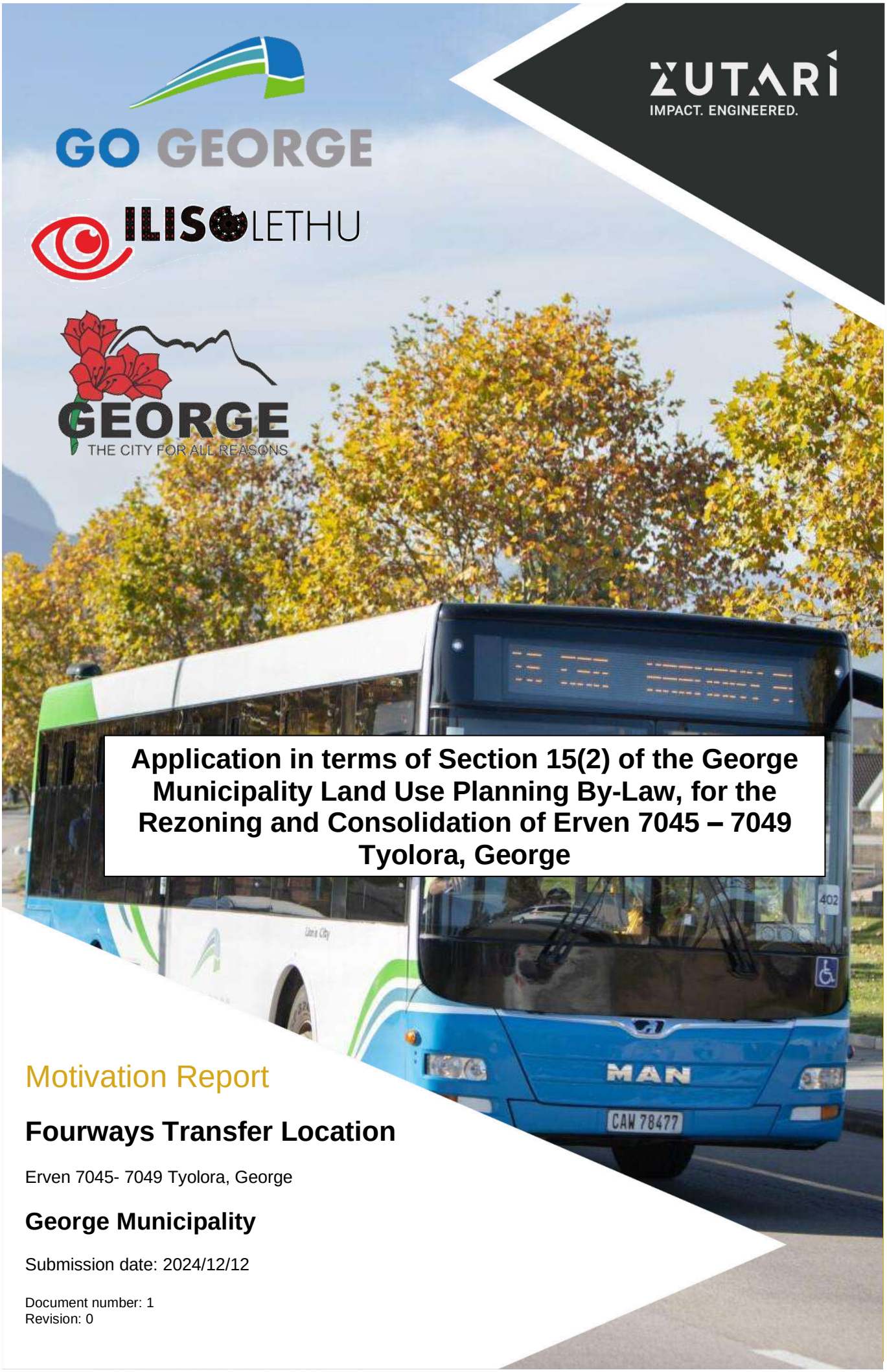

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George

Motivation Report

Fourways Transfer Location

Erven 7045- 7049 Tyolora, George

George Municipality

Submission date: 2024/12/12

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Revision: 0

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Approval			
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Title	Candidate Planner	Title	Professional Planner

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1 INTRODUCTION AND BACKGROUND

1.1 Project Introduction

Zutari has been requested to prepare a land use planning application on behalf of the George Municipality for the required land use management application(s), namely the consolidation and rezoning of Erven 7045 – 7049 Tyolora, George, in order to secure the appropriate development rights for a bus transfer location located in Thembalethu, George.

The site of application is made up of a number of municipal owned erven currently zoned as "Business zone II", but the intention is for the five erven to be consolidated and used as a bus transfer location to be developed on the site. A rezoning application is therefore required to amend the current zoning to an applicable zoning, such as "Transport Zone 1". In order for the bus transfer location to also accommodate other land uses such as outdoor trading and business, an application for consent use on Erven 7045 – 7049 Tyolora, is made to add additional land uses under the Transport Zone I zoning.

Two concept site development plans have been prepared with inputs from spatial planning, LED and transport engineers, that form the basis of this land use planning application that is submitted to secure development rights for the proposed facility.

The application is submitted in terms of section 15(2) of the George Municipality Land Use Planning By-law, 2023, to obtain development rights for the proposed development on Erven 7045 – 7049 Tyolora, George.

1.2 Purpose of Memorandum

(i) To gather all relevant information regarding the proposed rezoning and consolidation proposal into one document;

(ii) To analyse all relevant information regarding the site and informants to the design of the proposed development; and

(iii) To motivate the need and desirability of the proposed **Fourways Transfer Location Development**, in terms of the George Municipality Land Use Planning By-laws, 2015, in order to enable the relevant governing bodies to make an informed decision.

1.3 Application

An application is hereby submitted for the following:

a) An application is submitted in terms of Section 15(2)(a) of the George Municipality Land Use Planning By-laws, 2023 for the **rezoning** of Erven 7045 – 7049 Tyolora, George from "Business Zone II" to "Transport Zone I", including a number of consent uses, in order to allow for the planned development.

b) An application is submitted in terms of section 15(2)(o) of the George Municipality Land Use Planning By-laws, 2023 for **consent use** on Erven 7045 – 7049 Tyolora, George for the following additional land uses under the Transport Zone I zoning:
   - outdoor trading facilities
   - convenience shop and
   - business premises

c) An application is submitted in terms of section 15(2)(e) of the George Municipality Land Use Planning By-laws, 2023 for the **consolidation** of Erven 7045 – 7049 Tyolora, George, in order to give effect to the proposed development.

1.4 Pre-Application Consultation

In terms of **Section 37** of the George Municipality Land Use Planning By-laws, 2023:

(1) The Municipality may require an owner who intends to submit an application or his or her agent to meet with the authorised employee and, where applicable, with employees of other relevant organs of state for a pre-application consultation before he or she submits an application to the Municipality in order to determine the information and documents that must be submitted with the application.

(2) The Municipality may issue guidelines regarding—

(a) applications that require a pre-application consultation;

(b) the nature of the information and documents that must be submitted with an application;

(c) the attendance of employees from the Municipality or other organs of state at a pre-application consultation; and

(d) the procedures at a pre-application consultation.

(3) The Municipality must keep minutes of the proceedings of a pre-application consultation.

In terms of this application and the development proposal contained herein, a pre-application was submitted to the George Municipality's town planning department on the 15 November 2024, and a pre-application consultation meeting was held on 20 November 2024.

The minutes of the pre-application consultation is attached as **Annexure F**.

1.5 Information Required in terms of Section 38 of the By-Law

In terms of Section 38 of George Municipality Land Use Planning By-laws, 2023, an application must be accompanied by the following information and documents:

Table 1: Information required in terms of Section 38 of the By-Law

Information Required	**Location**	**Included in the Application**	
		Yes	**No**
Application form, completed and signed by applicant	Annexure A	X	
Power of Attorney & Proof that the person is authorised to act on behalf of the Client	Annexure B	X	
Proof of Registered Ownership (Title Deed)	Annexure C	X	
Bondholder's Consent			X

Written motivation for the application based on the criteria referred to in Section 65		X	
Copy of the Surveyor-General's diagram	Annexure D	X	
Locality Plan	Annexure E	X	
Subdivisional Layout Plan			X
Proof of Payment of Application Fees			X
Conveyancer's Certificate indicating that the application is not restricted by any condition contained in the title deed.			X
Minutes of pre-application consultation	Annexure F	X	

In addition to the mandatory requirements listed above, this application is supported by the following additional documents:

- Site development plan
- Concept drawing of Fourways Transfer Location
- Transport impact assessment report
- Consolidation plan

1.6 Applicant Detail

George Municipality is the lawful owner of the properties as stated on the registered title deed of Erven 7045 – 7049 Tyolora, George. Attached please find a copy of the Title Deed, confirming the ownership of each land parcel **(Annexure C).**

The George municipality appointed Zutari (Pty) Ltd to submit this land use planning application on their behalf. Zutari (Pty) Ltd, in their capacity as consultant for the George Municipality, was authorised by the Municipality to sign any and all relevant documentation which may be necessary for the proposed planning application on behalf of the Municipality. The Special Power of Attorney signed by the Municipality, appointed Zutari (Pty) Ltd. as the lawful agent to prepare and compile the documentation required for the change in land use rights of the Fourways Transfer Location development. Attached please find a copy of the signed Special Power of Attorney **(Annexure B).** Also attached as Annexure B is a council resolution whereby the George Municipal Council approves the Ilisolethu Project.

Table 2: Applicant details

Applicant, full name and title	Zutari (Pty) Ltd. Reg No. 1977/003711/07
Contact Person of Authorised Professional Planner	Rudolf Schröder
SACPLAN Registration number:	A/151/2009 (See registration certificate attached as Annexure K)
Street Address	Suite 201 2nd Floor Bloemhof Building 65 York Street George 6529
Telephone Number	+27 44 805 5400 / +27 83 390 6963

Email Address	rudolf.schroder@zutari.com

See SACPLAN registration certificate attached as **Annexure K**.

2 PROPERTY PARTICULARS

2.1 Property Description, Registered Owner and Title Deed

The study area is made up of five erven (Erven 7045-7049). The combined size of the project area to be consolidated is 2 799m^2 in extent.

The registered owner of the properties as reflected on the title deed is George Municipality. See **Annexure C** for copies of the Title Deed. Attached please also find a copy of the Signed Special Power of Attorney authorising Zutari to submit an application on the Municipality's behalf **(Annexure B)**.

Additional property details are reflected in the table below:

Table 3: Property details

	Property description	Extent	Registered owner	Title deed number
1	Erf 7045 Tyolora, George	537m^2	George Municipality	T39457/2000
2	Erf 7046 Tyolora, George	624m^2	George Municipality	T39457/2000
3	Erf 7047 Tyolora, George	548m^2	George Municipality	T39457/2000
4	Erf 7048 Tyolora, George	546m^2	George Municipality	T39457/2000
5	Erf 7049 Tyolora, George	544m^2	George Municipality	T39457/2000

Please see Title Deed attached as **Annexure C** for confirmation of property ownership and the extent of each erf.

2.2 Locality

The proposed Fourways Transfer Location development (also know as the "site") is located on Nelson Mandela Boulevard Road in Thembalethu, a township located south of the N2 in the George Municipality. The study area is located in a residential area known as Zone 1, adjacent to the Thembalethu Fire & Emergency Services and the Thembalethu iHub. The site is also located within close proximity to the Thembalethu Square shopping Mall, and the Thembalethu Square Boxer superstores.

Also see the Locality Plan attached as **Annexure E**.

Figure 1: The Greater George Area (Source: George Municipality, 2022)

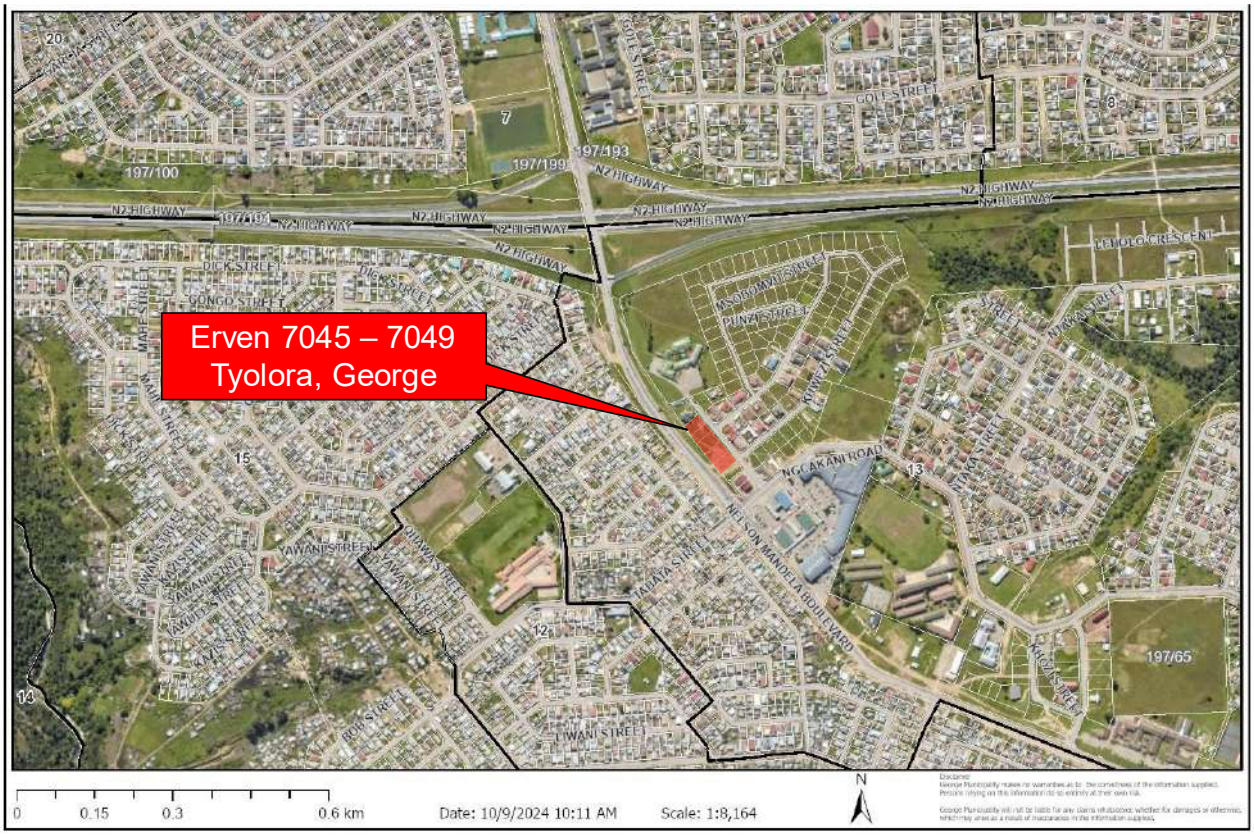


Figure 2: Project location

2.3 Extent

The study area is made up of five erven (Erven 7045-7049). The combined size of the project area to be consolidated is 2 799m^2 in extent.

2.4 Jurisdiction

The Site of Application is within the jurisdiction of the George Municipality, Western Cape Province, South Africa, in the Garden Route District area.

2.5 Restrictive Title Conditions

There are no conditions in the title deeds of the property that are deemed as being restrictive to the proposed development.

Please refer to the attached copy of the Title Deed for the site of application (**Annexure C**).

2.6 Surveyor General Diagrams and Servitudes

The Surveyor General diagram for the properties is shown below as per General Plan 1368/1998.

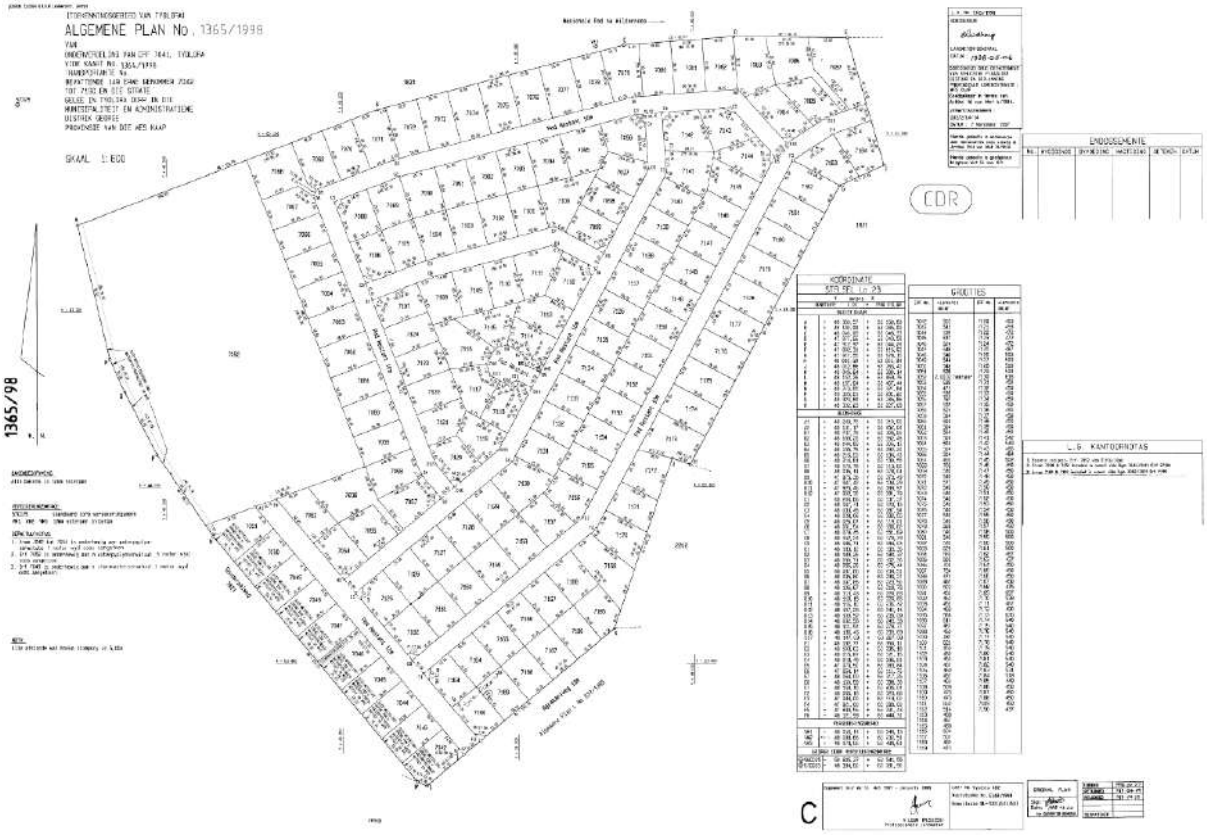
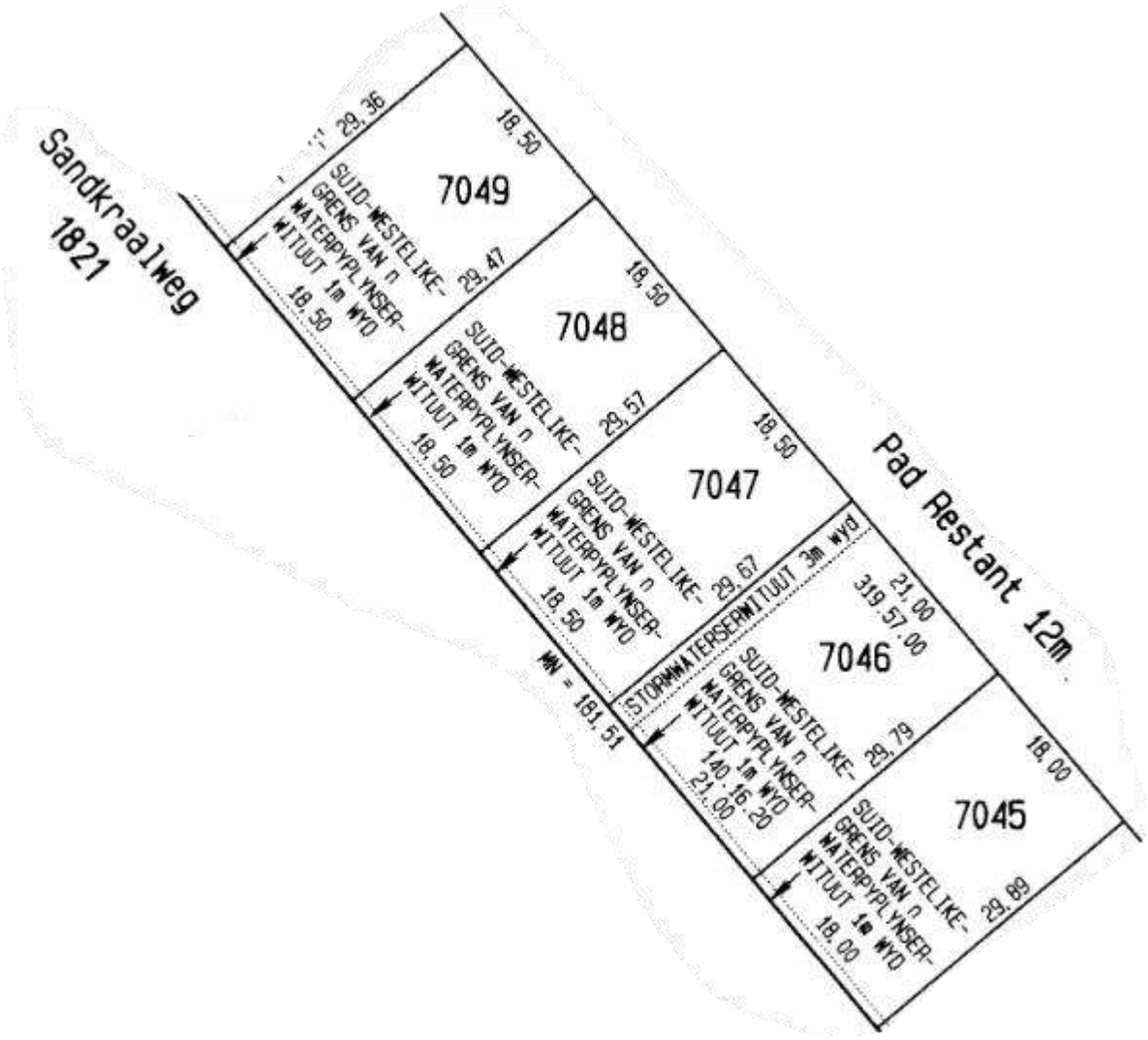


Figure 3: General Plan 1368/1998



See all **SG diagrams** attached as **Annexure D.**

- The erven are affected by a water pipeline servitude, 1 metre wide, that runs along the south-western edge of the site which have been incorporated into the design of the proposed facility.
- Erf 7046 is also subject to a 3m wide stormwater servitude.

2.7 Mortgage Bond

There are no mortgage bonds registered against the properties.

2.8 Applicable Zoning Scheme and Current Zoning

The development site is currently zoned “Business Zone II” as per the provisions of the George Integrated Zoning Scheme Bylaw, 2023.

According to the George Integrated Zoning Scheme By-Law, 2023, land zoned as “Business Zone II” can only be used for a shop as its primary right, as shown in the figure below.

Business Zone II (BZII)		
The objective of this zone is to provide for the retail sale of goods and services to the public.	**Primary use** • Shop	**Consent uses** • Adult shop • Conference facility • Dwelling house • Flats • Function venue • Liquor store • Open air motor vehicle display • Place of assembly • Place of instruction • Place of leisure • Place of worship • Restaurant • Service station • Utility services • Veterinary clinic

Figure 4: Use Zone table for Business Zone II

The current zoning of the five properties is “Business Zone II” in terms of the George Integrated Zoning Scheme By-Law, 2023.

Figure 5: Current zoning - Business Zone II

The current zoning does not accommodate the proposed development. A land use planning application is therefore required to secure the development rights for the proposed development.

2.9 Land Use

The zoning of the properties in the vicinity of the proposed transfer location is shown in the figure below, with Table 7 providing some additional information about each property.

Figure 6: Existing land-use zones

Table 4: Property Details

Property Number	Land-Use
Erf 7052	Thusong Service Centre[Error! Bookmark not defined.]
Erf 9720	Thembalethu iHub[Error! Bookmark not defined.]
Erven 7048, 7047, 7046, 7045	Vacant land where the Fourways Transfer Location is proposed
Erf 7044	Vacant land that is reserved for the fire station
Erven 7043, 7042	Thembalethu Fire Station
Erf 2202	Vacant land that is proposed to be a SMME cluster (refer to section 2.3.3)
Erf 1619	Fuel service station and Thembalethu Taxi Rank
Erf 1693	Shopping centre

2.10 Topography

The site topography is ideal for the proposed development with only a 1 metre drop in elevation across the site.

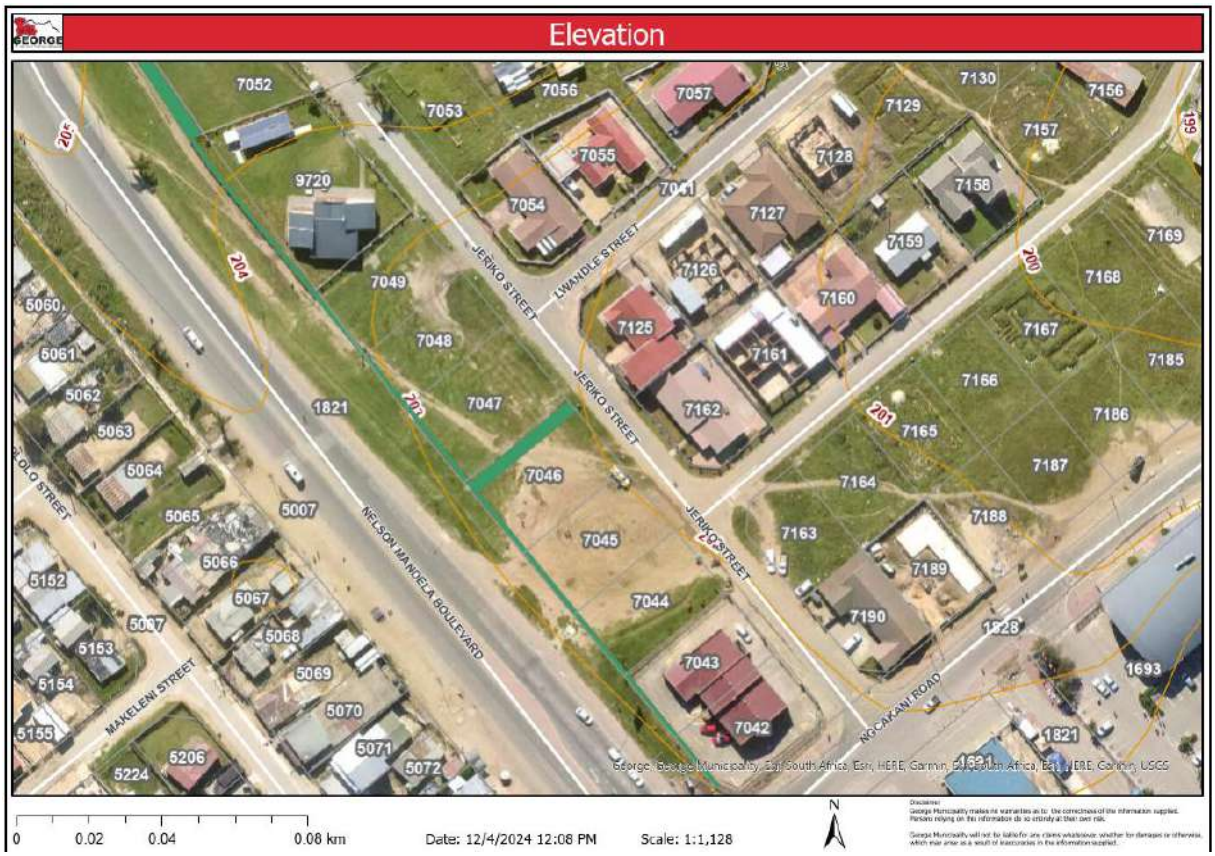


Figure 7: Site Elevation

3 PROPOSED DEVELOPMENT

3.1 Proposed Fourways Transfer Location

It is proposed to develop a bus transfer location on the site of application, and to also include trading facilities to create a transport and social cluster (aligned with Ilisolethu Project 11). It is therefore proposed to consolidate the five erven and rezone the site from its current zoning to an applicable zoning that is aligned with the intended use. The proposed Fourways Transfer Location as envisaged on Erven 7045 – 7049, Tyolora, George is shown in the concept drawing below. This facility is planned to include four passenger boarding platforms to service the four planned GO GEORGE mainline bus routes to the George CBD, Garden Route Mall, the industrial area and Blanco. The four routes are planned to enter the facility via Nelson Mandela Boulevard from the north and will depart for their respective destinations via Jeriko Street, Ngcakani Street and back onto Nelson Mandela Boulevard and out of Thembalethu. An additional boarding platform to service the bi-directional community routes will enter the facility from Tabata Street and Ngcakani Street via Jeriko Street, and then depart the facility in the reverse direction.

Additional facilities to enhance and support GO GEORGE operations such as, ticket sales, outside trading, information kiosk, CCTV surveillance, and Security offices will be accommodated in the proposed transport facility.

See additional information on access management to and from the facility in the Traffic Impact assessment report attached as **Annexure I**.

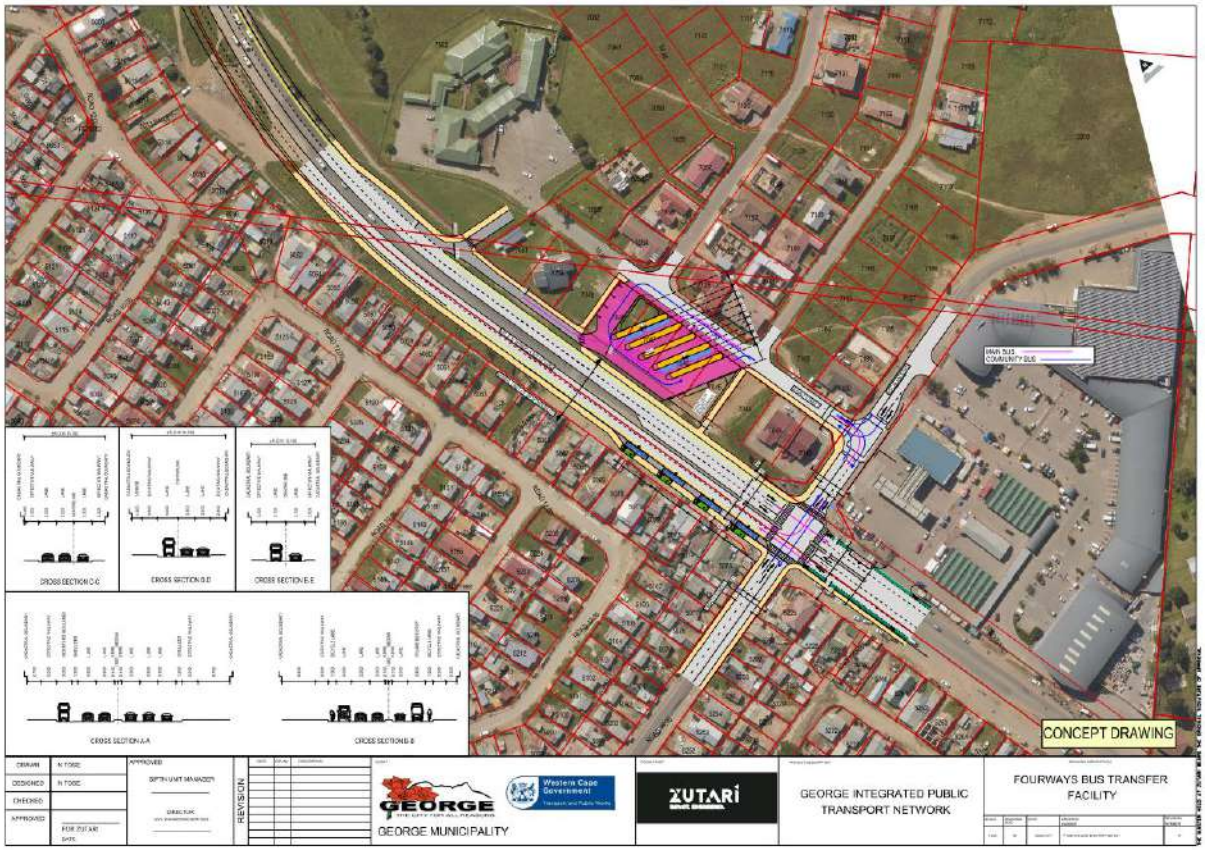


Figure 8: Proposed Fourways Transfer Location concept drawing

3.2 Concept Site Development Plan

Consultations were held with the Municipality's spatial planning department and certain requirements identified to also include trading facilities to create a transport and social cluster (aligned with Ilisolethu Project 11). Zutari's urban design team also consulted with the Municipality's LED department and developed a concept site plan with inputs from spatial planning, LED, and transport engineers, that form the basis of the land use planning application to secure development rights for the proposed facility.

The vision of the proposed development as illustrated in the concept site development plan is to create an integrated facility that is aligned with its current and planned surroundings, as well as to create a safe and active node that supports economic opportunities, and transportation needs of the Thembalethu community.

Two concept site plans were prepared with inputs from the George Municipaliy's spatial planning, LED and transport engineers. The main difference between the two development concepts is the number of "formal" roller shutter shops compared to the open trading shelters (sheltered bays). The municipality will make a decision on which option is preferred at the time of implementation, also considering the amount of funding available at the time of implementation. The proposed land uses in both options are the same.

See the Site Development Plan attached as **Annexure G**.

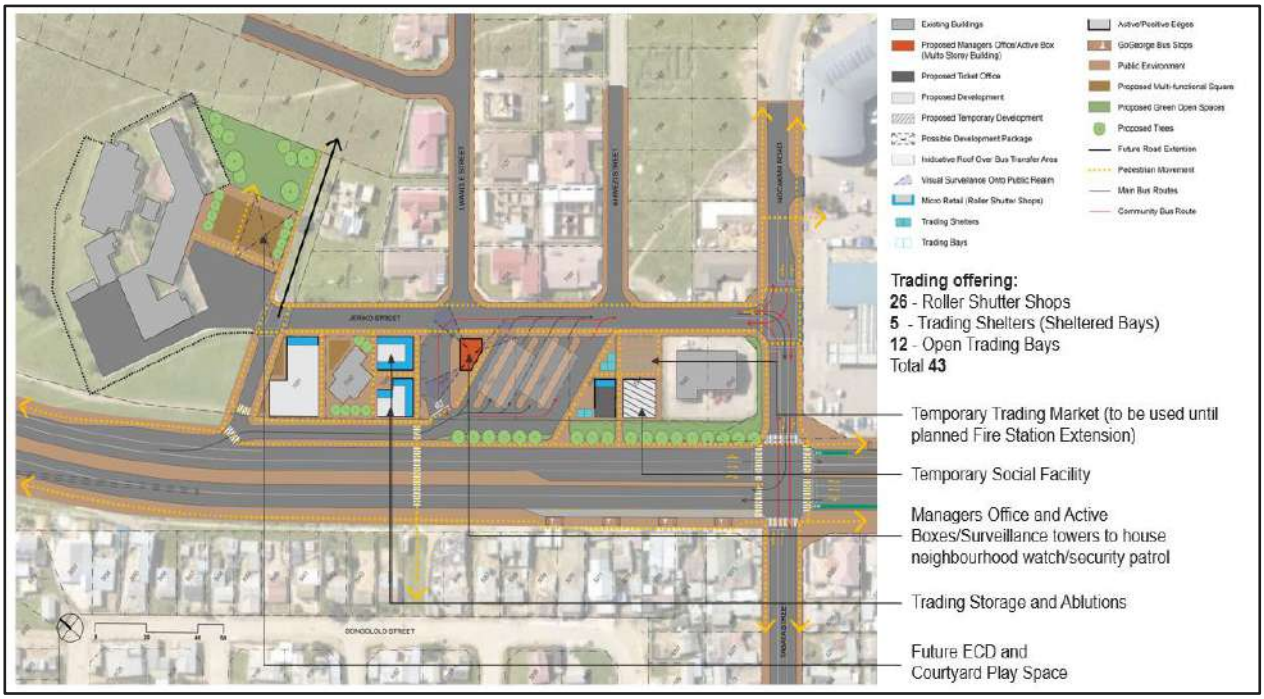


Figure 9: Concept Site Plan - Option 1

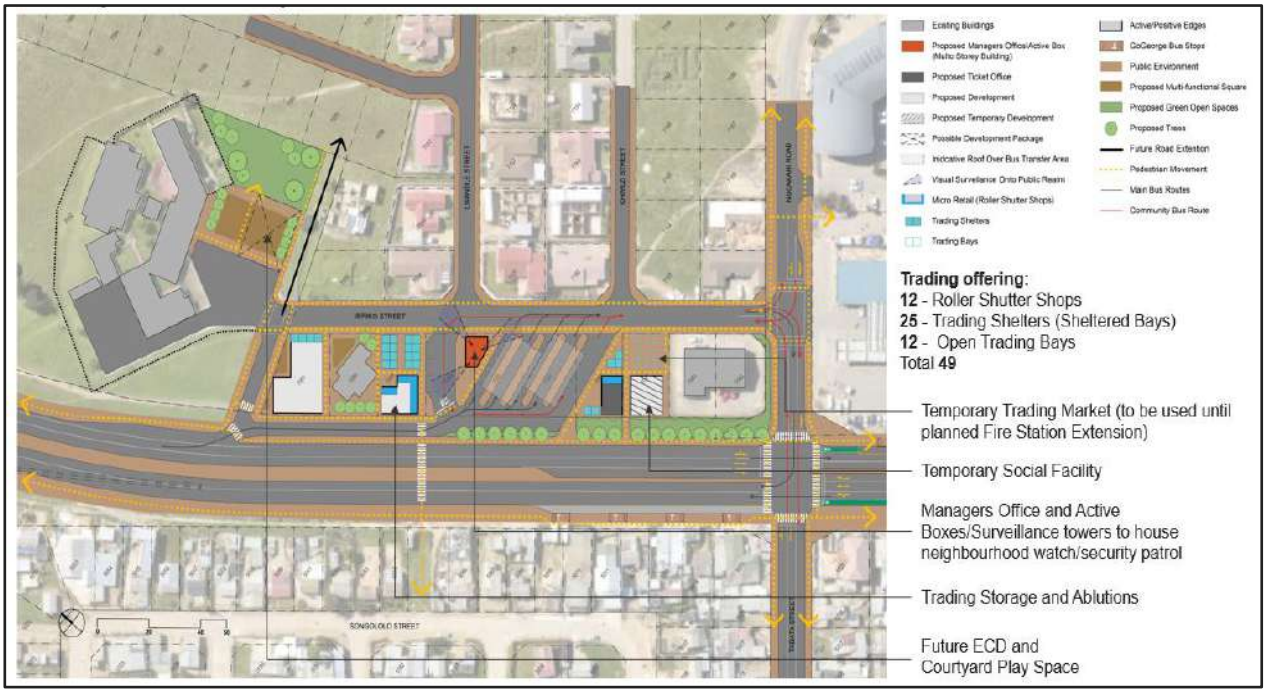


Figure 10: Concept Site Plan - Option 2

3.3 Stormwater Management

The stormwater accumulated by this development will be discharged into the exiting municipal stormwater infrastructure. Depending on the amount of water accumulated and the capacity of the existing infrastructure, upgrades to the existing infrastructure may be required. This assessment will be done at the Detail Design stage.

4 APPLICATION PARTICULARS

The previous sections of this report provided an overview of the site context and the various components of the site analysis undertaken to date, as well as an outline of the proposed development. Furthermore, previous sections of this report detailed the required approvals which will be needed for the legal implementation of the proposed development. However, in order to clarify the exact details of the application, this section will reiterate specifically what is being applied for in this application to secure the development rights for the proposed Fourways Transfer Location development.

An application is hereby submitted for the following:

d) An application is submitted in terms of Section 15(2)(a) of the George Municipality Land Use Planning By-laws, 2023 for the **rezoning** of Erven 7045 – 7049 Tyolora, George from "Business Zone II" to "Transport Zone I", including a number of consent uses, in order to allow for the planned development.

e) An application is submitted in terms of section 15(2)(o) of the George Municipality Land Use Planning By-laws, 2023 for **consent use** on Erven 7045 – 7049 Tyolora, George for the following additional land uses under the Transport Zone I zoning:
   - outdoor trading facilities
   - convenience shop and
   - business premises

f) An application is submitted in terms of section 15(2)(e) of the George Municipality Land Use Planning By-laws, 2023 for the **consolidation** of Erven 7045 – 7049 Tyolora, George, in order to give effect to the proposed development.

4.1 Proposed Rezoning

An application is submitted in terms of Section 15(2)(a) of the George Municipality Land Use Planning By-laws, 2023 for the **rezoning** of Erven 7045 – 7049 Tyolora, George from "Business Zone II" to "Transport Zone I", including a number of consent uses, in order to allow for the planned development - see Site Development Plan (**Annexure G**) attached for detail.

Transport Zone I (TUZI)		
The objective of this zone is to reserve land for transportation systems and ancillary uses excluding public streets and private roads but including all other transport undertakings including public and private parking facilities.	**Primary use** • Transport use	**Consent uses** • Air and underground rights • Airfield • Airport • Business premises • Conference facility • Container site • Convenience shop • Helicopter landing pad • Hotel • Industry • Informal trading • Motor repair garage • Outdoor trading and dining • Restaurant(s) • Service station • Truck stop • Utility service • Warehouse

Figure 11: Use zone table for Transport Zone I

"Transport Zone I" zoning proposed includes "transport use", see definition below according to the George Integrated Zoning Scheme By-law.

GEORGE INTEGRATED ZONING SCHEME BY-LAW

"transport use"

Land use description: *"transport use"* means the use of land, a building or structure for the operation of a service for the transportation of goods (including liquids, gases and solid materials) or passengers by means of rail, road, sea or pipeline and—

(a) includes the use of that land, building or structure for the purpose of a harbour, railway station, bus depot or taxi interchange, and a transport undertaking; and

(b) includes a public-private undertaking including a railway station, bus depot, multiple parking garage, taxi rank, public transport interchange, harbour and ancillary purposes; and

(c) does not include an airport, airfield; or helicopter landing pad.

Development parameters:

Development parameters applicable to "business premises" apply.

Figure 12: Transport use definition as per the George Integrated zoning scheme by-law

4.2 Proposed Consent Use

An application is submitted in terms of section 15(2)(o) of the George Municipality Land Use Planning By-laws, 2023 for **consent use** on Erven 7045 – 7049 Tyolora, George for the following additional land uses under the Transport Zone I zoning:

- outdoor trading facilities
- convenience shop and
- business premises

The consent use application is submitted to accommodate all land uses proposed in the Fourways Transfer Location, which are currently not accommodated in the Transport Zone I zoning.

4.3 Proposed Consolidation

An application is submitted in terms of section 15(2)(e) of the George Municipality Land Use Planning By-laws, 2023 for the **consolidation** of Erven 7045 – 7049 Tyolora, George, in order to give effect to the proposed development.

The consolidated erf illustrated below, will measure approximately 2 799m² in extent.

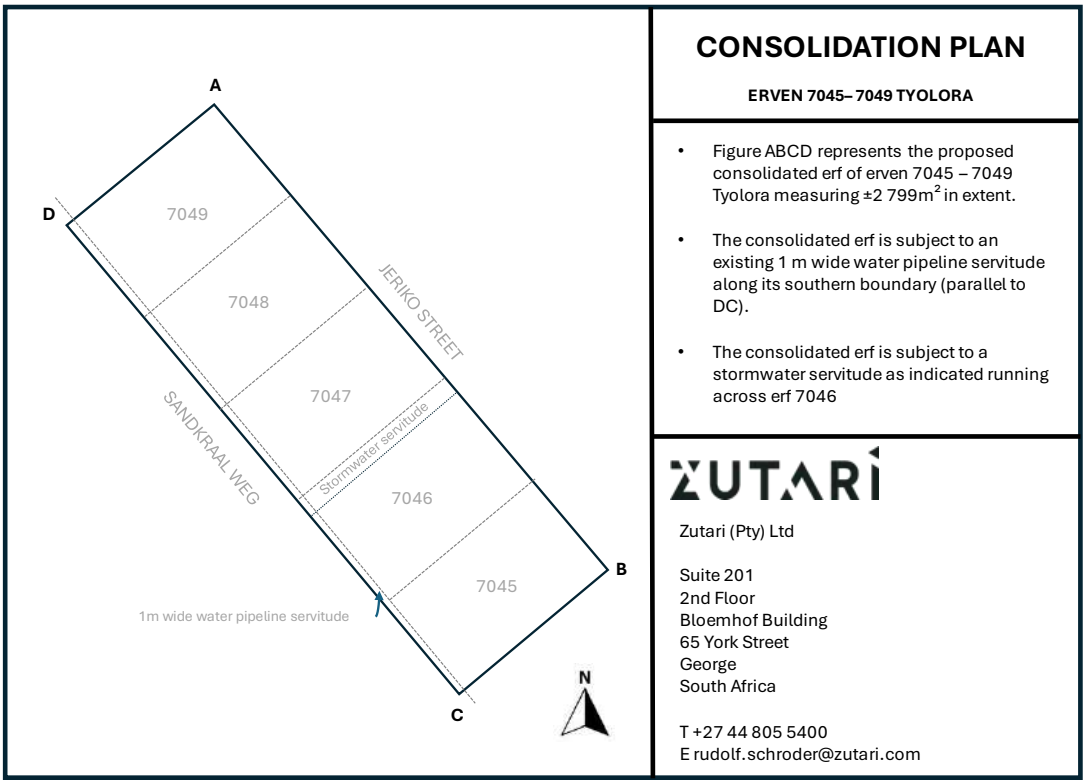


Figure 13: Consolidation Plan

Refer to the consolidation plan attached as **Annexure J** for further information.

4.4 Proposed Land Uses

The main objective is to obtain development rights for the proposed Fourways Transfer Location. The proposed development of Erven 7045 – 7049 Tyolora, George, will consist of the following land uses:

- Outdoor trading facilities
- Temporary social facilities
- Office and active boxes
- Public transport facilities
- Convenience shop and
- Business premies

Refer to the concept site development plan attached as **Annexure G** that was prepared with inputs from spatial planning, LED and transport engineers, that forms the basis of this land use planning application that is submitted to secure development rights for the proposed facility.

4.5 Proposed Development Parameters

The proposed development parameters for the site will be in accordance with the prescriptions of the George Integrated Zoning Scheme By-law, 2023

The applicable development parameters for the proposed zoning will be that of “business premises”, as set out below.

The following development parameters apply:

Coverage:

The maximum coverage for all buildings on a land unit is 100%.

Street centre line setback:

The Municipality may require a street centre line setback, in which case all buildings or structures on a land unit must be set back at least 8 metres from the centre line of the abutting public street or streets.

Floor factor:

The maximum floor factor on the land unit is 3.

Height:

The highest point of a building may not exceed 15 metres to the top of the roof.

Building lines:

The street building line is 0 metres; Side and rear building lines are 0 metres up to a height of 8.5 metres and 4.5 metres for the remainder of the building provided that the Municipality may lay down more restrictive common building lines in the interest of public health and safety or in order to enforce any other law or right.

Refer to the attached Concept Site Development Plan (**Annexure G**) for more details of what is planned on the site and confirmation that the development parameters will be adhered to. The detailed designs for the facility will still be conducted and submitted to the Municipality’s Civil Engineering Department for approval before the start of construction.

4.6 Transport Planning and Traffic Impact Assessment

A Transport Impact Assessment (TIA) has been prepared in support of the application for the rezoning of Erven 7045 - 7049 Tyolora. The said erven are to be consolidated and developed to become an important extension to the Fourways GO GEORGE Transfer Location in Thembalethu.

The proposed Fourways Transfer Location extension as envisaged on Erven 7045 - 7049 Tyolora is reflected in the figure below. Included in this are the following:

- Four passenger loading islands to serve the mainline GO GEORGE bus routes destined for the CBD, the GRM, the industrial areas and Blanco. All these services will enter the facility from the northern end from NMB, and will depart via Jeriko Street, Ngcakani Road and NMB in a northerly direction.

- A further passenger boarding island to serve the bi-directional Community routes that will enter from both Tabata and Ngcakani Streets via Jeriko Street, then depart the facility in the reverse direction.
- Facilities to accommodate the GO GEORGE operation personnel, security staff and ticket sales.
- Space allocated for some on-site trading.
- A suitable seating, information displays, CCTV surveillance, a roof structure for passenger comfort.

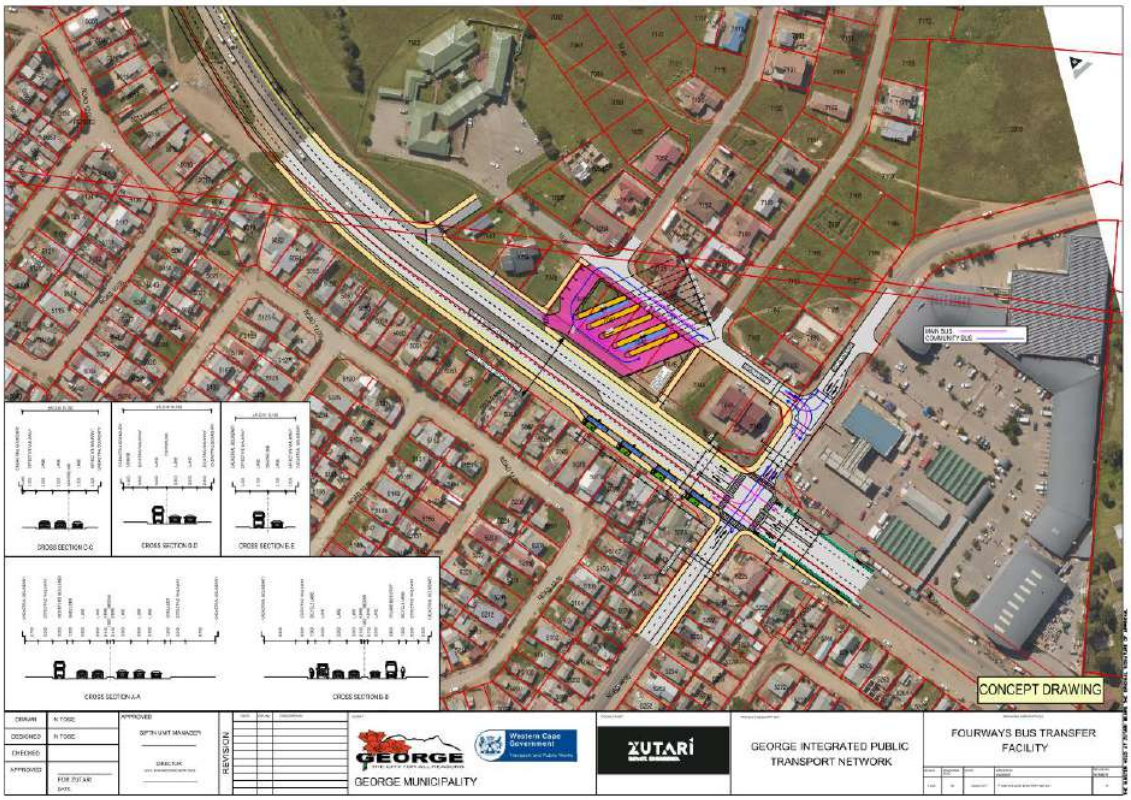


Figure 14: Concept Drawing - Fourways GO GEROGE Transfer Location

4.6.1 Access Arrangement

Critical to the development of both the Transfer Location extension and the planned Ilisolethu Gateway Project is the issue of vehicular access. The Ilisolethu planning indicated an access to what was referred to as the Multimodal Transport Social Cluster and the Ilisolethu Interchange Gateway Development as indicated in Figure 2.3 and Figure 2.4. Two issues emerged from this early proposal.

- The first being that the access from NMB would be from a portion of road over which the Municipality has no jurisdiction, this being a part of the proclaimed National Road 2 (Thembalethu Interchange and thus required early consultation with SANRAL.
- The second related to the access arrangement and possible internal facility layout that could be accommodated within what would be the Transfer Location extension which would be very circuitous, and not suitable for the bus operations. As such, an alternate access arrangement was sought.

Figure 15: Proposed access to the Ilisolethu Multimodal Cluster

Figure 16: Proposed accesses to the Ilisolethu Interchange Gateway Development

4.6.1.1 Proposed Access:

When considering the high number of passengers walking along NMB, and the pedestrian/vehicle conflict areas created when pedestrians need to cross left-in accesses, as well as the cross section of NMB between N2 Southern Terminal and Fourways intersection and the vertical alignment of the road encouraging high operating speeds; and the dual function of a Class 3 road (such as NMB) to serve both a mobility and access function, it is proposed that access Alternative 1 be implemented providing a single access point to a service road running parallel to NMB but separated with a 3m wide island, as illustrated below:

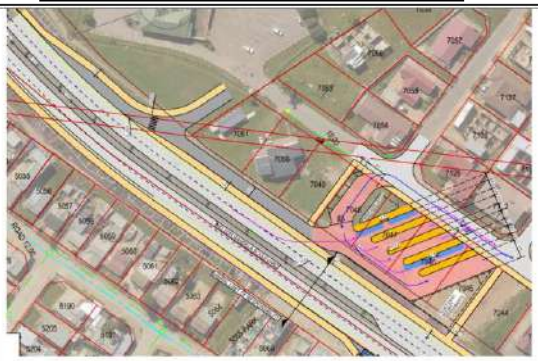
	Alternative 1 (Preferred Access)	Alternative 2
Concept Layout		
Description	The access to the Transfer Location and Ilisolethu Interchange Gateway are combined by providing a single access point to a service road running parallel to NMB.	Two separate accesses off NMB are provided. Access 1 to the Ilisolethu Interchange Gateway Development and access 2 to the Transfer Location.

