# WATER USE LICENCE APPLICATION SUMMARY REPORT

# APPLICATION FOR A WATER USE LICENCE IN TERMS OF SECTION 21 (B) AND (E) AND A GENERAL AUTHORISATION REGISTRATION IN TERMS OF SECTION 21(C) AND (I) OF THE NATIONAL WATER ACT ON ERF 11193, ERF 12379, ERF 11039, ERF 10984, ERF 11111, ERF 12378, ERF 11072, AND ERF 12380, CONSTANTIA

**DWS REF: WU40639**

**NAME OF APPLICANT:**

**STEENBERG ESTATE PROPERTY COMPANY (PTY) LTD**

**COMPILED BY:**
**PHS CONSULTING**

**DATE: November 2025**

PHS
CONSULTING
environmental, land-use, eco-tourism planning and management.

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## Terms and Abbreviations

CMA – Catchment Management Agency

C&R – Comments and Responses report

CVB Wetland - Channel Valley Bottom Wetland

CEMP- Construction Environmental Management Programme

DEA&DP – Department of Environmental Affairs and Development Planning (Western Cape)

DWS – Department of Water and Sanitation

EAP – Environmental Assessment Practitioner

ELU – Existing Lawful Use

GA – General Authorisation

GN – Government Notice

I&AP – Interested and Affected Party

NEMA - National Environmental Management Act, Act 108 of 1998

NWA – National Water Act, Act 36 of 1998

OEMP – Operational Environmental Management Programme

PAOI – Project Area of Influence

PES – Present Ecological State

REC – Recommended Ecological Category

RMO – Recommended Management Objective

SDP – Site Development Plan

SWMP – Stormwater Management Plan

UVB – Unchanneled Valley Bottom Wetland

WULA – Water Use Licence Application

ZoR – Zone of Regulation

# 1. Applicant details

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# 3. Background and purpose

## 3.1. Background

The Steenberg Estate Property Company (Pty) Ltd owns and manages the Steenberg Golf Course located in Constantia, Cape Town. The golf course, established in 1996, spans several properties, including Erf 11193, Erf 12379, Erf 11039, Erf 10984, Erf 11111, Erf 12378, Erf 11072, and Erf 12380.

The golf course benefits from Existing Lawful Use (ELU) water rights for taking and storing of water in terms of Section 21(a) and (b) of the National Water Act (NWA) (Act 36 of 1998). To improve water security and operational resilience of the golf course, the applicant proposes to increase the onsite water storage capacity of two existing onsite dams, namely Dam 5 (also referred to as the 5$^{th}$-Tee Dam) located on Erf 11193 Constantia and Dam 6 (also referred to as the Northern Entrance Dam) located on Erf 12379 Constantia. Both dams were in existence during the ELU qualifying period (1996–1998) and have been confirmed as ELUs in terms of the NWA.

The golf course is located within Quaternary catchment G22D which forms part of what used to be the Berg and later the Berg-Olifants Water Management Area (WMA) (WRC, 2017). The Berg-Olifants WMA was administered by the Department of Water and Sanitation (DWS). As of 2023 the golf course is now located within the Breede-Olifants WMA and is administered by proto-CMA officials. The Department of Water and Sanitation is still the authorisation agent for this region.

Upon consultation with DWS it was determined that an integrated WULA process is required for the proposed development. A NEMA checklist (June 2025) confirmed that the proposed development activities do not trigger any NEMA listed activities, and therefore no Environmental Authorisation is required.

The location map is presented in Figure 1 and the preferred SDP is shown in Figure 2.

Existing Lawful Uses:

In terms of the NWA the Steenberg Golf Course benefits from several confirmed ELUs for the taking and storing of water. These authorisations are summarised in Table 1 below:

**Table 1: Existing Lawful Water Uses Confirmed Under Section 25(4) of the NWA - Steenberg Golf Course (Validation and verification process concluded in 2023).**

| Property | Extent and Lawfulness of water use(s) | | |
|---|---|---|---|
| | Type of Water Use | Volume | Source / # Dams |
| Erf 11193 | Taking of water for irrigation purposes | 4 047m$^3$/annum | Surface Water |
| | Taking of water for industry | 11 563m$^3$/annum | Surface Water |
| | Taking of water for industry | 41 583m$^3$/annum | Ground Water |
| | Storing of water | 8 259m$^3$ | 1 Dam |
| Erf 12379 | Taking of water for industry | 47 310m$^3$/annum | Surface Water |

| | | | |
|---|---|---|---|
| | Taking of water for industry | 13 861m$^3$/annum | Ground Water |
| | Storing of water | 25 031m$^3$ | 5 Dams |
| Erf 11039 | Taking of water for industry | 9 358m$^3$/annum | Surface Water |
| | Taking of water for industry | 13 861m$^3$/annum | Ground Water |
| | Storing of water | 4 951m$^3$ | 3 Dams |
| Erf 10984 | n/a | n/a | n/a |
| Erf 11111 | Taking of water for irrigation purposes | 1 611m$^3$/annum | Surface Water |
| | Taking of water for industry | 1 988m$^3$/annum | Surface Water |
| | Storing of water | 1 904m$^3$ | 1 Dam |
| Erf 12378 | n/a | n/a | n/a |
| Erf 11072 | Taking of water for industry | 27 556m$^3$/annum | Surface Water |
| | Taking of water for industry | 13 816m$^3$/annum | Ground Water |
| | Storing of water | 14 579m$^3$ | 5 Dams |
| Erf 12380 | n/a | n/a | n/a |

In addition, the golf course supplements irrigation supply with treated effluent from the City of Cape Town (CoCT). This irrigation activity constitutes a Section 21(e) water use under the NWA and although this practice has been in place since the course's establishment in 1996, Section 21(e) water uses cannot qualify as ELU's, and as this water use has not previously been registered in terms of the NWA it therefore forms part of the current WULA application.

Proposed Development:

The proposed development activities comprise the following:

- The enlargement of Dam 5 (5$^{th}$-Tee Dam) located on Erf 11193 from approximately 8 259m$^3$ (ELU volume) to approximately 32 690m$^3$ resulting in an increase of approximately 24 431m$^3$. The dam will be predominantly excavated with a retaining structure and berm developed along the northeastern portion and controlled infilling to the northwestern section of the expanded dam using suitable excavated material. The dam will have a total footprint area of 1,59ha.
    - To accommodate the enlarged dam 5, the existing golf cart tracks will be extended by approximately 240m around the new dam. The tracks will be narrow, low-impact pathways.
    - As part of the dam enlargement activities, fairway modifications will be undertaken around the dam to ensure the continued functionality of the adjacent golf course. These works are included within the overall work extent of the dam enlargement activities.

- The enlargement of Dam 6 (Northern Entrance dam) located on Erf 12379 from 6 360m$^3$ (ELU volume) to approximately 23 560m$^3$ resulting in an increase of approximately 12 700m$^3$. The dam will be predominantly excavated with a berm developed along the northeastern perimeter. The dam has been designed with an island in the centre. The dam will have a total footprint area of 0,98ha.
    - To accommodate the enlarged dam 6, the existing golf cart tracks will be extended by approximately 150m around the new dam. The tracks will be narrow, low-impact pathways.
    - As part of the dam enlargement activities, fairway modifications will be undertaken around the dam to ensure the continued functionality of the adjacent golf course. These works are included within the overall work extent of the dam enlargement activities.
- Ongoing supplementation of irrigation supply with treated municipal effluent from CoCT. Currently, a volume of approximately 555 884m³ per annum of treated effluent is applied to approximately 63.058ha of the golf course.

Both Dam 5 and Dam 6 will be lined with a geosynthetic composite liner covered with a soil blanket for waterproofing. This will prevent water losses due to ingress. Following the enlargements, the total onsite water storage capacity will be:

- Erf 11193: 32 690m³
- Erf 12379: 42 231m³

The enlargements will not result in any additional water abstraction. Instead, the intent is to optimise the use of existing allocations by enabling greater storage during periods of availability and to provide a buffer during drought or interruptions in CoCT effluent supply.

Steenberg Golf Course Irrigation Reticulation:

The Steenberg Golf Course utilizes both surface and groundwater sources as part of its ELU allocation, supplemented by treated effluent purchased from the CoCT, to irrigate the greens, tees, fairways, and roughs across the course. The flow of water through the irrigation system is illustrated in Figure 3. Treated effluent is pumped into the 18th Tee Dams, where it is blended with water from the ELU allocation before being transferred to Dam 5 (5th Tee Dam). Irrigation of the fairways and roughs is supplied from the 18th Tee Dam, while the greens and tees are irrigated from Dam 6 (Northern Entrance Dam) which comprises only ELU water (refer Figure 3).

Freshwater Screening:

A freshwater screening assessment confirmed the presence of several watercourses within the 500m Zone of Regulation (ZoR) from the proposed development areas. Dam 5 (5$^{th}$-Tee Dam) was identified as being located within 500m of a downstream wetland, while Dam 6 (Northern Entrance

Dam) lies within both the 100m ZoR of the Princeskasteel Stream and the 500m ZoR of a downstream wetland.

Water Use Activities:

The proposed development triggers the following water uses in terms of Section 21 of the National Water Act (Act 36 of 1998):

- Section 21(b): storing water (total capacity exceeds GA threshold);
- Section 21(c): impeding or diverting the flow of water in a watercourse (dam expansion footprints within regulated areas);
- Section 21(i): altering the bed, banks, course or characteristics of a watercourse (dam expansion footprints within regulated areas);
- Section 21(e): engaging in a controlled activity, namely the irrigation of golf course fairways with treated municipal effluent, supplied by CoCT. As Section 21(e) uses cannot be considered ELUs, this activity is also included in the current application.

A DWS GN509 Risk Assessment Matrix has been completed for the proposed (c) and (i) water uses. The outcomes indicate a low-risk rating for both the (c) and (i) water uses, which would otherwise fall within the ambit of a General Authorisation. However, since the dam storage capacity will exceed the GA threshold for the quaternary catchment, an integrated WULA is required.


**Figure 1: Locality Map - Steenberg Golf Course**


**Figure 2: Preferred Spatial Development Plan**


**Figure 3: Steenberg Golf Course Irrigation Water Distribution Map**

### 3.2. Location of water uses

The proposed project site is located in the Western Cape Province within the Wynberg Magisterial District in Constantia. The water uses will take place on Erf 11193, Erf 12379, Erf 11039, Erf 10984, Erf 11111, Erf 12378, Erf 11072, and Erf 12380 all of which form part of the G22D Quaternary Catchment within the Breede Olifants Water Management Area.

Please refer to Figure 1 and Figure 2 for location plans which show the general locality and the proposed development areas respectively.

It should be noted that the proposed development site is located in what used to be the Berg and later the Berg-Olifants Water Management Area (WMA) (WRC, 2017). The Berg-Olifants WMA was administered by the Department of Water and Sanitation (DWS). As of 2023 the golf course is now located within the Breede-Olifants WMA and is administered by proto-CMA officials on behalf of BOCMA. The Department of Water and Sanitation is still the authorisation agent for this region.

**Table 2: Property Details**

| Property description | Title Deed number | Owner | Applicant | SG Code | Geographic Location |
|---|---|---|---|---|---|
| Erf 11193 Constantia | T12371/2021 | Steenberg Estate Property Company | Steenberg Estate Property Company | C0160011000 1119300000 | 34° 4'11.51"S 18°25'51.29"E |
| Erf 12379 Constantia | T12371/2021 | Steenberg Estate Property Company | Steenberg Estate Property Company | C0160011000 1237900000 | 34° 3'45.11"S 18°25'54.94"E |
| Erf 11039, Constantia | T12371/2021 | Steenberg Estate Property Company | Steenberg Estate Property Company | C0160011000 1103900000 | 34° 3'48.26"S 18°25'44.34"E |
| Erf 10984, Constantia | T12371/2021 | Steenberg Estate Property Company | Steenberg Estate Property Company | C0160011000 1098400000 | 34° 3'49.84"S 18°25'33.30"E |
| Erf 11111, Constantia | T12371/2021 | Steenberg Estate Property Company | Steenberg Estate Property Company | C0160011000 1111100000 | 34° 4'2.91"S 18°25'38.95"E |
| Erf 12378, Constantia | T12371/2021 | Steenberg Estate Property Company | Steenberg Estate Property Company | C0160011000 1237800000 | 34° 3'54.02"S 18°25'29.31"E |
| Erf 11072, Constantia | T12371/2021 | Steenberg Estate Property Company | Steenberg Estate Property Company | C0160011000 1107200000 | 34° 4'7.05"S 18°25'26.65"E |
| Erf 12380 Constantia | T12371/2021 | Steenberg Estate Property Company | Steenberg Estate Property Company | C0160011000 1238000000 | 34° 4'12.54"S 18°25'41.77"E |

# 4. Administrative documents and other technical reports submitted to support the WULA

## 4.1. Administrative documents

The following administrative documents will be submitted as part of the application:

- Proof of Payment of Water Use Licence Application Processing Fee
- Certified Copy of Identity Document of Applicant's representative.
- Copy of Steenberg Estate Property Company (Pty) Ltd registration certificate
- Power of Attorney for PHS Consulting to lodge the WULA application on behalf of the applicant.
- Confirmation of NEMA Listed Activities Applicability - No Application required in terms of NEMA
- Landowner information (title deed) for the following properties: Erf 11193, Erf 12379, Erf 11039, Erf 10984, Erf 11111, Erf 12378, Erf 11072, and Erf 12380, Constantia

## 4.2. Reports and other technical documents

The reports and technical documents that will be submitted as part of the application are listed in Table 3 below.

