP agreement will exceed three years, which requires a municipality to comply with the requirements of section 33 of the MFMA. The TVR III report must be prepared to meet the requirements of both section 33 of the MFMA, and regulation 4(3) of the Municipal PPP Regulations.

8.1.2 City Governance Processes

The following section outlines the key City governance processes:

- Stage Gate Reviews (SGR) and SGR Committee: The City developed a Stage Gate Review Guideline (latest version V6 dated June 2024) to clearly define the SGR process. It aims to ensure that projects and programmes are systematically reviewed and assessed at critical stages throughout their lifecycle.

- Legal vetting of bespoke contract: If an implementing body requires a tender for which there are no standard template, then it is a requirement that the draft tender document be vetted by the City Legal department before entering the SCM process.
- Bid Initiation Form (BIF) Submission: The BIF needs to accompany the draft tender document submitted to SCM when initiating a tender process.
- Bid Specification Committee Approval: Bid specifications and the procurement documents must be approved by the City Manager or his delegated authority prior to publication of the invitation for bids.
- Bid Evaluation Committee: The SCM Policy states that "The Bid Evaluation Committee shall submit a report, including recommendations regarding the award of the bid, the nomination of one or more responsive standby supplier(s), or any other related matter, to the Bid Adjudication Committee for award."
- Bid Adjudication Committee: "The Bid Adjudication Committee shall consider the report and recommendations of the Bid Evaluation Committee and make a final award or make another recommendation to the City Manager on how to proceed…"
- Due Diligence Process: The SCM due diligence process requires that bids with estimated award values above R50 million must be subjected to a comprehensive due diligence review in the procurement process. The first due diligence process takes place during the bid specification approval process and the second during the bid evaluation approval process.

8.2 The Project Programme

Table 8-1 outlines the key milestones and approvals that will be required to take the project from TVR I to TVR III and financial close. These dates are aligned to the baseline schedule named High Level Development Schedule REV1.0 dated March 2025.

Table 8-1: Project Timetable – Key Milestones and Approvals for the baseline scenario

Ref[20]	Key Milestone	Start Date	End Date
	Council Approval		15 Dec 25
	Procurement Preparatory Activities for new Advisors	15 Dec 25	13 Feb 27
574	Prepare initial detailed Output Specification	15 Dec 25	20 Feb 26
575	Draft Request for Qualification (RFQ) and RFP documentation Preparation including PPP Agreement	13 Feb 26	22 May 26
576	Stage Gate Approval process	23 Feb 26	22 Jul 26
586	TVR II A	28 Jul 26	5 Aug 26
587	Legal Vetting of bespoke contract	21 Jul 25	24 Aug 26
591	Bid Specification Committee Approval Process	7 Sep 26	24 Nov 26
604 & 5	Prepare advertisement and Issue RFQ/RFP documentation	24 Nov 25	11 Jan 27
609	Bidders Conference (1 – 2 months after RFP issued)		15 Mar 27
610	Bidders submit mark-ups (c.2 months post RFP issued)		15 Mar 27
611 - 612	Transaction advisor and City to consider proposed mark-ups	15 Mar 27	29 Jun 27
613	Re-Issue updated RFQ/RFP documentation		30 Jun 27

[20] **Reference to item in Appendix 1 Procurement Programme GANNT Chart**

Ref[20]	Key Milestone	Start Date	End Date
614	Bid Submission Date (c. 8 months bid preparation time)		2 Dec 27
619 - 629	Bid Evaluation	8 Dec 27	21 Jan 28
634	BEC Report complete		18 Feb 28
635	BAC Award	17 Feb 28	21 Mar 28
644 - 648	Prepare TVR IIB Report	21 Mar 28	4 Apr 28
647	TVR IIB Approval	4 Apr 28	19 May 28
652	Contract Negotiations and preparation for TVR III and Section 33 Approval	21 Jun 28	6 Dec 28
656	TVR III Approval	6 Nov 28	6 Dec 28
659	Section 33 Approval	9 Jan 29	13 Mar 29
660	Financial Close and Final Council award		13 Mar 29
	Detailed Design	2 Apr 29	16 Jan 30
	Construction Period (c.23 months)	19 Nov 29	20 Nov 31
	First Water		20 Nov 31
	Operating Period (20 years)	21 Nov 31	19 Mar 52

8.3 Project Challenges

This section summarises potential challenges to the project or any items that would need to be resolved prior to or during the procurement phase, with recommended actions on how these need to be addressed. Some of these challenges were highlighted during the legal due diligence investigation as contained in section 5.1.3.6 of this Report on the Feasibility Study. These sections should be read together for a full appreciation of the specific challenge.