Figure 17: Proposed Access to Fourways Transfer Location and Ilisolethu precinct

The proposed access has been approved in principle by SANRAL, but formal approval is required as this section of Nelson Mandela Boulevard is under SANRAL's authority.

4.6.2 Study intersections

The critical intersections which will be impacted by the proposed Fourways Transfer Location extension are shown in the figure below which have been considered in the TIA:

1) Nelson Mandela Boulevard / Ngcakani Road / Tabata Street intersection (hereafter referred to as Fourways intersection)
2) Ngcakani Road / Jeriko Street intersection
3) Tabata Street / Bomvana Street intersection
4) Thembalethu Taxi Rank Access
5) Nelson Mandela Boulevard / N2 Southern Ramp Terminal (hereafter referred to as N2 Southern Terminal); and
6) Nelson Mandela Boulevard / N2 Northern Ramp Terminal (hereafter referred to as N2 Northern Terminal).

The geometric layout and control of each of the intersections are indicated in the table below.

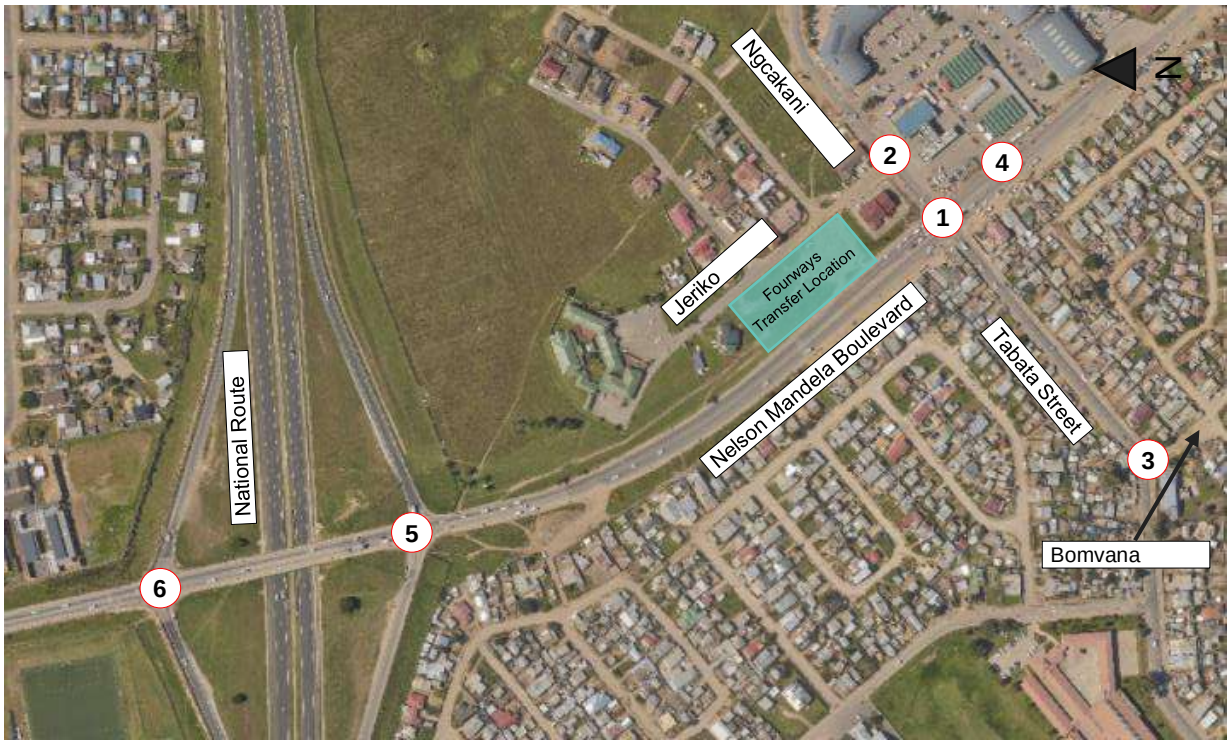
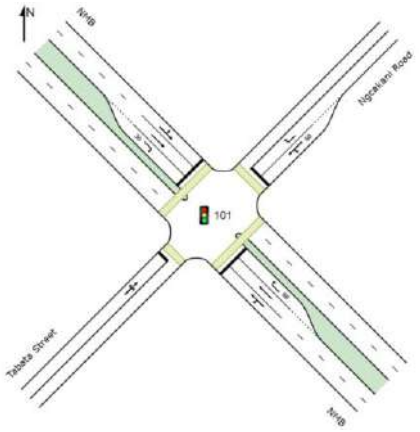
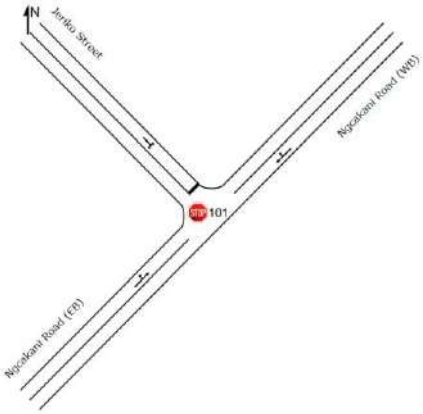
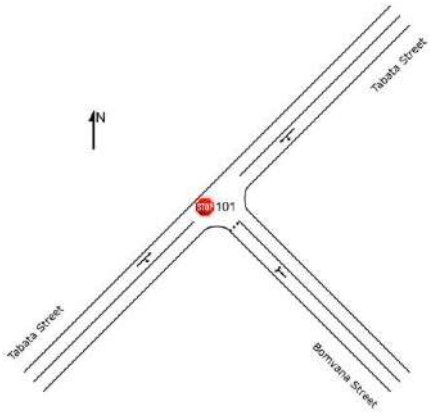
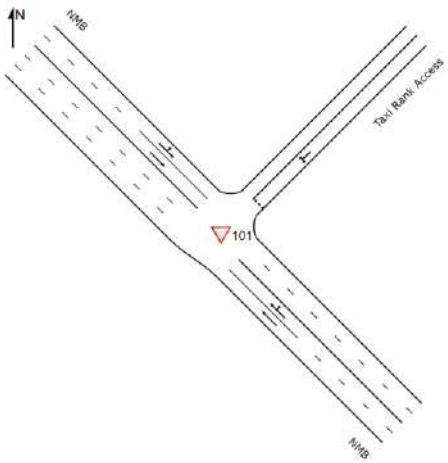
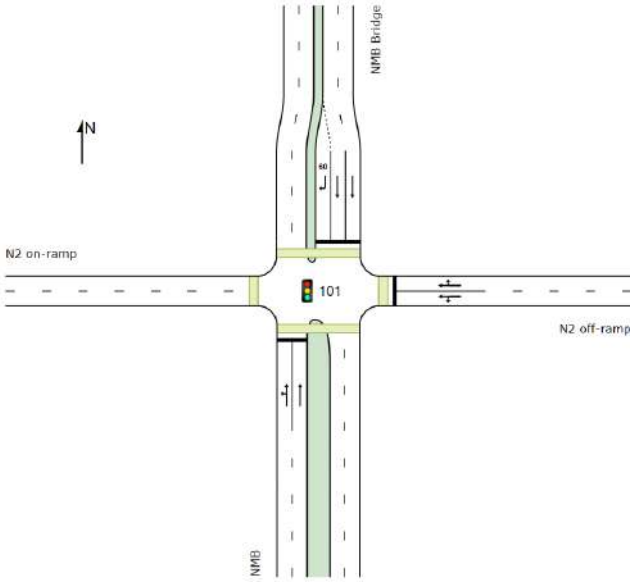
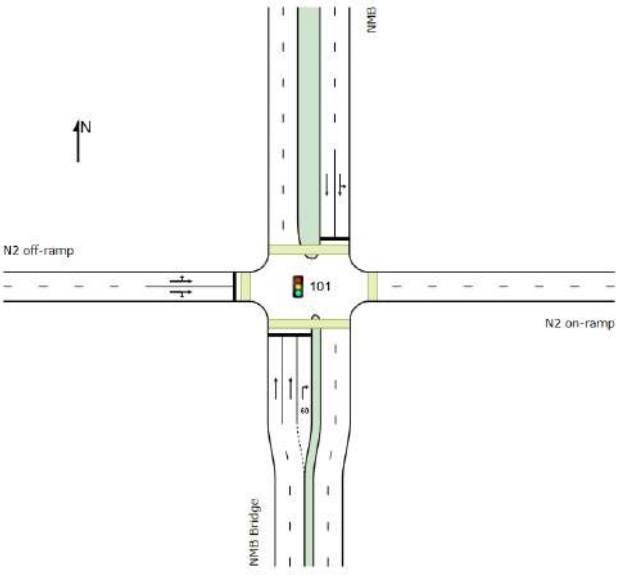


Figure 18: Study intersections

Table 5: Existing intersection control and geometry

Intersecting Roads			Intersection Control Type	Intersection Geometry
1	Nelson Mandela Boulevard	Tabata Street & Ngcakani Road	Fully Signalised intersection	
2	Ngcakani Road	Jeriko Street	T-junction (stop on Jeriko Street)	
3	Tabata Street	Bomvana Street	No Control	

Intersecting Roads			Intersection Control Type	Intersection Geometry
4	Nelson Mandela Boulevard	Taxi Rank Access	Stop Minor Road	
5	Nelson Mandela Boulevard	N2 Southern Terminal	Fully Signalised intersection	
6	Nelson Mandela Boulevard	N2 Northern Terminal	Fully Signalised intersection	

4.6.3 Road Network

The figure below shows the roads that will be affected by the proposed transfer location. The functional classification of the roads in the road network is also reflected.

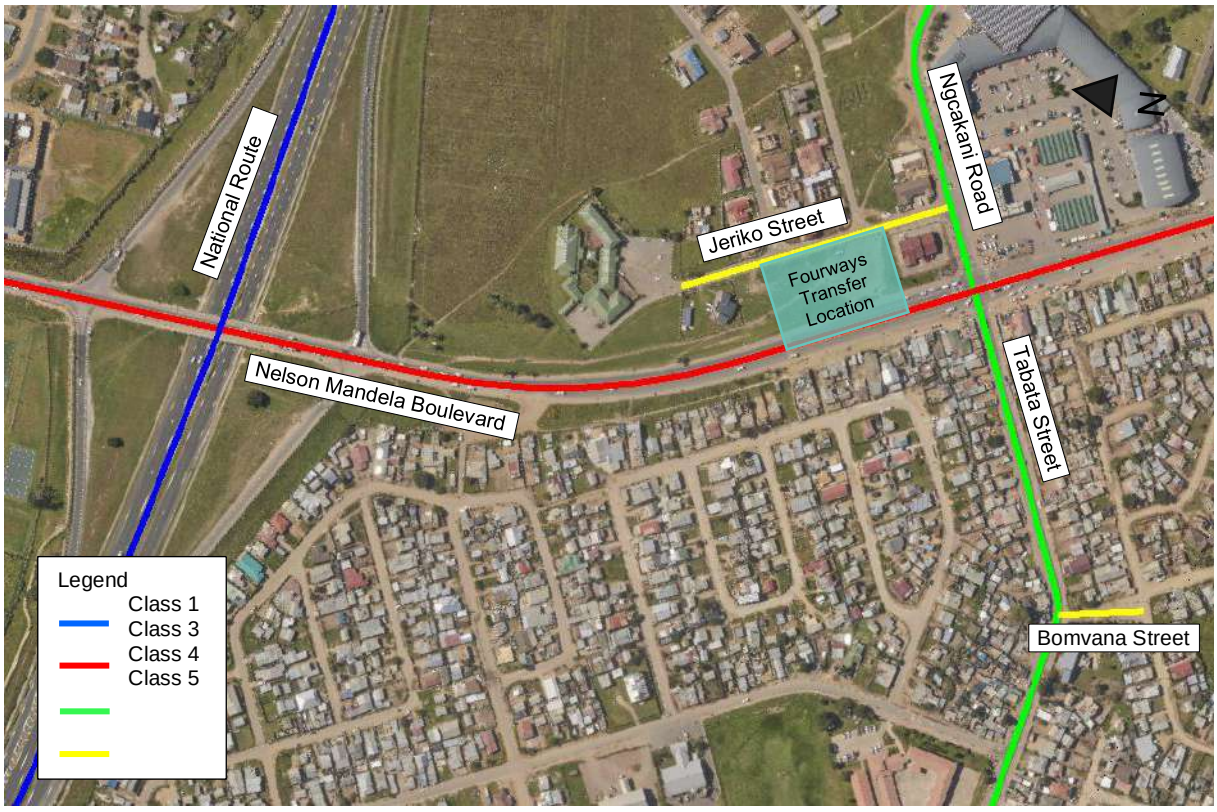


Figure 19: Road network and classification

The table below summarises the class and geometry of the roads in the vicinity of the proposed transfer location.

Table 6: Road classification and geometry

Road	Class	Geometry
1. Nelson Mandela Boulevard	Class 3 Minor Arterial	Dual carriageway north of Fourways with 2 lanes per direction, reverting to a 2-lane roadway south of Fourways intersection
2. Tabata Street	Class 4 Collector	Single carriageway, 1 lane per direction
3. Ngcakani Road	Class 4 Collector	Single carriageway, 1 lane per direction with 2-lane approach to Fourways I/S
4. Jeriko Street	Class 5 Local	Single carriageway, 1 lane per direction
5. Bomvana Street	Class 5 Local	Single carriageway, 1 lane per direction
6. National Route 2	Class 1 Primary Arterial	Dual carriageway, 2 lanes per direction

4.6.4 Existing Property Accesses

There are several accesses to properties which may be impacted by the proposed Fourways Transfer Location extension.

Accesses in the TIA were identified and classified according to the Access Management Guidelines WCG, 2020 which classifies accesses according to a threshold number of vehicles entering or exiting a property per hour. There are three categories for conventional driveways: domestic equivalent

driveways (DED), low-volume driveways (LVD) and high-volume driveways (HVD). The purpose (land-use) and classification of the accesses in this study are summarised in the table below.

Table 7: Property access details

Access No.	Road	Land Use	Purpose	Classification (AMG)
1	NMB	Thembalethu Square - Boxer Superstores	Commercial Access	HVD
2		Taxi Rank Access	Commercial Access	HVD
3	Ngcakani Road	Filling Station Access	Commercial Access	LVD
4		Thembalethu Square	Commercial Access	LVD
5	Jeriko Street	Fire Station Access	Utility Access	DED
6		Thembalethu iHub	Commercial Access	DED
7		Thusong Centre	Commercial Access	LVD
8		Bodi	Commercial Access	DED
9		Residence	Residential Access	DED
10		Residence	Residential Access	DED

The location and the classification of the accesses are presented in the figure below.

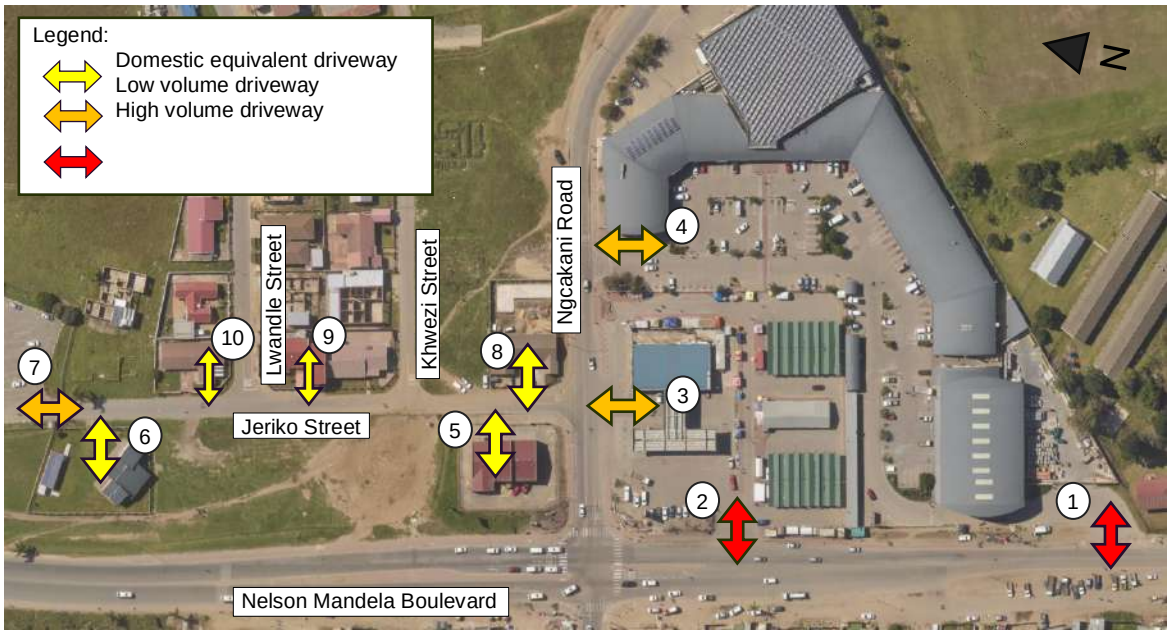


Figure 20: Existing property access to commercial area

The recommendations made in the TIA have been incorporated in the Site development Plan for the proposed development.

See the Traffic Impact Assessment Report attached as **Annexure I.**

5 MOTIVATION

5.1 Land Development Principles

The proposal is consistent with existing Policy and Planning Frameworks and adheres to the principles of the Spatial Planning and Land Use Management Act (Act No 16 of 2013) (SPLUMA). This application complies with the following General Principles for development as stated in Chapter 2 of the Spatial Planning and Land Use Management Act, 2013 (Act No 16 of 2013):

- Section 7 (b): The principle of spatial sustainability, whereby spatial planning and land use management systems must:
- (vi) promote land development in locations that are sustainable and limit urban sprawl; and
- (vii) result in communities that are viable;
- Section 7 (c): The principle of efficiency whereby:
- land development optimises the use of existing resources and infrastructure.

The proposal also sets out to meet the land development principles referred to in Section 42 of the Spatial Planning and Land Use Management Act (Act 16 of 2013) (SPLUMA) and Chapter VI of the Western Cape Land Use Planning Act (Act 3 of 2014) (LUPA):

- Spatial justice
- Spatial sustainability
- Efficiency
- Spatial resilience
- Good administration

5.1.1 Spatial Justice

The principle of spatial justice relates to redressing the past development imbalances to improve access to, and use, of land. The goal of the proposed Fourways Transfer Location development is to improve the use of land by providing access to formalised public transport and economic opportunities within the local context of Thembalethu. The provision of access to formal public transport and economic opportunities is intended to service people of different economic statuses to bring about community and social cohesion.

5.1.2 Spatial Sustainability

The principle of spatial sustainability relates to land use management systems that promote land development that is within the fiscal, institutional and administrative means of South Africa, must protect prime and unique agricultural land, and must comply with environmental laws and limit urban sprawl.

The land identified for the proposed development is ideally located within the urban edge of the municipality and has been identified by the ilisolethu project 11 as a concentration point of social and community services for the entire Thembalethu township. According to the Ilisolethu project 11 the envisioned multimodal transport social cluster will enable more diverse social facilities to be clustered within a pedestrian – orientated (but public transport accessible), well-designed public open space. This contributes to both spatial sustainability and spatial resilience.

5.1.3 Efficiency

The principle of efficiency relates to the optimal use of existing resources and infrastructure. The development of the study area will capitalise on the existing infrastructure. The development will also yield the least impact on the environmental resources of the area and protect the open areas from being invaded and degraded.

5.1.4 Spatial Resilience

The principle of spatial resilience relates to the flexibility of spatial policies and land use management systems. The primary vision of the Fourways Transfer Location to allow for public transport use, however additional land uses are envisioned to be incorporated into the development. The flexibility of the land use management systems makes provision for adding consent uses to the primary land use Zone (Transport Zone I) applied for to enable all planned land uses.

5.1.5 Good Administration

The principle of good governance relates to all spheres of government ensuring an integrated approach to land use and land development. The proposed development supports the principle of good administration as it is aligned to the overall strategic spatial development of the municipal area.

5.2 Desirability

In Chapter 5, Section 65 of the Land Use Planning By-Law for George Municipality, 2023, the desirability of the proposed utilisation of land and any guidelines issued by the Provincial Minister regarding the desirability of proposed land uses must be considered when the municipality considers an application. Assessment criteria include aspects such as socio-economic impact; compatibility with surrounding uses; impact on the external engineering services; impact on safety, health and wellbeing of the surrounding community; impact on heritage; impact on the biophysical environment; traffic impacts, parking, access and other transport related considerations; and whether the imposition of conditions can mitigate an adverse impact of the proposed use or development of land.

These criteria are motivated below.

5.2.1 Socio-economic impact

In the development concept it is shown that a variety of land uses can be accommodated on the site with the proposal focussing on providing a multimodal social and transport cluster development that would result in much needed economic opportunities and access to formalised public transport in the area. The consent uses applied for can accommodate outdoor trading facilities, convenience shop and business premises which will give the local economy an opportunity to thrive in this highly accessible and visible location.

The proposed development embraces economic opportunities by creating an environment that is conducive to and encourages economic growth. The proposed Fourways Transfer Location is integrated with community facilities and services, thereby creating linkages of facilities adjacent to it, and allowing for resource sharing between activities, thereby promoting place-making. The proposed

development will act as focal points for social interaction that is responsive, attractive and comfortable to the community.

5.2.2 Compatibility with surrounding development

The proposed development will compliment and uplift the area by providing a high-quality multimodal social cluster type development. The proposed development will provide much needed access to formalised public transport and economic opportunities to the local community. The community will as a result realize an increased sense of security and human well-being, and the development will also contribute to the character of the area.

5.2.3 Traffic, parking and access impacts

A Traffic Impact Assessment (TIA) and detailed traffic modelling were conducted and formed an integral part of the layout planning and design of the proposed development. The studies concluded that the proposed development is feasible with a number of access management interventions that will be required. Refer to section 4.6 of this report for more information in this regard.

5.2.4 Impact on safety, health and well-being of the surrounding community

The development will contribute greatly to the creation of safe and secure communities through establishing a greater degree of visual connection and passive surveillance to the adjacent communities. A diversity of land uses on the property will also increase activity in the vicinity of the site, thereby contributing to safety. The current land use of the site is deemed to not be used to its full potential. Through the increase in passive surveillance brought about by pedestrian movement, the activation of the site for a greater portion of the day through the provision of different land uses promotes a safer urban environment.

5.2.5 Impact on engineering services

The proposed Fourways Transfer Location development aims to achieve a feasible inclusionary development approach that provides for the integration of:

- Quality sustainable infrastructure according to municipal standards;
- Quality built environment;
- Economic opportunities;
- Provision of social facilities;
- Delivered in one seamless development process.

Based on the information provided in the preceding sub-sections, the desirability of the proposed Fourways Transfer Location Development is clearly demonstrated.

5.3 Strategic National, Provincial and Local Planning Frameworks and Policies

5.3.1 National Policy Context

5.3.1.1 The National Development Plan 2030

The National Development Plan (NDP) 2030 was developed by the National Planning Commission (NPC) in the office of the President in 2012. The objectives stated within the NDP include the need for a strong and efficient planning system, integrated across the various spheres of government. The NDP sets out an integrated strategy for accelerating growth, eliminating poverty and reducing inequality, by 2030. It further provides a new focus for planning authorities to embrace several other policies of the government, developed since 1994. Accordingly, the NDP places spatial transformation as the key challenge and objective within South Africa and is seen as the foundation, and enabler, of economic growth and development.

Chapter 8 of the NDP 2030 deals with "Transforming Human Settlements", where specific provision is made for spatial planning, and which includes issues of importance for the review of a Spatial Development Framework (SDF). The NDP states that "planning in South Africa will be guided by normative principles to create spaces that are liveable, equitable, sustainable, resilient and efficient, and support economic opportunities and social cohesion". These principles for spatial development are premised on spatial justice, spatial sustainability, spatial resilience, spatial quality and spatial efficiency. These principles are regulated in Chapter 2 of the Spatial Planning and Land Use Management Act (SPLUMA): Development Principles Sections 7(a), (b), (c), (d) and (e).

Furthermore, the NDP proposes that: "These principles need to be incorporated into operational principles that provide guidance on":

- Integrating rural and urban areas;
- Accommodating social diversity within the built environment;
- Creating more dense settlements without raising the cost of land and housing for the poor;
- Integrating transportation systems and land use;
- Broadening the economic base of towns and cities through the supply of reliable infrastructure, suitable land and property, connectivity, skills and logistics;
- Building community involvement and partnerships;
- Supporting the development of vibrant, diverse, safe, green and valued places; and
- Ensuring that governance arrangements and leadership deliver equitable and efficient decision-making."

The spatial interventions, concepts and principles underpinning the proposed development is therefore aligned with the NDP objectives ensuring integrated transportation systems and land use.

5.3.1.2 Spatial Planning and Land Use Management Act

The Spatial Planning and Land Use Management Act (2013) (SPLUMA) is a law assented to by the President of the Republic of South Africa on 5 August 2013. SPLUMA replaced the Development Facilitation Act (DFA) and the Land Use Planning Ordinance, 15 of 1986 (LUPO), and came into effect on 1 July 2015. SPLUMA is a framework act for all spatial planning and land use management legislation in South Africa. It seeks to promote consistency and uniformity in spatial planning and management related procedures and decision-making. Other objectives include addressing historical spatial imbalances and integrating the principles of sustainable development into land use and planning regulatory tools and legislative instruments. SPLUMA requires national, provincial and municipal spheres of government to prepare SDFs that establish a clear vision that must be developed through a thorough inventory analysis based on national spatial principles and local long-term development goals and plans. SPLUMA was developed to legislate a single and integrated planning system for South Africa. Furthermore, SPLUMA provides a framework for spatial planning and land use management and, as such, it can be used as a tool to aid the spatial transformation of our rural and urban areas.

As it pertains to urban planning, SPLUMA provides for two pillars of planning, namely spatial forward planning and land use management, or land development administration. SPLUMA provides general development principles in Chapter 2, subsection 7(a)-(e) of the Act, that applies to spatial planning and land use management, including:

- Spatial justice: Past spatial, and other, development imbalances must be redressed through improved access to, and use of, land.
- Spatial sustainability: Spatial planning and land-use management systems must promote land development that is within the fiscal, institutional and administrative means of South Africa, protect prime and unique agricultural land, comply with environmental laws and limit urban sprawl.
- Efficiency: Land development should optimise the use of existing resources and infrastructure, and decision-making procedures must be designed to minimise negative financial, social, economic or environmental impact.
- Spatial resilience: Flexibility in spatial plans, policies and land-use management systems are accommodated to ensure sustainable livelihoods in communities that are most likely to suffer the impacts of economic and environmental shocks.
- Good administration: All spheres of government are to ensure an integrated approach to land-use and land development, that is guided by spatial planning and land-use management systems. All governmental departments are to provide sector inputs, comply with any other requirements and follow a transparent public process.

Figure 21: SLUMA principles

Sustainable principles, regulations and practices have been incorporated into the proposed development. The spatial interventions conform to these normative principles to ensure sustainable development and the promotion of natural, human, social and physical capital within the immediate area.

5.3.1.3 National Environmental Management Act

The National Environmental Management Act (Act.107 of 1998) (NEMA) provides for cooperative environmental governance by establishing principles for decision-making on matters affecting the environment. It also provides for certain aspects of administration and environmental management law enforcement to be undertaken by institutions that can promote cooperative governance and procedures for co-ordinating environmental functions exercised by organs of government.

NEMA is crucial in matters of environmental sustainability, resilience to climate change and the sustainable use of natural resources, as these are key to the current and future socio-economic well-being of residents within a municipal area. To this end, it is crucial that NEMA principles, in conjunction with the development principles set out in SPLUMA, are applied. Both NEMA and SPLUMA provide for an integrated and coordinated approach towards managing land use and development processes. This approach is based on co-operative governance and foresees the utilisation of spatial planning and environmental management instruments, such as SDFs and EMFs, to align the requirements of allowing development, while ensuring that biodiversity, as well as other sensitive natural elements, are protected.

By promoting development within the urban edge, NEMA principles are considered and a spatial strategy that is environmentally sustainable, and which creates a balance between development and the protection of natural resources are presented.

5.3.1.4 Integrated Urban Development Framework

The Integrated Urban Development Framework (IUDF) is the government's policy position, coordinated by the Department of Co-operative Governance and Traditional Affairs (COGTA), to guide the future growth and management of urban areas. The IUDF responds to the post-2015 Sustainable Development Goals (SDGs), particularly Goal 11, which focuses on making cities and human settlements inclusive, safe, resilient and sustainable.

An important outcome of the IUDF is that of spatial transformation. The policy levers that have been identified are crucial for maximising the potential of urban areas, by integrating and aligning investments in a way that improves the urban form. The IUDF adopted a Transport-Oriented Development (TOD) approach to urban design, where all development policies promote higher-density urban development along mass transit corridors. This approach should promote investment in human settlements and other key economic infrastructure, further enabling mobility and accessibility to social and economic opportunities.

To reach its vision, the IUDF identifies four strategic goals (defined below) which will aid in achieving the transformative vision of restructured urban spaces, and compact, connected cities and towns:

- Spatial integration: To forge new spatial forms in a settlement, transport, social and economic areas.

- Inclusion and access: To ensure people have access to social and economic services, opportunities and choices.
- Growth: To harness urban dynamism for inclusive, sustainable economic growth and development.
- Governance: To enhance the capacity of the state and its citizens to work together to achieve spatial and social integration.

The proposed development will contribute to providing an inclusive, safe, resilient and sustainable transport node, and will promote collaboration between local government and citizens and integrated development.

5.3.2 Provincial Policy Context

5.3.2.1 Western Cape Provincial Spatial Development Framework (PSDF)

The Provincial Spatial Development Framework (PSDF) provides a shared spatial development vision for both the public and private sectors and serves as the guide to all sectoral considerations concerning space and place in the Western Cape. The PSDF serves to guide the location and form of public investment and seeks to influence other investment decisions, by establishing a coherent and logical framework for spatial investment. The PSDF furthermore provides the spatial development policy framework through which the various provincial strategic goals will drive economic growth, improve natural resource management and resource use efficiencies, and develop more sustainable and integrated settlements.

The Provincial spatial agenda can be summarised as follows:

- Growing the Western Cape economy, in partnership with the private sector, non-governmental and community-based organisations;
- Using infrastructure investment as the primary lever to bring about the required urban and rural spatial transitions; and
- Improving oversight of the sustainable use of the Western Cape's spatial assets.

The PSDF includes four spatial themes, namely resources, space economy, settlement and spatial governance. The policies and strategies that flow from these themes focus on strategic investment in the space economy, settlement restructuring and the protection of the Province's natural and cultural resource base.

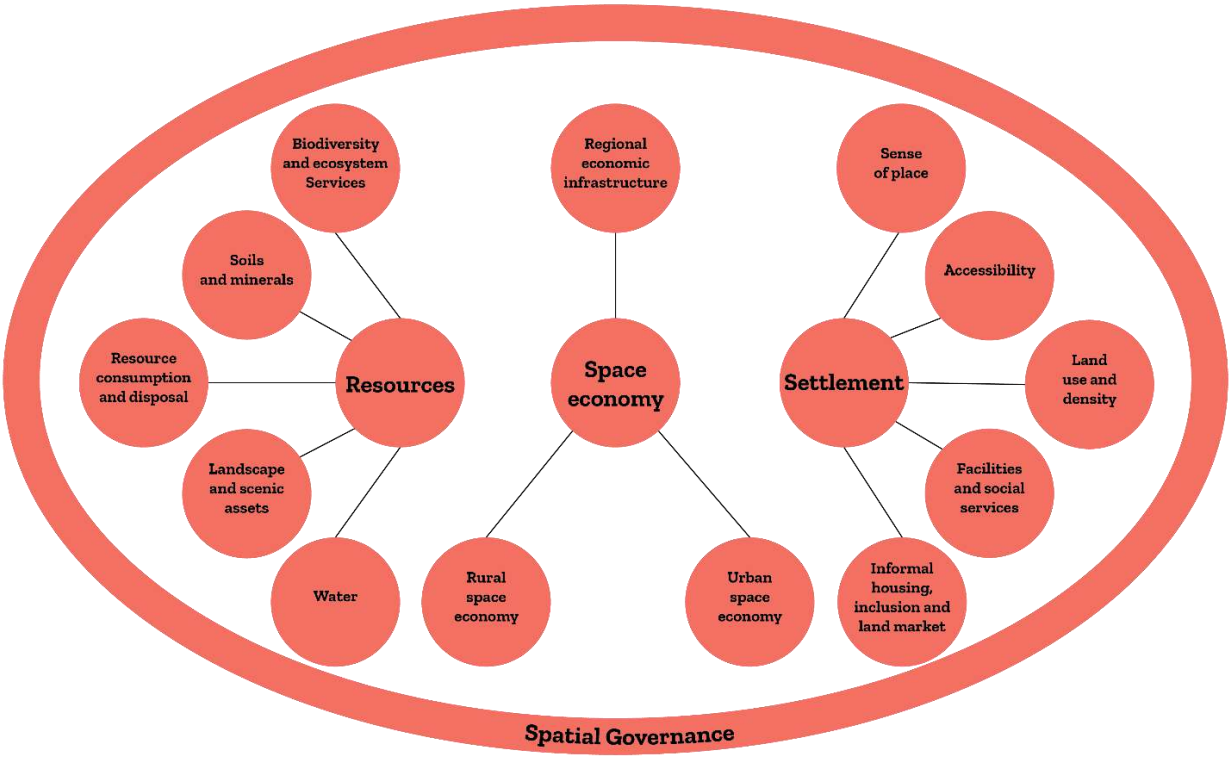


Figure 22: PSDF themes

The PSDF is an important spatial planning and land use management tool. It graphically portrays the Western Cape at a provincial level. The spatial planning principles and strategies underpinning the proposed development of the Fourways Transfer Location development site aligns with the PSDF.

5.3.2.2 Western Cape Land Use Planning Act

The purpose of the Western Cape Land Use Planning Act (Act 3 of 14) (LUPA) is to consolidate legislation in the Western Cape Province that relates to spatial planning and to coordinate public investment. It is strongly aligned with SPLUMA and governs spatial planning and land use management in the Western Cape.

5.3.2.3 OneCape 2040

OneCape 2040 is a vision for the Western Cape which envisages a transition towards a more inclusive, integrated and resilient economic future for the Western Cape region: “A highly-skilled, innovation-driven, resource-efficient, connected, high opportunity and collaborative society”. The spatial vision that OneCape 2040 foresees, is: “creating a resilient, inclusive and competitive Western Cape with higher rates of employment, producing growing incomes, greater equality and an improved quality of life”. This vision seeks to set a common direction to guide planning and action and to promote a common commitment to, and accountability of sustained long-term progress. To this end, the six transitions have been identified, as summarised in the table below.

Table 8: The role of local government in achieving the OneCape 2040 vision

Educated Cape	Every person will be appropriately educated for an opportunity. Recognised centres of ecological, creative, science and social innovation excellence.
Enterprising Cape	Anyone who wants to be economically active can work. The entrepreneurial destinations of choice.
Connecting Cape	Welcoming, inclusive and integrated communities. Global meeting place and connector.
Living Cape	Healthy, liveable, accessible, high opportunity neighbourhoods and towns. Ranked as one of the greatest places to live in the world.
Green Cape	Functioning ecosystems working for and with communities. Leader and innovator in Green Economy.
Leading Change	Collaboration. Innovation mechanisms. Supportive roles.

Source: Western Cape Government OneCape 2040 presentation

OneCape 2040 has a strong focus on inclusive, integration and the creation of job opportunities. The proposed Fourways Transfer Location development is therefore aligned with these principles to provide an integrated development that will stimulate job creation.

5.3.3 District policy context

5.3.3.1 Garden Route Spatial development framework.

The Garden Route Spatial Development Framework (2017) identifies several spatial drivers of change that need to be translated into the Garden Route District policy. For the Garden Route to reach its full potential, six central issues were identified that need to be addressed based on the policy review and synthesis. These issues relate to

- Regional resource capacity constraints
- Regional competitive advantage
- Sprawling low-density settlements
- Constrainted regional accessibility
- Erosion of biodiversity and cultural landscapes; and
- Sustainability of agriculture and rural settlements.

In line with the Garden Route District Vison and Mission adopted in the 2017 IDP, the SDF focused on four spatial drivers of change. These spatial drivers underpinning a development approach, are:

- The **Economy is the Envirnment**; A sustainable environment is an economy posiitioned for growth;
- **Regional Accessibility for Inclusive and Equitable Growth;**
- **Coordinated Growth Management for Financial Sustainability**; and
- **Effective, Transversal Institutional Integration**.

The spatial drivers underpinning the development approach for the proposed Fourways Transfer Location development is aligned with the four spatial drivers of change identified in the Garden Route SDF.

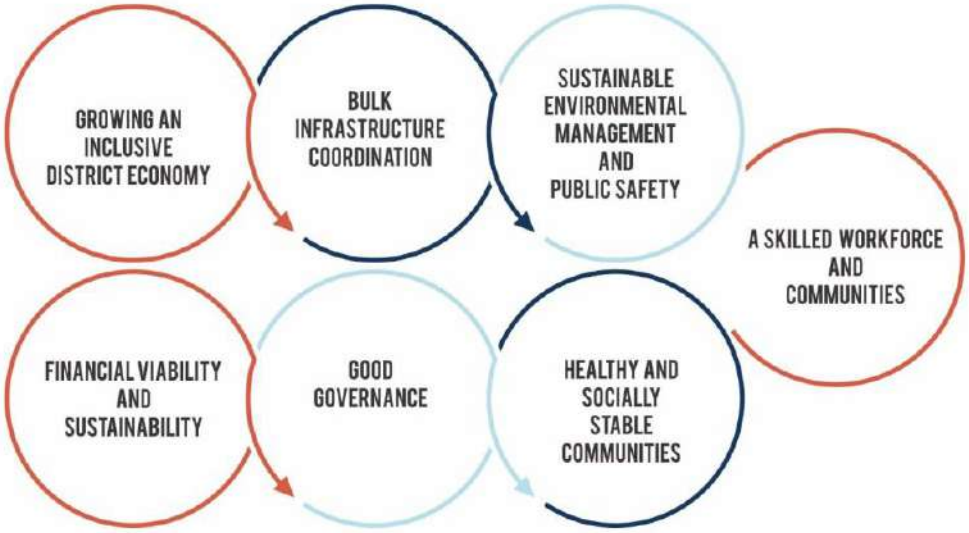
5.3.3.2 Garden Route Integrated Development Plan 2024-2025

The Graden Route District Municipality adopted its vision for the 2022-2027 term of office and highlighted key aspects that should drive the administration for effective implementation of projects and programmes adopted by Council for the term of office.

“Garden Route the leading, enabling, and, and inclusive district, characterised by equitable, sustainable development, high quality of life and equal opportunities for all”

The IDP is the fundamental part of the planning nucleus in the Garden Route District and its anchored on 7 strategic objectives which define the growth path of the District over the period. These strategic objectives guide and informs all the planning activities in the municipality;

- Growing an inclusive District Economy
- Coordinate bulk infrastructure Service Delivery
- Promote Environmental Sustainability and Public Safety
- Building a Skilled Workforce and Communities
- Ensuring Financial Viability
- Good Governance
- Promoting Healthy and Socially stable Communities



The proposed Fourways Transfer Location development is aligned with the strategic objectives of the Garden Route Integrated Development Plan 2024-2025.

5.3.3.3 Garden Route Integrated Human Settlement (HIS) Strategic Plan

The Garden Route District Municipality (GRDM) has formulated principles and guidelines that will play a more meaningful strategic programme coordination role in the Human Settlement environment that best echoes with the proposed Government's strategic interventions related to service delivery.

The Integrated Human Settlement strategic plan advocates for the provision of efficient and equitable services in line with the principles listed below. For the long-term integration and sustainability, the following principles will be undertaken in the GRDM:

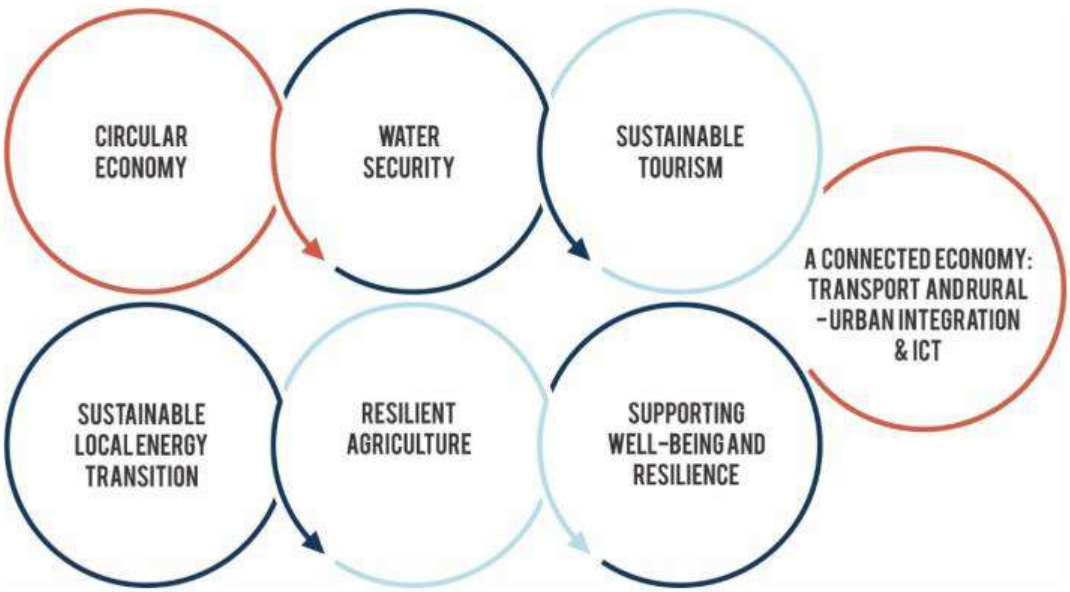
- **Equity:** All applicants applying for an affordable housing opportunity must have an equal opportunity for related services**;**
- **Transparency:** create necessary understanding and confidence by allowing all apprived policies and procedures to be readily avaiable to allow anyone to scrutinise them.
- **Pragmatic and functionality:** this plan as well as its related policies and procedures, will at all times be practical and less costly.
- **Social Cohesion**
- **Long Term Integration.**

5.3.3.4 Garden Route Growth and Development Strategy (GDS)

The Garden Route Growth and Development Strategy (GDS) provides a framework for growth and development planning in the Garden Route District for 2020-2040. The Garden Route Region adopted a long-term approach to the development that is sensitive to the requirements of the region and its people. Furthermore, the adopted strategic priorities for the region is intend to drive local growth and development.

There are seven (7) key strategic priorities that was adopted as listed below. These priorities have been identified based on a long-term vision for the Graden Route, as well as on the existing work, strengths, and potential of the region. Each one is also aligned to existing policies and strategies. This strategy draws on the significant work that went into Southern Cape Regional Spatial Implementation Framework (RSIF)

- Circular Economy.
- Water Security.
- Sustainable tourism.
- A connected economy.
- Supporting well-being and resilience.
- Resilient agriculture.
- Sustainable local energy transition.



The proposed Fourways Transfer Location development is aligned with the strategic divers and vision as outlined in the Garden Route Growth and Development Strategy (GDS).

5.3.4 Municipal Policy Context

5.3.4.1 Integrated Development Plan (IDP)

The IDP is an instrument of both local mobilisation and intersectoral and intergovernmental coordination and covers the extent of the local agenda. It must be viewed as the convergence of all planning, budgeting and investment in the George municipal area and must incorporate and illustrate national, provincial and district policy directives. The plan also seeks to integrate and balance the economic, ecological and social pillars of sustainability without compromising effective service delivery. The George municipality vision is to be **"A city for a sustainable future"**.

The focus of the George Municipality's Integrated Development Plan (IDP) for the current term of council (2022) is to pave a way for socio-economic, infrastructural and institutional development for the next five years. The 2022 IDP seeks to attain inter alia:

- Continue to elevate the IDP as the principal plan through which an integrated response to the current realities of George is coordinated.
- Enhance the quality of ward based plans (targeted development)
- Economice development strategy to serve as a key for sociao-eceominc transformation
- Long term infrastructure planning to promote growth.

Figure 23: Vision, Mission and Values of the George Municipality (IDP)

The proposal to develop the Fourways Transfer Location site will support the municipality's Strategic goal 1 to develop and grow George.

5.3.4.2 Municipal Spatial Development Framework (MSDF)

The Municipal Spatial Development Framework 2023, for the period May 2023 to May 2027, guides spatial growth and development in George. The MSDF provides clarity in respect of the manner in which land-use, development, and investment will be supported to build a spatial form which facilitates the vision and strategic objectives of the Municipality.

Building on the George Municipality's IDP vision of "**A city for a sustainable future**" the supporting Spatial Planning Vision to guide the George MSDF remains to "**Develop George as a resilient regional development anchor of excellence for prosperity, inclusive-and smart growth**".

The MSDF (or SDF) informs land development and service provision decisions made by the municipal departments and decision makers in other tiers of government but does not confer, or take away, land use rights. The purpose of the George Municipal Development Framework (MSDF), as set out in the Spatial Planning & Land Use Management Act (2013) (SPLUMA), is to:

- Interpret and represent the spatial development vision of the municipality.
- Guide planning and devlopment decisions across all sectors of government and specifically the municipality and provincial government in its spatial planning and land use management decisions.
- Contribute to a coherent, planned approach to spatial development across the spheres of government.
- Provide clear and accessible information to the public and private sector and provide direction for investment purposes.
- Include previously disadvantaged areas, rural areas, informal settlements, slums and landholdings of state-owned enterprises and government agencies and address their inclusion and integration into the spatial, economic, social, and environmenatl objectives of the relevant sphere.
- Adress historic spatial imbalances in development
- Identify the long-term risks of spatial patterns of growth and devlopment and the polocies and strategies necessary to mitigate those risks.
- Provide direction for strategic developments, infrastructure investment, promote efficient, sustainable, and planned investiments by all sectors and indicate priority areas for investment inland development.
- Promote a rational and predictable land development environment to create trust and stimulate investment.
- Assist in integrating, coordinating, aligning, and expressing development policies and plans emanating from the various sectors of the spheres of government as they apply within the municipal area, specifically as it relates to environmenatl management, and
- Outline specific arrangements for prioritising, mobilising, sequencing, and implementing public and private infrastructural and land development investment in the priority spatial structuring areas identified. (SLUMA, 2013).

The land development and service provision of the Fourways Transfer Location development is informed by the Municipal Spatial Development Framework.

5.3.4.3 Local Economic Development strategy

In the context of the George Municipality Economic Development Strategy released April 2012, the purpose of the municipality is to deliver an enabling environment that is as conducive and business friendly as is possible within the law and national regulations and to make every effort to eliminate structural barriers to investment, business retention and growth.

In the context of economic growth and development and given South Africa's history it is not viable option to leave business development and investment decisions to the market alone. For this reason, it is imperative that the George Municipality intervenes strategically in the development arena.

- Improve functionality or markets;
- Facilitating catalytic projects, that level the playing field for entrepreneurial activity,
- Facilitating growth in sectors of strategic priority,
- Manage mechanisms that organise buying and selling, channel the flow of information but all the same time do not distort the market by creating unfair competition.

The proposed Fourways Transfer Location development will provide an enabling and conducive environment for the local community.

5.3.4.4 George Integrated Zoning Scheme By-Law

The George integrated Zoning Scheme By-Law, 2023 was adopted by the Municipal Council in terms of Section 12 of the local Government Municipal Systems Act, 2000 (Act 32 of 2000) on 28 September 2023 and promulgated in terms of Section 13 of said Act on 6 October 2023. The integrated Zoning scheme By-Law provides detailed land-use planning information, indicating for which purpose properties may be used as well as the regulatory process(es) to follow for development applications.

The proposed development is planned in strict accordance with the prescripts of the George integrated Municipal Zoning Scheme By-Law, 2023

6 PUBLIC PARTICIPATION

The public participation process to be followed for the application will be in accordance with the George Municipality Land Use Planning By-law, 2023.

The prescribed period which must be allowed for the submission of inputs and comments on an application is 30 days for interested and affected parties, and 60 days for any organ of state.

A comprehensive comments and response report will be compiled and submitted to the Municipality following the conclusion of the public participation process.

7 CONCLUSION AND RECOMMENDATIONS

The development proposals for the Fourways Transfer Location development are consistent with the Municipality's policies and promotes the City's development objectives. remains flexible with regards to the anticipated and permitted land uses, to allow for maximum flexibility in the future development.

The proposed development is desirable and will further promote the George Municipality's developmental objectives in the area. The proposed development will compliment and uplift the area by providing a high-quality live and work environment conducive to economic opportunities for the Thembalethu community. The Fourways Transfer Location will form an integral part of the Go-George operations to the Thembalethu area and will aid in the provision of efficient and cost effective public transportation to the area.

The following should be taken into account when considering the proposed rezoning, and consolidation of the proposed Fourways Transfer Location development for approval:

- The project site is located within the urban edge and within an area that has been identified to be developed as a social and transportation cluster as per the Ilisolethu project 11.
- The proposed changes in land use will complement the existing land uses on surrounding properties and will unlock the potential of the site.
- The proposed development will create a positive impact on the surrounding area.
- The proposed development is in line with all the forward planning frameworks and plans which guide development in and around George.
- The development proposal will adhere to all guidelines and restrictions prescribed by Council in terms of the George Integrated Zoning Scheme Bylaw, 2023.
- The proposed development will yield significant benefits in terms of social, economic and public transport aspects and will thus contribute to the sustainable development model of the Municipality.
- The proposed development is planned and in line with the required specialist inputs and accompanying reports.

It is therefore recommended that this application be approved.

We thank you for your consideration of the proposed application and look forward to your response.

Rudolf Schröder Pr. Pln A/151/2009

Professional Planner

PP Zutari (Pty) Ltd

_____ _____

Signature Date

ANNEXURES

ANNEXURE A	–	**APPLICATION FORM**
ANNEXURE B	–	**SPECIAL POWER OF ATTORNEY AND COUNCIL RESOLUTION**
ANNEXURE C	–	**TITLE DEED**
ANNEXURE D	–	**SG DIAGRAM**
ANNEXURE E	–	**LOCALITY PLAN**
ANNEXURE F	–	**MINUTES OF PRE-APPLICATION MEETING**
ANNEXURE G	–	**SITE DEVELOPMENT PLAN**
ANNEXURE H	–	**CONCEPT DRAWING OF FOURWAYS TRANSFER LOCATION**
ANNEXURE I	–	**TRANSPORT IMPACT ASSESSMENT REPORT**
ANNEXURE J	–	**CONSOLIDATION PLAN**
ANNEXURE K	–	**SACPLAN REGISTRATION CERTIFICATE**

In diversity there is beauty and there is strength.

