UTHUNGULU

Uthungulu District Municipality
Uthungulu Distrik Munisipaliteit
Umasipala Wesifunda Waso Thungulu

April 2005

Joint Venture between:

ARUP

UWP CONSULTING

Enhancing the Quality of Life

uThungulu District Municipality

uThungulu ITP

FINAL

uThungulu District Municipality

uThungulu Integrated Transport Plan

April 2005

Arup (Pty) Ltd
635 Ridge Road, Overport, 4001, P.O. Box 37002, Overport, 4067
Tel +27 031 2087171; Fax +27 031 2097072
www.arup.com
UWP Consulting (Pty Ltd
University House, Eton Office Park, Harrison Ave, Private Bag X66
Bryanston, 2021, Tel +27 11 709-8426; Fax 086 671 4617
www.uwpweb.co.za

ARUP

Document Verification

Job title	uThungulu ITP		Job number SA 0047
Document title	UThungulu Integrated Transport Plan		File reference
Document ref			

Revision	Date	Filename	ITP Draft.doc		
Draft 1	30/11/04	Description	First draft		
			Prepared by	Checked by	Approved by
		Name	F Slabbert		
		Signature			
Draft 2	14/02/05	Filename			
		Description	Improved Draft		
			Prepared by	Checked by	Approved by
		Name	F Slabbert / T le Roux		
		Signature			
Draft 3	31/03/05	Filename			
		Description	Final Draft		
			Prepared by	Checked by	Approved by
		Name	F Slabbert / T le Roux		
		Signature			
Final	14/03/05	Filename			
		Description	uThungulu District Municipality Integrated Transport Plan		
			Prepared by	Checked by	Approved by
		Name	F Slabbert / T le Roux	F Slabbert	F Slabbert
		Signature			

Issue Document Verification with Document ✓

CONTENTS

		Page
ABBREVIATIONS		**1**
1.	**PREAMBLE AND INTRODUCTION**	**2**
1.1	Background	2
1.2	Objective of the ITP	4
1.3	Scope of the ITP	4
1.4	Study Approach	4
1.5	Chapter Overview	6
1.6	Methodology	7
2.	**LAND TRANSPORT VISION, GOALS AND OBJECTIVES**	**9**
2.1	Introduction	9
2.2	Vision	9
2.3	Goals	9
2.4	Objectives	10
3.	**SPATIAL FRAMEWORK**	**12**
3.1	Demographics	12
3.2	Settlements and Urbanisation	12
3.3	IDP Linkage	14
3.4	Land Use Information	14
3.5	Physical Attributes	14
3.6	Social Facilities	17
4.	**LAND TRANSPORT STATUS QUO**	**21**
4.1	Public Transport Facilities Status Quo	21
4.2	Road Infrastructure and Network Status Quo	30
4.3	Public Transport Services according to PTC Status Quo	32
4.4	Freight and Private Transport Status Quo	41
4.5	Institutional Structures Status Quo	48
5.	**NEEDS ASSESSMENT**	**54**
5.1	Public Transport Demand	54
5.2	Operating License Strategy (OLS)	61
5.3	Rationalisation Plan (RatPlan)	65
5.4	Needs Assessment Summary	65
6.	**TOWARDS PUBLIC TRANSPORT PROPOSALS**	**66**
6.1	Proposed Projects to create a State of Readiness	66
6.2	Proposed PT Facility Infrastructure Improvements	66
6.3	Proposed Road Infrastructure Improvements	69
6.4	Proposed PT Planning Studies	72
6.5	Preparation of Implementation Plans	74
7.	**PRIVATE TRANSPORT AND FREIGHT PROPOSALS**	**76**
8.	**STAKEHOLDER CONSULTATION**	**77**
8.1	Consultations and Workshops	77
9.	**PRIORITISED TRANSPORT PROPOSALS AND IMPLEMENTATION PROGRAMME**	**78**

10. FINANCIAL IMPLICATIONS 79

ABBREVIATIONS

CPTR	Current Public Transport Plan
DM	District Municipality
ITP	Integrated Transport Plan
KFA	Key Focus Area
KZN – DOT	KwaZulu Natal Department of Transport
LM	Local Municipality
NLTTA	National Land Transport Transition Act
OLS	Operating License Plan
PT	Public Transport
PTP	Public Transport Plan
RatPlan	Rationalisation Plan
DOT	National Department of Transport

Note:

Wherever there is reference to a figure, the figure number and description appear in the body of the Integrated Transport Plan.

