

# HERITAGE REPORT

## SECTION 38 OF NHRA: SUBMISSION OF NOTICE OF INTENT TO DEVELOP FOR THE DEPLOYMENT OF TWO OPTIC FIBRE LINES WITHIN THE SOL PLAATJE MUNICIPAL AREA



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For Frogfoot Networks Pty (Ltd)

September 2022



Town Planning | Property Investigations | Heritage Studies

## EXECUTIVE SUMMARY

This report is a Heritage Report in support of the submission of a Notice of Intent to Develop in terms of Section 38 of the National Heritage Resources Act of 1999 (NHRA) for the deployment of two (2) fibre optic network systems (lines) of 300 m plus by Frogfoot Networks Pty (Ltd), an open access fibre network, to allow links (“backhaul”)<sup>1</sup> between existing fibre lines and existing 5G Rain towers within the Sol Plaatje Municipal Area.

The two underground fibre lines will be deployed within the Riviera, Rhodes, Kirstenhof, Verwoerd Park and Diamond Park areas in the Sol Plaatje Municipal Area. The application also includes an application in terms of Section Section 38(1)(d) for possible alterations made to structures older than 60 years (some sidewalks within the study area) which is normally regulated by Section 34 of the NHRA. Due to the nature of the activities and the nature of the areas where the fibre lines are proposed, no impact is foreseen on historical sidewalks and curbstones.

The proposed fibre lines would enable a transmission base that is much more stable than microwave and other wireless technologies currently available within the municipal area and will thus further increase broadband width to users. Currently, these 5G Rain towers are not backhauled on fibre, meaning poor connectivity and lower broadband output for residents of the Sol Plaatje Municipal area especially within areas where residents have limited access to reliable and affordable broadband connectivity.

The proposed fibre lines are underground lines and is required as links between existing lines, previously approved. Frogfoot Networks applied for wayleave approval to the relevant departments within the Directorate Infrastructure and Service of the Sol Plaatje Municipality to enable them to deploy the fibre optic network systems.

It should be noted that the 5G Rain towers are existing and the approval thereof has been dealt with by Rain.

It should also be noted that the local Northern Cape Heritage Authority has no delegation to deal with Section 38 applications in terms of the National Heritage Resources Act, 1999.

The study area includes areas older than 60 years. These areas have not been identified as heritage areas or have been identified as such in the relevant heritage and spatial studies for the Municipal area.

The heritage statement accompanying the NID submission has assessed these areas and did not find any negative impact on any heritage resources along the proposed routes. It is thus

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<sup>1</sup> In a hierarchical telecommunications network, the backhaul portion of the network comprises the intermediate links between the core network, or backbone network, and the small subnetworks at the edge of the network.

recommended that the deployment of fibre as per the individual route plans submitted with this application be implemented due to the economic advantages thereof for local communities, especially those in previously disadvantaged areas, who currently have limited access to good quality broadband services. Some mitigation measures are proposed to limit the impact on trees and sidewalks during excavations.

**NOTICE OF INTENT TO DEVELOP  
DEPLOYMENT OF A FIBRE NETWORK WITHIN THE SOL PLAATJE  
MUNICIPAL AREA**

**TABLE OF CONTENTS**

**SECTION 1  
INTRODUCTION**

1.1	PROJECT DESCRIPTION .....	1
1.2	LEGAL REQUIREMENTS.....	5
1.3	STATEMENT OF INDEPENDENCE .....	10
1.4	EXPERTISE AND PROFESSIONAL ACCREDITATION OF PROJECT TEAM .....	11
1.5	METHODOLOGY AND SOURCES OF INFORMATION .....	11

**SECTION 2  
KEY POLICY INFORMANTS AND SPATIAL POLICIES**

2.1	SOL PLAATJE MUNICIPAL INTEGRATED URBAN DEVELOPMENT FRAMEWORK.....	12
2.2	SOL PLAATJE MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK.....	13

**SECTION 3  
BRIEF HISTORY OF THE STUDY AREA AND ENVIRONS**

3.	HISTORY OF THE STUDY AREA AND ENVIRONS.....	15
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**SECTION 4  
NATURE OF ACTIVITIES OF THE DEPLOYMENT OF A FIBRE NETWORK**

4.	NATURE OF ACTIVITIES.....	17
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**SECTION 5  
SITE INFORMATION AND ANALYSIS**

5.	SITE DESCRIPTION AND ANALYSIS.....	19
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**SECTION 6  
CONCLUSIONS AND RECOMMENDATIONS**

6.	CONCLUSIONS AND RECOMMENDATIONS.....	38
7.	REFERENCES.....	40

## **ANNEXURES**

- ANNEXURE 1: POWER OF ATTORNEY**
- ANNEXURE 2: LOCALITY PLAN OF AREAS WHERE OPTIC FIBRE LINES WOULD BE DEPLOYED**
- ANNEXURE 3: TREE PROTECTION GUIDELINE FOR CONSTRUCTION, EXCAVATION & TRENCHING FOR AERIAL AND UNDERGROUND FIBRE OPTIC CABLING**

## **SECTION 1: INTRODUCTION**

### **1.1 PROJECT AND SITE DESCRIPTION**

This project will entail the deployment of two (2) optic fibre network routes (lines) by Frogfoot Networks Pty (Ltd) to link existing lines within the Riviera, Rhodes, Kirstenhof, Verwoerd Park and Diamond Park areas in the Sol Plaatje Municipal Area

Frogfoot Networks submitted an application for wayleave approval to the relevant Departments within the Directorate Infrastructure and Service of the Sol Plaatje Municipality to allow for the optic fibre deployment on municipal land (within their road reserves and sidewalks). Most of the approvals from the relevant line departments have been obtained and an indication of support was given during a discussion with the Municipality. A formal approval will be issued once the heritage record of decision is received.

Frogfoot Networks Pty Ltd is licenced with ICASA (No 0165/IECNS/JAN/09) in terms of the Electronic Communications Act and strives to fulfil its obligations to supply access to South African communities. With the COVID pandemic and studying and working from home becoming a new reality, most communities can benefit from advanced internet infrastructure such as 5G in their areas. This project will specifically contribute to offer better quality access to network to residents of previously disadvantaged areas within the municipal area as it would provide a link to a recently approved line within the Galeshewe township.

The proposed optic fibre lines connecting these existing 5G Rain towers would enable a transmission base that is much more stable than microwave and other wireless technologies currently available within the municipal area and will thus further increase broadband width to users. Currently, the 5G Rain towers are not backhauled on fibre, meaning poor connectivity and lower broadband output for residents of the Sol Plaatje Municipal area, especially within areas where residents have limited access to reliable and affordable broadband connectivity.

Rain has launched the African continent's first commercial 5G network in 2019 and one of the first in the world. The intention is bringing ultra-fast broadband connections to homes and small businesses at affordable cost. It should be noted that the Rain 5G towers do not form part of this application. Most of the towers have already been erected and Rain is dealing with the relevant application processes in this regard.

Frogfoot Networks Pty Ltd is licenced with ICASA (No 0165/IECNS/JAN/09) in terms of the Electronic Communications Act and strives to fulfil its obligations to supply access to South African communities. With the COVID pandemic and studying and working from

home becoming a new reality, most communities can benefit from advanced internet infrastructure such as 5G in their areas.

