RUSTENBURG LOCAL MUNICIPALITY

COMPREHENSIVE INTEGRATED TRANSPORT PLAN (CITP)

Rustenburg CITP 2017 – 2022

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Definitions

Bus – a motor vehicle designed or modified to carry more than 34 persons, including the driver.
Business marketing plan – a plan aimed at effectively managing and marketing the public transport services in the planning area.
Capacity management – the application, by a transport authority, of policies or measures to match the supply of a service (e.g. public transport) with the demand for that service.
Commuting – travelling to and from one's daily work.
Concession – the authority and contract to operate a rail line or network at an agreed price.
Contract – an agreement between an authority and an operator regarding the delivery of a public transport service at an agreed price.
Framework – an outline or skeleton which provides the structure and form around which a plan, policy or strategy is constructed.
Gazette – means the national Government Gazette.
Goal – an idealised end-state of the system, or a desired direction for the evolution of the system.
Guideline – a course of action required by COLTO (Committee of Land Transport Officials (nd). to direct transport authorities at all levels of government in the preparation of integrated transport plans.
Infrastructure – in relation to land transport, means fixed capital equipment and facilities in the land transport system.
Integrated Development Plan (IDP) – a plan which in terms Section 25 of Chapter 5 of the Municipal Systems Act, (32 of 2000) IDP must be prepared by a municipality.
Integrated Public Transport Network (IPTN) – a system in a particular area that integrates public transport services between modes, with through-ticketing and other appropriate measures to provide users of the system with the optimal solutions to be able to travel from their origins to destinations in a seamless manner.
Integrated transport planning – a comprehensive and integrated process for generating a plan relating to the regulation, provision and management of transport infrastructure (roads, rail, stations, terminals and public transport facilities) and for regulating public transport operations/services and the use of infrastructure by both operators of public transport and private travellers. Because of the spatial relationship between residential and economic activities, resulting in the demand for travel, it is essential that an integrated transport plan should be developed in the context of a land use plan which is supportive of efficient public transport. Details to be contained in a transport plan include public transport operations, circulation or movement and mobility needs, vehicles and rolling stock, depots/equipment and human resources.
Issue – it arises in a national, provincial or local community when there are conflicting goals and objectives (desires or perceptions) within that community.
Land transport – a generic term which describes the movement of people by land-based travel modes. It encompasses both private and public travel modes.
Land use planning – the process of determining the use or uses permissible on portions of land. The land use policies should relate explicitly to spatial relationships between broad categories of land, development densities, the mix of land uses and land use policies in support of efficient and effective public transport.
Long distance service – a scheduled or unscheduled public transport service, other than a service for commuting, which is provided beyond the boundary of the area covered by an ITP.
Metered taxi service – a public transport service operated by means of a motor vehicle which: Is available for hire by hailing, by telephone or otherwise; may stand for hire at a rank; is equipped with a sealed meter, in good working order, for the purpose of determining the fare payable and that is calibrated for such fare.
Midibus – a vehicle designed or modified solely or principally for conveying more than 16 but less than 35 persons, including the driver.

Minibus – a motor vehicle designed or modified solely or principally for conveying more than nine but not more than 16 seated persons, including the driver.
Minibus-taxi service – an unscheduled public transport service operated on a specific route or routes, or where applicable, within a particular area, by means of a motor car, minibus or midibus.
Motor car – a motor vehicle, other than a motor cycle, motor tricycle or motor quadrucycle, designed or modified solely or principally for conveying not more than nine persons, including the driver.
Non-motorised transport (NMT) – includes all forms of movement that do not rely on an engine or motor for mobility, such as: • Walking; • Wheelbarrows and handcarts; • Wheelchairs; • Animal drawn vehicles; • Bicycles, bicycle trailers and tricycles.
Objective – a target, the attainment of which will help towards reaching a stated goal.
Operating licence – a licence required in terms of the National Land Transport Transition Act (NLTTA) of Act no 22 of 2000 authorising the rendering of a public transport service in accordance with any preconditions as may be specified.
Permit – the authority or licence to operate a public transport service in terms of current public transport policy governed by the Road Transportation Act 74 of 1977.
Planning Authority – is: • A transport authority for its area; or • The applicable metropolitan, district or local authority for any areas not situated in a transport area.
Plans and planning – a plan is a product of the process of planning which in turn is an organised method by which things are to be done. In the transport context, a plan is a vision of the desired future conditions, a set of objectives to achieve the vision, policies to regulate the transport system, strategies, actions and projects to implement the plan and a financial statement and budget.
Policy – an adopted framework or basis for the action needed to overcome identified problems and achieve stated goals and objectives.
Problem – an unfulfilled or unattained goal or objective.
Public transport – the conveyance of people for reward (a fare) by any travel mode, for example car, metered taxi, minibus-taxi, bus, coach, tram, and rail (light or heavy).
Rail service – a public transport service operated on a rail track or electro-magnetic guideway, and includes both light and heavy rail.
Requirement – an obligation demanded by the Department of Transport [published separately as Transport Planning Requirements (TPR)]
Scheduled service – a public transport service operated by road or rail on a particular route or routes by timetable.
Strategy – a plan or programme of action to be taken in terms of a policy. Such action may often take the form of a series of projects.
Subsidiarity – the devolvement of functions to the lowest sphere of government where such functions can be administered most effectively
Subsidised – in relation to public transport services, is a situation where passengers are provided with financial assistance to be able to afford services that they would not be able to otherwise.
Tendered contract – the authority to operate a public transport route or network at tendered contract rates.

Timetable – a published document informing passengers of headways (that is intervals between departures or the passing of vehicles), or times when and places where public transport services are available; indicating at least origin and destination points and significant intermediate locations along the route.
Traffic management – the application of engineering measures such as "traffic calming" and/or road marking, road signs and traffic signals to regulate the use of road space and the speed and flow of traffic. Engineering measures could be supported by economic measures, including the application of road user charges (parking fees, road tolls and entry levies). Whatever combination of engineering and economic measures is applied to traffic management, the measures should be supported by effective law enforcement.
Travel Demand Management (TDM) – is a system of actions to maximise the capacity of the transport system for the movement of people and goods rather than vehicles. For instance through increasing vehicle occupancy, developing priority measures for public transport, encouraging travel during off-peak periods, shifting demand between modes, restricting the space available for parking, adjusting the price of parking, and other appropriate measures.
Unscheduled service – is a public transport service operated by road on a particular route or routes, or (where applicable) within a particular area, without a timetable, and for which passengers are charged fares individually.
Vision – a commonly shared view of future conditions.

(Source: Adapted from RLM CITP 2007)

Abbreviations

AARTO Act	The Administrative Adjudication Of Road Traffic Offences Act 46 OF 1998
ACSA	Airports Company South Africa
AFC	Automated Fare Collection System
APTMS	Advanced Public Transport Management Systems
ATIS	Advanced Traveller Information Services
CITP	Comprehensive Integrated Transport Plan
COTO	Committee of Transport Officials formally COLTO
CPTR	Current Public Transport Records
EPWP	Expanded Public Works Program
HOV	High Occupancy Vehicle
IDP	Integrated Development Plan
IRPTN	Integrated Rapid Public Transport Network
ITP	Integrated Transport Plan
ITS	Intelligent Transport System
KPI	Key Performance Indicators
LITP	Local Integrated Transport Plan
MEC	Members of the Executive Council (or MECs) are responsible for the various departments of the provincial administration.
MIG	Municipal Infrastructure Grant, Road Fund
MINMEC	National Minister of Transport & Provincial MEC's
MSA	Municipal Systems Act (32 of 2000)
NATMAP	National Transport Master Plan (2050, 2011)
NDOT	National Department of Transport
NDP	National Development Plan (2030, 2012)
NEMA	National Environmental Management Act 107 OF 1998
NLTA	National Land Transport Act 5 of 2009
NLTSF	National Land Transport Strategic Framework 2006-2011
NMT	Non-Motorised Transport
NRTA	National Road Traffic Act (Act No. 93 of 1996)
NSDP	National Spatial Development Perspective
NWPLTF	North West Provincial Land Transport Framework
OLS	Operating License Strategy
PAJA	The Promotion Of Administrative Justice Act 3 OF 2000
PIG	Provincial Infrastructure Grant
PLTF	Provincial Land Transport Framework (North West Provice PLTF 2011/12 – 2015/16)
PMS	Pavement Management System
PTIFG	Public Transport Infrastructure Grant
PTISG	Public Transport Infrastructure and Systems Grant (NDoT Conditional)
PTP	Public Transport Plan
RatPlan	Rationalization Plan, BPDM Rationalization Plan 2012
RIN JV	Rustenburg Integrated Network Joint Venture
RLM	Rustenburg Local Municipality
RMP	Roads Master Plan (RLM specific versions for 2008, 2014/2015)
RRT	Rustenburg Rapid Transport
RTSSA	Rural Transport Strategy of South Africa, 2007
SABS	South African Bureau of Standards
SACAA	South African Aviation Authority
SANCB	South African National Council for the Blind

SANRAL ACT	The South African National Roads Agency Limited And National Roads Act 7 Of 1998
SARTSM	South African Road Traffic Signs Manual, 2012
SDF	Spatial Development Framework
TDM	Transport demand management
TGSI	Tactile Ground Surface Indicators
TMC	Transport Management Centre
TNF	Taxi Negotiation Forum
TRIP	Transport Rustenburg Incubation Programme
TSM	Transport System Management
UN	United Nations
UNCRPD	Convention on the Rights of Persons with Disabilities
UTC	Urban Traffic Control

(Source: Adapted from RLM CITP 2007)

EXECUTIVE SUMMARY

Overview of the Comprehensive Integrated Transport Plan

In terms of section 36(1) of the National Land Transport Act, 2009, (Act No. 5 of 2009), the Minister of Transport has published minimum requirements and guidelines for the preparation of Integrated Transport Plans (CITP's). This Comprehensive Integrated Transport Plan (CITP) that has been developed in accordance with the requirements of the National Regulations for the preparation of Comprehensive Integrated Transport Plans published by the Minister of Transport in terms of the minimum content and form. Rustenburg Local Municipality (RLM) is required to prepare a Type 1 Comprehensive Integrated Transport Plan every five years and to update it annually.

To meet those requirements the preparation of the CITP has been based on sound research of the status quo of the planning and provision of integrated transport services and facilities within the RLM. The document provides an overviewof the current transport situation, identified transport needs and the strategies required to address these needs.

Land Transport Vision, Mission, Goals and Strategy

The development of the vision, goals and strategies for the RLM CITP took into account current transport policies and legislation, but also the Rustenburg Integrated Development Plan as well as other city development strategies to inform the city's transport vision, mission, goals and strategies.

The vision statement for RLM CITP is "A Sustainable Integrated Transport System that enhances the quality of life for all."

The mission statement for RLM CITP is "To effectively mobilise and allocate resources to implement and manage an ccessible, affordable, safe, reliable, efficient and effective integrated transportation system."

The following are the overall goals for the Rustenburg CITP:

- Enhance the quality of life for all citizens;
- Create a sustainable transportation system;
- Allocate resources to implement and manage the transportation system;
- Provide a safe and reliable integrated transportation system; and
- Develop policies to guide the implementation of the transportation goals.

Strategies are based on the objectives listed above and direct the preparation and implementation of specific aspects of the CITP. The strategies for each specific component of the transport system are set out in terms of:

- Public Transport Operation;
- Infrastructure;
- Transport Demand Management;
- Freight Logistics;
- Parking;
- Non-Motorised Transport;

- Public Transport Safety and Security;
- Airports;
- Funding; and
- Public Participation/Stakeholder Consultation

Transport Register

The Transport Register covers the full spectrum of data collection necessary for the planning of all types of transport infrastructure and operations, which includes the following:

- Intersection Traffic Counts;
- Taxi/Bus Utilisation Surveys;
- Freight Counts;
- Demographic and Socio-economic Profile;
- Passenger Travel Behaviour and Service Level Requirements;
- Land Use Information;
- Public Transport Infrastructure;
- Public transport Organisational Profile;
- Public Transport Operations by Mode including:
    - Bus;
    - Minibus Taxi;
    - Metered Taxis;
    - Commuter Rail;
    - Air Transport; and
    - Planned IRPTN - Rustenburg Rapid Transport (RRT).

Spatial Development Framework

Spatial Development Framework chapter gives an overview of the spatial considerations in RLM from an urban planning perspective of land use policies. The Rustenburg Local Municipality Spatial Development Framework (RLM SDF) was summarised in the CITP to show the development patterns, future growth direction and land use proposals in the RLM that may have an impact on the CITP proposals. One of the main priorities of this framework include “Integration of Land Use and Transport Development”. The objectives of particular importance to this project and that will have an impact on the spatial urban form are:

- Develop transport infrastructure in accordance with the recommendations of the RLM CITP;
- Focus urban development along major public transportation routes to establish transport corridors;
- Implement a reliable and affordable public transport system; and
- Align land use planning with the proposed RRT System.

The following was considered:

- Broad land use and growth direction in the following main nodes Rustenburg CBD, Phokeng, Boitekong, Marikana and Future extension areas outside of the above mentioned nodes. Maps have been prepared indicating the location of these key projects;

- Future development proposals that will have an influence on the transportation system;
- Important aspects of the RLM SDF; and
- Gaps within the RLM SDF.

Transport Needs Assessment

This chapter focus on the needs as identified by the Transport Register, Household Travel Survey, the information from the IRPTN network, the Integrated Spatial Development Plan and consultation with RLM representatives and location roads and traffic engineers in the RLM area. The needs assessment shows the present problems and needs that will be translated into projects for prioritisation.

- The transport needs assessment contained in the CITP focuses on the following key factors:
- Measures to promote public transport;
- The needs of learners and persons with disabilities;
- Non-motorised transport; and
- Private transport and travel demand estimation.

A comprehensive review was done on the public transport system, management of the public transport infrastructure, intersections in the CBD areas that needs to be signalised and how to manage transport safety. Also the analysis was done on the future growth areas and township development trends that would require transport infrastructure around it. Analysis of the Rustenburg Household Survel data focused on the needs raising from origin-destination patters, availability of different modes of public transport, satisfaction with public transport including the scholar transport.

As no demand modelling was done with software for the CITP, the process of identifying needs areas relied heavily on stakeholder participation and the feedback to estimate the demand, which is described in detail in Chapter 12: Stakeholder Consultation.

Public Transport Operational Strategy

The aim of the Public Transport Operational Strategy is to address the current and future person trip needs as identified in Chapter 5: Transport Needs Assessment. The strategy has been prepared in accordance with the National Land Transport Transition Act: Minimum Requirements for Preparation of Integrated Transport Plans (Regulation 1119 of 2007).

Furthermore, the Public Transport Operational Strategy is required to pay adequate attention to:

- The needs of learners;
- The needs of special needs passengers;
- Developing and implementing the integration of public transport services in and between modes; and
- Measures to promote public transport over private transport.

The following public transport system elements were considered:

- Rustenburg IRPTN (RRT);
- Scholar transport;
- Minibus-taxi transport;
- Bus transport;
- Non-motorised transport and universal access; and
- Public transport facilities.

This chapter also provided information about the Operating License Strategy (OLS). This includes an overview of regulatory entities and operating license issuing offices, as well as status quo of licensing in RLM which shows the oversupply of the minibus-taxi licences and the undersupply of the scholar transport licences. The plan for rationalisation of the minibus taxi and bus service for the Rustenburg Local Municipality is part of the Bojanala Province District Municipality (BPDM) Rationalisation Plan, 2012. The plan already included the planning of RRT, which will have an immense impact on the rationalisation of the public transport services such as minibus taxi and buses. However, at the time when the study was done the list of the routes that are planned to be rationalised once the RRT is implemented was not available. Therefore, the final list will be provided in the 1st year updated of the CITP document.

Infrastructure Strategy

The Transport Infrastructure Startegy deals with the development and maintenance of all types of transport infrastructure (major roads, public transport facilities, rail infrastructure and traffic signals) within RLM. It includes measures which are aimed at giving priority to public transport, and a plan for the movement of hazardous substances. This chapter also includes proposals made for new infrastructure and for the improvement of existing public transport facilities and major roads.

This section elaborates on infrustructure requirements as outlined in the 2007/2008 RLM Roads Master Plan. The network was modelled with future proposed developments as well as with the High Occupancy Vehicle (HOV) lanes which represent the future proposed RRT. However, at the time when the RLM Roads Master Plan was prepared in 2008 certain planning projects were not considered. RLM Road Master Plan 2015 is currently under process of developing. The plans shows the existing road network as well as future network. The futureproposed road network will be constructed in support of the future developments aimed at improving connectivity and alleviation of congestion. However, at the time when this report was prepared the Road Master Plan 2015 was only a draft version and not the approved master plan was only in the progress and it didn't account for all the roads that were identified during this project for prioritisation. So the plans presented are not comprehensive enough to cater for all the planning that was happening in the area as a result of changes in local conditions and needs. Therefore, it is recommended that the master plan should be updated to accommodate 5 years requirements from the CITP.

As part of the CITP there are list of the roads thata that were identified after the consultation process with RLM and veriuos stakeholders as the one which are listed as "the ones with the highest priority" and the ones "which will respond the best to the future demand". Those roads are plotted on the updated land uses with newly proclaimed developments. The map of the roads that would require upgrades with additional lanes to accommodate future demand (2020 and 2025) was also provided.

The chapter also summarises the 2013 Phase 1 Road Network Master Plan (RNMP) for Rustenburg.

Travel (Transport) Demand Management

Travel Demand Management (TDM) refers to the various strategies that can be put in place to encourage sustainable transport and also to maximise the efficiency of the transport system. The main aim of TDM is to reduce the use of private vehicles by reducing the number of private vehicle trips and trip lenghts while supporting the demand for person trips. TDM strategies are aimed at promoting and prioritising the use of public transport while discouraging private vehicle use.

The chapter analysed what has been implemented in other cities and provided TDM actions and directives that are deemed to be implementable in the Rustenburg area. However, a recommendation was that full TDM Strategy report would need to be prepared so that it can properly guide the TDM implementation.

Freight Logistics Strategy

The economic growth of Rustenburg is mainly built around the mining industry which represents the bulk of freight in the precinct. Therefore, efficient and effective transportation of freight is a vital element in planning for growth.

The strategy listed the freight routes that were identified in RLM Road Master Plan 2008, but it identified upgrades and/or rehabilitation that are required to support those proposed freight routes. Freight routes and upgrades and/or rehabilitation are considered as very important to support the development of a freight ring road. The freight ring road will limit the movement of heavy vehicles in the CBD, but will stimulate freight logistic capabilities around the CBD. Also, it creates the opportunity to establish a logistics hub at the airport in the future. The strategy also dealt with law enforcement aspects such as congestion control, overload control and extending the number of weightbridges as well as issues around linences for transportation of hazardous materials.

Other Transport Related Strategies

This section of the CITP deals with the development of strategies pertaining to parking, non-motorised transport, public transport safety and security and airports.

Development of the parking strategy was highly informed by the parking policy that was identified as a need during the planning for the introduction of the Rustenburg Rapid Transport (RRT) System. RRT will have a direct influence on the parking capacity in the CBD in the short term as many on-street parking bays will be removed. However the implementation of the system aims to decrease the parking required in the CBD in the longer term through the provision of a good public transport system that should encourage its use as an alternative to using a private car.

In order to propose parking strategy the following guiding principles was applied, namely:

- Consider relevant policy, legislation, by-laws and town planning scheme requirements;
- Provide adequate parking guidance as a method to effectively manage parking;
- Optimization of parking at certain locations in order to reduce travel demand;
- Provision of paid on-street parking;
- Utilisation of parking provision to promote public transport and park-and-ride facilities.

Non-Motorised Transport (NMT) has been identified ad a priority area at national, provincial and local government level. It has now reached the stage where it is accepted, promoted and prioritized as a feasible and sustainable mode of transport. A key concept that goes hand in hand with NMT is Universal Access (UA). To develop NMT strategy the following was considered:

- NMT status-quo (mode split and cycling potential);
- Interventions that can be considered in RLM (improved infrastructure-pedestrian and bicyle, traffic calming etc.) ;
- Areas where the NMT should be prioritized (around public transport-intermodal facilities, marginalized area, linkages between nodes, educational facilities etc.).

A map was prepared that highlightes planned NMT projects together with the current and proposed land uses.

An Access Plan was developed for the RRT under requirements from the National Department of Transport (NDoT). Passengers with special categories of need are required by law to be accommodated on all new infrastructure developments and upgrades. The UA strategy was heavily informed by the Universal Design Access Plan for Rustenburg.

Public transport safety and security should promote passenger safety and security in respect of operations at public transport facilities and on board PT vehicles. The main aim of a Safety and Security Strategy is to provide on-board and on-street safety and security measures for commuters. The strategy is not focusing on specific routes alone, but rather provides a comprehensive approach that supports practical interventions for public transport safety and security. As such, the strategy is a comprehensive and fully integrated plan that addresses all aspects of traffic engineering, enforcement and education on an integrated basis in an effort to reduce the social and economic costs associated with accidents. This strategy assists in establishing the priorities that acknowledge the importance of addressing safety issues in both the public and private transport systems.

The airport strategy focused on:

- Upgrade the road to the airport to improve accessibility;
- Upgrade terminal; and
- Appoint a task team within the municipality to develop an airport masterplan for the airport and the facant land surrounding the airport.

Funding Strategy and Summary of Proposals & Programmes

It is a requirement that this chapter contain a summary of proposals and programmes provided for in the plan. The proposals contained should be realistic either in financial terms or with regard to the capacity of the authority. Projects should also be phased over a realistic period or moved to a future year. The proposals and programmes must link with the integrated development plan (IDP) process as required by section 18(1)(a) of the act. In our case the latest IDP to be used will be the *Bojanala IDP 2012-2017*. A list of project for RLM was sourced from different stakeholders. This is because not all projects within the local municipality will be implemented by the local municipality. There is currently no specific prioritization process most used by RLM to decide which projects are more important than others. The projects provided by the officials were all stated to be critical within the RLM. Projects identified in this list are not the only projects but are the critical projects. Once these projects have been implemented new ones will be identified and addressed.

The analsyis first focused on the project proposals that were previously identified to verify the current status of whether they have been implemented or not. The chapter also give an isight on the prioritisation model to be used as an indication of which projects should be given priority, when assessing the intervention's strategic choices. Projects that were identified for the CITP were then listed by following categories:

- Road projects for upgardes;
- Public transport facilities projects for upgrades;
- Freight routes projects;
- Non-motorised transport projects; and
- Other transport planning projects.

The following aspects were also covered:

- Variuos funding sources;
- Budget per project and programme;
- Strategic action plan covering a 20-years planning horizon; and
- 5-years more detailed and prioritised implementation plan to guide future budgetary allocations.

Stakeholder Consultation

Stakeholder consultation is required for the successful development of a CITP. To ensure a comprehensive CITP the following stakeholders were consulted:

- Consultation with general public (Household Travel Survey Data, 2012);
- Consultation with community (stakeholder consultation meetings);
- Consultation and workshops with Local Municipal Departments;
- Consultation with Local Transportation andEngineering Firms
- Consultation with District authorities;
- Consultation with Provincial authorities; and
- Operator Associations (Minibus-Taxi and Bus) via the RRT Forums.

1 Introduction

1.1 Background

The purpose of this report is to inform the Rustenburg Local Municipality Mayoral Committee about the development of the Comprehensive Integrated Transport Plan (CITP).

The Integrated Transport Plan (ITP) is a statutory plan required by the National Land Transport Act No. 5 of 2009 and required by the (NWPLTF) North West Province Land Transport Framework of 2011.

Legislative requirements regarding the preparation of ITP have now changed with the final Act, section 36(1) of the National Land Transport Act (NLTA), No. 05 of 2009 and the ITP now reflects the new chapter layout.

The Rustenburg Local Municipality (RLM) has been categorized as a Type 1 Planning Authority in terms of the Minimum Requirements for the Preparation of Transport Plans. In terms of the strategic phasing 2007 – 2020 we are now near the end of phase II where basic networks must be delivered within the 12 cities and 6 districts. Rustenburg is therefore required to prepare a Comprehensive Integrated Transport Plan (CITP).

When adopted by Council the CITP will replace the current ITP 2007-2012 and will inform the update of the current IDP. It will also be submitted to the MEC to be promulgated in the North West Provincial Land Transport Framework (NWPLTF) and to the Minister for approval.

1.2 Scope of Services

Table 1-1 contains an outline of the project steps, as well as method statements and resulting deliverables produced during each stage of this CITP project, some of which were conducted in parallel and others consecutively.

Table 1-1: Study Steps, Method Statements and Deliverables

	Method Statements
1	Project initiation / inception and mobilisation resulting in an Inception Report detailing the project execution and deliverables.
2	**Executive summary** An executive summary was drafted containing information about the status quo, transport trends in the RLM area, objectives and proposed interventions and projects.
3	**Introduction / context** The legislative and other responsibilities related to the preparation of the CITP was investigated. Reference was made to agreements and determinations by the Provincial MEC, the status of the CITP and the period over which the plan is to be implemented. The institutional and organisational arrangements affecting the functioning of RLM were described, as well as the liaison/communication mechanisms to coordinate the transport planning function with other responsibilities of RLM and those of other stakeholders. **Deliverable:** Chapter 1 : Introduction
4	**Transport vision and objectives** The vision statement for transportation in the RLM area was updated within the framework of the White Paper on National Transport Policy of 1996, and guided by the relevant national, provincial and municipal transport policy. The vision statement is a concise statement guiding short-, medium- and long-term transport development in the RLM area.

	Specific, measurable and realistic objectives were formulated giving effect to the vision statement. A legal compliance audit with respect to transportation planning and related matters was performed. The risk of non-compliance for RLM were highlighted where applicable. **Deliverable:** Chapter 2: Transport vision and objectives
5	**Transport register (transport data collection)** The outcomes of surveys currently being conducted for RLM by already appointed service providers were obtained and relevant information assessed, extracted and included in the CITP, with a view to identifying possible gaps to be addressed in order for RLM to fulfil its comprehensive transport planning and operations function. Particularly relevant are: • Integrated Rapid Public Transport Network (IRPTN) for RLM; • Road Master Plan RRT; • Household Travel Survey in respect of the IRPTN for RLM; • Roads Master Plan (RMP) for RLM; • Airport Master Plan for RLM; • Rationalisation Plan - Still being developed for the RRT; • Operating License Strategy - Still being developed; • Freight Logistic Strategy; • Parking Policy. More specifically, distinction were made between the following types of information: • **Demographic and socio-economic:** Population and profile of population in terms of income, age, education and car ownership. • **Transport demand and supply:** Modal split between private, public (by mode) and non-motorised transport. Relevant information (such as levels of dissatisfaction with public transport) to be extracted from the Roads Master Plan (RMP) and Household Travel Survey currently being done or completed for RLM. • **Public transport system and services:** Supply and demand information being extracted from current public transport surveys, i.e. : o Supply; o Demand based on household travel survey data; o Utilisation from existing surveys. **Deliverable:** Chapter 3: Transport Register
6	**Spatial development framework** The transport proposals contained in the Spatial Development Framework (SDF) for RLM, were integrated into the CITP clearly showing existing and intended transport corridors and nodes, and areas earmarked for mixed land use and densification. This included SDF's and precint plans where available. The IDP was summarised within this Chapter. **Deliverable:** Chapter 4: Spatial development framework
7	**Transport needs assessment** The Transport needs of the community was described based on an analysis or interpretation of: • Spatial Development Framework (Chapter 4); • Transport Register (Chapter 2); • Household Travel Survey; • Non-Motorised Transport (NMT) study; and • Existing public participation/involvement and stakeholder feedback. **Deliverable:** Chapter 5: Transport needs assessment
8	**Public transport operational strategy (available from RRT)** The OLS from the District was used as a basis for developing this Chapter. Work done by the RRT was integrated to formulate an integrated schedule to ensure optimal passenger flows allowing for the shortest travelling distance and time, and minimum fare levels. The

	Operational Plan for the RRT was used to determine the impact of the new RRT system. More specifically, the following information / data was sourced from existing RLM initiatives: • Routes; • Vehicle numbers / fleet plans; • Contract information from the Provincial Regulatory Entity (PRE) office; • Schedules; • Fare systems; • Modal Integration Strategy; • Strategic Public Transport Network; • Transport Infrastructure Plan; • Road Master Plan; • Airports Master Plan; • Learner transport information; The Airport Strategy covering all airports and airfields in the RLM area were summarised. **Deliverable:** Chapter 6: Public transport operational strategy
9	**Transport infrastructure strategy** The integrated transport infrastructure strategy is based on existing information being available as part of developing/updating the Roads Master Plan (RMP) for RLM, and covers the development and maintenance of all types of transport infrastructure, including major roads and public transport facilities. The transport infrastructure strategy promotes practical and economical measures aimed at giving priority to public transport over private transport. **Deliverable:** Charter 7: Transport infrastructure strategy
10	**Travel (transport) demand management** Appropriate, practical and financially viable measures aimed at managing transport demand were identified and analysed, including Intelligent Transport Systems (ITS) and Transport System Management (TSM) measures. The following were considered when formulating the Travel Demand Management Strategy for RLM: • Status quo analysis of travel demand measures in, and external to, the RLM area; • Needs assessment regarding the implementation of travel demand measures; • Alignment with external initiatives by SANRAL and other Authorities; and • Implementation/action plan for rolling-out travel demand measures in RLM. **Deliverables:** Chapter 8: Travel (transport) demand management
11	**Freight transport strategy** A Freight Transport Strategy was formulated covering both road- and rail-based routes. The Freight Transport Strategy also covers the movement of hazardous substances The development of the Freight Transport Strategy covers the following: • The movement of hazardous substances by road; • An status quo audit and analysis of freight movement within the RLM (desire lines); • Overloading control strategy and plan; • A strategy to reduce the impact of overloading on the municipal road networks; and • The identification of desire lines or freight movement and the development of an implementation plan to support. The Freight strategy developed supports future growth in the region and surrounding areas. The freight plan includes the following: • Freight road network; • Freight rail network; • Freight hubs or development areas; and • Limited classified counts to understand the type of vehicles per class and possible freight categories. **Deliverable:** Chapter 9: Freight transport strategy

12	**Other transport-related strategies** The following strategies were reviewed: • Non-Motorised Transport (NMT); • Public transport safety and security strategy; and • Parking Policy. **Deliverable:** Chapter 10: Other transport-related strategies
13	**Funding strategy and summary of proposals and programmes** The flowing aspects were covered: • Summary of proposals; • Funding strategy; • Prioritisation of projects; • Budget per project and programme; • Strategic action plan covering a 20-years planning horizon; and • 5-years more detailed and prioritised implementation plan to guide future budgetary allocations. **Deliverables:** Chapter 11: Funding strategy and summary of proposals and programmes
14	**Stakeholder consultation and public participation** The following key stakeholders will be consulted: • Mayoral Committee; • Portfolio Committee Councillors; • Councillors and general public through regional workshops (two workshops); • IDP forum if plaaning is synchronized; • Other CITP consultative meetings; • Public Transport Operators (using available forums and workshops); • Business stakeholders (if necessary); and • Developers Forum (presenting outcomes at forum meetings). Individual discussions were held with relevant RLM departments to source inputs and secure buy-in and ownership, i.e. : • Department Development Planning; • Department Public Safety; • The IDP Office; and • RRT Office and RLM Roads consulting engineers. Contact was also made with the Regional Offices of RLM, i.e. the Roads, Transport and Civil Works Department. **Deliverable**: Chapter 12: Stakeholder consultation and public participation
17	**Promotional Material** Promotional material will be developed where required.

The CITP contains as appendices the latest CPTR and a Summary of the OLS and RATPLAN for RL. The Bojanala CPTR, OLS and Ratplan forms the main part of the RLM document.

1.3 Description of the Planning Area

The RLM is located in the eastern parts of North West Province and forms part of the Bojanala Platinum District Municipality (BPDM).

1.3.1 Regional Overview

The RLM is located in the North West Province and falls within the boundaries of the BPDM. The largest urban concentrations in the district include Rustenburg and Brits. Both towns are located to the north of N4 and within an hour's drive of western parts of Gauteng. See **Figure 1-1.**

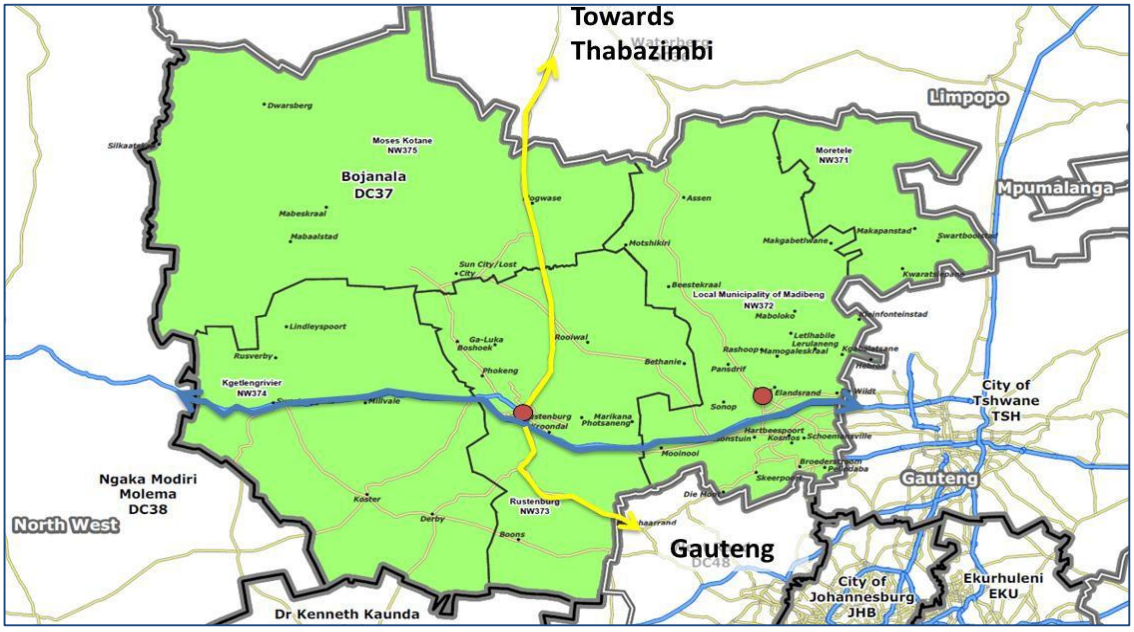


Figure 1-1: Rustenburg Boundary within North West Province

1.3.2 Broad Land Use

Large portions of land within the RLM consist of rural residential and agriculture related uses. Urban development is concentrated around Rustenburg with mining land and associated residential areas to the north-east of Rustenburg and the Magalies Mountain Range located to the south of Rustenburg. Increased mining activity in the area resulted in an increase demand for housing, retail developments and support services which require office space. These new developments generate additional trips on the road network, putting further pressure on the road network which is already operating at capacity in certain areas. Also, mining products are transported within and across the RLM mainly by road.

The N4 traverses the Municipality in an east west direction passing Rustenburg to the south connecting RLM with Gauteng and the North West province.

Primary tourism areas and facilities located within the municipal area are as follows:

- Rustenburg Town;
- Kgaswane Mountain Nature Reserve;
- Vaalkop Dam Nature Reserve;
- Kroondal;
- Bafokeng Sport Palace; and
- Buffelspoort Dam.

1.3.3 Structuring Elements

The RLM's settlement pattern is influenced by four major elements.

These elements are:

- The existing built-up environment;
- The natural environment ;
- The main road network; and
- The platinum mines.

(a) The Existing Built-up Environment

Rustenburg is the centre of population concentration in the RLM. Rustenburg is where the largest concentration of employment opportunities and economic activity exist. Most of the settlements within the RLM boundary are dependent on Rustenburg and its concentration of economic activity. The largest settlements in the RLM area developed within a 20km radius from Rustenburg.

(b) The Main Road Network

Roads are determining factors in the location of development as they provide access, ensure connectivity and provide ease of movement through an area. The main roads that link Rustenburg with the greater region and influence the growth direction of settlements in the area are the:

- N4;
- R565;
- R510;
- R104; and
- R24.

(c) The Natural Environment

The topography plays a big role in the settlement pattern, but more specifically in the future growth potential of the city with the Magaliesburg Mountain Range bordering Rustenburg to the south and the Hex River running through the city. The Hex River originates from the Kgaswane Mountain Nature Reserve. The proximity of agricultural land also has an influence on settlement patterns.

(d) Mining Activities

Mining activity is concentrated to the north and east of Rustenburg creating issues for expansion of the city in those regions.

1.4 Frequency of Plan Preparation and Update

The minimum frequency of ITP preparation and updating is shown in **Table 1-2**, which includes reference to the preparation of a CPTR and an OLS. These two planning activities are to be performed normally by Type 1 and Type 2 planning authorities, and not by local municipalities categorized as Type 3 planning authorities. Type 3 planning authorities may assist a Type 2 planning authority with the preparation of a CPTR or OLS for its own area through mutual agreement and approval by the MEC.

Table 1-2: Minimum Frequency of Plan Preparation and Update

PLAN	FREQUENCY		COMMENTS
	PREPARATION	UPDATE	
Comprehensive ITP (CITP) and district ITP (DITP)	Total Overhaul every 5th year	Annually, in synchronisation with IDP	Update to focus on action programme and budget; Prerogative of PA to do more comprehensive update

Local Integrated Transport Plan (LITP)	Annually, in synchronisation with IDP	Focus on the identification of needs and annual programme and budget

CPTR (forms part of ITP)	Total overhaul every 5th year	Continuous (if required)	Update to concentrate on gaps and information of poor quality
OLS (forms part of ITP)	Total overhaul every 5th year	Continuous (if required)	This should be a live document reflecting any CPTR update or the issuing of OLs by the OLB
RatPlan (where required: forms part of ITP)	Total overhaul every 5th year	Continuous (if required)	Update to ensure the objectives of rationalisation are realised

The CPTR, OLS and Ratplan do not exist for RLM, but however these documents exist for the BPDM. Interims of the ITP for Rustenburg and the Bojanala documents will be referenced and some additional data will be collected as detailed in the Scope of Services below.

1.5 Outline of the Integrated Transport Plan (ITP)

Below is the analysis of the requirement for the previous ITP and the updated ITP as per the minimum statutory plan required by the National Land Transport Act No. 5 of 2009.

1.5.1 Chapter Alignment

Table 1-3: Chapter Alignment

Chapter Number Min Requirements	Description	Chapter Comparison	
		2007 ITP	2014 – 2019 CITP
Chapter 1	Introduction	1	1
Chapter 2	Transport Vision and Objectives	2	2
Chapter 3	Transport Register	3	3
Chapter 4	Spatial Development Framework	4	4
Chapter 5	Transport Needs Assessment	5	5
Chapter 6	Public Transport Operations Strategy	6	6
Chapter 7	Transport Infrastructure Strategy	Not separate chapter previously	7
Chapter 8	Travel Demand Management Strategy	Not separate chapter previously	8
Chapter 9	Freight Logistics Strategy	7	9
Chapter 10	Other Transport Related Strategies – Non Motorised Transport Strategy	Not separate chapter previously	10
	Other Transport Related Strategies – Public Transport Safety and Security Strategy		
Chapter 11	Summary of ITP's in case of District Municipalities	Not separate chapter previously	Not Applicable
Chapter 12	Implementation Plan – Capital and Operational Implementation Plan	9	11 (to allow chronology)
	Implementation Plan – Funding Strategy		
Chapter 13	Public Participation	Not separate chapter previously	12 (to allow chronology)

1.5.2 Replacement of Previous Requirements

The document entitled Integrated Transport Plans: Minimum Requirements in Terms of The National Land Transport Transition Act, 2000 (Act 22 of 2000) as published in the Government Gazette No R. 1119 of 30 November 2007 replaces the following documents:

- Current Public Transport Record: Minimum requirements in terms of the National Land Transport Transition Act, 2000 as published in the *Government Gazette* on 24 July 2003 under General Notice No 1085 of 2000;
- Operating License Strategy: Minimum requirements in terms of the National Land Transport Transition Act, 2000 as published in the *Government Gazette* on 1 August 2003 under General Notice No 1090 of 2003;
- Integrated Transport Plan: Minimum requirements in terms of the National Land Transport Transition Act, as published in the *Government Gazette* on 1 August 2003 under General Notice No 1092; and
- Rationalisation Plan: Minimum requirements in terms of the National Land Transport Transition Act, as published on 1 August 2003 under General Notice No. 1091.

1.6 ITP in Relation to the Phases of the IDP Process

The preparation of an ITP must however also be synchronized with the IDP process. The suggested time frame for the development of an IDP is 37 weeks. The following table proposes the minimum alignment requirements per IDP phase. In view of the normal IDP timetable, this means that a CITP or CITP update should be completed by December of the year prior to plan implementation. For municipalities, this is July of the following year.

It should therefore be noted that the ITPs should be prepared in order for them to be available at the Integration Stage of the IDP which is proposed to be Week 28 to the end of Week 32 **(See Table 1-4).**

Table 1-4: Overview of how the ITP must be Integrated with the IDP

Phase	DESCRIPTION	ITP SECTION OF THE IDP SHOULD INCLUDE THE FOLLOWING:
I	Analysis	○ Provide a summarized assessment of the status quo of transport. ○ Identify the key priority issues/ problem statements relating to transport and discuss briefly the nature/ dynamics/ causes of these priority/ problem issues.
II	Strategies	**Identify mid-term objectives for each priority issue identified in Phase 1 and then develop strategies (strategic options) for each priority issue.**
III	Projects	**From the abovementioned strategies, identify projects and for each project compile a project proposal which specifies the following:** ○ Project objectives and indicators for achieving these objectives; ○ Project outputs, targets and locations; ○ Project tasks/ activities, responsible agencies and timing; ○ Project costs including budget estimates and sources of finance; ○ Remarks, if any.
IV	Integration	**Work with the IDP Steering committee to ensure that projects:** ○ Are in line with strategic guidelines, objectives and resource frames; ○ Reflect people's priority needs; ○ Are planned in a cost-effective manner; and ○ Can be implemented in a well-coordinated manner. ○ Revise project proposals, if required.
V	Approval	**Part of the IDP approval process by Council**

However the ITP was awarded too late for alignment with the IDP Process. The findings from this ITP will be used in the 2015 update of the IDP.

1.7 Phased Approach

The project was broken down into phases due to its magnitude and complexity, as follows:

- Phase1: Status Quo Report;
- Phase 2: Analysis, Projections, Strategies, Budget;
- Phase 3: Comments and Feedback;
- Phase 4: Public Participation.

1.7.1 Phase 1: Describing the Status Quo of Transport for RLM

Phase 1 includes all data collections and survey activities, data capturing and documentation of the status quo data.

The following chapters of the CITP were developed in parallel to the data collection process:

- Chapter 1: Introduction
- Chapter 2: Transport vision and objectives
- Chapter 3: Transport Register
- Chapter 4: Spatial Development Framework
- Chapter 5: Transport Needs Assessment (based on the household travel survey)

The information contained in the register will enable the Department to fulfil its obligations, as defined by the NLTA in terms of:

- Identifying problems and issues;
- Assessing the present and future demand for public transport and infrastructure;
- Preparing an Operating License Strategy and Rationalization Plan;
  Preparing a Network Operational Plan (for services included in the IRPTN);
- Monitoring the Key Performance Indicators of the transport system.

The Operational Plan, OLS and Ratplan development falls outside the scope of GIBB's appointment, however **Chapter 6** and **Annexure C** provide the information and the summary of the existing plans. BPDM developed these documents and the RRT developed on Operational Plan for the RRT.

1.7.2 Phase 2: Analyses, Projections, Strategies and Budget

Following a thorough understanding of the Status Quo information, the data is analysed to identify and quantify problems, issues and needs. Demand modelling was excluded from the proposal. However, future development will be evaluated in the RLM area.

After analysis the focus will be on Transport Strategy development:

- Chapter 6: Public Transport Operational Strategy
- Chapter 7: Transport Infrastructure strategy
- Chapter 8: Travel Demand Management Strategy
- Chapter 9: Freight Logistic strategy
- Chapter 10: Non-Motorized Transport Strategy

- Chapter 11: Funding Strategy
- Chapter 12: Stakeholder consultation

1.7.3 Phase 3: Comment and Feedback

The RRT and RLM will comment on the report and the feedback will be incorporated into the final report.

1.7.4 Phase 4: Public Participation

Public participation will be scheduled for the month following the final approval of the draft CITP report. Approved feedback will be incorporated into the final document.

1.8 Institutional Arrangements

The following are the institutional structures in the Rustenburg Local Municipality (RLM).

1.8.1 Political

The following is the political structure that gives political guidance and direction for Rustenburg Local Municipality:

- Council;
- Executive Mayor, Speaker and Chief Whip;
- Mayoral Committee;
- Section 80 Committees; and
- Section 79 Committees.

Table 1-5: Councils

Council	
Executive Mayoral Committee	
Section 80 Committees	**Section 79 Committees**
PFC: Corporate Support Services	Audit
PFC: Community Development	Disciplinary Committee
PFC: Public Safety	Procurement and Tenders
PFC: Infrastructure Development and Management	Rules of Order
PFC: Integrated Development Planning	
PFC: Planning and Development	
PFC: Special Projects	
PFC: Traditional and Corporate Affairs	

The transport function falls under the Section 80 Portfolio Committee: Infrastructure Development and Management.

1.8.2 Administrative

The following is the administrative structure that is responsible for administration for the Rustenburg Local Municipality:

- Directorates for corporate support services, public safety, infrastructure development and management, finance, planning and development and community development;

- Municipal Manager;
- Office of the Chief Operations Officer;
- Director: Community Development;
- Director: Corporate Support Services;
- Director: Infrastructure Development & Technical Services;
- Director: Planning;
- Director: Public Safety;
- Director: Budget & Treasury;
- Director: Local Economic Development;
- Director: Rustenburg Rapid Transport; and
- Director: Housing.

The transport function falls under the Directorate: Rustenburg Rapid Transport.

1.8.3 Inter-departmental Co-ordination and Liaison

The RLM has established a cluster system which is responsible for inter-departmental co-ordination and liaison.

1.9 Stakeholder Consultation

The following is a brief description of the stakeholders in Rustenburg.

1.9.1 Operator Associations (Minibus-Taxi, Bus, Rail, Freight)

The minibus-taxi forum was recently established to deal with matters related to the taxi industry and for liaison with other relevant authorities. There are also organised Taxi Associations including 22 in total, and the regional Taxi Body, Northern Region Taxi Council (NORTACO). There are also bus organised Bus Operators, SABOA aligned.

Members of the Rustenburg Taxi Negotiating Forum (TNF) were duly mandated by their respective associations to represent the best interests of the minibus taxi industry as the Rustenburg Municipality prepares to roll out elements of an Integrated Rapid Public Transport Network in its jurisdiction. Whilst members were elected by associations, once on the TNF they must engage the project in its entirety and from the perspective of the entire taxi sector. In terms of section 11(1) (a) of the NLTA, the national government is responsible for the operating licensing function, and this can be assigned to the Province, some selected Metros / Municipalities qualify to administer the Licensing of Operators.. The function is currently being undertaken by the North West Provincial Regulatory Entity (PRE). The responsibility of the Rustenburg office is to issue operating licences for minibus taxi, bus, scholar transport and contracted services like mines transporting their own people. The PRE office was engaged during 2015 and provided information relating to the associations and their function as it apllies to the Bojanala District.

1.9.2 Passenger Organizations

There are no passenger organizations that exist in the area.

1.9.3 Educational Institutions

There are no educational institution organizations that deal with transport issues.

1.9.4 Special Interest Groups

There is a hawker organization which is responsible for coordinating hawker related activities in the Rustenburg area.

1.9.5 Employer/Business Organizations

There is the mining sector forum which comprises of mining houses in the Rustenburg area and the municipality.

2 Land Transport Vision, Mission, Goals and Strategy

2.1 Introduction

South African land transport has in the recent past undergone an extensive transformation process, which has resulted in the introduction of new policies and legislation. The introduction of the new constitution for the country has set the scene for a fundamental restructuring process of various legislative frameworks.

The publication of the White Paper on National Transport Policy in 1996 has laid the foundation for the re-alignment of transport policy at all spheres of government.

In view of the above, the development of the vision, goals and strategies for the Rustenburg Integrated Transport Plan had to take into account current transport policies and legislation. Secondly, cognizance was taken of the Rustenburg Integrated Development Plan as well as other city development strategies to inform the city's transport vision, mission, goals and strategies.

2.2 National Policy and Legislation

The guiding documents from a National perspective that were considered include the following:

- National Transport Master Plan 2005 - 2050 (NATMAP 2050);
- The National Development Plan (NDP) Vision for 2030;
- The White Paper on National Transport Policy of 1996.

These are transport specific policies and strategies that are applicable to all spheres of government with the view of meeting specific socio-economic goals.

The following laws are administered by the Department of Transport

Aviation Laws

- Carriage by Air Act,1946 (Act 47 of 1946) Aviation Act,1962 (Act 74 of 1962);
- Air Services Licensing Act, 1990 (Act 115 of 1990) Airports Company Act, 1993 (Act 44 of 1993);
- Air Traffic and Navigation Services Company Act, 1993(Act 45 of 1993);
- Convention on the International Recognition of Rights in Aircraft Act, 1993 (Act 53 of 1993) International Air Services Act, 1993 (Act 60 of 1993);
- South African Civil Aviation Authority Levies Act,1998 (Act 41 of 1998) South African Airways Unallocatable Debt Act, 2000 (Act 7 of 2000); and
- South African Maritime and Aeronautical Search and Rescue Act, 2002 (Act 44 of 2002) Convention on International Interests in Mobile Equipment Act, 2007 (Act 4 of 2007) Civil Aviation Act, 2009 (Act 13 of 2009).

Motor Vehicles

- Road Transportation Act, 1977 (Act 74 of 1977) Urban Transport Act, 1977 (Act 78 of 1977) Road Traffic Act, 1989 (Act 29 of 1989);
- Financial Supervision of the Road Accident Fund Act, 1993 (Act 8 of 1993) Road Accident Fund Act, 1996 (Act 56 of 1996);
- National Road Traffic Act, 1996 (Act 93 of 1996);
- Cross Border Road Transport Act, 1998 (Act 4 of 1998) Transport Appeal Tribunal Act, 1998 (Act 39 of 1998);
- National Land Transport Interim Arrangements Act, 1998 (Act 45 of 1998) Administrative Adjudication of Road Traffic Offences Act, 1998 (Act 46 of 1998) Road Traffic Laws Rationalisation Act, 1998 (Act 47 of 1998);
- Road Accident Fund Commission Act, 1998 (Act 71 of 1998); and
- Road Traffic Management Corporation Act, 1999 (Act 20 of 1999) National Land Transport Transition Act, 2000 (Act 22 of 2000) National Land Transport Act, 2009 (Act 05 of 2009).

Railways and harbours

- Railway Purchase Act,1971 (Act 25 of 1971);
- Railway and Harbours Purchase Act,1977(Act 47 of 1977) Railway Construction Act,1985 (Act 75 of 1985);
- Second Railway Construction Act,1985 (Act 94 of 1985);
- South African Transport Services Conditions and Service Act,1988 (Act 41 of 1998) Legal Succession to the South African Transport Services Act, 1989 (Act 9 of 1989) National Railway Safety Regulator Act, 2002 (Act 16 of 2002); and
- National Ports Act, 2005 (Act 12 of 2005).

Roads

- Advertising on Roads and Ribbon Development Act, 1940 (Act 21 of 1940) National Roads Act,1972 (Act 54 of 1971);
- National Road Safety Act,1972 (Act 9 of 1972);
- South African Roads Board Act, 1988 (Act 74 of 1988) Transport Deregulation Act, 1988 (Act 80 of 1988); and
- South African National Roads Agency Limited and National Roads,1998 (Act 07 of 1998).

Shipping

- Merchant Shipping Act,1951 (Act 57 of 1951) Marine Traffic Act, 1981 (Act 2 of 1981);
- Carriage of Goods by Sea Act,1986(Act 1 of 1986);
- Marine Pollution (Prevention of Pollution from Ships), 1986 (Act 2 of 1986) Shipping and Civil Aviation Laws Rationalisation Act, 1994 (Act 28 of 1994) Wreck and Salvage Act, 1996 (Act 94 of 1996);
- South African Maritime Safety Act, 1998 (Act 5 of 1998);
- South African Maritime Safety Authority Levies Act, 1998 (Act 6 of 1998) Ship Registration Act, 1998 (Act 58 of 1998); and
- Sea Transport Documents Act, 2000 (Act 65 of 2000).

2.3 Land Transport Vision

The following are vision and mission statements obtained from various policy documents and legislation relevant to transport.

2.3.1 Department of Transport

The Vision

"Transport, the heartbeat of South Africa's economic growth and social development!"

The Mission

Lead the development of integrated efficient transport systems by creating a framework of sustainable policies, regulations and implementable models to support government strategies for economic, social and international development.

The Values

The core values of the department are:

- Maintain fairness and equity in all our operations;
- Strive for quality and affordable transport for all;
- Stimulate innovation in the transport sector;
- Ensure transparency, accountability, accessibility; and
- Upholding of the Batho Pele principles.

The Strategic Objectives

The objectives that the department aims to achieve in providing a policy framework, regulation and implementation models are:

- Competitive transport costs;
- Safety and security improvements;
- Reduce infrastructure backlogs;
- Improve access; and
- Reduce time in transit.

2.3.2 National Transport Master Plan 2005 - 2050 (NATMAP 2050)

NATMAP 2050 states that current legislation needs to be reviewed and amended in order to ensure the proper integration of transport modes. It is stated that the biggest problem from a legislative point of view is that important principles contained in policies drafted and various pieces of legislation are not being implemented correctly. It is however, important to note that NATMAP 2050 has not been adopted by government yet.

The NATMAP 2050 goal is to:

Develop a dynamic, long term, and sustainable land use/multi-modal transportation systems framework for the development of networks infrastructure facilities; interchange termini facilities and service delivery that shall be demand responsive to national/provincial/district and /or any socio-economic growth strategy, and/or any sectorial Integrated Spatial Development Plan.

2.3.3 National Development Plan Vision for 2030

The National Development Plan for 2030 provides the medium to long term direction and focus geared towards delivery. The back-bone of a successful city and its economy is based on its transport infrastructure network and efficient operations which reduces the cost to business while also improving access.

The key areas of the National Development Plan include the following:

- Creating jobs and livelihoods;
- Expanding infrastructure;
- Transitioning to a low-carbon economy;
- Transforming urban and rural spaces;
- Improving education and training;
- Providing quality health care;
- Building a capable state;
- Fighting corruption and enhancing accountability; and
- Transforming and uniting the nation.

2.3.4 White Paper on National Transport Policy of 1996

"To provide safe, reliable, effective, efficient, and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being environmentally and economically sustainable".

In summary the long term outcome for transport places an emphasis on:

- Safety;
- Reliability;
- Integrated operations;
- Meeting customer needs;
- Improving service levels;
- Affordability;
- Economic and social development; and
- Environmental and economic sustainability.

2.3.5 Moving South Africa

"By 2020, transport in South Africa will meet the needs of freight and passenger customers for accessible, affordable, safe, frequent, high quality, reliable, efficient and seamless transport operations and infrastructure. It will do so in a constantly upgrading, innovative, flexible and economically and environmentally sustainable manner. In doing so, transport will support and enable government strategies, particularly those for growth, development, redistribution, employment creation and social integration, both in South Africa and in the Southern region".

2.3.6 Provincial Land Transport Framework, 2002

The Provincial Land Transport Framework borrowed its vision from the White Paper on National Transport Policy which reads as follows:

"To provide safe, reliable, effective, efficient, and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being environmentally and economically sustainable".

2.3.7 North West Province: Public Works Roads and Transport, Strategic Plan 2010-2014

The Vision

"Safer public transport and sustained investment in physical public and roads infrastructure"

The Mission

To provide safer public transport, provincial land, building and roads infrastructure management towards a better life for all.

2.3.8 The Bojanala Platinum District Municipality Vision

"To provide safe, reliable, effective, efficient, and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being environmentally and economically sustainable".

2.3.9 The Vision of the Rustenburg Local Municipality

"*A successful Rustenburg for the benefit of all"*

2.3.10 Previous RLM CITP Vision 2007/2012

"To provide a safe, reliable, efficient, effective and integrated transport system for both passengers and freight that will enhance the quality of life for all".

2.3.11 New RLM CITP Vision 2014/2019

"A Sustainable Integrated Transport System that enhances the quality of life for all."

2.3.12 RLM CITP Mission 2014/2019

"To effectively mobilise and allocate resources to implement and manage an accessible, affordable, safe, reliable, efficient and effective integrated transportation system"

2.4 Land Transport Goals

2.4.1 The White Paper on National Transport Policy goals are stated as follows:

- To support the goals of the reconstruction and development programme in meeting basic needs, growing the economy, developing human resources, and democratising decision-making;
- To enable customers requiring transport for people or goods to access the transport system in ways which best satisfy their chosen criteria;
- To improve the safety, security, reliability, quality and speed of transporting goods and people;
- To improve South Africa's competitiveness and that of its transport infrastructure and operations through greater effectiveness and efficiency to better meet the needs of different customer groups, both locally and globally;
- To invest in infrastructure or transport systems in ways which satisfy social, economic or strategic investment criteria; and
- To achieve the above objectives in a manner which is economically and environmentally sustainable, and minimise negative side effects.

2.4.2 The Draft Green Paper on Transport Policy of the North West Province states its goals as follows, to:

- Provide for the basic accessibility needs of people and freight in all areas, both urban and rural, in an efficient manner;
- Proactively and positively contribute to economic growth and development through integrated multi-modal transport in the province;
- Open up market and business opportunities for provincial SMMEs;
- Eliminate distortions in the funding and provision of services;
- Provide for basic mobility needs at affordable levels, in support of human resource development and social transformation priorities of the province;
- Improve the competitiveness of the province and to stimulate new investment, not only in transport infrastructure, but also in other economic sectors; and
- Enforce minimum safety and traffic management standards to reduce accident levels and costs in the province.

2.5 Land Transport Strategic Trusts

The strategic trusts for RLM ITP are aligned with national and provincial thrusts.

2.5.1 Modal Integration

- Provide user friendly public transport facilities;
- Provide real time public transport information systems;
- Promote integrated ticketing systems for all modes of public transport.

2.5.2 Role of Public Transport vs. Private Transport

- Promote travel demand management;
- Provide high occupancy vehicle lanes;
- Formalise public transport;
- Improve the image of public transport.

2.5.3 Integrate Transport and Land-use

- Regulate land-use development to ensure that transport plans are taken into account;
- Contain urban sprawl;
- Promote densification.

2.5.4 Special Categories of Passengers

- Provide transport vehicles that are accessible to people with disability;
- Reduce barriers of access at public transport facilities;
- Provide learner transport services.

2.5.5 Safety

- To promote pedestrian safety;
- To reduce the number of fatalities.

2.5.6 Non- Motorized Transport

- Provide facilities for NMT such as bicycle and pedestrian pathways.

2.6 Rustenburg Local Municipality CITP Goals

The following are the overall goals for the Rustenburg CITP:

- Enhance the quality of life for all citizens;
- Create a sustainable transportation system;
- Allocate resources to implement and manage the transportation system;
- Provide a safe and reliable integrated transportation system; and
- Develop policies to guide the implementation of the transportation goals.

The goals above link well with the formulated goals for RRT which are:

- Acceleration of the implementation of primarily existing public transport improvement plans;
- Maximised use of existing infrastructure;
- Maximised engagement of appropriate private sector and innovative finance;
- Integration, improvement and expansion of existing services;
- Professionalisation and integration of the minibus-taxi sector; and
- Committed implementation of existing economic empowerment and sustainable development policies to guide the way that all transport objectives are met.

3 Transport Register

3.1 Background

The traffic and transport status quo for RLM is presented in this chapter addressing the following modes; namely, taxis, busses, airports, freight and rail. This was done by reviewing previous studies and surveys.

3.2 Documents Consulted

3.2.1 Documents Consulted in the Previous ITP

The following documents were consulted during the preparation of the previous ITP. See **Table 3-1.**

Table 3-1: Previous Documents Consulted for 2007-2012 ITP

Item	Document
1.	Rustenburg Household Travel Survey;
2.	Current Public Transport Record (CPTR) for the Bojanala Platinum, by Sedibeng Construction (Pty) Ltd;
3.	Public Transport Management Information System (PTMIS), which was developed by the TRC Consortium (to facilitate GIS mapping and data analysis);
4.	Provincial Taxi Registrar in Mahikeng;
5.	Land Transport Permit System – LTPS, from provincial Department of Transport;
6.	Information on bus operations from Bojanala Bus;
7.	Information with regard to the rationalisation of the bus contracts, from the provincial Department of Transport;
8.	Worker travel information from the 1998 October Household Survey (OHS), published by Statistics South Africa (Stats SA);
9.	Policy and legal information obtained from various national and provincial White Papers and legislation.

(Source: Rustenburg Itegrated Transport Plan, 2007 – 2012)

Additional document were consulted to update the ITP to a CITP, they are listed in the following sections.

3.2.2 National Documents

The following national documents were consulted during the preparation of this ITP. See **Table 3-2.**

Table 3-2: National Documents

Item	Document	Status
1.	National Land Transport Act (05 of 2009)	Adopted
2.	National Transport Master Plan (2050)	Adopted
3.	South African Civil Aviation Authority Act (41 of 1998)	Adopted
4.	National Freight Logistics Strategy (2005)	Adopted
5.	Public Transport Strategy	Adopted
6.	National Land Transport Strategic Framework	Adopted
7.	National Rural Transport Strategy (RTS) 2007	Adopted

3.2.3 Provincial Documents

The following Provincial documents were consulted during the preparation of this ITP. See **Table 3-3.**

Table 3-3: Provincial Documents

Item	Document	Status	Date
1.	Draft Provincial Transport Policy	Pending for approval	-
2.	Provincial Land Transport Bill	Pending adoption	-
3.	Rail Pre-Feasibility Study	Complete	-
4.	Rail infrastructure Audit	Complete	-
5.	Freight Data Bank	Due for update	-
6.	SABS specifications for Animal Drawn Carts	Complete	November 2014
7.	Provincial Land Transport Framework (PLTF)	Complete	2010
8.	Operating License Strategy (OLS)	Complete	October 2012
9.	Rationalization Plan (RatPlan)	Complete	October 2012

3.2.4 BPDM Documents

The following BPDM documents were consulted during the preparation of this ITP.See **Table 3-4.**

Table 3-4: BPDM Documents

Item	Document	Status	Comment
1.	District Integrated Transport Plan (DITP 2012-2017)	Completed	Updated March 2014
2.	Current Public Transport Records (CPTR)	Completed	Used as CPTR for RLM.
3.	Rationalization Plan (RatPlan 2013)	Completed	This document together with the Operations Plan for the RRT will be considered the Ratplan for RLM.
4.	Operating License Strategy (OLS)	Completed	This document together with the Operations Plan for the RRT will be considered the OLS for RLM.

3.2.5 Rustenburg Local Municipality Documents

The following National documents were consulted during the preparation of this CITP.See **Table 3-5.**

Table 3-5: Rustenburg Local Municipality Documents

Item	Document	Status	Comment
1.	Integrated Transport Plan (ITP 2007-2012)	Approved	-
2.	Integrated Transport Plan (ITP 2012-2019)	Update in progress	-
3.	Current Public Transport Records (CPTR)	NA	The Bojanala CPTR will be used. Infrastructure and Utilization Surveys will be done additionally.
4.	Rationalization Plan (Ratplan)	NA	Bojanala Ratplan and RRT Operations Plan will be used.
5.	Operating License Strategy (OLS)	NA	Bojanala OLS and RRT Operations Plan will be used.

3.2.6 Additional Documents Consulted

The following additional documents were consulted for this updated CITP. Refer to **Table 3-6** below.

Table 3-6: Additional Documents Consulted

Item	Document	Source	Year of Publication
1.	Walking & Cycling policy and concept plan for Rustenburg city	RLM	2012
2.	BPDM Non-motorised transport master-plan	RLM	2012/2013
3.	Sustainable road freight distribution policy	RLM	2013
4.	RLM Household survey report	RLM	2012
5.	RRT current bus industry analysis report	RLM	2013
6.	PRASA strategic plan, 2012 – Technology of choice framework	RLM	2012
7.	Rustenburg Airport master plan	RLM	2014
8.	Rustenburg ITP	RLM	2008
9.	2008 Roads Master Plan (Update)	RLM	2014

3.3 Data Collection and Surveys

3.3.1 Existing Data Sources

The following data was obtained from work done by other consultants in the RLM area. The data was sourced though our sub consultant, PCE and our client, the Rustenburg Local Municipality.

The table below, **Table 3-7,** lists the survey information that was obtained.

Table 3-7: Surveys

Item	Data Name	Source	Date
1.	CBD Intersection Counts	EPS Civil Traffic Engineers / Deep designs/TRAFTRANS	2013 / 2014
2.	Vehicle Occupancy Counts	Vela –Vke (SMEC)	2011
3.	SANRAL Link Counts	SANRAL Yearbook	2013

(Source: Rustenburg Local Municipality)

3.3.2 Additional Data Collected

Since the main source of public transport information was the BPDM Integrated Transport Plan (DITP) and the BPDM CPTR, and with the unavailability of the RLM 2007 Current Public Transport Record (CPTR), gaps were identified and as a result Infrastructure and utilisation surveys were conducted.

Also, there was insufficient information with regards to the movement of freight in RLM. This also prompted additional freight surveys to be conducted at strategic locations. **Table 3-8** below gives a description of the surveys.

Table 3-8: Additional Data Collection

Item	Data Name	Source	Date	Comment
1.	Public Transport Infrastructure Surveys	TRIP/Phatwe / GIBB	2014	These were done for all facilities
2.	Taxi/Bus Utilisation Surveys at 7 facilities.	Trafsol Data Specialists	2014	Only 7 due to budget constraints, the rest will be done when CITP is updated.
3.	Freight Counts at 6 locations	Trafsol Data Specialists	2014	

3.3.3 Data for Future Updates

Additional surveys will be done in the update years for Taxi and bus utilization. On-board and Cordon surveys falls outside the scope of the deliverables for this project as there will be an overlap with the RRT process.

3.4 Demographic and Socio Economic Profile

The RLM commissioned the Rustenburg Integrated Network Joint Venture (RIN JV) to conduct a household travel survey. The purpose of the survey was to:

- Provide information for an understanding of transport patterns & demand in the area; and
- To give information to inform the planning process of the integrated Rapid Public Transport Network.

Figure 3-1, below shows the description of the boundary of RLM, macro zones and traffic zones.

