



Langeberg Municipality Local Integrated Transport Plan

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Executive Summary

This Langeberg Local Integrated Transport Plan is primarily based on four existing planning documents of the Langeberg Local Municipality, namely: Langeberg Integrated Development Plan Review (2021/2022), Langeberg Spatial Development Framework (January 2016), Operating Licence Strategy (March 2022) and the Langeberg Pavement Management System (October 2015). All of these documents provided excellent inputs to the LITP with the possible exception of the PMS, of which the surveys are very dated (2011). The latter should thus be replaced by a new Roads Master Plan to provide inputs for the next LITP planning cycle.

The OLS was developed as this LITP's chapter 6. From all of these documents a comprehensive executive summary has been compiled for the LITP:

Spatial Vision and Core Ideas

The IDP Vision for the Municipality is as follows:

- “To create a stable living environment and sustainable living conditions for all citizens”

While this vision serves the purposes required by the IDP it is silent on the municipality's urban and rural spatial attributes:

Spatial Vision:

To ensure that the municipality's physical attributes including the Riviersonderend, Langeberg and Waboom mountains, Breede River with its tributaries and fertile land, the large heritage building stock, factories, and infrastructure, including the R60 and R62, are sustainably exploited so as to continue to provide and enhance the livelihoods of its residents;

The implications of this vision are as follows:

- The water quality and quantity of the rivers must be improved, especially in the Breede, Touw, Keisies, Poesjenels, Houtbaais and Riviersonderend Rivers;
- There should be no further urban development of existing or potential arable land;
- The use of the rail system for freight traffic should be promoted so as to free up the use of the road network for commuter and tourist private motor vehicle, bus and coach and non-motorised traffic;
- The visual impact of buildings, e.g., large resorts, factories and sheds, and infrastructure, power lines, renewable energy facilities and roads should be carefully assessed; and,
- Highly accessible and visually exposed sites should also be accessible to SMME businesses.

Four distinct natural systems give rise to the following issues and opportunities:

- There are a number of critical biodiversity area (CBA) corridors of which a large extent is already formally or informally conserved. Protection of the Langeberg mountains corridor is already mostly continuous throughout the municipality;
- Efforts should be made to complete these conservation linkages by encouraging links between:
 - Anyenberg Nature Reserve, Rooikrans and Drie Kuilen Private Nature
- Reserves and Matroosberg Mountain Catchment area (taking care to retain the dryland farming area between Drie Kuilen Private Nature
- Reserve and Matroosberg Mountain Catchment Area;
 - Extending the Langeberg Wes Mountain Catchment Area (Waboom mountains) eastwards; and,
 - Creating formal or informal protected corridors across the Breede River
- Valley linking the Langeberg range to the Riviersonderend Mountains.
- These are likely to be the most challenging. Some of these links exist along the tributaries flowing from the Riviersonderend mountains into the Breede River but there are also important farming areas in these corridors, and it will be difficult enough to secure riparian buffer areas a minimum of 32 metres from the banks, never mind a wide biodiversity corridor;
- The river networks form another important natural system. These are largely in an acceptable state except for the Touws, Keisie, Vink, Poesjenels, Houtbaais and the Riviersonderend where it flows through the municipality near Swellendam. Conservation and improvement of these river systems are even more important for Langeberg municipality compared to other municipalities given the importance of agriculture in its local economy;
- Agri-industry and agriculture are Langeberg municipality's most important economic and employment sectors. Langeberg is fortunate in that its agricultural resources are mostly intensive, comprising vineyards, orchards, and pastures as these employ large amounts of labour. These are dependent on water, already mentioned, and arable land. Together with the magnificent scenery these resources and agricultural activities, especially wine-making also form the basis of its vibrant tourism industry; and, Therefore, it is important that the arable land resource comprising existing as well as potential farming areas are retained and improved and not converted to other uses, especially urban development.

The municipality comprises two main systems, a rural system and an urban one.

Rural System

The rural system provides the resources for Langeberg municipality's successful economic growth and relatively good employment generation flowing from the agricultural, manufacturing, tourism, and services sectors. Its strength is shown in that unlike most municipalities in South Africa its rural population has remained constant over the past decade indicating the strength of the opportunities it offers.

It comprises essentially three mountain ranges, the Riviersonderend, Langeberg and the Waboom.

They frame the following valleys:

- Breede River valley, (Riviersonderend and Langeberg) in which most of the agriculture, population and main settlements are located; and,
- The Koo and Keisies River valley, also important for agricultural and tourism but less so than the Breede River valley.
- The R62 tourism route begins in the eastern section of the Keisies river starting in Montagu.
- The SDF proposes that the highest priority is given to maintaining the natural resources within this rural system as follows:
 - A minimum of 32m from river and wetland banks and more, if necessary, should be kept free of urban development and intensive agriculture so as to protect the water quality and quantity essential for agriculture, industry and domestic use;
 - The formal and informal conservation areas, already extensively protecting the critical biodiversity area network, should continue to be extended, especially by promoting private nature reserve and permitting resort development within the relevant guidelines as an incentive. This will promote economic growth and employment creation in the tourism sector as well as promote biodiversity conservation;
 - Intensive agricultural areas should be protected from urban development but should also not be a priority for biodiversity conservation. This land is an important source of agricultural (low-skilled) jobs, inputs for agri-industry, tourism, and exports;
 - As much arable land should be brought into production as possible depending on available water resources and soil suitability.
 - An important resource for the tourism industry is the scenic attractiveness of the municipality's rural environment; and, therefore,
 - There should be strict controls on the siting, design materials and colour of new buildings (homesteads, pack sheds, etc.) and plant (renewable energy projects) so as not to weaken this resource.

Urban System

This comprises the settlements of Robertson, Ashton, Bonnievale, Montagu and McGregor.

The first four act as an interconnected network of specialized settlements:

- Robertson; main administrative and retail centre, it is also the closest to the N1 and Cape Town;
- Ashton; industrial and services, e.g., main municipal landfill site;
- Montagu; conservation town; and,
- Bonnievale; agriculture and agri-industry with considerable traffic between them.

Robertson has considerable potential in that it has a large heritage resource which is not well promoted but, if this is done, it will make the town even more attractive to tourists and residents. Care needs to be taken that the town presents a positive image to through traffic, especially with the new development proposed along the Bonnievale road intersection.

Nkqubela, prominently located at the eastern R60 entrance to Robertson, require upgrading and landscaping.

Ashton is the only town in the municipality, other than Robertson that is on the increasingly important R60 route between the N1 intersection at Worcester and N2 intersection at Swellendam. Strong efforts should be made to upgrade the appearance and functions of Ashton so that it is better able to take advantage of this through traffic.

Similarly, Bonnievale, although not on the R60, also require upgrading of its public appearance so as to enhance its strong appeal to tourists and permanent residents.

The distances between the towns are relatively short and flat suggesting the practicality of promoting public and non-motorised transport, especially cycling, if appropriate facilities, e.g., marked, wide road shoulders are provided on the interconnecting road network. (It should be noted however, that any proposed intervention along or adjacent to the proclaimed provincial road network will require consultation with the DTPW Roads Branch and DTPW Roads Branch approval prior to implementation.)

The current scenic route upgrading that has occurred between Robertson and Bonnievale should be extended to all of the linking routes in this network.

This 2021/2022 Integrated Development Plan is the fourth review of the initial 5-year plan and the last phase in the 5-year planning cycle. The Integrated Development Plan (IDP) is the Municipality's principal strategic plan that deals with the most critical development needs of the municipal area, as well as the most critical governance needs of the organisation.

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Abbreviations and Acronyms

Abbreviation	Meaning
BRT	Bus Rapid Transport
CoGTA	Cooperative Governance and Traditional Affairs
CRDP	Comprehensive Rural Development Programme
CWD	Cape Winelands District
DEDAT	Department of Economic Development and Tourism
DITP	District Integrated Transport Plan
DM	District Municipality
DTPW	Department of Transport and Public Works
EPWP	Expanded Public Works Programme
ES	Equitable Share
GDP	Gross Domestic Product
IDP	Integrated Development Plan
ITM	Integrated Transport Management
LITP	Local Integrated Transport Plan
LM	Local Municipality
LLM	Langeberg Local Municipality
MIG	Municipal Infrastructure Grant
MRE	Municipal Regulatory Entity
NDP	National Development Plan
NLTA	National Land Transport Act
NMT	Non-Motorised Transport
OL	Operating Licence
OLAS	Operating Licence Administrative System
OLP	Operating Licences Plan
OLS	Operating Licence Strategy
PAWC	Provincial Administration Western Cape
PFS	Provincial Freight Strategy
PLTF	Provincial Land Transport Framework
PMS	Pavement Management System
PPP	Public-private partnerships
PRASA	Passenger Rail Agency of South Africa

PRE	Provincial Regulatory Entity
PRMG	Provincial Roads Maintenance Grant
PT	Public Transport
RBIG	Regional Bulk Infrastructure Grant
RAMP	Road Asset Management Plan
SANRAL	South Africa National Roads Agency Limited
SAPS	South African Police Service
PTIG	Public Transport Infrastructure Grant
PTNG	Public Transport Network Grant
PTOG	Public Transport Operations Grant
PTP	Public Transport Plan
SDF	Spatial Development Framework
TFR	Transnet Freight Rail
TR	Transport Register
WC	Western Cape
WCG	Western Cape Government

1 Chapter 1: Introduction

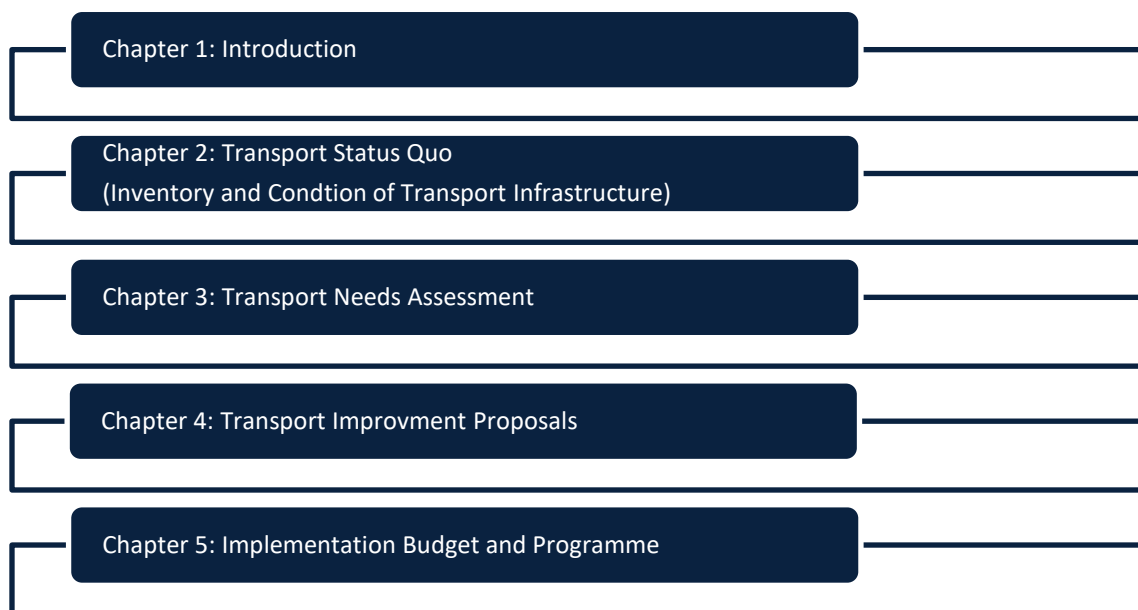
The Langeberg Local Integrated Transport Plan (LITP) was prepared as part of the review of the Cape Winelands District (CWD) Integrated Transport Plan (DITP) for 2022 - 2027.

As per Section 36 of the National Land Transport Act (Act 5 of 2009) all Planning Authorities must prepare an Integrated Transport Plan (ITP) for their area for a five-year period. These ITPs need to be overhauled every five years and updated annually. The Integrated Transport Plans for the Cape Winelands District have been prepared to meet the minimum requirements for preparing an Integrated Transport Plan as published by the Department of Transport (Notice No 881, July 2016).

As part of the previous update of the Cape Winelands District Integrated Transport Plan (2014/15), the planning authorities for each of the local municipalities were re-categorised. The Langeberg Local Municipality (LLM), through the previous update process, was classified as a Level 3 Planning Authority, which requires that a Local Integrated Transport Plan be prepared.

This report comprises the 5-year review of the Langeberg Local Integrated Transport Plan, as part of the review of the Cape Winelands District Integrated Transport Plan.

The LITP comprises of the chapters as documented in the minimum requirements for preparing an Integrated Transport Plan, as published by the Department of Transport (Notice No 881, July 2016).



The Operating Licence Plan (OLP) and Public Transport Plan were undertaken as part of the current project and have been included in this version of the Langeberg LITP, as two additional chapters.

1.1 Study Area

The Langeberg Municipality lies within the beautiful Cape Winelands District which also includes the municipalities Breede Valley (Worcester), Drakenstein (Paarl), Stellenbosch and Witzenberg (Ceres).

Covering a total area of approximately 4 517.4 km², the Langeberg Municipality includes the towns of Robertson, Montagu, Ashton, Bonnievale and McGregor, as well as rural areas adjacent to and between these towns.

Below is a map of the local Municipal area:

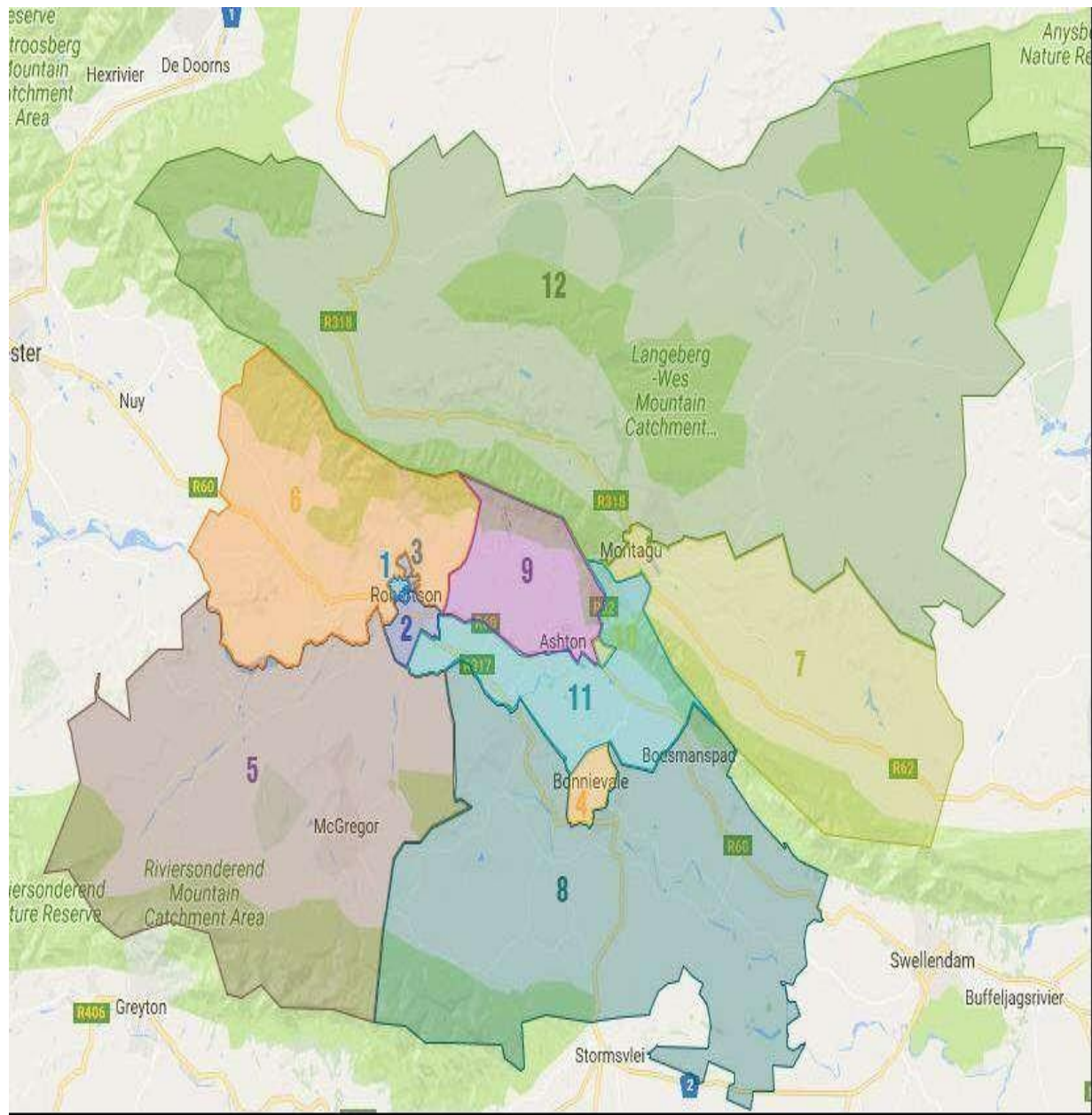


Figure 1-1: Langeberg Municipal Area

The towns in the Langeberg area are described as follows:

Situated in the shadow of the majestic Langeberg Mountains, with the Breede River as its life blood, Robertson is the western gateway to The Heart of Route 62, only 1 ½ hours leisurely drive from Cape Town. With 150 years of history, Robertson has grown into one of the most attractive Cape Winelands towns, with Victorian buildings, jacaranda-lined streets, and beautiful gardens.

Today, Robertson is one of the largest wine-producing regions in South Africa. The area is best known for its wine, but a variety of diverse attractions and activities, combined with spectacular scenery and the relaxed hospitality of the people ensure visitors unforgettable stays and a reason to return.

The Robertson Wine Valley forms part of the longest wine route in the world - Route 62, boasting a large number of cellars, co-operatives, private estates, and award-winning wines.

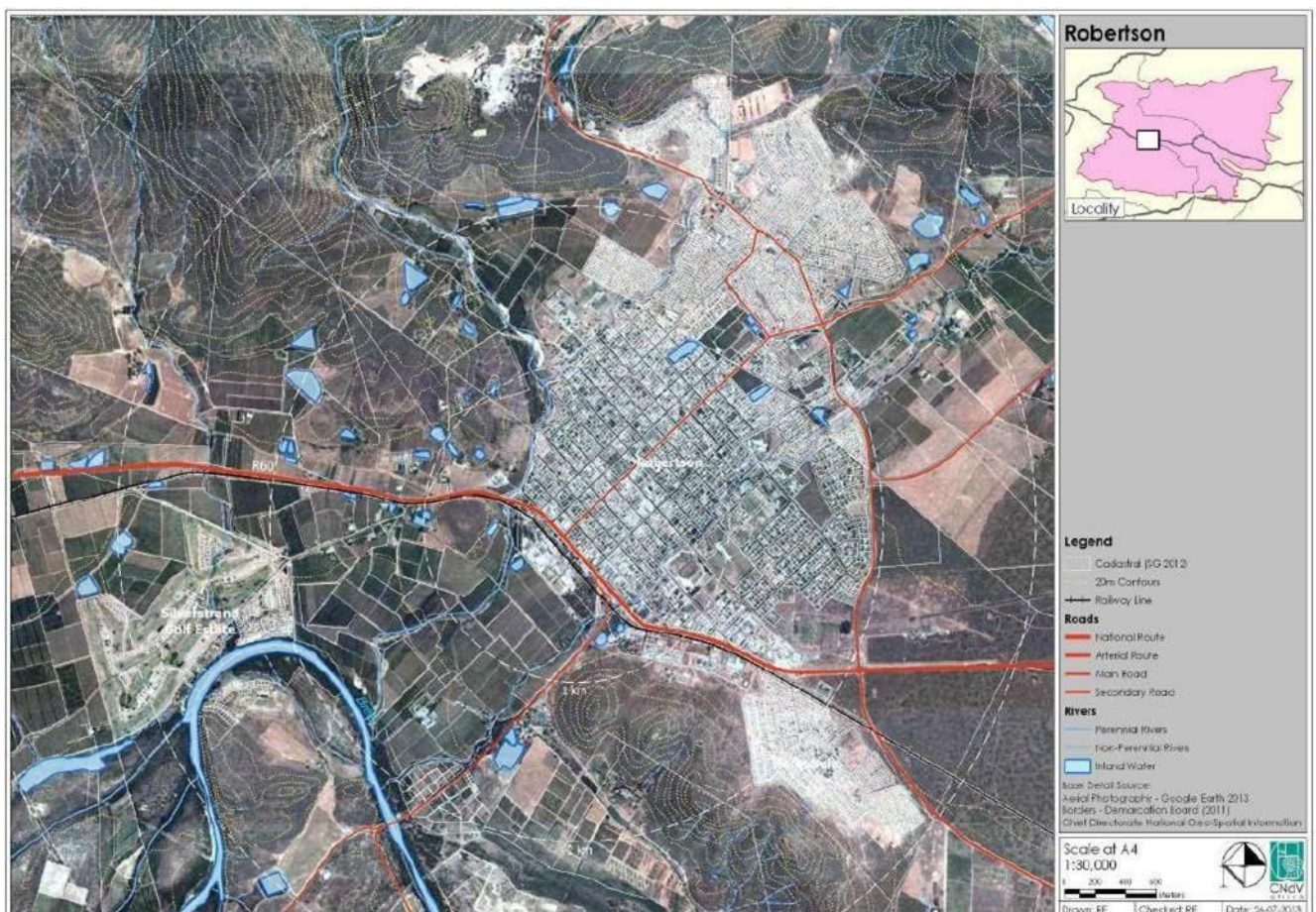


Figure 1-2: Robertson

Montagu lies on the legendary Route 62, nestled between two mountain ranges and halfway between Cape Town and the Garden Route. The town is the scenic heart of Route 62 and the gateway to the Little Karoo. It is renowned for its crisp, clean air - free of any pollution. This historic link between Cape Town, Oudtshoorn, the Garden Route and the Eastern Cape, offers travellers, winding through spectacular scenery and mountain passes, remarkable beauty, and excellent facilities. Montagu lies between the Keisie and Kingna Rivers.

Nature walks, 4X4 routes, cycling and many hiking trails add to the magic. As one of the Western Cape's best rock-climbing areas, it offers crags of varying grade, steepness, and excellent quality rock. Montagu has many hidden gems to discover. Unique art galleries and top cuisine can be found just about everywhere.

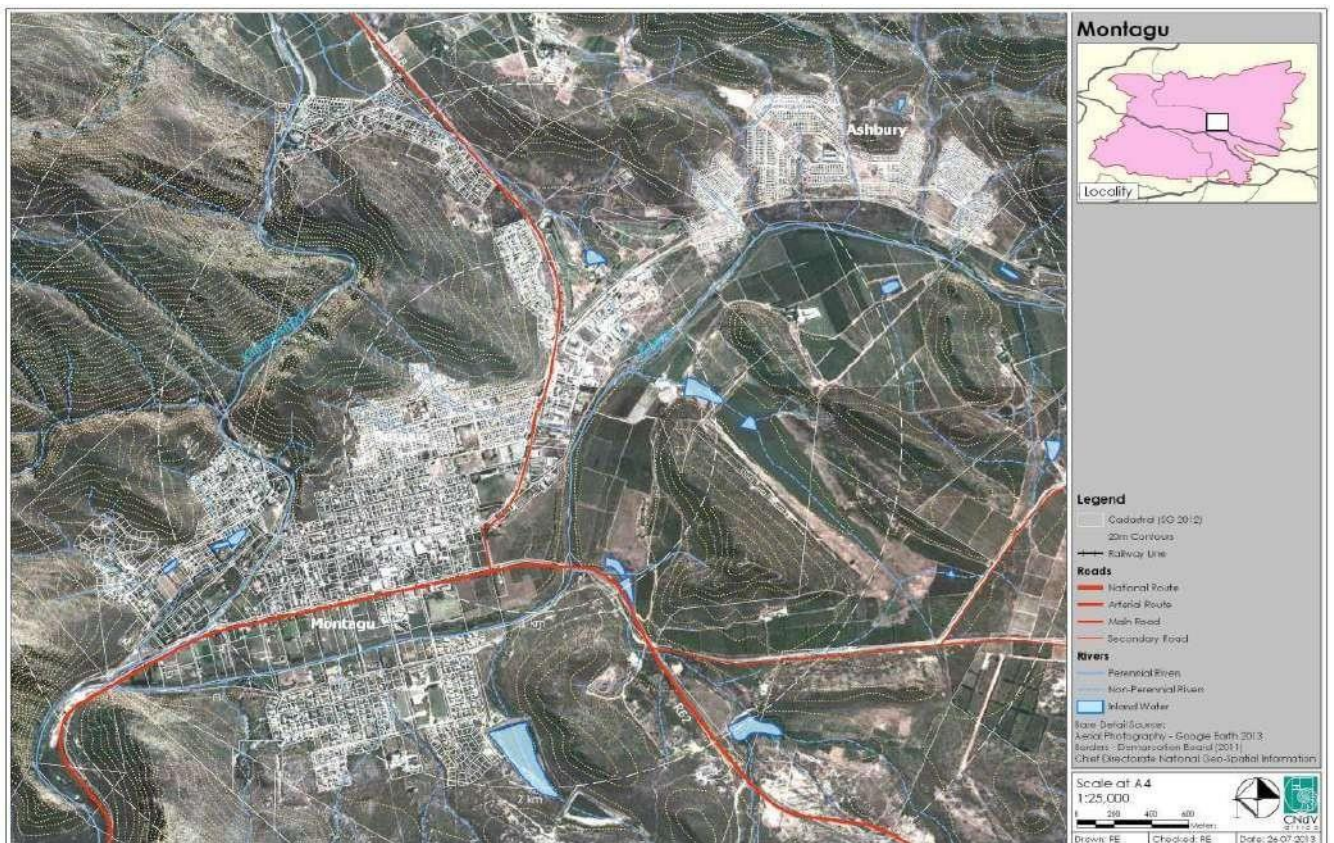


Figure 1-3: Montagu

Ashton is a small town at the foot of the Langeberg, situated on the R62, between Robertson and Swellendam. It is the heart of the Langeberg Municipal area and not only host the administrative Head Office of the Langeberg Municipality, but is also home to almost ten wineries and two large canneries. Between vineyards and green fruit orchards, this wine producing, and fruit processing centre is home to many local artists.

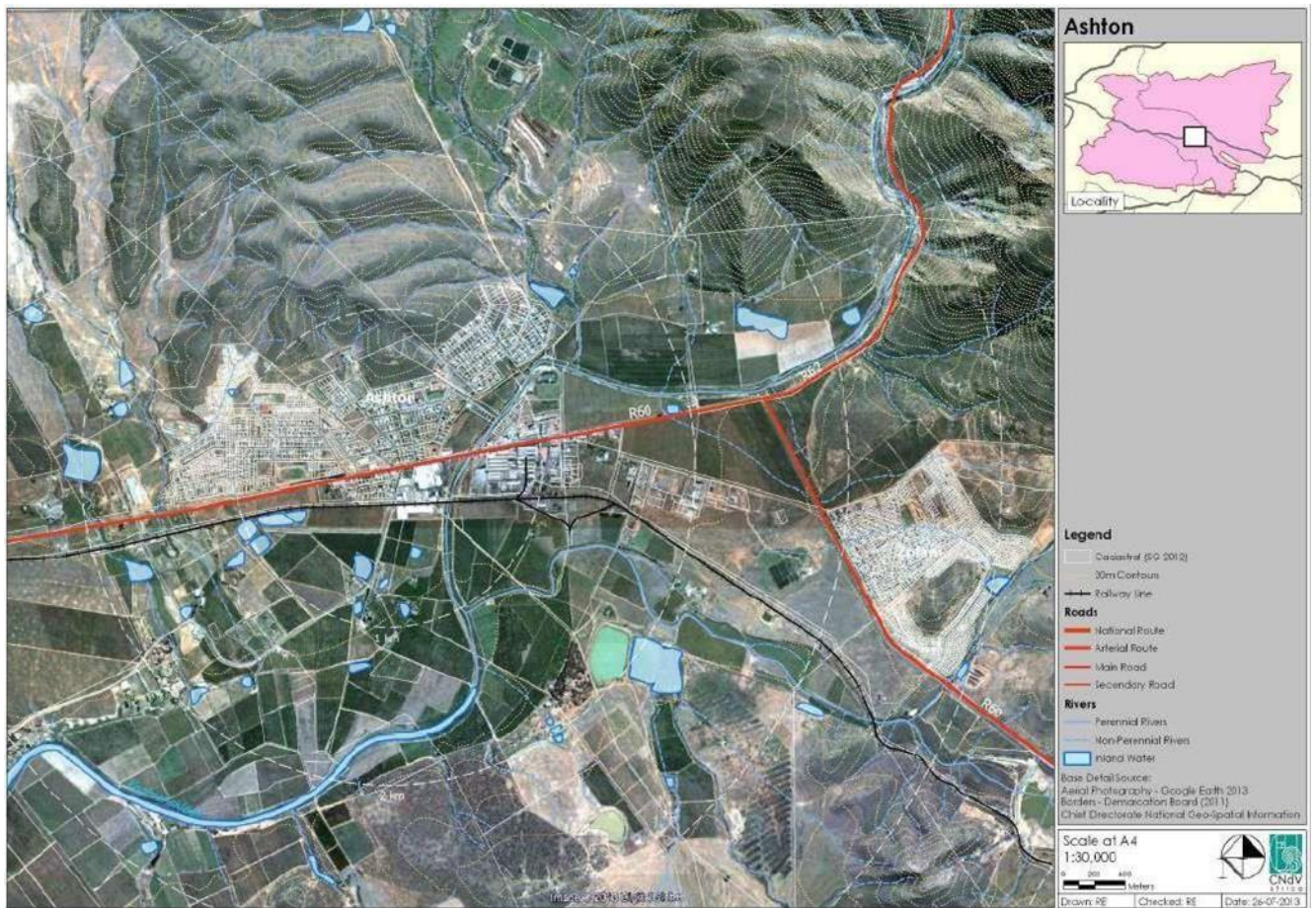


Figure 1-4: Ashton

Bonnievale is situated on the banks of the Breede River and is surrounded by the Langeberg Mountain Range in the north-east and the Riviersonderend mountains in the south-west. Having majestic mountains, an ever-flowing Breede River and a rolling, green sea of beautiful fruit and wine farms lining the way, it is one of the most beautifully situated towns in the Western Cape. The name Bonnievale actually means Beautiful Valley.

Bonnievale, also known as the valley of cheese and wine, boasts eight wine cellars and two cheese factories producing cheese, butter, milk, and yoghurt and whey powder.



Figure 1-5: Bonnievale

The 19th century village of McGregor dreams away in a quiet valley at the end of a road going no-where. Life is slow, tranquil, and gentle. Beautiful preserved, white-washed cottages nestle in half-wild gardens, with water burbling down old stone irrigation channels.

Surrounded by mountains, fruit orchards, olive groves and vineyards, the village has maintained a peaceful, rural ambience. McGregor is a unique, eccentric, and therapeutic village away from the crowds. A place to unwind, step back in time and just relax. The village is home to a vibrant community of artists. Several fine restaurants make eating out a pleasure. A variety of activities are on offer - walking, hiking, mountain biking, 4x4 trails, bird watching, art galleries, pottery studios, massage therapies and much more.

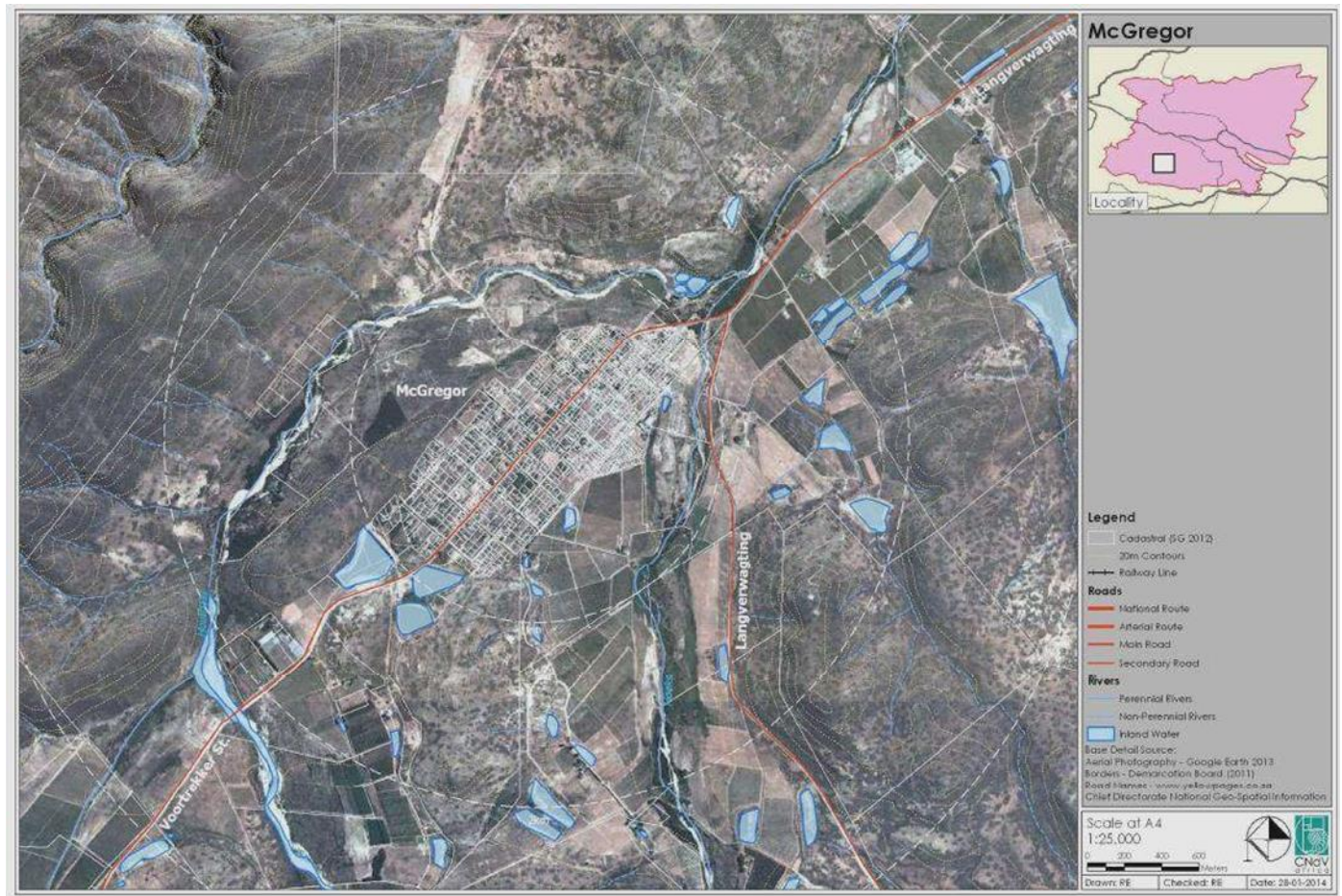


Figure 1-6: McGregor

1.1.1 Population and Households

The population of the Langeberg municipal area totalled 118 434 people in 2020, making it one of the less populated areas in the Cape Winelands District (CWD). This total is expected to grow to 126 640 by 2024, equating to an average annual growth rate of 1.7 per cent.

Household size refers to the number of people per household. In the Langeberg municipal area, no change in household size is expected between 2020 and 2023, with the actual size of households estimated to remain at 3.9 persons per household. Average household size is expected to drop marginally in 2024 to 3.8 persons per household.

Amidst rapid urbanisation across the Western Cape, population density figures will aid public sector decision makers to mitigate environmental, health and service delivery risks. In 2020, the population density of the Cape Winelands District was 44 persons per square kilometre. In order of highest to lowest, the various local municipal areas in the Cape Winelands District compare as follows:

- Stellenbosch 232 people/km²
- Drakenstein 189 people/km²
- Breede Valley 50 people/km²
- Langeberg 26 people/ km²
- Witzenberg 14 people/ km²

1.1.2 Economic Contribution and growth

The demand for transport is derived from the need to access social and economic activity, therefore it is important to consider economic and sector growth when preparing transport plans.

In 2018, the economy of Langeberg municipal area was valued at R6.996 billion (current prices) and employed 54 041 people. Historical trends between 2014 and 2018 indicate that the municipal economy realised an average annual growth rate of 1.9 per cent which can be attributed to the relatively good tertiary sector growth of 3.4 per cent as well as relatively good growth in the electricity, gas and water and construction sectors (within the secondary sector) of 2.6 per cent and 2.3 per cent respectively.

1.2 Purpose of the Integrated Transport Plan

The compilation of an Integrated Transport Plan forms part of the legislated development planning process. This allows for transport planning to be strategic in nature and focused on the desired outcomes, as derived from national, provincial, and local transport policy. It takes into consideration all modes of transportation and infrastructure in the planning and aims to address concerns, gaps, and areas of development for the period of implementation of the ITP. The inter-relationship between plans and frameworks with the national, provincial, and local context is presented in Figure 1-7.

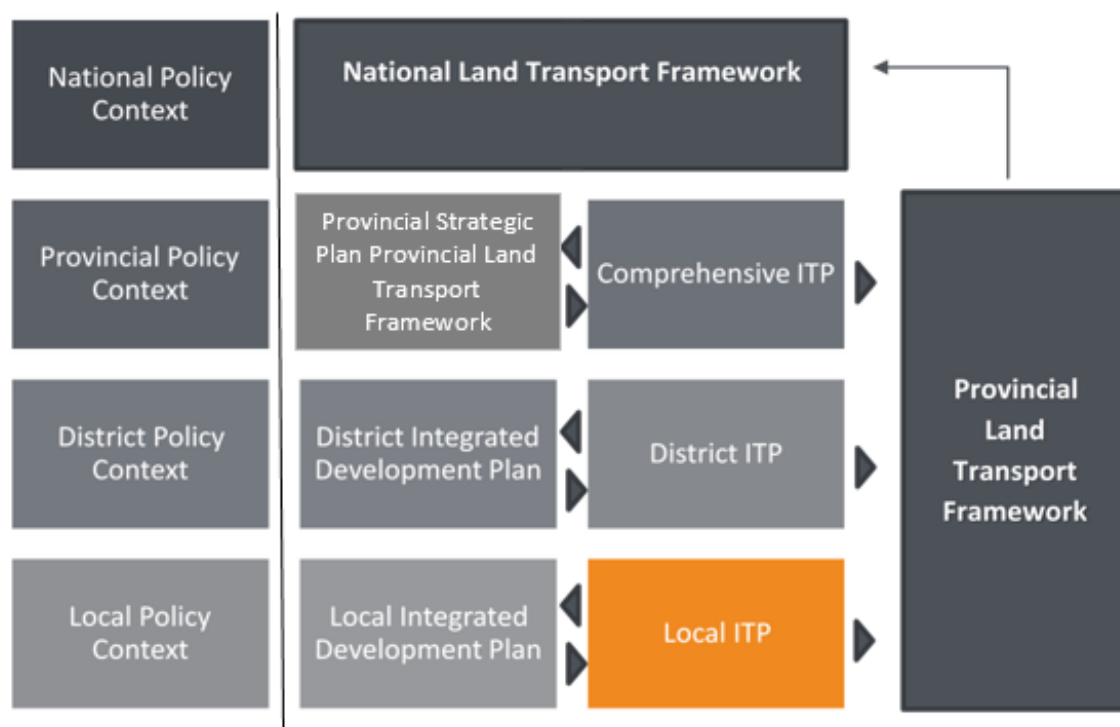


Figure 1-7: Inter-relationship between Transport Plan and Frameworks

Essentially, the ITP is a sector plan that takes into account the plans made in the Integrated Development Plan (IDP) on a local level and feeds into the Provincial Land Transport Framework (PLTF), which ultimately forms part of the National Land Transport Framework (NLTF). The development of this ITP also takes into consideration the Spatial Development Framework (SDF).

1.3 Status of the Plan

Integrated Transport Plans are prepared for a five-year period and updates of selected aspects of the plan should be undertaken on an annual basis with a specific focus on programmes and budgets. The annual updating must include the following aspects:

- Update the TR if any significant new data collection occurs, including the transportation GIS.
- Describe progress of the implementation of the ITP.
- Document which contracts have been awarded and which have expired and any changes or additions to the proposed contracted services network.
- The database of the operating licences, where municipalities has established such, should be updated on an ongoing basis, as per the OLs are awarded, lapsed, or are renewed.
- Revised and updating projects, programmes, and budgets in chapter 5, so that a three-year period ahead is maintained, along with a detailed programme and budget for the next financial year.

The frequencies of the required plans are shown below in Table 1-1.

Table 1-1: Plan Required Frequencies

Plan	Frequency		Comments
	PREPARATION	UPDATE	
1. Comprehensive ITP (CITP) and District ITP (DITP)	Total overhaul every 5th year	Annual update of selected aspects, in synchronisation with the IDP.	Update to focus on action programme and budget. Prerogative of PA to do more comprehensive update.
2. Local Integrated Transport Plan (LITP)	Prepare every five years, as input to new DITP in the case of local authorities that fall within a district municipality	Update the budget and programme for the following year annually, in synchronisation with the IDP.	
3. Transport Register (forms part of ITP)	Total overhaul every 5th year	Update the TR if any significant new data collection occurs. GIS, databases, and information systems to be updated on an ongoing basis, as and when new information is collected.	Update to concentrate on gaps and information of poor quality.
4. Public Transport Plan (forms part of ITP)	Total overhaul every 5th year	Report annually on contracts that have been awarded or which have expired and any changes or additions to the proposed contracted services network. Database of operating licences should be updated on an ongoing basis as OLs are awarded, lapse, or are renewed.	