Some of the benefits of such a combined network for the Sol Plaatje Municipal area, especially for these previously disadvantaged areas where it would be deployed, would be:

- Lower cost of data.
- Improved access to fast broadband encourages economic growth which will assist to alleviate the unemployment crisis in the country.
- As a foundational pillar of the Fourth Industrial Revolution (4IR), 5G networks will support Government's initiatives to ensure South Africans will benefit from these technological advances.
- Frogfoot is aligned with the 2030 Sustainable Development goals of significantly increasing access to information and communications technology and to strive to provide universal and affordable access to the Internet.
- Smarter cities are safer cities. 5G's ability to connect thousands of cameras and other sensors cost effectively can make a city more efficient and safer.
- Education can be revolutionised by streaming classes to students.
- Virtual reality application holds great promise for this sector.
- Critical machine-to-machine communication, together with augmented reality, can create thousands of jobs in SA, servicing international markets cost effectively.
- Low latency
- Increased number of devices connected to network

The study area is thus the routes of the two proposed optic fibre lines. See **Figure 1** on the next page, also **Annexure 2 (Locality Plan)**, which depicts the different **Routes within the Municipal Area**. Although the Riviera line on its own is less than 300 m it has been included in the NID submission as this would be a combined project.

- **Line 1: Riviera line**
- **Line 2: Kirstenhof/Verwoerd Park/Diamant Park/Rhodesdene line**

Individual Route Plans were submitted for the wayleave application indicating the routes thereof and the proposed/preferred manner to install the optic fibre routes which in this case is only underground (conventional trenching). This was discussed and negotiated with the relevant Departments of the Municipality taking into consideration the location of existing municipal services and soil conditions.

Two types of deployment are possible, namely conventional trenching and aerial fibre. Frogfoot had several discussions with the Sol Plaatje Municipality regarding the possibility of micro-trenching in the road reserves as they have done in other municipal areas. No micro trenching in the road reserve would, however, be allowed as the Municipality's Directorate Infrastructure and Services indicated that there is currently no

National Standard for the provision of micro trenching in existence (in compliance with the Standards Act). It was further indicated that they are of the opinion that the current standard for the provision of telecom ducting is SANS 1200LC (Standardised Specification for Civil Engineering Construction) which only makes provision for conventional trenching methods. The Municipality indicated that the methodology employed in micro trenching is a machined one which relies on scanning technology which has serious limitation when dealing with older services which tend to have densities beyond the parameters of such devices.





**Figure 1:** The proposed two optic fibre routes (marked with red lines) within the Sol Plaatje Municipal Area

## 1.2 LEGAL REQUIREMENTS

### 1.2.1 NATIONAL HERITAGE RESOURCES ACT, 1999

The National Heritage Resources Act, 1999 describes the national estate and what can be considered as heritage resources:

The national estate consists of the following as set out in Section 3 of the NHRA:

#### **Section 3(1):**

For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.

#### **Section 3(2):**

Without limiting the generality of subsection (1), the national estate may include—

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites;
- (g) graves and burial grounds, including—
  - (i) ancestral graves;
  - (ii) royal graves and graves of traditional leaders;
  - (iii) graves of victims of conflict;
  - (iv) graves of individuals designated by the Minister by notice in the Gazette;
  - (v) historical graves and cemeteries; and
- (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa;
  - (i) movable objects, including—
  - (ii) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens; (ii) objects to which oral traditions are attached or which are associated with living heritage;
  - (iii) ethnographic art and objects;
  - (iv) military objects;
  - (v) objects of decorative or fine art;

- (vi) objects of scientific or technological interest; and (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

The National Heritage Resources Act also makes provision for the grading of local heritage resources if it fulfils one or more of the criteria set out in Section 3(3) of the Act or in the case of a site contributing to the environmental quality or cultural significance of a larger area. Certain heritage resources are considered more valuable than others based on age, symbolic context, architectural merit, uniqueness or associations with significant people and other considerations. This will influence their grading.

**Section 3(3):**

Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—

- (a) its importance in the community, or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- (h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- (i) sites of significance relating to the history of slavery in South Africa

**Sections 27 and 30**

Some sites and buildings within the Sol Plaatje Municipal area have been identified as Provincial Heritages Sites in terms of Section 27 of the NHRA and are listed on the Northern Cape Heritage Register prepared in terms of Section 30 of the NHRA. None of these sites fall within the study area of this NID.

It can be accepted that the study area has not yet been formally assessed. The NID will, however, do an assessment of possible heritage resources along the proposed optic fibre routes to determine any possible negative impact on heritage resources.

### **Section 34**

Section 34(1) of the NHRA states that “no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority”. In terms of the NHRA a structure is defined as “any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith”.

No alterations are proposed to any buildings. In terms of this definition a sidewalk could, however, possibly be considered as a structure. Some sidewalks within the study area are older than 60 years and application is thus simultaneously made to allow for a permit in terms of Section 34 to allow for the excavations within these side walk areas. It should be noted that none of the historical curb stones (older than 60 years) are removed during the conventional trenching activities. Where road cuts are done, the contractors tunnel/trench underneath these curb stones.

On the next page, **Figure 2**, is a map showing the areas older than 60 years within the study area. The boundaries of the areas older than 60 years have been determined by utilising historical aerial photographs and more specifically the 1960, 1964 and 1968 aerial photographs which have been obtained from the website of the National Geo Spatial Information Section of the Department of Rural Development and Land Reform’s Geospatial Portal. (<http://www.cdngiportal.co.za/cdngiportal/>)

