## DEPARTMENT OF WATER AND SANITATION

**NO. 6707** **3 October 2025**

NOTICE OF PROPOSAL TO CONSTRUCT THE COERNEY DAM IN ACCORDANCE WITH SECTION 110 OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998)

The Minister of Water and Sanitation ("the Minister") intends constructing government waterworks as described in the attached Schedule.

In accordance with Section 110(1) of the National Water Act, 1998 (Act No. 36 of 1998), the Minister must undertake an Environmental Impact Assessment (EIA) before constructing government waterworks. The EIA for the proposed Coerney Dam Project was conducted from September 2021 to August 2023, culminating in the granting of *Environmental Authorisation* on 8 August 2023. This authorisation was issued under the National Environmental Management Act (Act No. 107 of 1998, as amended) and the EIA Regulations, 2014 (GN R982 - 985, as amended). No appeals were lodged against the Environmental Authorisation.

The project has now progressed to the implementation stage, with construction set to commence once funding is secured and the detailed design completed.

Interested and Affected Parties (I&APs) are invited to submit written comments for the Minister's consideration to ensure the seamless implementation of the Coerney Dam Project. Comments must be submitted by close of business on **31 Dec 2025** to the following address:

**Director-General**
Department of Water and Sanitation
Private Bag X313
Pretoria, 0001
Tel.: 012 336 7500

Submissions should be marked for the attention of **Dr Menard Mugumo, Chief Engineer: Water Resource Development Planning** and sent via email to mugumom@dws.gov.za.

SCHEDULE TO THE PROPOSED COERNEY DAM GOVERNMENT WATERWORKS - TECHNICAL DETAILS AND EIA SUMMARY

### A. COERNEY BALANCING DAM PROJECT

#### *1) INTRODUCTION*

The Nelson Mandela Bay Metropolitan Municipality (NMBM) water supply system currently lies, in part, on an inter-basin transfer from the Gariep Dam on the Orange River via the Lower Sundays River. Bulk water is supplied through the Orange-Fish-Sundays Transfer Scheme (see **Figure 2**). The scheme was originally implemented as an emergency measure during the extreme drought experienced from 1987 to 1992. The Scheepersvlakte Balancing Dam was selected as the only feasible abstraction point for this emergency supply.

The gravity supply pipeline from the Scheepersvlakte Balancing Dam was designed to meet long-term flow requirements for both the Nelson Mandela Bay Municipality and the Sundays River right bank irrigators, who are part of the Lower Sundays River Water Users Association.

In 1993, the first phase of the Nooitgedagt Water Treatment Works (WTW) was commissioned, officially incorporating the Orange River allocation as a permanent water source for the region. The completion of the Nooitgedagt WTW Phase 3 in 2021 further increased the maximum treatment capacity to 210 ML/day.

However, the Scheepersvlakte Balancing Dam has been identified by NMBM and the Department of Water and Sanitation as a growing operational risk to the NMBM bulk water supply system. With a capacity sufficient for only two days of peak supply, the dam is inadequate to sustain water supply during emergencies, such as canal failures or breakages in other parts of the greater NMBM water supply system.

To mitigate this risk, a new balancing dam has been investigated at a feasibility level of detail to provide additional balancing storage. The proposed Coerney Balancing Dam aims to supplement the storage capacity of the existing Scheepersvlakte Balancing Dam, ensuring enhanced reliability of the bulk water supply to NMBM.

Following an evaluation of multiple potential dam sites, the Coerney site was identified as the most suitable location for the proposed balancing dam (see **Figure 3** for a locality map of the proposed scheme).

### *2) DESCRIPTION OF THE SCHEME*

#### *Korhaansdrift Weir*

Water transferred from the **Gariep Dam** on the Orange River flows via the Great Fish, Little Fish and Sundays Rivers before reaching **Darlington Dam**, located on the Lower Sundays River. From Darlington Dam, water is released downstream and then diverted at **Korhaansdrift Weir** into the Kirkwood Primary Canal.

Over time, the Korhaansdrift Weir has lost most of its limited storage capacity due to siltation, reducing its ability to provide adequate balancing storage. However, the proposed Coerney Balancing Dam and its associated infrastructure will not impact the weir in any way.

#### *Coerney Balancing Dam*

The proposed Coerney Dam is located upstream of the Coerney Siphon outlet, in a valley east of and adjacent to the existing Scheepersvlakte Dam. It is designed as a **homogeneous earthfill embankment** with a **side channel spillway**. The embankment incorporates zoning for slope protection, with riprap on the upstream face, crushed stone on the downstream face, and internal filter drains. The upstream slope has a ratio of 1V:3H, while the downstream slope is 1V:2H.

The lowest point of the valley bottom is 81.5 masl (metres above sea level), while the non-overspill crest (NOC) level is 102.0 masl, resulting in a maximum wall height of 20.5 metres. The full supply level (FSL) is 98.2 masl, providing a maximum water depth of 16.2 metres and a storage capacity of 4.69 million cubic metres. Given the wall height (categorized as a medium-sized dam) and the expected high hazard rating, the dam is classified as a **Category III** structure under dam safety regulations. Refer to **Figure 1** for the embankment cross-section.

#### *Geotechnical Considerations*

Geotechnical investigations indicate that the available material in the basin **lacks sufficient differentiation** between core and general shell zones to allow for a zoned embankment construction. Consequently, a homogeneous embankment design – utilizing a semi-pervious to impervious fill for the entire embankment – is the only feasible option.