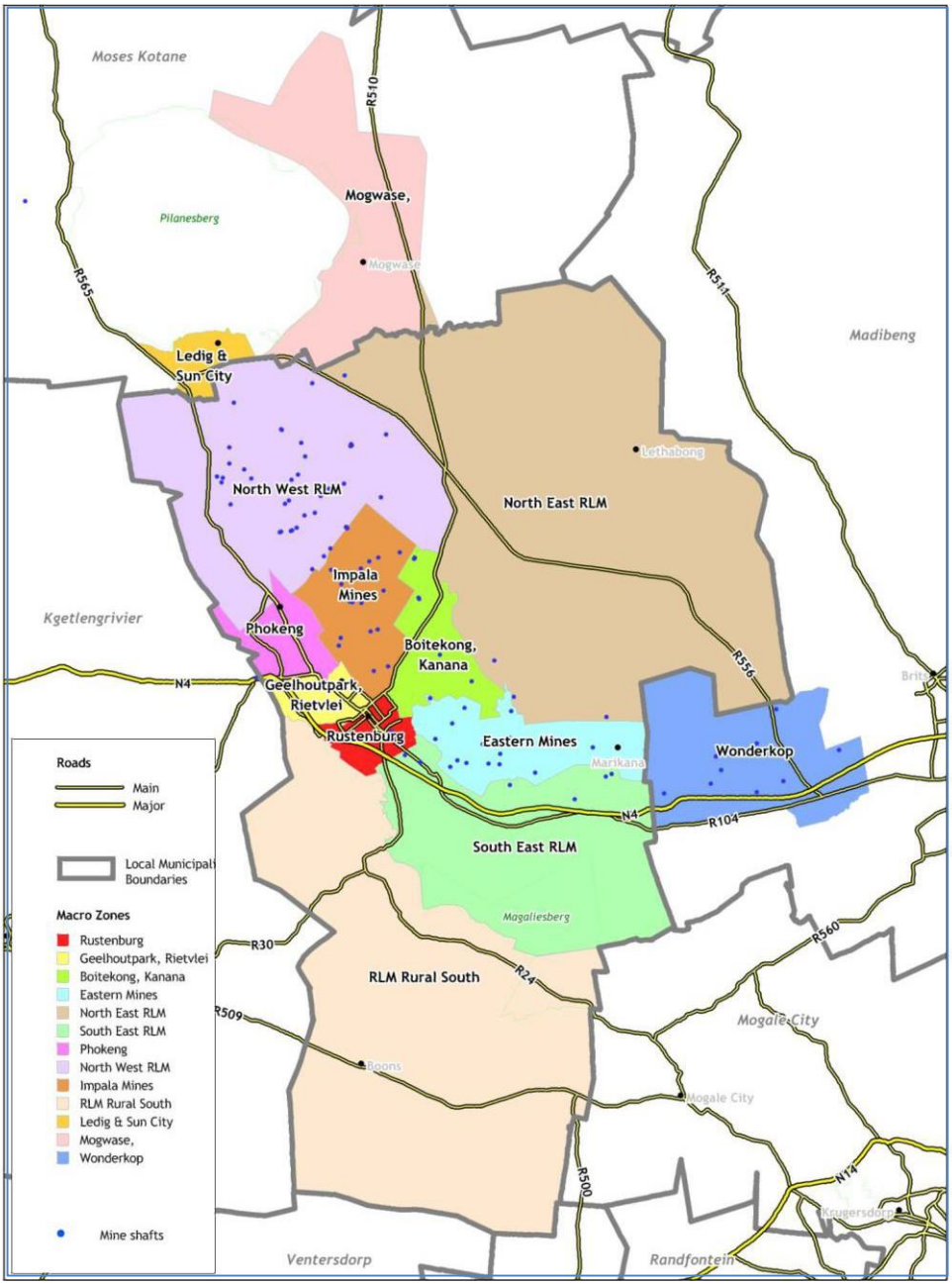


Figure 3-1: RLM, Macro Zones and Traffic Geographic Information
(Source: Rustenburg Household Travel Survey, Feb 2012)

The North West Province occupies a total land area of about 104 885 square kilometres of South Africa. Rustenburg, which falls within the BPDM Municipality in North West Province, occupies 3 588 square kilometres with a population of 549 575 and 119 863 households.

3.4.1 Socio Economic Information

Socio Econimic data was obtain from the current IDP under review and the sensus data for 2011.

(a) Total Population

The 2011 population figures show that, of the total 549 575 people in Rustenburg, 247 776 are female while 301 798 are males. The most dominating group are Africans, with a

population of 486 411 followed by Whites at 51 842. **Table 3-9**, below shows the distribution of the population.

A large percentage of the RLM population is situated within Rustenburg and several segregated townships, some as a result of the mining industries housing programs. The greatest concentration of people is located within 20km of Rustenburg towards the north and eastern side of the CBD.

Table 3-9, below provides a summary of the total population per ethnic group.

Table 3-9: Total Population

Population Group	Male - 2011	Female - 2011	Total 2011	Total 2010	% Growth / decrease
African	269 351	217 060	486 411	410 762	18%
Coloured	2 503	2 356	4 859	2 824	+58%
Indian/Asian	2 362	1 851	4 213	3 022	+71%
White	26 113	25 729	51 842	58 623	-11%
Other	1 469	780	2 249	-	
Total	**301 798**	**247 776**	**549 575**	**475 232**	

(Source: Rustenburg IDP revision 2014/2015)

(b) Housing Types

The majority, approximately 60%, of the residents living in RLM, stay in a house. Shacks and informal housing is the second highest at 28% while Hostel is at 4.5%, as shown in **Table 3-10** below.

Table 3-10: Housing Types

Housing types	Percentage Split (%)
House	59.2%
Flat	1.70%
Simplex/Duplex	0.10%
Second dwelling in yard/plot	3.20%
Backyard shack	3.10%
Shack/Informal House	28.1%
Hostel	4.50%

(Source: Rustenburg Household Travel Survey, Feb 2012)

(c) Household Size

The most dominant household size, at 60%, is two to four people. This is followed by single occupant household at 24%. About 12% of the households have between five and six members while those with more than seven members are 4.4%, as shown in **Table 3-11** below.

Table 3-11: Household Size

Household size	Percentage Split (%)
1	24.0%
2-4	59.9%
5-6	11.7%
7+	4.40%

(Source: Rustenburg Household Travel Survey, Feb 2012)

(d) Population by Gender

Table 3-12 below shows the distribution of the population per area within RLM, per province and nationally.

Table 3-12: Population by Gender

Area	Male	Female
Rustenburg Central	55.1%	44.9%
Geelhoutpark, Rietvlei	52.0%	48.0%
Boitekong, Kanana	54.2%	45.8%
Eastern Mines	58.0%	42.0%
North East RLM	48.9%	51.1%
South East RLM	55.5%	44.5%
Phokeng	50.7%	49.3%
North West RLM	56.9%	43.1%
Impala Mines	58.2%	41.8%
RLM Rural South	49.9%	50.1%
Rustenburg Municipality	**53.9%**	**46.1%**
Ledig and Sun City	49.1%	50.9%
Mogwase	57.3%	42.7%
Wonderkop	52.0%	48.0%
Survey Area	**53.9%**	**46.1%**
North West (StatsSA 2010 mid-year estimates)	48.9%	51.1%
RSA (StatsSA 2010 mid-year estimates)	48.7%	51.3%

(Source: Rustenburg Household Travel Survey, Feb 2012)

(e) Population by Age Group

The distribution of the population groups in RLM and its external areas were also surveyed. These were classified in four race groups, namely: Black, Coloured, Indian and White. **Table 3-13** below shows the distribution of the population.

Table 3-13: Population by Age Group

Race	Sample (Households)				Weighted Sample (Households)			
	Rustenburg LM	External Areas	Survey Area		Rustenburg LM	External Areas	Survey Area	
Black	2 670	135	2 805	88.9%	134 072	38 344	172 416	93.4%
Coloured	27	0	27	0.90%	912	0	912	0.50%
Indian	23	0	23	0.70%	954	0	954	0.50%
White	298	2	300	9.50%	9 748	491	10 239	5.50%
All	3 018	137	3 155	100.0%	145 686	38 835	184 521	100.0%

(Source: Rustenburg Household Travel Survey, Feb 2012)

(f) Occupation Profile and Economic Activity

Figure 3-2, below shows the occupation profile of residents in the RLM. More than a third of households do not have an employed person in the household. On average, the employed persons per households are 0.8. In **Figure 3-3**, only 43% of economic active population in Rustenburg is permanently employed.

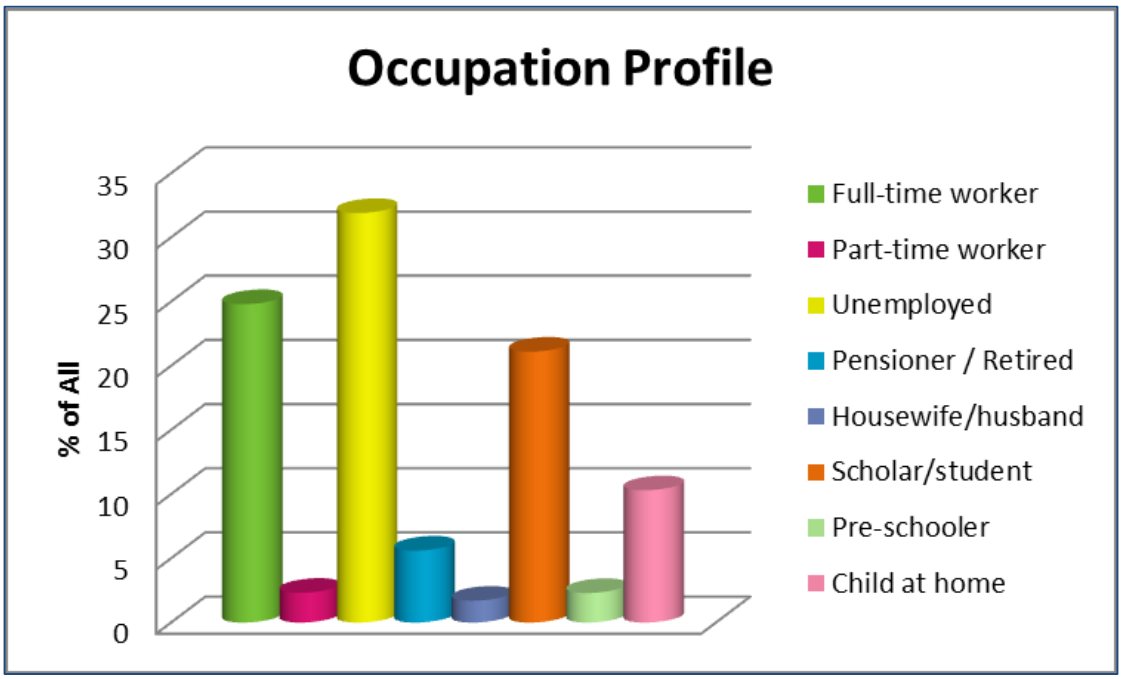


Figure 3-2: Occupation Profile

(Source: Rustenburg Household Travel Survey, Feb 2012)

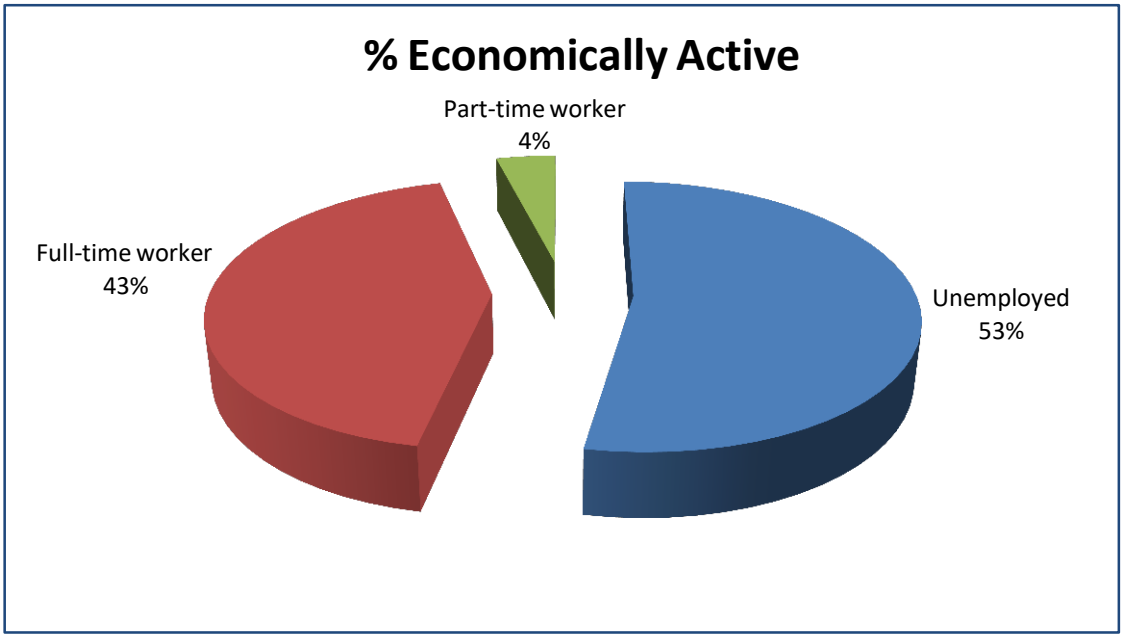


Figure 3-3: Economic Activity

(Source: Rustenburg Household Travel Survey, Feb 2012)

(g) Household Income

Most people in Rustenburg, 35.1%, earn between R1 501 and R4 500 with those earning R1 500 and less following closely at 30.3%. Individuals earning R8 001 and more are significantly less than the aforementioned coming up to only 14.1% of the Rustenburg population as seen in **Table 3-14** below**.**

Table 3-14: Household Income

Rustenburg Household Income	
Income	**Percentages (%)**
0 – R1 500	30.3%
R1 501 – R4 500	35.1%
R4 501 – R8 000	20.4%
≥ R8 001	14.1%

(Source: Rustenburg Household Travel Survey, Feb 2012)

(h) Employment Industries

The mining sector is the main source of employment in the Rustenburg Local Municipality area. This accounts for 46,7% of the respondents who participated in the household survey. Other contributors to employment are shown in **Table 3-15** below.

Table 3-15: Employment Industries

Industry	% of respondents working in RLM
Mining and Quarrying	46.7%
Community, Social and Personal services, including Government	15.4%
Wholesale and Retail Trade	9.60%
Private households (domestic service) and foreign government	8.00%
Manufacturing	5.00%
Financial, Insurance, Real Estate and Business Services	4.30%
Agriculture	3.90%
Construction	3.80%
Transport, Storage and Communication	1.70%
Electricity, Gas and Water Supply	1.40%
Other	0.10%

(Source: Rustenburg Household Travel Survey, Feb 2012)

The section below gives a breakdown of the sectoral contributions to the GVA. According to the IDP 2014/2015 the main economic contributors to the RLM is mining. The largest export from the Bonjanla PDM (no data available for RLM) is platinum in a semi-manufactured form. Platinum contributes 45, 2% towards total exports.

(i) Formal Employed by SIC Sectors

The largest employment sector within RLM is mining sector. It accounts for more than 50% of the employment active population. The second and third largest employment sectors are Trade and Community Services respectively as seen below in **Figure 3-4.**

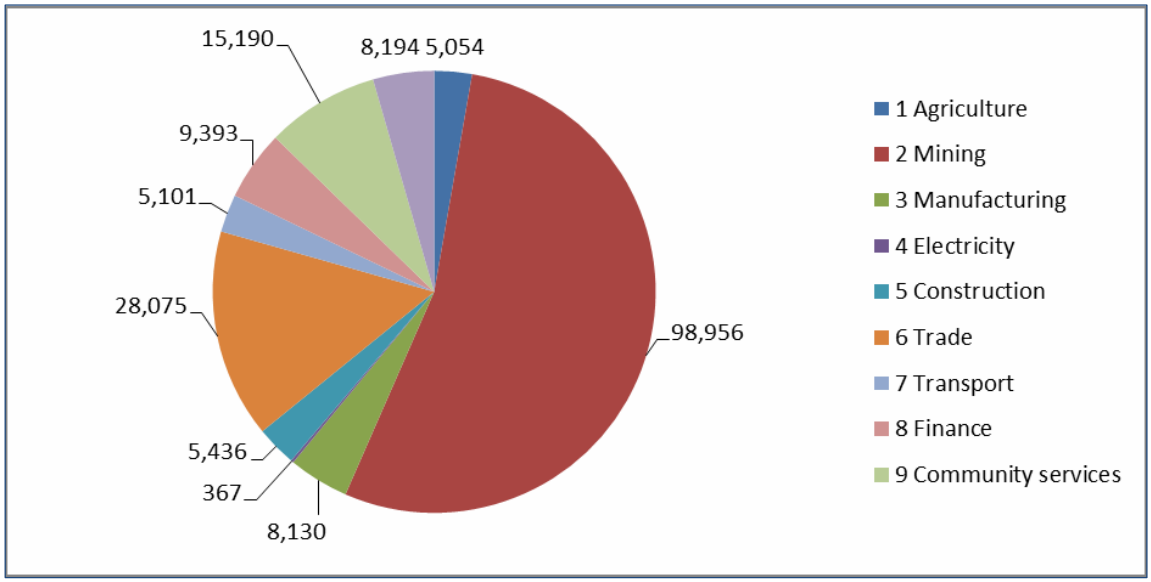


Figure 3-4: Formal Employment Sectors
(Source: Rustenburg IDP revision 2014/2015)

(j) Informal Employment by SIC Sectors

The largest employment sector (informal) is the trade sector, followed by manufacturing and construction.

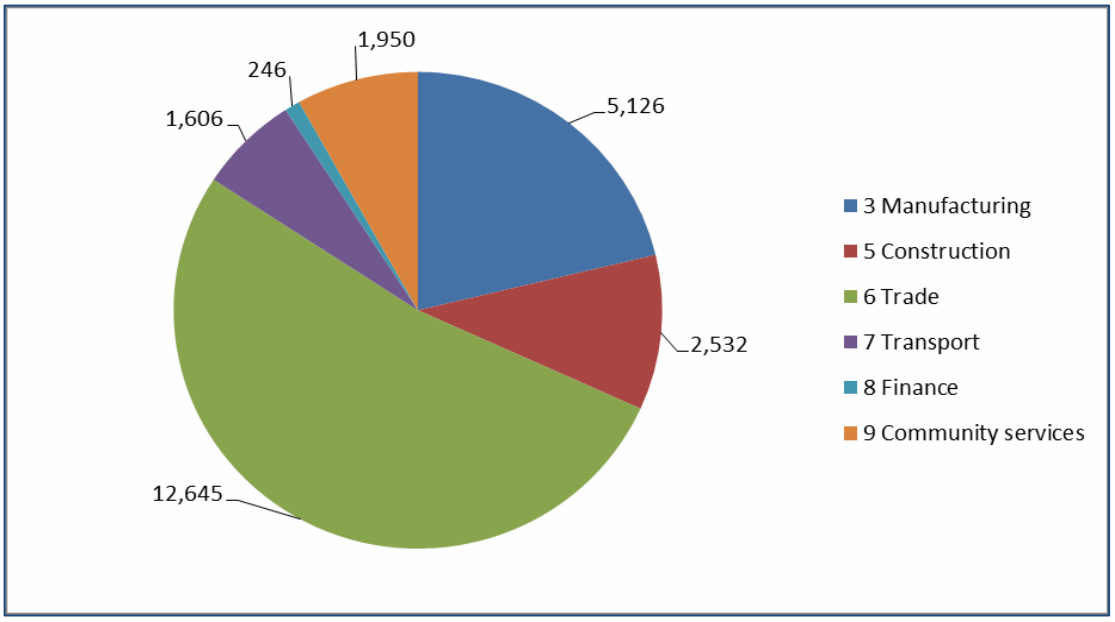


Figure 3-5: Informal Employment Sectors
(Source: Rustenburg IDP revision 2014/2015)

(k) Household Expenditure on Public Transport

The monthly expenditure per household using public transport is shown in the **Table 3-16** below. Households who spend nothing on public transport are about 21 percent. Ten percent of households spent between R1 – R100 on public transport, while those who spend between R101 -R150 constitute 6 percent. The percentage of households who spend between R151 – 200 is about 12 percent. Households who spend between R201 – R300 are about 14

percent. Thirty-six (36%) percent of households spend more than R 300 on public transport.

Table 3-16: Fares (%)

Monthly Household Expenditure	Home Area						
	Boitekong	Phokeng	Suburbs North	Rustenburg Central	Suburbs South	Tlhlbane	All
Nothing	6.10%	1.00%	35.8%	94.9%	84.1%	2.50%	21.3%
R1 – R50	7.60%	3.00%	3.00%	1.70%	1.20%	3.30%	5.10%
R51 – R100	5.10%	4.00%	3.00%	1.70%	3.70%	13.3%	5.30%
R101 – R150	7.60%	5.00%	2.20%	1.70%	3.70%	11.7%	6.40%
R151 – R200	15.2%	5.90%	11.9%	—	2.40%	12.5%	11.5%
R201 – R300	17.3%	15.8%	14.2%	—	1.20%	17.5%	14.4%
>R300	41.0%	65.3%	29.9%	—	3.70%	39.2%	36.1%

(Source: Rustenburg Integrated Transport Plan, 2007 - 2011)

3.5 Passenger Travel Behaviour and Service Level Requirements

The Household Travel Survey report informed the CITP on the travel behaviour and service level requirements of the residents in the RLM.

3.5.1 Household Characteristics

The Rustenburg central zone is mainly developed with houses as the dwelling type. It comprises 80% of the dwellings, followed by 14,9% flats. In the eastern mining areas, more than 64% of the people live in shacks or informal housing. Below in **Table 3-17** it shows the dwelling type by zone.

Table 3-17: Dwelling Type by Macro Zone

Macro Zone	House	Flat	Duplex / Simplex	2nd dwelling in yard / plot	Backyard Shack	Shack / Informal House	Hostel
Rustenburg Central	80.0%	14.9%	1.10%	2.70%	0.70%	—	0.60%
Geelhoutpark, Rietvlei	75.4%	0.20%	—	1.40%	2.50%	7.00%	13.5%
Boitekong, Kanana	64.2%	—	—	0.60%	4.30%	30.9%	—
Eastern Mines	29.3%	—	—	2.00%	3.20%	61.4%	4.00%
North East RLM	60.3%	—	—	2.40%	3.60%	31.7%	2.00%
South East RLM	25.2%	0.50%	0.40%	36.9%	1.50%	17.2%	18.2%
Phokeng	69.7%	—	—	1.90%	5.20%	23.2%	
North West RLM	71.7%	—	—	2.30%	2.90%	16.5%	6.60%
Impala Mines	39.6%	2.10%	—	1.30%	2.20%	49.6%	5.10%
RLM Rural South	57.2%	—	—	14.3%	3.90%	24.1%	0.50%
Rustenburg Municipality	59.2%	1.70%	0.10%	3.20%	3.10%	28.1%	4.50%
Ledig and Sun City	60.5%	—	—	—	—	39.5%	—
Mogwase	48.6%	—	—	—	5.70%	45.7%	—
Wonderkop	65.6%	—	3.10%	1.60%	—	23.4%	6.30%
Survey Area	58.8%	1.30%	0.40%	2.70%	3.00%	29.8%	4.10%

(Source: Rustenburg Household Travel Survey, Feb 2012)

Table 3-18 below shows the main mode of transport used to go to amenities. The most dominant mode used is the taxi while walking was the second most dominant and private car usage third.

Table 3-18: Mode of Transport (%)

Amenity	Mode (percentage of households)						
	Bus	Taxi	Car/Bakkie	Walk all the way	Other	Don't need service	Can't get there
Food shop	0.7%	51.8%	10.9%	35.1%	1.4%	0.0%	0.1%
Other shops	1.9%	53.0%	10.6%	31.2%	2.1%	0.8%	0.3%
Bank	1.8%	69.8%	1.6%	11.0%	2.4%	2.5%	0.9%
Medical Services	0.9%	51.1%	11.7%	30.7%	1.8%	2.7%	1.1%
Post Office	0.4%	44.0%	10.5%	28.9%	1.5%	11.4%	3.4%
Welfare Services	0.7%	32.3%	5.3%	10.9%	1.2%	42.3%	7.3%
Police Station	0.3%	48.8%	10.4%	25.3%	2.2%	12.3%	0.6%
Municipality	0.9%	54.0%	10.4%	9.6%	1.5%	19.2%	4.4%
Tribal Authority	0.9%	14.8%	2.4%	19.0%	0.5%	56.1%	6.3%

(Source: Rustenburg Household Travel Survey, Feb 2012)

3.5.2 Trip Purpose

Determination of trip purpose either starting in or ending at the Rustenburg Local Municipality is shown below. The main trip purposes conducted are for work, education and home. **Table 3-19**, below illustrates the trip purpose and percentage of trips made.

Table 3-19: Trip Purpose

Trip Purpose	% of Trips	
	Made by Rustenburg Residents	Starting or Ending in Rustenburg
Work, as part of work	23.9%	24.8%
Education	20.5%	20.4%
To take / fetch another person	1.2%	11.0%
Shopping	3.0%	3.2%
Personal business / recreational	1.6%	1.5%
Go home	46.1%	45.0%
Other	4.0%	4.0%

(Source: Rustenburg Household Travel Survey, Feb 2012)

3.5.3 Mode Combinations (Transfers)

Almost all trips made in RLM are single direct trips as can be seen from the **Table 3-20** below that about half of the trips made by the Rustenburg residents take less than 30 minutes. A significant number of trips greater than 60 minutes are made by people living in the North East while a significant amount of short trips are in the rural south, about 67% which are shorter than 15 minutes.

Table 3-20: Mode Combinations

Macro Zone	Up to 15 mins	16 to 30 mins	31 to 45 mins	46 to 60 mins	>60 mins
Rustenburg Central	26.9%	42.5%	13.1%	12.4%	5.10%
Geelhoutpark, Rietvlei	13.5%	35.5%	14.9%	24.3%	11.8%
Boitekong, Kanana	13.2%	33.7%	13.3%	22.0%	17.8%
Eastern Mines	15.1%	34.7%	13.3%	20.7%	16.2%
North East RLM	16.5%	18.6%	13.1%	22.2%	29.6%
South East RLM	37.5%	28.4%	7.80%	12.0%	14.4%
Phokeng	15.8%	29.3%	19.6%	20.9%	14.4%
North West RLM	12.4%	29.5%	18.9%	25.7%	13.4%
Impala Mines	16.6%	34.0%	12.4%	20.8%	16.3%
RLM Rural South	67.3%	18.6%	4.50%	5.40%	4.20%
Rustenburg Municipality	18.0%	31.9%	14.0%	20.3%	15.7%

(Source: Rustenburg Household Travel Survey, Feb 2012)

3.5.4 Trips to Education

Figure 3-6, below shows the different modes of transport used for trips to educational institutions. Walking is the dominating mode used at 57%, while taxi is the second highest at 23% followed by car at 11%. Bus mode is the last at 8%.

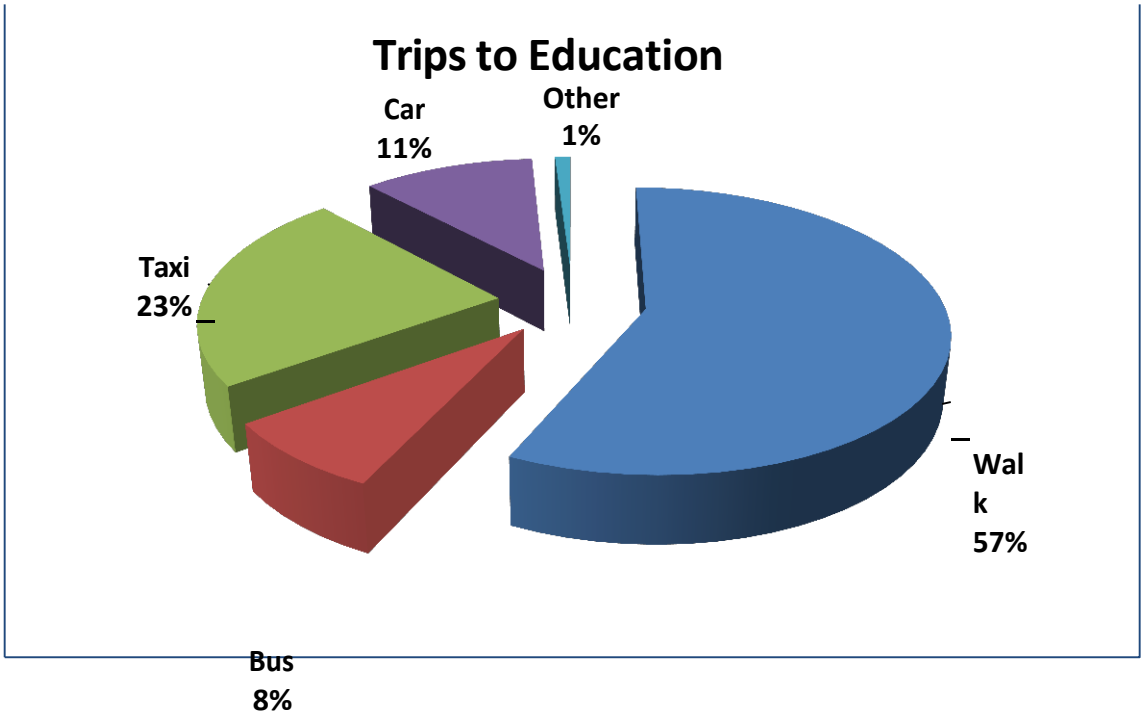


Figure 3-6: Trips to Education
(Source: Rustenburg Household Travel Survey, Feb 2012)

In terms of time spent going to the educational institutions, more than 50% take less than half an hour. This amounts to 76% of educational trips.

Table 3-21: Trip to Education

Macro Zone	Up to 15 mins	16 to 30 mins	31 to 45 mins	46 to 60 mins	>60 mins
Rustenburg Central	43.7%	32.8%	11.0%	6.30%	6.20%
Geelhoutpark, Rietvlei	21.3%	49.9%	11.1%	12.6%	5.10%
Boitekong, Kanana	18.2%	42.2%	11.9%	13.0%	14.7%
Eastern Mines	24.8%	39.7%	13.5%	15.3%	6.80%
North East RLM	22.3%	26.2%	13.5%	23.6%	14.3%
South East RLM	15.2%	24.0%	9.6%	21.3%	29.9%
Phokeng	19.9%	42.6%	19.4%	8.40%	9.80%
North West RLM	19.4%	36.6%	20.6%	17.5%	5.90%
Impala Mines	14.6%	48.9%	10.3%	15.0%	11.2%
RLM Rural South	89.6%	7.70%	2.70%	—	—
Rustenburg Municipality	23.8%	37.8%	13.0%	14.8%	10.6%

(Source: Rustenburg Household Travel Survey, Feb 2012)

3.5.5 Origins and Destinations of Trips (Only Motorised)

The percentage of trips starting and ending at Rustenburg of all motorised transport are shown in **Table 3-22** below. Almost a third of the trips end in the Rustenburg central area while approximately 16% originate in the Boitekong area and 13% originate in the Geelhoutpark, Rietvlei area.

Table 3-22: Origins and Destinations of Trips (Only Motorised)

Origin	Destination											
	Rustenburg Central	rk, Rietvlei	Boitekong, Kanana	Eastern Mi ıes	North East RLM	South East RLM	Phokeng	North West RLM	Impala Min es	RLM Rural South	External	Total
Rustenburg Central	16.7%	0.40%	0.40%	1.00%	0.00%	0.00%	0.10%	0.90%	0.50%	0.00%	0.20%	20.8%
Geelhoutpark, Rietvlei	3.20%	7.20%	0.20%	0.50%	0.00%	0.20%	0.20%	0.40%	0.70%	0.00%	0.30%	12.9%
Boitekong, Kanana	3.40%	0.80%	9.70%	0.30%	0.20%	0.00%	0.10%	0.50%	0.80%	0.00%	0.20%	16.2%
Eastern Mines	0.40%	0.10%	0.20%	3.90%	0.10%	0.10%	0.00%	0.10%	0.00%	—	0.80%	5.40%
North East RLM	1.70%	0.10%	0.30%	0.10%	8.40%	0.10%	0.20%	0.30%	0.20%	—	1.00%	12.3%
South East RLM	0.30%	0.00%	0.00%	0.00%	0.00%	0.90%	0.00%	—	—	0.00%	0.00%	1.30%
Phokeng	1.00%	0.40%	0.10%	0.10%	0.00%	0.10%	4.70%	0.80%	0.30%	0.00%	0.10%	7.50%
North West RLM	0.70%	0.10%	0.10%	0.10%	0.00%	—	0.20%	0.20%	0.20%	—	0.40%	6.10%
Impala Mines	2.10%	0.60%	0.10%	0.10%	—	0.10%	0.00%	1.10%	7.90%	—	0.10%	12.2%
RLM Rural South	0.00%	—	—	—	—	—	—	—	—	0.30%	0.10%	0.30%
Rustenburg Municipality	29.5%	9.70%	11.0%	6.20%	8.90%	1.70%	5.60%	10.2%	10.7%	0.40%	3.00%	96.7%
Ledig and Sun City	0.20%	0.10%	—	0.10%	—	—	—	—	—	—	0.00%	0.30%
Mogwase	0.60%	—	—	—	0.40%	0.30%	—	—	0.80%	—	0.00%	1.90%
Wonderkop	0.10%	0.10%	—	0.60%	0.20%	0.10%	—	—	—	—	0.00%	1.10%
Survey Area	30.4%	9.90%	11.0%	6.80%	9.40%	2.00%	5.60%	10.2%	11.3%	0.40%	3.00%	100.0%

(Source: Rustenburg Household Travel Survey, Feb 2012)

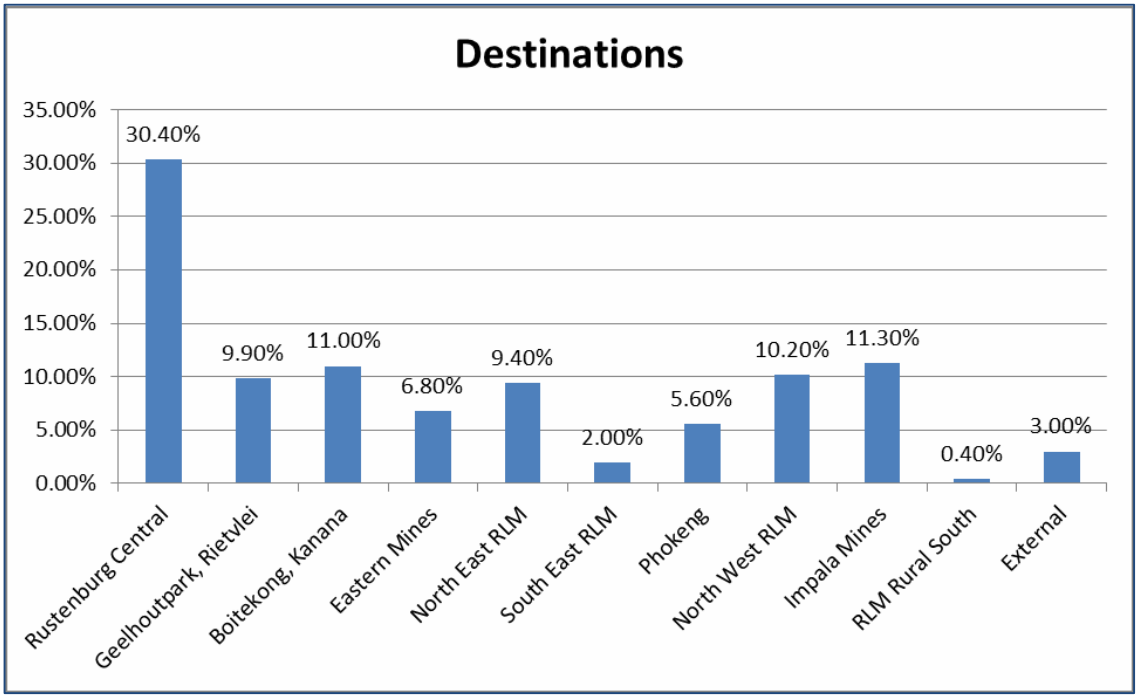


Figure 3-7: Destinations

(Source: Rustenburg Household Travel Survey, Feb 2012)

The graph above shows that the majority of trips are in the Rustenburg central making it biggest trip attractor at 30.4%. The south east of RLM, Eastern mines, Phokeng, RLM rural south and other external areas are at an average of 4% making it the lowest trip attractors. The rest of the areas attract trips of up to 10.5%.

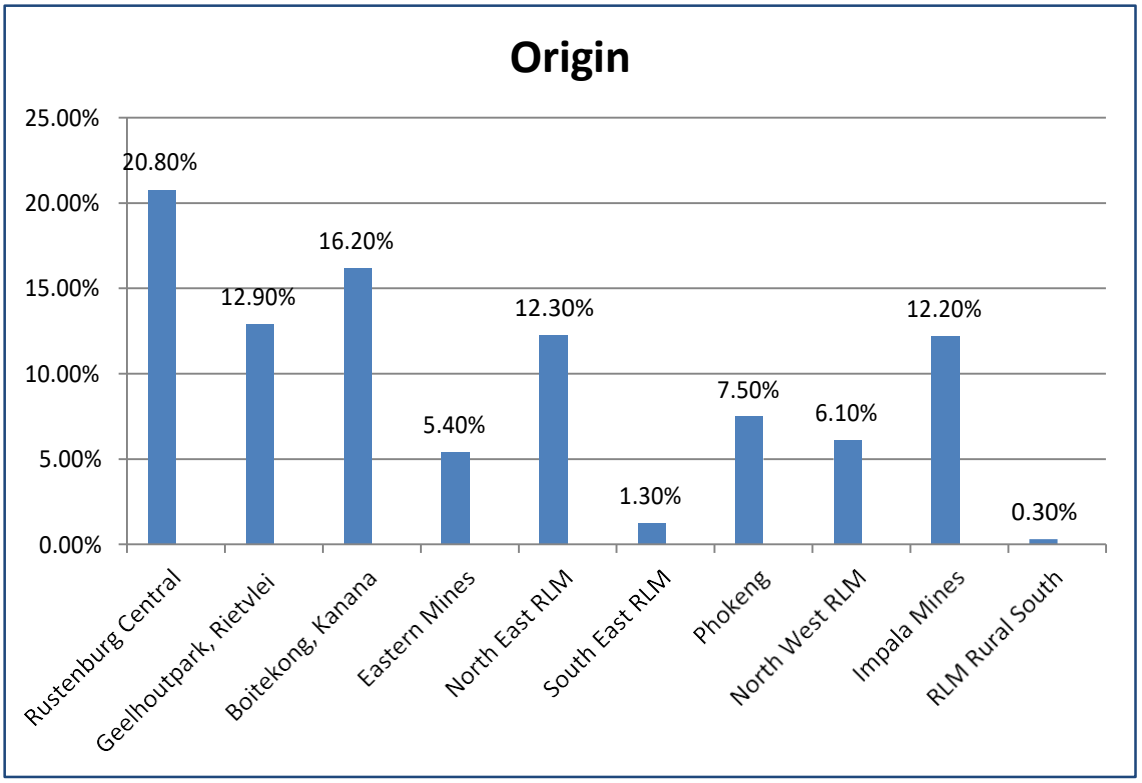


Figure 3-8: Origin

(Source: Rustenburg Household Travel Survey, Feb 2012)

From the graph above, Rustenburg central is the highest trip generator at 20.8%. Lowest trip generator at an average of 4% include the eastern mines, south east RLM, Phokeng, north-west RLM and RLM rural south. The rest of the areas are at an average of 13%.

3.5.6 AM Trips

AM travel patterns indicate a large percentage of trips end in the Rustenburg Central macro zone, with 65% of the trips from other zones. Geelhoutpark / Rietvlei, Eastern Mines, South Eastern RLM, North Western RLM and Impala Mines macro zone all who are more than 40% trips from other zones.

Table 3-23: Number of AM Trips made by Rustenburg Residents, Ending in Rustenburg Macro Zones

Macro Zone	Number of AM trips ending in zone	Number of AM trips from other zones	% of trips from other zones
Rustenburg Central	50 700	33 300	65.7%
Geelhoutpark, Rietvlei	18 200	8 200	44.8%
Boitekong, Kanana	19 400	5 600	58.6%
Eastern Mines	14 800	6 800	46.2%
North East RLM	24 300	4 900	20.0%
South East RLM	6 100	3 300	54.8%
Phokeng	11 000	4 000	35.6%
North West RLM	20 000	10 500	52.0%
Impala Mines	24 300	10 300	42.4%
RLM Rural South	2 800	300	9.7%

(Source: Rustenburg Household Travel Survey, Feb 2012)

3.5.7 Walk Time to Bus and Taxi Facility

(a) Bus Stop

Walking time to nearest bus stops in the area was surveyed. The most time spent walking to a bus stop is 16 minutes while shortest is about 9 minutes. The average time spent walking per macro zone is shown in **Table 3-24**, below.

Table 3-24: Walk Time to Nearest Bus Stop

Macro Zone	1 to 15 mins	16 to 30 mins	More than 30 mins	No Service	Mean walk time (mins) of those with service
Rustenburg Central	27.9%	2.10%	1.00%	69.1%	9.97
Geelhoutpark, Rietvlei	55.4%	6.10%	0.40%	38.1%	8.70
Boitekong, Kanana	62.1%	6.30%	1.10%	30.5%	9.74
Eastern Mines	67.3%	11.5%	2.20%	19.0%	11.26
North East RLM	76.2%	14.9%	1.50%	7.40%	9.83
South East RLM	40.3%	13.0%	5.20%	41.4%	15.79
Phokeng	71.3%	9.80%	0.70%	18.1%	9.96
North West RLM	73.7%	7.90%	2.00%	16.4%	9.78
Impala Mines	48.5%	9.0%	1.3%	41.2%	10.80
RLM Rural South	43.4%	13.2%	3.6%	39.8%	12.93

Macro Zone	1 to 15 mins	16 to 30 mins	More than 30 mins	No Service	Mean walk time (mins) of those with service
Rustenburg Municipality	59.7%	8.9%	1.4%	29.9%	10.17
Ledig and Sun City	65.8%	26.3%	5.3%	2.6%	14.46
Mogwase	51.4%	5.7%	11.4%	31.4%	16.04
Wonderkop	71.9%	12.5%	3.1%	12.5%	13.71
Survey Area	60.1%	9.4%	2.6%	27.8%	11.24

(Source: Rustenburg Household Travel Survey, Feb 2012)

(b) Taxi Facility

Walking time to nearest taxi facility was surveyed as well. The longest walking time was recorded to be 22 minutes while the shortest is 7 minutes. The average time spent walking per macro zone is shown in **Table 3-25** below.

Table 3-25: Walk Time to Nearest Taxi Facility

Macro Zone	1 to 15 mins	16 to 30 mins	More than 30 mins	No Service	Mean walk time (mins) of those with service
Rustenburg Central	39.1%	5.8%	1.3%	53.8%	11.04
Geelhoutpark, Rietvlei	81.1%	5.7%	0.8%	12.4%	6.99
Boitekong, Kanana	79.3%	14.0%	1.5%	5.3%	10.66
Eastern Mines	65.6%	16.1%	2.2%	16.0%	12.36
North East RLM	59.7%	10.3%	12.0%	17.9%	14.68
South East RLM	23.1%	20.9%	13.8%	42.2%	25.90
Phokeng	75.1%	14.0%	1.0%	9.9%	10.17
North West RLM	84.5%	8.8%	3.2%	3.4%	10.11
Impala Mines	69.2%	12.4%	6.1%	12.3%	12.79
RLM Rural South	19.9%	10.9%	9.6%	59.7%	22.27
Rustenburg Municipality	67.1%	11.3%	4.4%	17.2%	11.62
Ledig and Sun City	65.8%	34.2%			14.03
Mogwase	62.9%	20.0%	11.4%	5.7%	17.7
Wonderkop	32.8%	25.0%	9.4%	32.8%	21.67
Survey Area	63.7%	14.0%	5.4%	16.9%	13.07

(Source: Rustenburg Household Travel Survey, Feb 2012)

3.5.8 Passenger Satisfaction with the Transport System

Passenger satisfaction levels for dominant public transport modes, in this case being the bus and taxi are shown in the **Table 3-26** below.

(a) Bus Satisfaction Survey

Table 3-26: Bus Satisfaction Survey

Bus Service Attribute	% of users	
	Satisfied	Dissatisfied
Off peak-frequency	62.4%	37.6%
Facilities at stops	62.6%	37.4%
Crowding	64.6%	35.4%
Roadworthiness of vehicles	65.0%	35.0%
Punctuality	68.5%	31.5%
Travel time	68.9%	31.1%
Bus service overall	70.8%	29.2%
Peak frequency	71.5%	28.5%
Distance from work	72.9%	27.1%
Safety from accidents	73.2%	26.8%
Fares	76.6%	23.4%
Security at stop	76.7%	23.3%
Driver behaviour	77.8%	22.2%
Security on walk	77.8%	22.2%
Distance from home	80.4%	19.6%

(Source: Rustenburg Household Travel Survey, Feb 2012)

(b) Taxi Satisfaction Survey

Passenger satisfaction levels for dominant public transport modes, in this case being the bus and taxi are shown in **Table 3-27** below.

Table 3-27: Taxi Satisfaction Survey

Taxi Service Attribute	% of users	
	Satisfied	Dissatisfied
Driver behaviour	46.5%	53.5%
Taxi fares	47.1%	52.9%
Facilities at stops	48.1%	51.9%
Safety from accidents	48.5%	51.5%
Punctuality	49.2%	50.8%
Security at stops	49.7%	50.3%
Off peak frequency	50.2%	49.8%
Taxi service overall	51.7%	48.3%
Security on walk	53.3%	46.7%
Peak frequency	54.0%	46.0%
Security in vehicles	54.3%	45.7%
Crowding	54.4%	45.6%
Roadworthiness of vehicles	55.2%	44.8%
Distance from work	56.2%	43.8%
Distance from home	57.8%	42.2%
Travel time	58.0%	42.0%

(Source: Rustenburg Household Travel Survey, Feb 2012)

3.6 Land-Use Information

Detailed land use information is provided in Chapter 4 of this document.

3.7 Public Transport Infrastructure

3.7.1 Strategic Road Network

The RLM has a total road network of 1 912 km, excluding national and provincial roads. Of this, 952 km are tarred while 960 are gravel. The majority of the paved roads are in a fair to good condition while gravel roads range from fair to poor condition.

Figure 3-9 below shows the Rustenburg Strategic Road Network as provided by the North West Province. The map is included in **Annexure B.**

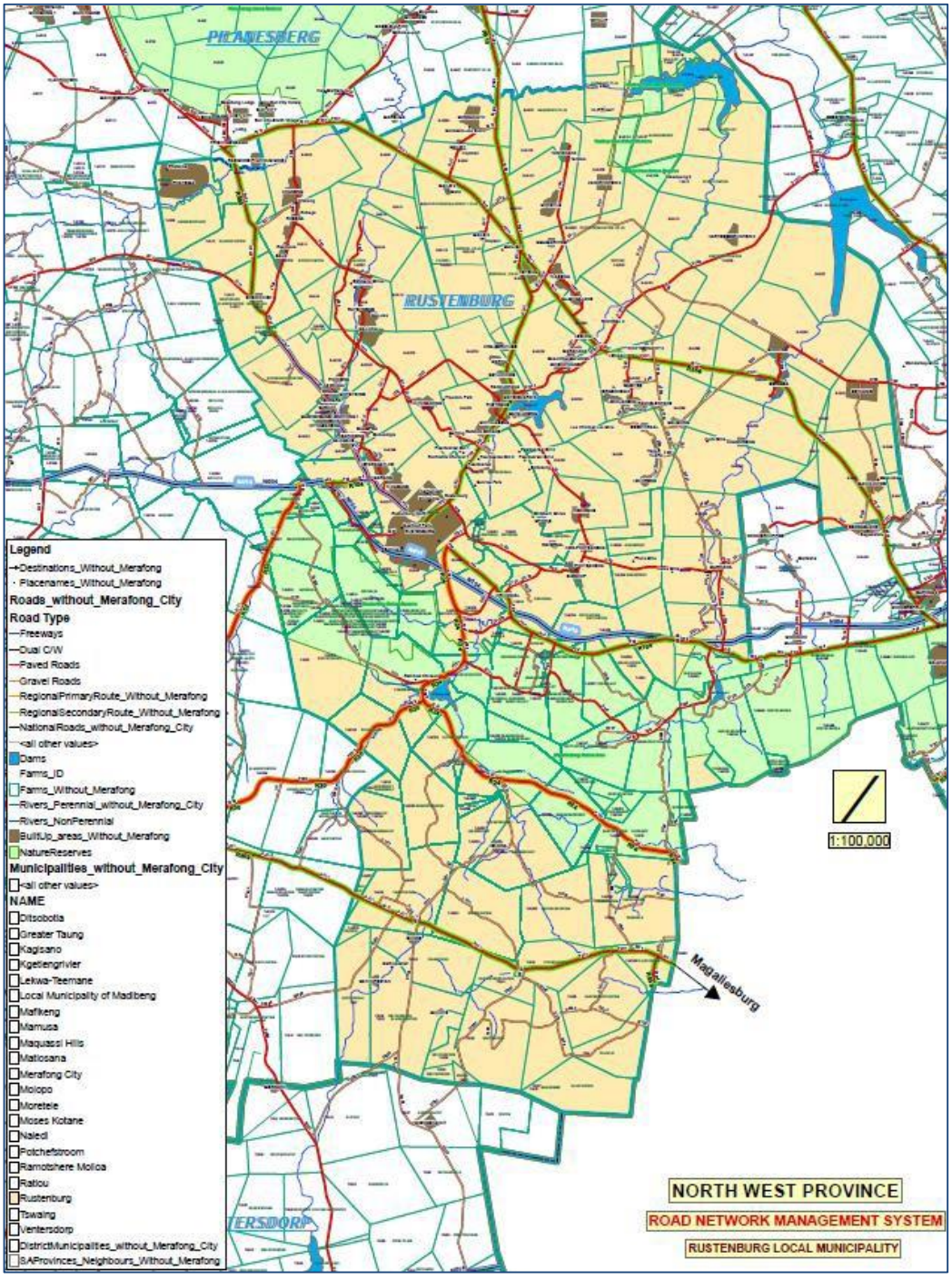


Figure 3-9: Rustenburg Road Network

(Source: North West Province, Road Network Management System)

3.7.2 RLM Road Master Plan 2008

In February 2008, a road master plan was developed by Kwezi V3 Engineers and MPP Consulting with the assistance from ITS Engineers and Namela Consulting. This study was requested by RLM due to high developments in the past. Also, the mining in the area had resulted in an increase in supporting developments such as retail, housing and office space. The development of this travel demand model was to also feed into the ITP, expected to be completed in the same time.

The travel demand model was done using TRACKS, a macroscopic traffic model. This was aimed at determining what road network should be implemented to accommodate the future traffic demand for the 2015. The study area for the traffic model was as follows:

- In the east: Kroondal and the rural settlements of Thekwane
  - The N4 and R104 up to the Kroondal Interchange
  - The D108 up to Photshaneng
- In the south: R30 up to 8km south of the Waterfall Interchange
- In the west: N4 and R104 including the R104 Interchange
  - R565 up to 1 km north of Phokeng
- In the north: Meriteng, Boitekong, Freedom Park and Kanana
  - R510 up to north of Kanana

The roads master plan assumed the following increases in land use:

- Residential units will be 122 520 units compared to existing 84 200 units;
- Retail rights will increase from 2007 to 2015 with 34% from 901 000 m² to 1 121 000 m²;
- Office rights will increase from 303 000 m² to 430 700 m²; and
- Industrial rights will increase from 823 000 m² to 984 000 m².

Typical volumes calculated for the AM peak hour are shown in **Table 3-28** below. The latest values obtained from SANRAL are shown later in this report.

Table 3-28: Volumes Calculated for the AM Peak

Road Links	Range of Average Daily Traffic Volumes (ADT)	
	Lower Volume	Higher Volume
N4	1 400	6 500
P16-1	860	16 700
R104 East of CBD	7 200	7 700
R104 West of CBD	10 900	14 300
R565 IN Phokeng	6 100	9 100
R510	8 600	12 700
Nelson Mandela Drive	6 800	7 800
O R Tambo Drive	9 200	14 300
Beneden	6 300	12 400
President Mbeki	9 000	10 100
Beyers Naude Rd	5 600	8 200
Helen Joseph Drive	3 600	11 100

(Source: Rustenburg Integrated Transport Plan 2007 - 2011)

Figure 3-10 shows the traffic demand on the road network.

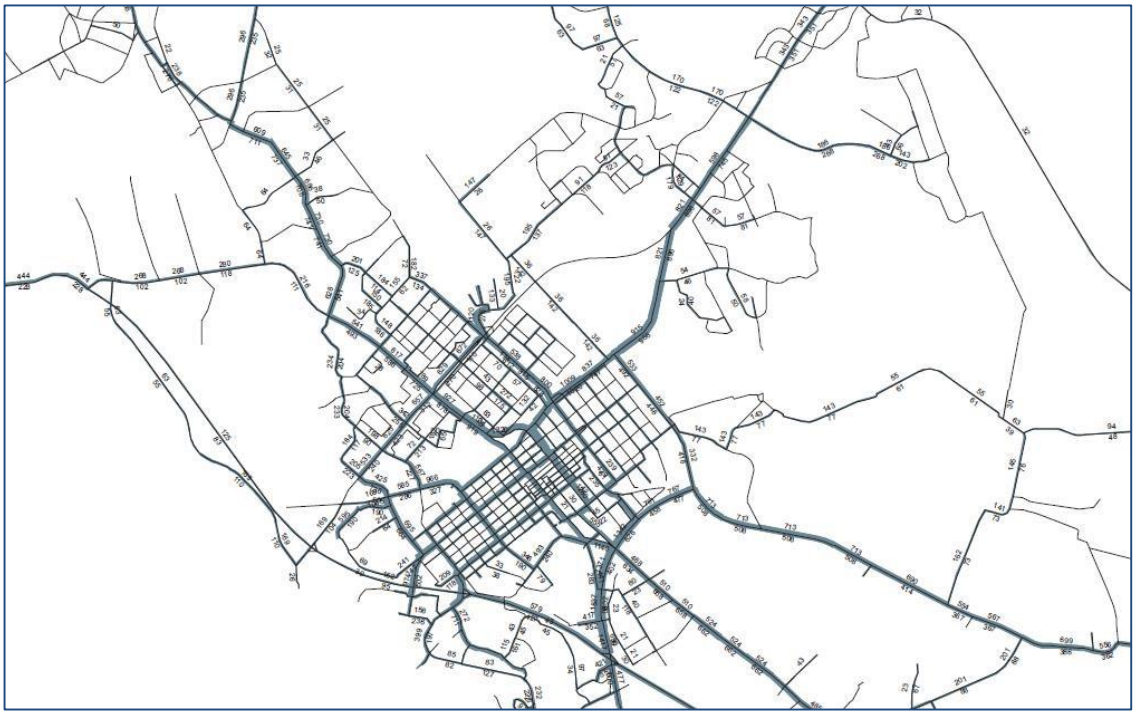


Figure 3-10: Traffic Demand on the Road Network
(Source: Rustenburg Integrated Transport Plan 2007 - 2011)

The Roads Mater Plan study outlined the following road upgrades as required to cater for the 2007 traffic demand:

- The Rustenburg 2007 ITP recommends the implementation of an Integrated Rapid Public Transport Network (IRTPN). The IRPTN recommends the implementation of high occupancy vehicle (HOV) lanes. The conversion of traffic lanes to HOV lanes will reduce the overall road capacity with a resultant reduction in the average speed on the road network to 26.4 km/h.
- The implementation of HOV lanes and the IRPTN should result in a shift from private vehicle usage to public transport. A theoretical calculation indicated that if a proportion of private vehicle users (50%) shift to the IRPTN, then the average speed on the road network will increase to 39.4 km/h. However this is a very high shift in real terms.
- From the evaluation of the expected 2015 travel demand, it is clear that significant road upgrading will have to be implemented to ensure that the expected future development in the RLM area can be accommodated. However, it can also be concluded from the analyses that acceptable service levels on the road network can also only be achieved if the road upgrading projects are implemented with a successful IRPTN system.

Over and above the upgrades noted above, the 2007 ITP identified some issues related to congestion:

- Nelson Mandela Drive and Oliver Tambo Drive in the CBD, including on-street parking on these streets;
- R 510 / Beneden Rd intersection with Buiten / P16-2;
- Dr Moroka / Lebone / Wit / Molen Street at-grade intersection next to the railway line; and
- Intersections on Kock Street, without sufficient turning lanes. No clear road hierarchy is presented on Kock Street, which is similar to other adjacent streets.

Traffic related issues include:

- Intersections not complying with the South African Road Traffic Signs Manual (SARTSM);
- At-grade crossing of Dr Moroka Drive with the railway line;
- A significant backlog of paved roads exist in some areas, such as Phokeng, Boitekong and Thlabane;
- A large number of four-way stop controlled intersections are present in Rustenburg. The traffic control at these intersections might be improved, as four-way stop control is probably ineffective and drivers tend not to adhere to the control measure;
- Dr Moroka and Helen Joseph Drive Interchanges with the N4 freeway only have ramps to and from the east. This leads to insufficient accessibility from the west. Also this leads to U-turn movements on the N4 freeway, which presents an important safety hazard;
- Insufficient conveniently located parking in the Rustenburg CBD;
- There is a high demand for land use development on Beyers Naude Drive in the southern perimeter of the Rustenburg CBD. The road has insufficient right turn lanes and Access Management is required to ensure safe and efficient access to the various adjacent properties;
- Roads Master Planning is not available in a number of areas. This leads to insufficient guidance with new development applications, especially where sufficient road reserve requirements need to be specified. A road hierarchy plan is also required to address these issues; and
- Absence of an Access Management Policy for Rustenburg.

Additional needs and requirements will be identified and prioritised in the following chapters.

3.7.3 RLM Road Master Plan 2015

An attempt was made to update the Roads Master Plan in 2015 by EPS Engineers. This is a partial Master Plan as it mainly focuses on the RLM Central area similar to the previous update in 2015. No modelling was done to update the Master Plan and it is suggested that this be done in the near future. The latest proposed Master Plan is available in **Annexure B.**

3.7.4 Boitekong Roads Master Plan

The RLM commissioned Aurecon to do a route determination, planning and feasibility study for the two new Boitekong link roads. The study was completed in 30 June 2014.

The aim of the study was:

- The investigation of alternative routes for the link roads;
- The establishment of the road category and finalisation of all geometric design standards that will be applicable for the preferred options;
- Identifying the owners of the land and ensuring availability of required land in principle;
- Establishing the land acquisition requirements in principle, and if possible, verifying the restrictions posed due to mining activities (underground and surface); and
- Recommending route options based on evaluation of available data.

3.7.5 Public Transport Facilities

The RLM has a total of up to 35 public transport facilities. These are mainly for taxis and buses. The Infrastructure surveys conducted in 2014 at these facilities have shown that a lot of these facilities are informal, with a few being semi-formal or formal. As can be noted from the table below, the majority of the facilities (78%) are informal, while formal and semi-formal facilities are only 22%.

Table 3-29: Public Transport Facilities

Status	Percentage	Facility Name	Facility Name
Informal	78%	Kanana Taxi Rank	Rasimone Taxi Rank
		Thekwane Taxi Rank	Modikwe Taxi Rank
		Wonderkop Taxi Rank	Seraleng Taxi Rank
		Boitekong Taxi Rank	Waterfall Mall Taxi Rank
		Rustenburg Taxi Rank	Sunrise
		Tsitsing Taxi Rank	Meriting Taxi Rank
		Rankelenyane Taxi Rank	Thlabane Taxi Rank
		Bleskop Pick up Point	Chaneng Bus Depo
		Entabeni Taxi Rank	Chaneng Taxi Rank
		Mfidikwe Taxi Rank	Robega Taxi Rank
		Photsaneng Taxi Rank	Luka Taxi Rank
		Nkaneng Taxi Rank	Freedom Park Taxi Rank
		Marikana Taxi Rank	Meriting Taxi Rank 2
		Segwalane Taxi Rank	
Formal	11%	Rustenburg Taxi Rank (Main Rank)	Tlaseng Bus Depot
		Rustenburg Bus Rank	Phokeng Taxi Rank
Semi-Formal	11%	Zinniaville Taxi Rank	Monakato Taxi Rank
		Bethanie Taxi Rank	Haartebeesfontein Taxi Rank

(Source: Infrastructure Surveys, 2014)

3.7.6 Footpaths

The NMT infrastructure is discussed in the NMT Chapter.

3.8 Transport System Overview

3.8.1 Private Transport

The February 2012 Household Travel Surveys conducted for the RRT investigated the public transport use in RLM. **Figure 3-11,** below shows that the use of taxi transport is approximately 36%, followed by car at 24% and walking is at 17% while bus is at 15%. Company transport contributes about 7%.

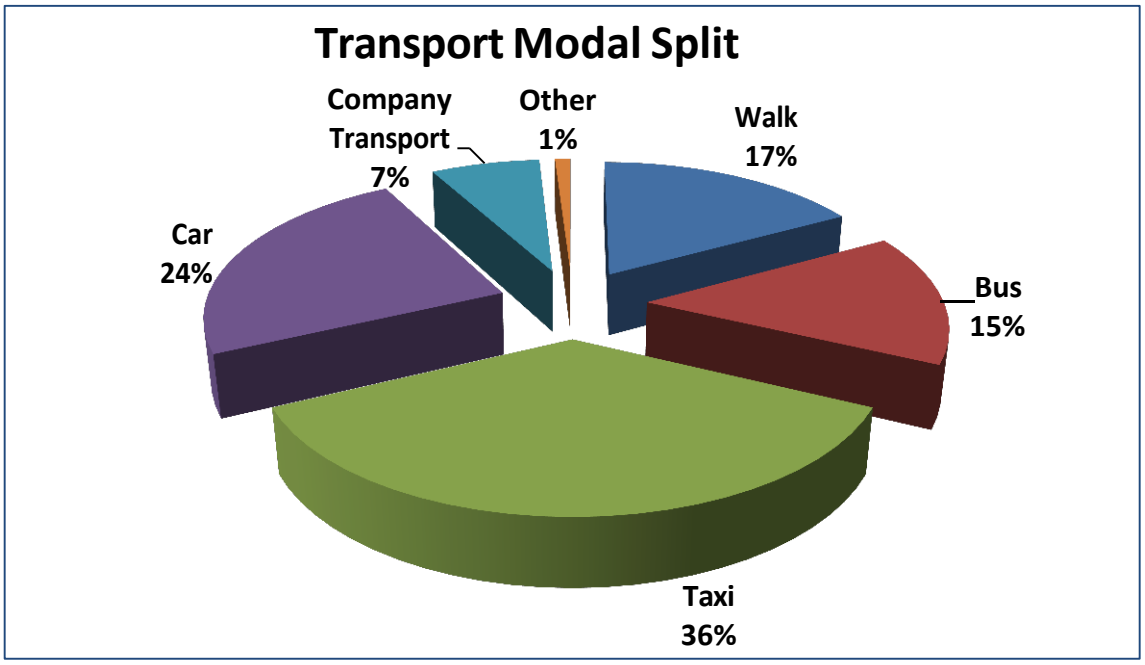


Figure 3-11: Private Transport Modal Split
(Source: Rustenburg Household Travel Survey, Feb 2012)

Private transport use is significantly less than public transport.

3.8.2 Public Transport Overview

Public transport in the RLM is mainly provided by buses and taxis. Taxi and bus travel account for more than 51% of total travel for all purposes and walking 17%. There are no commuter rail services. Metered taxi services provide very limited services, usually around big malls and big taxi/bus facilities. Due to the intensity of mining, company transport also exist, although not all companies provide such a service to its employees.

Public transport operations are mainly busy during the AM and PM peak periods. This includes company transport as well.

3.9 Public Transport Organisational Profile

3.9.1 Bus Operators

The Bojanala Bus service is a subsidised service that that transports passengers within the north-west province. The service has been in existence since 1997 and operates on interim contracts. The Bojanala (PTY) Ltd is owned by Unitrans with 51% of its shares owned by Broad Based Economic Empowerment (BEE) stakeholders. The bus company gets revenue by means of fares and subsidies paid to Bojanala Bus in terms of tendered contracts. Operations are monitored by MTM management services.

Thari Bus operators also provide services in RLM, bus is a smaller organisation than Bojanala Bus.

3.9.2 Minibus Taxi Operators

There are 22 taxi associations operating in RLM with a total estimated fleet of 3 212. These are either local or long distance operations. A list of operations of all associations in RLM are shown below in **Table 3-30.**

Table 3-30: Minibus Taxi Operators

Name of Association	Abbrev.	Fleet
Group A - Local		
Boitekong and Meriting Taxi Association	BAMTA	386
Kanana, Boschfontein Taxi Association	KBTA	140
Hartebees, Ramokoka, Mamerotse, Tlaseng Taxi Association	HAMARATA	78
Mamerotse, Monakato, Jabula Zinniaville Taxi Association	MAMOJAZI	78
Kanana, Rankunyana, Makukama Taxi Association	KARAMATA	56
Group B – Route R565		
Moruleng and District Taxi Association	MODITA	230
Mogwase Taxi Association	MTA	87
Mankwe Taxi West, Debrak, Dwarsberg and Mabeskraal Taxi Association	MADEMA	90
Madikwe Taxi Association		101
Motlhabe Tlhatlhaganyane Moalogane Witrankie Taxi Association	MOTLHAMAWI	70
Bleskop Taxi Association	BTA	300
Northern Scholar Transport Association	NOSTOA	250
Group C – City and Local OPS		
Thlabane Taxi Owners Association Trust	TTOAT	201
Bafokeng Taxi Owners Association	BTOA	245
Ledig, Sun City Mahopi Taxi Association	LESUMATA	56
City Shuttle		40
Group D – Long Distance		
Bojanala Kopano Taxi Association	BOKTA	82
Bontle Taxi Association		77
RTA		
Rustenburg Local and Long Distance Taxi Association	RULLDTA	420
Borolelo Transfreestate Taxi Association	BOTRANSA	104
Greater Rustenburg Long Distance Taxi Association	GRLDTA	121

(BPDM District Integrated Transport Plan, 2013-2014)

3.10 Public Transport Operations by Mode

3.10.1 Existing Bus Service

The RLM is mainly dominated by Bojanala and Thari Bus services.

(a) **Bojanala Bus Service**

Bojanala Bus service is one of the two dominating bus companies in RLM. It has only one Thlabane depot in RLM. It has a fleet of 222 commuter buses (mainly 63 seater) serving the North West province. Of the total fleet, approximately 134 buses operate in the RLM. The

average age of the fleet is 12 years. There are about 102 bus stops and 88 routes serviced in RLM.

Bojanala Bus Company receives ticket subsidies through the Provincial bus subsidization scheme. Bojanala Bus is paid by means of fares collected from its passengers and subsidies paid to Bojanala Bus in terms of tendered contracts. The subsidy burden is divided between the Provincial Department and the NDoT. Bojanala Bus routes are classified in to three groups:

- Internal routes: these are routes that have both origins and destination within the RLM or within the boundary of the RRT system. It consist of 120 routes of which in total are 1 874km.
- External routes: these are the routes that have neither an origin nor a destination in the RLM and the RRT system. It consist of 30 routes of which in total are 1 900km.
- Cross-border routes: these routes either have an origin or a destination in the RLM and at some point cross the boundaries of the RLM. It consist of 69 routes of which in total are 9 413km.
- In total, the Bojanala Buses cover a distance of up to 13 500km.

A summary table showing the route type and distance covered is shown in **Table 3-31** below.

Table 3-31: Bojanala Bus: Route Type and Distance

Route Type	Number of Routes Mapped	Distance Covered
Internal	120	1 874 km
External	30	1 900 km
Cross- Border	69	9 413 km

(Source: Rustenburg Local Municipality, 2014)

A table showing destinations covered by the Bojanala Bus service is shown below.

Table 3-32: Bojanala Bus: Destinations

The main destinations of this service include:		
Bafokeng North	Protea Park	Uitkyk
Boitekong	Putfontein	Koedoesrand
De Brak	Styledrift	Styledrift
Geelhoutpark	Sun City	Magong
Boitekong	Sunrise Park	Swartruggens
Koedoesrand	Rooiwal	Zeerust
Koster	Thlabane	Mmabatho
Ledig	Pella	Schoongezicht
Madikwe	Silwerkrans	Wildebeesfontein
Rustenburg		

(Source: Rustenburg IDP revision 2014/2015)

Figure 3-12 below shows Bojanala Bus stops in RLM.

