Traffic Engineering Status Quo Report: Erf 191 Tweefontein 915LS, Polokwane

Mr Gregory Mofokeng (Client)
K-SL Property Development
26 Ismini Street, Bendor, Polokwane
C: +2715 297 2065
E: admin@kslgroup.co.za

Kobus Van Zyl (Consultant)
Exclusive Engineering Consult
12 Mt Seymour, Midstream,1692
C: +2766 219 5238
E: admin@xeconsult.co.za

Reference: Erf 191 Tweefontein 915LS Polokwane
Prepared for: K-SL Property Development
Revision: 1
11 December 2020

K-SL Student Lifestyle

Document Control Record

Document prepared by:

Exclusive Engineering Consult
PO Box 35451
Menlo Park
0102
South Africa

T **+27 66 219 5238**
E admin@xeconsult.co.za
W www.xeconsult.co.za

Any person using documents or data contained in this report accepts the risk of:

a) Using the documents or data in electronic form without requesting for accuracy or check against the original hard copy version.
b) Using the documents or data for any purpose not agreed to in writing by the client and Exclusive Engineering Consult.

Document Control Form						
Report Title		**Traffic Engineering Status Quo Report: Erf 191 Tweefontein 951LS, Polokwane**				
Document ID		202012-101_KSL	**Project Number**			
File Path		202012 -101_KSL Group Holding_Erf 191 Tweefontein 915LS _Status Quo Report _December2020_Jfvz				
Client		K-SL Property Development	**Client Contact**		Gregory Mofokeng / Dikganq Nkwashu	
Rev	**Date**	**Revision Details/Status**	**Prepared by**	**Author**	**Verifier**	**Approver**
0	11 August 2020	Status Quo Report	JFVZ	JFVZ		
1	**10 December 2020**	Status Quo Report	JFVZ	JFVZ		
Current Revision						

Mt Seymour, Midstream, 1692
Cell: +2766 219 5238

Contents

Mt Seymour, Midstream, 1692
Cell: +2766 219 5238

Index of Figures

Index of Tables

No table of figures entries found.

Mt Seymour, Midstream, 1692
Cell: +2766 219 5238

1 Current Status Quo

1.1 Background

KSL Group Holdings, based in Polokwane, Limpopo province appointed Exclusive Engineering Consult to facilitate the traffic and transport impact assessment related to the proposed site, Erf 191 Tweefontein 915LS in Polokwane.

The client proposed to develop the site for student housing and institutional facilities. The findings in this report are the initial assessment and interaction with the client's professional team for a high-level SDP. The scope is related to and will inform the TIA on the development which will deal with the access to site and impact on the surrounding road network. Important factors will be the spatial planning to link up with Polokwane SDF, existing and planned development bordering the development, latent rights and the long-term planning to ensure proper access planning and functional internal road network and linkage to the external road network for the sustainability of the development. The planning will include assessment for public transport and facilities.

The figure below shows the site location relative to Polokwane:

Figure 1-1: Locality plan

1.2 Initial Assessment from the Traffic Engineer

1.2.1 Site Assessment

The City of Polokwane Local Municipality spatial development framework as presented below indicate the proposed long-term development planning for Polokwane. The high-level road hierarchy play a vital role in the development of the areas along these routes. Proposed developments need to take these into consideration the future vision for the city to allow sufficient road reserves and access spacing/planning in line with a function road hierarchy.

The extract below is from the SDF of City of Polokwane Municipality fort his area

