SITE SENSITIVITY VERIFICATION REPORT: THE PROPOSED UPGRADES TO THE BULK WATER SUPPLY FOR KAKAMAS ACROSS VARIOUS PROPERTIES IN KAKAMAS AND THE SURROUNDING VILLAGES

INTRODUCTION:

This Site Sensitivity Verification ("SSV") Report was undertaken in terms of the *Protocols for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes* (referred to "the Protocols" hereafter) as per Government Notice No. 320 (published in Government Gazette No. 43110 on 20 March 2020)[1]. These Protocols, effective as of 09 May 2020, must be complied with for every application for environmental authorisation submitted to the competent authority from the effective date onwards.

The above-mentioned development proposal constitutes the following activities identified as Listed Activities in the Environmental Impact Assessment ("EIA") Regulations of 2014 (as amended):

Item 3
The development of reservoirs, excluding dams, with a capacity of more than 250 cubic metres.

g. Northern Cape

I. In an estuary;
II. In a protected area identified in terms of NEMPAA, excluding conservancies;
iii. Outside urban areas, in:

a) National Protected Area Expansion Strategy Focus areas;
b) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;
c) Sites or areas identified in terms of an International Convention;
d) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;
e) Core areas in biosphere reserves;
f) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;
g) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.

Item 9 of Listing Notice 1, *i.e.*, "*The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water—*
(i) with an internal diameter of 0,36 metres or more; or
(ii) with a peak throughput of 120 litres per second or more;
excluding where—
(a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or

(b) where such development will occur within an urban area".

[1] The Protocols are in line with Section 24(5)(a) and (h) and Section 44 of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998).

Item 12, *i.e., "The development of;*
(iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size;
(xii) infrastructure or structures with a physical footprint of 100 square metres or more;
where such development occurs;
(a) within a watercourse;
(b) in front of a development setback; or
(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;
— excluding—
(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;
(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;
(cc) activities listed in Activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;
(dd) where such development occurs within an urban area;
(ee) where such development occurs within existing roads, road reserves or railway line reserves; or

(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared".

Item 19 of Listing Notice 1, *i.e.*, "*The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from—*

(i) the seashore;

(ii) the littoral active zone, an estuary or a distance of 100 metres inland of the highwater mark of the sea or an estuary, whichever distance is the greater; or

(iii) the sea; —

but excluding where such infilling, depositing, dredging, excavation, removal or

moving—

(f) will occur behind a development setback;

(g) is for maintenance purposes undertaken in accordance with a maintenance

management plan;

(h) falls within the ambit of activity 21 in this Notice, in which case that activity

applies;

(i) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies".

Item 27 of Listing Notice 1, *i.e.*, "*The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—*

(i) the undertaking of a linear activity; or

(ii) maintenance purposes undertaken in accordance with a maintenance management plan".

Item 28 of Listing Notice 1, *i.e.*, **"***Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:*
(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or

(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes".

Item 12 of Listing Notice 3, *i.e.*, "*The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.*

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i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;
ii. Within critical biodiversity areas identified in bioregional plans;
iii. Within the littoral active zone or 100 metres inland from high-water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; or

iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning".

Item 14 of Listing Notice 3, *i.e., "The development of—*
(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or
(ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs—
(a) within a watercourse;
(b) in front of a development setback; or
(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour

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i. In an estuary;
ii. Outside urban areas:
(aa) A protected area identified in terms of NEMPAA, excluding conservancies;
(bb) National Protected Area Expansion Strategy Focus areas;
(cc) World Heritage Sites;
(dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;
(ee) Sites or areas identified in terms of an international convention;
(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;
(gg) Core areas in biosphere reserves;
(hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;
(ii) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined; or

iii. Inside urban areas:
(aa) Areas zoned for use as public open space;

(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for a conservation purpose; or

(cc) Areas seawards of the development setback line".

An application for environmental authorisation must therefore be lodged with the competent authority and the environmental authorisation obtained before the development proposal can be commenced with.

According to the Protocols, the EAP must verify the current use as well as environmental sensitivity of the proposed site in accordance with the DFFE Screening Tool Report, to determine the need for specialist inputs in relation to the themes (and proposed specialist assessments) included in the Protocols.