2 Chapter 2: Transport Status Quo

2.1 Demographics and Economic Activity

The following graphics provide a good summary of the population and economic information as provided in the IDP review:

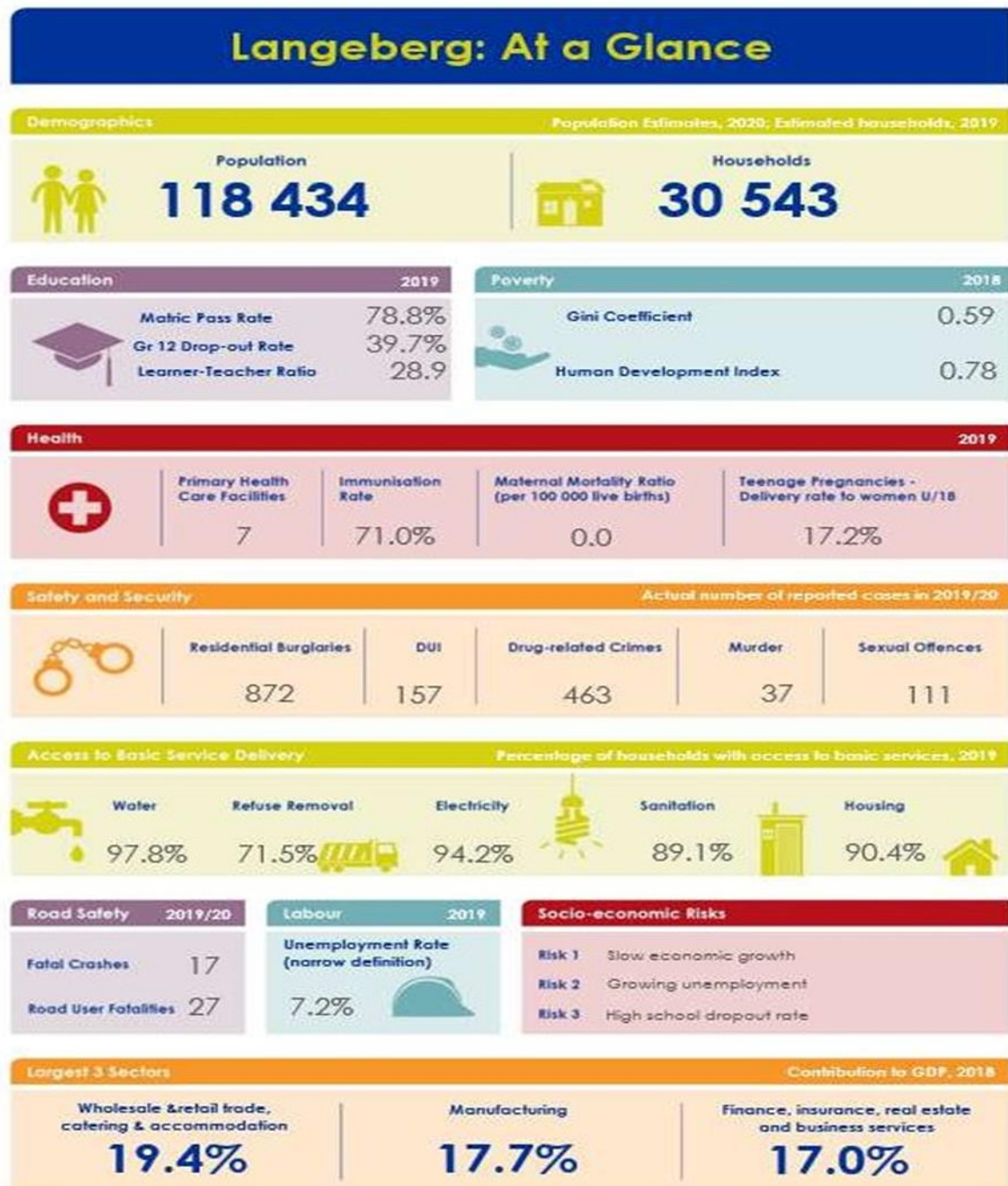


Figure 2-1: Socio- economic Summary

In terms of growth over the next couple of years the 2021 Municipal Economic Review and Outlook has published the following forecast of population growth over the period 2021 to 2025:

FUTURE POPULATION GROWTH, Cape Winelands District, 2021 – 2025



- Witzenberg
- Drakenstein
- Stellenbosch
- Breede Valley
- Langeberg
- Cape Winelands District



Source: Western Cape Government PPU, 2021. Provincial, District and local municipality population estimates by sex and age (2002 – 2036) based on Stats SA mid-year population estimate (MYPE) series 2021 and 2020

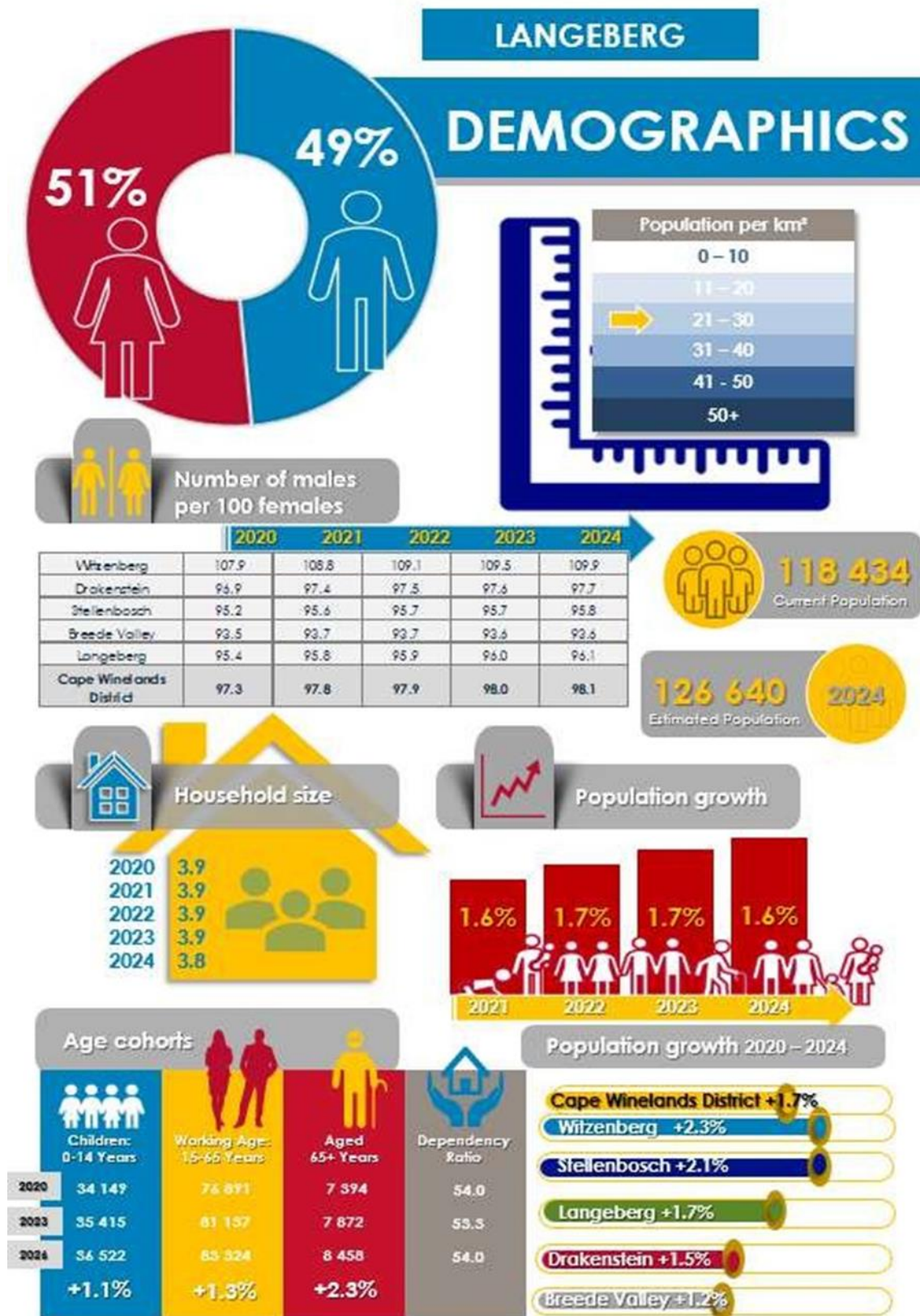


Figure 2-2: Demographics of Langeberg LM

The Langeberg LM IDP contains the following summary of the economy and the performance of the local labour market:

ECONOMY AND LABOUR MARKET PERFORMANCE

	SECTOR	GDP			Employment		
		R Million value 2018	Trend 2014 - 2018	Real GDP growth 2019e	Number of jobs 2018	Average annual change 2014 - 2018	Net change 2019e
PS	Primary Sector	908.8	-0.9	-10.0	14 016	44	-184
	Agriculture, forestry & fishing	898.1	-0.9	-10.1	13 998	45	-183
	Mining & quarrying	10.7	1.2	-2.9	18	0	-1
SS	Secondary sector	1 762.6	0.1	-2.2	7 402	88	-355
	Manufacturing	1 238.9	-0.6	-2.2	4 650	0	-140
	Electricity, gas & water	149.9	2.6	-2.0	106	2	0
	Construction	373.8	2.3	-2.5	2 646	85	-215
TS	Tertiary sector	4 324.2	3.4	2.5	32 623	980	316
	Wholesale & retail trade, catering & accommodation	1 354.7	2.8	1.2	12 981	401	282
	Transport, storage & communication	743.6	4.0	1.8	2 119	63	129
	Finance, insurance, real estate & business services	1 187.3	5.1	4.7	7 202	328	27
	General government	573.0	0.6	1.2	3 425	51	71
	Community, social & personal services	465.6	2.5	1.6	6 896	137	-193
	Langeberg	6 995.6	1.9	-0.3	54 041	1 112	-223

Skill Levels Formal employment	Skill Level Contribution 2019 (%)	Average growth (%) 2015 - 2019	Number of jobs	
			2018	2019
Skilled	16.4	3.5	5 268	5 404
Semi-skilled	37.9	3.2	12 187	12 449
Low-skilled	45.7	0.1	14 854	15 005
TOTAL	100.0	1.8	32 309	32 858

Informal Employment	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of informal jobs	21 402	19 316	19 260	19 570	20 917	21 287	23 109	21 342	22 233	21 732	20 960
% of Total Employment	45.8	43.7	43.2	42.5	43.1	43.5	43.0	40.5	41.3	40.2	38.9

Unemployment rates	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Drakenstein	11.2	12.6	12.9	12.6	12.2	12.6	11.6	12.6	13.2	13.1	14.2
Langeberg	5.1	6.1	6.3	6.2	5.9	6.2	5.4	6.1	6.4	6.5	7.2
Stellenbosch	8.2	9.4	9.7	9.6	9.3	9.6	8.9	9.9	10.3	10.3	11.3
Witzenberg	5.8	6.8	6.9	6.6	6.1	6.4	5.4	5.9	6.2	6.2	6.7
Breedse Valley	8.6	9.9	10.1	9.8	9.4	9.7	8.6	9.5	9.9	9.9	10.7
Cape Winelands	8.4	9.7	9.9	9.7	9.2	9.6	8.6	9.5	9.9	9.9	10.7
Western Cape	14.2	15.5	15.7	15.8	15.7	16.0	16.1	17.3	18.1	18.0	19.4

Figure 2-3: Local economy and labour market performance.

2.2 Public Transport Surveys conducted in Langeberg LM

The surveys were conducted in a time when there were very few restrictions on passenger movements due to covid, in fact the only restriction was a night curfew.

2.2.1 Ashton Zolani Taxi Rank

Zolani Taxi Rank is a formal rank situated at geographical coordinates 33°50'16.63"S 20° 5'7.60"E.



Figure 2-4: Zolani Taxi Rank



Figure 2-5: Locality of Ashton Cordon Counts and Taxi Rank survey

2.2.2 Cordon Count Surveys

Private and public cordon counts were carried out on 3 intersections within Ashton on the 23 November 2021. These counts were performed by 14 enumerators from the community of Ashton.



Figure 2-6: Cordon counts on Intersection within Ashton

2.2.3 Rank surveys

Rank surveys were conducted on the 20 November 2021. These surveys were conducted by 3 enumerators.



Figure 2-7: Zolani Rank Survey carried out on 20 November 2021



Figure 2-8: Vehicle operating on taxi route as a private vehicle



Figure 2-9: Farm workers transported from rank in the back of mini trucks

2.2.4 Stakeholder Consultation with Taxi Association in Ashton

Stakeholder consultation with regards to problems faced by the association was held on the 16th of November 2021, where an introductory meeting was held in regards to the purpose of the study to be carried out.

The following problems was highlighted by Deputy Chairperson of Ashton Taxi Association (ATA) Mr Maqolo on site visit,

- Rank facility is not being utilized.
- Highlighted the movement of illegal private transportation services (Avanzas) which operate on the routes allocated for taxis. Adding that this causes underutilization of the rank and legal taxis registered to operate.
- Ashton Zolani rank has no ablution facilities on site due to vandalism incurred on the taxi rank.
- A meeting was held by the association in which concerns was highlighted as ATA.
- In the meeting a concern was raised with regards to the transporting of farm workers by farm owners. It was noted that there are not routes operating to the farms alighting from Zolani Taxi Rank.
- It was highlighted that the rank facility was built with no protection around the facility. The taxi rank has no fencing and security measures in place for the safety of the public transport commuters.
- One of the concerns highlighted that ATA has no long-distance permits.



Figure 2-10: Zolani Taxi Rank facilities vandalized



Figure 2-11: Zolani Taxi Rank no Ablution Facilities

2.2.5 Bonnievale Taxi Association

Bonnievale Taxi Rank is an on-street rank situated on geographical coordinates 33°56'25.91"S 20° 5'54.05"E.



Figure 2-12: Bonnievale On-street Rank

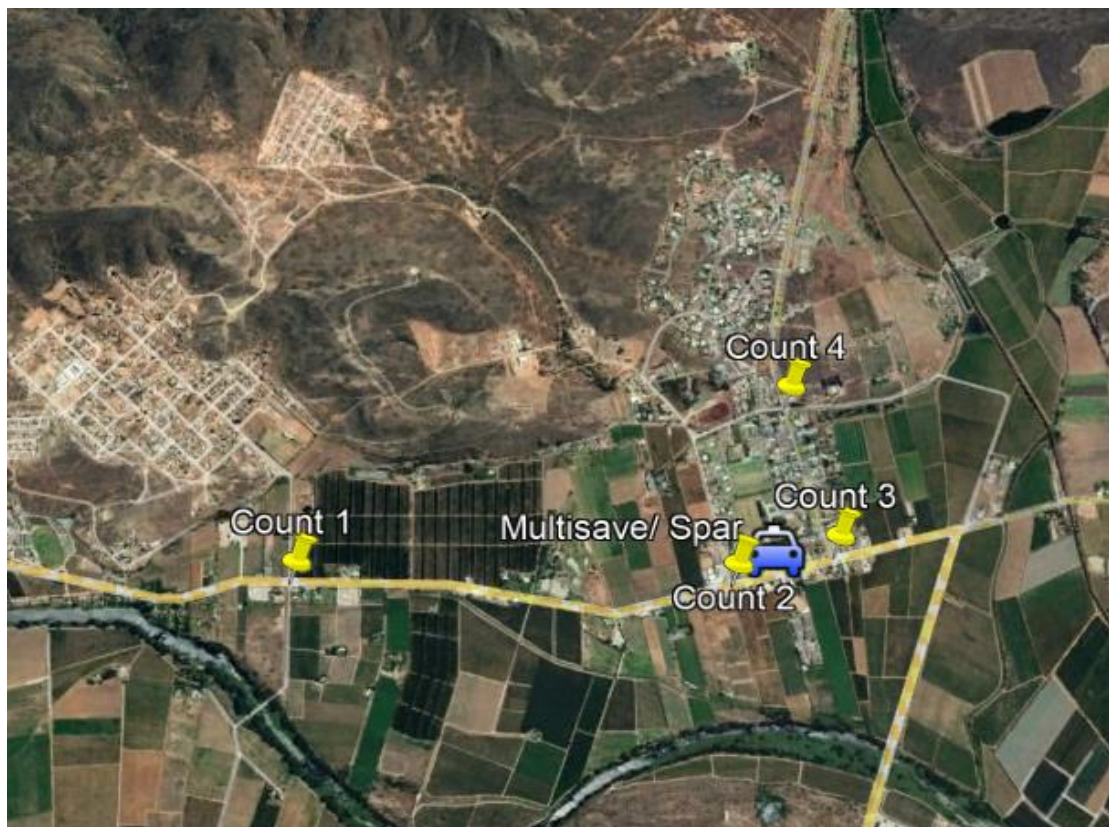


Figure 2-13: Bonnievale Locality and Cordon Counts

2.2.6 Cordon Count Surveys

Private and public cordon counts were carried out on 4 intersections within Ashton on the 24 November 2021. These counts were performed by 14 enumerators from the community of Bonnievale.



Figure 2-14: Enumerator on site at Cordon Count in Bonnievale

2.2.7 Rank Surveys

Rank surveys were carried out on the on-street informal rank within Bonnievale.



Figure 2-15: Rank Survey in Bonnievale

2.2.8 Stakeholder Consultation with Taxi Driver Mr Selwyn Bonnievale Taxi Association

Stakeholder consultation with regards to problems faced by the association was held on the 16th of November 2021 on site, where an introductory meeting was held in regards to the purpose of the study to be carried out.

The following problems were highlighted during consultation with a taxi driver on site:

- It was highlighted that Bonnievale rank has no ablution facilities. Previously, ablution facilities were provided by the shopping centre located adjacent to the on- street rank, but this agreement is void as the shop owner now has a problem with the use of that ablution facilities.
- The rank has no waiting facilities for passengers.
- He added that local travel within Bonnievale includes trips to Cape Town, but this is a problem if the taxi has no CATA or CODETA sticker.



Figure 2-16: Shopping centre located adjacent on-street rank facility used ablution facilities previously

2.2.9 Montagu Taxi Association

Montagu Taxi Rank is an informal rank situated at geographical coordinates 33°47'10.03"S 20° 7'31.22"E.

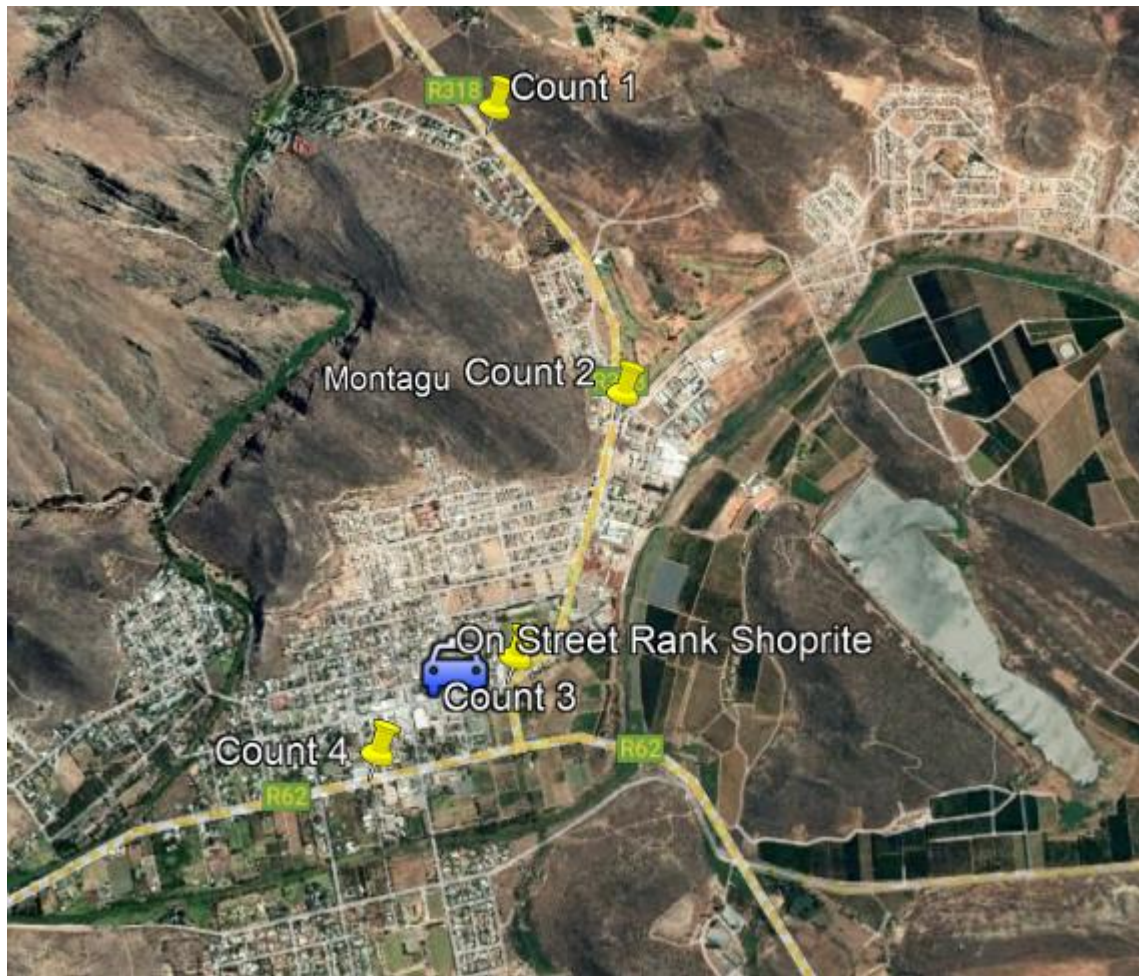


Figure 2-17: Montagu Taxi Rank

2.2.10 Cordon Count Surveys

Private and public cordon counts were carried out on 4 intersections within Montagu on the 25 November 2021. These counts were performed by 14 enumerators from the community of Montagu.

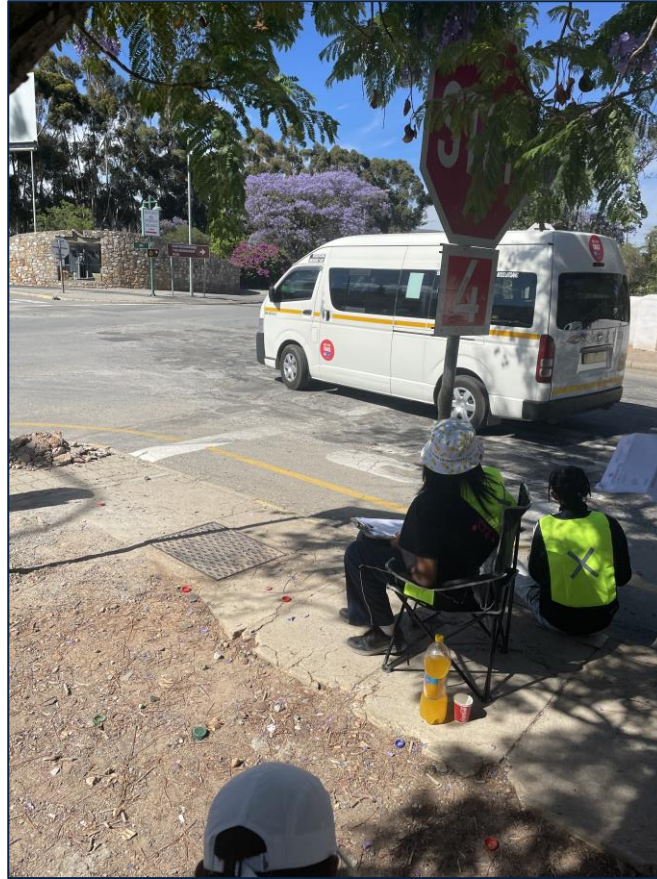


Figure 2-18: Cordon Count Survey on cordon point in Montagu

2.2.11 Rank Surveys

Rank surveys were carried out on 26 November 2021. These surveys were conducted with 3 enumerators from the community of Montagu.



Figure 2-19: Rank survey for Montagu Informal Shoprite rank

2.2.12 Stakeholder Consultation with Taxi Association in Montagu

Stakeholder consultation with regards to problems faced by the association was held on the 16th of November 2021, where an introductory meeting was held with regards to the purpose of the study to be carried out.

Mr Micheal Gertse a representative of Montagu Taxi Association highlighted the following with regards to Montagu Taxi Rank:

- He highlighted that there are not problems within Montagu.
- He added that the taxi rank facility is not in use due to it being far from the CBD.
- He highlighted that the Association has an agreement to make use of the Shoprite Informal rank facility.
- He added that there are no formal ablution facilities for the rank, adding that passengers make use of the ablution facilities at Shoprite.



Figure 2-20: Montagu On-street rank in Bad St



Figure 2-21: Montagu Taxi Association allocated parking bays within the Shoprite parking facility.

2.2.13 Robertson Taxi Association

Robertson Taxi Rank is an informal rank situated at geographical coordinates 33°48'7.15"S 19°52'54.39"E.

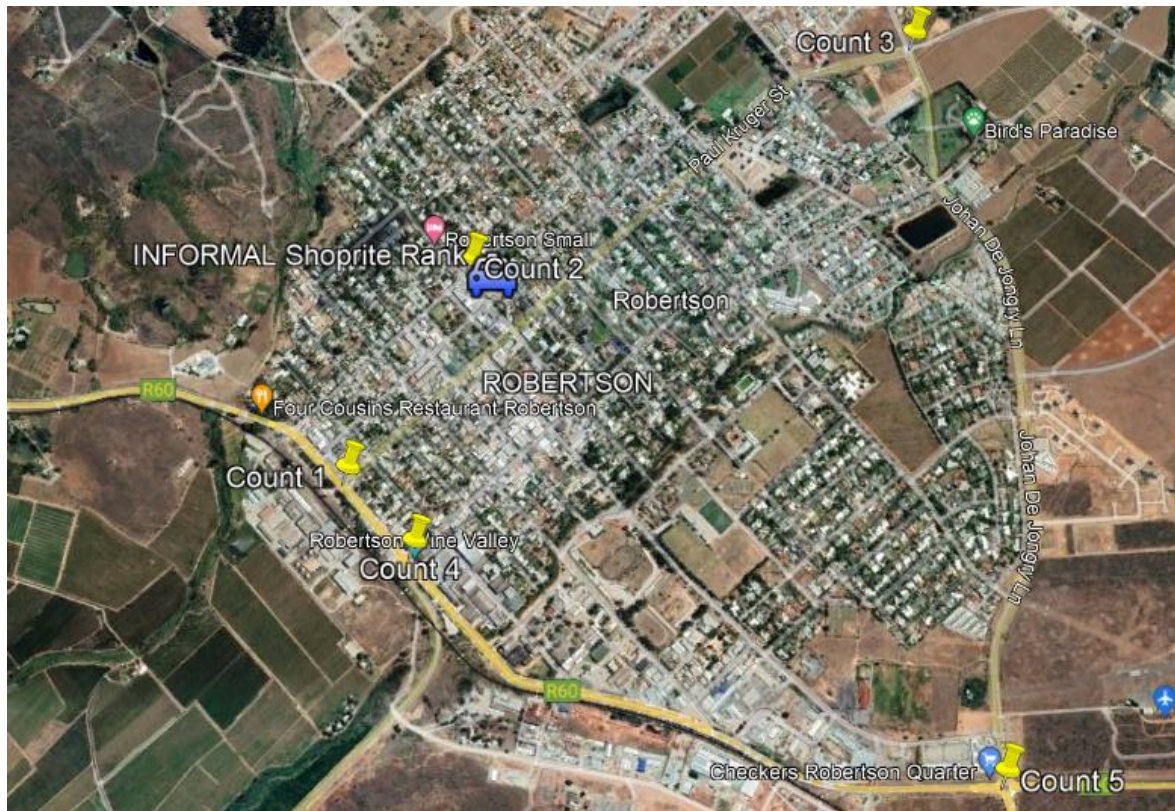


Figure 2-22: Robertson Taxi Ranks

2.2.14 Cordon Count Surveys

Private and public cordon counts were carried out on 5 intersections within Robertson on the 26 November 2021. These counts were performed by 18 enumerators from the community of Robertson.



Figure 2-23: Cordon Count Survey in Robertson

2.2.15 Rank Surveys

Rank Surveys were carried out 26 and 27 November 2021. These counts were performed by 3 enumerators from the community of Robertson.



Figure 2-24: Rank survey within Robertson



Figure 2-25 Robertson Taxi Rank Facility

2.2.16 Stakeholder Consultation with Taxi Association in Robertson.

During stakeholder consultation held on the 17th of November 2021 at the Langeberg Traffic department. Robertson Taxi Association Chairman was not engaged into the consultation and highlighted that this meeting is of no use to resolve issues faced within the town of Robertson. As issues they are facing is related to the Local Authorities within Langeberg.

The operation of illegals within the town of Robertson is significant and is seen with the visual inspection of the ranks conducted by SMEC and is mentioned throughout stakeholder engagement.



Figure 2-26: Private vehicle identified as operation of illegal taxi within Robertson.

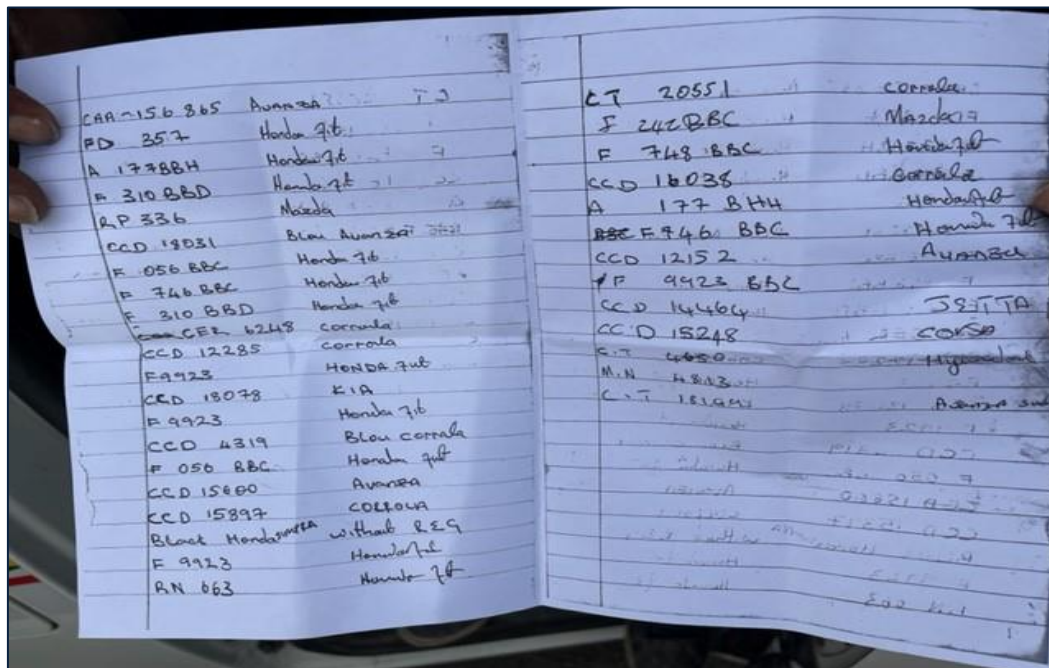


Figure 2-27: Illegal operators identified by Robertson Taxi Association operating within Robertson

2.3 Transport Register

2.3.1 Public Transport

2.3.1.1 Listing of all ranking facilities for road-based transport

There are eight taxi ranks in the Langeberg Local Municipality. Three of the taxi ranks are located in Robertson, with two in Montagu, another two in Ashton and one in Bonnievale. There is no taxi rank in McGregor.

Table 2—1: Listing of all facilities (Table 1 as per minimum requirements)

No.	Town	Facility Name	Physical Location		Facility Size (Bays)	Type Of Service	Facility Code
			Latitude	Longitude			
1	Robertson	Informal Shoprite taxi rank	33°48'8.37"S	19°52'51.43"E	0	Commuters	N/A
2	Robertson	Informal Taxi Rank Pick n Pay	33°48'19.94"S	19°52'59.33"E	0	Commuters	N/A
3	Robertson	Taxi Rank	33°48'19.79"S	19°52'31.14"E	0	Commuters	N/A
4	Montagu	Piet Retief Rank	33°47'8.71"S	20° 7'22.68"E	0	Commuters	N/A
5	Montagu	On Street Rank (Bad St)	33°47'12.55"S	20° 7'16.06"E	0	Commuters	N/A
6	Ashton	Zolani	33°50'26.63"S	20° 5'14.59"E	4	Commuters	N/A
7	Ashton	Multisave Informal Rank	33°50'9.48"S	20° 2'35.24"E	0	Commuters	N/A
8	Bonnievale	Multisave/Spar	33°56'24.30"S	20° 6'2.81"E	0	Commuters	N/A

In accordance with the NLTA, 2009(Act No.5 of 2009), an application has to be done before granting, renewal, amendment, or transfer of an operating license as in:

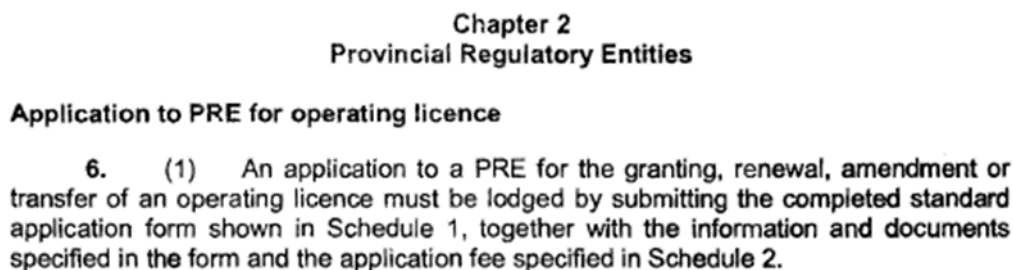


Figure 2-28 PRE Snip

As highlighted, in the minimum requirements for the preparation of Integrated Transport Plans, 2016. Route descriptions should be the same as in operating licenses and the descriptions in OLAS should mirror these descriptions as shown in

Table 2—2.

Table 2—2: Route Description (Table 2 as per minimum req)

No.	Mode	Route Code	Origin	Destination	Route Description
1	MBT	762	Swellendam	Swellendam	
2	MBT	832	Bonnievale	Bonnievale	
3	MBT	836	Barrydale	Barrydale	
4	MBT	861	Swellendam	Copperstraat swellendam	
5	MBT	862	Railton swellendam	swellendam	
6	MBT	990	swellendam	Suurbraak	
7	MBT	F02	Bonnievale Phase 317	Bonnievale	
8	MBT	F03	Bonnievale	Plase Gelukshooppad Bonnievale	
9	MBT	F62	Swellendam	Swellendam	
10	MBT	H80	Swellendam	Swellendam	
11	MBT	L55	Buffelsjagsrivier	Swellendam	
12	MBT	N43	Bonnievale	Ashton	
13	MBT	N40	Bonnievale	Robertson	
14	MBT	R 70	Swellendam	Swellendam	
15	MBT	725	Montagu	Ashbury	
16	MBT	830	Montagu	Montagu	
17	MBT	872	KOO Distrik Montagu	Montagu	
18	MBT	D59	Montagu	Klipheuwel	
19	MBT	086	Montagu	Ashton	
20	MBT	087	Montagu	Robertson	
21	MBT	686	Robertson	Robertson	
22	MBT	687	Robertson	R60 Robertson	
23	MBT	688	Robertson	Road 1342 Robertson	
24	MBT	689	Robertson	Main Road 290 Robertson	
25	MBT	689	Robertson	McGregor	
26	MBT	690	Robertson	Main Road 287 Robertson	
27	MBT	691	Robertson	Road 1372 Robertson	
28	MBT	692	Robertson	Die Laaitjie Robertson	
29	MBT	944	Robertson	Robertson	
30	MBT	N35	Robertson	Ashton	
31	MBT	N36	Robertson	Montagu	
32	MBT	N37	Robertson	Bonnievale	
33	MBT	N52	Robertson	Bellville	
34	MBT	N34	Robertson	Bellville	

No.	Mode	Route Code	Origin	Destination	Route Description
35	MBT	Q30	Mcgregor	McGregor	
36	MBT	CH			Charter Services
37	MBT	LE			Learners/ Scholar
38	MBT	ORG			Organised Parties
39	MBT	ST			Staff/Employes
40	MBT	TO			Tourist Services
41	MBT	WCED			Western Cape Education Dept Contract

2.3.1.2 Route as identified by ranking facility

The routes that were identified per facility is listed in Table 2—3. The route distances and trip times were obtained using Google Maps. The average vehicle speed was calculated according speed, distance, and time method using the spot checks that were done to ensure accuracy. The data from Google Maps was used with driving the physical routes during the prediction to conclude that the Google Maps data is accurate.

Table 2—3: Routes as identified per facility (Table 3 as per minimum req)

Mode	Town	Origin Rank		Destination Rank		Route Codes	Typical Route Distance (Km)	Average Vehicle Speed (Km/H)	Trip Time (One-Way) (Min)	Turn Around Cycle Time (Min)
		Name	Code	Name	Code					
MBT	Bonnievale	Multisave/Spar		Swellendam		832, 836, 861, 990, F02, F03, F62, F62, H80, L55	40,8	75	32	64
MBT	Bonnievale	Multisave/Spar		Zolani Taxi Rank		N43	14,7	60	15	30
MBT	Bonnievale	Multisave/Spar		Robertson Taxi Rank		N40	34	70	28	56
MBT	Swellendam			Swellendam		R70, 762, 862, F62, H80	1,3	60	2	4
MBT	Montagu	Piet Retief Rank		Ashbury		725, 830, 872, D59	3,6	36	6	12
MBT	Montagu	Piet Retief Rank		Zolani Taxi Rank		086	9,7	40	15	30
MBT	Montagu	Piet Retief Rank		Robertson Taxi Rank		087	28,4	60	30	60
MBT	Robertson	Shoprite Informal Taxi Rank		Robertson		686, 687, 688, 689, 690, 691, 692	2,9	30	7	14
MBT	Robertson	Pick n Pay Informal Taxi Rank		Robertson		944	4,1	40	8	16
MBT	Robertson	Robertson Taxi Rank		Zolani Taxi Rank		N35	20,8	80	18	36

Mode	Town	Origin Rank		Destination Rank		Route Codes	Typical Route Distance (Km)	Average Vehicle Speed (Km/H)	Trip Time (One-Way) (Min)	Turn Around Cycle Time (Min)
		Name	Code	Name	Code					
MBT	Robertson	Robertson Taxi Rank		Piet Retief Taxi Rank		N36	27,6	60	27	56
MBT	Robertson	Robertson Taxi Rank		Bonnievale		N37	29,3	80	24	48
MBT	Robertson	Robertson Taxi Rank		Bellville		N52, N34	136	100	104	208
MBT	Mcgregor			Mcgregor		Q30	5,2	40	8	16

2.3.1.3 Rank utilisation of loading facilities

There is formal rank in Ashton and informal ranks in Montagu, Bonnievale, and Robertson. There is no taxi rank in Mcgregor. All the taxi rank are combined loading/holding ranks. Montagu utilization is at highest on an end of month Friday. Similar statistics were obtained for Ashton, and Robertson. Bonnievale have its maximum utilisation on Wednesday. The data of the maximum utilisation is as shown in Table 2—4.

Table 2—4: Rank utilisation of loading/holding facilities (table 6 as per minimum req)

Town	Facility Name							No Of Bays	Utilisation			% Util
	CODE	FACILITY NAME	Physical Location		Mode	Type Of Services	Loading/Holdin g Area		Days Of Max Utilisation	Max No Of Vehicles	Time Of Max Utilisation	
			Longitude	Latitude								
Ashton		Zolani	33°50'26.63"	20° 5'14.59"	MBT	Commuters	Combined	4	EOM Saturday	20	09:30-10:30	500%
Bonnievale		Multisave/Spar	33°56'24.30"	20° 6'2.81"	MBT	Commuters	Combined	2	EOM Wednesday	4	16:00-17:00	200%
Robertson		Shoprite Taxi Rank	33°48'8.37"	19°52'51.43"	MBT	Commuters	Combined		EOM Friday	8	14:00-15:00	100%
Robertson		Shoprite Taxi Rank	33°48'8.37"	19°52'51.43"	MBT	Commuters	Combined		EOM Saturday	14	13:00-14:00	100%
Montagu		Piet Retief Rank	33°47'12.55"	33°47'12.55"	MBT	Commuters	Combined	2	EOM Friday	18	16:00-17:00	900%

2.3.1.4 Service Capacity and Capacity Utilization of Routes

Lists of the routes per town, and describes them according to the following criteria:

- Origin and destination
- Route Code
- Period of highest utilization
- No. of departure during this period
- Total capacity of departing vehicles
- No. of passengers utilizing these services, during the period
- Utilisation of available seats, in a percentage value

The following conclusions were drawn from utilisation:

- On a weekday the route is utilized at 40%.
- On an EOM Friday all routes are utilized at over 100%
- On an EOM Saturday all routes are utilized at maximum of 93%

Table 2—5: Service Capacity and Capacity Utilisation of Routes-specified Peak Hour (Weekday) (Table 5 as per minimum req)

Town	Rank	Route Code	Route Name	Period	No Of Depart	Service Cap	Pax	% Util
Bonnievale	On Street	839, Ch	Valley	16:00-17:00	4	60	24	40%

Table 2—6: Service capacity and Capacity utilisation of Routes- specified Peak Hour (EOM Friday)

Town	Rank	Route Code	Route Name	Period	No Of Depart	Service Cap	Pax	% Util
Montagu	Shoprite Rank	720, 830, CH, LE, ST, 725, 086, 087	Ashbury	16:00-17:00	18	254	256	101%
Robertson	Shoprite inbound Rank	686-692, 944, N35-N37, N52, CH, LE, ST	Vergesig	14:00-15:00	8	120	125	104%

Table 2—7 Service capacity and Capacity utilisation of Routes- specified Peak Hour (EOM Saturday)

Town	Rank	Route Code	Route Name	Period	No Of Depart	Service Cap	Pax	% Util
Ashton	Zolani	N35	Robertson	09:30-10:30	20	230	116	51%
Robertson	Shoprite Rank		Vergesig	13:00-14:00	14	223	208	93%

2.3.1.5 Description of Facilities

- Zolani Taxi Rank

Zolani ranking facility is located on the R60 off-street. The facility is formal ranking facility, the structure has roof, the ablutions are abandoned and there is no electricity. The facility is paved.



Figure 2-29 Zolani Taxi Rank Location

Table 2—8: Description of facilities (taxi only)

FACILITY NAME	TOWN	STATUS		FACILITY TYPE			ON/OFF STREET	PAVING (YES/NO)	FACILITY CODE	ELECTRICITY (YES/NO)	ROOF STRUCTURE (YES/NO)	ABLUTION FACILITY (YES/NO)	OFFICES (YES/NO)
		FORMAL	INFORMAL	TERMINUS FOR BUSES	RANK FOR MBT	HOLDING AREA							
Zolani Rank	Ashton	x		No	Yes	Yes	Off	Yes		NO	Yes	Yes	No

- Bonnievale (Multisave/Spar)

Multisave ranking facility is located on the corner of Main Road and Coetzee Street. The facility is an on-street ranking facility. The facility is paved road side parking.

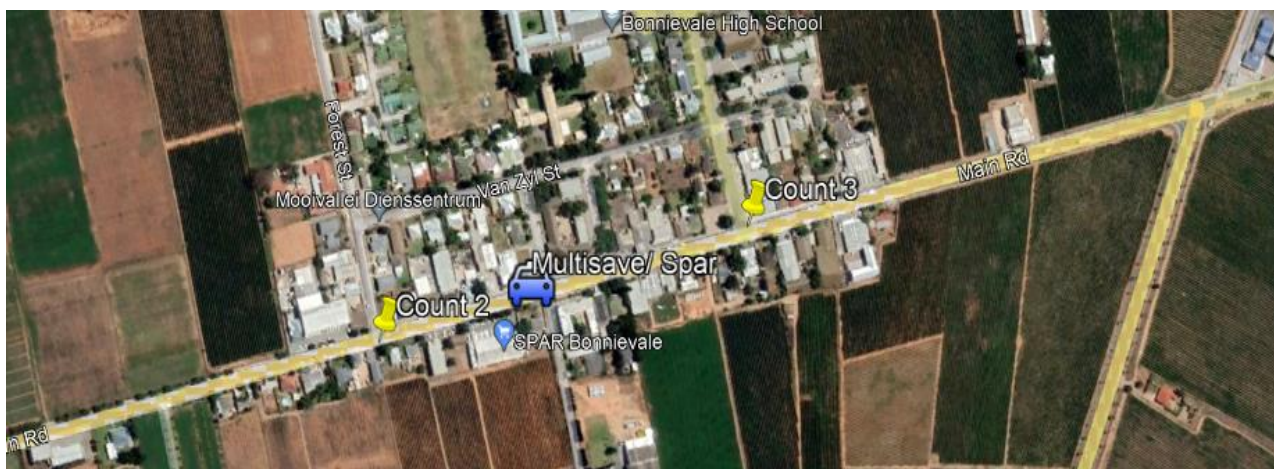


Figure 2-30: Bonnievale Rank location

Table 2—9: Description of facilities (taxi only)

FACILITY NAME	TOWN	STATUS		FACILITY TYPE			ON/OFF STREET	PAVING(YES/NO)	FACILITY CODE	ELECTRICITY (YES/NO)	ROOF STRUCTURE (YES/NO)	ABLUTION FACILITY (YES/NO)	OFFICES (YES/NO)
		FORMAL	INFORMAL	TERMINUS FOR BUSES	RANK FOR MBT	HOLDING AREA							
Multisave/ Spar	Bonnievale		x	No	Yes	No	On	Yes		No	No	No	No

- Robertson (Shoprite Taxi Rank)

Shoprite informal ranking facility is located on Robertson Street. The facility does not have a formal structure, ablutions, or electricity. The facility is off-street. The facility is paved, but not in good condition.