This gazette is also available free online at **www.gpwonline.co.za**

The filter zone materials, embankment protection materials, and concrete aggregates (sand, aggregate, and rock) are not available on-site and will need to be imported. Additionally, **core trench excavation** will need to extend past a potential seepage path consisting of reworked terrace gravels. Excavation depths are estimated as follows:

- 7 to 8 metres on the left embankment,
- 4 metres in the river section, and
- 3 to 5 metres on the right embankment.

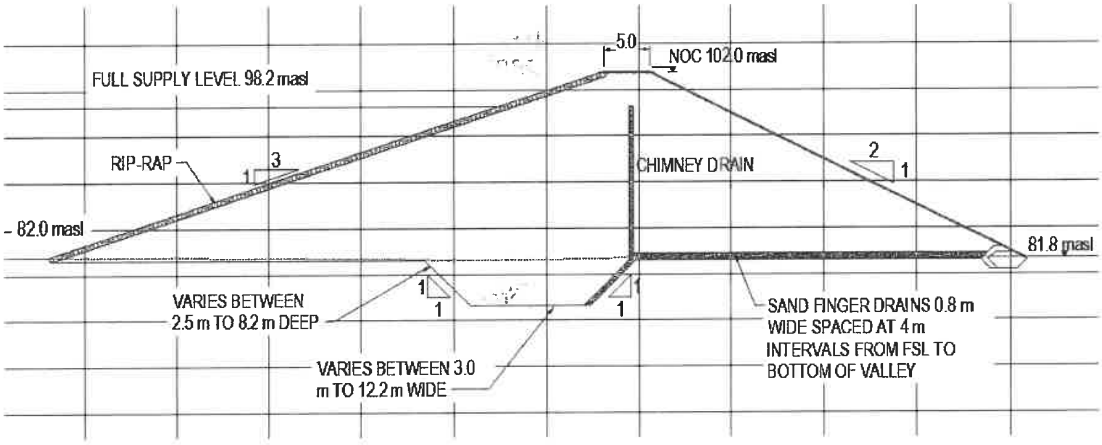


Figure 1: Embankment Cross-Section

***Operational Advantages***

The dam is strategically positioned at an elevation that allows it to be filled under gravity via a new supply pipeline from the Kirkwood Primary Canal. It will also be able to supply the Nooitgedagt WTW under gravity through a new connecting pipeline to the existing 1 400 mm Nooitgedagt WTW pipeline. The primary advantage of this scheme is its ability to be operated entirely by gravity, enhancing system efficiency and reducing operational costs.

***Water Supply Infrastructure***

The Coerney Dam will be supplied with water from the Kirkwood Primary Canal via a new 1 400 mm diameter steel pipeline, abstracting water from a new offtake on the canal between the existing long weir and the existing syphon intake (refer to **Figure 3**). The head at the long weir will provide the maximum available head for filling the new dam.

The Coerney Dam works will not impact the operation of the existing supply pipeline from Scheepersvlakte Dam. Flow to the Nooitgedagt WTW will be controlled from the downstream end of the new pipeline. However, instead of relying solely on the Scheepersvlakte Dam outlet, it is proposed that the WTW be supplied from a combination of the new intake at the long weir and from the Coerney Dam.