Wherever there is reference to a map, the map number refers to the map in the appendix of the Integrated Transport Plan.

1. PREAMBLE AND INTRODUCTION

1.1 Background

Arup SA (Pty) Ltd and UWP Consulting (Pty) Ltd were appointed by the uThungulu District Municipality (uThungulu) to prepare an Integrated Transport Plan (ITP) for the whole uThungulu District. **Figure 1.1** and **Figure 1.2** illustrate the extent of the study area.

This ITP is based on the CPTR (Current Public Transport Record) for uThungulu that was completed in March 2003. The investigation period and preparing of the report span from December 2003 to February 2005. Items that need to be reviewed annually in the ITP are the PTP (Public Transport Plan), OLS (Operating License Strategy) and RatPlan (Rationalisation Plan).

In the past public transport was offered as a service regardless of the demand for the service in that specific area. The paradigm shift from public authorities recommending when and how the service will be offered based on the demand for public transport in a specific area has presented a different planning approach than before. Due to the changing nature of Public Transport in South Africa in recent years, the KwaZulu Natal Department of Transport (KZN-DOT) developed a planning approach to accommodate this shift.

The recent Public Transport surveys within uThungulu showed that approximately 15 350 daily public transport vehicle trips traverse more than 4 100 km roads with or without surfacing to bring more than 203 000 passengers per day to their various destinations within uThungulu. The assessment of the results of the surveys and the status quo of public transport in uThungulu are described in this ITP.

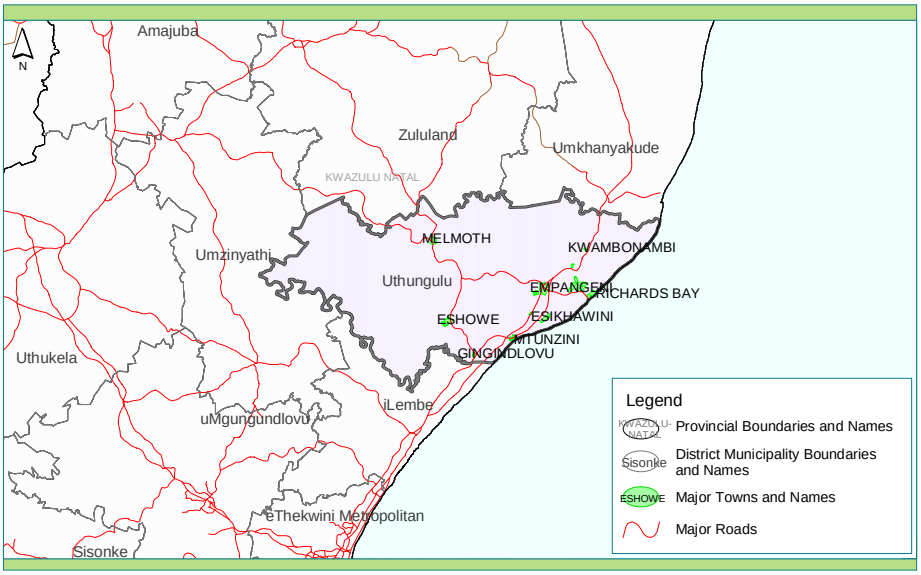
It is not uncommon to find that the existence and availability of detailed and up to date data such as freight, Non Motorised Transport (NMT), special category passengers (Learners and people with disabilities) within urban and rural areas are limited. The cost and resources required to collect and maintain comprehensive databases are high, and normally result in limited efforts to undertake these studies. All components of the ITP need to be reviewed annually and should include new information that becomes available.