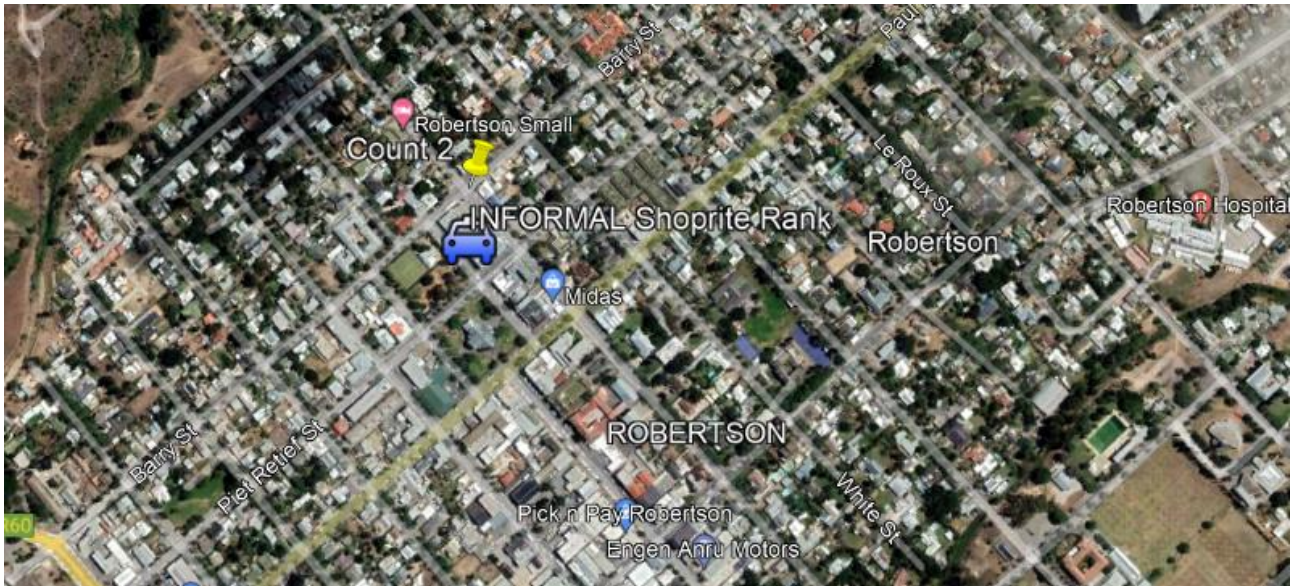


Figure 2-31: Shoprite Informal rank location

Table 2—10: Description of facilities (taxi only)

FACILITY NAME	TOWN	STATUS		FACILITY TYPE			ON/OFF STREET	PAVING(YES/NO)	FACILITY CODE	ELECTRICITY (YES/NO)	ROOF STRUCTURE (YES/NO)	ABLUTION FACILITY (YES/NO)	OFFICES (YES/NO)
		FORMAL	INFORMAL	TERMINUS FOR BUSES	RANK FOR MBT	HOLDING AREA							
Shoprite Rank	Robertson		x	No	Yes	Yes	Off	Yes		No	No	No	No

- Montagu (Piet Retief rank)

The Piet Retief ranking facility is located on the corner of Piet Retief Street and Du Toit Street. The facility is on-street. The facility is paved road side parking.



Figure 2-32: Piet Retief rank Location

Table 2—11: Description of facilities (taxi only)

FACILITY NAME	TOWN	STATUS		FACILITY TYPE			ON/OFF STREET	PAVING(YES/NO)	FACILITY CODE	ELECTRICITY (YES/NO)	ROOF STRUCTURE (YES/NO)	ABLUTION FACILITY (YES/NO)	OFFICES (YES/NO)
		FORMAL	INFORMAL	TERMINUS FOR BUSES	RANK FOR MBT	HOLDING AREA							
Piet Retief Rank	Montagu		x	No	Yes	Yes	On	Yes		No	No	No	No

2.3.1.6 Passenger Waiting Times

The passenger waiting times measurement were conducted at the rank facilities. The surveys were done over a common time period of 05:00-19:00. The passengers were collected from their home areas and transported to their places of work. Mini-Bus-Taxis are being used for the transportation of commuters. The waiting periods were shown below:

Table 2—12: Passenger waiting times - peak hour (weekday)

Town	Rank	Route Codes	Route Name	Period	No Of Pax	No. Of Departures	Avg. Passenger Waiting Time (Min)
Robertson	Shoprite Informal Rank	686-692,944, N35-N37,N52	Vergesig	11:00-12:00	104	8	6min

Table 2—13: Passenger waiting times - peak hour (EOM Friday)

Town	Rank	Route Codes	Route Name	Period	No Of Pax	No. Of Departures	Avg. Passenger Waiting Time (Min)
Montagu	Shoprite Informal Rank	720, 830, Ch, Le, St, 725,086,087	Ashbury	17:00-18:00	223	14	4min

Table 2—14: Passenger waiting times - peak hour (EOM Saturday)

Town	Rank	Route Codes	Route Name	Period	No Of Pax	No. Of Departures	Avg. Passenger Waiting Time (Min)
Ashton	Zolani	N35	Robertson	09:00-10:00	195	13	5min
Robertson	Shoprite Informal Rank	686, 687, 688, 689, 690, 691	Robertson Town	10:00-11:00	29	3	7min
Robertson	Shoprite Informal Rank	686-692,944, N35-N37,N52, Ch	Vergesig	11:00-12:00	169	13	2min

2.3.2 Cordon Counts

To understand the travel characteristics of the travel patterns and traffic volumes in the municipality, cordon counts surveys were conducted at multiple locations in different towns as specified in the tender document. The surveys were done to obtain information on the trips originating outside, within, and passing through the municipality study area by counting all vehicles passing at a count point during the day.



Figure 2-33: Ashton Cordon Survey

Table 2—15: Ashton Cordon survey Summary (23/11/2021)

Ashton Cordon Survey (23-11-2021)									
Inbound Trips									
Location	Vehicles	Car	Bus	Heavy	Taxi	NMT	Pedestrian	Cycling	Other
1	2320	1909	88	166	157	0	0	0	0
2	14454	12913	157	908	476	0	0	0	0
2021 Total	16774	14822	245	1074	633	0	0	0	0

Outbound Trips (23-11-2021)									
Location	Vehicles	Car	Bus	Heavy	Taxi	NMT	Pedestrian	Cycling	Other
1	1201	449	132	313	307	0	0	0	0
2	3992	2946	145	512	389	0	0	0	0
2021 Totals	5193	3395	277	825	696	0	0	0	0
% PT				19%					
% Taxis	of PT		72%		of Total		13%		
%Busses	of PT		18%		of Total		6%		

Minibus-taxis are the dominant public transport mode with 72% of the public transport market.

Table 2—16: Public transport split 23/11/2021

Inbound									
Location	Old Taxi	New Taxi	Bus	Other	Empty	Quarter	Half	Three Quarter	Full
1	7	20	5	9	8	16	7	0	15
Total	7	20	5	9	8	16	7	0	15
% Taxi					57%				
% Bus					11%				
% Full					33%				
% Empty					17%				

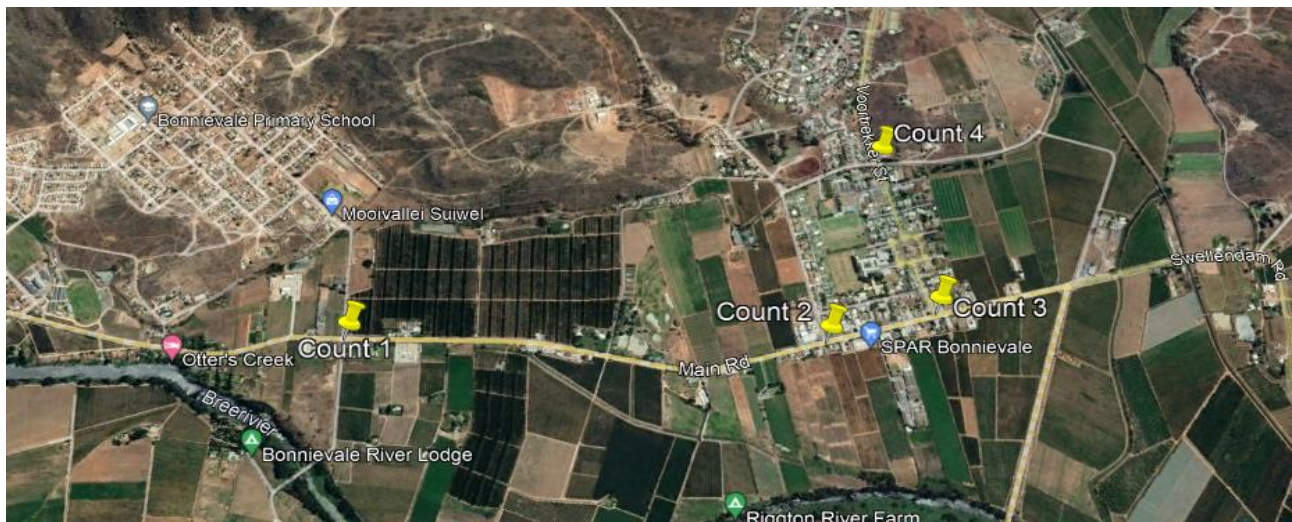


Figure 2-34: Bonnievale Cordon Locations

Table 2—17: Bonnievale Cordon survey Summary 24/11/2021

Bonnievale Cordon Survey (24-11-2021)									
Location	Vehicles	Car	Bus	Heavy	Taxi	NMT	Pedestrian	Cycling	Other
1	2749	2357	51	152	189	0	0	0	0
2	2774	2523	45	134	72	0	0	0	0
2021 Totals	5523	4880	96	286	261	0	0	0	0

Outbound Trips (24-11-2021)									
Location	Vehicles	Car	Bus	Heavy	Taxi	NMT	Pedestrian	Cycling	Other
1	2531	2160	76	180	115	0	0	0	0
2	2216	1957	45	112	102	0	0	0	0
2021 totals	4747	4117	121	292	217	0	0	0	0
% PT				8%					
%Taxies	of PT		64%		of Total	5%			
%Busses	of PT		36%		of Total	3%			

Bus transport has a surprising market share of 36% in Bonnievale.

Table 2—18: Public transport split 24/11/2021

Inbound Trips									
Location	Old Taxi	New Taxi	Bus	Other	Empty	Quarter	Half	Three Quarter	Full
2	0	60	12	8	19	17	13	7	24
Outbound Trips									
2	2	35	4	4	30	12	3	0	0
Total	2	95	16	12	49	29	16	7	24
%Taxi				78%					
%Bus				13%					
%Full				19%					
%Empty				39%					

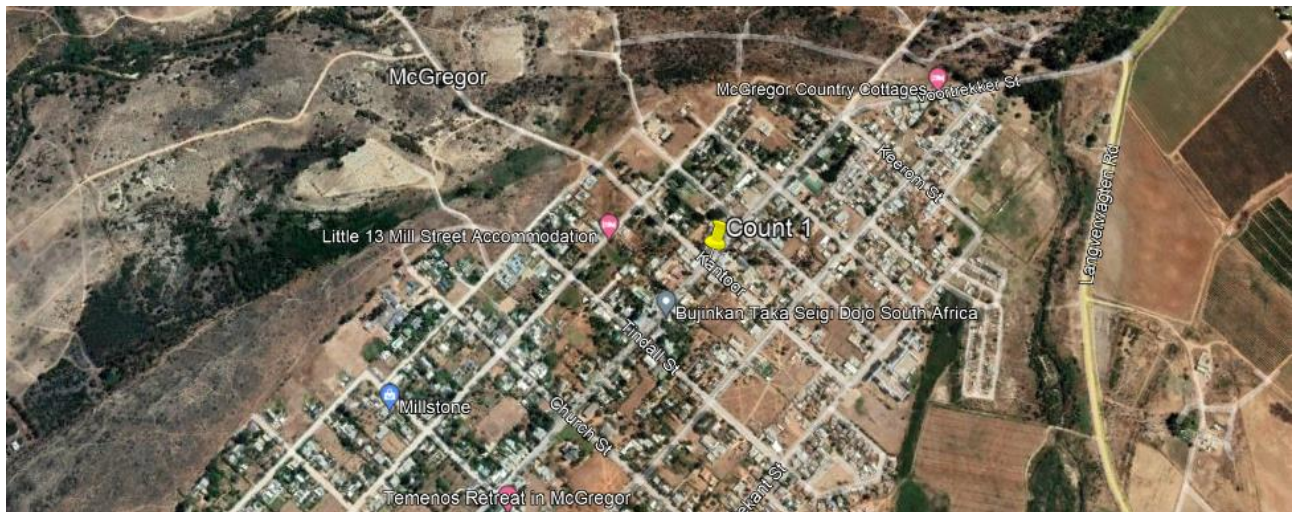


Figure 2-35: McGregor Cordon Locations

Table 2—19: McGregor Cordon Survey Summary 26/11/2021

Mcgregor Cordon Survey (26-11-2021)									
Inbound									
Location	Vehicles	Car	Bus	Heavy	Taxi	NMT	Pedestrian	Cycling	Other
1	1117	1035	10	59	13	0	0	0	0
Total	1117	1035	10	59	13	0	0	0	0
Outbound									
Location	Vehicles	Car	Bus	Heavy	Taxi	NMT	Pedestrian	Cycling	Other
1	1203	1155	2	23	23	0	0	0	0
Total	1203	1155	2	23	23	0	0	0	0
2021 Totals	2320	2190	12	82	36	0	0	0	0
%PT					2,10%				
%Taxies	Of PT		75%		Of Total		1,55%		
%Busses	Of PT		25%		Of Total		0,52%		

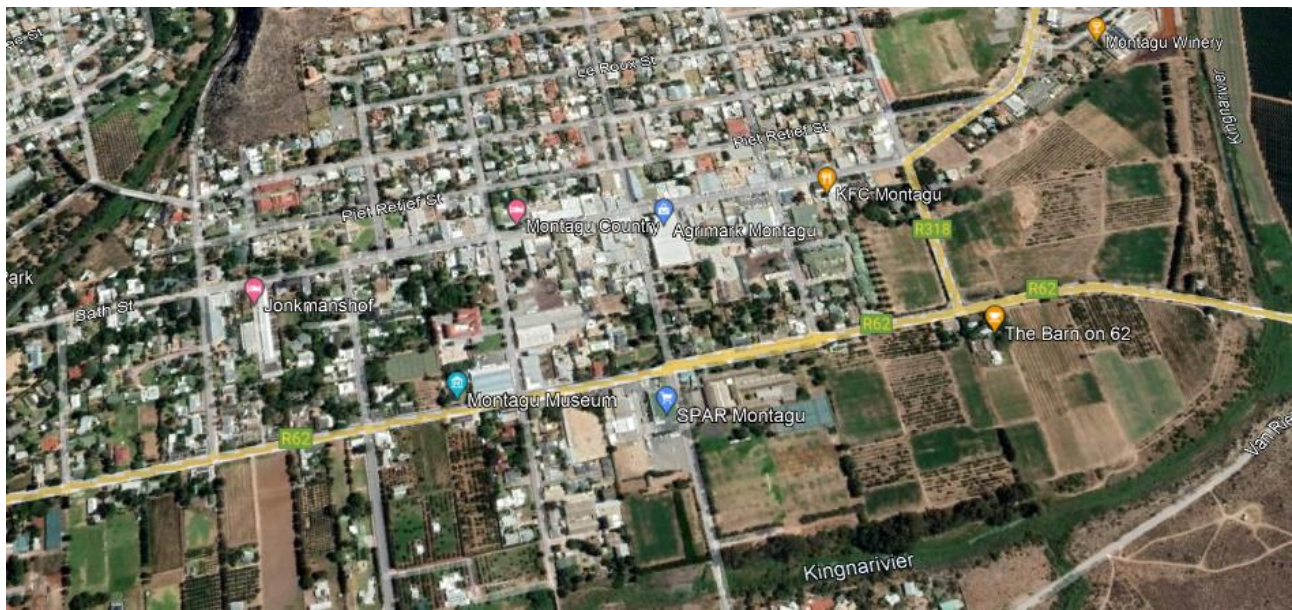


Figure 2-36: Montagu Cordon Location

Table 2—20: Montagu Cordon Survey Summary 25/11/2021

Inbound									
Location	Vehicles	Car	Bus	Heavy	Taxi	NMT	Pedestrian	Cycling	Other
1	972	858	14	70	30	0	0	0	0
3	3208	2989	29	90	100	0	0	0	0
Total	4180	3847	43	160	130	0	0	0	0
Outbound									
Location	Vehicles	Car	Bus	Heavy	Taxi	NMT	Pedestrian	Cycling	Other
1	1185	1125	11	49	0	0	0	0	0
3	2925	2835	19	71	0	0	0	0	0
Total	4110	3960	30	120	0	0	0	0	0
2021 Totals	8290	7807	73	280	130	0	0	0	0
%PT					2,45%				
%Taxies	Of PT		64%		Of Total		1,57%		
%Busses	Of PT		36%		Of Total		0,88%		

In Montagu bus transport has just over half the share that minibus-taxi has.

Table 2—21: Public Transport Split 25/11/2021

Inbound Trips									
Location	Old Taxi	New Taxi	Bus	Other	Empty	Quarter	Half	Three Quarter	Full
1	1	45	27	31	54	16	7	20	10
3	8	66	14	3	52	12	5	0	19
Outbound Trips									
1	2	47	31	25	55	13	10	16	17
3	1	52	7	0	36	7	2	0	25
Total	12	210	79	59	197	48	24	36	71
%Taxi					62%				
%Bus					22%				
%Full					20%				
%Empty					55%				

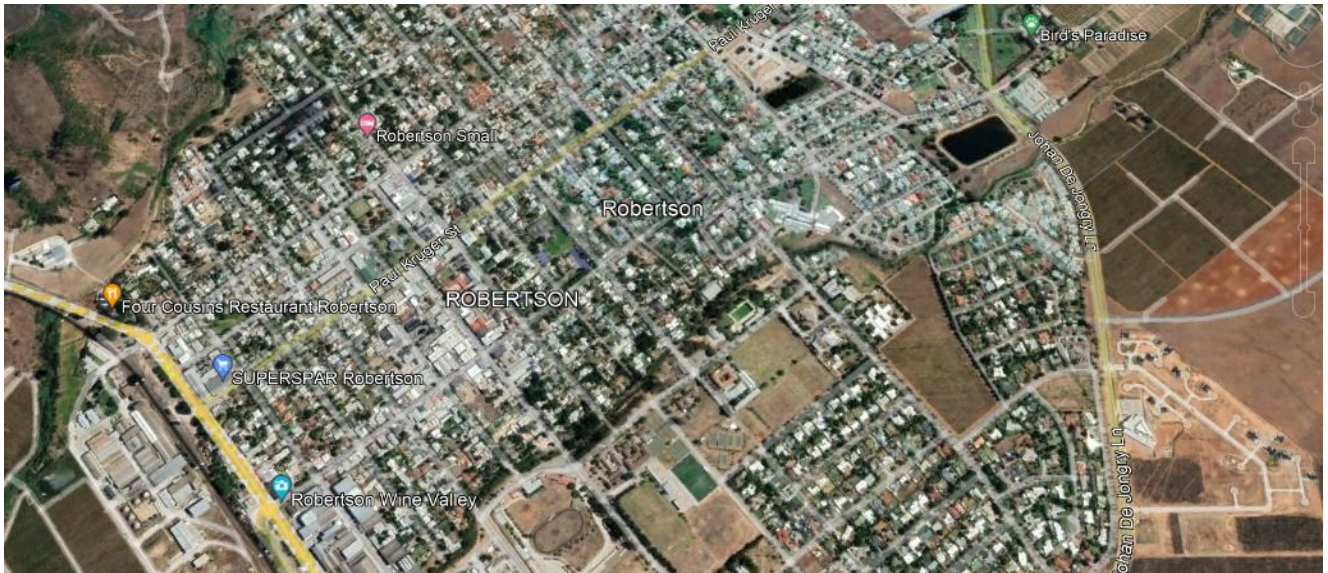


Figure 2-37: Robertson Cordon Location

Table 2-22 Robertson Cordon survey Summary 25/11/2021

Robertson Cordon Survey (25-11-2021)									
Inbound									
Location	Vehicles	Car	Bus	Heavy	Taxi	NMT	Pedestrian	Cycling	Other
3	75	64	1	6	4	0	0	0	0
5	3628	2693	94	250	591	0	0	0	0
Total	3703	2757	95	256	595	0	0	0	0
Outbound									
Location	Vehicles	Car	Bus	Heavy	Taxi	NMT	Pedestrian	Cycling	Other
3	114	99	12	0	3	0	0	0	0
5	5151	4220	104	739	88	0	0	0	0
Total	5265	4319	116	739	91	0	0	0	0

2021 Totals	8968	7076	211	995	686	0	0	0	0
%PT					10,00%				
%Taxies	Of PT		76%		Of Total		7,65%		
%Busses	Of PT		24%		Of Total		2,35%		

Table 2—23: Public transport split 25/11/2021

INBOUND TRIPS									
Location	Old Taxi	New Taxi	Bus	Other	Empty	Quarter	Half	Three Quarter	Full
3	2	0	1	2	4	0	0	1	0
OUTBOUND TRIPS									
3	1	7	0	5	5	3	2	0	5
Total	3	7	1	7	9	3	2	1	5
%Taxi				56%					
%Bus				6%					
%Full				28%					
%Empty				50%					

In Robertson minibus-taxis have the dominant market share of public transport, namely 76%.

2.4 Commuter Rail

There are no commuter rail services to or in the Langeberg Municipality. The existing rail corridor from Worcester to Mossel Bay only carries very light freight rail traffic. As a result of the Covid-19 pandemic, PRASA has suspended all the Shosholoza Meyl services.

2.5 Roads and Traffic

The data for this section has been sourced from the Pavement Management System Report, which has been completed as long ago as 2011 by V&V Engineers. However, as there is no other data, it is still provided here and a check can be made as to what maintenance priorities have not been implemented as yet:

2.5.1 Major road network and condition

Summary of maintenance work to be executed on tarred roads:

Route Classification	Segment	Length (km)	Area (m ²)	Width (m)
Primary Routes	17	3.2	29,625	9.1
Secondary Routes	44	8.0	70,024	8.7
Main Tertiary Routes	242	34.1	293,798	8.6
Tertiary Routes	1247	151.4	1,053,439	7.0
TOTAL NETWORK	1550	196.8	1,446,886	7.4

2.5.2 Road Maintenance and upgrading needs

The complete list of road maintenance needs is the following:



PAVEMENT MANAGEMENT SYSTEM

PAVEMENT ASSESSMENT (PHASE 1)



Client: Langeberg

28/10/2015

Routine Maintenance				Langeberg		Assessment Date : 2011/05					
Suburb	Street :	Segment From To	Route Class	Existing Surfacing	Attention Required			Patching Edge Crack			
					Rehab	Reseal	Action	Surfacing	Struc	Break	Seal
Main Arterials	Kerk	Johan de Jongh	Toets Sentrum	P	Cape		Rehab (H)				**
Main Arterials	Kerk	Toets Sentrum	Toets Sentrum	P	Cape		Rehab (H)				**
Main Arterials	Kerk	Toets Sentrum	Industria	P	Cape			*****		***	**
Main Arterials	Kerk	Industria	Denne	P	Cape	REHAB	****	Rehab (H)	***	**	***
Main Arterials	Kerk	Denne	Lang	P	C Slurry		****	Rehab (H)	*		**
Main Arterials	Kerk	Lang	Dirkie Uys	P	C Slurry		****	Rehab (H)		***	**
Main Arterials	Kerk	Dirkie Uys	Reitz	P	C Slurry		****	Rehab (H)			**
Main Arterials	Kerk	Reitz	Paul Kruger	P	C Slurry		****	Rehab (H)			**
Main Arterials	Muskadel	Cinnaut	Barlinka	S	13.2+6.7		Mod 13.2		**	***	**
Main Arterials	Muskadel	Barlinka	Road 2	S	13.2+6.7	REHAB	****	Rehab (M)	****	**	****
Main Arterials	Muskadel	Road 2	Siprus	S	13.2+6.7		Rehab (M)		***	****	***
Main Arterials	Muskadel	Siprus	Road 1	S	13.2+6.7	REHAB	****	Rehab (M)	***	***	****
Main Arterials	Muskadel	Road 1	Eike	S	13.2+6.7	REHAB	****	Rehab (M)	**	***	***
Main Arterials	Van Riebeeck	Van Huysteen	Klipna Circle	P	F Slurry		Asphalt (AC)				**
Main Arterials	Van Riebeeck	Klipna Circle	Exssen	P	F Slurry		***	Mod 13.2	**		*
Main Arterials	Van Riebeeck	Exssen	Kohler	P	F Slurry		****	Mod 13.2	**	*	**
Main Arterials	Van Riebeeck	Kohler	Kerk	P	F Slurry		****	Mod 13.2	**	*	**
Main Arterials	Van Riebeeck	Kerk	Swanepoel	P	13.2+6.7		Rehab (M)				**
Main Arterials	Van Riebeeck	Swanepoel	Brink	P	13.2+6.7	REHAB	****	Rehab (M)	***	***	**
Main Arterials	Van Riebeeck	Brink	Reitz	P	13.2+6.7		****	Slurry (CS)	***	*	**
Main Arterials	Van Riebeeck	Reitz	Prov Road (Start)	P	13.2+6.7		****	Mod 13.2	***		**
Ashbury	Akasia	Eike	Waboom	t	F Slurry		9.5mm		***		*
Ashbury	Akasia	Waboom	Alwyn	t	F Slurry		9.5mm		**	**	**
Ashbury	Akasia	Alwyn	Denne	t	F Slurry		9.5mm		*	***	*
Ashbury	Alwyn	Cul De Sac	Alwyn Link 2	t	F Slurry		9.5mm			**	**

Routine Maintenance

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PAVEMENT MANAGEMENT SYSTEM

PAVEMENT ASSESSMENT (PHASE 1)

Client: **Langeberg**

28/10/2015

Routine Maintenance				Langeberg		Attention Required			Assessment Date : 2011/05			
Suburb	Street :	Segment		Route	Existing	Rehab	Reseal	Action	Patching	Edge	Crack	
		From	To	Class	Surfacing				Surfacing	Struc	Break	Seal
Ashbury	Alwyn	Alwyn Link 2	Silwerboom	t	F Slurry			9.5mm	***			
Ashbury	Bloekom	Mimosa	Mimosa	t	F Slurry			9.5mm	**	**		
Ashbury	Denne	Eike	Alwyn Link 2	t	F Slurry			9.5mm	**	**		**
Ashbury	Denne	Alwyn Link 2	Palm	t	F Slurry			Rehab (L)	***			**
Ashbury	Denne	Palm	Akasia	t	F Slurry			Mod 9.5				**
Ashbury	Eike	Muskadel	Mimosa	T	F Slurry	***		Rehab (M)	**	***		**
Ashbury	Eike	Mimosa	Jakaranda	T	F Slurry	****		Rehab (M)	***	**		**
Ashbury	Eike	Jakaranda	Denne	T	F Slurry	****		Rehab (M)	***	***		**
Ashbury	Eike	Denne	Silwerboom	T	F Slurry	REHAB	????	Rehab (M)	***	***		**
Ashbury	Eike	Silwerboom	Akasia	T	F Slurry			Mod 13.2	**	**		**
Ashbury	Eike	Akasia	Bloekom	T	F Slurry			Mod 13.2				**
Ashbury	Eike	Bloekom	Wilger	T	13.2+6.7	****		Slurry (CS)	***	**		**
Ashbury	Eike	Wilger	Rooikrans	T	13.2+6.7	****		Slurry (CS)	***	**		**
Ashbury	Jakaranda	Denne	Palm	t	F Slurry			Rehab (L)		**		***
Ashbury	Jakaranda	Palm	Eike	t	F Slurry			9.5mm	**	**		**
Ashbury	Karee	Salie	Olien	t	F Slurry				**	*		
Ashbury	Mimosa	Eike	Bloekom	t	F Slurry			9.5mm	**	***		**
Ashbury	Mimosa	Bloekom	Bloekom	t	F Slurry			9.5mm	**	**		
Ashbury	Palm	Gravel/Tar	Jakaranda	t	F Slurry			9.5mm		***		**
Ashbury	Palm	Jakaranda	Denne	t	F Slurry			9.5mm	*	**		**
Ashbury	Road 1	Muskadel	Road 3	t	13.2+6.7					**		
Ashbury	Road 1	Road 5	Road 4	t	13.2+6.7					***		
Ashbury	Road 4	Road 1	Road 3	t	13.2+6.7			Slurry (CS)	**	**		
Ashbury	Seder	Geelhout	Sitrus	t	13.2+6.7					***		**
Ashbury	Sipres	Muskadel	Sitrus	t	13.2+6.7	***		Rehab (L)	***	***	***	**
Ashbury	Sitrus	Sipres	Seder	t	13.2+6.7	***		Rehab (L)	**	***		**



PAVEMENT MANAGEMENT SYSTEM

PAVEMENT ASSESSMENT (PHASE 1)



Client: Langeberg

28/10/2015

Routine Maintenance				Langeberg		Attention Required			Assessment Date : 2011/05			
Suburb	Street :	Segment		Route	Existing				Patching	Edge	Crack	
		From	To	Class	Surfacing	Rehab	Reseal	Action	Surfacing	Struc	Break	Seal
Ashbury	Sitrus	Seder	Geelhout	t	13.2+6.7			DE??	***			
Ashbury	Sitrus	Geelhout	Ficus	t	13.2+6.7			DE??	**	***		
Ashbury	Sitrus	Ficus	Doringboom	t	13.2+6.7			DE??	***			
Ashbury	Sitrus	Doringboom	Hibiscus	t	13.2+6.7			DE??	****			
Ashbury	Waboom	Akasia	Waboom	t	13.2+6.7			DE??	***	***		
Ashbury	Waboom	Waboom	Olyfboom	t	13.2+6.7			DE??	**	**	***	
Ashbury	Waboom	Olyfboom	Waboom	t	13.2+6.7			DE??	**			
Ashbury	Wilger	Eike	Populier	t	ASPH(C)		****	9.5mm	**	**		
Ashton	1st Ave	Grav (2nd Ave)	Abbatoir	t	9.5mm	REHAB	???	Rehab (L)	***	****	***	**
Ashton	2nd Ave	Abbatoir	Tar/Gravel	t	9.5mm		***	FS + Mod9	****	****		**
Ashton	Abbatoir	Industria	1st Ave	T	9.5mm		****	Slurry (FS)	**	*	***	*
Ashton	Abbatoir	1st Ave	2nd Ave	T	9.5mm		***	DE??	***	**	***	**
Ashton	Abbatoir	2nd Ave	3rd Ave	T	13.2+6.7		****	Slurry (CS)	***	****	***	**
Ashton	Abbatoir	3rd Ave	CDS (Tar/Gravel)	t	13.2+6.7		****	Rehab (L)	****	***	***	***
Ashton	Industria	Abbatoir	Tar/Gravel	t	9.5mm			DE??	*	**		**
Badshoogte	Angelier	Cul De Sac	Protea	t	13.2+6.7			DE??	**			
Badshoogte	Angelier	Protea	Ranonkel	t	13.2+6.7			DE??	***			*
Badshoogte	Angelier	Ranonkel	Aster	t	13.2+6.7			DE??	***			*
Badshoogte	Angelier	Aster	Prov Road	t	13.2+6.7			DE??	*			**
Badshoogte	Aster	Cul De Sac	Angelier	t	13.2+6.7			DE??	***			
Badshoogte	Aster	Dahlia	Protea	t	13.2+6.7			Slurry (FS)	***	**		**
Badshoogte	Badskop Cres	Castle	Castle	t	C Slurry		****	Rehab (L)	****	***		**
Badshoogte	Castle	Muller	Badskop Cres	t	C Slurry			9.5mm	***	**		**
Badshoogte	Castle	Badskop Cres	Badskop Cres	t	13.2+6.7			DE??	***	***		**
Badshoogte	Castle	Badskop Cres	Wessels	t	13.2+6.7		***	Slurry (FS)	***	***		**

Routine Maintenance

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Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Badshoogte	Dahlia	Protea	Aster	t	13.2+6.7			Slurry (FS)	***	*		**
Badshoogte	Fouche	Uitvlucht	Wessels	t	C Slurry			Slurry (CS)		*		**
Badshoogte	Magnolia	Protea	Cul De Sac	t	13.2+6.7			Slurry (FS)	**	***		**
Badshoogte	Muller	Prov Road	Castle	T	C Slurry		***	13.2mm	***	***		**
Badshoogte	Protea	Prov Road	Aster	T	13.2+6.7			Rehab (L)		**		***
Badshoogte	Protea	Aster	Dahlia	T	13.2+6.7		****	Rehab (L)	***	***		**
Badshoogte	Protea	Dahlia	Ranonkel	t	13.2+6.7			DE??	***			**
Badshoogte	Protea	Vygie	Angelier	t	13.2+6.7			DE??	***	**		
Badshoogte	Ranonkel	Protea	Angelier	t	13.2+6.7			Slurry (FS)	***			**
Badshoogte	Ranonkel	Angelier	Cul De Sac	t	13.2+6.7			DE??		*		**
Badshoogte	Truter	Wessels	Cul De Sac	t	C Slurry		***	9.5mm	***	**		**
Badshoogte	Uitvlucht	Prov Road	Wessels	T	F Slurry		****	Rehab (M)	***	**		**
Badshoogte	Uitvlucht	Wessels	Burger	T	F Slurry			Rehab (HS)				**
Badshoogte	Uitvlucht	Burger	Fouche	T	F Slurry			Rehab (HS)		***		**
Badshoogte	Uitvlucht	Fouche	Wessels	T	F Slurry			Rehab (L)		**		**
Badshoogte	Uitvlucht	Wessels	CDS (Gate)	T	F Slurry			Rehab (HS)	**	***		**
Badshoogte	Vygie	Protea	Cul De Sac	t	13.2+6.7			DE??		***		
Badshoogte	Wessels	Uitvlucht	Phillips	t	9.5mm			DE??	***			**
Badshoogte	Wessels	Fouche	Burger	t	9.5mm		***	Slurry (FS)	***	*		**
Badshoogte	Wessels	Burger	Castle	t	C Slurry		***	9.5mm	**	**		**
Badshoogte	Wessels	Castle	Uitvlucht	t	C Slurry			9.5mm	*	**		**
Bonnievale	Akasia	Kruin	Karee	t	Sand		****	Slurry (FS)	*	**		
Bonnievale	Akasia	Karee	Olien	t	Sand			Rehab (L)	**	***		**
Bonnievale	Akasia	Olien	Kruin 2	t	9.5mm			Mod 9.5		**		
Bonnievale	Almeria	Buitekant	Lombard	T	13.2+6.7			Slurry (FS)		**		



PAVEMENT MANAGEMENT SYSTEM

PAVEMENT ASSESSMENT (PHASE 1)



Client: Langeberg

28/10/2015

Routine Maintenance				Langeberg		Assessment Date : 2011/05							
Suburb	Street :	Segment From To	Route Class	Existing Surfacing	Attention Required			Patching	Edge	Crack			
					Rehab	Reseal	Action	Surfacing	Struc	Break	Seal		
Bonnievale	Almeria	Lombard	New Cross	T	13.2+6.7	***	Slurry (FS)	**					
Bonnievale	Almeria	Milners	Braaf	t	F Slurry		Slurry (CS)	**	*****				
Bonnievale	Almeria	Braaf	Almeria CDS	t	C Slurry		9.5mm			***	**		
Bonnievale	Almeria	Almeria CDS	Rock	t	9.5mm		DE ??	***		****	**		
Bonnievale	Barlina Close	Barlina	Tar/Gravel	t	9.5mm		DE ??		***	****			
Bonnievale	Bester	Reitz	Main	t	F Slurry	****	Rehab (M)	****	***		**		
Bonnievale	Braaf	Cul De Sac	Almeria	t	13.2mm	REHAB	????	Rehab (L)	*****	***			
Bonnievale	Braaf	Almeria	Milners	t	9.5mm		Slurry (FS)	**	***	***			
Bonnievale	Buite Cres 1	Kruin 2	Kruin 1	t	C Slurry				***		*		
Bonnievale	Buite Cres 2	Kruin 2	Buite Cres Close	t	9.5mm		Slurry (FS)	**	**		*		
Bonnievale	Buite Cres Close	Buite Cres 2	Cul De Sac	t	13.2+6.7		DE ??	***	***				
Bonnievale	Buitekant	Almeria	Moos Snyman	t	13.2+6.7		DE ??		**	**			
Bonnievale	Buitekant	Moos Snyman	Moos Snyman	t	13.2+6.7		DE ??		***	**			
Bonnievale	Buitekant	Moos Snyman	New Cross	t	13.2+6.7		Slurry (FS)		***				
Bonnievale	Coetzee	Main	Van Zyl	t	6.7mm		DE ??	****					
Bonnievale	Forrest	Gravel/Tar + 2300m	Kruin	t	6.7mm		Slurry (CS)		***	**			
Bonnievale	Forrest	Myrtle Rigg	Reitz	T	6.7mm	***	Slurry (CS)	**	**		*		
Bonnievale	Forrest	Reitz	Waterkant	T	6.7mm		Slurry (CS)		***				
Bonnievale	Forrest	Waterkant	Kort	T	6.7mm		Mill+Replace				*		
Bonnievale	Forrest	Kort	Middel	T	6.7mm	***	Slurry (CS)	**			**		
Bonnievale	Forrest	Middel	Keerom	T	6.7mm		Mill+Replace	**					
Bonnievale	Forrest	Keerom	Van Zyl	T	6.7mm		Slurry (CS)	**			*		
Bonnievale	Forrest	Van Zyl	Main	T	6.7mm	****	Rehab (H)	***			**		
Bonnievale	Forrest Link	Forrest	Waterkant	t	9.5mm		Slurry (FS)		***	***			
Bonnievale	Hanepoort	Hanepoort Close 1	Hanepoort Close 2	t	Sand		Mill+Replace				**		
Bonnievale	Hanepoort	Hanepoort Close 2	Kristal	t	9.5mm	****	Slurry (FS)	***	**				

Routine Maintenance

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IMQS PMS Version 6.2

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Bonnievale	Hanepoort	Kristal	Hanepoort Close 3	t	9.5mm			DE??	***	***		
Bonnievale	Hanepoort	Hanepoort Close 3	Cul De Sac	t	9.5mm		****	Slurry (FS)	***	****		
Bonnievale	Hanepoort Close 2	Hanepoort	Cul De Sac	t	Sand			Mill+Replace	***	***		*
Bonnievale	Hill	CDS North	Hill A	t	Sand					**	**	*
Bonnievale	Hill	Hill A	Kloof	t	Sand					***		**
Bonnievale	Hill A	CDS West	Hill	t	Sand			Mod 9.5		***		**
Bonnievale	Hoop	Cul De Sac	Voortrekker	t	6.7mm		****	Mill+Replace	****	***	**	
Bonnievale	Hoop	Voortrekker	Cul De Sac	t	6.7mm			Mill+Replace	***	***	**	**
Bonnievale	Karee	Akasia	Akasia	t	Sand			Mod 9.5	**	***		*
Bonnievale	Keerom	Forrest	Cul De Sac	t	6.7mm			Slurry (CS)		*****		
Bonnievale	Kelkiewyn	Protea	Road 8	T	6.7mm			Mill+Replace	**	**	***	
Bonnievale	Kelkiewyn	Road 8	Aarbeiboom	T	6.7mm			Mill+Replace	***	**	**	
Bonnievale	Kerk	Hoop	Rigg	S	6.7mm		****	CS + Mod13	**			**
Bonnievale	Kerk	Van der Merwe	Van Zyl	S	6.7mm			Slurry (CS)		**		**
Bonnievale	Kerk	Van Zyl	Main	S	6.7mm		****	Slurry (CS)	****			**
Bonnievale	Keurboom	Protea	Protea	T	6.7mm			Rehab (L)	**	***		
Bonnievale	Keurboom	Protea	Leeubekkie	T	6.7mm			DE??		**		
Bonnievale	Keurboom	Leeubekkie	Vygie	T	6.7mm		***	DE??	***	**		
Bonnievale	Keurboom	Vygie	Buitekant	T	6.7mm			DE??	**	**		
Bonnievale	Kloof	Cul De Sac	Hill	t	C Slurry			Mod 9.5	**	**	****	*
Bonnievale	Kloof	Hill	Rock	t	C Slurry			Mod 9.5		**	***	**
Bonnievale	Kort	Forrest	Cul De Sac	t	6.7mm			DE??	**	***		
Bonnievale	Kruin	Kruin 2	Akasia	t	9.5mm					**		*
Bonnievale	Kruin	Akasia	Voortrekker	t	6.7mm		****	Slurry (FS)	***			**
Bonnievale	Kruin 1	Kruin 2	Buite Cres 1	t	9.5mm			Mod 9.5		**		**
Bonnievale	Kruin 1	Buite Cres 1	Kruin	t	9.5mm			9.5mm				**

Suburb	Street :	Segment		Route	Existing	Attention Required			Patching		Edge	Crack
		From	To	Class	Surfacing	Rehab	Reseal	Action	Surfacing	Struct	Break	Seal
Bonnievale	Kruin 2	Kruin 4	Kruin 1	t	9.5mm			Mod 9.5				**
Bonnievale	Kruin 2	Kruin 1	Kruin	t	9.5mm			Mod 9.5	**	**		**
Bonnievale	Kruin 2	Olien	Buite Cres 2	t	9.5mm			DE??		**		*
Bonnievale	Kruin 2	Buite Cres 2	Akasia	t	9.5mm		****	Slurry (CS)	***	***		**
Bonnievale	Kruin 4	Buite Cres 1	Forrest	t	9.5mm			DE??	**	**		**
Bonnievale	Landbou	Gravel/Tar	Main	T	6.7mm	REHAB	????	Rehab (HS)	**	**	***	*
Bonnievale	Leeubekkie	Bloekom	Bloekom	t	6.7mm			DE??	**	*		
Bonnievale	Leeubekkie	Bloekom	Roos	t	6.7mm			DE??	**	**		
Bonnievale	Leeubekkie	Roos	Aarbeiboom	t	13.2+6.7			DE??	***	***		
Bonnievale	Leeubekkie	Landbou	Road 6	t	13.2+6.7			DE??	**	**		
Bonnievale	Leeubekkie	Road 6	Silverboom	t	13.2+6.7			DE??	***	***		
Bonnievale	Lombard	Almeria	Pietersen	t	C Slurry			9.5mm		**	***	
Bonnievale	Louisiana	Cul De Sac	Louisiana Close	t	6.7mm					***		*
Bonnievale	Louisiana	Louisiana Close	Main	t	6.7mm					*****		**
Bonnievale	Madelifie	Almeria	Madelifie Slot 1	t	C Slurry					**		
Bonnievale	Malherbe	Waterkant	Main	t	6.7mm	REHAB	????	Rehab (L)	****	***	***	**
Bonnievale	Middel	Forrest	Cul De Sac	t	6.7mm			Slurry (CS)				
Bonnievale	Milners	Almeria	Frans	T	9.5mm		***	Slurry (CS)	***	**		
Bonnievale	Milners	Frans	Adendorf	T	9.5mm			Slurry (CS)	**	**		
Bonnievale	Milners	Hanepoort	Barlinka	T	9.5mm		***	Mill+Replace	***			**
Bonnievale	Milners	Barlinka	Kristal	T	9.5mm			DE??	**	**		
Bonnievale	Milners	Sultana	Hanepoort	T	9.5mm		***	Mill+Replace	***	**		
Bonnievale	Moos Snyman	Pietersen	Buitekant	t	F Slurry				***	**	***	*
Bonnievale	Muller	Cul De Sac	Van der Merwe	t	13.2+6.7		****	Slurry (CS)	***	**		*
Bonnievale	Muller	Kerk	Kerk	S	13.2+6.7		****	Asphalt (AC)	***	**		**
Bonnievale	Muller	Kerk	Cul De Sac	t	13.2+6.7			Slurry (CS)		***		**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struc		
Bonnievale	Myrtle Rigg	Myrtle Rigg Close	CDS West	t	6.7mm				**	**		
Bonnievale	Myrtle Rigg Close	Myrtle Rigg	Cul De Sac	t	6.7mm			Mod 9.5	**	***		**
Bonnievale	New Cross	Madeliefie	New Cross Close 1	T	F Slurry					**	**	
Bonnievale	New Cross	New Cross Close 2	Frans	t	F Slurry					**		
Bonnievale	New Cross	Frans	Sultana	t	9.5mm			DE??				*
Bonnievale	New Cross Close 2	New Cross	Tar/Gravel	t	9.5mm			DE??		***		
Bonnievale	Olien	Akasia	Kruin Cres 2	t	Sand					**		*
Bonnievale	Pietersen	Moos Snyman	Lombard	t	6.7mm			DE??		***		*
Bonnievale	Protea	Kelkiewyn	Roos	T	6.7mm					**	***	**
Bonnievale	Protea	Roos	Besembos	T	C Slurry					**		
Bonnievale	Protea	Besembos	Roos.	T	6.7mm				**	**		
Bonnievale	Reitz	Forrest	Bester	t	6.7mm			Mill+Replace		***	***	**
Bonnievale	Rigg	CDS 1	Kerk	t	6.7mm			Mill+Replace		***		
Bonnievale	Rigg	Kerk	CDS 2	t	6.7mm		****	DE??	***	**		**
Bonnievale	Road 6	Leeubekkie	Road 7	t	13.2+6.7				***	***		
Bonnievale	Road 6	Road 7	Landbou	t	13.2+6.7					****		
Bonnievale	Roos	Protea	Protea	t	6.7mm	REHAB	????	Rehab (L)	***	***	**	
Bonnievale	Roos	Protea	Protea.	t	6.7mm		***	Rehab (L)	***	***	**	
Bonnievale	Roos	Protea.	Leeubekkie	t	6.7mm			Slurry (FS)	***	***		
Bonnievale	Silwerboom	Main	Leeubekkie	t	C Slurry			Rehab (L)	***	*****		***
Bonnievale	Silwerboom	Leeubekkie	Silwerboom Close	t	6.7mm		***	Slurry (FS)	***	**		
Bonnievale	Silwerboom	Silwerboom Close	Gousblom	t	6.7mm			Mill+Replace		***		**
Bonnievale	Silwerboom	Gousblom	Kelkiewyn	t	6.7mm		***	Slurry (FS)	***	**	***	
Bonnievale	Sultana	Sultana Close	Milners	t	9.5mm			FS + Mod9	**			**
Bonnievale	Tuin	Waterkant	Tuin Close	t	9.5mm			Slurry (FS)	**	***		**
Bonnievale	Tuin	Tuin Close	Cul De Sac	t	9.5mm			DE??		**		

