

# ENVIRONMENTAL IMPACT ASSESSMENT

## LUSIKISIKI REGIONAL WATER SUPPLY SCHEME

### BACKGROUND INFORMATION DOCUMENT & INVITATION TO COMMENT

**Proposed by:**  
**Department of Water and Sanitation.**



**water & sanitation**

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Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

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## AIM OF THIS DOCUMENT

In terms of the National Environmental Management Act, certain listed activities require environmental approval and require that an **Environmental Impact Assessment (EIA)** be conducted. The purpose of this document is to ensure that people interested in or affected by the proposed **Lusikisiki Regional Water Supply Scheme (LRWSS)** are provided with information about the proposal, the process being followed, and an opportunity to be involved in the EIA process.

Registering as an **Interested and/or Affected Party (I&AP)** allows individuals or groups the opportunity to contribute ideas, issues, and concerns regarding the project. I&APs also have an opportunity to review all reports and submit comments on those reports. All comments received are included in the reports submitted to the Competent Authority that will decide whether or not to issue an Environmental Authorisation.

## PROJECT DESCRIPTION

### Project History

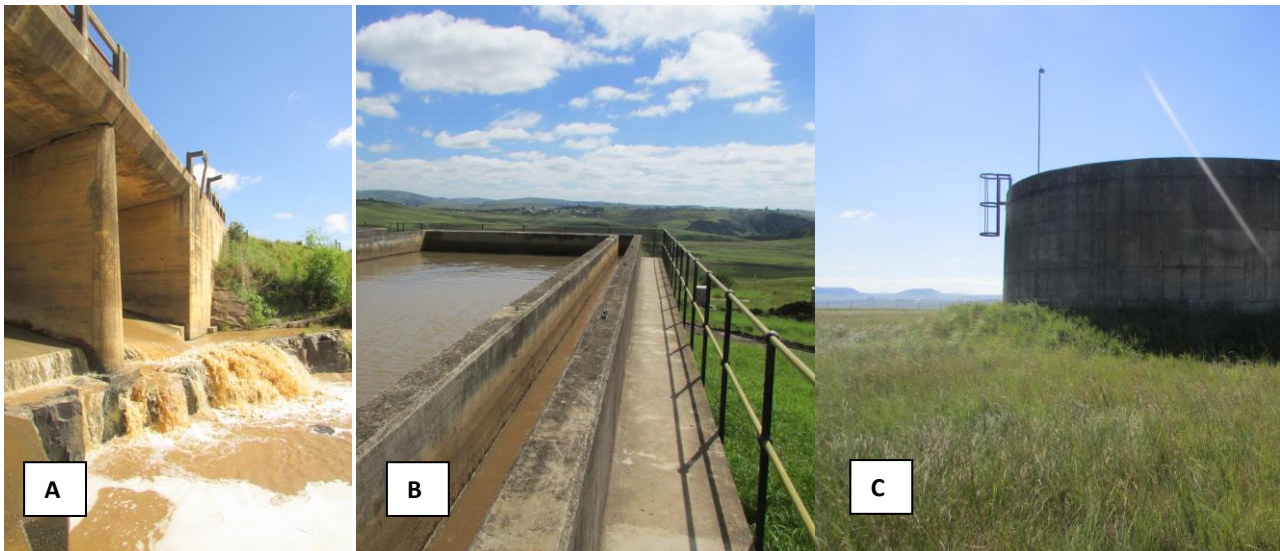
The LRWSS was originally planned in 1978 as a regional scheme to utilize a dam on the Xura River. Only phase 1 of the originally planned larger scheme has been implemented to date, and the dam has never been built. This phase was commissioned in July 1989 and currently supplies the town of Lusikisiki (11 000 people) and 23 surrounding villages (41 000 people). The town of Lusikisiki is provided with full water services, including house connections and water borne sanitation, but the level of services for the villages is limited to bulk water supply to village reservoirs.

### Current Status

Currently the capacity of the bulk water supply infrastructure is 2 760 m<sup>3</sup>/day. Water is pumped from a weir on the Xura River and conveyed by gravity to the pump station which is located near the weir (Figure 1a). The water is then pumped to the existing Water Treatment Works (WTW) (Figure 1b). After treatment the potable water is conveyed to bulk storage reservoirs (Figure 1c) at various locations in the area, which in turn feed 24 service reservoirs that supply rural villages.

The current scheme is not able to meet the water requirements in the area and water shortages are experienced frequently. This low assurance of water supply can be attributed to the following reasons:

- Inadequate capacity of existing infrastructure;
- The poor condition of existing infrastructure;
- Significant housing development in the area, which has significantly increased water demand in the area.