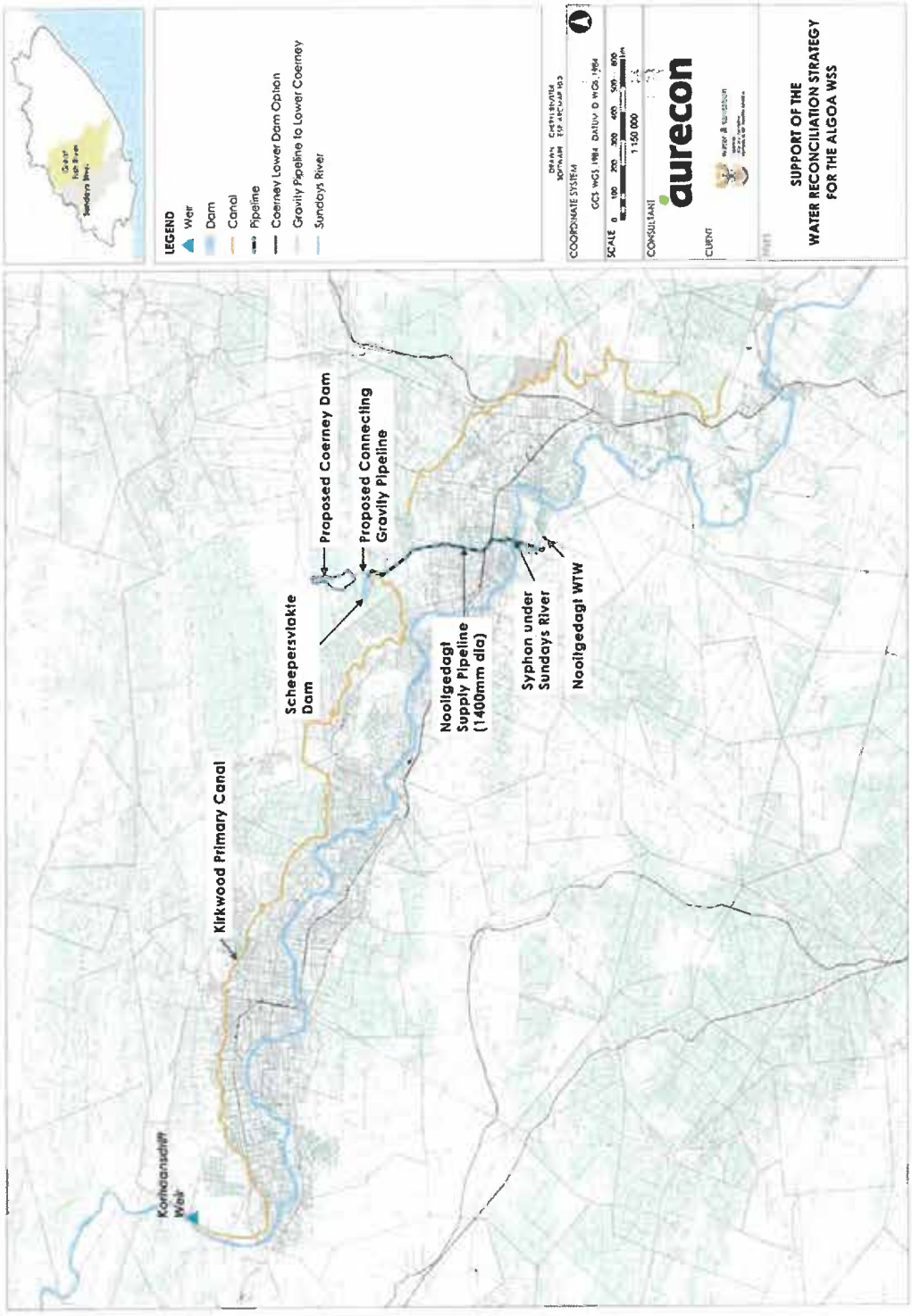


Figure 2: Locality Plan of water supply system between Korhaansdrift Weir and Nooitgedagt WTW

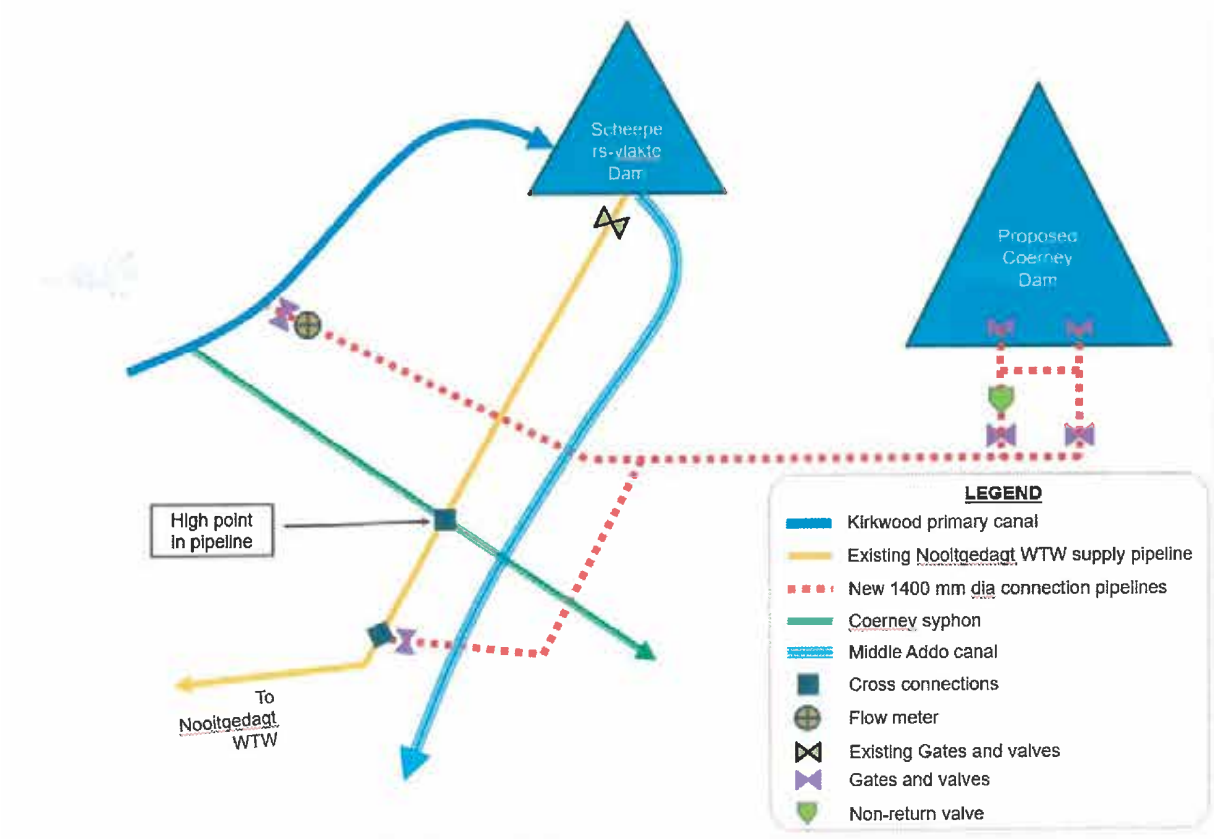


Figure 3: Schematic Layout of Coerney Dam and Connecting Pipelines

***Salient Features of the Coerney Dam***

The salient features of the proposed Coerney Dam, as per the feasibility design, are presented in **Table 1** below.