8.3.1 Land Use Agreements – Municipal Rights to Project Site

The eastern portion of the PIP Site land, the proposed infrastructure (pipeline routes) corridors and the land for the landfall sea water intake pump station is owned by TNPA. The City has not yet secured requisite rights to the portion of the Project Site it does not own. The Due Diligence Report concluded that that the TNPA owned land would need to be sub divided and consolidated and then rezoned and certain portions of the City's land need to be rezoned for purposes of implementing the Project.

Use of the TNPA-owned portion of land would require a purchase or long-term lease, and in this regard the City is pursuing the long-term lease option. All requisite ownership or lease and servitude rights to the Project Site and pipeline route need to ideally be secured prior to commencement of the procurement process, namely prior to applying for TVR IIA. If this matter is not resolved before issuing the procurement documents, it may be perceived by the market as a lack of readiness and may deter participation. The absolute deadline for securing the requisite rights to the Project site is Financial Close - the Project will not reach financial close if this item is not resolved.

8.3.2 Timing of the N1 Upgrade

The PIP Site is split by Marine Drive (R27), which results in a complex site arrangement. Plans for the N1 ultimate scheme include the planned removal of the portion of the R27 currently

bisecting the site. The removal of this portion of the R27 will commence once Phase 1 of the N1 ultimate scheme has been concluded to replace the existing N1/R27 intersection. At the time of this report, it appears that the sequencing of the proposed infrastructure upgrade projects, specifically Phase 1 of the N1 ultimate scheme, will not be completed by the time that construction is expected to start. Therefore, this study and specifically the plant layout considered that the existing R27 will still be operational.

8.3.3 915-Bulk Pipeline Condition Concerns

Investigations into the condition of the existing 915mm bulk pipeline shows that this pipe would require rehabilitation, irrespective of whether the desalination project proceeded or not. Recommendations for further investigation and interventions were made. It is proposed at least upgrading the pipeline from the tie-in point towards the Molteno Reservoir, should it not be possible to refurbish the full pipeline length.

The desalinated water injected into the 915 bulk pipeline will primarily serve the CBD and Sea Point areas of the city. The injected water will thus free up allocation and capacity for use in other parts of the city.

8.3.4 Culvert Condition Assessment and Servitude Rights

Based on previous assessments undertaken and on what will be determined when a follow up conditional assessment is undertaken as planned, the refurbishment extent required for these culverts will need to be assessed. This will be planned in consultation with TNPA (owners of the infrastructure), considering how this refurbishment can be undertaken in time to accommodate the City's desalination project.

Alternatively, the refurbishment could be assigned to the PPP entity as part of site readiness development under that implementation. Aspects to be considered include the required extent of refurbishment to accommodate the desalination pipelines, as well as accommodating the stormwater runoff from the small incremental catchment draining into the canal. Either the option of a potential closed conduit (pipeline) installed to receive the stormwater runoff, or continued discharge of stormwater directly into the culvert will need to be considered. If the latter is adopted, then trash racks will be required to trap floating litter and debris in the culvert. The site of the landfall intake pump station has formed the basis of recent discussions between TNPA and the City (March 2025). TNPA have indicated that use of this property at the proposed site in the port is possible, subject to negotiations and agreements being reached between TNPA and its tenants, and subject to this being formalised in the commercial agreement to be entered into between the City and TNPA. An updated condition assessment of the culvert is vital, as extensive rehabilitation is likely to be required.

The City would need to obtain servitude rights from TNPA in order to use the TNPA servitude and canal/culvert to install and operate the water conveyance infrastructure required. The City and TNPA have agreed in principle to pursue the option of the City leasing the TNPA-owned land required to implement the Project. This arrangement should extend to include the use of the TNPA servitude, the canal/culvert and the land for the landfall sea water intake pump station.

8.3.5 Updated Flood Line Study

It is recommended that the flood line for this site be reassessed. Climate change, tidal

influences, and urban stormwater routing (from the slopes of Table Mountain), all of which potentially influence the PIP Site, should be modelled.

8.3.6 Limited Geotechnical Data Available

Limited geotechnical studies were conducted on the TNPA-owned portion of the PIP site. It is recommended that additional onshore geotechnical studies to be performed. The level of detail of these studies is intended to be sufficient to inform both the Concept and Detailed Design stages. It is recommended that these studies be undertaken before or at the start of the Procurement Phase.