**Figure 1: The existing LRWSS which transfers water from a weir on the Xura River (a) to the water treatment works (b) and then storage reservoirs (c).**

### The Current Proposal

The Department of Water & Sanitation (DWS) appointed AECOM SA (Pty) Ltd. (consulting engineers) in 2010, to undertake a **Feasibility Study for Augmentation of the Lusikisiki Regional Water Supply Scheme**. This study reported that a combination of surface water (Zalu Dam) and groundwater would be the most feasible solution for the long-term water supply for the LRWSS. The Zalu Dam was found to be the most feasible surface storage option for the areas surrounding the Lusikisiki area (Figure 4). The south-western portion of the study area, mostly falling within Port St Johns Local Municipality, will be supplied with borehole water from cluster standalone schemes.

The DWS proposes to begin the second phase of the scheme to augment the existing water supply in the area from Lusikisiki to Port St Johns (Ingquza Hill and Port St John's Local Municipalities). This will involve two water resources:

- Surface water  
The construction of the Zalu Dam on the Xura River to the west of Lusikisiki, which will also involve the **upgrading of the Lusikisiki water treatment works** and the **expansion of the potable water reticulation** in the Lusikisiki area (Figure 5 and 6); and
- Groundwater

A **groundwater abstraction scheme** which will consist of two distinct projects:

1. *Augmentation of the LRWSS with groundwater* (serving mostly Ingquza Hill and a small portion of PSJ LM)

It has been recommended that 9 previously drilled boreholes be equipped and an additional 8 conceptual boreholes be drilled and equipped to abstract 2533m<sup>3</sup>/day from

the Regional Well-field Area (RWA). Groundwater from the RWA will be blended with surface water.

## 2. *Stand-alone schemes (serving mostly PSJ LM)*

Numerous communities fall outside the RWA and will need to be served by stand-alone schemes. These schemes are still only planned at a high level and will serve either single communities or small clusters of communities depending on local groundwater conditions (Figure 3).

### The Mzimvubu Water Project

The Mzimvubu Water Project has also been commissioned by DWS but is a separate scheme from the LRWSS. The Mzimvubu Water Project is a Strategic Integrated Project aimed at socio-economic upliftment of communities within the Mzimvubu River catchment area. The project consists of two multi-purpose dams on the Tsitsa River, a major tributary to the Mzimvubu River. The two dams will be built and operated as one integrated scheme.

