water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

WU23125 – Water Use Application Process for the Lower Coerney Dam, Eastern Cape: Pre-application Meeting 15 December 2021

GA Environment

PRESENTATION OUTLINE

GA Environment

- Introduction
- Purpose of the meeting
- Project Description and Background
- Environmental Setting
- Triggered NWA Section 21 activities
- Specialists requirements
- Public Participation Requirements
- Conclusion & Way forward

PURPOSE

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- Present the status quo
- Confirm the triggered NWA Section 21 Activities
- Specialist Requirements
- Public Participation
- Client (Pretoria DWS) to confirm if current designs are sufficient (final designs question)

PROJECT BACKGROUND

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- GA Environment appointed by the Department of Water and Sanitation;
- DWS proposes the development of a dam with a homogeneous Earthfill embankment wall of 20,5 m in height and with a volume of 4,69 million m^3;
- The proposed dam is meant to limit the shortfall in supply to the Nelson Mandela Bay Municipality (NMBM);
- The proposed dam will take advantage of gravity to slowly fill to capacity using an existing irrigation canal from the Lower Sundays River Water Use Association (LSRWUA). The existing canal is known as the Kirkwood Primary Canal;
- The water supply to NMBM is to be channelled through and extension of the Nooitgedacht Pipeline from the existing Scheepersvlakte Dam to the Nooitgedacht water treatment works (WTW);

PROJECT BACKGROUND

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- The proposed development is located in a valley where a non-perennial drainage line is a geographic feature;
- The development of the dam requires a Scoping and Environmental Impact Assessment (EIA);
- Construction of the STP may trigger a Basic Assessment
- Activities (c & I, storage of water (b) and engaging in a streamflow reduction activity (d);
- Proposed development will almost be flanked by citrus orchards on its entire eastern side with more in development; and
- Farmers have obtained an Environmental Authorisation for the building of a new, smaller dam for irrigation purposes and for clearing vegetation to plant more citrus orchards.

Location

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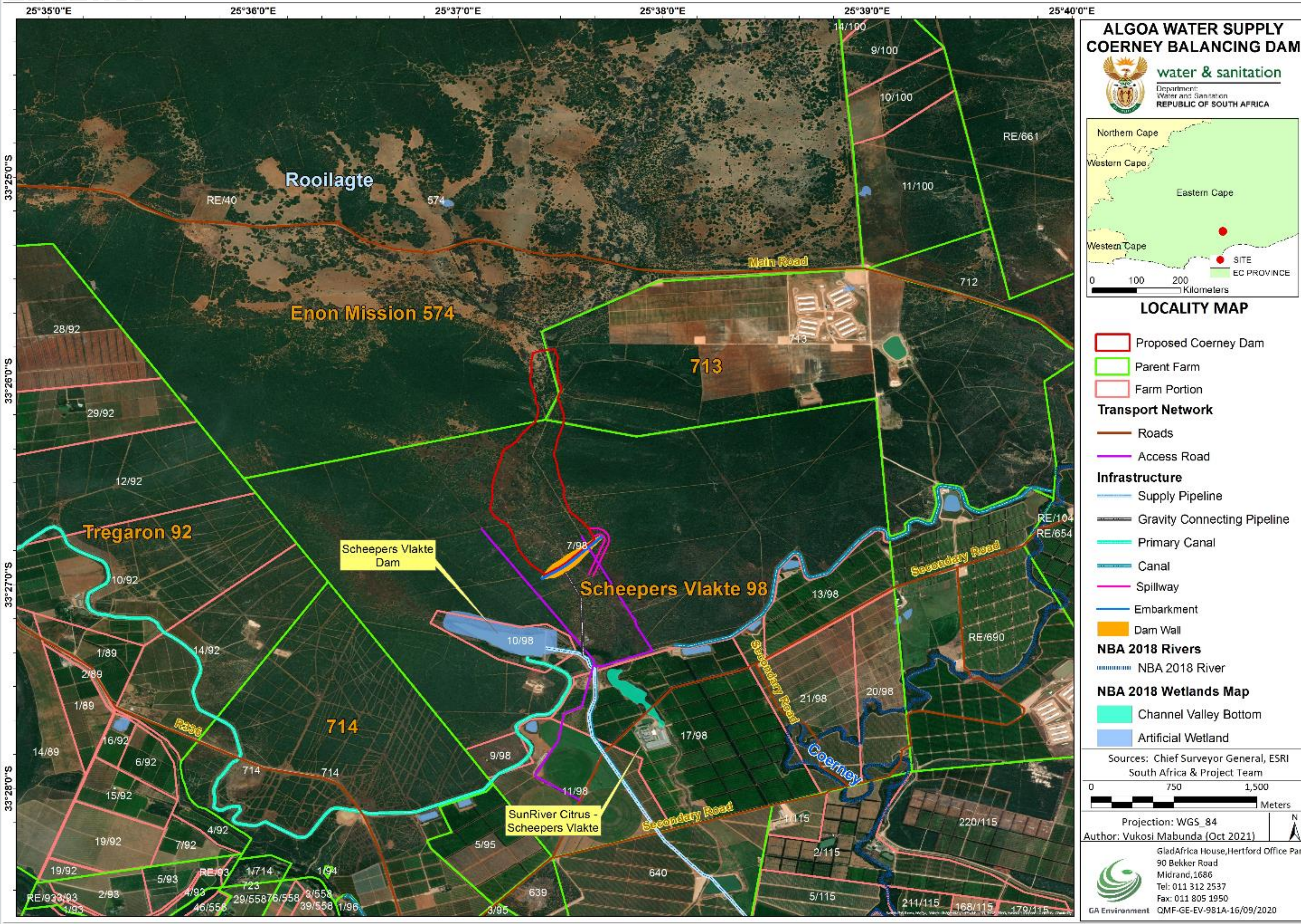
Coerney Balancing Dam Data Pack.kmz

