



Our Ref:  
NSS Ref: 2538NSS

30<sup>th</sup> September 2020

**Natural Scientific Services**

P.O. Box 457  
MODDERFONTEIN  
1645

**RE: PROFESSIONAL OPINION – SCREENING TOOL REQUIREMENT - AGRICULTURAL POTENTIAL STUDIES – HIGH SENSITIVITY SITES – UPGRADE TO ROAD – DR 1797**

Thank you again for the opportunity afforded Earth Science Solutions in joining you and your team on this project.

Based on the information supplied, our knowledge of the area in question and after discussions with the specialist consultant, the following factors are considered pertinent to the proposed upgrade and associated expropriation being considered as part changes to the DR 1797 roadway.

Our professional opinion is based on information supplied by the lead consultants as well as inputs from other earth scientists and professionals and information received from the authorities relating to the use of the Screening Tool.

Please contact me should you require any additional information in this regard.

Yours sincerely  
Earth Science Solutions

A handwritten signature in black ink, appearing to read 'Ian Jones', is written over a horizontal line.

Ian Jones - BSc (Geol), Pr.Sci.Nat (400040/08)

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**EARTH SCIENCE AND ENVIRONMENTAL CONSULTANTS**

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***Declaration***

This Professional Opinion Report has been compiled in terms of the local Environmental Legislation and forms part of the Environmental and Social Impact Assessment being undertaken for the project, both as a standalone document, and as supporting information to the overall Basic Assessment and Screening Tool Report.

The specialist opinion was signed off by Ian Jones (Pr. Sci. Nat. 400040/08), an Earth Scientist with 40 years of experience and expertise.

I declare that both, Ian Jones, and Earth Science Solutions are totally independent in this process and have no vested interest in the project.

**DISCLAIMER**

Earth Science Solutions (ESS) has supplied this professional opinion and specialist comment on behalf of Natural Scientific Services (NSS) as part of the Basic Assessment being undertaken by Hatch Africa (Pty) Ltd for the DR 1797 Road Upgrade Project.

The findings, conclusions and opinions of ESS are based on the scope of services as defined in the contractual undertakings between NSS and ESS.

The contents of this report are specific to the intended development. The report shall not be used nor relied upon neither by any other party nor for any other purpose without the written consent of ESS.

ESS accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. The comments, recommendations and opinions expressed in this report reflect the best judgement of ESS in light of the information available and supplied at the time of preparation.

The analyses contained in this report has been developed from information provided by the proponents and other parties. This information is not within the control of ESS, and has not be audited for authenticity, and we make no representations as to the validity or accuracy thereof.

## 1. Introduction

This professional opinion is based on the information supplied, our understanding and knowledge of the area in question and an explanation from the relevant authority on the utilisation of the screening tool.

The presentation and screening tool report supplied by the lead consultants (EAP) (Refer to Figure 1 – Areas of interest, and Figure 2 – Agricultural Theme) consider the areas of proposed change associated with the DR 1797 roadway and rate the Agricultural Theme Sensitivity for the areas either side of the existing road alignment.

The area is located north of Keerboomstrand close to Kurland Village in the Western Cape Province of South Africa.

It is understood, that:

- The proposed project will involve the expropriation of portions of land along the existing road alignment where the road is to be rehabilitated and in places upgraded.
- These upgrades will occur within the existing road servitude, and where necessary the road servitude will be widened to accommodate the changes to the road construction.

The Screening Tool is a guideline that is used “to flag sensitivities”, and highlight areas that need to be considered during an EIA/BA study, while also assisting to plan the types of specialist studies that need to be conducted as part of any new developments.

## 2. Background Information

The information utilised includes the Screening Tool Report, a presentation by the lead consultants (Hatch Africa (Pty) Ltd, the Google Earth Imagery and the Regional Geological mapping. Interaction with the specialist consultants was also had throughout the process.