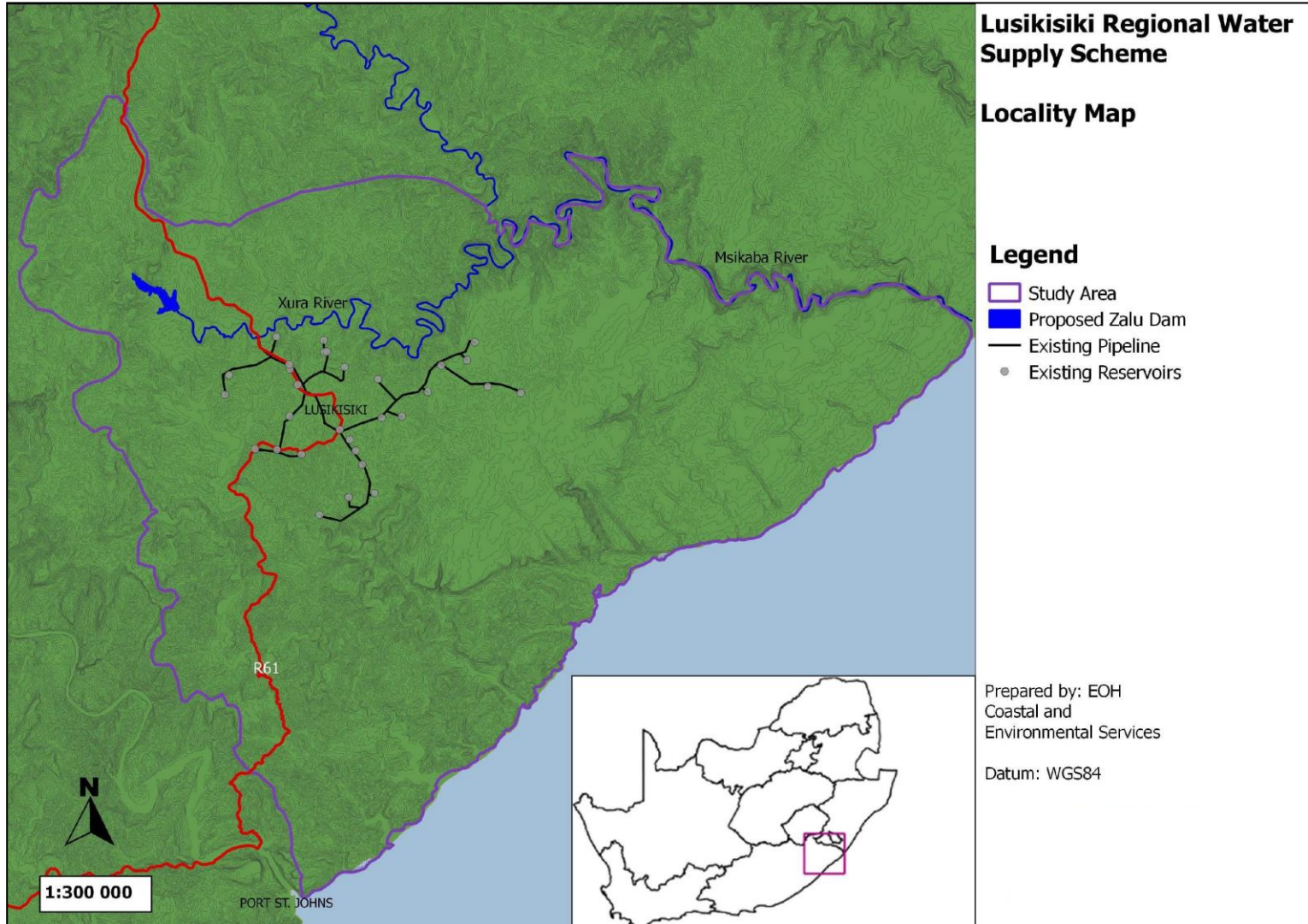


Figure 2. Locality map showing the Lusikisiki Regional Water Supply Scheme (LRWSS) study area.

