

Your Ref: 16/1/4 – 002-250-2009/2D2

Our Ref: MP1302/TP

26 June 2018

The Regional Manager  
SANRAL Eastern Region  
PO Box 100410  
SCOTTSVILLE  
3209**Attention:** Mr. Ridhwaan Mahomed

Dear Sir,

**CONTRACT NRA N.003-010-2017/2: CAPACITY IMPROVEMENTS ON N3 – 1 FROM WESTVILLE VIADUCT (km 11,8) TO PARADISE VALLEY INTERCHANGE (km 17,54): ENVIRONMENTAL MATTERS RELATED TO PARADISE VALLEY VIADUCT OVER PARADISE VALLEY NATURE RESERVE.**

1. The various discussions and the meeting held on 18 June 2018 between SANRAL, eThekweni, Acer Africa and SNA (Pty) Ltd regarding the above, refers.
2. The minutes of the above meeting are attached and the actions noted for SNA are covered in this letter.
3. On the basis of the acceptance by all present at this meeting of the additional Rectangular piers in the river channel, SNA were asked to evaluate the impact on the river flow under the condition where debris collects behind each pier and causes a backwater in the river as per section 3.6.2 of the minutes. In order to simulate this, a 6m tree stump or equivalent width of smaller debris was applied to all the piers in the water over the full depth. As requested by Mr. Greg Mullins of eThekweni this was repeated for a 1:5 year, 1:10 year, 1:20 year and 1:50 year recurrence internal flood as well as the 1:100 year and 1:200 year floods as presented at the meeting.

The results were as follows:

- The trends from the 1:5 year through to the 1:200 year return period remained similar, indicating that the river flow characteristics (width, depth and velocity) remain essentially similar under the different flood return periods.
- At the 1:100 year flood which was used as our baseline for the calculations the debris accounted for an additional 350mm in backwater upstream of the bridge.

Certificate Number 7759  
ISO 9001 : 2015SOUTH AFRICA: PRETORIA - PIETERMARITZBURG - CAPE TOWN - BLOEMFONTEIN - RICHARDS BAY  
AFRICA: ZAMBIA: LUSAKA - BOTSWANA: GABORONE

Directors: JWB STOLTZ (Managing) A DeV TALJAARD KG MALCOMSON CE MUSHWANA R SHAIK AE TSHIPONGO

MEMBER FIRM OF CONSULTING ENGINEERS SOUTH AFRICA  
MEMBER FIRM OF CONCRETE SOCIETY OF SOUTHERN AFRICA

Consulting Engineers South Africa

CONCRETE SOCIETY  
OF SOUTHERN AFRICA  
SILVER MEMBER

The conclusion derived from these further studies is that this will result in a limited backup of water upstream of the Bridge but that there was no apparent reason to channelize the river on the western side to accommodate this.

There is no doubt that there will be some of the existing "Hiking Trails" that would be inundated. As agreed to in the meeting by SANRAL the Reserve Management would identify these on their GIS Maps and that these trails will be moved above the flood level by the Contractor appointed by SANRAL to construct the bridge widening.

If this is done any erosion which may occur on the Western Bank of the river would not influence the use of the reserve. We recommend that this would be a more environmentally friendly solution than channelizing the western bank of the riverbed as suggested by the Reserve Management at this stage.

4. The intention is to add a section to the Project Document setting out all the Environmental requirements in the Nature Reserve as set out in Section 5 of the minutes in addition to the and in support of the EMP so that the Contractor will be properly informed of his obligations within the Nature Reserve.
5. We trust that you will be in agreement without proposal and that this matter is now closed.
6. Should you require any additional information. Please contact us.

Kind Regards,



**DS TEMPLE** Pr. Eng.  
for **SNA Civil & Structural Engineers (Pty) Ltd.**