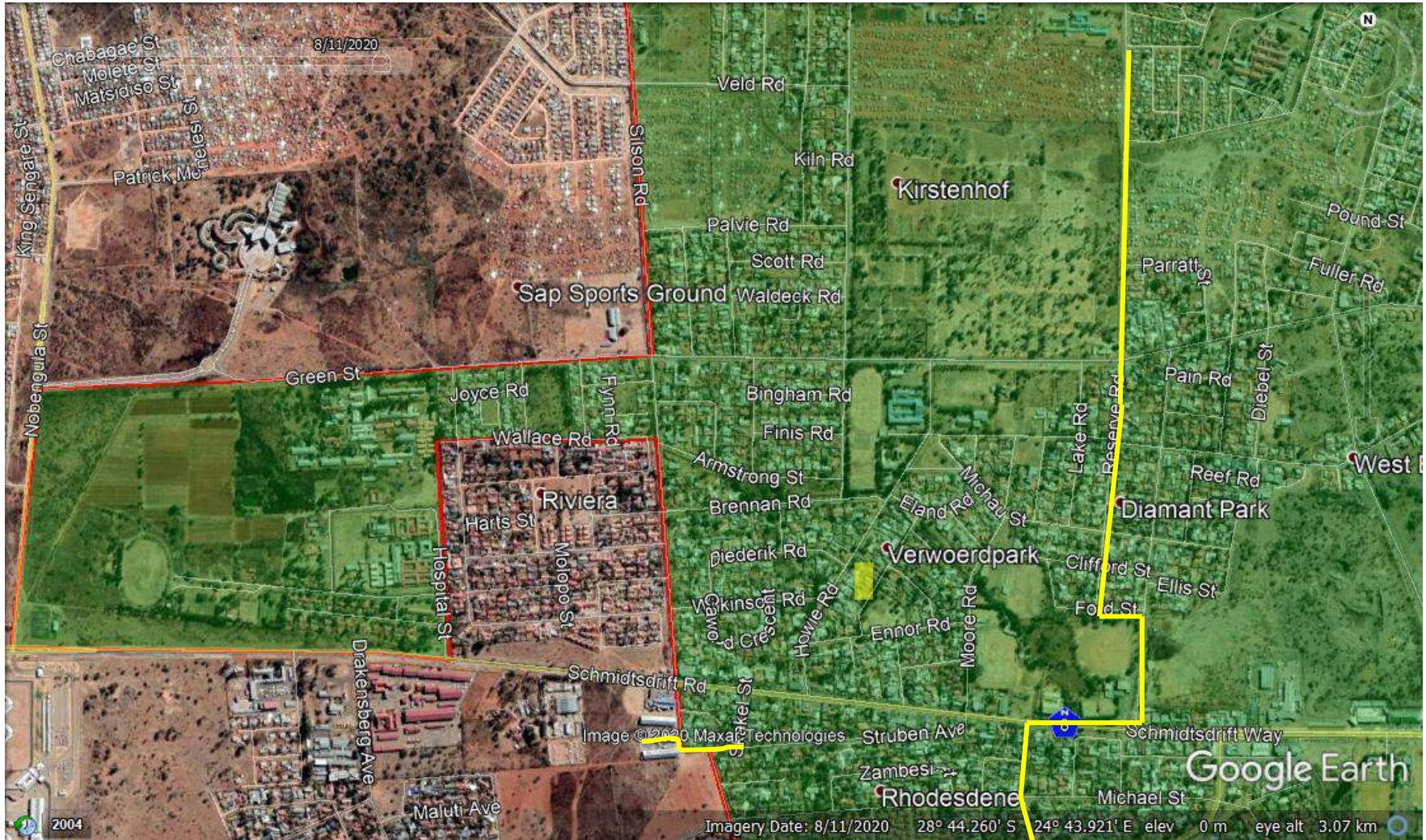


Figure 2: Areas older than 60 years indicated in green and the proposed fibre lines in yellow

## **Section 38**

The proposed activities associated with the deployment of the fibre network routes will include the following development categories as listed in Section 38(1) of NHRA, namely:

Section 38(1)(a): *The construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;*

Section 38(1)(c): *Any development or other activity which will change the character of a site—*

(i) *exceeding 5 000 m<sup>2</sup> in extent.*

Section 38(1)(d): *Any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority – thus e.g. including approvals for any alterations to any structures older than 60 years as required in terms of Section 34 of the NHRA. (No alterations are proposed to any buildings. In terms of this definition of a structure a sidewalk could, however, possibly be considered as a structure. Some sidewalks within the study area are older than 60 years and application is thus simultaneously made to allow for a permit in terms of Section 34 to allow for the excavations within these side walk areas. It should be noted that there are no historical curb stones within the study area.)*

The installation of the fibre network lines thus requires the submission of a Notice of Intent to Develop in terms of Section 38 – the purpose of this heritage report.

The proposed development does not trigger any of the listed activities as set out in the 2014 Environmental Regulations published in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and would thus not require environmental authorisation.

### **1.2.2 THE SOL PLAATJE MUNICIPAL LAND USE MANAGEMENT SCHEME, 2008**

The Sol Plaatje Land Use Management Scheme, 2008 does not make provision for any Heritage Overlay Zones. There are specific provisions with regard to the Big Hole area, but the study area is not affected by any HPOZ's.

In Section 17(1) it states that “permission in terms of Clause 28 shall be required for any alteration to or development affecting an erf listed in the heritage register as compiled and gazetted in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999). This provision would not affect any of the proposed two routes within the study area for the NID.

#### 1.2.4 MUNICIPAL WAYLEAVE APPROVAL PROCESS

All public land within the Sol Plaatje Municipal Area's road reserves is owned by the municipality. The local Council is therefore responsible to administrate this publicly owned land and need to give permission to all parties before any contractor may install utility services or infrastructure. All parties and their contractors therefore need to obtain permission from the local authority to install their services or infrastructure on the public land.

Normally a department within the municipality acts as the custodian of these permissions, even for council services. For the Sol Plaatje Municipal Area it is done by the Directorate Infrastructure and Services. This enables the responsible use of public assets, by co-ordinating service installation, minimising service clashes, simplifies maintenance of assets, and minimises collateral damage due to new installations or construction.

Using a formalised Wayleave, the Council also has the opportunity to control the installation of services, as well as to specify installation and protection requirements for the installed services, and to verify that the service designs meet the engineering and other standards prescribed by the council.

To allow for the deployment of fibre within the road reserves, a Wayleave Approval was thus submitted to the Directorate Infrastructure and Services for each of the different Sectors. These Wayleave Approvals are subject to certain conditions of approval. As indicated earlier in this report, Frogfoot has applied for the required wayleave approvals. Approval have already been obtained from most of the relevant Departments.

The proposed routes and manner of deployment of the fibre lines (only conventional trenching) in this case, is the result of several discussions with the Municipality and what they would support in terms of their wayleave approvals.

No micro trenching in the road reserve is allowed within the Sol Plaatje Municipal Area as indicated earlier in this report.

### 1.3 STATEMENT OF INDEPENDENCE

This is to confirm that *Christine Havenga and Associates*, acting as the Heritage Practitioner, Andrew Berman of *Urban Design Services* acting as Urban Designers and Rene Maria Brett of *Viridian Consulting Landscape Architects* acting as the Landscape Architect, are responsible for undertaking the report. They are independent practitioners and have no vested or financial interest in the future development of the study area being either approved or rejected by the relevant authorities.

## 1.4 EXPERTISE AND PROFESSIONAL ACCREDITATIONS OF THE SPECIALISTS

The expertise of the Heritage, Urban Design and Landscape specialists is presented underneath:

<i>Company name</i>	Qualifications and expertise	Professional accreditations
<i>Christine Havenga and Associates (Christine Havenga)</i>	M Phil in the Conservation of the Built Environment – University of Cape Town  M Town and Regional Planning – University of Stellenbosch	Association of Professional Heritage Practitioners (APHP) No. 0083  South African Council for Professional Planners (SACPLAN) – Reg. No. A/945/1997
<i>Viridian Consulting Landscape Architects (Rene Brett)</i>	B. Landscape Architecture - University of Pretoria, RSA  Master of City Planning and Urban Design - University Cape Town  Green Star SA Accredited Professional	South African Council for the Landscape Architectural Profession (SACLAP) – Reg. No. 20122  Urban Design Institute of South Africa (UDISA) – Reg No. V002

## 1.5 METHODOLOGY AND SOURCES OF INFORMATION

A survey of diverse information repositories was made to identify appropriate relevant information sources. These sources were analysed for credibility and relevance. Credible, relevant sources were then critically reviewed. The objectives of the literature review were to gain an understanding of the cultural landscape within which the project is located; and identify any potential fatal flaws, sensitive areas, current social complexities/issues and known or possible tangible heritage. Information was gained through obtaining the following historical and archival documentation:

- (i) Diagrams and township plans of the study area.
- (ii) Maps and aerial photographs from National Geo-spatial Information.
- (iii) SAHRIS, online / electronic journals and platforms, and certain internet sources.
- (iv) Heritage surveys done by the former National Monuments Council.
- (v) The Northern Cape Heritage Authority Heritage Register
- (vi) The Sol Plaatje Integrated Development Plan and Municipal Spatial Development Framework.