8.3.7 Reaction from Organized Labour

Directorate Labour Committee did not express any views or provide comments of concern within the comment period. Key considerations from the consultations with the local community and organised labour are summarised below in Section 9.3 of this report and the detailed questions and responses are appended in Annexure 1 (View of Local Community and Organised Labour) of this Report.

8.3.8 Reaction from Local Communities

A comprehensive consolidation of all the comments received from the general local public and the organised labour unions has been completed and appended to this Report on the Feasibility Study as Appendix 2. A summary of the key aspects for consideration by the City in this project going forward has been provided in Section 9 of this report.

8.3.9 Inadequate Interest from Suitable Bidders

A selective market testing exercise could be initiated prior to launching the RFP in order to gauge market interest if deemed necessary. This market engagement is recommended to be informal and to take place early in 2026, after the feasibility study is approved by Council approval in Dec 2025.

8.3.10 Bidders and Lenders View of the City's Financial Standing

It is recommended that a market sounding be undertaken during the procurement phase as to gather views from lenders as to the level of bankability that all the City projects will require.

8.3.11 Project Affordability and Funding Structure

The Project affordability will be a key consideration during the final approval processes where the final Value for Money and Affordability assessments will be reconsidered utilising the final terms and cost of the PPP agreement.

8.3.12 Funding Structure

To improve the bankability and affordability of the Project it would be beneficial to introduce some concessional funding and to consider all possible credit enhancements.

8.3.13 Environmental Considerations

The following actions are recommended to overcome the identified environmental challenges:

- Structure the PPP to deliver optimised environmental and social outcomes.

- The project programme is to include environmental processes and must ensure that obtaining the requisite environmental approvals are properly scheduled to prevent risks of non-compliance during project implementation.
- Clearly highlight the environmental regulatory requirements associated with the project, as well as the obligations of the bidders in this regard, in the bidding document. This will include compliance with City's environmental specifications, environmental approvals obtained for the project and the Environmental Management Programme.

8.4 Recommended Procurement Practice

8.4.1 Recommended Procurement Model

The recommended procurement model for the Project is an external service delivery mechanism delivered through a PPP. The recommended PPP structure is for the private party to design, finance, build, operate and maintain the plant for 20 years after which it will transfer the plant to the City at the end of the PPP contract term. Ownership of the plant will vest with the City. As a mechanism of service delivery, a municipal PPP is firmly in line with the intent of the MFMA and the MSA. This model transfers a significant proportion of the risk to the private party and has historically proven to offer the greatest opportunity to achieve Value for Money if the procurement documents and risk allocation is structured appropriately. One of the primary benefits of PPPs is that they allocate risk to the party best suited to manage it. The unique risk profile of desalination projects, therefore makes these facilities particularly well-suited to benefit from a PPP. The PPP contractual structure should guarantee the quantum of water that will be acquired, providing a clear set of rights and obligations for the project stakeholders, offering infrastructure support for acquiring land, electricity and environmental authorisations for the selected site.