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Bonnievale	Tuin Close	Tuin	Cul De Sac	t	9.5mm				***			*
Bonnievale	Uitsig	Louisiana	Cul De Sac	t	6.7mm	REHAB	????	Rehab (M)	*****			
Bonnievale	Van Zyl	Cul De Sac	Kerk	t	6.7mm		***	Slurry (CS)	***	**		
Bonnievale	Van Zyl	Kerk	Coetzee	t	6.7mm		***	Slurry (FS)	**	***		
Bonnievale	Van Zyl	Coetzee	Forrest	t	6.7mm		****	DE??	***			**
Bonnievale	Van der Merwe	Cul De Sac	Kerk	S	13.2+6.7		****	FS + Mod13	***	***		
Bonnievale	Van der Merwe	Kerk	Kerk	S	13.2+6.7			Slurry (CS)				**
Bonnievale	Violtjie Cres	Botterboom	Kelkiewyn	t	13.2+6.7				***	****		
Bonnievale	Wade	New Cross	New Cross	t	F Slurry			Mod 9.5	**	***	**	*
Bonnievale	Waterkant	Forrest	Tuin	t	6.7mm		***	DE??	***	*	**	
Bonnievale	Waterkant	Tuin	Kerk	t	6.7mm			Slurry (CS)	***	**		**
Bonnievale	Waterkant	Kerk	Malherbe	t	Sand			Rehab (L)		**	***	**
Bonnievale	Waterkant	Malherbe	Cul De Sac	t	Sand	REHAB	????	Rehab (L)	***	**	***	**
Cogmanskloof	Amirilla	Middel	Iris	t	9.5mm		***	DE??	***	***		**
Cogmanskloof	Amirilla	Iris	Rose	t	9.5mm		***	DE??	***	***		
Cogmanskloof	Amirilla	Rose	Jasmein	t	9.5mm			DE??		***		
Cogmanskloof	Amirilla	Jasmein	Petunia	t	9.5mm			DE??	**	***		
Cogmanskloof	Amirilla	Petunia	Lelie	t	9.5mm		****	FS + Mod9	****	**		**
Cogmanskloof	Aster	Blue Bell	Cul De Sac	t	13.2mm			DE??	**	***		
Cogmanskloof	Begonia	Anemoon	Kiepersol	t	13.2+6.7					***		
Cogmanskloof	Bloekom	Denne	Gardenia	t	9.5mm		***	DE??	***	***		**
Cogmanskloof	Blue Bell	Iris	Madeliefie	t	13.2mm		***	DE??	***	***		
Cogmanskloof	Blue Bell	Madeliefie	Narsing	t	13.2mm		****	Slurry (FS)	*****	**		
Cogmanskloof	Blue Bell	Aster	Jasmein	t	13.2mm			DE??		**		
Cogmanskloof	Coronation	Lelie	Krisant	t	9.5mm		***	DE??	***	*****		**

Suburb	Street :	Segment		Route	Existing	Attention Required			Patching		Edge	Crack
		From	To	Class	Surfacing	Rehab	Reseal	Action	Surfacing	Struc	Break	Seal
Cogmanskloof	Coronation	Krisant	Jasmein	t	9.5mm			Rehab (L)		*****		
Cogmanskloof	Coronation	Jasmein	Iris	t	9.5mm	REHAB	????	Rehab (L)	***	*****		
Cogmanskloof	Coronation	Iris	Middel	t	13.2+6.7		***	DE??	***	***		
Cogmanskloof	Coronation	Middel	Protea	t	9.5mm			DE??	**	**		
Cogmanskloof	Coronation	Marula	Jakaranda	t	9.5mm			DE??	**	***		
Cogmanskloof	Coronation	Karee	Wilger	t	9.5mm			DE??		***		**
Cogmanskloof	Coronation	Wilger	Uitspan	t	9.5mm			DE??		***		
Cogmanskloof	Delphinium	Iris	Krisant	t	9.5mm	REHAB	????	Rehab (L)	***	*****		****
Cogmanskloof	Denne	Bloekom	Uitspan	t	9.5mm			DE??	**	**		
Cogmanskloof	Disa	Jakaranda	Wilger	t	9.5mm			DE??		***		
Cogmanskloof	Disa	Wilger	Uitspan	t	9.5mm			DE??	**	***		
Cogmanskloof	Gardenia	Middel	Mahonie	t	9.5mm		****	Rehab (L)	***	*****		
Cogmanskloof	Gardenia	Mahonie	Sipres	t	9.5mm			DE??				
Cogmanskloof	Gardenia	Sipres	Marula	t	9.5mm			DE??			***	
Cogmanskloof	Gardenia	Marula	Bloekom	t	9.5mm		***	DE??	*****		***	
Cogmanskloof	Gardenia	Bloekom	Karee	t	9.5mm		****	Slurry (FS)	***	***		
Cogmanskloof	Gardenia	Karee	Uitspan	t	9.5mm			DE??	***	***		
Cogmanskloof	Gladioli	Krisant	Ranonkel	t	9.5mm		***	DE??	***	***		****
Cogmanskloof	Gladioli	Ranonkel	Iris	t	9.5mm			Rehab (L)	**	*****		
Cogmanskloof	Iris	Ranonkel	Gladioli	t	9.5mm		***	DE??	***	*****		
Cogmanskloof	Iris	Gladioli	Delphinium	t	9.5mm		***	DE??	***	*****		
Cogmanskloof	Iris	Delphinium	Coronation	t	9.5mm			DE??	**			**
Cogmanskloof	Iris	Blue Bell	Amirilla	t	F Slurry				**	***		
Cogmanskloof	Jakaranda	Coronation	Disa	t	13.2+6.7				***	***		
Cogmanskloof	Jakaranda	Disa	Acacia	t	9.5mm		****	DE??	****	*****		**
Cogmanskloof	Jakaranda	Acacia	Main	t	13.2+6.7		***	DE??	***	**		****

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Cogmanskloof	Jasmein	Amirilla	Blue Bell	t	13+Sand					***		
Cogmanskloof	Krisant	Coronation	Delphinium	t	9.5mm		****	Slurry (FS)	***	***		**
Cogmanskloof	Krisant	Delphinium	Gladioli	t	9.5mm			DE??	**	***		
Cogmanskloof	La Rochelle	Zandvliet	Zandvliet	t	9.5mm		***	FS + Mod9	**	**		**
Cogmanskloof	Lelie	Cul De Sac	Orgidee	t	9.5mm		***	DE??	***	***		
Cogmanskloof	Lelie	Orgidee	Amirilla	t	9.5mm		***	Slurry (FS)	**	***		
Cogmanskloof	Lelie	Amirilla	Coronation	t	9.5mm		****	Rehab (L)	***	***		**
Cogmanskloof	Madeliefie	Blue Bell	Cul De Sac	t	13.2mm			DE??		***		
Cogmanskloof	Magnolia	Dahlia	Middel	t	F Slurry					***		
Cogmanskloof	Mahonie	Olien	Gardenia	t	F Slurry		****	9.5mm	**	*		
Cogmanskloof	Marula	Gardenia	Coronation	t	F Slurry			9.5mm	*	**		
Cogmanskloof	Middel	Main	Acacia	T	Cape	REHAB	????	Rehab (L)	***	***		****
Cogmanskloof	Middel	Acacia	Coronation	T	F Slurry		****	13.2mm	***	***		**
Cogmanskloof	Middel	Coronation	Gardenia	T	F Slurry		***	13.2mm	***	***		**
Cogmanskloof	Middel	Gardenia	Ranonkel	T	F Slurry		***	13.2mm	***	***		
Cogmanskloof	Noord	Bruwer	Voortrekker	t	9.5mm		***	Slurry (FS)	**	**		***
Cogmanskloof	Noord	Voortrekker	Uitspan	t	9.5mm			DE??		**		
Cogmanskloof	Olien	Sipres	Bloekom	t	9.5mm			DE??	*	*		
Cogmanskloof	Olien	Bloekom	Uitspan	t	9.5mm		***	Slurry (FS)	**	****		
Cogmanskloof	Orgidee	Lelie	Cul De Sac	t	9.5mm		***	DE??	***	****		
Cogmanskloof	Petunia	Rose Cres	Amirilla	t	13.2+6.7		***	Rehab (L)	**	****		
Cogmanskloof	Populier	Begonia	Bloekom	t	13+Sand					****		
Cogmanskloof	Protea	Coronation	Acacia	t	F Slurry			9.5mm	**	***		
Cogmanskloof	Ranonkel	Gladioli	Iris	t	9.5mm		****	DE??	****	****		
Cogmanskloof	Rose Cres	Petunia	Amirilla	t	9.5mm		****	Slurry (FS)	***	****		**
Cogmanskloof	Sipres	Gardenia	Olien	t	F Slurry			9.5mm	**	***		

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Cogmanskloof	Uitspan	Olien	Denne	t	9.5mm			DE??		***		
Cogmanskloof	Uitspan	Gardenia	Coronation	t	9.5mm			DE??		**		
Cogmanskloof	Uitspan	Coronation	Disa	t	9.5mm			DE??	**	*		
Cogmanskloof	Uitspan	Disa	Main	t	9.5mm			DE??	*	**		**
Cogmanskloof	Voortrekker	Noord	Waterkant	t	9.5mm	****		FS + Mod9				**
Cogmanskloof	Voortrekker	Waterkant	Faure	t	F Slurry	***		FS + Mod9	***			**
Cogmanskloof	Voortrekker	Faure	Main	t	F Slurry	****		9.5mm	**			**
Cogmanskloof	Waterkant	Voortrekker	Bruwer	t	9.5mm			CS + Mod9				**
Cogmanskloof	Wilger	Coronation	Disa	t	9.5mm			DE??	**	*****		
Cogmanskloof	Wilger	Disa	Main	t	9.5mm			DE??	**			**
Conradie Dorp	Barry	Swart	Faure	t	C Slurry	***		9.5mm	**	***		***
Conradie Dorp	Barry	Faure	Main	t	6.7mm			Mod 9.5		**		**
Conradie Dorp	Bruwer	Zandvliet	Main	T	ASPH(C)			13.2mm				**
Conradie Dorp	Bruwer	Main	Faure	T	F Slurry	***		13.2mm				**
Conradie Dorp	Bruwer	Faure	Swart	T	F Slurry			13.2mm				**
Conradie Dorp	Buitekant	Cul De Sac	Robertson	t	9.5mm			DE??		***		
Conradie Dorp	Buitekant	Robertson	Kloof	t	C Slurry	***		9.5mm	***	**		**
Conradie Dorp	De Villiers	Hoog	Fullard	t	F Slurry	****		9.5mm	***	***		**
Conradie Dorp	De Wet	Fullard	Swart	t	F Slurry			9.5mm				**
Conradie Dorp	Faure	George	Barry	t	F Slurry	****		Rehab (HS)	***	**		**
Conradie Dorp	Faure	Barry	Green	t	F Slurry	REHAB	????	Rehab (L)	***	**		****
Conradie Dorp	Faure	Green	Bruwer	t	F Slurry			9.5mm				**
Conradie Dorp	Faure	Bruwer	Voortrekker	t	F Slurry	****		Rehab (L)	***	**		**
Conradie Dorp	Fullard	George	Skool	t	F Slurry			9.5mm				**
Conradie Dorp	Fullard	Skool	De Wet	t	F Slurry			9.5mm				**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struc		
Conradie Dorp	Fullard	De Wet	De Villiers	t	F Slurry			9.5mm				***
Conradie Dorp	George	Faure	Swart	T	F Slurry	****		13.2mm	**	*		**
Conradie Dorp	George	Swart	Fullard	T	F Slurry	****		Rehab (L)	***			**
Conradie Dorp	George	Fullard	Paul Kruger	T	F Slurry	****		Rehab (L)	***	****		**
Conradie Dorp	George	Kloof	Robertson	T	C Slurry	****		Rehab (HS)	***	***		**
Conradie Dorp	George	Montagu	Cul De Sac	t	9.5mm			DE??		***		
Conradie Dorp	Green	Cul De Sac	Park	t	13.2+6.7	****		Slurry (FS)	***	***		**
Conradie Dorp	Green	Park	Wium	t	13.2+6.7	****		Rehab (HS)	**	**		***
Conradie Dorp	Green	Hoog	Fullard	t	F Slurry			9.5mm				**
Conradie Dorp	Green	Fullard	Swart	t	F Slurry			9.5mm		**		**
Conradie Dorp	Green	Swart	Faure	t	F Slurry	****		9.5mm	***			**
Conradie Dorp	Hoog	De Villiers	Skool	t	F Slurry			9.5mm				**
Conradie Dorp	Kort	Wium	Cul De Sac	t	F Slurry			9.5mm	***	***	***	**
Conradie Dorp	Loop	Main	Cul De Sac	t	F Slurry			Mod 9.5		***	***	**
Conradie Dorp	Montagu	George	Paul Kruger	t	9.5mm			DE??		***		**
Conradie Dorp	Montagu	Paul Kruger	Roodewal	t	9.5mm			Slurry (FS)				**
Conradie Dorp	Paul Kruger	George	Riviera	T	C Slurry	****		Rehab (HS)		***		**
Conradie Dorp	Paul Kruger	Riviera	Riviera	T	C Slurry			Rehab (HS)		***		**
Conradie Dorp	Paul Kruger	Riviera	Robertson	t	C Slurry	****		9.5mm	***			**
Conradie Dorp	Paul Kruger	Montagu	Tindale	t	C Slurry			Rehab (L)		**		***
Conradie Dorp	Paul Kruger	Tindale	Prov Gravel Road	t	C Slurry			9.5mm		****		***
Conradie Dorp	Riviera	Paul Kruger	Paul Kruger	t	9.5mm	****		Rehab (HS)	***	**		**
Conradie Dorp	Robertson	Roodewal	Paul Kruger	t	F Slurry	***		9.5mm	**	**		**
Conradie Dorp	Robertson	Paul Kruger	George	T	F Slurry			13.2mm				**
Conradie Dorp	Robertson	George	Buitekant	t	9.5mm	****		DE??	****	***		
Conradie Dorp	Roodewal	Prov Gravel Road	Tindale	t	9.5mm	****		DE??	***	***		

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge	Crack
		From	To			Rehab	Reseal	Action	Surfacing	Struct	Break	Seal
Conradie Dorp	Roodewal	Tindale	Montagu	t	F Slurry		****	9.5mm	***	**		**
Conradie Dorp	Roodewal	Montagu	Robertson	t	F Slurry			9.5mm		***		**
Conradie Dorp	Skool	Hoog	Fullard	t	F Slurry			9.5mm		***		**
Conradie Dorp	Station	Prov Road	Tar/Gravel	t	9.5mm			DE ??		*****		**
Conradie Dorp	Swart	De Villiers	Barry	t	F Slurry			9.5mm		**		**
Conradie Dorp	Swart	Barry	De Wet	t	F Slurry			9.5mm		**		**
Conradie Dorp	Tindale	Roodewal	Paul Kruger	t	F Slurry			9.5mm		***		**
Conradie Dorp	Zandvliet	La Rochelle	La Rochelle	t	Cape			Mod 9.5	**	**		
Conradie Dorp	Zandvliet	La Rochelle	Spoorlyn (CDS)	t	Cape			Mod 9.5	**	**	***	
Droeheuwel	Lusembos 1	Bloubos	Bloubos	t	F Slurry					***		
Droeheuwel	Rolbos	Bloekombos	Taaibos	t	Cape					**		
Droeheuwel	Rolbos	Bloubos	Doringbos	t	Cape					**		
Droeheuwel	Rolbos	Bloubos	Paddy	t	Cape					**		
McGregor	Barry	Mill	Voortrekker	t	Cape			Slurry (CS)	**	***	**	
McGregor	Barry	Voortrekker	Long	t	Cape			Slurry (CS)	**	**	****	**
McGregor	Bree	Long	Voortrekker	t	Cape				*	*		*
McGregor	Buitekant	Barry	Loop	t	13.2+6.7			DE ??		**		
McGregor	Church	Gate (CDS)	Grewe	t	9.5mm			Slurry (CS)	**	**		*
McGregor	Church	Mill	Voortrekker	t	13.2+6.7			Slurry (CS)				**
McGregor	Church	Voortrekker	Long	t	13.2+6.7			Slurry (CS)	**	***	***	
McGregor	Hartzenberg	Buitekant	Cul De Sac	t	13.2+6.7			Slurry (CS)	**	***	***	
McGregor	Long	Lady Grey	Keerom	T	9.5mm				**	**		**
McGregor	Long	Tindall	Church	T	Cape				*	**		
McGregor	Long	Church	Bree	t	Cape					*		
McGregor	Loop	Buitekant	Long	t	13.2+6.7			DE ??		***		

Suburb	Street :	Segment		Route	Existing	Attention Required			Patching		Edge	Crack
		From	To	Class	Surfacing	Rehab	Reseal	Action	Surfacing	Struct	Break	Seal
McGregor	Loop	Long	Voortrekker	t	9.5mm			DE??	**	**	***	
McGregor	Loop	Voortrekker	Mill	t	13.2+6.7			DE??	**	**	***	
McGregor	Loop	Mill	Tar/Gravel	t	13.2+6.7			Slurry (FS)	***	***		
McGregor	McGregor 2	Long	Cul De Sac	t	Cape				**	***		
McGregor	Mill	Office	Loop	t	9.5mm			Slurry (CS)	***	***		*
McGregor	Office	Buitekant	McGregor 1	t	13.2+6.7			DE??		**	***	
McGregor	Office	McGregor 1	Long	t	13.2+6.7			Slurry (CS)	**	***	***	**
McGregor	Office	Long	Voortrekker	t	13.2+6.7			Slurry (CS)	**	***	***	**
McGregor	Office	Voortrekker	Mill	t	9.5mm			DE??	**	**	***	**
McGregor	Office	Mill	Cul De Sac	t	13.2+6.7			Slurry (FS)	**	***	***	**
McGregor	Piet October	Piet October	Piet October	t	Cape					***	***	
McGregor	Piet Visser	Willie Meyer	Buitekant	t	13.2+6.7			Slurry (CS)	***	***	***	*
McGregor	Plein	Long	Voortrekker	t	Cape					*		
McGregor	Smith	Darling	Mill	t	Cape				**	***	**	
McGregor	Smith	Mill	Voortrekker	t	Cape			Slurry (CS)	**	***		
McGregor	Tindall	Grewé	Mill	T	Cape				**	**	**	*
McGregor	Tindall	Mill	Voortrekker	T	Cape				**	**	***	*
McGregor	Tindall	Voortrekker	Long	T	Cape			Slurry (CS)		**		**
McGregor	Tindall	Long	Buitekant	T	Cape			Slurry (CS)		***		*
McGregor	Van Niekerk	Willie Meyer	Willie Meyer	t	13.2+6.7	***		Slurry (CS)	**	***		
McGregor	Voortrekker	Gravel (P 1334)	Smith	t	9.5mm	***		Slurry (FS)	**	***		
McGregor	Voortrekker	Smith	Plein	t	9.5mm				**	***		
McGregor	Voortrekker	Loop	Barry	t	9.5mm							
McGregor	Willie Meyer	Buitekant	Van Niekerk	t	13.2+6.7			Rehab (L)	**	***	**	**
McGregor	Willie Meyer	Van Niekerk	Van Niekerk	t	13.2+6.7			Slurry (CS)		***		*
McGregor	Willie Meyer	Van Niekerk	Piet Visser	t	13.2+6.7			FS + Mod9	**	***		**

Suburb	Street :	Segment		Route	Existing	Attention Required			Patching		Edge	Crack
		From	To	Class	Surfacing	Rehab	Reseal	Action	Surfacing	Struc	Break	Seal
Montagu	Africa	Wilhelm Thys	Andries	t	9.5mm			Slurry (FS)	**	**		
Montagu	Amandel	Keerom	Loop	t	13.2+6.7	***		Slurry (FS)	***	**		**
Montagu	Amandel	Loop	Cul De Sac	t	13.2+6.7	***		DE??	****	***		**
Montagu	Anderson	Du Preez	Van Wyk	t	9.5mm			Slurry (FS)	**	*		
Montagu	Anderson	Van Wyk	Du Preez	t	9.5mm			DE??	**	**		
Montagu	Andries	Banie	Johnson	t	9.5mm			DE??				*
Montagu	Andries	Johnson	Africa	t	9.5mm			DE??		*		
Montagu	Banie	Wilhelm Thys	Goetham	t	F Slurry			9.5mm	**	*		
Montagu	Banie	Goetham	Andries	t	F Slurry	****		9.5mm	**	*		
Montagu	Banie	Fluks	Buitekant	t	F Slurry			9.5mm		***		**
Montagu	Barry	Cul De Sac	Meul	t	13.2+6.7	****		Slurry (FS)	***	***		
Montagu	Barry	Meul	Bell	T	F Slurry	***		Mod 13.2	**	**		**
Montagu	Barry	Bell	Bath	T	F Slurry	****		Mod 13.2	**			**
Montagu	Barry	Bath	Lang	T	6.7mm				**	**		**
Montagu	Bath	Rose	Barry	T	C Slurry	****		Rehab (L)	***	**		***
Montagu	Bell	Barry	Cul De Sac	t	13.2+6.7	***		DE??	***	***		
Montagu	Bloem	Kruin Cres	Le Roux	t	F Slurry			9.5mm	***	**		*
Montagu	Bloem	Le Roux	Joubert	t	F Slurry			9.5mm		**		*
Montagu	Bloem	Joubert	Piet Retief	t	F Slurry			Mod 9.5	**	**		**
Montagu	Bloem SB	Piet Retief	Bath	T	F Slurry			Slurry (CS)	***	***		**
Montagu	Bloupunt	Swanepoel	Cogmans Close	t	13.2+6.7			DE??	**	*		**
Montagu	Bloupunt	Cogmans Close	Cul De Sac	t	13.2+6.7			DE??	**	**		
Montagu	Boesak	Fluks	Goetham	t	13.2+6.7			DE??	**	**		
Montagu	Bree	Linvelt	Grave	t	13.2+6.7	***		DE??	***	**		**
Montagu	Brink	Cul De Sac	Van der Merwe	t	6.7mm			DE??		***		

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge	Crack
		From	To			Rehab	Reseal	Action	Surfacing	Struct	Break	Seal
Montagu	Brink	Van der Merwe	Hofmeyer	t	6.7mm		****	Slurry (FS)	***			*
Montagu	Brink	Hofmeyer	Van Riebeeck	t	6.7mm			Slurry (FS)	***	**		**
Montagu	Brown	Rose	Middel	T	13.2+6.7			DE??	*	***	***	
Montagu	Buitekant	Prov Road	Ismael	T	9.5mm		***	Slurry (FS)	**	***		**
Montagu	Buitekant	Montagu 3	Banie	T	9.5mm			DE??	**	*		**
Montagu	Buitekant	Banie	Mark	T	9.5mm			FS + Mod13		*		**
Montagu	Buitekant	Mark	Du Toit	T	9.5mm			Rehab (L)		***		**
Montagu	Buitekant	Du Toit	Nel	t	F Slurry			FS + Mod9		**		**
Montagu	Cogmans Close	Bloupunt	Montagu 1	t	13.2+6.7		***	DE??	***	****		**
Montagu	Cogmans Close	Montagu 1	Cul De Sac	t	13.2+6.7			DE??	**	**		
Montagu	Cross	Le Roux	Joubert	t	F Slurry			Mod 9.5	**			**
Montagu	Cross	Joubert	Piet Retief	t	F Slurry			Mod 9.5	**			**
Montagu	Cross	Piet Retief	Bath	t	F Slurry			Mod 9.5	**	**		**
Montagu	Cross	Bath	Lang	T	F Slurry			Slurry (CS)	**	*		***
Montagu	Cupido	Wilhelm Thys	Van Turha	t	9.5mm			DE??	**	**		
Montagu	Cupido	Van Turha	Mohammed	t	9.5mm			DE??		*		
Montagu	Cupido	Mohammed	Stuart	t	9.5mm			Slurry (CS)	***			**
Montagu	Cupido	Stuart	Du Preez	t	9.5mm			Slurry (CS)	*	**		
Montagu	De Kock	Hofmeyer	Hospital	t	6.7mm		***	Slurry (FS)	***	**		**
Montagu	Diener	Knipes Hope	Polisie Stasie	t	13.2+6.7			9.5mm	**	***		*
Montagu	Du Preez	Cupido	Anderson	t	9.5mm			DE??	*	**		
Montagu	Du Preez	Anderson	Felix	t	9.5mm			Slurry (FS)	**			
Montagu	Du Preez	Felix	Sacca	t	9.5mm		***	Slurry (FS)	***	**		
Montagu	Du Preez	Sacca	Cul De Sac	t	13.2+6.7		****	Slurry (FS)	***	**		
Montagu	Du Toit	Lang	Bath	T	F Slurry		****	Rehab (M)	***	***		**
Montagu	Du Toit	Bath	Piet Retief	T	F Slurry			Mod 13.2		**		**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Montagu	Du Toit	Piet Retief	Joubert	T	F Slurry			Mod 13.2				**
Montagu	Du Toit	Joubert	Le Roux	T	F Slurry			Mod 13.2	*			**
Montagu	Du Toit	Le Roux	Union	T	F Slurry			Mod 13.2				**
Montagu	Du Toit	Union	Buitekant	T	F Slurry			13.2mm		**		**
Montagu	Du Toit	Buitekant	Wilhelm Thys	T	13.2+6.7	***		Rehab (L)	**	**		**
Montagu	Ebden	Prov Road	Cul De Sac	t	9.5mm	****		Slurry (FS)	***	***		
Montagu	Eyssen	Hospital	Rossouw	t	6.7mm			Slurry (FS)	*	**		**
Montagu	Eyssen	Rossouw	Thomson	t	6.7mm			Slurry (FS)	*			**
Montagu	Eyssen	Van Riebeeck	Lang	t	6.7mm			Rehab (L)		**		**
Montagu	Felix	Wilhelm Thys	Pokwas	t	9.5mm			DE??	***	**		
Montagu	Felix	Pokwas	Du Preez	t	9.5mm			DE??	*	***		
Montagu	Fluks	Banie	Lekay	t	13.2+6.7			DE??	**	**		
Montagu	Fluks	Lekay	Boesak	t	13.2+6.7			DE??		***		
Montagu	Fluks	Boesak	Cul De Sac	t	13.2+6.7			DE??		**		
Montagu	Goetham	Januarie	Ismael	t	9.5mm			DE??		**		
Montagu	Goetham	Ismael	Titus	t	9.5mm			DE??		**		
Montagu	Goetham	Titus	Lekay	t	9.5mm			DE??		**		*
Montagu	Goetham	Lekay	Banie	t	9.5mm			DE??		**		*
Montagu	Grave	Mount	Tanner	t	9.5mm			DE??				**
Montagu	Grave	Tanner	Keerom	t	9.5mm			Slurry (FS)	***			**
Montagu	Grave	Keerom	Bree	t	9.5mm	***		Slurry (FS)	***			**
Montagu	Grave	Bree	Loop	t	9.5mm			Slurry (FS)	***			**
Montagu	Grave	Loop	Krom	t	9.5mm			DE??	**			**
Montagu	Grave	Krom	Kort	t	9.5mm			Slurry (FS)				**
Montagu	Hof	Joubert	Piet Retief	t	13.2+6.7			Slurry (FS)	***	**		**
Montagu	Hofmeyer	Cul De Sac	Kerk	t	6.7mm			DE??	**	*****		**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge	Crack
		From	To			Rehab	Reseal	Action	Surfacing	Struct	Break	Seal
Montagu	Hofmeyer	Kerk	De Kock	t	6.7mm			DE??	*	***		**
Montagu	Hofmeyer	De Kock	Swanepoel	t	6.7mm			Slurry (FS)	***			**
Montagu	Hofmeyer	Swanepoel	Brink	t	6.7mm			Slurry (FS)		**		**
Montagu	Hoog	Barry	Cul De Sac	t	13.2+6.7			Slurry (CS)	*	**		
Montagu	Hospital	Van Huyssteen	Exssen	t	6.7mm			DE??	***	*		*
Montagu	Hospital	Gravel/Tar	Kerk	t	6.7mm			Slurry (FS)	*	**		**
Montagu	Hospital	Kerk	De Kock	T	6.7mm		***	Slurry (FS)	***	**		**
Montagu	Hospital	De Kock	Swanepoel	T	6.7mm			Slurry (FS)	**	**		**
Montagu	Hospital	Swanepoel	Cul De Sac	t	6.7mm		***	DE??	***	***		**
Montagu	Ismael	Buitekant	Pekeur	t	9.5mm			DE??	**	**		
Montagu	Ismael	Pekeur	Saunders	t	9.5mm			DE??		*		
Montagu	Ismael	Saunders	Goetham	t	9.5mm			DE??	***	**		
Montagu	Ismael	Goetham	Wilhelm Thys	t	9.5mm		***	Slurry (FS)	***	**		
Montagu	Ismael	Wilhelm Thys	Simon	t	9.5mm			DE??	**	*		
Montagu	Januarie	Goetham	Saunders	t	9.5mm			DE??	**	**		
Montagu	Johnson	Andries	Wilhelm Thys	t	13.2+6.7			Slurry (FS)	**	***		
Montagu	Joubert	Rawson	Bloem	t	F Slurry			9.5mm	**	*		*
Montagu	Joubert	Bloem	Kohler	t	F Slurry			Mod 9.5	**	**		**
Montagu	Joubert	Kohler	Plein	t	F Slurry			Mod 9.5	**	**		**
Montagu	Joubert	Plein	Du Toit	t	F Slurry			Mod 9.5	*	**		**
Montagu	Joubert	Hof	Mark	t	F Slurry			Mod 9.5				**
Montagu	Joubert	Mark	Cross	t	F Slurry			Mod 9.5				**
Montagu	Keerom	Grave	Linvelt	t	13.2+6.7		***	FS + Mod9	***			**
Montagu	Keerom	Linvelt	Amandel	t	13.2+6.7		***	Slurry (FS)	***			**
Montagu	Keerom	Amandel	Cul De Sac	t	13.2+6.7		***	Slurry (FS)	***	****		**
Montagu	Kerk	Cul De Sac	Hospital	t	6.7mm			Rehab (HS)	*	*****		**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Montagu	Kerk	Hospital	Hofmeyer	T	6.7mm			Rehab (HS)				**
Montagu	Kerk	Hofmeyer	Van Riebeeck	T	6.7mm		***	Slurry (CS)	**	***		**
Montagu	Kerk	Van Riebeeck	Lang	T	6.7mm	REHAB	????	Rehab (H)	***	**		****
Montagu	Kerk	Lang	Bath	T	F Slurry			Mod 13.2		***		**
Montagu	Klassen	Ismael	Visser	t	13.2+6.7		****	Slurry (FS)	**	**		
Montagu	Klassen	Visser	Stevens	t	13.2+6.7		****	Slurry (FS)	****	***		
Montagu	Klipna Circle	Van Riebeeck	Cul De Sac	t	6.7mm			DE??	**	***		**
Montagu	Kloof	Mount	Tar/Gravel	t	9.5mm			DE??		***		
Montagu	Knipes Hope	Bath	Diener	t	C Slurry					*		
Montagu	Knipes Hope	Diener	Cul De Sac	t	13.2+6.7		***	Slurry (FS)	**	**		*
Montagu	Kohler	Gate (CDS)	Buitekant	t	13.2+6.7		***	Rehab (HS)	**	***		
Montagu	Kohler	Unie	Le Roux	t	F Slurry		****	9.5mm	**			**
Montagu	Kohler	Le Roux	Joubert	t	F Slurry		****	9.5mm	**			
Montagu	Kohler	Joubert	Piet Retief	t	F Slurry			9.5mm	***			*
Montagu	Kohler	Piet Retief	Bath	t	F Slurry			9.5mm				**
Montagu	Kohler	Bath	Lang	t	F Slurry		****	Rehab (M)	***			**
Montagu	Kohler	Lang	Cul De Sac	t	F Slurry			FS + Mod9	***	***		**
Montagu	Kohler	Cul De Sac	Van Riebeeck	t	6.7mm	REHAB	????	Rehab (L)	*****	*****		**
Montagu	Kohler	Van Riebeeck	CDS (Brug)	t	6.7mm			Rehab (L)		***		**
Montagu	Kort	Cul De Sac	Grave	t	13.2+6.7		***	Slurry (FS)	****			
Montagu	Kort	Grave	Klip	t	13.2+6.7			Slurry (FS)	***			**
Montagu	Kort	Klip	Linvelt	t	13.2+6.7			DE??	**	*		**
Montagu	Krom	Grave	Kiesie	t	9.5mm		***	Slurry (FS)	***			**
Montagu	Krom	Kiesie	Grave	t	9.5mm		***	Slurry (FS)	***	**		**
Montagu	Kruin Cres	Bloem	Kohler	t	F Slurry			9.5mm	**	***		*
Montagu	Le Roux	Cross	Mark	t	F Slurry			Mod 9.5	**			**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge	Crack
		From	To			Rehab	Reseal	Action	Surfacing	Struct	Break	Seal
Montagu	Le Roux	Mark	Du Toit	t	F Slurry			9.5mm	*	**		**
Montagu	Le Roux	Du Toit	Kohler	t	F Slurry			9.5mm	**			**
Montagu	Le Roux	Kohler	Bloem	t	F Slurry			9.5mm	***	**		**
Montagu	Lekay	Goetham	Fluks	t	13.2+6.7			Slurry (FS)	*	***		
Montagu	Linvelt	Cul De Sac	Kort	t	13.2+6.7	****		Slurry (FS)	***	**		
Montagu	Linvelt	Kort	Loop	t	13.2+6.7	***		Slurry (FS)	***			*
Montagu	Linvelt	Loop	Bree	t	13.2+6.7	***		DE??	***	**		*
Montagu	Linvelt	Bree	Keerom	t	13.2+6.7	***		Slurry (FS)	***			**
Montagu	Loop	Cul De Sac	Amandel	t	13.2+6.7			DE??		*		
Montagu	Loop	Amandel	Linvelt	t	13.2+6.7			DE??	**	*		**
Montagu	Loop	Linvelt	Grave	t	13.2+6.7			DE??				**
Montagu	Low	Prov Road	Tar/Gravel	t	F Slurry			Slurry (CS)	***	***	***	
Montagu	Mark	Lang	Bath	T	F Slurry	REHAB	????	Rehab (M)	*	***		***
Montagu	Mark	Bath	Piet Retief	T	F Slurry			Mod 13.2	*			**
Montagu	Mark	Piet Retief	Joubert	t	F Slurry			Mod 9.5				**
Montagu	Mark	Joubert	Le Roux	t	F Slurry			Mod 9.5	**	*		**
Montagu	Mark	Le Roux	Park	t	F Slurry			9.5mm				**
Montagu	Mark	Park	Union	t	F Slurry			Slurry (CS)				**
Montagu	Mark	Union	Buitekant	t	F Slurry			Mod 9.5				**
Montagu	Meul	Barry	Middel	t	9.5mm	****		Slurry (FS)	***			****
Montagu	Meul	Middel	Mount	t	9.5mm	***		Slurry (CS)	**	*		***
Montagu	Mohammed	Montagu 8	Cupido	t	9.5mm			DE??		*		
Montagu	Montagu 3	Buitekant	Park	t	F Slurry			9.5mm	**	**		**
Montagu	Montagu 8	Stuart	Strydom	t	ASPH(C)			9.5mm	*	*		
Montagu	Montagu 8	Simon	Wilhelm Thys	t	ASPH(C)			9.5mm	**	**		*
Montagu	Mount	Meul	Grey	t	F Slurry	****		FS + Mod9	***			**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struc		
Montagu	Mount	Grey	Mount Cl 1	t	F Slurry		***	Mod 9.5	***			**
Montagu	Mount	Mount Cl 1	Mount	t	F Slurry		****	FS + Mod9	****	***		**
Montagu	Mount	Mount	Kloof	t	F Slurry		***	Mod 9.5	***			**
Montagu	Mount Cl 1	Mount	Cul De Sac	t	F Slurry					****		
Montagu	Nel	Buitekant	Davids	t	13.2+6.7			Rehab (L)		***		**
Montagu	Park	Mark	Cross	t	F Slurry			9.5mm	**			**
Montagu	Park	Cross	Montagu 3	t	F Slurry			9.5mm		**		**
Montagu	Park	Montagu 3	Prov Road	t	F Slurry		***	9.5mm	***			**
Montagu	Parring	Andries	Wilhelm Thys	t	9.5mm			Slurry (FS)	***	***		
Montagu	Pekeur	Stevens	Ismael	t	9.5mm			Slurry (FS)	**	*		
Montagu	Piet Retief	Bath	Cross	t	F Slurry		***	Mod 9.5	***			**
Montagu	Piet Retief	Mark	Hof	t	F Slurry			Mod 9.5	**	**		**
Montagu	Piet Retief	Kohler	Bloem	t	F Slurry			Mod 9.5				***
Montagu	Piet Retief	Rawson	Barry	t	F Slurry		****	Mod 9.5	***	**		**
Montagu	Plein	Joubert	Piet Retief	t	13.2+6.7			Slurry (FS)	**	*		**
Montagu	Rawson	Piet Retief	Joubert	t	F Slurry			Mod 9.5				**
Montagu	Rawson	Joubert	Cul De Sac	t	6.7mm			Slurry (CS)	**	**		**
Montagu	Rose	Lang	Bath	t	F Slurry			9.5mm	***	**		**
Montagu	Rossouw	Van Huyssteen	Van Zyl	t	6.7mm			DE??	***	***		**
Montagu	Rossouw	Van Zyl	Exssen	t	6.7mm			DE??	***	*		
Montagu	Saunders	Ismael	Januarie	t	13.2+6.7		****	Slurry (FS)	***	**		
Montagu	Saunders	Januarie	Stevens	t	13.2+6.7			Slurry (FS)	**	**		
Montagu	Simon	Montagu 8	Ismael	t	9.5mm		****	Slurry (FS)	***	***		
Montagu	Stevens	Klassens	Wilhelm Thys	t	13.2+6.7		***	FS + Mod9	**			**
Montagu	Stevens	Wilhelm Thys	Goetham	t	9.5mm			DE??	*			
Montagu	Stevens	Goetham	Saunders	t	9.5mm			DE??		**		

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Montagu	Stevens	Saunders	Pekeur	t	9.5mm			DE??	**	*		
Montagu	Strydom	Ismael	Montagu 8	t	9.5mm		***	DE??	***	**		**
Montagu	Stuart	Montagu 7	Montagu 8	t	9.5mm		***	Slurry (FS)	**	**		
Montagu	Sultana Cres (N)	Barlinka	Sultana Link	t	C Slurry		***	Rehab (L)	**	**		**
Montagu	Sultana Cres (S)	Sultana Link	Barlinka	t	C Slurry	REHAB	????	Rehab (L)	***	***		****
Montagu	Sultana Link	Prov Road	Sultana Cres	t	F Slurry			Slurry (CS)		**		****
Montagu	Swanepoel	Bloupunt	Hospital	t	13.2+6.7		****	Slurry (CS)	***	*		*
Montagu	Swanepoel	Van der Merwe	Hofmeyer	t	C Slurry			9.5mm	**	****		**
Montagu	Swanepoel	Hofmeyer	Van Riebeeck	t	C Slurry			9.5mm	***			**
Montagu	Tanner	CDS (Gate)	Kiesie	t	6.7mm			Slurry (FS)	**			**
Montagu	Tanner	Kiesie	Meul	t	13.2+6.7		***	Slurry (FS)	***			**
Montagu	Titus	Goetham	Wilhelm Thys	t	9.5mm			DE??	**	**		
Montagu	Union	Kohler	Du Toit	t	F Slurry			Mod 9.5	*			**
Montagu	Union	Du Toit	Mark	t	F Slurry			9.5mm	*	**		**
Montagu	Van Huysteen	Thomson	Rossouw	t	6.7mm			Slurry (FS)	**	**		**
Montagu	Van Turha	Cupido	Montagu 8	t	9.5mm		***	DE??	***	**		
Montagu	Van Wyk	Anderson	Van Wyk	t	13.2+6.7		****	Slurry (FS)	***	**		
Montagu	Van Wyk	Van Wyk	Van Wyk	t	13.2+6.7		****	Slurry (FS)	***	**		
Montagu	Van Zyl	Thomson	Rossouw	t	6.7mm			DE??	*	**		**
Montagu	Van der Merwe	Swanepoel	Brink	t	6.7mm			Slurry (FS)	***	**		**
Montagu	Visser	Ismael	Klassen	t	13.2+6.7		****	Slurry (FS)	***	***		
Montagu	Wilhelm Thys	Montagu 5	Nel	t	13.2+6.7			Slurry (FS)	***	**		
Montagu	Wilhelm Thys	Nel	Du Toit	t	9.5mm			Slurry (FS)	*	**		
Montagu	Wilhelm Thys	Du Toit	Montagu 6	t	13.2+6.7			DE??	***	**		
Montagu	Wilhelm Thys	Montagu 6	Parring	T	13.2+6.7			DE??	*	*		
Montagu	Wilhelm Thys	Parring	Africa	t	13.2+6.7			DE??	***	**		



PAVEMENT MANAGEMENT SYSTEM

PAVEMENT ASSESSMENT (PHASE 1)



Client: Langeberg

28/10/2015

Routine Maintenance				Langeberg		Attention Required			Assessment Date : 2011/05			
		Segment		Route	Existing				Patching	Edge	Crack	
Suburb	Street :	From	To	Class	Surfacing	Rehab	Reseal	Action	Surfacing	Struc	Break	Seal
Montagu	Wilhelm Thys	Africa	Johnson	t	13.2+6.7			DE??	***	*		
Montagu	Wilhelm Thys	Johnson	Banie	t	13.2+6.7			DE??	**	*		
Montagu	Wilhelm Thys	Banie	Montagu 7	t	13.2+6.7			Slurry (FS)	**	*		
Montagu	Wilhelm Thys	Montagu 7	Titus	t	9.5mm		****	DE??	****			
Montagu	Wilhelm Thys	Titus	Montagu 8	t	ASPH(C)			Mod 9.5	**	*		
Montagu	Wilhelm Thys	Montagu 8	Ismael	t	ASPH(C)			Mod 9.5	**	**		**
Montagu	Wilhelm Thys	Ismael	Stevens	t	ASPH(C)			Rehab (M)	**	***		**
Montagu	Wilhelm Thys	Stevens	Prov Road	t	ASPH(C)	REHAB	????	Rehab (L)	***	**		****
Montagu	Willem Lourens	Van Riebeeck	Cul De Sac	t	13.2+6.7			Slurry (FS)	**	**		*
Nkqubela	Burwana	Hani	Silimela	T	F Slurry			13.2mm		*		
Nkqubela	Burwana	May	Nokhonya	T	13.2+6.7			DE??	**	**		
Nkqubela	Dayi	Samuel	Samuel	t	13.2+6.7			DE??	*	***	*****	**
Nkqubela	Hani	Burwana	Silimela	t	13.2+6.7			Slurry (FS)	**	**		
Nkqubela	Luthuli	Nentsa	Cul De Sac	t	13.2+6.7			Slurry (FS)	***	**	***	
Nkqubela	Masakhane	Burwana	Hani	t	13.2+6.7			DE??	**	**		**
Nkqubela	Mzola	Stuurman	Tar/Gravel	t	ASPH(C)		****	9.5mm	***	**	****	
Nkqubela	Nentsa	Mzabalazo	Monyawaza	t	Cape					***		
Nkqubela	Peter	Nentsa	Qhanqiso	t	F Slurry			Rehab (L)		*****	***	
Nkqubela	Qhanqiso	May	Dantis	t	F Slurry			9.5mm	***	**	***	**
Nkqubela	Qhanqiso	Dantis	Peter	t	13.2+6.7			Slurry (FS)	**	*	***	
Nkqubela	Samuel	Silimela	Silimela	t	13.2+6.7		****	Slurry (FS)	***	*****		
Nkqubela	Samuel	Silimela	Dayi	t	13.2+6.7		****	Slurry (FS)	***	**		
Nkqubela	Silimela	Hani	Samuel	t	13.2+6.7		****	Slurry (FS)	***	***		
Nkqubela	Silimela	Samuel	Samuel	t	13.2+6.7		****	Slurry (FS)	***	***		
Nkqubela	Silimela	Samuel	Burwana	t	13.2+6.7		****	Slurry (FS)	***	***		