Table 1: Coerney Dam Statistics

| DAM FEATURE | DESCRIPTION |
|---|---|
| **Dam Safety Classification** | |
| Size | Medium |
| Hazard Potential | High |
| Classification | Category 3 |
| **Dam Site** | |
| Location (coordinates) | 33° 26' 54" S<br>25° 37' 33" E |
| River | Tributary of the Coerney River (which in turn is a tributary of the Sundays River) |
| Closest Town | Kirkwood |

| DAM FEATURE | DESCRIPTION |
|---|---|
| Distance | 18 km |
| Property Description | Scheepersvlakte 98 Portion Number 7 |
| **Catchment and Flood Parameters** | |
| Catchment Area | 33.6 $km^2$ |
| Recommended Design Flood (RDF) | Inflow 143 $m^3/s$<br>Outflow 110 $m^3/s$ |
| Water Surface Elevation at RDF Discharge | 99.3 masl |
| Safety Evaluation Flood (SEF) | Inflow 835 $m^3/s$<br>Outflow 753 $m^3/s$ |
| Water Surface Elevation at SEF Discharge | 101.84 masl |
| Probable Maximum Flood (PMF) | 835 $m^3/s$ |
| **Dam Statistics** | |
| Dam Type | Homogeneous earthfill embankment with filter zones |
| Total Crest Length | 600 m |
| Maximum Height Above Riverbed Level | 20.5 m |
| Embankment Non-Overspill Crest (NOC) | 102.0 masl |
| Full Supply Level (FSL) | 98.2 masl |
| Gross Storage Capacity at FSL | 4.69 million $m^3$ |
| Surface Area of Water at FSL | 72 ha |
| Minimum Operating Level (MOL) | 86.0 masl |
| Base Width of Dam at Maximum Cross-Section | 107 m |
| Crest Width | 5 m |
| Upstream Slope | 1V:3H |
| Downstream Slope | 1V:2H |
| Riverbed Level at Downstream Toe | 81.5 masl |
| **Spillway Layout** | |
| Spillway Type | Uncontrolled ogee overflow crest discharging into a side channel spillway on the left abutment |
| Ogee Crest Level | 98.2 masl |
| Crest Length | 50 m |
| Freeboard | 3.8 m |
| Energy Dissipation | Stilling basin at the end of the discharge channel |
| **Outlet Works** | |

| DAM FEATURE | DESCRIPTION |
|---|---|
| Outlet Tower | At the intake in the dam basin the outlet pipes are provided with a wet well tower with two intake levels, viz. 92.0 masl and 86.0 masl. The tower will be accessed via a pedestrian space frame bridge from the embankment NOC |
| Inlet and Outlet Pipes | The dam will have two pipes of 1000 mm dia. each which serve as the inlet and outlet pipes. The pipes will be encased in reinforced concrete through the embankment.<br>The pipes are situated on the left flank.<br>At the downstream end, each of the pipes will have an arrangement to control the inlet and outlet flows. The inlet branch will have a shutoff valve while the outlet branch will have a shutoff valve as well as a non-return valve. Both pipes will connect to a wet well inlet tower in the dam basin |
| Environmental Water Requirements (EWR) Outlet | Most of the water that will be stored in Coerney Dam is transferred from Korhaansdrift Weir. As such, no allowance for environmental releases is currently included in the dam design. The Reserve Section of DWS will determine whether further studies are required to determine the EWR and design arrangement for its release |

***Pipeline Design***

The proposed conveyance infrastructure consists of two gravity pipelines: one supplying water from the Kirkwood Primary Canal to the Coerney Dam and the other transporting water from Coerney Dam to a tie-in point on the existing Nooitgedagt WTW pipeline. The high point in the existing Nooitgedagt WTW gravity main will be bypassed to enhance hydraulic capacity during periods of low water levels in the dam.

The hydraulic calculations for both pipelines are based on a design capacity of 280 ML/day (3.24 $m^3/s$), with the Coerney Dam operating at a minimum level of 86 masl and a full supply level (FSL) of 98.2 masl. The Hazen-Williams equation was employed to determine the required operating level for achieving a flow of 280 ML/day. The results were further assessed against the dam's depth-storage curve to evaluate the percentage of available storage versus the minimum water level necessary to sustain the maximum discharge. It was established that only 17% of the dam's storage capacity would be required for a DN 1400 pipeline to maintain the required maximum flow rate. Additionally, a flow of 106.6 ML/day (1.85 $m^3/s$) can be discharged through a DN 1400 pipeline when the dam level is at the minimum operating level, corresponding to 40% of the maximum discharge rate.

Based on the hydraulic gradient lines, it is feasible to discharge 280 ML/day from the Kirkwood Canal to the Coerney Dam, even when the dam is at full supply level. At the

tie-in point to the existing Nooitgedagt WTW supply pipeline, a residual pressure of approximately 3 metres will be available.

Glass reinforced polyester (GRP), ductile iron, and steel pipes were evaluated as suitable materials for the pipeline, considering the required diameter and expected operating pressures. Given the advantages associated with steel pipes, they are recommended as the preferred material for the proposed pipelines. A preliminary wall thickness assessment was conducted based on available geotechnical data, hydraulic analysis, and external load considerations. The proposed pipelines will be DN 1400, Grade X52 steel, with a yield strength of 358 MPa and a recommended wall thickness of 10 mm. A maximum soil cover of 3.4 m must be maintained during the detailed design of the pipeline's vertical alignment. However, a wall thickness greater than 10 mm may be required if the native soil's modulus of elasticity (E-value) is lower than anticipated or if the bedding material's E-value does not meet expected parameters.