- (vii) Other relevant resources which are cited and included in the literature review's bibliography.
- (viii) Site visits and photographic surveys of the study area.

## **SECTION 2: KEY POLICY INFORMANTS AND SPATIAL POLICIES**

This section briefly outlines key policy informants and Spatial Studies/Policies which informs the future development of the subject block and its immediate surrounds, and includes a brief description of relevant planning and urban design policy for the study area.

### **2.1 SOL PLAATJE MUNICIPALITY INTEGRATED URBAN DEVELOPMENT FRAMEWORK (2017 – 2022)**

The Sol Plaatje Integrated Urban Development Framework (IUDF) is guided by the four principles set out in the National Development Plan (NDP): spatial justice, spatial sustainability, spatial quality, spatial efficiency, and spatial resilience. To achieve this transformative vision, the IUDF introduces four overall strategic goals:

- **Spatial Integration:** To forge new spatial forms in settlement, transport, social and economic areas.
- **Inclusion and Access:** To ensure people have access to social and economic services, opportunities and choices.
- **Inclusive Growth:** To harness urban dynamism for inclusive, sustainable economic growth and development.
- **Good Governance:** To enhance the capacity of the state and its citizens to work together to achieve spatial and social integration.

The proposed fibre lines would link existing fibre lines with newly installed fibre lines within the Galeshewe township area to improve the quality of data access and speed. The IDP states that 31.9% of the population in this area is unemployed – a number which is probably much higher at this stage. The youth make up 41.7% of the unemployed population in the area, 14,8% of the households in this township do not have a source of income while 20,4% (highest percentage) has an income between R19,601 and R38,200. The township's formal housing sits at 74,3%. This confirms the need for affordable high quality broadband access for residents.

## 2.2 SOL PLAATJE LOCAL MUNICIPALITY DRAFT SPATIAL DEVELOPMENT FRAMEWORK 2018-2023 (DRAFT)

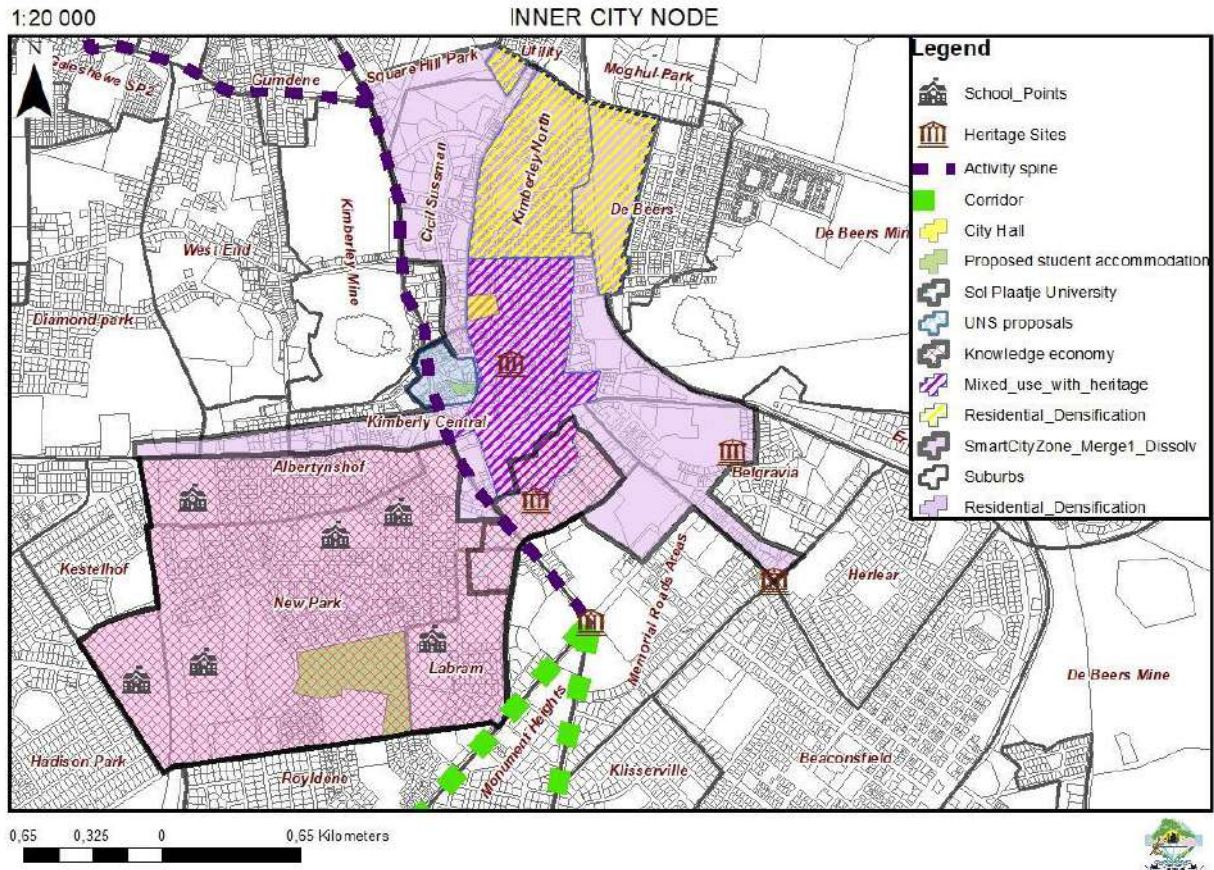
The Municipal Spatial Development Framework (MSDF) is a dynamic model of strategic planning that will be reviewed annually, adjusting its focus and direction based on spatial transformation that takes place on the ground. In addition, it is a spatial policy document that identifies the main challenges and opportunities in the Sol Plaatje Local Municipality (SPLM). Fundamentally, it sets a spatial vision for the future and outlines a set of strategies in order to achieve the vision.

The MSDF states that it is imperative that this MSDF ensures spatial transformation that will enhance and preserve the heritage of the Sol Plaatje Local Municipality. The natural and heritage assets, cultural experiences and destinations places identified in this study are considered important structuring elements of the city. The heritage resources within Kimberley have been identified as key assets of the city. A number of areas which are deemed to be heritage conservation worthy areas (inter alia based on a survey of the former National Monument Council) within the city have been identified, namely:

- (i) Beaconsfield;
- (ii) Belgravia;
- (iii) Inner City;
- (iv) De Beers;
- (v) Open Mine;
- (vi) West End;
- (vii) Memorial Road area;
- (viii) Greater no 2; and
- (ix) Herclear.

The heritage value of the “*Inner City Zone*” is also acknowledged in the MSDF.

None of these areas are included within the study area of this fibre network deployment project of Frogfoot



**Figure 3: Extract from the draft Sol Plaatje Municipal Spatial Development Framework, 2018-2023**

Although the MSDF stresses the importance of protecting heritage resources within the city, it also promotes social and economic development. In this regard it specifically refers to the importance of telecommunication in this regard. It is stated that a ‘smart city’ approach to development should be adopted. The MSDF describes a smart city as “an urban development vision that integrates numerous information and communication technologies and the internet solutions in a secure fashion. This is done in order to better manage and distribute a city’s assets. Technologies such as social media, information market places, and the internet of things can support the Sol Plaatje in achieving objectives such as community well-being, social mobility, economic growth, and infrastructure resilience. New housing developments must include fibre optic networks to ensure that an information rich future is secured. Adopting this approach in Sol Plaatje can go a long way in addressing the urban and social ills faced in the municipality. The Sol Plaatje University intends to commence with a pilot to stimulate a safe zone with free Wi-Fi within the CBD linking the university and the FET College through this initiative. This will be the beginnings of the smart city in Sol Plaatje.”