Locality



ALGOA WATER SUPPLY
COERNEY BALANCING DAM
water & sanitation
Department: Water and Sanitation
REPUBLIC OF SOUTH AFRICA
Northern Cape
Western Cape
Eastern Cape
SITE
EC PROVINCE
0 100 200 Kilometers
LOCALITY MAP
Proposed Coerney Dam
Parent Farm
Farm Portion
Transport Network
Roads
Access Road
Infrastructure
Supply Pipeline
Gravity Connecting Pipeline
Primary Canal
Canal
Spillway
Embarkment
Dam Wall
NBA 2018 Rivers
NBA 2018 River
NBA 2018 Wetlands Map
Channel Valley Bottom
Artificial Wetland
Sources: Chief Surveyor General, ESRI South Africa & Project Team
0 750 1,500 Meters
Projection: WGS_84
Author: Vukosi Mabunda (Oct 2021)
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QMF-GE-EV-981A-16/09/2020
25°35'0"E
25°36'0"E
25°37'0"E
25°38'0"E
25°39'0"E
25°40'0"E
33°25'0"S
33°26'0"S
33°27'0"S
33°28'0"S
Rooilagte
Enon Mission 574
713
Main Road
Tregaron 92
Scheepers Vlakte Dam
Scheepers Vlakte 98
714
SunRiver Citrus - Scheepers Vlakte
Secondary Road
Coerney
R336