MAYA ANGELOU

Document prepared by:
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South Africa
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E Rudolf.schroder@zutari.com

GO GEORGE

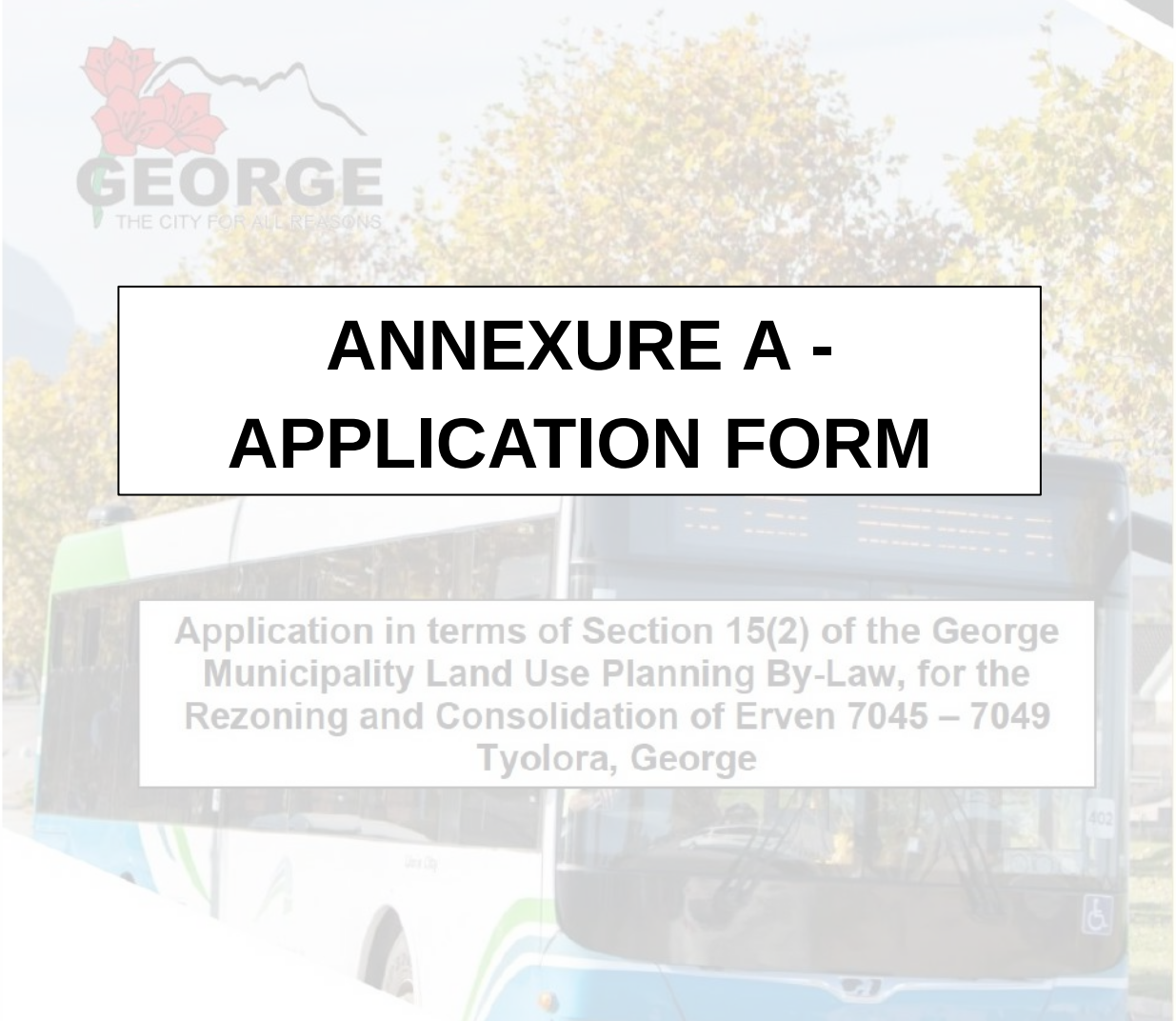
ILISOLETHU

GEORGE
THE CITY FOR ALL REASONS

ZUTARI
IMPACT. ENGINEERED.

ANNEXURE A - APPLICATION FORM

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George



Motivation Report

Fourways Transfer Location

Erven 7045- 7049 Tyolora, George

George Municipality

Submission date: 2024/12/12

Document number: 1
Revision: 0

GEORGE MUNICIPALITY

APPLICATION FORM FOR APPLICATION SUBMITTED IN TERMS OF THE LAND-USE PLANNING BY-LAW FOR GEORGE MUNICIPALITY

NOTE: *Please complete this form using BLOCK capitals and ticking the appropriate boxes.*					
PART A: APPLICANT DETAILS					
First name(s)	***Rudolf***				
Surname	***Schröder***				
SACPLAN Reg No. (if applicable)	*A/151/2009*				
Company name (if applicable)	*Zutari*				
Postal Address	*PO Box 509*				
	George		*Postal Code*	*6530*	
Email	rudolf.schroder@zutari.com				
Tel	*0448055400*	*Fax*		*Cell*	*0833906963*
PART B: REGISTERED OWNER(S) DETAILS (if different from applicant)					
Registered owner	**George Municipality**				
Address	*71 York Street, George CBD*				
			Postal code	**6530**	
E-mail	lgroenewald@george.gov.za				
Tel	*044 8019436*	*Fax*		*Cell*	**0826533900**
PART C: PROPERTY DETAILS (in accordance with Title Deed)					
Property Description [Erf / Erven / Portion(s) and	*Erven 7045 – 7049 Tyolora, Thembalethu, George*				

Farm number(s), allotment area.]							
Physical Address	*Jeriko Street, Thembalethu*						
GPS Coordinates	***-33.999328, 22.477951***			*Town/City*	**George**		
Current Zoning	*Business Zone II*		*Extent*	**2 799m²**	*Are there existing buildings?*	Y	***N***
Current Land Use	*Vacant*						
Title Deed number & date	*T39457/2000*						
Any restrictive conditions prohibiting application?	*Y*	**N**	*If Yes, list condition number(s).*				
Are the restrictive conditions in favour of a third party(ies)?	*Y*	**N**	*If Yes, list the party(ies).*				
Is the property encumbered by a bond?	*Y*	**N**	*If Yes, list Bondholder(s)?*				
Has the Municipality already decided on the application(s)?	*Y*	***N***	*If yes, list reference number(s)?*				

Any existing unauthorized buildings and/or land use on the subject property(ies)?	*Y*	***N***	*If yes, is this application to legalize the building / land use?*	*Y*	***N***
Are there any pending court case / order relating to the subject property(ies)?	*Y*	***N***	*Are there any land claim(s) registered on the subject property(ies)?*	*Y*	***N***

PART D: PRE-APPLICATION CONSULTATION

Has there been any pre-application consultation?	**Y**	N	*If Yes, please complete the information below and attach the minutes.*		
Official's name	***Martin Botha***	*Reference number*	**3487535**	*Date of consultation*	***20 November 2024***

PART E: LAND USE APPLICATIONS IN TERMS OF SECTION 15 OF THE LAND USE PLANNING BY-LAW FOR GEORGE MUNICIPALITY & APPLICATION FEES PAYABLE

***Application fees that are paid to the Municipality are non-refundable and proof of payment of the application fees must accompany the application.**

BANKING DETAILS	
Name:	***George Municipality***
Bank:	***ABSA***
Branch no.:	***632005***
Account no.:	***01022220981***
Type:	***Cheque***
Swift Code:	***ABSAZAJJCPE-SORTCODE 632005***
VAT Registration Nr:	***4630193664***
E-MAIL:	***ronel@george.org.za***
****Payment reference**:*	**Erven , George**

PART F: DETAILS OF PROPOSAL

Brief description of proposed development / intent of application:

The application for rezoning and consolidation entails the following:

To create a bus transfer location to enable Go George operations, and to also to enable trading facilities to create a transport and social cluster that is aligned with the ILisolethi project.

PART G: ATTACHMENTS & SUPPORTING INFORMATION FOR LAND USE PLANNING APPLICATIONS

Please complete the following checklist and attach all the information relevant to the proposal. Failure to submit all information required will result in the application being deemed incomplete.

Is the following compulsory information attached?

Y	*N*	*Completed application form*	**Y**	*N*	*Pre-application Checklist (where applicable)*	
Y	*N*	*Power of Attorney / Owner's consent if applicant is not owner*	*Y*	**N**	*Bondholder's consent*	
Y	*N*	*Motivation report / letter*	*Y*	**N**	*Proof of payment of fees*	
Y	*N*	*Full copy of the Title Deed*	**Y**	*N*	*S.G. noting sheet extract / Erf diagram / General Plan*	
Y	*N*	*Locality Plan*	**Y**	*N*	*Site layout plan*	

Minimum and additional requirements:

Y	*N*	**N/A**	*Conveyancer's Certificate*	**Y**	*N*	*N/A*	*Land Use Plan / Zoning plan*	
Y	*N*	**N/A**	*Proposed Subdivision Plan (including street names and numbers)*	*Y*	*N*	**N/A**	*Phasing Plan*	
Y	*N*	*N/A*	*Consolidation Plan*	*Y*	*N*	**N/A**	*Copy of original approval letter (if applicable)*	
Y	*N*	*N/A*	*Site Development Plan*	*Y*	*N*	**N/A**	*Landscaping / Tree Plan*	
Y	*N*	**N/A**	*Abutting owner's consent*	*Y*	*N*	**N/A**	*Home Owners' Association consent*	
Y	*N*	*N/A*	~~*Copy of Environmental Impact Assessment (EIA) /*~~ ~~*Heritage Impact Assessment (HIA) /*~~	*Y*	*N*	**N/A**	*1 : 50 / 1:100 Flood line determination (plan / report)*	

			Traffic Impact Assessment (TIA) */ ~~Traffic Impact Statement (TIS) / Major Hazard Impact Assessment (MHIA) / Environmental Authorisation (EA) / Record of Decision (ROD~~)* *(strikethrough irrelevant)*					
Y	*N*	**N/A**	*Services Report or indication of all municipal services / registered servitudes*		**Y**	*N*	*N/A*	*Required number of documentation copies* **2 copies**
Y	*N*	**N/A**	*Any additional documents or information required as listed in the pre-application consultation form / minutes*		*Y*	*N*	*N/A*	*Other (specify)*
PART H: AUTHORISATION(S) IN TERMS OF OTHER LEGISLATION								
Y	**N/A**	*National Heritage Resources Act, 1999 (Act 25 of 1999)*			*Y*	**N/A**	*Specific Environmental Management Act(s) (SEMA)* *(e.g. Environmental Conservation Act, 1989 (Act 73 of 1989), National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004), National Environmental Integrated Coastal Management Act, 2008 (Act 24 of 2008), National Environmental Management: Waste Act, 2008 (Act 59 of 2008), National Water Act, 1998 (Act 36 of 1998)* *(strikethrough irrelevant)*	
Y	**N/A**	*National Environmental Management Act, 1998 (Act 107 of 1998)*						
Y	**N/A**	*Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970)*						
Y	**N/A**	*Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)(SPLUMA)*						
Y	**N/A**	*Occupational Health and Safety Act, 1993 (Act 85 of 1993): Major Hazard Installations Regulations*						
Y	**N/A**	*Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA)*			*Y*	**N/A**	*Other (specify)*	
Y	**N**	*If required, has application for EIA / HIA / TIA / TIS / MHIA approval been made? If yes, attach documents / plans / proof of submission etc.* **N/A**						
Y	**N**	*If required, do you want to follow an integrated application procedure in terms of section 44(1)of the Land-Use Planning By-law for George Municipality?*						

SECTION I: DECLARATION

I hereby wish to confirm the following:

1. *That the information contained in this application form and accompanying documentation is complete and correct.*
2. *The Municipality has not already decided on the application.*
3. *I'm aware that it is an offense in terms of section 86(1)(d) to supply particulars, information or answers in an application, knowing it to be false, incorrect or misleading or not believing them to be correct.*
4. *I am properly authorized to make this application on behalf of the owner and (where applicable) copies of such full relevant Powers of Attorney/Consent are attached hereto.*
5. *I have been appointed to submit this application on behalf of the owner and it is accepted that correspondence from and notifications by the Municipality in terms of the by-law will be sent only to me as the authorised agent and the owner will regularly consult with the agent in this regard (where applicable).*
6. *That this submission includes all necessary land use planning applications required to enable the development proposed herein.*
7. *I confirm that the relevant title deed(s) have been read and that there are no restrictive title deed restrictions, which impact on this application, or alternatively an application for removal/amendment/suspension forms part of this submission.*
8. *I am aware of the status of the existing bulk services and infrastructure in the subject area and that I am liable for any possible development charges which may be payable as a result of the proposed development.*

Applicant's signature:	CRSchröder	*Date:*	**12 December 2024**
Full name:	*Rudolf Schröder*		
Professional capacity:	*Professional Planner*		
SACPLAN Reg. Nr:	*A/151/2009*		

FOR OFFICE USE ONLY

Date received:		*Received by:*	
Receipt number:			
Date application complete			

ANNEXURES

Please <u>do not submit</u> these Annexure exemplars with the application form.

<u>Annexure A</u>: Exemplar of locality plan (consult guidelines for precise requirements)

<u>Annexure B</u>: Application submission checklist

<u>Annexure C:</u> Exemplar of typical layout plan (consult guidelines for precise requirements

<u>Annexure D:</u> Examples of required documents

ANNEXURE B - SPECIAL POWER OF ATTORNEY AND COUNCIL RESOLUTION

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George

Motivation Report

Fourways Transfer Location

Erven 7045- 7049 Tyolora, George

George Municipality

Submission date: 2024/12/12

Document number: 1
Revision: 0

GEORGE
THE CITY FOR ALL REASONS

EXTRACT MINUTES: ORDINARY COUNCIL MEETING HELD ON 28 SEPTEMBER 2023

8.2.1 **HUMAN SETTLEMENTS, PLANNING AND DEVELOPMENT: NEIGHBOURHOOD DEVELOPMENT PARTNERSHIP PROJECT: THEMBALETHU NODE [4.2]** (continue on the next page)

Proposed by Councillor Wessels and seconded by Councillor Mbete, it was

RESOLVED

(a) That the Ilisolethu Development Framework, 14 August 2023 **BE APPROVED**, provided that the development plan-, investment packages- and area management strategy reports be used as working documents that are continiously monitored and improved.

(b) That the process to use the investment packages to secure funds from government and the private sector within the legal framework set out for local government, **BE SUPPORTED**.

(c) That it **BE SUPPORTED** that funding secured from National Treasury towards the Thembalethu Ilisolethu Node may be applied towards the preparation and implementation of the projects identified in the Ilisolethu Development Framework.

(d) That the Municipal Manager **BE MANDATED** to proceed with the establishment of the Ilisolethu Improvement District with an associated management entity (NPC).

(e) That the Director of Human Settlements, Planning and Development **BE MANDATED** to establish an interim steering committee to manage the project process going forward until the NPC for the IID is formalized;

(f) That in preparation of the implementation of the investment packages, the following immediate actions **BE SUPPORTED**:

i. Project 3: That ATNS **BE APPROACHED** to secure the land (Re Ptn 65/197) at no cost to George Municipality, to enable the BPO Village proposal;
ii. Project 2: That the principle of the Gateway Development proposal **BE SUPPORTED** and that the Municipal owned land included in Project 2 may be released as part of the project, either through lease or sale, following due process in terms of the policy;

28/09/2023

GEORGE
THE CITY FOR ALL REASONS

EXTRACT MINUTES: ORDINARY COUNCIL MEETING HELD ON 28 SEPTEMBER 2023

8.2.1 **HUMAN SETTLEMENTS, PLANNING AND DEVELOPMENT: NEIGHBOURHOOD DEVELOPMENT PARTNERSHIP PROJECT: THEMBALETHU NODE [4.2]** (continue from previous page)

iii. Project 7: That the proposed 5km recreation route through Thembalethu **BE SUPPORTED** and that potential sponsors and project investment partners for the Ilisolethu area be identified and engaged.

iv. That the Zoning Overlay for the nodal area **BE SUBMITTED** to Council for adoption in principle, prior to commencement with public participation.

R Bredenkamp Date: 28/09/2023

Manager: Committee Support (Miss R Bredenkamp)

Date: 28/9/2023

Acting Director: Corporate Services (Mr E Ganza

MEMORANDUM

Mr Jannie Koegelenberg
Director: Civil Engineering Services
E-mail: Jkoegelenberg@george.gov.za
Tel: +27 (0)44 801 9077

OFFICE OF THE DIRECTOR: CIVIL ENGINEERING SERVICES

Aan/To:	**: Ms Delia Power (Deputy Director: Planning)**
Van/From	**: Mr Jannie Koegelenberg**
Tel	**: 044 801 9260**
Datum/Date	**: 29 November 2024**
Insake/Regarding	**: Power of Attorney for Rezoning of Municipal Owned Property**

1. Purpose

This document sets out the relevant background to the request for signature of a power of attorney, in favour of the Municipality's appointed service provider, currently Zutari (Pty) Ltd ("**Zutari**"), to undertake a rezoning application on the Municipality's behalf for Erven 7044 – 7049 Tyolora, George (the "**Property**"), being a Municipality of George owned property (the "**POA**").

2. Background

The Property has been earmarked for use for the benefit of the George Integrated Public Transport Network ("**GIPTN**"), known as the GO GEORGE. The GIPTN team identified the Fourways site in Thembalethu as an ideal location for a bus terminal, as it will improve the GO GEORGE bus operations in the area and shorten the distance that busses need to travel to turn around as well as service the area.

Zutari was requested by the GIPTN team to investigate the land use planning requirements for the Property and advise what will be required to secure development rights for the Property to be used as a bus transfer location. Consultations were held with the Municipality's spatial planning department and certain requirements were identified, such as to also include trading facilities to create a multimodal transport and social cluster (aligned with Ilisolethu Project 11). Council approved the Ilisolethu Development Framework of 14 August 2023, amongst other decisions, in terms of the attached extract of minutes from the Ordinary Council meeting held on 28 September 2023 (the "**Minutes**"). A copy of Project 11: Multimodal Transport Social Cluster Investment Package is also attached.

Zutari's urban design team also consulted with the Municipality's Local Economic Development ("**LED**") department. A concept site plan (two options) has been prepared with inputs from spatial planning, LED and transport engineers, that will form the basis of the land use planning application that will need to be submitted to secure development rights for the proposed facility on the Property.

MEMORANDUM

GEORGE
THE CITY FOR ALL REASONS

Insake/Regarding : Power of Attorney for Rezoning of Municipal Owned Property

The land use planning application will include the consolidation of the erven and the rezoning of the Property from its current zoning (Business zone II) to an applicable zoning, such as “Transport Zone 1” (with consent uses) to accommodate the proposed land uses. Temporary use proposed on Erf 7044 (Temporary Trading Market to be used until planned fire station extension).

In order to undertake this proposed work, various enquiries and approvals need to be made with the Municipality through its prescribed processes. This includes the below, which is captured in the POA:

a) Investigate and engage with the Municipality regarding the zoning as well as requirements in respect of the required land use planning application to obtain approval for the development of a proposed multi-modal transport and social cluster;

b) To make enquiries at any of the departments at the Competent Authority regarding the proposed multi-modal transport and social cluster to be developed on Erven 7044 – 7049 Tyolora, George, Province of the Western Cape;

c) Undertake any rezoning, subdivision, consolidation activities and any related land use processes or other essential measures permitted in law;

d) Lodge applications or any relevant documents required to obtain approval for the development of a multi-modal transport and social cluster;

A copy of the POA is attached hereto.

3. Financial considerations

The costs associated with the actions undertaken in terms of the POA will be paid from Zutari’s budget that has been allocated to it by the Western Cape Government via its Mobility Department for the GIPTN. Thereafter, following the successful granting of the land use planning application, all relevant construction work on the Property will be funded through the funding of approximately R8 million allocated for the Fourway Transfer Location project from the funds received from the National Department of Transport, totaling approximately R505 million, for the purpose of funding infrastructure for the GIPTN. The relevant UKEY for this project is in the process of being created and can only be provided after the Municipal Budget Office has finalized the Special Adjustment Budget, which is expected to be around the end of November 2024.

MEMORANDUM

GEORGE
THE CITY FOR ALL REASONS

Insake/Regarding : Power of Attorney for Rezoning of Municipal Owned Property

4. Assistance required

It is requested that the attached POA be considered further for your approval and guidance as to who should be the signatory for the Municipality. The POA is currently prepared with the signatory being Ms Delia Power as Deputy Director: Planning and Environment, George Municipality, Directorate: Human Settlements, Planning & Development in terms of the below provision of the Delegation ro Director HSP&D as approved in Delegation of Powers 30 June 2022:

4.16.9 To sign a Power of Attorney in respect of Development Land Use and Environmental applications for Council's own land.

Further, I believe that following discussions between the GIPTN Management Unit, James Robb and Lynette Groenewald of your offices, it is the view that as the Ilisolethu project as a whole has been approved by Council in terms of the attached Council Minutes, that separate approval from Council to enter into the attached POA (as a component of the total Ilisolethu project) should not be required.

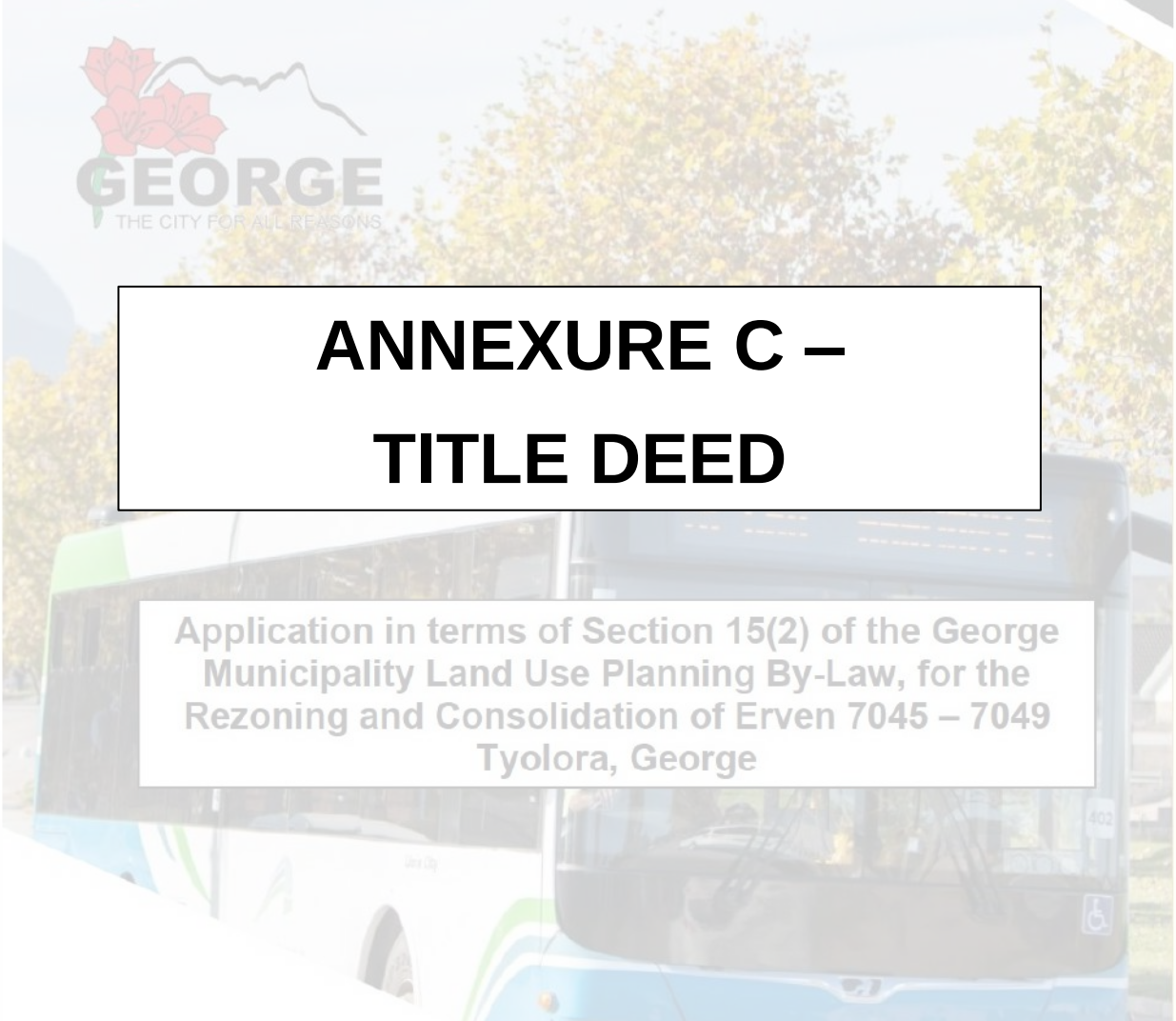
Yours sincerely,

MR J KOEGELENBERG
DIRECTOR: CIVIL ENGINEERING SERVICES

ANNEXURE C –

TITLE DEED

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George



Motivation Report

Fourways Transfer Location

Erven 7045- 7049 Tyolora, George

George Municipality

Submission date: 2024/12/12

Document number: 1
Revision: 0

Deeds Office Property

TYOLORA, 7044, 0, CAPE TOWN

Lexis® WinDeed

This report is compiled exclusively from the very latest data directly supplied to WinDeed by the Deeds Office.

Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

** ASTERISKS INDICATE THE INFORMATION IS ENRICHED FROM THE WINDEED DATABASE.

SEARCH CRITERIA

Search Date	2024/11/08 11:39	Erf Number	7044
Reference	-	Portion Number	-
Report Print Date	2024/11/08 11:39	Deeds Office	Cape Town
Township	TYOLORA	Search Source	Deeds Office

PROPERTY INFORMATION

Property Type	ERF	Diagram Deed Number	DU 1000/800
Township	TYOLORA	Local Authority	K P A
Erf Number	7044	Province	WESTERN CAPE
Portion Number	0	Extent	539.0000SQM
Registration Division	NOT AVAILABLE	LPI Code	C02700100000704400000
Previous Description	-	Co-ordinates (Lat/Long)**	-33.999435 / 22.47805
Suburb / Town**	THEMBALETHU		

OWNER INFORMATION (1)

MUN GEORGE			Owner 1 of 1
Company Type**	GOVERNMENT	Document	T39457/2000
Registration Number	-	Microfilm / Scanned Date	-
Name	MUN GEORGE	Purchase Price (R)	T/T
Multiple Owners**	NO	Purchase Date	-
Multiple Properties**	NO	Registration Date	2000/05/22
Share (%)	-		

ENDORSEMENTS (1)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	GENERAL PLAN FROM	TOWN TYOLORA ,ERF 7041 ,PRTN 0	-	-

HISTORIC DOCUMENTS (2)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	T39457/2000	PROVINCE OF THE WESTERN CAPE	G/P	-
2	T39457/2000	HOUSING DEVELOPMENT BOARD-WESTERN CAPE	T/T	-

Deeds Office Property

TYOLORA, 7045, 0, CAPE TOWN

Lexis® WinDeed

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SEARCH CRITERIA

Search Date	2024/11/08 11:44	Erf Number	7045
Reference	-	Portion Number	-
Report Print Date	2024/11/08 11:45	Deeds Office	Cape Town
Township	TYOLORA	Search Source	Deeds Office

PROPERTY INFORMATION

Property Type	ERF	Diagram Deed Number	DU 1000/800
Township	TYOLORA	Local Authority	K P A
Erf Number	7045	Province	WESTERN CAPE
Portion Number	0	Extent	537.0000SQM
Registration Division	NOT AVAILABLE	LPI Code	C02700100000704500000
Previous Description	-	Co-ordinates (Lat/Long)**	-33.999313 / 22.477929
Suburb / Town**	THEMBALETHU		

OWNER INFORMATION (1)

MUN GEORGE			Owner 1 of 1
Company Type**	GOVERNMENT	Document	T39457/2000
Registration Number	-	Microfilm / Scanned Date	-
Name	MUN GEORGE	Purchase Price (R)	T/T
Multiple Owners**	NO	Purchase Date	-
Multiple Properties**	NO	Registration Date	2000/05/22
Share (%)	-		

ENDORSEMENTS (1)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	GENERAL PLAN FROM	TOWN TYOLORA ,ERF 7041 ,PRTN 0	-	-

HISTORIC DOCUMENTS (2)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	T39457/2000	PROVINCE OF THE WESTERN CAPE	G/P	-
2	T39457/2000	HOUSING DEVELOPMENT BOARD-WESTERN CAPE	T/T	-

Deeds Office Property

TYOLORA, 7046, 0, CAPE TOWN

Lexis® WinDeed

This report is compiled exclusively from the very latest data directly supplied to WinDeed by the Deeds Office.

Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

** ASTERISKS INDICATE THE INFORMATION IS ENRICHED FROM THE WINDEED DATABASE.

SEARCH CRITERIA

Search Date	2024/11/08 11:45	Erf Number	7046
Reference	-	Portion Number	-
Report Print Date	2024/11/08 11:46	Deeds Office	Cape Town
Township	TYOLORA	Search Source	Deeds Office

PROPERTY INFORMATION

Property Type	ERF	Diagram Deed Number	DU 1000/800
Township	TYOLORA	Local Authority	K P A
Erf Number	7046	Province	WESTERN CAPE
Portion Number	0	Extent	624.0000SQM
Registration Division	NOT AVAILABLE	LPI Code	C02700100000704600000
Previous Description	-	Co-ordinates (Lat/Long)**	-33.99918 / 22.477796
Suburb / Town**	THEMBALETHU		

OWNER INFORMATION (1)

MUN GEORGE			Owner 1 of 1
Company Type**	LOCAL AUTHORITY	Document	T39457/2000
Registration Number	-	Microfilm / Scanned Date	-
Name	MUN GEORGE	Purchase Price (R)	T/T
Multiple Owners**	NO	Purchase Date	-
Multiple Properties**	NO	Registration Date	2000/05/22
Share (%)	-		

ENDORSEMENTS (1)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	GENERAL PLAN FROM	TOWN TYOLORA ,ERF 7041 ,PRTN 0	-	-

HISTORIC DOCUMENTS (2)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	T39457/2000	PROVINCE OF THE WESTERN CAPE	G/P	-
2	T39457/2000	HOUSING DEVELOPMENT BOARD-WESTERN CAPE	T/T	-

Deeds Office Property

TYOLORA, 7047, 0, CAPE TOWN

Lexis® WinDeed

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** ASTERISKS INDICATE THE INFORMATION IS ENRICHED FROM THE WINDEED DATABASE.

SEARCH CRITERIA

Search Date	2024/11/08 11:46	Erf Number	7047
Reference	-	Portion Number	-
Report Print Date	2024/11/08 11:46	Deeds Office	Cape Town
Township	TYOLORA	Search Source	Deeds Office

PROPERTY INFORMATION

Property Type	ERF	Diagram Deed Number	DU 1000/800
Township	TYOLORA	Local Authority	K P A
Erf Number	7047	Province	WESTERN CAPE
Portion Number	0	Extent	548.0000SQM
Registration Division	NOT AVAILABLE	LPI Code	C02700100000704700000
Previous Description	-	Co-ordinates (Lat/Long)**	-33.999043 / 22.477661
Suburb / Town**	THEMBALETHU		

OWNER INFORMATION (1)

MUN GEORGE			Owner 1 of 1
Company Type**	GOVERNMENT	Document	T39457/2000
Registration Number	-	Microfilm / Scanned Date	-
Name	MUN GEORGE	Purchase Price (R)	T/T
Multiple Owners**	NO	Purchase Date	-
Multiple Properties**	NO	Registration Date	2000/05/22
Share (%)	-		

ENDORSEMENTS (1)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	GENERAL PLAN FROM	TOWN TYOLORA ,ERF 7041 ,PRTN 0	-	-

HISTORIC DOCUMENTS (2)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	T39457/2000	PROVINCE OF THE WESTERN CAPE	G/P	-
2	T39457/2000	HOUSING DEVELOPMENT BOARD-WESTERN CAPE	T/T	-

Deeds Office Property

TYOLORA, 7048, 0, CAPE TOWN

Lexis® WinDeed

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** ASTERISKS INDICATE THE INFORMATION IS ENRICHED FROM THE WINDEED DATABASE.

SEARCH CRITERIA

Search Date	2024/11/08 11:47	Erf Number	7048
Reference	-	Portion Number	-
Report Print Date	2024/11/08 11:47	Deeds Office	Cape Town
Township	TYOLORA	Search Source	Deeds Office

PROPERTY INFORMATION

Property Type	ERF	Diagram Deed Number	DU 1000/800
Township	TYOLORA	Local Authority	K P A
Erf Number	7048	Province	WESTERN CAPE
Portion Number	0	Extent	546.0000SQM
Registration Division	NOT AVAILABLE	LPI Code	C02700100000704800000
Previous Description	-	Co-ordinates (Lat/Long)**	-33.998915 / 22.477533
Suburb / Town**	THEMBALETHU		

OWNER INFORMATION (1)

MUN GEORGE			Owner 1 of 1
Company Type**	LOCAL AUTHORITY	Document	T39457/2000
Registration Number	-	Microfilm / Scanned Date	-
Name	MUN GEORGE	Purchase Price (R)	T/T
Multiple Owners**	NO	Purchase Date	-
Multiple Properties**	NO	Registration Date	2000/05/22
Share (%)	-		

ENDORSEMENTS (1)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	GENERAL PLAN FROM	TOWN TYOLORA ,ERF 7041 ,PRTN 0	-	-

HISTORIC DOCUMENTS (2)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	T39457/2000	PROVINCE OF THE WESTERN CAPE	G/P	-
2	T39457/2000	HOUSING DEVELOPMENT BOARD-WESTERN CAPE	T/T	-

Deeds Office Property

TYOLORA, 7049, 0, CAPE TOWN

Lexis® WinDeed

This report is compiled exclusively from the very latest data directly supplied to WinDeed by the Deeds Office.

Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

** ASTERISKS INDICATE THE INFORMATION IS ENRICHED FROM THE WINDEED DATABASE.

SEARCH CRITERIA

Search Date	2024/11/08 11:47	Erf Number	7049
Reference	-	Portion Number	-
Report Print Date	2024/11/08 11:48	Deeds Office	Cape Town
Township	TYOLORA	Search Source	Deeds Office

PROPERTY INFORMATION

Property Type	ERF	Diagram Deed Number	DU 1000/800
Township	TYOLORA	Local Authority	K P A
Erf Number	7049	Province	WESTERN CAPE
Portion Number	0	Extent	544.0000SQM
Registration Division	NOT AVAILABLE	LPI Code	C02700100000704900000
Previous Description	-	Co-ordinates (Lat/Long)**	-33.998785 / 22.477404
Suburb / Town**	THEMBALETHU		

OWNER INFORMATION (1)

MUN GEORGE			Owner 1 of 1
Company Type**	GOVERNMENT	Document	T39457/2000
Registration Number	-	Microfilm / Scanned Date	-
Name	MUN GEORGE	Purchase Price (R)	T/T
Multiple Owners**	NO	Purchase Date	-
Multiple Properties**	NO	Registration Date	2000/05/22
Share (%)	-		

ENDORSEMENTS (1)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	GENERAL PLAN FROM	TOWN TYOLORA ,ERF 7041 ,PRTN 0	-	-

HISTORIC DOCUMENTS (2)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	T39457/2000	PROVINCE OF THE WESTERN CAPE	G/P	-
2	T39457/2000	HOUSING DEVELOPMENT BOARD-WESTERN CAPE	T/T	-

Opgestel deur my,

TRANSPORTBESORGER
HAYCOCK N

VIR ENDOSSEMENTE SIEN BLADSY
FOR ENDORSEMENTS SEE PAGE 4 ET SEQ

T 39457/2000

SERTIFIKAAT VAN GEREGISTREERDE TITEL

(Uitgereik kragtens die bepalings van Artikel 43 van die Registrasie van Aktes Wet, 1937 (Nr. 47 van 1937)

NADEMAAL die PROVINSIE VAN DIE WES-KAAP aansoek gedoen het om die uitreiking aan hom van 'n SERTIFIKAAT VAN GEREGISTREERDE TITEL kragtens Artikel 43 van die Registrasie van Aktes Wet, 1937 ten opsigte van die hierondergenoemde eiendom, synde gedeelte van die grond geregistreer op die naam van die PROVINSIE VAN DIE WES-KAAP kragtens Sertifikaat van Verenigde Titel Nr. T6167/1986.

SO is dit dat ingevolge die bepalings van genoemde Wet, ek, die REGISTRATEUR VAN AKTES te KAAPSTAD hierby sertifiseer dat voormoemde

PROVINSIE VAN DIE WES-KAAP

Die se opvolgers in titel of regverkrygendes, die geregistreerde eienaar is van:

ERF 7041 ('N GEDEELTE VAN ERF 7821) TYOLORA,
IN DIE MUNISIPALITEIT EN AFDELING VAN GEORGE
PROVINSIE WES-KAAP

GROOT 11, 1695 (ELF KOMMA EEN SES NEGE VYF) hektaar

Soos meer volledig sal blyk uit KAART NR. 1364/98 hierby aangeheg en GEHOU KRAGTENS SERTIFIKAAT VAN VERENIGDE TITEL NR. T6167/1986

A. ONDERHEWIG aan die voorwaardes waarna verwys word in Sertifikaat van Gewysigde Titel Nr. T148/1923.

B. ONDERHEWIG VERDER aan die volgende voorwaarde as onderverdelingsvoorwaarde opgelê kragtens Artikel 12(1)(a)(iv) van Wet op Nasionale Paaie Nr. 54 van 71:

"Geen bouwerk of iets anders (met inbegrip van iets wat verbind is aan die grond waarop dit staan al maak bedoelde grond nie deel van die erf uit nie) mag op die betrokke grond, sonder die skriftelike goedkeuring van die Suid-Afrikaanse Pad Raad (SAPR), binne 'n afstand van 10 meter, gemeet vanaf die grens van die Nasionale Pad opgerig, aangelê of tot stand gebring word nie."

-4-

ENDORSEMENT IN TERMS OF SECTION 46 ACT 47/1937

ENDORSSEMENT KRAGTENS ARTIKEL 46 WET 47/1937

The Land herein described has been subdivided S16 UNO WET 4/84

Die Grond hierin beskryf is onderverdeel

in accordance with General Plan No. 1365/98

in ooreenstemming met Algemene Plan Nr. ....

approved by the Surveyor-General on ....

goedgekeur deur die Landmeter-Generaal op 6-5-1998

....

....

into erven numbers 7042 - 7190

in erwe genommer ....

Public Places number ....

Openbare Plekke genommer ....

And Thoroughfares.

en Strate.

Application filed as DC 26535 / 2000

Aansoek geliasseer as DC ....

Sect 4/84

Registrar of Deeds

REGISTRAR OF DEEDS

REGISTRATEUR VAN AKTES

DEEDS OFFICE / AKTEKANTOOR

CAPE TOWN/ KAAPSTAD

2000-05-22 VIR ENDOSSEMENT ... FOR ... 5 ... ET SEQ

................/19........

SERTIFIKAAT VAN MINERALEREGTE UITGEREIK
CERTIFICATE OF MINERAL RIGHTS ISSUED

TEN OPSIGTE VAN
IN RESPECT OF all rights to gold, silver and precious stones. IFV REPUBLIC OF SOUTH AFRICA

K 485 2000RM

REGISTRATEUR/REGISTRAR

SERTIFIKAAT VAN MINERALEREGTE UITGEREIK
CERTIFICATE OF MINERAL RIGHTS ISSUED

TEN OPSIGTE VAN
IN RESPECT OF all rights to minerals except rights to gold, silver and precious stones IFO PROVINCE OF THE WESTERN CAPE

K 486 2000

REGISTRATEUR/REGISTRAR

VIR ENDOSSEMENTE KYK BLADSY
FOR ENDORSEMENTS SEE PAGE... 6 ET SEC

(6)

Endossement kragtens artikel 14 van W.o.t. 107 van 1997

Kragtens artikel 14(4) van Wet 107 van 1997 en Artikel 6(3) van Wet 6 van 1999 word die hierongemelde eiendom nou in die Wes-Kaapse Behuisingsontwikkelingsraad (ingestel ingevolge Wet 6 van 1999)

2002-01-10

Aktekantoor
Kaapstad

Reg van Aktes

VIR ... 7 ... ET SEC

(7)

Endossement kragtens artikel 14 van Wet 107 van 19

Kragtens artikel 19(6) van Wet 6 van 1999 en art 14 van Wet 107 van 1997 vestig die bogemelde eiendom nou in die Munisipaliteit van George

2002-01-19

Aktekantoor
Kaapstad

Registrateur van Aktes

Vir verdere endossemente sien
For further endorsements see ....

ARTIKEL 16 VAN WET 47 VAN 1937 GETRANSPORTEER AAN	SECTION 16 OF ACT 47 OF 1937 TRANSFERRED TO
~~DIE REPUBLIEK VAN SUID-AFRIKA~~	~~THE REPUBLIC OF SOUTH AFRICA~~
George Municipality	
T 000024575/2007	
2006 -11- 03	REGISTRATEUR/REGISTRAR

VIR ENDOSSEMENTE KYK BLADSY
FOR ENDORSEMENTS SEE PAGE 9

EN DAT, kragtens hierdie Sertifikaat, genoemde

PROVINSIE VAN DIE WES-KAAP

Die se opvolgers in titel of regverkrygendes nou en voortaan daartoe geregtig is ooreenkomstig plaaslike gebruik, die Staat nogtans sy reg behoudende.

Ten Bewyse waarvan ek, die gemelde Registrateur, hierdie Akte onderteken en dit met die Ampseël bekragtig het.

ALDUS GEDOEN en ONDERTEKEN op die Kantoor van die Registrateur van Aktes, te KAAPSTAD op 22 Mei 1999.

PEGISTRATEUR VAN AKTES.

T 29157 2000

VA 000006745 / 2019

Certified a true copy of the duplicate original filed of record in this Registry, issued to serve in place of the original thereof under the provisions of Deeds Regulation No 68. (1)

Deeds Registry
Cape Town

.....

ASST REGISTRAR OF DEEDS 30 SEP 2019

ANNEXURE D –

SG DIAGRAM

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George

Motivation Report

Fourways Transfer Location

Erven 7045- 7049 Tyolora, George

George Municipality

Submission date: 2024/12/12

Document number: 1
Revision: 0

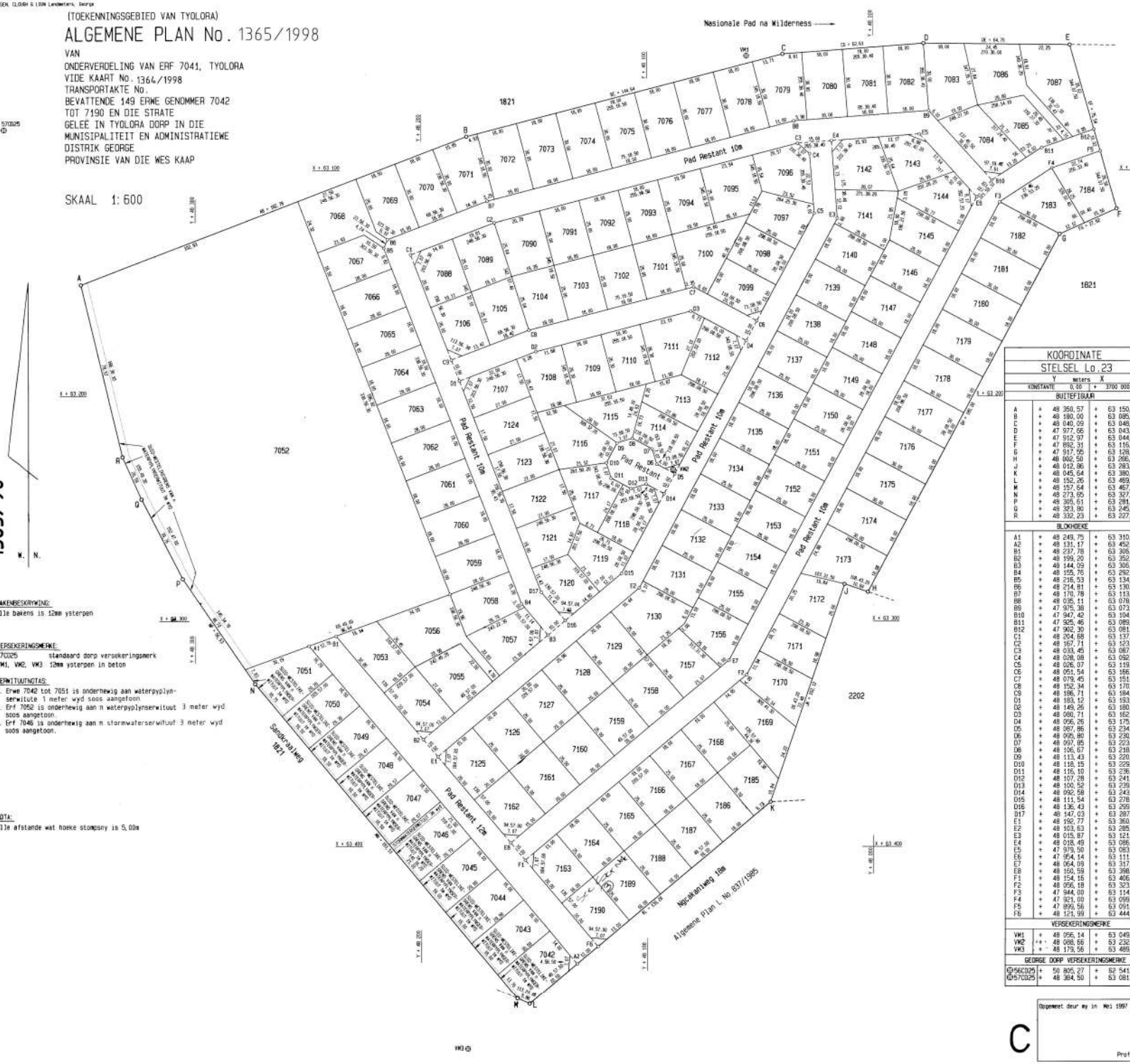
BOSSEN, CLOUGH & LOUW Landmeters, George

(TOEKENNINGSGEBIED VAN TYOLORA)

ALGEMENE PLAN No. 1365/1998

VAN
ONDERVERDELING VAN ERF 7041, TYOLORA
VIDE KAART No. 1364/1998
TRANSPORTAKTE No.
BEVATTENDE 149 ERWE GENOMMER 7042
TOT 7190 EN DIE STRATE
GELEE IN TYOLORA DORP IN DIE
MUNISIPALITEIT EN ADMINISTRATIEWE
DISTRIK GEORGE
PROVINSIE VAN DIE WES KAAP

SKAAL 1: 600



BAKENBESKRYWING:
Alle bakens is 12mm ysterpen

VERSEKERINGSMERKE:
570325 standaard dorp versekeringsmerk
VM1, VM2, VM3 12mm ysterpen in beton

SERWITUUTNOTAS:
1. Erwe 7042 tot 7051 is onderhewig aan waterpyplyn-serwitute 1 meter wyd soos aangetoon
2. Erf 7052 is onderhewig aan n waterpyplynserwituut 3 meter wyd soos aangetoon.
3. Erf 7046 is onderhewig aan n stormwaterserwituut 3 meter wyd soos aangetoon.

NOTA:
Alle afstande wat hoeke stompsny is 5,00m

L.G. No. 1365/1998

GOEDGEKEUR

LANDMETER-GENERAAL
DATUM : 1998-05-06

GOEDGEKEUR DEUR DEPARTEMENT VAN BEHUISING PLAASLIKE BESTUUR EN BEPLANNING PROVINSIALE ADMINISTRASIE : WES KAAP
Goedgekeur in terme van Artikel 16 van Wet 4/1984.
VERWYSINGSNOMMER : 603/2/04/14
DATUM : 7 November 1997

Hierdie gedeelte is onderworpe aan voorwaardes soos vervwys in Artikel 11(6) van Wet 21/1940

Hierdie gedeelte is goedgekeur kragtens Wet 56 van 1971

CDR

ENDOSSEMENTE

No.	WYSIGINGS	BYVOEGING	MAGTIGING	GETEKEN	DATUM

KOORDINATE STELSEL Lo.23

	Y meters	X
KONSTANTE	0,00	+ 3700 000,00
BUITEFIGUUR		
A	+ 48 350,57	+ 63 150,68
B	+ 48 180,00	+ 63 085,00
C	+ 48 040,09	+ 63 046,33
D	+ 47 977,95	+ 63 043,58
E	+ 47 912,97	+ 63 044,26
F	+ 47 892,31	+ 63 116,92
G	+ 47 917,95	+ 63 128,15
H	+ 48 002,50	+ 63 266,54
J	+ 48 012,86	+ 63 283,42
K	+ 48 045,64	+ 63 380,14
L	+ 48 152,26	+ 63 469,76
M	+ 48 157,64	+ 63 467,44
N	+ 48 273,65	+ 63 327,84
P	+ 48 305,61	+ 63 281,22
Q	+ 48 323,90	+ 63 245,86
R	+ 48 332,23	+ 63 227,08
BLOKHOEKE		
A1	+ 48 249,75	+ 63 310,96
A2	+ 48 131,17	+ 63 452,04
B1	+ 48 237,78	+ 63 305,56
B2	+ 48 199,20	+ 63 352,46
B3	+ 48 144,09	+ 63 305,13
B4	+ 48 155,76	+ 63 292,24
B5	+ 48 216,53	+ 63 134,43
B6	+ 48 214,81	+ 63 130,95
B7	+ 48 170,78	+ 63 113,60
B8	+ 48 035,11	+ 63 076,04
B9	+ 47 975,38	+ 63 073,49
B10	+ 47 947,42	+ 63 104,29
B11	+ 47 925,46	+ 63 089,97
B12	+ 47 902,30	+ 63 081,79
C1	+ 48 204,88	+ 63 137,37
C2	+ 48 167,71	+ 63 123,13
C3	+ 48 033,45	+ 63 087,94
C4	+ 48 028,08	+ 63 092,55
C5	+ 48 026,07	+ 63 119,01
C6	+ 48 051,54	+ 63 166,62
C7	+ 48 079,45	+ 63 151,69
C8	+ 48 152,54	+ 63 170,79
C9	+ 48 186,71	+ 63 184,03
D1	+ 48 183,12	+ 63 193,36
D2	+ 48 149,26	+ 63 180,32
D3	+ 48 080,71	+ 63 162,36
D4	+ 48 056,26	+ 63 175,44
D5	+ 48 087,86	+ 63 234,51
D6	+ 48 095,80	+ 63 230,27
D7	+ 48 097,85	+ 63 223,50
D8	+ 48 106,67	+ 63 218,78
D9	+ 48 113,43	+ 63 220,83
D10	+ 48 118,15	+ 63 229,65
D11	+ 48 116,10	+ 63 236,42
D12	+ 48 107,28	+ 63 241,14
D13	+ 48 100,52	+ 63 239,09
D14	+ 48 092,58	+ 63 243,33
D15	+ 48 111,54	+ 63 276,77
D16	+ 48 136,43	+ 63 299,69
D17	+ 48 147,03	+ 63 287,08
E1	+ 48 192,77	+ 53 360,11
E2	+ 48 103,63	+ 53 285,18
E3	+ 48 015,87	+ 53 121,15
E4	+ 48 018,49	+ 53 086,81
E5	+ 47 979,50	+ 63 083,84
E6	+ 47 954,14	+ 63 111,76
E7	+ 48 064,09	+ 63 317,26
E8	+ 48 160,59	+ 63 398,38
F1	+ 48 154,16	+ 63 406,04
F2	+ 48 056,19	+ 63 323,68
F3	+ 47 944,00	+ 63 114,00
F4	+ 47 921,00	+ 63 099,00
F5	+ 47 899,56	+ 63 091,43
F6	+ 48 121,99	+ 63 444,31
VERSEKERINGSMERKE		
VM1	+ 48 056,14	+ 63 049,13
VM2	+ 48 088,66	+ 63 232,51
VM3	+ 48 179,56	+ 63 489,61
GEORGE DORP VERSEKERINGSMERKE		
⊕56C025	+ 50 805,27	+ 62 541,55
⊕57C025	+ 48 384,50	+ 63 081,90

GROOTTES

ERF No.	vierkante meter	ERF No.	vierkante meter
7042	553	7120	463
7043	541	7121	458
7044	539	7122	472
7045	537	7123	472
7046	624	7124	472
7047	548	7125	487
7048	546	7126	500
7049	544	7127	500
7050	542	7128	500
7051	626	7129	500
7052	2,0002 hektaar	7130	615
7053	535	7131	450
7054	473	7132	450
7055	539	7133	450
7056	797	7134	450
7057	533	7135	450
7058	521	7136	450
7059	504	7137	450
7060	504	7138	450
7061	504	7139	450
7062	504	7140	450
7063	504	7141	542
7064	504	7142	549
7065	504	7143	486
7066	504	7144	484
7067	492	7145	502
7068	706	7146	450
7069	546	7147	450
7070	540	7148	450
7071	573	7149	450
7072	540	7150	450
7073	540	7151	450
7074	540	7152	450
7075	540	7153	450
7076	540	7154	450
7077	540	7155	450
7078	540	7156	490
7079	588	7157	492
7080	540	7158	500
7081	540	7159	500
7082	540	7160	500
7083	625	7161	500
7084	589	7162	487
7085	505	7163	437
7086	701	7164	450
7087	794	7165	450
7088	474	7166	450
7089	487	7167	450
7090	502	7168	475
7091	450	7169	597
7092	450	7170	539
7093	450	7171	467
7094	488	7172	490
7095	566	7173	635
7096	514	7174	540
7097	467	7175	540
7098	450	7176	540
7099	437	7177	540
7100	621	7178	540
7101	450	7179	540
7102	450	7180	540
7103	450	7181	540
7104	467	7182	540
7105	469	7183	531
7106	457	7184	518
7107	450	7185	449
7108	509	7186	450
7109	473	7187	450
7110	473	7188	450
7111	552	7189	450
7112	514	7190	437
7113	488		
7114	457		
7115	488		
7116	604		
7117	507		
7118	490		
7119	473		

L.G. KANTOORNOTAS

1) Beacons replaced- Erf- 7052 vide E1956/2000
2) Erwen 7050 & 7051 included in consol vide Dgm 3685/2011 (Erf 9720)
3) Erwe 7189 & 7190 included in consol vide Dgm 2382/2021 Erf 11919.