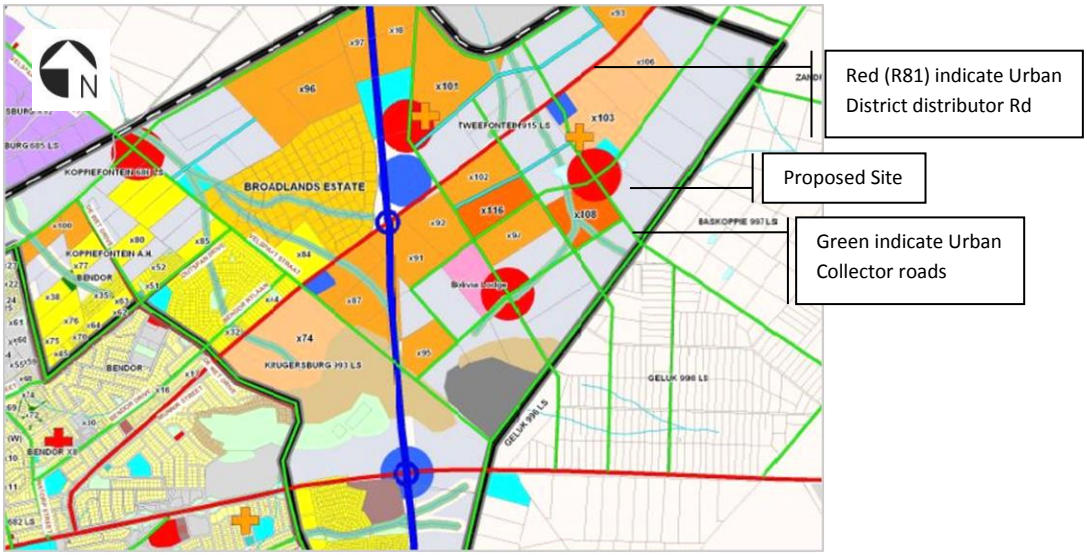

Figure 1-2: Polokwane SDF

The proposed development high level layout of the SDP was obtained from the client's architects, urban planners and town planner SVA architects and Hunter Theron Town planners. The initial SDP presented by the town planners for inception and comment from the city of Polokwane Municipality (The current layout was amended in line with comments from the traffic engineer):

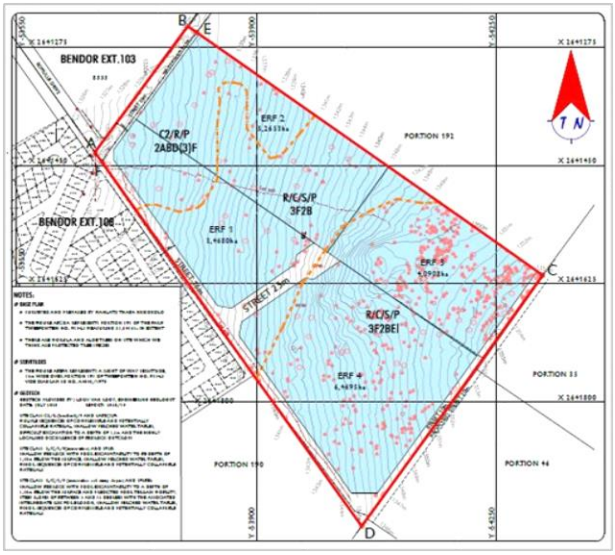

Figure 1-3: Proposed New Development

The initial layout presented was amended with a revision to the access to the site as result of the sensitive environmental areas and needs of the client. Below is a preliminary high-level SDP for the development with the traffic and transport inputs to the development. It is anticipated that this proposal is in line with all the requirements of the city of Polokwane Municipality.