**Table 3: List of reports and other technical documents submitted**

| Number | Report Title | Compiled by | Date of report |
|---|---|---|---|
| 1 | Freshwater Assessment & DW775 Supplementary Form | The Biodiversity Company | September 2025 |
| 2 | Dam Design Report for Dam 5 (5th-Tee Dam) and Dam 6 | Storey ENG (Pty) Ltd | November 2025 |
| 3 | Dam Design, Layout and Work Extent for Dam 5 (5th-Tee Dam) (inclusive of golfcart tracks) | Storey ENG (Pty) Ltd | March 2025 |
| 4 | Dam Design, Layout and Work Extent for Dam 6 (Freshwater Dam) (inclusive of golfcart tracks) | Storey ENG (Pty) Ltd | March 2025 |
| 5 | Engineering Method Statement – Dam at 5th Tees (Dam 5) | Storey ENG (Pty) Ltd | March 2025 |
| 6 | Engineering Method Statement – Northern Entrance Dam (Dam 6) | Storey ENG (Pty) Ltd | March 2025 |
| 7 | Preferred dam development SDP | PHS Consulting | April 2025 |
| 8 | Steenberg Golf Course ELU confirmation & WARMS:<br>- Erf 11193<br>- Erf 12379<br>- Erf 11039<br>- Erf 10984 | DWS | January 2024 |

| | | | |
|---|---|---|---|
| | - Erf 11111<br>- Erf 12378<br>- Erf 11072<br>- Erf 12380 | | |
| 9 | S27 Motivation report (included in this report) | PHS Consulting | September 2025 |
| 10 | Coordinates for proposed S21 water uses being applied for (Refer Table 5 of this report) | PHS Consulting | September 2025 |
| 11 | Dam Water Balance Summary | Storey ENG (Pty) Ltd | October 2025 |
| 12 | Treated Effluent Application Area Summary | Storey ENG (Pty) Ltd | October 2025 |
| 13 | Routine Water Quality Monitoring Report | Alternate Water Solutions | June 2025 |

# 5. Project Description

The proposed development involves the enlargement of two existing dams (Dam 5 and Dam 6) and the realignment of the associated golf cart tracks within the Steenberg Golf Course. The purpose of these upgrades is to enhance water security and optimise the utilisation of existing lawful water allocations. Both dams will be enlarged primarily through excavation and berm development. The dams will be lined with a geosynthetic composite liner and soil blanket to minimise seepage losses. Dam 5 will be filled using a combination of water abstracted from within the ELU allocation and treated effluent purchased from the CoCT while Dam 6 will be filled primarily with water abstracted within the ELU allocation. Water will be pumped from the dams for irrigation of the golf course as needed. No additional abstraction is proposed; the enlargements are intended solely to increase storage capacity to provide a buffer during drought or interruptions in treated effluent supply.

**Table 4: Project Details**

| Activity | Water use to be applied for (S21 of NWA) | Description |
|---|---|---|
| Expansion of Dam 5 (5th-Tee Dam) | (b), (c) & (i) | The proposed expansion of Dam 5 will be undertaken through the excavation of the existing dam basin, the construction of a retaining structure and berm along the northeastern perimeter, and the controlled infilling to the northwestern section of the expanded dam using suitable excavated material. The dam will be lined with a geosynthetic composite liner covered with a soil blanket to prevent seepage water loss. The Non-Overspill Crest (NOC) will be approximately 41.1m above sea level (a.b.s.l.), with the height of the berm ranging from 0.1m to 3m. The Full Supply Level (FSL) will be |

| | | |
|---|---|---|
| | | approximately 40.3m a.b.s.l. As per current operation an overflow point will be located along the eastern boundary from where any excess stormwater entering the dam will overflow back into the City stormwater network along Steenberg Road. The storage capacity will increase from 8259m³ to 32690m³, with a total footprint of 1.59ha. Water from the dam will be pumped for irrigation within the golf course as needed and the dam will be filled using a combination of water abstracted within the ELU allocation and treated effluent purchased from the CoCT. The proposed expansion footprint is located within the 500m regulated area of a valley bottom wetland system delineated to the South and southeast of the site. |
| Extension of golf cart track associated with the expansion of Dam 5 | (c) and (i) | To accommodate the enlarged dam 5, the existing golf cart tracks will be extended around the new waterbody. Portions of the tracks will fall within the 500m regulated area of a valley bottom wetland system delineated to the South and southeast of the site. The tracks will be narrow, low-impact pathways. |
| Expansion of Dam 6 (Freshwater Dam) | (b), (c) & (i) | The proposed expansion of Dam 6 will be achieved through excavation of the existing dam basin and construction of a berm along the northeastern boundary of the dam. The dam will be lined with a geosynthetic composite liner covered with a soil blanket to prevent seepage water loss. The Non-Overspill Crest (NOC) will be approximately 30.9m above sea level (a.b.s.l.) and the berm height will range from 0.1m to 1.3m. The Full Supply Level (FSL) will be at approximately 30.1m a.b.s.l. The storage capacity will increase from 6360m³ to 23560m³, with a total footprint of 0.98ha. Water from the dam will be pumped for irrigation within the golf course as needed and the dam will be filled using water abstracted within the ELU allocation. The proposed expansion footprint is located within the 100m regulated area and 1:100-year floodline of the Prinseskasteel Stream and the 500m regulated |

| | | |
|---|---|---|
| | | area of a valley bottom wetland system delineated to the North of the site. |
| Extension of golf cart track associated with the expansion of Dam 6 | (c) & (i) | To accommodate the enlarged dam 6, the existing golf cart tracks will be extended around the new waterbody. Portions of the tracks will fall within the 100m regulated area and 1:100-year floodline of the Prinseskasteel Stream and the 500m regulated area of a valley bottom wetland system delineated to the North of the site. The tracks will be narrow, low-impact pathways. |
| Irrigation with water containing treated effluent supplied from the Cape Flats Wastewater Treatment Work. | (e) | The Steenberg Golf Course supplements its irrigation supply with treated municipal effluent from the Cape Flats Wastewater Treatment Works (WWTW). The water quality of the incoming treated effluent is monitored. Currently, a volume of approximately 555 884m³ per annum of treated effluent is applied to approximately 63.058ha across the eight properties that comprise Steenberg Golf Course. |

## 6. Methods statement (only for 21 (c) and (i) activities)

**The following generalised guidelines apply to all works undertaken within the regulated area of a watercourse:**

- A suitably qualified individual must be designated and appointed by the Applicant to fulfill the role of Environmental Control Officer (ECO). The responsibilities of the ECO during the life span of the project will include:
    - Review method statements and to determine the most environmentally sensitive options of modus operandi for the development tasks;
    - Monitor the fencing off and work around no-go areas onsite;
    - Oversee the implementation of method statements, mitigation measures and rehabilitation as set out in this WULA summary report and Freshwater Screening;
    - Take immediate action on site where clearly defined no-go areas are violated, or in danger of being violated, and to inform the landowner and Site Manager immediately of the required action to be taken;
    - Keep an up-to-date record of works on site, as they relate to environmental issues;

    - Conduct monthly site visits during the construction phase and report on environmental issues on site;
    - A final site visit will be required one month post completion of construction.

- The boundaries of the proposed work extent, which is to include all contractor laydown areas and stockpile locations, are to be clearly defined and demarcated with suitable fencing. All construction activities are to remain within the designated area, and edge effects must be managed to prevent disturbance beyond the predetermined footprint. Fencing must allow for only predetermined access points. An exception applies only to the construction of the proposed golf cart track, which will extend partially within the 32m NEMA Zone of Regulation (ZoR). Disturbance in this area must be strictly confined to the minimum footprint required for the track, and no unnecessary clearing or soil disturbance may occur beyond this defined area.
- Wherever possible, existing access routes must be used. If no suitable routes are available, new access routes should be established through the most degraded areas, avoiding environmentally sensitive features. New access routes should not cross or encroach into delineated watercourses or occur within 32m of their boundaries.
- The 32m buffer surrounding the delineated Prinseskasteel Stream must be treated as a strict no-go zone for all construction vehicles, machinery, and equipment. No movement, or storage of materials may occur within this area. The only permitted activity within this buffer is the establishment of the golf cart track, which must be undertaken under strict supervision, using methods that minimise disturbance and ensure that all works remain within the approved alignment. Disturbance must be limited to what is essential for the track, and all temporarily disturbed areas must be rehabilitated upon completion.
- All repairs and maintenance should be undertaken within the dry season, except for emergency maintenance works.
- It must be ensured that all hazardous storage containers and storage areas comply with the relevant SABS standards to prevent leakage. All hazardous chemicals as well as stockpiles should be stored on bunded surfaces and have facilities to control runoff from these areas.
- Appropriate sanitation facilities must be provided onsite for the duration of the construction of the development. Sanitation facilities must be located more than 32m from the delineated extent of watercourses.
- An adequate number of waste bins must be provided throughout the construction phase of the development.
- When machinery is involved, ensure effective operation with no leaking parts and at a safe distance from any watercourses (recommended minimum of 32m) to manage any accidental spillages and pose no threat of pollution.

- In the event of a vehicle breakdown, maintenance of vehicles must take place with care and the recollection of spillage should be practised near the surface area to prevent ingress of hydrocarbons into topsoil and subsequent environmental pollution.
- All spills should they occur, should be immediately cleaned up and treated accordingly.
- At no time should the flow of any watercourse be blocked nor should the movement of aquatic and riparian biota be prevented.
- In circumstances which require the removal of any topsoil, this must be sufficiently restored through sustainable measures and practices.
- The build-up of debris/sediment removed from the site may:
    - be utilised for the purpose of in-filling or other related maintenance actions onsite;
    - not be deposited anywhere within any watercourse or within 32m thereof.
    - Material that cannot be used for maintenance purposes must be removed to a suitable stockpile location or disposal site, at least 32m from a watercourse.

**The following method statements have been developed for specific activities related to the S21 (c) and (i) water uses:**

1. Expansion of two dams and associated infrastructure (including golfcart track, pumpstation upgrades, retaining structures, berms, fairway modifications, irrigation pipes, and sprinklers) within the regulated area of a watercourse.
2. Operation of the expanded Dam 6 within the 1:100-year floodline of the Prinseskasteel Stream.
3. Maintenance and repairs of dams associated infrastructure (including pumpstation, pipelines and sprinklers), golf cart tracks and pathways within the regulated area of a watercourse.
4. Alien invasive vegetation management within the regulated area of a watercourse.

