

## **Project Name: Periodic Maintenance of DR 1797 - Kurland, Western Cape**

### **1. Introduction**

Hatch Africa (Pty) Ltd (Hatch) has been appointed by the Provincial Department of Transport and Public Works: Roads Infrastructure Branch of the Western Cape Government (WCG), to undertake the Periodic Maintenance of DR 1797, Kurland, Western Cape. The work will cover upgrades to Road 1797 (from gravel to tar), which joins the TR2/12 near Kurland.

This document provides an overview of the project and the key tasks required from the freshwater specialist to meet the requirements of the 2016 General Authorisation in terms of Section 39 of the National Water Act (No. 36 of 1998) (NWA). In addition, the requirements of the National Environmental Management Act (No. 107 of 1998) (NEMA) Environmental Impact Assessment (EIA) Regulations of 8 December 2014, as amended 7 April 2017, promulgated in Government Gazette 40772 and GN R324, R325, R326 and R327 (as corrected in GN 706 in Government Gazette 41766 of 13 July 2018), will need to be met.

#### **1.1 Background**

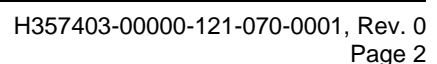
At the end of 2019, an option analysis was undertaken by Hatch to determine the most appropriate solution for the geometric design challenges of the DR 1797. The preferred option triggers the need for an Environmental Authorisation to be obtained for the upgrade of the DR 1797. Due to this, the DR 1797 road upgrade project has been separated from the current TR2/12 and OP 7220 road projects, as the DR 1797 authorisation would hold up the construction of the TR2/12 and OP 7220 road maintenance, which have already received authorisation.

### **2. Project Description**

#### **2.1 Site Locality**

The Upgrade of the DR 1797 will be from km 0.00 (left off the N2 and just past The Craggs Petrol Station) to km 4.87.

This road is dual lane, single carriageway and is situated in the jurisdiction of the Garden Route District Municipality (formerly known as the Eden District Municipality). A locality plan, indicating the areas which require expropriation, is presented in Figure 2-1.



- Construct a major culvert at km 0.7
- Construct subsoil drainage and unlined earth drain structures along the route
- Erect additional and missing signs, as well as replace existing signs in poor condition
- Re-establish permanent road markings
- Expropriate and move the fence line where required.

## **2.3 Overview of Construction Works**

### **2.3.1 Road Works**

#### **2.3.1.1 Cross Section (lane and shoulder widths, cut and fill slopes etc.)**

The typical cross section of the single carriageway of DR 1797 generally conforms to a Class 4 unsurfaced (gravel) cross section. The gravel road consists of 2 by 3.0 m wide lanes with no defined gravel shoulders. The surfacing width shall conform to a special Class 4 consisting of 2 by 3.4 m wide lanes with a 300 mm gravel shoulder on each side.

#### **2.3.1.2 Horizontal and Vertical Alignment**

Upgrading of the existing gravel road will require adjustments to the vertical and horizontal alignment. The new alignment shall allow for a 60 km/hr design speed (with advanced warning signage at the sharp curve situated at km 3.4) and will tie into all existing access roads along the section.

#### **2.3.1.3 Intersections**

There are twenty-one accesses and three OP road intersections all of which are at grade accesses on this section of the DR 1797. All minor and major farm accesses, as well as the three OP road intersections, are to be formalized.

#### **2.3.1.4 Side Drains**

The drainage along this route is deemed inadequate. Subsoil drains and unlined side drains shall be constructed along the road as specified on the drawings.

### **2.3.2 Structural Works**

#### **2.3.2.1 Major Culverts**

The third structure would be one that is built along the fill of the road and allows water to pass under the road. This culvert structure would similarly need to be 5 m wide and 3 m high with a length of 20 m. Due to this structure requiring a large amount of fill with a fill footprint that will extend beyond the existing road reserve, expropriation of additional land would be required.

#### **2.3.2.2 Minor Culverts**

All minor culverts (600 mm) will be upgraded.

### **2.3.3 Appurtenant Works**

#### **2.3.3.1 Road Markings**

Road markings and new road studs will be applied in accordance with the latest SADC Road Traffic Signs Manual and as specified.

## 2.3.3.2 Road Signs

New road signs, as well as the replacement of existing signs, are required as indicated on the drawings or as directed by the Employers Agent. A Road Sign Schedule that provides details regarding the new road signs is included in Volume 4: Drawings for Road Works.

## 2.3.3.3 Guardrails

Guardrails are to be erected at locations which have high fills along the DR 1797.

## 2.3.3.4 Fencing

The condition of the fencing along the route varies from fair to poor. It is anticipated that about 50% of the length of the existing fencing shall be replaced. Additional fencing is to be erected at the positions where there is no fencing.

Fencing (LHS)			
Start km	End km	Length (m)	Type
0.01	0.28	270	Vermin
0.28	0.80	520	Stock
1.04	1.26	220	Stock
1.67	3.42	1750	Stock
Total LHS (m)		2760	
Fencing (RHS)			
Start km	End km	Length (m)	Type
0.01	0.13	120	Vermin
0.13	3.42	3290	Stock
Total RHS (m)		3410	

## 2.3.3.5 Services

No Telkom, Eskom, electrical or water lines are to be relocated.