Opgemeet deur my in Mei 1997 - Januarie 1998

A. LOUW (PLS0356)
Professionele Landmeter

Leer No.Tyolora 602
Meetstukke No. E568/1998
Kompilasie BL-700/25(1761)

C

ORIGINAL PLAN
Sign
Date: 1998-06-20
for SURVEYOR GENERAL

LODGED	1998-06-23
RETURNED	1998-06-09
RELODGED	2000-04-22
DESPATCHED	

ANNEXURE E – LOCALITY PLAN

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George

Motivation Report

Fourways Transfer Location

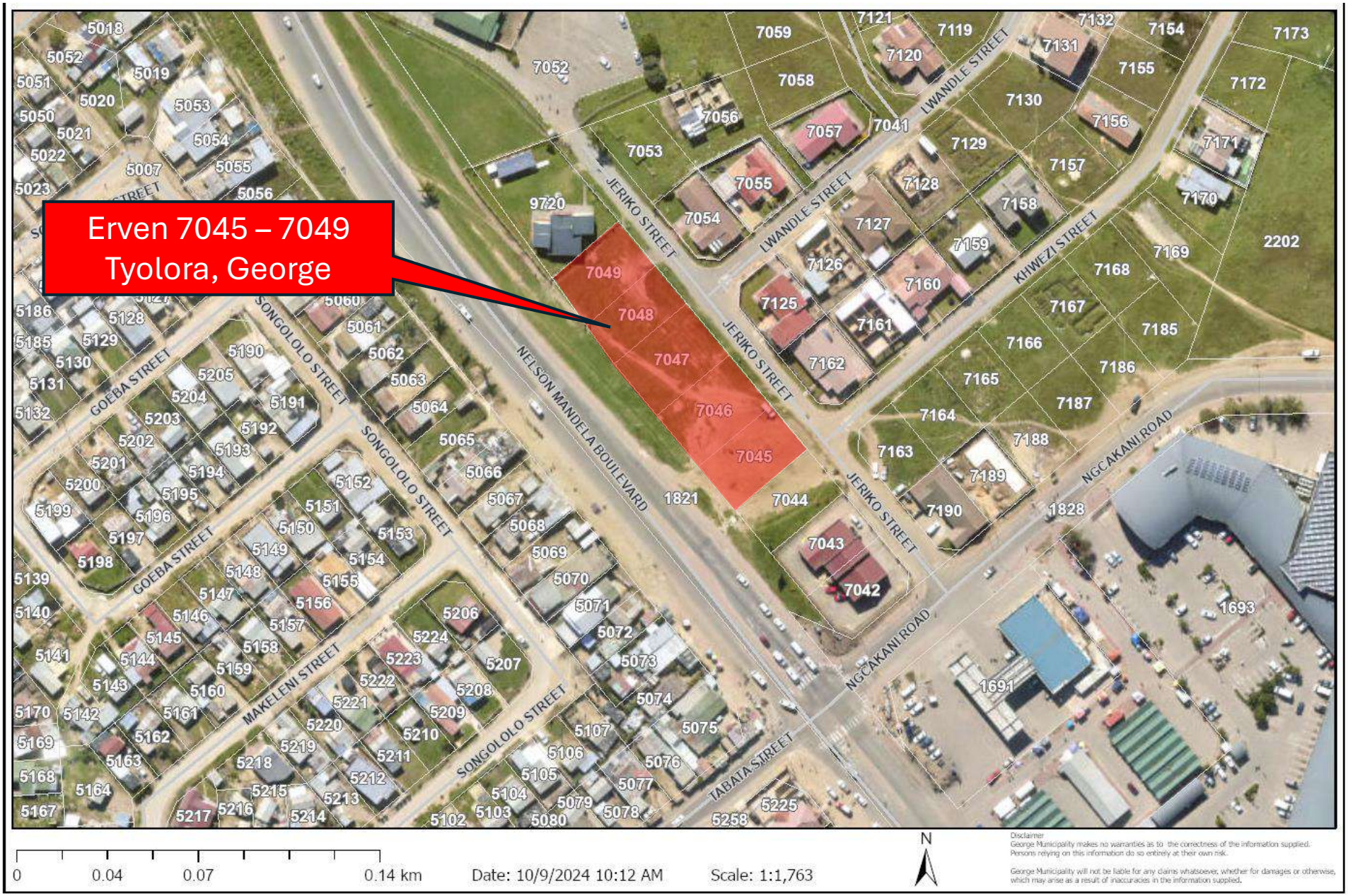
Erven 7045- 7049 Tyolora, George

George Municipality

Submission date: 2024/12/12

Document number: 1
Revision: 0

LOCALITY PLAN



ANNEXURE F –

MINUTES OF PRE-APPLICATION MEETING

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George

Motivation Report

Fourways Transfer Location

Erven 7045- 7049 Tyolora, George

George Municipality

Submission date: 2024/12/12

Document number: 1
Revision: 0

Planning and Development
E-mail: town.planning.application@george.gov.za
Tel: +27 (0)44 801 9477

LAND USE PLANNING PRE-APPLICATION CONSULTATION FORM

PLEASE NOTE:

Pre-application consultation is an advisory session and is required prior to submission of an application for rezoning, consent use, temporary departure and subdivision. It does not in any way pre-empt the outcome of any future application which may be submitted to the Municipality.

PART A: PARTICULARS

Reference number: _3487535_____

Purpose of consultation: ___Pre-application consultation for the proposed Fourways Transfer location on Nelson Mandela Boulevard (NMB) at the intersection with Tabata Steet and Ngcakani Street in Thembalethu, George.

Brief proposal: __To create a bus terminal to enable Go George operations, and to also to enable trading facilities to create a multimodal transport and social cluster that is aligned with the ILisolethi project.

Property(ies) description: _____Erven 7044 - 7049 Tyolora, George _____

Date: _____15 November 2024_____

Attendees:

	Name & Surname	Organisation	Contact Number	E-mail
Official	Martin Botha	George Mun.	044 801 9191	pmbotha@george.gov.za
	Naudica Swanepoel	George Mun.	044 801 9138	nswanepoel@george.gov.za
Pre-applicant	Rudolf Schröder	Zutari	083 390 6963	Rudolf.Schroder@zutari.com

Documentation provided for discussion:

(Include document reference, document/plan dates and plan numbers where possible and attach to this form)

__ Pre-planning motivation report, Site development plan, SG diagrams, Title deed, Fourways transfer location concept drawing, Traffic impact assessment and locality map

Has pre-application been undertaken for a Land Development application with the Department of Environmental Affairs & Development Planning (DEA&DP)?

(If so, please provide a copy of the minutes)

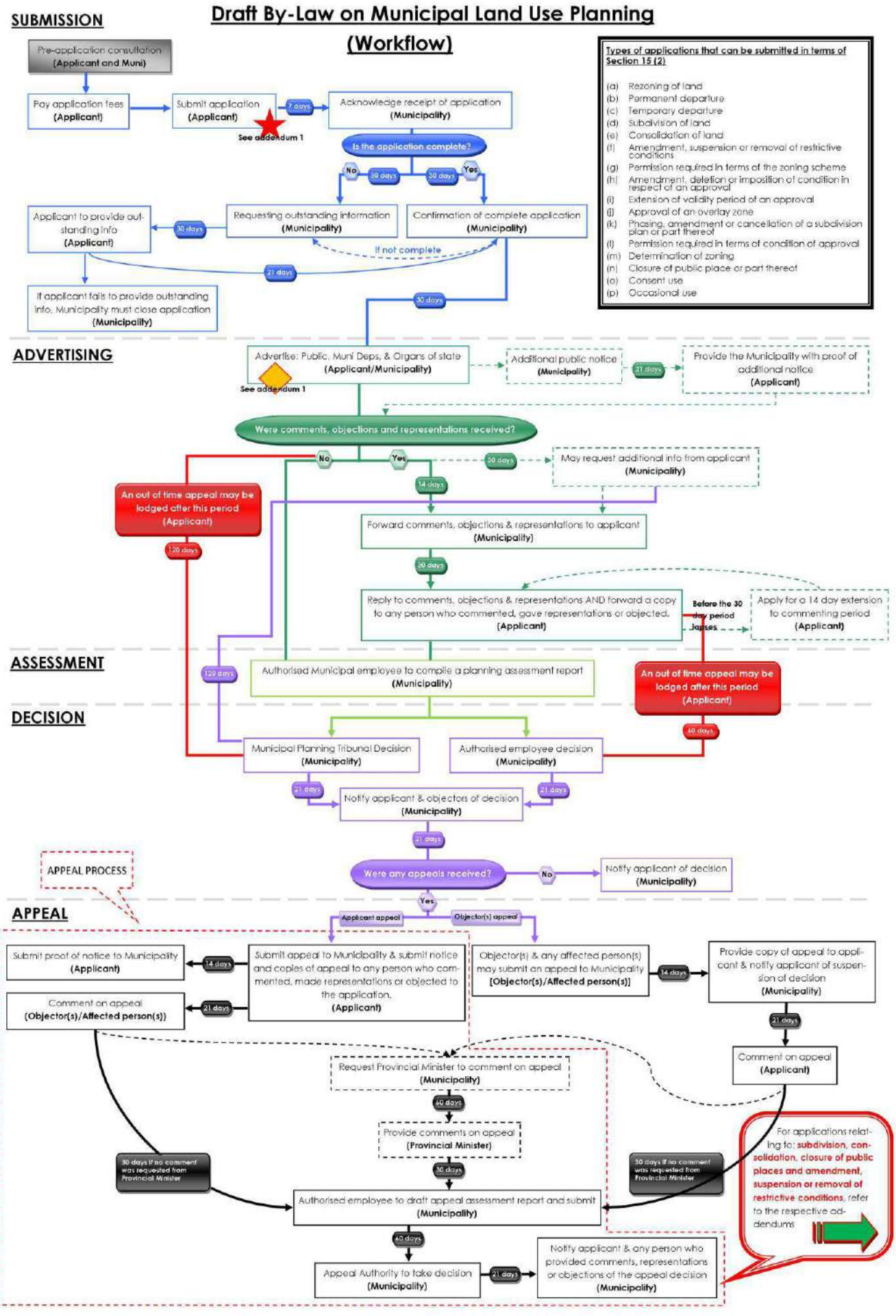
YES	NO
	X

Comprehensive overview of proposal:

The intension of the development is to create a bus terminal to enable Go George operations, and to also to enable trading facilities to create a multimodal transport and social cluster that is aligned with the ILisolethi project. The site of application is currently zoned as "Business zone II", but the intention is for five erven to be consolidated and used as a bus terminal to be developed on the site. A rezoning application is therefore required to amend the current zoning to an applicable zoning, such as "Transport Zone 1". To further accommodate all the planned uses in the Fourways Multimodal Transport and Social Cluster, an application for consent use on Erven 7045 – 7049 Tyolora, George for additional land uses under the Transport Zone I zoning will be required to accommodate outdoor trading facilities, convenience shop and business premises. Erf 7044 is excluded from the rezoning, consolidation and consent use application as it is earmarked for future expansion of the fire station located on erven 7042 and 7043. However, an application will be made for temporary use of erf 7044 to accommodate the proposed development and allow for trading activities to take place on the erf until the fire station is ready for expansion. Two concept site development plans have been prepared with inputs from spatial planning, LED and transport engineers, that will form the basis of the land use planning application that will be submitted to secure development rights for the proposed facility. The intension is to submit an application in terms of Section 15(2) of the George Municipality Land Use Planning By-laws, 2023 for the rezoning, consolidation and consent use Erven 7045 – 7049 Tyolora, George in order to allow for the proposed transfer location development as per the Site development plan attached, and a temporary use application on Erf 7044. See attached pre-application motivation report for more information

PART B: APPLICATION PROCESS

(WILL FULLY APPLY ONLY ONCE LUPA REGULATIONS ARE IN FORCE)



PART C: QUESTIONNAIRES

SECTION A:
DETERMINATION OF APPLICATION TYPES, PRESCRIBED NOTICE AND ADVERTISEMENT PROCEDURES

Tick if relevant		What land use planning applications are required?	Application fees payable
X	**2(a)**	**a rezoning of land;**	**R**
	2(b)	a permanent departure from the development parameters of the zoning scheme;	R
	2(c)	a departure granted on a temporary basis to utilise land for a purpose not permitted in terms of the primary rights of the zoning applicable to the land;	R
	2(d)	a subdivision of land that is not exempted in terms of section 24, including the registration of a servitude or lease agreement;	R
X	**2(e)**	**a consolidation of land that is not exempted in terms of section 24;**	**R**
	2(f)	a removal, suspension or amendment of restrictive conditions in respect of a land unit;	R
	2(g)	a permission required in terms of the zoning scheme;	R
	2(h)	an amendment, deletion or imposition of conditions in respect of an existing approval;	R
	2(i)	an extension of the validity period of an approval;	R
	2(j)	an approval of an overlay zone as contemplated in the zoning scheme;	R
	2(k)	an amendment or cancellation of an approved subdivision plan or part thereof, including a general plan or diagram;	R
	2(l)	a permission required in terms of a condition of approval;	R
	2(m)	A determination of a zoning;	R
	2(n)	A closure of a public place or part thereof;	R
X	**2(o)**	**a consent use contemplated in the zoning scheme;**	**R**
	2(p)	an occasional use of land;	R
	2(q)	to disestablish a home owner's association;	R
	2(r)	to rectify a failure by a home owner's association to meet its obligations in respect of the control over or maintenance of services;	R
	2(s)	a permission required for the reconstruction of an existing building that constitutes a non-conforming use that is destroyed or damaged to the extent that it is necessary to demolish a substantial part of the building	R
Tick if relevant		**What prescribed notice and advertisement procedures will be required?**	**Advertising fees payable**
Y	N	Serving of notices (i.e. registered letters etc.)	R
Y	N	Publication of notices (i.e. Provincial Gazette, Local Newspaper(s) etc.)	R

Y	N	Additional publication of notices (i.e. Site notice, public meeting, local radio, website, letters of consent etc.)	R
Y	N	Placing of final notice (i.e. Provincial Gazette etc.)	R
		TOTAL APPLICATION FEE* (VAT excluded):	**TBC**

PLEASE NOTE: * *Application fees are estimated on the information discussed and are subject to change with submission of the formal application and/or yearly application fee increase.*

SECTION B:

PROVISIONS IN TERMS OF THE RELEVANT PLANNING LEGISLATION / POLICIES / GUIDELINES

QUESTIONS REGARDING PLANNING POLICY CONTEXT	YES	NO	TO BE DETERMINED	COMMENT
Is any Municipal Integrated Development Plan (IDP)/Spatial Development Framework (SDF) and/or any other Municipal policies/guidelines applicable? If yes, is the proposal in line with the aforementioned documentation/plans?	**X**			**Yes, the proposal is in line with the municipal IDP and SDF**
Any applicable restrictive condition(s) prohibiting the proposal? If yes, is/are the condition(s) in favour of a third party(ies)? [List condition numbers and third party(ies)]			**X**	**Conveyancer's Certificate required**
Any other Municipal by-law that may be relevant to application? (If yes, specify)	**X**			**George Municipality Land Use Planning By-laws, 2023**
Zoning Scheme Regulation considerations: Which zoning scheme regulations apply to this site? George Integrated Zoning Scheme Bylaw, 2023 What is the current zoning of the property? Business Zone II What is the proposed zoning of the property? Transport Zone I Does the proposal fall within the provisions/parameters of the zoning scheme? Yes Are additional applications required to deviate from the zoning scheme? (if yes, specify) Yes. An application is submitted for consent use to allow for additional land uses proposed in the Fourways transfer location, which are currently not accommodated in the Transport Zone I zoning.				

QUESTIONS REGARDING OTHER PLANNING CONSIDERATIONS	YES	NO	TO BE DETERMINED	COMMENT
Is the proposal in line with the Provincial Spatial Development Framework (PSDF) and/or any other Provincial bylaws/policies/guidelines/documents?			**X**	**Public transport - ease of mobility, community facility**
Are any regional/district spatial plans relevant? If yes, is the proposal in line with the document/plans?		**X**		

SECTION C:

CONSENT / COMMENT REQUIRED FROM OTHER ORGANS OF STATE

OUESTIONS REGARDING CONSENT / COMMENT REQUIRED	YES	NO	TO BE DETERMINED	OBTAIN APPROVAL / CONSENT / COMMENT FROM:
Is/was the property(ies) utilised for agricultural purposes?		**X**		Western Cape Provincial Department of Agriculture
Will the proposal require approval in terms of Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970)?		**X**		National Department of Agriculture
Will the proposal trigger a listed activity in terms of National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA)?		**X**		Western Cape Provincial Department of Environmental Affairs & Development Planning (DEA&DP)
Will the proposal require authorisation in terms of Specific Environmental Management Act(s) (SEMA)? (National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003) (NEM:PAA) / National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) (NEM:BA) / National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) (NEM:AQA) / National Environmental Management: Integrated Coastal Management Act, 2008 (Act 24 of 2008) (NEM:ICM) / National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEM:WA) (strikethrough irrelevant)		**X**		National Department of Environmental Affairs (DEA) & DEA&DP
Will the proposal require authorisation in terms of the National Water Act, 1998 (Act 36 of 1998)?		**X**		National Department of Water & Sanitation (DWS)
Will the proposal trigger a listed activity in terms of the National Heritage Resources Act, 1999 (Act 25 of			**Submit Notice of Intent to**	South African Heritage Resources

OUESTIONS REGARDING CONSENT / COMMENT REQUIRED	YES	NO	TO BE DETERMINED	OBTAIN APPROVAL / CONSENT / COMMENT FROM:
1999)?			**Develop to Heritage Western Cape [refer Section 38(c)(ii) of the National Heritage Resources Act]**	Agency (SAHRA) & Heritage Western Cape (HWC)
Will the proposal have an impact on any National or Provincial roads?	**X**			National Department of Transport / South Africa National Roads Agency Ltd. (SANRAL) & Western Cape Provincial Department of Transport and Public Works (DTPW)
Will the proposal trigger a listed activity in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993): Major Hazard Installations Regulations		**X**		National Department of Labour (DL)
Will the proposal affect any Eskom owned land and/or servitudes?		**X**		Eskom
Will the proposal affect any Telkom owned land and/or servitudes?		**X**		Telkom
Will the proposal affect any Transnet owned land and/or servitudes?		**X**		Transnet
Is the property subject to a land / restitution claims?		**X**		National Department of Rural Development & Land Reform
Will the proposal require comments from SANParks and/or CapeNature?		**X**		SANParks / CapeNature
Will the proposal require comments from DEFF?		**X**		Department of Environment, Forestry and Fishery
Is the property subject to any existing mineral rights?		**X**		National Department of Mineral Resources
Does the proposal lead to densification to such an extent that the number of schools, healthcare facilities, libraries, safety services, etc. In the area may be impacted on? (strikethrough irrelevant)		**X**		Western Cape Provincial Departments of Cultural Affairs & Sport (DCAS), Education, Social Development, Health and Community Safety

SECTION D:

SERVICE REQUIREMENTS

DOES THE PROPOSAL REQUIRE THE FOLLOWING ADDITIONAL INFRASTRUCTURE / SERVICES?	YES	NO	TO BE DETERMINED	OBTAIN COMMENT FROM: (list internal department)
Electricity supply:			**X**	Directorate: Electro-technical Services
Water supply:			**X**	Directorate: Civil Engineering Services
Sewerage and waste water:			**X**	Directorate: Civil Engineering Services
Stormwater:			**X**	Directorate: Civil Engineering Services
Road network:			**X**	Directorate: Civil Engineering Services
Telecommunication services:			**X**	
Other services required? Please specify.			**X**	
Development charges:			**X**	

PART D: COPIES OF PLANS / DOCUMENTS TO BE SUBMITTED AS PART OF THE APPLICATION

		COMPULSORY INFORMATION REQUIRED:				
Y	N	Power of Attorney / Owner's consent if applicant is not owner (if applicable)		**Y**	N	S.G. noting sheet extract / Erf diagram / General Plan
Y	N	Motivation report / letter		**Y**	N	Full copy of the Title Deed
Y	N	Locality Plan		**Y**	N	Site Layout Plan
Y	**N**	Proof of payment of fees		Y	**N**	Bondholder's consent
		MINIMUM AND ADDITIONAL REQUIREMENTS:				
Y	N	Site Development Plan		**Y**	N	Conveyancer's Certificate
Y	N	Land Use Plan		**Y**	N	Proposed Zoning plan
Y	**N**	Phasing Plan		**Y**	N	Consolidation Plan
Y	**N**	Abutting owner's consent		Y	**N**	Landscaping / Tree Plan
Y	**N**	Proposed Subdivision Plan (including street names and numbers)		Y	**N**	Copy of original approval letter
Y	**N**	Services Report or indication of all municipal services / registered servitudes		Y	**N**	Home Owners' Association consent
Y	N	~~Copy of Environmental Impact Assessment (EIA) / Heritage Impact Assessment (HIA) /~~ **Traffic Impact Assessment (TIA)** / ~~Traffic Impact Statement (TIS) / Major Hazard Impact Assessment (MHIA) / Environmental Authorisation (EA) / Record of Decision (ROD)~~ (strikethrough irrelevant)		Y	**N**	1 : 50 / 1:100 Flood line determination (plan / report)
Y	N	Other (specify)		Y	N	Required number of documentation copies

PART E: DISCUSSION

Town and Spatial Planning:
The attached documents were discussed.

- The subject properties are municipal owned. In this regard, a Council Resolution must be obtained and submitted with the land use application.
- In terms of Section 18(5)(b) of the Land Use Planning By-law for George Municipality (2023), a temporary departure may include an improvement of land only if the land can, without further construction or demolition, revert to its previous lawful use upon the expiry of the use right. It is therefore advised that Erf 7044, Tyolora be excluded from the land use application (i.e. keep the zoning as is). The site may be used for trading purposes (excluding the proposed social facility), in terms of its primary rights.
- Should Erf 7044, Tyolora remain included with this application: In conjunction with Spatial Planning and LED, discuss, and include into the motivation, how traders will be reallocated when required.
- The application should be motivated in terms of the relevant spatial planning policies (i.e. MSDF 2023, SPLUMA, etc.).
- A detailed site plan must be submitted with the application (indicating uses, building lines, heights, elevations, access, parking etc.).
- Stormwater management must be addressed in the land use application.
- The standard public participation requirements will apply.
- Include the Ilisolethu logo on documents.
- All structures and uses need to comply with the relevant development parameters, land use descriptions, and zoning objective, as presented in the George Integrated Zoning Scheme By-law, 2023.
- Greening and landscaping will be required.
- Traffic Impact Assessment / Statement to be included with the land use application.

CES:
- Approval for access is required from SANRAL (access within SANRAL road reserve).
- Trees must be included within the proposed development.

ETS:
- According to the GIS, the electrical cables are installed across the erven. The location to be confirmed and moved out of the erven, as agreed with ETS.
- Required load to be determined.

PART F: SUMMARY / WAY FORWARD

Proceed with the submission of the land use application, subject to Part E above.

OFFICIAL:	Martin Botha	PRE-APPLICANT:	Rudolf Schröder
SIGNED:		SIGNED:	
DATE:	**26 November 2024**	DATE:	**15 November 2024**

OFFICIAL: NAUDICA SWANEPOEL

SIGNED: 

DATE: **26 November 2024**

**Please note that the above comments are subject to the documents and information available to us at the time of the pre-application meeting and we reserve our rights to elaborate on this matter further and/or request more information/documents should it be deemed necessary.*

ANNEXURE G –

SITE DEVELOPMENT PLAN

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George

Motivation Report

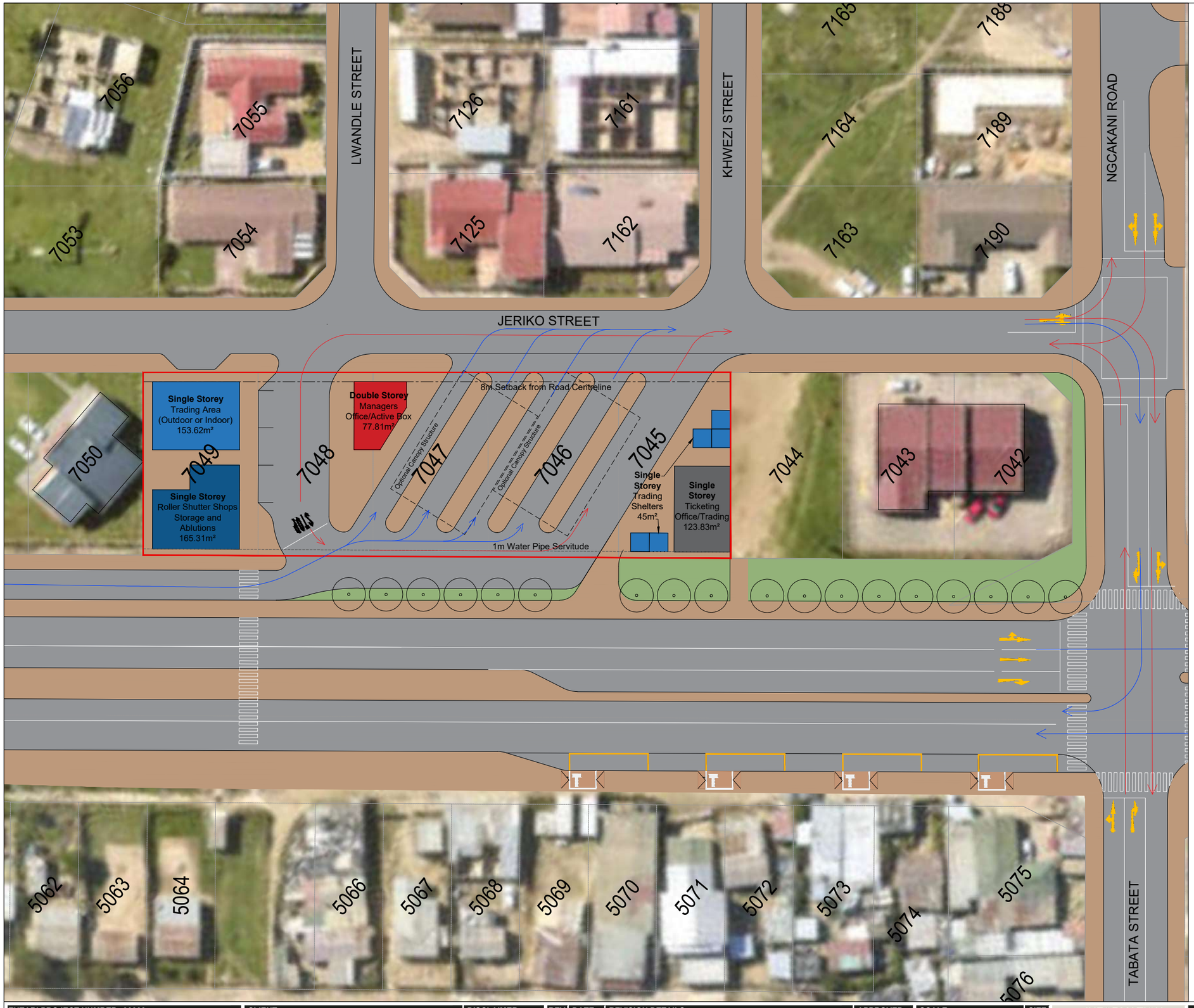
Fourways Transfer Location

Erven 7045- 7049 Tyolora, George

George Municipality

Submission date: 2024/12/12

Document number: 1
Revision: 0



DEVELOPMENT PARAMETERS

Total Site Area	2800.59
Site Coverage %	100%
Total Developable Area	280059.40
Floor Area Ratio	3.0
Maximum Bulk	8401.78
Height	15m (top of Roof)
Building Lines	The street building line is 0 metres; Side and rear building lines are 0 metres up to a height of 8.5 metres and 4.5 metres for the remainder of the building provided that the Municipality may lay down more restrictive common building lines in the interest of public health and safety or in order to enforce any other law or right.

PROPOSED LAND USE

Land Use	Land Area (m²)	Height	Bulk (m²)
Trading Area - Shelters	198.62	1.0	198.62
Roller Shutter Shops (Storage and Ablutions)	165.31	1.0	165.31
Managers Office/Active boxes	77.81	2.0	155.62
Public Transport Area	2235.02	-	-
Ticketing Office and Trading	123.83	1.0	123.83
Total	2800.59		643.38

- Proposed Consolidated Erf
- Existing Property Boundaries
- Managers Office/Active Box
- Roller Shutter Shops/Storage/Ablutions
- Trading Area - Shelters
- Ticketing Office/Trading/Roller Shutter Shops
- Canopy Structure Over Buses
- Servitude - Water Pipe
- Setback Line
- Community Bus Route
- Main Bus Route

0 5 10 15 25m

N

ZUTARI PROJECT NUMBER: 99999

CLIENT

ZUTARI
IMPACT. ENGINEERED.

DISCLAIMER

IF CONSTRUCTION DRAWINGS ARE ISSUED UNSIGNED, THE MASTER WITH THE ORIGINAL SIGNATURE OF APPROVAL WILL BE HELD AT THE ZUTARI OFFICE OF THE APPROVER

REV	DATE	REVISION DETAILS	APPROVED
0	10/12/2024	First Revision	R Schröder

SCALE	AS SHOWN
SIZE	A3
DRAWN	SH
DESIGNED	SH
REVIEWED	RS

INFORMATION
NOT FOR CONSTRUCTION

APPROVED
R Schröder
DATE
December 2024

PROJECT	FOURWAYS BUS TRANSFER FACILITY SDP
TITLE	Proposed Consolidation and Rezoning of Erven 7045 - 7049 Tyolora
DRAWING No.	1005841--ZUT-ZA-LL-DRG-TP-FW000-00
REV	0

ANNEXURE H –

CONCEPT DRAWING OF FOURWAYS TRANSFER LOCATION

DRAWN	N TOSE	APPROVED	
DESIGNED	N TOSE	GIPTN UNIT MANAGER	
CHECKED		DIRECTOR CIVIL ENGINEERING SERVICES	
APPROVED	FOR ZUTARI DATE:		

REVISION

DATE	REV No.	DESCRIPTION

CLIENT

GEORGE
THE CITY FOR ALL REASONS

Western Cape Government
Transport and Public Works

GEORGE MUNICIPALITY

CONSULTANT

ZUTARI
IMPACT. ENGINEERED.

PROJECT DESCRIPTION

GEORGE INTEGRATED PUBLIC TRANSPORT NETWORK

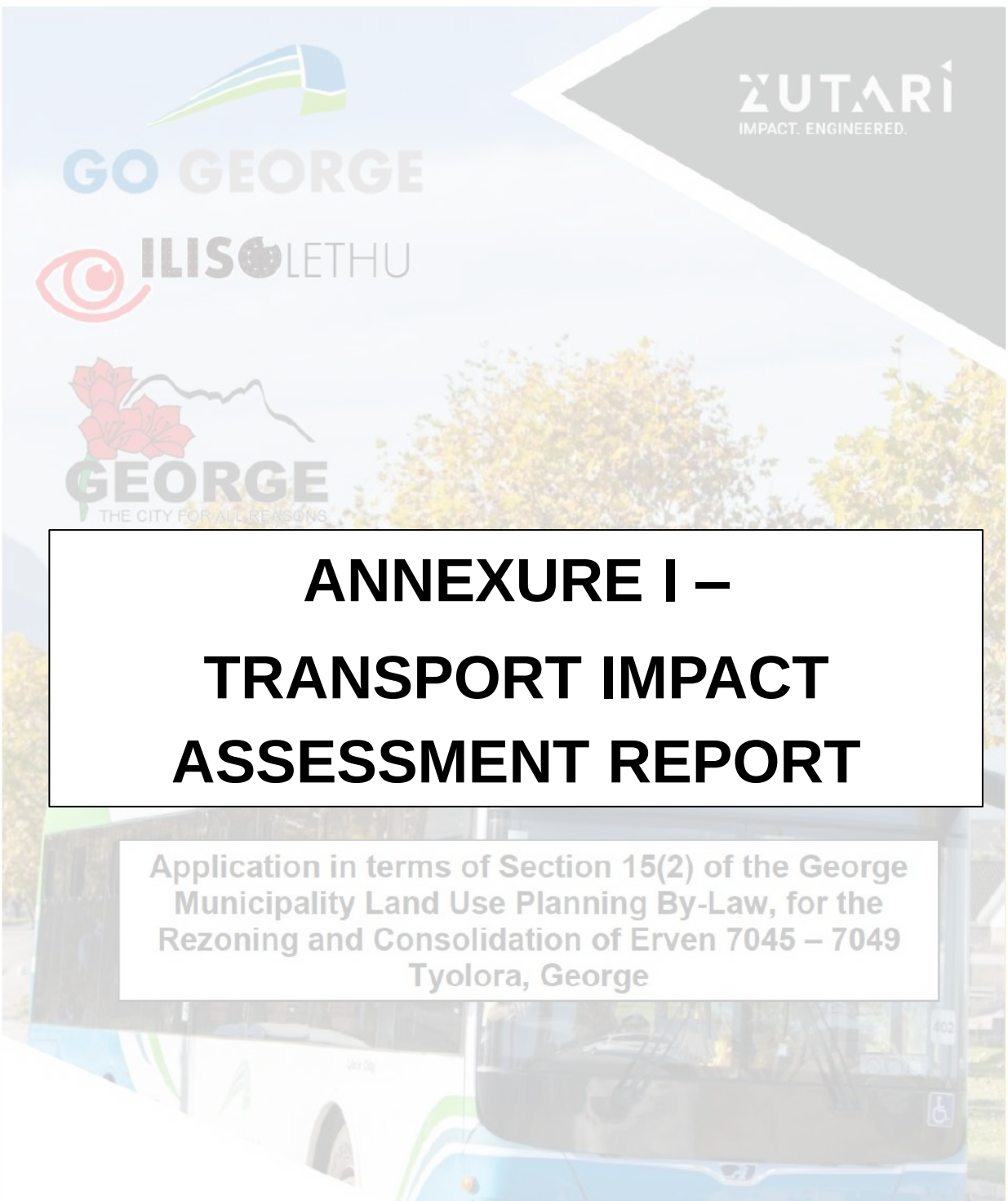
DRAWING DESCRIPTION

FOURWAYS BUS TRANSFER FACILITY

SCALE	DRAWING SIZE	DATE	DRAWING NUMBER	REVISION NUMBER
1:500	A0	2024/10/11	P1002745-CON-DRG-RR-P500-001	A

ANNEXURE I – TRANSPORT IMPACT ASSESSMENT REPORT

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George



Motivation Report

Fourways Transfer Location

Erven 7045- 7049 Tyolora, George

George Municipality

Submission date: 2024/12/12

Document number: 1
Revision: 0

ZUTARI
IMPACT. ENGINEERED.

George Integrated
Public Transport Network

Fourways Transfer Location Extension Transport Impact Assessment

Second and third project headline if required

Western Cape Government

Submission date: 2024/11/04

Document control record

Document prepared by:

Zutari (Pty) Ltd
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Document Control						
Project name		Fourways Transfer Location Extension Transport Impact Assessment				
Document number		1002745-CON-REP-KR-0001	**Project number**		1002745	
Client		Western Cape Government (George Municipality)				
Client contact			**Client reference**			
Rev	**Date**	**Revision details/status**	**Author**	**Reviewer**	**Verifier** (if required)	**Approver**
0	2024/09/30	First Draft	KR, MM	CH, YV	PS, RR	CH
1	2024/12/13	Second Draft	KR, MM	CH, YV	PS, RR	CH
Current revision		**1**				

Approval				
Author signature			Approver signature	
Name	Khevna Rajput	Mutondi Makhado	Name	Carine Heyns
Title	Transport Engineer	Transport Engineer	Title	Professional Engineer

Contents

Appendices

Figures

Tables

List of Abbreviations

AMG	Access Management Guidelines
CBD	Central Business District
CITP	Comprehensive Integrated Transport Plan
DED	Domestic Equivalent Driveway
GIPTN	George Integrated Public Transport Network
GIZS	George Integrated Zoning Scheme
GRM	Garden Route Mall
LOS	Level of Service
LVD	Low Volume Driveway
NB	Northbound
NDOT	National Department of Transport
NMB	Nelson Mandela Boulevard
NMT	Non-Motorised Transport
PV	Private Vehicles
PT	Public Transport
RAG	Road Access Guidelines
SARTSM	South African Road Traffic Signs Manual
SB	Southbound
SMME	Small, Medium, and Micro Enterprises
TIA	Traffic Impact Assessment
TL	Transfer Location
UA	Universal Accessible
WCG	Western Cape Government

1 Introduction

1.1 Purpose

This Transport Impact Assessment (TIA) has been prepared in support of the application for the rezoning of Erven 7045, 7046, 7047 and 7048 Tyolora (shown in Figure 1.1). The said erven are to be consolidated and developed to become an important extension to the Fourways GO GEROGE Transfer Location in Thembalethu.

A Transfer Location being a point on the GO GEORGE public transport network where bus routes intersect and where passengers have opportunity to transfer from one route to another en-route to their selected destination.

The Fourways Transfer Location is located as shown in Figure 1.1, this being in the vicinity of the Nelson Mandela Boulevard / Tabata Street / Ngcakani Road intersection.

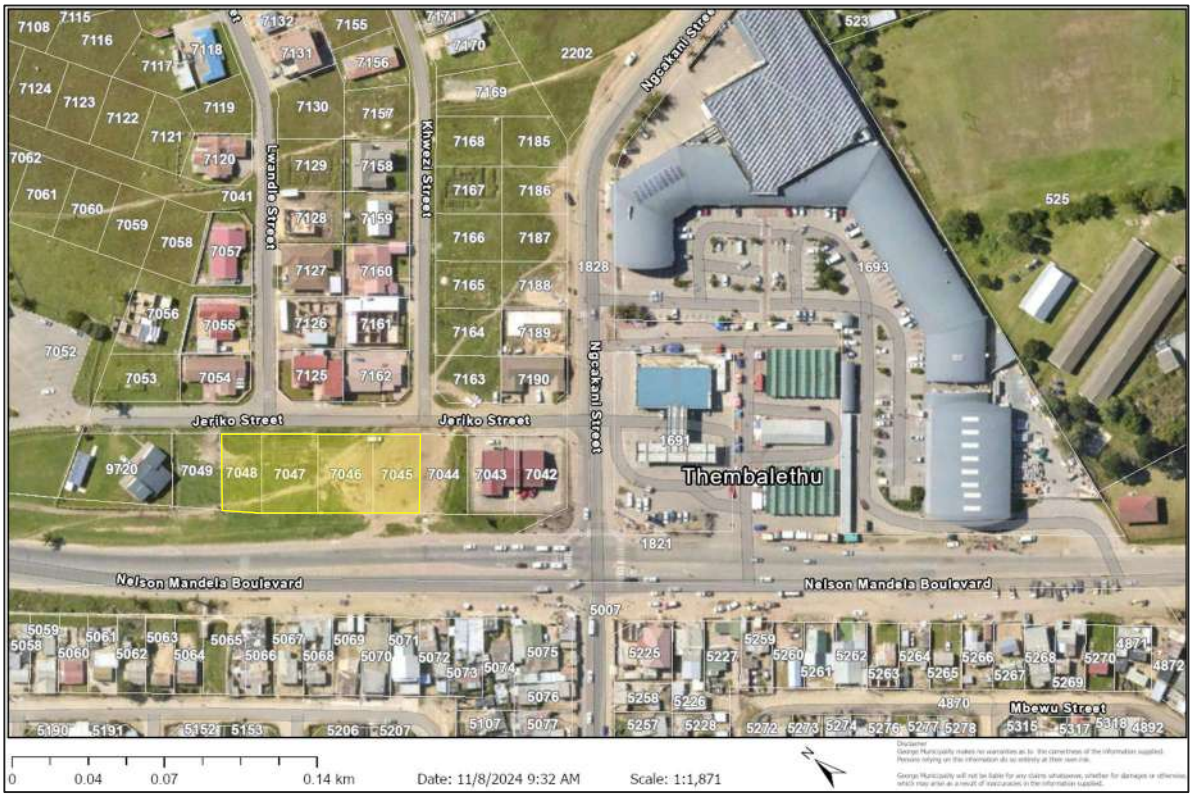


Figure 1.1: Fourways Transfer Location (subject erven highlighted)

1.2 Background and Motivation

The initial, 2006, planning for the GO GEORGE public transport network envisaged that all bus routes in Thembalethu would begin at the Sandkraal Road Circle located at the intersection of Nelson Mandela Boulevard and Jonga Street. However, rapid development in Thembalethu since 2006 has necessitated adjustments to the original service offerings, with a significant percentage of routes now starting near the intersection between NMB / Ngcakani Road / Tabata Street (also referred to as the Fourways intersection), thereby effecting significant fleet and operating cost savings.

The presence of a service station, taxi rank, and shopping centre, along with the current complex access arrangements to these facilities, limits the possibility of routing busses through the taxi rank as a turn-round facility as was being contemplated. Additionally, uncertainty surrounding the future use of the minibus taxi rank poses challenges. The original goal was to fully integrate taxi operations into the GO

GEORGE system, which would have freed up space within the existing taxi rank. However, it now seems unlikely that this integration will occur, as minibus taxis are expected to continue operating alongside GO GEORGE services.

As a temporary solution, busses are being routed via NMB, Nkonjane, and Ngcakani Streets, before proceeding through the Fourways intersection (refer to Figure 1.2) which has several disadvantages.

Figure 1.2: Bus routing via NMB, Nkonjane and Ngcakani Streets

The notion of developing the extension to the Fourways Transfer Location on the vacant Erven 7045, 7046, 7047 and 7048 Tyolora arose as a consequence of severe congestion experienced during the construction of the Thembaletu N2 interchange. The idea gained impetus with the planning for the Thembalethu Ilisolethu project and the prospect of utilising the subject erven offers several advantages to GO GEORGE passengers and will bring about cost savings to the GO GEORGE operation.

The earmarked properties are owned by the George Municipality, currently zoned as Business Zone 2, and are vacant. The intention is to have the zoning amended to Transport. Ownership of the erven will remain with the George Municipality, who will be the custodians of the planned Fourways Transfer Location.

1.3 Assessment Area & Reference Documentation

The study area for this TIA goes well beyond that which might usually be required for a development of this scale as it is a requirement of the Municipality to ensure that the proposed Fourways Transfer Location extension will not compromise the various components of the very significant Ilisolethu development.

In this regard, the following documentation was made available to Zutari and is referenced in this report.

- George Comprehensive Integrated Transport Plan (CITP): Final: March 2024
  - Transport Modelling undertaken in support of the CITP.
- Ilisolethu Gateway Development Node
  - Investment Plan
  - Area Management Plan
  - Project 1: NMB Multipurpose Identity Route
  - Project 2: Ilisolethu Interchange Gateway Development
  - Project 3: BPO Mixed-use Village (ATNS Land)
  - Project 4: DLab Call Centre
  - Project 5: Inkcubeko Youth and Science Centre Development
  - Project 6: SMME and Recycling Hub
  - Project 7: Park run and Trimpark Recreation Route
  - Project 8: NMB Multipurpose Public Open Spaces
  - Project 9: NMB Sports Node

    - Project 10: NMB SMME Trading Areas
    - Project 11: Multimodal Transport and Social Cluster
- Works Package 8: Thembalethu Roads Planning & Development: EAS Infra Engs' et al: Draft Feb 2023
    - Linkages Study (EAS / G Hitge)
    - Access Study / Transportation Impact Assessment (EAS / Sturgeon)
    - NMB Concept Design Drawings
- Rand Street Extension: SMEC: January 2024
    - Route Determination Report
    - Traffic Impact Study Report
- Roundabout Technical Memorandum, SMEC, September 2022

1.4 Stakeholders consulted

Prior to preparing this TIA, the following stakeholders were consulted:

- George Municipality: Civil Engineering Services, Town Planning and Local Economic Development.
- GIPTN (GO GEORGE) Unit Manager.
- Fire Department – Thembalethu Satelite Station;
- Techso Consortium - appointed to develop the 2024 CITP (including the Vissim transportation model used in the assessment);
- George Municipality's consultants appointed for the conceptual design of Thembalethu Roads (referred to as Project 7 Works Package 8);
- SANRAL (SA National Roads Agency Ltd) as responsible for the N2 and Thembalethu Interchange.
- The consultants appointed by SANRAL for capacity Improvements to the Thembalethu Interchange on National Route 2 Section 7 near George.

1.5 Assessment Methodology

In preparing this TIA and Precinct Plan the following tasks are required:

1) Desktop Study – to gather and review all relevant background information.
2) Status Quo Assessment.
3) Draft facility Concept Plan – informed by the GO GEORGE requirements in terms of size and functionality, together with the preparation of a Precinct Plan that included adjacent erven.
4) Vissim modelling, findings of the status quo assessment, stakeholder input and site-specific constraints.
5) Final Precinct Plan– informed by further stakeholder engagement and Vissim modelling.
6) Draft TIA – submitted to George Municipality Civil Engineering Services and Town Planning and the GIPTN Unit Manager.
7) Final TIA.

Tasks 1-4 outlined above have been completed. This report is the First Draft of the TIA, which will be circulated to stakeholders for comment prior to it being included in the rezoning application. Comments received will be addressed in the Final TIA (Task 7), which will be submitted with the rezoning application.

2 Proposed Development: Fourways Transfer Location Extension

2.1 Proposed Transfer Location Extension

The proposed Fourways Transfer Location extension as envisaged on Erven 7048, 7047, 7046 and 7045 Tyolora is reflected in Figure 2.1. Included in this are the following:

- Four passenger loading islands to serve the mainline GO GEORGE bus routes destined for the CBD, the GRM, the industrial areas and Blanco. All these services will enter the facility from the northern end from NMB, and will depart via Jeriko Street, Ngcakani Road and NMB in a northerly direction.
- A further passenger boarding island to serve the bi-directional Community routes that will enter from both Tabata and Ngcakani Streets via Jeriko Street, then depart the facility in the reverse direction.
- Facilities to accommodate the GO GEORGE operation personnel, security staff and ticket sales.
- Space allocated for some on-site trading.
- A suitable seating, information displays, CCTV surveillance, a roof structure for passenger comfort.

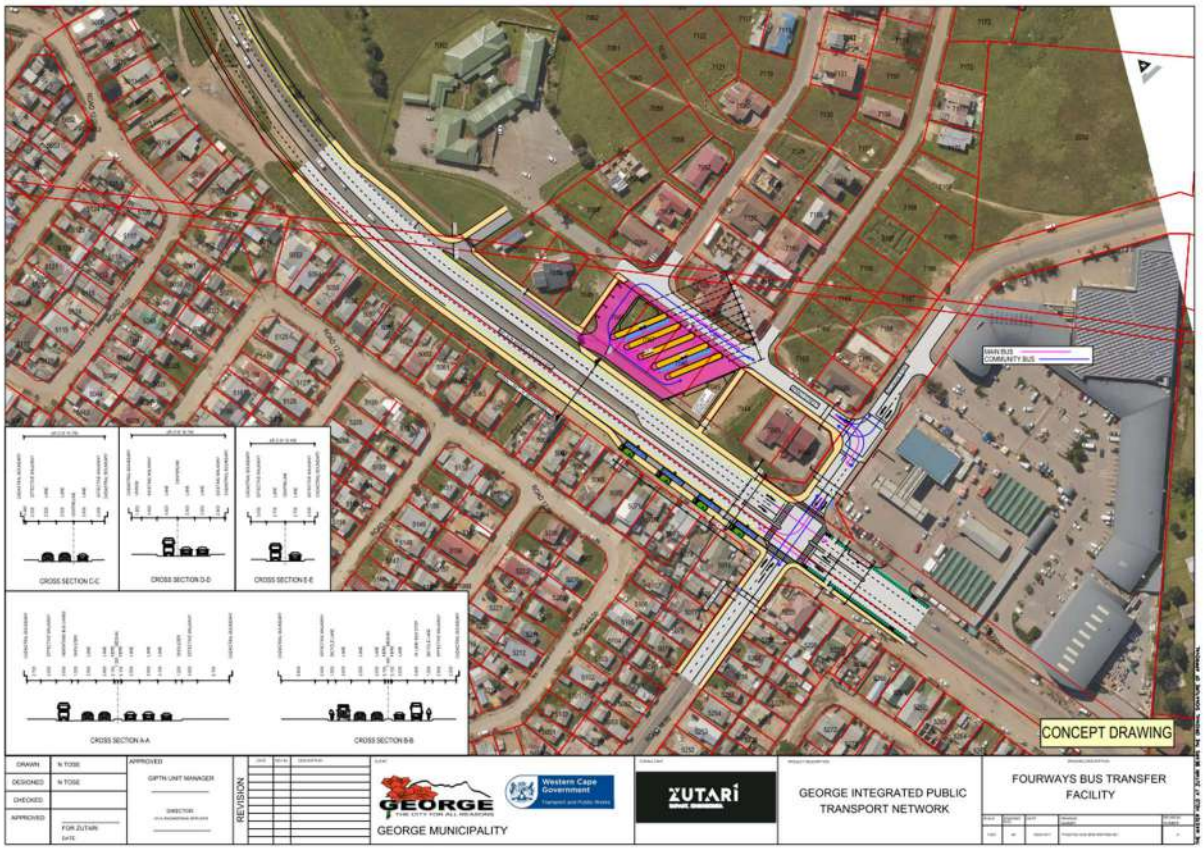


Figure 2.1: Concept Drawing

2.2 Precinct Plan

The Precinct Plan shown in Figure 2.2 goes beyond the proposed Transfer Location extension as shown in Figure 2.1. The Precinct Plan having been requested by the George Municipality. Their reasoning

being logical, as it would be in everyone's interest to see the Transfer Location well aligned with the surrounding erven over which the Municipality has jurisdiction. Thus, the Precinct Plan have been included in this TIA but the development thereof will not be provided as part of the Transfer Location Extension.

Figure 2.2: Fourways Transfer Location Extension Precinct Plan

2.2.1 Access Arrangements

Critical to the development of both the Transfer Location extension and the planned Ilisolethu Gateway Project has been the matter of road vehicular access.

Indicated in Figure 2.3 and Figure 2.4 was the proposed access to what was referred to as the Multimodal Transport Social Cluster and the Ilisolethu Interchange Gateway Development.

Two issues emerged from this early proposal.

- The first being that the access from NMB would be from a portion of road over which the Municipality has no jurisdiction, this being a part of the proclaimed National Road 2 (Thembalethu Interchange). In turn this required early consultation with SANRAL.
- The second related to the access arrangement and possible internal facility layout that could be accommodated within what would be the Transfer Location extension would be very circuitous, and not suitable for the bus operations. As such, an alternate access arrangement was sought.

Figure 2.3: Proposed access to the Ilisolethu Multimodal Cluster

Figure 2.4: Proposed accesses to the Ilisolethu Interchange Gateway Development

Alternative accesses arrangements will be considered in Section 6.1.