**MS1 - Expansion of two dams and associated infrastructure (including golfcart track, pumpstation, irrigation pipes and sprinklers) within the regulated area of a watercourse.**

| | |
|---|---|
| **Description of activity** | **The proposed development entails the expansion of Dam 5 and Dam 6, both located within the regulated area of a watercourse. Associated infrastructure works will include extending the existing golf cart tracks to integrate with the enlarged dam footprints, constructing a brick barrier wall around the existing pump room at Dam 6, development of berms and retaining structures, turf modifications within the work extent and reinstating irrigation lines and sprinkler systems upon completion of the dam expansion activities.** |
| **Actions** | Vegetation removal, topsoil stockpiling, groundbreaking, excavation, trenching, groundworks, reshaping, laydown of construction offices and ablution facilities, movement of construction vehicles, equipment and personnel, infrastructure installation and construction activities within the regulated area of a watercourse. |
| **Impacts of actions** | - Removal of vegetation and associated soil disturbance:<br>  o Exposure of soil, leading to increased runoff, and erosion, and thus increased sedimentation of the downslope watercourses.<br>  o Proliferation of alien vegetation as a result of disturbances.<br>- Excavation and trenching leading to the stockpiling of soil:<br>  o Runoff from stockpiled material or sediment laden runoff from the dam construction footprint could result in sedimentation of downslope watercourses.<br>- Movement of construction machinery, equipment and personnel within the regulated area of a watercourse:<br>  o Soil disturbance and increased risk of sedimentation.<br>  o Possible contamination of soil and surface water from oils and hydrocarbons originating from construction vehicles.<br>- Potential spillage from construction vehicles.<br>- Possible contamination of soil and surface water due to concrete works and runoff originating from the construction site.<br>- Erosion and incision due to expanded dam walls and erosion related to the outflow of water from the dams.<br>- Damage to marginal and non-marginal vegetation, leading to exposed/compacted soils, in turn leading to further increased runoff and erosion.<br>- Altered runoff patterns, leading to increased erosion and sedimentation of the receiving environment. |

| | |
|---|---|
| **Severity of impacts** | The severity of the potential impacts associated with the expansion of Dam 6 (Northern Entrance dam) were determined to be 'Low' with application of mitigation measures.<br>The potential impacts pertaining to the proposed Dam 5 (5th-Tee) expansion activities were deemed to pose no quantum of risk on any freshwater ecosystems. |
| **Measures to mitigate the severity of the impacts** | <u>General:</u><br>- The work extent should remain as small as possible and vegetation clearing must be limited to what is essential.<br>- The boundaries of the proposed work extent must be clearly demarcated with suitable fencing prior to the start of construction activities.<br>- The dam enlargement activities should not be undertaken during the winter rainfall months, which will decrease the number of surface runoff days during construction. The commencement date for site preparation should be established in consultation with the appointed ECO.<br>- The delineated extent of the Prinseskasteel Stream must be considered a no-go area for vehicles, equipment and staff.<br>- Vehicle movement must be limited to existing access routes as far as operationally possible<br>- Contractor laydown areas and material storage facilities must be located within the fenced off work extent.<br>- Vehicle re-fuelling should take place off site.<br>- Dedicated parking area for construction vehicles must be located away from sensitive areas, and drip trays must be located beneath any leaking equipment and lubricant/fuel absorbing media (moss/peat type products) within drip trays must be used to contain spilled material. Leaking equipment must be repaired immediately.<br>- All cleared vegetation designated for re-use must be stockpiled in a designated area, outside of the delineated extent of the Prinseskasteel Stream and its associated 32m buffer.<br>- All vegetation material that will not be reused onsite must be disposed of at a registered garden refuse site or incorporated into the golf course's composting yard.<br>- Stockpiles of exposed soils must be protected for the duration of the construction phase with a suitable geotextile (e.g. Geotextile or hessian sheeting) to prevent potential sedimentation of the Prinseskasteel Stream and protect the stockpile from foreign seed.<br>- The stockpiled lawn that was lifted and removed to enable dam enlargement must be closely monitored to not become a habitat for the establishment of alien and invasive vegetation |

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| | - Excavated material from the dam basins that is suitable for reuse—either for fairway modifications or for constructing the boundary berm—must be stockpiled within the designated, fenced-off work area.<br>- All surplus or unsuitable excavated material must be disposed of at a registered, off-site waste disposal facility.<br>- All stockpiles should not exceed 2m in height and should be covered with a suitable geotextile such as hessian sheeting to prevent excessive dust generation and/or sedimentation. Stockpiles may not become contaminated.<br>- Topsoil must be stockpiled separately from all other materials, for use to cover the disturbed area in preparation for revegetation.<br>- Sediment control measures such as sandbags or a sediment drift fence must be put in place to ensure that sediment does not enter into the Prinseskasteel Stream (irrespective of the potentially affected reach being impounded).<br>- Exposed soils must be revegetated as soon as feasibly possible after disturbance.<br>- Once construction activities are done, all disturbed areas must be suitably rehabilitated.<br>- Any trenches dug should be backfilled as soon as infrastructure has been installed in any given section in order to reduce potential erosion of exposed soil.<br>- Mixture of the lower and upper layers of the excavated soil should be kept to a minimum.<br>- Where outflow points are required, suitably measures must be put in place to prevent erosion.<br>- Airborne dust must be reduced at construction sites through:<br>o Damping dust generation areas with water (although not in sufficient quantities to generate runoff);<br>o Use of geotextile or brush barrier fences; and<br>o Covering stockpiles with geotextiles.<br>- Edge effects of activities including erosion and alien/ weed control need to be strictly monitored and controlled.<br>- Should any erosion be detected on site, the ECO must identify the cause of such erosion and ensure that the most appropriate method of mitigation or stabilisation is employed as soon as possible.<br>- The banks of the expanded dams must be revegetated after the construction activities to stabilize soil and prevent erosion.<br>- The dams and outlet pipes should be routinely inspected for signs of erosion, with particular attention following heavy rainfall events when overflow and increased flow velocities are likely to occur. Any identified erosion should be promptly remediated, preferably through the re-establishment of vegetation in affected areas. In |

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| | cases where erosion is significant, appropriate erosion control measures should be implemented in consultation with a freshwater specialist.<br>- The surface layers/wearing layers of the newly constructed golf cart track must be constructed during the summer dry season, to avoid the potential for the runoff of highly toxic substances such as concrete or asphalt into the stream. This is also true for herbicides that are used to prohibit regrowth and penetration of vegetation through the overlying imported material.<br><br><u>Should concrete be required:</u><br>- Ready mix concrete is preferred over batching concrete on site as this minimises the handling of concrete on site, and thereby the potential for environmental spillage<br>- Mixing of fresh concrete must be done within a construction camp, at least 30m away from watercourses, on a batter board/platform mixing tray, else within a lined, bound or bunded portable mixer. No mixing on bare ground is permitted<br>- Cement bags must be placed in demarcated hazardous waste receptacles and suitably disposed of offsite.<br>- Spilled or excess concrete must be disposed of at a suitable landfill site.<br>- A washout area must be designated outside of the delineated extent of watercourses and wash water must be treated on site or discharged to a suitable landfill site. Chain of custody documentation in this regard is required<br><br><u>Dewatering of Dam 6 to facilitate construction activities:</u><br>- Water levels in the impounded reach of the Prinseskasteel Stream must be monitored throughout dewatering activities.<br>- An emergency response plan must be prepared in which water from the northern entrance dam can be pumped into the downstream reach of the Prinseskasteel Stream if dewatering impacts do occur. Should this action be required, outlet points must be fitted with sediment traps to prevent downstream sedimentation.<br>- If necessary, the pump discharge rates must be regulated to prevent erosion in the downstream reach of the stream; and maintain adequate freshwater flows, particularly during the low-flow season.<br>- It must be ensured that downstream flow conditions are maintained at at least at pre-construction levels to preserve existing ecological and hydrological conditions. |

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| | <u>Groundwater Management During Construction:</u><br><br>Should groundwater be encountered during excavation, sub-soil drains and a sump will be installed to keep the excavation dry for the duration of construction. The groundwater will then be pumped out onto the golf course to infiltrate and recharge the groundwater resource. The following mitigation measures are recommended to manage this process responsibly:<br><br>- Ensure that the discharge area (golf course) has sufficient infiltration capacity and does not result in surface ponding or erosion.<br><br>- Install energy dissipation measures at the discharge point to prevent erosion.<br><br>- Manage discharge rates to ensure optimal infiltration and avoid erosion.<br><br>- Sediment traps must be installed at outlet points and accumulated sediment must be suitably reused onsite or disposed of at an offsite facility.<br><br>- Limit the duration and extent of dewatering to the minimum necessary for construction. |
| **Remedial measures** | There are no additional remedial mitigation measures other than those listed above if implemented in full. |
| **Methods of access** | Existing access roads should be used as far as possible. |
| **Period of activity** | Planning, Construction and (limited) Operational Phase |

**MS2 – Operation of the expanded Dam 6 within the 1:100-year floodline of the Prinseskasteel Stream**

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| **Description of activity** | **Dam 6 is located within the 1:100 years floodline of the Prinseskasteel Stream** |
| **Actions** | Operation of Dam 6 – storage of water |
| **Impacts of actions** | - Alien invasive encroachment as a result of general disturbance in the area since the construction phase, with re-establishment and spreading during the operational phase<br>- Potential overflow of the dam once full capacity has been reached resulting in the flushing of sediment laden runoff into the downgradient Prinseskasteel Stream<br>- Routine maintenance activities resulting in increased vehicle access, soil disturbance, vegetation trampling and potential downstream sedimentation.<br>Please note: Should desilting be required, the dam will first be drained prior to works being undertaken. |
| **Severity of impacts** | If all mitigation measures are implemented the severity of the impact will be Low |
| **Measures to mitigate the severity of the impacts** | - Implement regular monitoring and removal of invasive alien plants within and around the dam area.<br>- Ensure that all outlet structures are appropriately designed and maintained to prevent erosion at discharge points and associated sedimentation in downstream areas.<br>- Conduct routine inspections of the dam and adjacent freshwater system to identify signs of erosion, sediment build-up, or damage to the dam or associated infrastructure, with particular attention following heavy rainfall events.<br>- Any identified erosion should be promptly remediated, preferably through the re-establishment of vegetation in affected areas. In cases where erosion is significant, appropriate erosion control measures—such as the installation of Reno mattresses or similar stabilisation structures—should be implemented in consultation with a freshwater specialist.<br>- Increased sediment deposition noted within the adjacent Prinseskasteel Stream must be managed with guidance from a freshwater specialist.<br>- Only existing access routes should be utilised during maintenance and monitoring activities to avoid indiscriminate movement of vehicles.<br>- During desilting operations, all removed silt and sediment must be promptly transported off-site to prevent sedimentation or contamination of downstream systems. |

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| | - During desilting activities, temporary silt traps must be installed at outlet points. The silt traps should be inspected and emptied regularly throughout the desilting process to prevent excess sediment from being washed downstream.<br>- Schedule maintenance during dry weather conditions to reduce the risk of sediment runoff and compaction.<br>- Reinstate and stabilise disturbed areas immediately after maintenance using vegetation or biodegradable erosion control materials. |
| **Remedial measures** | There are no additional remedial mitigation measures other than those listed above if implemented in full. |
| **Methods of access** | Existing access roads should be used as far as possible. |
| **Period of activity** | Operational Phase |

**MS3 - Maintenance and repairs of dams associated infrastructure (including pumpstation, pipelines and sprinklers), golf cart tracks and pathways within the regulated area of a watercourse.**

| Description of activity | Maintenance activities within the regulated area of watercourse |
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| **Actions** | Repairs and general maintenance will be periodically required for the dams, golf cart tracks and associated infrastructure within the regulated area of a watercourse.<br>Please note: Should desilting be required the dam will first be drained prior to works being undertaken. |
| **Impacts of actions** | - Soil compaction and disturbance around the dam and associated infrastructure;<br>- Staff operation within the regulated area of a watercourse;<br>- Potential sedimentation of downstream watercourses;<br>- Vegetation degradation and alien invasive proliferation;<br>- Sedimentation of dam water;<br>- Flushing of removed vegetation into downstream habitats;<br>- Maintenance activities within or in close proximity to dams can cause water quality impairment through operation of heavy vehicles (e.g. as result of fuel spills or leakage).<br>- Loss of Biota- Loss of biota as a result of maintenance activities would be likely if large machinery were used for maintenance (e.g. for sediment removal) and if vehicles were required to access the site to remove materials (e.g. sediment). |
| **Severity of impacts** | The severity of the potential impacts associated with the expansion of Dam 6 (Northern Entrance dam) were determined to be 'Low' with application of mitigation measures.<br>The potential impacts pertaining to the proposed Dam 5 (5$^{th}$-Tee) expansion activities were deemed to pose no quantum of risk on any freshwater ecosystems. |
| **Measures to mitigate the severity of the impacts** | - Undertake dam maintenance activities during the dry summer months only.<br>- Only existing roadways should be utilised during maintenance and monitoring activities to avoid indiscriminate movement of vehicles.<br>- Ensure that all vehicles, equipment, machinery and staff remain outside the delineated extent of onsite watercourses. |

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| | - During desilting operations, all removed silt and sediment must be promptly transported off-site to prevent sedimentation or contamination of downstream systems.<br>- During desilting activities, temporary silt traps must be installed at outlet points. The silt traps should be inspected and emptied regularly throughout the desilting process to prevent excess sediment from being washed downstream.<br>- Should repair be required to address seepage, mitigations as per construction activities above are applicable depending upon the location and severity of the seepage/structure failure.<br>- Schedule maintenance during dry weather conditions to reduce the risk of sediment runoff and compaction.<br>- Reinstate and stabilise disturbed areas immediately after maintenance using vegetation.<br>- Should it be necessary to remove excess vegetation within the dams, identify and clearly demarcate one or two designated access points where vegetation removal can preferably be carried out manually by hand.<br>- Ensure appropriate maintenance and refuelling of machinery and the appropriate containment of hazardous substances and chemicals (if required) at least 50m from the nearest watercourse, on a bunded surface. |
| **Remedial measures** | There are no additional remedial mitigation measures other than those listed above if implemented in full. |
| **Methods of access** | Existing access roads should be used as far as possible. |
| **Period of activity** | Operational and Maintenance Phase |