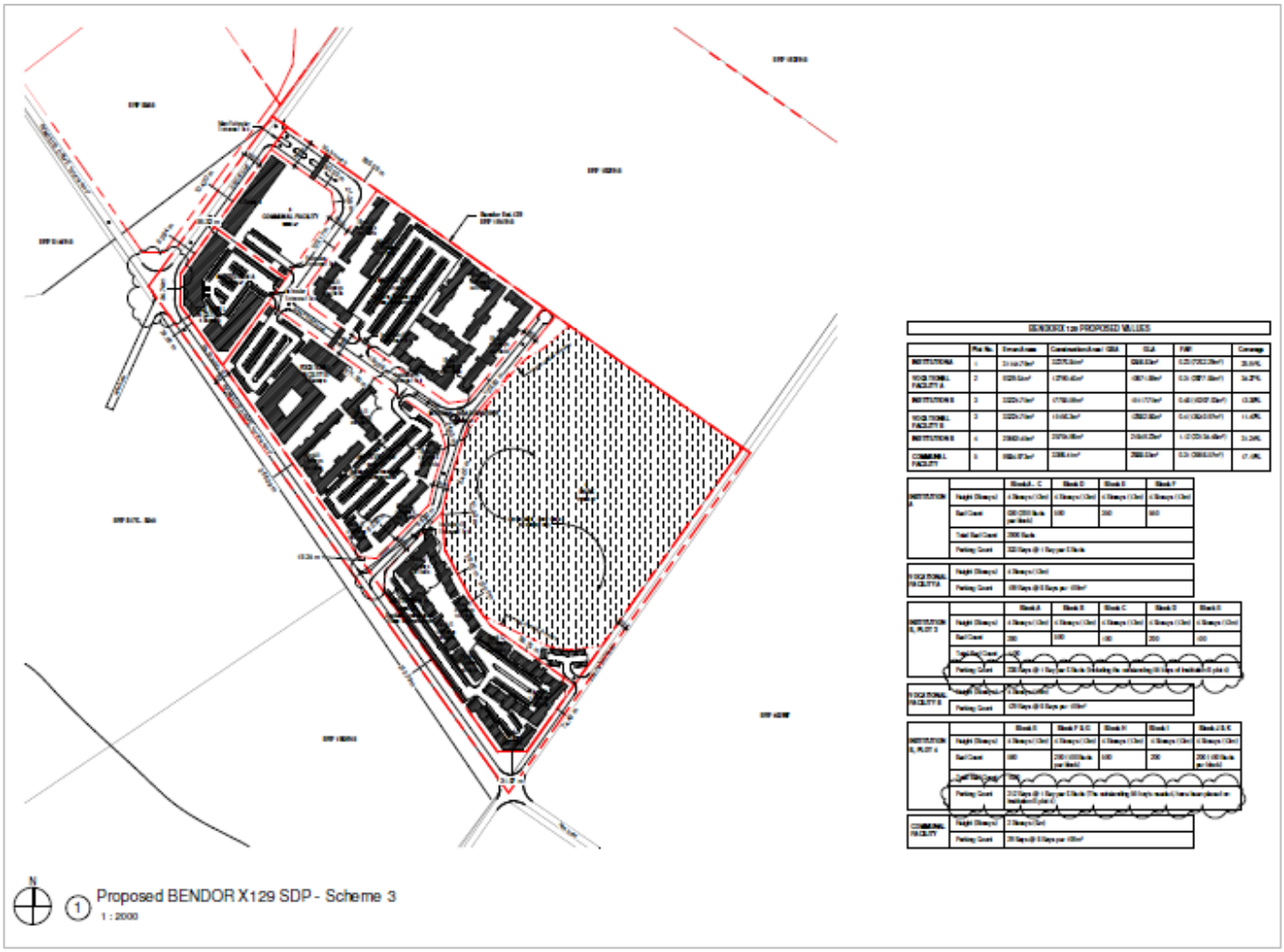

Figure 1-4: Proposed Development Layout and internal Road network (High level SDP)

1.2.2 Traffic and Transport Considerations

Considering the SDF and the proposed development in the initial assessment from a traffic point of view all engineering design principles and standards were applied in the proposed design. A traffic impact assessment will inform the requirements in terms of road upgrades on the external road network. The following assessments and comments need to be confirmed and discussed with the relevant authorities. This include but not limited to the following:

- **Road Reserves**: The north, west and south boundaries of the site will be urban collector roads in terms of the SDF. The normal road reserve along these boundaries will be in the order of 20m to 25m wide. To be confirmed with PLK. Normally each erf should allow for 50% of the reserve depending on the approved developments. The development make provision for 25m road reserves along the affected boundaries. The western boundary allows for more than 50% of the road reserve as Bendor extension 108 only allowed for

a 8m road reserve along their boundary. The north/south link in future will be a significant link to the R81 and R71 (SANRAL jurisdiction)

- **Road widths and sidewalks:** Depending on the planned road infrastructure the road network will be uniform. Typically, the urban collector will comprise of either 1 or 2 lanes per direction with controlled intersections and intersection spacing. These will be in line with the design principles and standards for township development and road design. Typically, the Geometric Design of Urban Collector Road Guidelines (UTG's 5,7) provide the minimum engineering design guidelines. Most of the larger metro/municipalities has their own design guidelines.
- **Access and spacing requirements:** Depending on the municipality and order of the road hierarchy, typical intersection spacing could range between 100m to 250m and access spacing between 50m to 70m. However, the size of development could impact the access spacing to intersection to allow for sufficient stacking distance to ensure functionality of the proposed control measures. The current access spacings of the proposed development is in excess of 150m from the main intersections western link road Romulus Drive and the proposed intersection on Romulus Drive on the southern boundary of Bendor Ext108 is in excess of 200m from the intersection on the southern boundary of the development. TIA will look at the control measures and stacking distance once the SDP is finalised. From the initial assessment it appears that the initial development proposal is in line with the minimum design principles. The development will gain access from the northern and western boundary of the site. (Erf 191 Tweefontein 915LS)
- **Lane configuration and control measures:** The required control measures on the external road network will be the outcome from a traffic impact assessment taken into account the traffic generated by the development, background traffic and other latent rights.
  The internal road networks, road reserves, make provision for a 25m and 20m road reserve.
  Parking provision will be in line with the town planning requirements of Polokwane. The student accommodation parking bay per number of units and institutions GLA.
- **Available bus and taxi laybys and facilities on the current roads:** Public transport facilities will be provided on the downstream side of an intersection on the main corridors to make provision for bus and taxi laybys. Design will be in line with the minimum requirements and design standards. These positions to be confirmed with the Roads and Stormwater Division at the municipality.
  A planned future taxi-rank facility to the north of the proposed site to be confirmed and should not impact the proposed site layout. These considerations will be taken into account with the development design layout and pedestrian movements. Paved side walks to be provided along these routes. All facilities will be within walking distance.
- **Potential design limitations:** Depending on the municipality planned road infrastructure, construction timelines and minimum standards allowance should be made at each intersection to accommodate traffic circles as alternative to signalised intersection if warranted. These to be discussed with the municipality in line with SDP and formalisation of the TIA.