***Pipeline Connections and Affected Infrastructure***

The proposed Coerney Dam will be supplied with water from the Kirkwood Primary Canal via a DN 1400 pipeline, which will also facilitate the release of water from the dam to the tie-in point on the existing Nooitgedagt WTW pipeline. The pipeline serving both the inlet and outlet functions will bifurcate at the outlet chamber, located at the downstream toe of the embankment. The inlet branch will be equipped with an isolation valve to regulate supply when the dam reaches full capacity, while the outlet branch will include a non-return valve as well as isolation valves positioned both upstream and downstream.

The offtake from the Kirkwood Primary Canal will be situated downstream of the Coerney syphon intake and just beyond the long weir, which will provide the necessary hydraulic head for the new intake. The connection to the existing Nooitgedagt WTW supply pipeline will be established downstream of its junction with the Scheepersvlakte pipeline, as well as downstream of the existing high point in the current supply pipeline.

To ensure the integrity and uninterrupted operation of the Middle Addo Canal, it is recommended that the new pipeline be installed over the canal using a pipe bridge. This approach will mitigate potential impacts on the canal while also facilitating easier maintenance. Additionally, the proposed new pipeline will need to cross the existing Nooitgedagt WTW supply pipeline.

To minimize the risk of supply failure, it is recommended that an additional syphon be installed beneath the Sundays River along the existing Nooitgedagt WTW supply pipeline. This new syphon should be located upstream and separate from the existing syphon to enhance system redundancy. Furthermore, in addition to duplicating the syphon, it is advisable to maintain an adequate stockpile of replacement pipes on-site. This precaution will enable rapid repairs in the event of a pipeline failure, ensuring the continuity of water supply.

***Hydraulic Input Parameters***

The proposed scheme consists of two gravity pipelines:

- A pipeline conveying water from the Kirkwood Primary Canal to the proposed Coerney Dam.
- A pipeline transporting water from the proposed Coerney Dam to a tie-in point on the existing Nooitgedagt pipeline, which supplies the Nooitgedagt Water Treatment Works.

The hydraulic grade line of the pipeline from Coerney Dam to the Nooitgedagt WTW is illustrated in **Figure 4**. The following input parameters were utilized for the hydraulic calculations of the pipelines.

Pipeline from Kirkwood Primary Canal to Coerney Dam:

- START : Kirkwood Primary Canal
- Kirkwood Water Levels : Long weir overflow = 105.8 masl
- END : Coerney Dam
- Coerney Dam Water Levels : MOL = 86.0 masl, FSL = 98.2 masl
- Design Capacity : 280 ML/d (3.24 m3/s)
- Length of pipeline section : 1 373 m

Pipeline from Coerney Dam to Tie-in on Nooitgedagt WTW Pipeline:

- START : Coerney Dam
- Coerney Dam Water Levels : MOL = 86.0 masl, FSL = 98.2 masl
- END : Nooitgedagt WTW Supply Pipeline
- Design Capacity : 280 ML/d (3.24 m3/s)
- Length of pipeline section : 1 573 m