**MS4 - Alien vegetation removal within the regulated area of a watercourse**

| **Description of activity** | **Removal of alien invasive vegetation within the 500m regulated area of a wetland**. |
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| **Actions** | Removal of alien invasive vegetation within the defined work extent:<br>1) Identify alien invasive species;<br>2) Cutting or pulling of target plants, or application of appropriate herbicide (only when absolutely necessary and according to guidelines in Martens et al (2021));<br>3) Treatment of plant remainders with appropriate herbicide or treatment of herbaceous plants that cannot be manually removed (only when absolutely necessary and according to guidelines in Martens et al (2021));<br>4) Removal of plant material from regulated area;<br>5) Follow-up work to prevent regrowth and the production of seed remaining in the soil; and<br>6) Revegetation of areas with indigenous vegetation where necessary<br>Please note: All removal of alien invasive vegetation must be done according to the guidelines outlined in Martens et al (2021). |
| **Impacts of actions** | - Localized habitat disturbance<br>- Soil compaction<br>- Increase erosion potential<br>- Potential increase in sedimentation of watercourses located downslope |
| **Severity of impacts** | If all mitigation measures are implemented the severity of the impact will be Low |
| **Measures to mitigate the severity of the impacts** | - Identify alien plants to be removed.<br>- Avoid trampling or clearing indigenous vegetation<br>- Clear woody alien vegetation according to the described alien vegetation removal methods for each invasive species as provided in the methods and herbicides/biological control recommended on the Working for Water website: http://www.dwaf.gov.za/wfw/.<br>- Where necessary (where vast areas have been cleared) revegetate cleared areas with suitable indigenous vegetation. Planted areas may require irrigation and care for a period following planting. The irrigation requirements will be determined by the season in which planting takes place and the plant species planted. |

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| | Planting of the new vegetation at the start of the wet season can assist in ensuring that the new vegetation is kept wet whilst establishing itself.<br>- Ongoing monitoring and clearing of regrowth of alien plants within these areas will be required.<br>- No cleared material may be stockpiled within 32m from sensitive areas.<br>- All cleared material must either be removed from the site or responsibly utilized onsite.<br>- Dedicated parking area for construction vehicles must be located away from sensitive areas, and drip trays must be located beneath any leaking equipment and lubricant/fuel absorbing media (moss/peat type products) within drip trays must be used to contain spilled material. Leaking equipment must be repaired immediately. |
| **Remedial measures** | There are no additional remedial mitigation measures. |
| **Methods of access** | Existing access roads should be used as far as possible. |
| **Period of activity** | Operational and Maintenance Phase |

# 7. Stormwater Management Plan

The Steenberg golf course is an established development with an existing stormwater management network that effectively manages runoff across the site. The existing system comprises surfaced roadways, kerbs, open channels, drains, and various minor structures that collectively convey runoff to designated discharge points. The proposed enlargement of Dam 5 and Dam 6 will not alter the overall stormwater regime of the site.

For Dam 5, stormwater entering the dam will be discharged via an outlet structure designed to maintain flow into the existing municipal stormwater network as per the current operations. The enlargement of Dam 6 will not result in any increase in stormwater capture, as the contributing catchment area remains small and unchanged. Excavation, construction, and infilling activities will be managed to prevent sediment-laden runoff from entering natural or artificial drainage systems, through the use of silt fences and sediment traps where required.

Energy dissipation and erosion control measures will form part of standard site management practices, ensuring that stormwater runoff is managed in a manner that prevents pollution, maintains site stability, and preserves the integrity of downstream systems.

# 8. Rehabilitation Plan

Project planning has been guided by a preventative approach, with a primary focus on avoiding impacts to nearby watercourses rather than relying on post-construction rehabilitation. No construction activities or vehicle movement will occur within delineated watercourses or within 32m thereof. An exception applies only to the construction of the proposed golf cart track, which will extend partially within the 32m NEMA (ZoR). Disturbance in this area must be strictly confined to the minimum footprint required for the track, and no unnecessary clearing or soil disturbance may occur beyond this defined area.

The key mitigation measure is the clear demarcation of the pre-determined work extent, which includes all contractor laydown areas and stockpile locations. The boundaries of this area must be clearly defined and fenced prior to the commencement of works. All construction activities are to remain strictly within the demarcated footprint, with edge effects carefully managed to prevent any disturbance beyond the approved area. Fencing must allow access only through pre-determined entry points to limit unnecessary movement, control disturbance, and prevent accidental encroachment into sensitive areas.

Wherever possible, existing access routes must be used. If new access routes are unavoidable, these should be established through previously disturbed or degraded areas, avoiding all environmentally sensitive features.

Should any accidental disturbance occur within or adjacent to a watercourse, the affected area will be rehabilitated to restore pre-construction conditions and prevent further degradation. Rehabilitation measures will depend on the nature of the disturbance but may include reshaping, manual ripping of compacted soils, and replanting disturbed zones. These activities must be implemented under the supervision of a suitably qualified ECO.

Upon completion of construction, all temporarily disturbed areas within the defined work extent should be rehabilitated and stabilised. Rehabilitation measures should include:

- Soil preparation and decompaction in areas impacted by construction to restore natural infiltration and soil structure;
- Replanting or re-turfing disturbed areas with suitable grass species or, where appropriate, indigenous vegetation;
- Implementation of erosion and sediment control measures such as gentle regrading or soil stabilisation to prevent sedimentation into nearby watercourses; and
- Removal of all temporary infrastructure, fencing, construction materials, and waste once construction is complete.

Further to this Method Statements have been developed for construction activities related to Section 21 (c) and (i) water use activities (refer to section 6 of this document).

# 9. Water Uses applied for

The application includes the following water uses as detailed in Table 5.

**Table 5: Water Uses Applied for**

| Water use(s) activities | Purpose | Capacity/ Volume ($m^3$, tonnes and/or $m^3$/annum)/ dimension (Area (ha) Length/depth, (m)) | Property Description | Co-ordinates |
|---|---|---|---|---|
| Section 21(a) | | | | |
| *N/A* | | | | |
| Section 21(b) | | | | |
| *Storing water in Dam 5 (5th-Tee Dam) (Expanded)* | *Irrigation* | Additional 24431$m^3$ to result in total volume of 32690$m^3$. | Erf 11193, Constantia | 34° 4'13.69"S 18°25'50.04"E |
| *Storing water in Dam 6 (Northern Entrance Dam) (Expanded)* | *Irrigation* | Additional 17200$m^3$ to result in total volume of 23560$m^3$. | Erf 12379, Constantia | 34° 3'44.71"S 18°25'55.93"E |
| Section 21 (c & i) | | | | |
| Expansion of Dam 5 (5th-Tee Dam) | Storage of irrigation water | 1.59ha | Erf 11193, Constantia | 34° 4'13.69"S 18°25'50.04"E |
| Extension of golf cart tract associated with the expansion of Dam 5 | Golf cart access | ±240m | Erf 11193, Constantia | 34° 4'11.88"S 18°25'48.83"E |
| Expansion of Dam 6 (Northern Entrance Dam) | Storage of irrigation water | 0.98ha | Erf 12379, Constantia | 34° 3'44.71"S 18°25'55.93"E |
| Extension of golf cart tract associated with the expansion of Dam 6 | Gold cart access | ±150m | Erf 12379, Constantia | 34° 3'47.12"S 18°25'53.16"E |
| Section 21 (d) | | | | |
| N/A | | | | |
| Section 21 (e) | | | | |
| Irrigation with water containing treated effluent | Irrigation of the golf course using water that contains treated effluent from the Cape Flats WWTW | ±11.257ha with ±99 235$m^3$/annum | Erf 11193 Constantia | 34° 4'6.02"S 18°25'52.17"E |
| | | ±7.497ha with ±66 089$m^3$/annum | Erf 12379 Constantia | 34° 3'41.89"S 18°25'44.09"E |
| | | ±6.156ha with ±54 268$m^3$/annum | Erf 11039, Constantia | 34° 3'51.73"S 18°25'47.30"E |
| | | ±4.390ha with ±38 700$m^3$/annum | Erf 10984, Constantia | 34° 3'50.19"S 18°25'32.93"E |
| | | ±6.980ha with ±61 532$m^3$/annum | Erf 11111, Constantia | 34° 4'0.95"S 18°25'38.94"E |
| | | ±2.238ha with ±19 729$m^3$/annum | Erf 12378, Constantia | 34° 3'54.86"S 18°25'30.34"E |
| | | ±11.382ha with ±100 337$m^3$/annum | Erf 11072, Constantia | 34° 4'6.53"S 18°25'25.97"E |
| | | ±13.158ha with ±115 994$m^3$/annum | Erf 12380, Constantia | 34° 4'13.26"S 18°25'43.74"E |

| Water use(s) activities | Purpose | Capacity/ Volume ($m^3$, tonnes and/or $m^3$/annum)/ dimension (Area (ha) Length/depth, (m)) | Property Description | Co-ordinates |
|---|---|---|---|---|
| Section 21(g) | | | | |
| N/A | | | | |
| Section 21(f) | | | | |
| N/A | | | | |
| Section 21(h) | | | | |
| N/A | | | | |
| **Section 21(j)** | | | | |
| N/A | | | | |

## 10. Description of the Environment

The development area under evaluation is located within the Breede-Olifants Water Management Area, quaternary catchment G22D. The site is located within a winter rainfall region with a mean annual precipitation of 985mm. The mean annual temperature is 16.2°C. The property forms part of a well-maintained golf estate with associated infrastructure and landscaped greens. Topographically, the site lies on the lower foothills of the Cape Peninsula Mountain Range, gently sloping from southwest to northeast, with gradients ranging between 3–10%, becoming more gradual, 0–3%, towards the northeast.

Surface Water (The Biodiversity Company, September 2025):

According to the Freshwater Sensitivity Screening undertaken by The Biodiversity Company (TBC, September 2025), the following watercourses were field verified within the golf course (Figure 4):

- The Prinseskasteel Stream which traverses through the Steenberg Golf Course.
- Several instream dams including a dam system located at the 12$^{th}$-tee, adjacent to Dam 6.

Through desktop analysis, the Freshwater Sensitivity Screening (TBC, September 2025) also identified several additional watercourses, located outside the boundaries of the golf course (Figure 4):

- The unchannelled valley bottom (UVB) wetland reach of the Prinseskasteel Stream, North of the Steenberg Golf Course;
- The UVB wetland reach, and a channelled valley bottom (CVB) wetland reach of the Westlake River, southeast of the Steenberg Golf Course; and
- The Keysers River into which the Prinseskasteel Stream drains (not shown in maps).

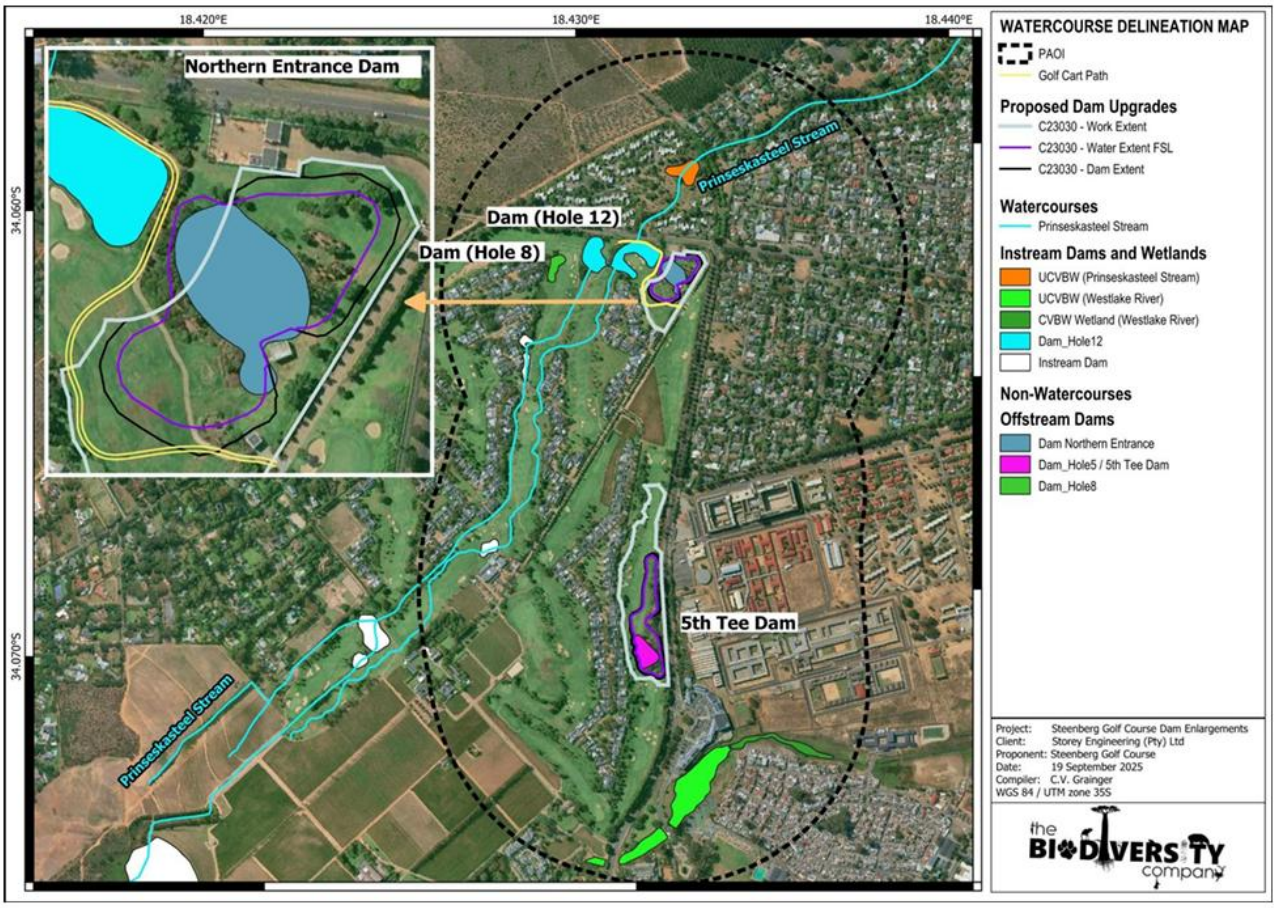


**Figure 4: Watercourse identification in relation to the proposed dam enlargements and the Project Area of Influence (PAOI) (TBC, September 2025).**

The Freshwater Sensitivity Screening (TBC, September 2025) determined that the Prinseskasteel Stream, its associated in-stream dams situated downslope of the proposed works (notably the Hole 12 Dam), the downstream UVB wetland reach of the Prinseskasteel Stream, and the Keysers River — which receives flow from this system — could potentially be impacted by the proposed development activities. In contrast, the UVB wetland and CVB wetland reaches of the Westlake River, situated southeast and upslope of the Steenberg Golf Course, are unlikely to be impacted and were therefore excluded from further assessment in this report.

