

The Department of Water and Sanitation has requested SRK to apply for Environmental Authorisation (EA) for the restoration of 10 bridges along the Skoenmakers river. In a letter from the Department of Environmental Affairs the Department requested that we provide confirmation from SAHRA that no Archaeological and Palaeontological studies are required.

## **Background**

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. The river receives water from the Gariep dam via a gravity tunnel and discharges into the Darlington dam. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous. To overcome inaccessibility to Middlewater and farmlands, 10 river crossings were constructed.

The continual change in the hydrological regime of this once ephemeral stream to a much bigger perennial river led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This has resulted in:

- Erosion of the river embankment.
- Excessive siltation causing unnatural islands to form within the river bed.
- Blockage of water extraction Weirs and pump stations.
- Excessive invasive vegetation causing blockage of the water course.
- Damage to infrastructure such as road crossings, water extraction weirs and equipment to regulate flood water.

## **Project Description - Bridge restoration**

This continual change has led to the deterioration of the 10 river crossings. This project entails restoring and/or upgrading the 10 crossings.

### **1. River Crossing 1**

Located on the DWS servitude is going to be upgraded by removing the structures that were part of the existing bridge and constructing a suspended bridge. The foot print of River Crossing 1 will be expanded as the height of the crossing will be raised and the length increased.

### **2. River Crossing 2**

Located along the DWS servitude, is going to be upgraded by removing existing structures and replacing them with portal culverts adequately sized to accommodate the hydraulic capacity, both current and future. The foot print of River Crossing 2 will be widened.

### **3. River Crossing 3**

Located along the DWS servitude, is going to be upgraded by removing existing structures and replacing them with portal culverts adequately sized to accommodate the hydraulic capacity, both current and future. The foot print of River Crossing 3 will be widened

#### **4. River Crossing 4**

Located on the DWS servitude is going to be expanded on with 2 additional culverts and the reinstatement of the washed away embankment including approach slabs. The foot print of River Crossing 4 will be extended.

#### **5. River Crossing 5**

This bridge is going to be repaired and maintained. Approach slabs will also be constructed on either side of each bridge crossing. Bull noses will be constructed in order to prevent debris getting trapped in the water way. This will expand on the footprint of the crossing.

#### **6. River Crossing 6**

Located along the DWS servitude, is going to be upgraded by removing existing structures and replacing them with portal culverts adequately sized to accommodate the hydraulic capacity, both current and future. The foot print of River Crossing 6 will be widened.

#### **7. River Crossing 7**

Located along the DWS servitude, is going to be upgraded by removing existing structures and replacing them with portal culverts adequately sized to accommodate the hydraulic capacity, both current and future. The foot print of River Crossing 7 will be widened.

#### **8. River Crossing 8**

Located along the DWS servitude, is going to be upgraded by removing existing structures and replacing them with portal culverts adequately sized to accommodate the hydraulic capacity, both current and future. The foot print of River Crossing 8 will be widened.

#### **9. River Crossing 9**

Located along the DWS servitude, is going to be upgraded by removing existing structures and replacing them with portal culverts adequately sized to accommodate the hydraulic capacity, both current and future. The foot print of River Crossing 9 will be widened

#### **10. River Crossing 10**

Located along the DWS servitude, is going to be upgraded by removing existing structures and replacing them with portal culverts adequately sized to accommodate the hydraulic capacity, both current and future. The foot print of River Crossing 10 will be widened.

The location of the bridges are presented in the attached kmz file (this file indicates 12 sites, but the application only focussed on sites 1-10).

### **Project Description - River Rehabilitation**

The river rehabilitation as indicated in the attached pdf document indicates the positions along the river that require intervention. Details relating to the earthworks

required for the rehabilitation of the river banks is not yet available but will include construction and placement of measures to prevent further degradation of the river banks.