

NOTICE 1051 OF 2012**DEPARTMENT WATER AFFAIRS****INVITATION TO SUBMIT WRITTEN COMMENTS IN TERMS OF SECTION 110 OF THE NATIONAL WATER ACT 1998 (ACT 36 OF 1998) ON THE PROPOSED CONSTRUCTION OF THE GROOT LETABA RIVER DEVELOPMENT PROJECT (GLeWaP) AND THE ENVIRONMENTAL IMPACT ASSESMENT RELATING THERETO**

The Minister of Water and Environmental Affairs intend constructing the government water works as contained in Part A of the Schedule hereto.

In terms of section 110(1)(b)(iii) interested parties are invited to submit written comments on the proposed water works (Part A of Schedule) and the environmental impact assessment (Part B of Schedule), by 8 March 2013. Comments must be submitted to the Director-General, Department of Water Affairs, Private Bag X313, Pretoria; Fax 012 336 6863 and marked for attention of Mr. OJS van den Berg, Chief Engineer Options Analysis (North).

SCHEDULE TO THE PROPOSED CONSTRUCTION OF THE GROOT LETABA RIVER DEVELOPMENT PROJECT (GLeWaP) (GOVERNMENT WATER WORKS) AND A SUMMARY OF THE ENVIROMENTAL IMPACT ASSESMENT**A. PROPOSED CONSTRUCTION OF THE SCHEME**

The Groot Letaba River Water Development Project (GLeWaP) will augment the water supplies of the Groot Letaba River that supplies water to domestic users, commercial irrigation, commercial afforestation and tourism in the Mopani District Municipality (DM). This DM serves a total urban and rural population of about 1,2 million people, with 425 000 people from the directly affected Greater Tzaneen Municipality.

Locality maps of the proposed scheme are attached.

The project comprises of construction of a dam situated just below the confluence of the Groot Letaba and the Nwanedzi Rivers on a site known as Nwamitwa, the raising of the Tzaneen Dam and water treatment works, pipelines and reservoirs for the regional bulk distribution of water for domestic use.

The purpose of the development proposals are:

- To meet the projected growing primary water requirements to a planning horizon of 2030 at an acceptable assurance of supply. The envisaged beneficiaries are in the Mopani District Municipality, and specifically the Greater Tzaneen and Greater Letaba Municipalities.
- To prevent further degradation of the riverine ecosystem by implementing the recently signed-off preliminary Reserve determined in compliance with the National Water Act No 36 of 1998. At present the EWR of 82 million m³/a downstream of the Nwamitwa site is only partially met by judicious management of the available supplies in co-operation with the Water User Association. Construction of a new dam at Nwamitwa will, inter alia, make it possible to manage the Reserve flow downstream so as to improve the flow regime in the Kruger National Park while respecting international obligations to Mozambique specifically as

downstream neighbour, but also to Botswana and Zimbabwe that also shares the Limpopo River basin.

- To minimize further lowering of the assurance of availability of water supplies to the irrigation sector for the existing development. This sector is the major contributor to the economy of the region and worsening shortages will have serious negative socio-economic consequences through job losses and increased poverty. The avoidance of insidious worsening of poverty in the region is essential for economic transformation.
- To improve water availability for the establishment of resource-poor farmers (about 2000 ha of which 658 ha is available for beneficiaries), who require dedicated support to become commercially successful and gain a share of the existing market for their products. The process of identifying candidate farmers and settling them has not commenced. For this to be possible they must again receive reliable water allocations from the increasingly stressed water resource system. In this way a positive contribution can be made to agrarian reform as well as to the economic transformation of rural communities.

The overall yield of schemes in the Groot Letaba Catchment is 126 million m³/a, and the total allocation for domestic, industrial and irrigation usage from these schemes is 177 million m³/a.

Besides potable bulk water distribution infrastructure, the GLeWaP will consist of:

1. NWAMITWA DAM

The Nwamitwa Dam will be situated on the Groot Letaba River, downstream of the confluence of the Nwanedzi River, on the farm Janetsi Farm No 463LT (Coordinates S23° 45' 21.4" E30° 29' 23.9") and about 1 km south of the Nkambako village. A name for the dam has not yet been decided upon, although it is sometimes referred to as Nwamitwa Dam. It is planned to construct a dam with a height of 36 m above the river bed level and a gross storage capacity of approximately 190 million m³. The proposed dam will increase the firm yield from the river system for domestic use by 14 million m³ per annum.