8.4.2 Proposed Project Structure

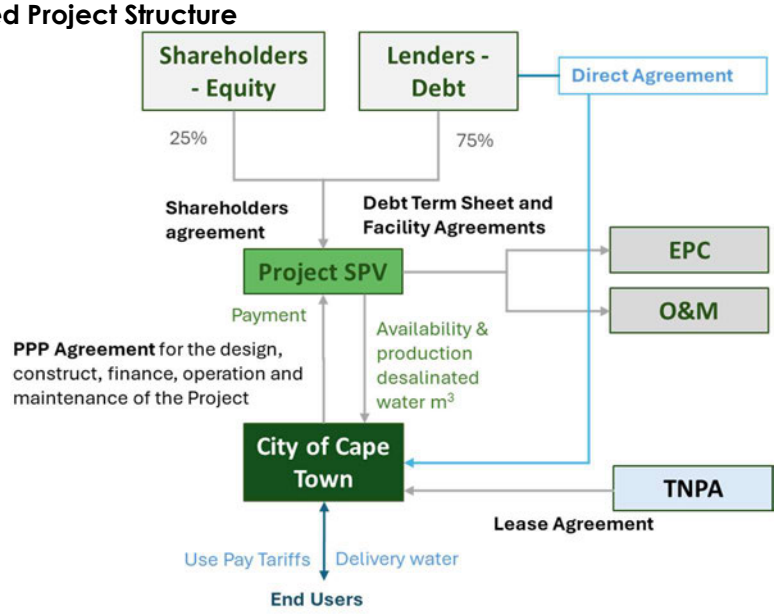

Figure 8-1: Commercial and funding structure

8.4.3 One Stage vs Two Stage Procurement Process

In a PPP procurement process, a "one-stage" approach means all bidders submit their technical and financial proposals simultaneously in a single step through an RFP, while a "two-stage" approach involves an initial qualification stage (RFQ) where only the most qualified bidders are selected to proceed to the second stage of submitting detailed technical and

financial proposals (RFP).

An optimisation recommended by the TA, included in the baseline programme, is the combination of the RFQ and the RFP phases as indicated in Table 8-1 Ref 575. Traditionally a RFQ was used to identify key participants in the market, to test the degree of interest and possible areas of contention from potential bidders and to seek specialised information where this is needed. It is current best practice for PPPs to combine the RFQ and the RFP processes as the historic advantages of an RFQ are now outweighed by the time investment of the RFQ. The benefit of the obligatory qualifications phase is easily obtained by appropriately defined functional or qualification criteria in the RFP. This combined process reduces the procurement programme timeline significantly. It is therefore recommended that a one stage procurement process be followed.

8.5 Economic Development / B-BBEE Scorecard

The Economic Development / B-BBEE elements were subdivided into three options: Option 1 – based on the City's Specific Goals flowing from the Preferential Procurement Regulations, Option 2 – based on the PPR Guideline as well as the City's SCM policy and the B-BBEE Codes of Good Practice and Option 3 – a hybrid that considered (i) the economic development opportunities that will arise from the undertaking of the project activities by the private party / concessionaire, (ii) consider the Specific Goals of the City and (iii) consider the B-BBEE elements contained in the Codes of Good Practice. Having discussed the **three options** with the City, the City's representatives have since indicated a preference for Option 1 (Specific Goals) - an Economic Development / B-BBEE Scorecard as detailed in Table 8-2.

Table 8-2: Economic Development Scorecard

B-BBEE / Economic Development Element	Sub-element	Measurement Indicator	Weighting (out of 100)
OWNERSHIP IN THE PRIVATE PARTY/ CONCESSIONAIRE	Race [1]	Shareholding by Black People in the Concessionaire/Private Party as a percentage of Total Shareholding in the Concessionaire/Private Party	30%
	Gender	Shareholding by Women in the Concessionaire/Private Party as a percentage of Total Shareholding in the Concessionaire/Private Party	30%
	People with Disabilities	Shareholding by People with Disabilities in the Concessionaire/Private Party as a percentage of Total Shareholding in the Concessionaire/Private Party	10%
PROMOTION OF MICRO AND SMALL ENTERPRISES	N/A	Shareholding by Black People in the Concessionaire/Private Party as a percentage of Total Shareholding in the Concessionaire/Private Party	30%

The primary reason for the preference by the City for Option 1 (*Specific Goals*) is that the elements align with the City's Specific Goals.

Furthermore, the City further expressed a desire to include a preference of including a "Minimum targeted labour contract participation goal". In support of the National Department of Public Works' Expanded Public Works Programme, the City aims to alleviate poverty by creating temporary employment through labour-intensive construction methods in

infrastructure projects. The PPP/Concession agreement is then expected to mandate the use of such methods to provide low and semi-skilled job opportunities. A minimum targeted labour Contract Participation Goal ("CPGL") of a prescribed monetary value may be set for the PPP/Concession agreement, requiring the Preferred Bidder to replace some mechanized work with labour-intensive methods. The Preferred Bidder must also provide necessary skills training, with costs included in work rates. Failure to meet the CPGL will result in the City levying penalties. It is understood that the Preferred Bidder will be required to submit a plan within a set period upon request to do so, in order to demonstrate compliance with the CPGL requirement[21].

The option does not take full advantage of the economic development opportunities which the typical PPP project activities provide, such as Local Content, and the preferential procurement of goods and/or services from targeted entities and groups.