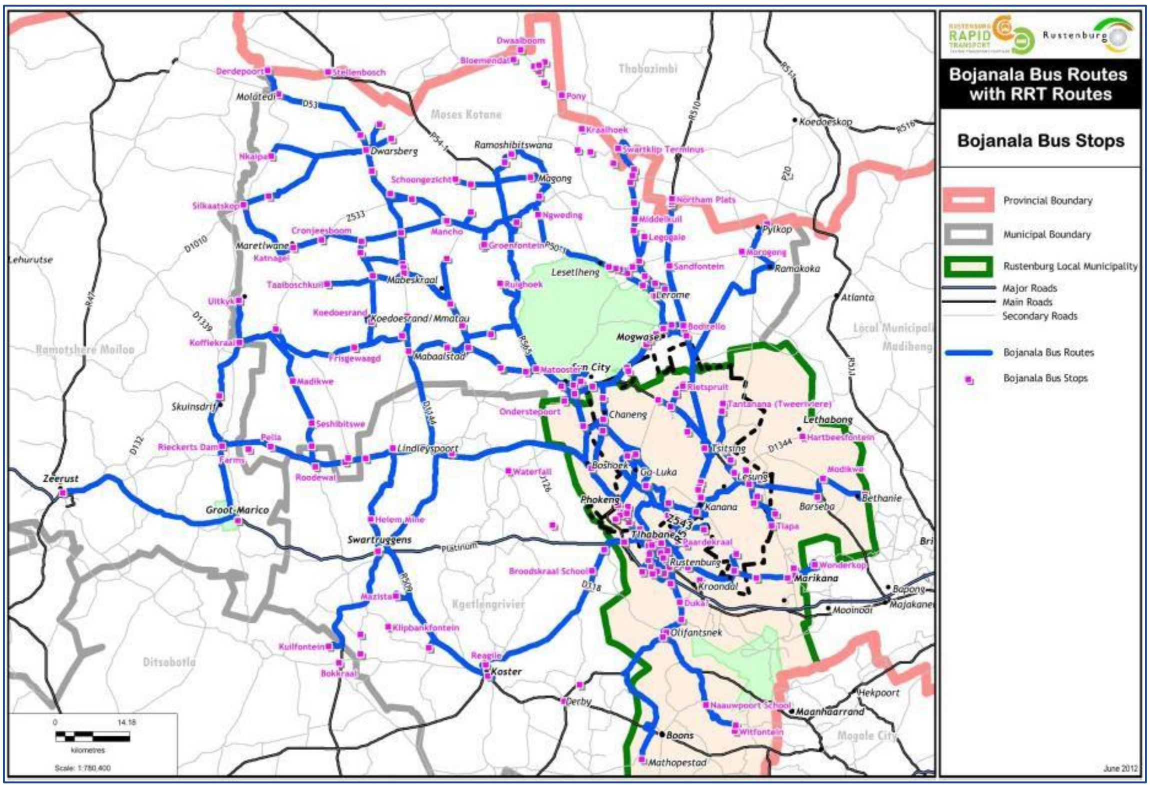


Figure 3-12: Bojanala Bus Routes and Stop Locations

(b) **Thari Bus Service**

The second dominating bus company in RLM is the Thari Bus services. Although not as big as the Bojanala Bus services, Thari operates a small number of routes. The bus company is contracted by the North West Province Department of Transport to provide commuter services in the BPDM municipal area. The company also receives ticket subsidies through the National / Provincial bus subsidisation scheme.

A total of 155 routes are shown. However, within RLM, only nine (9) routes are serviced.

A summary table showing the route type and distance covered is shown in **Table 3-33** below.

Table 3-33: Thari Bus: Route Type and Distance

Route Type	Number of Routes Mapped	Distance Covered
Internal	11	534 km
External	122	5 460 km
Cross- Border	22	1 252 km

(Source: Rustenburg Local Municipality, 2014)

3.10.2 Long Distance Bus Operators

There is currently only Intercape bus operator that is operating long-distance routes from RLM. The only direct route is from Rustenburg to Johannesburg and from Rustenburg to Pretoria, operating once a day the whole week. Rustenburg is also a stop point for the route Johannesburg-Pretoria-Rustenburg-Gaborone. The two–legged routes are offered via Johannesburg to Port Elizabeth, Durban, East London, Mossel Bay, Upington and Cape Town (most of them are operating 5 days a week).

3.10.3 Long Distance Passenger Rail: Shosholoza Meyl

There are currently no Shosholoza Meyl services in RLM. However, there are two (2) interprovincial rail lines crossing the RLM:

- The first line runs from Pretoria, via Brits, to Rustenburg. It diverts to the north past Sun City and Mogwase to Thabazimbi from Rustenburg.
- The second line runs east-west through the southern part of RLM and is from Johannesburg via Swartruggens (Borolelo) and Koster to Zeerust. This line is also linked to Pretoria via Magaliesburg.

3.10.4 Existing Taxi Service

There are approximately 1 592 taxis operating in the RLM with a total of 3 212 fleet according to the CPTR (2002) and the northern region taxi council information obtained in 2007. According to the the BPDM DITP of 2013/14, the passenger PM peak trips between 16h00 and 19h00 are 35 284 of which 25 498 are in Rustenburg. This relates to approximately 1 754 PM vehicle trips in Rustenburg at 100% utilisation. The passenger AM peak trips between 04h00 and 08h00 are 19 332 in Rustenburg. This relates to approximately 1 329 PM vehicle trips in Rustenburg at 100% utilisation. **Figure 3-13** below shows the distribution of public transport facilities in RLM.

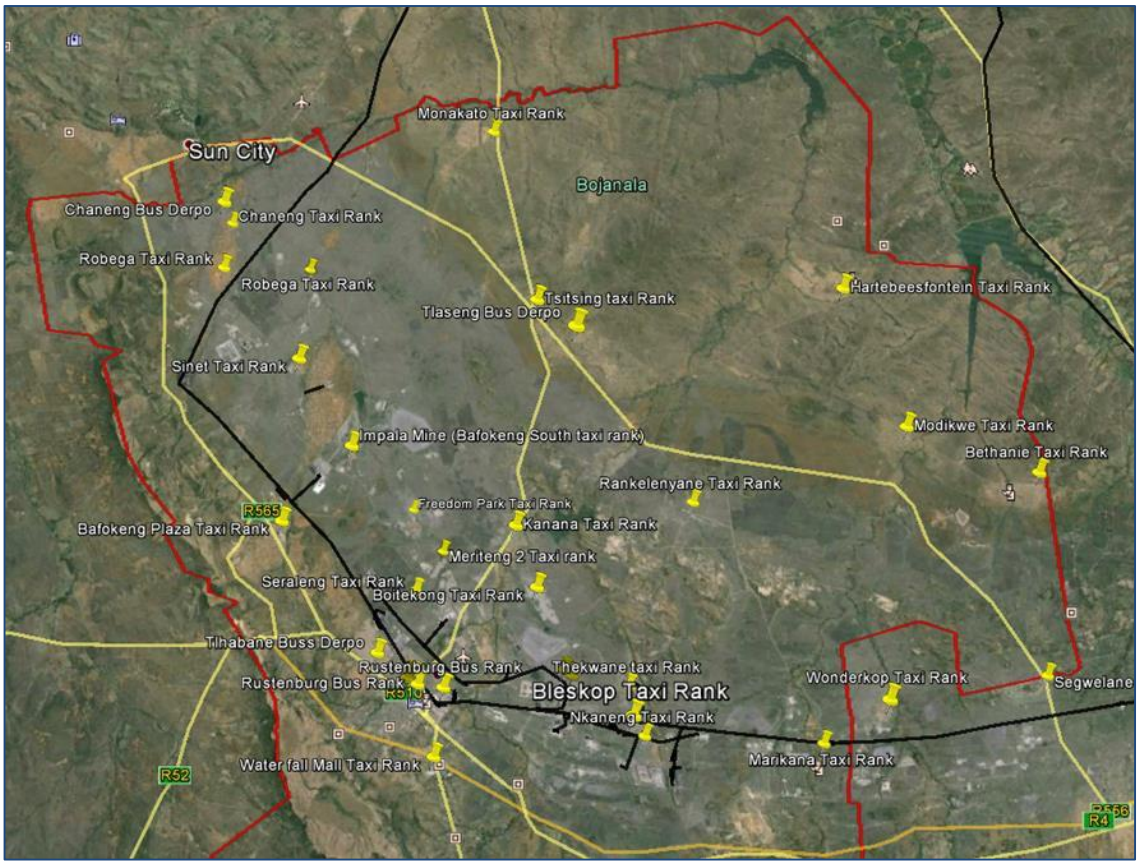


Figure 3-13: A Layout Showing the Distribution of Public Transport Facilities in RLM
(Source: 2014 Infrastructure surveys, 2014)

3.10.5 Metered Taxis

There are currently metered taxi services operating in RLM. These services are mainly found in the CBD, the Waterval and Boitekong Mall. The current fleet is estimated to be approximately 110 with the average age being 10 years. An implementation plan to use 2000 model year cars is anticipated to be initiated in the near future.

3.10.6 Commuter Rail Service

There are currently no commuter rail services in RLM as indicated by PRASA. The CITP does not contain any commuter transport provisions due to the lack of current services therefore an intermodal planning community dealing with commuter rail transportation is also not required. However, this should be revised once commuter rail services are re-established in the region.

3.10.7 Air Transport

There is only one airfield in Rustenburg which is owned by RLM and complies with the South African Aviation Authority (SACAA) regulations. **Figure 3-14** below shows the location of the airport in RLM.

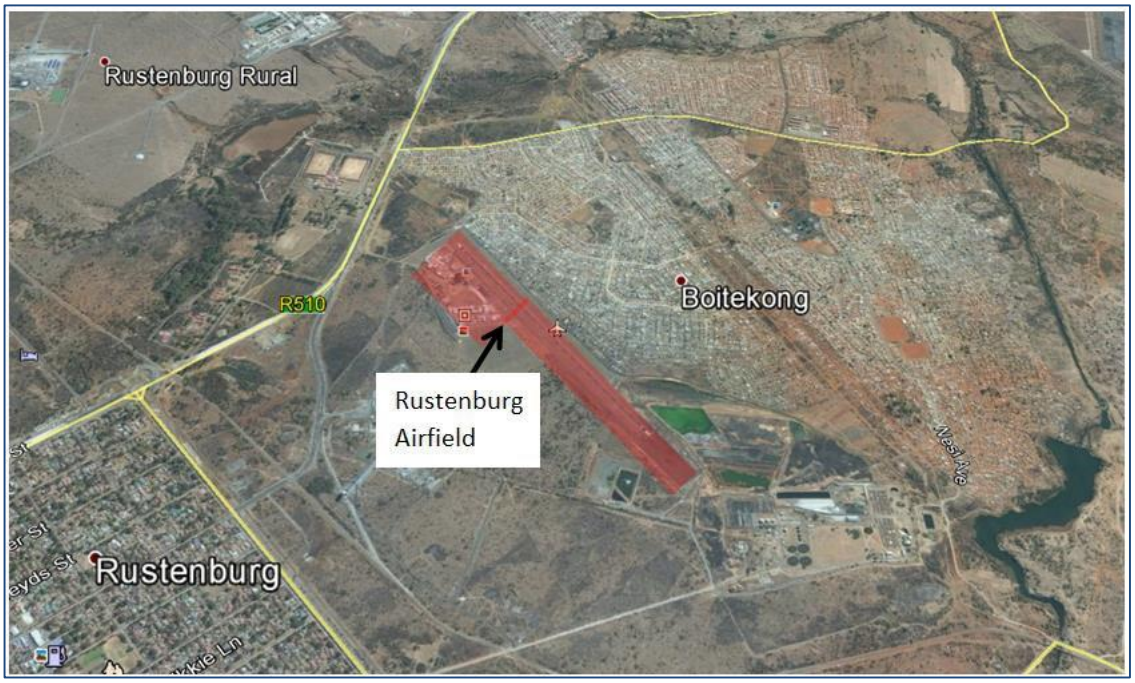


Figure 3-14: Location of the Airport in RLM
(Source: Google Image, 2014)

The airfield's main functions are:

- Flying and sky diving clubs;
- South African Police Air Wing;
- Mining houses; and
- Flying of politicians.

Typical infrastructure existing in the airport includes:

- 1 225m runway;
- Taxiways;
- Aprons;
- Terminal buildings;
- General aviation precinct; and
- Access roads and parking areas.

Most of the air transport services are provided at the Pilanesberg Aerodrome, serving mainly tourists to Sun City and the Pilanesberg Game Reserve. The Rustenburg area also has two heliports which are located at the Paul Kruger Hospital and the Marikana Platinum mine.

RLM appointed Delta Built Environment Consultants (Delta BEC) to compile an airport master plan for the Rustenburg airport. The study was finalised in 2014. The purpose of the investigation was to outline the short, medium and long term development plans of the airport to meet future aviation demand.

Following the stakeholder consultation process, several issues were raised and deemed important in order to ensure seamless operation of the airport in future, these include:

- Risk assessment of the current locations of the Avgas and Jet A1 should be carried out in order to ensure that there are no safety or environmental risks;
- Current capabilities of the standby generator is not sufficient for full operation of the airport during a power failure and as such an additional generator is required;
- Insufficient fire safety equipment in most of the airport facilities; and
- Ponding on certain areas of the taxiway after heavy rainfall.

The following investigations and designs would be needed in order to upgrade the airport:

- Topographical and Geotechnical Surveys;
- Preliminary Design;
- Detail Design and Procurement;
- Construction;
- Environmental Impact Assessment;
- Stakeholder Interaction; and
- Develop Operational Model / Business Plan.

However, prior to this, and of importance is to first acquire necessary land in order to accommodate these upgrades and to develop a commercial property business plan.

3.11 Public Transport: IRPTN

3.11.1 Overview

The Rustenburg Integrated Public Transport Network (IRPTN) was proposed and approved between 2007 and 2012. The first phase of the project IRPTN will be concentrated in Rustenburg and will later extend to surrounding areas located within 20km radius from Rustenburg.

Currently, RLM is in a process of rolling out its IRPTN system, also referred to as the Rustenburg Rapid Transport (RRT) system.

A fully implemented RRT system is shown below in **Figure 3-15.** This system is a mixture of direct services and the traditional trunk-feeder type system to provide the best mix of operational performance for the user with operational efficiency for the operator. Buses are planned to operate full (peak period).

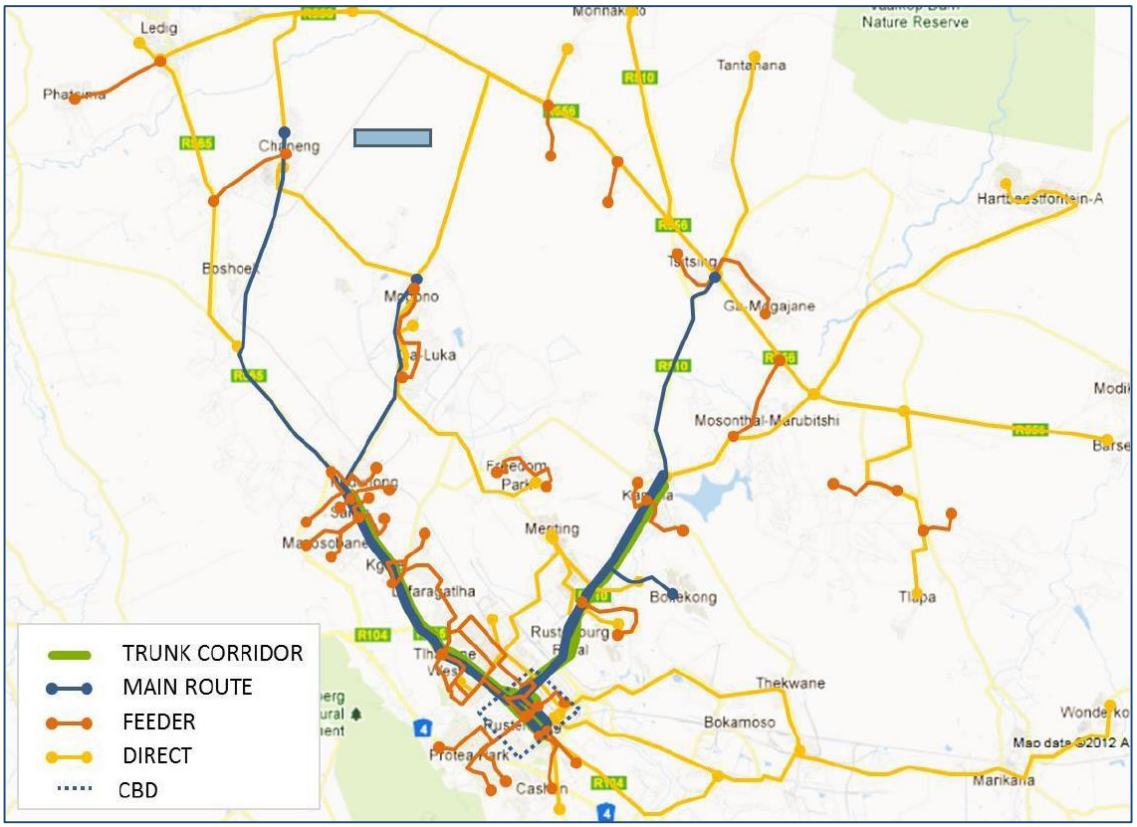


Figure 3-15: Rustenburg IRPTN Full Network
(Source: RRT Operational Plan, June 2014)

Each of these services will be discussed briefly in the following section.

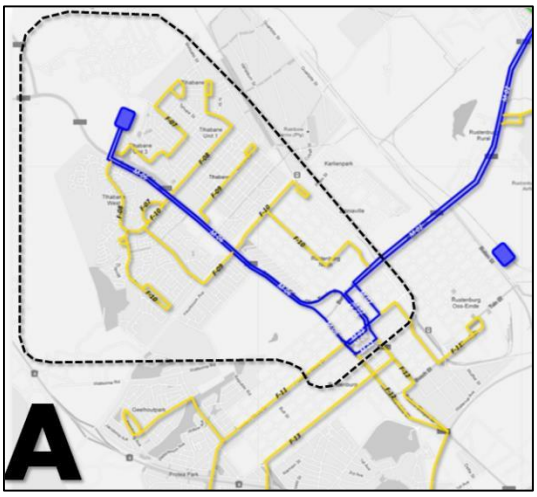
3.11.2 Phased Approach

The system is anticipated to be rolled out in four (4) stages, starting in December 2016 to March 2018 for Phase 1&2. The description of the phases is shown below in **Figure 3-16.**

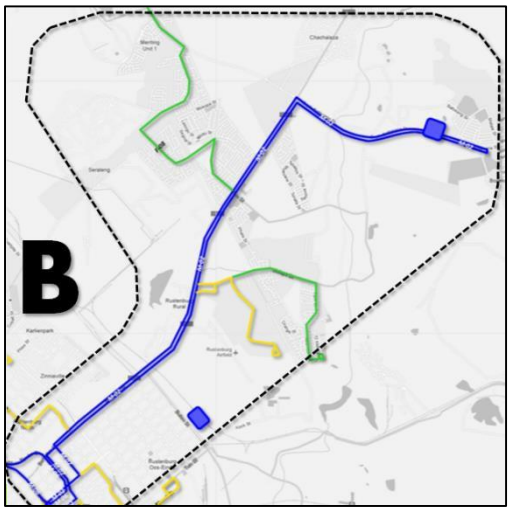
Phase 1 covers the areas of Thlabane, South of CBD (including Protea Park, Cashan, Safari Tuine and Waterval Mall), Sunrise Park, Boitekong and Meriting to Freedom Park. Phase 1 is further divided into **Phase 1A, 1B and 1C** (**Figure 3-17**).
Phase 2 extends the RRT service to the north along the R510
Phase 3 extends to the west towards Phokeng along the R565.
Phase 4 of the project will be the final phase of the project, implementing the bus service to complete the RRT network.

Figure 3-16: Phased RRT system
(Source: RRT Operational Plan, June 2014)

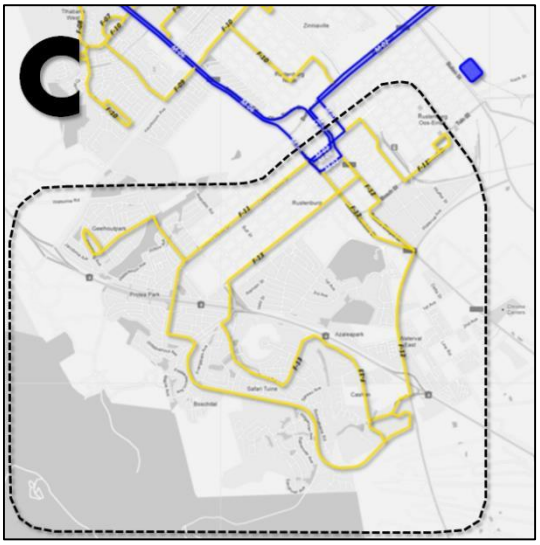
Phase 1A



Phase 1B



Phase 1C



Phase 1A:
December 2016
16.5% of the full RRT system
36 buses

Phase 1C:
March 2017
12% of the full RRT system
44 buses

Phase 1B:
December 2017
16% of the full RRT system
70 buses

Figure 3-17: Phase 1 (Staggered)
(Source: RRT Phasing Implementation Plan – Sub Phasing, August 2014)

The following will be key features once the system is complete:

- Bus Rapid Transit on the identified 33.3 kilometres of Trunk Corridors with segregated median located lanes, closed median located stations, level boarding and pre-payment prior to boarding, electronic fare collection, fare integration and associated security, universal access, comfort and real-time information at stations and vehicles.
- Low entry vehicles to be in three (3) sizes – 18 meter articulated, 12 meter and 7.8 meter. All vehicles with doors on sides, universal access and on-board electronic fare collection equipment to allow for closed transfers at median stations on the trunk route, full system integration and maximum operational flexibility.
- Level boarding at all stations (trunk and feeder) with low platform heights (about 30cm). Closed system and stations on trunk route. Open stations outside trunk route with on-board fare verification.
- Zone based fare system integrated across entire IRPTN system with AFC.

- Traffic Management Centre to control the IRPTN system and integrate with emergency services and traffic control
- ITS that includes a broad range of services for the management of transportation systems enabled by the use of information and communication technologies to make the system safe, efficient and reliable without necessarily physically altering the existing transport infrastructure.

3.11.3 Route / Service Description

Once all phases are completed trunk routes will be located along the R565, R104, R510 and some roads within the Rustenburg CBD. Feeder routes will complement the trunk routes by providing feeder and distribution services. A brief description of the service is shown below.

(a) Trunk Corridors

The two main corridors are the R510 from Kanana to Rustenburg CBD and the R565/R104 from Phokeng to Rustenburg CBD. These corridors will be serviced by a Bus Rapid Transport System that includes dedicated and segregated BRT lanes and trunk stations that are integrated with pedestrian and cycle networks, with bicycle parking at identified stations.

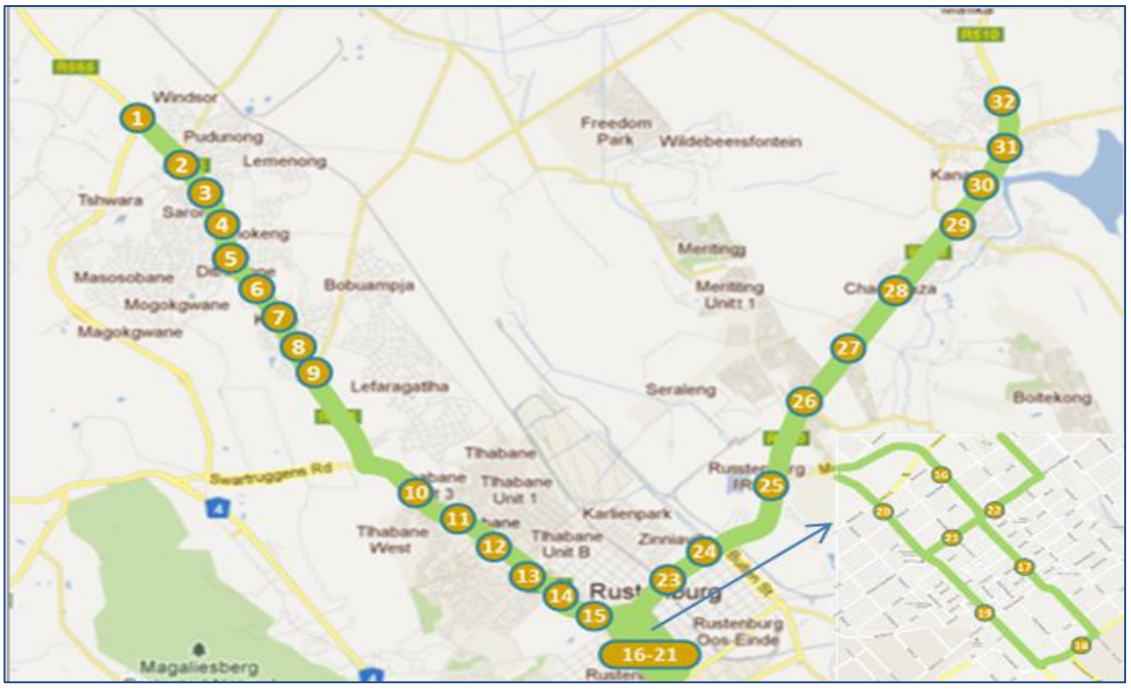


Figure 3-17: Trunk Stations Locations
(Source: RRT Operational Plan, June 2014)

(b) Journey Times

Estimated journey times on trunk routes is as shown in the table below. Both the express and the all stop services are to run on trunk corridors to both improve journey times and reduce the required level of station infrastructure in terms of the number of required bays. The speed adopted for corridors is 22km/h and 14km/h for out of corridor services.

Table 3-34: Phokeng to Rustenburg Journey Times

Station ID	Station Location	Journey Time		Cumulative Journey Time	
		All-Stops	Express	All-Stops	Express
Phokeng to Rustenburg CBD					
1	Phokeng Terminal Station	0min 0sec	0min 0sec	0min 0sec	0min 0sec
4	Bafokeng Plaza, Phokeng	6min 10sec	4min 0sec	6min 10sec	4min 0sec
11	Thlabane West	14min 57sec	11min 12sec	21min 7sec	15min 12sec
15	Dr Moroka Street Thlabane	5min 20sec	—	26min 27sec	—
18	Rustenburg Rank	5min 5sec	5min 31sec	31min 33sec	20min 43sec
20	Rustenburg Local Municipality Offices	6min 9sec	6min 9sec	37min42sec	26min 52sec

(Source: RRT Operational Plan, June 2014)

Table 3-35: Kanana to Rustenburg CBD Journey Times

Station ID	Station Location	Journey Time		Accumulative Time	
		All-Stops	Express	All-Stops	Express
Kanana to Rustenburg CBD					
37	Kanana Terminal Station	0min 00sec	0min 00sec	0min 00sec	0min 00sec
32	Boitekong	10min 49sec	7min 32sec	10min 49sec	7min 32sec
29	Paardekraal	4min 25sec	2min 47sec	15min 14sec	10min 19sec
24	President Mbeki / Nelson Mandela	11min 28sec	9min 09sec	26min 42sec	19min 28sec
20	Rustenburg Local Municipality Offices	5min 41sec	5min 41sec	32min 23sec	25min 09sec

(Source: RRT Operational Plan, June 2014)

(c) Direct Routes

Direct Services are routes that operate between settlement areas outside the Trunk Corridors. These Routes consist of two types of services:

- Services that start or end outside the trunk corridor, but make use of the Trunk Corridor for part of the journey; and
- Services that operate completely outside the Trunk Corridor.

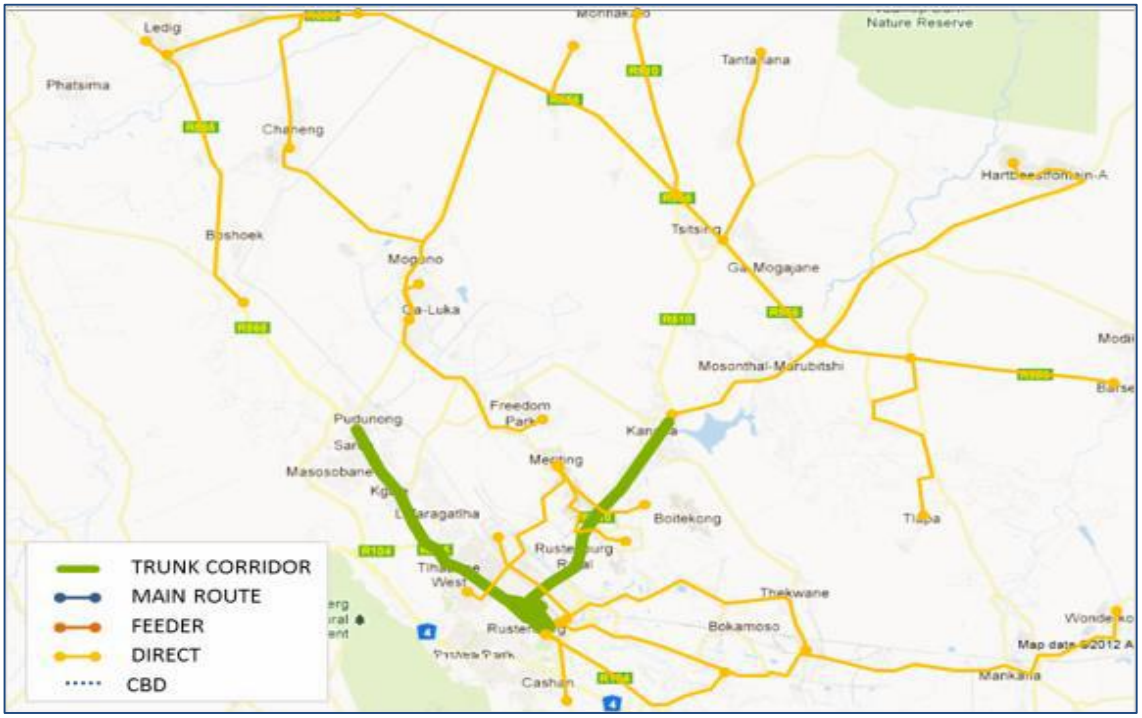


Figure 3-18: Rustenburg IRPTN Direct Services
(Source: RRT Operational Plan Minimum Scenarios with Sub Phasing, June 2014)

(d) Local Feeder Routes

Local feeder routes provide access to the Trunk Routes and Direct Access Route Services. **Figure 3-19** below shows the location of the Local Feeder Routes

Figure 3-19: Rustenburg IRPTN Local Feeder Services and Zones
(Source: RRT Operational Plan Minimum Scenarios with Sub Phasing, June 2014)

3.11.4 Vehicle Types

One vehicle type is proposed for the Phase 1 and 2: 12m low-entry standard buses. For other phases, vehicle type will be determined based on the demand but it is likely that for all phases they will be all standard buses.

The vehicle type for each route in the system is based on the demand as well as minimum performance level and operational parameters associated with the service frequency.

3.11.5 Intelligent Transportation Systems

The RRT system will make use of information and communication technologies to make the system safe, efficient and reliable without necessarily physically altering the existing transport infrastructure.

Some of the elements to make the system more attractive include:

- Journey time reduction;
- Accurate and reliable traveller information;
- Accurate and reliable fleet information;
- Congestion management;
- A secure and inclusive travelling environment;
- Efficient and trustworthy fare collection; and
- Car park management information.

ITS functions will include:

- Automated Fare Collection Systems (AFC);
- Advanced Public Transport Management Systems (APTMS);
    - Advanced Traveller Information Services (ATIS);
    - Fleet management;
- Traffic Management;
    - Urban Traffic Control (UTC) & Transport Management Centre (TMC);
    - Public Transport Priority Systems;
    - Surveillance;
    - Freeway Management (including Incident Management);
    - Transport demand management (TDM);
    - Transport safety and security;
    - Integration and communication;

The following design principles of the RRT system are directly related to ITS:

- Signal priority will be provided at intersections in order to minimise delays to the main route vehicles, especially in instances where RRT vehicles are falling behind schedule. The peripheral effect of the vehicle pre-emption will be mitigated through adaptive control (Urban Traffic Control system) ;
- Clear route maps, signage and/or real-time information displays at stations, stops and on vehicles;
- Pre-board fare collection / card validation at main line stations to reduce boarding times;
- On-board fare collection/card validation at kerb-side stops;
- Fare integration between main, direct and feeder services;
- System management through a centralised control centre using ITS applications;
- Surveillance within and around RRT infrastructure; and
- Enforcement of dedicated RRT lanes.

3.12 Roads and Traffic

The traffic on the road network is described in the following sections. Traffic counts were conducted from the last ITP to 2013 and these are listed below as part of the Transport Information Register. The Road Master Plan is given in **Annexure B** of the report.

3.12.1 Traffic Volumes

The detail of all traffic volumes is available in **Annexure A**; the CPTR for RLM.

(a) CBD Intersection Counts

The following CBD intersection traffic counts (34 locations) were obtained from EPS Civil Traffic Engineers. The counts were conducted in 2013 **Figure 3-20,** shows the CBD intersection counts locations.

(b) SANRAL Counting Stations

The following link counts were obtained from SANRAL Yearbook 2013. The detail is available in **Annexure A**; the CPTR for RLM.

Figure 3-21, shows the SANRAL count station locations.

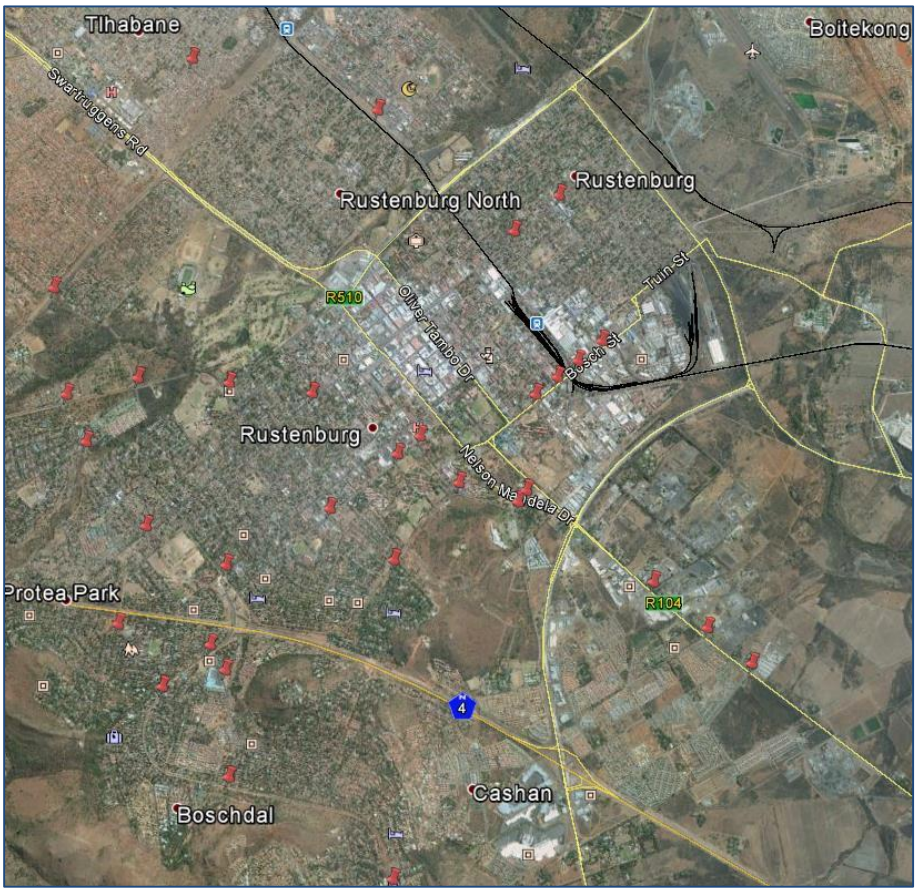


Figure 3-20: CBD Intersection Counts Locations
(Source: Rustenburg Local Municipality, 2014)

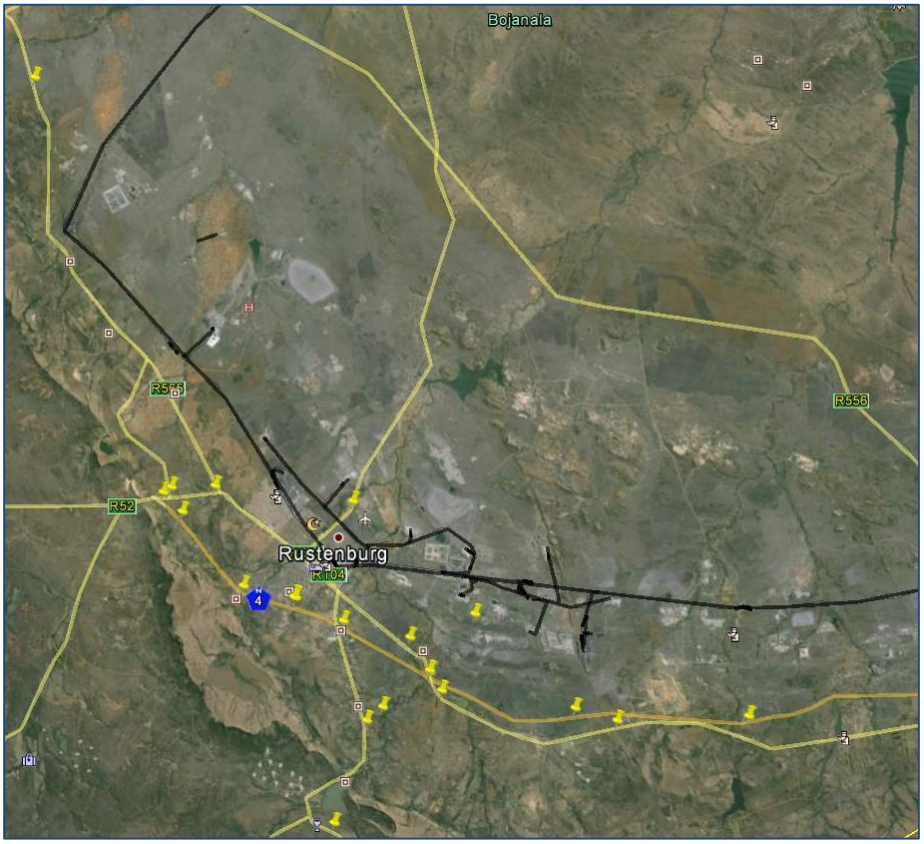


Figure 3-21: SANRAL Counts Locations
(Source: SANRAL Yearbook, 2013)

(c) Intersection Counts – Deep Designs

The following traffic counts (6 locations) were obtained from Deep Designs.

Figure 3-22: Intersection Counts Locations.
(Source: Rustenburg Local Municipality, 2014)

(d) Traffic Counts – Gaia Group

The following traffic counts (18 locations) were obtained from Gaia Group.

Figure 3-23: Traffic Counts Locations.
(Source: Rustenburg Local Municipality, 2014)

(e) Traffic Counts – Traftrans

The following traffic counts (8 locations) were obtained from Traftrans. The detail is available in **Annexure A**; the CPTR for RLM.

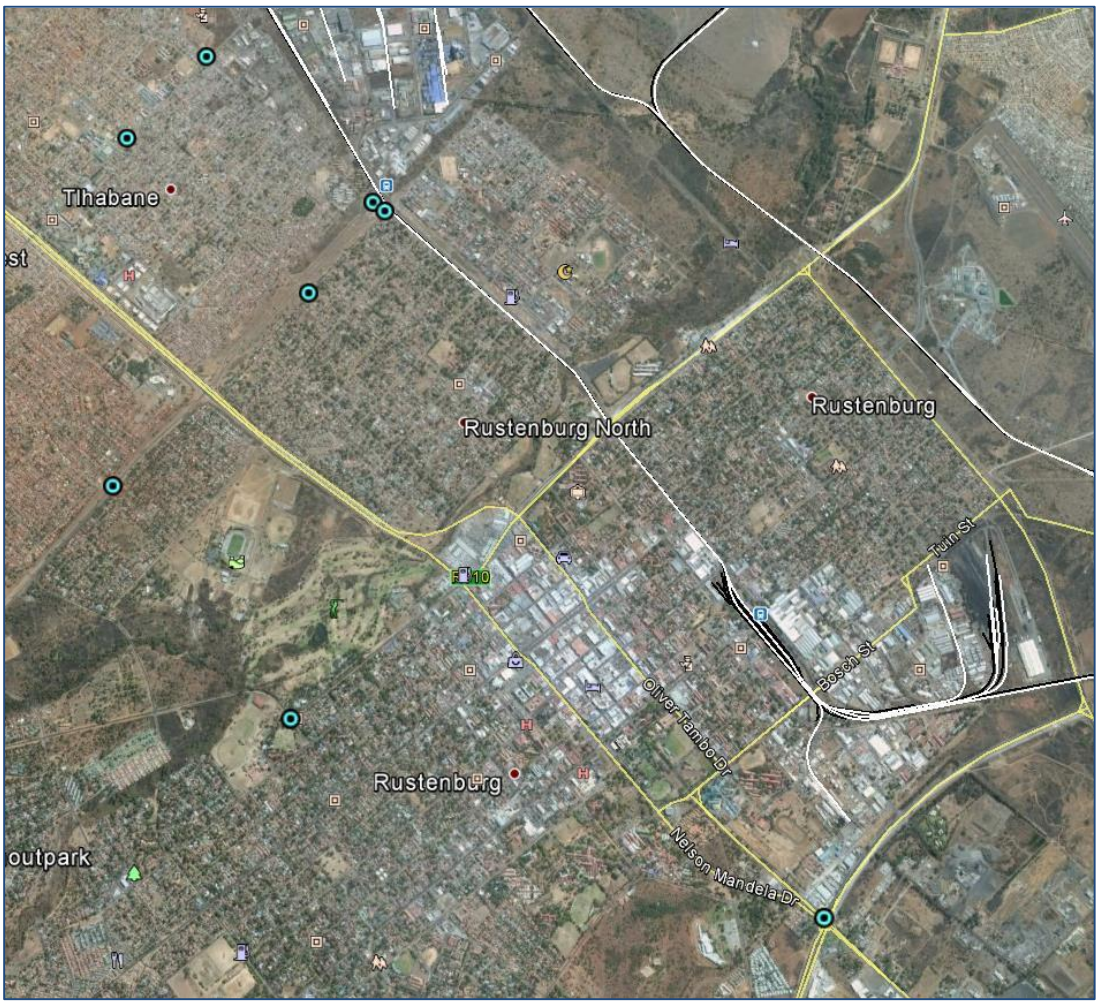


Figure 3-24: Traffic Counts Locations
(Source: Rustenburg Local Municipality, 2014)

3.12.2 Road Condition (Pavement Management)

RLM commissioned Kagga and partners (KAGGA) to development Phase 1 of their Road Master Plan Network. The objective of this study was for:

- It to be used as a platform for Phase II Road Network Master Plan (RNMP).
- It will assist the Municipality with effective road network maintenance activities and future planning.

The scope of works for the project was as follows:

- Project Mobilisation;
- Acquisition and Processing Existing Data;
- Field Survey Activities;
- Field Data Analysis; and
- Prioritize maintenance activities and costing.

The following findings were made:

1. The paved roads were reasonably well maintained and therefore routine maintenance was required to keep them in a good condition. Routine maintenance would include grass cutting, drainage cleaning, pothole fixing, culvert desilting, road signage cleaning etc.
2. For the unpaved roads, the findings were that the roads were poorly maintained and therefore, there was a need for regravelling and improvement of storm water drainage.
3. In order to carry out any upgrade or maintenance activities, identification of funding is required. The traditional sources for funds that assist in implementation of the road development and maintenance would include Road Fund, Municipal Infrastructure Grant (MIG); Provincial Infrastructure Grant (PIG); National Treasury, through the equitable share; National Treasury, through the Supplementary Municipal Conditional Grants; Municipality Income; Public Transport Infrastructure Grant (PTIFG); SANRAL's Community Development Program; and Expanded Public Works Program (EPWP).
4. More attention should be given to the maintenance of storm water drains.
5. In order to effectively improve the road network, a Stormwater Master Plan is a necessity.
6. Rustenburg Local Municipality being the fastest growing municipality, with an annual compound economic growth rate of 6%, traffic into the CBD has increased and therefore the main road into the CBD, Nelson Mandela is stressed and cannot be widened to accommodate the growing traffic. A need to develop alternative(s) route(s) into the CBD is a necessity.
7. In order for the Road Network Master Plan to function effectively and avoid repetition of studies, it should be linked to other studies carried out within the Municipality. These studies would include Asset Management Plan/Programme, Roads and Storm water Master Plans etc.

3.13 Freight Movements / Traffic

Table 3-36 shows the heavy vehicle counts that were conducted in 2008.

Table 3-36: Heavy Vehicle Counts: 2008

No	Intersection name	Latitude	Longitude
1	R104 and R30	25°40'54.84"S	27°15'20.64"E
2	Swartruggens Rd and R565	25°37'51.72"S	27°11'13.11"E
3	R104 and road to Marikana	25°45'30.72"S	27°29'25.54"E
4	R510 and R556	25°27'11.51"S	27°18'48.72"E
5	R565 and road to Boshoek	25°29'33.09"S	27° 5'6.26"E
6	R565 and D1344	25°33'49.62"S	27°18'35.36"E
7	R510 and Buiten	25°38'50.32"S	27°15'20.31"E
8	Foord St and R104	25°39'40.48"S	27°13'50.00"E

(Source: Rustenburg Integrated Transport Plan, 2007-2011)

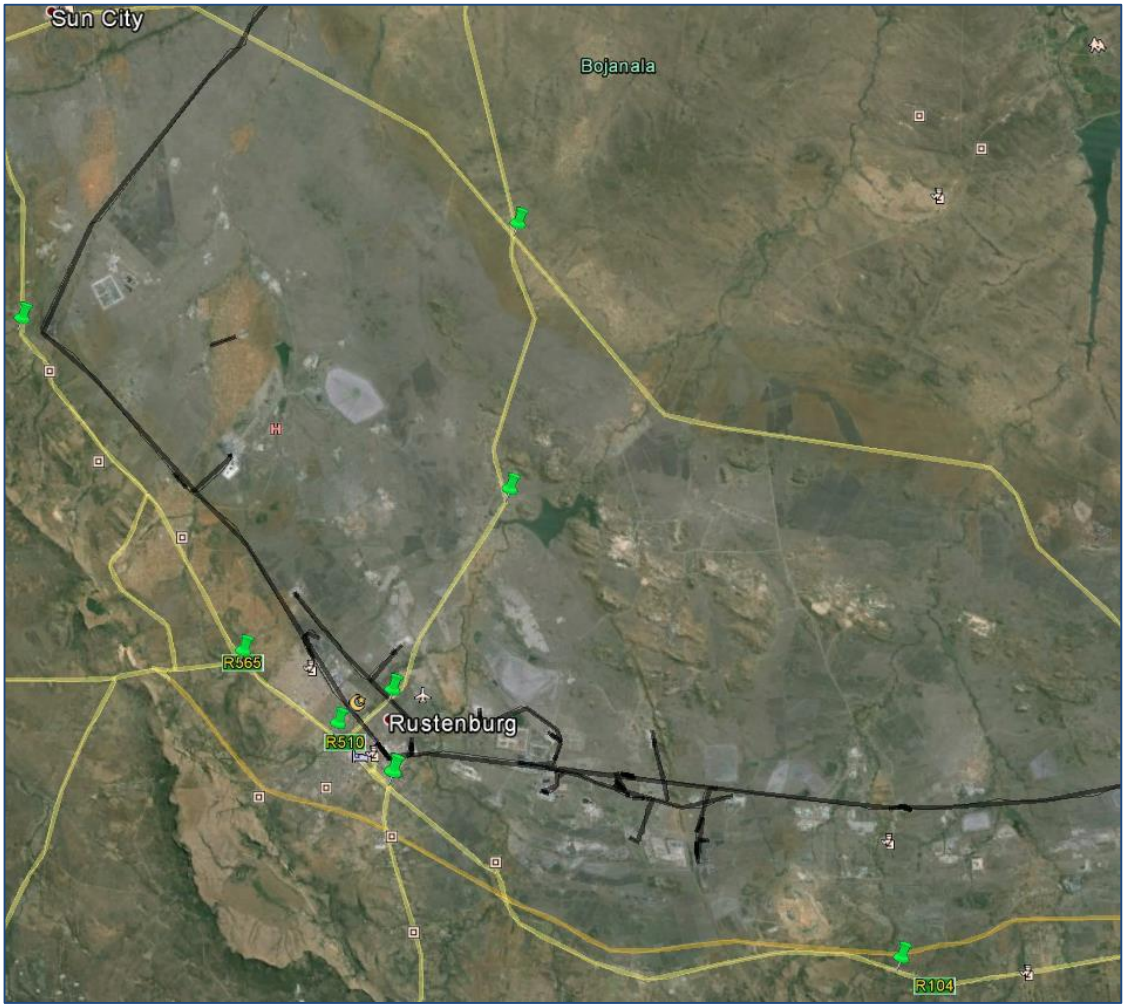


Figure 3-25: Heavy Vehicle Counts: 2008
(Source: Rustenburg Integrated Transport Plan, 2007-2011)

Due to insufficient freight data, additional counts were conducted at six (6) locations to give an indication of freight into and out of RLM. The counts was conducted over a period of 12 hours on a typical weekday. Freight classes captured include:

- Fuel;
- Bulk (tipper);
- Break bulk;
- Containers.

Table 3-37: Heavy Vehicle Counts: 2014

No	Intersection name	Latitude	Longitude
1	R104 and R30	25°40'54.15"S	27°15'20.94"E
2	R30 and Buiten St	25°40'14.78"S	27°16'16.49"E
3	R510 and Oliver Tambo Dr	25°39'38.80"S	27°14'18.44"E
4	R556 and N4	25°43'39.77"S	27°39'48.97"E
5	R510 and R556	25°27'12.04"S	27°18'48.85"E
6	Along the R565	25°33'37.56"S	27° 8'40.23"E

Figure 3-26 shows the additional heavy vehicle count locations as surveyed in 2014.

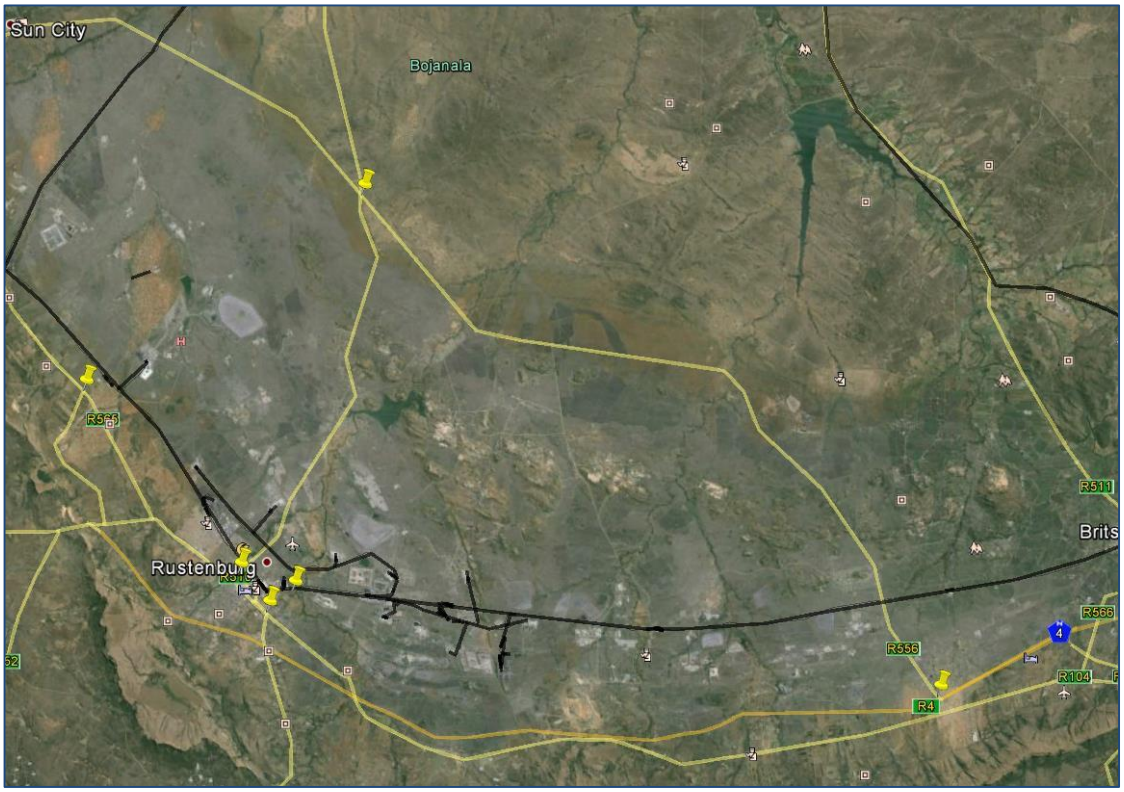


Figure 3-26: Heavy Vehicle Counts: 2014

(a) Rail Services

There are two interprovincial rail lines crossing the RLM (**Figure 3-27**):

- The first line runs from Pretoria, via Brits, to Rustenburg. From Rustenburg it diverts to the north past Sun City and Mogwase to Thabazimbi.
- The second line runs east-west through the southern part of RLM and runs from Johannesburg via Swartruggens (Borolelo) and Koster to Zeerust. This line is also linked to Pretoria via Magaliesburg.

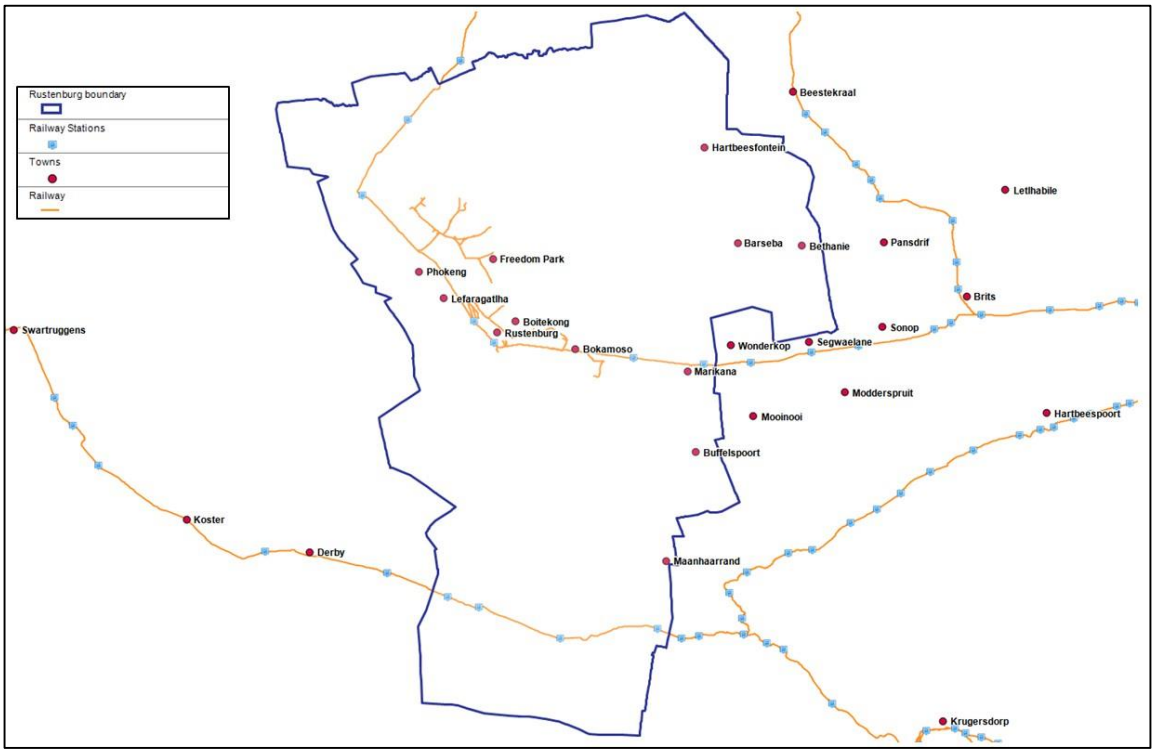


Figure 3-27: Freight Rail Service

(b) Air Transport

The RLM has an airfield with a 1 225m runway. Most of the air transport services are provided at the Pilanesberg Aerodrome, serving mainly tourists to Sun City and the Pilanesberg Game Reserve. The Rustenburg area also has two heliports which are located at the Paul Kruger Hospital and the Marikana Platinum mine.

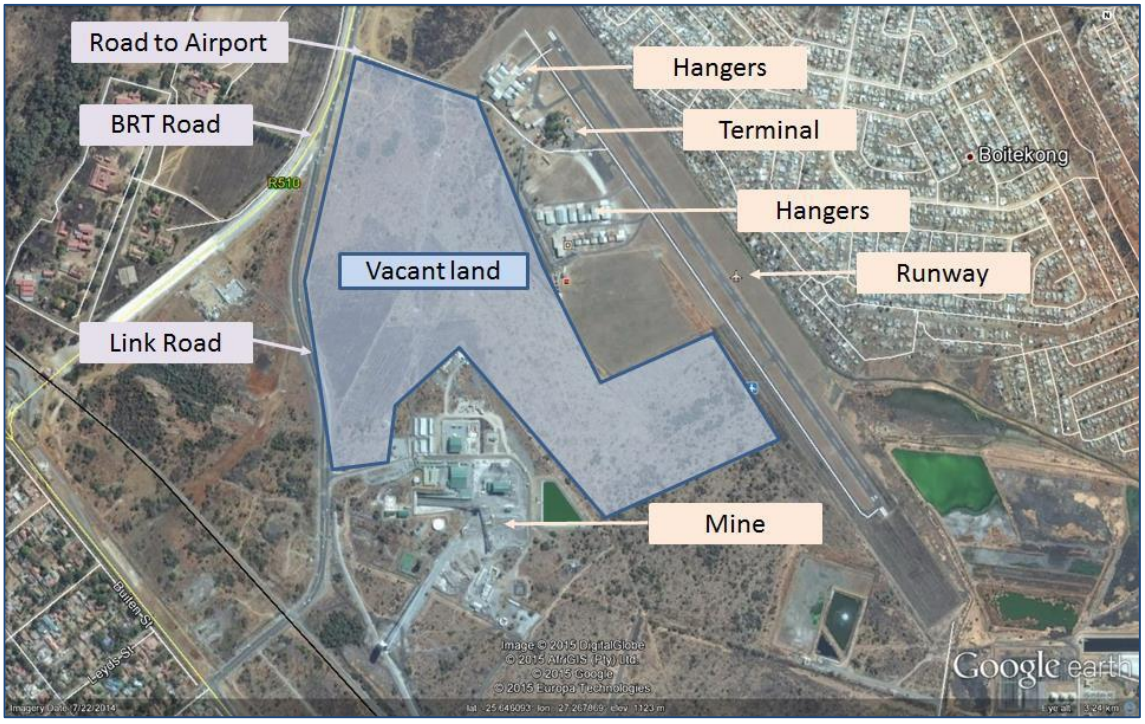


Figure 3-28: Rustenburg Airport Layout
(Source: Adapted from Google Earth)

4 Spatial Development Framework

4.1 Introduction

It is the purpose of this chapter to give an overview of the spatial considerations from an Urban Planning perspective of land use policies and plans that should be taken into consideration as part of this CITP. The following was considered:

- Broad land use in RLM;
- Future development proposals of the RLM that will have an influence on the transportation system;
- Important aspects of the Rustenburg Spatial Development Framework that should be taken note of as part of this CITP; and
- Criteria to identify gaps within the Rustenburg Spatial Development Framework.

4.2 The Spatial Development Framework

The purpose of this section is to extract the most relevant information from the RLM SDF to show the development pattern, future growth direction and land use proposals in the RLM that may have an impact on the CITP proposals.

4.2.1 The Spatial Development Concept

(a) Spatial Priorities

The Spatial Development Framework identifies the desired spatial form of the Municipality, which is summarised the following 6 priorities:

- PRIORITY 1: Integrated Spatial Development Supported by the Required Bulk Infrastructure Development;
- PRIORITY 2: Accelerated and Shared Economic Growth Supported by Creation of Spatial Economic Opportunities;
- PRIORITY 3: Sustainable Use and Management of Natural Resources;
- PRIORITY 4: Integration of Land Use and Transport Development;
- PRIORITY 5: Creation of Sustainable Settlement through Access to Appropriate Housing and Social Facilities; and
- PRIORITY 6: Creation of Opportunities for Sustainable Rural Development.

The priorities and objectives of particular importance to this project and that will have an impact on the spatial urban form are:

<u>PRIORITY 1: Integrated Spatial Development Supported by the Required Bulk Infrastructure Development</u>

- Promote a compact urban structure through urban infill and densification, specifically within the individual settlement clusters. Create a logical hierarchy of settlements to support effective service delivery;
- Improve integration between social amenities, economic opportunities and places of residence;
- Increase residential densities in selected focus areas; and
- Improved connectivity with Gauteng City region and surrounding municipalities.

PRIORITY 2: Accelerated and Shared Economic Growth Supported by Creation of Spatial Economic Opportunities

- Future urban development must take cognizance of the impact of existing and future mining operations and mining rights;
- Development must be sensitive to the expected lifespan of large individual mining operations;
- Integrate mining settlements within the greater Rustenburg urban structure to ensure its long term sustainability and visibility after mine or shaft closures;
- Create a viable business node hierarchy that is linked to the proposed service delivery centres;
- Identity and plan for the development of industrial/commercial areas linked to the Platinum SDI;
- Identify and develop tourism nodes in line with the character of the surrounding environment; and
- Develop tourism in the Rustenburg Municipal Area as gateway facilities to the surrounding regional tourism destination.

PRIORITY 4: Integration of Land Use and Transport Development

- Develop transport infrastructure in accordance with the recommendations of the Rustenburg ITP;
- Focus urban development along major public transportation routes to establish transport corridors;
- Implement a reliable and affordable public transport system; and
- Align land use planning with the proposed Bus Rapid Transport System.

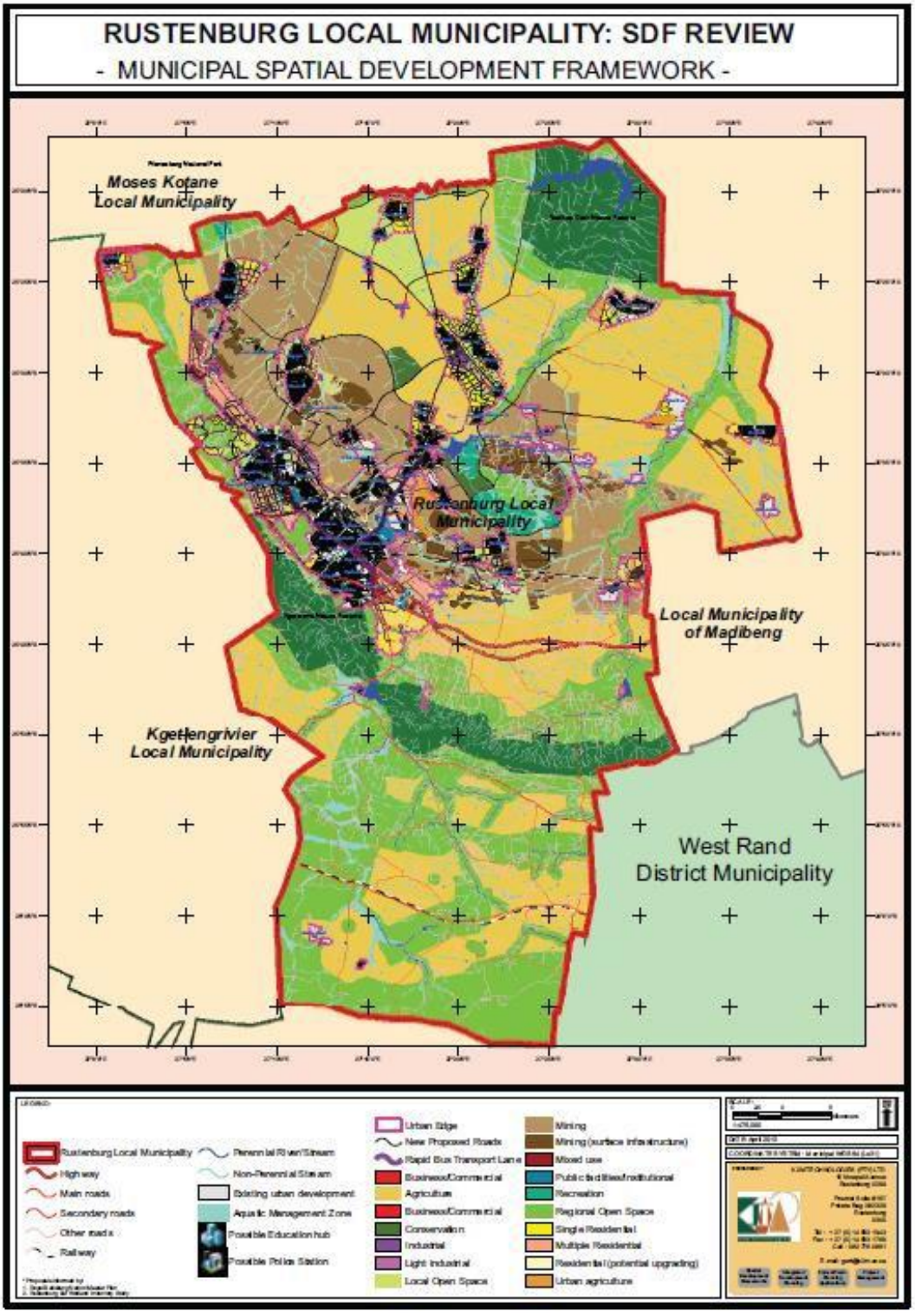


Figure 4-1: Rustenburg Draft SDF 2011
(Source: Rustenburg Spatial Development Framework - 2010 Review)

Section 4.2.2 below is a summary of the most important SDF proposals as shown in **Figure 4-1,** above. This section indicates the future development proposals that have an impact on the urban growth and form of the RLM, resulting in a direct impact on proposals made to improve the transportation system of the Municipality.

4.2.2 Spatial Proposals

The main development nodes and growth direction within RLM are discussed for the following nodes:

- Rustenburg CBD;
- Phokeng;
- Boitekong;
- Marikana; and
- Future extension areas outside of the above mentioned nodes.

(a) Rustenburg CBD

As mentioned earlier in the report, Rustenburg is the main node within the Rustenburg Local Municipal area and the importance of Rustenburg lies with its administrative, residential cluster and employment opportunities associated therewith. The focus area for development is in the south-eastern quadrant along old Pretoria road, the N4 and the Magaliesburg road, with the Hexriver forming the outer boundary. The area to the south of the N4 is mostly earmarked for single residential development, whereas the areas to the north of the N4 are earmarked for multiple residential developments. The area along the R24, from the mixed land use area southwards and adjacent to this road, up to the Hexriver tributary is also earmarked for a multiple residential development.