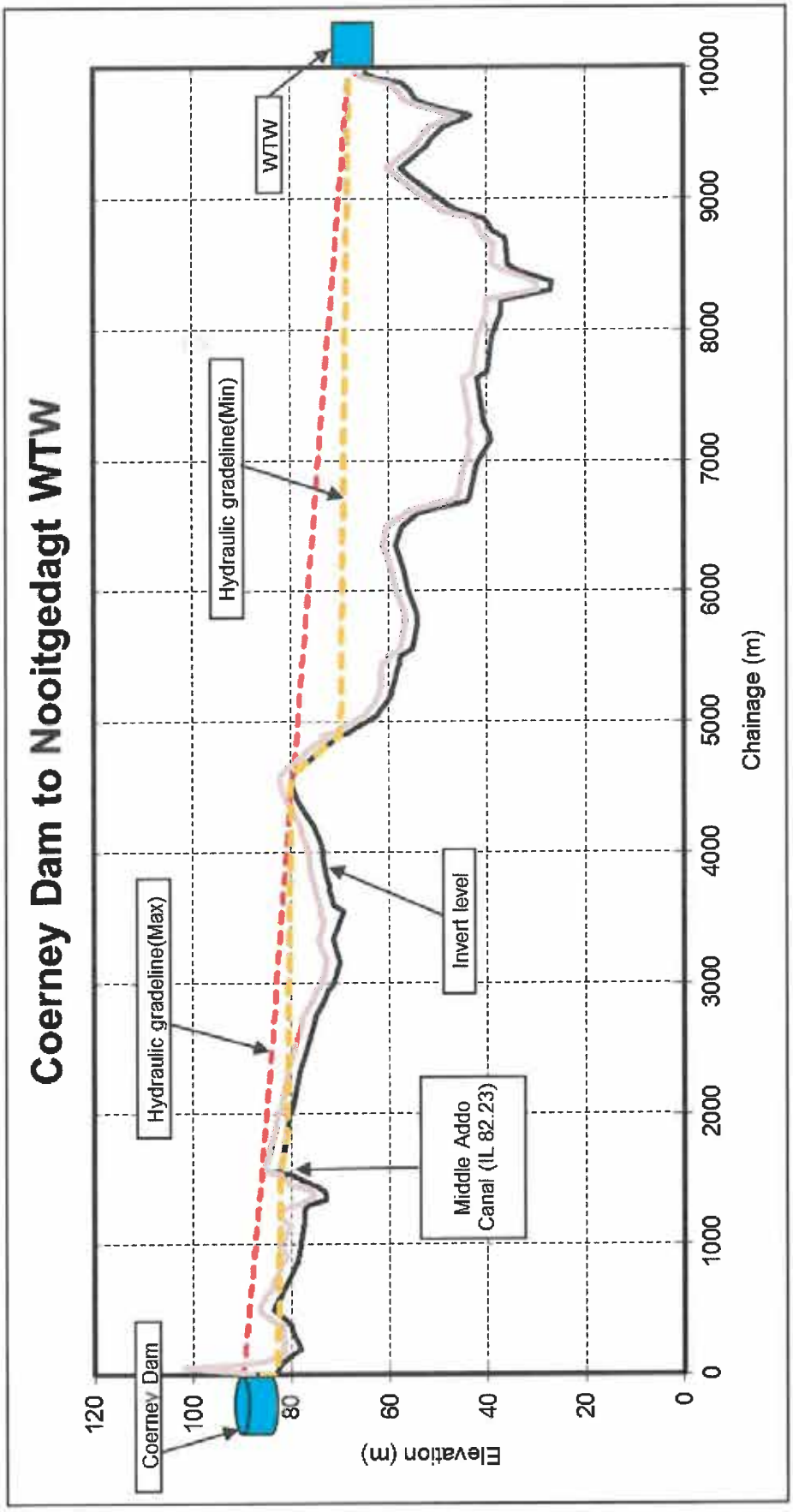


Figure 4: Coerney Dam to Nooitgedagt WWT – HGL for 280 ML/d in aged DN 1400 pipeline

### *3) FUNDING REQUIREMENTS*

At 2020 price levels, the estimated construction cost for the proposed Coerney Dam and associated works was assessed at **R327.228 million**, excluding VAT (refer to **Table 2**). The estimated cost for the construction of the conveyance infrastructure was **R103.904 million**, excluding VAT (refer to **Table 3**).

These cost estimates incorporate:

- A **Preliminary and General Items** allowance of **50%**,
- **Professional Fees** (for design and supervision) of **10%**, and
- A **Contingency allowance** of **25%** for the dam and **15%** for the conveyance infrastructure.

The total project cost, including both the dam and conveyance infrastructure, is estimated at **R517.753 million** (including 15% VAT) at 2020 prices (refer to **Table 4**).

Applying an **annual escalation rate of 6.5%**, the project cost estimate for construction completion in 2026 is **R703.747 million**. This estimate will require updating upon the revision of the implementation program following completion of detailed design.

Table 2: Coerney Dam Cost Estimate (January 2020 prices)

| NO. | DESCRIPTION | CAPITAL COST (Excl. VAT) |
|---|---|---|
| 1 | Site Clearing | R0.195 million |
| 2 | River Diversion | R10.000 million |
| 3 | Excavations | R20.262 million |
| 4 | Drilling and Grouting | R0.677 million |
| 5 | Embankment Fill Materials | R41.717 million |
| 6 | Concrete Works | R52.570 million |
| 7 | Mechanical Items | R22.525 million |
| 8 | Miscellaneous | R8.877 million |
| | **SUB-TOTAL** | **R156.823 million** |
| 9 | Preliminary and General Items (50%) | R78.412 million |
| 10 | Access and Electrical Supply | R2.750 million |
| | **SUB-TOTAL** | **R237.985 million** |
| 11 | Contingencies (25%) | R59.496 million |
| | **SUB-TOTAL (Construction Cost)** | **R297.481 million** |
| 12 | Professional Fees (10% of construction cost) | R29.748 million |
| | **TOTAL** | **R327.228 million** |

Table 3: Conveyance Infrastructure Cost Estimate (January 2020 prices)

| NO. | DESCRIPTION | CAPITAL COST (Excl. VAT) |
|---|---|---|
| 1 | Kirkwood Canal Offtake | R1.873 million |
| 2 | Inlet/Outlet to Coerney Dam | R6.831 million |
| 3 | Main Connecting Pipeline | R32.760 million |
| 4 | Tie-in at Nooitgedagt Pipeline | R1.277 million |
| 5 | Crossing of Middle Addo Canal | R0.812 million |
| 6 | Syphon under Sundays River | R1.205 million |
| | **SUB-TOTAL** | **R54.759 million** |
| 7 | Preliminary and General Items (50%) | R27.379 million |
| | **SUB-TOTAL** | **R82.138 million** |
| 8 | Contingencies (15%) | R12.321 million |
| | **SUB-TOTAL (Construction Cost)** | **R94.458 million** |
| | Professional Fees (10% of total construction cost) | R9.446 million |
| | **TOTAL** | **R103.904 million** |

Table 4: Total Project Cost (January 2020 prices)

| NO. | DESCRIPTION | CAPITAL COST |
|---|---|---|
| 1 | Coerney Dam | R327.228 million |
| 2 | Conveyance Infrastructure | R103.904 million |
| | **SUB-TOTAL** | **R431.132 million** |
| | Value Added Tax (15%) | R64.67 million |
| 3 | Land Acquisition | R21.95 million |
| | **TOTAL** | **R517.753 million** |

***4) OPERATIONAL COSTS***

The operation and maintenance (O&M) costs for the various dam components have been estimated as annual cost, expressed as a percentage of the construction value (see **Table 5**). The dam components are categorized into three sections:

- **Civil Works**: Includes the concrete spillway, intake tower and access bridge, the access roads, and pipelines.
- **Mechanical Works**: Comprises hosting equipment, valves, and gates.
- **Dam Wall**: Encompasses the embankment and dam basin.

A simplified annual cost estimate for these three categories has been determined based on a percentage of the construction value. The construction value used includes a 25% contingency allowance but excludes costs associated with river diversion and the 50% preliminary and general charge items.