The Prinseskasteel Stream is located within the Sand River topographical catchment. The stream and its associated instream dams drain in a north-easterly direction through Steenberg Estate and the Steenberg Golf Club, before passing beneath Tokai Road and continuing northeast through Tokai, where it confluences with the Keysers River.

Within the Steenberg Golf Course, the stream has been formalised and impounded, splitting into two main courses: a western, open grassed channel and an eastern landscaped, boulder-lined bed with a sparse distribution of restios and rushes (Figure 5). The system includes several instream impoundments, notably the dam at Hole 12. The dam at Hole 12 and the other instream impoundments are classified as highly modified reaches of the Prinseskasteel Stream, reflecting significant alteration of the natural bed and banks.

The reach of the Prinseskasteel Stream within the Steenberg Golf Course has been fully formalised, resulting in the absence of a natural riparian zone. The channel itself comprises a landscaped instream habitat with a grassed bed interspersed with sedges and restios, while the area that would have supported riparian vegetation now forms part of the maintained golf course grounds, which are regularly mowed (Figure 5). Downstream of Tokai Road, however, the stream regains a more natural riparian zone.

The Present Ecological Status (PES) of the Prinseskasteel Stream within the golf course is Class E (Seriously Modified) due to channelisation, habitat loss, and impoundments. Downstream of Tokai Road, the stream improves to Class D (Largely Modified), with an Ecological Importance and Sensitivity (EIS) rating of Moderate. From the freshwater specialist's knowledge, the Prinseskasteel Stream and other tributaries of the Keysers River historically functioned as valley-bottom wetland systems with diffuse flow and no distinct riparian zones (TBC, September 2025). Urbanisation and agricultural activities have since transformed these systems into concentrated fluvial channels, often lacking taller vegetation that would naturally slow and regulate flows. Under the current conditions, the flow, after exiting the various instream impoundments is effectively escalated into the next impoundment, meaning collectively that this stream is designed to be “dry”, and contain water only in its impoundments.

The water quality of the flowing reaches of the Prinseskasteel Stream is expected to be fair, with estimated values of pH 6.5–8.5, electrical conductivity <80mS/m, and dissolved oxygen around 6mg/L. Within the impoundments (e.g., Hole 12), electrical conductivity may be slightly elevated and dissolved oxygen slightly depleted, consistent with standing water systems. Turbidity is expected to increase seasonally during winter, when upstream dams overtop and mobilise sediments. It should be noted that on-site water quality measurements were not undertaken as this fell outside the scope of the freshwater field verification.

Although the ecological sensitivity of the stream within the golf course is low due to complete formalisation, it remains functionally important for flow regulation within the Keysers River system. The Prinseskasteel Stream is a tributary of the Keysers River, which ultimately drains into the Zandvlei Estuary, a proclaimed Nature Reserve, and further into the Table Mountain National Park Marine Protected Area at Muizenberg Beach.

The Keysers River receives flow from several tributaries, including the Prinseskasteel Stream. The PES of the Keysers River has been qualitatively assessed as Class D (Largely Modified). This condition reflects extensive transformation of its catchment due to urban and agricultural land uses, as well as multiple road and street crossings that have altered natural flow regimes and geomorphological processes. Despite its modified condition, the EIS of the Keysers River is considered High, owing to its larger catchment size compared to the Prinseskasteel Stream, its transition to an unchannelled valley bottom wetland where flows lose confinement, and its functional contribution to the Zandvlei Estuary in Muizenberg.


**Figure 5: Photographs of onsite dams and the Prinseskasteel Stream (TBC, September 2025)**

# 11. Impacts and mitigation measures

The potential risks and associated mitigation measures that are expected from the proposed development activities, as identified within the Freshwater Sensitivity Screening (TBC, September 2025) are presented in Table 6 below. The activities associated with the 5th Tee Dam were not assessed in the risk assessment matrix, considering that this dam is not associated with any proximate downstream watercourses, and therefore no quantum of risk to freshwater infrastructure is envisaged (TBC, September 2025). Only the activities pertaining to Dam 6 (Northern Entrance Dam) were assessed.

**Table 6: Summary of impacts and mitigation measures associated with the expansion of Dam 6 (Northern Entrance / Freshwater Dam) and its associated golf cart track within the Steenberg Golf Course (TBC, September 2025).**

| Phase | Activity | Impact | Potentially affected watercourses | Mitigation Measures | Risk Rating after mitigation |
|---|---|---|---|---|---|
| CONSTRUCTION | Lawn to be lifted and stockpiled in preparation for subsequent excavation activities (Northern Entrance Dam) | Stockpiles are substrates on which alien and invasive vegetation inhabit and spread to other terrestrial and watercourse areas | Prinseskasteel Stream (downstream reach) & Keysers River | - All dam enlargement activities will be planned outside the 32m NEMA Zone of Regulation of the Prinseskasteel Stream, this in itself is considered mitigation to prevent any potential impacts to the ecological integrity of this system.<br>- The stockpiled lawn that was lifted and removed to enable dam enlargement must be closely monitored to not become a habitat for the establishment of alien and invasive vegetation that could disburse to other areas, including the downstream reach of the Prinseskasteel Stream, outside the Steenberg Golf Course. The same is true for the laydown of construction materials. Best practice to avoid the establishment and spread of alien and invasive vegetation is to temporarily cover the stockpile with hessian sheeting or geotextile. This should isolate the stockpile from foreign seed but still allow sunlight to penetrate the grass in efforts to keep it alive for the duration of the excavation and backfill activities.<br>- Sediment control measures such as sandbags or a sediment drift fence must be put in place to ensure that sediment does not enter into the Prinseskasteel Stream (irrespective of the potentially affected reach being impounded). This is especially relevant at the northern entrance dam whose enlargement area is upgradient of the impounded reach of the Prinseskasteel Stream. The dam enlargement activities are proposed during the dry summer months, which will decrease the number of surface runoff days during construction.<br><br>There is a small probability that the northern entrance dam is hydraulically connected to the impounded | **LOW** |
| | Laydown of construction materials (Northern Entrance Dam) | Laydown areas can become areas of disturbance which promotes the encroachment and establishment of alien and invasive vegetation which could spread into watercourses. Laydown areas can also impede and/or divert surface water away from its intended downstream reaches | Prinseskasteel Stream (downstream reach) & Keysers River | | **LOW** |
| | Earthworks for the excavation of the dam (Northern Entrance Dam) | Operation of machinery may cause potential contamination of the associated watercourses as a result of hydrocarbon contaminant spills and associated runoff into watercourses during vehicular and machinery operation | Prinseskasteel Stream (downstream reach) & Keysers River | | **LOW** |
| | | Stockpiled earthworks material may become a substrate on which alien and invasive vegetation may establish and spread into watercourses | Prinseskasteel Stream (downstream reach) & Keysers River | | **LOW** |
| | | Potential sedimentation of the receiving watercourses from the generated sediment laden surface runoff during rainfall events as a result of the earthworks activities | Prinseskasteel Stream (downstream reach) & Keysers River | | |
| | | Increased sedimentation of the watercourses may provide areas of substrate which encourages the encroachment and establishment of alien and invasive vegetation, which may then spread to other areas in this watercourse | Prinseskasteel Stream (downstream reach) & Keysers River | | **LOW** |

| Phase | Activity | Impact | Potentially affected watercourses | Mitigation Measures | Risk Rating after mitigation |
|---|---|---|---|---|---|
| | | Increased likelihood of the dewatering of the Prinseskasteel Stream via two mechanisms:<br><br>Mechanism 1: Via dewatering of the impounded reach of the Princessvlei Stream (Hole 12) into the newly excavated area of the northern entrance dam which may attract water from adjacent areas due to the new casm that is created.<br><br>Mechanism 2: Via dewatering of the impounded reach of the Princessvlei Stream (Hole 12) due to groundwater abstraction from the northern entrance dam, which may lower the groundwater level in Hole 12 which is positioned in the Prinseskasteel Stream. This would essentially cause increased hydrologically stress on the downstream receiving reach of the Prinseskasteel Stream in terms of increased desiccation of aquatic habitat and increased zero flow days. The decrease in water delivered via the Prinseskasteel Stream into the Keysers River is also considered here. | | section of the Prinseskasteel Stream. If this is the case, then dewatering of the northern entrance dam may cause lateral movement of water from the Prinseskasteel Stream impoundment into the northern entrance. Another form of hydraulic connection is via the groundwater table, whereby dewatering of the northern entrance dam may cause an associated decrease in groundwater levels underlying the Prinseskasteel system. This could lower the dam level to an elevation which is below the dam outlet, which would then dewater the downstream reach of the Prinseskasteel Stream which flows through the suburbs of Tokai, on route to the Keysers River. | **LOW** |
| | Earthworks for the excavation of the dam (Northern Entrance Dam) | | Prinseskasteel Stream (downstream reach) & Keysers River | - It is suggested that the water levels of the impounded reach of the Prinseskasteel Stream be monitored, and an emergency plan already be in place, to pump stream water that has been collected in the northern entrance dam into the downstream reach of the Prinseskasteel Stream.<br>- Should this measure be required, silt traps must be installed at outflow points to prevent sedimentation of the Prinseskasteel Stream.<br>- The pump rate would need to both ensure that erosion to the downstream reach of the Prinseskasteel Stream is avoided and that the assurance of freshwater flows is preserved. This is especially critical during the low flow season when watercourses and associated biota are already under the most stress;<br>- While it is acknowledged that the hydrological signature of the Prinseskasteel Stream has already been completely modified, the contractor must simply ensure, that whatever flows the downstream reach of the Prinseskasteel Stream typically received pre-construction, are preserved. | **LOW** |

| Phase | Activity | Impact | Potentially affected watercourses | Mitigation Measures | Risk Rating after mitigation |
|---|---|---|---|---|---|
| | Concrete works for the construction of the dam perimeter (Northern Entrance Dam) | Concrete is highly toxic to aquatic life and has an alkaline pH which is above the natural signature of river systems in the region | Prinseskasteel Stream (downstream reach) & Keysers River | - The concrete works for the construction of the dam perimeter must take place with caution according to the following guidelines:<br>o Ready mix concrete is preferred over batching concrete on site as this minimising the handling of concrete on site, and thereby the potential for environmental spillage;<br>o Mixing of fresh concrete must be done within a construction camp, at least 32m away from watercourses, on a batter board/platform mixing tray, else within a lined, bound or bunded portable mixer. No mixing on bare ground is permitted;<br>o Cement bags must be disposed of in demarcated hazardous waste receptacles;<br>o Spilled or excess concrete must be disposed of at a suitable landfill site; and<br>o A washout area must be designated outside of the delineated extent of watercourses and wash water must be treated on site or discharged to a suitable landfill site. Chain of custody documentation in this regard is required. | |
| **CONSTRUCTION** | Layerworks for the construction of the golf cart track (Northern Entrance Dam) | Overuse of herbicide that is used to prohibit regrowth and penetration of vegetation through the overlying imported foreign material which could contaminate the watercourse and negatively impact indigenous vegetation and aquatic biota | Prinseskasteel Stream (downstream reach) & Keysers River | - Removed grass stockpiles must be protected from becoming sources of alien and invasive vegetation, by being protected with hessian sheeting or geotextile that permits sunlight, but prohibits alien seed from contacting the stockpile; and<br>- It is imperative that the surface layers/wearing layers of the newly constructed golf cart track be constructed during the summer dry season, to avoid the potential for the runoff of highly toxic | **LOW** |
| | | Pouring of asphalt and spraying of the road sealant which is highly toxic to aquatic life should this enter into the watercourse. This includes the use of concrete as part of the layerworks. | Prinseskasteel Stream (downstream reach) & Keysers River | | **LOW** |

| Phase | Activity | Impact | Potentially affected watercourses | Mitigation Measures | Risk Rating after mitigation |
|---|---|---|---|---|---|
| | | Compaction of foreign material that could contain alien seeds and introduce alien invasive vegetation to the watercourses | Prinseskasteel Stream (downstream reach) & Keysers River | substances such as concrete or asphalt into the stream. This is also true for herbicides that are used to prohibit regrowth and penetration of vegetation through the overlying imported material. | **LOW** |
| | | | | | |
| **OPERATION** | Operation of the proposed dams (Northern Entrance Dam) | Alien invasive encroachment as a result of general disturbance in the area since the construction phase, with re-establishment and spreading during the operational phase | Prinseskasteel Stream (downstream reach) & Keysers River | - Monitor the area for signs of alien invasive encroachment. Remove as detected. | **LOW** |

# 12. Water demand and water supply Analysis

## 12.1. Water Demand

The Steenberg Golf Course requires irrigation to maintain its greens, tees, fairways, and roughs. The total irrigated area comprises approximately 65.22ha across the golf course.