PROJECT DESCRIPTION

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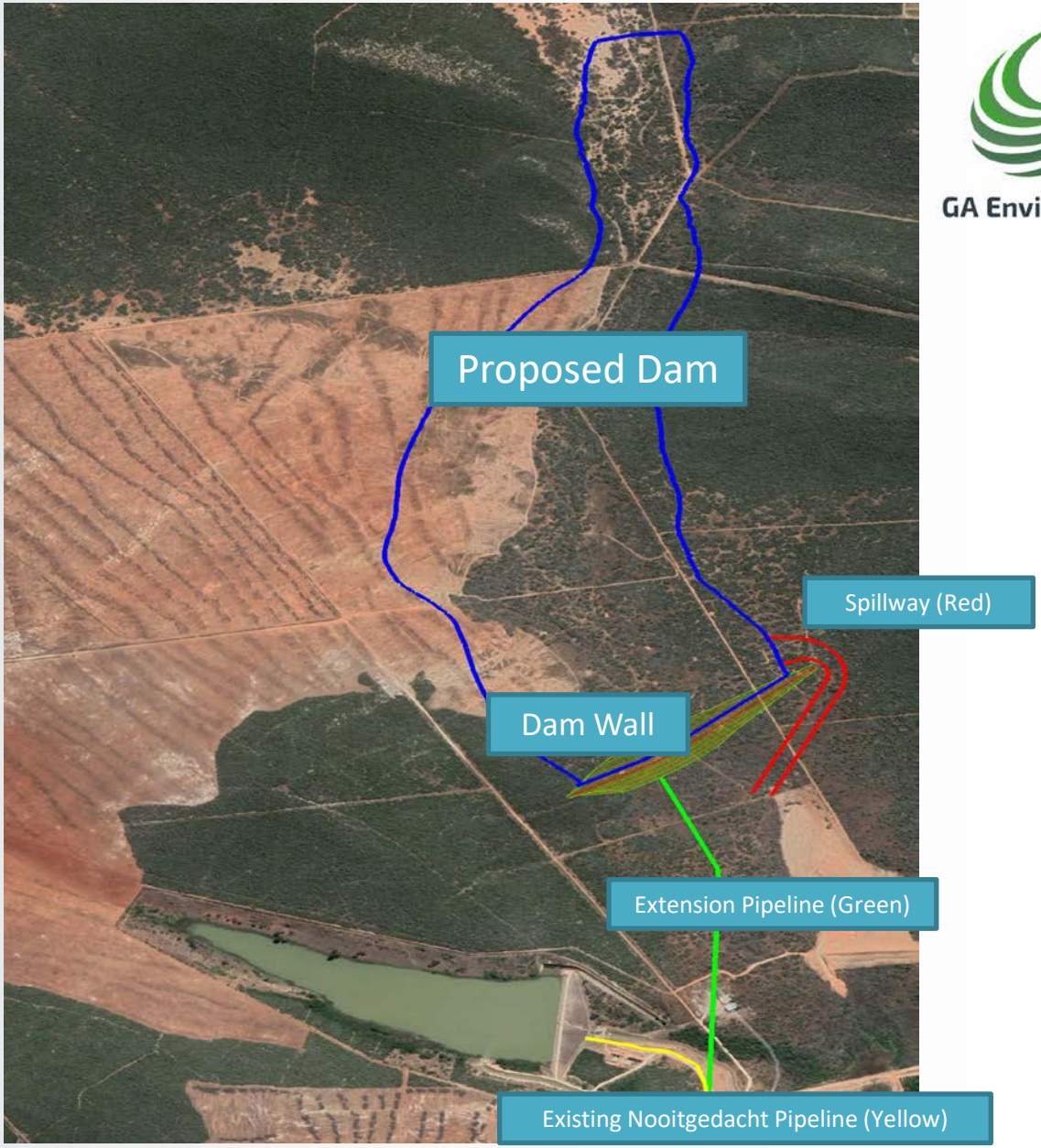
- An area of 77 hectares is to be cleared for the proposed development;
- A new extension pipeline of 900 m is planned to transport water from the proposed dam to connect with the existing Nooitgedacht Pipeline and to transfer water from the canal into the dam;
- Infrastructure to fill the dam from the Kirkwood Primary Canal (either a siphon or attenuated inlet) is planned. Linear footprint is to be minimised by utilising the same pipeline extension to the WTW as both a filling pipeline and supply outlet;
- Materials for the construction of the wall will have to be brought in as the materials on site are not adequate. The required materials are proposed to be gravel, aggregates, sand and concrete;
- A right spillway (to the east of the dam wall) is planned to be constructed as opposed to sluices – this will control a flooding event should the dam overflow its freeboard;

INFRASTRUCTURE

- Main infrastructure features:
  - Proposed dam footprint (blue on image);
  - Homogeneous Earthfill Embankment Dam Wall;
  - Spillway (red on image);
  - Extension pipeline from dam (and from Canal to fill dam – green on image); and
  - Existing Nooitgedacht Pipeline (yellow on image).