Detailed freight data were limited in the preparation of the ITP of uThungulu. Chapter 3 on the Status Quo of Freight Transport in uThungulu is based on discussions and data received from the South African Port Operations regarding freight movement especially in the uMhlathuze area (Richards Bay and Empangeni) as well as other available information on freight movement in the rest of uThungulu. The available literature used for the assessment of the freight status quo is as follows:

- Freight Transport Data Bank for the Directorate Freight Transport: Department of Transport KZN
- Information on freight movements into and out of Richards Bay Harbour received from South African Port Operations
- Broad freight movement data generated from industrial activity centres within uThungulu such as timber, sugar cane and other related industries

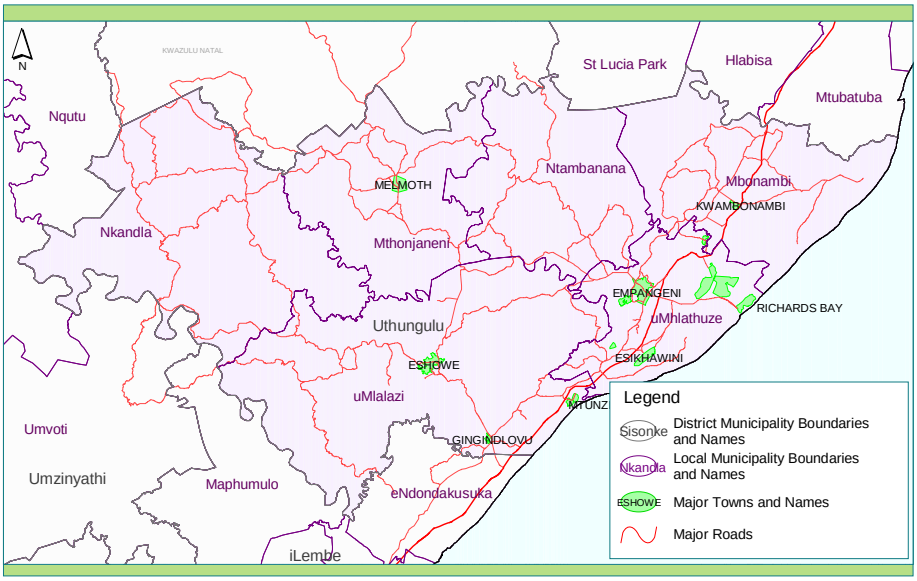
Proposals towards the improvement of public transport and control over freight transport are made in this ITP with some indication of the financial implications thereof. Due to a number of data gaps it is suggested that the whole ITP be revised in the next financial year.

Figure 1.1: Locality Map



Map 1 illustrates the general orientation of the study area.

Figure 1.2: Local Municipalities



Map 2 illustrates the boundaries of the local municipalities in uThungulu.

1.2 Objective of the ITP

The guiding objective for all planning in the province is to endeavour the minimization of cost of transport that is necessary to satisfy people's requirements for carrying out daily activities. The objective of this ITP can therefore be summarised as follows:

- Transport sector's contribution towards socio-economic growth and sustainability
- Refer to and distinguish between operational services, public transport facilities and road infrastructure and the management thereof
- Review existing and future land use frameworks in conjunction with subsequent Needs Analysis considering all Land Transport Modes and Facilities and the linkage/integration with the IDP process to ensure transport planning/land-use integration and integration into budget processes (MIG, Subsidies, municipal budget, etc.)
- Investigate the significance and importance to deal with NMT, special category passengers, and transport for the rural areas. These are also national and provincial objectives, contemplated in policies, the NLTTA and the Regulations of Part 7 of the Act.
- Future alternative, integrated, multi-modal Solutions should be developed and evaluated resulting in a preferred alternative to implement;
- Providing prioritised multi-modal Transport Proposals and an Implementation Programme.

These objectives are realistic but due to the data gaps not all will be achieved in this first ITP. This ITP complies with the minimum requirements contained in the Government Gazette: Regulation 7728 of 1 August 2003.