Whilst it is noted that Option 1 (*Specific Goals*) and "Minimum targeted labour contract participation goal" addresses the City's Specific Goals and economic development aspirations, the following is noted:

- the "Minimum targeted labour contract participation goal", which flows from Department of Public Works' Expanded Public Works Programme, is not a quantified pursuit of a preferential procurement goal but rather seeks to impose a manner in which the Preferred Bidder should carry out works, for instance to rather make use of labour intensive methods of construction over the use of mechanised equipment in order to attain a desired construction outcome of the project to which the goal relates. This requirement seems better placed in the technical requirements (i.e. output specifications). It would be the technical advisors who would be best placed to develop this requirement in the output specification requirements due to their proximity on knowing which area in the construction process would best suit such a requirement.

Whilst it is noted that the City's preference is for Option 1 (Specific Goals), it is recommended that the City considers adopting Option 3 (Hybrid Option) as the preferred scorecard for the following reasons:

It would incorporate each of the Specific Goals of the City as follows:

- the City's specific goals of Gender (women), Race (black persons) and People with disabilities would be subsumed as sub-elements of the Ownership element;
- Promotion of Micro and Small Enterprises would be subsumed as a sub-element of Preferential Procurement.
- It would best address the powers conferred on a procuring entity in terms of section 2 of the PPPFA to consider the specific goals to be pursued for a procurement, by considering what is best opportune for PPP procurement.

9 Notify / Consult with Stakeholders

This section aims to provide an overview of the key consultations and notifications that needs to take place during the Feasibility Study phase.

[21] Paragraph 5.4.2.1 of tender 69S/2017/18 for the "Design, supply, establish, commission, operate and later to decommission a sea water reverse osmosis (SWRO) plant at a site, or sites, to supply SANS 241:2015 compliant potable water to the City of Cape Town, Monwabisi and Strandfontein"

9.1 Section 78(1)(a) of the MSA provides the following:

"(1) When a municipality has in terms of section 77 to decide on a mechanism to provide a municipal service in the municipality or a part of the municipality, or to review any existing mechanism—

(a) it must first assess—…

(v) the views of organised labour"

According to the above, organised labour has an interest in the impact which the manner of instituting new services may have upon workers within and outside of the municipality and obliges the municipality to assess the views of organised labour before deciding on a mechanism to provide a municipal service and it accords organised labour the right to have its views assessed when determining whether to utilise an internal or external mechanism to provide a municipal service. The City presented the project to Organised Labour in a Directorate Labour Committee meeting on 26 February 2025. No negative comments or concerns were raised against the desalination project.

In addition to the MSA, the Municipal Service Delivery and PPP Guidelines provides the following for purposes of the Needs Analysis:

"1 Obtain views of organised labour. Written comments/views requested within 21 days of notification. Section 78(1)(a)(v) of the MSA. See labour notifications for details and 9.1 above.

2 Meet the public notification and participation requirements of other related national departments including DWAF and DEAT based on the sector involved (e.g., water, solid waste)"

The required consultations have been undertaken in the development of the Water Strategy and City IDP.

9.2 Section 78(3)(b)(ii) & (v) of the MSA provides the following:

"(3) If a municipality decides in terms of subsection (2) (b) to explore the possibility of providing the municipal service through an external mechanism it must—…

(b) assess the different service delivery options in terms of section 76 (b), taking into account—…

(iii) the views of the local community

(v) the views of organised labour;"

According to the above, when a municipality has decided to explore the possibility of providing a municipal service by leveraging an external mechanism, there is an obligation on the municipality to assess different service delivery options if it decides to provide a municipal service or part thereof through an external mechanism and to take into account the views of organised labour as well as the views of the local community. Key considerations from the consultations with the local community (12 and 19 Feb 2025 respectively) and organised labour (20 February 2025) are summarised in Section 9.4 of this report and the detailed questions and responses are appended in Annexure 1 (View of Local Community and Organised Labour) of the Report on the Feasibility Study.

9.3 Section 120 of the MFMA

With respect to the second paragraph mentioned above, the provisions of section 120(6) of the MFMA are mentioned below and reads as follows:

> *"(6) When a feasibility study has been completed, the accounting officer of the municipality must—*
>
> *(a) submit the report on the feasibility study together with all other relevant documents to the council for a decision, in principle, on whether the municipality should continue with the proposed public private partnership*
>
> *(b) at least 60 days prior to the meeting of the council at which the matter is to be considered, in accordance with section 21A of the Municipal Systems Act*
>
> *(i) make public particulars of the proposed public private partnership, including the report on the feasibility study; and*
>
> *(ii) invite the local community and other interested persons to submit to the municipality comments or representations in respect of the proposed public private partnership; and*
>
> *(c) solicit the views and recommendations of—*
>
> *(i) the National Treasury.*
>
> *(ii) the national department responsible for local government.*
>
> *(iii) if the public-private partnership involves the provision of water, sanitation, electricity, or any other service as may be prescribed, the responsible national department; and*
>
> *(iv) any other national or provincial organ of state as may be prescribed*