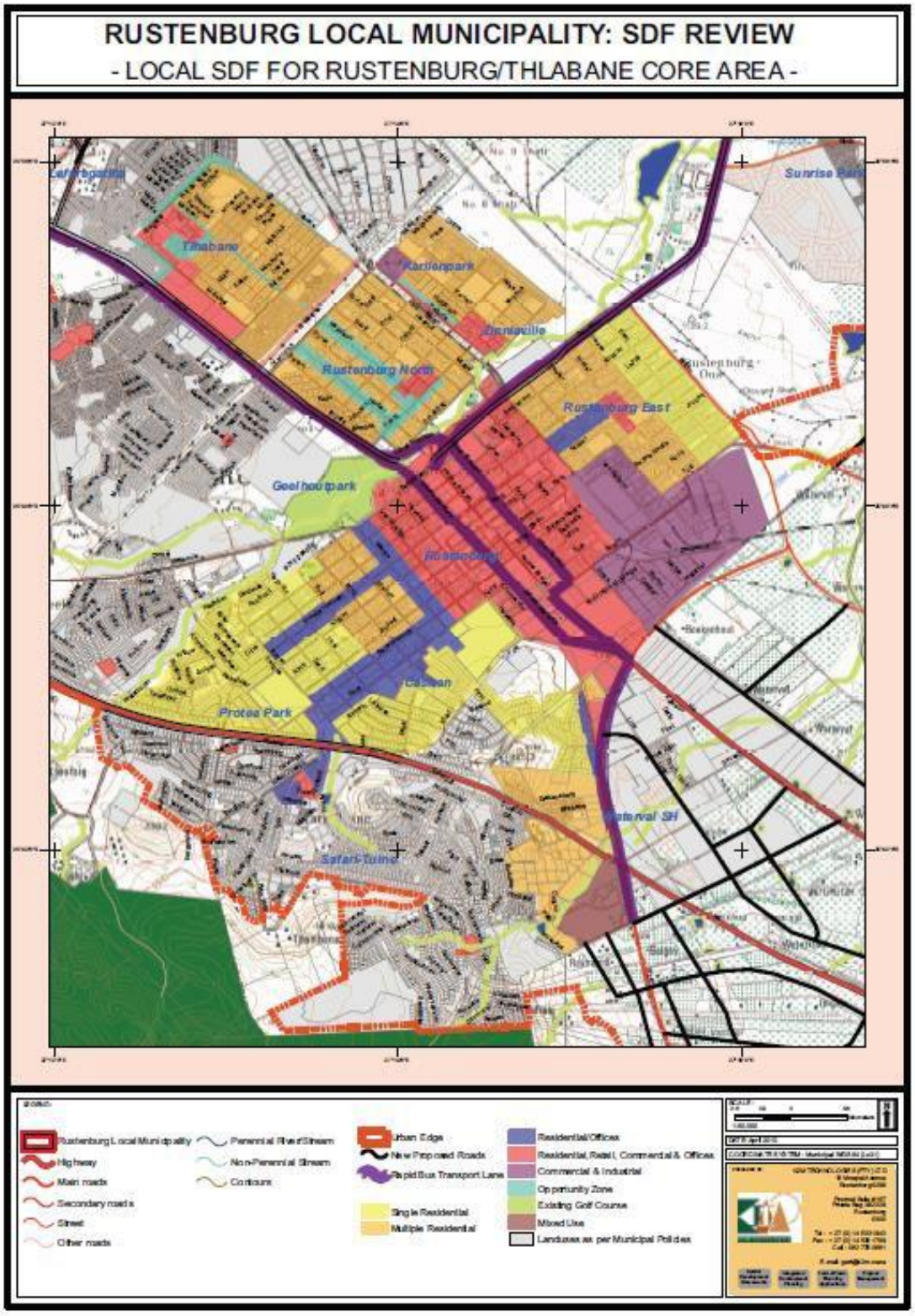


Figure 4-2: Rustenburg/Thlabane Core Area LSDF

(Source: Rustenburg Spatial Development Framework - 2010 Review)

(b) Phokeng

Future residential development of Phokeng will mostly be concentrated in a western direction, north of the Rustenburg/ Swartruggens road earmarked for multiple residential developments.

The new development area is located on either side of the existing development, a bit removed from the planned RRT corridor. The new developments are approximately 3 km to either side of the RRT corridor (the R565).

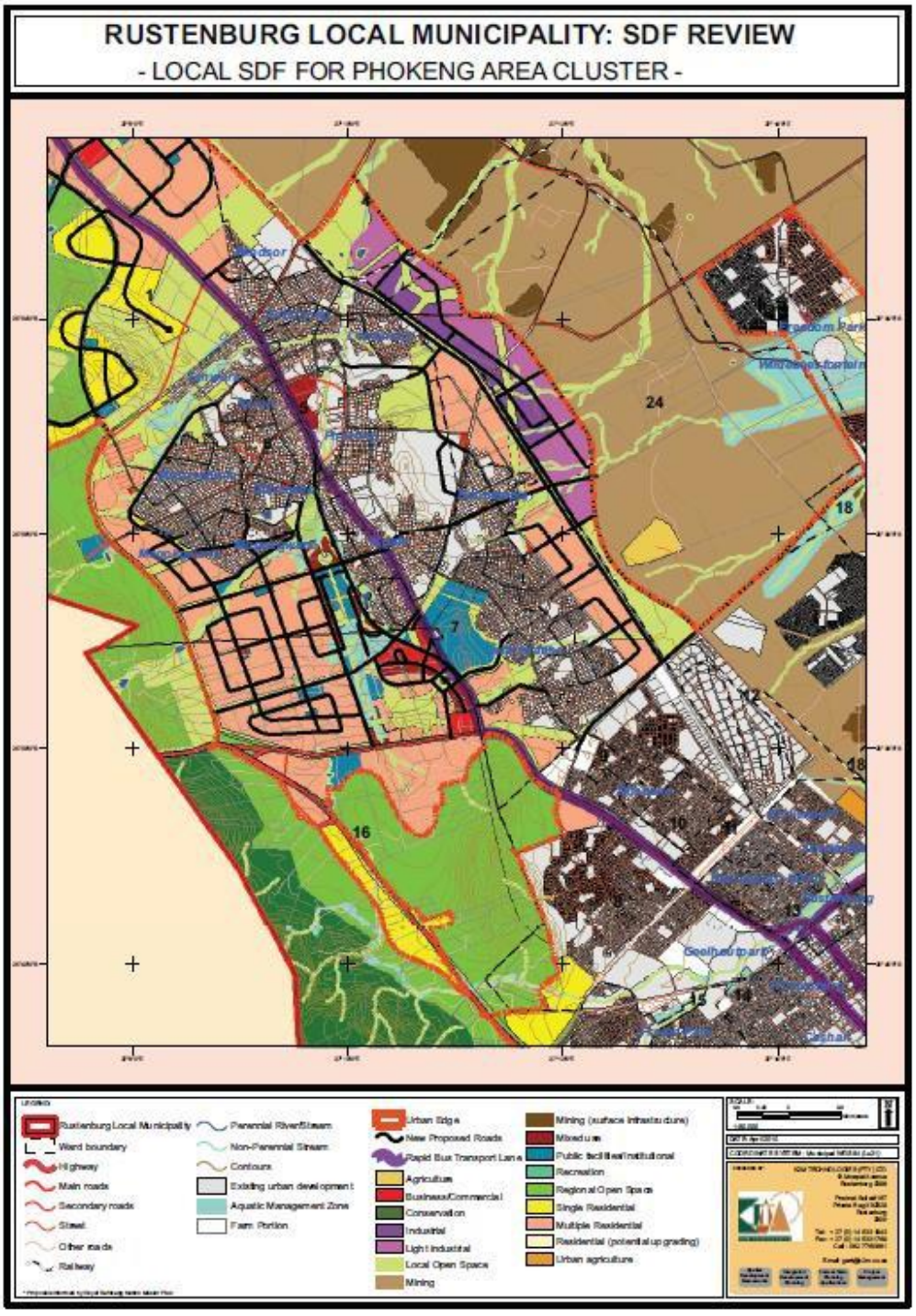


Figure 4-3: Phokeng Area Cluster LSDF

(Source: Rustenburg Spatial Development Framework - 2010 Review)

(c) Boitekong

Large parts of the Boitekong area cannot be developed due to various factors affecting land availability such as mining activities, surface infrastructure, safety zone of the slimes dam, etc.

Large parts of land earmarked for development are located between Kanana and Boitekong along the R510. The areas in and around Kanana have also been earmarked for both single and multiple residential development in terms of the SDF Review 2010.

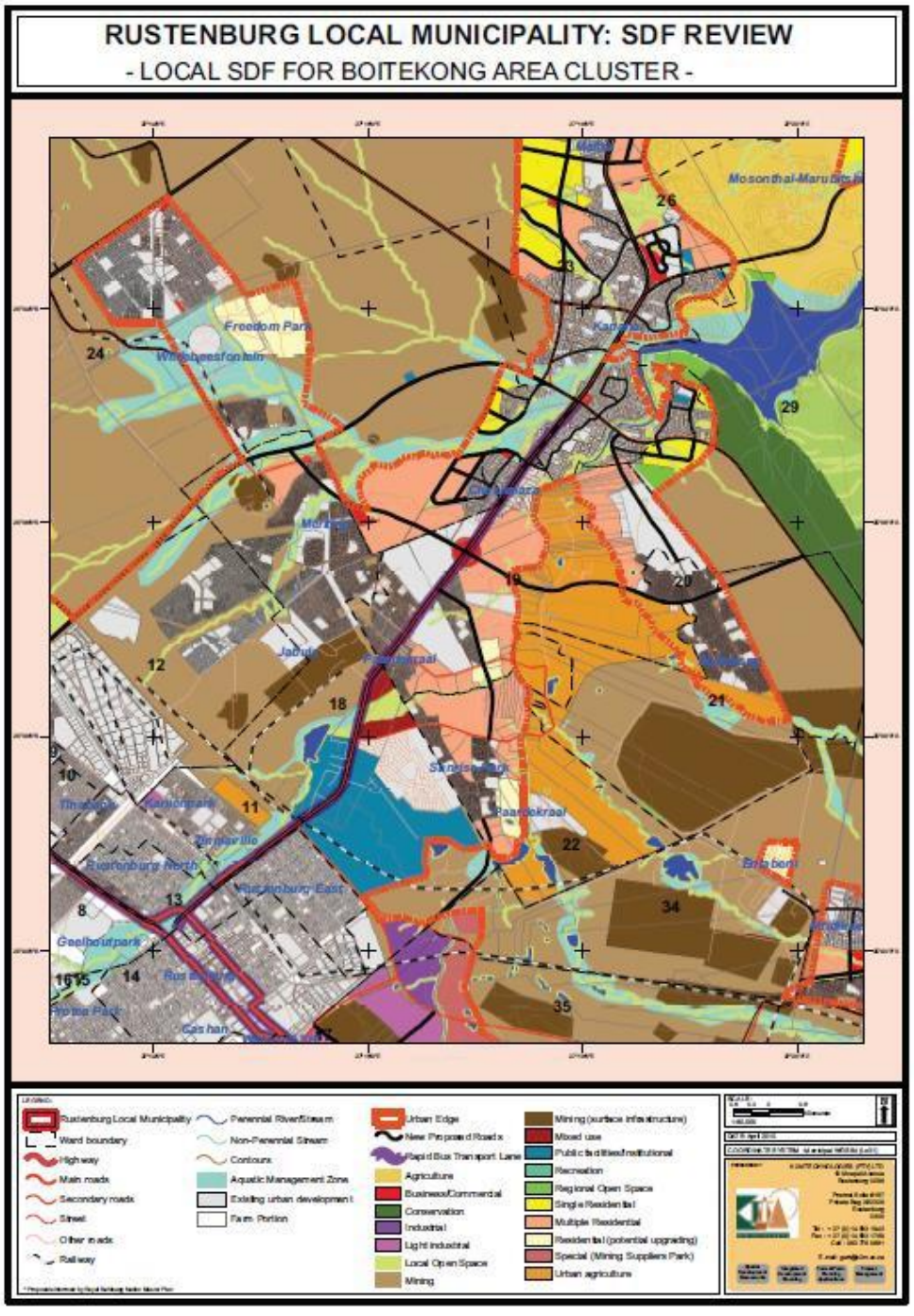


Figure 4-4: Boitekong Area Cluster LSDF
(Source: Rustenburg Spatial Development Framework - 2010 Review)

(d) Future Growth Direction

(i) Marikana

Marikana is a growth node not associated or linked to the main node (Rustenburg) and is separated from the rest of Rustenburg by a river and mining activity separating the two areas from each other.

The SDF Review 2010 makes provision for a large concentration of people to be accommodated within the Marikana node. This should be taken into consideration when planning future transport of the RLM.

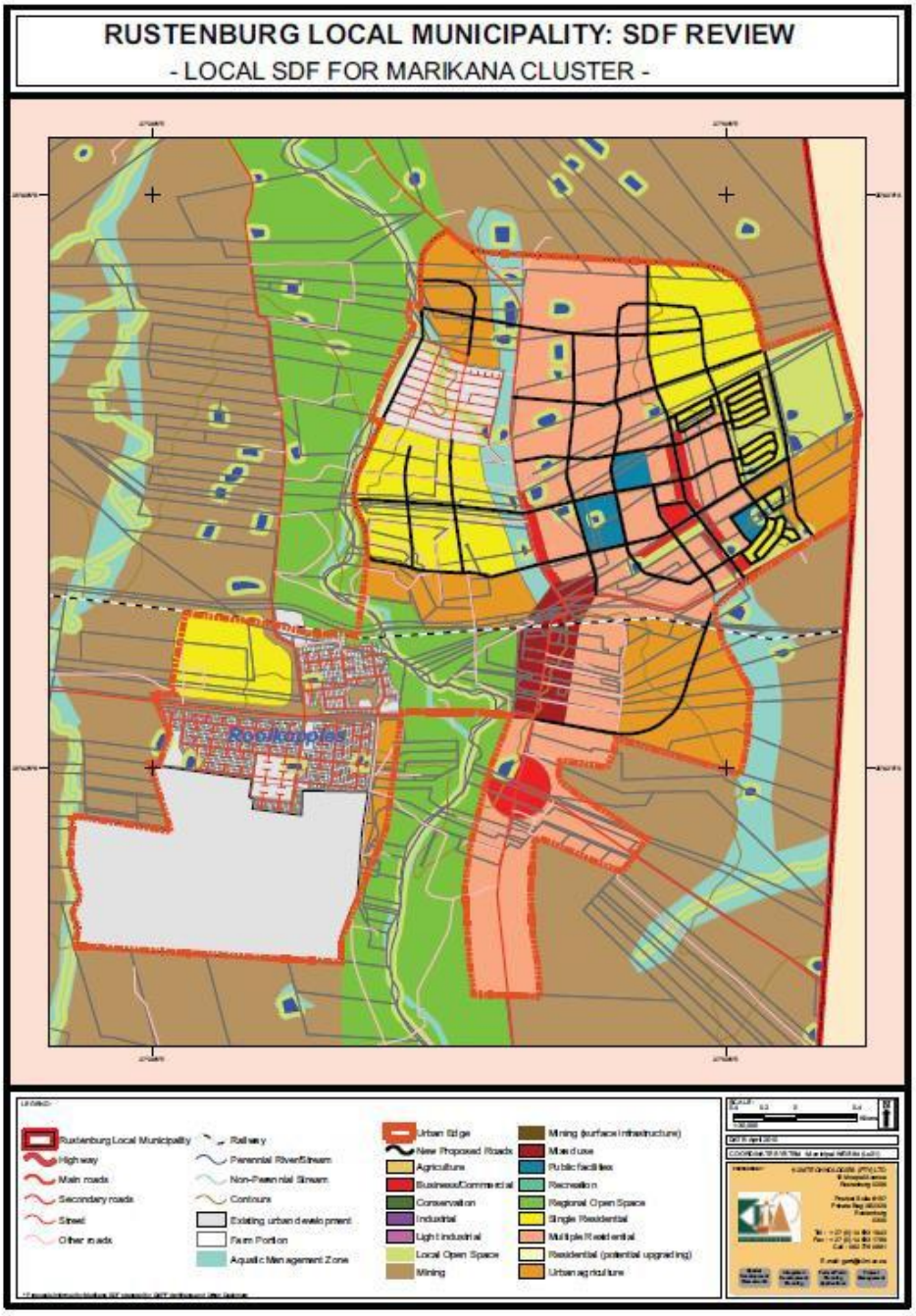


Figure 4-5: Marikana Cluster LSDF
(Source: Rustenburg Spatial Development Framework - 2010 Review)

(ii) New Town Area Cluster

The New Town Area Cluster is an area located to the north-west of Tshwara and Phokeng. The SDF Review indicates large portions of land for future development along the R565 to Sun City. The main land uses proposed within the New Town Area Cluster include multiple residential and mixed land use development along the R565 with lower density residential further away and to the south of the R565.

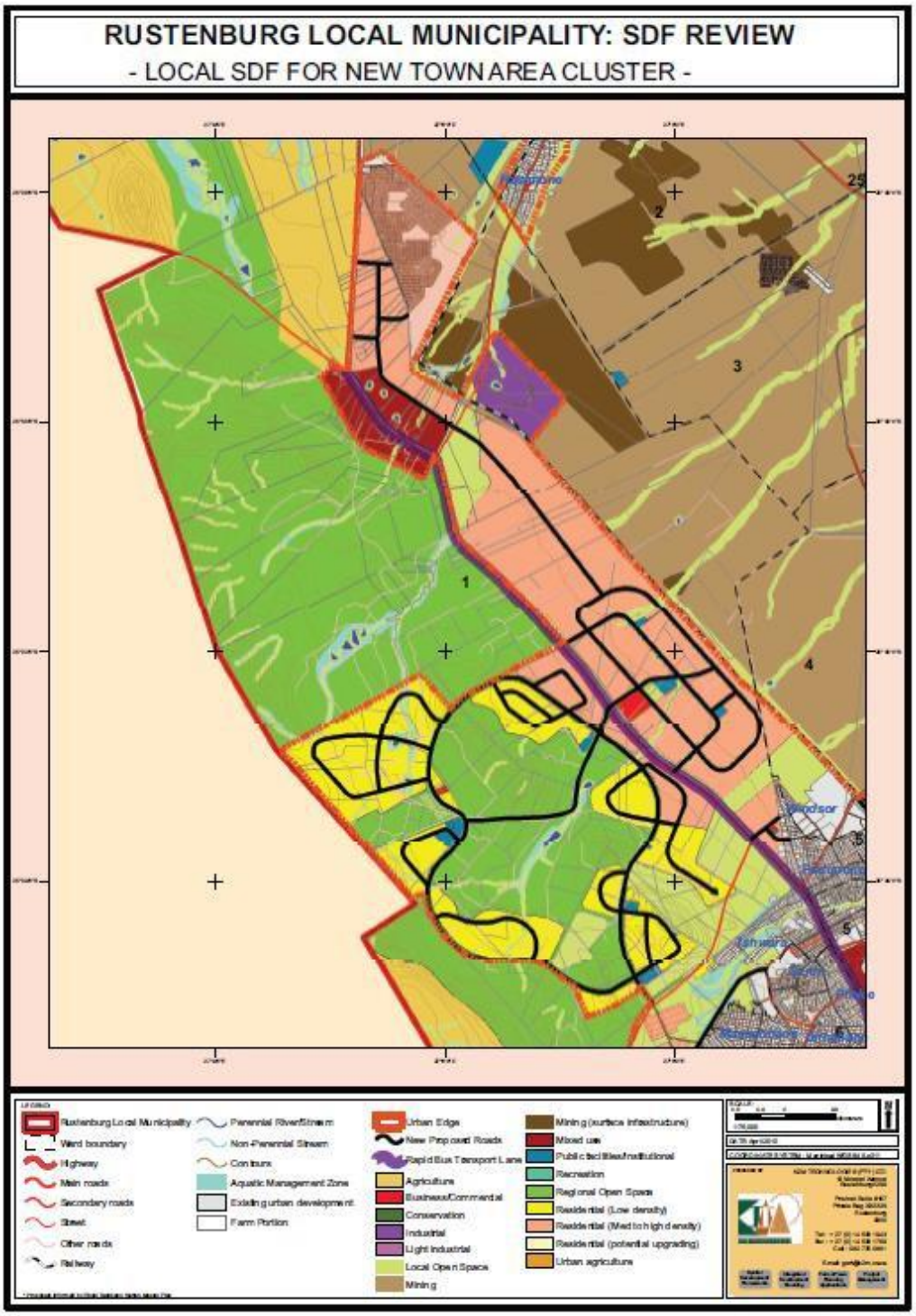


Figure 4-6: New Town Area Cluster LSDF

(Source: Rustenburg Spatial Development Framework - 2010 Review)

4.3 Criteria for Land Use and Transportation Integration

Transportation infrastructure is vitally important for the economic growth of cities. A safe and efficient public transport system that connects people, places and businesses in a cost effective manner will give people the opportunity to improve their standard and quality of living. It is therefore important to make sure that land use and transportation are integrated as much as possible in order to achieve the above. A study done by the New South Wales Department of Urban Planning Affairs in 2001 listed key concepts that need to be understood when planning for transport of choice. Making a decision to travel is influenced by the following principles:

- *"Convenience:* *The transport mode needs to be easy to find and use, and to transfer from one mode to the other.*
- *Information:* *Reliable information at accessible locations is essential to encourage use of various travel alternatives.*
- *Proximity:* *Transport facilities and services such as cycle paths and bus services, need to be in close, convenient and obvious locations to people's trip origins and destinations.*
- *Destination of choice:* *The more destinations that can be linked on a public transport route, the more attractive it will be.*
- *Directness:* *Routes should take the shortest and least deviating course, with priority to achieve the fastest travel time for walking, cycling and public transport.*
- *Security:* *The environment for walking and waiting needs to be comfortable and safe from personal attack or conflicts with traffic."*

The choice of making use of a particular mode of transport is influenced by the above principles and if these principles were not taken into consideration during the planning and implementation of transport modes/ infrastructure, this may have a negative effect on the utilisation of the particular mode. With the above in mind, a set of criteria was drafted in order to measure level of integration that is promoted between land uses and transportation.

The criteria set out below were based on other ITPs done in other municipalities, but adapted to suit the circumstances in this report and makes use thereof as a tool to measure the level of integration between land uses and transportation in the Rustenburg Municipal area. The criteria for achieving integration between land use and transportation are based on the following principles:

- Promote a more sustainable city;
- Strive to achieve efficient cities;
- Improve accessibility to areas of opportunity; and
- Promote economic growth opportunities and business facilitation.

Each of the above mentioned principles are discussed in more detail below, also indicating how the principle should be achieved.

Promote a more sustainable city by:

- Identifying routes to be used by public transportation, as well as interventions to encourage / promote public transport routing;
- Identification of the need for as well as existing location of intermodal facilities;
- Desired densities to make public transport viable; and
- Improve all modes of public transport.

Strive to achieve more efficient cities through the following:

- Promote public transport between nodes as identified in the Spatial Development Framework;
- Identify a clear road hierarchy and road function that will relate to the spatial pattern; and
- Identify future corridors for development as per the Spatial Development Framework.

Improve accessibility to areas of opportunity includes:

- New infrastructure to connect "poor" with economic centres;
- Look at proposals to make use of existing infrastructure to improve accessibility where needed.

Promote Economic Growth opportunities and business facilitation

- By improving transport modes to areas of import and export (airports/ harbours, etc.) linking these facilities to economic centres.

4.4 Spatial Guidelines to Support the CITP and Encourage Effective Land Use and Transportation Integration

4.4.1 Gaps in the Spatial Development Framework

Table 4-1 below indicates the compliance of the existing policy to the criteria set out above as analysed by the Project Team.

Table 4-1: Existing Policy

Criteria for Land Use and Transportation Integration	Does the Spatial Framework Comply with the Criteria?	Comments
Promote a more sustainable city		
Clear identification of routes to be used by public transportation, as well as interventions to encourage / promote public transport routing.	Yes	The SDF and the routes identified for the RRT are acknowledged and aligned.
Identification of intermodal facilities (existing and proposed).	Yes	The RRT project identifies station locations and promotes supporting development around it.
Desired densities to make public transport viable.	Yes	The SDF promotes higher densities along the main RRT trunk routes.

Criteria for Land Use and Transportation Integration	Does the Spatial Framework Comply with the Criteria?	Comments
Improve all modes of public transport (including non-motorised modes).	No	Proposals on NMT modes aren't specific and can be elaborated on.
Strive to achieve efficient cities		
Promote public transport between nodes as identified in the Spatial Development Framework.	Yes	The RRT network is located on main routes linking main employment and residential nodes.
Identify a clear road hierarchy and road function that will relate to the spatial pattern.	Yes	The road hierarchy has been indicated as well as the intended function of each of the roads.
Identify future corridors for development as per the Spatial Development Framework.	Yes	The implementation of the RRT network is done in phases,
Improve accessibility to areas of opportunity;		
New infrastructure to connect the "poor" with economic centres.	Yes	The accessibility of the "poor" to employment opportunities is improved by the implementation the RRT system.
Look at proposals to make use of existing infrastructure to improve accessibility where needed.	Yes	Existing roads used for implantation of public transport initiatives
Promote economic growth opportunities and business facilitation.		
By improving transport modes to areas of import and export (airports/ harbours, etc.) linking these facilities to economic centres.	Yes	The proposed RRT system link Rustenburg CBD and surrounding areas along the trunk routes with the exiting airport.

5 Transport Needs Assessment

5.1 Introduction

This chapter focus on the needs as identified by the Transport Register, Household Travel Survey, the information from the IRPTN network, the Integrated Spatial Development Plan and consultation with RLM representatives and location roads and traffic engineers in the RLM area. The needs assessment shows the present problems and needs that will be translated into projects for prioritisation.

5.2 Summary of Transport Needs identified from the Transport Register

5.2.1 Transport System

According to the to the 2012 household surveys which were conducted for the Rustenburg Rapid Transit investigated the public transport use in RLM shows the use of taxi transport is approximately 36%, use of bus is approximately 15%, car usage is approximately 24%, walking contribute 7% and company transport also contribute approximately 7%.

This shows that the usage of public transport as well as walking are more dominant than private transport usage.

5.2.2 Public Transport

The Bojanala DITP identified key issues or challenges affecting public transport in the district, these are:

- Improvement of the public transport system;
- Improvement of road infrastructure, especially in rural areas;
- Improvement of municipal capacity in dealing with land transport planning and implementation;
- More accessible and affordable public transport for the rural community and special needs users;
- Management and optimisation of road freight movement including hazardous substances;
- Improvement of road safety and law enforcement; and
- Improvement of congestion in Central Business Districts, especially in Rustenburg.

Public transport in Rustenburg includes taxis, meter taxis and bus which will be discussed in this chapter. The dominant mode of public transport is taxi. The passenger rail service in RLM was discontinued in 2012. Public transport must provide mobility to all and must be accessible.

(a) **Taxis**

There are currently 35 public transport facilities in the RLM mainly for taxis and buses. According to the Northern region taxi council information obtained in 2007 and the CPTR 2002, there are 1592 taxis operating in the RLM with 3 212 fleet. According to the surveys

that were conducted for the facilities, approximately 78% of these facilities are informal, 11% are semi-formal, 11% are formal.

(b) **Bus**

The following bus services operate in the Rustenburg Local Municipality:

- **Bojanala Bus Service**

  The Bojanala Bus service has two depots, one in Rustenburg and the other one in Thlabane. Bojanala Bus Company receives ticket subsidies through the National or Provincial bus subsidization scheme. According to the Integrated Development Plan (2012-2017) Bojanala Bus provides the subsidised commuter services in the Rustenburg in terms of an interim contract of which the monthly subsidy paid to the operator is approximately R10 million. It has a fleet of 222 commuters buses, of which approximately 134 buses operate in the Rustenburg Local Municipality with an average fleet age of 12 years. There are 102 bus stops and 88 routes served in the Rustenburg Local Municipality.

- **Thari Bus Service**

  Thari Bus service operates only a few routes in Rustenburg compared to Bojanala Bus service. A total of 155 routes are operated by Thari Bus service, of which it only operate 9 routes within the Rustenburg Local Municipality. Thari Bus Company receives ticket subsidies through the National or Provincial bus subsidization scheme.

(c) **Metered Taxis**

The metered taxis mainly operate in the CBD, waterfall and Boitekong Mall. The current fleet is estimated to be 110, with an average age of 10 years.

(d) **Rail**

According to the RLM integrated Development Plan 2012-2017, Section 2, Rustenburg has two interprovincial railway lines passing through it.

The first railway line runs from east to west through the southern part of Rustenburg. This line is linked to Pretoria via Magaliesburg and runs from Johannesburg via Swartruggens and Koster to Zeerust. The second railway line runs from Pretoria via Brits to Rustenburg and then continues in a northerly direction past Sun City and Magwase to Thabazimbi.

According to PRASA 2012/13 Annual report, Rustenburg currently does not have active rail passenger services for short or long distance travel. Services on the Johannesburg to Mafikeng corridor were terminated on the 1st of August 2012 due to budgeted losses that amounted to R19.4m for the 2012/13 financial year.

During 2015 State of the Province address, the Premier of the North West Province Mr. Supra Mahumapelo mentioned that the Mafikeng to Johannesburg rail corridor would be

resuscitated through cooperation with PRASA. The project, which is valued at approximately R30 million, includes the refurbishment of rail related infrastructure in Mafikeng, Zeerust, Groot Marico, Koster, Swartruggens and Magaliesburg. The Memorandum of Understanding was signed on the 20th of March 2015.

5.2.3 Managing Public Transport Infrastructure

The public transport facilities in the RLM are mainly for taxis and buses. According to the surveys that were conducted (CPTR) for all the public transport facilities in the RLM which are 35 in total, most of them are in poor condition. Approximately 78% are informal, semi-formal and formal are 22%. According to the facility surveys conducted approximately 53% are off street ranking and 47% are on street ranking.

To give a clear understanding on the rank categories, the definitions are provided below.

A	Formal facility with all the necessary infrastructure for NMT, People with disability, high Security and safety
B	Formal facility with limited infrastructure for NMT, people with disability, safety, security
C	Semi-Facility but with no infrastructure for majority of users of the facility
D	Informal facility with no infrastructure to support the effective operation of the rank

The overall condition of the facilities is shown in **Annexure A- CPTR,** the evaluation matrix. The overall conditions of the facilities were obtained from the results of the public transport infrastructure surveys that were conducted. If the component category (paving, toilets, fence, seats, shelter, etc.) is:

- ≤50% then the overall condition is Poor
- >50% ≤ 75% the overall condition is Fair
- >75% the overall condition is Good

The condition and the categories of the ranks are shown below in **Table 5-1.**

Table 5-1: Public Transport Facility Condition

Facility Name	Physical Location (Description)	Rank Category	Overall Rank Condition
Rustenburg Taxi Rank (main Rank)	Nelson Mandela Dr, Bethlehem Dr	A	Good Condition
Kanana Taxi Rank	Along the R510 within Kanana	D	Poor Condition
Zinniaville Taxi Rank	Petunia, Sonneblom	A	Good Condition
Bethanie Taxi Rank	Bethanie along the main road which intersect the R511	D	Poor Condition
Thekwane Taxi Rank	Thekwane	D	Poor Condition
Wonderkop Taxi Rank	Wonderkop	C	Poor Condition
Boitekong Taxi Rank	Mogwase St, Bophuthatswana St	D	Poor Condition
Rustenburg Taxi Rank	Nelson Mandela Dr, Bethlehem Dr	B	Poor Condition
Rustenburg Bus Rank	Nelson Mandela Dr, Bethlehem Dr	A	Good Condition
Tsitsing Taxi Rank	R510, R556	D	Poor Condition

Monakato Taxi Rank	R510 and the intersecting road from Monnakato	C	Poor Condition
Haartebeesfontein Taxi Rank	Haartebeesfontein	B	Poor Condition
Rankelenyane Taxi Rank	Rankelenyane and main road to Mabitse	D	Poor Condition
Bleskop Pick up Point	Photshaneng	C	Poor Condition
Entabeni Taxi Rank	Entabeni along the railway line	D	Poor Condition
Mfidikwe Taxi Rank	Mfidikwe next to the railway line	D	Poor Condition
Photsaneng Taxi Rank	Photshaneng	D	Poor Condition
Nkaneng Taxi Rank	Nkaneng	C	Poor Condition
Marikana Taxi Rank	Corner of the Marikana road intersecting the N4	D	Poor Condition
Segwalane Taxi Rank	Intersecting road from Segwalane and the R556	C	Poor Condition
Rasimone or Sinet Taxi Rank	Bafokeng North Mines	D	Poor Condition
Modikwe Taxi Rank	Modikwe	D	Poor Condition
Seraleng Taxi Rank	Seraleng	D	Poor Condition
Waterfall Mall Taxi Rank	Augrabies Ave, Howick Ave	C	Poor Condition
Sunrise	300m east of R510 and Molapo Dr Intersection	D	Poor Condition
Tlaseng Bus Depot	Intersecting road from Tlaseng and the R556	C	Poor Condition
Meriting Taxi Rank	Bophuthatswana, R510	D	Poor Condition
Thlabane Taxi Rank	R565, Swartruggens Rd and Assegaai St	D	Poor Condition
Phokeng Taxi Rank	Bafokeng complex next to Royal Bafokeng Sports Palace along the R565	C	Fair Condition
Chaneng Bus Depo	Next to Royal Bafokeng platinum	B	Poor Condition
Chaneng Taxi Rank	1km south east of Chaneng primary school	D	Poor Condition
Robega Taxi Rank	Along the Main Rd from Robega intersecting the R565	D	Poor Condition
Luka Taxi Rank	Ga-luka	D	Poor Condition
Freedom Park Taxi Rank	Freedom Park	D	Poor Condition
Meriting Taxi Rank 2	3km west of R510 and Bophuthatswana St	D	Poor Condition
Meriting and Sondela	1km west of R510 and Tlou	D	Poor Condition

According to the facility infrastructure surveys done in 2014, approximately 89 % of the facilities are in poor condition whilst approximately 11% are in a fair to good condition.

Annexure A-CPTR contains the evaluation matrix that shows the rank categories in more detail.

The needs identified for management of public transport infrastructure include:

- Most of the facilities are in “poor” condition, even facilities with rank category A require significant maintenance;

- Facilities with rank category B require maintenance and provision of infrastructure for NMT and people with disabilities;
- Category C facilities require provision of shelters for protecting commuters against weather conditions, lighting and a fence for security of commuters;
- Facilities with category D can be formalised for the facilities serving more than three destinations or population growth should be considered in order to decide if a formal or semi-formal facility should be provided; and
- Provision of hawker facilities at taxi ranks.

5.2.4 Traffic Signals

EPS consulting Engineers was commissioned in 2013 to investigate intersections where signals would be required. This study was mainly focusing on Rustenburg CBD and the immediate outlying areas. Of the total intersections investigated, 34 would need to be signalised in order to improve its level of service and make them safer. More details regarding the description of these intersections are included in the CPTR report given in **Annexure A** of the report.

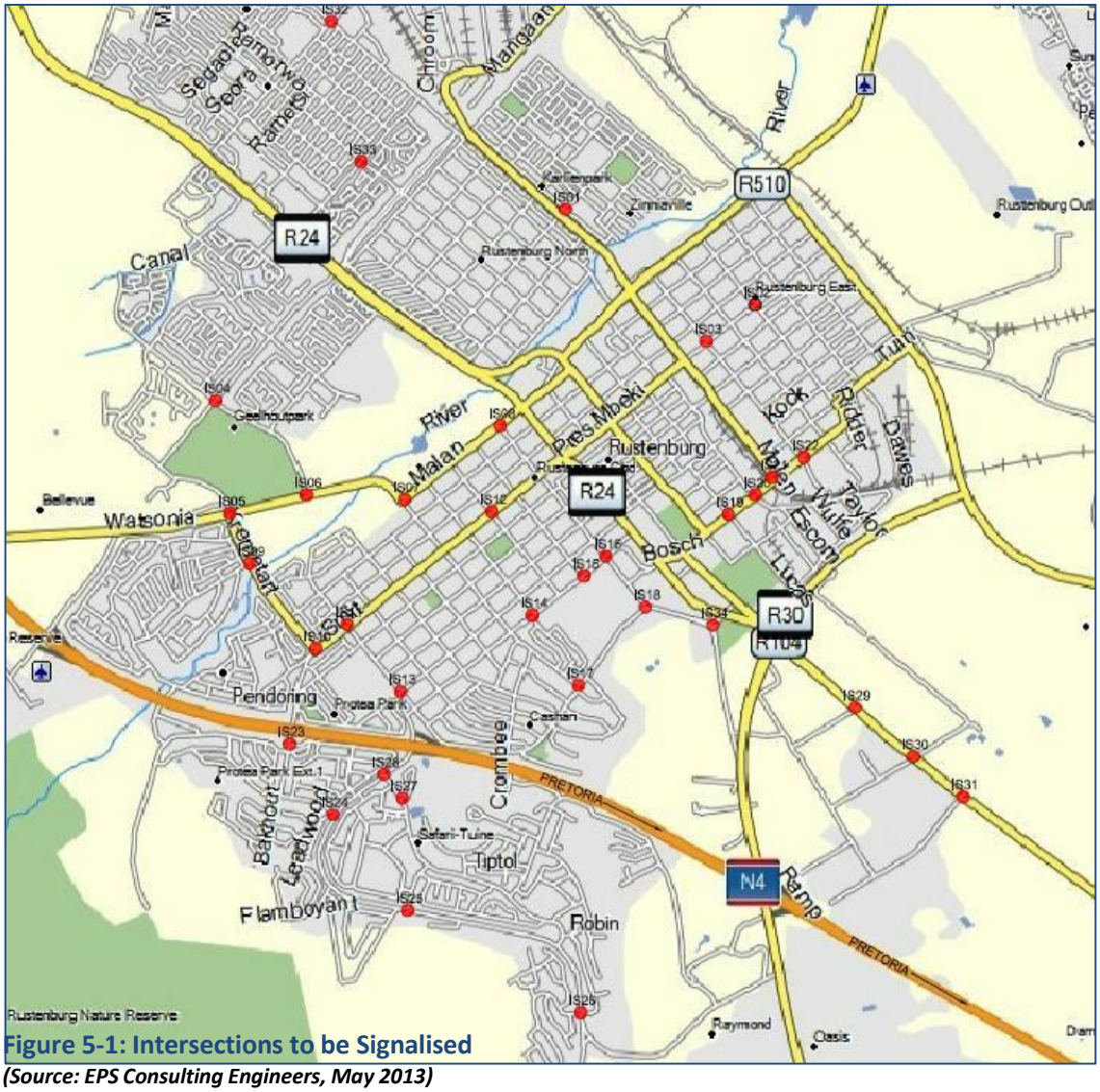


Figure 5-1: Intersections to be Signalised

(Source: EPS Consulting Engineers, May 2013)

5.2.5 Managing Transport Safety

Transport safety management should consider the following needs and requirements:

- Upgrading of infrastructure should be done based on a safety audit process to improve traffic safety;
- Promote road safety education and training;
- Adequate NMT facilities around public transport nodes;
- Provide multi-modal facilities to ease transfers of commuters;
- Promote the use of traffic management plan;
- Promote investment and maintenance in the public transport system;
- Law enforcement officers should be placed at major transport facilities; and
- Provide operating CCTV and security monitoring system at all facilities.

5.2.6 Financing/Funding Sources

Various sources of funding are available to Municipalities these include:

- Public Transport Infrastructure and Systems Grant (PTISG) from National Treasury;
- Medium Term Revenue and Expenditure Framework (MTREF) Budget;
- Public Transport Infrastructure System Funding Allocations (PTISF);
- Capital Replacement Reserve (CRR);
- Division of Revenue Act/ Bill (DORA);
- Public Transport Operations Grant (PTOG); and
- Municipal Infrastructure Grant (MIG).

Each fund is further explained in Chapter 11 and each listed project is assigned to its relevant funding Agency and specific fund.

5.3 Interpretation of Rustenburg Spatial Development Framework and Development Trends

The RLM SDF and development trends were further analysed to obtain a clearer understanding of development needs as it related to transportation infrastructure and transportation services.

5.3.1 Directives from Chapter 4: Special Development Framework

The following needs were identified from the Spatial Development framework analysis and the interpretation of the current IDP (Integrated Development Plan):

- Promote public transport routing;
- Improve all modes of public transport;
- Identification of a clear road hierarchy and road function;
- Promote public transport between nodes as identified in the SDF;
- Provide infrastructure that connects public transport system with economic centres and provision of transport infrastructure for economic growth;
- Identify future corridors for development;

- Roads Master Plan is required in most areas;
- Provision of Access Management Policy; and
- Travel time and distance should be reduced where possible particularly for low income users.

5.3.2 Interpretation of Needs

Provision of priority lanes can reduce the travel time for users of public transport. Settlements must be planned in such a way that they are accessible to public transport, taking account of the size of settlement as this will assist in determining the spacing of public transport stops, existing public transport and how to link the settlement to the existing transport network.

The following sections provide an overview of development applications in the RLM. The purpose is to obtain an understanding of where development will happen in the short term (2 – 4 years), medium term (4 – 6 years) and the long term (6 – 10 years). This will enable the municipality to make important decisions regarding infrastructure projects to be mobilised and will further assist in determining the needs of the communities in term of current and future development.

5.3.3 Township Establishment Application Process

The information received was categorized according to the stage it is currently in and plotted on a map. The main categories used to determine the timeframe for development are:

- Submission;
- Approval; and
- Proclamation.

Each of the above mentioned categories are explained in more detail below.

(a) Submission

This phase consists of the preparation, submission and administration of an application to the local council. Whilst the estimated timeframe for the submission process is 12 months, the application can be prolonged as a result of comprehensive studies that need to be conducted and will inform the final submission. An application will generally contain a motivational memorandum, services/infrastructure reports, traffic and environmental studies as well any other information the local authority prescribes for submission.

(b) Approval

The application is then circulated to different internal and external departments for comment and bearing no objections will be approved. The expected duration of an application until approval is 24 months; however this timeframe is dependent on all parties commenting within the allocated timeframe of 60 days.

(c) Proclamation

The Deeds Office is the administrator of landownership within an area/ region and is the final step in the application process. An appointed conveyancer finalises the approved application

by opening up the deeds register for registration and proclamation of the township. Once the township has been proclaimed it is advertised in the provincial gazette. The projected duration for the proclamation period is approximately 36 months from date of submission.

(d) Servicing

This phase focuses on providing the township with the necessary services. This includes the installation of electrical services, roads, stormwater drainage, water and sanitation services. The average timeframe for the installation of services into the settlement is approximately 48 months from date of submission.

(e) 30% Developed

Primary development is implemented in the early stages of construction. Buildings are to be constructed according to council and service provider conditions.

(f) 50% Developed

This phase includes the linking of the installed services with the constructed building.

(g) 80% Developed

This mostly concludes the entire construction phase.

Figure 5-2 below shows the duration and different stages of the development of a township.

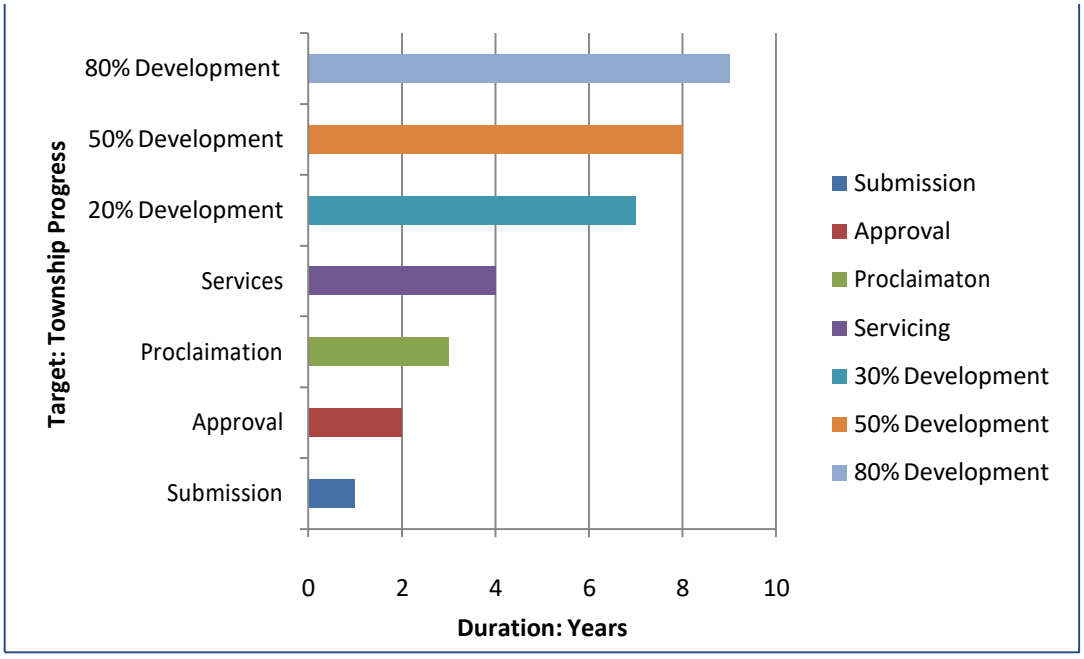


Figure 5-2: Township Development Phases

The Table in **Annexure H** presents existing and proposed township information within Rustenburg. The table indicates the development stage and physical address of the township. The given information will inform and guide future road development and indicates possible

public transport demands. The implementation of the IRPTN system will link residential settlements to the places of income (CBD, mining belt and industrial parks). **Figure 5-3** shows the content of the tables as mapped onto the road network.

5.3.4 Township Development Trends

The map below shows the existing and proposed townships within the jurisdiction of RLM, identifying the expected growth direction and timeframes for new development (townships).

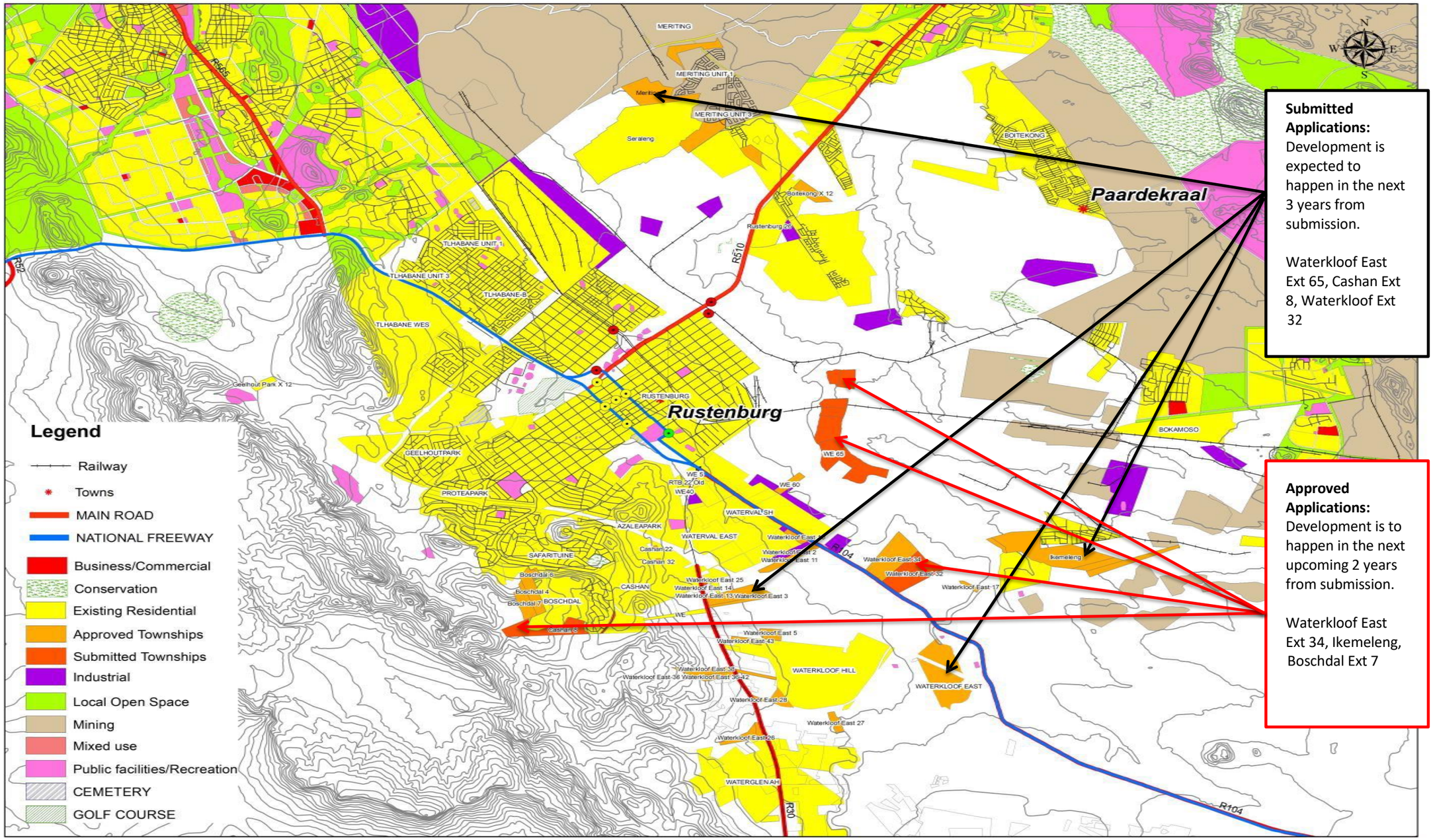


Figure 5-3: Township Development Trends

The largest portion of development is expected southeast of the CBD at Cashan Ext 8, and Boschdal Ext 4 & 7 townships. These developments are proposed to be developed within the next 5-10 years. The proposed townships are situated west of the R30 road that joins the R104 national road.

Three new townships located south-east of the town, are currently in the pre-proclamation phase. The projected timeframe for the development of these townships is expected to be 15 years. The proposed Ikemeleng Township is situated southeast of the R104 road.

5.3.5 Spatial Development Conclusion and Recommendations

As mentioned above the intention of this study is to provide an overview of the potential impact of development applications, however, the unavailability of cadastral information may have an impact on the accuracy of the results of this study.

The analysis of the Review of the Rustenburg CITP indicates that this document complies with the criteria needed for the purposes of this CITP report.

The main issues emerging from the Rustenburg Local Municipality are:

- Future growth of the RLM is around Rustenburg concentrated long the R565 towards Royal Bafokeng and Sun City;
- The majority of the people (labour force) reside within 20 kilometres of Rustenburg, to north and western parts of Rustenburg;
- The main roads, the R510 and the R565 form the backbone of the RIRPTN as it is the main link between the labour force and economic opportunities; and
- The future development of the New Town Cluster and Marikana must also be taken into consideration in the future planning of the RLM.

5.4 Public Participation and Stakeholder Feedback

Stakeholder consultation is an important component in reaching agreement about present and future problems and needs and in identifying potential solutions to problems within the financial constraints of the planning authority. Likewise, stakeholder consultation is an important component in setting objectives and selecting a shortlist of solutions whether they are in the form of policies, strategies or projects. Prioritisation of the projects was done in consultation with the RRT, RLM Planning and PMU departments.

As no demand modelling was done with software for the CITP, the following approach was followed that relied heavily on stakeholder participation and feedback to estimate the demand:

- Interrogate the Household Travel Survey for information relating to travel patterns and needs as it related to travel;
- Workshop travel patterns with RLM Officials from:
    - RRT Office
    - Roads and Stormwater
    - North west Province Department of Public Works
    - Local Traffic and Roads Engineers;
- Observe traffic in Rustenburg during various times of the day;

- Determine availability of traffic counts for conversion into link counts;
- Determine current areas of development; and
- Grow current traffic for the 5 year and 10 year scenario.

5.5 Observed and Latent Demand for Travel

Travel patterns were identified by interrogating the Household travel survey and by conducting workshops with the relevant stakeholders. Additional information was obtained from traffic counts and previous demand modelling done for the 2008 roads master plan.

5.5.1 Observed Travel Patterns

The RLM's road network forms an integral part of the transportation infrastructure. Rustenburg is characterised by an extensive road network of which the N4 forms the backbone of this network. The most prominent settlements, apart from Rustenburg, in the RLM include Phokeng and Boitekong which are connected to Rustenburg via the R565 and the R510 respectively. The most north-south movements are limited to the P16-1, Beyers Naude Road and President Mbeki Road. These roads have the highest congestion during peak hours.

Traffic in Rustenburg is characterised by relative short and high peak hour demand which is partly due to school timetables. The roads experiencing the most congestion in Rustenburg are the CBD and the southern suburbs, specifically the following:

- P16-1 from Waterberg Road to P2-4 (R104);
- Helen Joseph drive between the southern suburbs and the CBD, including the interchange with the N4; and
- Kruger Street between the southern suburbs and the CBD.

These congestion areas are an indication of the limited routes being provided across the N4 freeway, and is indicative of the need for improved capacity across the N4, linking the southern suburbs with the CBD area of Rustenburg. Further status quo issues are:

- Nelson Mandela Drive and Oliver Tambo Drive in the CBD, including on street parking on these streets;
- R 510/Beneden Rd intersection with Buiten / P16-2;
- Dr Moroka/Lebone/Wit/Molen Street at-grade intersection next to the railway line; and
- Intersections on Kock Street are without sufficient turning lanes. No clear road hierarchy is presented on Kock Street, which is similar to other adjacent streets.

In addition to the extent of road congestion, some other traffic related issues were identified in the Road Master Plan, 2008 (refer to **Chapter 3**).

A workshop with the RLM planning department also revealed that the perceived main travel demand in Rustenburg is along the lines indicated by blue arrows in **Figure 5-4.**

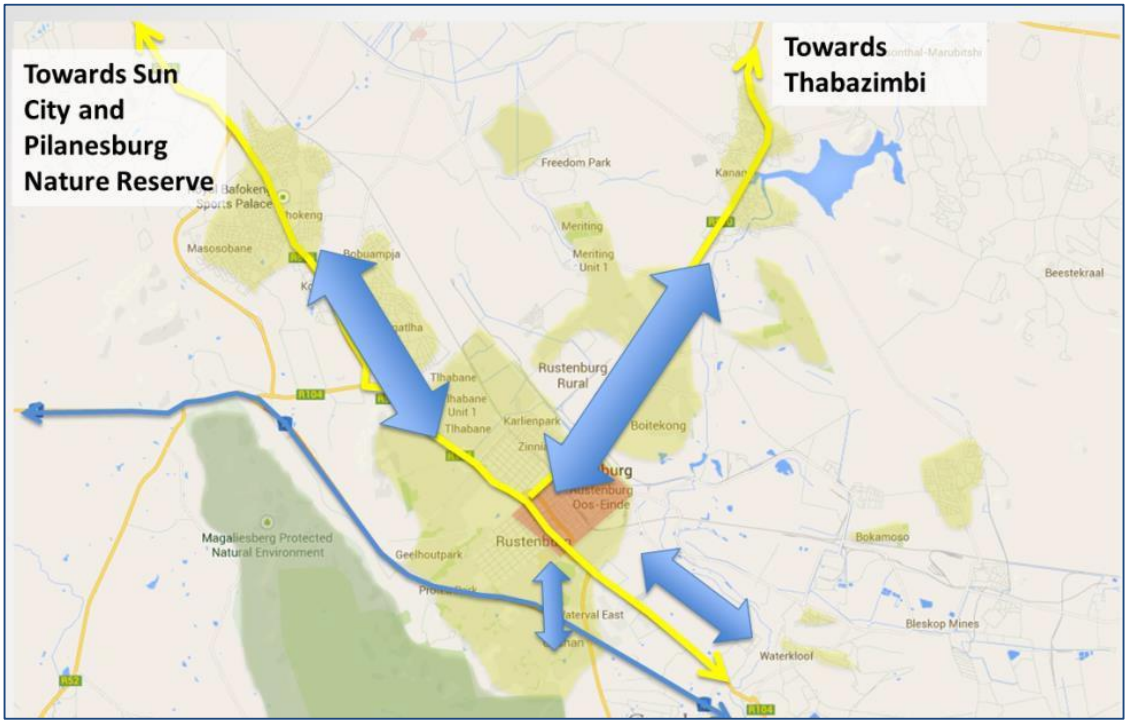


Figure 5-4: Perceived Travel Demand along Main Corridors

(Source: Workshop in training session with delegates from Rustenburg Local Municipality, 2014)

Future private transport demand is expected to be generated from developments in an east/west direction since the Magaliesburg in the south and the mining areas in the north limit further north/south development.

5.5.2 Latent Demand for Travel

The latent demand for travel was discussed in section 5.3.4 and again shown in the picture below. This links well with **Figure 5-5** that describes the perceived travel demand as shown above.

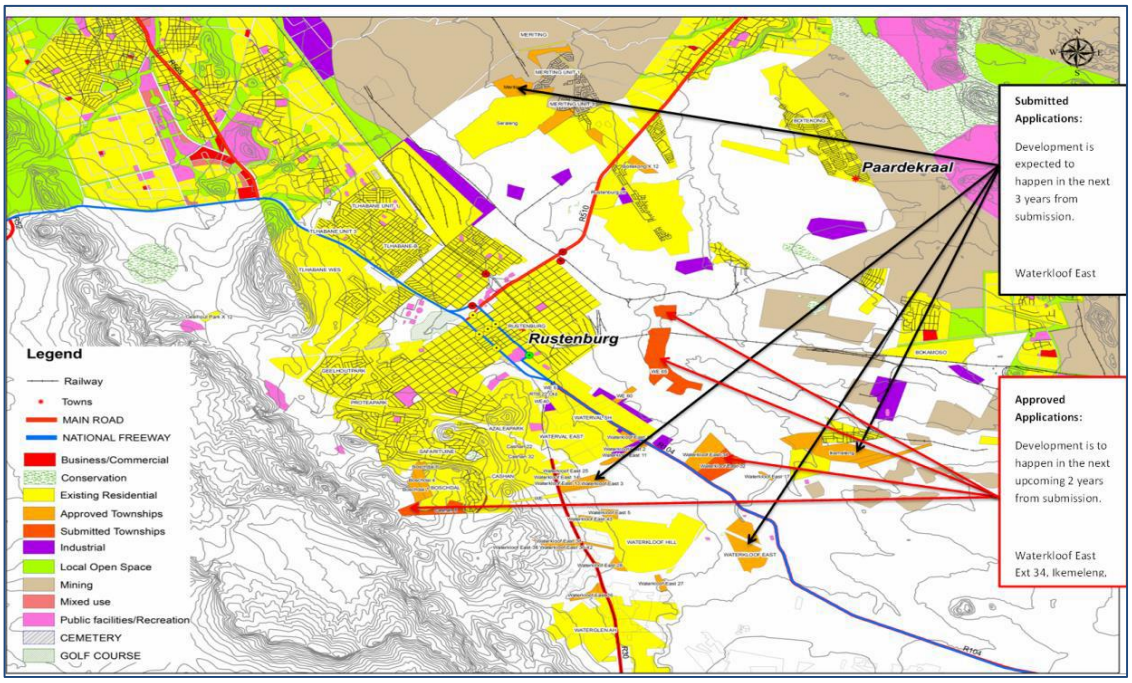


Figure 5-5: Township Development Trends

The actual traffic flow will be further investigated in Chapter 7.

5.6 Interpretation of Household Survey Data

Transport survey needs are highly informed by the Rustenburg Household Survey data 2012. The analysis covered the needs for bus, minibus taxi and scholar transport, together with the issue areas associated with those services.

5.6.1 Origin and Destination of Public Transport Trips

To understand the needs for public transport it is important to identify the areas which have the highest % of public transport users. **Figure 5-6** shows the destination areas/zones from each of the origin zones. **Table 5-2** shows the percentage split for destination zones from each of the origin zones. The percentage of public transport users (bus, minibus-taxi, sedan taxi and bakkie taxi) is given in **Table 5-2**. From **Figure 5-6** and **Table 5-2** it can be concluded that for each of the zones the percentage of trips staying in the same zone is from 40% onwards. The zones that have a very high percentage of those internal trips are Rustenburg Central, North-East RLM, South East RLM with 73% and RLM Rural South with 95%. The bold numbers are presented on the spider diagram **Figure 5-6.**

Table 5-2: Origin-Destination Trips

TAZ Zone Name	TAZ	1	2	3	4	5	6	7	8	9	10
Rustenburg Central	1	73%	5%	2%	6%	1%	2%	2%	3%	5%	0%
Geelhoutpark, Rietvlei	2	38%	40%	2%	4%	2%	2%	4%	2%	5%	0%
Boitekong, Kanana	3	30%	10%	48%	1%	3%	0%	0%	2%	6%	0%
Eastern Mines	4	16%	6%	17%	49%	0%	4%	1%	6%	1%	0%
North East RLM	5	12%	1%	8%	1%	73%	0%	2%	1%	1%	0%
South East RLM	6	17%	1%	0%	2%	2%	73%	3%	0%	1%	1%
Phokeng	7	20%	7%	0%	0%	0%	0%	62%	8%	2%	0%
North West RLM	8	12%	3%	3%	0%	9%	0%	14%	59%	1%	0%
Impala Mines	9	28%	14%	11%	0%	1%	1%	3%	1%	42%	0%
RLM Rural South	10	4%	0%	0%	0%	0%	1%	0%	0%	0%	95%

The numbers of intra-zonal trips (trips that originate and end in the same zone) represent 60% of the total trips. The remaining 40% of trips (923 trips as per the sample size) are the inter-zonal trips (trips that originate in one zone and end in the other one).

Almost 50% of those trips are the trips that have Rustenburg Central as a destination point. Those trips are mainly done by public transport (75% are public transport trips and the rest are private trips such as car, motorbike and company transport). Therefore the public transport would need to address those inter-zonal links, and to provide good coverage and direct lines. The RRT service would provide a better public transport network, but because such a service will be implemented in a couple of phases, and it will take a number of years to be fully implemented, the immediate actions would need to be done on improvement of the bus and minibus-taxi services in areas where the RRT will not initially provide coverage.

From **Table 5-3** it can be concluded that the only area which has a low percentage of public transport users on average is Rustenburg Central with 28% and South East RLM with 48%. All

other areas have more than 50% of public transport users with highest % being in Phokeng and North East RLM with 96% and 74% respectively.

Table 5-3: Public Transport Origin-Destination Trips

TAZ Zone Name	TAZ	1	2	3	4	5	6	7	8	9	10	Avg
Rustenburg Central	1	7%	29%	13%	9%	50%	20%	29%	0%	21%	100%	28%
Geelhoutpark, Rietvlei	2	73%	71%	75%	27%	0%	60%	50%	75%	55%	—	54%
Boitekong, Kanana	3	86%	91%	88%	25%	86%	—	0%	50%	86%	100%	68%
Eastern Mines	4	70%	75%	—	83%	—	—	0%	100%	—	—	66%
North East RLM	5	89%	67%	100%	0%	88%		80%	100%	67%	—	74%
South East RLM	6	57%			0%	0%	83%	100%	—	—	—	48%
Phokeng	7	92%	100%	100%	100%	100%	100%	85%	87%	100%	100%	96%
North West RLM	8	78%	75%	50%	—	100%	—	54%	88%	0%	—	64%
Impala Mines	9	82%	76%	29%	—	—	100%	80%	0%	55%	—	60%
RLM Rural South	10	50%	—	—	—	—	—	—	—	—	50%	50%

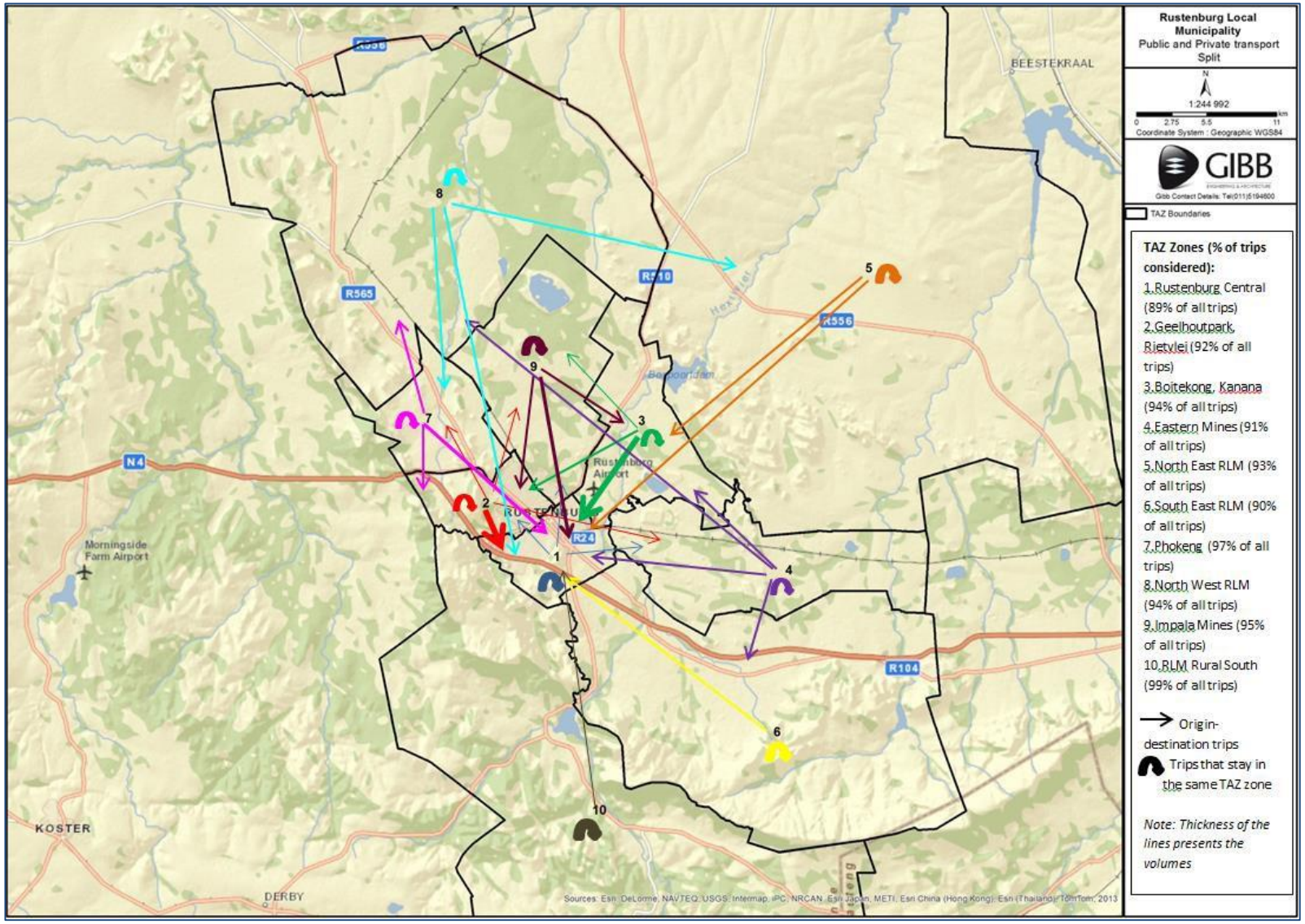


Figure 5-6: Origin-Destination Trips

(Note: OD lines with a percentage less than 10% in total per zone are not shown)

5.6.2 Public Transport Issue Areas

The top 5 issue areas per town are shown in **Figure 5-7**. The figure also shows the relative population size of the macro zones. One of the most prominent issues around public transport that was identified in all the areas is that the taxi fares are experienced as too expensive. The second one is the long walking distances to get to the taxi service (Phokeng, Lefaragatlha, Kanana, Sritube, Mafika, Rustenburg Rural, Freedom-park, Meritig, Thlabane, Cashan, Waterval East, Boshoek, Mogono, Ca-Luka and Phatsima). Non availability of the bus service is also one of the biggest issues together with issue of too many potholes.