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfaci	Struc		
Nkqubela	Spoorn Serv	Burwana	Cul De Sac	t	13.2+6.7			DE??	**	*****		
Nkqubela	Straat	Wolhunter	Cul De Sac	T	13.2+6.7		****	Rehab (L)	*****	***		
Nkqubela	Stuurman	Mzola	May	t	ASPH(C)			9.5mm		**		
Nkqubela	Tshazimpunzi	Hani	Cul De Sac	t	13.2+6.7		***	Slurry (FS)	***	***		
Nkqubela	Volt	Wolhunter	Cul De Sac	T	13.2+6.7	REHAB	????	Rehab (L)	**	*****		**
Nkqubela	Wolhunter	Prov Road	Straat	T	13.2+6.7	REHAB	????	Rehab (L)	**	**	*****	****
Nkqubela	Wolhunter	Volt	Hani	T	13.2+6.7			DE??		**	*****	
Robertson	Adderley	Kort	Dirkie Uys	T	6.7mm			Mod 13.2		*		**
Robertson	Adderley	Dirkie Uys	Dirkie Uys	T	6.7mm			13.2mm				**
Robertson	Adderley	Dirkie Uys	Reitz	T	F Slurry		****	Rehab (HS)	***	***		**
Robertson	Adderley	Reitz	Paul Kruger	t	F Slurry			Mod 9.5				**
Robertson	Adderley	Paul Kruger	Piet Retief	t	F Slurry			Mod 9.5		***		**
Robertson	Adderley	Piet Retief	Barry	t	F Slurry			9.5mm				**
Robertson	Adderley	Barry	Van der Stel	t	6.7mm		***	9.5mm	**			**
Robertson	Affodil	Nerina	Jasmyn	t	F Slurry			9.5mm	*	***		**
Robertson	Africa	Pietersen	Parking	t	13.2+6.7		***	Slurry (FS)	**	***		
Robertson	Africa Parking	Africa	Cul De Sac	t	9.5mm			DE??		***		
Robertson	Akker	Eben Donges	Jakaranda	t	6.7mm			DE??				**
Robertson	Akker	Jakaranda	Van Zyl	t	6.7mm		****	DE??	*****	***		**
Robertson	Albert	Reitz	Paul Kruger	t	C Slurry			9.5mm	**	***		**
Robertson	Albert	Paul Kruger	Museum	t	C Slurry			9.5mm	*	*****		**
Robertson	Albert	Museum	Piet Retief	t	C Slurry			9.5mm				**
Robertson	Albert	Piet Retief	Barry	t	C Slurry			9.5mm				**
Robertson	Anthony	Solomon	Coetzee	t	13.2+6.7		****	Slurry (FS)	**	***		**
Robertson	Ash	Waterkant	Polack	t	C Slurry		****	Rehab (L)	***			**



PAVEMENT MANAGEMENT SYSTEM

PAVEMENT ASSESSMENT (PHASE 1)



Client: **Langeberg**

28/10/2015

Routine Maintenance				Langeberg		Assessment Date : 2011/05						
Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Robertson	Barry	Voortrekker (Paving)	Konstitusie	T	F Slurry	****		Rehab (H)	***	***		**
Robertson	Barry	Konstitusie	Victoria	T	F Slurry	REHAB	????	Rehab (H)	***	***		***
Robertson	Barry	Adderley	Hoop	T	6.7mm			Mod 13.2				**
Robertson	Barry	Swellendam	Mark	T	6.7mm			FS + Mod13				**
Robertson	Barry	Mark	Robertson	T	9.5mm			Rehab (H)				**
Robertson	Barry	Robertson	Van Reenen	T	6.7mm			Rehab (H)				**
Robertson	Barry	Van Reenen	White	T	6.7mm	****		Rehab (H)	**			**
Robertson	Barry	White	Truter	T	F Slurry			Rehab (H)				**
Robertson	Barry	Truter	Albert	T	F Slurry	****		13.2mm				**
Robertson	Barry	Albert	Le Roux	T	F Slurry			13.2mm	**			**
Robertson	Barry	Le Roux	Van Zyl	T	F Slurry			13.2mm				**
Robertson	Barry	Van Zyl	Loop	T	F Slurry	***		13.2mm		***		**
Robertson	Barry	Loop	Polack	T	F Slurry	***		13.2mm		***		**
Robertson	Bergsig	Paddy	Coligny	t	F Slurry			9.5mm		***		**
Robertson	Bergsig	Coligny	Erica	t	F Slurry			Mod 9.5				**
Robertson	Bergsig	Erica	Fleur	t	F Slurry			9.5mm		**		**
Robertson	Bergsig	Fleur	George	t	F Slurry			9.5mm				**
Robertson	Bergsig	George	Heuwel	t	F Slurry			9.5mm		***		**
Robertson	Bloekom	Jakaranda	Van Zyl	t	6.7mm	****		FS + Mod9	***	***		**
Robertson	Bosheuwel	Leeuwin	Waterkant	t	6.7mm			DE??				**
Robertson	Buren	Drommedaris	Nassau	t	6.7mm			9.5mm	*	**		
Robertson	Buren	Nassau	Nassau	t	6.7mm			9.5mm		***		
Robertson	Ceder	Van Zyl	Jakaranda	t	9.5mm			DE??	**	***		**
Robertson	Ceder	Eben Donges	Cul De Sac	t	9.5mm			Slurry (FS)	*	**		
Robertson	Clairvaux	CDS South	Willem Nel	t	13.2+6.7			Slurry (FS)	**	**		
Robertson	Clairvaux	Willem Nel	CDS North	t	13.2+6.7			DE??	***	***		

Routine Maintenance

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Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Robertson	Coetzee	Wesley	Johnson	t	9.5mm			DE??	***			**
Robertson	Coetzee	Johnson	Tienvoet	t	9.5mm			DE??		***		
Robertson	Coetzee	Unnamed Road 0007	Paul Kruger	T	9.5mm		****	Slurry (FS)				**
Robertson	Coligny	Bergsig	Dagbreek	t	6.7mm		***	9.5mm	***	*****		
Robertson	Constantia	Van der Stel	Cul De Sac	t	6.7mm			9.5mm	**	***		**
Robertson	Dagbreek	Paddy	Coligny	t	F Slurry		***	9.5mm	**	**		
Robertson	Dagbreek	Coligny	Erica	t	F Slurry		***	9.5mm	**	**		**
Robertson	Dagbreek	Erica	Heuwel	t	F Slurry		****	9.5mm	***	***		
Robertson	Dagbreek	Heuwel	Iris	t	13.2+6.7		****	DE??	***	***		**
Robertson	Dahlia	Nutan	Jasmyn	t	F Slurry		****	9.5mm	*****	***		**
Robertson	De Villiers	Hospital	Hokim	t	Sand		***	Rehab (L)	**	*****		**
Robertson	De Wet	Unnamed Road 0007	Cul De Sac	t	13.2+6.7			DE??		*****		
Robertson	Denne	Van Zyl	Elm	t	13.2+6.7			Slurry (FS)	**	*****		**
Robertson	Denne	Eben Donges	Kerk	t	13.2+6.7			Slurry (FS)	*			**
Robertson	Derde	Sonskyn	Vierde	t	F Slurry			9.5mm		***		
Robertson	Dirkie Uys	Van Zyl	Truter	T	F Slurry			Rehab (L)		**		**
Robertson	Dirkie Uys	Truter	Eben Donges	T	F Slurry		***	13.2mm		**		**
Robertson	Dirkie Uys	Eben Donges	Kerk	T	F Slurry		***	13.2mm	**	***		
Robertson	Dirkie Uys	Kerk	Hoop	T	6.7mm		***	13.2mm	**		***	**
Robertson	Dirkie Uys	Hoop	Adderley	T	6.7mm			Mod 13.2	*			**
Robertson	Dirkie Uys	Adderley	Konstitusie	t	6.7mm			Mod 9.5	*	**		**
Robertson	Dordrecht	Waterkant	Leeuwin	t	6.7mm			DE??	**			**
Robertson	Dordrecht	Leeuwin	Parel	t	6.7mm		****	Slurry (FS)	*****	***		**
Robertson	Drommedaris	Buren	Van Zyl	t	13.2+6.7			FS + Mod9				**
Robertson	Eben Donges	Ceder	Akker	t	6.7mm			DE??	**			**
Robertson	Eben Donges	Akker	Dirkie Uys	t	6.7mm			FS + Mod9				**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Robertson	Eerste	Derde	Tweede	t	13.2+6.7			Slurry (FS)	*****			
Robertson	Eerste	Tweede	Scholtz	t	13.2+6.7		****	Slurry (FS)	*****	***		
Robertson	Eerste	Hokim	Hager	t	F Slurry			9.5mm	***			**
Robertson	Elm	Van Zyl	Denne	t	6.7mm			Slurry (FS)	**	***		**
Robertson	Erica	Bergsig	Dagbreek	t	6.7mm		****	Slurry (FS)	***	***		**
Robertson	Ficus	Van Zyl	Cul De Sac	t	9.5mm		****	Rehab (M)	*****	***		**
Robertson	Fleur	Bergsig	Heuwel	t	6.7mm		****	Rehab (L)	***	*****		
Robertson	Freeman	White	Truter	t	6.7mm			DE??	*	***		**
Robertson	Geelhout	Van Zyl	Cul De Sac	t	9.5mm		***	Slurry (FS)	**	***		
Robertson	George	Heuwel	Bergsig	t	ASPH(C)		***	Rehab (L)	**	***		**
Robertson	Gum Grove	Polack	Wavem	t	6.7mm			Slurry (FS)	*	***		**
Robertson	Hager	Eerste	Park	t	13.2+6.7			Slurry (FS)	*	**		**
Robertson	Hahn	Paddy	Cul De Sac	t	13.2+6.7		***	DE??	***	***	*****	
Robertson	Heide	Vygie	Protea	t	6.7mm		****	Rehab (L)	***	*****		**
Robertson	Heide	Protea	Paddy	t	6.7mm		***	DE??	***	***		**
Robertson	Heuwel	Dagbreek	Fleur	t	F Slurry			9.5mm		*****		**
Robertson	Heuwel	Fleur	Bergsig	t	9.5mm			9.5mm	*	*****		**
Robertson	Heuwel	Bergsig	Unnamed Road 0005	t	F Slurry			9.5mm	**	*****		**
Robertson	Heuwel	Unnamed Road 0005	George	t	F Slurry		***	9.5mm	***	*****		
Robertson	Heuwel	George	Unnamed Road 0006	t	F Slurry			Rehab (L)		*****		
Robertson	Hokim	River	De Villiers	t	C Slurry		****	9.5mm	**	***		**
Robertson	Hokim	De Villiers	Eerste	t	C Slurry			9.5mm		***		**
Robertson	Hoop	Dirkie Uys	Reitz	T	C Slurry		****	13.2mm	**			**
Robertson	Hoop	Reitz	Paul Kruger	T	F Slurry		***	13.2mm	**	***		**
Robertson	Hoop	Paul Kruger	Piet Retief	T	F Slurry			Rehab (L)		**		***
Robertson	Hoop	Piet Retief	Barry	T	F Slurry			13.2mm	*	*		***

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struc		
Robertson	Hoop	Barry	Cul De Sac	t	C Slurry			9.5mm				**
Robertson	Hopley	Truter	Albert	t	6.7mm	****		9.5mm	*****	*****		**
Robertson	Hopley	Albert	Le Roux	t	F Slurry			CS + Mod9		***	***	**
Robertson	Hopley	Le Roux	Jeneke	t	F Slurry			9.5mm		**	***	**
Robertson	Hopley	Jeneke	Van Zyl	t	F Slurry			9.5mm		***	***	**
Robertson	Hopley	Van Zyl	Loop	t	F Slurry	***		9.5mm	***	***	****	**
Robertson	Hospital	Eerste	Vygie	t	F Slurry			9.5mm		*		
Robertson	Hospital	Vygie	Protea	t	F Slurry			9.5mm				**
Robertson	Industria	Kerk	Voortrekker	t	9.5mm			Rehab (M)		***		**
Robertson	Iris	Unnamed Road 0006	Unnamed Road 0004	t	F Slurry	****		9.5mm	*****	***		**
Robertson	Iris	Unnamed Road 0004	Unnamed Road 0005	t	F Slurry			9.5mm	**	***		
Robertson	Jakaranda	Bloekom	Akker	t	6.7mm	***		DE??		***		**
Robertson	Jansen	October	De Witt	t	13.2+6.7	***		Slurry (FS)	**	***		
Robertson	Jansen	De Witt	Pietersen	t	13.2+6.7			DE??	**	***		**
Robertson	Japonika	Tulp	Watsonia	t	F Slurry			9.5mm				
Robertson	Jasmyn	Paddy	Saayman	t	F Slurry	***		9.5mm		****		**
Robertson	Jasmyn	Saayman	Affodil	t	F Slurry			Mod 9.5				**
Robertson	Jasmyn	Affodil	Nutan	t	F Slurry			9.5mm	**			**
Robertson	Jasmyn	Nutan	Dahlia	t	F Slurry			9.5mm	**	***		
Robertson	Jasmyn	Watsonia	Sonneblom	t	F Slurry	***		9.5mm	***	***		**
Robertson	Jeneke	Hopley	Cul De Sac	t	13.2+6.7			DE??		**		
Robertson	Johan de Jongh	Prov Road	Church	S	ASPH(C)			Mod 13.2				**
Robertson	Johan de Jongh	Church	Van Zyl	S	13.2+6.7			CS + Mod13			***	**
Robertson	Johan de Jongh	Van Zyl	Van Zyl + 500m	S	13.2+6.7			Slurry (CS)		**	***	**
Robertson	Johan de Jongh	Van Zyl + 500m	De Hoop	S	13.2+6.7			Rehab (M)		***		***
Robertson	Johan de Jongh	De Hoop	Van Oudtshoorn	S	13.2+6.7			Slurry (CS)	**	***	***	

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge	Crack
		From	To			Rehab	Reseal	Action	Surfacing	Struc	Break	Seal
Robertson	Johan de Jongh	Van Oudtshoorn	Paul Kruger	T	13.2+6.7		***	Slurry (FS)	**		***	**
Robertson	Johnson	Coetzee	Solomon	t	13.2+6.7			DE??		**		
Robertson	Johnson	Solomon	Cul De Sac	t	13.2+6.7			DE??				**
Robertson	Jones	Nerina	Orley	t	13.2+6.7		****	Slurry (FS)	***	***		**
Robertson	Jubel	Muller	Unnamed Road 0004	t	6.7mm			DE??	***	***		
Robertson	Jubel	Unnamed Road 0004	Unnamed Road 0003	t	6.7mm			DE??		***		**
Robertson	Jubel	Unnamed Road 0003	Iris	t	6.7mm		****	Slurry (FS)	***	***		
Robertson	Keerom	Loop	Van Zyl	T	13.2+6.7							*
Robertson	Keerom	Van Zyl	Le Roux	T	13.2+6.7							*
Robertson	Keerom	White	Cul De Sac	t	13.2+6.7		***	Slurry (FS)	**	**		**
Robertson	King	Van Zyl	Cul De Sac	t	F Slurry			9.5mm		**		*
Robertson	Kloof	Langeberg	Unnamed Road 0003	t	F Slurry		***	9.5mm	**	*****		**
Robertson	Konstitusie	Voortrekker	Dirkie Uys	T	F Slurry	REHAB	????	Rehab (L)		*****		****
Robertson	Konstitusie	Dirkie Uys	Reitz	T	ASPH(C)	REHAB	????	Rehab (L)	***	***		****
Robertson	Konstitusie	Reitz	Paul Kruger	t	F Slurry		***	9.5mm	***	***		**
Robertson	Konstitusie	Paul Kruger	Piet Retief	t	F Slurry			Mod 9.5		***		**
Robertson	Konstitusie	Piet Retief	Barry	t	F Slurry			Mod 9.5				**
Robertson	Konstitusie	Barry	Cul De Sac	t	F Slurry			Mod 9.5		*****		**
Robertson	Kort	Adderley	Cul De Sac	t	ASPH(C)			9.5mm	**	***		
Robertson	Kromhout	Voortrekker	Polisie	t	F Slurry			Mod 9.5		***		**
Robertson	Kromhout	Polisie	Concrete (Private Rd)	t	F Slurry		***	9.5mm	***	***		**
Robertson	Lakey	Meyer	Cul De Sac	t	9.5mm			DE??		*****		**
Robertson	Lang	Adderley	Kerk	t	6.7mm			Mod 9.5		*		**
Robertson	Langeberg	Paddy	Unnamed Road 0001	t	F Slurry			9.5mm	*			**
Robertson	Langeberg	Unnamed Road 0001	Heuwel	t	F Slurry		****	CS + Mod9	*			**
Robertson	Langeberg	Heuwel	Unnamed Road 0008	t	F Slurry		***	9.5mm	***	**		***

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Robertson	Langeberg	Unnamed Road 0008	Kloof	t	ASPH(C)			9.5mm	**	***		**
Robertson	Langeberg	Kloof	Unnamed Road 0002	t	ASPH(C)		***	9.5mm	**			**
Robertson	Langeberg	Unnamed Road 0002	Kloof	t	ASPH(C)		***	9.5mm	**	***		**
Robertson	Le Roux	Hopley	Keerom	t	6.7mm			Mod 9.5	*	***		**
Robertson	Le Roux	Keerom	Barry	t	6.7mm		***	9.5mm				**
Robertson	Le Roux	Barry	Piet Retief	t	F Slurry			9.5mm		***		**
Robertson	Le Roux	Piet Retief	Paul Kruger	t	F Slurry			9.5mm				**
Robertson	Leeuwin	Cul De Sac	Bosheuvel	t	6.7mm		***	Rehab (L)	***	***		**
Robertson	Loop	Van Oudtshoorn	Paul Kruger	t	C Slurry			9.5mm				**
Robertson	Loop	Barry	Cul De Sac	t	6.7mm		****	Slurry (FS)	***	*****		***
Robertson	Loop	Cul De Sac	Keerom	t	6.7mm		****	Rehab (L)	***	*****		**
Robertson	Loop	Keerom	Hopley	t	F Slurry		***	Mod 9.5	**			**
Robertson	Malherbe	Van der Stel	Barry	t	C Slurry			Mod 9.5		***		**
Robertson	Malva	Unnamed Road 0002	Muller	t	ASPH(C)		***	9.5mm	***	***		
Robertson	Malva	Muller	Nerina	t	ASPH(C)		****	9.5mm	***	***		
Robertson	Malva	Nerina	Unnamed Road 0008	t	F Slurry			9.5mm		***		
Robertson	Malva	Unnamed Road 0008	Unnamed Road 0001	t	F Slurry		****	9.5mm	*****	***		
Robertson	Marais 2	Drommedaris	Marais 4	t	F Slurry			9.5mm		***		
Robertson	Meyer	Pietersen	Lahey	t	13.2+6.7			DE??		**		**
Robertson	Muller	Malva	Malva	t	F Slurry			9.5mm		***		
Robertson	Muller	Malva	Langeberg	t	13.2+6.7		***	Slurry (FS)	**	***		
Robertson	Nerina	Paddy	Affodil	t	F Slurry		***	9.5mm	**	***		**
Robertson	Nerina	Affodil	Unnamed Road 0001	t	F Slurry			Mod 9.5				**
Robertson	Nerina	Unnamed Road 0001	Watsonia	t	F Slurry			Mod 9.5				**
Robertson	Nerina	Watsonia	Orley	t	F Slurry		****	Mod 9.5				**
Robertson	Nerina	Blocks/Tar	Jones	t	13.2+6.7		****	Slurry (FS)	*****			

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struc		
Robertson	Nerina	Jones	Malva	t	Cape		***		***	***		**
Robertson	Nutan	Jasmyn	Dahlia	t	9.5mm		****	9.5mm	****	***	***	**
Robertson	Nutan	Dahlia	Watsonia	t	F Slurry		****	9.5mm	**			**
Robertson	October	Jansen	Cul De Sac	t	6.7mm			Slurry (FS)	**	****		
Robertson	Orley	Jones	Begonia	t	F Slurry			9.5mm	***	****		
Robertson	Paddy	River	Heide	T	13.2+6.7			FS + Mod13	**			**
Robertson	Paddy	Heide	Bergsig	T	C Slurry		***	Mod 13.2	*	***		**
Robertson	Paddy	Bergsig	Vygie	T	C Slurry			Mod 13.2	*	**		**
Robertson	Paddy	Wesley	Langeberg	T	C Slurry			Mod 13.2		*		**
Robertson	Paddy	Nerina	Jasmyn	T	13.2+6.7			FS + Mod13	*	**		**
Robertson	Paddy	Jasmyn	Pietersen	T	9.5mm			FS + Mod13	**			**
Robertson	Paddy	Pietersen	Richter	T	13.2+6.7		****	DE ??	**	***		**
Robertson	Paddy	Richter	Paul Kruger	T	9.5mm			DE ??		***		**
Robertson	Parel	Dordrecht	Unnamed Road 1001	t	6.7mm			DE ??		****		**
Robertson	Park	Eerste	Hager	t	6.7mm			DE ??	**	*		**
Robertson	Parking	Solomon	Cul De Sac	t	13.2+6.7			DE ??		***		
Robertson	Paul Kruger	Voortrekker	Konstitusie	S	C Slurry		****	Rehab (M)		***		**
Robertson	Paul Kruger	Konstitusie	Victoria	S	C Slurry		****	Rehab (M)	**			**
Robertson	Paul Kruger	Victoria	Adderley	S	C Slurry			Mod 13.2		*		***
Robertson	Paul Kruger	Adderley	Hoop	S	C Slurry			Mod 13.2				**
Robertson	Paul Kruger	Hoop	Swellendam	S	C Slurry			Asphalt (AC)		**		
Robertson	Paul Kruger	Robertson	Van Reenen	S	9.5mm							**
Robertson	Paul Kruger	Van Reenen	White	S	C Slurry	REHAB	????	Rehab (H)	***			**
Robertson	Paul Kruger	White	Truter	S	C Slurry			Rehab (M)				**
Robertson	Paul Kruger	Truter	Albert	S	13.2+6.7		***	Rehab (M)				**
Robertson	Paul Kruger	Albert	Le Roux	S	13.2+6.7			Rehab (M)				**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Robertson	Paul Kruger	Le Roux	Van Zyl	S	13.2+6.7			Rehab (HS)	**	*		**
Robertson	Paul Kruger	Van Zyl	Loop	S	F Slurry							
Robertson	Paul Kruger	Loop	Polack	S	13.2+6.7							*
Robertson	Paul Kruger	Waterkant	Coetzee	S	13.2+6.7	***		Rehab (HS)	**	*		**
Robertson	Paul Kruger	Coetzee	Paddy	S	13.2+6.7	***		DE ??				**
Robertson	Paul Kruger	Paddy	Tar/Gravel	S	13.2+6.7	***		Rehab (L)	**	***	***	
Robertson	Paul Kruger	Gravel/Tar	Prov Road	S	13.2+6.7	****		Rehab (L)	***	***	***	
Robertson	Petunia	Begonia	Roos	t	F Slurry			9.5mm	**			**
Robertson	Piet Retief	Polack	Loop	t	C Slurry			Slurry (CS)		**		**
Robertson	Piet Retief	Loop	Van Zyl	t	C Slurry			Mod 9.5				**
Robertson	Piet Retief	Van Zyl	Le Roux	t	C Slurry			9.5mm		*		**
Robertson	Piet Retief	Albert	Truter	t	C Slurry			9.5mm				**
Robertson	Piet Retief	White	Van Reenen	t	F Slurry	****		Rehab (HS)	**			**
Robertson	Piet Retief	Van Reenen	Robertson	t	F Slurry			Mod 9.5				**
Robertson	Piet Retief	Swellendam	Hoop	T	F Slurry			Rehab (L)				**
Robertson	Piet Retief	Hoop	Adderley	T	F Slurry	****		Rehab (L)		***		**
Robertson	Piet Retief	Adderley	Victoria	T	F Slurry			Rehab (HS)				**
Robertson	Pietersen	Paddy	Africa	t	13.2+6.7			DE ??	**	*		**
Robertson	Pietersen	Meyer	Meyer	t	13.2+6.7	****		Rehab (L)	***	*****		
Robertson	Pietersen	Meyer	Jansen	t	13.2+6.7			FS + Mod9				**
Robertson	Pietersen	Jansen	Paddy	t	13.2+6.7			DE ??	**	***		**
Robertson	Plein	Watsonia	Nutan	t	9.5mm	REHAB	????	Rehab (L)	*****	*****		
Robertson	Polack	Tienvoet	Barry	t	C Slurry	****		Mod 9.5	*	**		**
Robertson	Polack	Barry	Piet Retief	t	6.7mm			FS + Mod9		*****		**
Robertson	Polack	Piet Retief	Paul Kruger	t	6.7mm			Rehab (L)		***		**
Robertson	Polack	Paul Kruger	Ash	t	C Slurry	****		Rehab (HS)	***			**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Struct		
Robertson	Polack	Ash	Smith	t	C Slurry		***	Rehab (L)	*	***		**
Robertson	Polack	Smith	Van Oudtshoorn	t	C Slurry			Rehab (M)				**
Robertson	Polack	Van Oudtshoorn	Gum Grove	t	C Slurry			9.5mm				**
Robertson	Polack	Gum Grove	Roodezandt	t	C Slurry			9.5mm		***		**
Robertson	Polisie	Kromhout	Cul De Sac	t	F Slurry		****	Mod 9.5	*	***		**
Robertson	Protea	Hospital	Vygie	t	6.7mm		****	Slurry (FS)	**	***		**
Robertson	Protea	Vygie	Heide	t	6.7mm		***	DE??	***	***		**
Robertson	Reitz	Van Zyl	Le Roux	t	F Slurry			Mod 9.5				**
Robertson	Reitz	Warren	Truter	T	F Slurry		****	Rehab (L)	**			**
Robertson	Reitz	Truter	White	T	F Slurry		****	13.2mm				**
Robertson	Reitz	White	Van Reenen	t	C Slurry			Rehab (M)				**
Robertson	Reitz	Van Reenen	Kerk	t	9.5mm			DE??	*			*
Robertson	Reitz	Victoria	Konstitusie	T	9.5mm			FS + Mod13				*
Robertson	Reitz	Konstitusie	Voortrekker	T	9.5mm			Slurry (FS)				*
Robertson	Richter	Paddy	Cul De Sac	t	13.2+6.7			Rehab (L)	***	*****		**
Robertson	Rijger	Van Zyl	Van Riebeeck	t	13.2+6.7			DE??		***		**
Robertson	River	Hospital	Hokim	t	C Slurry			9.5mm	**	*		
Robertson	Robertson	Paul Kruger	Piet Retief	T	C Slurry		****	Rehab (M)	**			**
Robertson	Robertson	Piet Retief	Barry	T	F Slurry			Rehab (M)				**
Robertson	Roodezandt	Polack	Wavem	t	6.7mm			DE??		**		**
Robertson	Roos	Petunia	Rosita	t	C Slurry			9.5mm	**			**
Robertson	Rosita	Watsonia	Begonia	t	C Slurry		****	9.5mm	*****			**
Robertson	Saayman	Jasmyn	Cul De Sac	t	6.7mm		***	DE??	***	***		**
Robertson	Sainsbury	Hager	Eerste	t	13.2+6.7		***	DE??	***	***		
Robertson	Scaifie	Paddy	River	t	F Slurry	REHAB	????	Rehab (L)	*****	*****		
Robertson	Scaifie	River	Paddy	t	13.2+6.7		***	Slurry (FS)	*****	*****		

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge	Crack
		From	To			Rehab	Reseal	Action	Surfacing	Struct	Break	Seal
Robertson	Scholtz	Eerste	Wesley	t	13.2+6.7	***		Slurry (FS)	**	**		**
Robertson	Smal	White	Malherbe	t	13.2+6.7			DE??		**		
Robertson	Smith	Polack	Waterkant	t	C Slurry			Mod 9.5	*			**
Robertson	Sonneblom	Cul De Sac	Jasmyn	t	C Slurry			Mod 9.5		*****		**
Robertson	Sonneblom	Japonika	Begonia	t	C Slurry	****		9.5mm	***			**
Robertson	Sonneblom	Begonia	Watsonia	t	C Slurry	***		9.5mm	**	***		***
Robertson	Sonskyn	Tweede	Eerste	t	F Slurry			Mod 9.5				**
Robertson	Swellendam	Barry	Piet Retief	T	C Slurry	***		Rehab (M)	*			**
Robertson	Swellendam	Piet Retief	Paul Kruger	T	C Slurry	****		CS + Mod13				**
Robertson	Tindall	Polack	Coetzee	t	13.2+6.7	***		Slurry (FS)	***			**
Robertson	Toets Sentrum	Kerk	Kerk	t	13.2+6.7			Slurry (FS)	**	***		
Robertson	Truter	Piet Retief	Paul Kruger	t	C Slurry			Mod 9.5				**
Robertson	Truter	Paul Kruger	Reitz	t	C Slurry			9.5mm		***		**
Robertson	Truter	Reitz	Dirkie Uys	t	C Slurry			9.5mm				**
Robertson	Tulp	Japonika	Cul De Sac	t	F Slurry	****		Mod 9.5	*****	*****		
Robertson	Tweede	Vierde	Sonskyn	t	13.2+6.7			DE??		**		
Robertson	Unnamed Road 0002	Langeberg	Malva	t	ASPH(C)			9.5mm	**	***		**
Robertson	Unnamed Road 0004	Iris	Jubel	t	13.2+6.7	****		Slurry (FS)	***	***		**
Robertson	Unnamed Road 0005	Iris	Heuwel	t	F Slurry	****		9.5mm	***	***		***
Robertson	Unnamed Road 0006	Iris	Heuwel	t	ASPH(C)	****		9.5mm	***	***		
Robertson	Van Oudtshoorn	Van Zyl	Loop	T	F Slurry			Mod 13.2	*			**
Robertson	Van Oudtshoorn	Loop	Polack	T	F Slurry	***		Rehab (M)	*			**
Robertson	Van Oudtshoorn	Wavem	Waterkant	T	9.5mm			DE??				**
Robertson	Van Oudtshoorn	Waterkant	Johan de Jongh	T	F Slurry	****		Rehab (L)	**			**
Robertson	Van Reenen	Barry	Piet Retief	T	C Slurry			Mod 13.2				**
Robertson	Van Reenen	Piet Retief	Paul Kruger	T	C Slurry	****		Mod 13.2		**		**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge	Crack
		From	To			Rehab	Reseal	Action	Surfacing	Struct	Break	Seal
Robertson	Van Reenen	Paul Kruger	Reitz	T	C Slurry			Rehab (M)				**
Robertson	Van Reenen	Reitz	Cul De Sac	T	C Slurry		****	13.2mm	**	***		**
Robertson	Van Riebeeck	Cul De Sac	Rijger	t	13.2+6.7			Slurry (FS)	**	**		
Robertson	Van Zyl	Geelhout	Ficus	T	9.5mm			Rehab (M)				**
Robertson	Van Zyl	Ficus	Elm	T	9.5mm			Slurry (FS)	*			**
Robertson	Van Zyl	Rijger	Denne	T	9.5mm			DE??		**		
Robertson	Van Zyl	Bloekom	Akker	T	6.7mm			Mod 13.2				**
Robertson	Van Zyl	Akker	Dirkie Uys	T	6.7mm			13.2mm	**	***		**
Robertson	Van Zyl	Dirkie Uys	King	T	6.7mm		****	13.2mm	***			**
Robertson	Van Zyl	King	Neethling	T	6.7mm			Mod 13.2		***		**
Robertson	Van Zyl	Neethling	Van Oudtshoorn	T	C Slurry			Mod 13.2				**
Robertson	Van Zyl	Van Oudtshoorn	Reitz	T	9.5mm			DE??		**		
Robertson	Van Zyl	Paul Kruger	Piet Retief	T	C Slurry			13.2mm				**
Robertson	Van Zyl	Piet Retief	Barry	T	C Slurry			13.2mm				**
Robertson	Van Zyl	Barry	Keerom	t	6.7mm			Mod 9.5				**
Robertson	Van Zyl	Keerom	Hopley	t	C Slurry			9.5mm				**
Robertson	Van Zyl	Hopley	Alberta	t	C Slurry			9.5mm		***		
Robertson	Van der Stel	Malherbe	Constantia	t	6.7mm			9.5mm		***		**
Robertson	Victoria	CDS North	Barry	t	6.7mm			FS + Mod9	*	*****		**
Robertson	Victoria	Barry	Piet Retief	t	6.7mm			FS + Mod9	**	***		**
Robertson	Victoria	Piet Retief	Paul Kruger	t	6.7mm			9.5mm				**
Robertson	Victoria	Paul Kruger	Reitz	t	6.7mm			9.5mm		***		**
Robertson	Vierde	Eerste	Cul De Sac	t	13.2+6.7			DE??		***		
Robertson	Vygie	Hospital	Heide	t	C Slurry			9.5mm		***		**
Robertson	Vygie	Heide	Protea	t	C Slurry			Mod 9.5				**
Robertson	Waterkant	Van Oudtshoorn	Smith	t	C Slurry			CS + Mod9		***		**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge Break	Crack Seal
		From	To			Rehab	Reseal	Action	Surfacing	Structural		
Robertson	Waterkant	Smith	Bosheuwel	t	C Slurry			CS + Mod9				**
Robertson	Waterkant	Bosheuwel	Ash	t	C Slurry			9.5mm				**
Robertson	Waterkant	Ash	Dordrecht	T	C Slurry	***		13.2mm	**	***		**
Robertson	Waterkant	Dordrecht	Paul Kruger	t	C Slurry			Mod 9.5		***		**
Robertson	Watsonia	Nerina	Petunia	t	C Slurry	****		9.5mm	***	***		**
Robertson	Watsonia	Petunia	Rosita	t	9.5mm			9.5mm				**
Robertson	Watsonia	Rosita	Sonneblom	t	C Slurry			9.5mm				**
Robertson	Watsonia	Sonneblom	Plein	t	C Slurry			9.5mm	**	***		**
Robertson	Watsonia	Plein	Nutan	t	C Slurry			9.5mm	**			
Robertson	Watsonia	Nutan	Japonika	t	C Slurry	****		9.5mm	**	***		**
Robertson	Watsonia	Japonika	Jasmyne	t	C Slurry	****		9.5mm	***			**
Robertson	Waverm	Roodezand	Gum Grove	t	6.7mm			Slurry (FS)	*			**
Robertson	Waverm	Gum Grove	Van Oudtshoorn	t	6.7mm			Slurry (CS)				**
Robertson	Wesley	Paddy	Wesley Link	T	13.2+6.7	***		DE??	**	**		
Robertson	Wesley	Wesley Link	Hospital	T	F Slurry			Mod 13.2				**
Robertson	Wesley	Hospital	Coetzee	T	F Slurry	****		Rehab (H)	**			**
Robertson	Wesley	Coetzee	Scholtz	T	9.5mm				**	*		**
Robertson	Wesley CDS	CDS North	Wesley Link	t	C Slurry			9.5mm				**
Robertson	Wesley CDS	Wesley Link	CDS South	t	C Slurry			9.5mm				**
Robertson	White	Cul De Sac	Reitz	t	9.5mm	***		DE??	***	*****		**
Robertson	White	Reitz	Paul Kruger	t	9.5mm			DE??		*		**
Robertson	White	Paul Kruger	Piet Retief	t	F Slurry			9.5mm				**
Robertson	White	Piet Retief	Barry	t	F Slurry			9.5mm				**
Robertson	White	Keerom	Smal	t	F Slurry			9.5mm		*		***
Robertson	White	Smal	Freeman	t	F Slurry			9.5mm		*		****
Robertson	White	Begraafplaas 1	Begraafplaas 3	t	9.5mm	***		Slurry (FS)	**	***		**



PAVEMENT MANAGEMENT SYSTEM

PAVEMENT ASSESSMENT (PHASE 1)



Client: Langeberg

28/10/2015

Routine Maintenance				Langeberg		Attention Required			Assessment Date : 2011/05			
Suburb	Street :	Segment		Route	Existing	Rehab	Reseal	Action	Patching	Edge	Crack	
		From	To	Class	Surfacing				Surfacing	Struc	Break	Seal
Zolani	Booyesen	Ndinisa	Cul De Sac	t	9.5mm			DE??	**	***		
Zolani	Bougard	Klaas	Khosi	t	9.5mm			DE??		***		
Zolani	Bougard	Khosi	Dudumashe	t	9.5mm			DE??	**	**		
Zolani	Building	Majola	Klaas	T	9.5mm			DE??				**
Zolani	Building	Klaas	Tyhalisisu	T	9.5mm			DE??				**
Zolani	Building	Maqolo	N32	T	9.5mm		****	DE??	***	**		**
Zolani	Dudumashe	Ndinisa	Tshoto	t	9.5mm			DE??	*			
Zolani	Gaveni	Tshoto	Cul De Sac	t	9.5mm			DE??		***		
Zolani	Gwebityala	Matroos	Mase	t	9.5mm			DE??	*	**		**
Zolani	Khosi	Maqolo	Quwe/Jantjies	t	9.5mm			Slurry (FS)	**	*		
Zolani	Khosi	Tyhalisisu	Bougard	t	9.5mm			DE??		***		
Zolani	Khuselo	Gravel/Tar	Dudumashe	t	F Slurry					**		
Zolani	Mafuya	Zwedala	Dudumashe	t	9.5mm		***	Slurry (FS)	***	*****		
Zolani	Mantlana	Suluba	Mbeka	t	ASPH(C)			9.5mm	**			***
Zolani	Maqolo	Cul De Sac	Building	t	13.2+6.7		***	DE??	***	*****		**
Zolani	Maqolo	Gcwabe	Jantjies	t	9.5mm			DE??		*****		
Zolani	Maqolo	Jantjies	Khosi	t	6.7mm			DE??	**	**		****
Zolani	Matroos	Mase	Ndinisa	t	9.5mm			DE??	**	*		
Zolani	Matroos	Ndinisa	Gwebityala	t	9.5mm			DE??		*****		
Zolani	Matroos	Gwebityala	Motasi	t	9.5mm			DE??	***	***		
Zolani	Mketsu	Micholi	Fahele	t	Cape					*****		
Zolani	Mketsu	Fahele	Zwedala	t	Cape					**		
Zolani	Mketsu	Zwedala	Notwalana	t	Cape		***	Rehab (L)	***	*****		***
Zolani	Motasi	Mob	Matroos	t	9.5mm			DE??	***	***	***	
Zolani	Notwalana	Building	Xhanywa	t	9.5mm		****	Slurry (FS)	***			**

Suburb	Street :	Segment		Route Class	Existing Surfacing	Attention Required			Patching		Edge	Crack
		From	To			Rehab	Reseal	Action	Surfacing	Struc	Break	Seal
Zolani	Ntantiso	Ndinisa	Cul De Sac	t	9.5mm			DE??	*****			
Zolani	Road 1	Road 5	Road 6	t	F Slurry				*****			
Zolani	Road 1	Road 6	Road 3	t	F Slurry				*****			
Zolani	Spofana	Khosi	Quwe	t	9.5mm			DE??				**
Zolani	Spofana	Quwe	Khuse	t	9.5mm			DE??	*			
Zolani	Tshoto	Nogemane	Gaveni	t	9.5mm		****	Slurry (FS)	***	***		
Zolani	Tyhalisisu	Faleni	Khosi	t	9.5mm			Mill+Replace	***	*	***	

Although the information that underlies these observations are quite old (2011), it is still a very exhaustive list as it include all the urban streets in the Langeberg Local Municipality. As such the municipality can still draw from these lists annual projects that will upgrade the local rad network. The following photographs depict such projects that have recently been constructed:



Figure 2-38: New road constructed in Nkqubela with labour intensive methods.



Figure 2-39: New tarred road under construction in Nkqubela



Figure 2-40: Another new road under construction in Nkqubela

2.6 Freight Transport

The Langeberg Local Municipality has not conducted a local freight study as yet, although freight issues are definitely being experienced in the municipal area. As is typical for an intensive agricultural area, such as the Breede River Valley with its numerous wine and fruit farms, logistics are an important component of the local economic structure. That implies that roads providing access to warehouses and other road freight generators need to be both functional and well maintained.

In the review of the Road Freight Strategy for the Cape Winelands DM (2013) information is sourced for the Langeberg area, which is provided below: (This information has been updated with 2019 data from the Transnet Freight Demand model.)

2.6.1 Freight Movements in and through Langeberg Local Municipality



Figure 2-41: The Langeberg LM area is an intensive agricultural area

As part of the Cape Winelands DM's Freight Strategy, the commodities of wine, fruit, vegetables, livestock, and dairy were identified as key commodities for the study. All of these are very much applicable to the Langeberg Local Municipal area. The process underlying the study is depicted below:

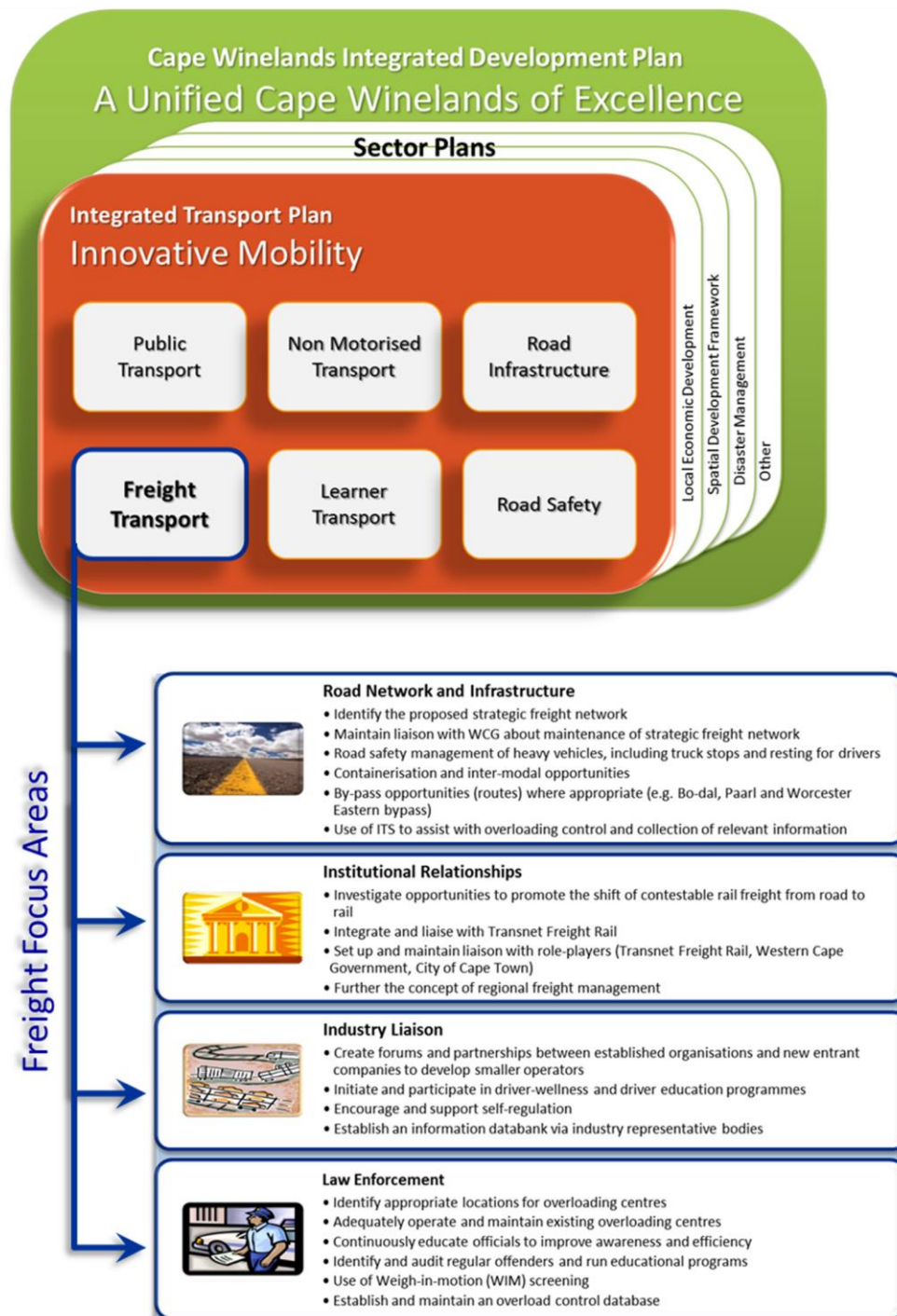


Figure 2-42: Freight Study Linkages for Langeberg

A freight transport model was developed by Transnet Freight Rail (TFR) in 2007. The total freight volumes by surface transport (road and rail), as well as the volumes by rail, were analysed. This analysis shows that road freight is the most dominant freight mode currently in the CWDM and this is likely to continue, in the near future. Currently more than 95% of all freight is moved via road, while it is expected that more than 90% of all freight will continue to be moved via road in the foreseeable future, although the latest Rail White Paper (April 2022) makes provision for the participation of private rail operators, other than Transnet in the rail freight space.