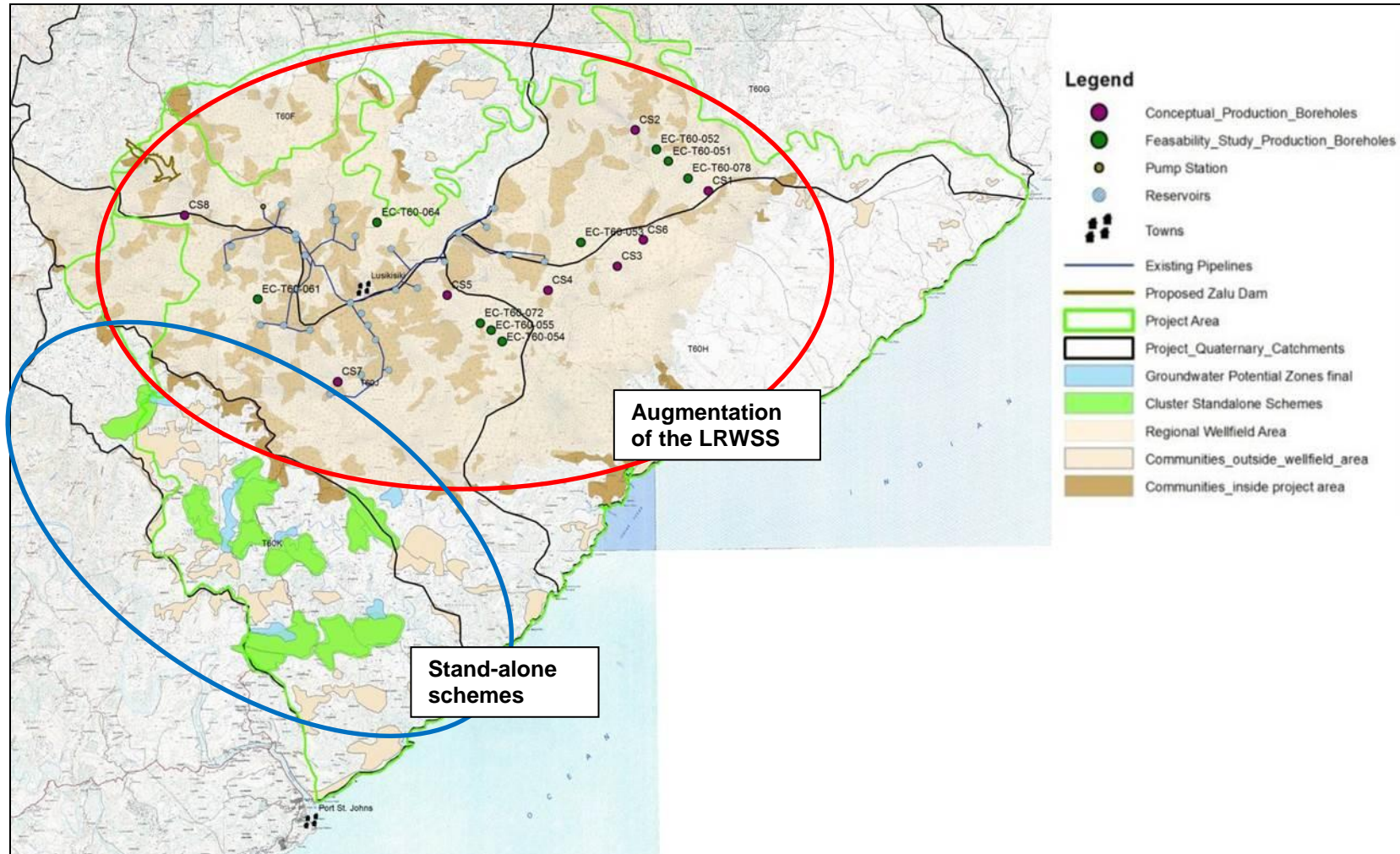


Figure 3. Regional Integrated Groundwater Supply. (Adapted from Feasibility Study for the Augmentation of the Lusikisiki Regional Water Supply Scheme: Assessment of Augmentation from Groundwater, November 2013).

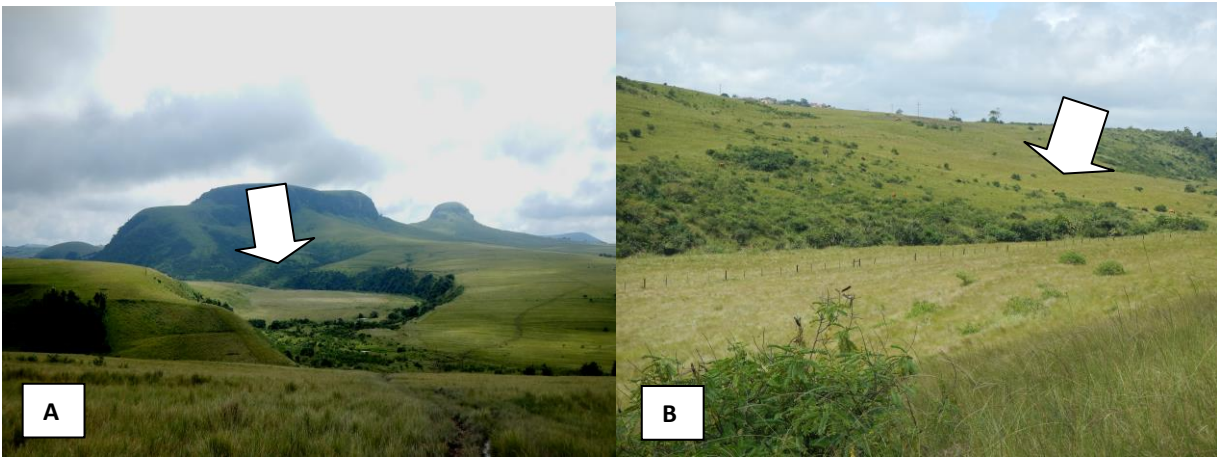


Figure 4. The proposed location of the Zalu Dam a) basin and b) wall.