Dissatisfaction with the bus service for the whole Rustenburg area is mostly related to the peak frequency (32%). Travel time also seems to be an area where certain improvements can happen, as just below the 30% of respondents share dissatisfaction with this aspect. (**Table 5-4**)

Table 5-4: Satisfaction with Bus Service

	Distance from home	Distance from work	Travel time	Peak frequency
Very satisfied	46%	42%	37%	41%
Somewhat satisfied	32%	31%	33%	28%
Somewhat dissatisfied	12%	17%	21%	15%
Very dissatisfied	10%	9%	8%	16%

Dissatisfaction with minibus taxi service is higher than with bus services. For almost all the areas highlighted in **Table 5-5** below, the dissatisfaction percentage is almost 50%.

Table 5-5: Satisfaction with Minibus-Taxi Service

	Distance from home	Distance from work	Travel time	Peak frequency
Very satisfied	29%	26%	26%	24%
Somewhat satisfied	28%	30%	32%	28%
Somewhat dissatisfied	20%	25%	25%	27%
Very dissatisfied	22%	18%	18%	21%

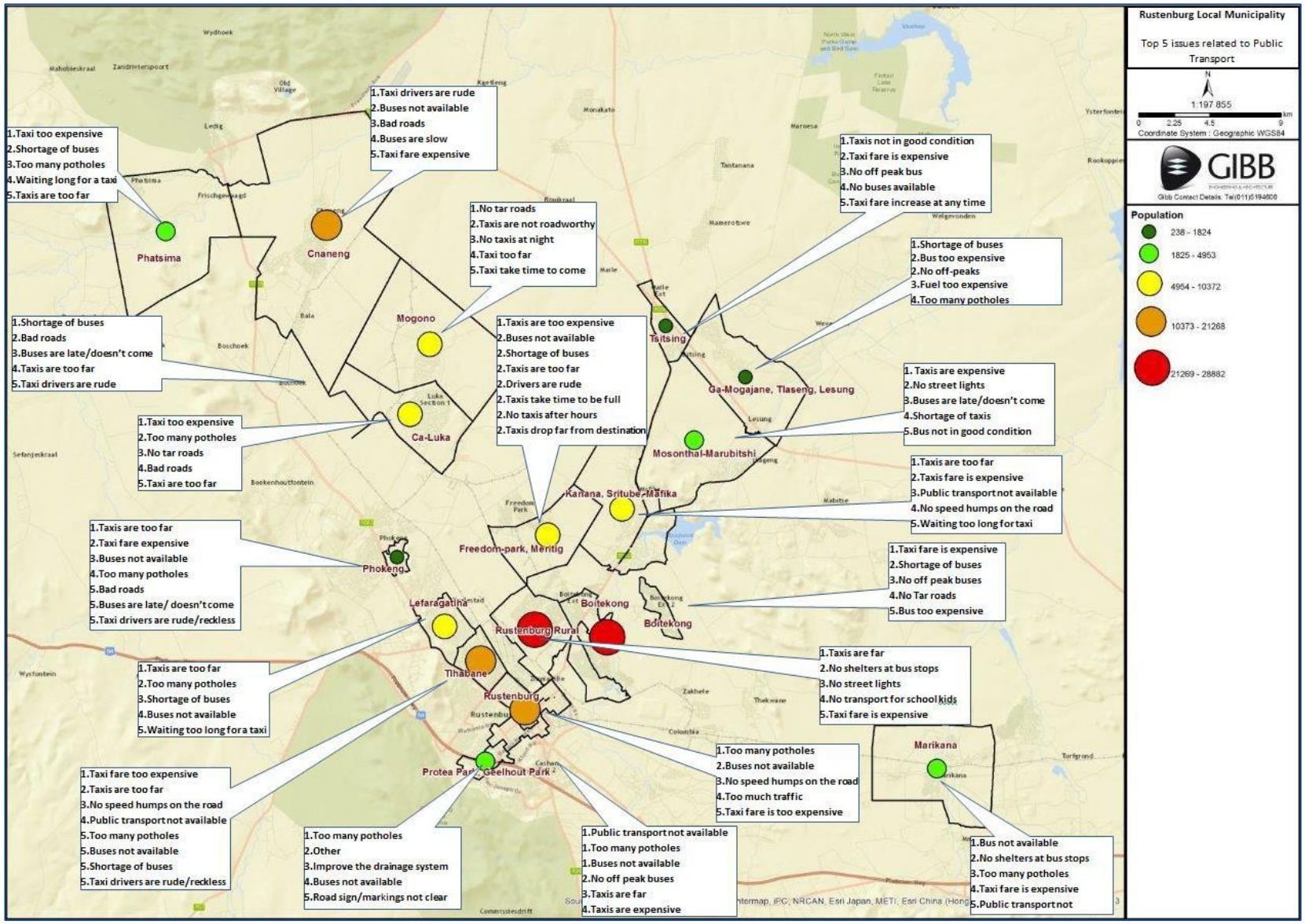


Figure 5-7: Top 5 Public Transport Problem Areas

5.6.3 Needs for Scholar Transport

Thlabane, Rustenburg and Rustenburg Rural area identified that there is "No transport for school kids" (5 respondents). **Figure 5-8** shows all schools in RLM together with the percentage of the scholar trips and the average walking time for scholar trips. The map shows that the area which has the highest number of schools is Rustenburg Central and Thlabane.

According to the Household Survey data 2012, the % of scholar trips is highest in the Phatisima, Thlabane, Mosonthal-Marubitshi, Kanana, Serutube and Mafika with more than 70% of trips being scholar trips. However, the average walking time is reported to be the highest in Boitekong and Thlabane. All other areas have walking times which are considered to be acceptable (less them 500m). Unfortunately, the Household Survey data, 2012 did not provide information on the % of users using the scholar transport as a main mode, so further analysis could not be done.

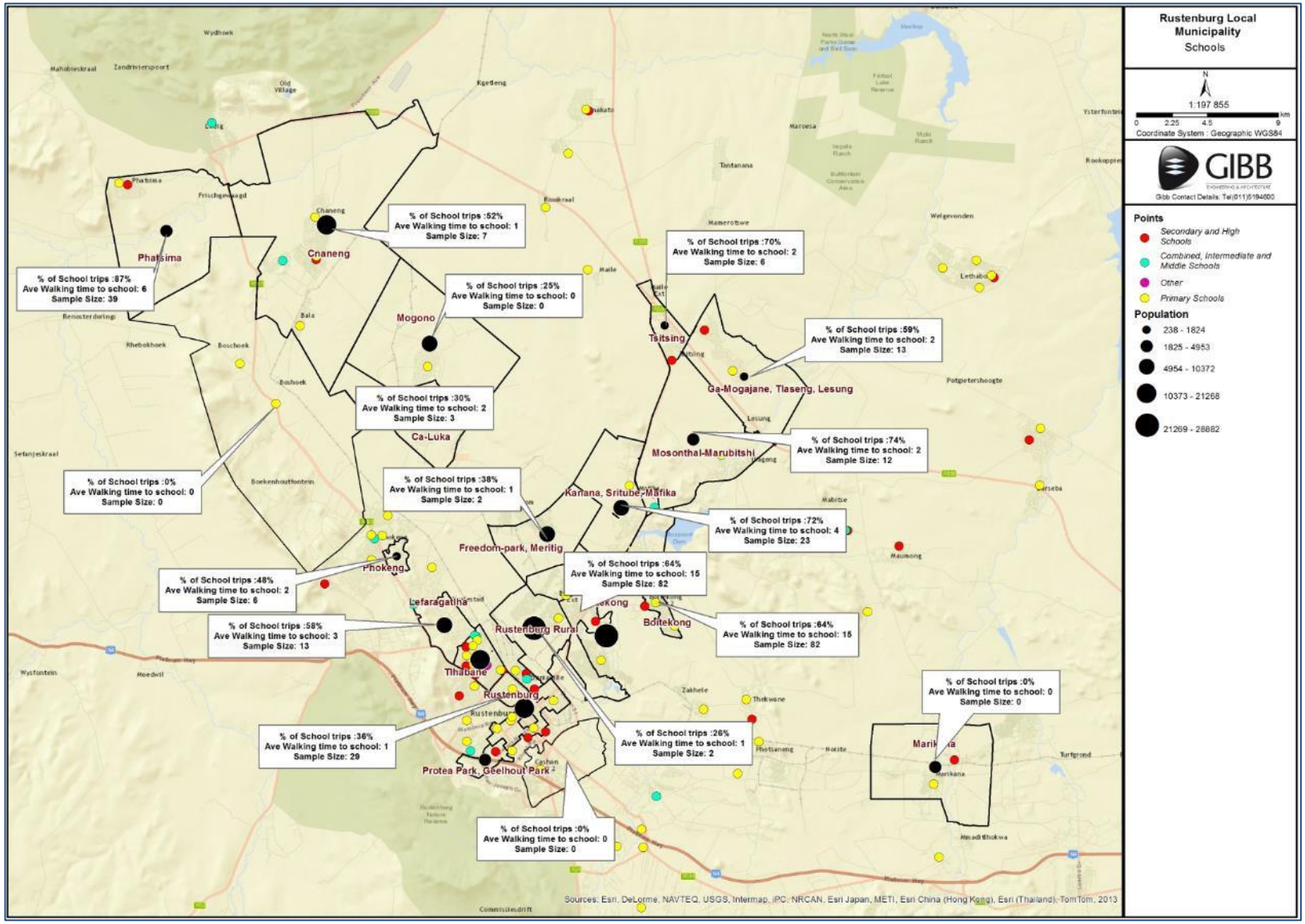


Figure 5-8: Needs for Scholar Transport

5.6.4 Fares

Dissatisfaction with bus fares are reported to be more than 50% in the areas such as Tsitsing, Cashan, Waterval East, Boshoek and Marikana. Areas like Phatisima, Chaneng, Freedom-park, Meritig, Protea Park, Geelhoutpark showed no dissatisfaction with bus fares. Please refer to **Table 5-6** below.

Table 5-6: Satisfaction with Bus Fares

Town	Very satisfied	Somewhat satisfied	Somewhat dissatisfied	Very dissatisfied
Marikana	17%	17%	50%	17%
Tsitsing	6%	31%	6%	56%
Cashan, Waterval East	0%	50%	0%	50%
Ga-Mogajane, Tlaseng, Lesung	3%	47%	25%	25%
Boshoek	25%	25%	50%	0%
Phokeng	29%	35%	24%	12%
Boitekong	48%	18%	10%	25%
Mosonthal-Marubitshi	41%	35%	24%	0%
Thlabane	38%	46%	4%	12%
Kanana, Sritube, Mafika	44%	41%	4%	11%
Rustenburg	67%	18%	6%	9%
Mogono	47%	41%	0%	12%
Ca-Luka	60%	30%	10%	0%
Phatsima	77%	23%	0%	0%
Cnaneng	82%	18%	0%	0%
Freedom-park, Meritig	71%	29%	0%	0%
Lefaragatlha	17%	83%	0%	0%
Protea Park, Geelhoutpark	100%	0%	0%	0%

Dissatisfaction with mini-bus taxi fares are reported to be more than 50% in the areas such as Tsitsing, Ga-Mogajane, Tlaseng, Lesung, Ca-Lukaand Marikana. There were no areas that reported 0% of dissatisfaction. In comparison to the satisfaction with bus fares, generally taxi fares are perceived to be higher and the commuters therefore less satisfied with them. Please refer to the **Table 5-7** below showing the satisfaction per area with minibus-taxi fares. Taxi fares per routes and different operators are given in **Annexure A** of the report.

Table 5-7: Satisfaction with Minibus-Taxi Fares

Town	Very satisfied	Somewhat satisfied	Somewhat dissatisfied	Very dissatisfied
Tsitsing	2%	12%	7%	79%
Ga-Mogajane, Tlaseng, Lesung	1%	26%	11%	62%
Ca-Luka	14%	21%	17%	48%
Marikana	12%	29%	12%	48%
Phatsima	22%	18%	26%	34%
Protea Park, Geelhoutpark	15%	26%	33%	26%
Mosonthal-Marubitshi	4%	38%	26%	32%
Kanana, Seritube, Mafika	16%	26%	32%	26%
Phokeng	13%	31%	23%	33%

Town	Very	Somewhat	Somewhat	Very
Cnaneng	17%	29%	23%	31%
Cashan, Waterval East	23%	31%	31%	15%
Mogono	29%	26%	15%	29%
Rustenburg	32%	25%	25%	18%
Lefaragatlha	15%	44%	21%	21%
Freedom-park, Meritig	24%	34%	2%	39%
Boshoek	32%	28%	20%	20%
Boitekong	36%	28%	15%	21%
Thlabane	31%	33%	18%	18%
Rustenburg Rural	35%	31%	12%	23%

However **Table 5-8** shows % of respondents that identified mini-bus taxi service as expensive / fare too expensive/ can't afford it.

Table 5-8: Taxi: Expensive / Fare too Expensive/ Can't Afford

Town	% of respondents Taxi: Expensive / fare too expensive/ can't afford
Phatsima	21%
Kanana, Seritube, Mafika	16%
Tsitsing	13%
Mosonthal-Marubitshi	13%
Phokeng	11%
Ca-Luka	10%
Freedom-park, Meritig	10%
Boitekong	7%
Thlabane	6%
Rustenburg Rural	6%
Chaneng	5%
Cashan, Waterval East	4%
Boshoek	3%
Mogono	3%
Lefaragathla	2%
Rustenburg	2%
Protea Park, Geelhoutpark	1%
Ga-Mogajane, Tlaseng, Lesung	0%

5.6.5 Accessibility of Public Transport

Accessibility of public transport can be analysed through the walking time for the first mile and last mile trips. According to **Table 5-9,** walk time at the start of the trip (first mile time) is reported to be less critical than the walk time at the end. In other words public transport is more accessible and closer in residential areas then in the areas where there are employment/educational or other opportunities.

Table 5-9: Walk Time at Start and at End of the Trip

Town	Walk time at start			Walk time at end		
	<7min, 500m	>7, <12min, >500, <900m	>900m	<7min, 500m	>7min, <12min, >500m, <900m	>900m
Boitekong	76%	16%	8%	24%	14%	**62%**
Mosonthal-Marubitshi	61%	14%	25%	30%	10%	**54%**
Phatsima	38%	24%	**38%**	25%	20%	**44%**
Kanana, Seritube, Mafika	70%	9%	21%	30%	26%	**44%**
Cashan, Waterval East	85%	7%	7%	11%	21%	35%
Tsitsing	84%	16%	0%	38%	16%	**33%**
Protea Park, Geelhoutpark	97%	2%	1%	57%	11%	32%
Boshoek	73%	17%	10%	16%	27%	31%
Cnaneng	89%	6%	6%	53%	14%	30%
Ca-Luka	81%	11%	7%	38%	29%	30%
Freedom-Park, Meritig	80%	17%	3%	39%	19%	29%
Rustenburg	86%	8%	6%	48%	23%	29%
Rustenburg Rural	79%	17%	4%	29%	21%	21%
Ga-Mogajane, Tlaseng, Lesung	60%	21%	19%	32%	44%	21%
Thlabane	95%	3%	2%	68%	16%	17%
Lefaragatlha	56%	29%	15%	37%	22%	14%
Mogono	72%	25%	3%	49%	39%	0%
Phokeng	79%	21%	0%	50%	25%	0%

To provide intermodal public transport accessibility, public transport would need to be supported with an improved non-motorised transport network. Currently this aspect is not adequately covered. The conclusions of the public transport needs assessment need to be read together with the projects that were already identified in the NMT Policy and Concept Plan for Rustenburg (Gail Jennings, 2013) and the BPDM NMT Master Plan (BPDM, 2012/2013). More details are given in **Chapter 10.2** and **Figure 10-10: NMT Projects and Land Uses.**

5.6.6 Summary of Needs

Of the 40% of Rustenburg's trips that are inter-zonal, almost 50% have Rustenburg Central as a destination point, and 75% of those trips are public transport trips. Therefore the public transport would need to address those inter-zonal links, and to provide good coverage and direct lines. The RRT service would provide a better public transport network, but because such a service will be implemented in a couple of phases, and it will take a number of years to be fully implemented, some immediate actions would need to be done to improve bus and minibus-taxi services particularly in areas not initially served by RRT. Once the RRT system is implemented certain bus and minibus-taxi routes would need to be rationalised. This would mean that certain routes would need to be changed in their whole length or just in certain section would need to be re-aligned. At the time when this report was prepared the list of those routes was not available. Therefore, it will be added in the CITP 5 years update.

Dissatisfaction with the bus service for the whole Rustenburg area is mostly related to the peak frequency (32%). Travel time is also seems to be an area where certain improvements

can happen, as just below the 30% of respondents share dissatisfaction with this aspect. More than 35% of commuters on buses state crowding as a concern. This might indicate a lack of seats available during the peak hours, indicating that more frequent services might be required. This is confirmed by 28,5% of respondents stating that they were dissatisfied with the peak period frequency. Lack of punctuality of busses will also contribute to the dissatisfaction experienced by commuters during the peak periods.

Dissatisfaction with minibus taxi service is even higher than with the bus service. For almost all areas the dissatisfaction rate is almost 50% with driver behaviour, taxi fares, facilities at stops, safety, security and punctuality. However in regards to the taxi fares, on average 7% of minibus-taxi users reported that they cannot afford the fares. Safety and security of stops as well as the facilities provided are addressed under **Chapter 10.3**.

The need for the scholar transport is not easy to identify as the sample size for those trips is very small, and this mode of transport is not listed as a main mode. However, the Operating License Strategy, **Chapter 6.2** talks about the need for increasing the number of school buses in various areas of RLM.

The accessibility of public transport is not adequately addressed in certain areas of RLM as the walking time for the first mile and last mile trips are reported to be high. Especially the length of the last mile trips is higher in the areas like Boitekong, Mosonthal-Marubitshi, Phatsima, Kanana, Seritube and Mafika.

5.7 Measures to Address Priority Needs

5.7.1 Promotion of Public Transport

Public Transport needs and requirements identified were:

- Public transport must be easily accessible and affordable for all;
- Public transport must be readily available, comfortable and a reliable means of travel;
- Adequate safety measures such as better lighting, CCTV and fencing must be employed at transport facilitites;
- The spacing between bus stops must be within acceptable walking distance depending on the development e.g. in areas which are highly developed or high concentration of trips ends bus stops should be closely spaced (approximately 300m apart) than areas where there is low development (approximately 800m apart);
- Provision of buses during off-peak and planning for other trips (e.g. education) other than home-work trips as this will assist in increasing ridership;
- Provision of multimodal facilities at convenient locations to enable commuters easy access to alternative modes of transport;
- Measures should be put in place to make it easy for first time users to use public transport. For instance, signs and colour coded route maps with fares for different destinations;
- NMT and Universal Access facilities and infrastructure should be prioritised so as to enable all members of society easy access to public transport facilities and services;
- Visible law and active law enforcement to ensure that there is no over-loading and that vehicles are in a good condition to transport passengers;
- Bus stops and transfer stops should have adequate shelter, lighting and benches for waiting commuters; and
- Travel time and distance must be reduced particularly for low income users.

5.7.2 Person with Disabilities and Needs of Learners

Some additional needs and requirement identified were:

- Provision of universal access to public facilities as well as safe public loading bays for boarding and alighting of disabled persons;
- Improve sidewalks and more appropriate boarding and alighting at schools;
- Provision of dedicated facilities such as toilets; and
- Promote training for public transport operators which address the needs of persons with disabilities.

5.7.3 Non-Motorised Transport

NMT needs and requirements include:

- Provision of safe parking for bicycles at public places;
- Provision for bicycle lanes and the use of stud separators to restrict access by other transport modes, especially in the case of bicycle lanes;
- Provision for dedicated traffic signalling to allow for the safe passage of NMT users at busy intersections;
- Provision of support infrastructure at various public facilities to allow for safe access;
- Appropriate signage and warning signs for other modes of transport to be aware of NMT users;
- Incorporation of NMT infrastructure and facilities in multimodal public transport facilities; and
- Provision of pedestrian pathways at public facilities.

5.7.4 Private Transport

The needs of private transport were identified as:

- Roads should be maintained and well surfaced;
- Provision of proper working signals at the intersections and intersection should comply with the South African Road Traffic Signs Manual;
- Provision of street lights to promote safety;
- In terms of Intelligent Transport Systems (ITS), it is of great significant that traffic signal coordination plan and strategy must be developed. It will assist in reducing the traffic congestion;
- To assist private car users to use or find more sustainable modes of transport, a revision under this CITP is being done on the Travel Demand Management strategy; and
- Reduction of four-way stops at the busiest intersections by providing signals, this will assist in congestion reduction.

6 Public Transport Operational Strategy

The aim of the Public Transport Operational Strategy is to address the current and future person trip needs as identified in **Chapter 5**. The strategy has been prepared in accordance with the National Land Transport Transition Act: Minimum Requirements for Preparation of Integrated Transport Plans (Regulation 1119 of 2007).

According to the NLTTA the focus of the operational strategy should be *"to integrate the public transport network, services and modes and develop schedules (where relevant) in such a fashion that passengers can move optimally from origin to destination in the area most effectively, in the shortest possible time and with the minimum of fare-paying transactions*".

Furthermore, the Public Transport Operational Strategy is required to pay adequate attention to:

- The needs of learners;
- The needs of special needs passengers;
- Developing and implementing the integration of public transport services in and between modes; and
- Measures to promote public transport over private transport.

The following public transport system elements were considered:

- Rustenburg IRPTN (RRT);
- Scholar transport;
- Minibus-taxi transport;
- Bus transport;
- Non-motorised transport and universal access; and
- Public transport facilities.

6.1 Integrated Rapid Public Transport System

6.1.1 Overview of the Full RRT

A fully implemented RRT system is shown in **Figure 6-1.** This system is a mixture of direct services and the traditional trunk-feeder type system to provide the best mix of operational performance for the user with operational efficiency for the operator.

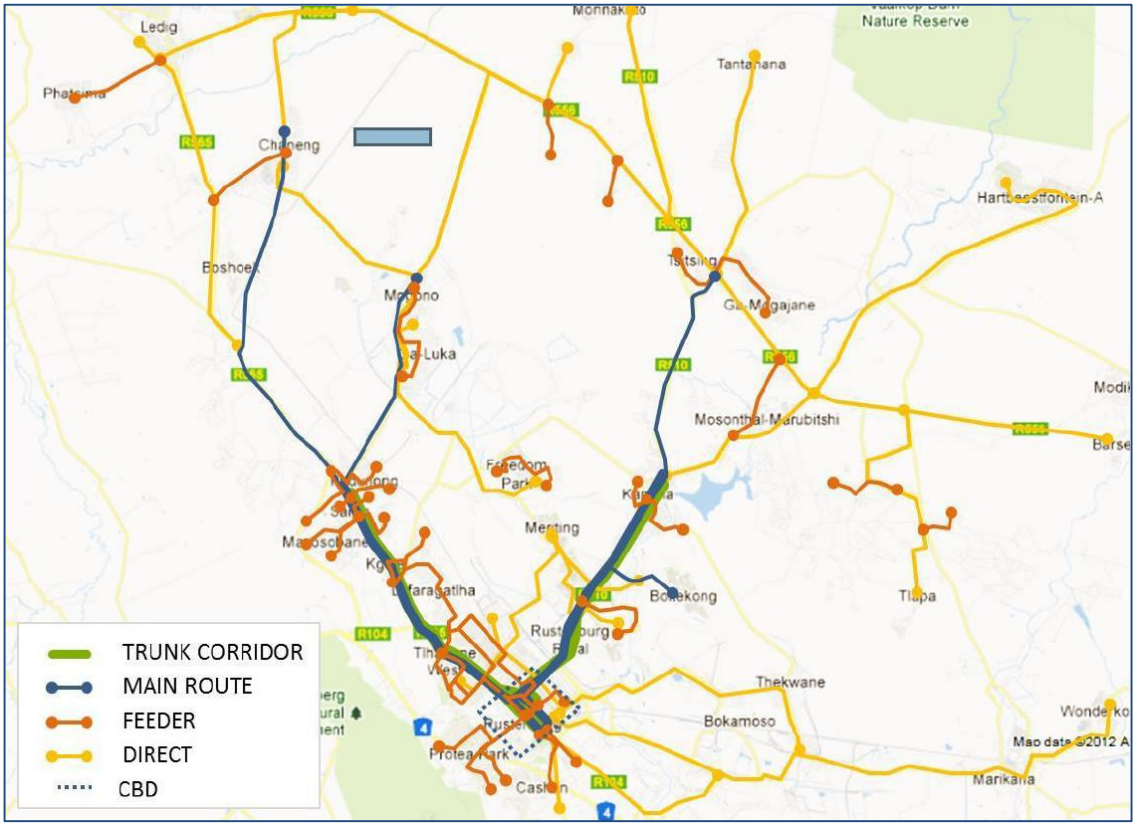


Figure 6-1: Rustenburg IRPTN Full Network
(Source: RRT Operational Plan, June 2014)

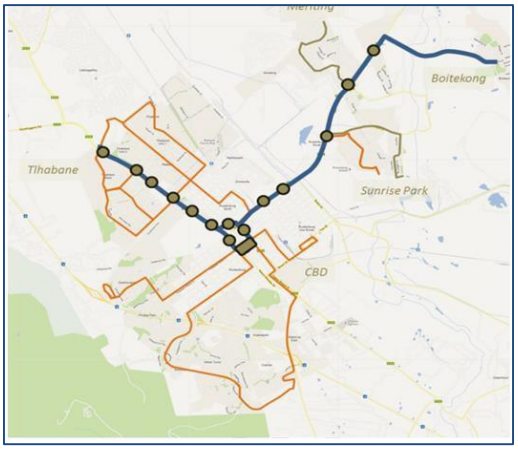
Each of these services will be discussed briefly in the following section.

(a) Phased Approach

Due to the phased approach of the RRT only Phase 1 and Phase 2 should be considered for the development of the OLS and the Ratplan. Phase 3 and Phase 4 might change in the future.

Phase 1 covers the areas of Thlabane, South of CBD (including Protea Park, Cashan, Safari Tuine and Waterval Mall), Sunrise Park, Boitekong and Meriting to Freedom Park. Phase 1 is further splited into **Phase 1A, 1B and 1C** (**Figure 6-3**).
Phase 2 extends the RRT service to the north along the R510
Phase 3 extends to the west towards Phokeng along the R565.
Phase 4 of the project will be the final phase of the project, implementing the bus service to complete the RRT network.

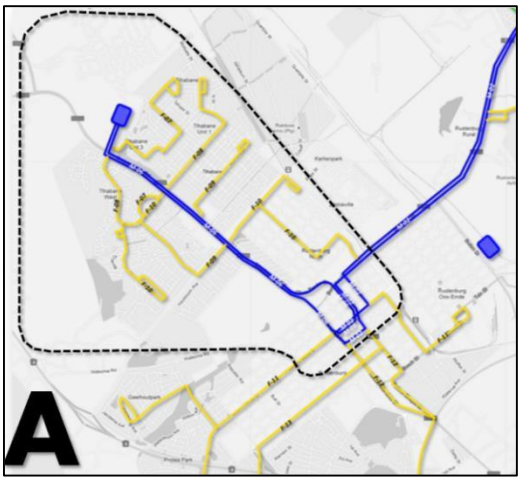
Phase 1



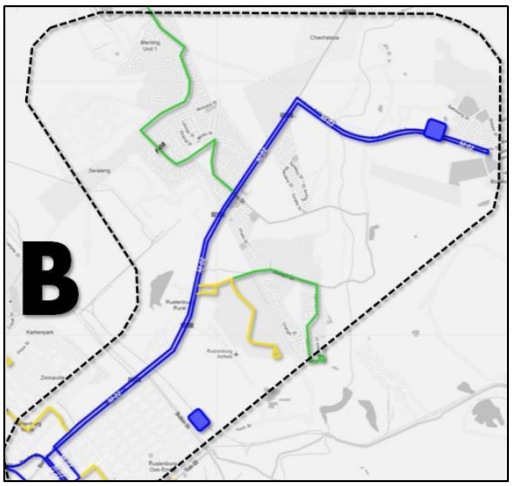
Phase 2

Figure 6-2: Phased Rustenburg Rapid Transport (RRT) system
(Source: RRT Operational Plan Minimum Scenarios with Sub Phasing, June 2014)

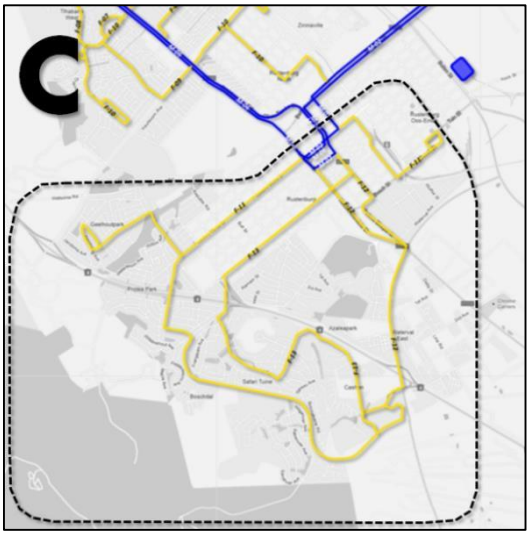
Phase 1A



Phase 1B



Phase 1C



Phase 1A:
December 2016
16.5% of the full RRT system
36 buses

Phase 1C:
March 2017
12% of the full RRT system
44 buses

Phase 1B:
December 2017
16% of the full RRT system
70 buses

Figure 6-3: Phase 1 (Staggered)
(Source: RRT Phasing Implementation Plan – Sub Phasing, August 2014)

(b) Fleet and Anticipated Daily Passenger Trips

Once the system is operational, the RRT report estimated it to have the buses and passenger trips as shown in **Table 6-1** below.

Table 6-1: Fleet and Anticipated Passenger Trips

	Phase 1	Phase 2	Phase 3	Phase 4
Total Passenger trips (maximum)	225 000	300 000	334 000	500 000
Demand for vehicle procurement (HHS + 30%)	117 000	160 000	175 000	260 000
Total Standard Busses	210		To be determined	To be determined
% of full system	45%	60%	67%	100%

(Source: RRT Demand Analysis and Vehicle Acquisition, November 2013
Note: Values shown are cumulative ones)

According to the *RRT Demand Analysis and Vehicle Acquisition Report of November 2013* shows that the demand used in the Household Survey plus 30% scenario uses a 1.3 trip rate per person giving a rounded total of 260 000 daily passenger trips for the full system. This is seen as a more realistic daily passenger trip demand. Phase 1 & 2 then is estimated at a demand of 160 000 person trips per day.

(c) Infrastructure and Fleet Requirements

The following fleet of standard buses and infrastructure (Stations) will be required for RRT's first two phases. These are shown in **Table 6-2** below.

Table 6-2: Infrastructure and Fleet Requirements

Item	Phase 1	Additional for Phase 2
Stations	14	+5
Main Routes	2	+1
Feeder Routes	9	+1
Direct Routes	1	+3
Fleet (standard busses)		210

(Source: RRT Demand Analysis and Vehicle Acquisition, November 2013)

6.1.2 Learner / Scholar Transport

In response to the plight of the rural communities, the North West Provincial Government established the Learner Transport Unit which was initially administered by the North West Education Department. This programme was transferred to the Department of Transport, Roads & Community Safety by the Provincial Executive Council. It was done to streamline and consolidate the public transport function within one department of specialization.

A Learner Transport policy was developed with collaboration between North West Department of Transport, Roads and Community Safety and the Department of Education.

As a policy it guides the two departments in who is responsible for which area of Learner Transport. As a result the following areas are discussed in the policy:

- Regulatory Framework;
- Objectives;
- Principles;
- Learner Safety; and
- Planning.

The implementation of learner transport in the provinces in relation to budget, number of learners and the criteria is highlighted in the **Table 6-3** below.

Table 6-3: Learner Transport Budget per Province

2015/16 PROVINCIAL LEARNER TRANSPORT IMPLEMENTATION				
NO	**PROVINCE**	**NO OF LEARNERS**	**BUDGET**	**CRITERIA**
1	Eastern Cape	57 176	R 356 076 000	5km and more
2	Mpumalanga	68 249	R 455 000 000	5km and more
3	Free State	8 035	R 27 589 000	8km and more
4	Limpopo	18 640	R 152 995 000	5km and more
5	Western Cape	52 051	R 242 593 000	5km and more
6	North West	32 200	R 240 444 000	5km and more
7	Northern Cape	23 420	R 116 097 000	5km and more
8	KwaZulu Natal	22 045	R 168 430 000	5km and more
9	Gauteng	78 432	R 338 349 000	5km and more
	TOTAL	**360 248**	**R 2 097 573 000**	

Source (Department of Basic Education)

Funding for learner transport in all the provinces except in Western Cape, is not provided to the schools but managed by the Provincial Departments of Transport and Education. In RLM currently there is not enough learner transport service to accommodate the need. The percentage of the current licences and the ones that pending the approval confirms the need for the better service. According to the Household Survey data 2012, the % of scholar trips is highest in the Phatisima, Thlabane, Mosonthal-Marubitshi, Kanana, Seritube and Mafika with more than 70% of trips being scholar trips. The areas which will be covered by the RRT are as follows: Phase 1 (Thlabane, Boitekong), Phase 2 (Kanana), Phase 3 (Mosonthal-Marubitshi) and Phase 4 (Seritube and Mafika).

6.1.3 Metered Taxis

The metered taxi services are mainly found in the CBD, the Waterfall and Boitekong Mall. The current fleet is estimated to be approximately 110 vehicles with the average age being 10 years. An implementation plan to use 2000 model year cars is anticipated to be initiated in the near future.

6.1.4 Special Needs Passenger Services

The special needs transport services refer to the needs of people with disabilities, the elderly, trauma and non-emergency patients, learners, pregnant women and tourists. The National Land Transport Act, 2009 (Act No 5, 2009) requires mainstream public transport to meet, in so far as possible, the needs of special categories of passengers that include persons with disabilities and the aged. The draft Implementation Strategy to Guide the Provision of

Accessible Public Transport Systems in South African also requires that all new midibuses and buses be accessible to as many passengers as possible including those using wheelchairs. It accepts that it is not financially feasible for minibuses to accommodate the latter and that a suitable accessible vehicle requires to be developed for passengers using wheelchairs.

The improvements in accessibility to public transport include the provision and/or improvement of the following aspects:

- Information and communication (before and during the journey);
- Dedicated transport service (e.g. dial-a-ride type services);
- The design of vehicles and rolling-stock so as to allow for people with disabilities;
- The design of transport facilities;
- Access to facilities and vehicles for mobility impaired;
- Affordability; and
- Safety and security.

6.1.5 Provision and Management of Public Transport Facilities

The maintenance is currently done through the Roads and Storm-water and Project Management Unit which provide services such as pothole filling, road-marks and roads signs installation.

6.2 Operating License Strategy (OLS)

Operating License Strategy provides recommendations to the Provincial Operating Licence Board in its evaluation or disposal of route operating licence applications.

According to the NLTA there are three spheres of the Government that act as regulatory entities for operating licences:

- National Public Transport Regulator (NPTR);
- Provincial Regulatory Entity (PRE); and
- Municipal Regulatory Entity (MRE) in the case of a Municipality to which the operating licence function has been assigned under Section 11(2) of the NLTA.

The NPTR must decide on applications for accreditation of tourist and interprovincial transport operators. This involves evaluating the matters set out in regulation 32 of the NLTA Regulations, including:

- Checking the applicant's record as an operator;
- Ensuring that the applicant's vehicles are acceptable and roadworthy;
- Ensuring that the applicant has an acceptable maintenance programme and/or facilities for the vehicles and keeps proper maintenance records; and
- Ensuring that the applicant has adequate, qualified back-up staff and admin facilities.

In terms of section 11(1) (a) of the NLTA, the national government is responsible for the operating licensing function, and this can be assigned to municipalities. The function is currently being undertaken by the North West Provincial Regulatory Entity (PRE). The OL function has been assigned to 5 different offices including Rustenburg, Brits, Mafikeng, Vryburg and Potchefstroom. The responsibility of the Rustenburg office is to issue operating licences for minibus taxi, bus, scholar transport and contracted services like mines transporting their own people. PRE office in Rustenburg started to manage OL since 2012.

Majority of current licences are 5 year licences, but it is planned by 31 March 2016 to have them all as fixed term 5 year licences. Because all the licences which are not 5 year will be re-issued this opportunity would need to be used for rationalisation.

The status quo of the licensing in Rustenburg shows that there is a bit of oversupply of the minibus taxi licences, and an increasing number of requests for scholar transport licences. Even though the Rustenburg office is also dealing with the applications, the final approval of the application is only received from the PRE office in Mahikeng. Due to this there is a backlog of around 1000 licences which are pending for approval. As the Mahikeng PRE office is responsible for other 5 regions, and they are also doing the inspections on the site, they are only available for 3 days per month to cover the Rustenburg area. This contributes to the delay of more than a year behind the schedule. Once the RRT service is implemented it will affect the areas where there are currently other public transport services such as minibus taxis and buses. Those licences would need to be transformed so that either new routes are assigned to them or the licences are cancelled especially for the minibus-taxi licences. At the moment no action and interventions has been taken in this regard.

6.2.1 Issuing of Operating Licenses

Table 6-4 below provides a list of all active minibus taxi associations and registered vehicles with contact details which operate within the Rustenburg area. The seated capacity is also indicated to provide an estimate of the total supply. Also, it can be concluded that around 60% of vehicles have active permits and OLS whereas 40% of vehicles operate without an active licence and OLs.

Table 6-4: List of the Minibus-taxi Associations and Number of Valid and Non-valid Permits and OLs

Taxi Association		Commuter Type	Members					Number of Vehicles				
			Active	In-Active	Active with active permits and OLs	Active without permits and OLs	In-Active with permits and OLs	Total	No with active permits and OLs	No without active permits and OLs	No of vehicles surveyed	Number of seats surveyed
Bafokeng Taxi Association	BTOA	Local	220	52	186	34	10	475	339	136	—	—
Bleskop Taxi Association	BLESKOP	Local	185	56	152	33	16	543	325	218	591	8 797
Boitekong and Meriteng Taxi Association	BAMTA	Local	215	69	159	56	24	567	388	179	419	6 229
Bojanala Kopano Taxi Association	BOKTA	Local	53	4	24	29	1	77	39	38	82	1 246
Bontle Taxi Association	BONTLE	Local	70	1	55	15	0	105	60	45	140	2 066
Borolelo Transfreestate Taxi Association	BOTRANSA	Long	39	33	30	9	1	67	41	26	64	1 008
Greater Rustenburg Long Distance Taxi Association	GRLDTA	Long	59	2	38	21	0	122	59	63	—	—
Hartebees Mamotlatsi Ramokoka Taxi Association	HARAMATA	Local	94	17	69	25	0	134	92	42	84	1 344
Kanana Boschfontein Taxi Association	KBTA	Local	105	7	62	43	1	155	98	57	190	2 790
Kanana Rankunyana Makokama Taxi Association	KARAMATA	Local	75	4	44	31	0	85	53	32	60	922
Khutlotharo Taxi Association	KTA	Local	87	4	43	44	2	87	49	38	—	—
Lesuma Taxi Owners Association	LESUMATA	Local	60	12	42	18	3	100	68	32	43	659
Mabeeskraal De-Brak Mankwe West Taxi Association	MADEMA	Local	109	5	79	30	0	146	88	48	194	2 818
Madikwe Taxi Association	MADIKWE	Local	148	16	25	13	8	73	29	44	103	1 534
Mamerotse Monakato Jabula Zinniaville Taxi Association	MAMOJAZI	Local	93	13	62	31	3	115	82	33	61	976
Mogwase Taxi Association	MOGWASE	Local	61	26	48	13	4	138	88	50	94	1 504
Moruleng District Taxi Association	MODITA	Local and Long	142	64	105	37	31	218	107	111	219	3 165
Motlhamawi Taxi Association	MOTLHAMAWI	Local	26	3	21	5	0	45	30	15	33	482
Rustenburg Taxi Association	RTA	Local	40	41	27	13	13	77	34	43	34	544
Rustenburg United Local and Long Distance Taxi Association	RULLDTA	Local and Long	141	46	35	106	5	146	40	106	133	1 945
Thlabane Taxi Owners Association Trust	TTOAT	Local and Long	110	14	91	19	5	266	207	59	—	—

(Source: BPDM DITP, 2014)

6.2.2 Recommendations on the Taxi Industry Transformation

The Taxi Recapitalisation Plan will continue for services that are not affected by the RRT system.

6.3 Rationalisation Strategy

The plan for rationalisation of the minibus taxi and bus service for the Rustenburg Local Municipality is ***part of the Bojanala Province District Municipality (BPDM) Rationalisation Plan, 2012***. The plan already included the planning of RRT, which will have an immense impact on the rationalisation of the public transport services such as minibus taxi and buses. The intended result of IPTN is to have one integrated system of public transport that addresses the needs of users in a safe, reliable and comfortable manner.

6.3.1 Bus Services

There are currently two bus companies that operate from Rustenburg, and one of those two is subsidised. The total number of routes is 236. There are 114 buses operating under contracts, whereas 14 are non-contract service. The number of trips per day that they make is 466 which are approximately 4 trips per bus per day. Number of passengers per day is 25 041 which calculates to an average passenger load of 53. Route utilisation of bus service is reported to be 61% and 68% for AM and PM peak period respectively.[1]

6.3.2 Minibus-Taxi Services

The minibus taxi service covers a major part within Rustenburg, Thlabane, Phokeng, Boitekong, Geelhoutpark, Protea Park and a limited service to Safari Gardens Park. The minibus taxi service is the preferred mode of public transport conveying approximately 70% of public transport passengers. Taxis operates a total of 824 trips per day and conveys about 12 181 passengers to and from 30 major origins and destinations within the Rustenburg and surrounding area. This calculates to an average passenger load of 15. When comparing to the bus service they make almost double the amount of trips but moving less than half of the passengers that the bus service move. **Table 6-5** shows the information on the minibus-taxi service including the need for the additional fleet and therefore OLs.[2]

Route utilisation of minibus taxi services is reported to be 100% for AM and PM peak period.[4] whereas for buses it is 61% and 68% respectively.[4]

[1] District Integrated Transport Plan 2013-2014, Bojanala Platinum District Municipality, March 2014

[2] BPDM OLS, 2012

Table 6-5: Minibus-Taxi Status Quo

Taxi Operators	28
Routes	97
Current vehicles	3 237
Issued Operating Licence *	2 617
Number of illegal and legal vehicles	755 (22%)
Utilisation (No pass)	73 110
Average % Utilisation Active Taxis	99.72%
No of 15 seaters required	1 384
No. Of 22 Capacity veh Required Currently	943
No. Of 35 Capacity veh Required Currently	593
Provincial Regulating Entity (PRE)To Consider To issue OL	-1 269

(Source: *the Bojanala Province District Municipality (BPDM) Rationalisation Plan, 2012*)

6.3.3 Rustenburg RRT Services

The development of a RATPLAN will have to take the planning and phasing of the RRT into consideration. Also, even though the NLTA promotes devolvement of the subsidised services there is a need to ensure that the new RATPLAN is developed in conjunction with the province and that the RRT planning is taken into consideration.

The implementation of the RRT is being planned in 4 Phases. The 1st phase will have the IPTN consisting of main trunk routes from Thlabane, Phokeng, Boitekong and Thekwane into the Rustenburg CBD and proceeding to various destinations within town including the Waterfall Mall. The detailed design proposes that all the routes entering into the CBD create a distribution system that will enable commuters to transfer at cross points towards various destinations outlying the CBD (industrial sites, shopping complexes and residential suburbs).
The RRT routes is planned to serve 32 stations in the Rustenburg area. The routes are planned in such a way to ensure that 85% of residents will have access to public transport within 1km of their homes.

6.3.4 Scholar Transport[3]

Land Use and Transport Integration

According to the first draft of *National Scholar Transport Policy (February 2009)*, the Department of Transport, Housing and Education must be involved in the planning process of the placing of schools in relation to residential areas and the relevant infrastructure. Inter-governmental co-ordination must ensure the integration of transport and land use, more especially with regard to ensuring that the building of schools and settlements are co-ordinated.

Modal Integration

One of the major problems facing public transport is the lack of modal integration. This problem is often worsened by fragmented spatial planning and impacts negatively on the ability of scholars to access educational institutions as a result. The Provincial Departments of Transport, together with the Housing and Education departments must be involved in the planning process to ensure that scholar transport services are integrated in order to provide an efficient and effective system. Scholars residing in areas where scholar transport services are not accessible will then use other subsidized modes of transport and inter-modal

[3] NWPG, North West Learner Transport Policy, 2011 and DOT, National Scholar transport Policy, 2009

ticketing for scholars will also be allowed so as to facilitate intermodal transfers. Provinces, in consultation with Local Government, must ensure that scholar transport services are accessible to scholars in both rural and urban areas.

Transport Infrastructure

The provision of transport infrastructure is important in the provision of scholar transport services and will ensure that scholar transport operated within a formalised and safe environment. Inter-governmental co-ordination must also ensure that adequate infrastructure is provided for scholar transport. Also, plans for scholar transport infrastructure must be incorporated into Integrated Transport Plans (ITPs).

Service Types

Scholar transport can be provided through various service types. Mainstream public transport will be used to provide scholar transport. Scholar transport service types include the following:

1. Dedicated Service
    - Subsidised group
      Operators providing dedicated scholar transport services receive subsidies from the Provincial Departments of Education (PDEs) and/or the DOT. Scholars are picked up and dropped off at designated points.
    - Non-subsidised group
      This refers to operators who are providing dedicated scholar transport services and do not receive subsidies from the DOT or PDEs
        - Class I
          These operators enter into contractual agreements with the parents of scholars and provide door-to-door services. Fees are payable on a monthly basis at the beginning of every month
        - Class II
          These operators have special arrangements with the scholars who organise themselves into groups and are then picked up and dropped off at designated points. Scholars then pay fares per trip.
2. Non-dedicated service
    - Subsidised group
      These are operators who provide general public transport services and also transport scholars with special subsidised tickets.

Funding

Funding is critical in ensuring that scholar transport services are provided on an on-going basis. A single government department needs to be responsible for the funding of scholar transport as it is currently done on a fragmented basis and this creates problems for effective service delivery within various departments. The DOT must ensure that adequate and sustainable funding for scholar transport available through its national budget allocation and then transfer the funding to provinces through its own budget. A scholar transport funding model must also be developed by the DOT and then implementation will be done by the Provincial DOTs.

Route Accessibility and Safety

Not all scholars have access to scholar transport through well-defined transport services including proper infrastructure and facilities. The Provincial DOTs, in consultation with the PDEs and Local Government must consider the safety of scholars as well as service efficiency when determining routes. Aspects that must be considered when determining routes and facilities include the following:

- Distances between bus stops will vary between 2 and 5 km for rural and urban areas. Exceptions will need to be considered for handicapped children and hazardous conditions;
- Maximum walking distances to scholar pick up points- 3km is considered to be fair;
- Routes should be planned in such a way that scholars picked up are no more than the seats available;
- Arrival and departure times at schools should be planned in such a way that they minimise the creation of unsafe conditions and congestion;
- Routes should be planned in such a way that a maximum number of students are picked up and dropped off at the assigned stops while also taking into consideration what is safe and economically feasible with regard to expense and time;
- Scholar transport should begin their routes at the most distant points from their designated schools as the vehicles proceeds towards the school. Should this not be possible then the least number of scholars should be carried away from the school. Scholars should also not ride longer than necessary on scholar transport; and
- The crossing of scholars from one side of the road to the other should be made as safe as possible when alighting.

Recommendation

Dedicated scholar trips are proposed in such a manner that when there are school holidays only the specific scholar service will be scaled down. Additional services should be provided during the peak periods to accommodate the demand.

6.3.5 Airports

Aviation section was updated in Chapter 10 of the report where the all information is provided. The Rustenburg Airport Master Plan 2014 highlights the airport services provided. The Master plan addresses the opportunities for change at Rustenburg Airport, including upgrades, extensions and new constructions of infrastructure required to meet the demand.

6.3.6 Public Transport Routes

Figure 6-4 shows the Rustenburg central area with the minibus-taxi, bus and RRT Phase 1, 2 routes. The red dotted section shows the typical example of the area where the intervention would need to happen and where the rationalisation of the minibus-taxi or bus service is needed. The full map showing the whole Rustenburg area is given in **Annexure C.**

According to the Bojanala Province District Municipality (BPDM) Rationalisation Plan, 2012, the current services of Bojanala in Mogwase and outlying areas was planned to be withdrawn from the Rustenburg Contract and proposed into a separate independent contract. However, this will be still discussed further.

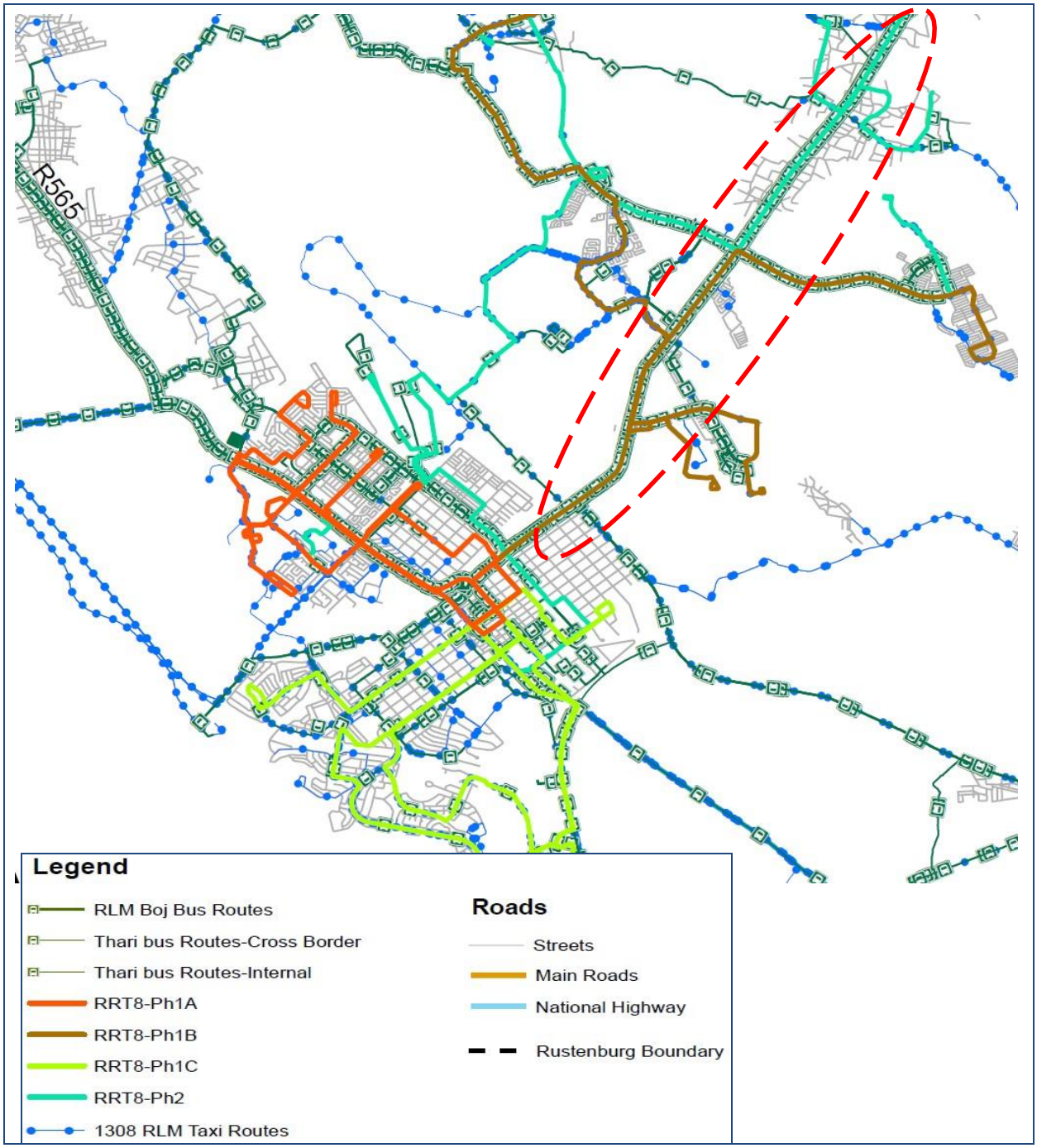


Figure 6-4: Comparison of the Minibus-taxi, Bus and RRT Phase 1, 2 Routes and Areas for Rationalisation of the Services

6.3.7 Public Transport Fares

The rationalisation of the fare system considers the usage of a distance-based fare structure. However based on the current travelling pattern there is a substantial amount of passengers coming from the rural surrounding areas into the Rustenburg CBD. The cost increments will therefore be reasonably modest to cater for those low-income families residing long distances from the city, so that they are not unnecessarily disadvantaged.

The design proposes a single ticket system which will also be in line with the RRT. That is when a full fare and ticketing system would be fully operational. Passenger wouldn't need to pay separate fares at transfer points and thus delay commuting time between integration stations (Terminals, feeder stations and intermediate stations).

Integrated Fare Management Systems

Section 11 (c) of the NLTA states that the municipal sphere of government is responsible for:

"Introducing, establishing or assisting in or encouraging and facilitating the establishment of integrated ticketing systems, the managing thereof including through-ticketing and determining measures for the regulation and control of revenue-sharing among operators involved in those systems"

The Fare Management System that is proposed in the Rustenburg Rapid Transit Operational Plans includes fare integration of RRT, bus and taxi services and an Automated Fare Collection (AFC) system. All bus and taxi services were defined as mode 1, with mode 2 reserved for later use to represent the integrated system. The financial cost of using services is then represented through two elements: a zonal element charged once for each mode, and an interchange cost which is charged each time a transfer occurs between mode 1 service. As an example, if a trip were to travel via Bojanala service 7a from Protea Park to the Rustenburg taxi rank, and then take a taxi to Kanana the model would consider the cost between Protea Park and Kanana, and also charge a set fare for the interchange.

With the design of the integrated network and fare system in mind, a zonal system of 6 fare zones radiating outwards from the Rustenburg CBD (along the main corridors) was found to adequately represent the existing situation. **(Figure 6-5)**

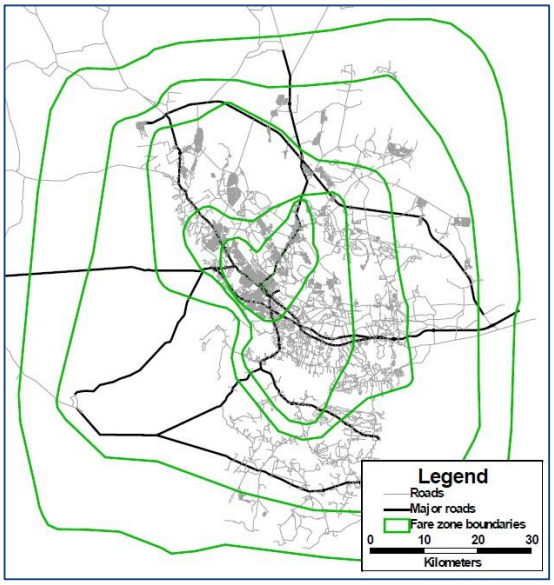


Figure 6-5: Fare Zones from RRT Operational Plan[4]

The first fare zone extends approximately 10 km to the northwest from the CBD area, including: Thlabane and Kgale, to the northeast it extends past Boitekong as far as Kanana and Mafika. To the south and east of the CBD it includes Geelhoutpark, Protea Park and Cashan. The second zone further includes Phokeng, Masosobane, Freedom Park, Mosonthal- Marubitshi, Nkaneng and Olifantsnek. The third zone extends this coverage to approximately

[4] IRPTN for Rustenburg Preliminary Operational Plan Update 2011/12

30 km, notably containing Ga-Luka and Chaneng, whilst the fourth incorporates Wonderkop, Koster, Hartbeesfontein and Ledig, Ga-Luka and Chaneng. The fifth and the sixth (which incorporates all destinations outside of the outermost zone boundary) complete the picture.

The analysis showed that the existing average fare per kilometre is approximately 40 cents. The additional fare of 5.50 Rand is only applied to interchanges between non-RRT services. Once the RRT system is introduced in the with-BRT scenario, interchanges between RRT services bear no additional cost, although other interchanges are still charged. The following **Table 6-6** shows proposed fares per zone. To put it in a perspective minibus-taxi fares are around R6 (0-10km), R9 (10km-20km) and R26 (20km-30km).[5]

Table 6-6: Proposed fares for the Public Transport in RLM[7]

2015 Fare (Rand)	1	2	3	4	5	6
1	5.50	8.00	11.50	14.50	21.50	27.50
2	8.00	5.50	8.00	11.50	14.50	21.50
3	11.50	8.00	5.50	8.00	11.50	14.50
4	14.50	11.50	8.00	5.50	8.00	11.50
5	21.50	14.50	11.50	8.00	5.50	8.00
6	27.50	21.50	14.50	11.50	8.00	5.50

6.3.8 Vehicles

The RRT system comprises of trunk, feeder and complementary routes using a combination of normal and articulated buses on the trunk routes, minibus taxis on the feeder routes and normal buses on the complementary routes. Based on this assumption, it is estimated that the number of buses required to provide the contract service would be slightly reduced as most of the other service will be provided for by the recapitalised minibus taxis.

[5] BPDM Rationalisation Plan, 2012

7 Infrastructure Strategy

This chapter gives an overview of the development and maintenance of the transport infrastructure in RLM. This will include amongst other, major roads, public transport facilities and rail infrastructure. This chapter also includes proposals made for new infrastructure and for the improvement of existing public transport facilities and major roads.

The transport infrastructure strategy includes measures which are aimed at giving priority to public transport, and a plan for the movement of hazardous substances.

7.1 Roads Infrastructure Plan

7.1.1 Road Master Plan 2007/2008

(a) Road Infrastructure Requirements from 2008 Road Master Plan

This section elaborates on infrastructure requirements as outlined in the 2008 Roads Master Plan. The findings will therefore guide RLM on what corridors would need upgrading when the anticipated developments are built. The study recommended the following:

- The RLM should conduct detailed investigations into the proposed new road links proposed in this document and investigate the feasibility of the proposed new road links;
- The RLM should make provision in the short and medium term capacity budgets to implement the proposed routes;
- The road planning associated with the implementation of the Integrated Rapid Public Transport Network (IRPTN) should proceed as soon as possible to ensure that the IRPTN can be implemented successfully;
- The road master plan proposed that it should be used as a guide in the planning of all new townships in the Rustenburg area, as well as along existing routes where redevelopment of existing property takes place. Deviation from these requirements should be well motivated by a professional engineer with sufficient experience in road planning and traffic engineering;
- The proposed external engineering service contribution policy for roads should be implemented in the Rustenburg area;
- Detailed access management studies are required on the following routes to ensure that access can be provided to all properties, whilst improving traffic safety and protecting the mobility function of these routes, namely Bayers Naude, Kock Street, Heysteck Street, Brink Street and Von Willich Street;
- After proposals of the IRPTN has been finalised, the parking provision in the CBD needs to be reconsidered to ensure that sufficient parking on routes affected by the IRPTN; and
- All traffic signals in Rustenburg need to be inspected and upgraded where necessary to ensure that they are compliant by 2010.

Information pertaining to the roads and costs of its upgrades is shown in given in **Table 7-1**

Table 7-1: Roads Category Costs

Class 4 roads (2 Lane road with NMT Lane)			
Category	Description	Weight	Cost per Km
1	Resurfacing with some road widening's	100%	R 3 000 000
2	Base rehabilitation and resurfacing with road widening's at intersections	150%	R 4 500 000
3	Above with relocation of services	200%	R 6 000 000
4	New road with expropriation	500%	R 15 000 000
5	Above with bridges at river crossings	900%	R 27 000 000
Class 3 roads (4 lane road with NMT Lanes)			
Category	Description	Weight	Cost per Km
1	Resurfacing with some road widening's	100%	R 4 500 000
2	Base rehabilitation and resurfacing with road widening's at intersections	150%	R 6 750 000
3	Above with relocation of services	200%	R 9 000 000
4	New road with expropriation	500%	R 22 500 000
5	Above with bridges at river crossings	900%	R 40 500 000

(a) Road Network 2007

As per the Road Master Plan 2008, the road network and lane geometry for 2007 is shown in **Figure 7-1**. This was before future proposed developments were added. The network was modelled with future proposed developments as well as with the High Occupancy Vehicle (HOV) lanes which represent the future proposed RRT.

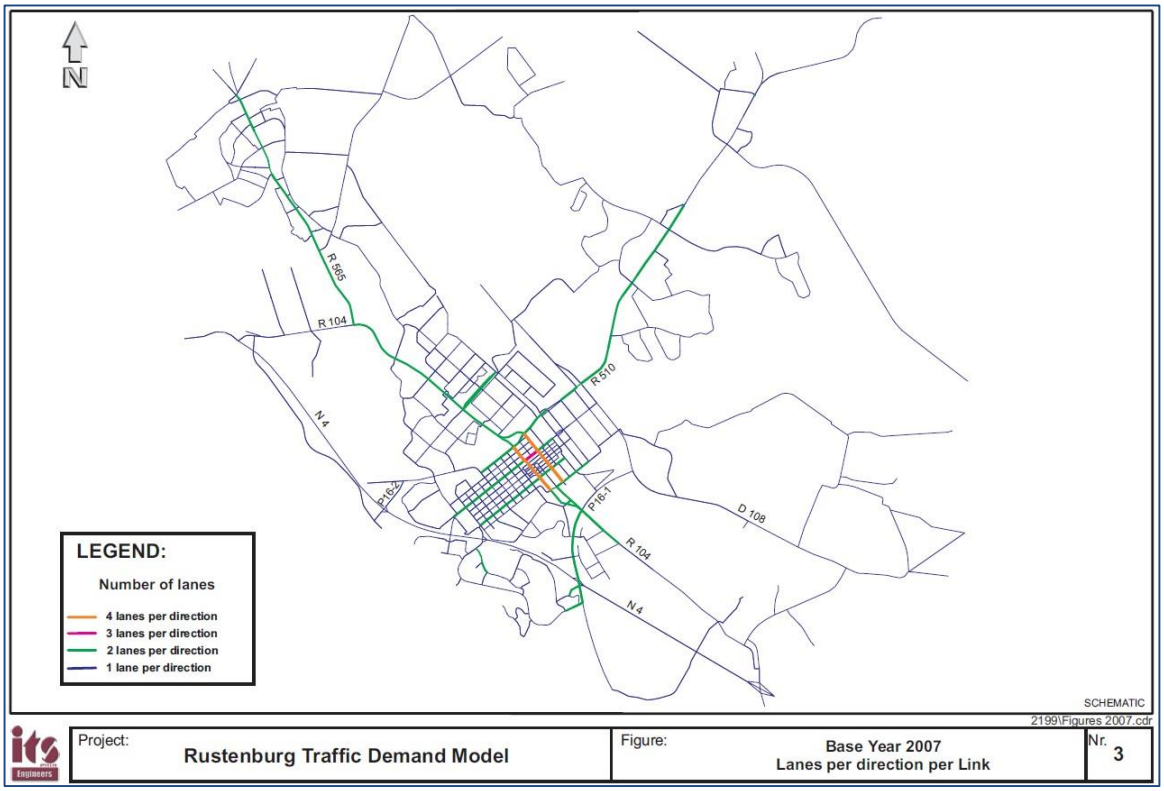


Figure 7-1: Road Network in Rustenburg
(Source: Road Master Plan - ITSE Consulting (2008))

(b) Future 2015 Road Network from Previous Model

The ultimate land uses which were assumed and modelled for the horizon year (2015) in *Road Master Plan 2008* are as follows:

- Residential units will be 122 520 units compared to existing 84 200 units, an increase of 45.5%. The overall split in housing units between low income, medium and high income will increase from 16% medium and high income/ 84% low income (2007) to 24% medium and high income/ 76% low income units (2015);
- Retail rights will increase from 2007 to 2015 with 34% from 901 000 m² to 1 121 000 m²;
- Office rights will increase with 42% from 303 000 m² to 430 700m²; and
- Industrial rights will increase with 20% from 823 000m² to 984 000m².

The increase in land use is expected to take place primarily in the areas listed below:

- Areas to the east of Rustenburg adjacent to the freeway N4 and R104;
- Areas to the southeast of Rustenburg adjacent to the P16-1;
- Areas in Cashan, Geelhoutpark, Oostende and Thlabane west;
- Boitekong area;
- Phokeng area; and
- Lefaragathle area.

The road network which was modelled for 2015 scenario is shown in **Figure 7-2**. This figure also indicates the locations of the High Occupancy Vehicle (HOV) lanes.

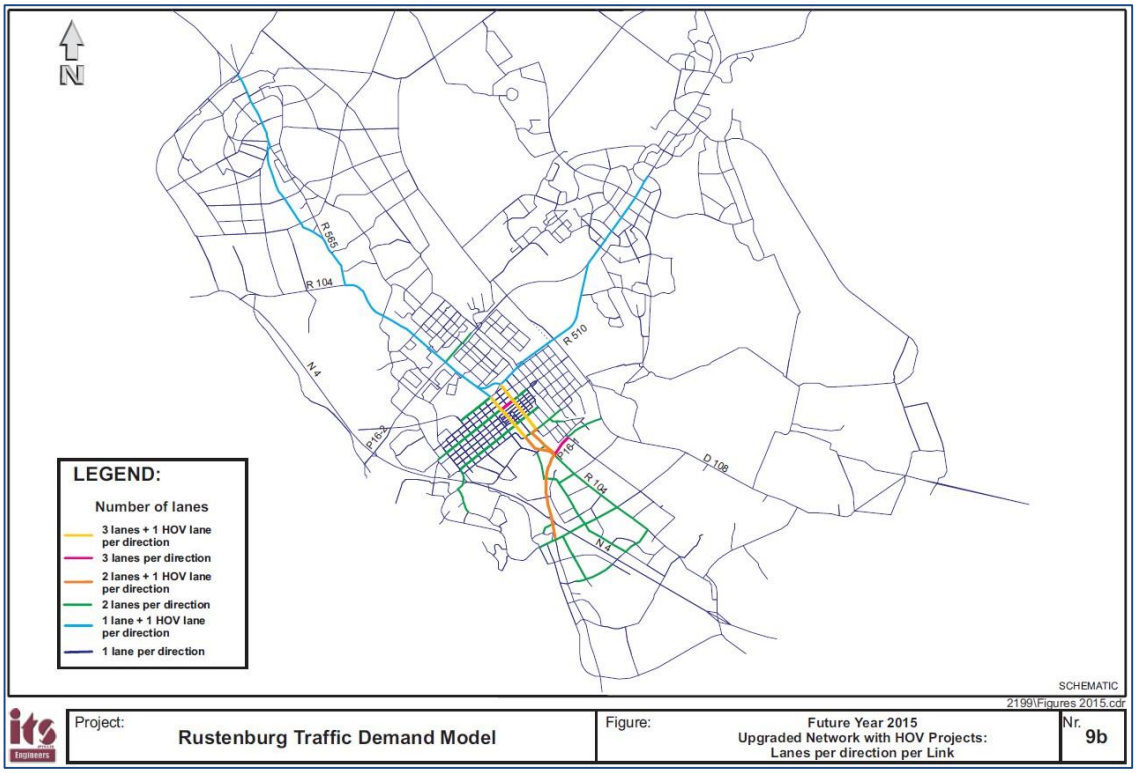


Figure 7-2: 2015 Future Year Network with HOV Lanes
(Source: Road Master Plan - ITSE Consulting (2008))

From **Figure 7-2** it can be seen that the planning for HOV lanes is as follows: R510 (from Chachalaza to Bethlehem Dr; 1 lane+1 HOV lane per direction), R565 (from R556 to R104; 1 lane+1 HOV lane per direction), R24 (from R104 to Waterberg Ave; 2 lanes+1 HOV lane per direction), R104 (from R565 to R24; 1 lane+1 HOV lane per direction)up to Bethlehem Dr; 3 lanes+1 HOV lane per direction up to Bosch St and 2 lanes+1 HOV lane per direction up to R24).