Important to a background understanding of the proposed project, and of pertinence to the opinions expressed herein concerning the Screening Tool Reports conclusions on the Agricultural Theme Sensitivity analysis include the following:

- That the project is being undertaken as part of the periodic maintenance and rehabilitation of the existing roadway to a Class 4 Rating/Standard,
- The road will require widening in places and additions of new shoulders and the construction of a new culvert,
- The existing land uses along the roadway include wine farms, vegetable farms, forestry estates accommodation and arts and crafts,
- A number of artificial water dams occur in close proximity to the roadway, and in places on the edge of the road servitude, while there are a number of perennial streams and wetland environments that cross the DR 1797,
- The regional geology (1:250 000 Geological Series) indicates that the area is underlain by a relatively homogeneous series of lithologies that have resulted in similar soil forms across the study area. The pedogenesis and resultant soil forms are further influenced by the climate, topographic landform changes and weathering mechanisms associated with the climatic conditions and hydrology of the area. These considerations have resulted in a number of differing soil groupings and wetland environments found associated with the differing landform units. The silty clays and alluvial/colluvial deposits associated with the riverine and stream environments contrast with the moderately deep to shallower and dry sandy loams and sandy clay loams associated with the ridge and midslope landforms.
- The land capability and associated land uses recorded as part of the baseline study are indicative of the variation in geomorphology across the study area and are form an integral part of the agricultural theme sensitivity being considered as part of the statement.