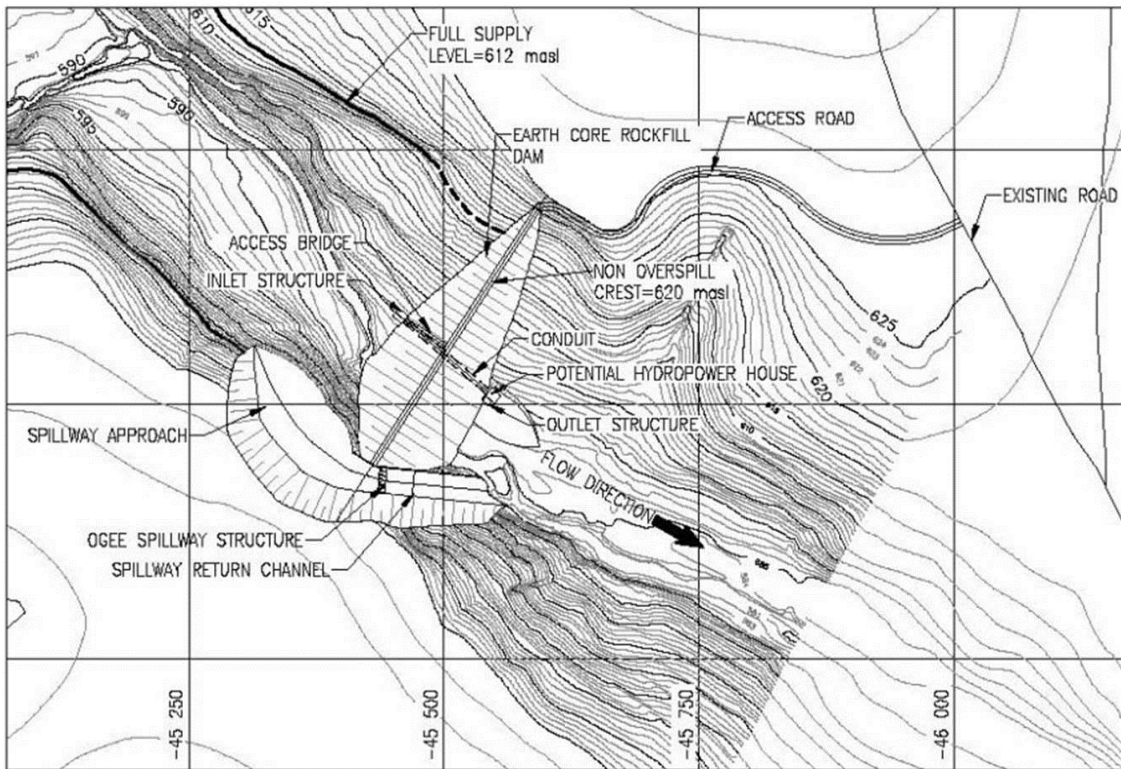


Figure 5. Detailed layout of the proposed Zalu Dam (Source: Feasibility Study for the Augmentation of the Lusikisiki Regional Water Supply Scheme: Main Study Report, February 2014).