Table 5: O&M Costs for Coerney Dam (Excl. VAT)

| NO. | DESCRIPTION | PERCENTAGE | CONSTRUCTION VALUE | ANNUAL AMOUNT |
|---|---|---|---|---|
| 1 | Civil Works | 0.5% | R89.65 million | R0.448 million |
| 2 | Mechanical Works | 4.0% | R18.75 million | R0.750 million |
| 3 | Dam Wall (embankment) | 0.25% | R78.564 million | R0.196 million |
| | | **TOTAL** | **R186.964 million** | **R1.394 million** |

The operation and maintenance costs for the various conveyance infrastructure components have been estimated as annual cost as a percentage of the construction value (see **Table 6**). The conveyance infrastructure components are categorized into two sections:

- **Civil Works**: Includes the pipelines and all concrete work at tie-ins and chambers; and
- **Mechanical Works**: Comprises valves and gates.

A simplified annual cost estimate for these two categories has been determined based on a percentage of the construction value. The construction value used includes a 15% contingency allowance but excludes the 50% preliminary and general charge items.

Table 6: O&M Costs for Conveyance Infrastructure (Excl. VAT)

| NO. | DESCRIPTION | PERCENTAGE | CONSTRUCTION VALUE | ANNUAL AMOUNT |
|---|---|---|---|---|
| 1 | Civil Works | 0.5% | R56.809 million | R0.284 million |
| 2 | Mechanical Works | 4.0% | R6.164 million | R0.247 million |
| | | **TOTAL** | **R62.972 million** | **R0.531 million** |

### *5) IMPLEMENTATION ARRANGEMENTS*

The implementation of the proposed Coerney Dam is critical to mitigating the risk of water supply failure to Nelson Mandela Bay Metropolitan Municipality (NMBM). The primary risk stems from the condition of the conveyance infrastructure. The water supply system is already under strain due to the ongoing shortages from storage dams west of Gqeberha (Port Elizabeth). A prolonged interruption of supply from the Nooitgedagt Water Treatment Works (WTW) – exceeding one week – would lead to a crisis, as no alternative supply exists. Given the urgency, the Minister of Water and Sanitation has declared the **Coerney Dam Project an Emergency Works**, expediting its implementation.

The Coerney Dam and associated infrastructure will form part of the **Lower Sundays River Government Water Scheme** and will be implemented as a **Government**

**Waterworks**, funded by National Treasury. Funding will need to be secured during the detailed design phase to enable prompt implementation once the design and tender documentation are finalised.

***Land Acquisition and Environmental Considerations***

The proposed dam site is located on **Portion 7 of Scheepersvlakte No. 98**, owned by **Scheepersvlakte Farms (Pty) Ltd**. The dam footprint overlaps with portions of the planned Scheepersvlakte Farms development, including areas within the Full Supply Level (FSL), the 1:100-year flood line, and parts of the dam wall and the spillway. The total impacted area is estimated at 36 hectares.

Scheepersvlakte Farms (Pty) Ltd has obtained **Environmental Authorisation** for the expansion of citrus orchards and the construction of a small storage dam, which would partially overlap with the Coerney Dam embankment. To accommodate this, the Coerney Dam's design includes an allowance for the farm dam, providing 150 000 $m^3$ of storage – equivalent to one week of supply for Scheepersvlakte Farms.

Land acquisition will be conducted under the **Expropriation Act, 2024 (Act No. 13 of 2024)** and the **Constitution of South Africa**. Additionally, servitudes for temporary and permanent access must be established during acquisition. **Wayleave applications** will be submitted to the relevant authorities to:

- Identify the location of existing infrastructure,
- Obtain comments on the proposed pipeline alignments, and
- Ensure compliance with all construction-related requirements.

This process will be undertaken during the detailed design phase.

***Ownership and Operational Responsibility***

The **Department of Water and Sanitation** (DWS) will own and implement the **Coerney Dam**, which will be used exclusively for the **NMBM**, with additional storage allocated for the **Scheepersvlakte Trust**. It is recommended that operation and maintenance of the dam be assigned to the **Lower Sundays River Water Users Association** (LSRWUA). This proposal is supported by the NMBM, as the LSRWUA already operates the water supply scheme. Integrating the Coerney Dam into the existing system would enable a more streamlined and efficient operation of the entire scheme.

## B. ENVIRONMENTAL IMPACT ASSESSMENT

The proposed Coerney Dam will require approximately **77 hectares** of land to accommodate the dam wall, basin, and appurtenant structures. The dam will have a **wall height of 20.5 metres** and a **storage capacity of 4.69 million $m^3$**.

As part of the Environmental Impact Assessment (EIA) Study, five **specialist studies** were conducted to assess the potential impacts of the project.

1. **Agricultural Impact Assessment** – Evaluating the impact on existing and potential agricultural activities.

2. **Terrestrial Biodiversity Impact Assessment** – Assessing the effects on local flora and fauna.

3. **Aquatic Biodiversity Impact Assessment** – Examining potential changes to aquatic ecosystems.

4. **Heritage Impact Assessment (Phase I)** – Identifying and evaluating cultural and historical resources.

5. **Palaeontological Impact Assessment** – Assessing the significance of potential fossil findings.

These studies form a critical component of the **environmental approval process**, ensuring that the project is implemented in a sustainable and responsible manner.

### *1) AGRICULTURAL IMPACT ASSESSMENT*

The proposed Coerney Dam development is situated within a citrus farming region near Addo, characterised by the **Fc 362 and Ia 85 land types**. The predominant soil forms in the area include **Mispah, Oakleaf, Valsrivier and Hutton**. Among these, the Hutton and Oakleaf soils are the most sensitive, exhibiting low to moderate and moderate to high sensitivities, respectively.