The proposed future road classification of the 2015 roads is presented in the following **Figure 7-3.**

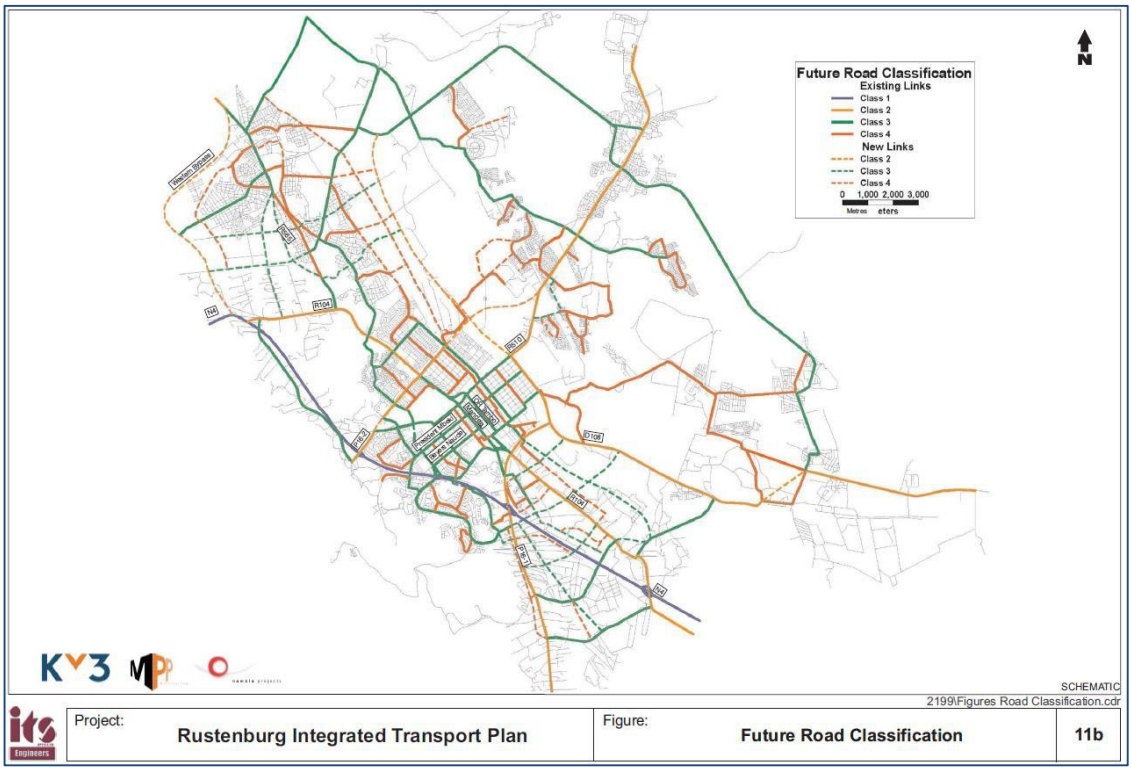


Figure 7-3: Future Road Network
(Source: Road Master Plan - ITSE Consulting (2008))

However, at the time when the RLM Roads Master Plan was prepared in 2008 certain planning projects were not considered. Some of those were planned and some of them conducted in recent years as the following ones:

- The implementation of the RRT roads construction:
  - The Thlabane Fast Track section is complete;
  - Four road sections are currently under construction. This construction work upon these 4 sections is projected to be completed in first quarter of 2017
  - The RRT Depots consulting engineers appointments are pending
  - The two RRT contracts in the Rustenburg CBD is currently pending the outcome of an appeal to a high court ruling; and
- The upgrading of the R 30 by SANRAL (to Class 3) within the RLM area.

7.1.2 Road Master Plan 2015 (in progress)

EPS Consulting Engineers is currently updating RLM's Roads Master Plan developed in 2008. This project is scheduled for completion in 2015. The master plan classifies Rustenburg's roads into arterial roads (Class 2 and Class 3) as well as Class 4 collector or distributor roads. These upgrades will be constructed in support of the future developments aimed at improving connectivity and alleviation of congestion. The future proposed road network is shown in **Figure 7-2** (with land uses) and **Figure 7-3.** However, at the time when this report was prepared the Road Master Plan 2015 was only a draft version and not the approved master plan was only in the progress and it didn't account for all the roads that were identified during this project for prioritisation. So the plans presented are not comprehensive enough to cater for all the planning that was happening in the area as a result of changes in local conditions and needs. Therefore, it is recommended that the master plan should be updated to accommodate 5 years requirements from the CITP. (**Figure 7-6** and **Table 11-5: Road Upgrades Projects**)

Growth in the local economy also results in increased freight movements, which will result in deteriorating road conditions. The increase in the number of private vehicles, public transport and freight movement (heavy vehicles) creates conflict along the major routes in Rustenburg. The following routes are identified as the main freight corridors:

- N4;
- R52 from Lichtenburg;
- R30 from Klerksdrop;
- R400 from Krugersdrop and Tarlton;
- R510 to Thabazimbi, Lephalale and Botswana.

It is important that freight be properly directed through a town so that, as far as possible, it does not mix with the daily traffic of the town in order not to affect traffic flow operations adversely. This can be done by restricting heavy vehicle routes to the outskirts of the town, and to arterial roads.

The 2008 Road Master Plan recommended a number of freight bypass route to cater for freight and the movement of hazardous substances and abnormal loads. According to this document, the future base network upgrade projects include the Phokeng western bypass and D108 eastern bypass which can be used as part of the future freight ring route.

More detail regarding the proposed bypass route is found in **Chapter 9** of this report.

7.1.3 Provincial Future Road Network Plan

(a) Provincial Network in Bojanala District Municipality

The North West Provincial Government has a Road Network Management System showing future proposed roads. These roads are aimed at alleviating congestion as well as improving connectivity once future developments are built. However, there are no fixed timeframes as

to when the roads will be built**. Figure 7-4** shows the road network in the Bojanala Platinum District Municipality.

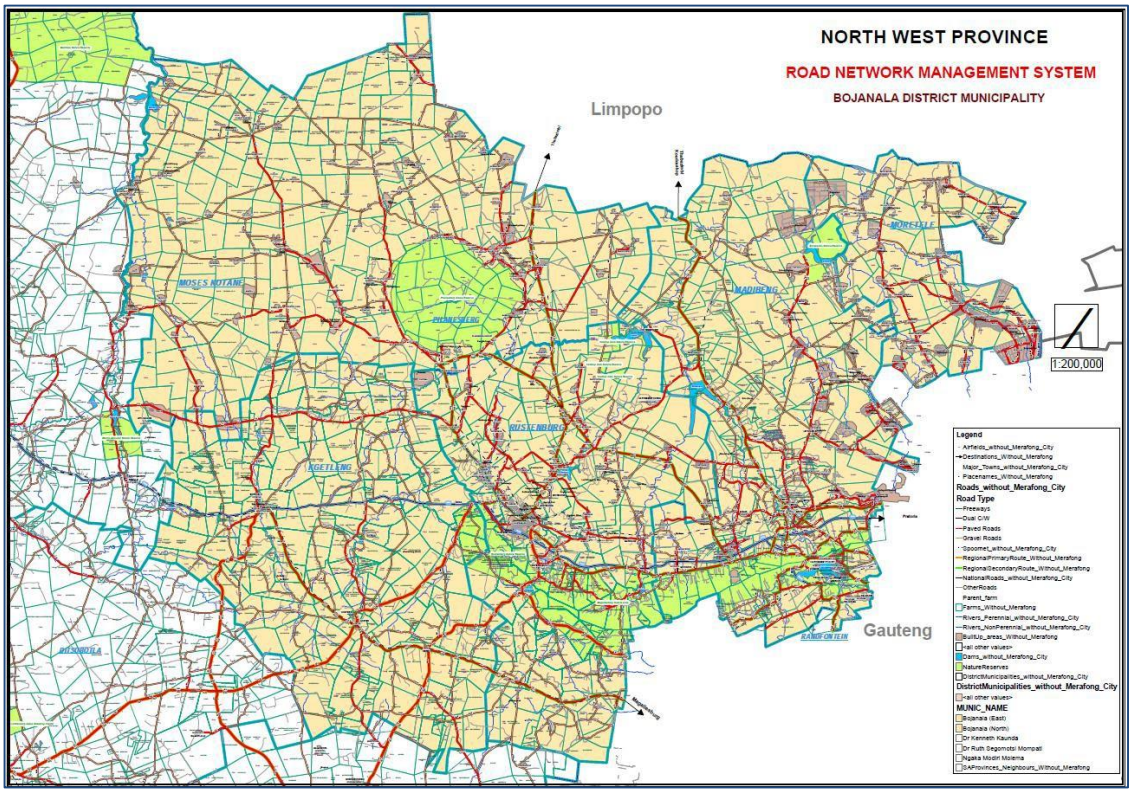


Figure 7-4: **Road Network in the Bojanala District Municipality**
(Source: North West province, Road Network Management System)

Zooming into the Rustenburg's road network, it is important that the road network gives proper connectivity in the east-west and north-south directions. Connectivity in the east-west direction is through routes such as R509, R30, R24, R104, and R556 while in the north-south direction it is mainly provided by the R510 and R565. Lower order roads also play a vital role in the improvement of connectivity.

Figure 7-5 shows the road network hierarchy in RLM.

Figure 7-5: Road Network Hierarchy in RLM

(Source: North West Province, Road Network Management System)

The Spatial Development Framework Chapter has identified future growth in the RLM to be mainly concentrated along the R565 towards the Royal Bafokeng and Sun City. Main Roads acting as a backbone for the RRT include the R510 and the R565. These also form main links between the labour force and economic opportunities.

7.1.4 2015 Future Road Network Plans and Utilisation

(a) 2015 Future Road Network

To improve connectivity between the main roads, existing residential areas as well as proclaimed townships, the roads shown on **Figure 7-6** were selected to be prioritised as part of 2015 Future Road Network. Details of the roads are given in **Table 11-5: Road Upgrades Projects.** The roads that were presented in the figure are the ones that were identified after the consultation process with RLM and various stakeholders and were listed as "the ones with the highest priority" and the ones "which will respond the best to the future demand". The roads are plotted on the updated land use as received from the RLM planning department that includes newly proclaimed developments. As discussed in **Chapter 7.1.2** those roads that were listed as 2015 Future Road Network would need to be included in the latest Road Mater Plan.

(b) Road Upgrades with Additional Lanes 2020/2025

According to the Traffic Modelling and Road Network Planning Study that was done as part of RLM Road Master Plan 2008 traffic modelling was done for the 8 years horizon 2015. The growth rate that it was used for the trip rates for the realistic scenario was 5.7% per annum, which translates into 57% increase of the total trips. The main drivers of traffic growth is population growth (more people travel) and economic growth (more trips per person as disposable income grows, as well as a shift from walking to public transport, and from public transport to using a private car as car ownership increases). Those link volumes were compared with the link volumes received from the most recent traffic counts that were done in RLM. The conclusion is that the volumes from the model 2015 Horizon Year Scenario were much higher than the actual ones received from the traffic counts. Therefore, the growth rate of 5.7% was too high as the main drivers for such a growth, as listed above were not achieved. The model results can be found in **Annexure H: Road Infrastructure Strategy.**

The approach that was taken to analysis the current and to project the future link volumes was to use the most recent data from traffic counts and then to grow it with a lower growth rate of 3.5% to get the 2020 and 2025 Future Scenarios. Table with detailed analysis of the volumes per each link's approach and exit for the Base Year 2015 and 2020 and 2025 Future Year Scenarios are given in **Annexure H**. Those volumes where then compare with the capacity of each link, so the v/c ratio was the performance measurement to guide on the necessary upgrades for the future years in terms of adding additional lanes. **Figure 7-67** shows the most critical links from the capacity analysis aspects. The information that are given are per the intersection ID, provided in table given in **Annexure Ha**nd present the number of lanes for the Base Year 2015 and 2020 and 2025 future year scenarios (e.g. 2-2-2 is number of lanes for 2015-2020-2025). The ones which are highlighted in red indicate the need for the upgrades either for the 2020 scenario or 2025 scenario or both like (1-2-2).

V/C-Volume to Capacity ratio, equal to volume divided by capacity (degree of saturation is the volume to saturation flow ratio). (**Table 7-2**) Basic saturation flow/capacity that was used

was 1900 tcu/h which is characterised as “Near ideal conditions for free movement of

vehicles on both approach and exit sides indicated by good intersection geometry, long distances to upstream and downstream intersections, good visibility, small numbers of pedestrians, and little interference due to loading and unloading of goods vehicles, buses or parking turnover." (HCM 2000)

Out of 549 links that were analysed for three scenarios only 7 of them would require upgrades for the future years. Refer to **Figure 7-67** for the red boxes.

Table 7-2: Vehicle Level of Service Thresholds

Level of Service	Volume to Capacity (V/C) ratio
A	< 0.5
B	< 0.8
C	< 0.9
D	< 0.95
E	<0.99
F	more than 0.99

(Source: HCM2000 Vehicle Level of Service Thresholds)

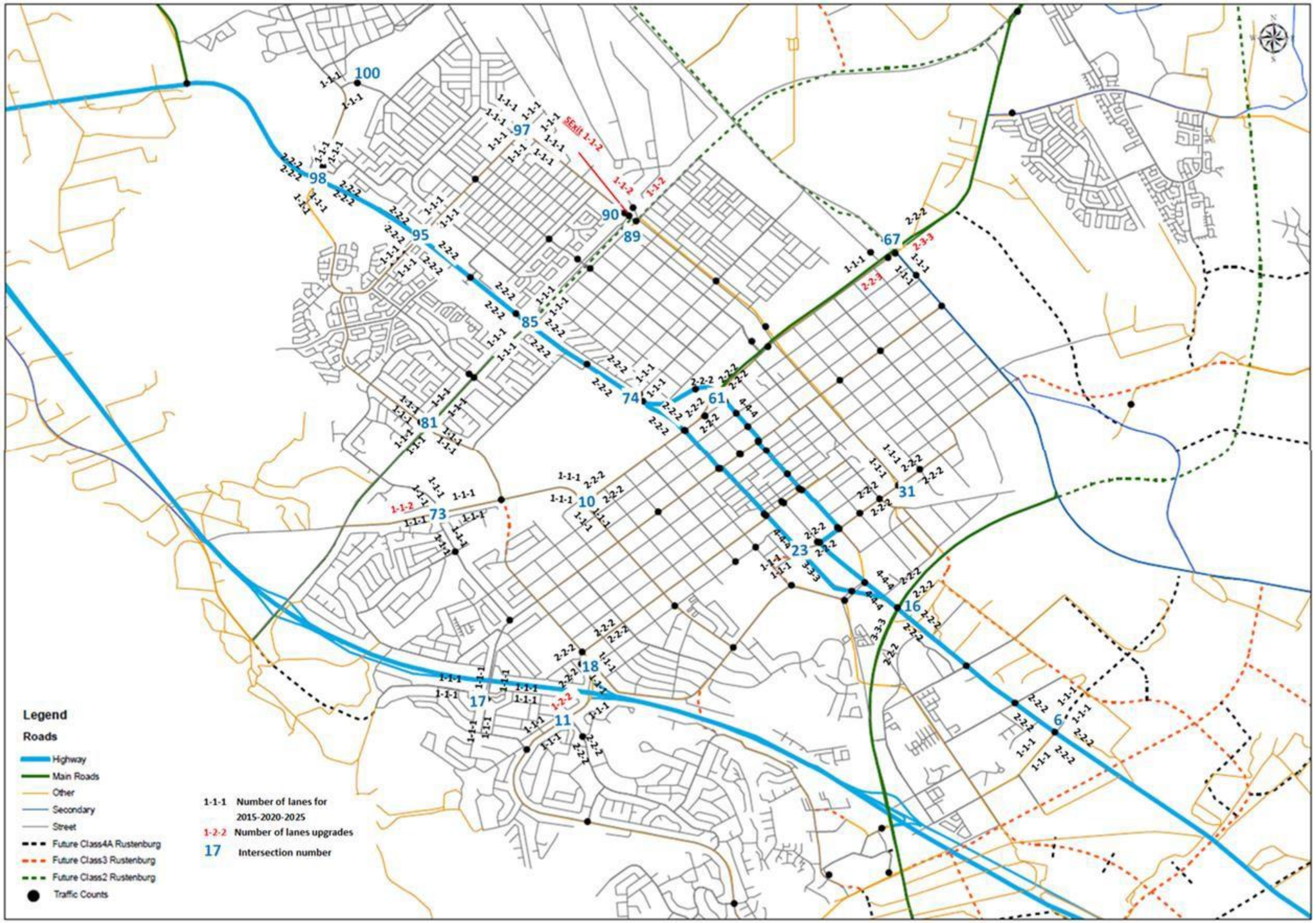


Figure 7-6: Road that Requires Upgrades in terms of the Number of Lanes for Scenario 2020 and 2025

7.1.5 Maintenance

In order for infrastructure to be kept at an acceptable good working order it is important that it be maintained when required. Main advantages of maintenance include:

- Prolonged life and reduced rate of deterioration;
- Reduced operating costs;
- Reduction in accidents;
- Reduction in CO2 emissions and wastage of fuels; and
- Reduction/postponement of large capital investment in reconstruction.

There are three major types of maintenance activities:

- **Routine Manual**

  This is the type of maintenance that is required continually on every road whatever its engineering characteristics or traffic volume.

- **Routine Mechanised**

  This is the type of maintenance required at intervals during the year with a frequency that depends of volume of traffic using the road.

- **Periodic Maintenance**

  This is the type of maintenance activity that usually spans the whole length of the road required at intervals of several years.

Table 7-3 shows activities involved in routine and periodic maintenance for RLM.

Table 7-3: Routine and Periodic maintenance

Classification	**Routine**		**Periodic**
Maintenance type	**Manual**	**Mechanised**	
Activity	Grass cutting	Light Grading	Regravelling
	Drain Cleaning	Medium Grading	Rehabilitation
	De-sitting culverts	Heavy grading with spot regravelling	
	Building / Maintain scour control	Ragging and Brushing	
	Potholes repair		
	Recutting ditches		
	Road sign cleaning		

(Source: Road Network Masterplan, 2015)

The following are maintenance works required for unpaved roads:

- Grading;
- Spot gravelling; and
- Regravelling.

For paved roads, the following are the types of maintenance required:

- Routine pavement works;
- Preventive treatment works; and
- Resealing and Rehabilitation works.

The 2012-2017 Bojanala IDP have given costs to upgrade or maintain the existing infrastructure. **Table 7-4** below gives a cost break down between gravel and paved roads.

Table 7-4 Upgrade costs

Road Type	Existing Roads	Cost to upgrade/maintain
Length of paved road	572	R 114 400 000
Length of gravel road	364	R 728 000 000
Total	**936**	**R 842 400 000**

(Source: 2012-2017 IDP)

7.1.6 Road Asset Management System (RAMS)

It is important that every municipality have a Road Asset Management System (RAMS), which includes and inventory of the condition of every road. A brief overview of what the RAMS entails is described below:

- The Pavement Management System (PMS);
- The Unpaved Road Management System (URMS);
- The Bridge Management Systems (BMS); and
- The Maintenance Management System (MMS).

Pavement (Paved & Unpaved) Mangement Systems

RLM commissioned KAGGA and Partners to develop a Phase 1 Road Network Master Plan (RNMP) for Rustenburg. The PMS was to cover both paved and un-paved roads. The study was finalised on the 11th February 2013. The main purpose of the study was to help RLM with the effective road network maintenance activities and future planning and to use the Phase 1 RNMP as a basis for Phase 2 RNMP.

- Status Quo

  RLM has a total road network of 1 903,1km with 951,5km of it being paved while 951,6km is gravel and earth roads. This amounts to 50% of municipal roads being paved while the remaining 50% is gravel or earth roads.

Table 7-5: Road Network Coverage

Road Type	Total distance (km)	Percentage Split
Paved	951,5	50%
Gravel & earth	951,6	50%
Total	**1 903,1**	

It is also important to note that almost all roads in RLM are either Class 4, 5 and 6 when classified in accordance to the South African Road Classification System. The primary role of the municipal roads is to serve as feeders or distributors, linking villages with each other as well as with district roads. They also form important linkages between Provincial and National roads, railway stations and market centres.

- Unpaved Road Condition

An assessment of approximately 960,1km of unpaved roads was conducted. The condition of each road was categorised as either very good, good, fair or poor. This was in investigated in accordance to the TMH 12.

The RNMP found the unpaved road condition to have the following distress rating which were later used to calculate the Visual Gravel Index (VGI). **Figure 7-7** shows the VGI ratings.

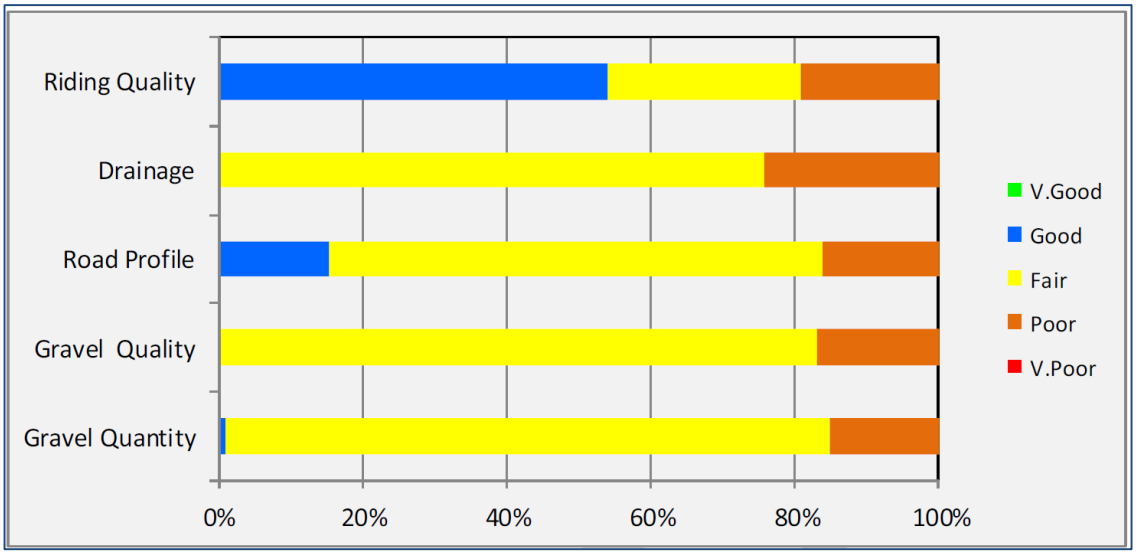


Figure 7-7: Distress Ratings
(Source: Road Network Master Plan, 2013)

The RNMP outcome on unpaved roads was that there were no drainage systems or planning for maintenance for most of the gravel roads. The roads had an average VGI of 41% implying that the roads where in a poor condition

- Paved Road Condition

The condition assessment was conducted in accordance to TMH 9. **Figure 7-8** gives distress ratings for paved roads in Rustenburg.

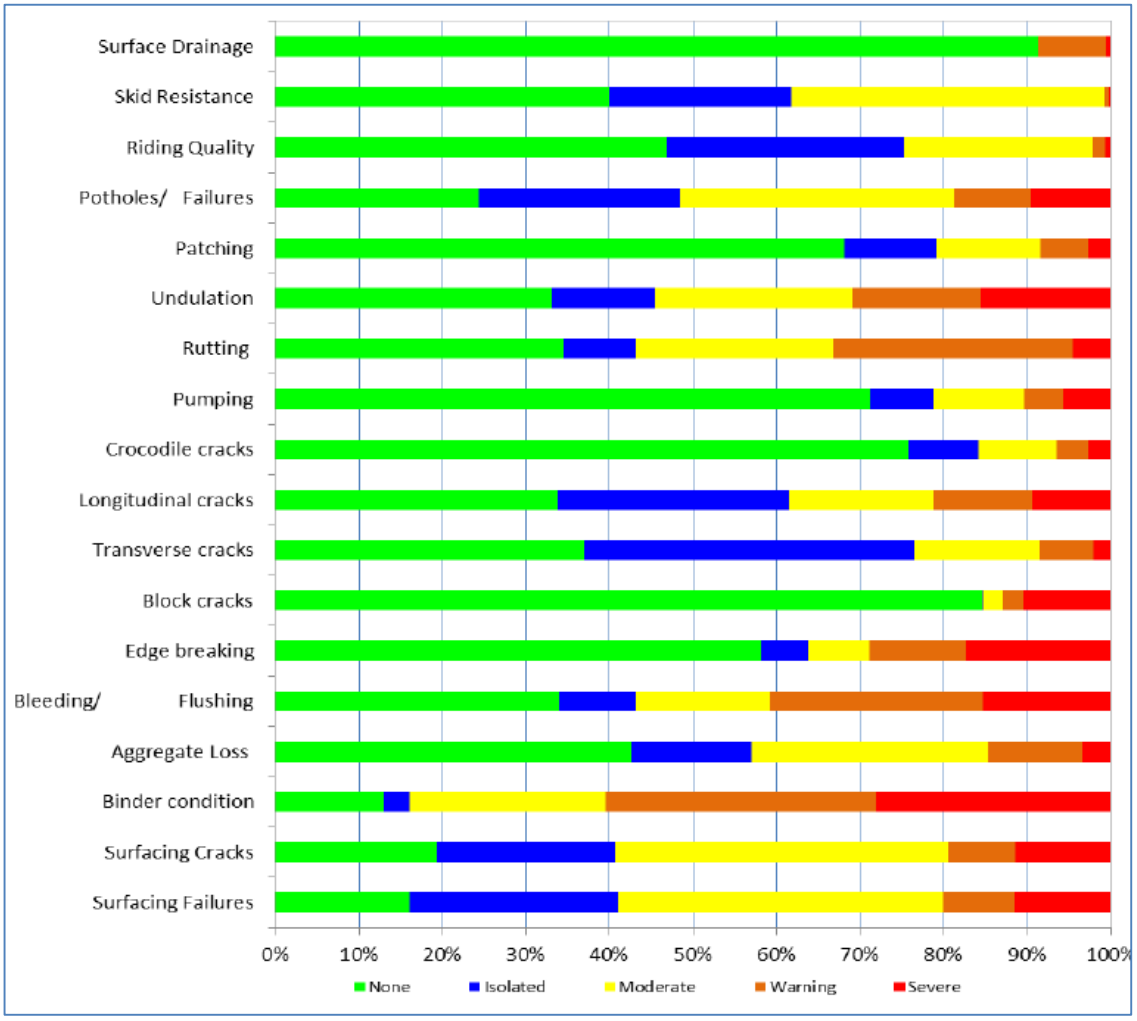


Figure 7-8: Distress Ratings for Paved Roads
(Source: Road Network Master Plan, 2013)

The Visual Condition Index for paved roads in Rustenburg is shown in **Figure 7-9** and **Figure 7-10.**

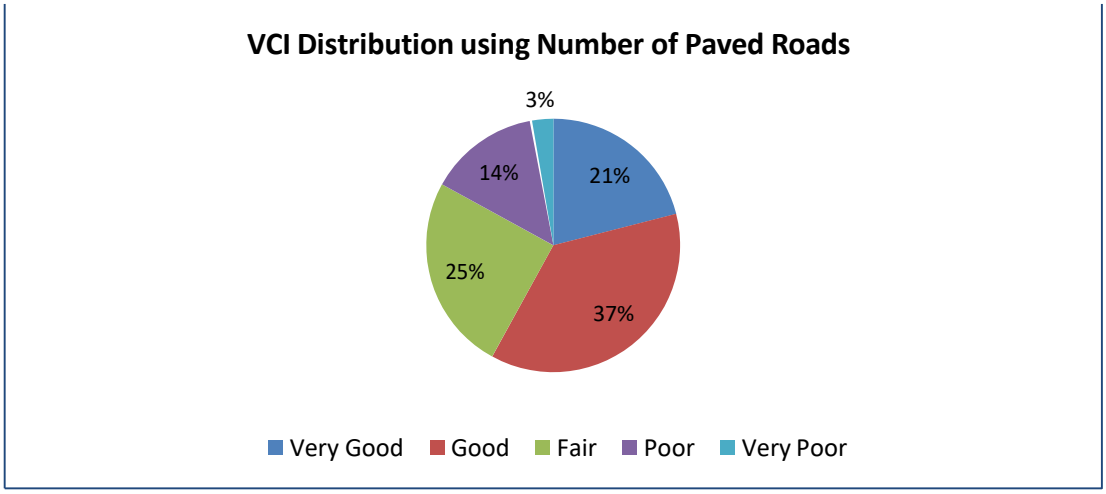


Figure 7-9: VCI for Paved Roads
(Source: Road Network Master Plan, 2013)

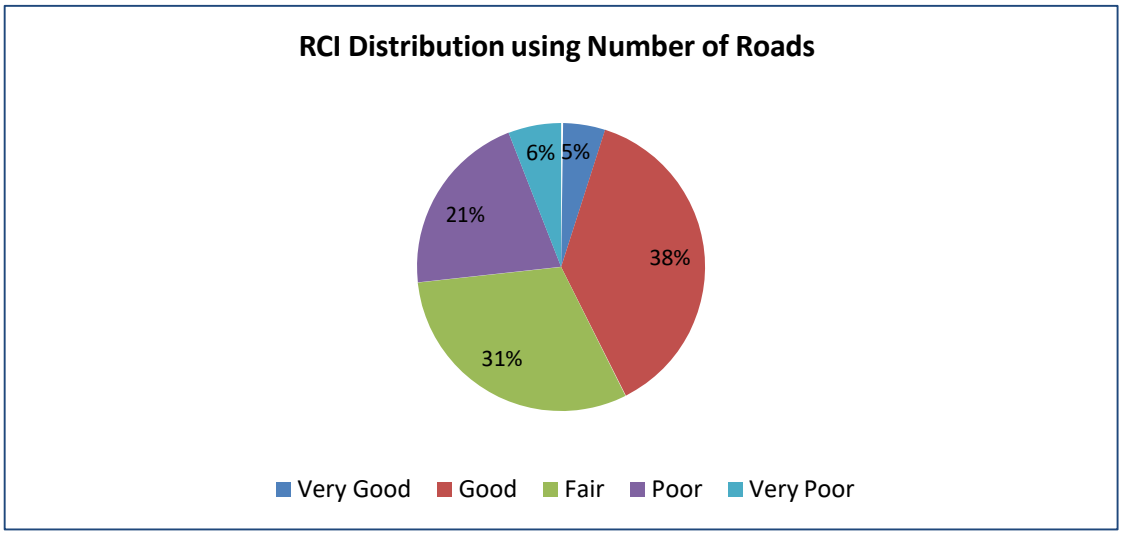


Figure 7-10: Reseal Condition Index (RCI) Distribution for Paved Roads in RLM
(Source: Road Network Master Plan, 2013)

The RNMP has indicated that the weighted VCI was calculated to be 69% indicating that all roads were in a fair condition. It also stated that should there be no maintenance, the roads will deteriorate in the next few years.

Figure 7-10 shows the Reseal Condition Index (RCI) of the distribution of paved roads in Rustenburg.

Recommendation for the maintenance can be obtained from the Phase 1 of the Road Network Master Plan for Rustenburg Local Municipality Rail Infrastructure Plan, 2013.

7.2 Rail Network

There is no passenger rail services (either commuter or long-distance) that currently operates via Rustenburg. (Refer to **Chapter 5.2.2**) Rustenburg is situated around the mining industry with the largest mines being Anglo platinum, Impala Platinum, Xstrata and Lonmin. There is Transnet rail infrastructure passing through the CBD. These mines are linked with the freight rail infrastructure, refer to **Figure 9-4: Mines and Rail Infrastructure** which illustrates the number of mines and also shows the freight rail infrastructure in the Rustenburg area.

Before any rail services are re-instated, it is recommended that a feasibility study be completed to assess the potential demand. This would confirm the optimum mode (rail or bus) to cost effectively serve the demand. Also, negotiation with Transnet Freight Rail (TFR) would need to be conducted to investigate the feasibility of sharing the corridor with passenger services.

Any future feasibility study should, in addition to rail, consider whether PRASA's Autopax bus services, being Translux or City to City, may be more feasible. As it stands, Translux and City to City bus services do not operate in RLM.

7.3 Public Transport Infrastructure

As part of analysis of the public transport infrastructure in the Rustenburg Local Municipality (RLM), approximately 35 facilities were identified and surveyed. The outcome of the results from surveys indicated that the majority of the facilities are informal (78%) whilst those that are semi-formal and formal are approximately 22%. **Figure 7-11** shows the overall condition of all the public transport facilities in terms of percentage.

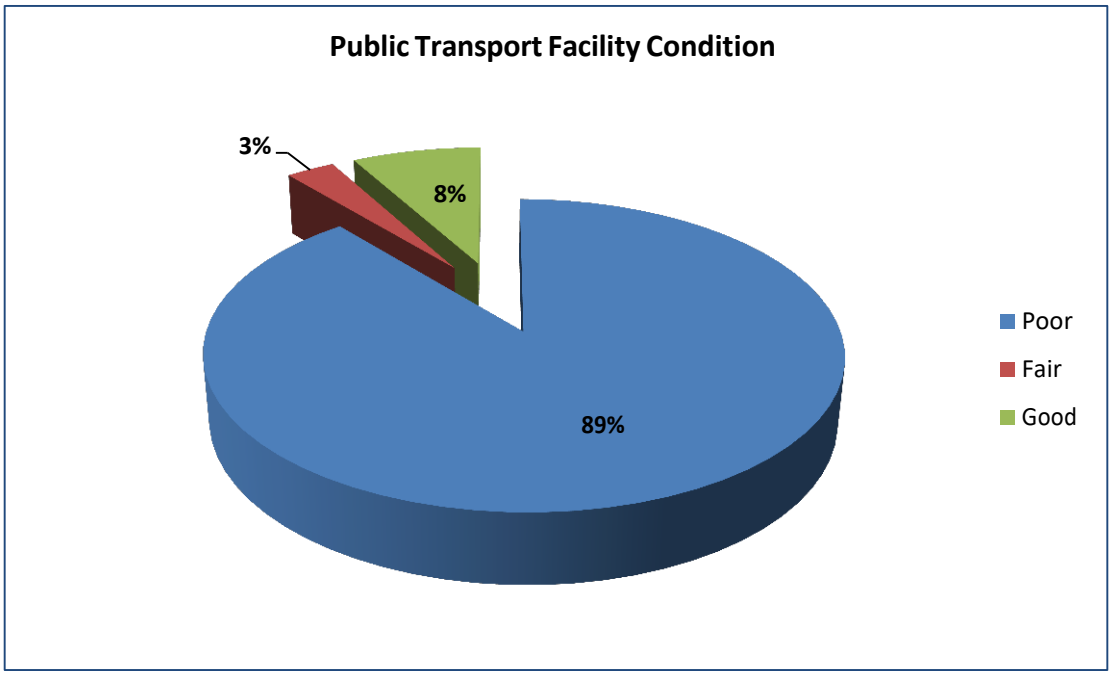


Figure 7-11: Public Transport Facility Condition

Depending on budget availability, informal public transport facilities can be upgraded to semi-formal, then to formal. The informal public transport can be upgraded to semi-formal as follows:

- Paving of the facility;
- Provision of passenger shelter and toilets;
- Promote safety in terms of providing fences and lights; and
- Provision of seat or benches to accommodate people with special needs.

The semi-formal can be upgraded to formal as follows:

- Provision of passenger shelters and traders shelter;
- Provision of universal access;
- Provision of adequate safety measures such as fences and lights;
- Provision of NMT facilities; and
- Provision of proper passenger queuing island and loading bays.

Error! Reference source not found.**2** show the public transport facilities as well as the public transport routes. It gives a clear understanding of the locations and the conditions of the public transport facilities. According to the public infrastructure facility surveys that were conducted, it was found that the public transport facilities which are in good condition and

categorised as “A” are located around the CBD whilst majority of the public transport facilities in poor condition are located outside the CBD. To give a clear understanding on the rank categories, the definitions are provided below.

A	Formal facility with all the necessary infrastructure for NMT, People with disability, high Security and safety
B	Formal facility with limited infrastructure for NMT, people with disability, safety, security
C	Semi-Facility but with no infrastructure for majority of users of the facility
D	Informal facility with no infrastructure to support the effective operation of the rank

The main taxi corridors, the Bojanala and the Thari Bus routes as well as the RRT routes are shown. This indicates which communities have limited or poor access to public transport or which have to walk a long distance to access the nearest public transport facility.

Management of the public transport facilities and list of the ones that would need to be upgraded are discussed in Transport Needs Assessment chapter, **Chapter 5.2.3 and Table 5-1**. The list of the final public transport facility projects for prioritisation is included in **Chapter 11** of this report.

7.4 Traffic Signals

Chapter 5.2.4 highlights the need for the traffic signals installation in the CBD area of RLM. A strategy to achieve this would be to group together by corridor, and budget for upgrading one or two (or more) corridors per year. However, the RRT network would need to be taken into account so that the signals are not upgraded on corridors where the RRT service is planned to run so that there is no duplication of the upgrades. Also, the other important thing is to focus on those which may be more urgent than others. Those streets would be the ones which were identified for the lane upgrades as shown in **Figure 7-6: Road that Requires Upgrades in terms of the Number of Lanes for Scenario 2020 and 2025.** The upgrades can also be done by developers as they build new developments.

8 Travel (Transport) Demand Management

Travel Demand Management (TDM) refers to the various strategies that can be put in place to encourage sustainable transport and also to maximise the efficiency of the transport system. The main aim of TDM is to reduce the use of private vehicles by reducing the number of private vehicle trips and trip lengths while supporting the demand for person trips. TDM strategies are aimed at promoting and prioritising the use of public transport while discouraging private vehicle use.

The benefits of successfully implementing TDM strategies include:

- Greater use of more effective and environmentally friendly modes of transport, including non-motorised transport (NMT);
- Reduced emissions as a result of reduced congestion;
- The promotion of public transport;
- More efficient land use;
- Reduced parking problems and costs associated with parking parking facilities;
- Improved health and fitness of the public;
- Reduced risk of traffic incidents;
- More transport options;
- More efficient use of road space;
- Improved mobility options;
- Improved road safety.

TDM affects land use patterns due to the complementary relationship between transportation and land use. Land use affects transportation activity and transportation decisions in turn affect land use development patterns. More land is used for roads and residential areas, resulting in destinations being further apart. This phenomenon leads people to use private vehicles for more of their trips.

TDM is not only about implementing measures to improve mobility and reduce emissions. TDM is a tool that sends a message to road users that resources related to transport such as roads, time, fuel and parking spaces are valuable and scarce.

8.1 Objectives of a successful TDM Strategy

TDM strategies are aimed at influencing commuters to change their travel behaviour in various ways such as trip planning, trip timing and using alternative modes of transport. TDM programmes are geared at incorporating a suitable combination of strategies for the population and area in which they are being implemented.

TDM programmes can be employed in a variety of areas. For instance, in the city centre, along a particular route/corridor, in an entire city or in a commercial zone.

The effective implementation of TDM programmes is dependent on the availability of alternative transport options such as public transport, ride sharing and NMT. Therefore, the alternative modes of transport need to be attractive, effective and efficient.

Some of the objectives of TDM include:

- Improved safety for commuters;
- Providing effective and efficient transport alternatives;
- Reduced congestion;
- Reduced energy consumption;
- Improved mobility; and
- Reduced carbon emissions.

The above objectives are expanded further in **Table 8-1**.

Table 8-1: TDM Objectives

Benefits	Definition of Objective
Mobility Objectives	
Public Transportation	Increasing public transport services by improving services rendered, incentivising people to use public transport and increasesing the number public transport services available to the public.
HOV Lanes	High Occupancy Lanes provide traffic capacity in the peak direction. HOV lanes give priority to high occupancy vehicles such as buses and carpools. HOV lanes are a form or prioritization that provides operating cost savings, increased travel reliability and travel time savings. Ideally, HOV Lanes should not be congested and should be able to provide a high level of service. HOV lanes also improve transit performance and encourage shifts from other modes of transport such as private vehicles, reducing peak period traffic.
Bicycles	The use of bicycles integrates well with public transport and is more effective for short trips on busy corridors. Including cycling in the public transport system can result in a high level of mobility, especially for non-drivers. This form of travel supports and promotes NMT and can help reduce the number of vehicle trips, consumer costs, vehicle travel, energy consumption as well as parking facility costs.
Ridesharing	Ridesharing is when a vehicle transports additional passengers with minimal additional mileage and excludes special trips a driver makes to transport a passenger. Ridesharing is a common and cost effective means of travel, especially in areas that are not well serviced by public transport. It is also a way for non-drivers to travel, more so in rural areas. Ridesharing can reduce peak time vehicle trips while simultaneously increasing commuters' travel choices. Ridesharing benefits include: • Reduced congestion • Reduced parking costs • Reduced emissions • Financial and time savings for consumers
Work from Home	Telecommuting/working from home is a method in which employers allow employees to work from home instead of a centralised office. Employees can then participate in meetings by using tools such as video conferencing. Employers are then required to work with managers, employees and other relevant organisations in order to develop and implement suitable policies and procedures. Telecommuting can assist in reducing travel costs, parking costs and has the potential to reduce traffic congestion in the long term.
Flexitime	Engaging with employers to assist employees by supporting flexible work schedules. This allows employees flexibility in their work schedules and also to adjust their commuting time away from peak periods. Employers would then work with managers, employees and the relevant organisations to develop suitable policies and practices. Flexitime is a strategy that can directly reduce congestion during peak periods.
Intelligent Transport Systems (ITS)	Intelligent Transport Systems provide the commuter with real time transport information and encourages trip planning. These systems can support TDM by exposing users to other travel options. The implementation of these systems would require support from various partners including government departments, vehicle and equipment suppliers. ITS can provide a combination of the following services: • Travel information such as transit fares, routes, departure and arrival times • Fleet management which would allow taxi and truck fleet managers to monitor the performance, locations and conditions of their

	vehicles • Computerised dispatching which allows for a more efficient method of scheduling demand-responsive shuttle and taxi services and routing delivery and utility vehicles • Advanced traffic management measures which would allow traffic control centres to manage roadway conditions and also coordinate traveler information, traffic control as well as emergency response teams.
Park and Ride	This refers to parking facilities at transit stations as well bus stops that facilitate the use of ridesharing and other modes of travel such buses. Parking at these facilities is usually cheaper. Park and Ride facilities reduce congestion and the demand for parking in urban centers as well as at work sites by encourage modal shifts to public transport. The benefits of Park and Ride facilities include a reduction in energy use, traffic congestion, traffic incidents and consumer costs.
Complete Streets	Complete streets are roadway designs and operating practices that are intended to safely accommodate a wide variety of users such as pedestrians, cyclists, public transport users, motorists and people with visual and mobility impairments. The concept of complete streets acknowledges that roadways serve diverse functions for a wide variety of users that must be considered in the design and management of roadways. The planning of complete streets can be an effective tool in the implementation of more multi modal planning. Comprehensive complete streets planning include bus lanes and traffic calming measures that can reduce vehicle use and encourage the use of public transport. Complete streets have various benefits, some of which include: • Improved mobility options for non-drivers • Reduced traffic congestion • Improved walking and cycling conditions • Improved quality of public service transport
Universal Design	Universally designed transport facilities accommodate a wide variety of users including those mobility and visual impairments as well as individuals with special needs. Universal design is a comprehensive concept that benefits all and results in seamless mobility for a wide range of users. This concept also considers and addresses potential obstacles that may exist in transport terminals, sidewalks roads and vehicles. Universal Design can be implemented as part of transportation and pedestrian planning. It usually involves the improvement of transportation facilities and services to remove barriers for people that are handicapped while at the same time reducing the need for special services and increasing the use of public transport facilities.
Economic Objectives	
Road Pricing	The cost of the benefits of using the road can be recovered through toll roads and toll lanes. A congestion charge system charges motorists for using certain roads during peak periods. This encourages motorists to seek alternative modes of travel that are cheaper, cost effective and time saving and also reduces the number of vehicles travelling on the particular roadway.
Tolling	Tolls are a based on the user pay method and revenues collected are dedicated to road project costs. A tolled road may do very little to reduce traffic congestion if the alternative routes are in a poor condition and if there isn't an existing efficient and reliable transport mode. Road users can then be incentivised to use other transit alternatives such as public transport or ridesharing.

Carbon Taxes	Carbon taxes are based on the carbon content of fossil fuels and are intended to encourage energy conservation and help reduce vehicle travel which can result in reduced vehicle congestion, road and parking costs.
Parking management	This strategy encourages more efficient use of existing parking facilities, reduces the demand for parking while also encouraging the shift from single occupancy vehicles (SOVs) to other transport modes. The most effective parking strategies are cost based that link the rates for parking to demand.
Traffic calming	Design features and strategies that are intended to reduce traffic volumes and speeds on particular roadways. This strategy forces drivers to use different routes or an alternative mode of transportation.
Fuel taxes	This strategy is aimed at reducing private vehicles by increasing fuel taxes. Also, as a result of increasing fuel taxes, the cost of the road can be recovered
Land Use	
Mixed land use	Mixed land use must create convenient, direct and safe connections between varying land uses, ensure that land uses are compatible and support each other and also ensure that land uses are within a convenient walking distance. Mixed land use encourages a more practical and convenient way of travelling to destinations that are close in proximity while encouraging the use of public transport, bicycles and walking.
Increased Densities	Land use patterns in which related activities are located in close proximity to each other and are usually within a walking distance. This improves accessibility and transport options. This concept creates multi modal centers and encourages the use of public transport, walking and cycling. Densification aims to reduce travel distances and private vehicle use while encouraging the use of alternative modes and reducing travel costs.
Policy and Institutional Reforms	
Regulatory reform	Policies that prioritise public transport by encouraging it and incentivising the public to use public transport whilst ensuring mobility and accessibility to public transport services
Institutional reforms	The development and provision of structures that can promote and deliver sustainable and efficient transportation services and systems to ensure that the needs of various users are met
Prioritisation of appropriate transportation measures	Policies that prioritise public transport by encouraging the use of public transport, minimizing the negative impacts of transport in an area and also ensuring mobility and accessibility for all users.
Asset management	Programmes and policies that set out to preserve valuable assets and infrastructure that support effective, efficient and sustainable transport while also maximizing the utilization
Other	
Road Safety	To promote road safety by providing proper working signals which comply with the South African Road Traffic Signals Manual to improve traffic flow, maintenance of routes, public education and training, road safety audit and traffic law enforcement. Reduced per capita traffic crash risk.

8.2 Best Practice Analysis

This section focuses on the interventions that has been considered and implemented in other South African municipalities. Those lessons learnt will serve as the inputs in developing the TDM strategy for Rustenburg.

8.2.1 Current TDM Measures used in other Cities

A broad spectrum of interventions is available, and some other municipalities successfully implemented some of those. For example TDM measures that have been applied in Cape Town include the following:

- HOV / BMT Lanes (dedicated lanes for public transport);
- Parking management by adjusting the cost of parking;
- Park and ride schemes;
- Land use / zoning incentives to enable the provision of sustainable public transport and reduce the need for travel;
- Improved non-motorised transport facilities;
- Traffic signal settings (e.g. bus/taxi priority systems, to optimise the flow of traffic);
- Improved public transport service / image;
- Connector / feeder services to high capacity public transport services such as BRT, rail and light rail;
- Parking supply limitations to encourage the use of public transport;
- Flexi-time, alternative working times and compressed working hours;
- Ride-share programmes (also referred to as car-pooling);
- Tele- commuting, conferencing and education;
- Freight management (off peak delivery times of goods); and
- On- road travel information (fixed or variable message signs).

The City of Tshwane TDM strategy recommends the implementation of a Large Employer Trip Reduction Plan, or shorter version Trip Reduction Plan (TRP). This entails a policy change, whereby the City of Tshwane passes a bylaw requiring all large employers, typically above 300 or 500 employees, to submit a plan to reduce the private travel to and from their place of work.

Other typical TDM measures that can be considered include the following:

- Private vehicle restriction zones;
- Taxation policy to discourage private vehicle subsidies and tax rebates where public transport is actively promoted;
- Public transport subsidies for companies or developments which actively support public transport usage;
- Shadow tolling;
- Travel pricing (e.g. freeway tolling, tolling of urban roads, fuel levies and cordon tolling);
- Congestion pricing;
- In- vehicle travel information e.g. traffic reports (RDS system);
- Freeway ramp control;
- Network TDM capacity improvements: Increase or decrease in network capacity can be done to the advantage of public transport specifically;
- Consolidation and coordination of marketing & specials including PT fare policy and PT marketing plan;

- Expand commuter trip reduction programme;
- Develop local area transport plans that identifies local TDM measures for key areas within the area;
- Increase resource capacity to manage TDM arrangements with stakeholders;
- Travel plans during construction periods;
- Expand park and ride areas; and
- Implement user charges such as to develop a road pricing feasibility study and action plan and develop and implement parking policy and pricing strategy.

8.2.2 Current TDM Strategies and Objectives for Rustenburg

There are currently no TDM strategies in place in Rustenburg. However, further investigations to determine and evaluate the feasibility of TDM strategies for Rustenburg are recommended in the ITP.[1]

TDM aims at utilising the existing infrastructure more efficiently, thereby reaching a sustainable balance between car usage, public transport and NMT. The percentage of car usage on average is around 30% whereas public transport is accommodating the majority of trips with more than 50%. However, certain areas such as Mogono, Rustenburg, Protea Park and Geelhoutpark have higher car usage of around 80%. In light of supporting pro-public transport policy, Rustenburg Municipality is implementing the RRT service.

The objectives for TDM strategy for Rustenburg as listed in the BPDM DITP 2014 are the following:

- To monitor traffic congestion and implement affordable and equitable demand management where and when required by influencing the timing, location, amount of travel, as well as mode and route choice of road users;
- To utilise travel demand management techniques to manage congestion within the functional Rustenburg CBD; and
- To utilise urban traffic control systems to alleviate congestion within the CBD of Rustenburg.

8.2.3 Proposed TDM Strategy and Objectives for Rustenburg

TDM measures should be a balanced package and should address the barriers that hamper users from switching to public transport. However, the proposed strategies would need to be realistic in the context of the Rustenburg area and also easy to implement.

Table 8-2 highlights the proposed TDM Strategy for RLM.

[1] Rustenburg Local Municipality ITP (2007-2012)

Table 8-2: TDM Strategy for RLM

Objectives	Actions	Reference in the document
Creation of the capacity within Rustenburg Local Municipality to manage TDM	RLM TDM office, under a possible New Transportation Agency. If not implemented then under the North West Province or BPDM.	
Rationalisation of the public transport services	Implementation of the recommendations from the RATPLAN	Chapter 6.3 Rationalisation Strategy and **Annexure C**
Improvement of bicycle usage	Provision of bicycle lanes, bicycle rental facilities and bike sharing systems, bicycle transit integration, improvement of safety and security	Chapter 10.2 NMT and UA Strategy
Ride share programme	Partnering with current providers and linking their web-sites to RRT website; development of marketing, awareness and incentive programmes; liaison with business communities and educate on the benefits and risks of ridesharing	Chapter 8.5 Best Practices TDM Strategies
Land Use Management (TOD, mixed-use, high density along transit corridors)	Active promotion of integration with land use development to facilitate densification and mixed use	Chapter 8.5 Best Practices TDM Strategies

The TDM actions and directives listed above is an indication of what is deemed to be implementable in the Rustenburg area. However, a full TDM Strategy report would need to be prepared so that it can properly guide the TDM implementation.

9 Freight Logistics Strategy

9.1 Background

A fundamental prerequisite for growth is the expansion of trade. However, it is the transport linkages that enable the exploitation and development of natural and human resources. Therefore, a region that has an inefficient and ineffective transport sector, would find it extremely difficult, if not impossible, to trade competitively.

A region that is well equipped to receive, sort and rapidly deliver goods and services cost effectively will profit considerably from these abilities. Logistic inefficiencies severely retard competitiveness and as a result encourage the transfer of economic activity to more favorable locations.

Transportation of freight is a vital element in planning for prosperity. The overarching objectives of all freight transport are by definition, the economic efficiency of the movement of goods so that freight transport policy and investment is primarily directed at creating conditions that support that objective.

Rail was one of the biggest catalysts of freight transport until 1988. Most of the freight handling facilities and heavy industrial activity were centred along the rail infrastructure. Since the deregulation of freight transport in 1988 the freight transport has changed from a rail based transport system to a road based transport system**. Figure 9-1** shows that in 2013 only 12.1% of total freight was on rail but 30.5% of tonne-km was on rail. **Figure 9-1 shows that** 74% (789mt and 496mt) of road freight are within the metropolitan and rural areas where short distance haulage will be found.

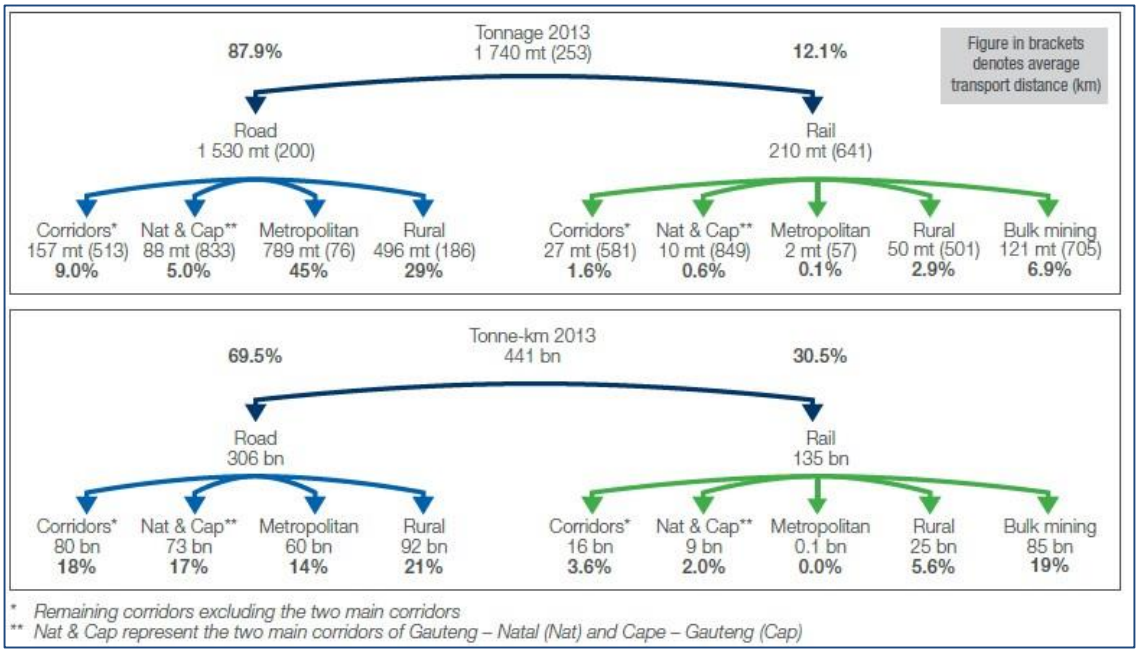


Figure 9-1: Road and Rail Freight Volumes for 2013
(Source: 10th State of Logistic Survey for South Africa 2013)

According to the State of Logistics data indicated in **Figure 9-2,** 58.8% of the total logistic cost is transport related. The biggest contributors to transport cost are fuel, maintenance and wages. Dwelling time as a result of congestion on roads, standing time at warehouses and

slow movement in the CBD are not directly measured but is reflected in fuel price, investment cost, and wages.

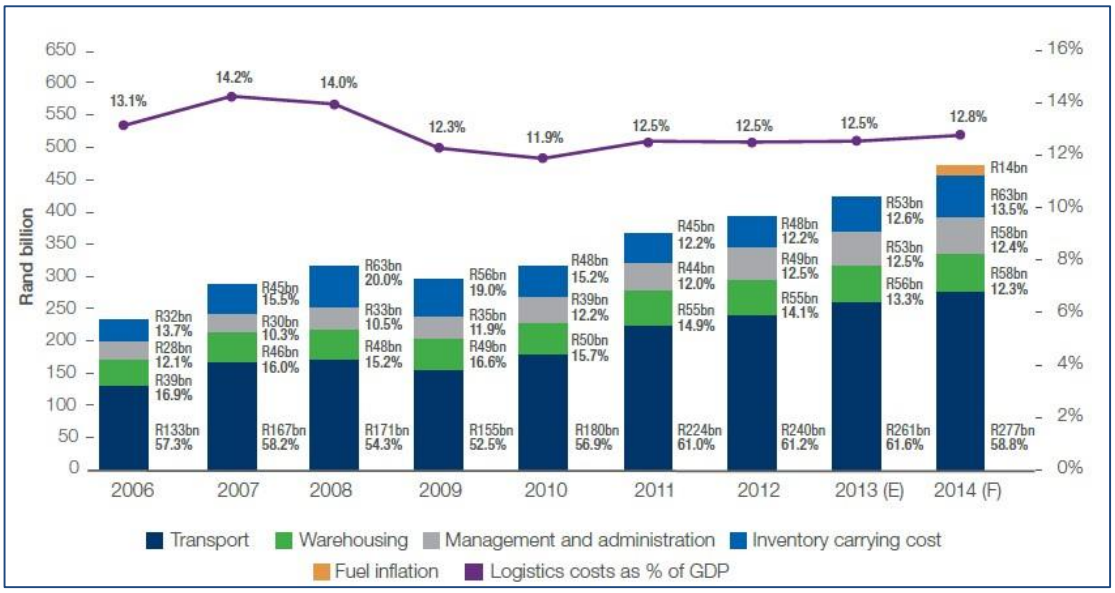


Figure 9-2: South Africa's Logistics Cost Components and GDP Comparison
(Source: 10th State of Logistic Survey for South Africa 2013)

Figure 9-3, illustrates the provincial logistics costs. The logistics costs in North West Province is the lowest of all provinces due to the bulk of the commodities being transported by rail, with a relative short haulage from the mines to the rail sidings. Rustenburg also carries a high volume of transit traffic to Botswana which is reflected in the transport cost of 12.7 %.

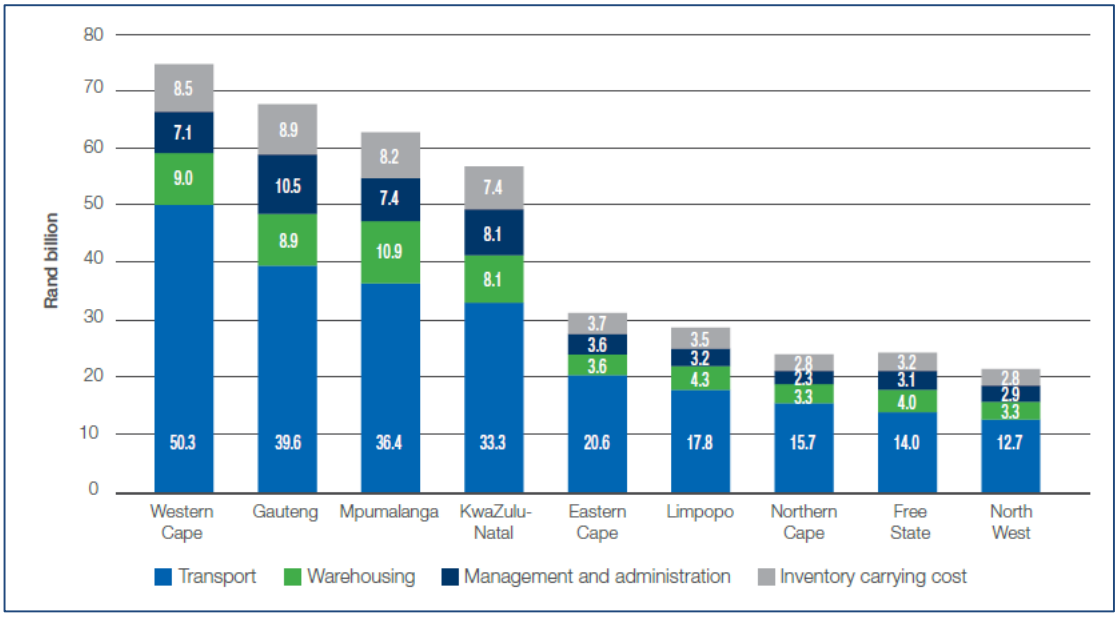


Figure 9-3: South Africa's Logistics Cost Components and GDP Comparison
(Source: 10th State of Logistic Survey for South Africa 2013)

9.2 Freight Landscape in RLM

The economic growth of Rustenburg is mainly built around the mining industry which represents the bulk of freight in the precinct. The freight consists of:

- Bulk materials for the export markets;

- Bulk materials imported to the mines;
- Bulk liquid to the mines and Rustenburg;
- Transit or through traffic between:
    - Gauteng to Botswana south on the N4, and
    - Gauteng (Krugersdorp/ Klerksdorp area) on the N4, R52 and R30 to Thabazimbi, Lephalale as well as Botswana north;
- Fast moving consumer goods (FMCG);
- Manufactured goods;
- Industrial freight (spares, machinery to the mines, bricks, stone, etc.); and
- Agricultural products.

The above freight flows can further be unpacked in different commodity groups namely:

- Bulk Materials;
- Break bulk;
- Fuel and petroleum; and
- Containerised freight.

Table 9-1 illustrates the different commodity groups and types. Bulk minerals are mainly linked to the mines with rail infrastructure to export but also to import products for the furnaces. It can therefore be considered as the main freight generator in the region.

Table 9-1: Commodity Groups and Commodity types

Commodity group	Commodity type
Bulk materials	Mines • Minerals (Chrome, Ferro chrome, Platinum) • Coal imports to furnaces • Granite • Bulk cement
Break bulk	• Building industry • Industrial freight (equipment and spares to mines, bricks, stone, etc.) • Bagged cement • Light industrial and small scale manufacturing • Agricultural products • Fresh products
Fuel and petroleum	• Diesel to the mines • Chemicals to the mines • Local consumption and industry
Containers	Fast moving consumer goods • High value goods • Food and processed foods

Figure 9-4 illustrates the numbers of mines in the Rustenburg area. These mines are located around the freight rail infrastructure. There are also three loadings sites where bulk minerals are transported by road from the surrounding mines to be loaded on rail wagons for export purposes.

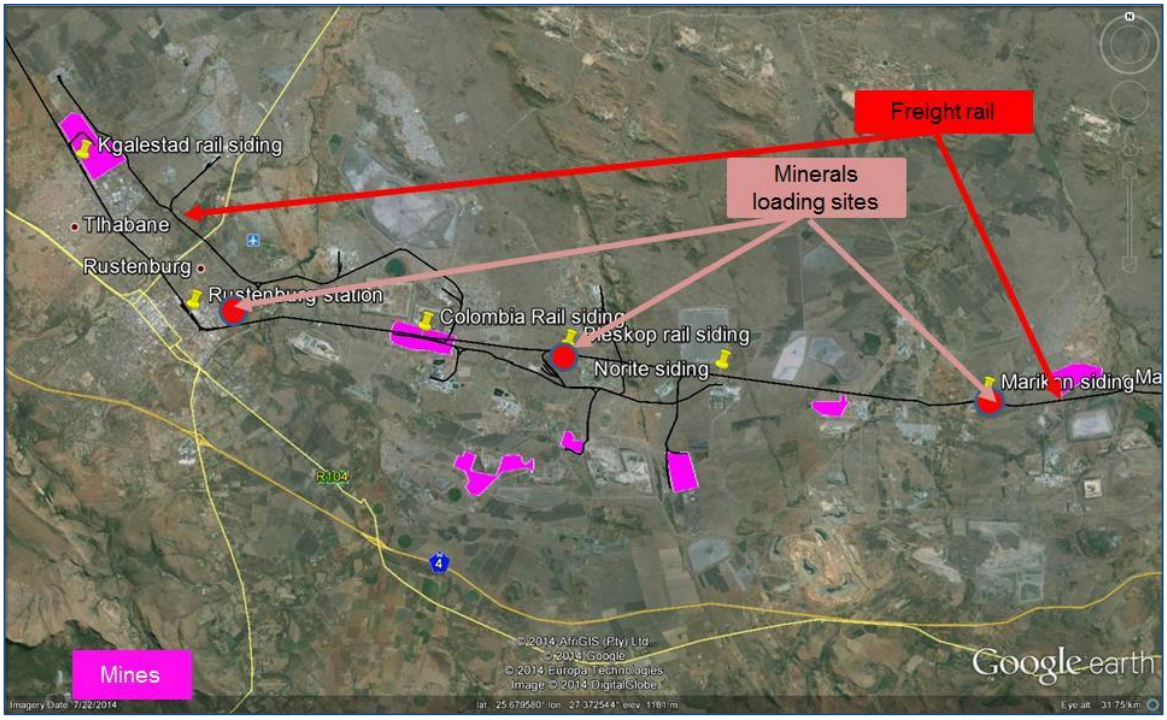


Figure 9-4: Mines and Rail Infrastructure

(Source: Adapted from Google Earth)

9.3 Road Freight Routes

9.3.1 Road and Rail Network

The main road freight corridors are:

- N4 to Botswana and SADC;
- N4 to Gauteng;
- N4 to Richards Bay, Durban and Maputo;
- R52 from Lichtenburg;
- R30 from Klerksdorp (Cape Provinces);
- R400 from Krugersdorp and Tarlton; and
- R510 to Thabazimbi, Lephalale and Botswana.

Figure 9-5 illustrates the main freight road network in the Rustenburg area which carries heavy vehicles with 5 and more axles per vehicles. It also illustrates Transnet's freight network running through the Rustenburg areas linking the mines.

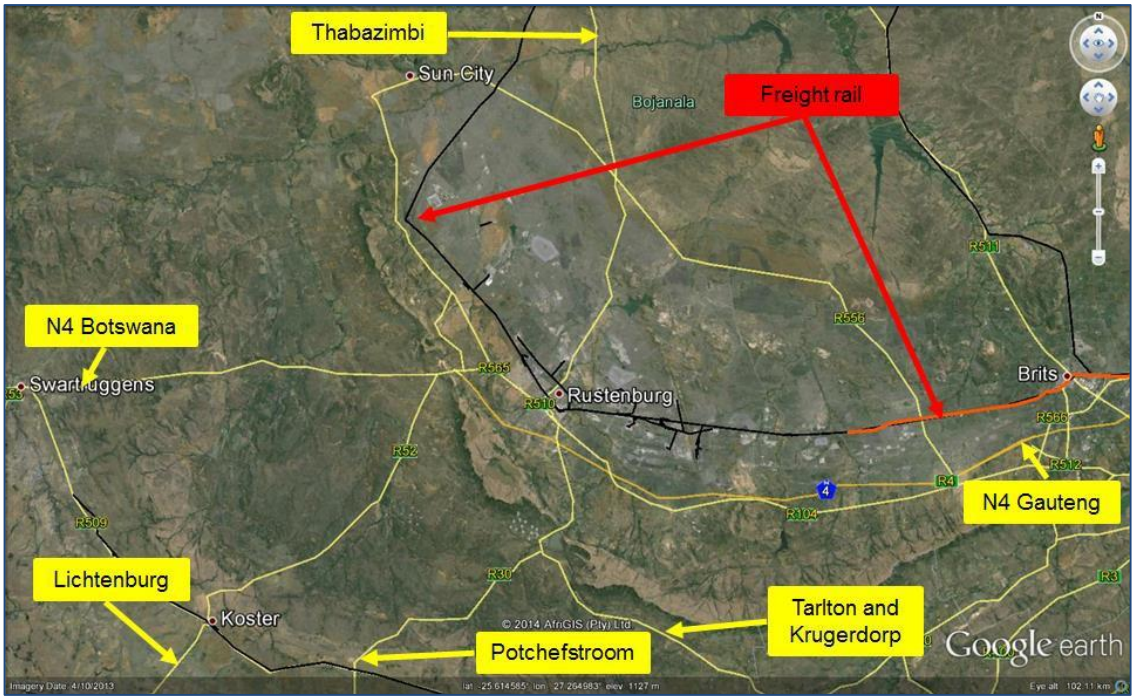


Figure 9-5: Freight Network Roads and Freight Rail Network
(Source: Adapted from Google Earth)

9.3.2 Traffic Flow on Road Network

The traffic flow is mainly centred on the N4 and the roads to the rail loading sites. **Figure 9-6** illustrates the total vehicles on the N4 and the R104. Between 50 000 and 70 000 heavy vehicles per annum with 5 and more axles are utilizing the road network. The N4 on the other hand carries more than 200 000 heavy vehicles to and From Gauteng. This is close to 700 heavy vehicles per day.