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INFRASTRUCTURE

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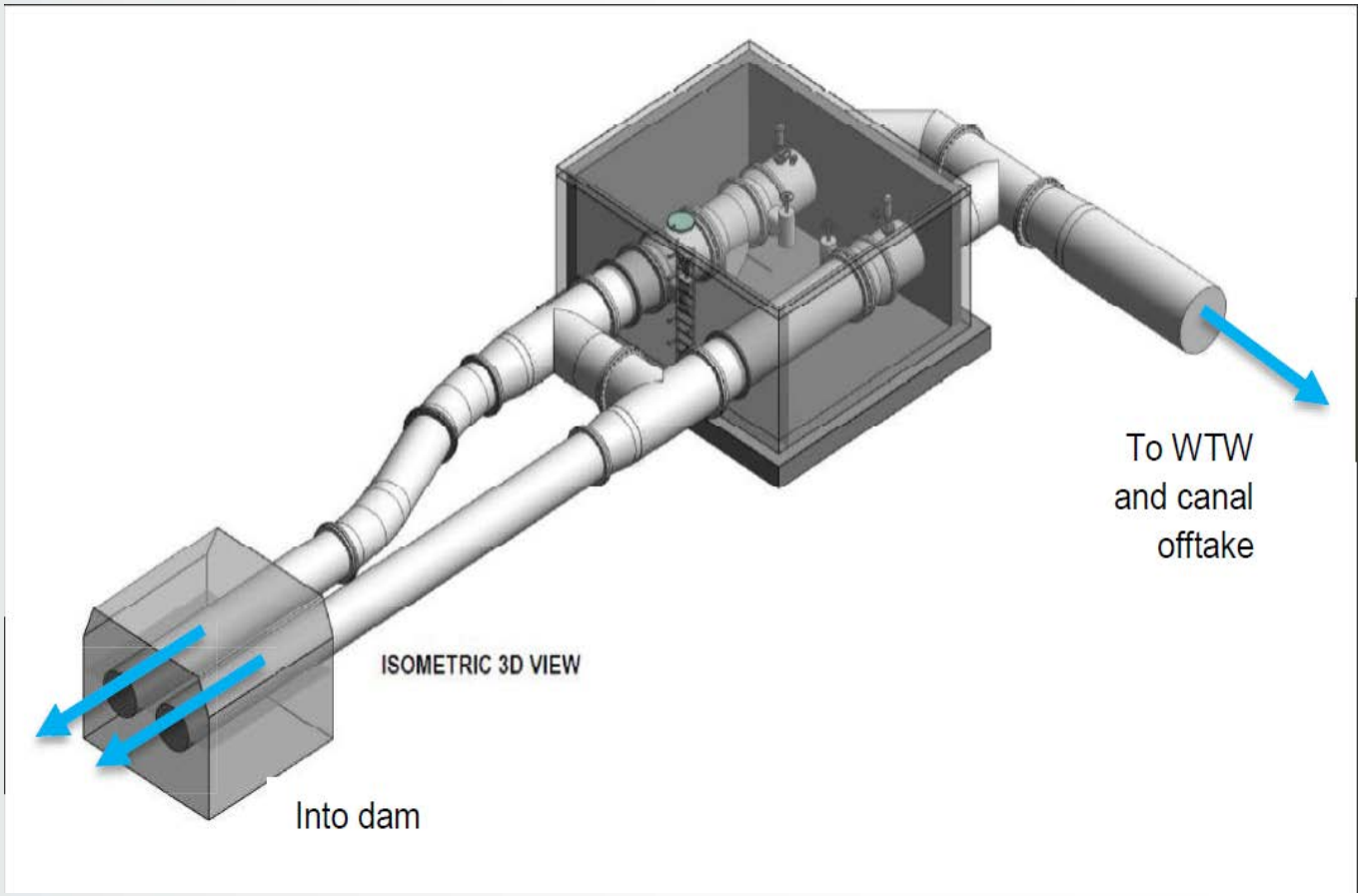
- The proposed mechanism of how a single pipeline extension (as opposed to two pipes – one to fill and one to supply water) can reduce the pipeline's footprint, its length and practical use by building an **inlet / outlet exchange chamber.**



Source: Feasibility-level engineering design (Aurecon, 2020)

SITE ENVIRONMENTAL CONDITIONS

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North to south view of the area where the proposed Lower Coerney Dam is planned to be developed. Existing dam visible in the top right corner.