Although the project will utilize approximately **77 hectares** of potential agricultural land, it **will not** result in the **segregation of any high-production farmland**. On the contrary, the proposed dam will enhance agricultural sustainability by **providing additional irrigation water** to the surrounding farming community, thereby supporting the expansion of citrus farming in the region.

To mitigate any environmental impacts, an **Environmental Management Programme** (EMPr) will be implemented. Supporting management plans, including *Soil and Erosion Rehabilitation and Invasive Species Control*, will be enforced to prevent unnecessary soil degradation, nutrient loss and vegetation disturbance, ensuring minimum impact on adjacent agricultural fields.

### *2) TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT*

The proposed Coerney Dam site is located within two distinct vegetation types:

- **Albany Alluvial Vegetation** (classified as Endangered).
- **Sundays Valley Thicket** (classified as Least Threatened).

The Albany Alluvial Vegetation has high conservation importance and significant site ecological importance (SEI) but is classified as a Not Protected/Poorly Protected Ecosystem. The Sundays Valley Thicket holds medium to high conservation importance and SEI.

The assessment identified a natural and abundant distribution of **Species of Conservation Concern (SCC)** within the site. The area supports at least **four (4) protected flora species** and **twenty-one (21) recorded fauna species**. Certain portions of the proposed development are anticipated to have a high negative impact, directly affecting the habitat of threatened/protected plant and listed faunal species. To mitigate these impacts, a series of biodiversity conservation and rehabilitation measures will be implemented, including:

- A **Search and Rescue Plan** to relocate sensitive flora and fauna.

- **ECO Compliance Monitoring** to ensure adherence to environmental regulations.

- A **Biodiversity Compensation Strategy** to further minimize and offset habitat disturbance.

These mitigation strategies will help reduce the ecological impact and enhance rehabilitation efforts.

### *3) AQUATIC BIODIVERSITY IMPACT ASSESSMENT*

The hydrological setting of the proposed Coerney Dam falls within the **Mzimvubu-Tsitsikamma Water Management Area (MWA 7)** and the **Southern Coastal Belt Aquatic Ecoregion**. The primary watercourse that may be impacted by the project is the **Coerney River**.

The **Present Ecological Status (PES)** of the Coerney River tributary, where the dam is to be constructed, is classified as **largely modified (Class D)**. Additionally, in situ water quality assessments indicate that the river system exhibits **deviations from the from Target Water Quality Ranges**, reflecting an already altered ecological condition.

Potential impacts on aquatic biodiversity include:

- **Clearing of vegetation** due to construction activities within aquatic and riparian habitats.
- **Disturbance to aquatic ecosystems** from earthworks and sedimentation.

To **mitigate** these impacts, the following measures will be implemented:

- **An 18-metre buffer zone** for all activities, except those directly within the riparian area.
- **Independent Environmental Control Officer (ECO)** monitoring throughout the construction phase to ensure compliance, impact mitigation, and riparian rehabilitation.

These mitigation strategies will help minimize **ecological disturbance** and support the **rehabilitation** of affected aquatic habitats.

### *4) HERITAGE AND PALAEONTOLOGICAL IMPACT ASSESSMENT*

The archaeological and palaeontological assessment of the proposed Coerney Dam site identified stone tools as the only archaeological materials present within the extended study area. Additionally, moulds and petrified blocks of fossilized wood were recorded, but these were determined to be of low scientific and conservation value.

While the overall archaeological and palaeontological sensitivity of the area is classified as low, there remains a possibility that culturally significant features could be discovered during excavation or grading activities. These construction activities may inadvertently expose or damage heritage and cultural resources beneath the surface.

To mitigate potential impacts, the following measures will be implemented:

- **Adherence to recommendations** provided by **specialist archaeologists**.
- **Implementation of a Chance Find Protocol**, ensuring that any uncovered archaeological or palaeontological materials are appropriately documented and managed.

- **Immediate cessation of work** in areas where significant finds are uncovered, pending expert assessment.

These **preventative and mitigation measures** will ensure that any **heritage or cultural assets** encountered during the construction process are **properly managed and preserved**.

***5) ENVIRONMENTAL MANAGEMENT PROGRAMME***

The development of the proposed **Coerney Dam** is of **critical importance**, as it will significantly enhance **water supply and security** for the region, addressing the urgent needs of both the local population and the farming community.

Based on the findings of **specialist assessments**, the environmental impacts of the dam are expected to be **moderate to low**, provided that all **mitigation measures** outlined in the **Environmental Management Programme (EMPr)** are strictly adhered to. Furthermore, approximately **36 hectares** of the **77-hectare** development footprint has already been **cleared** by the farming community for the expansion of the citrus orchards, thereby reducing the potential environmental impact of the project.

The EMPr, prepared as an annexure to the **Environmental Impact Report (EIR)**, sets out **comprehensive environmental mitigation measures** that will be implemented throughout the project lifecycle. This document will be **updated prior to project implementation** and submitted for **approval by the Department of Forestry, Fisheries, and the Environment (DFFE)** to ensure full regulatory compliance.

By integrating these measures, the project will not only **minimize environmental impacts** but also **deliver a net positive income** in terms of **socio-economic benefits and regional water security**.

**MISS PEMMY C.P. MAJODINA, MP**
**MINISTER OF WATER AND SANITATION**
**DATE:** 05/05/2025