3 Status Quo Assessment

3.1 Study intersections

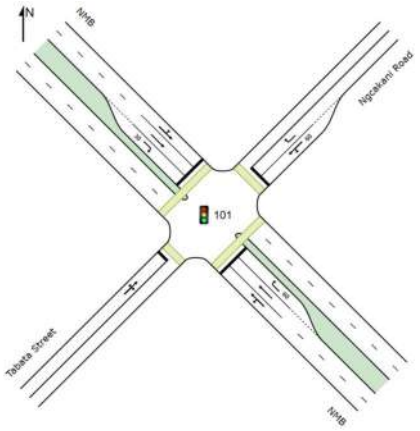
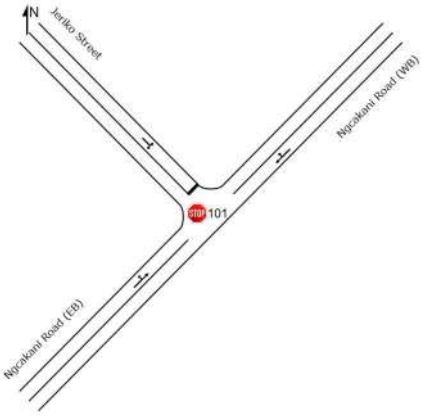
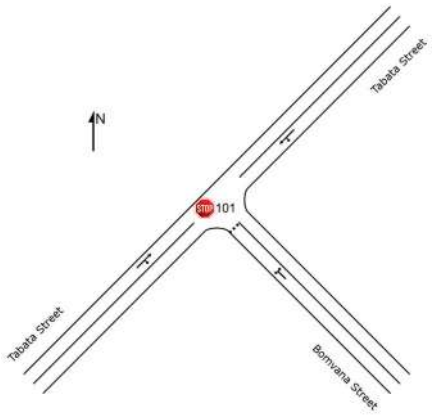
The critical intersections which will be impacted by the proposed GO GEORGE Transfer Location extension are shown in Figure 3.1. Below the intersection which will be considered further in this report:

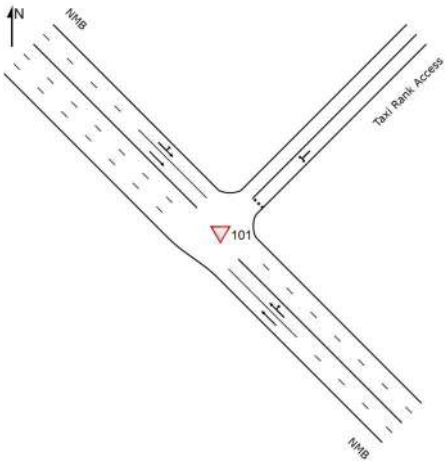
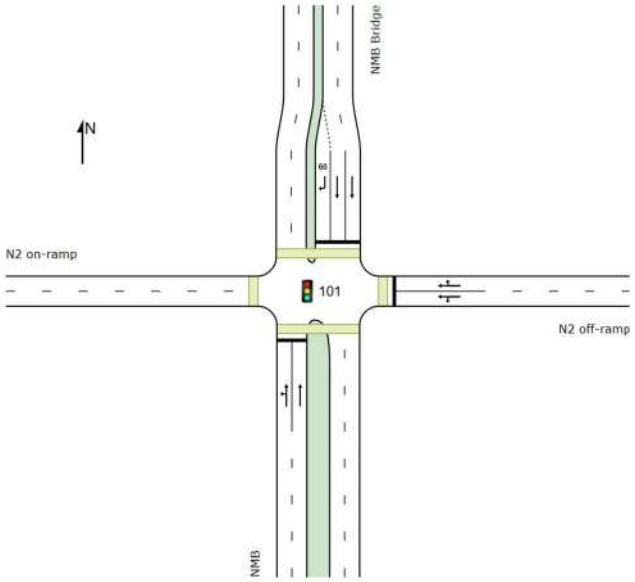
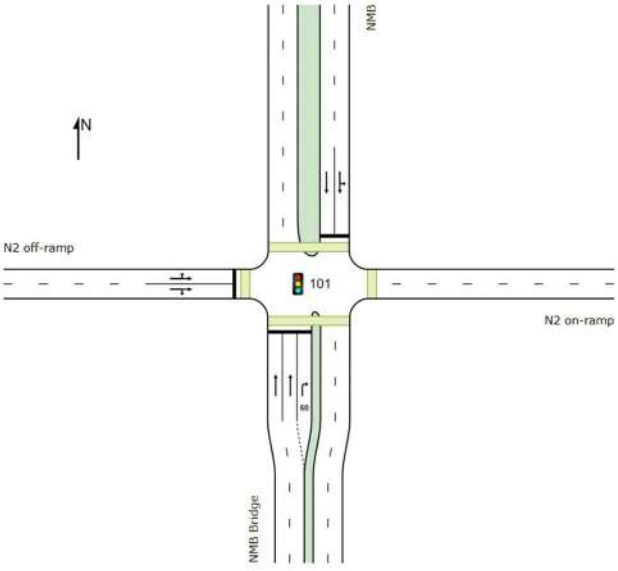
1) Nelson Mandela Boulevard / Ngcakani Road / Tabata Street intersection (hereafter referred to as Fourways intersection);
2) Ngcakani Road / Jeriko Street intersection;
3) Tabata Street / Bomvana Street intersection;
4) Thembalethu Taxi Rank Access;
5) Nelson Mandela Boulevard / N2 Southern Ramp Terminal (hereafter referred to as N2 Southern Terminal); and
6) Nelson Mandela Boulevard / N2 Northern Ramp Terminal (hereafter referred to as N2 Northern Terminal).

The geometric layout and control of each of the intersections are indicated in Table 3.1.

Figure 3.1: Study intersections

Table 3.1: Existing intersection control and geometry

Intersecting Roads			Intersection Control Type	Intersection Geometry
1	Nelson Mandela Boulevard	Tabata Street & Ngcakani Road	Fully Signalised intersection	
2	Ngcakani Road	Jeriko Street	T-junction (stop on Jeriko Street)	
3	Tabata Street	Bomvana Street	No Control	

	Intersecting Roads		Intersection Control Type	Intersection Geometry
4	Nelson Mandela Boulevard	Taxi Rank Access	Stop Minor Road	
5	Nelson Mandela Boulevard	N2 Southern Terminal	Fully Signalised intersection	
6	Nelson Mandela Boulevard	N2 Northern Terminal	Fully Signalised intersection	

3.2 Road Network

Figure 3.2 shows the roads that will be affected by the proposed transfer location. The functional classification of the roads in the road network is also reflected.

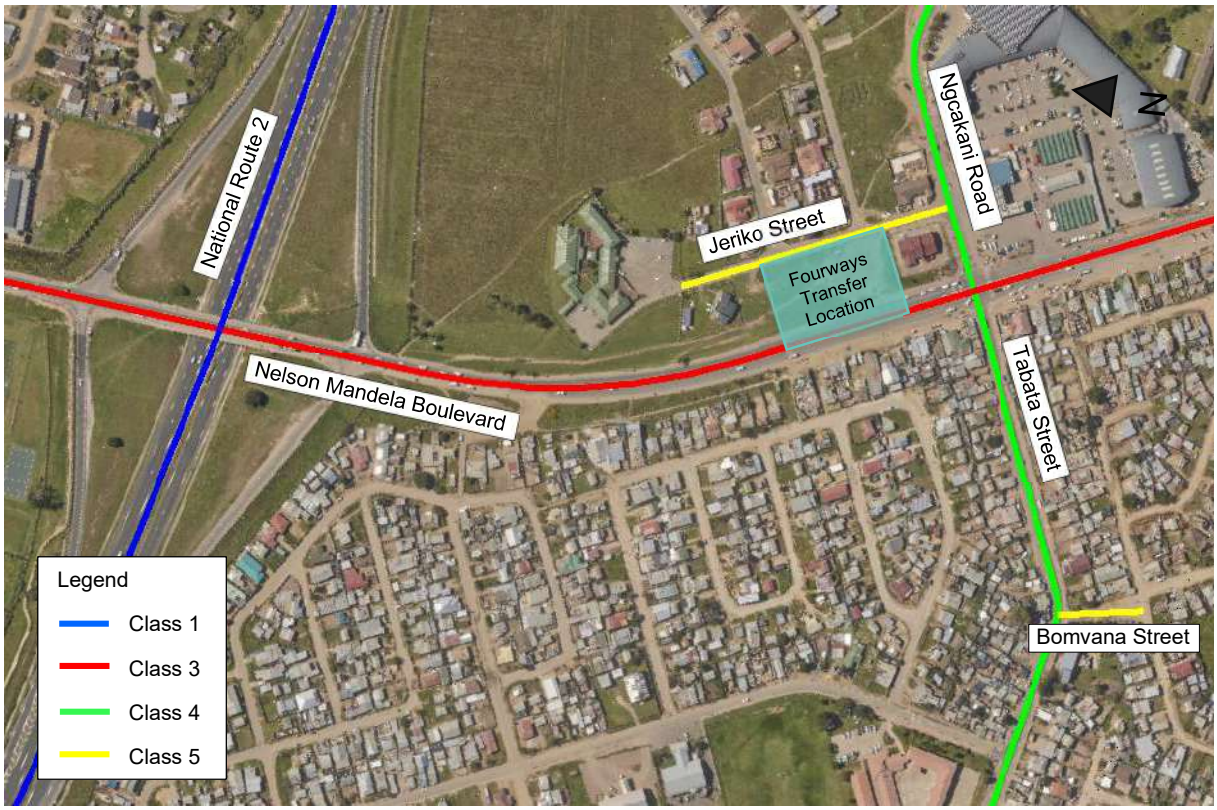


Figure 3.2: Road network and classification

Table 3.2 summarises the class and geometry of the roads in the vicinity of the proposed transfer location with corresponding images presented in Figure 3.3 to Figure 3.9.

Table 3.2: Road classification and geometry

Road	Class	Geometry
1. Nelson Mandela Boulevard	Class 3 Minor Arterial	Dual carriageway north of Fourways with 2 lanes per direction, reverting to a 2-lane roadway south of Fourways intersection
2. Tabata Street	Class 4 Collector	Single carriageway, 1 lane per direction
3. Ngcakani Road	Class 4 Collector	Single carriageway, 1 lane per direction with 2-lane approach to Fourways I/S
4. Jeriko Street	Class 5 Local	Single carriageway, 1 lane per direction
5. Bomvana Street	Class 5 Local	Single carriageway, 1 lane per direction
6. National Route 2	Class 1 Primary Arterial	Dual carriageway, 2 lanes per direction

Figure 3.3: Existing Nelson Mandela Boulevard

Figure 3.4: Existing Tabata Street

NMB (shown in Figure 3.3) is a Class 3 Minor Arterial, connecting the township of Thembalethu to areas north of the N2. This road is the only access point in and out of Thembalethu. The road reserve is approximately 40 m wide north of the Fourways intersection and 35 m wide south of Fourways intersection.

A second carriageway has recently been added to the section of NMB between the N2 Interchange and Fourways intersection. The remainder of NMB (south of Fourways intersection) is a single carriageway with a single lane in each direction. Plans to extend the dual carriageway south of Fourways intersection are currently underway.

The Fourways intersection is signalised and has a painted pedestrian crossings at each road leg there are however no dedicated pedestrian phase. The newly constructed cross section between Fourways intersection and the N2 Interchange is shown in Figure 3.1, this section has a 3 m wide surfaced walkway and 1.2 m wide shoulder. Each carriageway has two 3.5 m wide lanes separated by a 5 m wide median. The section of NMB, south of Fourways intersection, has adequate walkways on the LHS of the road when travelling southbound. The walkway on the RHS of the road when travelling southbound is fair but some sections are in poor condition.

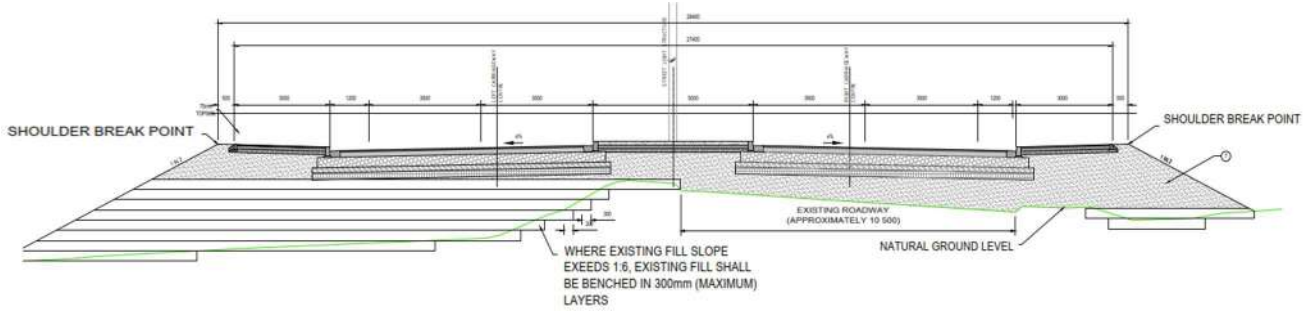


Figure 3.5: NMB cross section under construction

The section south of Fourways consists of a single carriageway with 1 lane per direction.

Tabata Street (refer to Figure 3.4) is a Class 4 Collector that provides access to other local streets and individual properties north of NMB. The road has a 1 m wide walkway on both sides of the road that is in an acceptable condition. The road reserve is approximately 15 m wide with a surfaced roadway width of 6 m.

Figure 3.6: Existing Ngcakani Road

Figure 3.7: Existing Jeriko Street

Ngcakani Road (refer to Figure 3.6) is a Class 4 Collector with a single lane per direction. This road serves the residential areas east of NMB. At the Fourways intersection, there is a painted pedestrian crossing across Ngcakani Road. The roadway has adequate walkways on both sides of the road with an approximate road reserve width of 18m.

Jeriko Street (refer to Figure 3.7) is a Class 5 Local Street with a single lane in each direction. This road provides access to mainly residential properties, the Thusong Service Centre[1] and the Thembalethu iHub[2]. The road has an approximate road reserve width of 12m. Jeriko Street will be a critical access road for a portion of the future Ilisolethu development and the Fourways Transfer Location.

Figure 3.8: Existing Bomvana Street

Figure 3.9: Existing National Route 2

Bomvana Street (refer to Figure 3.8) is a Class 5 Local Street. The road is surfaced with gravel, and it is assumed to be a single carriageway with a single lane in each direction. This road provides access to residential properties south of Tabata Street. The road has an approximate road reserve width of 9m.

National Route 2 (N2) as shown in Figure 3.9 is classified as a Class 1 Primary Arterial. Its primary function is to provide high mobility. This dual carriageway features two lanes in each direction, with an approximate road reserve width of 80 m.

3.3 Land Use

The zoning of the properties in the vicinity of the proposed transfer location is shown in Figure 3.10, with Table 3.3 providing some additional information about each property.

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[1] The Thusong Service Centre is part of a network of centres that aim to bring essential services and information closer to communities.

[2] The Thembalethu iHub is a Township hub aimed at providing support to ICT SMMEs in the George Municipal area.

Figure 3.10: Existing land-use zones

Table 3.3: Property Details

Property Number	Land-Use
Erf 7052	Thusong Service Centre[1]
Erf 9720	Thembalethu iHub[2]
Erven 7048, 7047, 7046, 7045	Vacant land where the Fourways Transfer Location is proposed
Erf 7044	Vacant land that is reserved for the fire station
Erven 7043, 7042	Thembalethu Fire Station
Erf 2202	Vacant land that is proposed to be a SMME cluster (refer to section 2.3.3)
Erf 1619	Fuel service station and Thembalethu Taxi Rank
Erf 1693	Shopping centre

3.4 Existing Property Accesses

There are several accesses to properties which may be impacted by the proposed Fourways Transfer Location extension.

Accesses in this study were identified and classified according to the *Access Management Guidelines WCG, 2020* which classifies accesses according to a threshold number of vehicles entering or exiting a property per hour. There are three categories for conventional driveways: domestic equivalent driveways (DED), low-volume driveways (LVD) and high-volume driveways (HVD). The purpose (land-use) and classification of the accesses in this study are summarised in Table 3.4 and shown in Figure 3.11 to Figure 3.19.

Table 3.4: Property access details

Access No.	Road	Land Use	Purpose	Classification (AMG)
1	NMB	Thembalethu Square - Boxer Superstores	Commercial Access	HVD
2		Taxi Rank Access	Commercial Access	HVD
3	Ngcakani Road	Filling Station Access	Commercial Access	LVD
4		Thembalethu Square	Commercial Access	LVD
5	Jeriko Street	Fire Station Access	Utility Access	DED
6		Thembalethu iHub	Commercial Access	DED
7		Thusong Centre	Commercial Access	LVD
8		Bodi	Commercial Access	DED
9		Residence	Residential Access	DED
10		Residence	Residential Access	DED

The location and the classification of the accesses are presented in Figure 3.11 and images of the corresponding accesses are shown in Figure 3.12 to Figure 3.18.

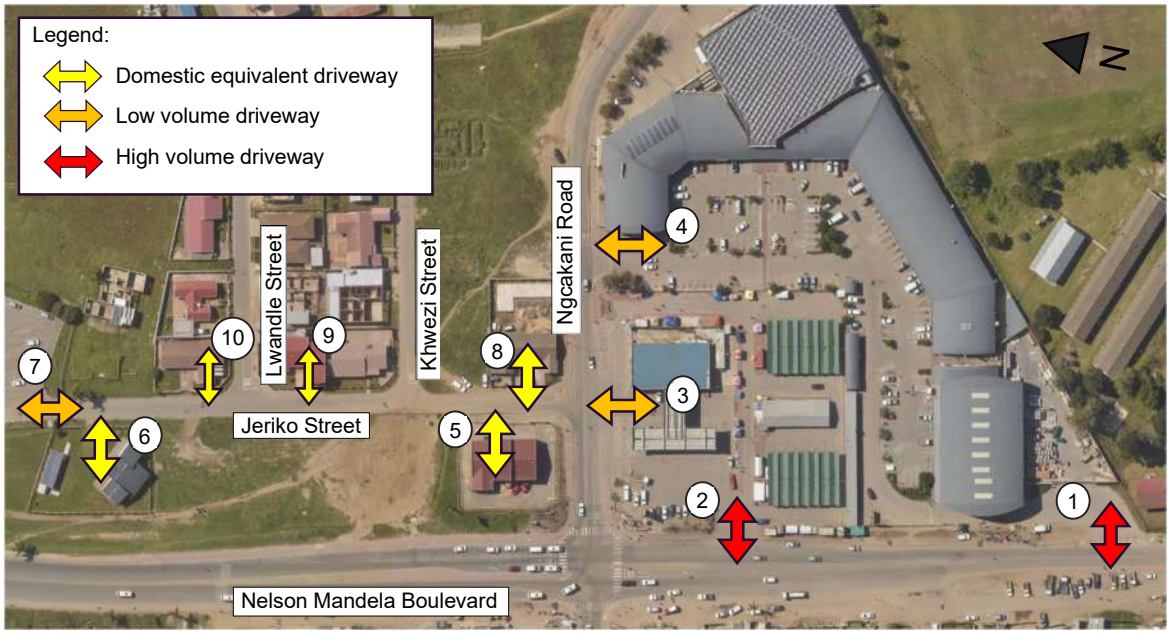


Figure 3.11: Existing property access to commercial area

Figure 3.12: Access 1 off NMB

Figure 3.13: Access 2 (Taxi Rank) off NMB

Figure 3.14: Access 3 off Ngcakani Road

Figure 3.15: Access 4 off Ngcakani Road

Figure 3.16: Access 5 to Thembalethu Fire Station

Figure 3.17: Access 6 to Thembalethu Hub

Figure 3.18: Access 7 to Thusong Centre

Figure 3.19: Access 8 to Bodi

The presence of many non-residential accesses in the study area made it necessary to evaluate the access spacing against the requirements set in the *Access Management Guidelines WCG, 2020*. The minimum spacing distances used for intersections and driveways on Class 3, 4 and 5 roads for an intermediate roadside environment were used. The actual and required spacing between accesses in the study area are summarised in Table 3.5.

Table 3.5: Access spacing

Road	From	To	Spacing (m)	Reference Document	Minimum spacing requirements (m)
NMB (Cl 3)	Ngcakani Road	Access 2 (HVD)	51.8	AMG, 2020	60
	Access 2	Access 1 (HVD)	139.8	AMG, 2020	60
Ngcakani Road (Cl 4)	NMB	Access 3 (LVD)	44.4	AMG, 2020	95
	Access 3	Access 4 (LVD)	46.3	AMG, 2020	25
Jeriko Street (Cl 5)r	Ngcakani Road	Access 5 (DED)	25.8	GIZS By-Law, 2017	10
	Access 5	Access 6 (DED)	151.0	GIZS By-Law, 2017	12
	Access 6	Access 7 (LVD)	10.8	GIZS By-Law, 2017	12
	Ngcakani Road	Access 8 (DED)	20.8	GIZS By-Law, 2017	10

In Table 3.5, accesses that have met the minimum spacing requirements are indicated in green and the accesses that have not are indicated in red. The Thembalethu Taxi Rank access off NMB does not meet the spacing requirements for accesses on Class 3 roads as it is too close to the Fourways intersection.

On Jeriko Street, a Class 5 road, the access to the Thembalethu Fire Station and the Bodi commercial area does not meet the access requirements and the access to Thembalethu iHub is within close range of the Thusong Centre access.

3.5 GO GEORGE Services

The routes and stops that the GO GEORGE bus system currently uses are detailed in the following sections.

3.5.1 Stops

The existing GO GEORGE stops in the vicinity of the Fourways Transfer Location are illustrated in Figure 3.20. The bus stops marked in green were used while the bus stops north of the Fourways intersection (bus stops 732, A, B and C) were constructed. Construction of these stops were completed in November 2024. The bus stop without a number (TBC) is a holding bay.

Table 3.6 is a summary of the shelters and configuration of the bus stops in the study area.

Figure 3.20: Existing and temporary GIPTN bus stops

Table 3.6: Bus stop details

Stop No.	Road	Shelter	Bay
732A	Nelson Mandela Boulevard	Yes (under construction)	Indented
732B		Yes (under construction)	Indented
732C		Yes (under construction)	Indented
733		None	In-lane
691		None	In-lane
445	Tabata Street	None	In-lane
1108		None	In-lane
1209	Ngcakani Road	None	In-lane
444		None	In-lane

3.5.2 Routes

Thembalethu will be serviced by 9 mainline and 5 community GO GEORGE routes. The routes that are serving the stops are summarised in Table 3.7 and the schematic is shown in Figure 3.21.

Table 3.7: Existing routes per stop

Stop No.	Stop Name	No. of Routes	Route Name		Route Type
732A	NGCAKANI A	4	4A	CBD - Thembalethu Circle	Mainline
			10F	Thembalethu Circle - Industrial	Mainline

Stop No.	Stop Name	No. of Routes	Route Name		Route Type
			18B	Fourways - Blanco	Mainline
			62A[3]	Jonga - Hospital	Community
732B	NGCAKANI B	3	10R	Thembalethu Circle - Industrial	Mainline
			11	Thembalethu Circle - Mall	Mainline
			62B[3]	Ramaphosa - Hospital	Community
732C	NGCAKANI C	3	4B	CBD – Fourways	Mainline
			18A	Thembalethu Circle - Blanco	Mainline
			62C[3]	Tabata - Hospital	Community
733	NGCAKANI	7	10F	Thembalethu - Industrial	Mainline
			10R	Thembalethu - Industrial	Mainline
			11	Thembalethu Circle - Mall	Mainline
			18A	Thembalethu Circle - Blanco	Mainline
			18B	Fourways - Blanco	Mainline
			57C	Tabata Community	Community
			57E	Ngcakani Community	Community
691	MBEWU	6	10F	Thembalethu - Industrial	Mainline
			10R	Thembalethu - Industrial	Mainline
			11	Thembalethu Circle - Mall	Mainline
			18A	Thembalethu Circle - Blanco	Mainline
			57C	Tabata Community	Community
			62B[3]	Ramaphosa - Hospital	Community
444	NELSON MANDELA B	1	57D	Fourways Community	Community
1209	NGCAKANI	3	57D	Fourways Community	Community
			57E	Ngcakani Community	Community
			62A[3]	Jonga - Hospital	Community
445	NELSON	2	57C	Tabata Community	Community
			57D	Fourways Community	Community
1108	TABATA	1	57D	Fourways Community	Community

To date, only route 18A and 18B (Thembalethu to Blanco) and 10 (Thembalethu to George Industrial) have been rolled out in Thembalethu. The other routes, that will serve Thembalethu in the future but have not been rolled out to date, are summarised in Table 3.8.

Table 3.8: Thembalethu GO GEORGE routes not rolled out

Mainline Routes	Community Routes
4A: Thembalethu - CBD	57A: Jonga Community
4B: Thembalethu - CBD	57B: Ramaphosa Community
11: Thembalethu - Garden Route Mall	57C: Tabata Community
62A Jonga - Hospital	57D: Fourways Community

[3] Routes that operate in the early morning.

Mainline Routes	Community Routes
62B Ramaphosa - Hospital	57E: Ngcakani Community
62C Tabata - Hospital	

The current planning is for these routes to operate between Thembalethu and the CBD and GRM. However, only Routes 4B, 18B, 57C, 57D and 57E are currently planned to stop at the proposed Fourways Transfer Location for the immediate future, Route 11 (Thembalethu – Garden Route Mall) and Route 10 (Thembalethu – Industrial) are planned to also use the transfer location in the future considering growth in demand in the area.

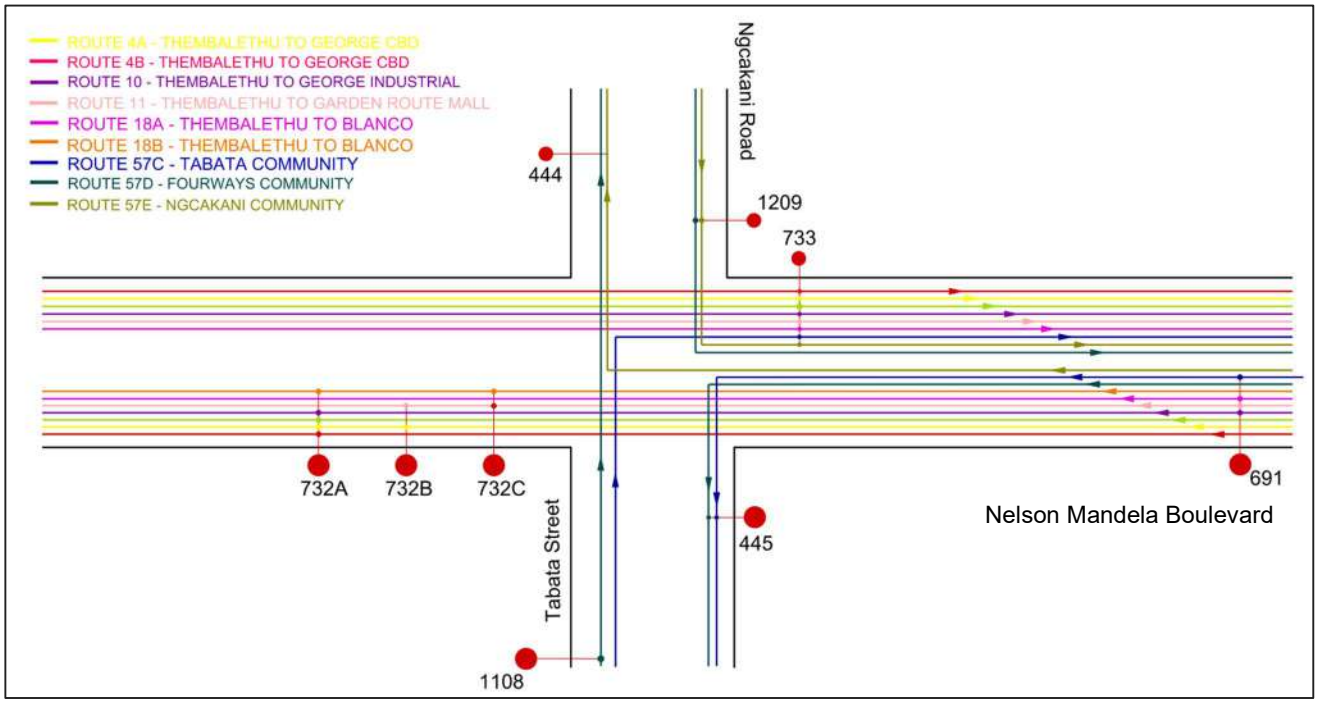


Figure 3.21: Fourways routes and stops (as per current planned operations)

3.5.3 Traffic Counts

Classified traffic counts were conducted at the intersections indicated in Figure 3.22 on Wednesday, 8th of December 2021. The day selected was abnormal as it occurred during the December recess time frame which occurs between last week of November and the first week of January. The counts were collected during the following periods:

- AM peak period (06:00 – 09:00)
- PM peak period (15:00 – 18:00)

Figure 3.22 indicates the locations where the traffic counts were conducted. Other intersections included as part of the study did not have any traffic count data.

Figure 3.22: Traffic survey locations

Figure 3.23 indicates the traffic volumes for 1 hour intervals in the AM and PM periods at each of the intersections in Figure 3.22. Refer to *Appendix C* for full traffic counts. This figure indicates that the peak hour in the AM period was from 06:45 to 07:45 and the PM peak period was from 16:15 to 17:15.

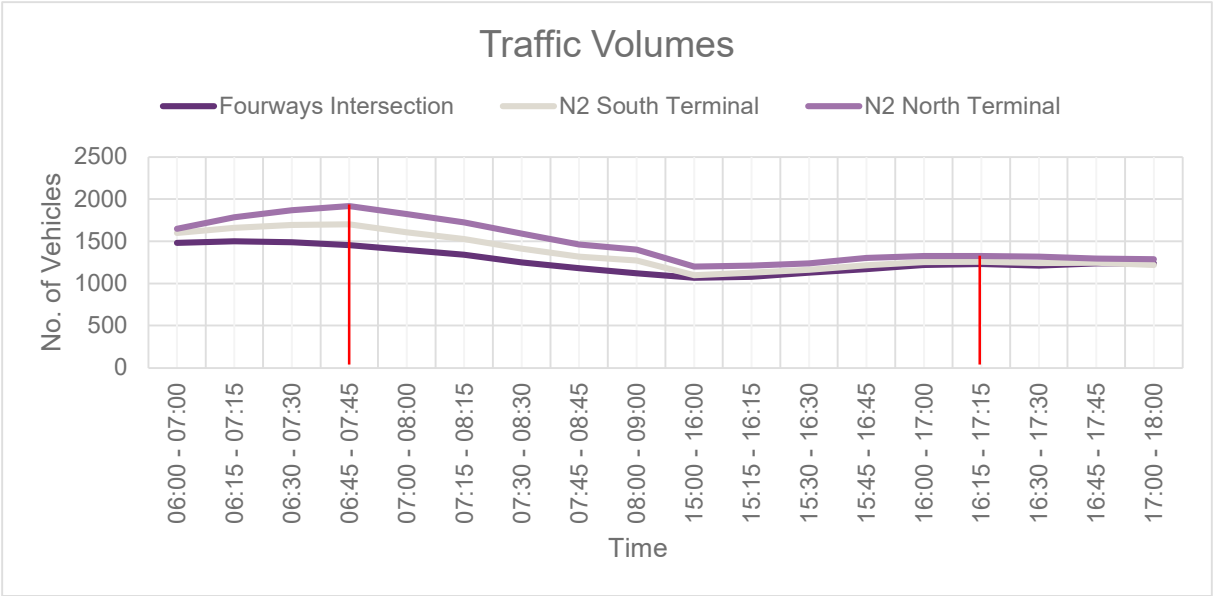


Figure 3.23: Traffic Volume during AM and PM periods

The following can be observed from the traffic count data:

AM Volumes

- There is a clear AM peak hour at all intersections that occurs between 06:45 and 07:45.
- The highest number of vehicles counted at the N2 Southern and Northern Terminals in the peak hour was 1700 vehicles and 1900 vehicles respectively.
- The peak volume at Fourways intersection was approximately 1450 vehicles in the peak hour.

PM Volumes

- The PM peak is less noticeable and more spread out than the AM peak at all intersection and occurs between 16:15 and 17:15.
- The peak hour volume at Fourways intersection and N2 Southern Terminal was approximately 1200 vehicles.

- Peak hour volumes at the N2 Northern Terminal were approximately 1300 vehicles.

The number of vehicles (by class) counted during the AM and PM peak hour, per movement are shown in Figure 3.24 and Figure 3.25 below.

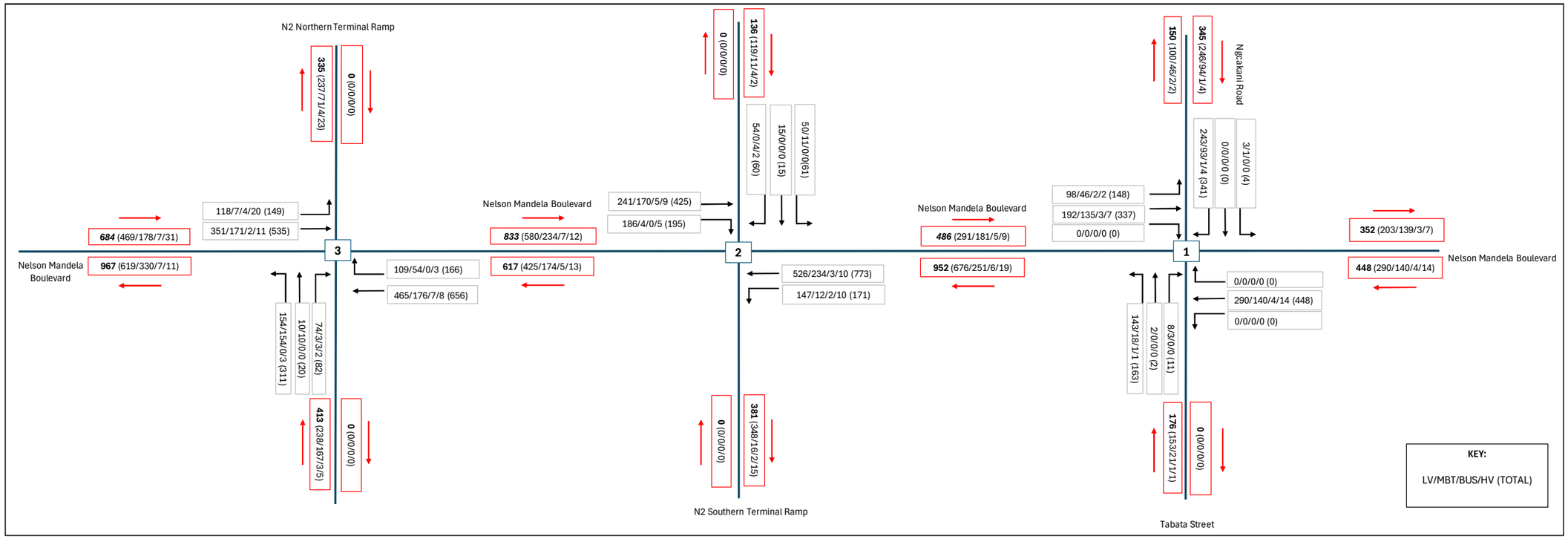


Figure 3.24: AM peak hour traffic movements

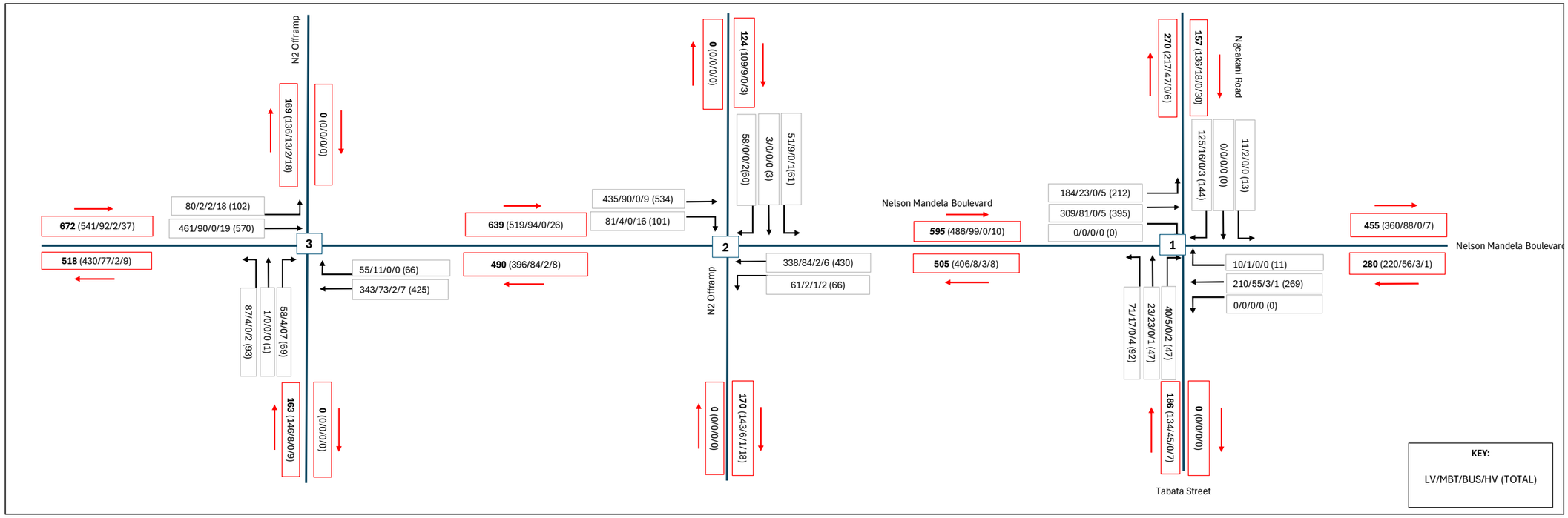


Figure 3.25: PM peak hour traffic movements

The following can be observed from the traffic movements data:

AM Peak Hour Turning and Link Movements

- The major direction of travel is out of Thembalethu towards George CBD.
- Although most vehicles that enter the Fourways intersection enter via the NMB northbound approach, a large proportion of vehicles enter from Ngcakani Road. The most prominent movement at the Fourways intersection is the 448 vehicles (31% being minibus taxi's) travelling northbound from Thembalethu and 341 vehicles also travelling northbound from Ngcakani Road. 337 vehicles enter Fourways intersection to travel southbound towards Thembalethu from the N2 Southern Terminal. Approximately 176 vehicles enter from Tabata of which the majority turn left onto NMB to travel northbound.
- The most prominent movement at N2 Southern Terminal is the northbound movement of 773 vehicles (30% being minibus taxi's) travelling towards the N2 Northern Terminal and of which 425 vehicles continue towards Fourways intersection. A large share of vehicles turns onto the N2 southern on-ramp from NMB northbound and southbound directions (171 vehicles from the northbound direction and 195 vehicles from the southbound direction).
- The most prominent movement at the N2 Northern Terminal is 656 vehicles (27% are minibus taxi's) travelling in a northbound direction on NMB towards George CBD and 535 vehicles travelling in the opposite direction towards N2 Southern Terminal. 311 vehicles turn left from the N2 off-ramp to head towards George CBD. 149 vehicles from NMB northern approach and 166 vehicles from NMB southern approach use the N2 on-ramp towards areas east of George.
- 952 vehicles approach the N2 Southern Terminal (25% of these vehicles are minibus taxi's) from the southern NMB approach. 617 Vehicles exist the N2 Southern Ramp Terminal, heading North towards the N2 Northern Ramp Terminal.

PM Peak Hour Turning and Link Movements

- The major direction of travel is towards Thembalethu with a fairly large number of vehicles also travelling towards George CBD.
- The most prominent movement at the Fourways intersection is 395 vehicles (20% being minibus taxi's) travelling towards Thembalethu from the N2 Southern Terminal and 269 vehicles travelling towards NMB/N2 Southern Terminal from Thembalethu followed by 144 vehicles travelling from Ngcakani Road towards NMB/N2 Southern Terminal.
- The most prominent movement at the N2 Southern Terminal is the southbound movement of 534 vehicles (16% being minibus taxi's) towards Fourways intersection and 430 vehicles towards George CBD. 101 vehicles turn on to the N2 on-ramp from the southbound direction of NMB.
- The most prominent movement at the N2 Northern Terminal is the southbound movement of 570 vehicles (16% being minibus taxi's) towards the N2 Southern Terminal and 425 vehicles headed towards George CBD. 102 vehicles turn on to the N2 on-ramp from the southbound direction of NMB.
- 639 vehicles cross the NMB bridge on the NMB southbound lane to go towards Thembalethu from George CBD (15% of these vehicles are minibus taxi's) and 607 of those vehicles use the southbound leg of NMB to go towards Fourways intersection. 505 vehicles can also be seen using the northbound leg of NMB to go towards the N2 Southern Terminal and 490 of those vehicles cross the NMB bridge to go towards N2 Northern Terminal.

3.6 Pedestrian Counts

On Wednesday, 8th December 2021, pedestrian counts along all legs of three of the intersections mentioned above were carried out during the following periods:

- AM peak period (06:00 – 09:00)
- PM peak period (15:00 – 18:00)

Figure 3.26 indicates the locations where the pedestrian surveys were conducted.

Figure 3.26: Pedestrian survey locations

The peak pedestrian movement per crossing is shown in Figure 3.27 to Figure 3.29 for the AM period and Figure 3.30 to Figure 3.32 for the PM period. Refer to *Appendix C* for full pedestrian counts.

The following can be observed from the pedestrian counts:

AM Volumes and peak hour

- The highest number of pedestrians were counted at the N2 Interchange with approximately 3000 pedestrians in the peak hour. The highest volumes at Fourways intersection are approximately 1311, counted between 6:30 and 07:30.
- There is a distinct AM peak hour at the N2 Interchange while the AM peak hour at Fourways intersection is noticeable but more spread out.
- Combining the pedestrian volumes counted at the 3-intersection indicated that the AM peak occurs between 07:00 and 08:00.

PM Volumes and peak hour

- The highest number of pedestrians were counted at the N2 Interchange with approximately 1950 pedestrians in the peak hour. The highest volumes at Fourways intersection were approximately 1750, counted between 16:45 and 17:45.
- There is a clear PM peak that is aligned for all intersections.
- Combining the pedestrian volumes counted at the 3-intersection indicated that the PM peak (approximately 3900 pedestrians) occurs between 17:00 and 18:00.

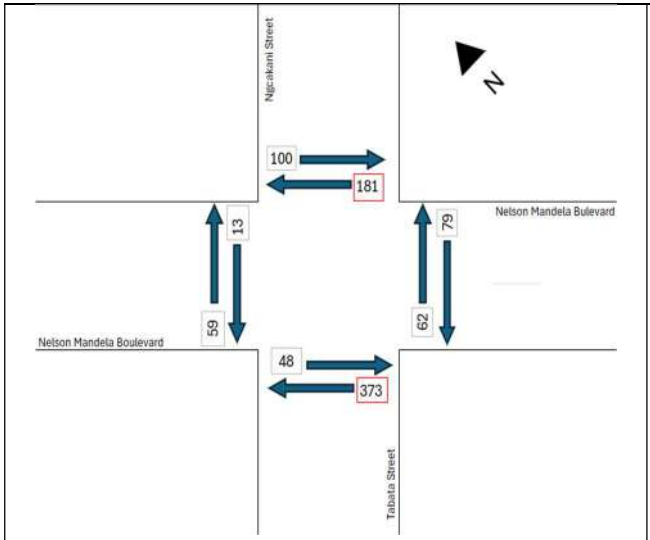


Figure 3.27: AM Peak pedestrian crossing movements Fourways intersection

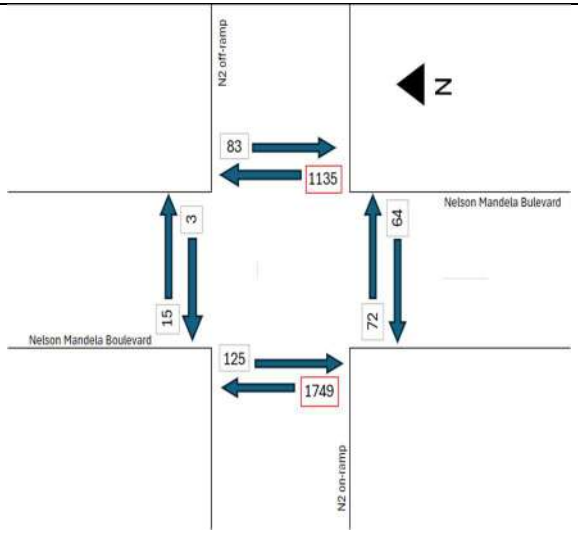


Figure 3.28: AM Peak pedestrian crossing movements N2 Southern Terminal

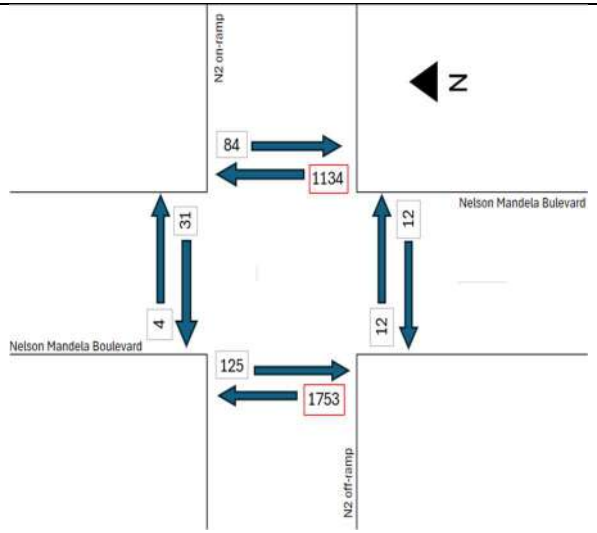


Figure 3.29: AM Peak pedestrian crossing movements N2 Northern Terminal

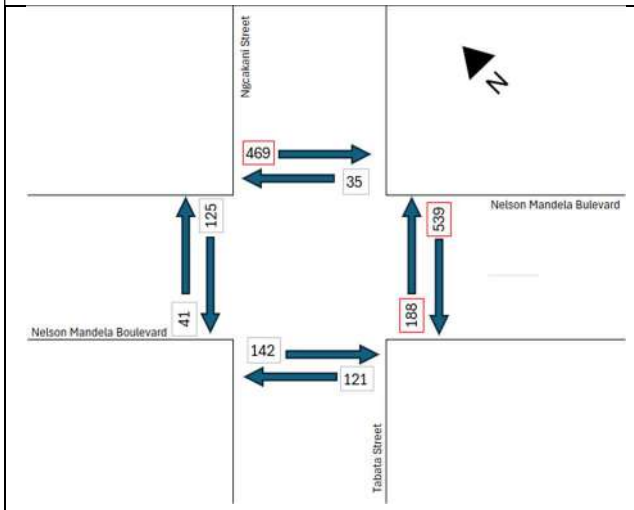


Figure 3.30: PM Peak pedestrian crossing movements Fourways intersection

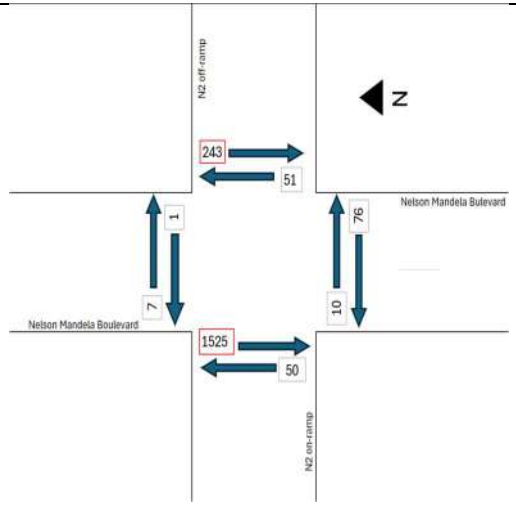


Figure 3.31: PM Peak pedestrian crossing movements N2 Southern Terminal

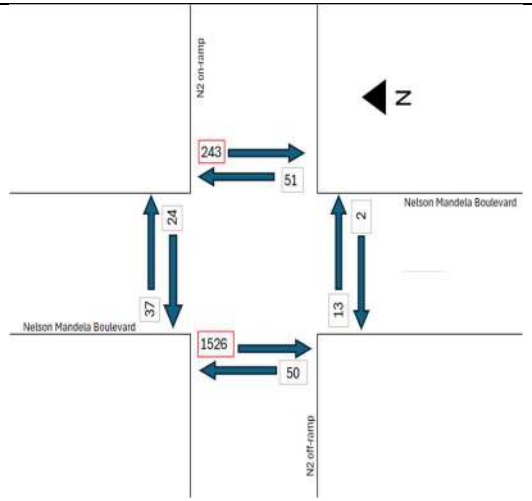


Figure 3.32: PM Peak pedestrian crossing movements N2 Northern Terminal

The following can be observed from the pedestrian movements:

AM Peak Hour Movements

- 1749 and 1134 pedestrians cross the Southern and Northern Ramp Terminals respectively.
- 373 people cross Tabata Street and 181 people cross Ngcakani Road to go towards George CBD or George Industrial.

PM Peak Hour Movements

- 1525 and 243 people cross the NMB/N2 bridge to go towards Thembalethu.
- 469 people cross Ngcakani Road at The Fourways Intersection to go to Thembalethu or the commercial area. 539 and 125 people cross NMB, walking towards Tabata Street or areas south of NMB. 188 and 44 people cross NMB to go to areas to north of NMB.

3.7 Road Authority

Due to its close proximity to the National Route 2 (N2), a portion of NMB falls within SANRAL's jurisdiction as shown in Figure 3.33. The remainder of NMB is a municipal road.

Figure 3.33: SANRAL road reserve (limits of responsibility)

4 Vissim Modelling

The modelling methodology consisted of developing a PTV Vissim[4] microscopic model for a study area in Thembalethu, specifically around the proposed Fourways location. The 2023 Comprehensive Integrated Transport Plan (CITP) Visum[5] model served as a foundation for extracting the base model demand. This demand includes trip generation, distribution and mode choice information which are represented in various OD matrices. The GO GEORGE public transport system's demand, routing and scheduling were included in the Vissim model using data provided by the Systems Planning team[6] and the Contracting Authority.

This model was then assessed for compliance with the calibration and validation criteria set out in the Western Australia Operational Modelling Guidelines. PTV Visum was used for generating the road network, the estimation of future traffic volumes, and initial dynamic assignments while PTV Vissim was used for operational assessment via detailed microsimulation modelling.

To assess the impacts of new infrastructure and developments on the existing road network in Thembalethu, multiple scenarios were identified and tested through the Vissim model. These include the evaluation of the proposed extension of the Fourways Transfer Location in Thembalethu, and the potential effects of new developments planned along NMB. Sensitivity analyses were also conducted to determine whether the Transfer Location will have sufficient capacity to meet projected demand over the next five years. Furthermore, a worst-case scenario, including the impact of a roundabout was modelled to understand its implications for system efficiency and network performance.

4.1 Scenario Testing and Demand Estimation

Multiple scenarios were modelled in Vissim to assess the impact of:

1) The Fourways Transfer Location and the extension thereof;
2) The Ilisolethu Interchange Gateway Development;
3) Different access arrangements; and
4) Different intersection controls (signal/stop controlled/roundabout).

A summary of the scenarios and the PV and PT demand assumptions are shown.

In all these scenarios non-motorised (pedestrian) and vehicular traffic were modelled.

- Scenarios labelled *"A"* refer to networks without the proposed extended Transfer Location. Transfers will occur on-street between the stops on NMB, Tabata Street and Ngcakani Road.
- Scenarios labelled *"B"* refer to networks with the proposed extended Transfer Location.

The analysis focused on the AM peak hour between 06:45 and 07:45, with each scenario incorporating a 15-minute warm-up period that is excluded from the final evaluation of results.

[4] Vissim refers to the traffic simulation software that traffic engineers use to model traffic patterns at an intersection level.

[5] Visum refers to the transport planning software that transport engineers and planners use to model travel patterns at a macroscopic level.

[6] Systems Planning team refers to the individuals who work for GO GEORGE, specifically tasked with the operational management of the GO GEORGE Service: timetabling, fleet, demand, etc.

Table 4.1: Modelling scenarios with PT and PV demand assumptions

Scenario	Horizon	Description	PT Demand	PV Demand
Scenario 0A	Base year	2023 CITP base model + Phase 4A Route 18A	2023 CITP Model	2023 CITP Model
Scenario 1A	Base year	2023 CITP base model + All Phase 4A Routes	2023 CITP Model + Phase 4A PT[7]	2023 CITP Model
Scenario 1B	Base year	2023 CITP base model + All Phase 4A Routes	2023 CITP Model + Phase 4A PT	2023 CITP Model
Scenario 3A	Base year	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development[8]	2023 CITP Model + Phase 4A PT	2023 CITP Model + Ilisolethu demand
Scenario 3B	Base year	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development	2023 CITP Model + Phase 4A PT	2023 CITP Model + Ilisolethu PV demand
Scenario 3A_5Y	5-year demand	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development	2023 CITP Model + Phase 4A PT + Ilisolethu PT demand[8] + 5% PT growth	2023 CITP Model + Ilisolethu demand
Scenario 3B_5Y	5-year demand	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development	2023 CITP Model + Phase 4A PT + Ilisolethu PT demand[8] + 5% PT growth	2023 CITP Model + Ilisolethu PV demand
Scenario 5B_5Y	5-year demand	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development + 4-Way Stop Fourways	2023 CITP Model + Phase 4A PT + Ilisolethu PT demand[8] + 5% PT growth	2023 CITP Model + Ilisolethu PV demand
Scenario 6A_5Y	5-year demand	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development and PT demand + Fourways roundabout	2023 CITP Model + Phase 4A PT + Ilisolethu PT demand[8] + 5% PT growth	2023 CITP Model + Ilisolethu PV demand

To estimate the future PV and PT demand, GO GEORGE timetables and the Ilisolethu Development proposed land use were used to calculate the future PV and PT trips (refer to Section 0). The additional trips were then added to the CITP base and 5-year scenarios (Scenarios 3, 5 and 6).

[7] Based on Phase 4A planned timetables available.

[8] Project 2 of the Ilisolethu development is in close proximity to the Fourways Transfer Location, for this reason, the trips generated by Project 2 were added to the existing network (Scenario 3, 5 and 6). The proposed Transfer location will form part of Project 11. Project 11 (and its proposed land uses) was therefore also considered.