Further consultation with TFR confirmed that TFR does not foresee any rail network improvements in the next 20 years to accommodate freight movement.

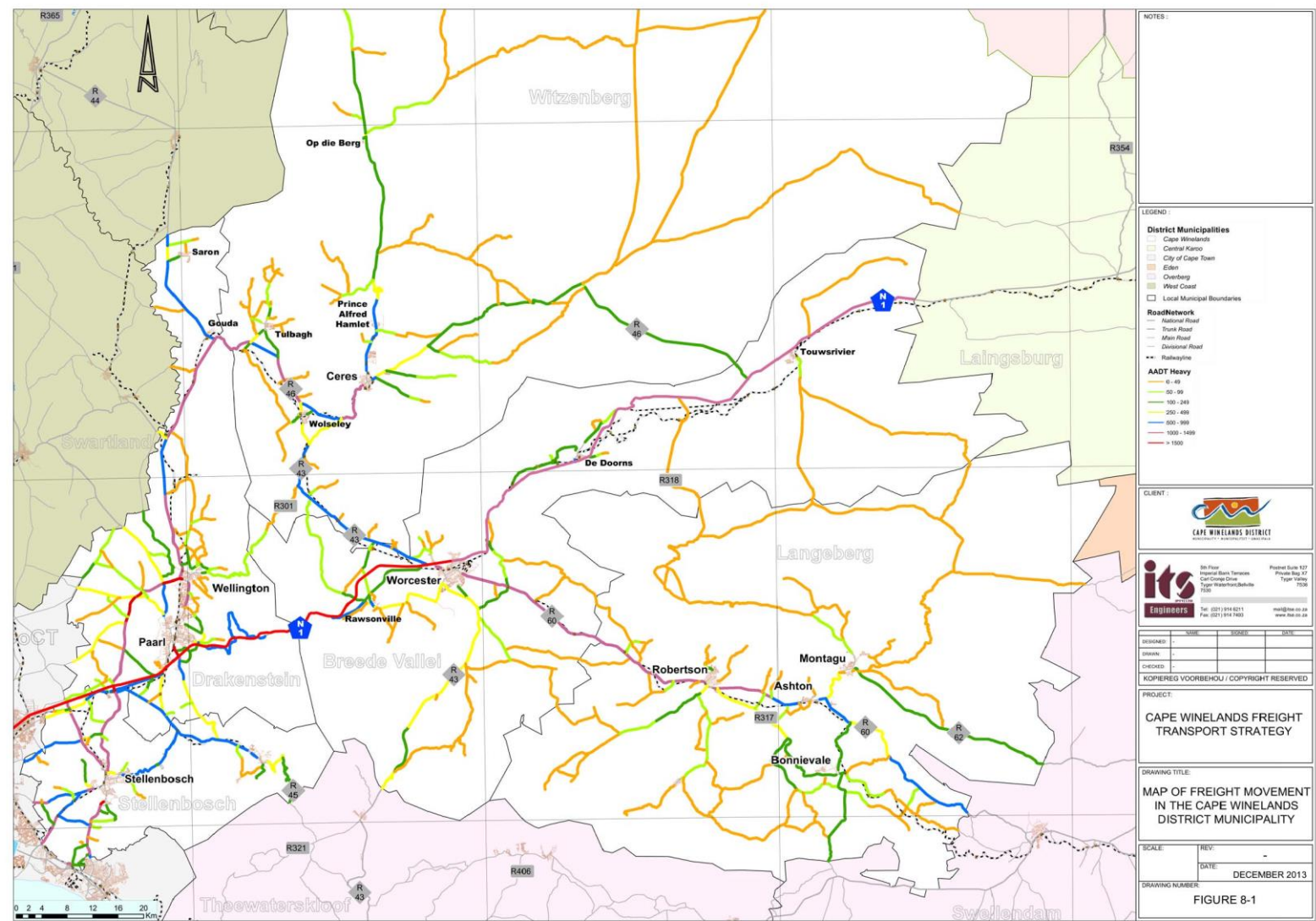


Figure 2-43: Freight routes in CWD (including Langeberg LM)



Figure 2-44: Fruit packing sheds dot the Langeberg Municipal area

The R62 and the R60 (from Ashton to Swellendam) are the most important freight routes in the Langeberg Municipal Area, as they are used to distribute the produce of the region to the market. In addition, all roads that carry fruit to Ashton for processing is of vital importance to the local economy, including for instance the route between Montagu and Ashton, that is vulnerable to flooding. As noted above this relatively narrow road, also impacts on industrial development in Montagu. This road is currently being upgraded, but because of the scenic and historic value the capacity will not be increased dramatically. The R317 between Bonnievale and Robertson is also important as it provides access for local wine cellars and the Parmalat plant in Bonnievale.

The efficient and optimal operation of the freight system is dependent on more than the physical infrastructure. Other important elements include law enforcement, overload control and the promotion of self-regulation by the freight haulage industry.

The corridor link road R60 between Worcester and Swellendam is considered a dominant freight route within the CWDM. The latest tonnages for this corridor are provide below: (Transnet demand model)

Direction	2019		
	Rail	Road	Surface
Worcester to Swellendam	198 444	3 765 698	3 964 142
Swellendam to Worcester	102 406	3 719 722	3 822 129

The top three commodities on this corridor are: Food and processed food, wood, and petrol.

A problematic secondary route that has been identified by the freight industry is the R317 from Robertson via Bonnievale to the N2. (Current maintenance and future upgrading of the route, have been considered problematic by freight operators making use of this route.)



Figure 2-45: A heavy vehicle in Montagu utilising parking spaces

In terms of freight, what is required for the Langeberg LM is a freight study in all the towns of the municipality that will address all of the following issues:

- Collect accurate traffic counts of heavy vehicles entering the towns (adjusted for seasonal factors).
- Through road-side surveys develop an O-D matrix for all truck movements inside the towns.
- Determine the demand for over-night truck stop facilities in each of the towns.
- Determine the demand for additional loading zones in all of the towns.
- Assess the need for a local by-law that specifies the need for off-street loading facilities at new developments.
- Determine road safety issues with respect to truck movements in the towns by analysing truck accident statistics.

The following freight strategy as depicted in the CWDM freight document is also applicable to the Langeberg LM to improve freight operations in the area:

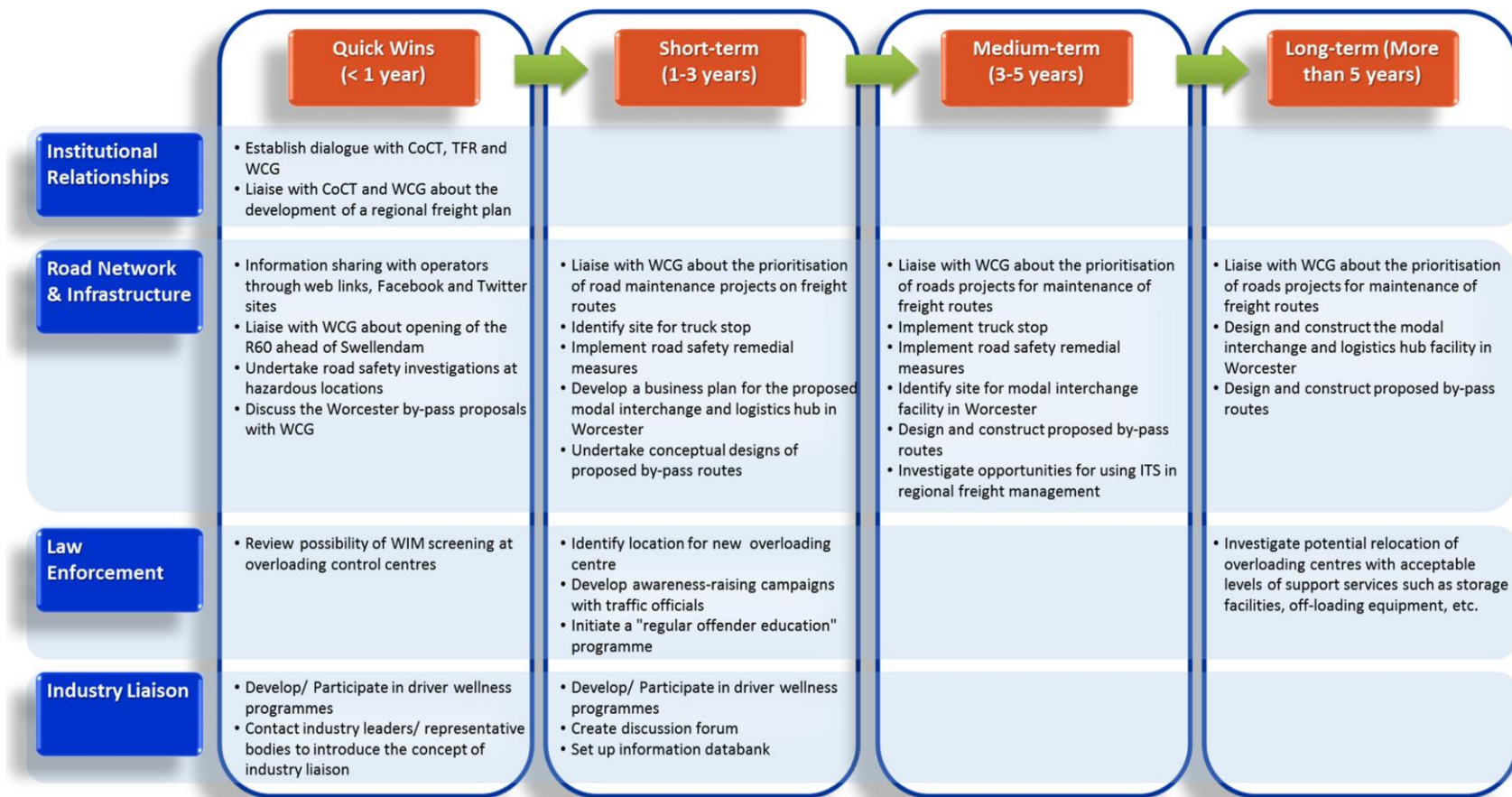


Figure 2-46: Proposed Freight Transport Improvements

2.6.2 Provincial Freight Strategy

The Western Cape Government of Transport and Public Works completed a Provincial Freight Strategy in January 2019. The 7 strategic focus areas in the plan are documented as below:

- Strategic Focus Areas 1: Freight, Planning, Coordination, and Institutional Arrangements
- Strategic Focus Area 2: Freight Demand Management
- Strategic Focus Area 3: Modal Rebalancing
- Strategic Focus Area 4: Freight Infrastructure Capacity and Condition
- Strategic Focus Area 5: Freight Traffic Management
- Strategic Focus Area 6: Technology and Innovation
- Strategic Focus Area 7: Freight Data and Information Management

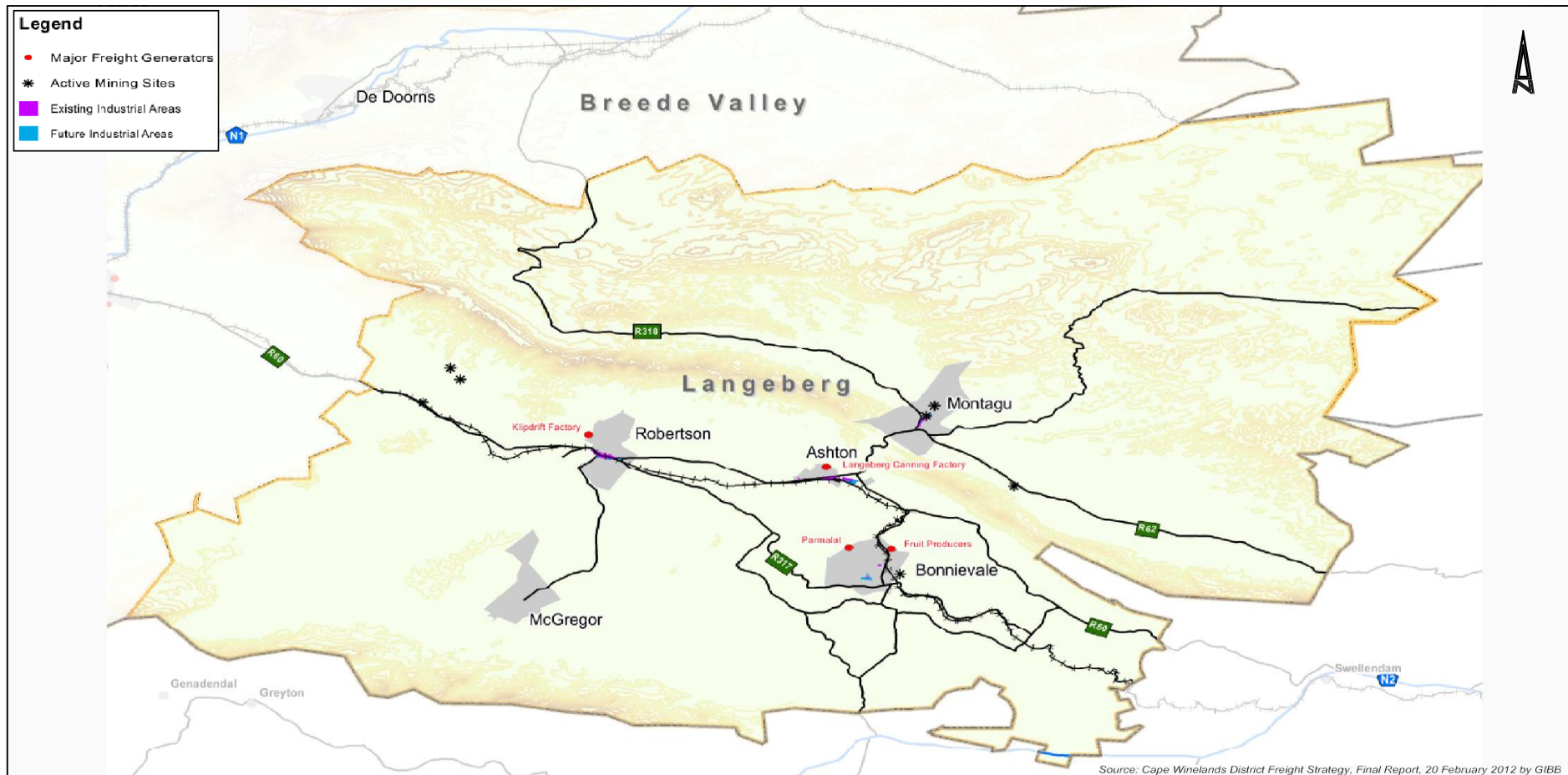
These strategic focus areas will lead to efficient movement of freight through the province and should be considered when looking at freight movement interventions at a local municipal level.



Figure 2-47: Collector road in Robertson that is suitable as a heavy vehicle route.

2.6.3 Planned Industrial Projects

The new industrial areas planned for the Langeberg LM area are indicated below:



2.7 Non-Motorised Transport

In the CWDM Non-motorised Transport Masterplan Framework a contextual analysis was executed of the NMT situation in all the towns of the Langeberg LM. The findings of this analysis are provided for each town below: (More recent photographs are provided as well.)

2.7.1 Robertson

Robertson has suitable NMT facilities (sidewalks) within the town centre with very wide roads. The town however does not have any formal minibus taxi rank and is currently using Shoprite owned land as the main minibus taxi pickup / drop-off point. The informal minibus taxi facilities results in passengers having no shelters, lighting, or other facilities such as universal accessibility and toilet facilities while waiting to be transported.

The minibus taxi operators indicated that they mostly transport passengers in the morning into town and that passengers will walk back to the residential areas in the afternoons. Given this tendency, and the distances involved, the design priority should be for walking and cycling.

Paul Kruger Street is the main street through the town and connects with farms to the east and the station at the west end of the town at the R60. Piet Retief Street is a similar (parallel) street with paved sidewalks, shade trees, churches, and parks, and may be more suitable for safe cycling as it has fewer shops than Paul Kruger St.

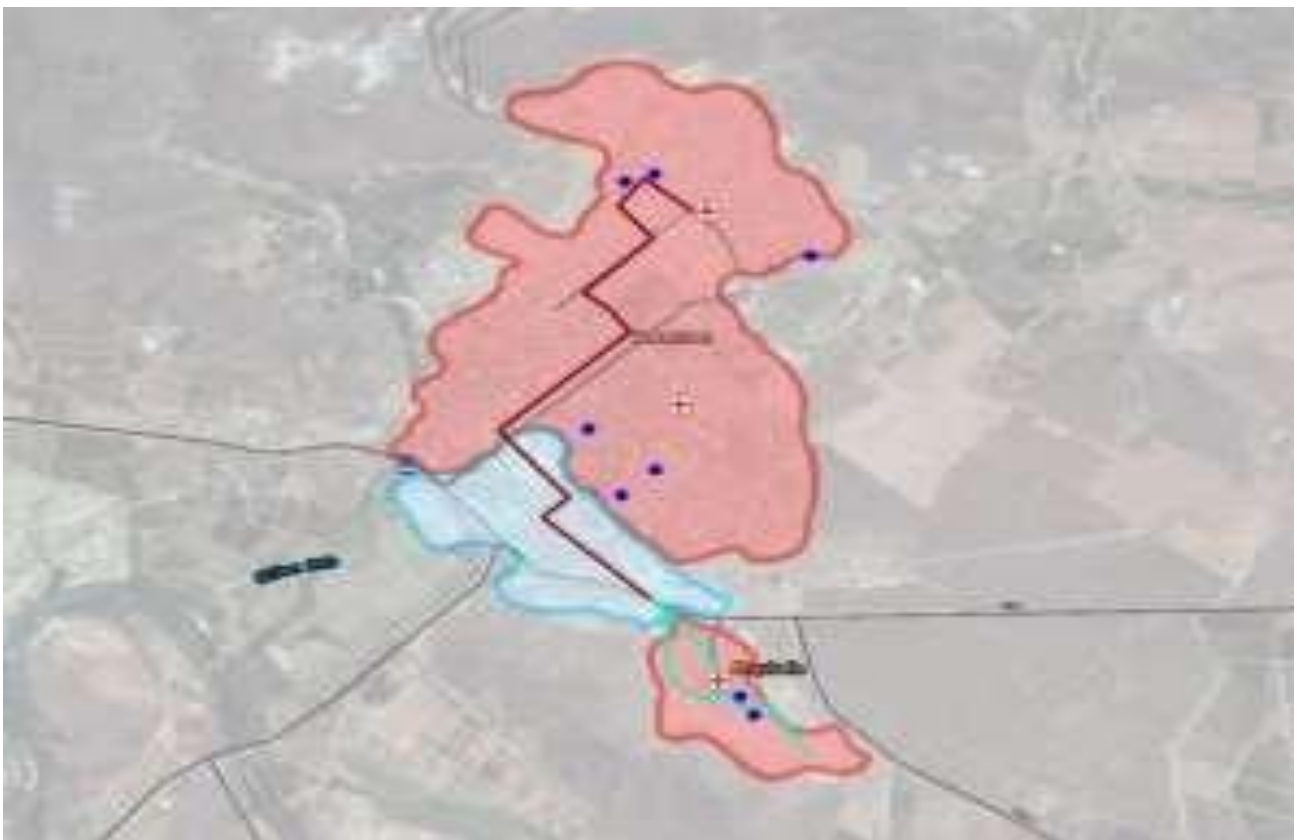


Figure 2-48: Primary pedestrian movement lines in Robertson.

Nkqubela is a small community approximately 2.5km from Robertson town centre which makes it a suitable cycling distance. There are also not many social facilities within Nkqubela, so that residents have to travel to town. There are existing sidewalks on main road within the community with limited traffic calming, but requires sidewalks close to the school and other roads

within the community. A lot of work has recently been done in this community with regard to sidewalks and the upgrading of roads as can be depicted on the photos below:



Figure 2-49: Pedestrian sidewalk in Nkqubela

On the pedestrian route between Nkqubela and Robertson town centre, the pavement on Church St is in a reasonable condition, so for improving cycling opportunities the priority needs to be on the key routes within Nkqubela. However, there is also a strong walking desire line along Hani and Adderley Streets, crossing the road and rail line. It would be easiest to provide for the more formal route that follows a road across the rail line, but it is unlikely that this would deter people from using the more direct informal route. Therefore, it is recommended that investigation be made into the feasibility of providing a pedestrian and cycling bridge over the road and rail line, in line with the natural desire line. There are schools and a clinic in Nkqubela, but walking conditions are poor. (It should be noted that any proposed intervention along of adjacent to the proclaimed Provincial Road Network will require consultation with and approval prior to implementation.)

New developments are proposed east of Nkqubela which is even further from the town centre and separated by arterial roads. In the SDF, area 17 is proposed as mixed use commercial, possibly with a school, which will improve job opportunities close to homes, while area 20 is envisaged as a residential area, possibly with a school. Adequate NMT infrastructure provision should be made to link these new areas to the town and other social facilities.

The low income residential area north of Robertson has schools, clinics and a local Thusong centre. Most of the residents walk to these facilities. There are no formal NMT walkways within this community with only limited shelters opposite the schools. The NMT network within this community should be upgraded with particular focus on the linkages between the social facilities and the main town centre.

The following recommendations have been defined in the contextual analysis for Robertson:

- Upgrade passenger shelter at taxi stop in Nkqubela on Hani Street with passenger seating and shelter and provide paved sidewalks on Hani Street. There is considerable unused space here – consider strategies to allow and encourage street trading and other uses to increase levels of activity.
- Upgrade surfaces for walking on key routes to schools and clinic in Nkqubela.
- Investigate feasibility of constructing a pedestrian / cyclist bridge over the rail and road in line with Hani and Adderley Streets. If this is provided, then approach routes should be improved for both pedestrians and cyclists on Hani and Adderley Streets.
- Provide improved cycling conditions on the core NMT route.



Figure 2-50: A lack of sidewalks force wheelchair users into the streets.



Figure 2-51: Ideally pedestrians should walk on paved sidewalks protected by barrier kerbing.



Figure 2-52: New sidewalks in Nkqubela

2.7.2 Ashton

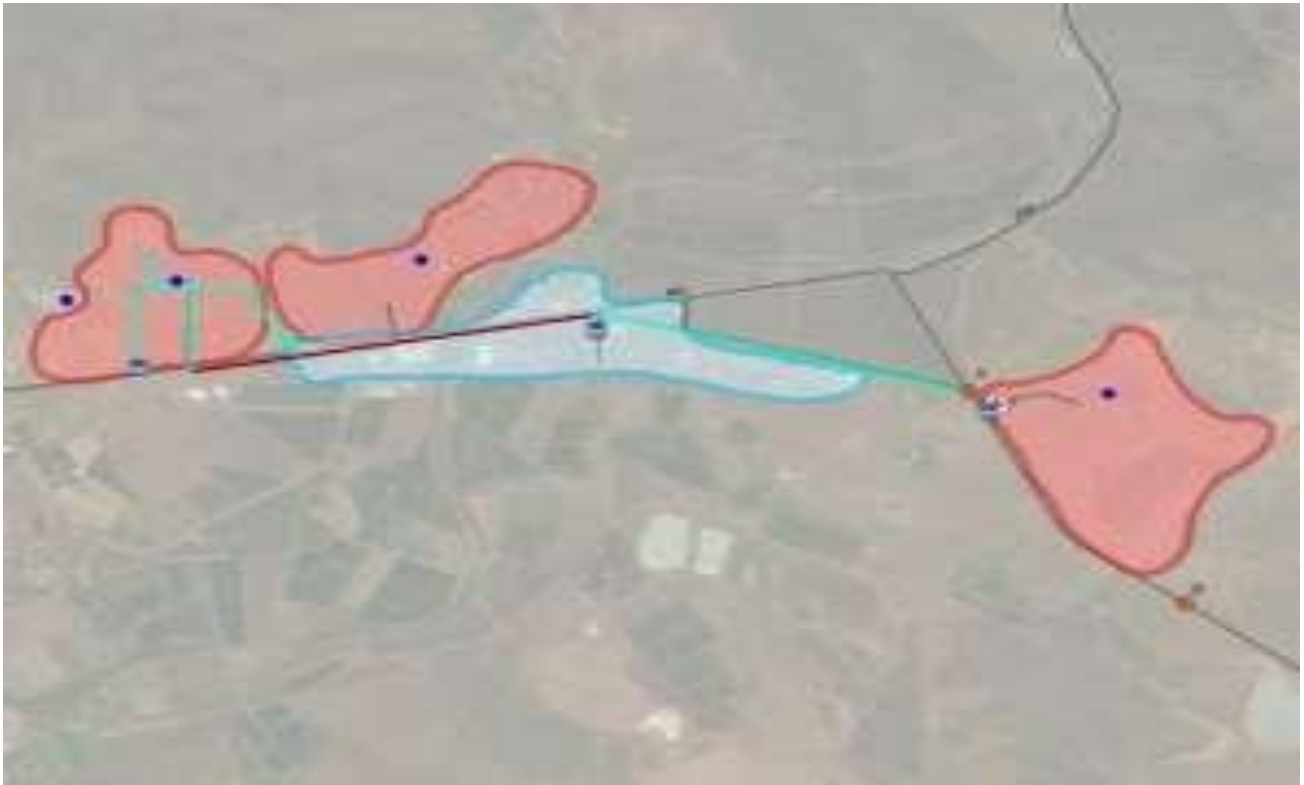


Figure 2-53: Primary pedestrian movement lines within Ashton.

High NMT movements were observed within Ashton with formal NMT infrastructure only on the main road passing through the town. A Koo factory within the town attracts employees from the surrounding areas. The road opposite the factory is used for minibuss taxi pickups and drop offs and is also linked by an adequate NMT network within the town.

The residential area east of Ashton town centre only has gravel sidewalks with no formal NMT facilities linking schools and other facilities. There is a high NMT movement between 1-2pm in the afternoon from school children walking home or to the town centre. These children walk within the roadway, presenting a high safety risk. Serious consideration should be given to the upgrade of the NMT network in this community. There is also major NMT desire line across a cemetery to the north of this community. People broke through the fence and consideration should be given to a more suitable NMT network to link the community. Olien Street would be a useful pedestrian distribution street, passing the school in an east-west orientation through the community on the north side of the R60. The street has some traffic calming, but sidewalks are unpaved, encouraging people to walk on the road (as is generally the case in this community). The north-south Middel St is wide enough (8m surface) for a shoulder that could be shared with pedestrians as a cheaper alternative to paving sidewalks. Jakaranda Street is also a logical north-south pedestrian route, but includes a diversion, as it is not continuous.

A proposed new housing development north of this community will further increase the necessity of providing sufficient NMT facilities. Zolani is a community approximately 3km from Ashton town centre. It is not well located from an NMT perspective as the R60 and R62 (which are two busy regional roads) needs to be crossed. There are no existing formal NMT facilities for the people to walk / cycle from Zolani to town and they are currently walking across the R60 through agricultural land to access the town. The SDF indicates a proposed development along the current walking desire line (next to agricultural land) and proposes a formal NMT walkway to link Zolani to the town centre. People are also walking next to the R60 and R62 to access the town where there is no sidewalk and pedestrians are sharing the road with fast moving vehicles, trucks, and animals. This is a very unsafe environment for pedestrians and urgent attention should be given to upgrade this NMT network.

A future housing development north-west of Zolani (closer to the R62) is proposed in the SDF which is considered a feasible location from a NMT perspective, as it fills in gaps in the urban form and reduces trip lengths. The proposed new housing development north of Zolani and the close proximity to the existing NMT desire line is across agricultural land. It is proposed that this NMT network following this desire line should be upgraded with the new development proposed south of this network.

The following recommendations have been defined in the contextual analysis for Ashton:

- Provide hardened surfaces on the sidewalks of key pedestrian routes as indicated in Figure 3-18. Upgrade and complete the discontinuous sidewalks on R60 within the urban area.
- Provide shelters for waiting passengers on R60 either at Middel St or Jakaranda St, depending on which is used most by school children.
- Formalise the pedestrian route through the cemetery.
- Formalise the NMT route between Zolani and Ashton along the diagonal route, as development takes place adjacent to this route, urban design should be used to maintain security, for example by not lining the route with the backs of buildings and fences, but rather have buildings face the route. There are trees providing shade between the Total petrol station and the formal town on the north side of the R60, but need to be incorporated with the NMT in order to be useful.
- Provide shelters and sidewalks at schools.

Continuous paved sidewalks would be ideal on the key routes of Dudumashe and Building Ave in Zolani, but this would require removal of a number of palm trees on Dudumashe. As an alternative, paint shoulders on the road. Building Ave is a pedestrian route to Ashton and has speed humps at the home for the aged and disabled. Paved sidewalks are possible here. There is a Western Cape Government library and e-centre on Building Ave. A taxi rank with some passenger shelter is also on Building Ave at the R60. All of these reinforce the need for a more walkable route. Investigate the most appropriate approach for a continuous NMT route within Zolani, linking the schools with the route to Ashton, thus creating a core NMT network.

Investigate the viability of traffic calming on R60 near Zolani to improve safety for pedestrians crossing the R60 on the route between Zolani and Ashton. Improve street lighting at the intersection of the R60 and Building Ave and add signs warning drivers of pedestrians crossing the R60.

2.7.3 Montagu



Figure 2-54: Pedestrian desire lines in Montagu

Adequate NMT infrastructure is provided within Montagu town centre and links Montagu with Ashbury (residential community north east of Montagu).

Ashbury is approximately 3.5 km northeast of Montagu town centre, which is not considered an appropriate distance for walking, as this results in a one-way journey of approximately 45 minutes. The NMT network provides adequate sidewalks and shelters along the way for pedestrians to use, and there are frequent embayments for minibs taxis on the road between Ashbury and the R318 into Montagu. It is also clear that there is a high volume of walking between these communities, despite the distance. This suggests that affordability is an issue for public transport. Therefore, cycling should be encouraged as the mode of choice between Ashbury and Montagu.

New industrial development is proposed between Montagu and Ashbury, which will be well located as it will be easily accessible by residents from Ashbury. It also strengthens the existing NMT network linking Ashbury to Montagu. (It should be noted that any proposed intervention along or adjacent to the proclaimed Provincial Road Network will require consultation with and approval prior to implementation.)

A regional hospital is very poorly located on the southern side of Montagu. It is far from the high-density residential areas such as Ashbury (+6km) and is situated on a hill which provides for no NMT to this important facility. Future spatial planning should consider the implications of approving certain social and health facilities in locations that are far and inaccessible to captive transport users.

The following recommendations have been defined in the contextual analysis for Montagu:

Investigate the feasibility of a cycle path between Ashbury and Montagu. The R318 section carries heavier traffic, including farm vehicles, so on this section the cycle path should be off-road if possible (class 1 facility). The other section (Muskadel St) can be painted on-road, as this is less costly.

Provide paved sidewalks on Eike St and Wilger Ave in Ashbury as protection for pedestrians who walk in the street. These are part of the core pedestrian network and are not wide streets, but have adequate road reserve width. Ashbury Primary School entrance is on Eike St. Plant trees for shade along the core NMT network.

2.7.4 Bonnievale

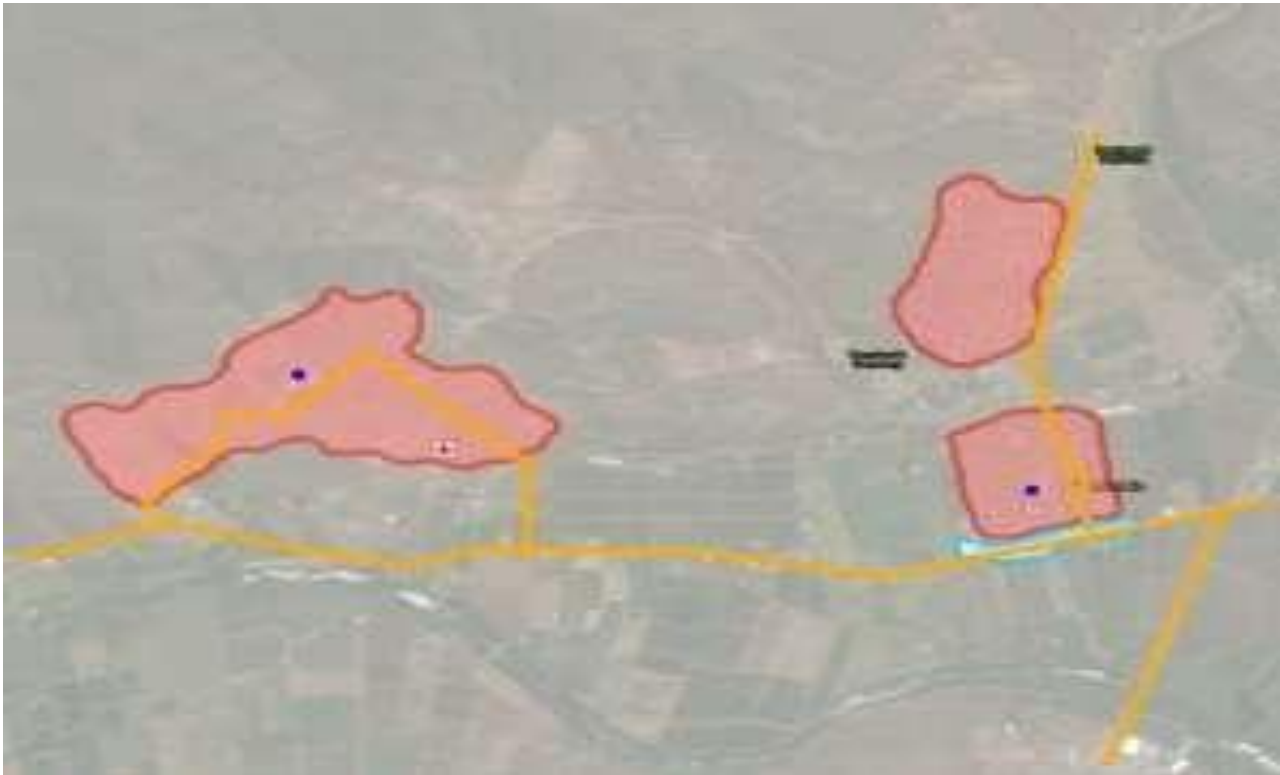


Figure 2-55: Urban structure of Bonnievale.

Bonnievale is broken up into two parts, a formal town with business present and the rural settlement of Happy Valley to the west. Happy Valley is more than 3 km from the Bonnievale CBD with the town main road (M317) connecting the two areas. A poor gravel sidewalk accompanies the main road, with a paved sidewalk only present from the formal town area.

Within Happy Valley there is a clinic, school, and taxi route, but no NMT infrastructures such as paved sidewalks and shelters. There is also a large number of learners walking to school and waiting for transport during the morning period.

Development is proposed along the northern “loop road” but this is a hilly area that would be harder to access by NMT.

This is part of a tourist area where there is walking, cycling and 4x4 activities undertaken by visitors, so improved cycling conditions on Main Road should add to the appeal of the area. (It should be noted that any proposed intervention along of adjacent to the proclaimed Provincial Road Network will require consultation with and approval prior to implementation.)

The following recommendations have been defined in the contextual analysis for Bonnievale:

- Upgrade key walking routes serving the clinic and schools within Happy Valley. The core NMT network should be considered as Landbou, Almeria and Milners St.

- Upgrade conditions for cycling on Main Road. Street lighting is on the south side, but there is more room (and less slope) on the north side for a shared pedestrian / cyclist lane outside the built-up area. As a minimum safety measure, edge-of-road markings should be added, and the paved shoulder repaired.
- Provide passenger shelters on Main Road at the three key intersections.

2.7.5 McGregor

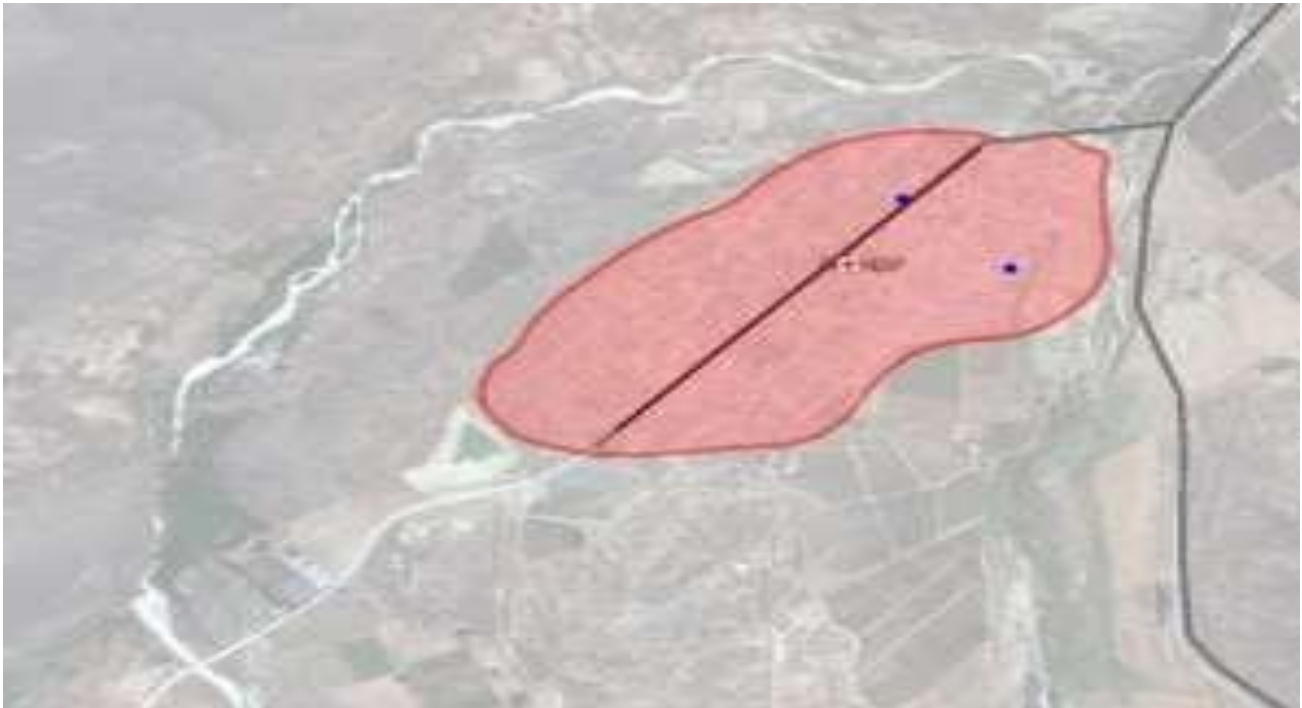


Figure 2-56: Pedestrian desire line in McGregor

Mc Gregor is a very small town with Robertson being the nearest economic hub approximately 18 km away. A high NMT movement is observed within the town. No formal NMT facilities were observed. There is also a low traffic volume between Robertson and McGregor.

McGregor Tourism has proposed a cycle way between the McGregor town and Vrolijkheid Nature Reserve. This would assist in facilitating the movement between McGregor and neighbouring farms and linking this to the nature reserve to encourage cycling for tourists.

The following recommendations have been defined in the contextual analysis for McGregor:

There is no high priority need in the town, but consider improving the walkability of the main road through the town (Voortrekker St), as this is a tourist town where visitors enjoy strolling. There is not much spare road reserve, but consider occasional “parklets” or mini rest areas with benches under some of the existing trees along the road, particularly near restaurants and guest lodges.

2.8 Learner Transport



Figure 2-57: Some of the school in the Langeberg area have their own school buses for the transport of scholars.

From the list of schools with their associated routes, obtained from the Western Cape Province, the following contracted services routes were identified for Langeberg Municipality to transport learners.

Table 2—24: List of schools and routes

ROUTE		SCHOOLS CONCERNED		APPROVED LEARNERS ACCORDING TO CONTRACT			DISTANCE (KM)
NUMBER	DESCRIPTION	PRIMARY SCHOOLS	SECONDARY SCHOOLS	P/S	S/S	TOTAL	
WCE 608	From Welgemoed, Ouplaas, Arbeidsgenot turn-off, Moddergat, De Goedemoed and Spes Bona to HM Beets Primary School	-	Ashton	0	69	69	43,8

2.9 Transport for Tourism



Figure 2-58: Noble's buses in Robertson.

Noble's Transport was founded in 1987 in Bonnievale, whereby founder and owner Mr. James Noble started transporting passengers in his Mazda 323 from Bonnievale to Cape Town. Since then, the company has grown to a fleet of 80 busses of which 15 is Luxury busses, 15 Semi- Luxury, as well as Quantums, Sprinters, 32-,37-,39- and 45- Seater Busses. This brings Noble's Transport to nearly 33 years of experience in the Transport Industry. They have permits for the transportation of passengers throughout the Republic of South Africa and we also do Cross- Border trips. The company also provides quotes for ad- hoc services in the area and is an example of a non-subsidised bus service company.

2.10 Air Travel

There is one airstrip within the Langeberg Local Municipality, namely in the town of Robertson. It does have the following characteristics:

Item	Description
IATA ² code	ROD
Latitude	-33.8113
Longitude	19.9067
City	Robertson
Airfield length	1.5 km (paved)
Owner	Langeberg Municipality

3 Chapter 3: Transport Needs Assessment

3.1 SDF Identified Transport Needs

3.1.1 Robertson (Population approximately 28 000)

3.1.1.1 General

Robertson is well placed in terms of the National Development Plan's (NDP) key economic drivers of agriculture, agri-industry and tourism and can expect considerable growth in the future, especially if the town is well managed spatially and aesthetically, and with respect to services, including "crime and grime". Due regard must be paid to the attractiveness of its townscapes for residents and visitors alike.

3.1.1.2 Landscapes

- Upgrade river corridors through the town as positive open spaces lined with pedestrian/cycle ways and street lights including two NDP Focus Areas along the upper reaches of the Droogte River in Robertson North;
- Retain Urban Culture (Urban Vineyards) as important heritage and sense of place elements in Robertson North. Investigate further urban agriculture opportunities, especially for community gardeners;
- Investigate the necessary steps including offsets to realign CBAs impacting on proposed New Development Area 20; and,
- Investigate the agricultural potential of New Development Area 21 with respect to how much of this site can be used for urban development.

3.1.1.3 Urban restructuring

- Historically Robertson has accommodated growth by expanding on the northern and southern peripheries;
- This growth direction incurs significant costs in terms of rendering services, the distances that residents have to commute and the difficulty of creating economic opportunities and employment creation in such marginal locations;
- Therefore, it is proposed that the current NDP proposals around the Cactus Garden be elevated into a major urban restructuring program. This would include:
 - Promoting and/or consolidating 3 nodes; 1) Voortrekker Road as the western gateway; 2) Cactus garden and the traffic circle and its surrounds as the eastern gateway and a new node at the P Kruger/Johan de Jong Rd/ Paddy street intersection;
 - Upgrade Johan de Jong Avenue as one of the major boulevard mixed use activity routes of the town; and,
 - Upgrade Church Street as a direct link from Cactus Garden to the historic retail core;
- Node 1: continue the upgrading and encourage buildings to have a contemporary high-quality appearance
- Node 2: This should be a major urban restructuring project attracting National Treasury finance for the public infrastructure. This should include a rail viaduct to raise the rail line over Burwa Road and

the R317. (1500m at 2%, 5.6m clearance over the roadways (SANRAL guidelines)) This will open up land at grade to Nkqubela;

- Node 3: This should be a new node. This node is seen as having more potential than the Wesley/Paddy Street T intersection as this can only be accessed via a dogs leg and T intersection, because it is on the direct routes of P Kruger and Johan de Jong Rd. If possible, the existing project on site B should be amended to take advantage of the potential of this intersection;
- It is extremely important that all the currently proposed and future projects for this area are guided by an overall urban design precinct plan covering architecture, landscaping, public facilities, road geometric design and signage; and,
- Stormwater management should be undertaken for NDA 16 as the site currently performs a stormwater retention function.
- It is proposed that the combined school is to be joined to the primary school to form a larger primary school.