METHODOLOGY:

The SSV Report is informed by desktop studies including the SANBI BGIS Biodiversity Spatial Plan, vegetation maps (Vegetation map of SA (Mucina & Rutherford, 2006, as updated in the 2012 beta version and 2018 Final), NFEPA, GoogleEarth imagery, specialist input in combination with the site visit of 17 April 2026 to investigate, identify, and evaluate the potential impacts, associated with the proposed development, on the receiving environment. The SSV Report was compiled by Maboee Nthejane (EAPASA Reg. 2022/4942)

AIM OF THE SSV REPORT:

The aim of the SSV Report is to;
- Verify land use and theme sensitivities as identified by the DFFE Screening Tool;
- Confirm or dispute the need for a particular specialist assessment(s) indicated by the DFFE Screening Tool; and
- Should the need for a specialist assessment be disputed, provide motivation why the proposed specialist assessment is not relevant to the proposed development.

SITE DESCRIPTION:

The Kakamas Bulk Water Supply ("BWS") system was last upgraded in 1987 and the population of the Kakamas its associated surrounding villages has grown significantly since then and the current water demand significantly currently outstrips the capacity of the existing BWs. In addition, the state of the existing BWS has deteriorated over the decades, resulting in significant wastage of potable water and therefore a great need now exists for the BWS to be upgraded.

The Kai !Garib Local Municipality wishes upgrade the existing bulk water supply system of Kakamas and the surrounding villages by constructing *inter alia*, the following:

- New Orange River Raw Water Abstraction Pump Station (120 litres per second) located 50m downstream of the existing railway bridge.
- New 450mm diameter uPVC Raw Water Rising Main pipe x 3 300m from Raw Water Pump Station to the proposed new Kakamas Water Purification Plant.
- New Kakamas Water Purification Plant with treatment capacity of 10 500m^3/day.
- A new 315mm diameter uPVC Class 9 Rising Main x 1 150m from new Kakamas Water Purification Plant to the existing Kliprand Reservoir.
- A new 250mm diameter Class 9 uPVC Rising Main x 1 903m from the new Kakamas Water Purification Plant to the existing Langverwag Reservoir.
- A new 160mm uPVC Class 9 diameter Rising Main x 2 150m from the new Kakamas Water Purification Plant to the new Kakamas East Reservoir.
- New 725 kiloliter reinforced concrete Kakamas East Reservoir.
- Upgrade of the mechanical and electrical infrastructure at the existing Kliprand HI lift Pump Station and the existing Langverwag HI lift Pump Station.
- Construction of a new 20 Megalitre Storage Reservoir at Rhenosterkop.
- Construction of a 350mm diameter pipeline x 1 200m from Kakamas Water Purification Plant to the new 20 Megalitre Reservoir
- New uPVC bulk connector pipes to each village's reservoir (Alheit Reservoir, Marchand Reservoir, Augrabies Reservoir): total pipe length of 6.80km (1.15 x 315mm diameter to new Renosterkop Reservoir, 1.70km to Alheit and Marchand Reservoirs, 3.45km to Augrabies Reservoir).

- Augrabies Bulk Supply pipeline from new Renosterkop Reservoir to Farm No.15 Rooipad 36km x 250mm diameter reducing to 160mm diameter pipe.
- Schroder Bulk Supply pipeline from the new Kakamas Water Purification Plant over the Orange River using the existing railway bridge to cross: 11.32km x 200mm diameter reducing to 110mm diameter pipe.
- Lutzburg Bulk Supply pipeline from Orange River railway bridge to Farm No.474 Baviaanz Krantz: 3.87km x 160mm diameter pipe.
- Kakamas East Bulk Supply pipeline from new Kakamas Water Purification Plant to the R359 at Kakamas South Settlement Erf 431: 9.40km x 125mm diameter pipe.
- New 22kV Electrical Power Supply Line x 3.95km from Kakamas Substation to the new River Abstraction Pump Station site.
- New Electrical Power Supply Line x 1.0km from Kakamas Substation to the new Kakamas Water Purification Plant.
- New high speed Radio Telemetry System to help control River Abstraction Pump Station and Reservoir Levels.

