



**PROPOSED SOLAR POWER FACILITY
PORTION 7 OF OLYVEN KOLK 187
KENHARDT, SOUTH AFRICA**

TRAFFIC IMPACT STATEMENT

October 2018

Compiled by:

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1 Introduction:

A Traffic Impact Statement for the proposed Kenhardt Solar PV Power Plant was prepared by SKCM Consulting Engineers.

The development is located south west of Kenhardt, approximately 24 km west of the R27 along the Pofadder gravel road. Sight distances along the Pofadder gravel road are adequate to allow safe use of the access to the site.

The proposed development will generate additional traffic on the surrounding road network in two distinct phases, namely the construction phase and the operational phase.

The total number of trips that that will be generated during the construction phase in the AM and PM peak hours is **39 veh/hour**.

The total number of trips that that will be generated by the permanent workforce during the operational phase in the AM and PM peak hours is **11 veh/hour**.

The generated traffic by the development will be less than 150 vehicles per peak hour and do not require detailed traffic analysis.

2 Surrounding Road Network:

The development is located south west of Kenhardt, approximately 24 km west of the R27 along the Pofadder gravel road. The Pofadder gravel road is reasonably straight and flat, but includes several river crossings. The road is not ideal for large heavy vehicles, but with regular maintenance, it should be able to accommodate the additional traffic generated by the development.

Sight distances along the Pofadder gravel road are adequate to allow safe use of the access to the site. Conflicting traffic flows on the road at the access are low and no significant safety concerns.

3 Traffic Generation:

The proposed development will generate additional traffic on the surrounding road network in two distinct phases, namely the construction phase and the operational phase. It must be noted that these two phases will generate traffic consecutively and not simultaneously and therefore the traffic volumes generated each phase will be considered separately.

3.1 **Construction Phase:**

The construction phase will generate traffic into the surrounding road network through two sources namely construction workforce and delivery of materials and equipment to site. The construction phase will require an estimated 280 workers.

3.1.1 Construction Workforce:

It is assumed that many of the unskilled workers will travel to the site by public transport either by bus or mini-bus taxi while skilled workers will travel to the site by private vehicles.

- It is assumed that the skilled workers will constitute 20% of the construction work force. This sector of the workforce will travel to work with private vehicles. Assuming vehicle occupancy of 2 persons per vehicle.

$$\begin{aligned}\text{Total private vehicles per hour} &= (280 \text{ workers} \times 20\%) / 2 \\ &= 28 \text{ veh/hour}\end{aligned}$$

- The remaining 80% will comprise of semi and unskilled workers. These workers are expected to travel to site by public transport, 60% by busses and 40% taxis. The average occupancy rate of 60 persons per bus and 15 people per taxi were used in the trip generation calculations.

$$\begin{aligned}\text{Total workers using public transport} &= (280 \text{ workers} \times 80\%) \\ &= 224 \text{ workers}\end{aligned}$$

$$\begin{aligned}\text{Total busses per hour} &= (224 \text{ workers} \times 60\%) / 60 \text{ persons per bus} \\ &= 2.24 \approx 3 \text{ veh/hour}\end{aligned}$$

$$\begin{aligned}\text{Total taxis per hour} &= (224 \text{ workers} \times 40\%) / 15 \text{ persons per taxi} \\ &= 5.97 \approx 6 \text{ veh/hour}\end{aligned}$$

3.1.2 Delivery of Equipment and Materials to Site:

Heavy delivery vehicles will be used to transport the equipment and materials to the proposed site during construction phase. The heavy vehicle trip generation will be less than 10 trucks per day (in and out combined).

$$\begin{aligned}\text{Total trips per hour} &= 10 \text{ trips per day} / 8 \text{ hours} \\ &= 1.25 \approx 2 \text{ veh/hour}\end{aligned}$$

Therefore, the total number of trips that that will be generated during the construction phase in the AM and PM peak hours is **39 veh/hour**.

3.2 Operation Phase:

The operational phase will require a workforce of an estimate 70 workers. Some of these job opportunities will be for semi- and un-skilled workers, which will be sourced from the town of Kenhardt.

- It is assumed that 20% of the workforce in the operational phase will consist of managers, supervisors and key staff. This sector of the workforce will travel to work with private vehicles. Assuming vehicle occupancy of 2 persons per vehicle.

$$\begin{aligned}\text{Total private vehicles per hour} &= (70 \text{ workers} \times 20\%) / 2 \\ &= 7 \text{ veh/hour}\end{aligned}$$

- The remaining 80% will comprise of semi and unskilled workers. These workers are expected to travel to site by public transport. The average occupancy rate of 15 people per taxi was used in the trip generation calculations.

$$\begin{aligned}\text{Total workers using public transport} &= (70 \text{ workers} \times 80\%) / 15 \text{ persons per taxi} \\ &= 3.73 \approx 4 \text{ veh/hour}\end{aligned}$$

Therefore, the total number of trips that that will be generated by the permanent workforce during the operational phase in the AM and PM peak hours is **11 veh/hour**.

4 Traffic Analysis:

The Department of Transport's *Manual of Traffic Impact Studies* indicates that only developments that generate more than 150 vehicles per hour requires a full Traffic Impact Assessment (TIA) and developments that generate less than 150 only Traffic Impact Statement (TIS).