### **SECTION 3: BRIEF HISTORY OF THE STUDY AREA AND THE BROADER KIMBERLEY AREA**

The study area contains a number of residential suburbs located within the Kimberley township area (demarcated municipal area of the Sol Plaatje Municipality) which is the capital and largest city of the Northern Cape Province. The city developed from the diamond mining camp that was formerly known as Vooruitzicht, Colesberg Kopje and De Beers New Rush. It was renamed Kimberly in 1873 in honour of the Earl of Kimberley and attained municipal status in 1877, and city status in 1912. (*Richardson, Historic Sites of South Africa, 2001, p 53*) Around 1994 post the apartheid era, the Kimberley City Council was renamed Sol Plaatje Municipality.

The only traces of any precolonial settlement within the city's boundaries are scatters of Stone Age artefacts and there is no record of what the place/s might have been called before the first nineteenth century frontier overlay of farm names. It lay beyond the areas occupied by Tswana people in the pre-colonial period. Sites such as the nearby Wildebeest Kuil testify to a Khoe–San history dating up into the nineteenth century.

The city has considerable historical significance due to its diamond mining past and the siege during the Second Anglo-Boer war. It is further associated with important business people of this period such as Barney Barnato and Cecil Rhodes who established the De Beers diamond company in the early days of the mining town. It is also associated with some other historical figures such as Sol Plaatje, a prominent writer and activist and Frances Baard as well-known trade unionist.

Founded after the discovery of diamonds on farms in the area in 1869–71, the mining camp of Kimberley grew as a result of the intensive digging of the diamond-bearing pipe at the hill called Colesberg Koppie. The camp was named after John Wodehouse, 1st Earl of Kimberley, who was then British colonial secretary. The town of Kimberley was created in 1878 and incorporated into the Cape Colony in 1880. In 1885 the Cape Town Railway reached Kimberley, and during the South African War the town was besieged by the Boers for 126 days until relieved by Gen. John French on February 15, 1900. City status was granted in 1912 with absorption of the mining town of Beaconsfield.

After 1888 the Kimberley Mine at Colesberg Koppie and most other mines in the area were controlled by a trust organized by Cecil Rhodes, with production placed in the hands of De Beers Consolidated Mines Ltd. Kimberley Mine (now called the Big Hole), long the richest diamond-producing mine in the world, was closed in 1914, but several other mines remain productive, and diamond mining and cutting remain prominent industries.

The oldest residential suburbs such as Belgravia which dates back to the 1870s, bear testament to the success stories of the time, with many of these massive homes built during the peak of diamond trade. It became a fashionable suburb in the 1890's during

a building boom which followed the amalgamation of the mines. The wealthier citizens built large, elegant homes of clay-coloured Kimberley brick, with elaborate iron roofs and intricate wooden verandah trim. The area has tree-lined streets, hedges and pleasant gardens which contribute to the historical streetscapes of this area. Large open spaces such as Queens Park and the school sport fields also contribute to the specific character of the area. Some well-known residents, associated with the early mining era history of Kimberley, resided in Belgravia, e.g. J. B. Currey, John Orr, Fritz Hirschhorn and Ernest Oppenheimer as well as Rhodes who financed the Sanatorium Kimberley's former most prestige hotel and health resort. Several declared National Monuments, Provincial Heritage sites and other sites/structures which have been included in the heritage register of the Province are found in this area.

The Memorial Road area also contains several National Monuments (e.g. the Honoured Dead Memorial designed by Sir Herbert Baker, which commemorates those who fell during the Kimberley siege I 1904) Provincial Heritage sites and other identified sites/structures which have been included in the heritage register of the Province.

The study area falls mainly within the residential areas of Riviera, Kirstenhof, Diamond Park and Rhodesdene, although older than 60 years, are relatively newer areas within the larger Sol Plaatje Municipal area. There are no identified heritage areas within these areas except for the Solomon Plaatje West End Cemetery which is an identified heritage resource.

Some of the older local churches and civic buildings/areas can also be considered as Grade III heritage resources.

None of these heritage resources are negatively affected by the proposed fibre deployment proposed routes in the study area.

## SECTION 4: NATURE OF THE ACTIVITIES OF THE DEPLOYMENT OF THE FIBRE NETWORK

As indicated earlier, two options for fibre deployment within the Sol Plaatje Municipal area are possible as agreed with the municipality, namely:

- Conventional trenching
- Overhead lines

There are certain requirements and guidelines in terms of legislation such as the Telecommunications Act 103 of 1996 and National Forest Act 84 of 1998 which guide the deployment of aerial fibre and conventional trenching. Underneath are some basic specifications with regard to the different manners of fibre deployment being allowed in terms of wayleave approval:

### **Conventional trenching**

Underneath are some images which give an indication of the nature of the activities associated with conventional trenching.



***Figures 4 - 6: Some photographs of conventional trenching within the Sol Plaatje Municipal area***

## **Deployment of aerial fibre**

As indicated earlier, there are certain requirements and guidelines in terms of legislation such as the Telecommunications Act 103 of 1996 and National Forest Act 84 of 1998 which guide the deployment of aerial fibre. These include specific specifications and guidelines with regard to e.g. the number of poles per kilometre (1 pole every 50 metres), determining the most appropriate position of poles, the height and nature of the poles and cables, colours of cables, fixing of boxes to poles and taking cognisance of other overhead lines such as Telkom lines. There are also specific guidelines with regard to tree pruning where required, e.g. liaison with private land owners and authorities and guidelines with regard to the type of trees to be pruned.

Underneath are some images of the manner in which the aerial fibre is deployed, showing the wooden poles and overhead lines. There would be no links to individual households or other facilities at this stage.



***Figures 7 - 10: Some photographs of aerial fibre deployed elsewhere within the Municipal area***

The considerations which would guide the preferred/most desirable manner of fibre deployment within the Sol Plaatje municipal area would inter alia include the following:

- An assessment of the soil conditions, e.g. if a terrain is very rocky and accordingly difficult to trench.
- The existing utilities infrastructure of the municipality and other service providers such as Eskom are not deployed to the required specifications which has the risk of conventional trenching disrupting the already fragile services which could be difficult to fix.
- The visual impact of aerial fibre on existing structures and streetscapes, e.g. in areas with heritage significance or with scenic qualities.

As indicated earlier, the two proposed fibre lines would be **by means of conventional trenching**. No overhead fibre lines are proposed.

## SECTION 5: SITE AND CONTEXT DESCRIPTION

### 5.1 SITE DESCRIPTION AND LOCATION

The study area is thus the routes of the proposed two underground optic fibre lines within the Sol Plaatje Municipal area as indicated on **Figure 1** and **Annexure 2** to this report. The different lines are indicated in red and numbered on the plan.