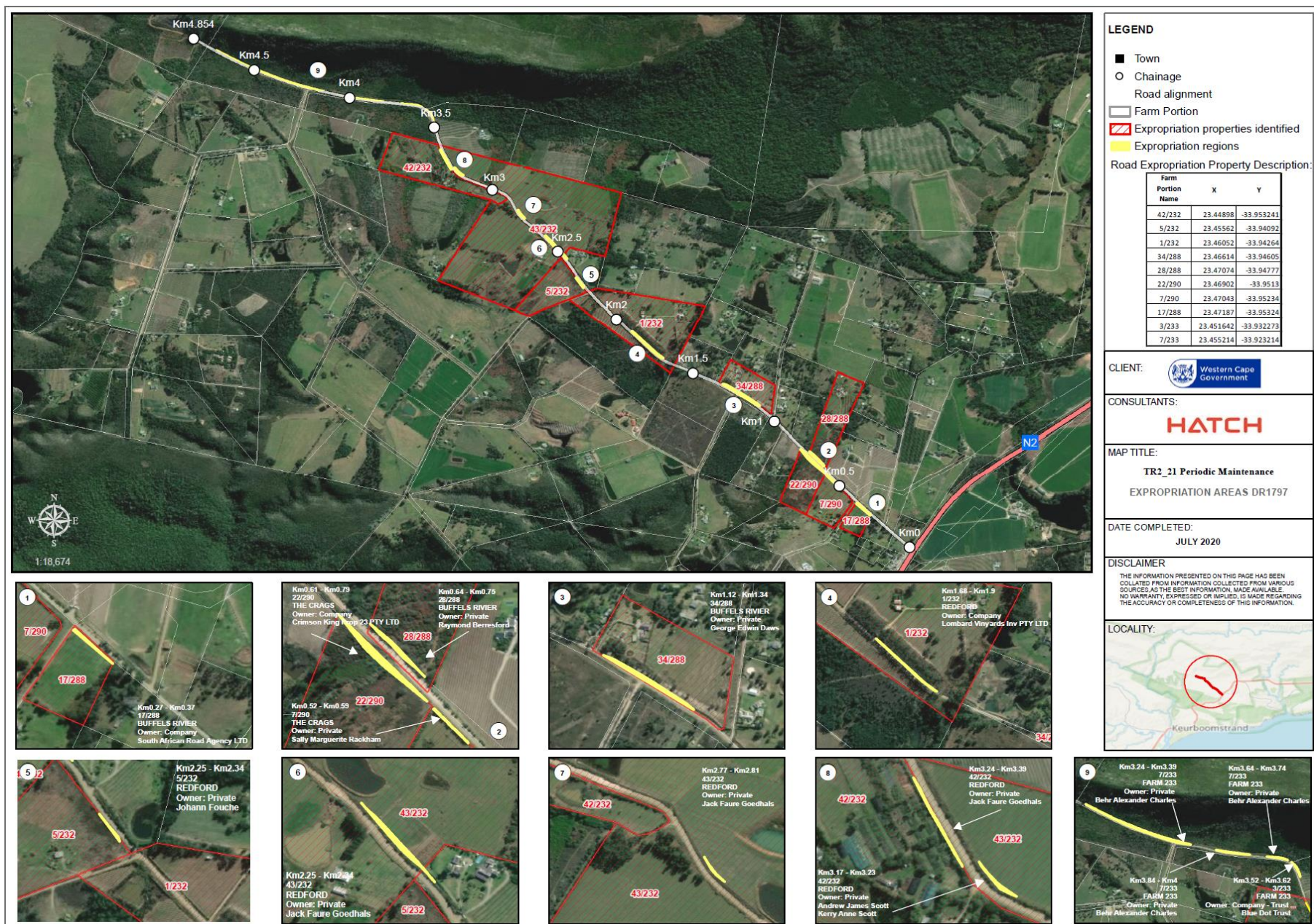


Figure 1 – Proposed Expropriation Areas – DR1797



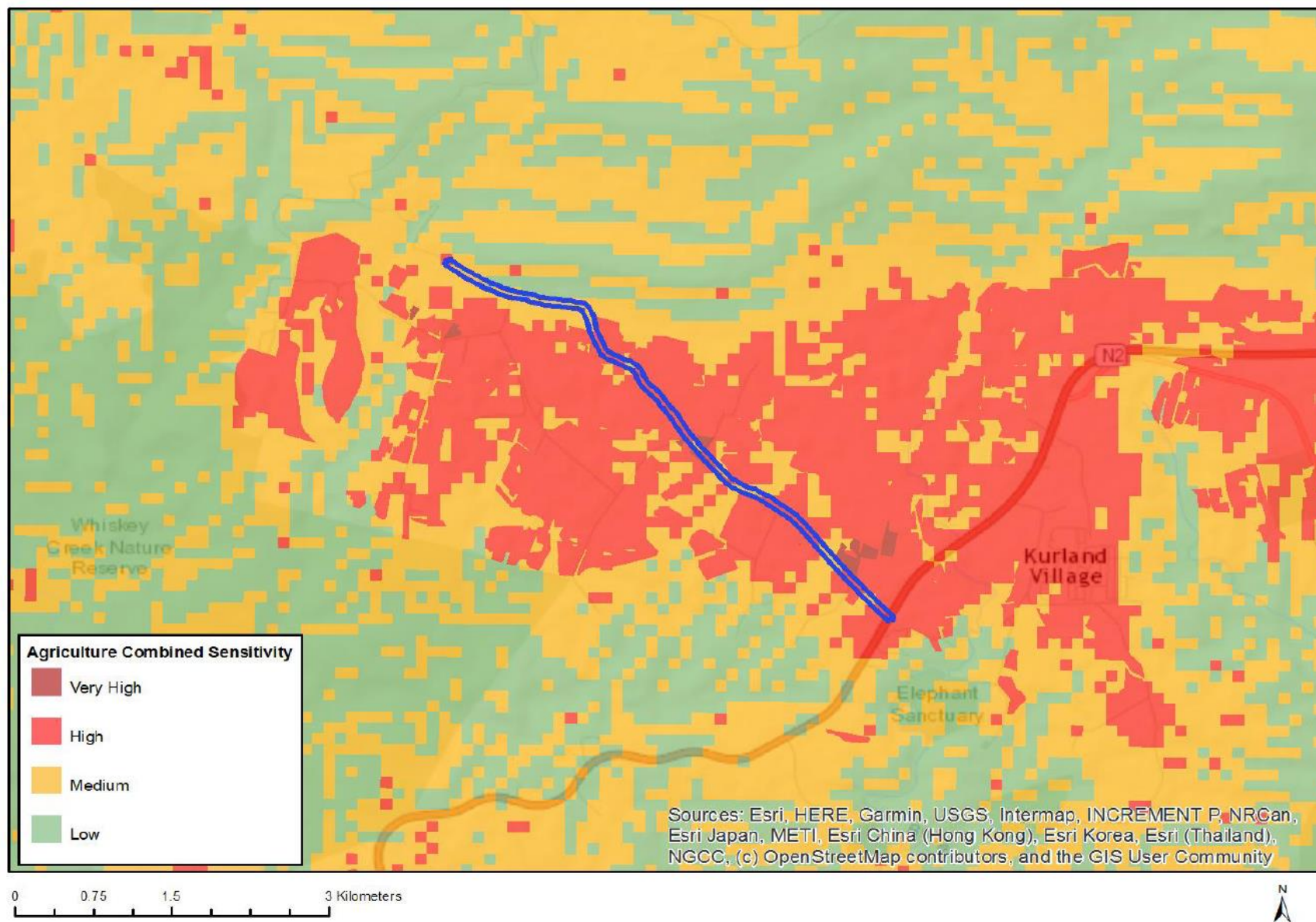


Figure 2 – Agricultural Theme Sensitivity Map (Periodic maintenance DR1797, EAP – Hatch Africa (Pty) Ltd Report - 29-05-2020)