1.2.3 Traffic Impact Study (TIS) or a Traffic Impact Statement

The requirements are detailed in the Committee of Transport Officials (COTO) Technical Methods for Highways (TMH) 16 and the South Africa "Trip Rates" in TMH 17. Trip rates are the new hourly or peak hour trips a new development will generate in addition to the current vehicle trips on the road network based on the proposed land use. It should also be noted that a number of municipalities compiled their own requirement and guidelines for TIS and TIS based on the aforementioned documents.

The **proposed land use and zoning** will be confirmed once the SDP is formalised. This will be used to confirm the calculated hourly trip rates and parking provision. As per the requirements for a TIA, the hourly trip rate exceeding the threshold of 50 trips per hour would normally require a TIA. The extent of a TIA will be clarified with the relevant departments at the city of Polokwane Municipality. If required a TIA assessment will be done for the

proposed development. This will inform the impact on the external road network and required mitigating measures to ensure adequate level of service on the road network and impacted intersections.

NOTE: To conduct a TIA, traffic counts are required which will have to represent a normal traffic pattern. The risk of a pandemic or similar will misrepresent a normal traffic day pattern if counts is not readily available and to be conducted for the TIA analysis and assessment.

1.2.4 Polokwane Municipality Planning Initiatives and Guidelines

The following but not limited to need to be considered from a traffic and transport point of view. These discussions will start when the SDP criteria has been finalised:

- City of Polokwane BRT Planning and Roads division
- Local taxi associations
- Design Standards and access spacing

1.3 Interaction and liaison with relevant role players

The following are interaction and liaison with relevant role players as part of the site assessment.

1.3.1 Meeting with the Client Town planner

The appointed town planner for the proposed development to confirm the proposed development land use application and limitations of the development. All relevant documentation and information to be collected and assumptions clarified and confirmed. Proposed amendments to the SDF and environmental impacts. Latent rights and development constraints.

1.3.2 Meetings with the relevant City of Polokwane Officials

The following departments and divisions to be consulted as per the requirements that will be imposed by the municipality on the proposed development. These included possible future roads planning, upgrades and public transport planning and design requirements.

- Roads and Stormwater Division
- Public transport/Planning BRT

1.3.3 Meeting with other Role players

Meeting with role players to incorporate any vision and future planning and developments. These could include but not limited to:

- Client representative and provisional team
- Land owners/developers – potential objection to the proposed development
- Client Architects and Urban designers (SDF)
- Town planner
- QS
- Civils Design Engineers

Mt Seymour, Midstream, 1692
Cell: +2766 219 5238

1.4 Way Forward

Once the high-level SDP and designs are finalised and approved by the client to present to Polokwane Municipality consultation with City of Polokwane officials will be required to clarify all traffic and transport related impact of the development in line with future roads planning.

Further consultation with relevant role-players on the project team is required up the submission of building plans and or any consultation in terms of objection to the development. The collection of relevant information outstanding that could impact any traffic and or roads related aspects.

Traffic impact assessment of the development impact on the external road network during peak traffic periods per day, future horizon criteria and existing and planned future networks.

Presentation of the proposed road networks, layouts and limitations and submission of the TIA if required by the City of Polokwane Municipality.

Exclusive Engineering Consult
Mt Seymour Cres
Midlands Estate
1692
South Africa

12 Mt Seymour Cres
Midlands Estate
1692
South Africa

T +2766 219 5238
E admin@xeconsult.co.za
W www.xeconsult.co.za