This supply will be available after ensuring sufficient flow in the river to meet the Ecological Water Requirements (EWR) as defined in the approved Preliminary Reserve, allowing for improvement in assurance of supply to existing irrigators and enabling resource poor farmers to access water for irrigation on land previously irrigated. The obligations of SA towards Mozambique as a co-basin state will be respected.

The dam will be of composite construction with a concrete spillway discharging onto a concrete apron and stilling basin in the river section and with earthfill embankments on both flanks. A multilevel, screened intake tower will be incorporated into the concrete spillway section. The centreline of the dam will be confirmed by detailed geological investigations. Technical details of the proposed dam is summarised in the table below:

Description	Detail	Unit
Dam type	Embankment	-
Gross full supply capacity	190	million m ³
Dam's contribution to system yield	14	million m ³ /a
Surface area at full supply level	27	km ²
Maximum Full supply level (FSL)	479.5	m.a.s.l
Maximum non-overflow crest	486	m.a.s.l
Riverbed level (RBL)	450	m.a.s.l
Embankment crest length (including spillway)	3 500	m
Dam height at FSL (FSL – RBL)	29.5 to FSL and 36 m to Non-overflow crest	M
Spillway type	Mass concrete gravity spillway	-
Spillway capacity	6 800	m ³ /s
Spillway size	190 m long ogee	

* The above detail is based on the preliminary design of Nwamitwa Dam and is subjected to final design which may result in changes to the FSL and the overall length of the dam wall.

2. RAISING OF THE TZANEEN DAM

The Tzaneen Dam, on the Groot Letaba River, will be raised by 3 m with a Labyrinth spillway (a fuse gate option is also being considered) to a Full Supply Level (FSL) of 726.9 m.a.m.s.l. This will increase the storage capacity from 157 million m³ to 200 million m³ and increase the firm yield from the system by 4 million m³/a.

The intention is to use the increased storage capacity for growth in Tzaneen's urban requirements and to mitigate future restrictions on water use for irrigation. Water allocations for irrigation will not be increased.

	Existing Dam	Dam with proposed 3 m raising
Type	Embankment dam	Embankment dam
Height to NOC	47 m to crest level	49.4 m to crest level (previous level raised)
Full supply level	723.9 mamsl	726.9 mamsl
Non-overflow crest	730.6 m	733 m
River bed level	689 mamsl	689 mamsl
Storage at FSL	157.29 x 10 ⁶ m ³	200 x 10 ⁶ m ³
Spillway type	Mass concrete gravity spillway	Labyrinth spillway (a fuse gate option is also being considered)
Spillway capacity	3 501 m ³ /s	4 120 m ³ /s
Spillway size	91.4 m long ogee	91.5 m wide, 8 cycles, 15° angles, 8.54 m high labyrinth
Outlet works	3 x 1 524 mm outlet pipes	3 x 1 524 mm outlet pipes
Outlet capacity	18 m ³ /s	18 m ³ /s
Area at FSL	11.7 km ²	13.2 km ²
Additional system yield through raising		4 million m ³ /a

* Information based on the preliminary design of the raising of Tzaneen Dam

B. SUMMARY OF THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

The Department of Environmental Affairs has granted Environmental Authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), for the works outlined in Part A. The key findings and recommendations of the Environmental Impact Assessment are summarised below.

(For more information please see full EIA on the website

<http://www.dwa.gov.za/Projects/GrootLetaba/>)

- *Multiple level outlets*

Stratification is predicted to occur in the proposed new dam, and the release of cold, anoxic bottom water will have a detrimental effect on the aquatic life up to a distance of about 15 km below the dam wall. To overcome this effect it is recommended that a multiple level outlet structure, with outlets between 4 - 5 meter intervals from 6 meters below the fully supply level (FSL), be installed.

- *Dam Basin Clearing*

Orchards and trees/bushveld in the dam basin should be cleared prior to first filling.

- *Pipelines*

Pipeline routes through untransformed vegetation should be regarded as least favourable options and routes should whenever possible traverse transformed habitats in order to minimise impacts on terrestrial ecology and heritage resources.

- *Booster Pump-stations*

Pump-stations should be located at least 250 m from residences, school or public facilities in order to maintain acceptable noise levels.

- *Road re-alignment*

The construction of the proposed new dam will inundate sections of Road R529, Road D1292 (R81) and Road P43/3 that will require re-alignment. The new road will deviate northwards from the R529 approximately 8.5 km north of the intersection with Route 71; it will cross over the D1292 (R81) until it links with the existing R529 1km south of Ka-Malubane.

- *Sedimentation*

The coffer dams should be designed not to cause river bank erosion or local scour at the dam site. The sediment concentrations 300 m downstream of the dam site should be monitored during construction to ensure present (90 percentile) high sediment concentrations are not exceeded.