The portion of Municipal Service Delivery and PPP Guidelines mentioned above, read with section 120(6) of the MFMA suggests:

> *2.1.15.1 the involvement of related national departments as stakeholders which have notification and participation rights with respect to the provision of municipal services by a municipality through an external mechanism. The Municipal Service Delivery and PPP Guidelines identifies two stakeholders, being DWAF and DEAT. It happens to be the case that the identified stakeholders, above, are the stakeholders relevant for purposes of this Project. However, the national department are contemporaneously restructured and named (i) the Department of Forestry, Fisheries, and the Environment and (ii) the Department of Water and Sanitation; and*
>
> *2.1.15.2 a municipality must, for a feasibility study completed in terms of section 120 of the MFMA, solicit the views and recommendations of the following stakeholders, the:*
>
> *(a) local community.*
>
> *(b) National Treasury.*
>
> *(c) Western Cape Provincial Treasury.*
>
> *(d) Western Cape Government.*
>
> *(e) Department of Water and Sanitation (the national department responsible for the provision of water); and*
>
> *(f) Department of Forestry, Fisheries, and the Environment (the national department responsible for environmental management and*

conservation, including the promotion and management of oceans and coastal conservation).

The consultation and solicitation of the views and recommendations of the stakeholders identified pursuant to section 120(6)(c) of the MFMA, shall be dealt with at the stage of implementation of section 120 of the MFMA.

9.4 Key considerations from the Public and Labour Consultations

Key considerations from the consultations with the local community and organised labour are summarised below and the detailed questions and responses are appended in Annexure 1 (View of Local Community and Organised Labour) of the Report on the Feasibility Study.

In particular, the main issues raised by the community and labour can be summarised as follows:

- The poor water quality within Table Bay as a result of marine outfall pipelines, discharges from the rivers and harbour activity pollution i.e. site concerns.
- The disposal of brine and return flows from the desalination plants which are not dispersed efficiently into the body of the receiving water.
- The expense of producing desalinated water and its impact of the resulting water tariffs.
- Labour is quite neutral as the impact on themselves from a green fields project will likely be only positive.

It must also be stated that a significant part of the comments, as evidenced in the Annexure 1, were positive and supportive by nature.

These comments were comprehensively considered in the analysis and Feasibility Study, and none of the comments were regarded as of such significance that the project needs to be abandoned. The benefits of the desalination plant outweigh the risks significantly.

The Report on the Feasibility Study will be available for further public insight in the final approval phase before procurement can commence. Both local public, the organised labour movements and other interested parties will be afforded a last opportunity to assess the outcomes of the Feasibility Study and to provide written comments again. These comments will be considered by the City's project team and the advisors, summarised and included in Section 7 of this Study and will be considered by the Council before the final approval decision will be made.

10 Conclusion - Recommended Procurement Model

The recommended procurement model for the Project is an external service delivery mechanism delivered through a PPP. The recommended PPP structure is for the private party to design, finance, build, operate and maintain the plant for 20 years after which it will transfer the plant to the City at the end of the PPP contract term. Ownership of the plant will vest with the City. As a mechanism of service delivery, a municipal PPP is firmly in line with the intent of the MFMA and the MSA.

One of the primary benefits of PPPs is that they allocate risk to the party best qualified and suited to manage it. The unique risk profile of desalination projects makes these facilities particularly well-suited to benefit from a PPP

This model transfers a significant proportion of the project risks to the private party and has historically proven to offer the greatest opportunity to achieve Value for Money if the procurement documents and risk allocation is structured appropriately. The indications are that the project will be affordable.

These three aspects namely transferred risk, value for money and affordability are considered as the cornerstone of any potential PPP project. If all three measures can be achieved, then the PPP model, as a project delivery model, is considered as the most appropriate form of procurement and service delivery.

The PPP contractual structure should guarantee the quantum and quality of water that will be acquired, providing a clear set of rights and obligations for the project stakeholders.

It is for all the reasons and considerations mentioned above and detailed in the Feasibility Study, that the final recommendation is to proceed with the procurement of the Project in the form of a PPP.