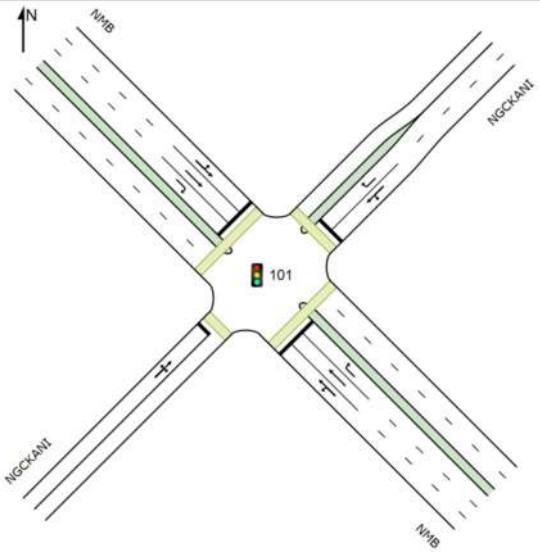
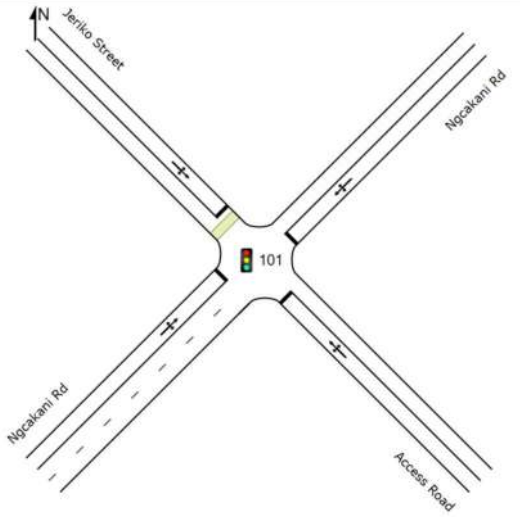
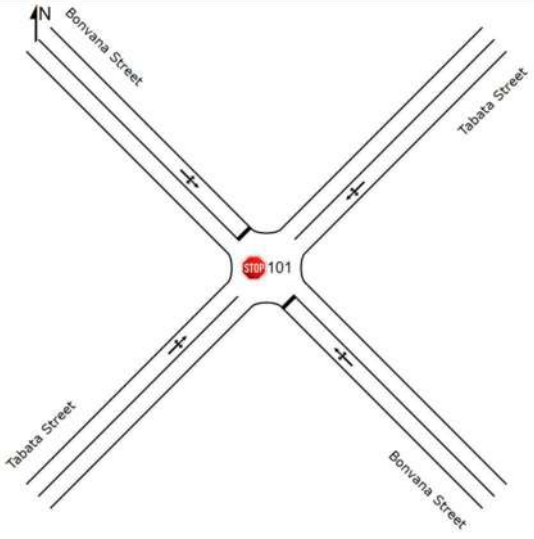
4.2 Assumptions

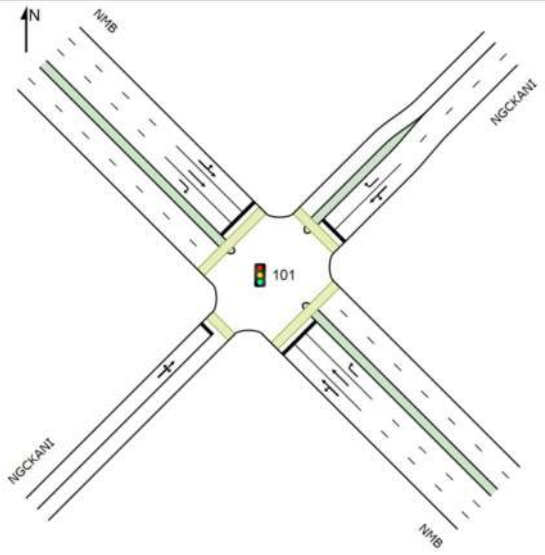
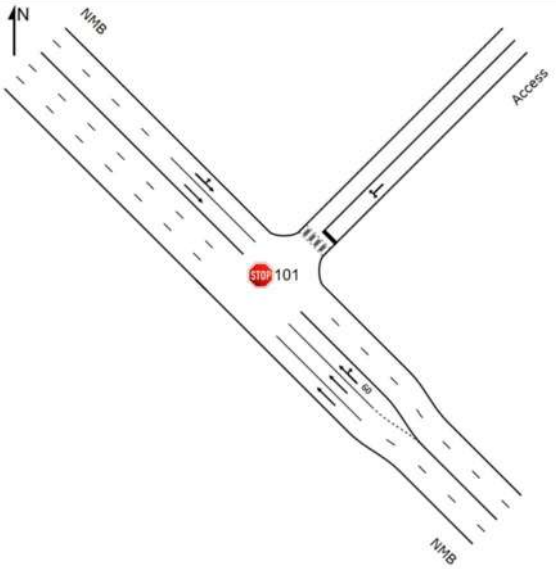
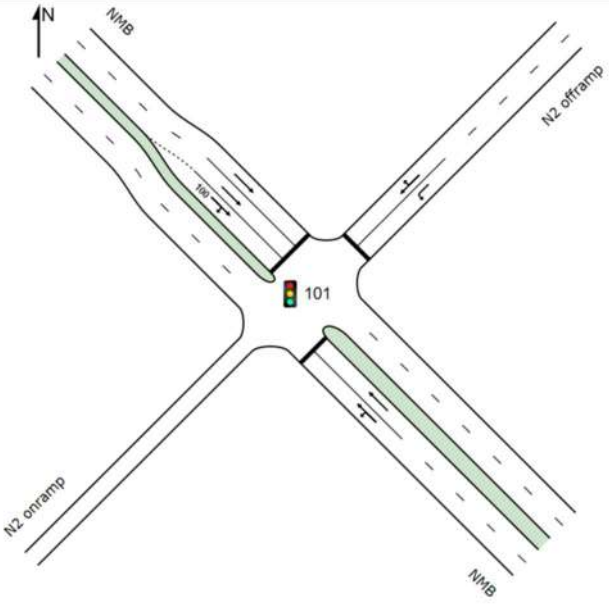
The following assumptions were made during the development of the Vissim model and analysis:

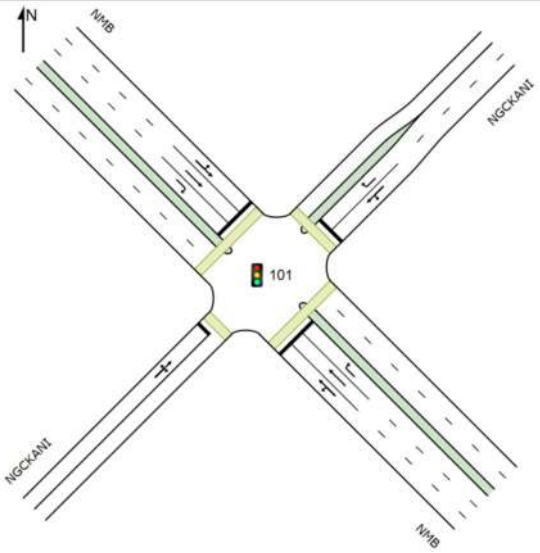
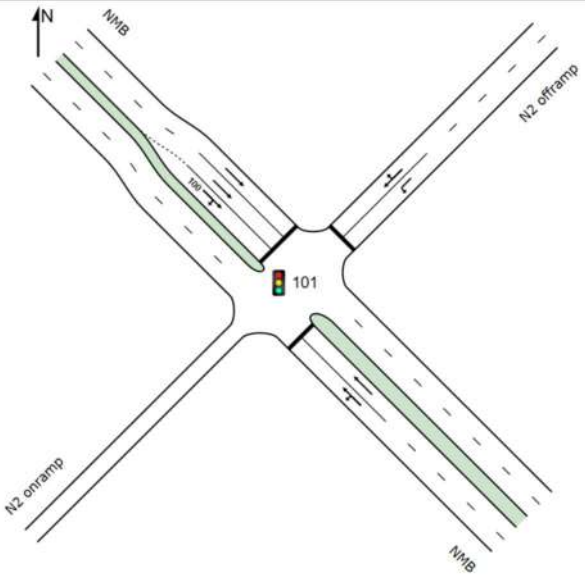
- The model inputs are based on the approved plans and GO GEORGE routing provided by the Contracting Authority, as detailed in previous sections. However, additional design elements have been introduced within the model to more accurately reflect the proposed road network.
- A private vehicle cost penalty has been applied to Jeriko Street to more accurately present the expected travel pattern through the street, adding unnecessary high volumes of traffic along this section would interfere with the operations at the Fourways Transfer Location. In practice this would be achieved through applying traffic calming measures.
- For the Ilisolethu development scenarios, the slip lane access from NMB has been incorporated, along with a two-way access road towards Ilisolethu. The purpose of this link is to improve permeability within the area and provide better connectivity to the surrounding developments.
- The N2 Interchange and Fourways intersection are signalised in both the base model and the scenarios that include the transfer location, with speed limits set at 60km/h for private vehicles and 50km/h for busses along NMB.
- The intersection at Jeriko Street and Ngcakani Road is also signalised for the scenarios that include the transfer location. The traffic signals are synchronised with the Fourways intersection to prioritise the movement of GO GEORGE busses. To account for the anticipated increase in public transport trips, a 50/50 split between GO GEORGE and minibus taxis (MBT) was assumed.
- Scenario 5B represents the worst-case scenario, designed to account for the Fourways signal being out of order and the intersection operating as a four way stop control. The model includes parameters for driver errors, reflecting a temporary lapse in attention while driving. It is assumed that this occurs with a 40% probability, lasting for a duration of 5 seconds.

4.3 Intersection Layout

This section shows Sidra layouts for the six critical intersections. These are the layouts built into the Visum network.

Intersection Roads		Intersection Control Type	Geometric Layout
Nelson Mandela Boulevard	Tabata Street & Ngcakani Road	Fully Signalised intersection	
Ngcakani Road	Jeriko Street	T-junction (stop on Jeriko Street)	
Tabata Street	Bomvana Street	Stop Minor Road	

Intersection Roads		Intersection Control Type	Geometric Layout
Nelson Mandela Boulevard	Tabata Street & Ngcakani Road	Fully Signalised intersection	
Nelson Mandela Boulevard	Taxi Rank Access	Stop on access Road	
Nelson Mandela Boulevard	N2 Southern Terminal	Fully Signalised intersection	

Intersection Roads		Intersection Control Type	Geometric Layout
Nelson Mandela Boulevard	Tabata Street & Ngcakani Road	Fully Signalised intersection	
Nelson Mandela Boulevard	N2 Northern Terminal	Fully Signalised intersection	

4.4 Trip Generation

The trips expected to be generated by the Ilisolethu Projects were calculated in the *Works Package 8 Draft Access Study/Transportation Impact Assessment* prepared by EAS/Sturgeon (February 2023). Table 4.2 was extracted from this report and shows the land use and PT and PV trips generated by Project 2 and Project 11.

Table 4.2: AM Peak Hour Trips Generated by Ilisolethu Project 2 and Project 11

Project	Land Use	GLA/Units	Mode			
			PT		PV	
			In	Out	In	Out
Project 2	Factory Shops (Retail)	9280	20	46	68	135
	Flats	1247				
Project 11	Clinic	2068	6	4	19	12
	Institution	2757				
	Neighbouring Shops (Retail)	2068				

The trips generated by Project 2 and 11, the existing background traffic and bus trips were added to the Vissim network.

5 Vissim Results and Interpretation

The Vissim micro-modelling results provide a comprehensive analysis of overall vehicle network performance, including average delay, average speed, and average travel distance across the network. At a nodal level, key intersections within the study area are evaluated based on level-of-service (LOS), maximum queue lengths, and total traffic volume. Detailed turn visualisations of the LOS at intersections highlights the operational performance of turning movements, offering insights into traffic flow efficiency and potential areas for improvement.

5.1 Evaluation Criteria

The evaluation criteria considered for the scenario analyses are the following:

- Overall vehicle network performance:
    - Average delay
    - Average speed
- Nodal analysis per intersection within the study area:
    - Level of service
    - Average and maximum queue lengths
    - Total volume throughput

Level-of-service (LOS) is a key performance metric used in traffic engineering to evaluate the operational efficiency of roadways and intersections. It quantifies traffic conditions based on the average delay experienced by vehicles within a specified area, into a simple grading system. LOS is typically categorised into six levels ranging from LOS A to LOS F, each representing different levels of service.

Table 5.1 and Table 5.2 provide specific LOS criteria for signalised and unsignalised intersections, respectively. These tables outline the threshold delay times associated with each LOS category. LOS A represents ideal conditions with minimal delay, while LOS F indicates highly congested conditions with excessive delay, showing a need for capacity improvements or operational changes. Up to LOS D is considered to be acceptable.

Table 5.1: Level of Service Criteria for signalised intersections

Level of Service	Average Control Delay (seconds/vehicle)	General Description
A	≤10	Free Flow
B	>10 – 20	Stable Flow (slight delays)
C	>20 – 35	Stable flow (acceptable delays)
D	>35 – 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 – 80	Unstable flow (intolerable delay)
F[1]	>80	Forced flow (congested and queues fail to clear)

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.

1. If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0 LOS F is assigned to the individual lane group. LOS for overall approach or intersection is determined solely by the control delay.

Table 5.2: Level of Service Criteria for unsignalised intersections

Level of Service	Average Control Delay (seconds/vehicle)
A	0 – 10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F[1]	>50

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.
1. If the volume-to-capacity (v/c) ratio exceeds 1.0, LOS F is assigned an individual lane group for all unsignalized intersections, or minor street approach at two-way stop-controlled intersections. Overall intersection LOS is determined solely by control delay.

5.2 Overall Network Analysis

This section presents the results from various scenario simulations, focusing on the overall network performance. Key performance indicators such as average delay and speed will be highlighted to assess the efficiency and effectiveness of the road network under different conditions. These metrics offer a comprehensive view of the operational performance of the network under varying traffic demands and infrastructure changes.

To enhance the reliability and accuracy of the results in Vissim, each scenario within the model was simulated 10 times and the average results presented. This process accounts for the inherent variability of traffic behaviour by running multiple iterations with different random seeds. Running the model 10 times helps achieve convergence, meaning that the results become consistent across iterations. This reduces the risk of outliers skewing the results. The more runs simulated, the closer the model gets to representing the true conditions of the road network. Figure 5.1 below indicates the extent of the Vissim model.

Figure 5.1: Extent of Vissim modelling network

5.2.1 Average Delay and Speed

The average delay measures the additional time vehicles experience beyond free flow conditions, providing insight into congestion levels and the impact of traffic flow disruptions. The delay measures the difference between actual travel times and free-flow travel times. Vissim records the delay for each vehicle that stops at an intersection and calculates the average delay per vehicle for the entire simulation period and across the

modelled network. The average speed reflects the ease with which vehicles are able to travel through the network, offering a direct comparison of traffic efficiency across the scenarios.

The modelling results showed that:

- The average delay in the network increases slightly for all the scenarios, except scenario 5B, when compared to the base network (Scenario 0A). This is mostly due to the increase in demand because of Ilisolethu developments and GO GEORGE routes for Phase 4A, although the additional busses would reduce some of the private vehicles and MBT's demand on the network.
- The average speed remains relatively consistent across most scenarios, except for Scenario 5B, which has a 33% reduction in speed, driven by the same factors contributing to the increased delay discussed above.
- Scenario 5B has a 295% increase in delay and a 33% decrease in speed due to the four-way stop control at Fourways and the inclusion of non-compliance factors to simulate driver behaviour. This indicates that Scenario 5B performs the worst and should be avoided.

5.3 Nodal Analysis

In this section, key intersections within the study area are assessed using a variety of traffic performance metrics to gain a detailed understanding of how each intersection functions under different scenarios. The evaluation focuses on three main indicators:

1. Level-of-service (LOS): The LOS helps identify intersections where capacity issues may arise and where operational improvements are needed. Refer to Section 5.1.
2. Average queue lengths: This measures the average number of vehicles waiting at an intersection during the peak period. It reflects traffic buildup and the efficiency of intersection control systems, such as traffic signals or stop signs. Monitoring queue lengths helps to identify bottlenecks and areas where traffic may back up, potentially spilling over into adjacent intersections.

Figure 5.2 indicates the location of the intersections within the study area. Queue length per approach is shown in *Appendix E.* Table 5.3 provides a summary of the LOS and queue length at each of the study intersections for the different scenarios.

Figure 5.2: Vissim Study Intersections

Table 5.3: LOS and Queue Length

Intersections		Table 5.4: LOS & Queue Length								
		Scenario								
		0A	1A	1B	3A	3B	3A_5Y	3B_5Y	5B_5Y	6A_5Y
		2023 CITP base model + Phase 4A Route 18A	2023 CITP base model + All Phase 4A Routes (without Transfer Location)	2023 CITP base model + All Phase 4A Routes (with Transfer Location)	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development (without Transfer Location)	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development (with Transfer Location)	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development (without Transfer Location)	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development (with Transfer Location)	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development (with Transfer Location) + Fourways 4-way stop	2023 CITP base model + All Phase 4A Routes + Ilisolethu Development and PT demand + Fourways roundabout
Fourways	LOS	C	C	C	C	C	D	C	F	C
	Average queue length [m]	28	20	10	21	15	25	22	202	15
Ngcakani Road / Jeriko Street	LOS	A	C	A	A	B	B	B	F	B
	Average queue length [m]	1	4	3	2	7	7	5	95	4
Tabata Street/ Bomvana Street	LOS	A	A	A	A	A	A	A	C	A
	Average queue length [m]	1	1	1	1	1	1	1	4	1
Taxi Rank Access	LOS	A	A	A	A	A	A	A	F	A
	Average queue length [m]	1	1	3	4	1	1	1	15	1
N2 Southern Terminal	LOS	A	A	A	A	A	A	A	C	A
	Average queue length [m]	8	7	7	7	7	6	6	27	9
N2 Northern Terminal	LOS	C	C	C	C	C	C	C	E	C
	Average queue length [m]	21	20	18	17	18	17	17	66	17
GO GEORGE transfer location	LOS	N/A	N/A	A	N/A	A	N/A	D	F	N/A
	Average queue length [m]			2		4		4	78	

From the results shown in Table 5.3:

- Scenario 0A: All the key intersections perform well for the base year, demonstrating acceptable levels of service (LOS). This is mostly attributed to the upgrades implemented at the Fourways intersection and the N2 Interchange on NMB

- Scenario 1A: This scenario includes the rollout of all GO GEORGE mainline and community bus routes across the network. In this scenario, the absence of extended transfer location as proposed means that busses are routed along Ngcakani Road. As a result, increased traffic along Ngcakani Road creates additional congestion, as the road must accommodate both public transport and general vehicle traffic without the relief of a transfer hub to streamline bus operations. The added volumes, combined with frequent stops for boarding and alighting, increase queuing in the area. This highlights the importance of dedicated transfer facilities in managing traffic flow on critical corridors such as NMB and Ngcakani Road.

- Scenario 1B: The rollout of GO GEORGE bus routes does not negatively impact the Fourways intersection since busses are diverted through the extended transfer location, effectively reducing southbound queue lengths at the intersection. There is a change in signal settings to prioritise the GO GEORGE service, this also aims to mitigate long queue lengths building up on Ngcakani Road.

- Scenario 3A: This scenario incorporates the Ilisolethu development's traffic demand and proposed road network, including the modelled access from NMB, which helps alleviate traffic congestion at Fourways.

- Scenario 3B includes both the extended Fourways transfer location and the Ilisolethu development. The increase in bus volume reflects slightly longer queues and a degraded level-of service at intersections along Ngcakani Road, but they are all within acceptable LOS.

- Scenario 3A_5Y accounts for increased demand from planned developments along NMB by adding GO GEORGE trips, accounting for a 5% increase in passenger demand. The LOS slightly deteriorates compared to the base year, which is expected but was mitigated through signal optimisation along NMB.

- Scenario 3B_5Y: In Scenario 3B_5Y, additional GO GEORGE trips are routed through the extended transfer location stops at Jonga, and along NMB. The increase in passenger demand and subsequent increase in dwell times for boarding and alighting, worsens the LOS at the transfer location, but the intersections are all within acceptable LOS range.

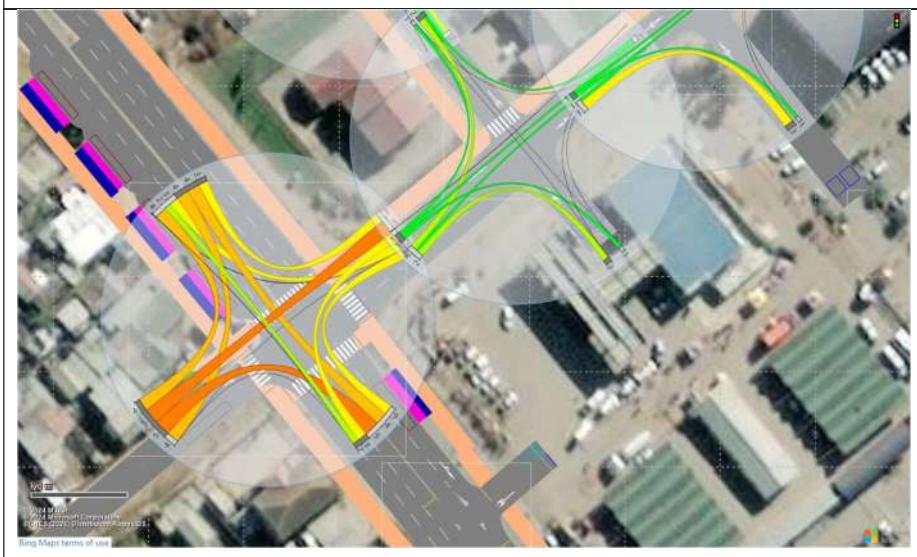
- Scenario 5B_5Y: Scenario 5B is the worst-case scenario that simulates a 4-way stop at Fourways. The resulting LOS and queue lengths degrade significantly, with many intersections reaching LOS F, indicating severe congestion and gridlock, and many vehicles unable to complete trips within the peak period. This is a scenario that should be avoided at all costs.

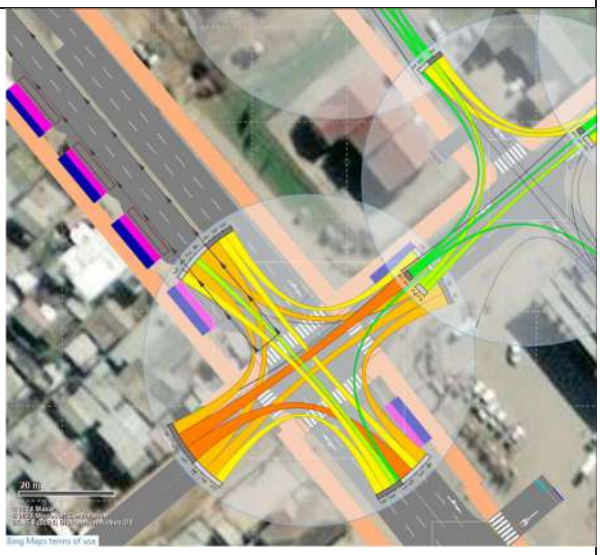
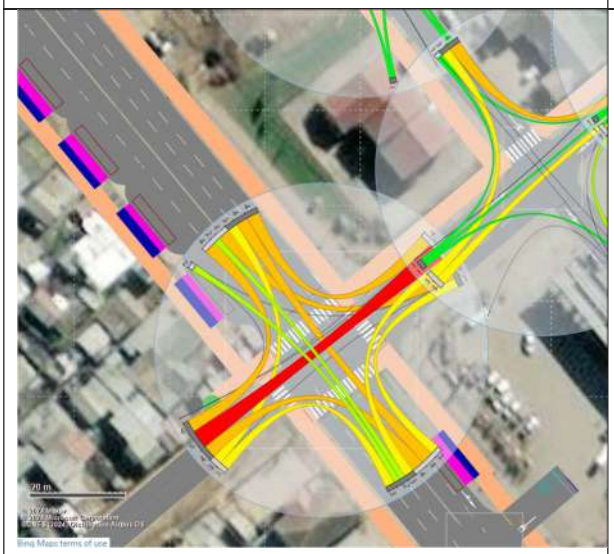
- Scenario 6A_5Y: Finally, Scenario 6A, which tests a 5-year sensitivity with a roundabout at Fourways, shows improved traffic operations and reduced queue lengths at key intersections, despite the added demand from the Ilisolethu Gateway Developments. However, it is important to consider pedestrian safety which could be compromised due to the increased turning radii introduced by the roundabout geometry. The impact of a roundabout, specifically on pedestrians, will be discussed in Section 5.5.

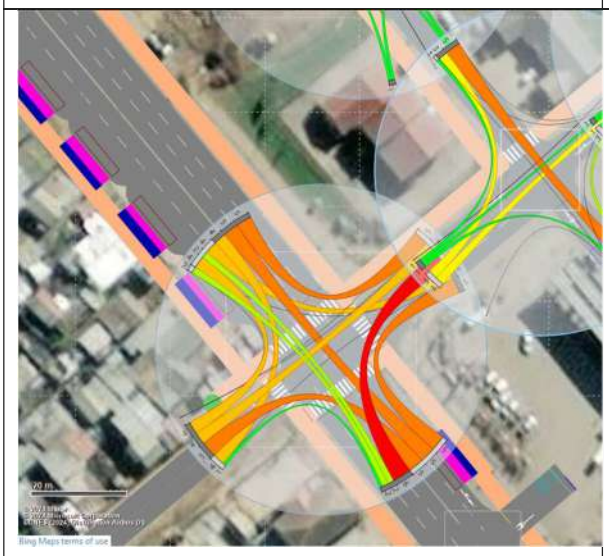
5.4 Turn visualisation LOS at Fourways

The LOS of each turn movement provides a detailed analysis of how each specific turning movement at the Fourways intersection performs, rather than assessing the overall intersection. Turn visualisation highlights the level-of-service (LOS) for each approach, identifying movements that experience higher delays or congestion due to factors such as lane capacity, the location of bus shelters, or infrastructure upgrades. The identification of the LOS per turning movement makes it easier to prioritise certain movements for optimisation, whether it involves adjusting signal timing, enhancing lane capacity or modifying the intersection layout. This approach helps to achieve a more balanced LOS for each movement at critical intersections. Table 5.5 below illustrate the turning movement LOS for Fourways and Ngcakani / Jeriko Street intersections per scenario.

Table 5.5: Intersection turn visualisation

Scenario 0A: Base network, status quo	
	LOS A LOS B LOS C LOS D LOS E LOS F
Overall this intersection operates at LOS C Movements from Tabata Street experiencing the worst LOS: o Left turn onto NMB North – LOS D o Straight through to Ngcakani Road – LOS E o Right turn onto NMB South – LOS E	

Scenario 1A: Base network, with GO GEORGE Phase 4A	**Scenario 1B: Base network, with GO GEORGE Phase 4A, and transfer location**
	
Overall this intersection operates at LOS C Movements from Tabata Street experiencing the worst LOS: ○ Left turn onto NMB North – LOS D ○ Straight through to Ngcakani Road – LOS D ○ Right turn onto NMB South – LOS F	Overall this intersection operates at LOS C Movements from Tabata Street experiencing the worst LOS: ○ Left turn onto NMB North – LOS D ○ Straight through to Ngcakani Road – LOS E ○ Right turn onto NMB South – LOS E
Scenario 3A: Base network, without transfer location, with Ilisolethu development	**Scenario 3B: Base network, with transfer location and Ilisolethu development**
	
Overall this intersection operates at LOS C Movements from Tabata Street experiencing the worst LOS: ○ Left turn onto NMB North – LOS D ○ Straight through to Ngcakani Road – LOS F ○ Right turn onto NMB South – LOS D	Overall this intersection operates at LOS C Movements from Tabata Street experiencing the worst LOS: ○ Left turn onto NMB North – LOS E ○ Straight through to Ngcakani Road – LOS E ○ Right turn onto NMB South – LOS B

Scenario 3A: 5-year demand, without transfer location, with Ilisolethu development	**Scenario 3B: 5-year demand, with transfer location and Ilisolethu development**
	
Overall this intersection operates at LOS D Movements from NMB North experiencing the worst LOS: o Left turn onto Ngcakani Road – LOS E o Straight through to NMB South – LOS E o Right turn onto Tabata Street – LOS D	Overall this intersection operates at LOS C Movements from Tabata Street experiencing the worst LOS: o Left turn onto NMB North – LOS E o Straight through to Ngcakani Road – LOS D o Right turn onto NMB South – LOS F
Scenario 6A: 5-year demand, roundabout at Fourways, without transfer location, with Ilisolethu development	Scenario 5B: 5-year demand, 4-way stop sign intersections (worst case), with transfer location and Ilisolethu development
	
Overall this intersection operates at LOS C Movements from NMB North experiencing the worst LOS: o Left turn onto Ngcakani Road – LOS E o Straight through to NMB South – LOS E o Right turn onto Tabata Street– LOS D	Overall this intersection operates at LOS F Movements from NMB South and Tabata Streetexperiencing the worst LOS: o All movements – LOS F

5.5 Discussion

This section discusses the results from the analysis carried out in this chapter. Intersections 1 to 7 form part of a network where the performance of an intersection influences upstream and downstream intersections. For this reason, intersection performance cannot be evaluated in isolation and the overall network performance must also be considered with the intersection performance.

5.5.1 Scenario Comparison

- **Testing the impact of the Extended Transfer Location - Comparing Scenarios 0A, 1A and 1B**:

  At an intersection level, the LOS at Jeriko Street/ Ngcakani has decreased from LOS A in the base scenario (Scenario 0A) to LOS C in Scenario 1A which includes all Phase 4A routes. This decline in LOS is due to the additional pressure placed on Ngcakani as busses are routed through it without the benefit of the transfer location. However, in Scenario 1B where the transfer location is implemented, the LOS remains at LOS A as the facility helps distribute the busses more efficiently. The other intersections are similar between Scenarios 0A, 1A and 1B in terms of LOS and average queue length.

- **Testing the impact of the Ilisolethu Development (with the extended Transfer Location as proposed) - Comparing Scenarios 1B, 3B and 3B_5Y**:

  When the Ilisolethu development traffic is added to the model (Scenarios 3A and 3B) the average delay increases by 2 and 0.5 seconds respectively. Comparing the results of Scenario 1B and 3B (both with the TL) indicates that the additional Ilisolethu development traffic has no effect on the delay experienced. When the 5Y demand is tested the delay increases by 3 seconds (from 66.9 sec to 69.8 sec). The average speed remains unchanged with the addition of the Ilisolethu development due to the operational efficiency of the transfer location. Comparing the results of Scenario 1B and 3B (both with the TL) indicates that the Ilisolethu development traffic has no effect on the travel speed. When the 5Y demand is tested the speed decreases slightly by 0.8km/h.

  At an intersection level, the LOS and average queue length for all study intersections remain consistent between Scenarios 1B, 3B and 3B_5Y. There are however differences in operations within the transfer location in the 5-year scenario (Scenario 3B_5Y). While the transfer location operates at LOS A in both Scenario 1B and 3B, the LOS worsens to LOS C at Fourways in Scenario 3B_5Y due to the additional bus services introduced to accommodate the developments planned along NMB. LOS is however considered to be acceptable.

- **Testing the impact of the Ilisolethu Development (without the extended Transfer Location) - Comparing Scenarios 1A, 3A and 3A_5Y**:

  At an intersection level, the LOS and average queue length for most study intersections remain consistent between Scenarios 1A and 3A. However, a comparison of the LOS at Fourways reveals a decline from LOS C in Scenario 1A to LOS D in Scenario 3A_5Y and a slight increase in queue length. This is a result of the additional vehicles introduced to accommodate the developments planned in the five-year scenario within the study area.

- **Testing the impact of the signals at Fourways being out of order and the intersection effectively operating as stop-controlled intersection (Scenario 5B_5Y)**

  At an intersection level, the impact of the signals being out of order and operating as stop-controlled intersections is detrimental to the level-of-service at all the study intersections. The

locations that are most affected (LOS F) in order of most severe includes Fourways, Jeriko Street / Ngcakani Road, GO GEORGE transfer location access, and the taxi rank access.

- **Testing how the network and intersections will perform if the Fourways intersection is converted to a roundabout (comparing Scenarios 3A_5Y and 6A_5Y)**

  With Fourways converted to a roundabout (Scenario 6A_5Y) the average delay is reduced by 8%, and consequently the average speed increased, when comparing the results to the scenario with the proposed signalised intersection layout (Scenario 3A_5Y).

  At an intersection level, Fourways improves from LOS D to LOS C and the average queue length also decreases by 10m. The other intersections are similar between Scenarios 3A_5Y and 6A_5Y in terms of LOS and average queue length.

  However, a roundabout is not preferred since it is located in a pedestrian heavy area and pedestrian safety can be compromised due to the increased turning radii which allows for higher speeds as vehicles approach the roundabout. Roundabouts can complicate navigation at busy intersections, which could cause frustration among pedestrians and drivers and lead to conflicts. Although roundabouts can improve traffic flow, they may not always accommodate high volumes of vehicles effectively and may favour certain approaches over others that have longer queue lengths. This can result in longer delays for vehicles entering the roundabout.

5.5.2 Intersection Analysis

This section describes the results from the various intersection analysis.

- **Fourways:** When the Fourways Transfer Location is introduced, the LOS remains at LOS C, except for Scenario 3A_5Y which worsens to LOS D due to the additional vehicles added to the network to accommodate the demand created by the proposed developments. LOS D is still within the acceptable LOS for signalised intersections. As can be expected, this intersection operates at LOS F when converted to a stop-controlled intersection or when signals are out of order.
- **Ngcakani Road / Jeriko Street:** With the transfer location in place and operational, this intersection will be converted to a signalised intersection which will be synchronised with the Fourways signal settings – the reason for this being to minimise delay, allowing busses to leave the transfer location and enter turn onto NMB. Without the transfer location, this intersection would remain a stop-controlled intersection. With all Phase 4A routes operational, this intersection will operate at LOS C. With Fourways intersection and Jeriko Street intersection stop control both intersections operate at LOS F. This intersection operates at LOS A and B in all other scenarios.
- **Tabata Street / Bomvana Street**: Operates at LOS A in all scenarios except for Scenario 5B_5Y where Fourways intersection is stop controlled, in which case the LOS deteriorates to LOS C.
- **Taxi Rank Access:** Operate at LOS A, except for the situation where the Fourways operates as a 4-way stop-controlled intersection (Scenario 5B_5Y). In this case this intersection operates at LOS F.
- **N2 Southern Terminal:** This intersection operates at LOS A in all scenarios except the situation where Fourways intersection is stop controlled, in this case the LOS deteriorate to LOS C.
- **N2 Northern Terminal:** Operate at LOS C in all scenarios except the situation where Fourways is stop controlled, in this case the LOS deteriorate to LOS E.

- **GO GEORGE Transfer Location:** Operate at LOS A in base year scenarios. In the 5-year scenario (Scenario 3B_5Y) the transfer location operates at LOS D due to the additional busses required for the expected demand from the developments in Thembalethu.

6 Development Detail

The proposed Fourways Transfer Location extension as envisaged on Erven 7048, 7047, 7046 and 7045 Tyolora is reflected in Figure 6.1.

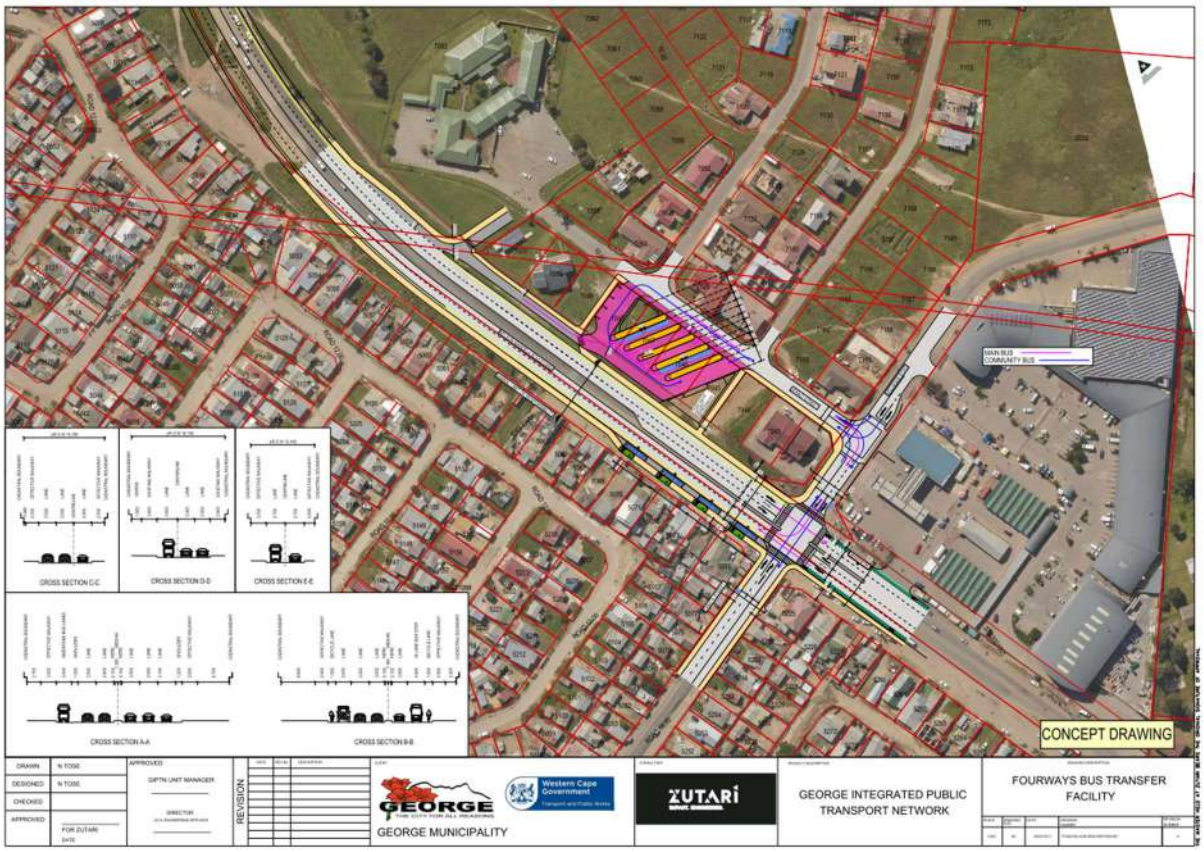


Figure 6.1: Concept Drawing

The concept is discussed in more detail in the following paragraphs.

6.1 Access

6.1.1 Access Spacing Requirements

Guidance for the access spacing required between full signalised intersections and the proposed left-in access off NMB was taken from the Access Management Guidelines (AMG) and TRH26.

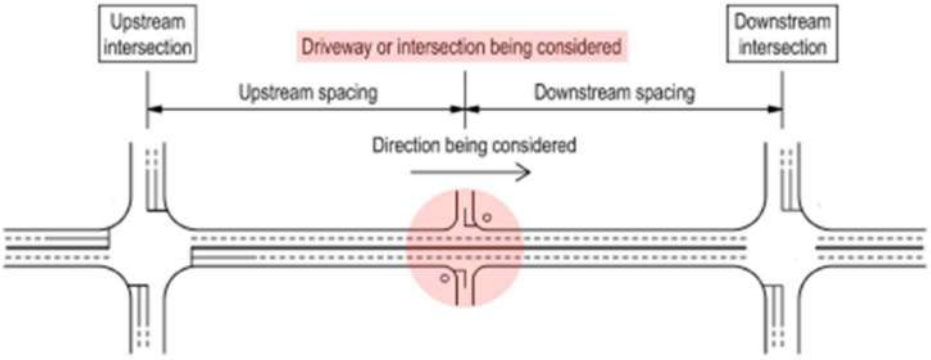


Figure 6.2 Intersection spacing definitions used (AMG, 2020)

Figure 6.2 shows the terminology used in the AMG to describe the spacing required, depending on the considered intersection's location in relation to an upstream or downstream intersection. In the proposed concept design:

- Upstream intersection: the signalised N2 Southern Ramp Terminal relates to the upstream intersection.
- Downstream intersection: signalised Fourways intersection is the downstream intersection.
- The access being considered is the proposed left-in access.
- NMB is classified as a Class 3 road and the section of NMB being considered has a median (with no breaks).

The access requirements relating to left-in left-out intersection in the AMG are considered to be conservative as the guideline refers to a traditional left-in left-out intersection, whereas the proposed left-in only intersection includes an auxiliary lane to decelerate vehicles before they turn.

The minimum upstream spacing between a signalised full intersection and a left-in left-out access should be equal to the left turn conflict distance. The conflict distance is based on the operating speed of the road and the various distances are shown in is shown in Table 6.1. NMB has an operating speed of 60 km/h therefore, a minimum left turn conflict distance of 82 m is the appropriate minimum upstream spacing distance for the roadside conditions.

Table 6.1: Left turn conflict distance

Operating speed (km/h)	Left turn conflict distance (m)
40	40
50	60
60	82
70	107
80	135

The minimum downstream spacing between a left-in left-out access and a signalised full intersection should be equal to the functional boundary distance. The functional boundary distance consists of the reaction time, braking/manoeuvring distance (collectively called decision sight distance) and the queue length. The decision sight distance is based on the operating speed of the road shown in Table 6.2. For the purpose of this report the queue length is assumed to be 30 m. Based on an operating speed of 60km/h, the decision sight distance should be 205 m. Therefore, the minimum downstream spacing distance should be 235m.

Table 6.2 Decision sight distance

Operating speed (km/h)	Reaction distance (m)	Manoeuvre and/or lane change distance (m)	Decision sight distance (m)
40	50	75	125
50	65	95	160
60	80	125	205
70	95	145	275
80	110	165	320

To provide an additional left-in left-out access upstream of a signalised full intersection, the minimum distance between the first and last left-in left-out intersection should be the left turn conflict distance i.e. 82 m for an operating speed of 60km/h. A second requirement is that the distance between the last left-in left-out access and the downstream signalised full intersection should be at a minimum distance equal

to the manoeuvring/braking and the queue length i.e. 155 m. The reaction distance is omitted as the driver passing the last left-in left-out intersection is assumed be alert to react to a vehicular movement associated with the intersection.

TRH26 emphasises that mobility roads should be continuous, as discontinuities affect capacity and traffic flow. It further emphasises that full accesses on mobility roads should meet intersection spacing requirements, but this restriction can be partially relaxed for partial and marginal access. Marginal accesses can be provided as left-in only intersections that only allow left-in movements. TMH26 requires a minimum separation between successive left-in/left-out accesses on Class 3 roads (where right-turn lanes not required) to be 125-150 m. TRH26 does not specify access spacing requirements between signalised accesses and left-in only accesses

Table 6.3 summarises the requirements of the AMG and TRH26.

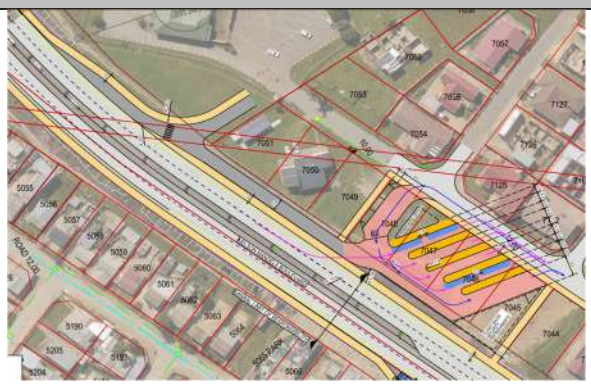
Table 6.3: Distance required between signalised intersection and left in accesses and successive left in accesses

Guideline	Distance required between signalized full intersection and left-in left-out accesses (m)	Distance required between successive left-in left-out accesses (m)
AMG	82 (upstream) 235 (downstream)	82
TRH26	-	125 – 150

6.1.2 Access Alternatives considered

Considering the information presented in preceding sections, two access arrangements were developed and are summarise in Table 6.4.

Table 6.4: Access Arrangements Alternatives

	Alternative 1	Alternative 2
Concept Layout		
Description	The access to the Transfer Location and Ilisolethu Interchange Gateway are combined by providing a single access point to a service road running parallel to NMB.	Two separate accesses off NMB are provided. Access 1 to the Ilisolethu Interchange Gateway Development and access 2 to the Transfer Location.

	Alternative 1	Alternative 2
Access Spacing	Distance of the access from the N2 Southern Terminal to the left in access is 220 m (> 82 m required in AMG). Therefor the proposed access spacing is more than the required minimum distance (as per AMG). Distance of the access from the left-in to Fourways intersection is 219 m < 235 m. The proposed access spacing is 6 m less than the required distance (as per AMG) however, the values in the AMG are considered conservative because they are for left-in left-out accesses vs the proposed which is a left-in access.	Distance between the N2 Southern Terminal and access 1 is 190 m > 82 m. The proposed access spacing is more than the required minimum distance (as per AMG). Distance between the two accesses is 62 m < 82 m. The proposed access spacing is 20 m less than the required minimum distance (as per AMG). Distance between access 2 and Fourways intersection is 136 m < 155 m. The proposed access spacing is 19 m less than the required distance (as per AMG).
Pros and Cons of each alternative	Pros: • One access off NMB, therefore only one pedestrian crossing across the slip off NMB • Speed of vehicles can be reduced before entering the Transfer Location be means of appropriate traffic calming measures. Cons: • Compared to Alternative 2, this alternative's construction cost will be higher • The proposed slip lane access may pose safety risks for pedestrians due to the speed at which vehicles typically approach slip lanes.	Pros • Reduced construction cost Cons • Two accesses off NMB, therefore two pedestrian crossings across two slip lanes off NMB • Increased accesses off mobility road may hinder mobility

6.1.3 Proposed Access

Considering:

1) The high number of passengers walking along NMB, and the pedestrian/vehicle conflict areas created when pedestrians need to cross left-in accesses;
2) The cross section of NMB between N2 Southern Terminal and Fourways intersection and the vertical alignment of the road encouraging high operating speeds; and
3) The dual function of a Class 3 road (such as NMB) to serve both a mobility and access function.

It is proposed that access Alternative 1 be implemented providing a single access point to a service road running parallel to NMB but separated with a 3m wide island.

6.2 GO GEORGE Routing

Current route planning without the Fourways Transfer Location extension, makes provision for busses to turn around by turning left out of NMB onto Nkonjane Street, left into Ngcakani Road and right into NMB heading back north towards the N2. The total length of this loop (using the N2 Southern Terminal as start and end point) is 2.13 km. The route is shown in Figure 6.3.

By providing the Fourways Transfer Location as proposed on Erven 7045, 7046, 7047 and 7048 Tyolora, the turn around loop can be shortened: busses will use the access off NMB to enter the Transfer Location. Upon leaving the transfer location, the busses will turn right onto Jeriko Street and right again

onto Ngcakani Road and right onto NMB, heading back north towards the N2. The total length of this loop is 1.11km. The shortened route is shown in Figure 6.4.

Figure 6.3: GO GEORGE Mainline Routing (without the Transfer Location as proposed)

Figure 6.4: GO GEORGE Mainline Routing (without the Transfer Location as proposed)

The routes that will benefit from the extended Transfer Location as proposed are Routes 18B, 4B, 10B[9], 11B[9], 57C, 57D, 57E. *Appendix D* shows a side-by-side comparison of the routing with and without the transfer location as proposed.

As per the current planning, Routes 18A, 4A, 10, and 11 will use bus stops long NMB.

Figure 6.5 shows the internal circulation of the extended Transfer Location. The black arrows indicate the routing of mainline busses while the red arrows indicate how busses on the community routes will enter and leave the facility.

Figure 6.5: Mainline and Community Routes

[9] Current planning does not include Routes 10B and 11B, these are however routes that will be operational in the future.

6.3 Signalisation of Ngcakani Road /Jeriko Street intersection

The section of Jeriko Street between the exit from the proposed transfer location and Ngcakani Road and the section of Ngcakani Road between Jeriko Street and NMB directly affects bus operations for Phase 4A.

The two intersections and the distance between them are shown in Figure 6.6.

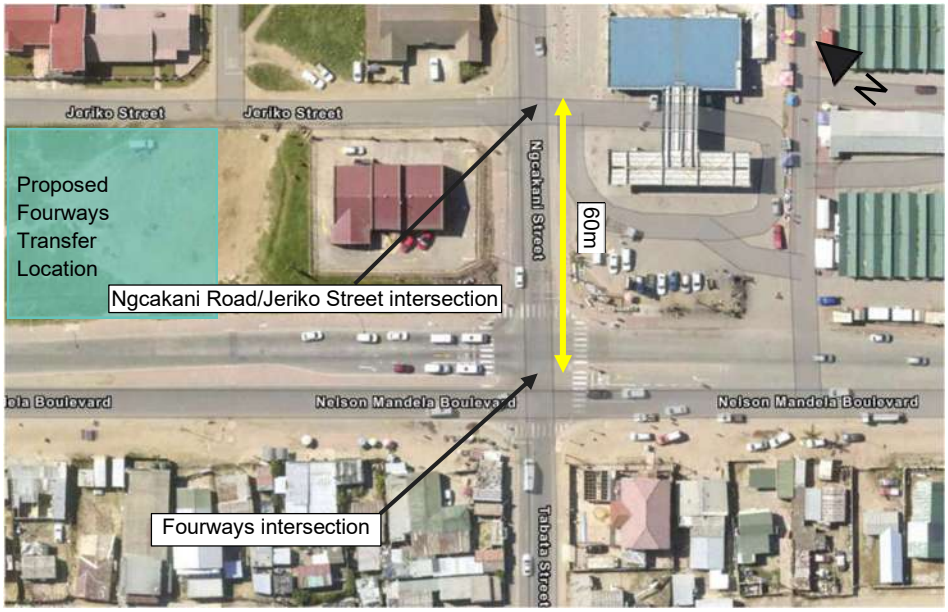


Figure 6.6: Spacing of Ngcakani Road / Jeriko Street and Fourways signalised intersections

To improve and prioritise bus operations it may be necessary to signalise the Jeriko Street/Ngcakani Road intersection.

6.3.1 Signalisation requirements

SARTSM recommends that the installation of traffic signals is warranted when the traffic signals meet the minimum queue length warrants. The queue length warrants (as extracted from SARTSM) require that any of the following queue length warrants are met:

- " *Warrant 1: The length of any individual queue equals or exceeds four over any one hour of a normal day*
- *Warrant 2: The sum of the average lengths of all queues equals or exceeds six over any one hour of a normal day*
- *Warrant 3: The sum of the average lengths of all queues equals or exceeds four over each of any eight hours of a normal day (the hours do not have to be consecutive, but they may not overlap)* "

The average queue lengths over an hour at each of the study intersections is shown in *Appendix E.* The average queue lengths for the Jeriko Street approach of the Ngcakani Road / Jeriko Street intersection and the Ngcakani Street approach of the Fourways intersection are summarised in Table 6.5.

The average queue length at the Jeriko Street northern approach is 7.46 m which is equivalent to a queue length of approximately two vehicles which happened in the 5-year scenario that includes the transfer location. This is less than the minimum queue length of 4 vehicles stipulated in SARTSM to warrant a signalised intersection.

Table 6.5: Summary of queue lengths at Fourways and Ngcakani Road / Jeriko Street intersections

Approach	Queue length (m) for Scenario 3B_5Y with Ngcakani Road / Jeriko Street intersection	
	Signalised	Stop controlled
Jeriko Street northern approach	5.42	7.46
Fourways eastern approach	12.84	15.22

6.3.2 Signalisation spacing requirements

Traffic signal spacing requirements were obtained from TMH16 V2 (2014) and WCG AMG (2020) to define the minimum space required between signalised intersections on Ngcakani Road (a Class 4 road). The minimum requirements are shown in Table 6.6.

Table 6.6: Distance required between signalised intersections

Guideline	Distance required between signalised intersection on Class 4 roads
AMG	210 m (CBD), 270 m (intermediate), 370 m (suburban)
TMH16	200-300 m

The distance between the proposed signalised Ngcakani Road / Jeriko Street intersection and the already signalised Fourways intersection is 60.0 m. Therefor the distance between these intersections do not meet the minimum requirements for signalised intersections as set out in the AMG and TMH16.

6.3.3 Motivation and recommendation

Although the signalisation of Ngcakani Road / Jeriko Street intersection is not warranted in terms of the SARTSM warrants and the distance between these intersections do not meet the minimum requirements for signalised intersections as set out in the AMG and TMH16, it is rproposed that it be signalised.

Signalising this intersection will ensure that busses can turn out of Jeriko Street into Ngcakani Road and NMB without being delayed by long queues and congestion on Ngcakani Road. This will improve the operation of the proposed transfer location by streamlining traffic flow to and from the transfer location. Due to the short distance between the proposed signalised intersection and the existing signals at the Fourways intersection, it is further proposed that these two signalised intersections are synchronised.

In summary, providing a traffic signal at Ngcakani Road / Jeriko Street intersection will help to reduce congestion; enabling busses to maintain schedule reliability and minimise delays that could disrupt operations on the Phase 4A routes. Without optimised signal control, the additional traffic from the transfer location would most likely lead to operational inefficiencies, impacting both bus and general traffic flow at these key approaches.

6.4 Non-Motorised Transport

NMB experiences a high volume of pedestrians (refer to *Section 3.6*) throughout the day due to (a) the high modal share of NMT and (b) NMB being the only access road into Thembalethu. This leads to significant pedestrian traffic along NMB, crossing any side road connected to NMB.

The provision of NMT routes is a critical part of the implementation of the extended Transfer Location as it supports the project's aim to ensure that the NMB corridor supports high NMT traffic. A well-established NMT network provides quick and easy access to NMB therefore NMT through routes that better connect adjacent neighbourhoods to NMB will provide pedestrians even greater access to NMB.

Through the Ilisolethu work it was recommended that two pedestrian links be provided to improve pedestrian access to NMB. The first is shown in Figure 6.7. This walkway will provide a pedestrian access from Mngoma Street to NMB close to where the N2 Southern Terminal.

The second route is shown in Figure 6.8 and proposes an access route from Songololo Street to NMB.

Figure 6.7: Pedestrian access to NMB from Mngoma Street

Figure 6.8: Pedestrian access to NMB from Songololo Street

Considering the nature of a Transfer Location and the high number of pedestrians expected, it is important to create safe passages that limit the risk of pedestrian and vehicle conflict.