**Line 1: Riviera line**

**Line 2: Kirstenhof/Verwoerd Park/Diamant Park/ Rhodesdene line**

### 5.2 Assessment of the individual routes and possible impact on the cultural landscape, built environment and heritage resources

As indicated earlier, there are no formally demarcated heritages areas within the study area. It is acknowledged that no formal heritage audits have been done within the study area. The NID will, however, identify and describe heritage resources identified along the eight fibre deployment routes. Due to the nature of the activities more focus would be placed on the cultural landscape/streetscapes than the history or significance of individual heritage resources. As the fibre would only be deployed by conventional trenching (underground) there would be no visual impact.

The different routes within the study area will be addressed individually. The underneath listed factors will be used to analyse the cultural landscape and built environment (townscape and streetscape) and assess the possible impact of fibre deployment on the character and heritage significance of the individual areas. The following criteria will be used to assess the cultural landscape and built environment of the area.

- Urban structure (framework and hierarchy of routes and space, landmarks/features and edge conditions)
- Density and mix (development intensity and range of uses)
- Scale, height and massing
- Architectural character form and appearances
- Landscape setting and character (typography, natural features, vegetation and greenery)
- Street character – spatial qualities and edge conditions, walls, trees, edges and fences.

The study areas contain primarily residential suburbs which also contain some community/civic facilities such as churches, schools, institutional buildings and public open spaces.



Municipal and other infrastructure includes road reserves (black top and sidewalks as well as underground municipal services), street lightning poles, telecommunication infrastructure (Telkom poles/cables, cellular masts and satellite discs), electrical substations and Eskom overhead lines.

The domestic scale prevalent is primarily single storey. Massing is commensurate with single residential dwellings. Edge conditions include a combination of more traditional fences and modern type of fences. The architectural character form and appearances of the study area is primarily domestic and is a mixture of 20<sup>th</sup> century architectural styles. The streetscapes consist of primarily dwelling houses (formal as well as informal) which are relatively ordinary architectural examples with ordinary or minor aesthetic merit. The streetscapes in the older areas can be considered 3C's heritage resources – being typical/representative of a certain period within the establishment of the township and not having a high architectural or streetscape significance.

The study area is flat and there is a combination of avenue trees and pockets of garden trees. Mature trees are found on some of the sidewalks within the study area, although in general much less than elsewhere in the historic areas of the City. There is little other greenery on the sidewalks. Certain undeveloped areas have quite a rural character to it.

Building frontages and roof outlines are mostly nearer to the street and are very visible due to smaller front garden areas and lack of mature trees in front gardens. Roof lines are visible from the street. Some frontages are often obscured by high solid boundary walls and other security measures.

On the next pages, more detail will be provided regarding the location of the different routes such as the areas where it will run, the streetscape characteristics of these areas and any heritage resources within the areas. The different sections along these routes will be addressed individually.

(i) **RIVIERA LINE (line 1)**

This underground line will start at a commercial site on the corner of Silson Way and Struben Avenue. It runs on Struben Avenue up to the corner of Skakel Street.



**Figure 11:** Proposed route of the Riviera Line

The first section of this route is primarily residential dwelling houses to the north and an open space to the south of Struben Avenue. A portion of this area is older than 60 years, but it contains mostly more recently built dwelling houses not being representative of a specific architectural style. Houses are setback from the street and are primarily enclosed with palisade fencing. The sidewalks are gravel with tarred or paved carriage way crossings. The road verges contain some mature trees, but little other greenery.



**Figure 13:** Dwelling houses along Struben Avenue



***Figure 14: Dwelling houses along Struben Avenue***



***Figure 15: Open space area to the south of Struben Avenue***

### Analysis of the area and possible impact on heritage resources

The area does not contain any identified heritage resources and does not fall within a declared historical area or proposed heritage area or indicated as a future Heritage Protection Overlay Zone. It is not an identified archeologically sensitive area. It is thus not foreseen that the proposed underground fibre will have a negative impact on any heritage or archeological resources.

(ii) **Kirstenhof/Diamant Park, Rhodesdene Line (Line 2)**

This route starts in the northern section of Reserve Road, connecting the existing 5G Rain tower at Re Tlameleng School southwards towards Anderson Street whereafter it then runs in Schmidtsdrift Road (N8) to the west for approximately two streetblocks whereafter it turns south again in Selous Avenue up to the intersection of Jameson Avenue where it terminates and connects with an existing approved fibre line.



**Figure 16:** Proposed route of the Kirstenhof/Diamant Park, Rhodesdene Line

The route runs primarily through residential areas. The northern sections runs along the Du Toitspan Cemetery – although on the opposite side of Reserve Road. Towards the intersection with Schmidtsdrift Road it runs along sport fields whereafter it is primarily Single Residential land uses. The different sections along the road will be addressed underneath:

## Section along Reserve Road

This section of the route starts at an existing 5G Rain tower at the Re Tlameleng School in Kirstenhof. Then it crosses the road and run along the eastern side of Reserve Road.



**Figure 17:** Aerial photograph of the route along Reserve Road – indicated in red (Source Google Maps 2022)

On the next pages are some images of the residential dwellings, the Du Toits Pan Cemetery and other structures and land uses along this route.



**Figure 18:** Starting point of the route at the Re Tlameleng School in Kirstenhof



**Figure 19:** Line crosses Reserve Road where it runs in the sidewalk along the Single Residential properties of a residential area of Galeshewe



**Figure 20:** Line crosses Reserve Road where it runs in the sidewalk along the Single Residential properties of a residential area of Galeshewe



**Figure 21:** The route the passes an informal settlement to the north of the Du Toitspan Cemetery



**Figure 22:** Section of route running along residential areas to the west and Du Toitspan Cemetery to the east



***Figure 23: Streetscape along Reserve Road with the Du Toits Pan Cemetery along the road***



***Figure 24: Streetscape along northern section of Reserve Road***



***Figures 25: Streetscape in southern section of Reserve Road (Diamond Park area)***





***Figure 26: Streetscape in southern section of Reserve Road (Diamond Park area)***



***Figure 27: Intersection of Reserve Road and Green Street***

The residential houses are a combination of formal and informal structures. Although the area is older than 60 years the dwelling houses are very ordinary suburban houses most are modern structures which, although some being representative of a certain period within the Kimberley township development, don't have specific heritage or architectural significance. The sidewalks are mostly gravel with some trees, but not your typical tree lanes found elsewhere in the older residential suburbs of the town.

The Du Toitspan Cemetery can be considered as a local heritage resource (3C). The fibre cables would be deployed underground and at the opposite side of the road within a road reserve (sidewalk area) which have previously been excavated for the installment of municipal and other services (e.g. for poles for Eskom and Telkom lines). It is thus not foreseen that there would be any impact on archeological resources.

No negative impact on any streetscapes, individual dwelling houses or heritage resources is thus foreseen.

### Section along Ford Street

The route runs for a single streetblock along Ford Road. This is a residential street to the north and a sport complex to the south.



**Figure 28:** Aerial image of the Ford Street section of the route (dotted red section)



**Figure 29:** Intersection of Reserve Road and Ford Street



***Figure 30: Residential dwellings and streetscape in Ford Street***



***Figure 31: Boundary wall around the sport complex to the south***

Although the houses in this area are all around 60 years and older, they are very ordinary suburban houses and most are modern structures which, although some being representative of a certain period within the Kimberley township development, don't have specific heritage or architectural significance. The sidewalks are mostly gravel with some greenery and trees, but not your typical tree lanes found elsewhere in the older residential suburbs of the town.