The proposed site is depicted in Figure 1 below:

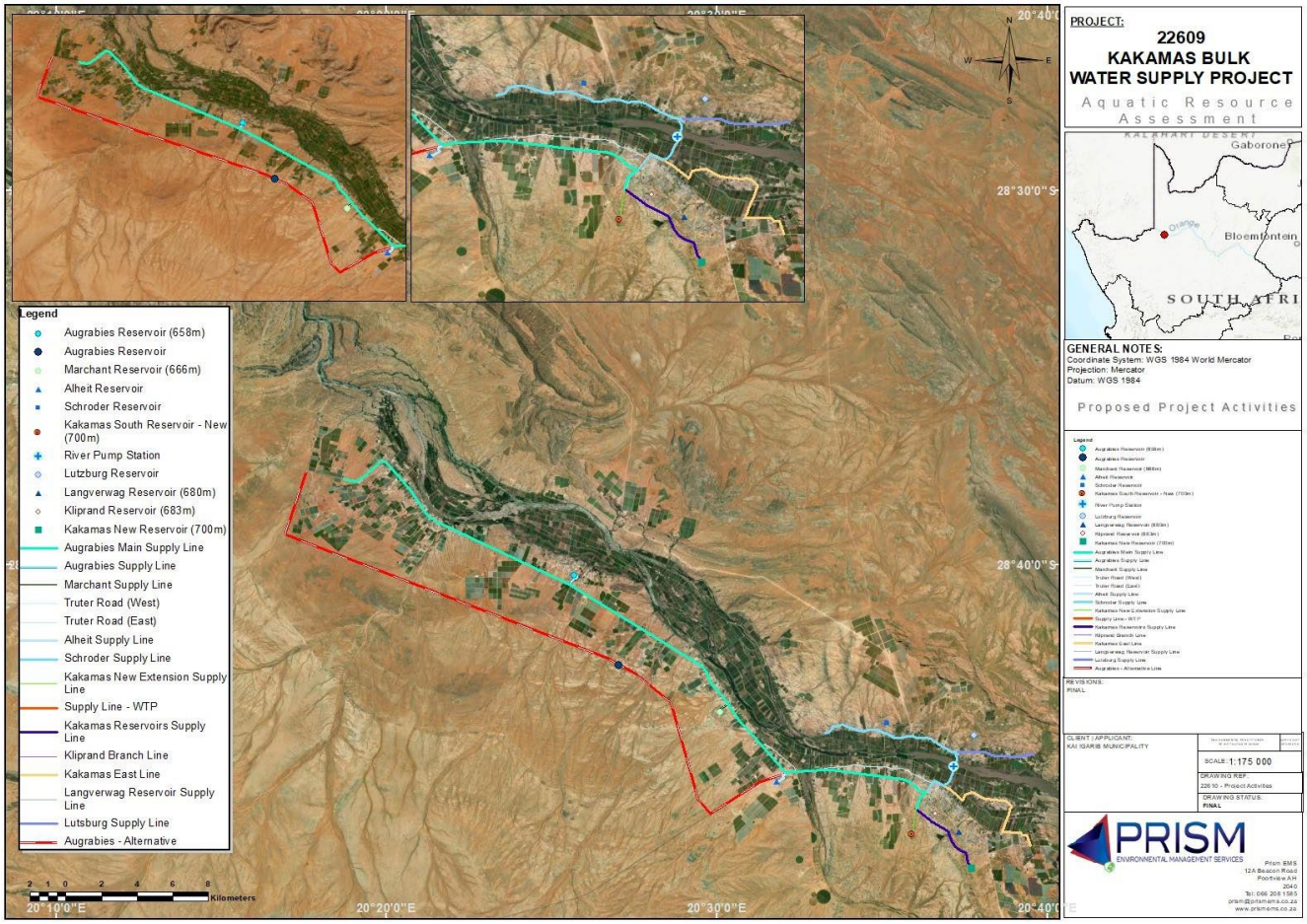


Figure 1: Locality map showing the proposed site and surrounding area

The 2024 Beta Vegetation Map of South Africa, Lesotho and Swaziland indicates that the proposed site traverses areas of Bushmanland Arid Grassland, Lower Gariep Broken Veld and Lower Gariep Alluvial Vegetation (Figure 2 below, refers). All of these vegetation types are categorised as Least Threatened.