### 3. Site Sensitivity Analysis

Based on the information assimilated the following considerations have relevance:

- The soils vary from moderately deep fine grained sandy loams and silty clay loams with better than average water holding capabilities and moderate permeabilities (moderate drainage) in the south east, varying somewhat in depth profile and clay content, to deep and very deep fine sandy loams and sandy clay loams in the northern areas on the foot slopes of the escapement.
- There are a number of classifiable wetlands associated with the perennial streams that trend south and south west out of the steeper landforms to the north of the study area, the alluvial materials and lower midslope colluvium forming sites with much higher clay percentages within the profile.
- Overall, the dominant landform associated with the roadway/study area comprises flat to undulating topography with slightly ensized streams and riverine profiles and flat midslope terrain.
- The geomorphology (Geology, soils, climate, topography etc.) of the study area and the site sensitivity has been used as a basis for land capability classification. The study area comprises moderate to high quality arable soils on the deeper and better drained sites, to good quality grazing lands with significantly large areas of classified wetlands associated with the perennial waterways and streams.
- The land use varies from highly intensive and high value (vineyards) cultivation, cultivated pastures and natural veldt lands found associated with the flat and undulating terrain and riverine areas respectively, with commercial forestry and natural veldt grasslands associated with the slightly more steep and upper midslope positions (northern portions of the study line).
- The road reserve (land between the roadway and the farm fences) is highly variable in width, with portions of the study line returning narrow (less than 3m) of utilisable space, to areas some areas, particularly on the northern third of the site, where there is greater than five (5m) metres of road reserve available.

### 4. Conclusions and Recommendations

In assessing the agricultural sensitivities and agricultural potential of the areas that are being planned for inclusion in the road upgrade, it was important to understand the baseline conditions that exist at present, the proposed impacts that are being planned, and the sensitivity and/or vulnerability of the affected sites to the proposed development actions.

As part of understanding the issues at stake, the environmental and geomorphological attributes of the study area (road reserve and areas of expropriation) have been weighed against the land capability and present land use, so that a better understanding of the agricultural theme sensitivity or agricultural potential could be determined and understood.

At the outset it is noted that:

- The agricultural theme sensitivity has been classified as High to Very High for all of the areas apart from those in the northern portion of the study area associated with commercial forestry and the steeper landforms. This information has been based on the desktop interpretation of the available information (Google Earth Imagery for the most part), and relies for the most part on an interpretation of the land use evident (Refer to report by Hatch Africa (Pty) Ltd – Lead Consultants).
- The Screening Tool is a guideline that is used “to flag sensitivities” that might need to be considered during an EIA or BA study, while also assessing and planning the types of specialist studies that might need to be conducted to address sensitivities associated with new development planning.
- The upgrade to the DR 1797 road will impact only small spatial areas outside the present road reserve boundary, the majority of the rehabilitation and/or realignment taking place within the area already affected and managed as part of the road servitude.

- All of the high potential agricultural land with a capability rating of arable or good grazing potential that has been developed/cultivated and planted to orchards or commercially cultivated pastures have been delineated as part of the areas required for expropriation, and consultation has been had with landowners and those concerned.

The land and its associated soils that are planned to be expropriated constitutes a very small percentage of the overall properties in question and **will not** reduce the carrying capability or commercial outputs (ecosystem services) from any of the farming ventures concerned.

- All of the sites associated with riverine wetlands and/or perennial streams are considered areas that require classification in terms of the wetland delineation guidelines and the DWS wetland legislation, and although none of these areas classify as having a high agricultural potential in terms of the land capability or agricultural theme sensitivity rating, the base flow associated with these features requires additional inputs and registration.

Based on the information available, it is my professional opinion that:

- The proposed upgrade and rehabilitation of the DR1797 roadway will have no significant negative effect on the agricultural potential/sensitivity, commercial outputs and/or have any significant negative impact on the agricultural considerations, and
- The areas considered for the upgrade and road refurbishment and new development can be expropriated without significant impact to the agricultural sensitivities as long as all of the management and mitigation measures proposed as part of the management plan are implemented and enforced.