3.1.1.4 SDF Proposals

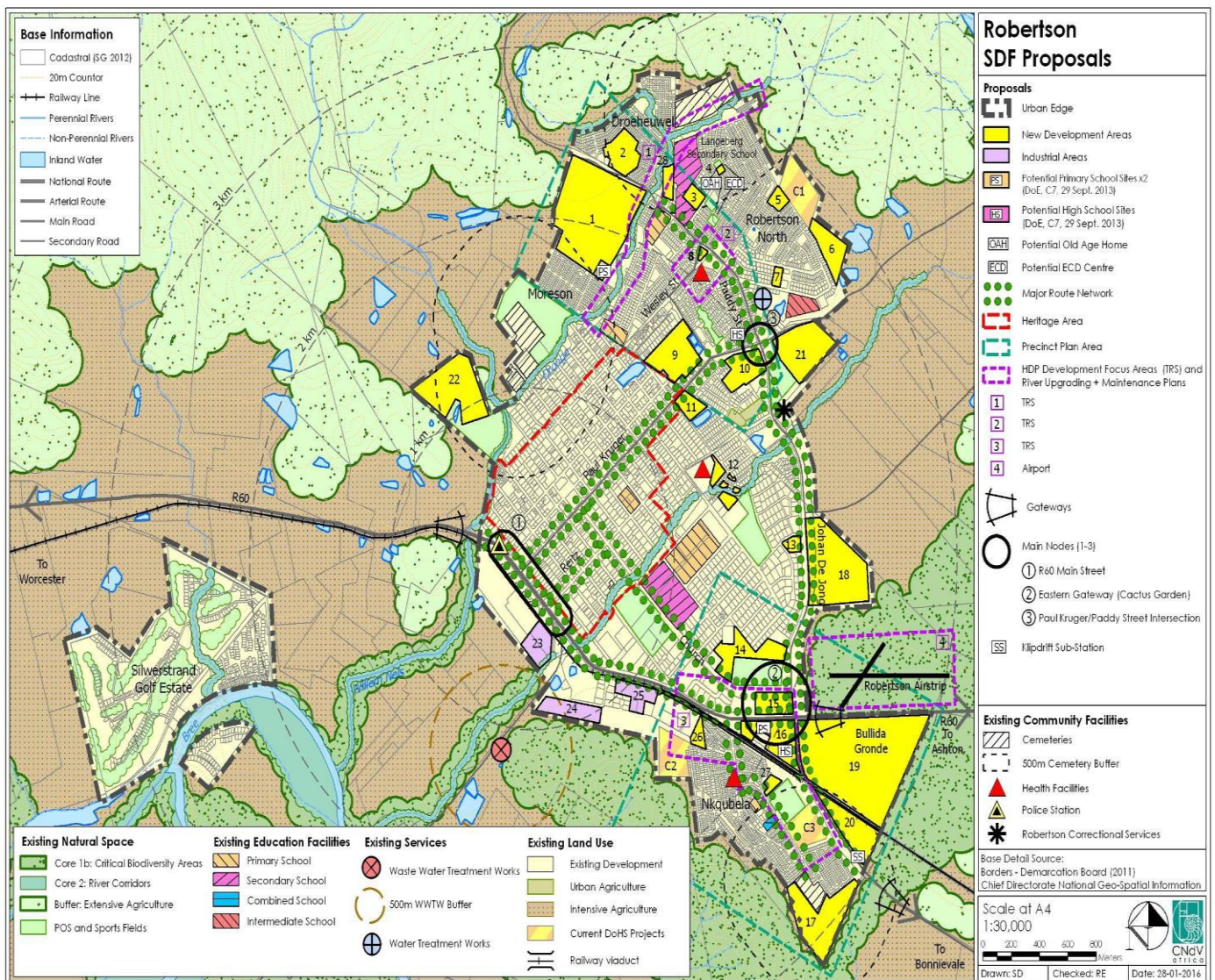


Figure 3-1: Robertson SDF Proposals

3.1.1.5 New Development Areas in Robertson

Table 3-1 Robertson Developments

Site No	Area (Ha)	Proposed Use
1	27.94	Mixed use residential with possible school site and allow for POS corridor linkage from Urban Edge through to portion of Site 2. Encourage urban agriculture where possible.
2	4.59	GAP, social housing with good views, allow for POS corridor linkage to west across Site 1 to Urban Edge.
3	1.30	Residential/Business/Thusong?
4	0.23	Residential: 50% retain balance as centrally located kick-about to serve surrounding residential area.
5	1.26	Residential; Retain 2000 – 4000m ² to serve as kick-about for surrounding residential area.
6	4.33	Residential; Retain 2000 – 4000m ² to serve as kick-about for surrounding residential area.
7	0.67	Residential: Retain 2000m ² to serve as kick-about for surrounding residential area.
8	0.31	Possible market site, investigate Site 10 also for optimum location.
9	7.59	Mixed use residential: Encourage urban agriculture where possible.
10	4.76	Mixed use residential with small scale commercial abutting intersection. Investigate possible location for market site, see Site 8 also.
11	2.05	Mixed use residential: Encourage urban agriculture where possible.
12	2.13	Residential with single sided roads to be planned along POS abutting river corridor.
13	0.97	Residential with possible small scale commercial. Investigate taking minor access off Johan de Jong.
14	5.97	Medium density residential with single sided road abutting dual purpose POS as community recreational area and protecting western runway approach.
15	3.37	Mixed use commercial – design to be guided by overall gateway precinct urban design framework to be strictly managed so as maximise entrance quality to Robertson from east.
16	6.21	Mixed use commercial – design to be guided by overall gateway precinct urban design framework to be strictly managed so as maximise entrance quality to Robertson from east – optional high school site.
17	11.07	Existing informal settlement: GAP, social housing on higher north facing slopes with better views and IRDP at lower levels (Draft layout under consideration). Urban Design and landscape guidelines to be prepared and strictly enforced due to high visibility of this site to tourist traffic from west. Open space link abutting eastern boundary to be as wide as possible.
18	16.68	Property sold to private developer.
19	38.92	Mixed use residential with possible school site including industrial and commercial development along the fringes adjoining Klipdrif sub-station. Encourage urban agriculture where possible. New urban village site with TRA and primary school in centre enclosed by IRDP housing which, in turn, is surrounded by GAP/social housing. The R60 and R317 edges can contain mixed use small scale commercial facing frontage/service roads and strongly treed and landscaped.
20	6.46	Investigate for high school site.
21	9.31	Mixed use residential. Encourage urban agriculture where possible.
22	11.78	Market related residential.
23	3.68	Industrial extension: check flood lines.
24	3.98	Industrial extension
25	3.24	Industrial extension: check access rights to all properties
26	1.20	GAP market. Layout to be redesigned.
27	0.78	ECD
28	1.41	ECD

3.1.1.6 Road and Transportation Implications of the Robertson SDF proposals

The following projects of a road or transportation nature have been defined in the SDF for Robertson and should be designed to a conceptual level and costed:

- Pedestrian and Cycle Way along the bank of the Droogte River in Robertson North with street lighting. (2 km)
- A Rail Viaduct is proposed to link Burwa Rd in Nkqubela to land that could be developed between the railway line and the R60. A new access road to this land will also be required from the R60. (It should be noted that any proposed intervention along or adjacent to the proclaimed Provincial Road Network will require consultation with and approval prior to implementation.)
- Upgrade Johan de Jongh Rd as a mixed-use activity street.
- Upgrade Church St as a collector road linking to the new proposed developments on the east of the town.
- A Main Road Interface Study is proposed for all the main towns in terms of what is allowed in the main roads.

- Upgrade the surrounding road network in terms of erven 3230 and 3231.
- Approach DTPW EC to prepare feasibility studies for NMT routes along main roads with Robertson and McGregor roads as a priority.

3.1.2 Montagu (Population approximately 15 100)

3.1.2.1 General

Montagu appears well placed to benefit from future growth in the tourism, retirement, and big city markets, as it is close to the Breede River Valley and its amenities in a location of outstanding natural and urban quality. The challenge will be to manage this growth without undermining the positive qualities of the settlement that create its attractions.

3.1.2.2 Landscapes

- Boulevard network of primary streets that integrates the town from south of the Kingna river through to east Ashbury;
- Landscape Kogmanskloof, Kingna and Keisies river banks as ecological river corridors as positive public open spaces with walking and cycling trails where possible. Urban development and intensive agriculture should be more than 32m from banks;
- Protect and consolidate urban agricultural areas as important ecological and heritage resource including incentives to property owners – e.g., agricultural, and not urban rates for those portions of properties under this use.

3.1.2.3 Urban restructuring

- The primary restructuring element is to upgrade the main street network including Church, Du Toit, Lang, Bath, Mark, Buitenkant and Muskadel streets from south of the Kingna river to Ashbury as an interlinked system of high-quality boulevards with a similar paving and tree planting theme. This type of upgrading can be implemented over time as an EPWP program. A similar program is currently underway in the Eastern Cape;
- A key issue here is the respective roles of Bath (main commercial strip) and Lang (tourist through route) streets where there is pressure from retailers to move their operations to Lang Street, presumably to capture greater levels of passing trade due to the through tourist traffic. There is a danger that such a move could undermine the current tourist and heritage quality of this route, especially considering the nature of the current signage, parking, and landscaping of the larger supermarket operations;
- Rather than moving retail operations to Lang Street a more preferable solution is seen in a two-fold approach that improves the attraction of Bath street. This can be achieved by:
 - 1st: upgrading key intersections on Lang Street and their linking routes to Bath street, e.g., with brick paving, landscaping these links and providing appropriate signage so that visitors along Lang street are attracted to Bath street; and,
 - 2nd: upgrading the urban quality of buildings, sidewalks and parking in Bath Street using the heritage guidelines as a start.

3.1.2.4 SDF Proposals

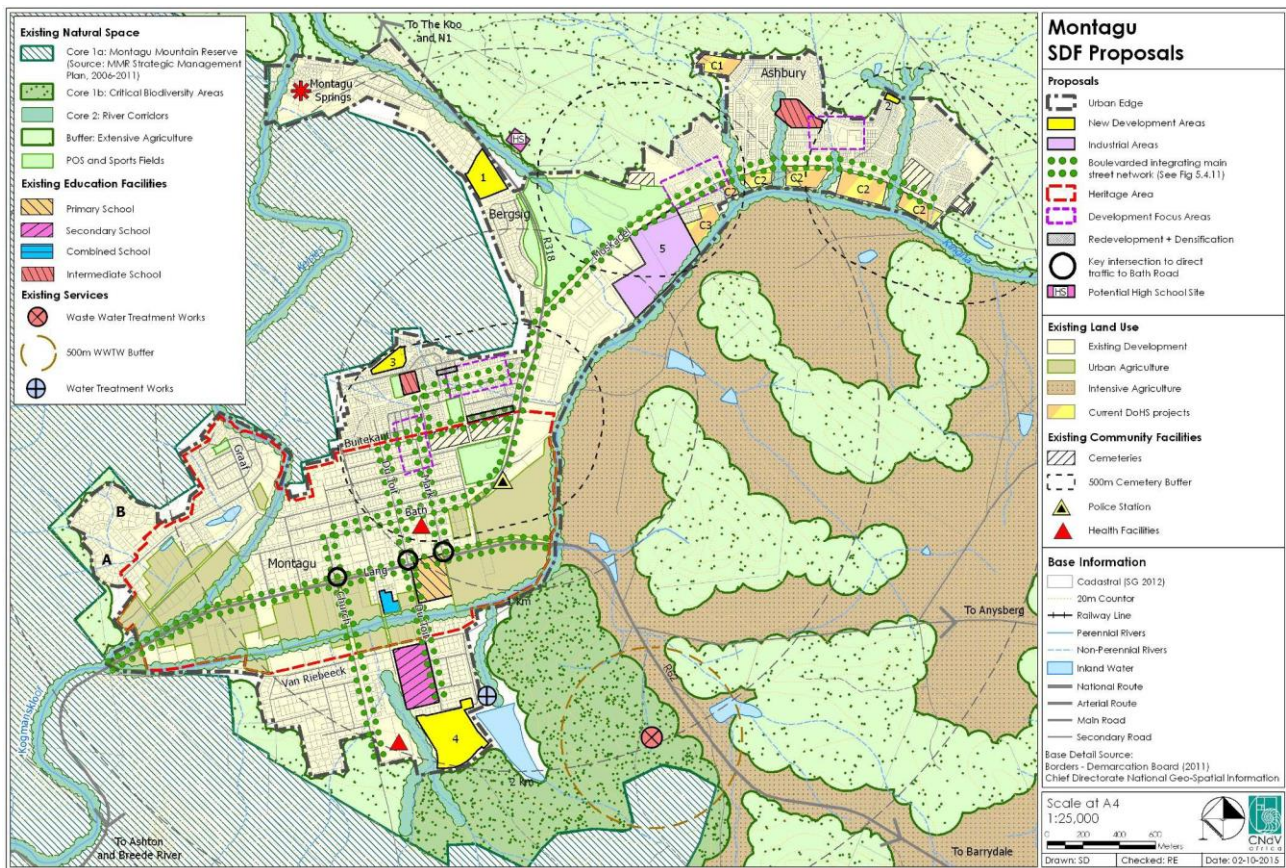


Figure 3-2: Montagu SDF Proposals

3.1.2.5 New Development Areas in Montagu

Table 3-2 Montagu Developments

Site No	Area (Ha)	Proposed Use
1	3.31	Middle income residential with POS corridor retained linking nature reserve to river corridor.
2	0.25	Social, GAP residential on site with good views, slope to be checked.
3	1.43	Social, GAP residential on site with good views, slope to be checked.
4	8.16	Market related housing with single sided road along river corridor.
5	13.94	Mixed use, industrial, education, see Annexure B for revised spatial standards.
6		Kingna sportsfield as part of housing project in current DoHS project areas C1 and C2
Total	27.09	

3.1.2.6 Road and Transportation Implications of the Montagu SDF proposals

The following projects of a road or transportation nature have been defined in the SDF for Montagu and should be designed to a conceptual level and costed:

- Develop walking/ cycle trails along the Kogmanskloof-, Kingna- and Keisies River Banks.

- Upgrade the main street network: Church, Du Toit, Lang, Bath, Mark, Buitekant and Muskadel Streets from south of the Kingna River to Ashbury as an interlinked system of high-quality boulevards. This will have to be modelled with a micro-simulation model to identify the required concept designs.
- Improves the attraction of Bath Street for visiting tourists on the R62, this can be done with a possible partial pedestrianisation of Bath Street.
- Upgrade of all gravel roads in Ashbury and provide stormwater infrastructure.
- Tarring of roads and provision of kerbs for stormwater control: Ficus, Doringboom and Sederlaan in Ashbury is a priority.

3.1.3 Ashton (Population approximately 13 000)

3.1.3.1 General

Complete and extend a high quality landscaped and treed boulevard along the frontages of the CBD and Zolani along the R60 taking into account the need for signage advertising businesses to be visible.

3.1.3.2 Landscapes

- Although Ashton's population is currently declining there is a need to accommodate the housing waiting list. If the quality of the town improves as well as improved economic prospects there could be further growth;
- Future urban development should be located to support the Urban Restructuring proposals below;
- As a general rule intensive agriculture should not be converted to urban use and it is proposed that the vineyards north of Abattoir Road is not used for this purpose, except for a 100-metre strip along its northern boundary;
- This is because the vineyards lining the pedestrian link between Zolani and the CBD occupy such a key strategic location that a 100-metre strip abutting this link should be developed for IRDP, FLISP and commercial uses;
- The remainder of the vineyards abutting the R60/R62 intersection should be retained because of the rural character together with views of the surrounding mountains that they give this intersection; and,
- There is a similar opportunity with the land between the rail line and R60.

3.1.3.3 Urban restructuring

- Integrating Zolani with the remainder of Ashton requires a bold intervention. The current degree of separation is so extreme in terms of distance, location of inappropriate land uses such as a WWTW in between; and the intervening vineyards, that it will not be overcome by incremental additions to the periphery of each settlement component, even if these are in the direction of each other. Therefore, the following is proposed:
 - Upgrade pedestrian link between the CBD and Zolani to a boulevarded urban street carrying vehicle traffic;
 - Celebrate the intersection with this upgraded street and Building Ave in Zolani across the R60 with tree planting, brick paving, pedestrian crossings and, if necessary, traffic signals. An overhead pedestrian bridge is not recommended because of the number of pedestrians that are likely to continue to cross at grade;

- Even more strongly emphasize Zolani as the gateway to Ashton than the Development Focus Area project at the Mantlana/R60 intersection proposes by similarly treating this intersection. The operating speed limit should be reduced to 60km/h; and the Access Management Guidelines Roadside Development Environment along the R60 should be designated as Suburban or even Intermediate from this point on;
 - There should be a service road between the Mantlana and Building Ave intersections east of the R60. This will provide direct access so that local SMMEs are visually exposed to passing traffic on the R60, which can access their businesses via the two intersections and service road;
 - The link route between Zolani and the CBD is strengthened by a strip of abutting New Development Area No 7 accommodating mixed income, mixed use development, including IRDP and FLISP housing. Due to the 500m WWTW odour zone, land uses south of this route should not include residential unless the plant is optimally managed to eliminate odour; and,
 - To further strengthen the integrating role of this linking route the same service road, landscaping and paving treatments should be applied where necessary along the entire length of the R60 from the Abbatoir Road intersection to the Ashton cellars at the western gateway.
- These projects could be funded with:
 - Land in Site 5 outside of the 500m WWTW buffer could be used for residential purposes; and,
 - This land could be alienated by the municipality in terms of NEMA or developed by them.

3.1.3.4 SDF Proposals

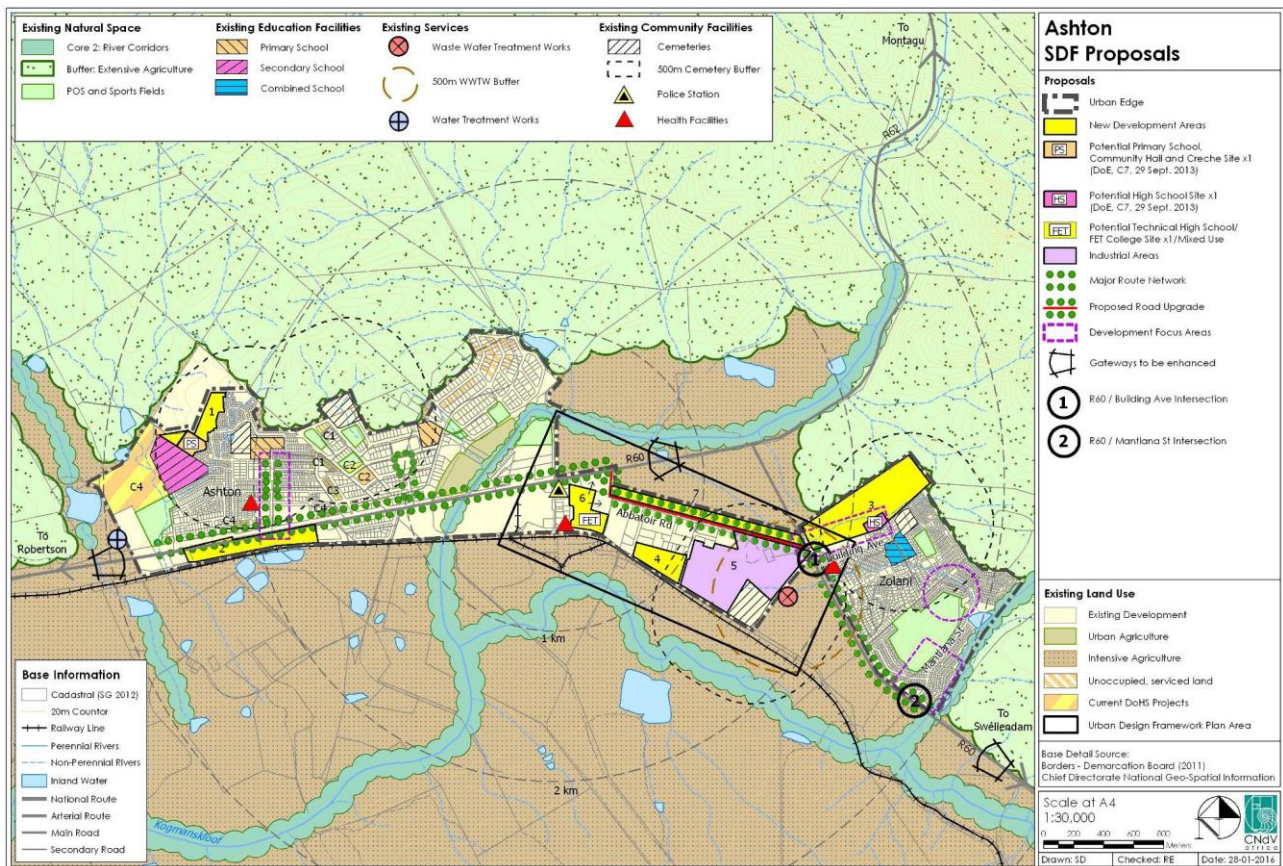


Figure 3-3: Ashton SDF Proposals

3.1.3.5 New Development Areas in Ashton

Table 3-3 Ashton Proposals

Site No	Area (Ha)	Proposed Use
1	4.18	Mixed income residential, IRDP on lower slopes with, GAP, social and market housing on the higher slopes with good views with possible school site, community hall and creche
2	9.02	Mixed use with commercial facing main road with suitable access
3	20.92	Mixed income residential with small commercial node abutting intersection with R60 and direct route to CBD
4	4.97	Mixed use residential
5	25.97	Mixed use with commercial facing proposed Ashton-Zolani link road with suitable access
6	5.23	Residential / mixed use, industrial / commercial
7	7.90	Mixed use residential including multi-purpose sports and social centre

3.1.3.6 Road and Transportation Implications of the Ashton SDF proposals

The following projects of a road or transportation nature have been defined in the SDF for Ashton and should be designed to a conceptual level and costed:

- To upgrade the current pedestrian link between the CBD and Zolani to a proper collector road carrying vehicle traffic. (For safety reasons this will have to include a bridge overpass over the R60.) (It should be noted that any proposed intervention along of adjacent to the proclaimed Provincial Road Network will require consultation with and approval prior to implementation.)

3.1.4 Bonnievale (Population approximately 9 000)

3.1.4.1 General

Bonnievale represents a significant spatial planning challenge due to its extremely fragmented layout interspersed with high quality intensive agriculture, much of it with expensive irrigation infrastructure. This resource has the ability to contribute to economic growth and employment creation for the long term, if well managed and protected. Furthermore, some of this fragmentation is not due so much to apartheid, but because residents seek to located themselves close to their source of livelihood, for example, the Brickfields and Parmalat communities. Therefore, it appears that a different spatial planning model to the integrated, sustainable, and convenient framework usually and correctly promoted by planning and development policy is warranted in this case

3.1.4.2 Landscapes

- Upgrade existing POS and sports fields;
- Create an interlinking and continuous treed and landscaped main street network;
- Protect the natural areas surrounding the settlement as incentivized private nature reserves such as promoted by Cape Nature' stewardship program; and,
- Designate and protect river corridors, including the Breede River aquatic CBA, by excluding urban development and ploughing for 32m from river and wetland banks.

3.1.4.3 Urban restructuring

- Bonnievale's envisaged future role as a growing agri-industrial centre should be confined. There are many agricultural and tourism activities are based in the surrounding rural area, more than in the town itself. The town is a service centre for these activities as well as being a residential and retirement area.
- The main urban restructuring element will be implementing the continuous network of boulevarded main streets. Little can be achieved with locating new urban development extensions appropriately because of the fertile agricultural land that would have to be taken out of production to achieve this.

3.1.4.4 SDF Proposals

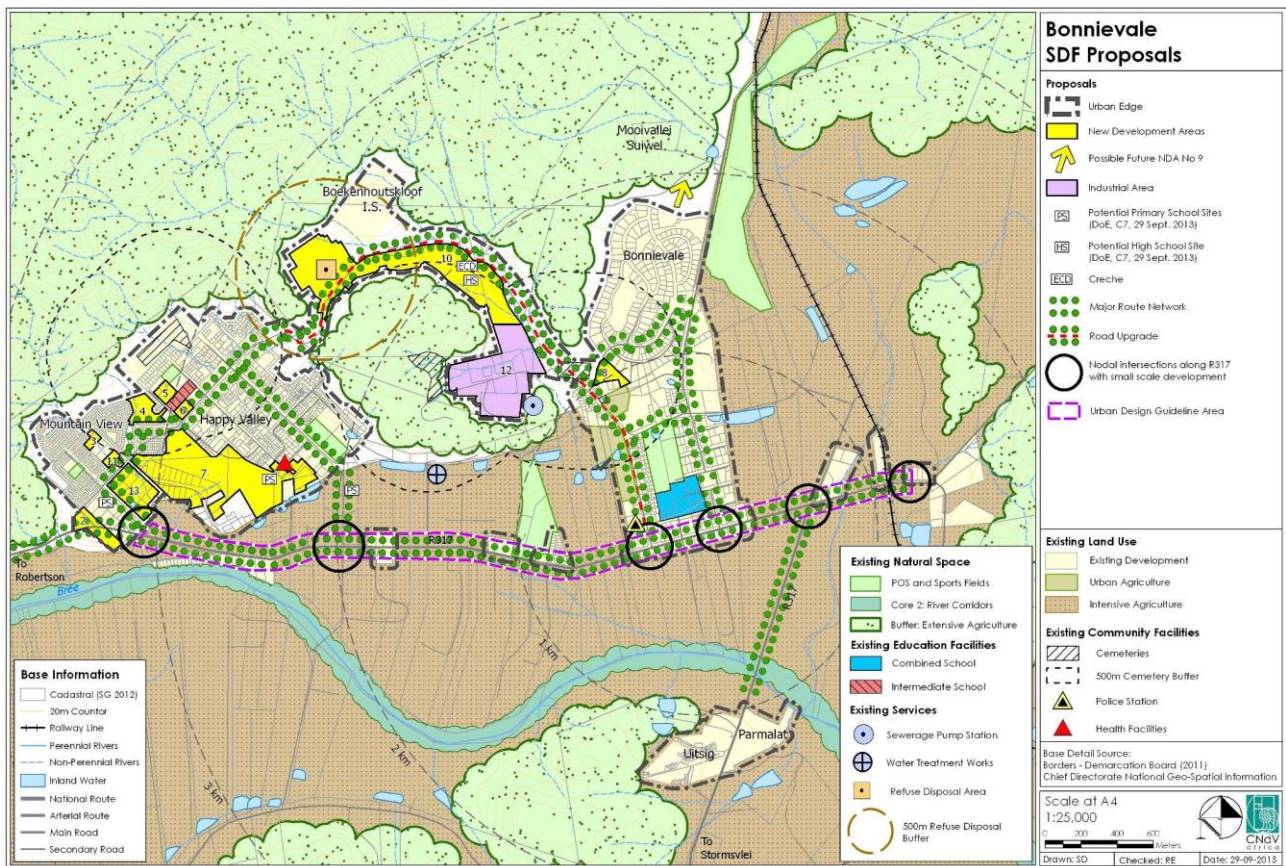


Figure 3-4: Bonnievale SDF Proposals

3.1.4.5 New Development Areas in Bonnievale

Table 3-4 Bonnievale Developments

Site No	Area (Ha)	Proposed Use
1	2.41	Gateway redevelopment / mixed use / residential (Densification).
2	0.54	Residential.
3	2.10	Residential: Retain 2000 – 4000m ² to serve as kick-about for surrounding residential area.
4	0.90	Residential.
5	0.61	Mixed use residential with small scale commercial abutting Almeria Avenue.
6	23.18	Mixed income residential, IRDP on lower slopes with, GAP, social and market housing on the higher slopes with good views and POS corridor to protect ridgelines to be retained.
7	1.51	Mixed income residential.
8	23.57	Mixed income mixed use residential fringing road to informal settlement to be upgraded.
9	0.62	Residential.
10	15.55	Industrial.
11	4.44	Mixed use residential – Gateway node
Total	75.43	

3.1.4.6 Road and Transportation Implications of the Bonnievale SDF proposals

The following projects of a road or transportation nature have been defined in the SDF for Bonnievale and should be designed to a conceptual level and costed:

- Mixed use residential fringing road to informal settlements to be upgraded. (4,6 km)
- Upgrade the existing gravel road linking the west and the east of Bonnievale.
- Upgrade Forrest Road.
- Develop a Main Road Policy plan for Bonnievale.

3.1.5 McGregor (Population approximately 3 100)

3.1.5.1 General

3.1.5.2 Landscapes

- Boulevard network of main streets that help to integrate the various components of the village. Many of the streets are already well treed and this project should infill street trees where there are gaps. The network should be extended into the future township extensions so that they are part of a single integrated network;
- Public open space in the form of recreational kick-about should be incorporated into the new layouts as there is very little public open space other than the sportsfields in the north east corner;
- The aquatic CBAs along the Houtbaais and Hoek rivers should be protected. The extent of the Houtbaai river CBA should be amended if other investigations indicate that settlement on the field between the cemeteries is viable;
- The agricultural plots in the centre of the blocks are a key component of the character of the village as well as a significant productive landscape being used for food gardening in many instances;
- To protect this resource two minimum subdivision overlay zones are proposed:
 - Overlay Zone I: Most of the village west of a line along Long street from the entrance to the town cutting back midblock between Kantoor and Tindall streets through to Church street is not permitted to subdivide less than 1000m² with not more than 50% hardened surfaces; and,
 - Overlay Zone II: East of this line a minimum subdivision of 200 m² (gross 30 du/ha) should be permitted with 50% minimum hard surfacing so that gardening is still encouraged on these smaller plots.
 - There should be 2 storey height restrictions on all properties.
- Retaining the urban agriculture usage should be incentivized using rates rebates or other measures.

3.1.5.3 Urban restructuring

- McGregor, due to its small size and development history, has remained fairly integrated with its residents all mainly living on the same settlement grid without the buffer areas seen separating communities in many other settlements. Care must be taken with the proposed new low-income housing developments that these qualities are not lost;

- There are three options for accommodating future low-income housing. These options are not mutually exclusive:
 - Option 1: further subdivision of existing blocks within the proposed Overlay Zone II area;
 - Option 2: development of New Development Area 8 as proposed in the IHSP and supported by provincial DHS. It is important that the layout and building design of this extension follows the guidelines mentioned above. This option requires taking developed vineyards out of production with associated loss of jobs and GVA; and,
 - Option 3: investigate land between the cemeteries and, if suitable, extend the grid to accommodate urban extension here. This land has the advantage of not taking developed agricultural land out of production although it may require amending an aquatic CBA. This land in any event will probably have to go through an EIA process.

3.1.5.4 SDF Proposals

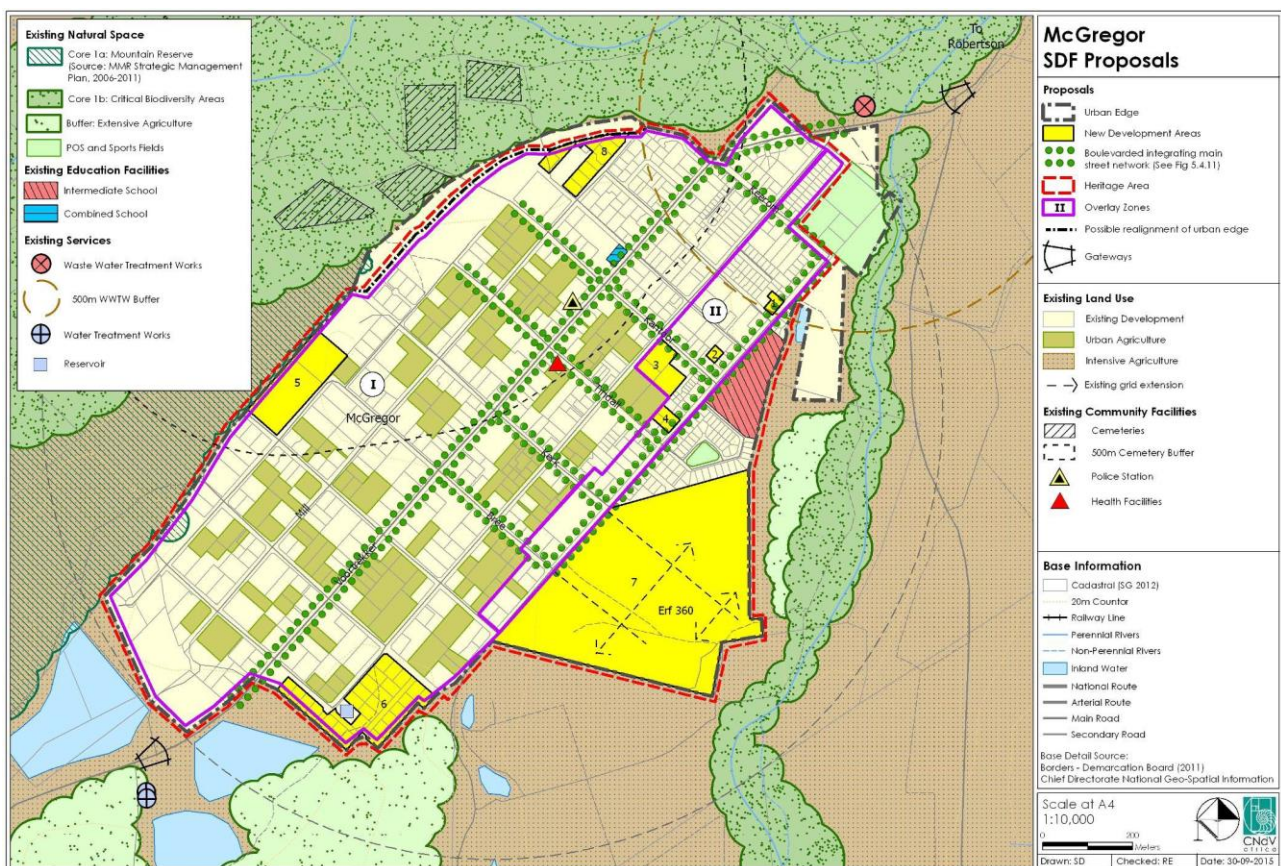


Figure 3-5: McGregor SDF Proposals

3.1.5.5 New Development Areas in McGregor

Table 3-5 McGregor Developments

Site No	Area (Ha)	Proposed Use
1	0.12	Residential
2	0.08	Residential
3	0.72	Residential
4	0.20	Retain as kick-about for surrounding residential area
5	0.90	Residential, retain 2000m ² as kick about for surrounding community
6	2.07	Residential (Market Related/Retirement Village)
7	2.95	Residential (Market Related) – off-grid services may be required
8	17.57	Mixed use residential with possible school site and allow for POS corridor linkage from Urban Edge. Encourage urban agriculture where possible.
9	0.98	Residential (Market Related)
Total	25.59	

3.1.5.6 Road and Transportation Implications of the McGregor SDF proposals

The following projects of a road or transportation nature have been defined in the SDF for McGregor and should be designed to a conceptual level and costed:

- Linking roads are to be constructed into the future developed area, which is currently informal (800m)

3.2 Stakeholder Identified Needs

3.2.1 Meeting with engineering department officials

The following transport and roads issues/ constraints were noted:

- Walking strips around schools and Thusong Centre is a priority for the municipality. (EPWP funds are used for the construction of walking strips.)
- In recent years a number of gravel roads in the township areas have been paved using labour intensive methods.
- Road maintenance to the tune of R30m are conducted on average annually in the municipality.
- A Road Master Plan is required as the previous pavement management surveys were conducted as long ago as 2011.
- A Road Traffic Study is required of the CBD of Robertson as traffic congestion is being experienced in the peak hours for the first time. (micro-simulation).
- De Jongh Street is to be developed as a major arterial running from southeast to northwest in the town of Robertson.
- Church Street is to be developed as an arterial linking the new shopping centre in the east with the traditional CBD in Robertson.
- The proposed further development of open land to the north of Nkqubela and south of the R60 would require the development of more accesses to that road from the new suburbs.

3.2.2 Meeting with traffic department officials

The following transport issues/constraints were noted:

- There are currently a very large percentage of illegal taxi operators in the town of Robertson. The local association have provided the officials with registration numbers of these illegals.
- Most of the local operators in Robertson make use of sedan vehicles as passengers are not willing to wait for a minibus-taxi (16-seater) to fill up.
- Overnight facilities for trucks are required in Robertson.
- A truck stop in Ashton is also required.
- No taxi ranking facilities are required.

4 Chapter 4: Transport Improvement Proposals

4.1 Project Proposals from the IDP

Table 4-1 IDP Project Objectives

Strategic Objectives	PDO
SO1 Housing: Effective approach to integrated human settlements and improved living conditions of all households	- To manage and provide access to affordable and low-cost housing opportunities to all qualifying citizens within the municipal area - To provide and maintain an acceptable standard of building activity
SO2 Basic Service Delivery: Maintain infrastructure to provide basic services to all citizens	- To provide and maintain the structural civil infrastructure of the Municipality - To provide and maintain the mechanical assets of the Municipality - To provide and maintain municipal roads and sidewalks - To provide and maintain storm water systems - To provide and maintain a waste management service - To provide and maintain the distribution of water in municipal area - To provide and maintain sewerage services in the municipal area - To provide and maintain the continuous supply of basic electricity - To provide Traffic and Law Enforcement services within the Municipal area - To provide and maintain Firefighting- and Disaster Management services - To provide and Maintain Recreational, Sporting and Community Facilities - To provide and maintain the Environmental Services and Cemeteries
SO3 Local Economic Development: Create an enabling environment for economic growth and decent employment	- To promote economic development in the municipal area - To facilitate and develop an entrepreneurial culture and skills development in the municipal area - To support the growth and development of the tourism sector - To work with private sector partners to promote economic growth and encourage business investment in the municipal area

A number of key capital projects have been funded for the financial years between 2021 and 2024. These projects are listed in figure 4-1 and are reflected in the IDP:

Table 4-2: IDP Projects

				2021/22
Strategic Objective	Predetermined Objective	Activity	Responsible Department	Target
Basic Service Delivery: Maintain infrastructure to provide basic services to all citizens	To provide and maintain municipal roads and sidewalks	Upgrade roads and storm water in Robertson	Roads, Transport & Stormwater	95%

4.2 Transportation Projects Identified through IDP Needs Assessment Processes

The needs identified during the community needs assessment 2017-2022 cycle mainly focus on the upgrading of existing roads, improvement of NMT facilities and traffic calming as captured below. Only detailed projects are listed:

Table 4-3 IDP Stakeholder Identified Needs

Ward	Priority Description	Department
1	Tar the roads in Moreson	Engineering Services
1	Provide a pedestrian crossing for learners in Victoria Street.	Engineering Services
1	Paving of Paddy Street	Engineering Services
1	Provide speed humps in White Street, Akasia Street, Smal Street, Van der Stel Street, Pollack Street, Victoria St, Barry St	Technical Services
1	Provide a 4-way stop at Barry/ Van Reenen	Technical Services
1	Provide sidewalks in Paul Kruger St	Engineering Services
1	Road Maintenance required in Adderley St, Victoria Rd, Leeuwin Rd	Engineering Services
1	Provide wheelchair ramp in 2 nd Ave	Engineering Services
1	Restructuring of parking areas along Voortrekker Rd	Engineering Services
1	Upgrading of shelters in Hoop St	Community Services
1	Change Willem Nels River entrance to the R62 to a roundabout.	Engineering Services
2	Provide speed humps in De Jongh Dr, Cedar Ave	Engineering Services
2	Broaden Wolhuter St for dual traffic	Engineering Services
2	Provide pedestrian walkways in Wolhuter St, Langeberg St, Wesley St	Engineering Services
2	Provide a pedestrian crossing in Wolhuter St	Engineering Services
2	Provide streetlights in Nkanini	Engineering Services

Ward	Priority Description	Department
3	Repair Streets in Dorpsig	Engineering Services
3	Speed humps in 1 st Ave, Petunia St, Heuwel St,	Engineering Services
3	Tar the De Hoop Rd, Afrimat Rd, Wesley St, Section of road to Dassieshoek	Engineering Services
3	Upgrade sidewalks in Coetzee St, Langeberg St, Wesley St	Engineering Services
3	Provide streetlight at roundabout in De Witt St	Engineering Services
3	Provide 3-way stop at Wesley St/ Hospital St	Community Services
4	Provide speed humps in Braaf St, Landbou St, Madeliefie St, Roos St, Protea St, Besembos St, Keerboom St and at creches.	Engineering Services
4	Tar roads in Happy Valley, Almeria St	Engineering Services
4	Make streets disabled friendly	Engineering Services
4	Upgrade Voortrekker St	Engineering Services
4	Provide sidewalks in Mark St	Engineering Services
4	Provide Shelter at taxi ranks	Engineering Services
4	Provide traffic calming in Bonnievale Main Rd	Engineering Services
4	Upgrade access rd. to informal settlement	Engineering Services
4	Provide curbing in Protea Avenue	Engineering Services
4	Tar Louisiana St	Engineering Services
5	Tar van Reenen St, Bree St, Mill St	Community Services
5	Provide speed humps in access rd to White City, Long St, Mill St, Voortrekker Rd, Buitekant St	Engineering Services
5	Provide sidewalks in Voortrekker St	Engineering Services

Ward	Priority Description	Department
5	Maintain the Eilandia access road	Engineering Services
6	Tar road from Vinkrivier Primary to Orange Grove	Engineering Services
6	Improve access to sidewalks for the disabled in Dorpsig	Engineering Services
6	Provide bus shelters on De Hoop Rd	Engineering Services
6	Provide road signs in De Hoop Rd	Community Services
7	Upgrade sidewalks in Bath St	Engineering Services
7	Upgrade Kloof St, Bell St, Bath St, Kohler St, Skilpad Lane, Guinea Fowl Close, Middle St, Karilien Crescent, Uitvlight St	Engineering Services
7	Provide speed humps in Union St, Park St, Mark St, Eike Ave, Long St, Berg St, Bath St	Engineering Services
7	Upgrade the steel foot bridge across Keisie River	Engineering Services
7	Improve universal accessibility of sidewalks	Engineering Services
7	Improve street lighting in Piet Retief St, Joubert St, Le Roux St, Unie St, Salie Ave	Engineering Services
7	Tar Van Wyk St, Jacobs St, Barlinka St	Engineering Services
7	Provide parking in Bath St	Engineering Services
8	Beautification of Main St in Bonnievale	Engineering Services
8	Upgrading of Church St, Forrest St, Van Zyl St, main road to Mountain View, Keurboom St	Engineering Services
8	Tar Uitsig St	Engineering Services
8	Provide bus shelters at schools	Community Services
8	Repair Gelukshoop Rd	Engineering Services
9	Upgrade roads and stormwater channels in Ashton industrial area	Engineering Services

Ward	Priority Description	Department
9	Upgrade La Rochelle Rd, Spoorlaan	Engineering Services
10	Provide speed humps in Zolani	Community Services
10	Provide speed curbing in Motasi St, Krewu St, Tyhalisisu St, Gcwabe St	Engineering Services
10	Upgrade Innovastion St	Engineering Services
11	Repair potholes in DR 1358, Normandy	Engineering Services
11	Provide speed humps in Eyssen St	Engineering Services
12	Tar Geelhout Ave, Ficus Ave	Engineering Services
12	Provide speed humps in Seder Ave, Citrus Ave, Du Preez St, Karee Ave, Wilge Ave, Muskadel Ave	Engineering Services
18	Provide shelters for the clinic bus	Community Services
18	Provide 4-way stop at Long/ Kohler	Engineering Services
19	Provide bicycle lane in Muskadel Ave	Engineering Services

(It should be noted that any proposed intervention along of adjacent to the proclaimed Provincial Road Network will require consultation with the WCG DTPW and approval prior to implementation.)