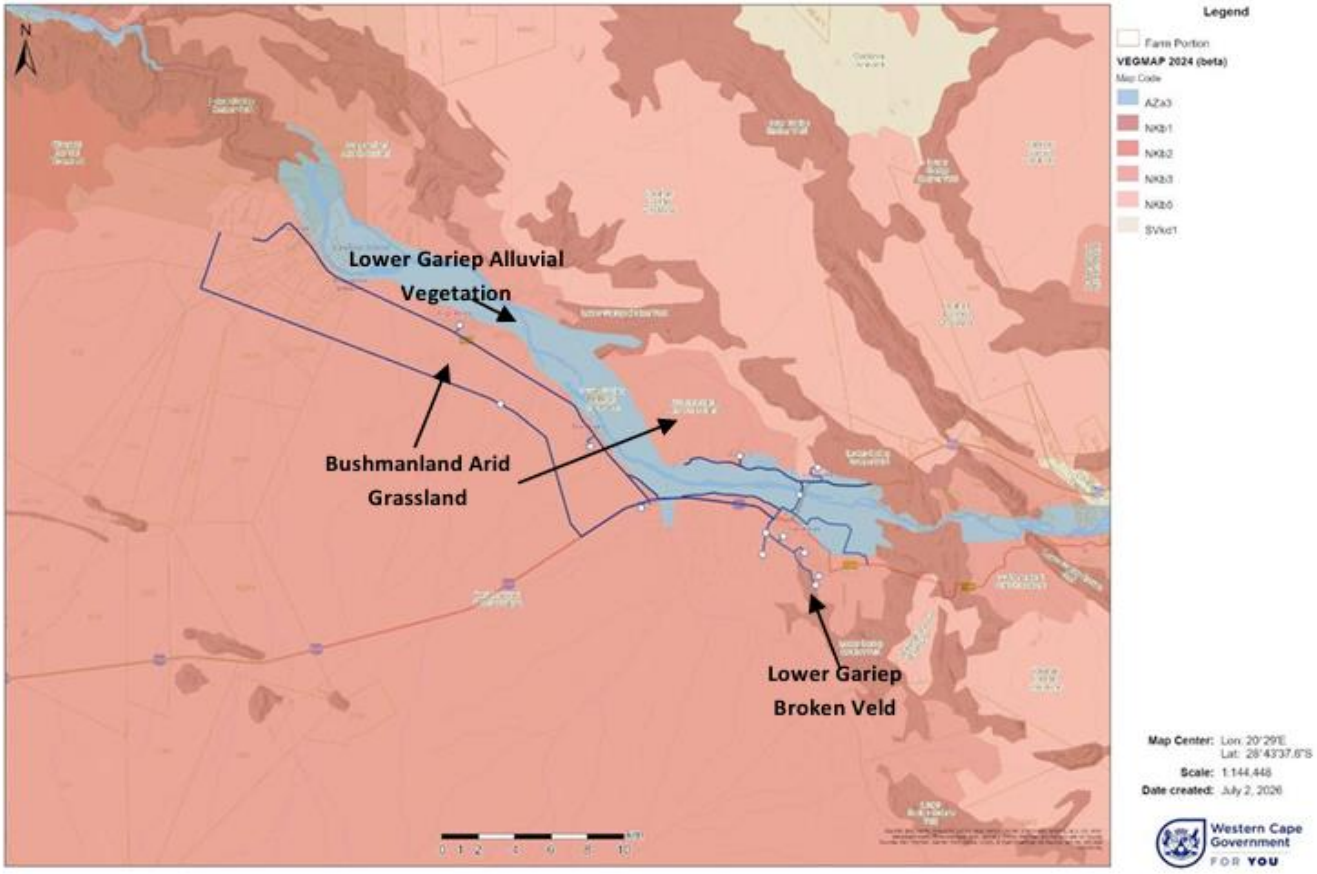


Figure 1: Map showing the *v*egetation types of the proposed site and surrounding area

The DFFE Screening Tool indicates a Very High sensitivity rating for the Terrestrial Biodiversity Theme, as the proposed site overlaps an area identified as a terrestrial CBA1 and an ESA area. It has also been noted that plant Species of Conservation Concern exist in the area of the proposed site.