**Table 7: Overall irrigation water demand**

| Water use | Irrigation area (ha) | Crop Demand (mm/week) | Irrigation demand ($m^3$/annum)* |
|---|---|---|---|
| Greens & Tees | 2.164 | 80 | 88 001 |
| Fairway | 15.626 | 34 | 243 881 |
| Rough | 47.432 | 22 | 410 602 |
| **Total demand** | | | **742 484** |

*Accounting for sprinkler effectiveness

## 12.2. Water supply analysis

Irrigation water is sourced from on-site dams that store surface runoff and borehole water from within the Existing Lawful Uses confirmed for the site as well as treated effluent purchased from the City of Cape Town. The existing lawful water uses confirmed under Section 25(4) of the National Water Act for the Steenberg Golf Course is presented in Table 1. The overall water supply available for irrigation of the Steenberg Golf Course is presented in Table 8 below.

While the CoCT has the capacity to supply larger volumes of treated effluent than are currently being utilised, the irrigation demand varies seasonally in response to rainfall patterns. In addition, the golf course is actively working to promote on-site water resilience. Consequently, the volumes reflected in Table 8 represent the current operational demand and the amounts presently being pumped to the Steenberg dams, rather than the maximum volume available under the agreement with CoCT.

**Table 8: Overall Golf Course Irrigation Water Supply**

| Water Source | Supply Volume ($m^3$/annum) |
|---|---|
| ELU Surface Water (Industry: Urban) | 103 433 |
| ELU Ground Water (Industry: Urban) | 83 166 |
| Treated Effluent | 579 093 |
| **Total** | **765 692** |

# 13. Water Balance

**Table 9: Overall Water Balance**

| **Water In** | | **Water Out** | | **Balance** | **Comment** |
|---|---|---|---|---|---|
| **Water Stream** | **Quantity** | **Water Stream** | **Quantity** | | |
| ELU Surface Water (Industry)<br>ELU Groundwater<br>Treated Effluent | 103 433<br>83 166<br>579 093 | **Water In** | **765 692** | **765 692** | |
| | | Irrigation of Greens & Tees | 88 001 | 677 691 | |
| | | Irrigation of Fairways | 243 881 | 433 810 | |
| | | Irrigation of Roughs | 410 602 | 23 208 | |
| | | Evaporation from dams | 23 163 | 45 | |
| **Total** | **765 692** | **Total** | **765 547** | **45** | Adequate |

# 14. Water quality

The Steenberg Golf Course utilises a combination of surface water and groundwater sources within its ELU allocation (refer to Table 1), supplemented by treated effluent purchased from the City of Cape Town's Cape Flats Wastewater Treatment Works for irrigation purposes.

Routine monitoring of the Cape Flats Wastewater Treatment Work's feed to the Steenberg Pump Station, which supplies irrigation water to the golf course, is undertaken by a SANAS-accredited laboratory. The key parameters assessed include pH, Electrical Conductivity (EC), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Ammonia, Nitrate, Orthophosphate, Chloride, and Alkalinity. Over the monitoring period from June to July 2025, pH values ranged from 7.3 to 7.6, indicating stable conditions well within the optimal range for irrigation water (DWAF, 1996). Electrical Conductivity ranged from 88 to 111mS/m, which is within the acceptable range for industrial and turf irrigation, suggesting low salinity risk and minimal likelihood of soil or turf stress (DWAF, 1996; WRC, 2017). Total Suspended Solids concentrations varied between 11 and 37mg/L, representing a low particulate load and thus a negligible risk of clogging in drip or sprinkler systems.

Chemical Oxygen Demand (COD) measured between 128 and 243mg/L during July, indicating a moderate concentration of organic and oxidisable material. Ammonia levels were also relatively high, ranging from 26.6 to 38.5mg N/L, suggesting nutrient enrichment within the supply. These levels require continued monitoring to prevent biofouling in irrigation infrastructure. In contrast, Nitrate concentrations were very low (<0.1–0.3mg N/L), indicating limited nitrification and low immediate risk to vegetation. Orthophosphate concentrations ranged from 3.2 to 6.1mg P/L, which is moderately elevated and may encourage algae or biofilm development in storage ponds or closed irrigation systems. Routine inspection and maintenance of filters and pipelines are therefore recommended to manage potential biofouling.

Chloride concentrations ranged from 105 to 117mg/L, which falls within safe limits for most turfgrass and industrial irrigation applications, posing no expected toxicity or salinity risk (DWAF, 1996). Alkalinity levels ranged from 231 to 299mg $CaCO_3$/L. Elevated alkalinity can contribute to scale formation, reduce irrigation efficiency, and affect emitter performance over time; thus, regular system maintenance is recommended to mitigate these risks.

Overall, the Cape Flats feed water quality during June–July 2025 is considered suitable for the intended irrigation use. Core physico-chemical indicators such as pH, EC, TSS, and chloride fall within the favourable ranges specified by the South African Water Quality Guidelines for Agricultural Use – Irrigation (DWAF, 1996). Moderate levels of COD, ammonia, orthophosphate, and alkalinity indicate the presence of organic and nutrient loads that, while not immediately detrimental, warrant continued vigilance to prevent potential long-term operational issues such as scaling, emitter clogging, or biofilm formation.

Although treated effluent is purchased from the City of Cape Town, it is not used directly for irrigation. Prior to application, the treated effluent is mixed with surface water from within the golf course's ELU allocation within the dams on site. A Routine Water Quality Monitoring Report, compiled by Alternate Water Solutions in June 2025, assessed the quality of water stored in the main irrigation dam. At the time of the June 2025 sampling, however, no new treated effluent had been pumped to the irrigation system for some time due to the high winter rainfall.

The testing results indicated that both pH and EC values were within acceptable limits, and the redox potential of the dam water sample indicated that the water was not anaerobic. The COD ranged between 28 and 35mg/L, significantly lower than that of the treated effluent supply. Similarly, alkalinity values were much lower than those recorded in the treated effluent, however the water is still considered well buffered. Hydrogen sulphide was not detected in the sample.

The E. coli count measured in the irrigation dam was 40 000 CFU/100mL. According to the South African Water Quality Guidelines for Agricultural Use – Irrigation (DWAF, 1996), water with E. coli counts exceeding 1 000 CFU/100mL may be used for irrigation of fodder crops, nurseries, tree plantations, and parks, provided the water quality is equivalent to or better than primary or secondary treated wastewater and no direct human contact occurs. The golf course is irrigated at night which minimizes the potential for human exposure.

In comparison to the treated effluent, ammonium and phosphate concentrations in the dam water were substantially reduced, while nitrate concentrations remained low. Chloride and sulphate levels were within acceptable ranges for irrigation use, although the presence of some sulphate suggests the potential for bacterial sulphate reduction under anaerobic conditions (Alternate Water Solutions, June 2025).

Irrigation Management Practices:

Irrigation across the golf course is carefully managed as a technical component of the facility's environmental and turf management programme. The course is irrigated at night to minimise

evaporation losses and to avoid potential for human exposure to spray. Irrigation scheduling is informed by specialist input and based on site-specific soil and turf requirements, ensuring that water is applied to meet plant needs without exceeding infiltration capacity. The system ensures that water infiltrates only as deep as the root zone, preventing both surface runoff and unnecessary percolation below the roots. Irrigation is typically applied on a needs basis and prevailing weather and soil moisture conditions.

## 15. Public participation

As per Regulation 267 published on 24 March 2017 (Government Gazette 40713) public participation must be conducted as part of the water use licence application process. The technical documentation and specialist reports will be placed out for comment for a period of 60 days, excluding the period from 15 December to 5 January, as per Government Gazette 40713 of March 2017. This process will include:

- Interested and Affected Parties (I&APs) will be identified throughout the process
- Notification letters will be emailed to identified I&APs and Homeowners Associations (HOAs) informing them of the activity and the opportunity to comment. Landowners and HOA's will be requested to inform all those residing on their properties of the application and the opportunity to comment.
- An English advertisement will be placed in a Local Newspaper – the Constantiaberg Bulletin.
- Site notices in English will be placed at each of the two entrances to the Steenberg Golf Course
- The WULA Summary Report and associated technical documentation will be made available on the PHS website;
- Where requested, the documentation will be made available through WeTransfer;
- A comments and response report will be compiled.

**Table 10: Outcome of the public participation**

| Person who commented | Comments (support/ object/ concerns) | Reasons for objections / concerns | Applicant's response to the objection/concerns |
|---|---|---|---|
| To be completed after 60-day PPP has been undertaken. | | | |

## 16. Inputs/Authorisations from other Departments /Stakeholders

- A Validation and Verification process was undertaken through DWS to confirm the Existing Lawful Use (ELU) of existing abstraction and storage rights for the properties that comprise the Steenberg Golf Course. This process was completed in January 2024.The outcome of the V&V process is presented in Table 1 of this report.
- An applicability checklist in terms of the National Environmental Management Act (NEMA) was submitted to the Department of Environmental Affairs and Development Planning (DEA&DP) on the 6th of May 2025. Feedback from DEA&DP dated 23 June 2025 confirmed that the proposed development does not require environmental authorisation.

## 17. Section 27 Motivation

The requirements contained in Section 27(1) of the National Water Act, 1998 (Act 36 of 1998) have been considered and are discussed further below.

### a) Existing lawful water uses

An existing lawful water use (ELU) is a water use that lawfully took place in the period two years before the commencement of the NWA. This allows any water use that lawfully took place to continue until such time as it can be converted into a Licence.

The Steenberg Golf Course spans several properties namely Erf 11193, Erf 12379, Erf 11039, Erf 10984, Erf 11111, Erf 12378, Erf 11072, and Erf 12380, in Constantia. A validation and verification process was undertaken in 2023 to confirm ELUs on each of these properties. Several ELUs were verified through this process as summarised in Table 1 of this report.

The applicant proposes to increase the onsite water storage capacity of two existing off-stream dams, namely Dam 5 (the 5th-Tee Dam) located on Erf 11193, Constantia, and Dam 6 (the Northern Entrance Dam) located on Erf 12379, Constantia. Both dams were operational during the ELU qualifying period (1996–1998) and have since been confirmed as Existing Lawful Uses (ELUs) in terms of the NWA.

Dam 5 (5th-Tee Dam) is proposed to be enlarged from 8 259m³ (ELU volume) to 32 690m³, while Dam 6 (Freshwater Dam) is proposed to be enlarged from 6 360m³ (ELU volume) to 23 560m³. Following the enlargements, the total storage capacity for these erven will be:

- Erf 11193: 32 690m³
- Erf 12379: 42 231m³

In addition, the applicant will continue to supplement the golf course irrigation supply with treated municipal effluent from the City of Cape Town. This activity constitutes a Section 21(e) water use under the NWA and has been in place from the qualifying period. As Section 21(e) uses cannot qualify as ELUs, this activity forms part of the current WULA application.

### b) Need to redress the results of past racial and gender discrimination

The landowner is Steenberg Estate Property Company (Pty) Ltd a South African registered private company. Steenberg Estate Property Company is a 100% subsidiary of Steenberg Homeowners Association Non-Profit Company (SHOA) and is controlled by the Trustees of SHOA who are elected by the homeowners. A non-profit company has no shareholders but the homeowners exercise voting rights. Ownership is spread across 225 homes on the estate.

Neither Steenberg Estate Property Company nor SHOA are BBBEE certified. The issue arises because ownership is a key component of BBBEE verification, and the structure of SEPC/SHOA

makes standard certification difficult—a challenge confirmed by multiple consultants. Both entities also do not qualify as Exempted Micro Enterprises (EMEs) under current BBBEE regulations.