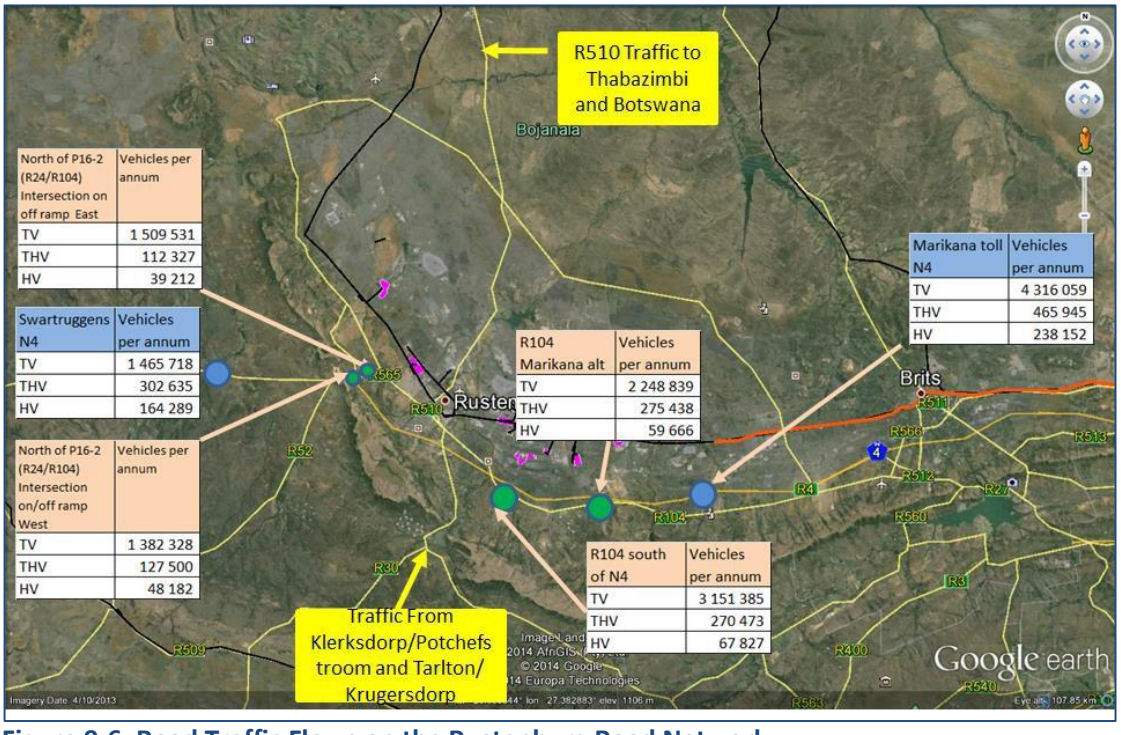


Figure 9-6: Road Traffic Flows on the Rustenburg Road Network
(Source: Google Earth and SANRAL 2014 information
Note TV = total vehicles, THV = Total Heavy Vehicles, HV = Heavy Long Vehicles (5 and more axles)

The complexity of traffic flow on the road network has been further increased by the introduction of a BRT system. The combination of public transport, an increase in heavy vehicles and private transport creates a potential increase in conflict.

9.4 Freight Ring Roads

The Transport Master Plan compiled in 2008 by ITS Engineering has already considered the concept of ring roads, and referred to it as the western and eastern bypasses.

9.4.1 Transport Master Plan

Figure 9-7 illustrates the future base network upgrades. According to this document, the future base network upgrade projects include the Phokeng western bypass (20) and D108 eastern bypass (17) which can be used as part of the future freight ring route. The following routes are identified as the main freight corridors: N4, R52 from Lichtenburg, R30 from Klerksdorp, R400 from Krugersdorp and Tarlton and R510 to Thabazimbi, Lephalale and Botswana.

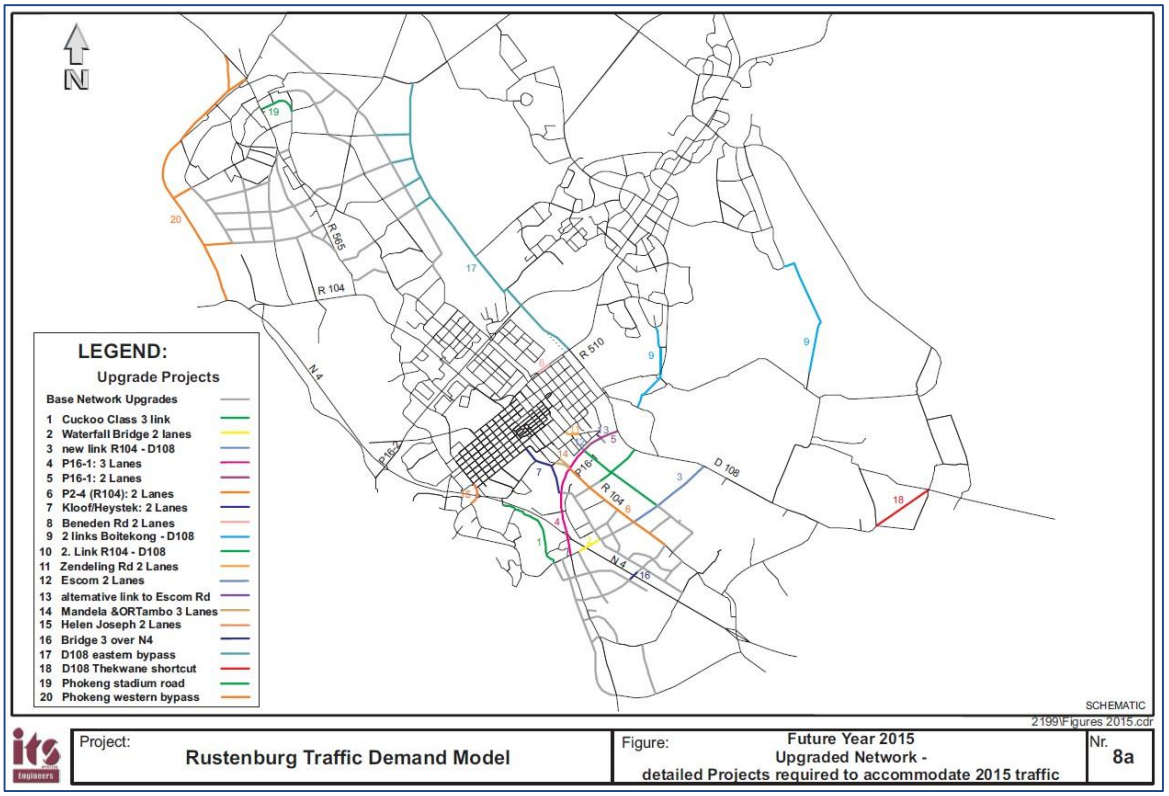


Figure 9-7: Base Network Upgrades

(Source: Rustenburg ITP & Roads Master Plan, Traffic Modelling and Road Network Planning Study. ITS Engineers, February 2008)

The implementation of the above freight ring routes will limit the movement of heavy vehicles in the CBD, but will stimulate freight logistic capabilities around the CBD. The freight ring road will channel the heavy vehicles to the Transnet Freight Rail bulk storage facility in Tuin Street. It also creates the opportunity to establish a logistics hub at the airport in the future, as indicated in **Figure 9-7.**

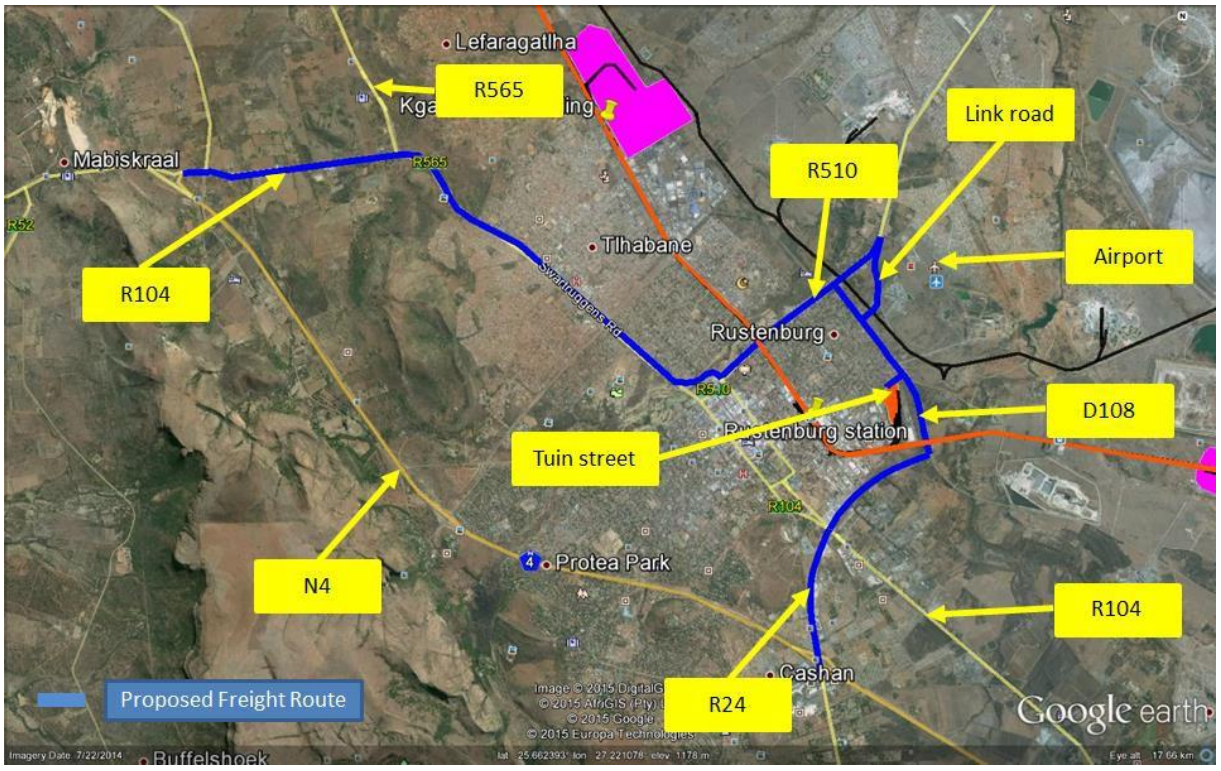


Figure 9-7: Proposed Freight Route
(Source: Adapted from Google Earth)

The proposed route will guide heavy vehicles from the N4, R30 and R565 to the R510 and D108.

The following upgrades and/or rehabilitation **(Table 9-2)** are required to support the proposed freight route.

Table 9-2: Freight Routes

No	Description	Construct/Upgrade/rehabilitate
1	R24 between R104 and D108/Buiten Street	Upgrade to dual carriage way
2	R24 between Howick Ave (N4) and R104	Upgrade to dual carriage way
3	D108 street between R24 and R510	Upgrade to dual carriage way
4	Tuin street between D108/Buiten Street and East Street	Increase lane capacity.
5	R510 road between R104 and Molen Street (Rail bridge)	Upgrade to dual carriage way
6	R104 between N4 and R565	Upgrade to dual carriage way
7	Link road	Upgrade
8	Road to airport	Upgrade

9.5 Law Enforcement

9.5.1 Congestion

The intersections with the highest HV traffic are located within a “triangle” surrounding the CBD. Nelson Mandela Street through the CBD carries approximately 2000 HVs/day in both directions. These HVs mix with ordinary passenger vehicles and cause congestion on this and other main roads and streets. They also have negative effects on accessibility to the urban area and the environment.

9.5.2 Overload

Rustenburg have limited access to weighbridges to manage and control heavy vehicles on the road network. Heavy vehicles operate on a specific road network which might make it worthwhile to invest in a static weighbridge on the proposed freight ring road close to the airport. The ideal area might be in the vicinity of the airport at the proposed logistic site. This opens the opportunity to test and manage overloaded vehicles with a dynamic weighbridge.

Heavy vehicles can be tested with a dynamic weighbridge system and overloaded vehicles be refer/diverted to the static weighbridge.

The functionality of the weighbridge should be extended with technology to test the roadworthiness of heavy vehicles and also test the fatigue limit of the drivers.

Some of the key enablers of a sound overload control management plan are:

- Basic road signage to guide heavy vehicles to the static weighbridge;
- Electronic signage in the long term;
- Training of officials to manage, operate and use the weighbridges; and
- Database for record keeping and identifying continuous offenders.

9.5.3 Issue of Permits

One of the key elements of law enforcement is the issuing of permits to transport hazardous cargo on South Africa's road network.

The application of these regulations is critical to prevent potential accidents or incidents. Rustenburg is within and in close proximity to the mines where hazardous materials including fuel and chemicals are transported, which requires specific parking and storage arrangements which are often neglected. A specific strategy should be developed to enable proactive law enforcement practices in the future.

10 Other Transport Related Strategies

10.1 Parking Study

The need for a Parking Policy was identified during the planning for the introduction of the Rustenburg Rapid Transport System. Rustenburg Local Municipality has developed a Parking Policy, an important component of the proposed Travel Demand Management strategy.

The existing parking supply in Rustenburg consists of on-street parking (including parallel parking, angled parking, 90 degree parking, loading bays, special needs parking and motorcycle parking) and off-street parking includes public open parking, unpaid private open parking and paid private parking which is normally access-controlled.

The following strategies are proposed:

- Manage parking demand in the Rustenburg CBD (paid parking);
- Zero tolerance for non-compliance with parking restrictions in the Rustenburg CBD;
- Efficient loading / off-loading in the Rustenburg CBD through the provision and enforcement of dedicated loading bays;
- Provision of dedicated parking for special needs (disabled parking bays);
- Park and Ride sites from where public transport services operates so that a person do not need to park in the CBD; and
- Introduce user friendly technology for the management of parking.

Further to the above the Rustenburg municipality is in the process of implementing a Rapid Transit System which will have a direct influence on the parking capacity in the CBD in the short term as many on-street parking bays will be removed. However the implementation of the system aims to decrease the parking required in the CBD in the longer term through the provision of a good public transport system that should encourage its use as an alternative to using a private car.

10.1.1 Study Approach and Guiding Principles

The approach to the proposed parking strategy for the RLM is based on the following:

- Reviewing background information and previous strategies;
- Reviewing current practice (local);
- Reviewing supporting technical information;
- Undertaking site visits related to various land uses and locations, and
- Observing cause and effect of current standards and external influences.

In order to conduct this study the following guiding principles was applied, namely:

- Consider relevant policy, legislation, by-laws and town planning scheme requirements;
- Provide adequate parking guidance as a method to effectively manage parking;
- Optimization of parking at certain locations in order to reduce travel demand;
- Provision of paid on-street parking;
- Utilisation of parking provision to promote public transport and park-and-ride facilities.

The following was considered in developing the parking strategy:

- Removal of on street parking bays on BRT routes;
- Reduction of the number of parking bays in CBD;
- The need to increase loading bays;
- Restrictions on parking to increase the efficiency of loading operations;
- Parking stategy for disabled persons;
- Parking technology solutions;
- Parking guidance;
- Promotion of park and ride systems;
- Promote the use of NMT (walking and cycling);
- Parking payment solutions.

In **Figure 10-1** the shaded area illustrates the area where structured parking is required in Rustenburg.

The need of parking and/or the restriction thereof in this area can only be decreased by a strategy to introduce NMT, a rapid public transport system and even tuk-tuks. The parking can be a combination of on-street parking, structured parking and open space parking.

Figure 10-1: Rustenburg potential parking need
(Source: Adapted from Google Earth)

10.1.2 Parking Issues

The following issues are generally encountered:

- Unavailability and loss of on-street parking – In general, on-street parking is mostly fully occupied. Finding parking often involves driving around the block a few times before finding an open spot. In an effort to look for an open parking space, patrons drive slowly on a travel lane, slowing down traffic and contributing to congestion and/or accidents;
- On-street parking is currently not charged – The City had about 960 on-street parking bays that were metered, although these are not confined to the inner city. According to

the City officials, the parking meters are no longer functional. The City plans to implement a handheld parking meter system. A new municipal by-law on the handheld parking meters came into operation on the 4th of September 2013;

- Vehicles parked for long durations – it is often business owners and employees who park their car on-street in front of the store. The car stays parked for most of the day, taking away parking spaces for short term parkers. This results in a low turn-over rate;
- Double parking – double parking is due to unavailability of on-street parking space, vehicles stopped or parked on the travel lane. This resulted in the blocking of lanes for through traffic. This situation worsen with taxis and deliveray vehicles parking in the travel lane;
- Cars parked on streets where parking is not permitted at all. Similarly, trucks parked in bays reserved for passenger cars and bus bays. Parking infringement was found to be very high;
- No or limited law enforcement exaggerates to problem;
- Unmarked parking areas in the CBD;
- Undersupply of loading areas;
- Undersupply of on- Street Parking in certain areas in CBD;
- Close relation between parking and informal trading; and
- Short term on street parking lost due to RRT must be accommodated on off- street parking areas.

10.1.3 Parking Strategy

The following strategies should be further investigated and developed, namely:

- The enforcement of zero tolerance in the CBD of double-parking and unauthorised use of parking designated for disabled people and loading zones. Increased visibility of policing in the CBD;
- To introduce advanced technologies to manage and increase the utilization of parking bays. Such technologies may include:
    - Implement hand-held meters on a limited scale which is in its self a method of job creation
    - Implement bollards and kerbs to prevent illegal parking
    - Improve sidewalks and NMT facilities
- To promote public transport and accessibility to public transport. A marketing strategy should be developed around the public transport capabilities and connectivity and the positive affects thereof. The marketing should also include a clear message that parking in the CBD is not free;
- To consider the efficiency of loading bays and the consolidation thereof, i.e. the times when these loading bays are utilised and the possible restructuring thereof; and
- To consider the impact of the loss of parking due to BRT and where it will be accommodated.

10.2 Non-Motorised Transport (NMT) and Universal Access Strategy

10.2.1 Background

South Africa is focusing on and investing heavily in infrastructural development. This largely includes infrastructure that is used by the general public on a daily basis, such as schools, hospitals, stadiums, BRT Systems, trains, stations, airport upgrades and road and intersection upgrades. Historically, detailed provision for NMT infrastructure has not been included into the designs and traditional transport planning. Walkways and cycle paths was generally done as an afterthought and sometimes not at all.

At National, Provincial and Local Government levels, NMT has been identified as a priority area. It has now reached the stage where it is accepted, promoted and prioritized as a feasible and sustainable mode of transport.

A key concept that goes hand in hand with NMT is Universal Access (UA), as defined in the following sections.

NMT is transport that requires human energy. These are in the form of bicycles and tricycles, rickshaws, hand push carts, wheel barrow and human porterage, rollerblades, skate boards, push scooters, wheelchair travel etc. NMT includes transport that required the use of animal power for example, horse drawn carts, donkey carts, bullock cart, horse riding etc. The largest portion of NMT is walking. Walking plays a considerable role for long as well as short trips in rural settings, as well as urban areas for accessing mechanized modes of transport.

Taking note of the needs of NMT users, as well as the importance of the NMT mode in terms of creating a low-carbon, equitable city, the BPDM NMT Master Plan has proposed the following NMT vision for Rustenburg:

"To provide a safe, reliable, effective, efficient and non-motorised transport system (including operations and infrastructure) that best meets the needs of the people of Bojanala Platinum District Municipality at acceptable and affordable levels of service and cost in support of the municipality strategies for economic and social development whilst being environmentally and economically sustainable".

'Inclusive Design' or 'Universal Access', takes everybody into consideration, throughout the travel chain, in any environment, be it rural or urban. A universal design approach to the built environment, results in the necessity to totally remove obstacles that can hinder the progress of people, regardless of their age, ability or status in life, people pushing a trolley or a pram, people with a temporary illness or injury, people with any kind of disability, be it visual, mobility or hearing. This can be any trip hazard, level difference between two surfaces, a flight of stairs or even a single stair or step. Uneven footways, kerbs, bollards or street clutter also hinder movement.

The application of kerb ramps assist access onto footways for everybody, including people with disabilities and the inclusion of Tactile Ground Surface Indicators (TGSI's) on pedestrian ramps at road crossings assist the mobility of visually impaired by providing information about the approaching road and direction of travel to cross the road safely as well as from what direction the traffic is approaching in the case of controlled crossings.

If one has designed or built an intersection or a rapid transit system for example, that is for some reason or the other not accessible by someone; then one has discriminated against the person according to the Equality and Prevention of Unfair Discrimination Act (2000).

Some of the biggest infrastructure development and transport investment projects ongoing in South Africa, are the BRT projects. Currently there are 13 projects in various phases of design and construction in South Africa. All have a high focus on NMT and universal access.

The Rustenburg Rapid Transport System is amongst the abovementioned systems and is in the early stages of construction.

Thousands of intersections are impacted by the BRT projects and their supporting feeder bus systems. This includes kilometers of footways, thousands of pedestrian crossings as well as cycle facilities and bus stops that will need design and upgrading.

The complete transport system has to be integrated with other facilities as per the NMT policies and Master Plans. This includes the full travel chain to all users and by not discriminating against anyone due to age or physical competence.

10.2.2 Objectives and Principles of NMT

The following objectives, which are in line with national policy have been identified, taking cognisance of the area of Rustenburg:

- Integration of NMT into the transport system including transport and spatial planning;
- Endorsement and facilitation of the use of NMT modes;
- Development of infrastructure and maintenance standards that recognise NMT as an essential mode of transport;
- Facilitation of NMT as a feeder system to other modes of transport;
- Promotion of NMT as reliable, healthy, affordable, accessible and safe transport mode;
- Reduction of the number of traffic fatalities of vulnerable non-motorised road users; and
- Raising awareness about the significance of NMT within the entire transport fraternity.

10.2.3 Existing Policies and Guidelines

One of the strategic objectives for Land Passenger Transport that is presented within the **White Paper on National Transport Policy, 1996**:

"Ensure that passenger transport services address user needs, including those of commuters, pensioners, the aged, scholars, the disabled, tourists and long distance passengers"

This is affirmed in all of the following constitutions, conventions, acts etc.:

- The Promotion of Equality and Prevention of Unfair Discrimination Act, 2000 (Act No 4 of 2000);
- The Integrated National Disability Strategy White Paper, Nov 1997;
- The National Development Plan targets;
- The Constitution of the Republic of South Africa (Act 108 of 1996) Highest LAW in South Africa;
- The SA adopted United Nations (UN) Convention on the Rights of Persons with Disabilities (Article 9). (UNCRPD);
- International Obligations under binding treaties and customary International law, Human rights, equality and prevention of unfair discrimination;
- 8 Millennium Development Goals (MDGs) identified by the United Nations in 2000;
- The Disability Rights Charter of South Africa;
- Integrated National Disability Strategy (INDS - 1997). White Paper (Policy);
- The White Paper on National Transport Policy, 1996;

- The National Land Transport Strategic Framework, 2006 (NLTSF);
- The Public Transport Strategy and Action Plan, 2007 (PTS);
- The Rural Transport Strategy for South Africa, 2007;
- Department of Transport Draft NMT Policy Document (2008);
  This Policy is governed by:
  - the White Paper on National Transport Policy (1996);
  - National Land Transport Transition Act, Act No. 22 of 2000;
  - National Land Transport Strategic Framework;
  - Public Transport Action Plan (2007);
  - National Road Traffic Act (NRTA), Act 93 of 1996;
  - Animal Protection Act 71 of 1962;
  - The NRTA and the National Road Traffic Regulations of 1999 are particularly important as they affect and regulate NMT, particularly bicycle transport;
- The National Land Transport Act,2009 (Act No 5 of 2009) (NLTA);
- The National Road Traffic Act 93 of 1996 (NRTA);
- The National Road Traffic Regulations, 2000 (NRT Regs);
- The Administrative Adjudication Of Road Traffic Offences Act 46 OF 1998 (AARTO Act);
- The National Building Regulations And Building Standards Act 103 OF 1977;
- The South African National Roads Agency Limited And National Roads Act 7 Of 1998 (SANRAL ACT) And Other Roads Legislation;
- National Transport Master Plan (NATMAP);
- National Spatial Development Perspective (NSDP);
- The National Environmental Management Act 107 OF 1998 (NEMA);
- The National Heritage Resources Act 25 OF 1999;
- The Promotion Of Administrative Justice Act 3 OF 2000 (PAJA);
- Legal requirements for animal drawn vehicles;
- South Africa's Universal Access Regulations (these are currently being drafted);
- Municipal By-Laws required by The Constitution and the National Road Traffic Act;
- NDoT NMT Guidelines, 2014 (Update From NDoT Pedestrian and Cycle Facility Draft Guideline, 2003);
- NDoT Conditional Public Transport Infrastructure and Systems Grant (PTISG);
- NDoT Strategy and Action Plan Municipal Systems Act (MSA);
- The Road To Safety Strategy (2001-2005);
- Walking & Cycling Policy & concept plan for the city of Rustenburg, Gail Jennings;
- Rustenburg Integrated Development Plan (IDP 2011-2012);
- Rustenburg Spatial Development Framework (SDF);
- Rustenburg Long Term City Development Plan (CDP 2020);
- Rustenburg Integrated Transport Plan (ITP); and
- BPDM Municipality NMT Master Plan (2012 commissioned, not yet finalised).

The Public Transport Strategy outlines the process towards achieving universally accessible transport.

This process is to be incremental, with new systems achieving universal access from the outset, and with existing services upgrading to the same standard within a similar timeframe.

10.2.4 NMT Guidelines and Standards (South Africa)

Over the past few years, a lot of controversy and confusion was prevailing about the correct design and construction of NMT and Universal Access facilities. This was mostly due to;

- A lack of available information
- Contradicting information
- Outdated information
- Inconsistent recommendations and designs by consultants, designers and contractors.

For the past three to four years groups have been meeting and work shopping the requirements for NMT and UA and the standards have been slowly but surely discussed and developed in conjunction with the NDoT, South African Bureau of Standards (SABS), some disability groups like the South African National Council form the Blind (SANCB) etc.

Some cities have been developing their own NMT guidelines and Standards including the City of Tshwane, The City of Cape Town and the City of Johannesburg.

The City of Rustenburg is in the process of developing their NMT Facility Guideline.

10.2.5 NMT Status Quo

Due to Rustenburg being one of the host cities for the 2010 FIFA World Cup at the Royal Bafokeng Stadium, accessibility was improved in the form of approximately 14.5km of footway upgrades. The routes linked the stadium to the main activity centres at the time, being Phokeng, the central mini-bus taxi rank, the shopping mall, the civic centre, two primary schools and one middle school.

The introduction of the Rustenburg Rapid Transit System (RRT) and DOT requirements on NMT facility provision and universal access requirements, assisted in more footways being upgraded along the trunk route and are planned for feeder routes.

For the rest of Rustenburg, footways and cycle ways are mostly inadequate or non-existing. Where footways are available, they have been poorly maintained and are crumbling and unsafe. Certain sections are muddy and flooded rendering it unusable.

Pedestrian crossings are mostly un-signalised and lining faded. On some locations, pedestrian crossings are located in sections of road with a 100km/hour speed limit. Traffic calming measures are inadequate and overall Universal Access and design is lacking.

(a) Mode Share

The results of the Rustenburg Household Survey Data 2012 analysis for the period from 06h00 to 09h00, is shown in **Figure 10-2.**

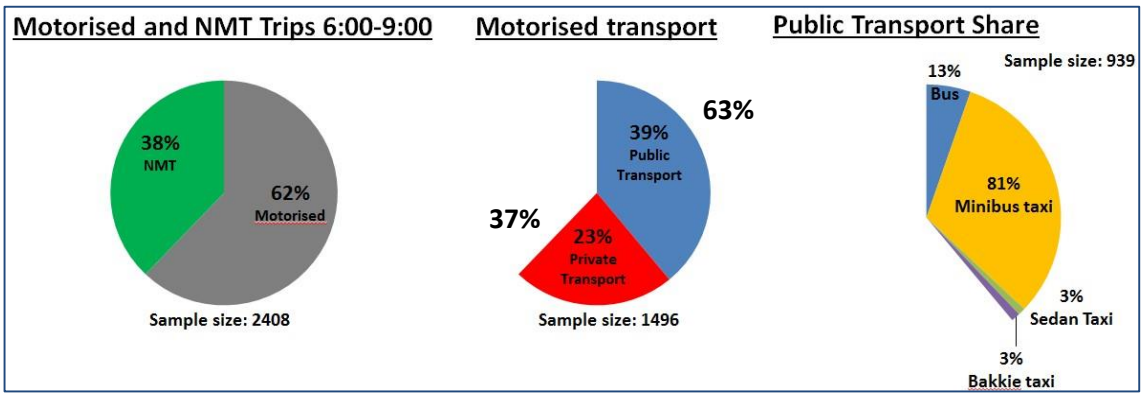


Figure 10-2: Mode Share

The following is deduced:

- Of all trips in the morning peak, 38% are NMT trips and 62% are motorised trips. Of the motorised trips, 63% are public transport trips and 37% are private transport trips.
- Of the public transport trips, 81% are minibus taxi trips, 13% are bus trips and the remaining 6% of trips are distributed between metered taxis. No scholar trips were captured by the survey.

Around 89% of the morning peak trips are work or education related as can be seen from the graph here below.

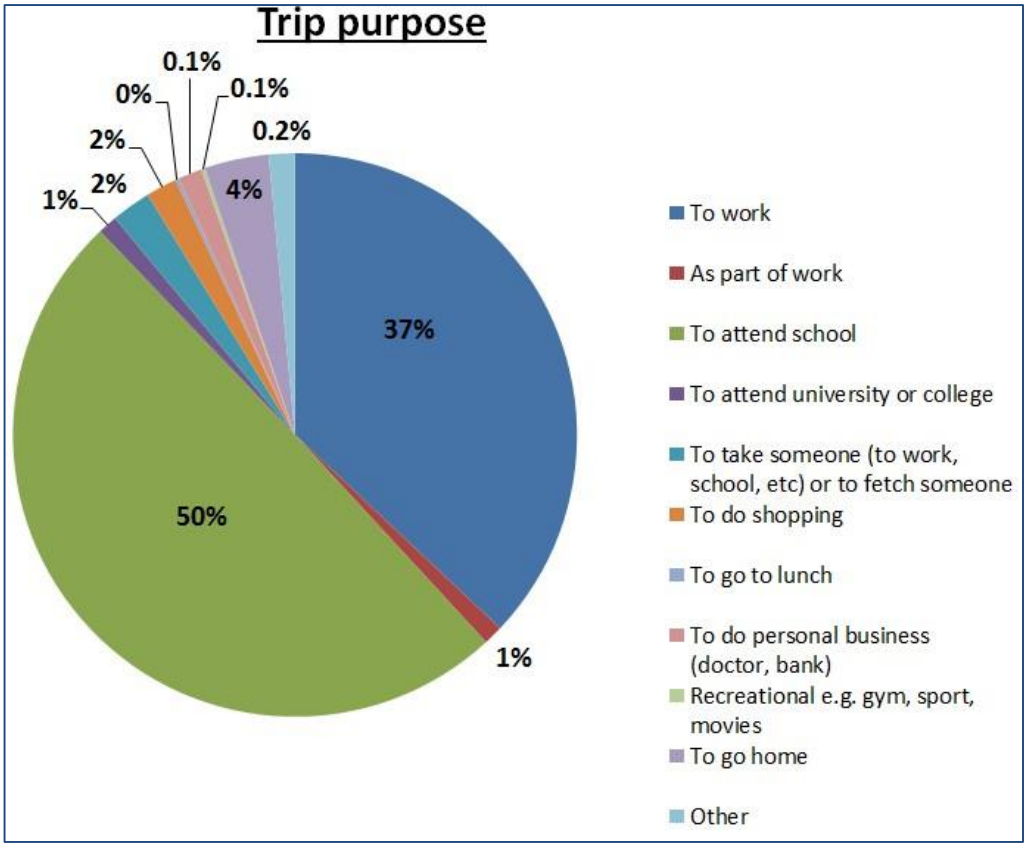


Figure 10-3: Trip Purpose (AM Peak all Modes)

Table 10-1 below provides an indication of the mode to work for households in the Rustenburg home areas, but the results should be considered with caution due to very small

sample sizes. It can be seen that Ca-Luka and Marikana area has high percentage of walking to work, whereas Phatisima, Mogono, Lefaragatlha, Tsitsing and Mosonthal-Marubitshi reported to have 0% of walking. Rustenburg central area has a very high percentage of the car usage (75%). Other areas with more than 50% of the car usage for commuter trips are Mogono, Protea Park, Geelhoutpark and Tsitsing. This analysis also provides the input into the NMT strategy.

Table 10-1: Mode to Work For Households in the Rustenburg Home Areas

Town	Bicycle	Walk	PT	Car	Sample Size
Phatsima	0%	0%	71%	29%	7
Chaneng	7%	29%	57%	7%	14
Mogono	0%	0%	20%	80%	5
Ca-Luka	0%	50%	50%	0%	2
Freedom Park, Meritig	0%	29%	71%	0%	7
Phokeng	0%	7%	71%	21%	14
Lafaragatlha	0%	0%	80%	20%	10
Thlabane	0%	22%	61%	17%	54
Rustenburg	0%	10%	15%	75%	147
Protea Park, Geelhoutpark	0%	8%	4%	88%	26
Kanana, Seritube, Mafika	0%	21%	57%	21%	14
Rustenburg Rural	0%	38%	25%	38%	16
Boitekong	1%	8%	72%	19%	74
Tsitsing	0%	0%	50%	50%	4
Ga-Mogajane, Tlaseng, Lesung	0%	12%	71%	18%	17
Mosonthal-Marubitshi	0%	0%	71%	29%	7
Marikana	0%	67%	33%	0%	6

Note: Because the analysis focused on the towns and not the whole RLM, the sample size was only 424 respondents which is way less than for the whole RLM (2408 sample size but only 38% are work trips, which translates in the sample size of 915)

In RLM approximately 22% of people walk to work compared to only 4% of commuter trips done by bus. Taxi and car are still the main modes for commuters with 37% and 30% respectively. This indicates that non-motorized transport plays a meaningful role in the transportation needs of the community. The number of people cycling to work is very minimal at 1%. This could show that there are not many people who own bicycles or prefer using bicycles to travel to work.

The mode split of shorter distance trips (less than 10km) for low, medium and high income groups are shown in **Figure 10-4.**

The analysis of the household survey data indicates the following range of NMT trip distances:

Walking:

In Rustenburg, walking generally occurs over distances of 3.5km which calculates to an average walking time of 50min. Walking is the first and last mile of travel by public transport, the dominant mode of workers in Rustenburg. Scholars and students walk from home to school and back or to/from public transport. Most walking occur around public transport nodes, city centres, shopping nodes, hospitals, clinics, community centres etc. and are also mostly focused in and around 2km from those facilities.

Cycling:

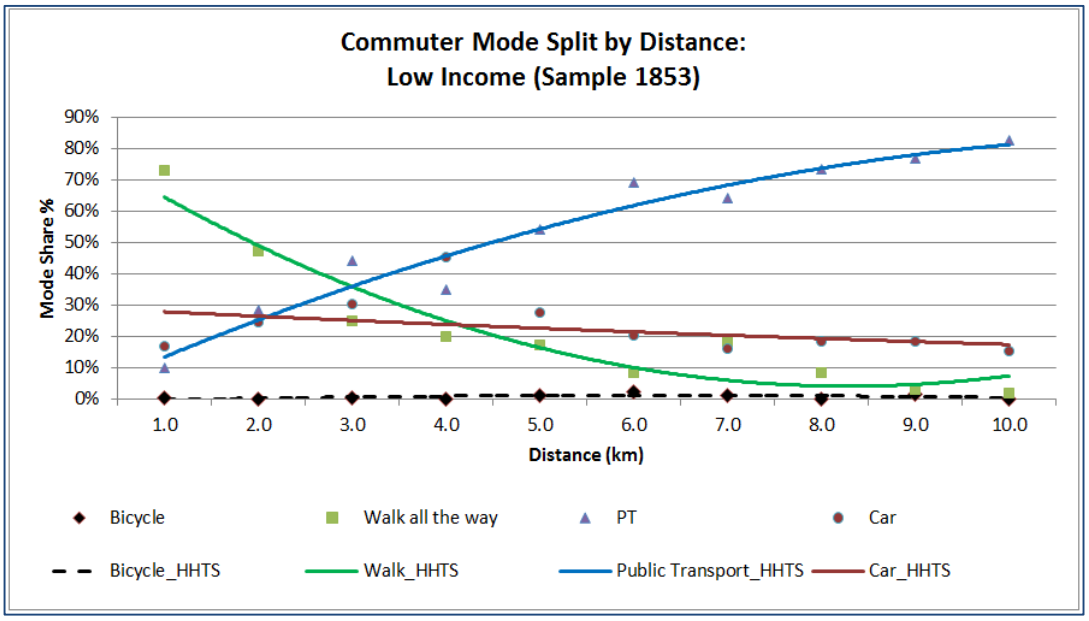
Cycling occurs mostly over distances less than 6km between activities such as the ones mentioned above. However, the data confirms that there are some people that commute by bicycle over distances far more than 6km per direction.

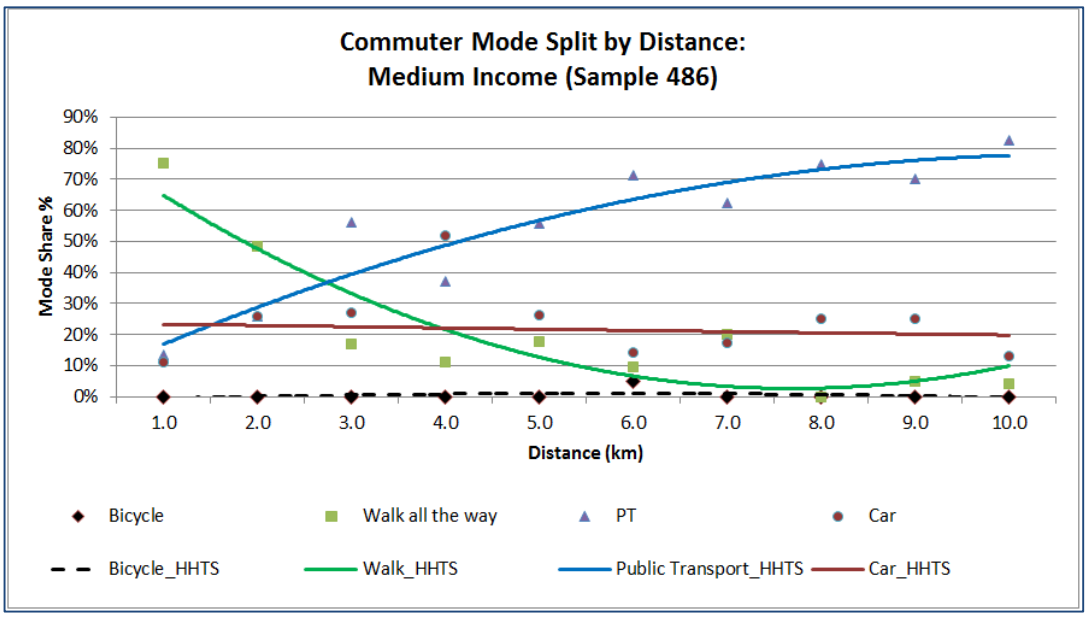
Public Transport:

The share of the public transport increases as the distance increases, reaching more than 80% of trips for low-medium income users.

Car:

Car usage is the highest around distance of 4km for all income levels. After 4km it drops but for high income users from 11km distance it becomes higher share then the public transport. Figure 10-5 shows the mode share for low and medium income users up to 10km and for high income users up to 39km.





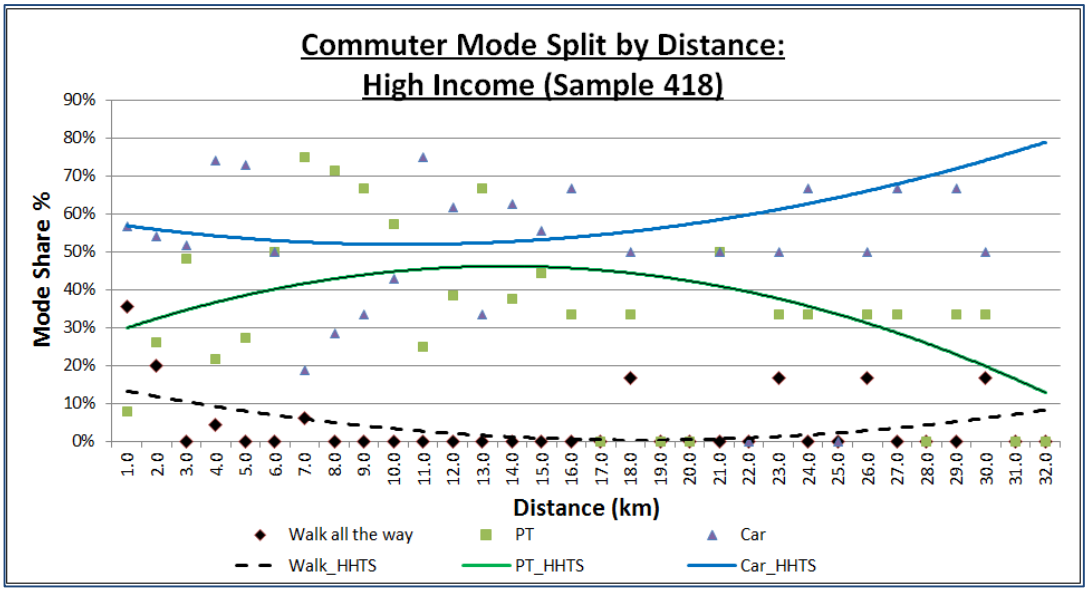


Figure 10-4: Commuter Mode Split– Low, Medium and High Income

Mode split in relation to sample size is given in the following **Figure 10-5.**

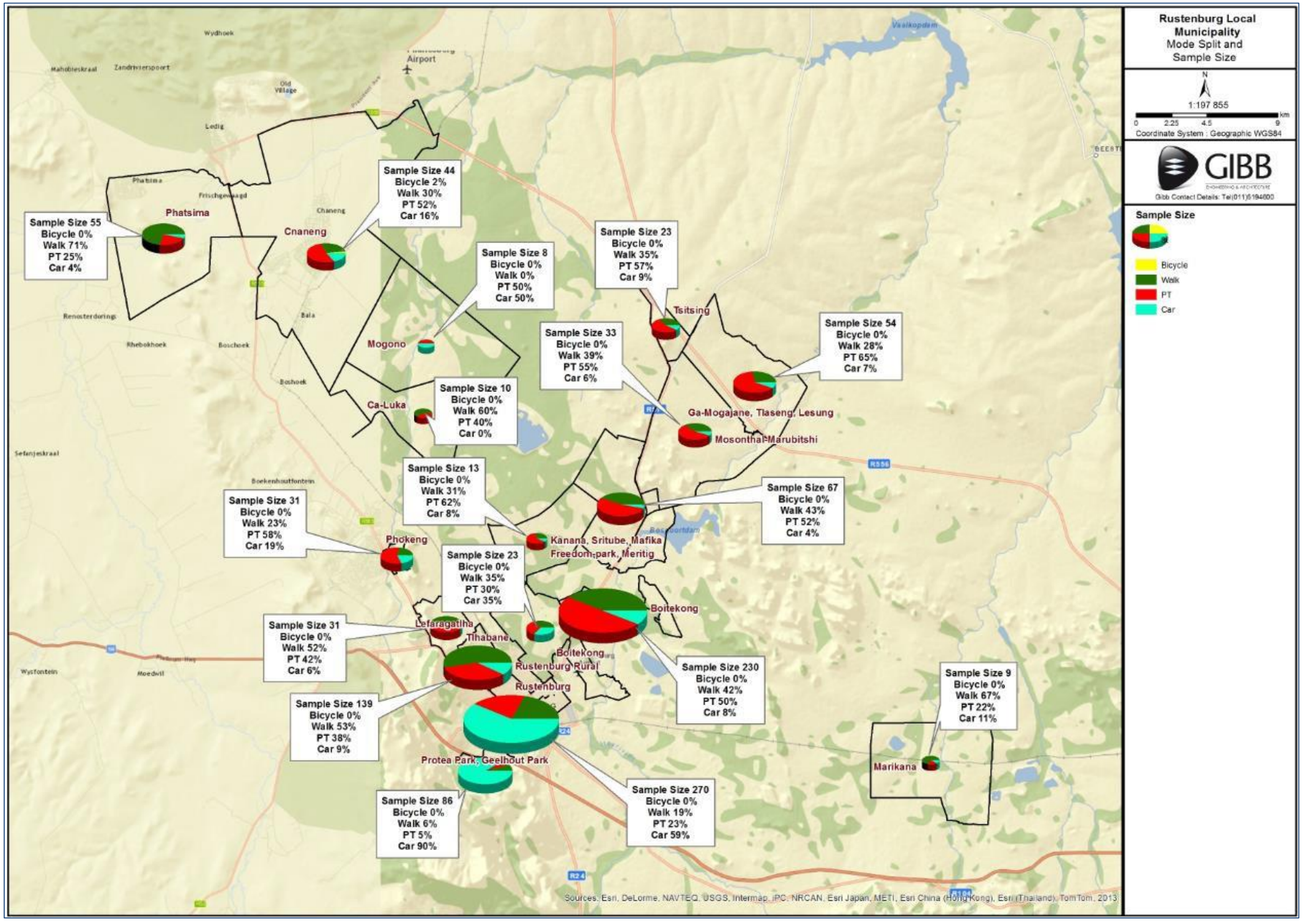


Figure 10-5: Mode Split in Relation to Sample Size

Table 10-2 provides a summary of the income group distribution in major towns in Rustenburg.

The areas where affordability of transport are the most problematic with high levels of poor households, and where significant emphasis of NMT improvements need to be placed, are indicated in in red.

Table 10-2: Income Group Distribution

Town	Low Income (R1-R4 500)	Medium Income (R4 501-R11 000)	High Income (>R11 001)
Phatsima	56%	30%	15%
Chaneng	67%	27%	6.0%
Mogono	37%	33%	30%
Ca-Luka	21%	70%	9.0%
Freedom-park, Meritig	24%	63%	13%
Phokeng	63%	38%	0.0%
Lefaragatlha	54%	23%	23%
Thlabane	44%	43%	13%
Rustenburg	48%	43%	9.0%
Protea Park, Geelhoutpark	19%	45%	36%
Kanana, Seritube, Mafika	12%	27%	62%
Rustenburg Rural	46%	23%	31%
Boitekong	69%	23%	7.0%
Tsitsing	57%	29%	14%
Ga-Mogajane, Tlaseng, Lesung	46%	39%	15%
Mosonthal-Marubitshi	54%	46%	0.0%
Marikana	46%	32%	23%

Figure 10-6 indicates the income level split in proportion to the population size.

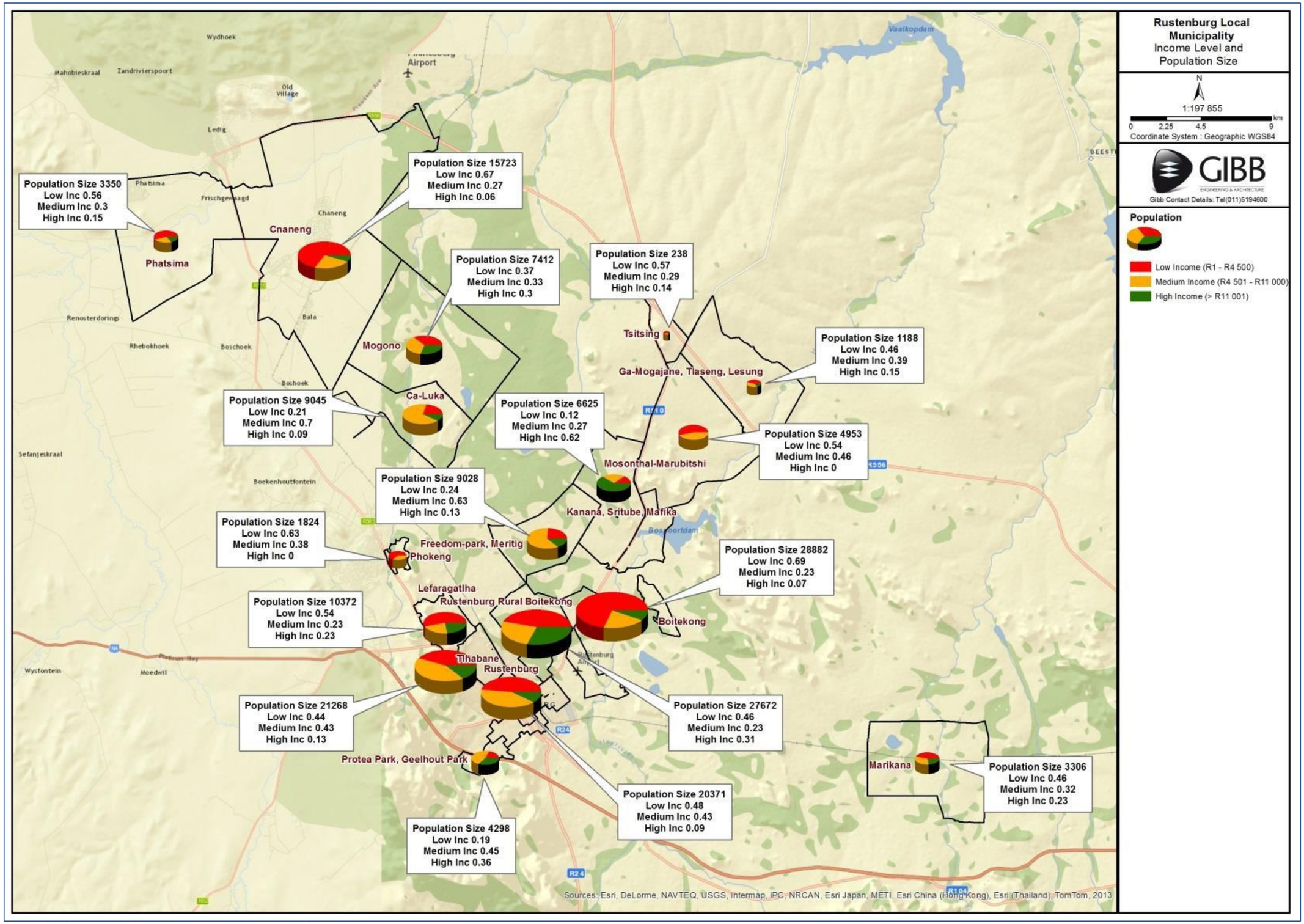


Figure 10-6: Income Split in Relation to Population Size

(b) Cycling Potential

If the objective is to achieve a mode shift to more sustainable transport modes, the following opportunities should be targeted or prioritised:

- Attracting people that currently walk excessive distances to cycling, by improving cycling facilities (safety) and possibly to assist those people with access to bicycles as the majority of people walking excessive distances do so due to unaffordability of alternative modes. The travel time savings of cycling will also improve their quality of life in other ways.
- Attracting people that currently use public transport or cars for short trips that are potentially within cycling range. Car users in this category that switch to cycling will result in an environmental improvement, while public transport users switching to cycling is more than likely going to save money over the long term.

Walking and cycling is only appropriate for shorter distance trips, as indicated in **Figure 10-7** Mode Trip Length vs Trip Cost. This should be taken into consideration when developing targets for improvement, to ensure realistic expectations.

For example, due to the large geographic spread of Rustenburg, low residential densities, and legacy of apartheid and subsequent housing policies resulting in a large proportion of people living long distances from most economic opportunities, only a relatively limited number of commuter trips can realistically take place by NMT. The importance of densification and the development of transit oriented developments to reduce the travel distances that need to be covered cannot be overemphasised.

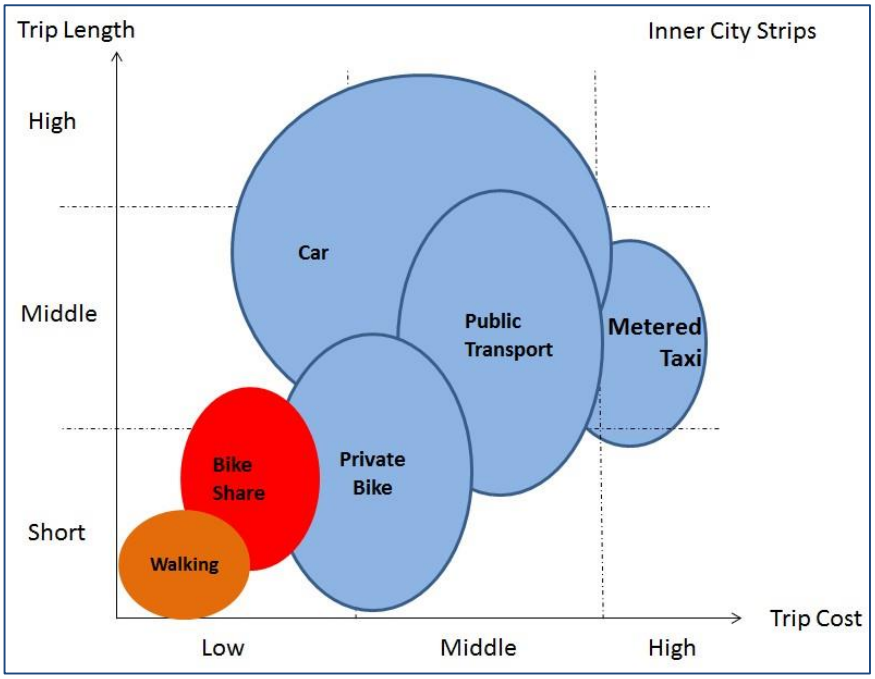


Figure 10-7: Mode Trip Length vs Trip Cost

(Source: Quay Communications Inc. 2008.Trans Link Public Bike System Feasibility Study. Vancouver)

The mode share of cycling is currently negligible (0.4%) as a % of all trips, but if only the trips up to 10km are considered, cycling makes up 0.8% of the NMT trips (still very low).

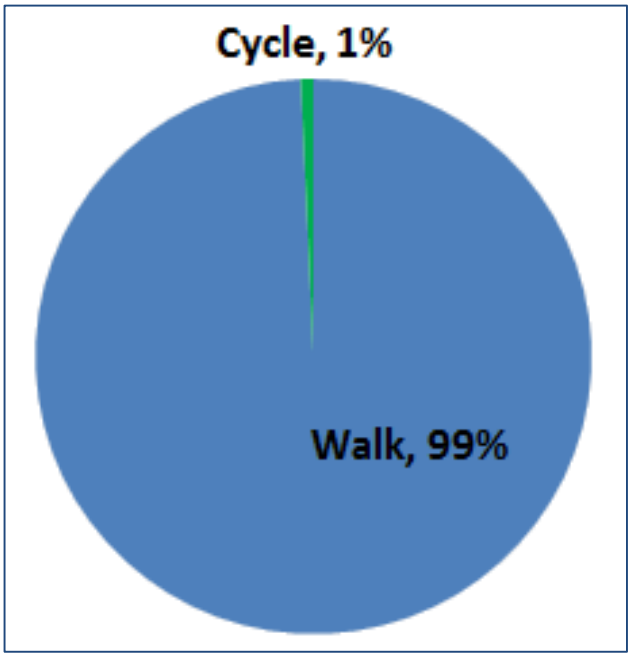


Figure 10-8: Cycle Mode Share for Trips up to 10km

Table 10-3 shows the potential for cycling in Rustenburg.

Table 10-3: Cycling Potential in the Rustenburg Area

TAZ Zone	% of people walking >=1km	Number of Walking Trips >=1km	%PT Trips <=5km	Number of PT Trips <=5km	Total number of trips
Rustenburg Central	65%	100	14%	127	227
Geelhoutpark, Rietvlei	51%	101	34%	145	246
Boitekong, Kanana	41%	130	30%	141	271
Eastern Mines	43%	40	26%	33	73
North East RLM	34%	75	27%	85	160
South East RLM	27%	38	11%	17	55
Phokeng	61%	277	30%	208	485
North West RLM	32%	48	25%	56	104
Impala Mines	51%	98	26%	73	171
RLM Rural South	3%	4	1%	2	6
Ledig and Sun City	32%	15	34%	29	44
Mogwase	37%	7	10%	2	9
Wonderkop	19%	6	12%	5	11

The above figure shows the areas that have potential for cycling, or the % of trips that might switch from walking (trips longer then 1km) and public transport (trips less than 5km). To put in a perspective this means that commuters who used to walk more than 1km will now save 4 min or more by using bicycle and commuters who used to take public transport would now spend 8min more in cycling then in public transport. The minibus taxi fare for such a trip is

R5-R9. The total number of the trips that might switch from walking and public transport is 1862. However, the analysis also took into account the public transport trips <=10km. This would mean that the number of commuters that are included in sample is almost 50% higher, but the probability of them switching to cycling is dropping as the distance increase. Therefore, this potential market was excluded from the analysis.

The analysed data shows that the usage and therefore bicycle ownership is very low in RLM. To support the switch from public transport to NMT such as cycling RLM could subsidise micro loans for bicycle purchases. Micro loans to finance bicycles (www.micro-loans.co.za). For example, a R2500 outlay at 8% interest p.a., with payment over 24 months, requires a monthly loan repayment of R113 per month. By subsidising say 50% of the cost of the bicycle, each recipient would need to pay around R50 – R60 per month. [6]

10.2.6 NMT Interventions That Can Be Considered in Rustenburg

The following interventions can be investigated and considered for NMT projects:

- **Improved Infrastructure**
  - Improve sidewalks, crosswalks, paths and bike lanes
  - Correct specific roadway hazards to non-motorized transport (sometimes called "spot improvement" programs)
  - Street furniture (e.g. benches), wayfinding and design features (e.g. human-scale street lights), that include Accessible Design principles
  - Increase road and path connectivity, with special non-motorized shortcuts, such as paths between cul-de-sac heads and mid-block pedestrian links
  - Introduce and promote the inclusion of shower facilities at the work place and public facilities
- **Universal Design, Including Tactile Surfaces** (transportation systems, including other prioritised areas as mentioned in section 10.2.7, that accommodate people with disabilities and other special needs in internal as well as external environments)
- **Develop Pedestrian Oriented Land Use And Building Design** (New Urbanism)
- Improve non-motorised transport facility **management and maintenance**, including reducing conflicts between users, and maintaining cleanliness
- **Traffic Calming**, streetscape improvements, traffic speed reductions, vehicle restrictions and road space reallocation
- **Safety Education, Law Enforcement And Encouragement** programs
- **Integrate With Public Transport** (bicycle/public transport integration and Transit Oriented Development (TOD)
- **Bicycle Parking And Storage Facilities**
- Address **Security Concerns** of pedestrians and cyclists
- **Bicycle Rental Facilities And Bike Sharing Systems** , which is a service in which bicycles are made available for shared use to individuals to provide efficient mobility for short, utilitarian urban trips
- **Bicycle Priority,** which involves prioritising bicycles over private cars through vehicle restrictions in certain zones or areas, traffic calming measures and speed reduction. At intersections, painted boxes called "bike boxes" may be provided, where bicycles can stop ahead of cars
- **Bicycle Transit Integration,** which should allow bicycles to be permitted on board in buses

[6] GIBB, 2015, Technical Feasibility for the Viability of a Bike Sharing Scheme in COJ

- **Pedways**, which are indoor urban walking networks that connect buildings and transportation terminals
- Create a multi-modal access guide, which includes **maps and other information** on how to walk and cycle to a particular destination (full trip chain)
- **NMT Education and Awareness Programs:** a key element to the success and sustainability of any NMT system and investment in infrastructure, is creating the awareness and educating users and potential users on various aspects and benefits of NMT like:
  - Health
  - Economic
  - Time saving
  - Environmental
  - Sports opportunities
  - Making walking and cycling "Cool" and breaking the stigma that walking and cycling is only for the poor
  - Education and training in the safe use of facilities
  - Business opportunities
- **NMT Use Incentives for Businesses**
- **Improve Access to Bicycles**
- **Improve safety and Security of Bicycles**

10.2.7 Where should NMT be prioritised in Rustenburg?

According to the available policies, guidelines, development plans, frameworks etc. the following locations are the key areas where NMT should be focussed and prioritised:

- **In and around Public Transport Modes and Facilities**: RRT, Bus termini, and very importantly, as can be seen from **Figure 10-3: Mode Share,** around major minibus taxi facilities as this mode continues to transport the majority of public transport users in Rustenburg and will continue to do so for the foreseeable future
- **Marginalised Areas:** increase access to opportunities and improved social equity
- **Linkages between Nodes:** strategic development projects, city renewal, regeneration, beautification, priority township programs, public realm upgrades, etc.
- **Educational Facilities:** schools, universities, colleges
- **Other Community Facilities:** sports stadiums and grounds, libraries, churches, community halls
- **Health Facilities:** hospitals, clinics
- **Tourist Networks:** in and around tourism locations, connecting the links between tourist sites for example in the CBD between museums etc. Promotion of eco-tourism (potential job creation). In South Africa, there are already tour operators that provide walking and or cycling tours
- **Recreational Facilities:** Open space networks provide opportunities for walking and cycling. Existing routes that are being used informally can be formalised. Existing formal routes can be assessed and possibly upgraded. Making parks more accessible and creating more opportunities in parks will uplift parks and open space areas overall.

Most commuter cyclists start cycling as recreational cyclists in parks and open spaces as well as quiet residential roads. The following **Table 10-4** highlights the NMT projects that should be prioritised. **Figure 10-8** shows the cycle ways classification. **Figure 10-10** shows those projects in regards to the land uses existing, approved and submitted.