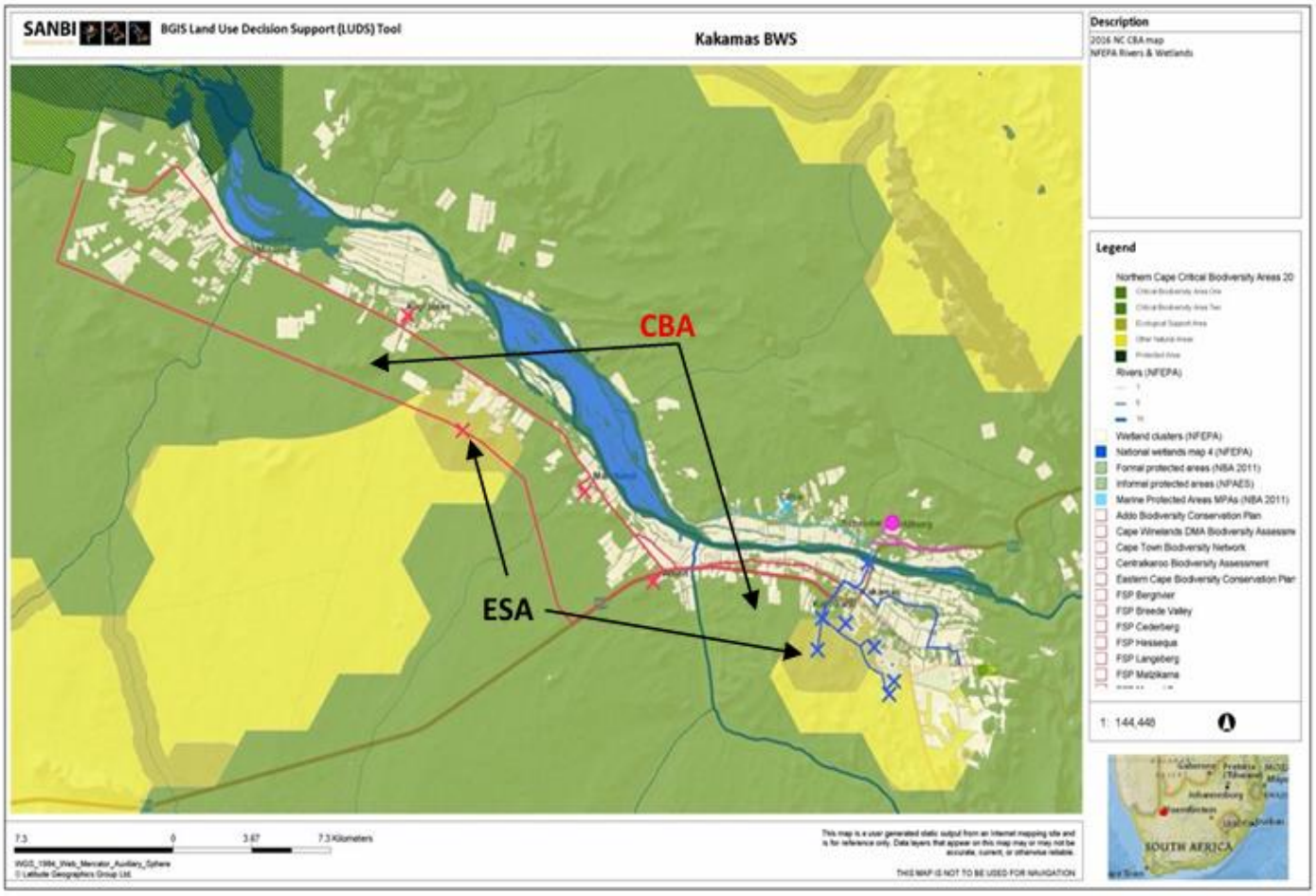


Figure 2: Map showing the proposed site traversing a CBA and an ESA

The DFFE Screening Tool indicates a Very High sensitivity rating for the Aquatic Biodiversity Theme, as the proposed site intersects prominent watercourse watercourses that flow into the Orange River and also intersects the Orange River and its associated wetlands. (Figure 4 below, refers).