## 2.3.3.6 Accesses

The project will cover the upgrade of DR 1797 which joins the TR2/12 near Kurland. The length of the route is approximately 5 km and upgrades are to include conversion of the road from gravel to tar. A more detailed construction strategy for these upgrades will be provided on completion of the engineering site assessment. The road is shown below:





## 2.4 Proposed Construction

The proposed construction strategy envisaged for the upgrade of the DR 1797 per identified period is to be carried out in the sequence of work shown in the construction strategy below:

### Phase 1 (km 0.00 -km 1.43)

- Installation of moveable temporary barriers and channelization devices
- Construction of a temporary widening on the LHS
- Excavation of existing pavement layers to the required depth for the proposed new pavement structure on the RHS
- Construction of new pavement layers of the lane and a 20 mm single seal with two slurry layers on the RHS
- Relocation of moveable temporary barriers and channelization devices
- Excavation of existing pavement layers to the required depth for the proposed new pavement structure on the LHS
- Construction of new pavement layers of the lane and a 20 mm single seal with slurry layer on the LHS
- Temporary road markings and road studs.

### Phase 2 (km 1.43 - km 2.70)

- Installation of moveable temporary barriers and channelization devices
- Construction of temporary widening on the RHS
- Excavation of existing pavement layers to the required depth for the proposed new pavement structure on the LHS

- Construction of new pavement layers of the lane and a 20 mm single seal with two slurry layers
- Relocation of moveable temporary barriers and channelization devices
- Excavation of existing pavement layers to the required depth for the proposed new pavement structure on the RHS
- Construction of new pavement layers of the lane and a 20 mm single seal with two slurry layers
- Temporary road markings and road studs.

#### Phase 3 (km 2.70 - km 3.64)

- Installation of moveable temporary barriers and channelization devices
- Construction of temporary widening on the LHS
- Excavation of existing pavement layers to the required depth for the proposed new pavement structure on the RHS
- Construction of new pavement layers of the lane and a 20 mm single seal with two slurry layers
- Relocation of moveable temporary barriers and channelization devices
- Excavation of existing pavement layers to the required depth for the proposed new pavement structure on the LHS
- Construction of new pavement layers of the lane and a 20 mm single seal with slurry layer
- Temporary road markings and road studs.

#### Phase 4 (km 3.64 – km 4.87)

- Installation of moveable temporary barriers and channelization devices
- Construction of temporary widening on the LHS
- Excavation of existing pavement layers to the required depth for the proposed new pavement structure on the RHS
- Construction of new pavement layers of the lane and a 20 mm single seal with two slurry layers
- Relocation of moveable temporary barriers and channelization devices
- Excavation of existing pavement layers to the required depth for the proposed new pavement structure on the LHS
- Construction of new pavement layers of the lane and a 20 mm single seal with slurry layer
- Final road markings and road studs over the entire length of the road
- Installation of final road signs and other ancillary works as specified and required.

---

### **3. Key Tasks**

#### **3.1 General Authorisation**

In terms of GNR. 509 of 2016 – GA in terms of Section 39 of the NWA for water uses as defined in Section 21(c) and (i), the maintenance of bridges over rivers, streams and wetlands and the construction of bridges done according to SANRAL Drainage Manual or similar norms and standards are generally authorized for SANRAL, Provincial Departments of Transport, or Municipalities; when the result of a risk assessment is low.

Due to the nature of activities proposed, it is expected that the project will be of low risk. This will need to be confirmed by the specialist study and risk assessment undertaken by the service provider.

The task is to therefore provide technical specialist information in support of the General Authorisation application for the proposed activities. The following uses, as defined in Section 21 of NWA, are being applied for:

- S21(c): impeding or diverting the flow of water in a water course
- S21(i): altering the bed, banks, course or characteristics of a water course.

This requires the completion of the following:

- Specialist wetland assessment and delineation
- Assessment of engineering method statements to ensure viable mitigation measures
- Completion of the risk assessment matrix in accordance with the requirements of Section 21 (c) and (i) published in GG No. 40229 on 26 August 2016
- The documents are to be completed by a SACNASP registered professional.

#### **3.2 Basic Assessment**

In terms of GN R.983 & R.984 of the NEMA EIA Regulations of December 2014, as amended 2017, is it anticipated that a Basic Assessment process will be required to obtain Environmental Authorisation.

A specialist study will be required to assess the environmental impacts of the periodic maintenance of the DR 1797, as well as provide mitigation measures which can be implemented to reduce the impact on the environment.

The task is to therefore provide technical specialist information in support of the Basic Assessment Application.

This requires the completion of the following:

- Specialist assessment
- Assessment of engineering method statements to ensure viable mitigation measures
- Input into the Basic Assessment Impact Assessment, including provision of mitigation measures.

### **4. Exclusions**

The following exclusions apply:

- Completion of relevant GA application forms
- Completion of Basic Assessment.

## 5. Returnable

The following returnables should accompany the quotation:

- A brief methodology outlining the tasks that will be undertaken
- A list of deliverables and timelines
- Budgets inclusive of all professional fees and disbursements
- Complete CV's of all staff involved in the project
- Any other supporting documentation.

MM:mm