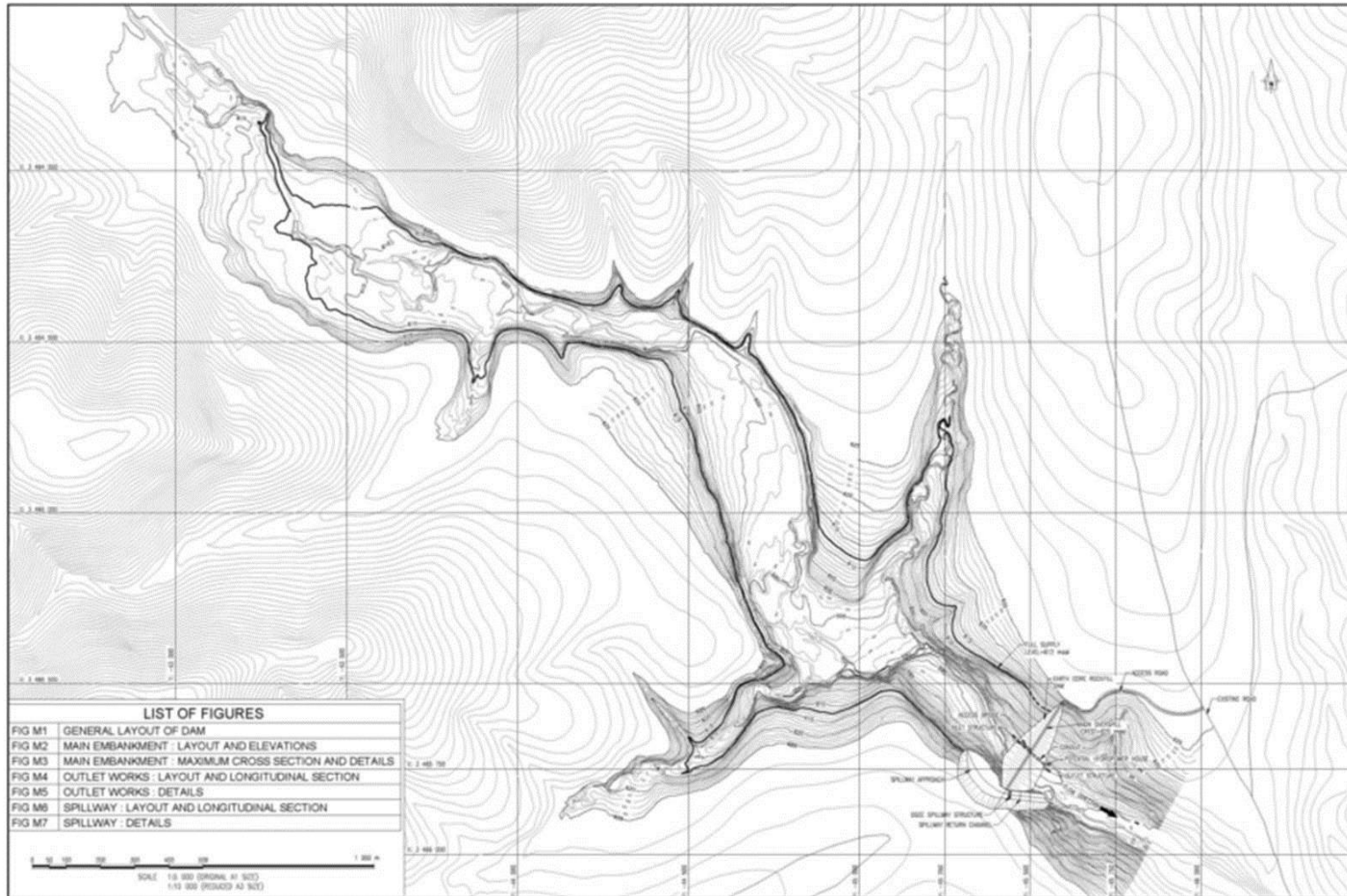


Figure 6. General Layout of proposed Zalu Dam (Source: Feasibility Study for the Augmentation of the Lusikisiki Regional Water Supply Scheme: Main Study Report, February 2014).



## DESCRIPTION OF THE PROJECT AREA

The Ingquza Hill and Port St Johns Local Municipalities, located within the OR Tambo District Municipality in the Eastern Cape, will directly benefit from the LRWSS. The Zalu Dam component of the scheme will fall predominantly within the Ingquza Hill LM, with a small portion falling in the Port St John's LM. The groundwater scheme will fall within both local municipalities.

The study area for the EIA comprises the entire region between Lusikisiki (up to about 15 km inland) and the coast, extending from the Mzimvubu River in the south-west to the Msikaba River in the north-east (Figure 2). This area includes the Zalu Dam site and its catchment along the Xura River, conveyance routes between the dam and control reservoirs, as well as borehole sites that could be developed for augmentation of water supplies from groundwater and the routes of the main pipelines from the boreholes to the control reservoirs.

## POTENTIAL IMPACTS AND BENEFITS

Site-specific assessments will be undertaken as part of the EIA process in order to confirm the feasibility of the proposed LRWSS in terms of the environmental impacts, and to delineate any areas of environmental sensitivity within the study area.

In line with the anticipated impacts, Table 1 below indicates the proposed specialist impact assessments that will form part of the EIA process. Table 2 highlights some of the benefits that the scheme will provide to the population of the area.

**Table 1. Potential Impacts of the LRWSS will be:**

- Potential impacts on heritage, archaeological and palaeontological features.
  - **Heritage/Archaeological Impact Assessment**
- Potential impacts of the floral and faunal biodiversity of the area.
  - **Ecological Impact Assessment**
- Potential impacts on paleontological features.
  - **Paleontological Impact Assessment**
- Potential impacts and benefits on local communities.
  - **Socio-economic Impact Assessment**
- Potential impacts on wetland and riparian habitats.
  - **Aquatic Impact Assessment**

## Table 2. Potential Benefits of the LRWSS will be:

- **Increased water availability and security of supply**
  - The main purpose behind the LRWSS is to meet the water requirements of the region and to ensure, via new and upgrading of existing infrastructure, greater security of supply to water users in the area.
- **The availability of alternative water resources**
  - The groundwater abstraction scheme will provide for water resources in an areas where pumping water from the Zalu Dam would be too expensive.
- **Socio-economic benefits**
  - Supply scheme for domestic and industrial water requirements;
  - The creation of temporary and permanent jobs;
  - Spin-off benefits (e.g tourism, aquaculture);
  - Irrigated agriculture.

## THE PROPONENT

The proponent for this project is the national **Department of Water and Sanitation (DWS)**. The DWS is the custodian of South Africa's water resources. It is primarily responsible for the formulation and implementation of policy governing this sector. It also has an overriding responsibility for water services provided by local government.

## THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

**EOH COASTAL & ENVIRONMENTAL SERVICES (EOH-CES)** specialises in impact assessments and environmental management. EOH-CES was established in 1990, and provides a wide variety of environmental advisory services to public and private-sector clients.

## THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

EOH-CES has been appointed by the Department of Water and Sanitation (DWS) to undertake the necessary environmental investigations for the LRWSS, and to apply for approval from the Competent Authority (Department of Environmental Affairs - DEA), for the construction of the LRWSS infrastructure, as required by South Africa's environmental legislation.

### Relevant Legislation

The Environmental Impact Assessment Regulations (2010), promulgated in terms of section 24(5) of Chapter 5 of the National Environmental Management Act (NEMA) (Act No 107 of 1998, as amended) identify activities which may not commence without an authorisation from the competent authority, who in this case is the National Department of Environmental Affairs (DEA, Pretoria). In order to apply for authorisation for the activity, the assessment and communication of potential impacts of the activities must follow the procedure as described in Government Notice No. R 543 (Section 26 to 35) of the EIA Regulations.

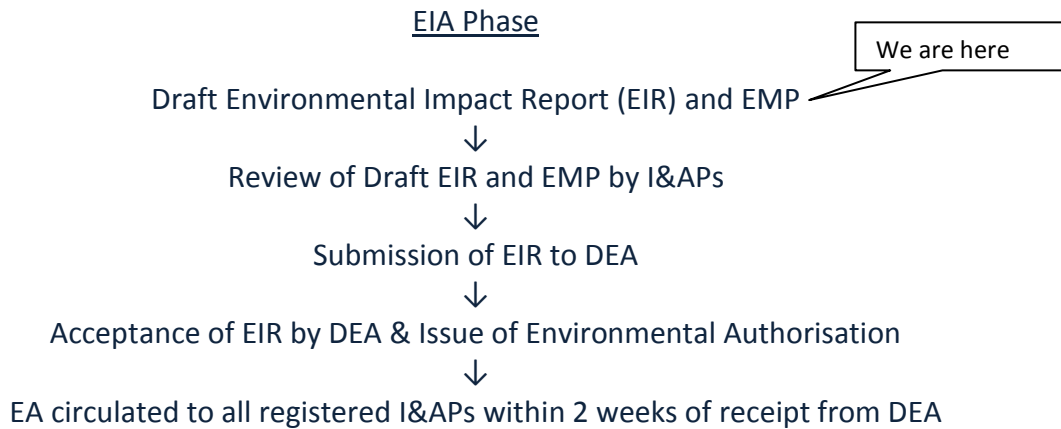
Please note that the 2010 EIA Regulations have been replaced by the new 2014 EIA Regulations (implemented from the 8th December 2014). However, the activities for which authorization is being sought will be based on the 2010 EIA Regulations.

The LRWSS is subject to a full **Scoping** and **Environmental Impact Assessment** in terms of the following listed activities:

ACTIVITY		DESCRIPTION
GN R 544 (June 2010)	9	Bulk water reticulation infrastructure will be constructed for the purposes of supplying water to water users. These pipelines will potentially exceed 0.36 m in diameter.
	11	Pipelines for reticulation of bulk water may cross watercourses.
	18	The construction of the Zalu Dam will require both excavation and infilling of material into the Xura River. Pipelines will also cross rivers and streams and will require excavation and/or infilling.
	23	An area in excess of 1 hectare outside of an urban area will be transformed from undeveloped land to institutional use.
GN R 545	15	An area in excess of 20 hectares will be transformed from undeveloped land to institutional use.
	19	Construction of the Zalu Dam on the Xura River. It is estimated that the highest part of the dam will exceed 5 m.
GN R 546	2	Reservoirs along the pipeline routes will be constructed. Some of these will fall within critical biodiversity areas in terms of the Eastern Cape Biodiversity Conservation Plan (ECBCP).
	4	A formal access road to the dam will need to be constructed.
	13	The area to be inundated by the proposed dam is identified as a critical biodiversity area in terms of the Eastern Cape Biodiversity Conservation Plan (ECBCP).
	16	Construction will take place within the Xura River (dam construction). The site is within a critical biodiversity area in terms of the Eastern Cape Biodiversity Conservation Plan (ECBCP).

## APPROACH TO THE EIA REPORT

The Scoping Phase has been completed and the final Scoping Report has been accepted by DEA on 20 November 2014. The proposed project is presently in the **EIA phase**.