Pedestrian walkways around the Transfer Location are indicated in orange in Figure 6.9. The pedestrian crossing across NMB will align with the walkway shown in Figure 6.8.

Figure 6.9: Pedestrian access to the Transfer Location

To enhance pedestrian access and to improve the safety of pedestrians using the transfer location, it is recommended that:

1) Walkways are provided along all roads and will be kept at the same level, giving pedestrians right of way;
2) Pedestrian crossings are provided where pedestrians are expected to cross a road;
3) Walkways and crossings will be clearly delineated, especially where busses are expected to conflict with pedestrian movements;

4) Change the surfacing of the parallel access road to make drivers aware that the roadside environment is changing; and
5) Pedestrian safety at slip lanes could be increased by implementing one or more of the following enhancements:

a. **Sharpen slip lane radii:** reducing the kerb radii of the slip lane to between 12–15 m will encourage slower vehicles speeds.

b. **Lane narrowing:** decreasing the lane width along the road or where pedestrians cross to encourage slower vehicle speeds due to less perceived space for vehicles (shown in Figure 6.10)

c. **Pedestrian signals:** gives the pedestrians a dedicated safe opportunity to crossroads with high vehicular flows

d. **Angle of crossing:** the angle at which the pedestrian crossing crosses the slip lane should be such that it improves the visibility of pedestrians and driver's line of sight.

Figure 6.10: Lane narrowing at pedestrian crossing (Source: **Road narrowing to be removed after two-year fight - The Cardiffian**)

6.5 Traffic Calming

The traffic along Jeriko Street (a Class 5 Local Street) will increase significantly with the development of Ilisolethu Interchange Gateway Development and the transfer location as proposed as part of the Multimodal Transport Cluster. It is therefore necessary to ensure that the road safety of the various road users and residents are not compromised.

Road safety along Jeriko Street can be enhanced by implementing traffic calming measures such as:

1. Road narrowing;
2. Changing the roadway surface;
3. Sufficient road signs and markings; and
4. Bus friendly speed hump or speed cushions (illustrated in Figure 6.11) To ensure comfort and safety, cushions should be no more 75 mm high[10] (based on bus routes for Greater Manchester, England).

[10] GMPTE, 2009, Guidance – Traffic Calming for Bus Routes

Figure 6.11: Bus friendly speed hump or Speed cushions (Sources: Reinforced concrete road safety: world experience for Cherkasy - 18000.com.ua **&** Speed Cushions | Traffic Choices - aiding traffic scheme decisions**)**

6.6 UA Compliance

The design of the Transfer Location will comply with UA requirements and will be reviewed by an independent UA consultant.

6.7 Other (future) Land Uses on Adjacent Properties

In an effort to develop a precinct plan that fits in with the Ilisolethu Project 11 vision. It was necessary to look at a slightly bigger area and include properties adjacent to the Transfer Location.

Figure 6.12 shows the final Fourways Transfer Location Development Concept Plan and all the elements that will be added and/or improved as part of the developments longer term plan.

Figure 6.12: Concept Site Plan – Option 1

The future land uses, shown in Figure 6.12, will consist of:

1) Future ECD and Courtyard Play Space;
2) Trading Storage and Ablutions; and
3) Temporary social facility and trading market until planned fire station extension).

The facility will have a total of 43 trading offerings including 26 roller shutter shops, 5 trading shelters (sheltered bays) and 12 open trading bays.

A loading bay serving the trading and social facilities can be provided along Jeriko Street.

6.8 Provision for Contractor, Farm Worker and other Transport

The matter of stopping areas for contractor, farm worker and other transport in the vicinity of the Fourways intersection has been raised on a number of occasions.

In response to that it is recommended that:

1) The existing bus stops south of the Fourways intersection be made available to be used by Contractor, Farm Worker and other transport as soon as the construction of the GO GEORGE bus stops north Fourways are completed (refer to Section 3.5).
2) A turn around and pick up opportunity be created further south along NMB (as shown in Figure 6.13)

Figure 6.13: Provision for Contractor, Farm Worker and other Transport

6.9 Fire and Rescue Service Performance

The Fire Station on Erf 7042 and 7043 serves the community of Thembalethu. The access to the Fire Station is off Jeriko Street, indicated in .

Figure 6.14: Fire Station on the corner of NMB and Ngcakani Road

The Jeriko Street approach of the Ngcakani Road/Jeriko Street intersection and the portion of Ngcakani Road between Jeriko Street and NMB forms a critical part of the route which fire trucks would follow in case of an emergency. The signalisation of Ngcakani Road /Jeriko Street intersection and the additional bus traffic on Jeriko Street will have an impact on the movements of fire trucks by possibly affecting the fire truck's ability to get out of the property and get to Ngcakani Road and/or NMB.

Movements from the Fire Station could be prioritised by:

1) Protecting a section along Jeriko Street in front of the fire station through the appropriate road marking.
2) Providing the fire station with the ability to control the signals at the Ngcakani Road /Jeriko Street intersection. This will ensure that the queues at these signals are cleared and that the Jeriko Street approach to the Ngcakani Road /Jeriko Street intersection and Ngcakani Road approach to the Fourways intersection are prioritised.

7 Conclusions

A major consideration in the on-going development of the GO GEORGE operation is that of continually enhancing the network, which includes infrastructure, to better provided accessibility and mobility for the residents of and visitors to George. With this is the need to keep operational costs to a minimum, so as to reduce the subsidy burden on all three spheres of government.

The proposed Transfer Location Extension to be on consolidated erven 7045, 7046, 7047 and 7048 Tyolora will contribute significantly to providing better services to Thembalethu, be compatible with longer-term urban developmental goals, and the achievement of the broader transportation objectives.

This Transport Impact Assessment has recognised the complexity of superimposing the bus operations in what is a constrained environment and demonstrated that the proposed land-use will be beneficial.

The bus routes 10 and 18, as now rolled out, operate via NMB, Nkonjane Street and Ngcakani Road with passengers boarding along Ngcakani Road and at the bus stops on NMB north of the Fourways intersection. This situation is far from ideal for the following reasons:

1. The routing requires that significant numbers of large busses make use of Nkonjane Street, a Class 5 Access Road, this is not desirable and should be avoided.
2. Similarly, the geometric design standard for Ngcakani Road, while a Class 4 Distributor Road, is moderately low. This is already a congested road which impacts negatively on the bus operations: adding to bus operating costs and the need for additional busses.
3. The need to use these roads to turn busses adds considerable ‘dead’ operating kilometres which can be eliminated.

The proposed Transfer Location Extension will offer several advantages:

1. It will provide bus stops facilities serving Main routes to the CBD, the GRM, the industrial areas and Blanco, and the Thembalethu Community Services, thereby offering GO GEORGE passengers much improved facilities.
2. It is well located to provide access to what is a significant development economic node and is well positioned to serve the needs of the planned Ilisolethu Gateway Development project.
3. The location of the facility provides for an easy access for busses approaching Thembalethu, with the return via Jeriko Street. While roads in this vicinity are restricted, there is now opportunity to dispense with previously planned Community bus stops on both Tabata and Ngcakani Streets. With the introduction of traffic signal controls on Ngcakani Road, there will be advantages to bus operations, thereby reducing overall bus operating costs.
4. Significantly reduces the bus turn round distance which in terms of routes 4B and 18B will bring about an immediate annual operating cost saving of some R0.36m p.a., which will grow as further envisaged service are sadded.
5. Reduces the cost of maintaining roads that will no longer be used to turn busses, and much reduce the traffic safety risks associated with busses on these lower order roads.
6. It is suitably positioned so as not to interfere with the development of any envisaged alternate access roads to Thembalethu as discussed in the draft CITP (2024).

Through the traffic assesment process (using the Vissim modelling), and in response to queries raised during the assessment process by Municipaliy of George officials, it was shown that:

1) With the transfer location as proposed in operation, traffic flow in the network improves and overall delays are reduced. At an intersection level there is very little change in the LOS when the Transfer Location is introduced. This, despite the additions bus routes introduced as part of Phase 4A roll out.

2) When the Ilisolethu development traffic is added to the network and with the transfer location as proposed in place, there is a slight increase in the overall network delay (maximum of 3 seconds). The LOS of all study intersections remain unchanged when the Ilisolethu development traffic is added to the network.

3) When the signals at the Fourways intersection are out of order, a gridlock situation is created with the LOS of all intersections declining to LOS F.

4) Converting the Fourways intersection to a roundabout reduces the overall delay. The intersection LOS improves and average queue lengths decrease. Although roundabouts can improve traffic flow, a roundabout at this location is not preferred for the following reasons:

    a. This location is a heavily pedestrianised area and pedestrian safety can be compromised due to the increased turning radii – allowing higher speeds as vehicles approach the roundabout.

    b. A roundabout does not always accommodate high volumes of vehicles effectively and may favour certain approaches over others that have longer queue lengths.

    c. Roundabouts can complicate navigation at busy intersections, which could cause frustration among pedestrians and drivers and lead to conflicts.

5) The additional bus trips along Jeriko Street, with the proposed signalisation of the Jeriko Street / Ngcakani Road intersection, do not have a negative impact on the travel time of emergency vehicles. In fact:

    a. the added traffic signals with remote control should significantly benefit fire engine response time by clearing the way through the 4-Ways intersection. Further it is important that:

    b. The section along Jeriko Street (in front of the fire station) be protected and kept clear by using the appropriate road marking an enforcement.

    c. The signals are in a good condition and working effectively.

8 Recommendations

It is recommended that:

1) The proposed rezoning and consolidation of Erven 7045, 7046, 7047 and 7048 Tyolora from Business Zone 1 to Transport be approved for the purpose of establishing an extension to the Fourways GO GEORGE Transfer Location
2) That access to the site will be from the Nelson Mandela Boulevard. That the access arrangement, as agreed to by SANRAL (as road authority) will also serve the planned Ilisolethu Gateway Development project
3) That the development on the subject erven will be aligned with the Precinct Development Plan shown in Figure 2.2, which provides for:
    a. The Jeriko Street / Ngcakani Road intersection to be signalised and with synchronised with the traffic signal at Nelson Mandela Boulevard/Ngcakani Road/Tabata Street (Fourways) intersection.
    b. The roadway in front of the fire station access be kept clear through the appropriate road marking.
    c. The following measures be introduced to enhance pedestrian access and to improve the safety of pedestrians using the transfer location:
        i. Walkways are provided along all roads and at the same level, giving pedestrians right of way;
        ii. Pedestrian crossings are provided where pedestrians are expected to cross a road;
        iii. Walkways and crossings be clearly delineated, especially where busses are expected to conflict with pedestrian movements;
        iv. The surfacing of the parallel access road should be changed to alert drivers to the changing roadside environment; and
        v. Pedestrian safety at slip lanes could be improved by implementing one or more of the enhancements discussed in this report.
    d. Traffic calming measures (roadway narrowing, changed roadway surfacing, road signs and markings and bus friendly speed hump or speed cushion) be considered for implementation along Jeriko Street together with the structural strengthening of the roadway section to be used by GO GEORGE busses.

Appendix A

Reference information

A.1 Upgrade of NMB between the N2 and Tabata Street

The construction on the section of NMB, between the N2 Interchange and the intersection with Tabata Street has recently been completed. A cut out of the plan layout and alignment of the newly built section is shown in Figure A.1.1. The full drawing is attached in *Appendix B*.

The cross section of this section of NMB consists of:

- 2 x 3.5 m lanes NB and 2 x 3.5 m lanes SB
- 2 x 1.2 m shoulders
- 2 x 3 m walkways
- 1 x 5 m median

Figure A.1.1: NMB cross section under construction

The intersection layouts of the newly constructed intersections are shown in more detail in Figure A.1.2, Figure A.1.3 and Figure A.1.4.

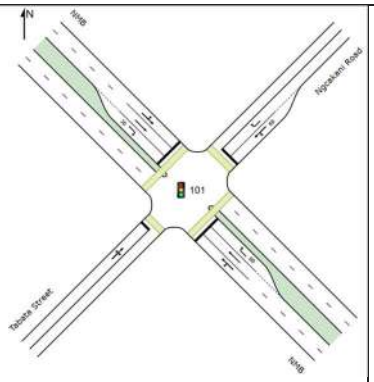


Figure A.1.2: Fourways intersection Geometry

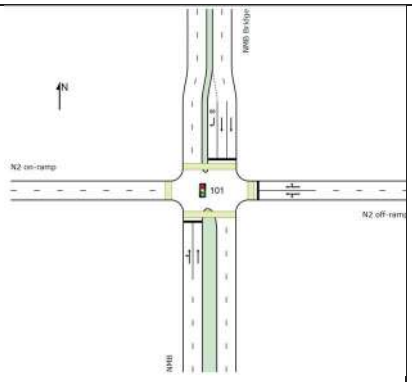


Figure A.1.3: N2 Southern Ramp Terminal

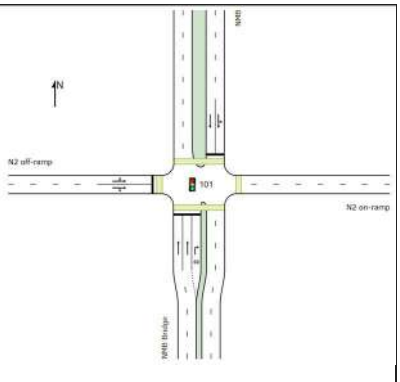


Figure A.1.4: N2 Northern Ramp Terminal

A.1 George CITP 2023 - 2028

The final version of the *2023-28 George Comprehensive Integrated Transport Plan (CITP)*, prepared by Techso-Tolplan-Lyners consortium, has recently been made available. Elements within the draft CITP are relevant to the future of Thembalethu and will therefore be considered in this TIA.

Figure A.1.5 is extracted from the CITP and reflects on road links required to accommodate future population and traffic growth. Link roads 7, 15 and 35 from the west, and 5 and 12 to the east are relevant to Thembalethu. These notional roads, together with portions of the Southern Arterial, have been shown to be necessary through a transport modelling process, but their physical and financial feasibility have yet to be investigated.

Associated with the planning and building of these road links are challenges relating to financing, the terrain, the impacts on existing households and community structures. While Figure A.1.5 suggests which road links should be provided with the 5–10-year, 20 year and beyond 20-year timeframes, the reality is that not all road links will be constructed - due either to a lack of funding, or environmental / community objection.

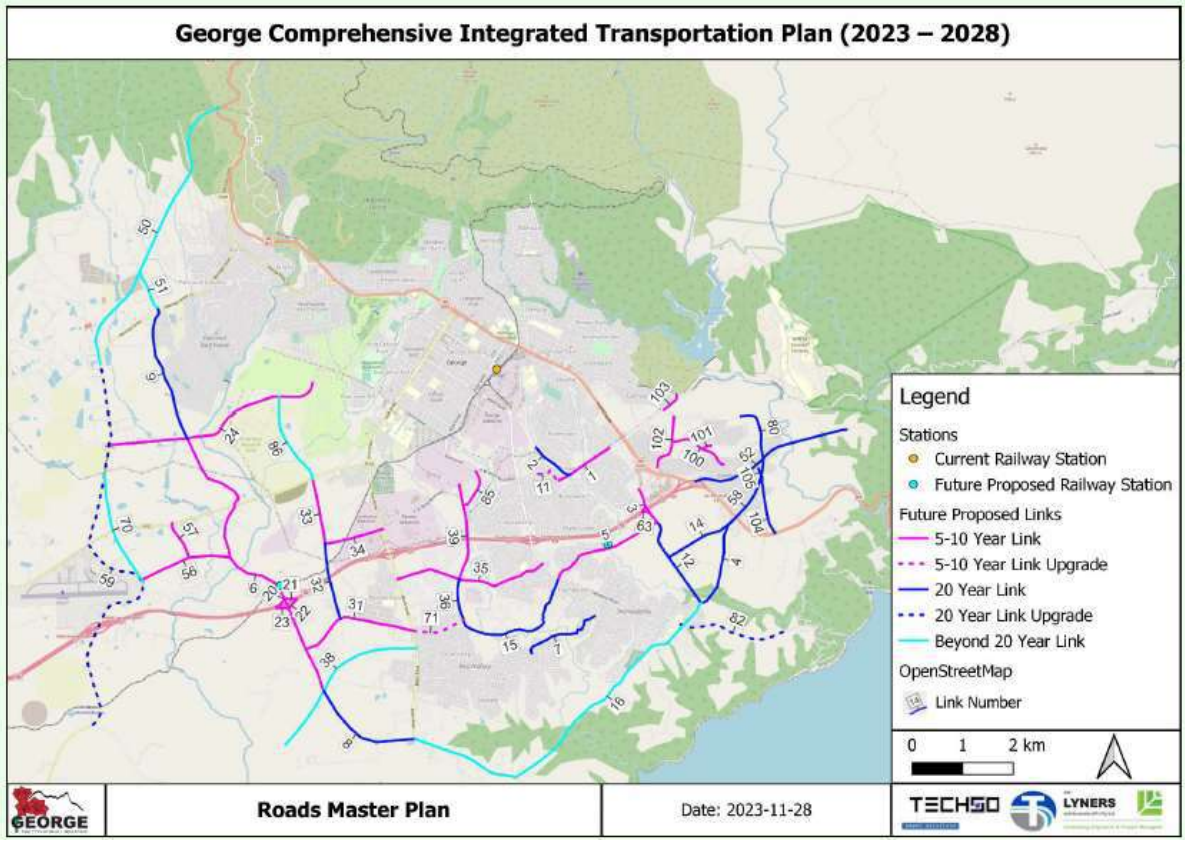


Figure A.1.5: George roads master plan

A.2 George CIPT Modelling

Much of the 2023-28 George CITP has been informed by a land-use / transportation meso-scopic modelling process.

The CITP Visum model, with some modification, formed the bases of the modelling work undertaken as part of this TIA.

A.3 Ilisolethu Gateway Node Development

The Ilisolethu Gateway Development Node consists of 11 investment projects. The overall development concept envisions NMB as a central mobility and activity spine. Although cars are accommodated, it is recommended in the Ilisolethu reports that emphasis should be on public transport, pedestrian movement and cycling (non-motorised transport). The plan also provides for economic activity along NMB, the activity spine.

Development proposals allow for mixed-use residential and commercial opportunities on the large portions of vacant land, supporting a sustainable live-work-play node. Infill developments are also proposed on underutilised smaller properties.

Figure A.1.6 is an illustration of the development plan, detailing the proposed land uses, identity elements, the pedestrian and vehicle movement network.

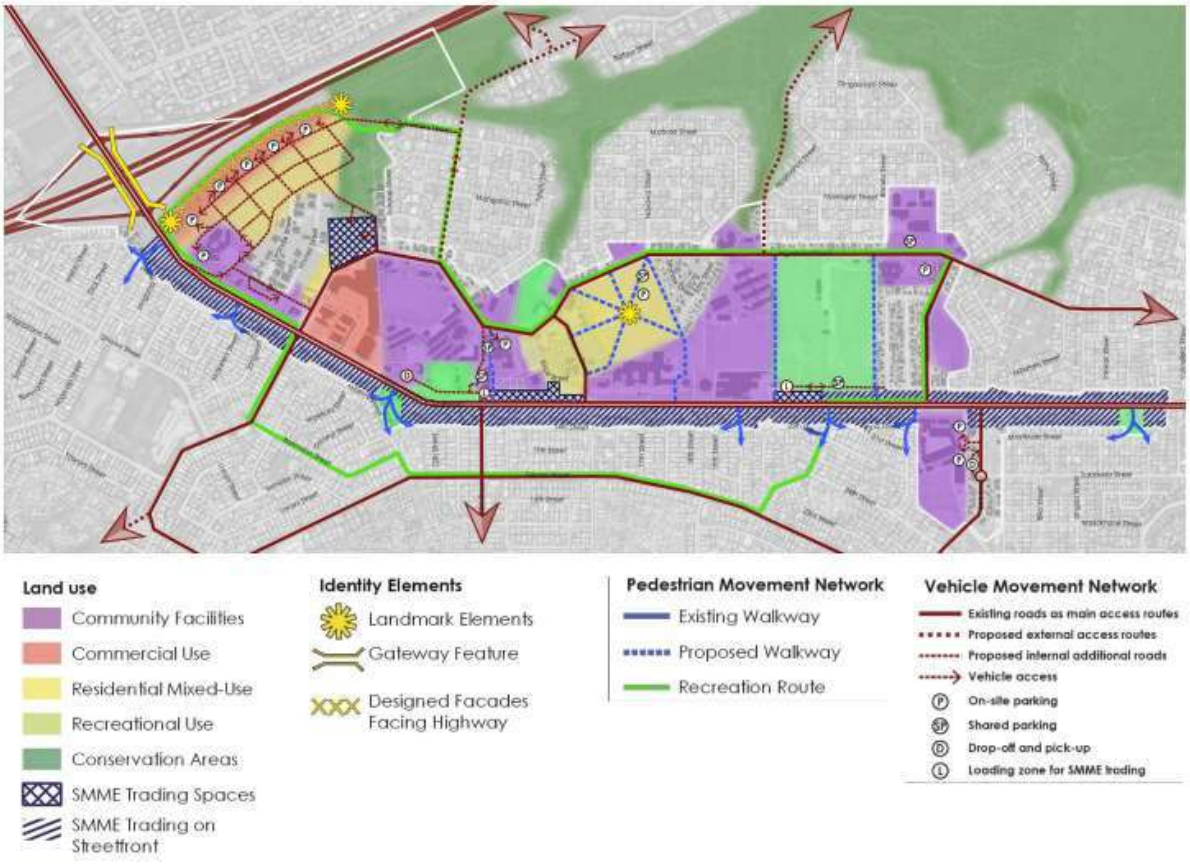


Figure A.1.6: Ilisolethu Gateway Node Development Concept

The Ilisolethu projects are summarised in Table A.1.1 and the physical extent of each project is presented in Figure A.1.7. In the following section the projects considered to be relevant to the TIA will be discussed.

No.	Project	Land Use Description	Potential GLA (m^3)	Max. Units	No. of person trips (no. of cars)		
					PT Trips	NMT Trips	PV Trips
1	NMB multipurpose identity route edge	-	-	-	-	-	-
2	Ilisolethu Interchange gateway development	Factory shops, Flats	62 308	1 247	858 (261)	858	922
3	BPO village (ATNS land)	Flats, Office, Business Premises, Neighbourhood Shop	29 603	442	127 (105)	127	184
4	D Lab call centre (Old Hospital/clinic)	Clinic, Office, Place of instruction, Sports and Recreation Centre, Business Premises	6 786	0	89 (27)	89	107
5	Inkcubeko Youth and Science Centre extension	Clinic, Office, Place of Instruction, Sports and recreation Centre	3815	0	78 (21)	78	86
6	SMME and recycling hub	Industrial Hive, Industry, Light Industry, Informal, Trading, Motor Repair Garage, Motor Garage, Outdoor Trading and Dining, Scrapyard	3 128	0	21 (7)	21	31
7	Recreation and exercise route	Farmers Market, Outdoor Trading and Dining, POS, Sports and Recreation Centre	846	0	9 (2)	9	12
8a	NMB multipurpose public open spaces	Informal Trading, Outdoor Trading and dining, Sports and Recreation Centre, Flats	2 586	120	38 (8)	38	40
8b	NMB multipurpose public open spaces	Informal Trading, Outdoor Trading and Dining, Sports and Recreation Centre, Flats	738	32	11 (2)	11	12
9	NMB sports node	Institution, Place of Instruction, Place of Worship, Public Parking, Public Street, informal Trading, Outdoor Trading and dining, Sports and Recreation Centre	1 745	0	19 (5)	19	19
10a	NMB SMME trading spaces	Industrial Hive, Informal Trading, Outdoor Trading and Dining	655	0	6 (2)	6	8
10b	NMB SMME trading spaces	Public Parking, Public Street, Industrial Hive, Informal Trading, Outdoor Trading and Dining	378	0	3 (1)	3	5
11	Multimodal transport and social cluster	Public Parking, Public Street, Clinic, Institution, Neighbourhood Shop, Transport use	6 893	0	123 (30)	123	121

Table A.1.1: Ilisolethu Gateway Node Projects

Figure A.1.7: Extent of investment projects

A.4.1 Project 1: NMB Multipurpose Identity Route

The purpose of the project centres around the redesign of NMB to serve as a mobility spine and an activity street that is pedestrian orientated, creating vibrancy and activity for the Ilisolethu node. It is proposed that NMB be redesigned to a dual carriageway with dedicated, well-designed walkways. It is proposed that NMB is dualled between the intersection with Ngcakani Road and 170 m east of the intersection between Inkwali Street. This project aims to address the encroachment of residential and trading structures in the road reserve.

The proposed concept layout plan and cross section are presented in Figure A.1.8 and Figure A.1.9 respectively.

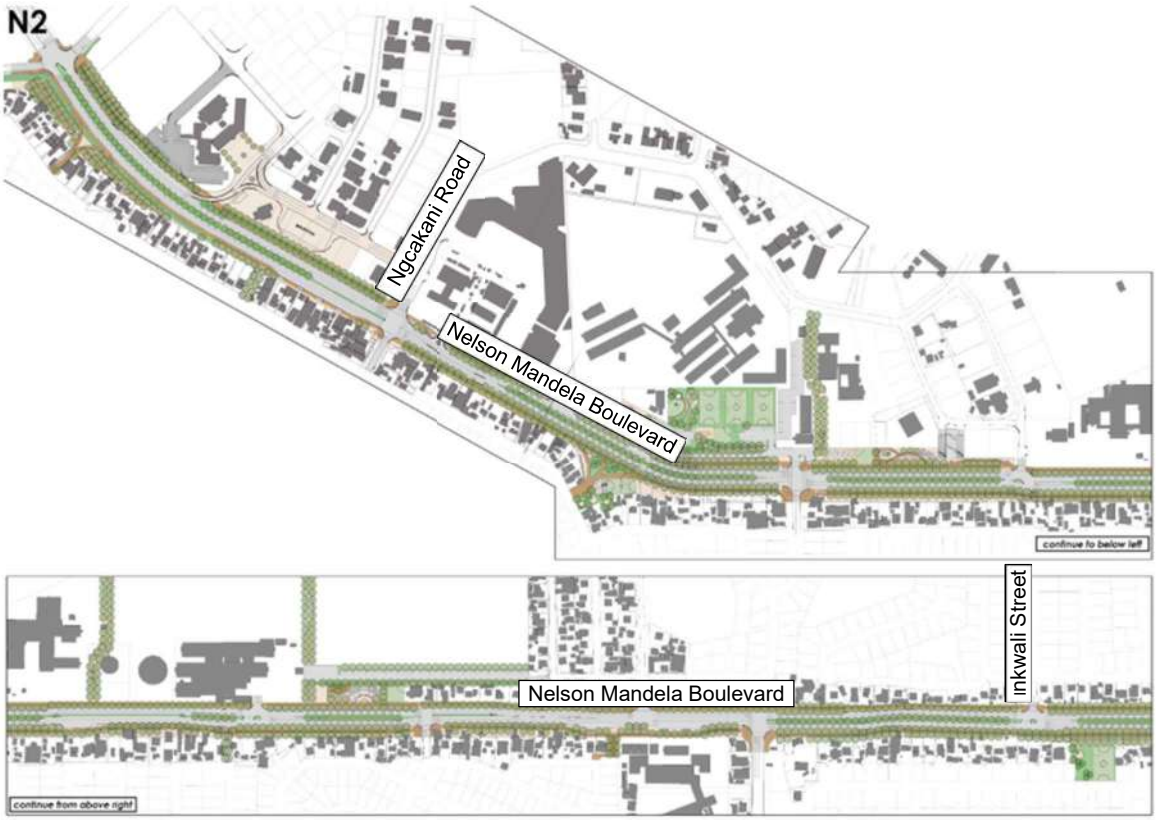


Figure A.1.8: NMB concept layout plan

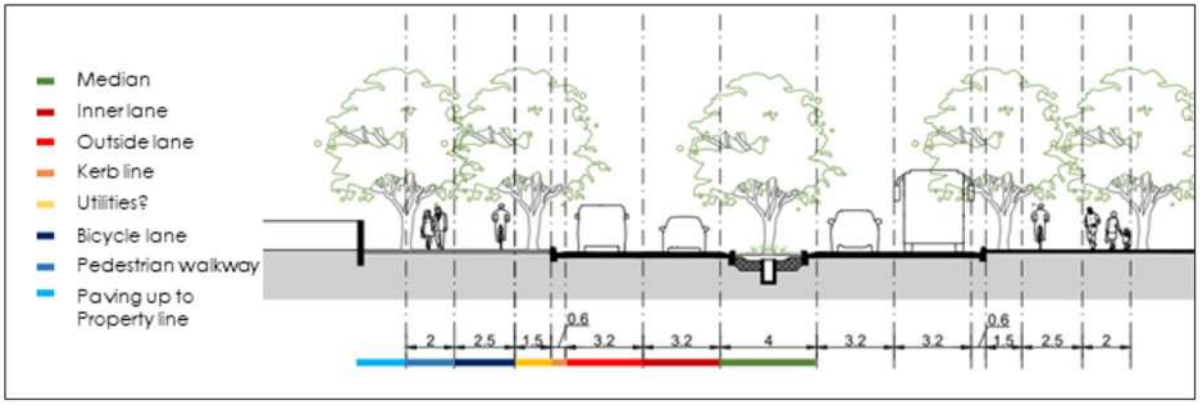


Figure A.1.9: NMB concept road cross section

A.4.2 Project 2: Ilisolethu Interchange Gateway Development

The Ilisolethu Interchange Gateway Development is a Greenfields development, encompassing numerous vacant properties. As planning currently stands Erf 7052 (where the Thusong Centre is, shown in Figure A.1.10) will be subdivided, and the remaining portion of the property incorporated in the Gateway development. The applicable residential properties that make up the project area will be consolidated, and the entire site will be made available for development as a single entity.

The project area includes the following properties:

- Vacant land at the back of the Thusong Centre (Erf 7052)
- 84 vacant residential properties (Erven 7059-7112, 7115-7117, 7121-7124, 7136-7150, 7176-7184)

The project area is depicted in Figure A.1.10.

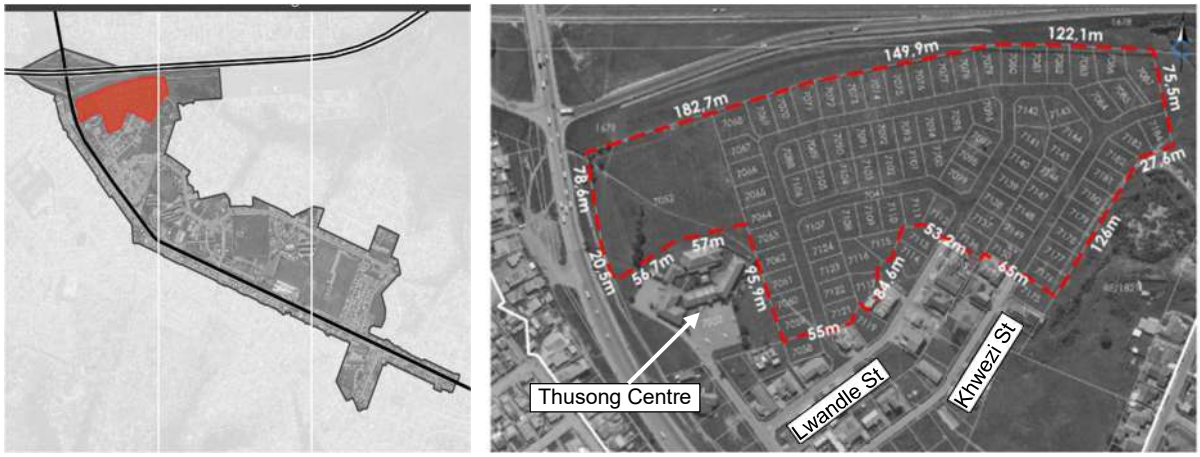


Figure A.1.10: Project 2 locality

Multiple access points (as per the planning document) to the proposed development area are shown in Figure A.1.11. The access points can be described as:

- A slip lane from NMB;
- Extension of Lwandle Street and Khwezi Street;
- An access road from Ngcakani Road past the proposed SMME Cluster (Project 6); and
- An extension of Ntaka Street into the eastern boarder of the development.

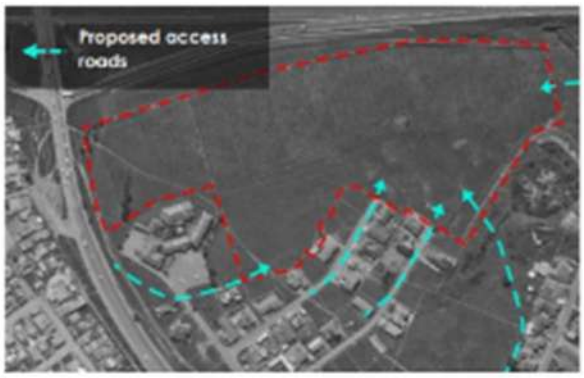


Figure A.1.11: Proposed access points (Project 2)

The land use of Project 2 is shown in Figure A.1.12.

Figure A.1.12: Land use project 2

A.4.3 Project 7: Recreation Route

The purpose of this project is to enhance the public environment by providing well-designed open spaces with facilities that promote liveability and health. The project focuses on the development of weekend market facilities, a recreational park and the upgrading of the sidewalks within the recreation route (shown as a red dotted line in Figure A.1.13).

The rondavel site (Erf 549, shown in Figure A.1.13) provides an area for a market, integrated with a recreational park for the community. The recreation route will start at the weekend market, run east along Ngcakani Road, turn south onto Ncamanza Street towards NMB, where it will cross the road at 24th Street. Following this road to Tabata Street and turning west, turning right onto Mbewu Street and immediately left onto Bomvana Street. Continuing straight until Tabata Street, crossing NMB at Fourways crossing, and running west parallel with NMB up to the N2 Interchange. Here the route will traverse the vacant land portion, turning right at the end of the existing residential layout and rejoining the existing road network at Iyatyambo Street. At the crossing with Ntaka Street, the route will turn south and continue until it joins with Ngcakani Road, ending the 5 km route at the weekend market facilities.

Figure A.1.13: Project 7 locality

A.4.4 Project 11: Multimodal Transport and Social Cluster

The purpose of this project is to develop the Ilisolethu node as a concentration point for a variety of social and community services. The development of the multimodal transport and social cluster will ensure that more diverse social services are made available to the community of Thembalethu and that these services are more accessible.

There is a range of community facilities located in the node however they are not integrated and have poor walkability due to limited pedestrian facilities available. The availability of vacant land provides an ideal opportunity for the development of a multimodal transport and social cluster. The intention is that this cluster be accessible for all modes of transport and that the space should serve as a well-designed, pedestrian-scaled and pedestrian-prioritised public space.

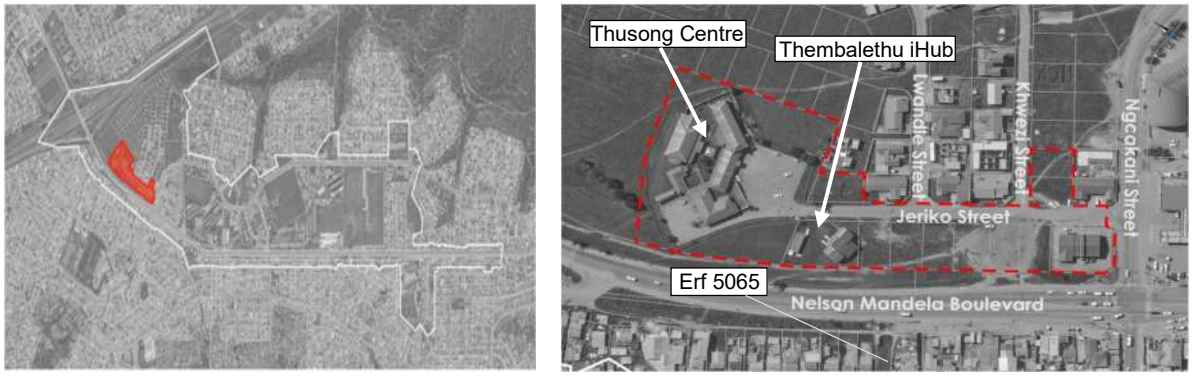


Figure A.1.14: Project 11 locality

The project area includes a number of properties which are described Figure A.1.14.The project area earmarked to be developed is presented in Figure A.1.15 and the number of properties within the area to be developed are described in Table A.1.2.

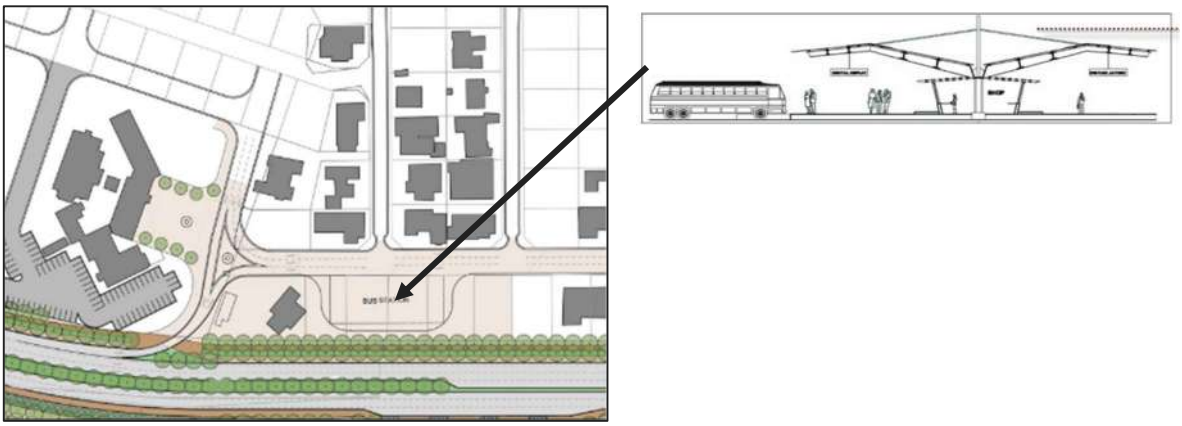


Figure A.1.15: Proposed layout of the Multimodal Transport Social Cluster

Table A.1.2: Properties Project 11

Erf	Description	Land Use
Erf 7042 and 7043	Fire Station[11]	Utility (see note)
Erf 7044 to 7049	Vacant land	Business
Erf 9720	Thembalethu iHub	Business
Erf 7052	Thusong Centre	Community

This project considered the development of a multimodal transport social cluster, which includes:

1) Refurbishing the Thusong Centre;
2) Design of slip lane and safe pedestrian and cycling lanes;
3) Mobile clinic approval and site allocation;
4) Bus Station approval and site allocation;
5) Approval of other temporary uses while waiting for the construction of the bus station; and
6) On Erf 5065 widen walkway from Songololo Street (shown in Figure A.1.14).

C.5 Thembalethu Roads Planning

Two documents have been compiled by EAS Infrastructure Engineers. One deals with road linkages to Thembalethu, and the other indicates the traffic impacts of developments being considered through the Ilisolethu Gateway Node Development.

A.1.1 Project 7: Work Package No. 8 (Linkages Study)

The *Implementation of Road Master Plan Projects: Thembalethu Roads Planning and Development, Report: Linkages Study* considers the need and prospect of providing alternative access to Thembalethu. It recognises that while the capacity of the current access over the N2 is being increased, this will not remove the risks associated with the single access to the extent needed, nor increase the range of route options between Thembalethu and other destinations in George.

The Linkages Study considered each of the links in Figure A.1.16. A closer look at the links related to Thembalethu is shown in Figure A.1.17.

[11] Facilities to which no project implementation item has been assigned

Figure A.1.16: Connection route road classification

Note that the links shown are only conceptual linkages. If and when an updated plan is made available, more in-depth information will be available on the potential impact of these connections, not only to the NMB urban design extension area but to Thembalethu as a whole.

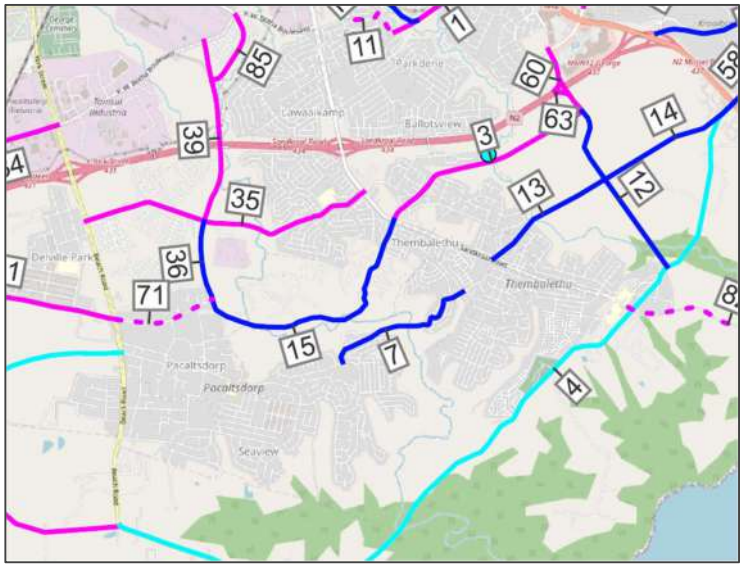


Figure A.1.17: Connection routes in Thembalethu

This study, however, gives no clear indication of the traffic (transportation) impacts each of these link roads may have on enhancing accessibility and reducing and/or increasing the demand on other elements of the broader road network.

All of these links will have an impact on how traffic is distributed in/out of Thembalethu. For the purpose of this study, these links were not considered and the impact of these on the Fourways intersection will not be reported on.

A.1.2 Project 7: Work Package No. 8 (Access Study)

The *Implementation of Road Master Plan Projects: Thembalethu Roads Planning and Development, Report: Access Study / Transportation Impact Assessment* provides a summary of the likely developments emerging from the Ilisolethu project and the impact that the trips will have on the surrounding road network. The report focuses on NMB and does not reflect on the impacts on the secondary roads such as Ngcakani Road and Jeriko Street. The report furthermore does not speak to the implications of other relevant sites such as the taxi rank, the shopping mall, the service station, and the proposed GO GEORGE Transfer Location.

The trips expected to be generated by the Ilisolethu development (PV, NMT and PT trips), as calculated in the Access Study were used in developing the Vissim model and testing scenarios.

The development projects considered diverse land uses, so person trip generation rates were used to estimate the demand for each project instead of car trip generation rates. The result was then converted into peak hour trips per mode which was used for the analysis.

The proposed intersection layouts as recommended in The Access Study are shown in Figure A.1.18. All of the intersections considered are expected to operate at acceptable levels of service (LOS C), with minimal delays. Interesting outcomes relate to the need for Tabata Street to have two lanes on its approach to NMB. This outcome was made without consideration of the Rosedale link road.

It should be noted that pedestrian movements and bus operations were not included in the intersection analysis. The performance of the Ngcakani Road and Jeriko Street intersection was not assessed.

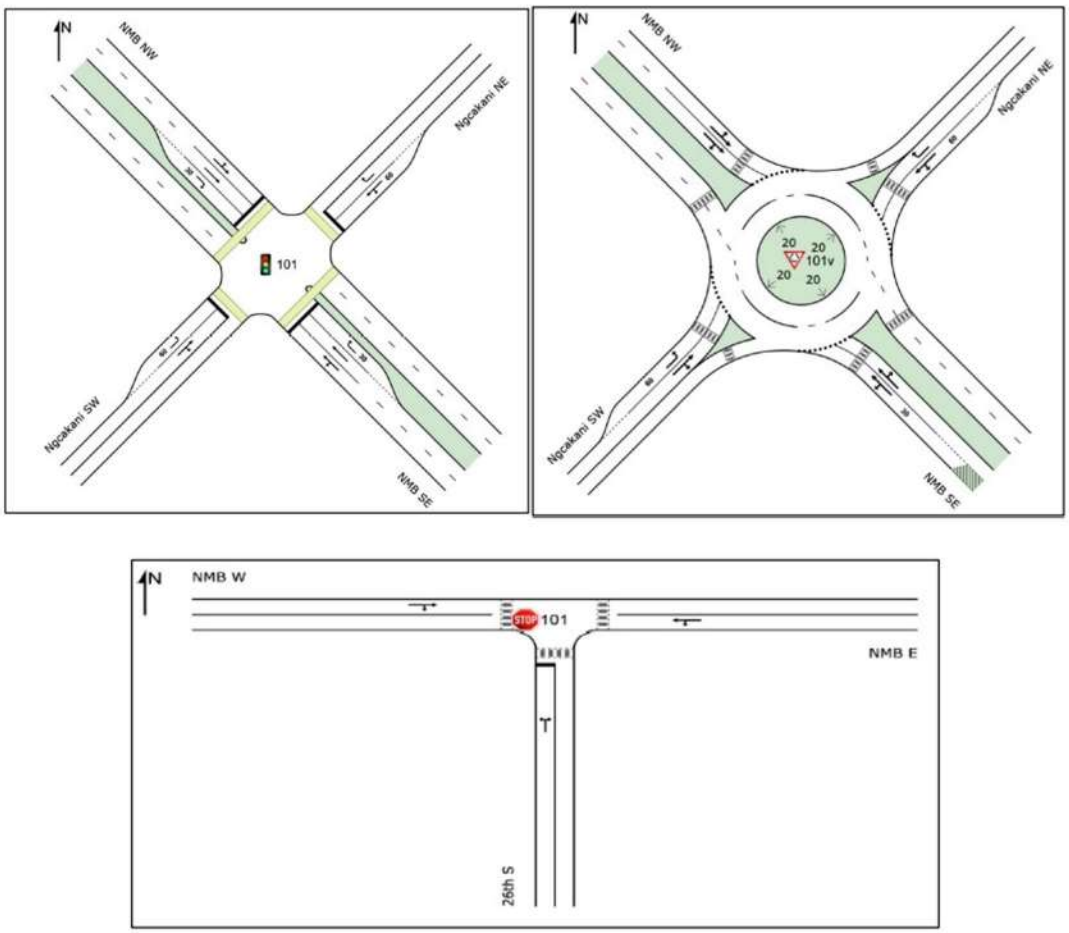


Figure A.1.18: Proposed intersections layouts for acceptable LOS levels

A.2 Fourways Roundabout

SMEC South Africa was appointed by George Municipality for the rehabilitation of Ngcakani Road in Thembalethu. While the upgrading of the NMB and Ngcakani Road intersection was not initially included in the Scope of Work, SMEC has requested by the George Municipality to investigate the feasibility of a traffic circle at the intersection of NMB, Ngcakani Road and Tabata Street.

Two roundabout designs were considered:

- A 30 m diameter traffic circle (shown in Figure A.1.19) which is the maximum diameter which could fit in the existing road reserve; this however has manoeuvrability constraints.

- A 45 m diameter traffic circle (shown in Figure A.1.20) which conforms to the design standards for higher order roads and improves manoeuvrability but would require expropriation.

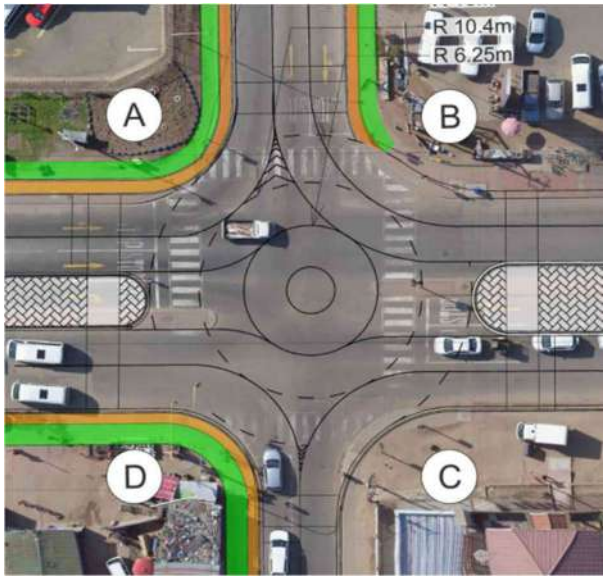


Figure A.1.19: Proposed 30 m diameter circle

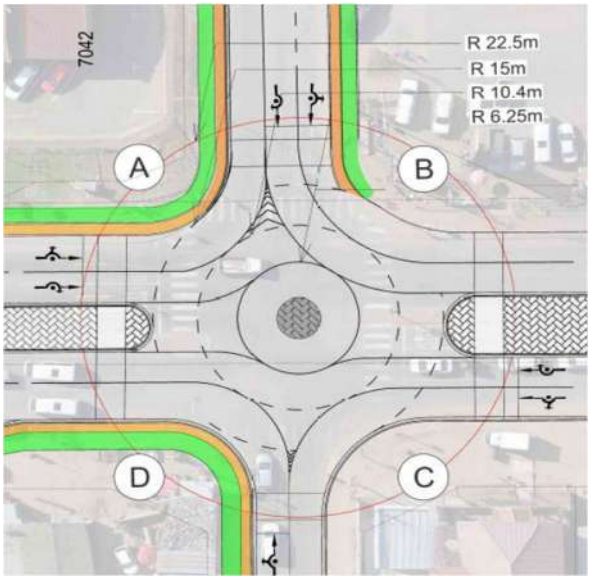


Figure A.1.20: Proposed 45 m diameter circle

The report recommends a 45 m diameter which would require the George Municipality to expropriate, alternatively retain the status quo with improvements to signal timing to improve LOS.

A.3 Rand Street Extension

Note: The reports referenced below were finalised before the final 2023 – 2028 CITP documents and model were available. There may have been updates to the Draft CITP which may impact the conclusions and recommendations of the Route Determination and Traffic Impact Study Reports.

A.3.1 Route Determination Report

There are two components to this report. The first relates to Rand Street Extension between PW Botha Boulevard and Rosedale Main (linkage 39 in Figure A.1.5) , while the second considers options for the eastward extension of Rosedale Main to Thembalethu (linkage 35 in Figure A.1.5).

Rand Street Extension is expected to be a future Class 3 Minor Arterial (see Figure A.1.21), with Rosedale Main Extension a Class 4 Connector/Distributor. Both road alignments offer the potential for accommodation of dual carriageway configuration.

Figure A.1.21: Rand Street Extension Concept (Linkage 39 in the CITP 2023 – 2028)

The Rosedale Main link would improve connectivity to Thembalethu with the alignment connecting more directly with Tabata Street seen as the more logical option according to SMEC's report. Figure A.1.22 shows the alternative alignment options.

The implications of connecting to NMB need further consideration due to:

- The severe limitations of street reserve widths within Thembalethu and;
- The multiple direct property accesses onto all collector and access roads.

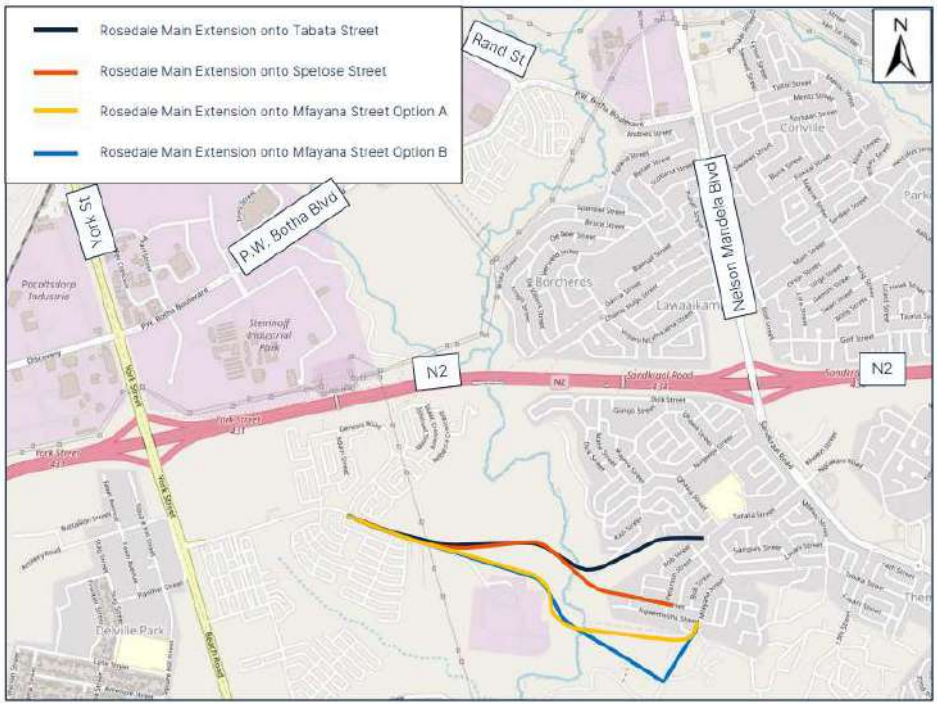


Figure A.1.22: Rosedale Main Extension (Linkage 35 in the CITP 2023 – 2028)

A.3.2 Traffic Impact Study Report

Accompanying the route determination report is a Traffic Impact Study that evaluated the impacts of including the Rand Street Extension and the Thembalethu Link (the extension onto Tabata Street was chosen as the preferred Thembalethu link - shown in black in Figure A.1.22) in a VISUM mesoscopic model, for the 2028 and 2043 horizon years.