Extent to which vegetation clearing (as per an existing environmental authorization) has progressed on Scheepersvlakte Farm.

SITE ENVIRONMENTAL CONDITION

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The Kirkwood Primary Canal – proposed source of water the Coerney Dam development.

Continuation of the Kirkwood Canal from the dam wall of Scheepersvlakte Dam. Yellow vents to the right are where the existing Nooitgedacht Pipeline runs.

SITE ENVIRONMENTAL CONDITION

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The Spillway of the existing Scheepersvlakte Dam which runs into a dry tributary of the Coerney River. The same river into which the proposed dam's spillway will decant.

To the north of the site of the proposed development, vegetation clearing has left very little coverage of the original Albany Thicket Vegetation and Albany Alluvial Vegetation.

SITE ENVIRONMENTAL CONDITION

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Of the (relatively) undisturbed vegetation patches remaining, many invasive species – most notably Prickly Pear species, were observed on site.

Similar inflow attenuation as present at Scheepersvlakte Dam will be considered for the proposed Lower Coerney development.

SITE ENVIRONMENTAL CONDITION

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The inlet from the Nooitgedacht Pipeline the Nooitgedacht WTW is currently being renovated.

The capacity and how water will be received from the Nooitgedacht Pipeline (and from the proposed Lower Coerney Dam) was confirmed on site.

TRIGGERED ACTIVITIES - SECTION 21 OF THE NWA

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- Site located within regulated area of a watercourse
- The likely listed activities are as follows:
  - **Section 21 (b)** storing of water;
  - **Section 21 (c)** impeding or diverting the flow in a watercourse;
  - **Section 21 (d)** engaging in a streamflow reduction activity; and
  - **Section 21 (i)** altering the bed, banks, course or characteristics of a watercourse.

SPECIALISTS – DFFE SCREENING TOOL

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Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme		X		
Aquatic Biodiversity Theme				X
Archaeological and Cultural Heritage				X
Civil Aviation Theme			X	
Defence Theme				X
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			
Paleontology Theme	X			

SPECIALISTS IMPACT ASSESSMENTS

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- Specialist studies to be undertaken to support the WUA & Scoping and EIA:
  - Terrestrial Biodiversity Impact Assessment;
  - Phase 1 Heritage Impact Assessment;
  - Paleontological Impact Assessment; and
  - Combined Aquatic Impact and Wetland Impact Assessments
  - DWS input.

Public Participation Process (PPP)

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- PPP required for WUA and Scoping EIA;
- Involvement of Local community & Stakeholders in decision making;
- Advertising: Public notice in local newspaper (01 December 2021);
- Contacting stakeholders, notifying them of the process;
- Meeting if applicable;
- Documenting all correspondence within the Scoping & EIA reports & DWS Technical Report; and
- Notifying stakeholders when the Water Use License and EA are issued.

CONCLUSIONS

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- Proposed Lower Coerney Dam development can supply NMBA with 21 days of extra water in an emergency;
- Watercourse identified is non-perennial and impacted by historical anthropological impacts;
- Albany Alluvial Vegetation is a CBA in terms of the Addo Biodiversity Sector Plan and is categorised as “EN” - Endangered;
- Two CBA units identified with the South African National Biodiversity Institute (SANBI)’s land use decision support tool (LUDS tool) for the area – one is seen as “degraded’’ and the other ‘’natural’’;
- Through site ground truthing, vegetation units not in a natural state – evident by fences, clearing and invasive species;
- Final engineering designs still to be confirmed by DWS (Pretoria) once consultant is appointed by them. DWS (Gqeberha Office Input Required).

Discussion and Way Forward

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- Triggered Activities (WUA)
- Specialist Studies (Aquatic & Wetland)
- Public Participation Requirements
- Designs (Conceptual vs Detailed designs)
- Possibility of a GA due to DWS, as state organ, identified the need for the Lower Coerney Dam and could grant / reject licences on their own applications??
- Possible exemptions??
- DWS requirements & Timeframes

THANK YOU

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