The **EIA phase** is the actual assessment of anticipated impacts and also includes a number of specialist studies that were identified during the Scoping phase. These specialist studies provide input into the EIA process based on expert information.

I&APs will be consulted again during this phase, and will be given an opportunity to comment on the Draft Environmental Impact Report (EIR) that will contain the specialist reports. During this phase an Environmental Management Programme must also be prepared for the project.

The final EIR will be submitted to the National Department of Environment Affairs (DEA) who, after considering the report, will make a decision on whether or not to authorise the activities. The authorisation of an activity carries a number of legally binding conditions, which will be contained in the Environmental Authorisation document. This document will be circulated to all registered I&APs within two weeks of receipt from the DEA.

Other activities that will require approval include:

### ***Mining Licences:***

The earth-fill dam will require rock, clay and sand which will be excavated from the surrounding area. Rock and sand will be excavated from the dam basin and clay will be excavated from **two borrow pits** below the dam wall. In terms of the Mineral and Petroleum Resources Development Act (MPRDA), 2008 (Act No. 49 of 2008) and associated regulations, R527 of 23 April 2004 a mining license must be obtained from the **Department of Mineral Resources (DMR)**. The **Department of Water and Sanitation (DWS)**, as an organ of state, holds a **general mining licence** per site for borrow areas. However, DWS is required to compile EMPs for approval in terms of the provisions of section 39 (5) of the MPRDA.

### ***Water Use Licence:***

The project triggers listed activities in section 21 of the National Water Act (NWA) Act No. 36 of 1998; (a) taking water from a watercourse; (b) storing water; (c) impeding or diverting the flow of water in a watercourse; (i) altering the bed, banks, course or characteristics of a watercourse. The

proposed water treatment plant will also trigger (f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit. Each triggering activity will require a **Water Use Licence Application (WULA)**.

## HOW CAN YOU BE INVOLVED?

A **Public Participation Process (PPP)** is being conducted as part of the EIA. The aim of the PPP is to allow everyone who is interested in, or likely to be affected by the proposed development to provide input into the process.

The Public Participation Process will include:

- Advertisements in the Daily Dispatch
- Notice boards on site
- Circulation of the BID (this document) to all identified I&APs and stakeholders
- Community and focus group meetings
- Review of all reports by registered I&APs and stakeholders

If you consider yourself an interested and/or affected person/party, it is important that you become and remain involved in the PPP. In order to do so please follow the steps below in order to ensure that you are continually informed of the project developments and will ensure your opportunity to raise issues and concerns pertaining to the project.

STEP 1: Please register by responding to our notification and invitation, with your name and contact details (details provided on cover page and below). As a registered I&AP you will be informed of all meetings, report reviews and project developments throughout the EIA process.

STEP 2: Attend meetings that will be held throughout the EIA process. As a registered I&AP, you will be invited to these meetings.

EOH-CES is required to engage with all private and public parties that may be interested and/or affected by the LRWSS, in order to distribute information for review and comment in a transparent manner.

In the same light, it is important for I&APs to note the following:

1. In order for EOH-CES to continue engaging with you, please **ENSURE** that you register on our database by contacting the person below.
2. As the EIA process is regulated by specific review and comment timeframes, it is your responsibility to submit your comments within these timeframes.

Please send your enquiries and/or comments to:

**Nande Suka**  
**16 Tyrell Road**  
**Berea**

East London, 5214  
P.O Box 8145  
Nahoon, East London, 5210  
Tel: (043) 726 7809/8313  
Fax: (043) 726 8352  
Email: [n.suka@cesnet.co.za](mailto:n.suka@cesnet.co.za)

**I hereby wish to register as an Interested and Affected Party (I&AP) for the  
Lusikisiki Regional Water Supply Scheme EIA process**

Name: \_\_\_\_\_

Organization: \_\_\_\_\_

Postal address: \_\_\_\_\_

Email: \_\_\_\_\_

Phone #: \_\_\_\_\_

Fax #: \_\_\_\_\_

My initial comments, issues or concerns are:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I would like to receive all future correspondence in: (please circle)

ENGLISH / XHOSA

Other individuals, stakeholders, organisations or entities that should be registered are:

Name: \_\_\_\_\_

Organisation: \_\_\_\_\_

Postal address: \_\_\_\_\_

Email: \_\_\_\_\_

Phone #: \_\_\_\_\_

Fax #: \_\_\_\_\_

Please return details to: **Nande Suka**: P.O. Box 8145, Nahoon, East London, 5210

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