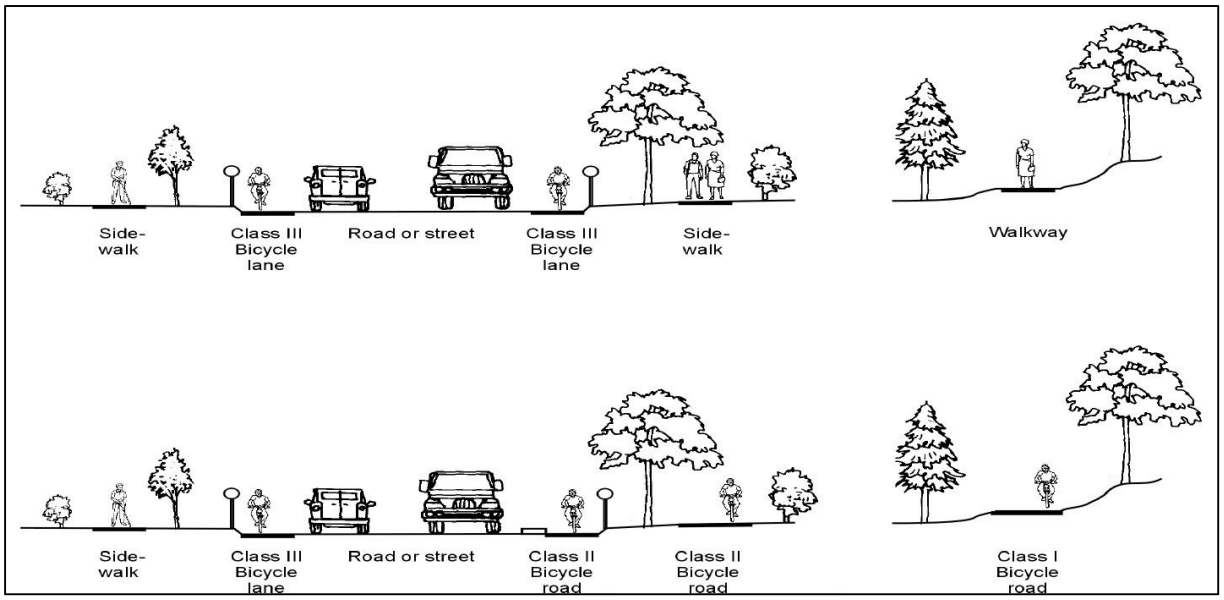


Figure 10-9: Classification of Cycle Ways

(Source: NDOT NMT Facility Guideline, 2014)

Table 10-4: NMT Projects for Prioritisation

Upgrade No	Description	Source of Information
1	Pedestrian and cyclist bridge facility across the R104/Oliver Tambo Rd	[7]
2	2.54km Class II pedestrian walkway along a main internal roads	[7]
3	Planning of an Intermodal Public Transport Facility	[7]
4	Walkways, cycle tracks, signage and pedestrian crossing signs in Mathopestadt	[7]
5	Infrastructure for cyclists including parking and signage in Phokeng	[7]
6	Pedestrianisation of Fatima Bhayat street (to be developed in phases).	[7]
7	Provision of lighting on subways (Fatima Bhayat)	[7]
8	Erection of walkway/cycle track along R 510 (from Oliver Tambo to Bophuthatswana Street in Kanana). (to be developed in phases)	[7]
9	Erection of overhead bridge on R104/Oliver Tambo drive	[7]
10	Bicycle / pedestrian facilities (class 3) to be constructed as a continuation of Oliver Tambo into Napoleon (Thlabane)	[7]
11	Construct / rehabilitate pedestrian sidewalks (minimum 3 m wide) on the 'station' sides of Nelson Mandela, Oliver Tambo, President Mbeki and Bosch Streets)	[7]
12	Class 1 shared pedestrian / bicycle facility (3 m minimum, bi-directional, landscape-protected) on either side of Swartruggens from the south of Nelson Mandela (from the Bethlehem intersection) up to the intersection with Assegaai Road (R112 signage series)	[7]
13	Class 3 cycle way on Foord St (R111 signage)	[7]
14	Signalised crosswalk across Molen to the shopping area in Zinniaville	[7]

[7] BPDM Business Plan 2012/13

15	Construct shared class 2 bicycle/pedestrian facilities (minimum 2m wide) on the 'non-stop' sides of the CBD BRT route (Oliver Tambo, Nelson Mandela and President Mbeki)	[8]
16	Slow down traffic into and within the CBD together with traffic calming measures such us green wave at 40km/h and raised intersections	[8]
17	Build a raised, signalised crosswalk at the proposed new intersection (near the taxi rank, toward Olivier Tambo)	[8]
18	Protected class 3 cycle ways on Heystack, Lucas and Zendeling	[8]
19	Warning signs (W309) and wayfinding markers along Plich Street (service road)	[8]
20	Upgrade/install pedestrian accesses across drainage channels to the south of Swartuggens (signage to indicate that cyclists give way to pedestrians)	[8]
21	Paved links connecting class 1 facilities are required between Dr Moroka Street and Plicht Street (R112 signage series)	[8]
22	Class 3 cycle way on Monareng, Makheni Middle extending to Benden and Napoleon (R111 signage)	[8]
23	Class 3 cycle way on Middel St (from Benden to Plicht) (R111 signage)	[8]
24	Class 1 (connecting route) from Middel to Molen in the direction of Zinniaville (R112 series)	[8]
25	Warning signs (W309) and wayfinding markers along Dr Moroka	[8]
26	Class 2 from Nelson Mandela to the bridge across Molen (R112 series) and Van Belkum	[8]
27	Warning signs (W309) and wayfinding markers along Benden Street (service road up to Buiten)	[8]
28	Class 1/signalised crossing over Buiten (R112 series)	[8]
29	Class 1/ signalised crossing over railway crossing (R112 series)	[8]
33	Class 2 (shared pedestrian/bicycle facility) on either side of Benden/R510)	[8]
31	Warning signs (W309) and wayfinding markers (feeders) Malapo until Egoli intersection	[8]
32	Warning signs (W309) and wayfinding markers (feeders) Malapo until Egoli intersection and Tlou St	[8]
33	Class 1: connecting Kloof to Nelson Mandela	[8]
34	Class 3: Nelson Mandela (from Bosch until R24)	[8]
35	Class 3: Heystack/Kloof continuing to R24	[8]
36	Class 4: President Mbeki and Beyers Naude north-east toward the CBD (wayfinding routes to the CBD)	[8]
37	Class 4: R104 toward Nelson Mandela	[8]
38	Class 4: Bosch (from Buiten intersection) south-east into CBD	[8]

[8] Walking and Cycling Policy and Concept Plan for the City of Rustenburg, 2013

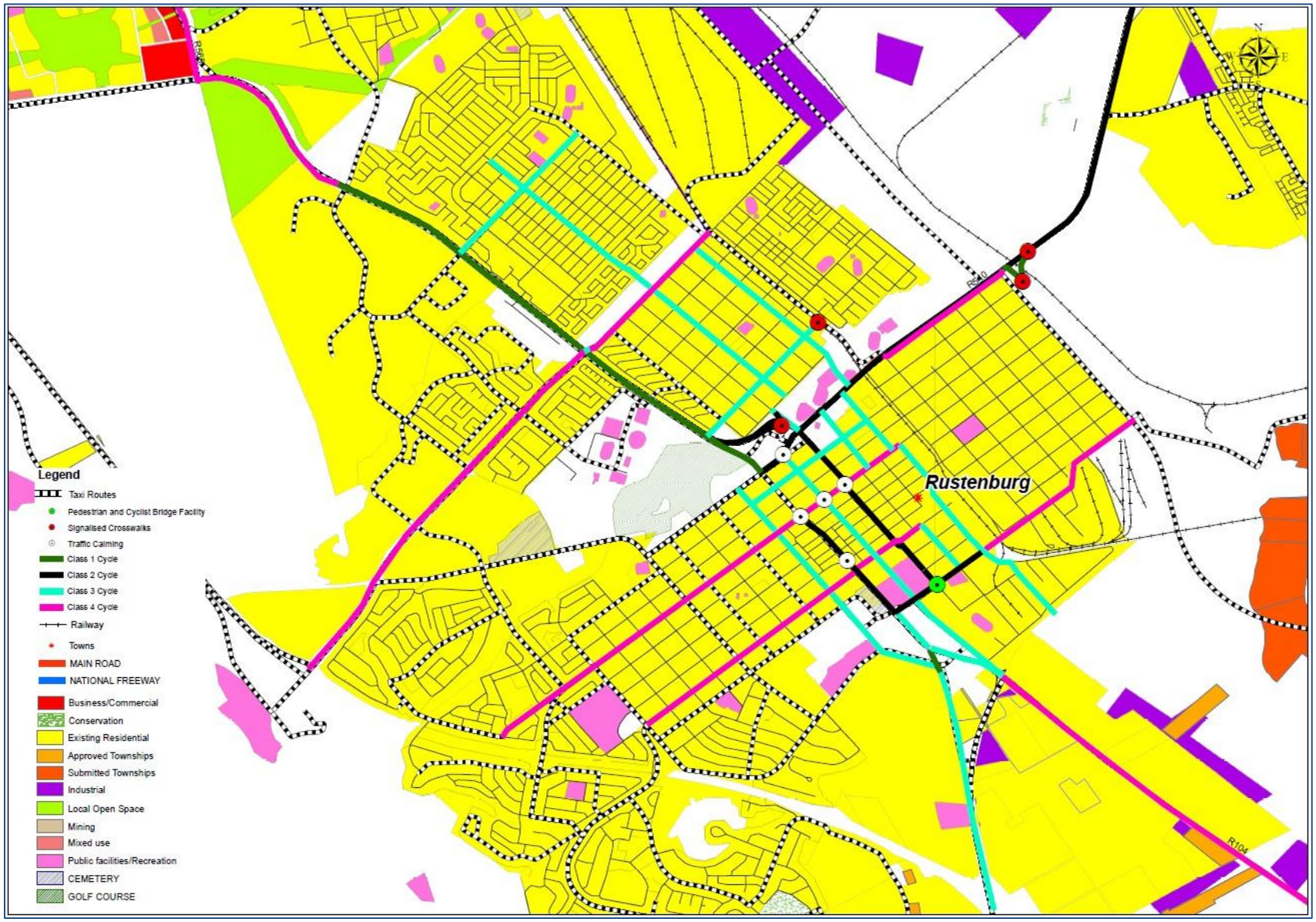


Figure 10-10: NMT Projects and Land Uses

10.2.8 Universal Access Status Quo

An Access Plan was developed for the RRT under requirements from the NDoT. Passengers with special categories of need are required by law to be accommodated on all new infrastructure developments and upgrades. This included the IRPTN of which the RRT plays a key role.

In order to improve the access of the RRT system, it is crucial that the whole travel chain be assessed and made fully accessible for all passengers with special categories of need. It is of no use having an accessible RRT system, but not all passengers can access the system in the first instance, or after having gained access to the system, and wanting to change to another mode of transport or another system, passengers are unable to do so.

The importance of NMT is highlighted in the report and the inter relationship between NMT and UA is clear. The improvement of pedestrian and cycle links from previously neglected areas towards town centres or areas of economic value are nationally a high priority.

Poor road safety, as proven by the road accident statistics, is highlighted and concern is raised. This is mostly due to the fact that the historic mind-set about NMT facilities on roads and other infrastructure, or rather the lack there off, created environments that are not safe enough. Now it is a key objective to make systems more accessible and to get more people, including passengers with special categories of need, to use the existing (unsafe) roads and footways. If the extent of safe NMT infrastructure is not adequate, the expected result would be even more people on unsafe infrastructure and thus the possibility of even more accidents.

This summary will not cover the "Ten Reasons to Act on Road Deaths" as indicated by the UN Decade of Action for Road Safety 2011-2020, launched by the Department of Transport on 11 May 2011, but is included to raise awareness and the importance of it:

"90% of 1.3 million people killed annually on roads each year are in developing countries and is expected to rise to 1.9 million by 2020. 50 million are injured of which many are disabled, drastically increasing the passengers with special categories of need annually, increasing the burden and cost to hospitals and the health system. The cost is approximated as $100 billion a year."

The final thought left to the reader is that "Road crashes are preventable".

More attention needs to be given to road and NMT infrastructure. Pedestrian and cyclist safety needs to be prioritised above vehicular safety, which is one of the greatest challenges on today's engineers and planners as design standards and guidelines historically focussed on mobility for cars, still don't incorporate adequate priority to cyclists and UA.

The transit oriented development approach is being pursued by most South African Cities today, especially as part of the IRPTN. This includes Rustenburg. NMT and accessibility is one of the key characteristics of this kind of inter related transport – land use development.

The Universal Design Access Plan for Rustenburg, Davis G., 2014 further goes into a lot of detail required for accessibility throughout every aspect of the complete travel chain:

- Planning the journey;
- Getting from home to the public transport pick-up point;

- Getting into the vehicle or mode of transport;
- Making the journey;
- Getting out of the vehicle or mode of transport;
- Changing modes of transport; and
- Travelling from public transport to the final destination.

A model for giving feedback is also included as a method to monitor progress and identify further needs and success of the system.

Throughout all aspects of the travel chain mentioned, the objective, a mechanism to use, and indicators are discussed.

The tabled discussion assist designers and planners to think further that traditional training and plan with a more integrated, accessible and informative IRPTN system and surrounding infrastructure in mind, during all phases of the journey.

For example, the first phase of a trip would be "To plan the trip"

The Objective is:

To have a system with sufficient accessible information that any person can plan a trip in their preferred format.
The system also has to be capable of handling feedback from users and gather statistical information on users to enable improvement of the system.

The Mechanism is:

What form of material can be used to enable a passenger to plan a trip; a website, hardcopy maps, mobile applications etc. How can feedback be recorded or issues captured and analysed?

The Indicators are:

A system for monitoring progress like a scoring system, for example;
1. Number of special needs passengers who make enquires about using the network in a weekly, monthly, and annual time period.
2. Number of special needs passengers who make enquires about using the network in a weekly, monthly, and annual time period that are not able to be accommodated.
3. Number of special needs passengers who are not able to access information independently in their preferred format.
4. A system have to be in place where any significant issue for PWSCN can be identified within 2 months of it becoming significant, and brought to the attention of the relevant stakeholders for a solution.

The Universal Design access plan then eludes on what accessible information is and how it can be applied to the system.

The different mechanisms like a website, printed information; mobile applications etc. are ordered on table format and commented on with regards to:

- Outcome;
- Problem identified;

- Recommendation or action taken; and
- Agreement column.

For example the mechanism of using a website's outcome will be to have an accessible website that is launched to the required standards. The problem identified in the report, was that there are no such website. The recommendation or action taken was that the IT department has started working on creating an accessible website to supplied standards. The agreement can be that the site was assessed and approved or there might have been some mitigating factor.

The next phase of the travel cycle is then treated or discussed in a similar fashion.

The revision of the NMT and UA policies is given in **Annexure F**.

10.3 Public Transport Safety and Security Strategy

10.3.1 Background

Transport safety is defined as the vulnerability to accidental injury and is usually related to road accidents involving vehicles, people as well as the traffic environment. Public transport safety and security should promote passenger safety and security in respect of operations at public transport facilities and on board PT vehicles. Transport security is then defined as the vulnerability to intentional criminal or antisocial acts suffered by those making trips. Some of these acts include robbery, fare evasion, sexual offences and criminal damage.

The main aim of a Safety and Security Strategy is to provide on-board and on-street safety and security measures for commuters. The strategy will therefore not focus on specific routes alone and will provide a comprehensive approach that supports practical interventions for public transport safety and security. As such, the Transport Safety and Security Strategy is a comprehensive and fully integrated plan that addresses all aspects of Traffic Engineering, Enforcement and Education on an integrated basis in an effort to reduce the social and economic costs associated with accidents. This strategy assists in establishing the priorities that acknowledge the importance of addressing safety issues in both the public and private transport systems. The following goals will assist key actions in the strategy:

- Safe road infrastructure;
- Good road safety information and intelligence;
- Consistent communication to maintain road safety awareness;
- Educated road users;
- Safe road user behaviour;
- Good communication with road users;
- Road safety planning and performance assessment;
- Road infrastructure that can be safely used by reasonable and responsible road users;
- Road safety efforts implemented according to an agreed plan with the effectiveness of the plan being measured at regular intervals; and
- Information on the current road safety situation that can be converted to intelligence upon which good decisions can be made.

10.3.2 Safe and Secure Facilities

In implementing this strategy the facilities relevant to public transport safety and security include, but are not limited to, hospitals, ambulance services, clinics, police and fire stations.

10.3.3 Stakeholders

The various stakeholders affected by and involved with public transport safety and security include the relevant authorities, the general public as well as the service providers. These stakeholders can be represented by commuter representative organisations, the South African Police Service (SAPS), emergency services, operator associations as well as the relevant city departments, etc.

10.3.4 Issues related to Safety and Security

Existing strategies in South Africa as well as various stake holder consultations summarise the main issues of concern as being the following:

- In-adequate non-motorised (NMT) facilities;
- In-effective and in-adequate law enforcement;
- The occurrence of security incidents while walking to and from public transport facilities, at the facilities as well as on vehicles;
- Deteriorating road conditions;
- Ageing vehicles and vehicles in a poor condition;
- Poor record keeping of incidences;
- High incidences of unsafe vehicle operations such as speeding and reckless driving;
- High levels of road incidents and fatalities;
- General lack of road safety awareness and practices; and
- In-adequate designs and the low availability of security measures such as visible policing, lighting etc.

10.4 Airports

The Rustenburg Local Municipality has a small airfield which has a 1 225 metres runway. Most of the air transport services are provided at the Pilanesberg Aerodrome, serving mainly tourists to Sun City and the Pilanesberg game reserve. The Rustenburg area also has two heliports which are located at the Paul Kruger Hospital and the Marikana Platinum mine.

10.4.1 Rustenburg Airport

Figure 10-11 illustrates the layout of the Rustenburg Airport which includes a small runway, hangers and terminal surrounded by vacant land. The airport is well connected to the RRT system and to the link road. The road to the airport itself is in a poor condition.

It is clear that opportunities exist to develop logistics activities around the airport. The airport has also good connectivity to the R510.

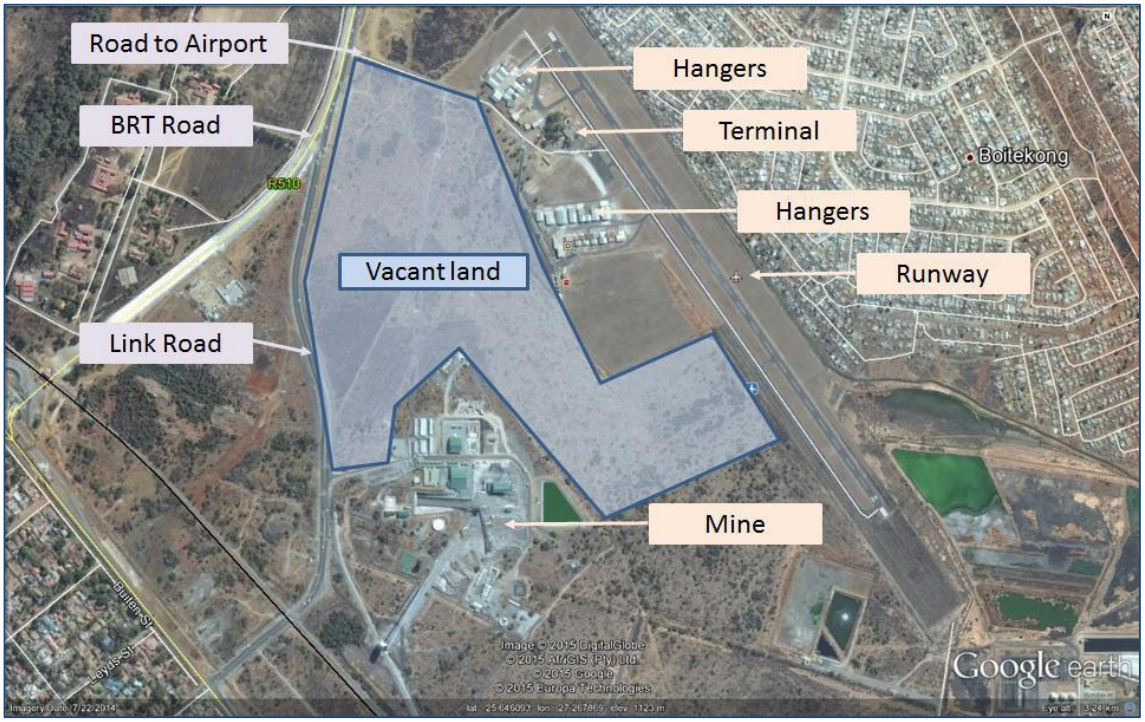


Figure 10-11: Rustenburg Airport Layout
(Source: Adapted from Google earth)

Table 10-5 provided the airport detail and some general information.

Table 10-5: FARG Airport Location

Description	Airport detail
Latitude	25-38-39 S (-25.644300)
Longitude	27-16-16 E (27.271099)
Elevation	3700 feet MSL (1128 m MSL)
Magnetic Variation	17.4 W (as of April 2015 from WMM2015 model)
Time Zone	UTC +2.0 (Standard Time) UTC +2.0 (Daylight Savings Time)
From City	0 N.M. of Rustenburg, North-West
Control tower	No
Beacon Colour	White-green flashing light (land airport)
Traffic Pattern altitude	4700 feet (1433 m)

10.4.2 Rustenburg Airport Relative to other Airports

Figure 10-12 illustrates the geographical position of Rustenburg airport to other airports. Rustenburg Airport is in linked with the following international airports:

- OR Tambo International Airport;
- Lanseria Airport;
- Mmabatho International Airport; and
- Pilanesberg International Airport.

The airport can be considered as a cluster airport which provides capacity for smaller aircraft used by the private sector. The useage can be classified as business and private. Any international flights must either go through Pilanesberg, Lanseria and/or Mmambatho. Mining is one of the biggest users of the airfield.

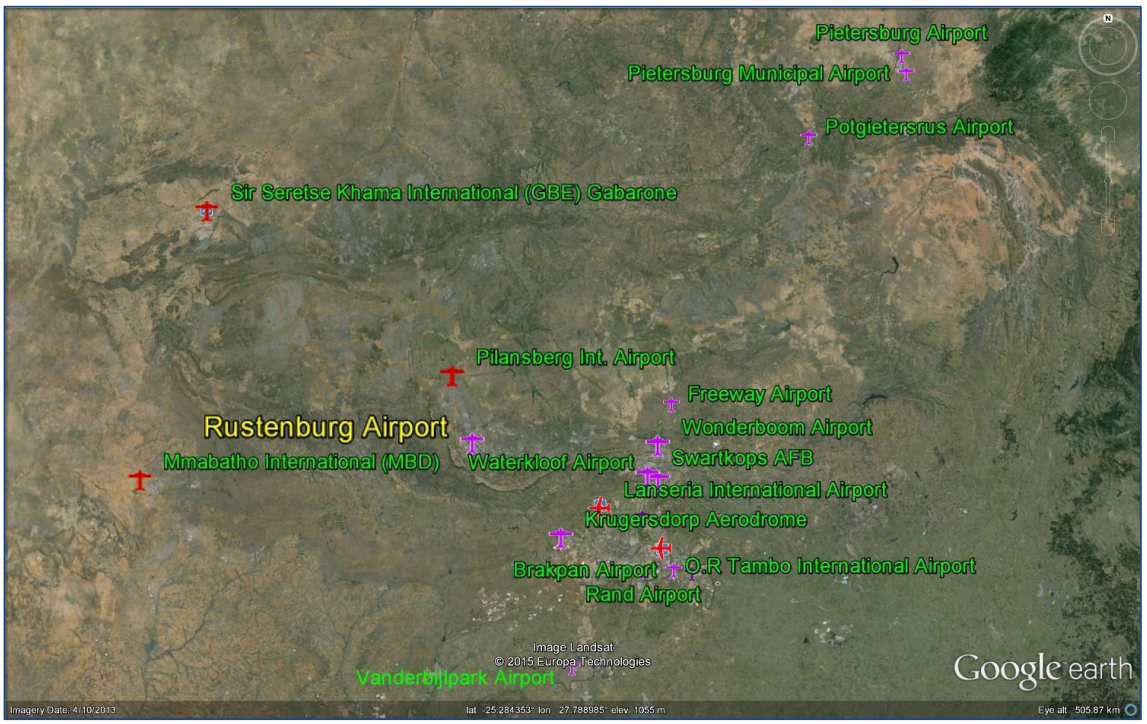


Figure 10-12: Rustenburg Airport Geographical Layout
(Source: Adapted from Google Earth)

10.4.3 Airport Strategy

The strategy to develop the airport should be as follows:

- Upgrade the road to the airport to improve accessibility
- Upgrade terminal
- Appoint a task team within the municipality to develop an airport masterplan for the airport and the vacant land surrounding the airport.

11 Funding Strategy and Summary of Proposals & Programmes

It is a requirement that this chapter contain a summary of proposals and programmes provided for in the plan. The proposals contained should be realistic either in financial terms or with regard to the capacity of the authority. Projects should also be phased over a realistic period or moved to a future year. The proposals and programmes must link with the Integrated Development Plan (IDP) process as required by section 18(1) (a) of the act. In our case the latest IDP to be used will be the *Bojanala IDP 2012-2017*.

11.1 Current Projects

A list of project for RLM was sourced from different stakeholders. This is because not all projects within the local municipality will be implemented by the local municipality.

Stakeholders consulted include the following:

- North West Provincial Government (2015 projects to be replaced by reseal projects, no detailed information yet);
- Bojanala Platinum District Municipality (BPDM); and
- Rustenburg Local Municipality (RLM).

There is currently no specific prioritization process most used by RLM to decide which projects are more important than others. The projects provided by the officials were all stated to be critical within the RLM. Projects identified in this list are not the only projects but are the critical projects. Once these projects have been implemented new ones will be identified and addressed.

11.2 Previous Project Programme in RLM

The *2007-2011 Rustenburg Integrated Transport Plan* identified projects to be prioritised. Projects which were contained in the PTIS Priority 1 were given the highest priority 1 while others were either prioritised as 2 or 3. The table below shows a list of the previous projects, their implementation programme as well as their costing.

Table 11-1: Previous ITP Projects

Project	Priority	Implementation	Costing (R)	Implemented		Still a priority
				Yes	No	
2010 Operational Plan	1	Feb 08 – June 08 (June 2010)	3 000 000	*		
IRPTN Operational Plan	1	Dec 07 – Jun 08	4 810 000	*		
Business and financial model	1	Feb 08 – Jun 08	3 880 000	*		
Consultation and negotiation with stakeholders	1	Jun 08 – Mar 09	3 382 000	*		
Upgrading of the existing CBD	1	Start	15 000 000	*		

Project	Priority	Implementation	Costing (R)	Implemented		Still a priority
				Yes	No	
taxi rank		construction June 08 complete construction Feb 2010				
RRT terminal (Phokeng) Part of RRT Phase 4. In the long term, the will be investigation of Multimodal facility.	1		10 000 000		*	*
RRT terminal (Waterfall Mall) Bus Stop. Similar Gautrain/Rea Vaya Bus Stops. Part of Phase 4	1		5 500 000		*	*
Transfer facilities (Nelson Mandela Drive)	1		7 800 000		*	*
Transfer facilities (Oliver Tambo Drive)	1		7 800 000		*	*
Lay-byes	1		23 600 000		*	*
RRT infrastructure(upgrade)	1		91 300 000		*	*
Stadium precinct: Improvement of accessibility	1		40 000 000		*	
NMT (walkways/cycle ways) 6km of NMT implemented, additional 15km under construction	1		15 000 000			*
Pedestrianisation of Fatima Bhayat Street	1		9 800 000		*	*
Park and ride facilities - To be investigated further	1		2 500 000		*	
Public transport priority systems (intersections)	1		16 100 000			*
IRPTN: marketing and branding	1	Jul 08 – Nov 08	1 140 000	*		
ITS and fare integration - RRT will use Automated Fare Collection across all routes. This is at planning stage.	1	Jul 08 – Nov 08	2 280 000		*	
P16/2 between Kloof i/c and R104	1	2008 – 2009	49 200 000	*		
Western by-pass	1	2008 – 2009	136 800 000	*		
Link roads from the bypass to the stadium	1	2008 - 2009	15 000 000	*		
Additional Projects identified in the ITP						
Investigate road safety on R565	2	2008/9			*	
Identification & management of accidents hotspots	2	2008/9				
Planning study to identify the demand for upgrading informal public transport facilities (Boitekong, Thlabane)	2	2009/10				
Provision of public transport stops and facilities	2	2010/11			RRT is implementing	

Project	Priority	Implementation	Costing (R)	Implemented		Still a priority
				Yes	No	
					some of these	
Freight transport survey & freight transport plan	2	2008/09			Under investigation	
Overload control	2	2008/09				
Planning project to identify transport needs for people with disabilities	3	2009/10				*
Provision of NMT facilities (Boitekong, Thlabane)	3	2011/12				*
Heavy vehicle bypass	3	2010/11				*

11.3 Prioritization / Multi-Criteria Model

The prioritisation model will only be used as an indication of which projects should be given priority, when assessing the intervention's strategic choices.

The multi-criteria analysis can be used for:

- Evaluating the ability of various activities of a programme to fulfil a given objective. This assessment can take place to collect the opinions of decision-makers and beneficiaries about the effectiveness of the projects.
- To structure the views of project or programme managers about on-going activities.
- To discuss the content of the programmes, and the funding of various activities during the drafting of strategies and programmes.

The steps involved in multi-criteria analysis are shown in **Table 11-2.**

Table 11-2: Prioritisation Steps

1	Choose a list of projects to be evaluated
2	Choose the negotiation / judgement group
3	Choose the technical team responsible for supporting the judgement team group
4	Establish the list of competing activities to be included in the analysis
5	Determine judgement criteria
6	Determine each criterion's relative weight
7	Formulate a judgement per criterion
8	Aggregate judgements

Stage 1: Choose a list of projects to be evaluated

The evaluating team needs to be provided with a list of projects that need to be evaluated.

Stage 2: Choose the negotiation / judgement group

The multi-criteria analysis will be based on the rating by the members of the judgement group, usually the Rustenburg officials in this case. The Rustenburg officials would have already provided GIBB with projects in Rustenburg local municipality.

Stage 3: Choose a technical team responsible for supporting the judgement team

The technical team (GIBB) have provided support to the judgement group (Rustenburg officials).

Stage 4: Establish the list of competing activities to be included in the analysis

Depending on what the multi-criteria process aims to achieve, it can also help in the comparison of:

- Scenarios or potential solutions in the planning or payment evaluation
- Choices of land use planning
- Activities implemented in a programme. At this point, a list of projects and budgets should be ready for analysis.

Stage 5: Determine judgement criteria

This is one of the main stages of the analysis. The outline of the criteria should be defined:

- The criteria for the selection of projects should be defined by the rules recognised and accepted by all the Rustenburg officials
- These usually integrate all points expressed by other members
- They should be comprehensive, resulting in reasonable and non-disputable findings.

Stage 6: Determine each criteria's relative weight

This is the stage where each criteria is now given the weight in order to measure their relative importance against other projects.

Stage 7: Formulate a judgement per criterion

Each of the criteria is now given a value based on its impact. This evaluation can be quantitative or qualitative. This stage aims at providing each activity with a rating for each criterion.

Stage 8: Aggregate judgements

Several methods for the aggregation of judgement can then be developed. These can be the weighted sum method, the weighted sum product, the outranking method etc. If the project to be undertaken happens as an agreement in a group working with criteria of identical weight, the performance table represents the findings of the multi-criteria analysis.

Using the above mentioned methodology, the prioritisation model to be used is outlined below.

Only four criteria will be used as a basis towards the weighting the importance of one project relative to another. The criteria will be governance, spatial development opportunities, efficiency gain and the impact.

- **Governance** – All projects are usually informed by studies required by the municipality. This is further influenced by mayoral priorities. Regulatory requirements consider whether legal requirements have been met, such as EIA, etc. Sectorial plans include the relevant department's own technical rating. For example, the CITP informing the city on transport priorities. This element is brought in at a very high level of the model, as it is deemed of strategic importance. Mayoral priorities are initiatives of the Mayor addressing political priorities.

- **Spatial Development Opportunities** – Known projects will be informed by areas which are targeted for projects meant to stimulate economic growth. It is important that investment be mainly directed towards investment opportunity areas. The target areas which have potential for economic growth and development are capital core, transit oriented developments, social housing, metropolitan node, urban core, and specialised nodes.

- **Efficiency Gains** – Efficiency and effectiveness are essential in programme and project planning and implementation. Programming and synchronization will be essential in wanting to realize impactful service delivery.

- **Impact** – It is important that upon implementation that a project yields financial, economic and social value investments. Socio-economic development, in a true sense, therefore seeks to find a balance between economic activities, the natural environment, and society. As each dimension is related to the other, a negative situation in one dimension will negatively affect other dimensions. There will be serious economic consequences should environmental costs increase over time. This will inevitably impact society in terms of employment, income and general welfare, and further in production and GDP.

Table 11-3: Prioritisation Criteria and Weights

Criteria	Weighting area	Points	Weight
Governance	Regulatory Requirements	15	30
	Sectorial Plans	5	
	Mayoral Priorities	10	
Spatial Development Opportunities	Target area	10	20
	Economic growth	10	
Efficiency Gains	Effectiveness	10	20
	Synchronization non RRT	5	
	Synchronization with RRT	5	
Impact	Economic	15	30
	Social	10	
	Environmental	5	

The 2012 Household Survey data has shown that the intervention that was mosty cited, is "All public Transport Improvements". **Table 11-4** below show a breakdown of transport interventions in RLM.

Table 11-4: Transport Interventions

Transport Problem	Percentage of responses	Importance
Improve roads	32%	1
Improve road furniture	20%	2
Increase/Improve public transport facilities	17%	3
Increase/Improve public transport services	16%	4
Improve conditions of public transport vehicles	12%	5
Reduce fares	3%	6

(Source: BPDM IDP 2012/17)

The second most frequent problem cited was improvement of roads With regards to the road network, of the total 936 km of road, 572 km of the length is paved and would need R114 400 000 to be maintained. The length of gravel roads is 363 km and would need R728 000 000 to be maintained. This is significantly more than the available budgets and prioritization of the most critical projects is therefore essential.

The projects for prioritization listed in **Chapter 11.4** will be prioritized with the above listed criteria, weightings and ratings only for the future update years. Therefore, the list of the projects will be updated for each of the future years.

11.4 New Prioritised Projects and Costing

Table 11-5 shows the road upgrades projects, **Table 11-6** indicates the public transport facilities for upgrades, **Table 11-7** shows the freight routes, **Table 11-8** NMT projects and **Table 11-9** shows the other transport planning projects.

Table 11-5: Road Upgrades Projects

No	Description	Map ID (Figure 7-5)	Ward	Ward no	Township	Existing Number of Lanes/ direction	Direction 1 Description	Road Class	Road Category	Link Length (m)	Link width (m)	Source of Information	Status	Cost (R)	Funding Agency
1	Cuckoo Rd as Class 3	P1 Cuckoo Ave	Rustenburg	30	Cashan	1		3	3	3 487	1	ITP 2007-2012	Note there are structures constructed upon the road reserve boundary		
2	Waterfall Bridge: Class 3,2 lanes/direction	P2	Rustenburg	30	Waterval East	2	R104 to Kloof			80	8	ITP 2007-2012	Under construction	R 9 600 000	SANRAL
3	New link P2-4 (R104) to D108	P3	Rustenburg	30	Waterval East	2				2 874	8	ITP 2007-2012	Under construction	R 16 094 400	SANRAL
	Bridge on link above		Rustenburg	30	Waterval East	2				80	8	ITP 2007-2012	Under construction	R 9 600 000	SANRAL
	Signals		Rustenburg	30	Waterval East	2						ITP 2007-2012	Under construction	R 1 600 000	SANRAL
4	P16-1 (Waterberg Rd to Escom Rd): 3 lanes/direction	P4	Rustenburg	30	Waterval East	2				3 623	8	ITP 2007-2012	Under construction	R 20 288 800	SANRAL
5	P16-1 (Escom Rd to D108): 2 lanes/direction	P5	Rustenburg	30	Waterval East	2				1 244	4	ITP 2007-2012	Under construction	R 3 483 200	SANRAL
6	P2-4 (R104):2 lanes /direction	P6	Rustenburg		Waterval East		2nd Ave to Rustenburg	3	3	6 400	8	ITP 2007-2012	Road over river crossing		
7	Kloof/Heystek (P16-1 to Kock	P7	Rustenburg	30	Rustenburg	1		3	3	1 986	8	ITP 2007-2012			
	Signals		Rustenburg									ITP 2007-2012		R 400 000	
8	Beneden Rd (R510): 2 lanes/direction	P8	Rustenburg	25	Rustenburg Oos-Einde	2	Molapo Dr to Rustenburg (Molen St)			501	8	ITP 2007-2012	Under construction		RRT
9	Boitekong Link 1 to D108	P9 Boitekong link	Rustenburg	18	Boitekong			3	5	8 361	7	ITP 2007-2012	2 x road over rail bridge, 2 x road over river bridge and 5 intersections		
	Boitekong Link 2 to D108	P9 Boitekong link 2	Rustenburg	29	Boitekong/ Mfidikoe			3	5	11 850		ITP 2007-2012	1 x road over river (± 150 m river crossing), 2 x Road over rail bridge and 6 intersections		
10	P2-4 (R104) - D108 Link 1	P10 D108-R104 link 1	Rustenburg	32	Between Rustenburg & Waterkloof			3	4	2 832		ITP 2007-2012	Bridge over river		
	P2-4 (R104) - D108 Link 2	P10 link 2		32				3	4	2 274	7	ITP 2007-2012	Bridge over river		
	Signals		Rustenburg									ITP 2007-2012		R 400 000	
11	Zendeling Rd: 2 lanes/direction	P11 Zendeling	Rustenburg	30	Rustenburg	2	Escom to Bosch	3	2	280	8	ITP 2007-2012			
12	Escom & Coetzer Rd: 2 lanes (one direction)	P12	Rustenburg	30	Rustenburg	2		3	2	1 279	8	ITP 2007-2012			
13	alternative link to Escom Rd	P13	Rustenburg	32	Rustenburg	2		3	3	85	8	ITP 2007-2012			
14	OR Tambo to Fatima Bhayat (P16-1 to Kloof St):3 lanes (show grounds)	P14	Rustenburg	30	Rustenburg			3	3	710	8	ITP 2007-2012			
15	Helen Joseph Drive 2 lanes/direction	P15	Rustenburg	27	Safari Tuine		Safari Tuine towards N4	3	3	4 100	8	ITP 2007-2012		R 36 900 000	
	Signals		Rustenburg									ITP 2007-2012			
16	Bridge over N4 Boven to	P16	Rustenburg	30	Rustenburg			3	5	530	8	ITP 2007-2012			

No	Description	Map ID (Figure 7-5)	Ward	Ward no	Township	Existing Number of Lanes/ direction	Direction 1 Description	Road Class	Road Category	Link Length (m)	Link width (m)	Source of Information	Status	Cost (R)	Funding Agency
	Cuckoo														
17	D108 eastern bypass R 510 up to R 565	P17	Rustenburg	13	Thlabane - Phokeng			2	4	17 395	8	ITP 2007-2012	Road over rail bridge and 3 new intersections		
	Link to P 16/2 (Dr Moroka)	P17-1	Rustenburg	24	Karlienpark			3	4	1 614		ITP 2007-2012	Road over rail bridge and new intersection		
	Link to Lefaragatlhe	P17 (N-S)	Rustenburg	13	Lefaragatlha			3	4	2 560	7	ITP 2007-2012	Road over rail bridge		
18	D108 Thekwane shortcut	P18	Rustenburg	32	Bokamoso			2	4	3 030	8	ITP 2007-2012			
	Signals		Rustenburg									ITP 2007-2012		R 400 000	
19	Phokeng stadium road	P19	Rustenburg	14	Phokeng	2				2 158	8	ITP 2007-2012	Completed		
20	Phokeng western bypass	P20	Rustenburg	14	Phokeng	2	R104 to R565/Phokeng			9 302	12	ITP 2007-2012	Provincial		
	Signals		Rustenburg	6	Masosobane	1						ITP 2007-2012	No signalling		
21	P 16-2 northern extension (from D 108 to R510) class 3		Rustenburg	24	Rustenburg Rural			3	4	2 838	8		The extension of the D108 to be completed before this project could commence		
22	P16-2 southern extension between Leontis and Watsonia	P21	Rustenburg	35	Geelhoutpark	1				649	8		This identified project does not make sence and should be removed	R 3 634 400	
23	Extension of Boven St to Watsonia Rd		Rustenburg	35	Geelhoutpark			3	4	730	8		Note that several houses bas been constructed within the road reserve		
24	Waterfall Bridge: 1 lane/direction R 24 to R 104	P22	Rustenburg	30	Waterval East			3	4	2 286	8		New bridge over N 4 no off ramps		
25	Phokeng entrance to Bafokeng stadium	P23	Rustenburg	14	Phokeng	1		4	2	720					
26	R 24 from Waterberg Ave to Rex Intersection (2 lane per direction)	P24	Rustenburg	28	Cashan	1		3	4	7 290					SANRAL
27	Boven Street from Hystek to Beyers Naude Drive	P25	Rustenburg	30	Rustenburg	1		3	3	2 795					
28	D108 from R 510 to D 1122	P26	Rustenburg	32	Waterkloof-Rustenburg			3	4	10 190					Provincial
29	N 4 New off ramps at Helen Joseph intersection	P27	Rustenburg	27	Protea Park										
	N 4 New on ramps at Helen Joseph intersection	P28	Rustenburg	27	Protea Park			2	3	400					

Table 11-6: Public Transport Facilities for Upgrades

No	Facility Name	Ward No	Township	Type	Status / Quality / overall condition	Recommended Improvements	Cost Estimation
1	Rasimone South Mine	1	Bafokeng North	Multimodal Semi formal	Reasonable	Maintenance	R 340 854
2	Boshoek Bus Stop		Boshoek	Bus -Informal	Poor	Create lay-bye point with shelter & seating	R 414 538
3	Rasimone North Mine Taxi Rank		Rasimone Mine	Multimodal Semi formal	Reasonable	Maintenance	
4	Chaneng P.P	2	Chaneng	Pickup-Informal	Poor	Help point facility including public telephone and rubbish bins with shelter	R 55 271
5	Chaneng P.P2		Chaneng	Pickup-Informal	Poor	Taxi waiting areas should be clearly identified by appropriate parking controls and private vehicle are actively discouraged from using them	R 3 454
6	Chaneng P.P3		Chaneng	Pickup-Informal	Poor	Create a lay-bye point with shelter and seating	R 414 538
7	Chaneng P.P		Magajane	Pickup-Semi formal	Poor	Create a lay-bye point with shelter and seating	R 414 538
8	Impala no6 Pickup point	3	Bafokeng north	Multi modal Semi formal	Reasonable	Shelter, pavement, benches, water and sanitation	R 2 065 782
9	Luka Mogono		GA-Luka	Pick up Informal	Poor	Real time information integrated with custom shelter, electrical and data installation	R 6 908
10	Sinet Taxi Rank	4	Bafokeng south	Multi modal Semi formal	Reasonable	Facility needs to be paved with shelter and seating	R 928 220
11	Luka Photsaneng		Ga-Luka	Bus Informal	Poor	Create a lay bye point with shelter and seating	R 414 538
12	Tshwara Bus stop		Phudumung	Bus Semi formal	Reasonable	Establish shelter and seating	R 635 625
13	Bafokeng Plaza taxi Rank	6	Batale	Taxi-Formal	Reasonable	Roof need to be re-structured to protect passengers along with taxis	R 635 625
14	Rashuki Street PP		Masosobane	Pickup Semi formal	Poor	Establishment of lay bye with shelter	R 414 538
15	Impala shaft taxi rank	12	Meriting	Multi Modal Semi Formal	Reasonable	The rank needs maintenance	R33 370
16	Meriting Ext 2 pickup Point		Meriting	Pickup Informal	Poor	Create a lay bye point with shelter and seating	R 414 538
17	Meriting/Seraleng PP		Meriting	Pickup Informal	Poor	Facility needs pavement and shelter	R 3 061 710
18	Rustenburg Taxi rank	13	Rustenburg	Multimodal Formal	Reasonable	The rank needs roof extension, CCTV, installations, tactile ground surface indicators and taxi rank bus info signs	R 55 299 395

No	Facility Name	Ward No	Township	Type	Status / Quality / overall condition	Recommended Improvements	Cost Estimation
19	MKTV Bus Rank	17	Rustenburg	Bus semi-formal	Reasonable	Benches need to be provided for passengers and routine maintenance	R 6 908
20	Mbeki Drive		Rustenburg	Bus semi-formal	Reasonable	Create a lay bye point with shelter for both taxis and passengers	R 635 625
21	Boitekong taxi rank	18	Boitekong	Taxi informal	Poor	Facility needs pavement incorporated with shelter and toilets	R 1 853 331
22	Sunrise taxi rank		Boitekong	Taxi-informal	Poor	Formal rank must be designed with all amenities required	R 3 995 802
23	Boitekong Mall taxi rank	19	Boitekong	Taxi formal	Poor	The rank shelter needs to be extended	R 635 625
24	Boitekong Ext 1 PP		Boitekong	Pickup informal	Poor	Create a lay bye point with shelter and seating	R 6 908
25	Boitekong Ext 2,4,6,8, P.P	20	Boitekong	Pickup informal	Poor	Create a lay bye point and seating	R 414 538
26	Kanana/Rankelenyane P.P	23	Matalaneng	Pickup informal	Poor	Create a lay bye point with shelter and seating	R 829 076
27	Serotobe P.P		Seritube	Pickup informal	Poor	Establishment of with seating and lighting	R 635 625
28	Bafokeng South taxi rank	24	Bafokeng south	Multi modal Semi formal	Reasonable	Fully custom shelter with seating for passengers	R 663 261
29	E and F Shaft taxi rank		Freedom Park	Multimodal Semi formal	Reasonable	Facility needs pavement and proper maintenance	R 1 149 859
30	NO 8 Freedom Park P.P		Freedom Park	Pickup informal	Poor	Create a custom shelter fully integrated with help point service	R 635 625
31	Maile Ext 1 P.P	25	Maile	Pickup informal	Poor	Establish a shelter and seating	R 414 538
32	Monakato taxi rank		Manakato	Taxi formal	Poor	Facility needs proper maintenance, toilets, water and benches for passengers	R 180 945
33	Mamerotswe Pickup point	26	Mamerotswe	Taxi informal	Poor	Pavement, shelter and toilets are required	R 797 986
34	Waterfall mall taxi rank		Mamerotswe	Taxi formal	Reasonable	Design a formal rank which includes shelter, benches, info signs, isles, toilets and lighting	R 4 206 526
35	Maile Ext 2 taxi rank		Tsitsing	Taxi informal	Poor	shelter and seating are required	R 414 538
36	Tsitsing P.P		Tsitsing	Pickup informal	Poor	Create a lay bye point	R 414 538
37	Maile Duipkuil P.P		Tsitsing	Pickup semi-formal	Reasonable	Pick up point needs maintenance	R 29 812
38	Ikageng rank	29	Masontha-Marubitshi	Taxi informal	Poor	Establishment of paved pickup point with shelter	R 414 538
39	Rankelenyane taxi rank		Rankelenyane	Taxi informal	Poor	create a lay bye point	R 414 538
40	Meriting/Sondela taxi rank	37	Boitekong	Taxi informal	Poor	create a lay bye point with shelter and seating	R 414 538
						Total	**R 84 718 135**

Table 11-7: Freight Routes for Prioritisation

No	Description	Construct/Upgrade/rehabilitate
1	R24 between R104 and D108/Buiten Street	Upgrade to dual carriage way
2	R24 between Howick ave (N4) and R104	Upgrade to dual carriage way
3	D108 street between R24 and R510	Upgrade to dual carriage way
4	Tuin street between D108/Buiten street and East Street	Increase lane capacity.
5	R510 road between R104 and Molen Street (Rail bridge)	Upgrade to dual carriage way
6	R104 between N4 and R565	Upgrade to dual carriage way
7	Link road	Upgrade
8	Road to airport	Upgrade

Table 11-8: NMT Projects for Prioritisation

Upgrade No	Description
1	Pedestrian and cyclist bridge facility across the R104/Oliver Tambo Rd
2	2.54km Class II pedestrian walkway along a main internal road
3	Planning of an Intermodal Public Transport Facility
4	Walkways, cycle tracks, signage and pedestrian crossing signs in Mathopestadt
5	Infrastructure for cyclists including parking and signage in Phokeng
6	Pedestrianisation of Fatima Bhayat Street (to be developed in phases).
7	Provision of lighting on subways (Fatima Bhayat)
8	Erection of walkway/cycle track along R 510 (from Oliver Tambo to Bophuthatswana Street in Kanana). (to be developed in phases)
9	Erection of overhead bridge on R104/Oliver Tambo drive
10	Bicycle / pedestrian facilities (class 3) to be constructed as a continuation of Oliver Tambo into Napoleon (Thlabane)
11	Construct / rehabilitate pedestrian sidewalks (minimum 3 m wide) on the 'station' sides of Nelson Mandela, Oliver Tambo, President Mbeki and Bosch Streets)
12	Class 1 shared pedestrian / bicycle facility (3 m minimum, bi-directional, landscape-protected) on either side of Swartruggens from the south of Nelson Mandela (from the Bethlehem intersection) up to the intersection with Assegaai Road (R112 signage series)
13	Class 3 cycle way on Foord St (R111 signage)
14	Signalised crosswalk across Molen to the shopping area in Zinniaville
15	Construct shared class 2 bicycle/pedestrian facilities (minimum 2m wide) on the 'non-stop' sides of the CBD BRT route (Oliver Tambo, Nelson Mandela and President Mbeki)
16	Slow down traffic into and within the CBD together with traffic calming measures such us green wave at 40km/h and raised intersections
17	Build a raised, signalised crosswalk at the proposed new intersection (near the taxi rank, toward Olivier Tambo)
18	Protected class 3 cycle ways on Heystack, Lucas and Zendeling
19	Warning signs (W309) and wayfinding markers along Plich Street (service road)
20	Upgrade/install pedestrian access across drainage channels to the south of Swartuggens (signage to indicate that cyclists give way to pedestrians)
21	Paved links connecting class 1 facilities are required between Dr Moroka Street and Plicht Street (R112 signage series)
22	Class 3 cycle way on Monareng, Makheni Middel extending to Benden and Napoleon (R111 signage)
23	Class 3 cycle way on Middel St (from Benden to Plicht) (R111 signage)
24	Class 1 (connecting route) from Middel to Molen in the direction of Zinniaville (R112 series)
25	Warning signs (W309) and wayfinding markers along Dr Moroka

26	Class 2 from Nelson Mandela to the bridge across Molen (R112 series) and Van Belkum
27	Warning signs (W309) and wayfinding markers along Benden Street (service road until Buiten)
28	Class 1/signalised crossing over Buiten (R112 series)
29	Class 1/ signalised crossing over railway crossing (R112 series)
33	Class 2 (shared pedestrian/bicycle facility) on either side of Benden/R510)
31	Warning signs (W309) and wayfinding markers (feeders) Malapo until Egoli intersection
32	Warning signs (W309) and wayfinding markers (feeders) Malapo until Egoli intersection and Tlou St
33	Class 1: connecting Kloof to Nelson Mandela
34	Class 3: Nelson Mandela (from Bosch until R24)
35	Class 3: Heystack/Kloof continuing to R24
36	Class 4: President Mbeki and Beyers Naude north-east toward the CBD (wayfinding routes to the CBD)
37	Class 4: R104 toward Nelson Mandela
38	Class 4: Bosch (from Buiten intersection) south-east into CBD

Table 11-9: Other Transport Planning Projects

No	Description	Project Type
1	Alternative Agency/Department	Institutional and Organisational Projects
2	Update non-motorised transport strategy	Public Transport Projects
3	Special Needs Transport Strategy	Public Transport Projects
4	A pedestrian & sidewalk strategies particularly at public transport facilities	Public Transport Projects
5	A dangerous goods movement Strategy	Public Transport Projects
6	Scholar Transport Strategy (Existing & Future developments)	Public Transport Projects
7	School Parking & Drop-off Guidelines	Public Transport Projects
8	Update CPTR	Public Transport Projects
9	Road Safety Plan	Transport Infrastructure Strategy Projects
10	Pavement Management System (Basic)	Transport Infrastructure Strategy Projects
11	Pavement Management System (GIS)	Transport Infrastructure Strategy Projects
12	Routine Maintenance Management System	Transport Infrastructure Strategy Projects
13	Traffic Signal Co-ordination Strategy and Plan	Travel Demand Management Projects
14	Update Household Travel Survey	Travel Demand Management Projects
15	Intelligent Transportation Strategy (ITS)	Travel Demand Management Projects
16	Feasibility Study Freight vehicle holding & overnight facilities	Freight & Logistics
17	Develop bicycle (master) plan	Public Transport Projects
18	Feasibility Study Bike Scheme	Public Transport Projects
19	Develop MNT Master Plan	Public Transport Projects
20	Develop (UA) Universal Access Guidelines	Public Transport Projects

21	Feasibility Study - Footpaths near PT facilities	Public Transport Projects
22	Design & Implement Footpaths	Public Transport Projects
23	Update Parking Study (Expand to all areas)	Public Transport Projects
24	Feasibility Study PT Modal Interchanges	Public Transport Projects
25	Update Freight Study (Expand to all areas)	Public Transport Projects
26	Develop A VISSUM model for the Rustenburg Road Master Plan	Demand Modelling
27	Develop Bus & Taxi Shelter Policy	Public Transport Projects
28	Develop Traffic Calming Policy	Public Transport Projects
29	Implementation of the Wayleave policy	Transport Infrastructure Strategy Projects

The following **Table 11-10** shows the projects that were listed in IDP.

Table 11-10: Projects that were listed in IDP

Issues from IDP summary
Intersections not complying with the South African Road Traffic Signs Manual (SARTSM).
At-grade crossing of Dr Moroka Drive with the railway line.
A significant backlog of paved roads exist in some areas, such as Phokeng, Boitekong and Thlabane.
A large number of four-way stop controlled intersections are present in Rustenburg. The traffic control at these intersections might be improved, as four-way stop control is probably ineffective and drivers tend not to adhere to the control measure.
Dr Moroka and Helen Joseph Drive Interchanges with the N4 freeway only have ramps to and from the east. This leads to insufficient accessibility from the west as well as U-turn movements on the N4 freeway, which presents an important safety hazard.
Insufficient conveniently located parking in the Rustenburg CBD.
There is a high demand for land use development on Beyers Naude Drive in the southern perimeter of the Rustenburg CBD. The road has insufficient right turn lanes and access. Management is required to ensure safe and efficient access to the various adjacent properties.
Road Master Planning is not available in a number of areas. This leads to insufficient guidance with new development applications, especially where sufficient road reserve requirements need to be specified. A road hierarchy plan is also required to address these issues.
Absence of an Access Management Policy for RLM.

11.5 Funding

Various sources of funding are available to Municipalities these include:

- Public Transport Infrastructure and Systems Grant (PTISG) from National Treasury
- Medium Term Revenue and Expenditure Framework (MTREF) Budget
- Public Transport Infrastructure System Funding Allocations (PTISF)
- Capital Replacement Reserve (CRR)
- Division of Revenue Act/ Bill (DORA)
- Public Transport Operations Grant (PTOG)
- Municipal Infrastructure Grant (MIG)

Municipalities are required to draw up a business plan for submission to the Department of Transport. This business plan is used as a motivational tool for funding from the PTISG from the National Treasury through the Department of Transport.

Various source of funding are discussed below:

(a) **Internal Funding**

- Medium Term Revenue and Expenditure Framework (MTREF) Budget

  Internal Funding as guided by the Municipal Finance Management Act (MFMA). Changes to current budget allocations are only possible by means of the Adjustments Budget process which is performed mid-term of a particular financial year.

- Public Transport Infrastructure System Funding Allocations (PTISF)

  This is a development fund which identifies projects with a focus to achieve specific DoT objectives. These projects are approved by DoT based on a project submission but the Local Municipality which is then evaluated on merit. It is reflected in the MTREF budget.

- Capital Replacement Reserve (CRR)

  The CRR allocation by them Municipal to the departments to either implement, upgrade and replace infrastructure and equipment in departments are reflected in the MTREF budget approval.

(b) **External Funding**

High-quality, car-competitive public transport systems are funded through the conditional Public Transport Infrastructure and Systems Grant (PTISG) from National Treasury. The grant was approved for 12 identified cities by Cabinet in 2007 and Rustenburg is one of the 12 cities. Funding is provided by National Treasury through the Department of Transport.

- Division of Revenue Act/ Bill (DORA)

  The division of Revenue Bill (Gazette No 35022 dated 7 February 2012) identifies the individual municipality's equitable share of the national revenue which is allocated to municipalities for implementation during the 2014/2015 financial years. The total allocated to the Local Municipality, might consist a portion allocation to the district and the province

- Public Transport Operations Grant (PTOG)

  Transport Agency or entity Funding is allocated annually to the municipality by means of a multiyear programme by the Division of Revenue Act. This funding is allocated to the provincial government to oversee and manage the planning of PT routes, oversee the

tendering process, and controlling and monitoring of the provision of subsidized Public Transport services.

- Municipal Infrastructure Grant (MIG)

  The MIG funding received from the Department of Public and Local Government based on the approval of submissions of approved project business plans. A portion is assigned to the Province, then to the District and to the Local Municipality. Examples are bridges, pedestrian bridges and bus routes. The following **Table 11-11** shows the MIG projects for prioritisation.

Table 11-11: MIG Projects for Prioritisation

No	Project name	Budget 2015/2016	Budget 2016/2017	Budget 2017/2018
	Roads And Stormwater	**105 300 000**	**125 861 355**	**126 000 000**
1	Meriting Roads & Stormwater - Ward 18	5 000 000	5 000 000	5 000 000
2	Boitekong Roads & Stormwater - Ward 19	5 000 000	5 000 000	5 000 000
3	Boitekong Roads & Stormwater - Ward 21	5 000 000	5 000 000	5 000 000
4	Boitekong Roads & Stormwater - Ward 20	5 000 000	5 000 000	5 000 000
5	Ikemeleng Bulk Roads Construction Phase 3	4 000 000	5 000 000	5 000 000
6	Tsitsing Roads & Stormwater Drainage	5 000 000	9 000 000	9 000 000
7	Freedom Park Roads & Stormwater Drainage	5 000 000	9 000 000	9 000 000
8	Marikana Roads & Stormwater Drainage	5 000 000	9 000 000	9 000 000
9	Upgrading & Construction Of Internal Access Roads In Mafika And Seritube	3 500 000	-	-
10	Upgrading & Construction Of Internal Access Roads In Kanana	5 000 000	9 000 000	9 000 000
11	Tlaseng Roads & Stormwater Drainage Phase 3	5 000 000	9 000 000	9 000 000
12	Phatsima Roads & Stormwater Drainage Phase 3	5 000 000	9 000 000	9 000 000
13	Mafenya Internal Roads & Stormwater Upgrading	5 000 000	8 000 000	9 000 000
14	Chaneng Internal Roads & Stormwater Upgrading	5 000 000	9 000 000	9 000 000
15	Rasimone Roads & Stormwater Drainage	5 000 000	9 000 000	9 000 000
16	Ward 5 Roads & Stormwater Upgrading	9 900 000	922 374	-
17	Ward 6 Roads & Stormwater Upgrading	9 900 000	1 938 981	-
18	Maumong Roads & Stormwater	5 000 000	9 000 000	10 000 000
19	Robega Roads & Stormwater	8 000 000	9 000 000	10 000 000
	Sewerage Reticulation	**23 500 000**	**40 380 000**	**57 867 249**
20	Lethabong 27& 28 Internal Sewer Reticulation	2 000 000	1 000 000	1 000 000
21	Macharora Vip Toilets	5 000 000	7 000 000	6 867 249
22	Upgrading Of Boitekong Wastewater Treatment Works	16 500 000	32 380 000	50 000 000
	High Mast Lights	**54 827 675**	**30 690 834**	**33 477 741**
23	Mosenthal/Ikageng High Mast Lights	4 000 000	5 590 834	8 477 741
24	Tlapa High Mast Lights	4 500 000	-	
25	Vergenoeg High Mast Lights	600 000	-	

26	Lekojaneng High Mast Lights	1 500 000	-	
27	Rankelenyane Mast Lights	5 700 000	-	
28	Thabaneng Mast Lights	5 000 000	4 000 000	-
29	Seritube High Mast Lights	3 000 000	-	
30	Kanana High Mast Lights	5 000 000	5 000 000	15 000 000
31	Mafika High Mast Lights	3 527 675	-	
32	Lesung High Mast Lights	3 000 000	300 000	
33	Mabitse High Mast Lights	4 000 000	-	
34	Maumong High Mast Lights	5 000 000	4 200 000	-
35	Rasimone High Mast Lights	5 000 000	1 600 000	-
36	Robega High Mast Lights	5 000 000	10 000 000	10 000 000
	Waste Management	**5 000 000**	**1 000 000**	**-**
37	Construction of Transfer Station - Marikana	5 000 000	1 000 000	-
	Sports Facilities	**8 000 000**	**7 000 000**	**-**
38	Development of Boitekong Sports Facility	8 000 000	7 000 000	-
	Pmu Admin Fees	6 115 325	6 343 811	6 722 010
		202 743 000	**211 276 000**	**224 067 000**

12 Stakeholder Consultation

The process of stakeholder consultation and public participation is a pre-condition for the final adoption and the approval of the CITP document. The stakeholder consultation processes that were conducted as part of the CITP process were the following:

- Consultation with general public (Household Travel Survey Data, 2012);
- Consultation with community (stakeholder consultation meetings);
- Consultation with District authorities;
- Consultation with Provincial authorities.

Stakeholder consultation plays an important role throughout the various phases of the transport planning process, including:

- Formulation of Transport Vision Statements, Goals and Objectives;
- Co-Ordination with Rustenburg CITP Project Team;
- Collection of the relevant documentation on transport planning and strategies, including freight, parking, intermodal facilities, RRT, town planning and local developments, operations of the PRE office and others; and
- Listing of the planning projects and formulation of the prioritisation criteria and process.

In order to meet the minimum requirements, the following is a list of the stakeholders in Rustenburg that were additionally consulted:

- Operator Associations (Minibus-Taxi and Bus) via the RRT Forums;
- Passenger Organizations via the RRT Forums; and
- Special Interest Groups via the RRT Forums

The data and information that was collected during this project are provided in appendices of this report. There were number of stakeholder meetings as summarised below:

- 7 Progress meetings (RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg in 2014: 7th June, 4th July, 8th August, 13th October, 13th November and 10th December and in 2015: 20th April);
- Workshop on CITP Chapter 1 (RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg on 5th of June 2014);
- Workshop and skills transfer between town planning teams (GIBB's Sunninghill Office);
- Roads department consultation on Provincial and District Road Master Plans (NW Province Department of Works and RRT on 9th of February 2015);
- Consultation with ICS on RLM Road Master Plan (RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg on 9th of February 2015);
- Consultation with the PRE on licenses (PRE Thlabane Offices on 23rd of April 2015); and
- Consultation with Phatwe Consulting Engineers on local developments in the area.

Detailed list of the stakeholder meetings is given in **Annexure I**.

Public participation process (PPP) will be done once the final report is approved. It will be done in accordance with the Department of Transport's CITP Minimum Requirements (DoT, 2007) which states that public participation should be comprehensive and all stakeholders should be involved in the development of the CITP. Also, it will be done in accordance with the Council's requirements.

13 References

1. Bojanala Platinum District Municipality: IDP 2012/17

2. Rustenburg Local Municipality Integrated Transport Plan (ITP) (2007-2012) February 2008

3. Rustenburg Household Travel Survey Report February 2012

4. Sustainable Road Freight Distribution Policy First Draft - October 2013

5. Jan 2013 Draft NMT Policy and Concept Plan RRT

6. Bojanala BPDM Non-Motorised Transport Master plan 2012/13

7. Chapter 4 Bojanala Bus Operations Evaluation

8. Chapter 5 Thari Bus Operations Evaluation

9. BPDM_Cadastrial

10. Integrated Rapid Transport Network (lRPTN) for Rustenburg Technical Report Demand Modelling, Mobility Analysis, and Network Planning Preliminary Operational Plan Update 2011/12

11. Integrated Rapid Transport Network (lRPTN) for Rustenburg Operations and Technology Workstream (OTW) RRT Minimum Scenarios with Sub-Phasing June 2014

12. Parking study Rustenburg CBD 7 March 2012 - SSI

13. Draft Universal Design Access Plan Version 2 Thursday 10 January 2013 Prepared by Guy Davies

14. Rustenburg Spatial Development Framework (2010 Review) Final Draft June 2010 K2M Technologies (Pty) Ltd

Annexures

Annexure A

CPTR

Annexure B

Road Master Plan

Annexure C

Review of BPDM OLS and RATPLAN

Annexure D

Review of Freight Policy

Annexure E

Review of Parking Study

Annexure F

Review of NMT and UA Policies

Annexure G

Prioritisation of Projects

Annexure H

Township Applications

Annexure I

Stakeholder Consultation

Subject	Location	Required Attendees	Start	End
CITP kick-off Meeting	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	(wbouwer@gibb.co.za); Obed Moleele; Marks Rapoo; Kagiso Maakoe; Keabetswe Leseyane; Amogelang Kgoathe	Wed 23/04/2014 10:00 AM	Wed 23/04/2014 12:30 PM
Inception Meeting for the CITP Contract	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	(wbouwer@gibb.co.za); Amogelang Kgoathe; Marks Rapoo; Obed Moleele; Keabetswe Leseyane; Itumeleng Maxes; Itumeleng Maxes	Mon 12/05/2014 10:00 AM	Mon 12/05/2014 01:00 PM
Chapter 1 - Rustenburg CITP	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Patrick Maruping; Patrick Maruping; Patrick Maruping; Seth Kgetsi	Thu 05/06/2014 09:00 AM	Thu 05/06/2014 12:00 PM
CITP Progress Meeting - Progress to date End June	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Patrick Maruping; Patrick Maruping; Patrick Maruping; Johannes Meintjies	Mon 07/07/2014 10:00 AM	Mon 07/07/2014 12:00 PM
Co-Ordination Meeting with Rustenburg CITP Project Team	Namela Boardroom	Pauline Froschauer; Pauline Froschauer; Pauline Froschauer; Zanele Masango	Tue 15/07/2014 11:30 AM	Tue 15/07/2014 12:30 PM
Rustenburg CITP - Freight & Parking Study	GIBB Office in Pretoria	Patrick Maruping;	Wed 30/07/2014 09:00 AM	Fri 01/08/2014 04:00 PM
CITP Progress Meeting - End July	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Patrick Maruping; Patrick Maruping; Patrick Maruping; Johannes Meintjies	Mon 04/08/2014 10:00 AM	Mon 04/08/2014 12:00 PM
Intermodal Facilities in Rustenburg (RRT)	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Neo Kutama; '; Louise Samuel; Louise Samuel; Louise Samuel;	Thu 28/08/2014 12:00 PM	Thu 28/08/2014 02:00 PM
CITP Progress Meeting - End Aug	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Patrick Maruping; Patrick Maruping; Patrick Maruping; Johannes Meintjies	Mon 08/09/2014 10:00 AM	Mon 08/09/2014 12:00 PM
CITP Progress Meeting - End Sept	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Patrick Maruping; Patrick Maruping; (skgetsi@gibb.co.za); Johannes Meintjies; Carl Erasmus	Mon 13/10/2014 10:00 AM	Mon 13/10/2014 12:00 PM

Subject	Location	Required Attendees	Start	End
CITP Progress Meeting - End Oct	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Patrick Maruping; Patrick Maruping; (skgetsi@gibb.co.za); Johannes Meintjies; Olebogeng Motitswe (olebogeng.phatwe@telkomsa.net)	Thu 13/11/2014 10:00 AM	Thu 13/11/2014 12:00 PM
CITP Progress Meeting - Meeting with Roads & Stormwater	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Patrick Maruping; Patrick Maruping; (skgetsi@gibb.co.za); Johannes Meintjies; Itumeleng Maxes; '; Olebogeng Motitswe	Wed 10/12/2014 11:00 AM	Wed 10/12/2014 02:00 PM
Nortaco - RLM Meeting	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Nortaco	Wed 28/01/2015 12:00 AM	Thu 29/01/2015 12:00 AM
Rustenburg Planning	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Urban Planning Office	Fri 30/01/2015 12:00 PM	Fri 30/01/2015 01:00 PM
CITP & Freight Study	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Obed@rustenburgrapidtransport.co.za	Fri 30/01/2015 01:30 PM	Fri 30/01/2015 02:30 PM
NW Province, RLM, SANRAL Budgets	NW Province Department of Works and RRT	Patrick Maruping (patrick@rustenburgrapidtransport.co.za); Olebogeng Motitswe	Mon 09/02/2015 10:00 AM	Mon 09/02/2015 01:00 PM
NW Province, RLM, SANRAL Budgets	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	(we@epsrtb.co.za); (wbouwer@gibb.co.za); Prediction Mongae; (johannes.meintjies@gmail.com); Itumeleng Maxes; Obed Moleele; Keabetswe Leseyane	Mon 09/02/2015 11:30 AM	Mon 09/02/2015 01:00 PM
CITP Progress	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	'; Prediction Mongae; Prediction Mongae; '; Obed Moleele; Itumeleng Maxes; Itumeleng Maxes; Keabetswe Leseyane; '; '; Dragana Valjarevic (dvaljarevic@gibb.co.za)	Mon 20/04/2015 10:00 AM	Mon 20/04/2015 12:00 PM
Information on OLS	Tlhabane Offices	Patrick Maruping; mkgobokoe@nwpg.gov.za; Obed Moleele; ''Willie Bouwer' (wbouwer@gibb.co.za)'; Itumeleng Maxes; odiratsagae@nwpg.gov.za	Thu 23/04/2015 10:00 AM	Thu 23/04/2015 11:00 AM
Draft Comprehensive Integrated Transport discussions	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Prediction Mongae; mmami motsisi; Mpho Hlaoli; Anthony oor; obed kgosiemang; Ronnette Barnard; Kagiso Maakoe; Keabetswe Leseyane; Duran Dube; Amogelang kgoathe; '; '; '	Mon 25/05/2015 10:30 AM	Mon 25/05/2015 02:30 PM

Subject	Location	Required Attendees	Start	End
CITP draft report presentation	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Prediction Mongae; mmami motsisi; Mpho Hlaoli; Anthony oor; obed kgosiemang; Ronnette Barnard; Kagiso Maakoe; Keabetswe Leseyane; Duran Dube; Amogelang kgoathe;	Tue 02/06/2015 10:30 AM	Tue 02/06/2015 02:30 PM
RLM Update Draft CITP	RRT Project Office-Waste Management Depot, 156 Bethlehem Drive, Rustenburg	Obed Moleele (omoleele@rustenburg.gov.za); Patrick Maruping (pmaruping@rustenburg.gov.za); '; Dragana Valjarevic (dragana.valjarevic@gmail.com)	Wed 08/07/2015 10:00 AM	Wed 08/07/2015 12:00 PM

Public participation process will be done according to Council requirements.

DOCUMENT CONTROL

FORM IP180_B

CLIENT	:	Rustenburg Local Municipality
PROJECT NAME	:	Rustenburg CITP 2014 – 2019 **PROJECT No.** : J34041
TITLE OF DOCUMENT	:	Rustenburg CITP 2014 – 2019: Final CITP
ELECTRONIC LOCATION	:	P:\J34041 Rustenburg CITP\G_Outgoing Reports\Draft CITP Report\J34041 - Rustenburg CITP Final Report October 2015.docx

	Approved By	**Reviewed By**	**Prepared By**
ORIGINAL	NAME **Johan De Bruyn**	NAME **Lize de Beer / Willie Bouwer**	NAME **Dragana Valjarevic / Willie Bouwer**
DATE **October 2015**	SIGNATURE	SIGNATURE	SIGNATURE

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DATE	SIGNATURE	SIGNATURE	SIGNATURE

	Approved By	**Reviewed By**	**Prepared By**
REVISION	NAME	NAME	NAME
DATE	SIGNATURE	SIGNATURE	SIGNATURE

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