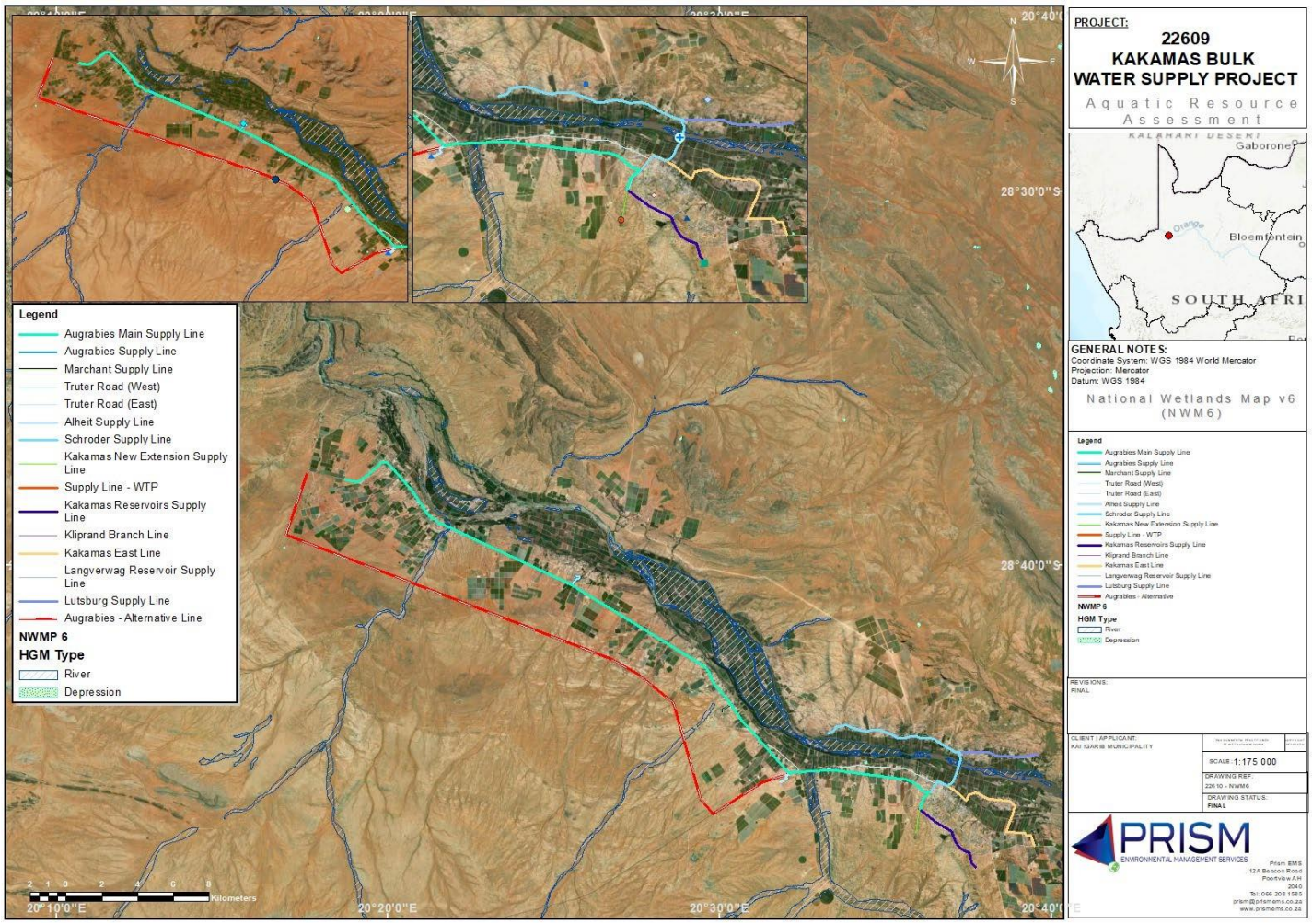


Figure 3: Map showing proposed site intersecting watercourses that flow into the Orange River and intersecting the Orange River and its riparian wetlands

Please see photographs taken on 17 April 2026 below:



Photo 1: View of proposed river pumpstation site from the railway bridge



Photo 2: View of proposed reservoir site from the north-west



Photo 3: View from the west along pipeline leading to Langverwacht Reservoir



Photo 4: View of north-east of N14 Road from alternative Augrabies pipeline route



Photo 5: View of R359 Road reserve where Augrabies pipeline extends



Photo 6: View of the east from proposed water purification plant to Kliprand Reservoir



Photo 7: View of the west from along pipeline to Cillie

Table 1. Themes and associated sensitivity indicated by the DFFE Screening Tool.