The proposed water use activities (enlargement of Dam 5 and Dam 6, and irrigation with treated effluent) will be undertaken on land owned by Steenberg Estate Property Company.

While the project does not directly contribute to redressing historical racial or gender inequities through ownership or profit-sharing, the proposed development will facilitate the sustainable operation of the Steenberg Estate Golf Course. The golf course is an important recreational and tourism asset that supports local economic activity, particularly in the hospitality, tourism, and service industries, where employment opportunities for HDIs and women are significant. By ensuring water security through additional storage and the use of treated effluent, the proposed development safeguards the ongoing operation of the golf course, thereby indirectly sustaining and creating jobs that benefit historically disadvantaged individuals in surrounding communities.

In addition, the construction and development phase of the project will generate further social and economic benefits through the creation of business and employment opportunities within the local economy. Many of these opportunities are expected to benefit local historically disadvantaged members of the community, particularly within the building and construction sector. The development phase may also engage local contractors, equipment suppliers, and maintenance service providers, thereby providing indirect economic benefits to HDI-owned businesses. This potential to create employment and support local enterprises is regarded as a meaningful social benefit of the proposed development.

**c) Efficient and beneficial use of water in the public interest**

The proposed WULA relates to the S21(b) enlargement of two off-stream dams situated within the Steenberg Golf Course. The project also involves the development of a new golf cart track next to the expanded freshwater dam to connect with the existing track, replacing the section lost to the dam enlargement. As both dams are located within the regulated areas of delineated watercourses, the project also triggers Section 21(c) and 21(i) water uses in terms of the NWA. In addition, the golf course supplements its irrigation supply with treated municipal effluent from the CoCT, which constitutes a Section 21(e) water use.

The primary purpose of the proposed development is to increase onsite water storage capacity to optimise the use of existing lawful allocations. Enlarging the dams will enable greater storage during periods of availability, provide resilience during drought conditions, and secure irrigation supply during interruptions in CoCT effluent provision. Importantly, the enlarged capacity will not lead to additional abstraction, as the dams will store only water within the verified ELU allocations, along with treated effluent in the 5$^{th}$ Tee dam.

The proposed development will also play a critical role in facilitating the ongoing functioning of the Steenberg Golf Course, which is an important recreational, tourism, and hospitality asset in the region. The golf course contributes significantly to local and regional economic activity, including job

creation within the estate itself and in linked sectors such as tourism, catering, maintenance, and landscaping services. Many of these opportunities are accessible to Historically Disadvantaged Individuals (HDIs), particularly in service and operational roles. Ensuring a secure and sustainable water supply for the golf course therefore helps to sustain these indirect socio-economic benefits, while reducing reliance on freshwater and potable water resources.

In addition, during the development phase, the project is expected to generate direct and indirect benefits through the creation of employment and service provision opportunities, particularly in the building and construction sector. Local contractors, equipment suppliers, and maintenance service providers are likely to be engaged, creating further opportunities for HDIs and HDI-owned businesses. Together, these factors highlight the project's contribution to both sustaining long-term economic activity and generating short-term socio-economic benefits in the local context.

The proposed enlargements are not expected to place aquatic or associated ecosystems at risk. Although the dams are situated within the regulated areas of delineated watercourses, the freshwater risk assessment conducted by The Biodiversity Company concluded that, with appropriate mitigation measures in place, the proposed development poses a Low Risk to nearby watercourses. No downstream users or communities will be deprived of access to water as the project does not involve additional abstraction.

In terms of water conservation and efficiency, the Steenberg Golf Course already applies a water conservation demand management approach through the integration of treated municipal effluent into its irrigation system. This practice reduces reliance on freshwater resources and helps ensure the efficient use of available supplies. Irrigation is undertaken using standard golf course irrigation methods. The use of treated effluent is diluted with other water streams before use.

Overall, the project represents an efficient and beneficial use of water in the public interest. It enhances water security and resilience for the golf course, sustains its role as a regional economic contributor, supports local economic development and job creation, and ensures that environmental risks are effectively managed, mitigated and kept to a low level.

**d) Socio-economic impact –**

**i) Of water use or uses if authorised:**

The proposed development will not involve permanent alteration of river channels. All construction activities will take place within already modified areas of the golf course and outside of active watercourse beds. Standard environmental management measures will be implemented to minimise potential impacts, including the containment of runoff, erosion control, and careful timing of works to avoid the rainy season. These measures ensure that the integrity of surrounding water resources is maintained throughout the construction process.

The water use does not entail a new taking but merely storage of an existing taking to improve the landowner's ability to irrigate during interruptions in CoCT effluent provision and drier periods of the

year. This will enable a more drought resilient and sustainable development with security of water supply.

At a local level, the project will generate socio-economic benefits primarily through the creation of temporary employment opportunities during the construction phase. Local contractors, labourers, and small service providers are likely to be engaged, creating opportunities for HDIs to participate in the building and construction process. Indirect benefits are also expected through local procurement of materials, equipment, and services, stimulating the local economy.

At a regional level, the project supports the continued operation and sustainability of the Steenberg Golf Course, which plays an important role in the tourism, hospitality, and recreation sectors of the Western Cape. The golf course attracts visitors, supports hospitality services, and contributes to the broader service economy. Ensuring reliable irrigation water through these water uses will help sustain employment at the facility and in associated industries.

Although modest in scale relative to national planning objectives, the project aligns with South Africa's broader socio-economic goals by supporting economic development, job creation, and sustainable use of water resources. The maintenance of a high-profile recreational and tourism facility such as Steenberg contributes indirectly to the national economy and the country's reputation as a tourist destination.

The activity will create an estimated 30 temporary employment position during the construction phase which is expected to last for 5 months.

**Table 11: Direct and indirect Job opportunities**

| Job Opportunities | Number of Job Opportunities | Type of employment | Affected sectors of the economy |
|---|---|---|---|
| *Direct* | ±30 | *Temporary* | *Construction* |
| *Indirect* | *Not estimated at this time* | *Temporary* | |
| **TOTAL** | **±30** | | |

**ii) Of the failure to authorise water use or uses:**

Should the licence not be granted, the socio-economic opportunities outlined in Section d(i) above would not materialise, resulting in a loss of potential short-term employment and local economic activity. While the project is not of a scale that would sustain long-term direct employment on a large scale, it nonetheless provides valuable short-term opportunities for income generation, skills development, and local procurement.

At the operational level, the proposed water uses are critical to supporting the continued functioning and sustainability of the Steenberg Golf Course, which contributes to the regional economy through tourism, recreation, hospitality, and associated service industries. If the licence were to be refused, the golf course would have limited ability to secure reliable irrigation water during periods of drought or interruptions to the supply of treated municipal effluent from the City of Cape Town. In such

scenarios, without adequate on-site storage capacity, the course may experience water shortages that could affect the quality of the facility, undermine its viability, and reduce its attractiveness to members, visitors, and tourists. This in turn would have broader knock-on effects on the local service economy and on employment associated with course operations, maintenance, catering, and tourism-linked activities.

In this context, the authorisation of the proposed water uses is considered strategically important for maintaining the water resilience of the golf course and sustaining its contribution to the regional economy. By ensuring secure irrigation supply, even under drought or supply interruption conditions, the development reduces risks to local economic activity and employment, while remaining aligned with national objectives for sustainable and efficient water resource use.

**e) Any catchment management strategy applicable to the relevant water resource**

The Department of Water and Sanitation (DWS) previously divided the country into 19 Water Management Areas (WMAs), each containing a large river system. The proposed development is located in what used to be the Berg and later the Berg-Olifants Water Management Area (WMA) (WRC, 2017). The Berg-Olifants WMA was administered by the Department of Water and Sanitation (DWS). As of 2023 the development properties are now located within the Breede-Olifants WMA and is administered by proto-CMA officials.

In 2017 the GreenCape Sector Development Agency prepared a report for the Water Research Commission and the Western Cape Government on “Managing Water as a Constraint to Development with Decision-Support Tools That Promote Integrated Planning: The Case of the Berg Water Management Area”. The report emphasises the growing pressures on water resources arising from climate change, population growth, and urbanisation, while recognising that economic growth remains essential for reducing poverty and inequality (WRC, 2017). The report highlights the need to allocate and manage water optimally to meet human needs, sustain ecological systems, and support economic growth. (WRC, 2017). The WRC report highlights the interdependency between economic development and water resources, which must be carefully considered in planning and management decisions.

The proposed development is aligned with the principles of catchment management as identified in the GreenCape report. Importantly, the project does not entail any new abstraction of water but instead increases on-site storage capacity for existing lawful allocations. By doing so, it enhances the efficiency and reliability of water use, particularly during periods of drought or interruptions in supply. This approach contributes to greater resilience in the face of climate variability and supports the sustainable use of available water resources.

Furthermore, the development demonstrates proactive measures to minimise pressure on freshwater systems by supplementing irrigation with treated municipal effluent from the City of Cape Town. This practice directly supports water conservation and reuse objectives identified in the GreenCape report, while reducing reliance on potable water supplies. In this way, the project reflects

a commitment to integrated and sustainable water resource management in line with catchment-level strategies.

Overall, the proposed development is consistent with the priorities highlighted in the 2017 GreenCape report by promoting water efficiency, resilience to climate-related risks, and sustainable economic activity within the Berg-Olifants catchment.

**f) Likely effect of the water use to be authorized on the water resource and on other water users.**

A freshwater screening study undertaken by The Biodiversity Company (TBC, September 2025) identified several watercourses within the zone of regulation. As the proposed development does not include a new taking, no direct reduction in water availability to other users is anticipated. Potential impacts on water resources are therefore expected to be limited to indirect effects associated with the (c) and (i) water uses within the regulated area. The freshwater screening study determined that Dam 5 (5$^{th}$-tee dam) is not associated with any proximate downstream watercourses, and therefore the activities associated with the expansion of this dam pose no quantum of risk to freshwater infrastructure. The expansion of Dam 6 (Northern Entrance Dam) will however take place within the 100m regulated area and 1:100-year floodline of the Pinseskasteel Stream. As such the following potential impacts to the Prinseskasteel Stream and associated downstream watercourses were identified and assessed within the relevant DWS risk assessment matrix (refer Table 6):

- Stockpiled earthworks material may become a substrate on which alien and invasive vegetation may establish and spread into watercourses
- Laydown areas can become areas of disturbance which promotes the encroachment and establishment of alien and invasive vegetation which could spread into watercourses. Laydown areas can also impede and/or divert surface water away from its intended downstream reaches
- Operation of machinery may cause potential contamination of the associated watercourses as a result of hydrocarbon contaminant spills and associated runoff into watercourses during vehicular and machinery operation
- Potential sedimentation of the receiving watercourses from the generated sediment laden surface runoff during rainfall events as a result of the earthworks activities
- Increased sedimentation of the watercourses may provide areas of substrate which encourages the encroachment and establishment of alien and invasive vegetation, which may then spread to other areas in this watercourse
- Increased likelihood of the dewatering of the Prinseskasteel Stream via two mechanisms:

- Mechanism 1: Via dewatering of the impounded reach of the Princessvlei Stream (Hole 12) into the newly excavated area of the northern entrance dam which may attract water from adjacent areas due to the new casm that is created
- Mechanism 2: Via dewatering of the impounded reach of the Princessvlei Stream (Hole 12) due to groundwater abstraction from the northern entrance dam, which may lower the groundwater level in Hole 12 which is positioned in the Prinseskasteel Stream

This would essentially cause increased hydrologically stress on the downstream receiving reach of the Prinseskasteel Stream in terms of increased desiccation of aquatic habitat and increased zero flow days. The decrease in water delivered via the Prinseskasteel Stream into the Keysers River is also considered here

- Concrete is highly toxic to aquatic life and has an alkaline pH which is above the natural signature of river systems in the region
- Overuse of herbicide that is used to prohibit regrowth and penetration of vegetation through the overlying imported foreign material which could contaminate the watercourse and negatively impact indigenous vegetation and aquatic biota
- Pouring of asphalt and spraying of the road sealant which is highly toxic to aquatic life should this enter into the watercourse. This includes the use of concrete as part of the layerworks.
- Compaction of foreign material that could contain alien seeds and introduce alien invasive vegetation to the watercourses
- Alien invasive encroachment as a result of general disturbance in the area since the construction phase, with re-establishment and spreading during the operational phase

According to the findings of the Risk Assessment, the identified activities and associated impacts are considered to pose a Low risk to the overall integrity of the watercourses within the study area, provided that all mitigation measures outlined in the Freshwater Screening (TBC, September 2025) are strictly implemented. The Low impacts are based on several factors, such as the watercourse PES, which is used to determine how much of a subject watercourses' ecological integrity can still be lost to development (reflected through activity impact severity ratings), watercourse EIS, and the probability that the activity will indeed cause a negative impact to the freshwater resource.