From the identified projects the following trends have been identified:

- All of the identified road maintenance and upgrading projects are to be addressed in terms of the Road Asset Management System.
- Traffic calming is a common problem in all the wards and a comprehensive Traffic Calming Policy document is required for the whole of the municipality, including implementation specifications.
- NMT infrastructure is also a requirement in many wards and a comprehensive NMT Study and Policy Document needs to be compiled for the municipality.

4.3 High accident areas

The IDP of the Langeberg Municipality lists a number of identified “high accident areas” as the result of the grassroots stakeholder consultations process. This information is important for the Transport Plan process and is listed here as provided in the IDP:

Table 4-4 High Accident Areas

Ward	Location	Perceived Problem
1	The CBD and Barry Street in Robertson	- Inadequate sidewalks forcing pedestrians to walk in the road. - Cyclists are also not educated on good road usage and ride on the wrong side of the road.
2	- R60 adjacent to Nkqubela - Intersection of Barry/ Voortrekker - Circle at Nkqubela	- Pedestrians crossing the road - Truck accidents - Illegal hitch hiking
3	The crossing at Paddy and Wesley St	- High traffic congestion in area - Pedestrians loitering in area - Farm vehicles picking up workers
6	- Crossing over Willem Nels River - Low water bridge towards Riverside - Goree turnoff from the R60	Poor lighting and other sight issues.
9,10	The R60 in the vicinity of Zolani	Cattle grazing along the road
11	Cogmanskloof Pass	Twisting road with limited sight distances
12	Burgers Pass	Difficult for trucks to negotiate the pass

4.4 Non-motorised Transport

In the CWDM's NMT Strategy document a number of projects are proposed for the Langeberg LM area. Because of the age of the document some of these projects may have been implemented already, however the list is provided here anyway, so that the task of implementation can be completed.

4.4.1 Robertson

- Upgrade passenger shelter at taxi stop in Nkqubela on Hani Street with passenger seating and shelter and provide paved sidewalks on Hani Street.
- Upgrade surfaces for walking on key routes to schools and clinic in Nkqubela.
- Provide improved cycling conditions on the core NMT route in Robertson. Investigate feasibility of constructing a pedestrian / cyclist bridge over the rail and road in line with Hani and Adderley Streets. If this is provided, then approach routes should be improved for pedestrians and cyclists on Hani and Adderley St. (It should be noted that any proposed intervention along of adjacent to the proclaimed Provincial Road Network will require consultation with the DTPW and approval prior to implementation.)

4.4.2 Ashton

- Provide hardened surfaces on the sidewalks of key pedestrian routes. Upgrade and complete the discontinuous sidewalks on the R60 within the urban area.
- Provide shelters for waiting passengers on the R60 either at Middel St or Jakaranda St, depending on which is used most by school children.

- Formalise the pedestrian route through the cemetery.
- Formalise the NMT route between Zolani and Ashton along the diagonal route, as development takes place adjacent to this route, urban design should be used to maintain security.
- Investigate the most appropriate approach for a continuous NMT route within Zolani, linking the schools with the route to Ashton, thus creating a core NMT network.
- Investigate the viability of traffic calming on R60 near Zolani to improve safety for pedestrians crossing the R60 on the route between Zolani and Ashton. Improve street lighting at the intersection of the R60 and Building Ave and add signs warning drivers of pedestrians crossing the R60.

4.4.3 Montagu

- Investigate feasibility of a cycle route between Ashbury and Montagu. Depending on feasibility, the R318 section would be off-road, while the quieter section would be a painted on-street lane.
- Paint cycle lanes on-street on Eike and Wilger St as a cheaper alternative to paved sidewalks.

4.4.4 Bonnievale

- Upgrade key walking routes serving clinic and school within Happy Valley.
- Upgrade conditions for cycling on Main Road including providing street lighting on the north side for a shared pedestrian cyclist lane outside the built-up area. Minimum safety measures, edge-of-road markings should be added, and the paved shoulder repaired.
- Provide passenger shelters on Main Road at the three key intersections.

4.4.5 McGregor

No high priority projects recommended. In the longer term, investigate measures to upgrade the main road through the town to improve walkability. Consider occasional “parklets” or mini rest areas with benches under some of the existing trees along the road, particularly near restaurants and guest lodges.

4.5 IDP Tourism Initiatives

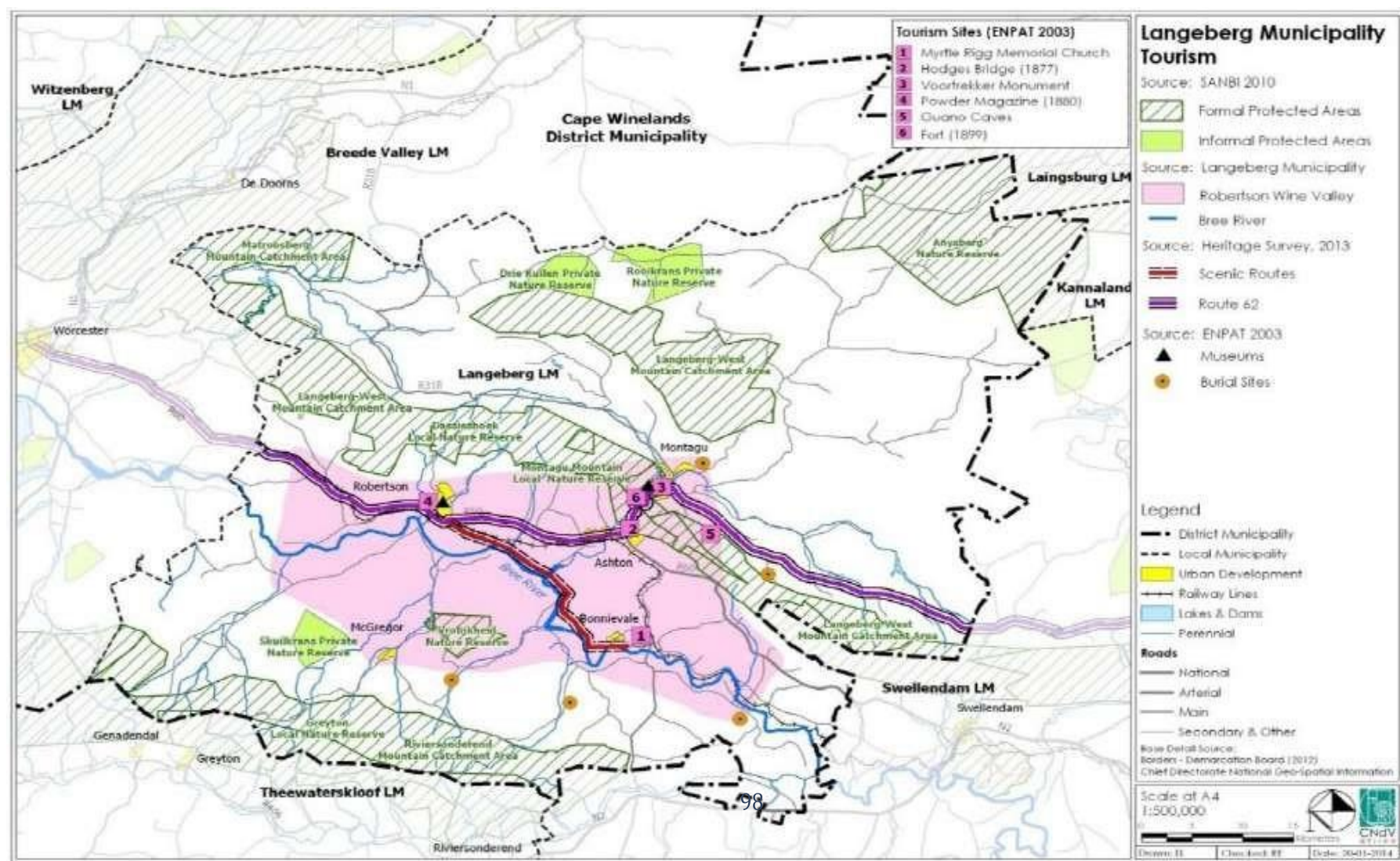


Figure 4-1: Langeberg Tourism Areas

The Langeberg Municipality is responsible for tourism and the marketing of the entire local area as a preferred tourism destination and to attract investors to our area by drawing attention to our area's niche strengths, i.e.:

- Our strong and well-known wine industry
- The established and popular Route 62
- Our beautiful and tranquil natural environment
- Our close proximity to Cape Town, the gateway to the rest of the Western Cape
- The availability of good tourism infrastructure

As one of the key drivers of our local economy, the Langeberg Municipality is committed to support local tourism and to create an environment which is conducive to unlock economic opportunities for the benefit of our broader community. However, it is important that all tourism stakeholders overcome the challenge to:

- Cooperate as assist in providing statistical data needed for better tourism planning, implementation, and development
- Work together as a unified sector.
- Assist in creating a more accessible tourism sector for the Langeberg area, which the broad community can participate in, own, and develop.
- Assist with tourism development, especially in the previously disadvantaged areas.

4.5.1 Future Plans

- To continue marketing the Langeberg as a preferred tourism destination by arranging media and tour operator visits, placement of tourism related advertisements in selected magazines, designing, printing, and distributing of marketing material.
- Langeberg area has shown a decrease in the number of visitors during the past year due to Covid. Once this pandemic has passed and travel has resumed to normal, we need to work with all stakeholders to market the area and attract the visitor number as were prior to Covid.
- To ensure that all communities benefit from Tourism and to promote tourism related businesses and township tourism in the previously disadvantaged communities.

4.5.2 Challenges from the past

- The lack of a unified approach to tourism.
- The lack of real hands-on support from WESGRO and Provincial Government on tourism related matters.
- Little or no involvement in tourism by persons from previously disadvantaged communities

4.5.3 Proposed Projects for 2021 / 2022

1. Financially support the Local Tourism Offices to render a tourism function as per signed agreement.
2. Continue to be a member of the Heritage Railway Association of South Africa.
3. Continue to update, print, and distribute tourism marketing material.
4. Continue to attend tourism related expos to market the Langeberg Municipality as a preferred tourism destination.
5. Continue to market the Municipal area.
6. To host a Christmas Lights Event

7. To update the photographic library which are used to compile brochures, tourism booklets and other marketing material
8. Continue to support local tourism events so as to benefit the local economy and manage event applications
9. Continue to deal with tourism related road signage applications

4.6 Transport Planning Projects

The transport needs assessment processes have identified a number of planning projects, that can provide the scientific backing for other categories of projects that the RAMP has done for the whole field of road maintenance. These projects and their approximate costing are as follows:

4.6.1 Micro-simulation modelling of the Robertson CBD

Although the Robertson CBD area and the arterials feeding it are not yet prone to heavy peak hour traffic congestion, it is certainly busy enough to warrant the commissioning of a modelling study to ensure maximum efficiency out of the existing road infrastructure and traffic signal set settings. By making use of software packages, such as PTV VISSIM, as much as 25% additional road capacity can be achieved by optimising traffic signal settings for the different peak hours of a normal work week. Projects, such as the proposed new roundabouts that have already been budgeted for can also be tested as part of the road network and its potential down-stream effects quantified. The massive traffic impact of excessive heavy vehicle flows on certain streets will also be quantified. (Impacts on the proclaimed Provincial Road network is to be shared with the WCG DTPW.)

Cost: R500 000.

4.6.2 Langeberg Non- motorised Transport Plan

As part of the needs assessment exercise, pedestrian safety and comfort have been at the forefront of a large number of the ward projects identified. It is at present however a very haphazard process with hardly any scientific backing for either the locations of the projects nor for the extent thereof. What is required to start with, are counts to identify and quantify pedestrian streams, along all the major corridors in the municipality. Then infrastructure must be designed up to concept design level to accommodate the identified pedestrian streams including elements such as footbridges, pedestrian underpasses, walkways, pedestrian crossings (signalised and un-signalised), raised crossings, scholar patrols, etc.

Pedestrian accident information should also be acquired to identify “blackspots”. Infrastructure that can minimise pedestrian safety concerns such as barrier kerbing and safety rails can then be designed to concept design level.

A proper traffic calming measures design plan can be part of the NMT Plan instead of the ad-hoc speedhumps that are being implemented currently.

A NMT Plan also needs to include cycling infrastructure identification for both the commuter mode, as well as recreational movements. Especially around secondary schools, cycling movements can be very important. This is by far the highest priority transportation planning project for the municipality.

Cost: R800 000

4.6.3 Langeberg Roads Master Plan and Pavement Management System

The current pavement surveys are very dated (2011), and it is certainly time to revisit these studies.

Cost: R2 000 000

4.6.4 Langeberg Freight Master Plan

A lot of agricultural freight are produced in the local municipal area and the municipality could benefit from a comprehensive freight plan that can improve efficiencies in the whole logistics chain within the municipal borders. Possibilities to include rail transport in this value chain should also be investigated after the May 2022 release of the Rail White Paper.

Cost: R2 000 000

5 Chapter 5: Implementation budget and Programme

5.1 Budget Principles

In its Budget Policy document the Langeberg Municipality identified the following principles for its budgeting process, which is also applicable to the Integrated Transport Plan budget:

- The Budget and Budget Preparation process shall comply with the requirements of the Municipal Finance Management Act of 2003, and nothing contained in this policy shall contradict the said legislation.
- The municipality shall not budget for a deficit and should also ensure that revenue projections in the budget are realistic taking into account actual collection levels.
- Expenses may only be incurred in terms of the approved annual budget (or adjustments budget) and within the limits of the amounts appropriated for each budget vote.
- When preparing its budget, Council must ensure that the budget is in accordance with its Integrated Development Plan.
- In its budget policy document, the Langeberg Municipality has identified the following budget principles that guide the budget process:
- Expenditure of a project shall be included in the capital budget if it meets the assets definition i.e., result in an asset being acquired or created and its value exceeds R10,000 and has a useful life in excess of one year
- Vehicle replacement shall be done in terms of Council's vehicle replacement policy. The budget for vehicles shall distinguish between replacement and new vehicles. No globular amounts shall be budgeted for vehicle acquisition.
- A municipality may spend money on a capital project only if the money for the project has been appropriated in the capital budget.
- The envisaged sources of funding for the capital budget must be properly considered and the Council must be satisfied that this funding is available and not been committed for other purposes.
- Before approving a capital project, the Council must consider:
- A business plan for each capital project which indicate cost of the project over all the ensuing financial years until the project becomes operational, future operational costs and any revenues, which may arise in respect of such project, including the likely future impact on operating budget (i.e., on property rates and service tariffs).
- The documentary proof of estimates and calculations to support the project costs of each capital project.
- Before approving the capital budget, the council shall consider:
- The impact on the present and future operating budgets of the municipality in relation to finance charges to be incurred on external loan.
- Depreciation of fixed assets,
- Maintenance of fixed assets, and
- Any other ordinary operational expenses associated with any item on such capital budget.
- Council shall approve the annual or adjustment capital budget only if it has been properly balanced and fully funded.

5.2 Funding of the Capital Budget

In Langeberg LM Budget Policy document the following capital expenditure sources have been identified with the local rules of each as follows:

5.2.1 Revenue of Surplus

- If any project is to be financed from revenue this financing must be included in the cash budget to raise sufficient cash for the expenditure.
- If the project is to be financed from surplus there must be sufficient cash available at the time of the execution of the project.

5.2.2 External Loans

- External loans can be raised only if it is linked to the financing of an asset.
- A capital project to be secured or if it can be reasonably assumed as being secured.
- Interest payable on external loans shall be included as a cost in the Expenditure Budget.
- Finance charges relating to such loans is to be charged to or apportioned only between the departments or votes to which the projects relate.

5.2.3 Capital Replacement Reserve

- Council shall establish a CRR for the purpose of financing capital projects.
- Such reserve shall be established from the following source of revenue:
 - Inappropriate cash-backed surpluses to the extent that such surpluses are not required for operational purposes.
 - Interest on the investments of the CRR, appropriated in terms of the investments policy.
 - Additional amounts appropriated as contributions in each annual or adjustments budget.
- Before any asset can be financed from the CRR, the financing must be available within the reserve and available as cash as this fund must be cash backed.
- If there is insufficient cash available to fund the CRR, this reserve fund must then be adjusted to equal the available cash.
- Transfers to the CRR must be budgeted for in the cash budget.

5.2.4 Grant Funding

- Capital expenditure must be budgeted for in the capital budget.
- Interest earned on investments of Conditional Grant Funding shall be capitalized if the condition stated the interest accumulate in the fund.
- If there is no condition stated, the interest can then be allocated directly to the revenue accounts.
- Grant funding does not need to be cash backed, but should be secured, before spending can take place.

5.3 Budget Summaries

5.3.1 Historic Budgets of Langeberg Municipality

Vote Description	Ref	2016/17	2017/18	2018/19	Current Year 2019/20			2020/21 Medium Term Revenue & Expenditure Framework		
R thousand	1	Audited Outcome	Audited Outcome	Audited Outcome	Original Budget	Adjusted Budget	Full Year Forecast	Budget Year 2020/21	Budget Year +1 2021/22	Budget Year +2 2022/23
Capital Expenditure - Functional										
<i>Governance and administration</i>		5 762	3 211	403	5 644	15 071	15 071	5 785	6 350	5 600
Executive and council Finance		171	—	63	500	831	831	500	1 550	600
and administrationInternal audit		5 592	2 704	340	5 144	14 240	14 240	5 285	4 800	5 000
		—	507	—	—	—	—	—	—	—
Community and public safety		6 914	4 890	1 350	6 884	5 729	5 729	11 782	12 501	8 214
Community and social servicesSport and recreation		5 781	2 317	350	300	1 011	1 011	1 250	1 420	500
Public safety		1 133	2 558	400	6 214	4 073	4 073	5 341	6 200	3 910
Housing Health		—	—	600	370	645	645	4 981	4 881	3 804
<i>Economic and environmental services</i>		—	1	—	—	—	—	210	—	—
Planning and developmentRoad transport		—	5	—	—	—	—	—	—	—
		6 092	4 112	3 639	36 756	38 959	38 959	34 834	59 930	2 750
Environmental protection		4 978	446	438	3 600	260	260	3 700	250	250
Trading services		1 114	3 666	3 201	33 156	38 699	38 699	31 134	59 680	2 500
Energy sources Water management		—	—	—	—	—	—	—	—	—
		33 662	32 675	5 472	30 518	36 254	36 254	49 358	62 144	35 114
Waste water management		6 167	5 470	963	22 356	24 410	24 410	15 683	18 087	3 109
Waste management		9 930	26 802	4 509	5 892	9 460	9 460	20 882	19 891	— 32 005
Other		9 983	404	—	150	214	214	2 500	12 775	—
		7 582	—	—	2 120	2 170	2 170	10 292	11 390	—
		—	—	—	—	—	—	—	—	—
Total Capital Expenditure - Functional	3	52 431	44 889	10 864	79 802	96 013	96 013	101 759	140 925	51 678

It is interesting to note that the budget for road transport has increased from around R34m for 2020/21 to a projected R59m for 2021/22.

5.3.2 Medium Term Revenue and Expenditure Framework 2021/2022

		17/18	18/19	19/20	20/21	20/21	20/21	21/22	22/23	23/24	
CAPITAL EXPENDITURE											
Total Upgrading of Existing Assets	6	8 335	30 813	44 829	30 946	38 502	38 502	37 924	50 035	36 865	
Roads Infrastructure		2 302	11 982	43 698	25 078	30 974	30 974	31 134	32 110	2 500	
Storm water Infrastructure		—	—	—	—	—	—	—	—	—	
Electrical Infrastructure		—	4 257	—	—	—	—	1 400	2 600	—	
Water Supply Infrastructure		2 038	—	—	3 600	3 600	3 600	3 690	1 000	—	
Sanitation Infrastructure		—	—	—	—	—	—	—	10 875	32 005	
Solid Waste Infrastructure		—	1	1 017	—	—	—	700	—	—	
Rail Infrastructure		—	—	—	—	—	—	—	—	—	
Coastal Infrastructure		—	—	—	—	—	—	—	—	—	
Information and Communication Infrastructure		—	—	—	—	—	—	—	—	—	
Infrastructure		4 340	16 240	44 715	28 678	34 574	34 574	36 924	46 585	34 505	
Community Facilities		88	—	—	—	711	711	—	—	—	
Sport and Recreation Facilities		1 911	12 862	375	2 269	3 216	3 216	1 000	3 450	2 360	
Community Assets		1 999	12 862	375	2 269	3 928	3 928	1 000	3 450	2 360	
Heritage Assets		—	—	—	—	—	—	—	—	—	
Revenue Generating Non-revenue Generating		—	—	—	—	—	—	—	—	—	
Investment properties		—	—	—	—	—	—	—	—	—	
Operational Buildings		1 996	1 711	(261)	—	—	—	—	—	—	
Housing		—	—	—	—	—	—	—	—	—	
Other Assets		1 996	1 711	(261)	—	—	—	—	—	—	
Biological or Cultivated Assets		—	—	—	—	—	—	—	—	—	
Servitudes		—	—	—	—	—	—	—	—	—	
Licences and Rights		—	—	—	—	—	—	—	—	—	
Intangible Assets		—	—	—	—	—	—	—	—	—	
Computer Equipment		—	—	—	—	—	—	—	—	—	
Furniture and Office Equipment		—	—	—	—	—	—	—	—	—	
Machinery and Equipment		—	—	—	—	—	—	—	—	—	
Transport Assets		—	—	—	—	—	—	—	—	—	
Land		—	—	—	—	—	—	—	—	—	

Zoo's, Marine and Non-biological Animals										
Total Capital Expenditure	4	44 537	92 953	84 029	79 802	109 322	109 322	101 759	140 925	51 678
<i>Roads Infrastructure</i>		2 341	17 744	49 699	32 756	33 216	33 216	31 134	61 580	2 500
<i>Storm water Infrastructure</i>		—	—	—	—	—	—	—	—	—
<i>Electrical Infrastructure</i>		5 122	12 743	24 615	22 085	24 139	24 139	8 263	18 087	3 109
<i>Water Supply Infrastructure</i>		24 641	39 385	1 202	9 392	15 573	15 573	24 382	19 891	—
<i>Sanitation Infrastructure</i>		353	297	3 082	20	12 199	12 199	1 500	10 875	32 005
<i>Solid Waste Infrastructure</i>		—	133	1 041	2 120	1 700	1 700	1 283	11 390	—
<i>Rail Infrastructure</i>		—	—	—	—	—	—	—	—	—
<i>Coastal Infrastructure</i>		—	—	—	—	—	—	—	—	—
<i>Information and Communication Infrastructure</i>		32 458	70 302	79 641	66 373	86 828	86 828	66 563	121 824	37 614
Infrastructure		428	459	—	420	1 131	1 131	4 435	5 650	4 250
Community Facilities		1 955	12 868	375	6 074	4 016	4 016	2 900	6 150	3 910
Sport and Recreation Facilities										
Community Assets										
Heritage Assets										
Revenue Generating Non-revenue Generating										
Investment properties										
Operational Buildings										
T										

Again, the roads budget stays around R30m, which can now be assumed as the norm for the municipality in terms of transportation infrastructure

5.4 Planned Projects

5.4.1 IDP Transportation Projects

Table 4-1 above lists the transport related projects from the IDP that have been budgeted over the next 3 years. These are the obvious highest priorities for the BVLM to implement as part of this LITP.

5.4.2 Transportation Planning Projects

If funding can be sourced for the three transportation planning projects identified in section 4.4. These projects should be the second highest priority, as it will provide a number of implementable transportation projects for the next IDP/LITP planning cycle. These new projects will also have a solid scientific basis for implementation, which will to a large extent improve the credibility of such projects.

The table below list roads projects that planned and by the Western Cape Department of Transport and Public Works over the next 3 years.

5.5 Projects of the Western Cape Department of Transport and Public Works

The following projects are being planned in the Langeberg Local Municipality area:

Departmental Project/Programme Description	Timing/ Phasing of Project Allocation per HeBook		
	2021/22	2022/23	2023/24
C818 ASHTON - MONTAGU	202.000	5.000	-
C1141 RESEAL MONTAGU- BARRYDALE	20.000	-	-
C1141 RESEAL MONTAGU - BARRYDALE - PRMG	-	85.000	-
C1203 RESEAL TRUNK 7 DIVISIONAL RD - PRMG	-	-	80.000
C1205 RESEAL -BONNIEVALE - PRMG			18.000

Source: Vote 10.

These will augment the municipal transportation projects of the medium-term expenditure framework detailed in section 5.3.2

5.6 Projects Proposed as part of the LITP

The following projects are proposed as part of the LITP:

- MBT Rank upgrades and maintenance (as listed in the PTP Plan) – Budget to be estimated based on requirements per facility
- Road Safety Assessment to address challenges related to freight movement on local roads
- Public Transport Affordability

5.6.1 Project Prioritisation

The main priorities for Langeberg municipality can be summarised as follows:

- Maintenance of existing road and public transport infrastructure to an acceptable level
- Improving road safety and reduction of non-motorised transport and vehicle conflict. Due to the high volume of pedestrian movement in the rural areas consideration of safety issues needs to be addressed through effective design.
- Provision of public transport bays and pedestrian facilities at schools to accommodate learner transport.

5.6.2 Sources of funding

Municipalities are faced with budget constraints for many reasons, but need to provide the municipal services with the funding allocated to them. The funding for municipal services needs to be distributed amongst the various departments to provide these services and transport infrastructure competes with other essential services such as health and housing.

5.6.3 Transport improvement proposals

The source of funding for municipalities is as follows:

- National and provincial allocation and grants, such as conditional and unconditional allocations
- Municipal Capital Replacement revenue
- Municipal Infrastructure Grant (Dep of Cooperative Governance and Traditional Affairs)
- Value capturing, such as property taxes (which may arise through new investments)
- Public Private Partnerships
- Loans
- Other sources such as user charges, advertising, rental of property, etc.

6 Operating Licence Plan

6.1 Background

The Operating Licence Plan is in the case of the Langeberg LM an analysis of the number of operating licences of the minibus-taxi industry in the municipality versus the demand for services by the same taxi operators. It is also a function of the municipality to advise the PRE on the need for more licences on specific routes when applications for such licences have been received by the PRE.

During November 2021 a series of rank specific surveys have been conducted by SMEC Engineers and the demand analysis detailed below are based on this survey information that have been detailed previously in chapter 2. The following tables are applicable:

- Table 2-1: Listing of all Facilities
- Table 2-2: Route Descriptions
- Table 2-3: Routes as identified by facility
- Table 2-4 Utilisation of Ranking Facilities
- Table 2-5 Capacity Utilisation of Routes (Weekday Peak Hour)
- Table 2-6 Capacity Utilisation of Routes (Friday Peak Hour)
- Table 2-7 Capacity Utilisation of Routes (Saturday Peak Hour)
- Table 2-8 Description of Facilities Ashton
- Table 2-9 Description of Facilities Bonnievale
- Table 2-10 Description of Facilities Robertson
- Table 2-11 Description of Facilities Montagu
- Table 2-12 passenger Waiting Times

6.2 Regulatory Background

6.2.1 Western Cape Road Transportation Act Amendment Act (Act 7 of 2000)

It amends the Road Transportation Act, 1977, insofar as it applies in the WC, to provide for special measures in respect of minibus taxi and other road transportation services in certain areas; to amend the Minister's powers to make regulations regarding persons who may seize motor vehicles; and for matters connected therewith.

6.2.2 Western Cape Road Regulations on Operating Licences, 2002

The NLTTA of 2000 permitted the Minister of Transport: Public Works and Property Management of the Western Cape to publish certain regulations relating to OLs. These are contained within Provincial Gazette No. 5838 of 14 June 2002 and are known as the Western Cape Regulations on Operating Licences, 2002.

- These regulations cover the following matters:
- Application for conversion of permit to operating licence;
- Submission of Regulation 2 (1) Application to planning authority for recommendations;
- Application for the granting, amendment, or transfer of an operating licence for contracted services;
- Application for the granting, renewal, amendment, or transfer of an operating licence for non-contracted services;
- Application for amendment of operating licence to replace a specified vehicle;
- Responsibilities of the Board regarding information and documents submitted with application forms;
- Publication of applications;
- Inter-provincial services;
- Representations regarding applications for operating licences;
- Convictions for offences to be considered by board in disposing of applications with regard to operating licences;
- Roadworthy certificates;
- Issuing of operating licences and distinguishing marks;
- Applications for duplicate original operating licences, permits, or distinguishing marks;
- Fees;
- Inspectors;
- Stopping of vehicles by authorised officer;
- Distinguishing marks;
- Information on vehicles to which operating licences relate;
- Information on vehicles used for courtesy services;
- Staff services; and
- Form of operating licences.

With regard to the submission of Operating Licence applications to the Planning Authority for comment, the regulation states that:

- An application must be submitted in writing to the Planning Authority within 30 days of receipt
- The PRE must dispose of the application within 90 days of receipt
- The Planning Authority must:
- Verify the route details claimed by the applicant;
- In the case of the conversion of a permit to an Operating Licence for a bigger vehicle; submit recommendations, amongst others, on the availability of ranks or terminals or other facilities or spaces for boarding and alighting from, or holding or parking the larger vehicle concerned;
- Submit any other recommendations or representations it may have in relation to the application
- If the Planning Authority fails to respond within 30 days, the PRE may consider the application without the input from the Planning Authority;
- In the process of the conversion of radius or area-based permits, the Board must adhere to the route descriptions, identifications and numbers shown in the ITP. The planning Authority or the PRE must provide Associations operating along the route or routes in question with adequate information to allow them to give input regarding route descriptions.

6.2.3 Western Cape Regulations on the registration of minibus-taxi associations, their members, and non-members, 2007

These regulations prescribe the following:

- Manner of keeping of the provincial transport register;
- Information to be kept in the register concerning non-members and their vehicles;
- Fees for information from the register;
- Requirements for associations to qualify for provisional and full registration;
- Application fees for registration;
- Application forms;
- Manner of application for registration by a newly admitted member of a registered association;
- Information and documents submitted with application forms;
- Registration of non-member: certificate by Registrar;
- Registration certificates;
- Distinguishing marks;
- Standard minimum Constitution and Code of Conduct;
- Form of subpoena and manner of serving;
- Fine for failure to comply with notice;
- Return of documents upon cancellation or suspension of registration; and
- Offences and penalties.

6.2.4 Types of Operating Licences

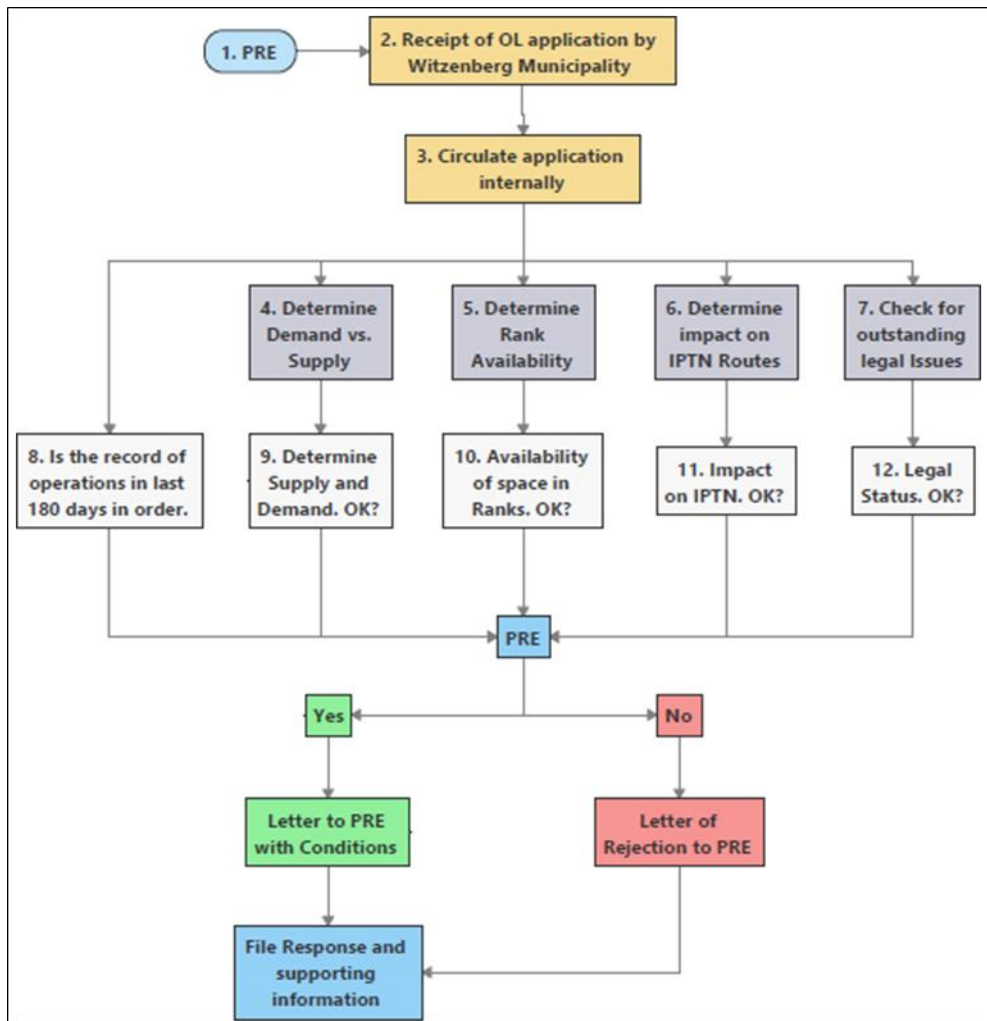
Operating Licences may be issued for the following types of services:

- Contracted Services;
- Non-contracted Services;
- Special Events;
- Long distance services;
- Metered taxi services;
- Charter service;
- Staff service;
- Learner Transport; and
- Tourist transport services.

The OLS report investigates the supply and demand of the operating licences of non-contracted services only.

6.3 Evaluation process

When a new application for an Operating Licence is received by the Planning Authority, a process is followed to evaluate the application. The process, as proposed in the Cape Winelands District Integrated Transport Plan (2016 – 2020) and developed for the Witzenberg OLS is shown in the figure below: (It is just as applicable for the Langeberg Municipality as it is for the Witzenberg Municipality.)



6.4 Ranks Assessments

A summary of the rank assessments is provided for each of the ranks and detailed below:

Table 6-1 Rank Summary Ashton

Rank Summary: Ashton		
Arrival Passengers	531	Surveyed
Departure Passengers	378	Surveyed
Total Trips Daily	81	Arrivals
	82	Departures
Max Peak Trips	20	Departures
Peak Passenger Demand	159	
Max Peak Vehicles	18	
Total Surveyed Unique Vehicles	37	Unique
Total	17	Unregistered
Total	20	Registered
% Illegal	46%	

Table 6-2 Rank Summary: Bonnievale

Rank Summary: Bonnievale		
Arrival Passengers	46	Surveyed
Departure Passengers	125	Surveyed
Total Trips Daily	23	Arrivals
	18	Departures
Max Peak Trips	4	Departures
Peak Passenger Demand	25	
Max Peak Vehicles	4	
Total Surveyed Unique Vehicles	7	Unique
Total	2	Unregistered
Total	5	Registered
% Illegal	29%	

Table 6-3 Rank Summary: Montagu

Rank Summary: Montagu		
Arrival Passengers	694	Surveyed
Departure Passengers	1304	Surveyed
Total Trips Daily	95	Arrivals
	94	Departures
Max Peak Trips	18	Departures
Peak Passenger Demand	283	
Max Peak Vehicles	9	
Total Surveyed Unique Vehicles	14	Unique
Total	1	Unregistered
Total	13	Registered
% Illegal	7%	

Table 6-4 Rank Summary: Robertson

Rank Summary: Robertson		
Arrival Passengers	78	Surveyed
Departure Passengers	908	Surveyed
Total Trips Daily	75	Arrivals
	65	Departures
Max Peak Trips	16	Departures
Peak Passenger Demand	249	
Max Peak Vehicles	10	
Total Surveyed Unique Vehicles	15	Unique
Total	5	Unregistered
Total	10	Registered
% Illegal	33%	

Effective law enforcement is required to address illegal minibus-taxis on routes to ensure that the safety of commuters, especially in the case of Ashton (46% illegal operations).

6.5 Facts Underlying the OLS Analysis

6.5.1 Robertson

- Three Ranks: Two Informal ranks as Shoprite and Pick n Pay. 1 Formal Rank Opposite the Police Station
- The formal rank is used by one taxi operating from Worcester. This rank is not used by the local Robertson association as it is in the wrong place for their operations as explained by Mr Visagie of the Roberson Taxi association.
- The Pick n Pay rank is operated by the Ashton association bringing persons from Ashton to Robertson and they return with those persons later on again.
- The Shoprite rank is used by the Robertson Association. They have two local major route destinations: Vergesig and Robertson (At the entrance to Nkqubela)
- They do not operate into Nkqubela, as this area is dominated by the violet illegal 4+1's
- They also have a lucrative route in Robertson to Bellville, but barely operate this as the passengers tend to rather hike to CT.
- The association request that the shoprite informal rank be formalised
- The association further requests that the illegal 4+1's be removed and policed.
- There was also an observation that many of the Nkqubela residence walk to the industrial and CBD area rather than using PT.
- It was further noticed that many working-class persons from Nkqubela work on farms and thus the farmer pick up his/ her employees daily.

6.5.2 Montagu

- Major movement is between Ashbury and Montagu.
- The internal town movements are done mainly on foot.
- There were no recorded trips between Ashton and Montagu during the surveys as the road was under heavy construction and delays were too large for the taxis to make that trip.
- There is one informal rank in Montagu operated from the Shoprite parking area.
- Montagu taxis would like a formal rank built in this location.

6.5.3 Ashton

- There are two ranks in Ashton: Zolani Rank and the Multisave rank.
- Due to the construction along the R60, only the Zolani rank was being used for pick up and drop off, the operations in the Ashton town was done by road side pick ups along the routes and not at a central location.
- The routes operate more radial like all over Ashton from Zolani.
- The routes are also to Robertson.
- There was a concern of persons operating between Bonnievale and Roberson using the Ashton rank as well.

6.5.4 Bonnievale

- There is one rank in Bonnievale.
- The Taxi Association is shared with Swellendam.
- Trips are local trips that operate more as scholar, staff etc type trips.
- External trips are done by a private bus company.
- This company does not operate from the rank.

6.6 Operating Licence Analysis

The operating licence analysis are being shown in the tables below for the various ranks that were surveyed in the Langeberg LM area.

From the analysis the following recommendations can be made:

- There are no routes for which the required OL's are more than the provided ones.
- The illegal number of vehicles are very high, and the authorities should investigate the situation to assess the reasons for this.
- If the surplus vehicles are simply illegal, they should be removed by way of law enforcement actions.

Rank	Origin	Destination	Route Number	No. Of Vehicle Trips	Passengers	Mode	Vehicle Capacity	Peak Period	Service Capacity	Utilisation	Distance km	Time (Min)	Stop Dwell Time	Average Rank Waiting Time	Number of Vehicles	Cycle (Min)	Frequency	Headway (Min)	Vehicles Required Based on Pax Demand	Average Vehicle Capacity	Capacity Calculated	Number of Trips	Peak Hour Capacity	Number of Issued OL	OL Required for Peak Period	Vehicle discussion	Notes
Ashton	Zolani	Ashton	D95, W65	6	61	Bus/ Minibus	21,15	9:30-10:30	80	76%	5	10	1,5	5	6	26,5	5	10	3	13	39	6	74	36	21	A total of 37 daily vehicles were surveyed. A total of 17 vehicles registrations are not matching those in the PRE database. The peak operations had a total of 24 vehicles.	Many routes were not being operated due to construction during the surveys. Furthermore 5 vehicles are dormant
	Zolani	Robertson Pick n Pay	812	17	159	Minibus, Seven, Sedan	15,7,4	9:30-10:30	257	62%	20,9	20	1	12	18	53	20	3	18	12	216	17	204				
	Zolani	Montague	810	Road Under construction during survey																							
	Ashton	Worcester	693	No route was observed to be travelled during the surveys																							
	Ashton	Bonnievale	809	One route vehicle was observed to be travelled from Bonnievale to Ashton																							
	Ashton	Ashton	Keisie	994	No route was observed to be travelling during surveys																						

Rank	Origin	Destination	Route Number	No. Of Vehicle Trips	Passengers	Mode	Vehicle Capacity	Peak Period	Service Capacity	Utilisation	Distance km	Time (Min)	Stop Dwell Time	Average Rank Waiting Time	Number of Vehicles	Cycle (Min)	Frequency	Headway (Min)	Vehicles Required Based on Pax Demand	Average Vehicle Capacity	Capacity Calculated	Number of Trips	Peak Hour Capacity	Number of Issued OL	OL Required for Peak Period	Vehicle discussion	Notes
Montague	Montague	Ashbury	725, 830, 872, D59	18	283	Minibus	15, 13	16:00-17:00	254	111%	3,6	6	2	5	9	24	25	2	12	14	168	25	350	16	12	A total of 14 daily vehicles were surveyed. A total of 1 vehicle's registration was not matching those in the PRE database. The peak operations had a total of 9 vehicles.	Zolani and Robertson routes have assigned three OL each while 3 OL are out of the district routes. Currently 2 vehicles are dormant and 1 OL as been suspended
	Montague	Zolani	O86	Road Under construction during survey																							
Montague	Montague	Robertson	87	Road Under construction during survey																							

Rank	Origin	Destination	Route Number	No. Of Vehicle Trips	Passengers	Mode	Vehicle Capacity	Peak Period	Service Capacity	Utilisation	Distance km	Time (Min)	Stop Dwell Time	Average Rank Waiting Time	Number of Vehicles	Cycle (Min)	Frequency	Headway (Min)	Vehicles Required Based on Pax Demand	Average Vehicle Capacity	Capacity Calculated	Number of Trips	Peak Hour Capacity	Number of Issued OL	OL Required for Peak Period	Vehicle discussion	Notes				
Bonnievale	Bonnievale	Bonnievale	832	3	37	Minibus	15	6:30-7:30	45	82%	3,4	5,1	5	5	2	20,2	3	20	2	15	30	6	89	9	4	A total of 7 daily vehicles were surveyed. A total of 2 vehicles registrations are not matching those in the PRE database. The peak operations had a total of 4 vehicles.	Forms part of the Swellendam association where there are many OL. In Bonnievale only 7 vehicles were seen to be in operation				
	Bonnievale	Farm	F2 and F3	4	25	Minibus	15	16:00-17:00	60	42%	6,5	9,75	2	5	4	26,5	2	30	1	15	15	2	34								
	Bonnievale	Swellendam	832, 836, 861, 990, F02, F03, F62, F62, H80, L55	Was been operated by a private bus company																											
	Bonnievale	Zolani Taxi Rank	N43	1	4	sedan	4	7:00-8:00	4	100%	14,7	14,7	1	5	1	35,4	1	60	1	4	4	1	4								
	Bonnievale	Robertson	N40	Not operated during surveys																											

Rank	Origin	Destination	Route Number	No. Of Vehicle Trips	Passengers	Mode	Vehicle Capacity	Peak Period	Service Capacity	Utilisation	Distance km	Time (Min)	Stop Dwell Time	Average Rank Waiting Time	Number of Vehicles	Cycle (Min)	Frequency	Headway (Min)	Vehicles Required Based on Pax Demand	Average Vehicle Capacity	Capacity Calculated	Number of Trips	Peak Hour Capacity	Number of Issued OL	OL Required for Peak Period	Vehicle discussion	Notes				
Robertson	Shoprite Informal Taxi Rank	Robertson	944	6	84	Seven Seater, Minibus, Bus	7,15,18,22	11:00-12:00	91	92%	2,9	4,8	5	2	3	16,6	7	8	3	15	45	9	136	33	12	A total of 15 daily vehicles were surveyed. A total of 5 vehicles registrations are not matching those in the PRE database. The peak operations had a total of 10 vehicles.	33 Issued OL for Robertson, In the PRE information, 12 vehicles are dormant.				
	Shoprite Informal Taxi Rank	Vergesig	686, 687, 688, 689, 690, 691, 692	13	215	Bus, Minibus	15,22,18	13:00-14:00	215	100%	4,1	7	5	7	7	26	17	3	9	16	144	17	277								
	Robertson Taxi Rank	Zolani Taxi Rank	N35	Discussed above																											
	Robertson Taxi Rank	Piet Retief Taxi Rank	N36	Part of the surveyed routes of Robertson																											
	Robertson Taxi Rank	Bonnievale	N37	One route travelled from Bonnievale																											
	Robertson Taxi Rank	Worcester		1 minibus taxi operating from Worcester																											
	Robertson	Belleville	N52 and N34	No routes surveyed during the survey																											

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