No	Theme	DFFE Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation
1	Agriculture Theme	Very High sensitivity	Agree		
2	Animal Species Theme	High Sensitivity	Agree		
3	Aquatic Biodiversity Theme	Very High sensitivity	Agree		
4	Archaeological and Cultural Heritage Theme	Very High Sensitivity	Agree		
5	Civil Aviation Theme	High Sensitivity	Disagree	No Impact	The pumphouse, pipelines, water purification plant and reservoirs for the proposed Bulk Water Supply for Kakamas and nearby surrounding villages is unlikely to pose any kind of significant impact relating to civil aviation.
6	Defence Theme	Low Sensitivity	Agree		
7	Palaeontology Theme	Medium Sensitivity	Agree		
8	Plant Species Theme	High Sensitivity	Agree		
9	Terrestrial Biodiversity Theme	Very High sensitivity	Agree		

Table 2. Specialist assessments identified as per the DFFE Screening Tool.

No	Proposed Specialist Assessment	Verification of Site Sensitivity and Motivation On The Need For Specialist Investigation
1	Agriculture	A specialist has been appointed to provide written input on the application.
2	Landscape/ Visual Impact Assessment	The proposed pumpstation, water purification plant, reservoirs, water supply pipelines and associated infrastructure in the urban area of Kakamas and surrounding nearby villages are quite compatible with urban landuses and are therefore unlikely to result in a significant eyesore amongst other landuses in the urban area. In addition, the aforesaid water supply infrastructure is of small scale and is therefore unlikely to result in any kind of significant eyesore where the proposed site is located outside of the urban area. In light of the above, a specialist will not be appointed to compile a visual impact study report for the proposed development.
3	Archaeological and Cultural Heritage Impact Assessment	A specialist has been appointed to submit a NID to SAHRA
4	Palaeontological Assessment	A specialist has been appointed to submit a NID to SAHRA.

5	Terrestrial Biodiversity Assessment	A terrestrial biodiversity specialist has been appointed to compile a terrestrial biodiversity study report that will inform the application.
6	Aquatic Biodiversity Impact Assessment	A specialist has been appointed to compile a statement that will inform the application.
7	Noise Impact Assessment	The construction work on the proposed BWS for Kakamas and the surrounding nearby villages is largely located away from residential areas. The construction work on the small portions of the proposed development that are located close to residential areas can be sufficiently managed via adherence to existing municipal laws that relate to noise as well as limiting construction work to times of the day that are better suited to residential areas. The EAP is of the view that a Noise Impact Assessment for the proposed development is not warranted and the so a specialist will not be appointed to conduct the noise impact study report.
8	Socio-Economic Assessment	The proposed development is of very small scale and is therefore unlikely to cause any kind of significant change in the socio-economic characteristics of the area located close to the proposed site. A specialist will therefore not be appointed to conduct a socio-economic for the proposed development.
9	Plant Species Assessment	A terrestrial biodiversity specialist has been appointed to compile a terrestrial biodiversity study report that includes *inter alia*, the Plant Species Theme.
10	Animal Species Assessment	A terrestrial biodiversity specialist has however been appointed to compile a terrestrial biodiversity study report that includes *inter alia*, the Animal Species Theme.

In light of the information contained in Table 2, the following specialist professionals will be appointed to conduct specialist studies that will inform the application for environmental authorisation:

- Agricultural specialist
- Heritage Impact specialist
- Terrestrial biodiversity specialist
- Freshwater specialist

All the Specialist Assessments and Compliance Statements compiled by specialists and the written opinions of other suitably qualified professionals will be appended to the Basic Assessment Report and submitted to the competent authority for review.

Please do not hesitate to contact EnviroAfrica for any further information or clarity regarding the above.

Yours faithfully,

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