The post-dam river will become narrower as a result of flood attenuation. The river bed between the dam and the Klein Letaba River tributary will become coarser due to sediment trapping at the dam and local bed degradation over a limited area near the dam of at least 2 m is expected.

- *Cultural Sites and Graves*

26 sites of cultural significance, which includes five Stone Age sites, nine Iron Age sites, four sites dating to historic times, and eight sites containing graves, were identified in the EIA.

Confirmation and detailed investigations of archaeological sites must be completed and the required excavation and documentation must be undertaken prior to the impact on the affected sections on the project. A grave relocation programme must be implemented in accordance with applicable legislation.

- *Compensation and development plan*

The landowners who have land in the proposed dam basin are all commercial fruit farmers. A few also grow vegetables on a commercial basis. Some also farm with cattle. 12 farmhouses and two packing facilities and approximately 26 small irrigation dams will be affected by the proposed new dam (at 1.5 MAR capacity). No re-location of rural village homesteads or facilities will be required.

A compensation and development plan that includes the prioritisation of the land acquisition process in accordance with the established legal procedures to minimise impacts on citrus farmers that require a lead time to re-establish their landuse, and the procedures to deal with the loss of rights of access to water must be compiled and implemented. Continued liaison with directly affected landowners and occupiers in the preconstruction and construction phases is required.

- *General communication strategy*

A general communication strategy should be implemented for the implementation phase of the project.

- *Labour procurement*

The project is expected to create 250 direct jobs. Negative social impacts can be mitigated by using local labour for construction. Labour procurement for construction must be undertaken through a Labour Desk in accordance with the Departments procedures and policies and gender and race targets to be set and measured as stated in the EMP.

- *Water distribution*

The project will result in an increase in the water availability and associated health and economic sustainability and stimulation in the operation phase. This is dependent on the implementation of distribution infrastructure.

Continued liaison with authorities responsible for the implementation of water distribution is therefore required.

- *Fauna and flora*

The project area covers two different vegetation types, Granite Lowveld and Tsende Mopaneveld with a wide range in ecosystem status. The main factors of disturbance in the project area are human settlements, agriculture and forestry. Nearly 60% of the project area is transformed or degraded by such developments.

Loss of fauna and flora in the areas to be disturbed and inundated should be mitigated by plant and animal rescue programmes, and establishing a holding nursery where plants can be kept for rehabilitation purposes.

- *Aquatic ecology*

Negative impacts on aquatic habitats and biota downstream of the construction activities are predicted if no mitigation is implemented. Mitigation includes limiting the disturbance on the local construction site, stabilising the downstream river bed and banks if necessary, and ensuring that connectivity between upstream and downstream riverine habitats is maintained at critical fish life-cycle periods during the construction phase.

Fish communities and populations upstream of the dam and within the dam will be impacted permanently upon in terms of abundances, but it is expected that the majority of species will manage to adapt and find adequate habitats for spawning and life-cycle stages. The habitats of the Groot Letaba River downstream of the Nwamitwa Dam should support the current diversity of fish species, provided that the mitigation measures are implemented correctly and that the Reserve requirements are maintained.

Bi-annual biomonitoring of river sections up and downstream of the dam should be implemented to inform a river management plan and the implementation of the Reserve.

- *Construction related impacts*

Construction activities result into a range of impacts that are common to most construction sites. Potential impacts include dust, noise, traffic, influx of people, crime and destruction of valuable flora and fauna. The Environmental Management plan will address and mitigate these impacts.

The impacts on the community are only expected to be significant when certain construction activities are in progress during the night time. Noisy construction activities should therefore be limited to day time hours wherever possible.

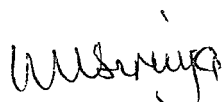
Construction activities will also impact on the movement patterns, social relationships and safety of local communities. This should be mitigated by providing safe passage as required.

- *Baseline studies*

Baseline studies should be undertaken to be completed as soon as possible before implementation commences in order to provide a benchmark against which impacts resulting from the construction and operation of the project can be measured. Aspects to be included are social, economic, water quality, aquatic ecology, terrestrial ecology, air quality and noise.

- *Environmental Management Plans*

The draft Pre-construction Environmental Management Plan (this includes monitoring mechanisms and specifications); and construction and operation EMPs based on the generic EMP (this includes monitoring mechanisms and specifications) must be finalised, approved and implemented.


DIRECTOR-GENERAL
Department of Water Affairs
Date: 02/11/2012