A number of scenarios were developed. The weekday AM and PM peak hour modelled flows for all the scenarios are presented in Table A.1.3.

Table A.1.3: Weekday AM and PM peak hour modelled flows

Scenario	Traffic Flow on Rosedale Main Extension	
	EB	WB
2023 weekday AM peak hour modelled flows	N/A	N/A
2023 weekday PM peak hour modelled flows	N/A	N/A
2028 weekday AM peak hour modelled flows	219	215
2028 weekday PM peak hour modelled flows	186	107
2043 weekday AM peak hour modelled flows	229	291
2043 weekday PM peak hour modelled flows	230	106
2043 + future Rand Street extension weekday AM peak hour modelled flows	333	310
2043 + future Rand Street extension weekday PM peak hour modelled flows	239	206

Table A.1.4 shows the LOS of two intersections: N2 Southern Ramp Terminal/NMB and Fourways. For the N2 Southern Ramp Terminal/NMB intersection, LOS F is reflected for 2023 base year. This condition improves to LOS C/LOS B in 2028 with the worst being LOS D in the weekday AM peak of the 2043 horizon year + future Rand Street Extension.

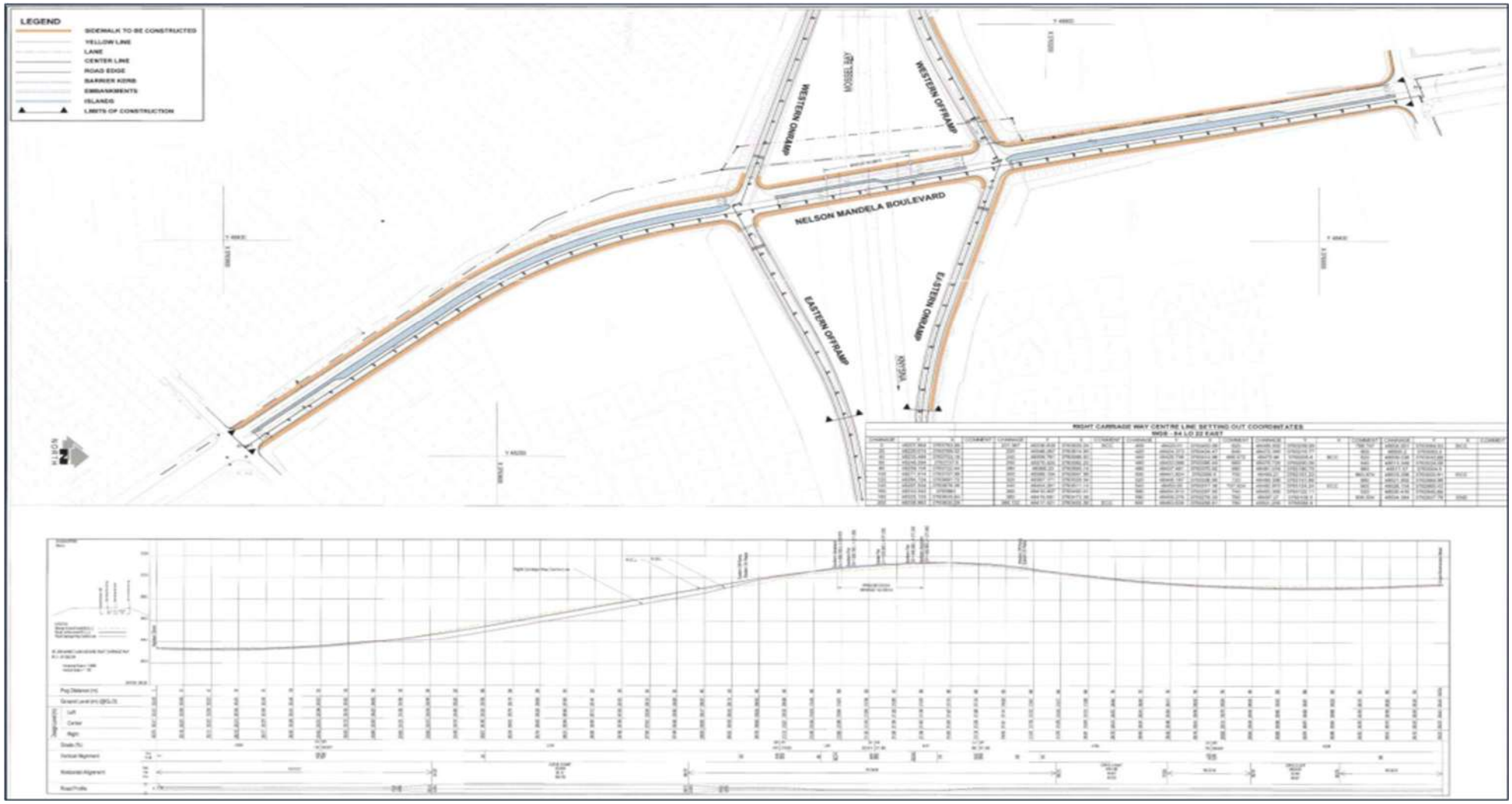
For the Fourways intersection (NMB/Tabata/Ngcakani Road), LOS C is reflected for both 2023 and 2028 where the latter year includes the Rosedale Street Extension. The LOS of the intersection worsens as the years go by but not substantially with the worst LOS recorded to be LOS C.

Table A.1.4: VISUM Rand Street Extension intersection Summary

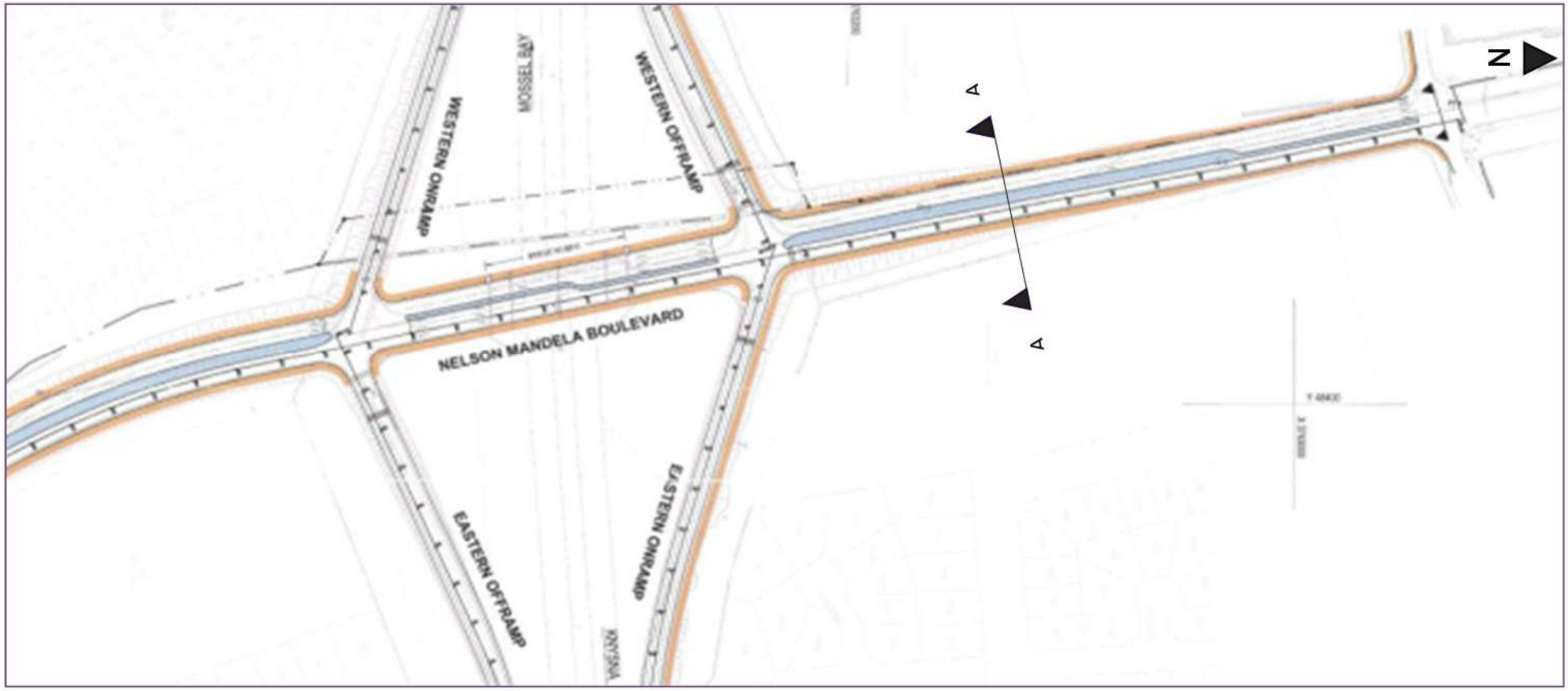
Intersections	Weekday AM		Weekday PM	
	Delay (s)	LOS	Delay (s)	LOS
2023 base year				
N2 southern ramp terminal and NMB	204.42	F	290.20	F
Fourways	21.65	C	16.45	B
2028 horizon year				
N2 southern ramp terminal and NMB	31.17	C	13.49	B
Fourways	23.24	C	17.90	B
2043 horizon year				
N2 southern ramp terminal and NMB	43.53	D	14.91	B
Fourways	24.98	C	19.97	B
2043 horizon year + future rand street extension				
N2 southern ramp terminal and NMB	50.13	D	16.05	B
Fourways	29.13	C	21.94	C

Appendix B

B.1 NMB Upgrades



B.2 Section of NMB currently under construction

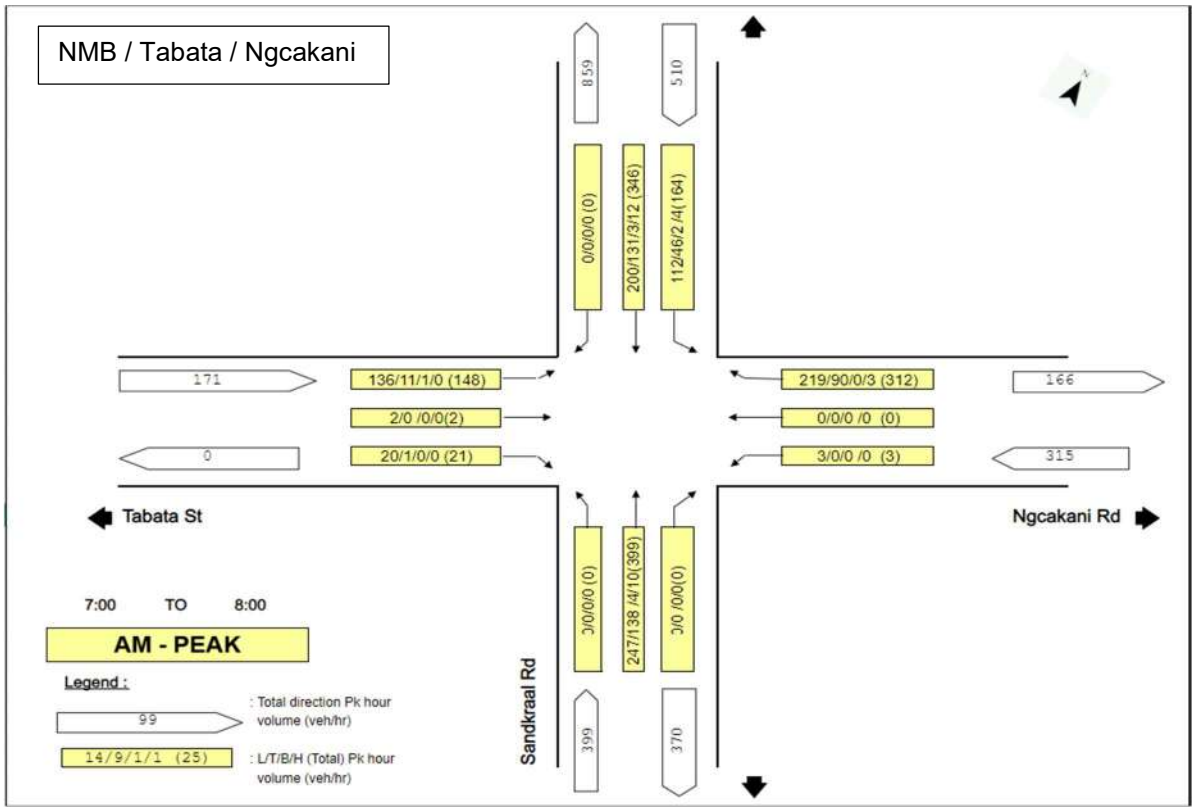


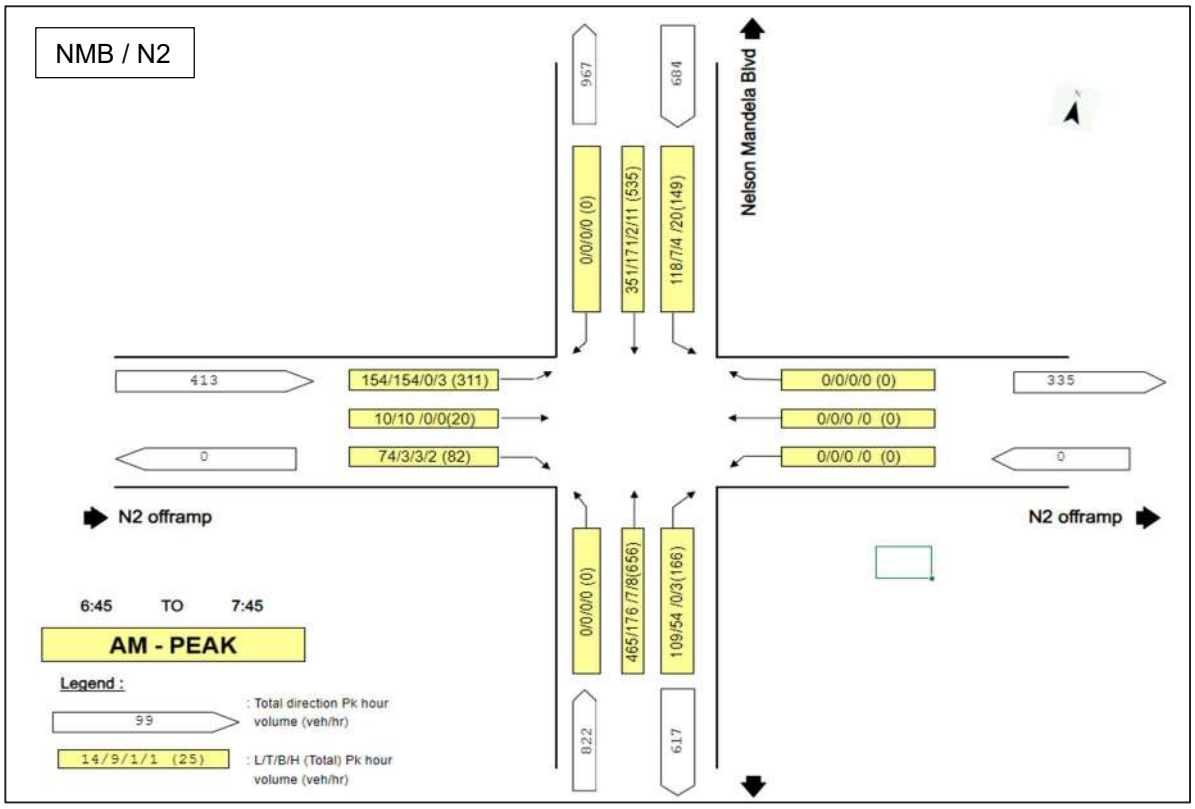
Appendix C

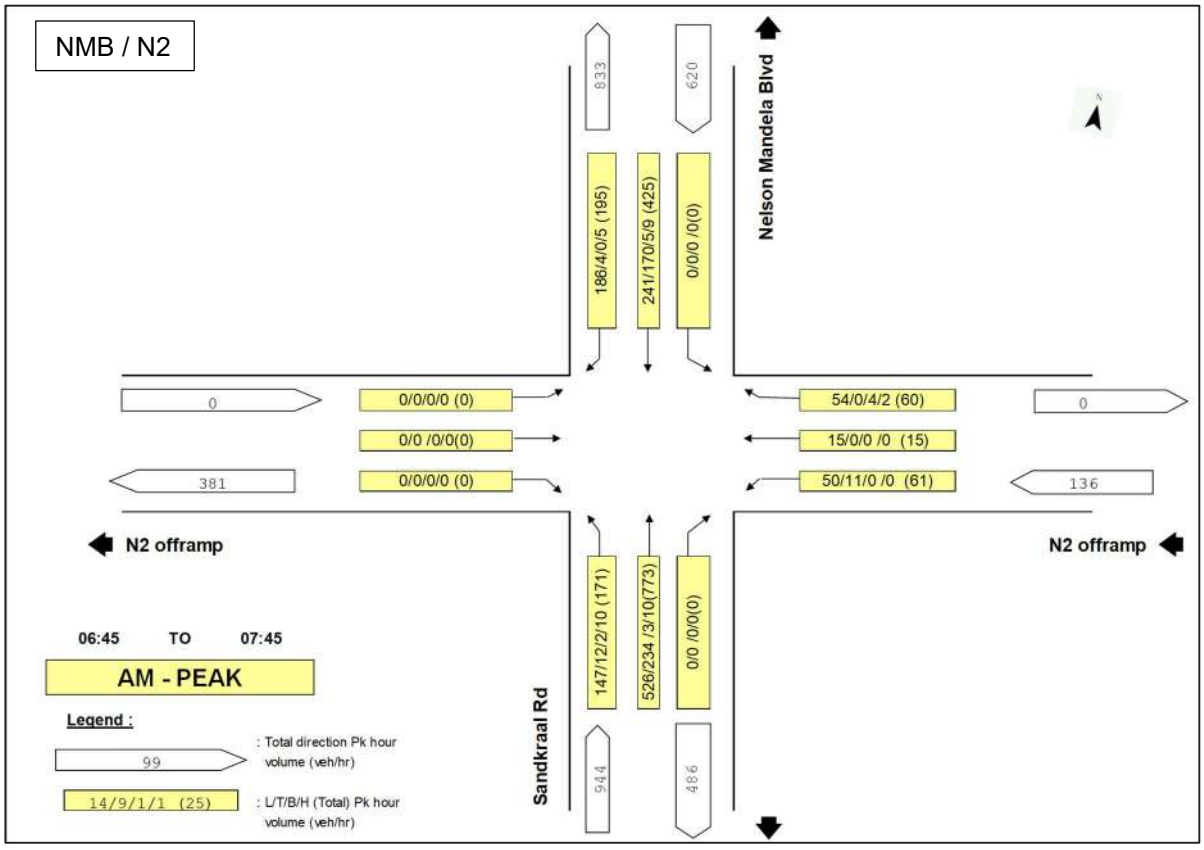
Traffic Count Data (Vehicles and pedestrian)

C.1.1 Vehicle Count Data

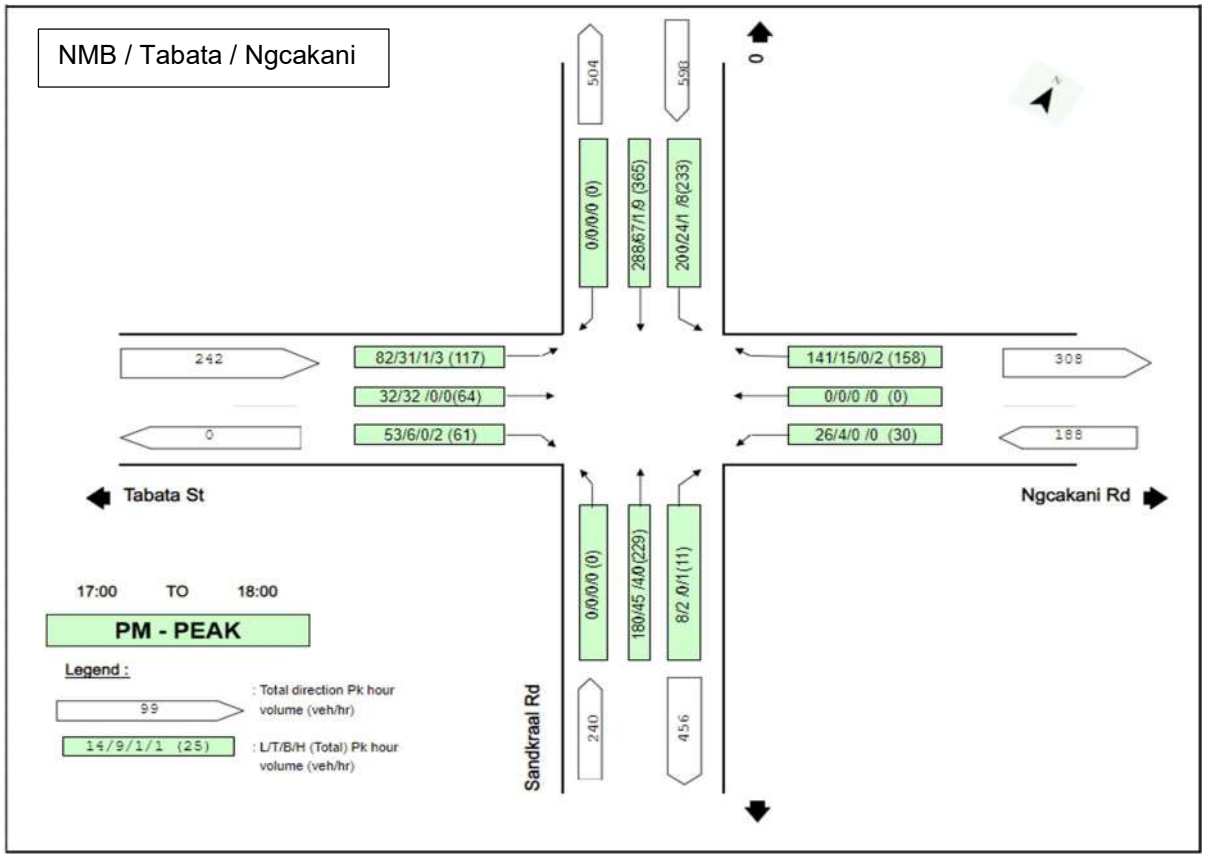
AM Vehicle Counts

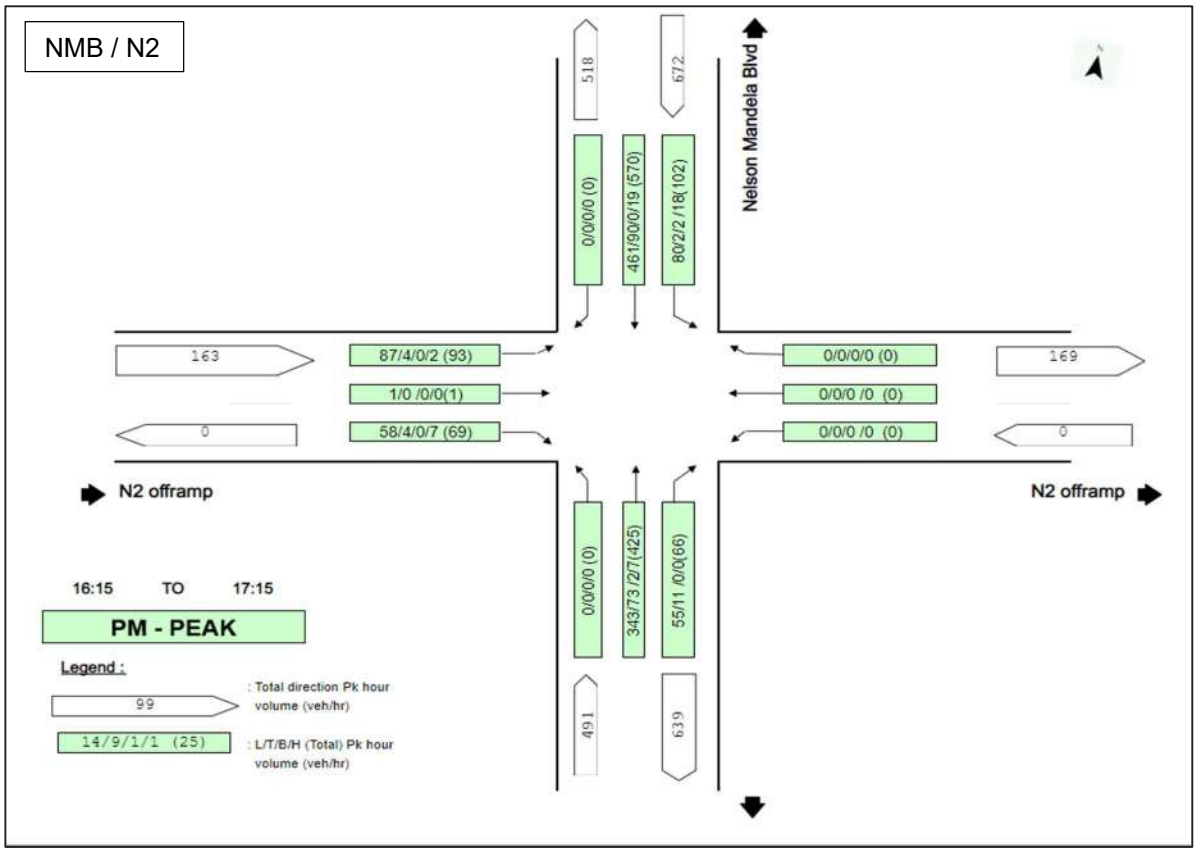


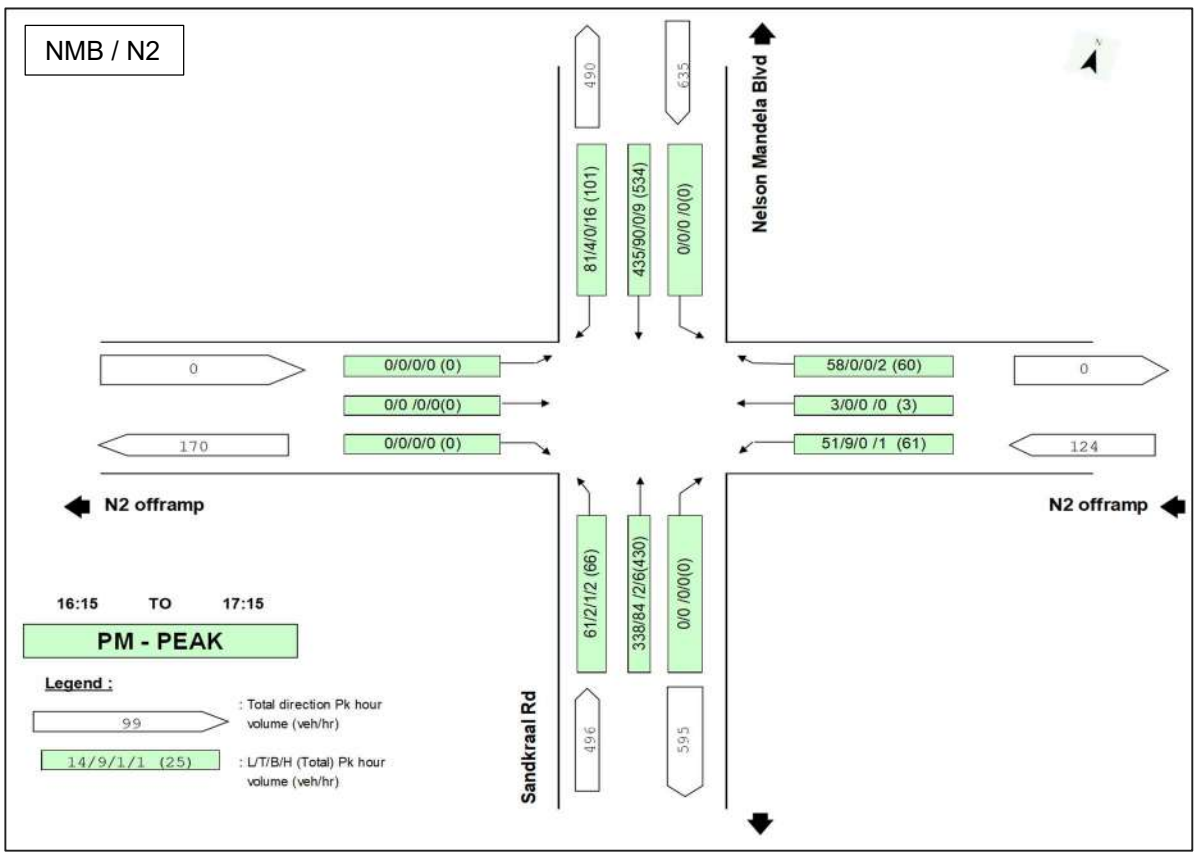

NMB / N2
967
684
Nelson Mandela Blvd
0/0/0/0 (0)
351/17 1/2/11 (535)
118/7/4 /20(149)
413
154/154/0/3 (311)
10/10 /0/0(20)
74/3/3/2 (82)
0
0/0/0/0 (0)
0/0/0 /0 (0)
0/0/0 /0 (0)
335
0
N2 offramp
N2 offramp
0/0/0/0 (0)
465/176 /7/8(656)
109/54 /0/3(166)
822
617
6:45 TO 7:45
AM - PEAK
Legend :
99
: Total direction Pk hour volume (veh/hr)
14/9/1/1 (25)
: L/T/B/H (Total) Pk hour volume (veh/hr)


NMB / N2
833
620
Nelson Mandela Blvd
186/4/0/5 (195)
241/170/5/9 (425)
0/0/0 /0(0)
0
0/0/0/0 (0)
0/0 /0/0(0)
381
0/0/0/0 (0)
54/0/4/2 (60)
15/0/0 /0 (15)
50/11/0 /0 (61)
0
136
N2 offramp
N2 offramp
Sandkraal Rd
147/12/2/10 (171)
526/234 /3/10(773)
0/0 /0/0(0)
944
486
06:45 TO 07:45
AM - PEAK
Legend :
99
: Total direction Pk hour volume (veh/hr)
14/9/1/1 (25)
: L/T/B/H (Total) Pk hour volume (veh/hr)

PM Vehicle Counts

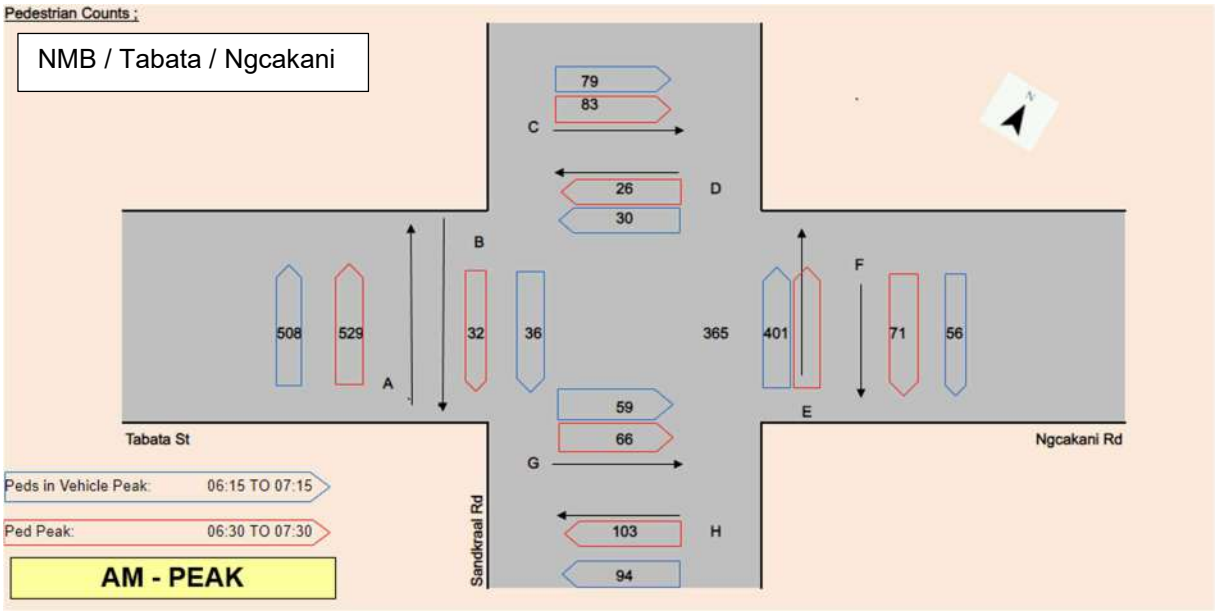


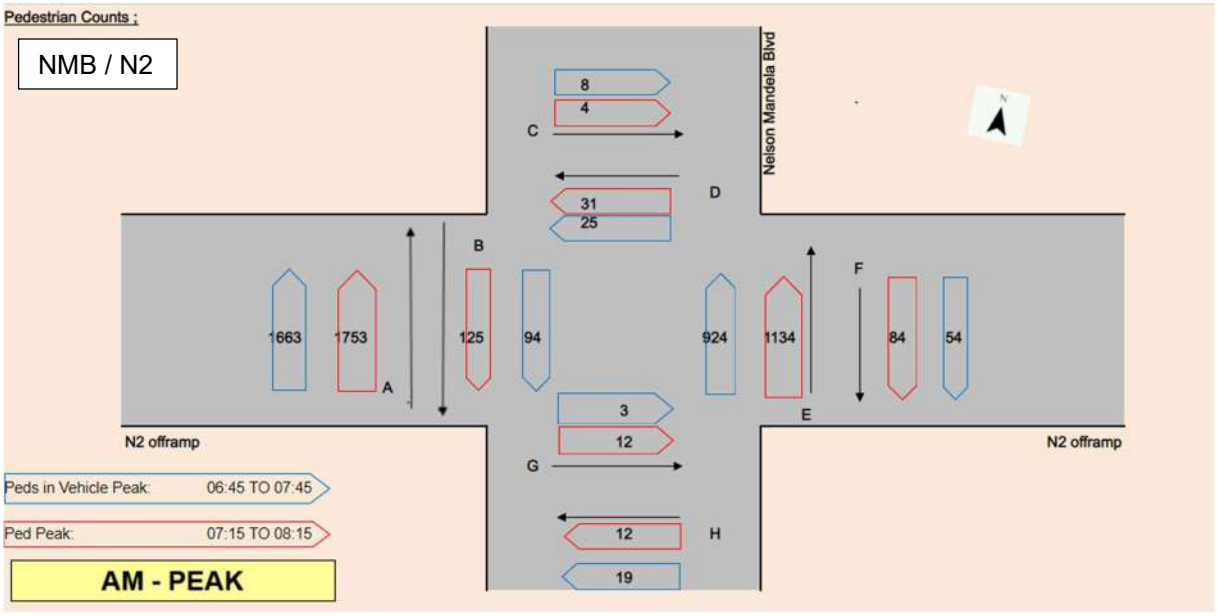

NMB / N2
518
672
Nelson Mandela Blvd
0/0/0/0 (0)
461/90/0/19 (570)
80/2/2 /18(102)
163
87/4/0/2 (93)
1/0 /0/0(1)
58/4/0/7 (69)
0
0/0/0/0 (0)
0/0/0 /0 (0)
0/0/0 /0 (0)
169
0
N2 offramp
N2 offramp
0/0/0/0 (0)
343/73 /2/7(425)
55/11 /0/0(66)
491
639
16:15 TO 17:15
PM - PEAK
Legend :
99
: Total direction Pk hour volume (veh/hr)
14/9/1/1 (25)
: L/T/B/H (Total) Pk hour volume (veh/hr)


NMB / N2
490
635
Nelson Mandela Blvd
81/4/0/16 (101)
435/90/0/9 (534)
0/0/0 /0(0)
0
0/0/0/0 (0)
0/0 /0/0(0)
170
0/0/0/0 (0)
58/0/0/2 (60)
3/0/0 /0 (3)
51/9/0 /1 (61)
0
124
N2 offramp
N2 offramp
61/2/1/2 (66)
338/84 /2/6(430)
0/0 /0/0(0)
Sandkraal Rd
496
595
16:15 TO 17:15
PM - PEAK
Legend :
99
: Total direction Pk hour volume (veh/hr)
14/9/1/1 (25)
: L/T/B/H (Total) Pk hour volume (veh/hr)

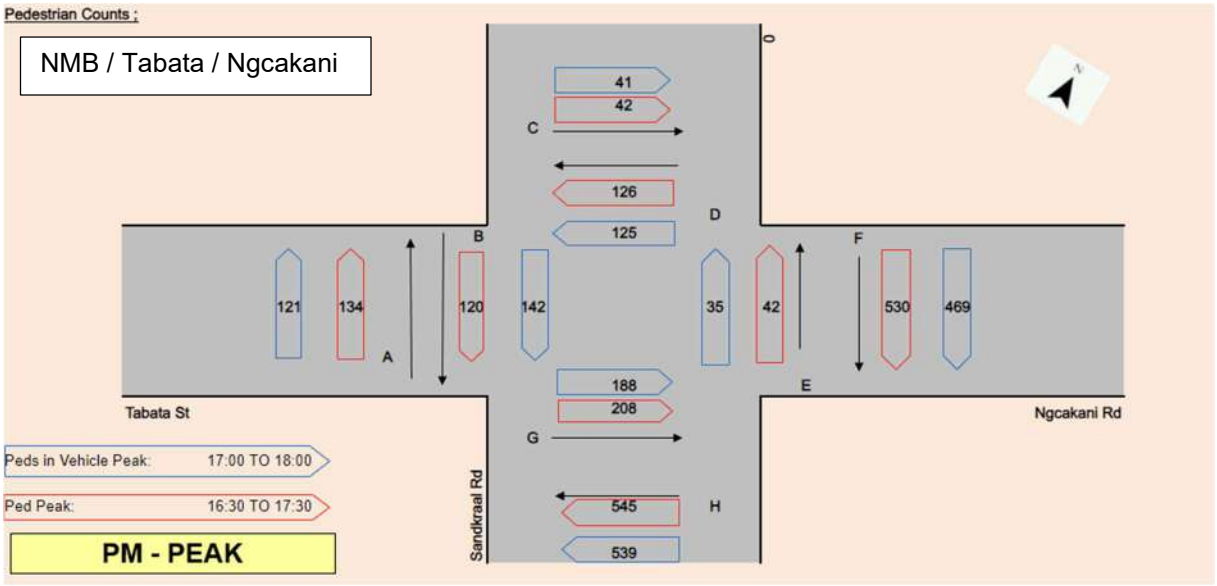
C.1.2 Pedestrian Count Data

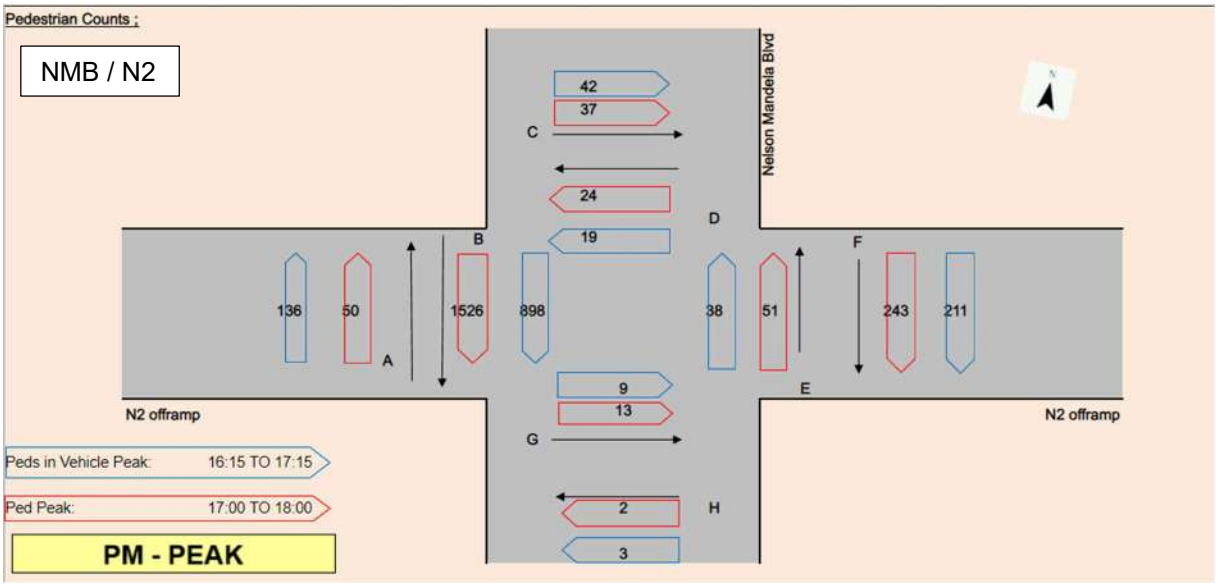
AM Pedestrian Counts





PM Pedestrian Counts





Appendix D

Average Queue Length per intersection

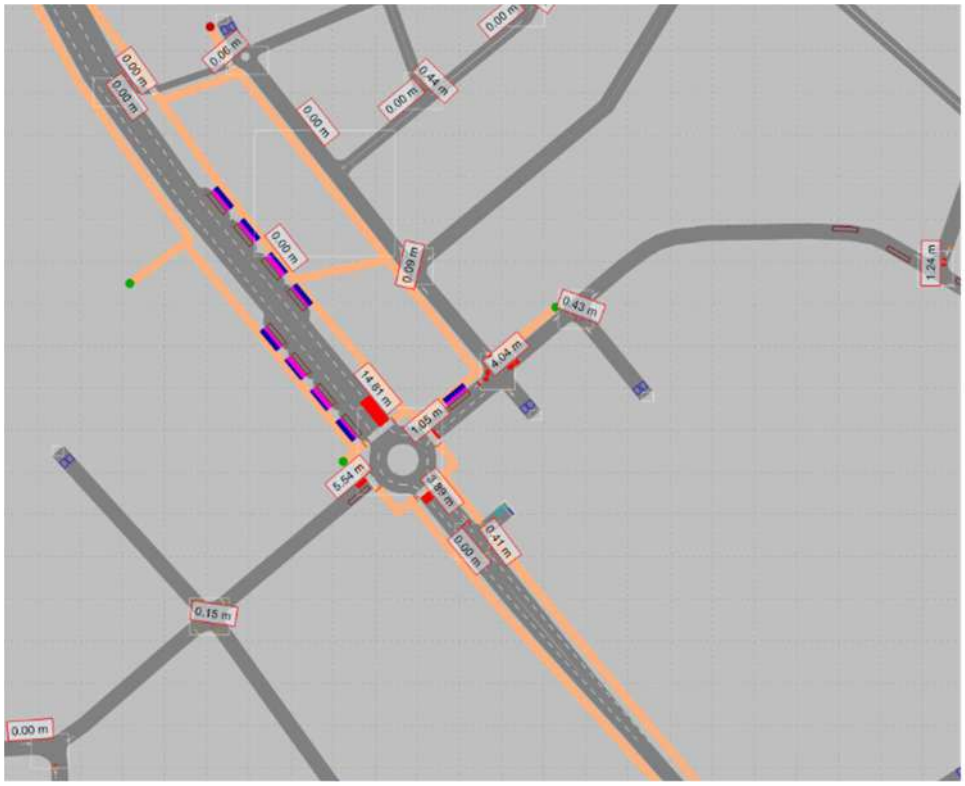
This section provides a more detailed display of the average queue length at each intersection. The queue length for each scenario is illustrated in Table A.1.5.

Table A.1.5: Queue length results for scenarios with the Transfer Location as proposed

Scenario 0A Base Year	
Scenario 1B Base Year	

Scenario 3A	
Scenario 3B	
Scenario 3A_5Y	

Scenario 3B_5Y	
Scenario 5B_5YR	

Scenario 6A_5YR	

From the results it is evident that the average queue lengths on all the approaches of each of the scenarios are not more than 58m, except for Scenario 5B-5YR where it extends beyond 100 m on some of the approaches.

Appendix E

Concept Design Drawing

In diversity there is beauty and there is strength.

MAYA ANGELOU

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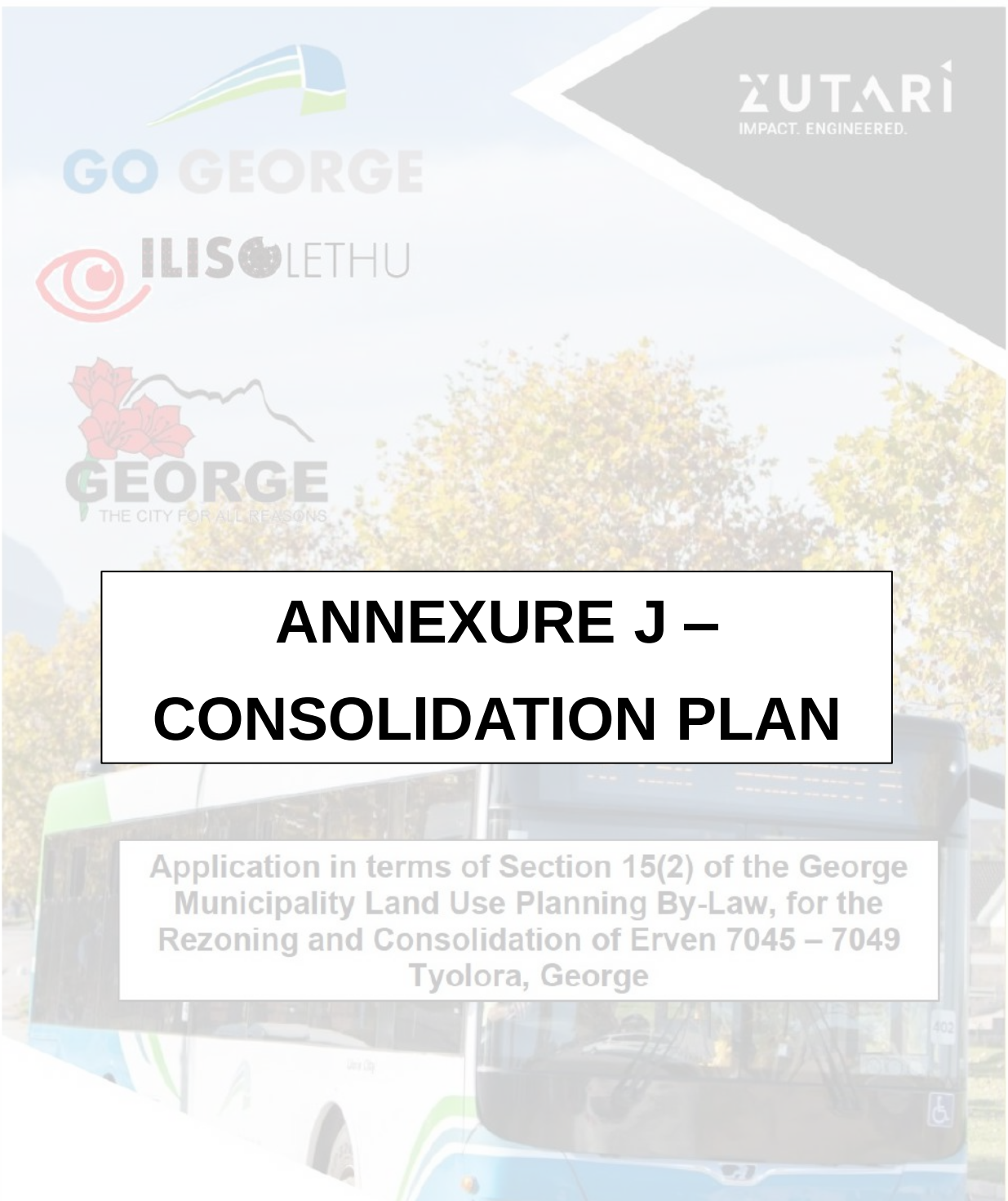
ANNEXURE J – CONSOLIDATION PLAN

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George



Motivation Report

Fourways Transfer Location

Erven 7045- 7049 Tyolora, George

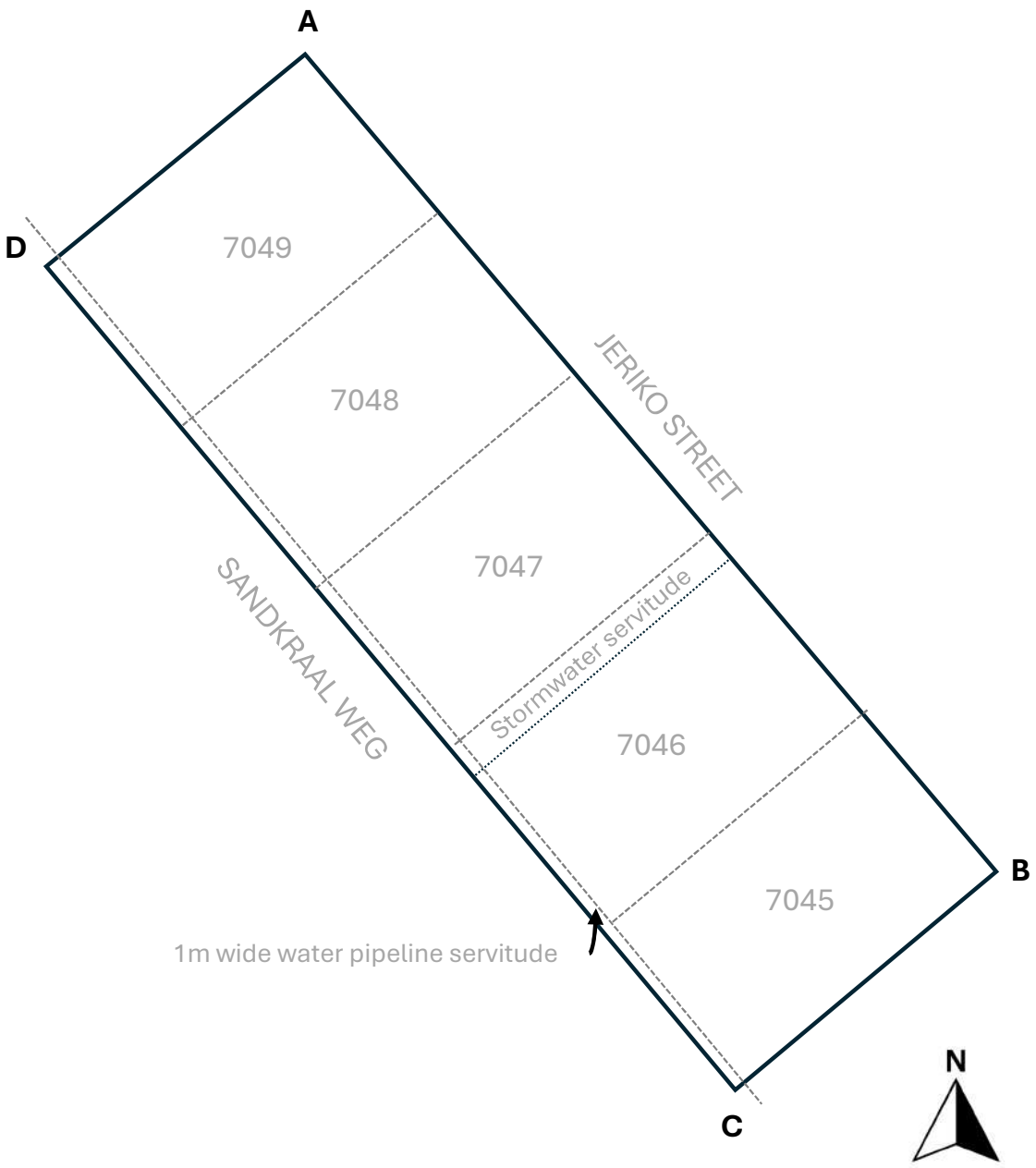
George Municipality

Submission date: 2024/12/12

Document number: 1
Revision: 0

CONSOLIDATION PLAN

ERVEN 7045 – 7049 TYOLORA



- Figure ABCD represents the proposed consolidated erf of erven 7045 – 7049 Tyolora measuring ±2 799m^2 in extent.
- The consolidated erf is subject to an existing 1 m wide water pipeline servitude along its southern boundary (parallel to DC).
- The consolidated erf is subject to a stormwater servitude as indicated running across erf 7046

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ANNEXURE K – SACPLAN REGISTRATION CERTIFICATE

Application in terms of Section 15(2) of the George Municipality Land Use Planning By-Law, for the Rezoning and Consolidation of Erven 7045 – 7049 Tyolora, George

Motivation Report

Fourways Transfer Location

Erven 7045- 7049 Tyolora, George

George Municipality

Submission date: 2024/12/12

Document number: 1
Revision: 0

The South African Council for Planners
SACPLAN

REGISTRATION CERTIFICATE

Issued in terms of Section 13(4) of the Planning Profession Act, 2002
(Act 36 of 2002)

This is to Certify that

Cornelis Rudolf Schroder

ID number: 7805315089081

is registered as a

Professional Planner

in terms of the Planning Profession Act, 2002 and is authorised to act as such in accordance with the said Act and the Rules prescribed thereunder.

Issued under the Seal of the Council

SACPLAN PROFESSIONAL PLANNER

CHAIRPERSON

REGISTRAR

REGISTRATION NUMBER:
A/151/2009

Date of Issue: 08-07-2024

The registered person remains in good standing with SACPLAN for the period ending as stipulated herein.

This certificate is valid until: **30-06-2025**

Verification Number: 9338e35feebe293bc306d82a4ef588f6