The area does not contain any identified heritage resources and does not fall within a declared historical area or proposed heritage area or indicated as a future Heritage Protection Overlay Zone. It is not an identified archeologically sensitive area. It is thus not foreseen that the proposed underground fibre will have a negative impact on any heritage or archeological resources.

## Section along Anderson Road

This section of Anderson Street runs along a sport complex to the west and an open area containing a driving range to the east. Underneath are some photographs of the streetscape in this section.



**Figure 32:** Aerial image of the Anderson Road section of the route (dotted red section)



**Figure 33:** Streetscape at intersection of Anderson Road and Reserve Road



***Figure 34: Streetscape in Anderson Road***



***Figure 35: View towards the driving range***



***Figure 36: Sportfield buildings***



***Figure 37: Light industrial/commercial activities on the intersection of Anderson and Schimtdrift Roads***



***Figure 38: Commercial (car wash) activities on the intersection of Anderson and Schimtdrift Roads***

### Assessment of area and possible impact on heritage resources

This route has sport fields and their associated buildings on both side of the road. Some of these buildings are used by the local government and in general more recent and don't have any architectural significance. Sidewalks are gravel with limited tree planting. The area has somewhat of a rural character, except for the commercial/light industrial node at the intersection of Anderson and Schimtdrift Roads..

This is not an identified archaeologically sensitive area, and it is not foreseen that the underground fibre will have any negative impact on heritage resources.

### **Section along Schmidsdrift Road (N8)**

Smidsdrift Road (N8) is a major east-west collector road within the Sol Plaatje Municipal area. Mixed land uses are found along the road and a commercial node is found around the intersection with Anderson Road while lower order residential uses are found on the southern side towards the intersection with Selous Avenue. Underneath are some photographs of the streetscape in this section.



***Figure 39: Aerial image of the Smidsdrift Road (N8) section of the route (dotted red section)***



***Figure 40: Streetscape in Smidsdrift Road (N8) at the intersection with Anderson Avenue***



**Figure 41: Commercial component on the southern side of Smidtsdrift Road (N8)**



**Figure 42: Commercial building on the southern side of Smidtsdrift Road (N8)**



**Figure 43: Jim Summers Hall (multi-purpose hall) on the northern side of Smidtsdrift Road**





**Figures 44 and 45:** *Jim Summers Hall (multi-purpose hall) on the northern side of Smidtsdrift Road*

#### Assessment of area and possible impact on heritage resources

This route is characterised by mixed land uses on both side of the road. Most of the commercial buildings are recent modern buildings and the dwelling houses, of which some have been converted into commercial units, have no specific architectural or heritage significance. Sidewalks are generally wide, some are paved, but most are gravel with limited tree planting and other greenery.

This is not an identified archaeologically sensitive area, and it is not foreseen that the underground fibre will have any negative impact on heritage resources.

## **Section along Selous Avenue**

The last section of the route is along Selous Avenue in the Rhodesdene residential area. This is a primarily residential area.



***Figure 46: Aerial image of the Selous Avenue (dotted red section)***



***Figure 47: Streetscape in Selous Avenue close to the intersection with Smidtsdrift Road***



**Figure 48:** Streetscape in Selous Avenue



**Figure 49:** Last section of the route in Selous Avenue

### Assessment of area and possible impact on heritage resources

This route is characterised by Single Residential dwellings on both side of the road. Sidewalks are generally wide, mostly gravel with only tree planting and no other greenery. This section has some mature tree lanes which is typical of the historical streetscape of Kimberley.

This is not an identified archaeologically sensitive area, and it is not foreseen that the underground fibre will have any negative impact on heritage resources.

## **SECTION 6. RECOMMENDATIONS AND CONCLUSIONS**

The individual assessments of the different sections of the proposed 2 underground optic fibre routes confirmed that there would be no detrimental impact on any individual heritage resources. In certain section some mature tree lanes, typical to the historical Kimberley

streetscape are found. These trees can thus be considered as a heritage resource and care should be taken to not harm the tree roots during excavations.

It is important to consider that the project will offer many socio-economic advantages for local residents, especially within certain disadvantaged areas, and the proposed manner of fibre deployment to ensure linkages with the existing 5G Rain towers will speed up access to higher quality more affordable broadband access to them.

**No further heritage studies are thus recommended.**

The following is recommended to lessen the impact of the deployment of the fibre lines along the two routes within the study area:

- (i) The excavations should comply with the **Tree Protection Guideline for Construction, Excavation & Trenching for Aerial and Underground Fibre Optic Cabling (Annexure 3)** to prevent any damage to root systems of mature trees which are considered a heritage resource within certain area within the study area. Any subcontractors should be trained by Frogfoot Networks regarding these protocols.
- (ii) Care should be taken to not harm any of the historical curb stones should it be present within the study area. Trenching underneath the curb stones is proposed.
- (iii) Archaeological monitoring of all excavation activities by a suitably qualified and registered archaeologist.
- (iv) A Close-Up Report be prepared by Frogfoot Networks within 30 days of completion of the project.

## SECTION 7 REFERENCES

### PRIMARY SOURCES

Google Earth images and Google Pro images

National Geo-Spatial Information (NGI): Historic aerial photographs

Photographs: Christine Havenga

Surveyor general: Survey diagrams and maps

*Survey of Buildings and Sites of Architectural, Historical and Contextual Importance in Kimberly* done by the Division of Professional and Technical Services of the former National Monuments Council in 1986

Northern Cape Heritage Register

*Survey of Buildings and Sites of Architectural, Historical and Contextual Importance in Kimberly* done by the Division of Professional and Technical Services of the former National Monuments Council in 1986

Frogfoot Draft FTTH Aerial Line Cable Specifications

### ACTS, POLICIES AND GUIDELINES

Sol Plaatje Local Municipality Draft Spatial Development Framework 2018-2023

National Heritage Resources Act (Act No.25 of 1999). Government Gazette Vol: 406, Cape Town. 28 April 1999. No. 19974.

Sol Plaatje Municipal Planning By-Law (2015) and Development Management Scheme

### BOOKS AND PUBLICATIONS

Anderson, Tania (2001). *A Beginner's Guide to the Plants of Kimberley and Surrounds*.

Beet, George and others (10996). *Knights of the Shovel. Glimpses of Life on the Diamond Fields 1869 – 1914*.

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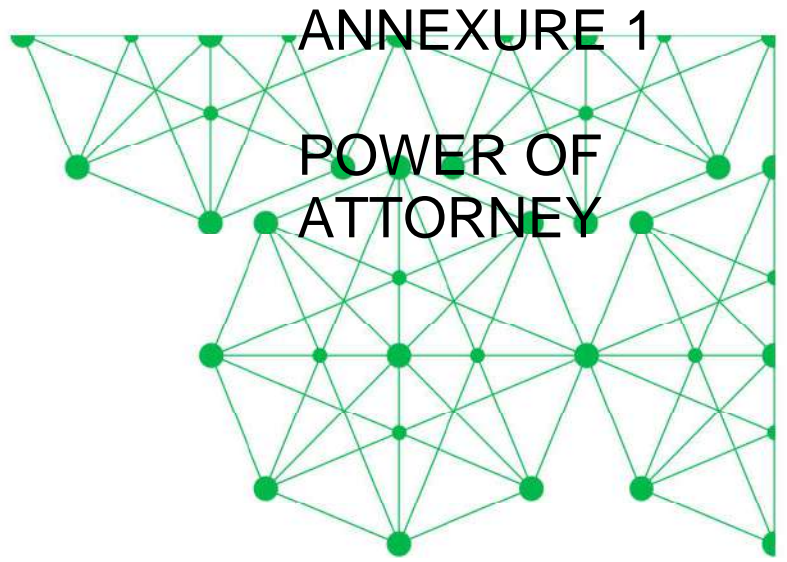
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**Frogfoot**  
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ANNEXURE 1