Since the construction and operation phases of the development both do not generate more than 150 vehicles per hour in the peak hour. Therefore, a traffic analysis of the surrounding road network will not be undertaken for this study.

It was observed during the site visit that the road network within the study area is operating at an acceptable level of service as no congestion problems, excessive queue lengths and delays were evident on the surrounding road network.

The traffic that will be generated by the development is not expected to have any significant impact on the existing road network.


5 Conclusion:

The impact of the traffic generated by this development was assessed in accordance with the *Manual for Traffic Impact Studies*, published by the Department of Transport.

The study showed that the construction and operational phase of the proposed development will generate negligible volumes of traffic during AM and PM peak hours.

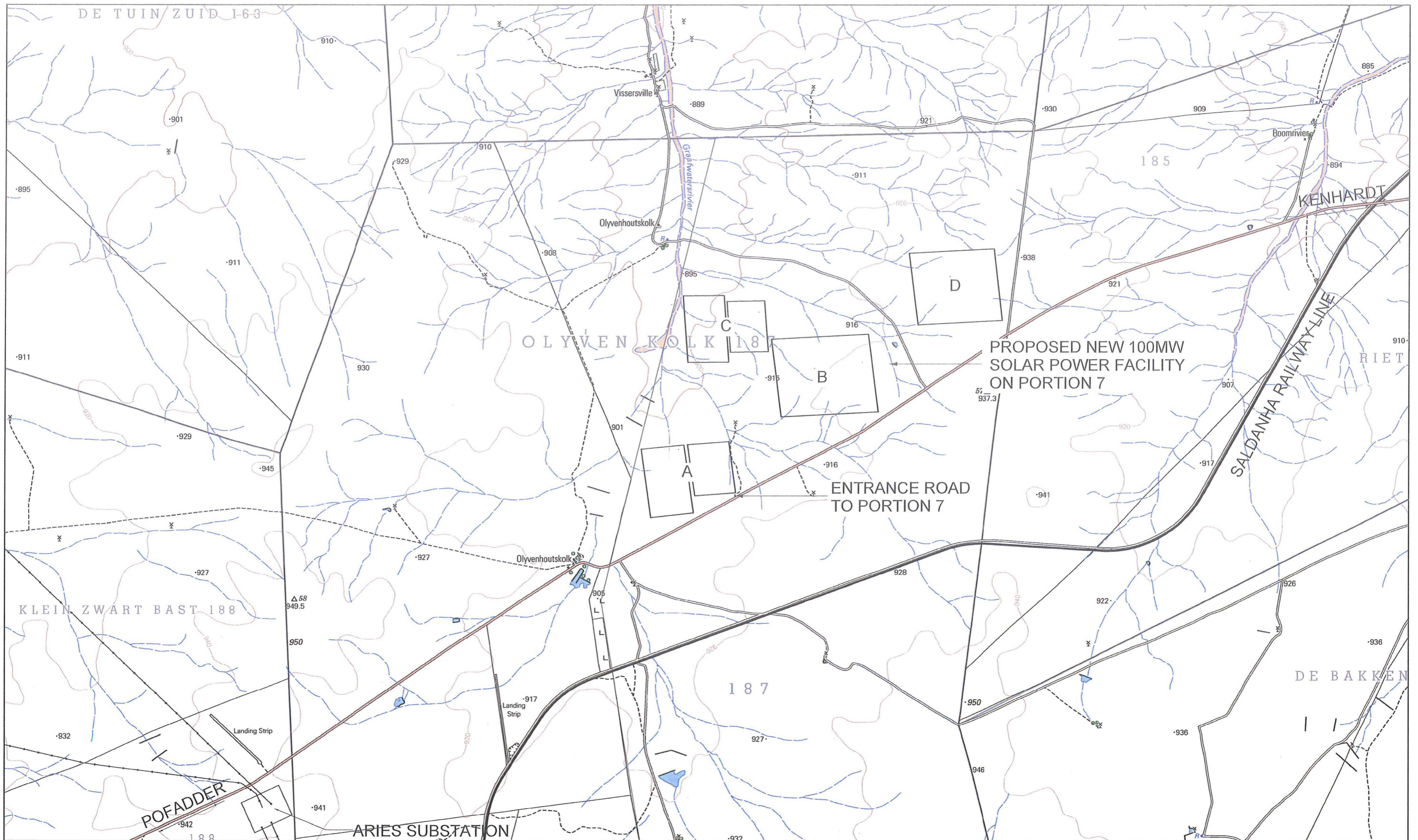
The existing road network has sufficient capacity to accommodate these additional low volumes of traffic.

Therefore, we are of opinion that the additional traffic generated by the development will have negligible impact on the future road networking system and should be approved from a traffic and transportation perspective.



MPJ Loubser Pr Eng
For SKCM

30/10/2018



DESCRIPTION: PROPOSED NEW SOLAR POWER FACILITY - PORTION 7 ON OLYVEN KOLK 187, KENHARDT SOUTH AFRICA

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DESIGNED	BY	DATE	CH
DRAWN	JVL	2018/11/01	ML
TRACED			
SCALE :		1:50000	
DRAWING NO.:		REVISION:	
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