The potential dewatering of the impoundment (Hole 12 Dam) on the Prinseskasteel Stream, potentially resulting from the dewatering of the Northern Entrance Dam—and which could encourage groundwater ingress from Hole 12 into the Northern Entrance Dam—has also been assessed as Low risk. This conclusion is supported by the following:

- The hydraulic connectivity between the impounded reach of the Prinseskasteel Stream and the Northern Entrance Dam is considered to be low;
- Any potential dewatering would be minimal, as dam construction will occur during the low-flow dry season; and

- An emergency response plan will be implemented, ensuring that water is pumped directly into the downstream reach of the Prinseskasteel Stream at a rate sufficient to maintain a wetted channel and sustain aquatic habitat integrity.

It is however recommended that the water levels in Hole 12 Dam be closely monitored throughout the construction phase and that appropriate interventions be implemented to ensure the continuous conveyance of freshwater to the downstream reaches of the Prinseskasteel Stream.

In addition, alien invasive plant species should be proactively managed, particularly around stockpile areas, to prevent their spread into adjacent watercourses. These recommendations, along with detailed mitigation measures related to stockpiling practices and concrete works, are provided in Sections 6 and 11 of this report.

### g) Class and the resource quality objectives of the water resource

A freshwater screening assessment undertaken by The Biodiversity Company (TBC, September 2025) has confirmed the presence of several watercourses within the regulated area of the proposed dam expansions namely:

- The Prinseskasteel Stream, which traverses the Steenberg Golf Course and lies within 100m northwest of Dam 6 (Northern Entrance Dam);
- The Hole 12 Dam and several other instream dams located along the golf course;
- The UCVB wetland of the Prinseskasteel Stream north of the golf course;
- A UCVBw wetland reach and a CVB wetland reach of the Westlake River southwest of the golf course; and
- The Keysers River, into which the Prinseskasteel Stream ultimately drains.

The off-stream dams located within the golf course are not considered watercourses, as they are artificially maintained using stormwater runoff and borehole water, with no hydrological connectivity to natural riverine or wetland systems (TBC, September 2025).

The freshwater screening determined that only the Prinseskasteel Stream and its associated downstream systems, including the Keysers River, may potentially be affected by the proposed development activities (TBC, September 2025).

The Prinseskasteel Stream is significantly modified by multiple upstream impoundments both within and beyond the Steenberg Golf Course. These impoundments attenuate flow and reduce natural seasonal variability—particularly during early wet-season events, when baseflows are first captured in instream dams before overflowing downstream. The cumulative effect of these impoundments results in a largely regulated hydrological regime, with the stream functioning as a series of impoundments rather than a continuous flowing system.

The instream habitat within the golf course is highly artificial, lacking heterogeneity in substrate (stony, vegetated, and sedimentary elements) and with an absent riparian zone. Consequently, the system provides limited ecological value and supports a low diversity of aquatic fauna and flora. Furthermore, poor vegetative cover along the stream banks reduces frictional resistance, accelerating flows between impoundments and reinforcing a “dry channel” design outside of the dams.

Downstream of Tokai Road, flow operations from the Hole 12 impoundment will be maintained during construction and operation, ensuring that no significant hydrological or ecological impacts are expected on the lower reaches of the Prinseskasteel Stream.

Sediment transport within the Prinseskasteel Stream is largely interrupted by impoundments, which trap sediment and inhibit its downstream conveyance. This results in a sediment imbalance, promoting erosion rather than deposition in downstream reaches, and reducing sediment delivery to the receiving Keysers River.

The riparian zone through the golf course is absent, replaced by a landscaped grass and sedge mosaic. In contrast, the downstream reach of the stream supports more natural riparian vegetation, though this reach is not expected to be affected by the proposed activities.

The PES of the Prinseskasteel Stream within the golf course is rated as Class E (Seriously Modified) due to extensive channel formalisation, loss of natural habitat, and flow regulation by multiple impoundments. The downstream reach below Tokai Road is rated Class D (Largely Modified) and represents the portion assessed for potential impacts.

The Keysers River, which receives flow from the Prinseskasteel Stream, is also classified as PES Class D (Largely Modified) due to catchment transformation from agricultural and urban land use, as well as multiple road crossings that have altered hydrology and geomorphology.

The EIS of the Prinseskasteel Stream downstream of Tokai Road is considered Moderate, reflecting its contribution to local hydrological regulation despite poor in-channel integrity. In contrast, the Keysers River has a High EIS, being a larger and more natural system that transitions into an unchannelled valley bottom wetland and ultimately discharges into the Zandvlei Estuary in Muizenberg.

The proposed enlargement of the Dam 6 would not impact on the social/cultural element that the Prinseskasteel Stream brings, as in the potentially impacted reach, this is based on its aesthetic to Steenberg Golf Course clientele. It is however envisaged that the downstream reach of this stream (through Tokai) is enjoyed by residents and nature enthusiasts of the local area. Ecologically speaking, the Prinseskasteel Stream (within the Steenberg Golf Gourse grounds) is not deemed ecologically sensitive nor ecologically important, as this watercourse has been completely formalised, both from a habitat and hydrological perspective. The stream however does assist with the flow regulation of the receiving Keysers River and therefore is an important triburary of the Keysers, along with the Grootbos River/Prinskasteel River and Spaanschemat Rivers.

No direct water abstraction or alteration of flow is proposed, and therefore no direct impacts on the quantity component of the watercourses are anticipated. Potential impacts are expected to be localised, indirect impacts as a result of development within the regulated area.

**h) Investments already made and to be made by the water user in respect of the water use in question**

The total capital investment for constructing the dams is estimated at approximately R30 million, inclusive of all associated costs.

**i) Strategic importance of the water use to be authorised**

The authorisation of the proposed water use is strategically important from both an economic and sustainability perspective. The development entails enlarging two existing off-stream dams at the Steenberg Golf Course to increase irrigation water storage, while continuing to supplement irrigation with treated municipal effluent. This reduces reliance on potable water and freshwater resources. By providing additional storage, the project enhances water security during dry summer months and temporary interruptions in effluent supply, allowing more efficient use of existing lawful allocations and supporting a drought-resilient, sustainable operation.

According to the National Water Resources Strategy the latest Water Sector Priority Focus Areas 2020 to 2030 are:

- Reducing water demand and increasing supply
- Redistributing water for transformation,
- Managing water and sanitation services under a changing climate,
- Regulating the water and sanitation sector,
- Improving raw water quality,
- Protecting and restoring ecological infrastructure for the green economy,
- Creating effective water sector institutions,
- Promoting international cooperation,
- Building capacity for action,
- Ensuring financial sustainability,
- Managing data and information in line with 4IR and global knowledge,
- Enhancing research, development and innovation,
- Addressing legislative and policy gaps.

The proposed water uses are in line with the following priority focus areas:

1. **Reducing water demand and increasing supply** – The Steenberg Golf Course makes use of treated municipal effluent from CoCT to supplement its irrigation supply, thereby reducing reliance on freshwater, groundwater and potable water resources. The proposed enlargement of the two dams will allow for more efficient storage and management of existing lawful water allocations, maximising water availability during periods of need.

2. **Managing water under a changing climate** – The Western Cape is particularly vulnerable to the impacts of climate change, notably reduced average rainfall and increasing variability in water supply. By providing additional storage, the proposed development will strengthen drought resilience, ensure continued irrigation during dry summer months, and mitigate risks associated with interruptions in CoCT's effluent supply.
3. **Protecting and restoring ecological infrastructure for the green economy** – The dams are off-stream and will not alter flows in the Prinseskasteel Stream. Furthermore, with mitigation measures in place, the ecological risk has been assessed as low by specialists. The use of treated effluent in place of freshwater abstraction reduces pressure on ecological systems while supporting the ongoing operation of the golf course as part of the broader urban green infrastructure.

When considering the contribution of the development to justifiable economic and social development, relevant spatial plans must be taken into account, including Municipal Integrated Development Plans (IDPs), Spatial Development Frameworks (SDFs) and Environmental Management Frameworks (EMFs).

The City of Cape Town IDP prioritises accelerated economic growth as a pathway to poverty alleviation and expanded opportunity. The Steenberg Golf Course contributes to this vision through its role in tourism, recreation, and employment creation. Its long-term sustainability depends on a secure irrigation supply, which the proposed development will help to safeguard. The IDP further emphasises resilience to climate change and resource constraints. By reducing reliance on potable water and improving water security through additional storage and the reuse of treated effluent, the project directly advances this objective.

The City of Cape Town's SDF identifies Inclusive Economic Growth and Balanced Urban Development as two key spatial strategies. As a well-established recreational and tourism facility, the golf course diversifies the local economy, and improved water resilience will ensure its continued contribution as an economic asset. The proposed water use does not compromise food security or ecological integrity, but instead supports the sustainable use of land designated for recreation and open space.

The City of Cape Town's Climate Action Plan (2021) identifies Water Security and Drought Readiness as a strategic focus area. By incorporating treated effluent reuse and enhanced storage capacity, the proposed development contributes directly to the City's goal of building a resilient water supply and advancing water-sensitive urban development.

The City's Environmental Strategy promotes long-term prosperity through sustainable management of natural resources. Desired outcomes include strengthened water conservation, increased wastewater reuse, and the adoption of water-sensitive urban design. The proposed development aligns with these objectives by optimising the reuse of treated effluent, reducing pressure on

freshwater and groundwater resources, and supporting Cape Town's vision of becoming a water-sensitive city.

Furthermore, the proposed property is zoned Open Space 3: Special Open Space. The proposed water use activities are consistent with the approved land use rights and the existing function of the property. The enlargement of the two dams and ongoing irrigation will not change the land use but will instead support the continued sustainable functioning of the golf course as a recreational and economic asset. This is in keeping with the broader regional development objectives of promoting tourism, recreation, and sustainable economic growth within the Western Cape.

### j) The quality of water in the water resource which may be required for the Reserve and for meeting international obligations

The proposed development site falls within two Strategic Water Source Areas (SWSAs): the Table Mountain SWSA for surface water and the Cape Peninsula and Cape Flats SWSA for groundwater. It is underlain by the Table Mountain Group Aquifer (TMGA) and is located within the Cape Peninsula Groundwater Resource Unit (GRU).

A High-Confidence Groundwater Reserve Determination Study was completed in 2024 for the Berg Catchment (Misrole & Wise, Umvoto South Africa (Pty) Ltd., on behalf of DWS). The study provides insights into the groundwater resource systems within the Berg catchment. Its main objective was to provide aquifer-specific information to support informed management of stressed or over-utilised groundwater resources. The groundwater quantity reserve for the Cape Peninsula GRU is summarised in the table below:

**Table 12: Groundwater quantity reserve – Cape Peninsula GRU**

| Recharge ($Mm^3/a$) | Ecological Water Requirement Reserve ($Mm^3/a$) | Basic Human Needs Reserve ($Mm^3/a$) | Groundwater reserve ($Mm^3/a$) | Total Allocatable Volume ($Mm^3/a$) | Water Use ($Mm^3/a$) | Still Allocatable ($Mm^3/a$) |
|---|---|---|---|---|---|---|
| 10.99 | 5.43 | 0.09 | 5.52 | 5.48 | 0.073 | 5.41 |

To evaluate potential stress on groundwater resources, the Reserve Determination Study applies an "Allocation Factor" representing the ratio of allocatable groundwater volume to the total recharge for each GRU. Based on this measure, the Cape Peninsula GRU falls within Category D, which indicates moderate stress. This suggests that while groundwater remains available, careful management is required to avoid over-allocation and to maintain ecological and basic human needs.

Importantly, the proposed development does not involve direct abstraction from the aquifer or additional water use beyond existing lawful allocations. Instead, it seeks to improve storage efficiency and ensure the continued use of treated municipal effluent for irrigation. As such, no adverse impact on the Reserve is anticipated.

The quality of water in the receiving watercourses and downstream environment is not expected to be adversely affected by the proposed development. The storage of irrigation water in the enlarged dams and its use for golf course irrigation will not result in any return flows of untreated or contaminated water into downstream watercourses. The quality of the treated municipal effluent obtained from the Cape Flats WWTW is monitored at the Steenberg pump station to ensure quality remains within suitable limits.

There are no known international obligations directly linked to the water resources associated with the proposed development that would be affected by the proposed activities. The water use is local and contained, and there are no significant downstream user groups whose access to water or water quality would be compromised.

Overall, the proposed development will not negatively impact the water quality required for the Reserve, will comply with legal and regulatory water quality standards, and will maintain the ecological functioning of downstream watercourses.

**k) Probable duration of any undertaking for which a water use is to be authorised**

The Water use authorisation will be linked to a long-term investment and operational presence of the landowner in the area and should be issued for 40 years and reviewed every 5 years to assure demand and use appropriateness.

## 18. Declaration by the application with signature confirming that the information submitted is correct

**We the applicant, Steenberg Estate Property Company (Pty) Ltd, hereby confirm that the information submitted as part of this WULA application is true.**

**Signed by:** Walter TARR **Date:** 11/11/2025.

**Signature:**