POWER OF ATTORNEY

**Special Power of Attorney**

I, the undersigned, **Abraham Albertus Cilliers van der Merwe**, with identity number 7804215013085, Chief Executive Officer of Frogfoot Networks (Pty) Ltd (company registration number 2006/011693/07) do hereby nominate and appoint **Christine Havenga**, with identity number 6610010119089 of **Christine Havenga and Associates (a sole proprietor)** in her capacity as a **Professional Planner and Heritage Practitioner** to represent Frogfoot Networks (Pty) Ltd and exercise all powers as agents as fully and effectually as I might or could do if personally present and acting in person without in any way detracting from the powers aforesaid, I hereby authorise our said Agent:

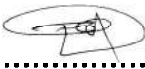
to do such things, sign and submit such documents as are required with regard to preparing and submitting an application for a Notice of Intent to Develop in terms of section 38 of the National Heritage Resources Act of 1999 with regard to the proposed deployment of a fibre optic telecommunications network within the **Sol Plaatje Local Municipality area.**

THUS DONE and SIGNED at Cape Town on the 22 day of April 2022 in the presence of the undersigned witnesses.

As witnesses:

- 1   
Amy Mizeer (Apr 22, 2022 08:40 GMT+2)
- 2   
Tracy Juut (Apr 22, 2022 08:46 GMT+2)

*Signatures of witnesses*



*Signature of the CEO*  
of Frogfoot Networks (Pty) Ltd

# ANNEXURE A: LOCALITY PLAN



**PROPOSED ROUTES OF THE TWO OPTIC FIBRE ROUTES (MARKED IN RED) WITHIN THE SOL PLAATJE MUNICIPAL AREA**



## TREE PROTECTION GUIDELINE FOR CONSTRUCTION, EXCAVATION & TRENCHING FOR AERIAL AND UNDERGROUND FIBRE OPTIC CABLING

### 1. Introduction

Trees can be damaged or killed by a wide variety of construction activities. Such as broken or torn branches and root damage. Broken or torn branches can lead to diseases and insects inserting the trees through the open wounds.

Trees are never the same shape below ground as they are above, so it is difficult to predict the length or location of their roots. Typically, however, approximately 90-95 percent of a tree's root system is in the top 90--100 cm of soil 100 cm of soil, and more than half is in the top 30-50 cm. The part of this root system in which construction damage should be avoided is called the Root Protection Area (RPA).

One common method to identify the RPA is to define it as the "dripline"--the area directly below the branches/crown of the tree. However, many roots extend beyond the longest branches a distance equal to two or more times the height of the tree. For this reason, you should protect as much of the area beyond the dripline as possible.

On most construction or excavation sites space is limited and it is not possible to protect the entire canopy and root area. Just how close an activity can come without seriously threatening the survival of a tree depends on the species, the extent of damage, and the plant's health. Some healthy trees can survive after losing 50 percent of their roots. However, other species are extremely sensitive to root cutting, even outside the dripline. Most trees can survive significant canopy pruning but not all species respond with successful regrowth of a visually acceptable canopy.

This guideline is aimed at providing direction for approaching and executing canopy pruning and root zone excavations for the purposes of installing fibre optic cabling both above ground mounted on poles and below ground in trenches, whilst minimizing any negative impact on the health and visual integrity of existing street trees.

## **2. Minimising Impact of Construction & Excavation Activities**

### **2.1 Soil Damage and Compaction**

Tree roots need loose soil to grow, obtain oxygen, and absorb water and nutrients. Stockpiled building materials, heavy machinery, and excessive foot traffic all damage soil structure. Lacking good soil aeration, roots suffocate and tree health declines.

Prevent soil compaction by carefully selecting storage areas and traffic routes and installing protective fences and signs. If you can, reroute traffic, install root system bridges with steel plates suspended over railroad ties or spread a layer (15cm or more) of wood chips on the soil within the RPA. Trees that are pruned or removed during the construction process should be chipped on site and the chips used for soil preservation tactics such as this.

Improper handling or disposal of materials used during construction also can harm roots. All building debris and chemical wastes be hauled away for proper disposal, and not burned or buried on the site.

Avoid changes in soil pH (acidity). Increases in pH are particularly dangerous to many species. Alkaline clays or limestones should not be used for fill or paving, and concrete should be mixed on a thick plastic tarp or outside the site. Mixing trucks should never be rinsed out on the site.

### **2.2 Excavation**

Up to 40% of a tree's root system could be cut during the installation of a nearby utility line. This however, reduces water and nutrient uptake, and may compromise the stability of the tree. If it is not possible to relocate the utility line outside the tree's RPA, you can reduce root damage by as much as 25% by tunnelling under the tree's root system. When digging a trench near a tree, begin tunnelling when you encounter roots larger than in 2,5cm in diameter. Drilling single holes or bridging critical areas as opposed to cutting deep trenches saves many critical roots.

For all digging operations, insist that exposed roots be cut cleanly to promote quick wound closure and regeneration. Hand

excavation, vibratory plows, chain trenchers, and hand tools are preferred than bulldozers and backhoes. Minimize damage by avoiding excavation during hot, dry weather; by keeping the trees well-watered before and after digging; and covering exposed roots with soil, mulch, or damp burlap/hessian as soon as possible.

## **2.3 Root Pruning**

Trenching and digging in the soil near trees can cut roots, and this can damage the tree resulting in tree decline or the tree falling over. Tree roots greater than about 2.5cm diameter should not be damaged. In some cases, roots of 2.5cm – 8cm diameter represent the major structural roots holding the tree upright. When roots greater than 2.5cm are exposed, a trained professional / arborist should be contacted.

## **3. Proposed additions/ amendments to Specifications**

With reference to the following documents:

Aerial fibre Working Specification, March 2020

Frogfoot FTTH Implementation Specification Rev 1.4

The following guidelines / specification are proposed to be added / incorporated into the above working documents to ensure that impacts on existing street trees in Kimberley are minimized:

- 3.1 Hand excavation only within the Root Protection Area (RPA) of any street trees
- 3.2 As per both documents, permission from the landowner (municipality or closest resident/ property owner) must be sought before any pruning of canopy or excavation within the Root Protection Area (RPA) is carried out.
- 3.3 Attempt to have a minimum 1meter setback from the root flare of the tree trunk for any trenches or excavations. A 2m setback is much preferred and if at all possible / reasonable, all cable routes and excavations should remain outside the dripline of the canopy completely.
- 3.4 Tunneling under roots is preferable to cutting through them. If a root 2,5cm or greater in diameter is encountered this must be protected and either bridged or tunnel under it.

3.5 Cutting of roots must be made with tools that result in a clean sharp cut. No tearing. Any pruning of roots 2,5cm or larger must be undertaken by a knowledgeable person (arborist) and treated with the correct sealant product to avoid disease entering the tree tissue.

3.6 All pruning to tree canopies as per the Aerial Fibre Working Specification March 2020