1.3 Scope of the ITP

This ITP aims at providing a strategic guideline document of all modes of transport within uThungulu to all stakeholders involved with Transport and to allow for the preparation of transport proposals and the implementation thereof. The CPTR for uThungulu was completed at the end of March 2003. This was the first CPTR for the area and was done according to the National requirements as published in the Government Gazette of 22 May 1998 under General Notice No. 847 of 1998. The information contained in this ITP forms the basis for future development planning related to Public and Freight Transport.

1.4 Study Approach

The National Land Transport Transition Act (NLTTA), Act 22 of 2000, requires that each planning authority, and in this case uThungulu, compile a package of plans to give effect to the provisions of the NLTTA. The implementation principles of the NLTTA are shown in Figure 4.17 and are discussed in section 4.5 of the ITP.

This ITP was developed from scratch and the OLS, RatPlan and PTP did not exist before this study. Due to substantial data gaps, specific project proposals are suggested to improve the overall quality of the ITP. It is therefore suggested that a close out be prepared to built on lessons learned through this project.

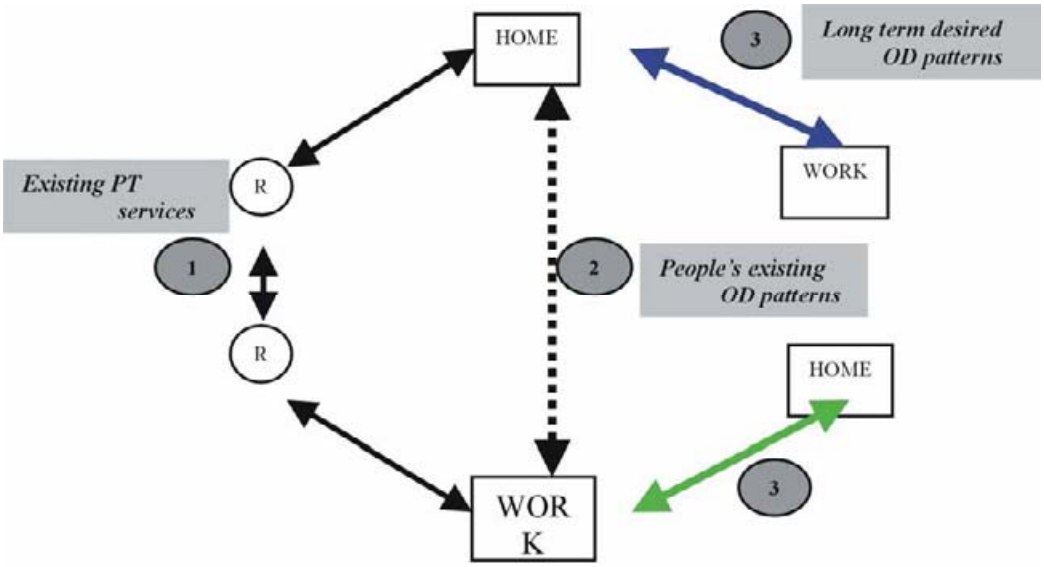
This document should be used as a guideline document to assist the DM in improving the Transport situation in uThungulu. The success of this document will be the responsibility of uThungulu.

The KZN-DOT has embarked on a process to provide a provincial framework for the implementation of these plans in a practical and consistent manner.

The guiding objective for all transport planning is "to endeavour to minimise the cost of transport that is necessary to satisfy people's requirements for carrying out activities." With this objective as background and using **Figure 1.3** to illustrate these principles the following applies:

- Actions taken in the short term should not conflict with / compromise long term plans as highlighted below:
- Transport is about moving people between Origin and Destination (O-D line 2);
- The actual pattern of movement (i.t.o. number of person trips between each O-D pair) will be a direct function of the pattern of land use development and the transport systems services provided;
- Before a long term movement pattern (number 3) can be established, it is necessary to start with the knowledge of the current movement pattern (number 1);
- This shows what people ARE doing at the moment and it provides the basis for identifying inefficiencies (primarily high costs) in the current pattern of land use development and transport services infrastructure; and
- Having identified these inefficiencies the land use and any other changes needed to increase efficiencies can be evolved.

Figure 1.3: The KZN-DOT Transportation Planning Process



To apply **Figure 1.3** to the ITP the whole process need to be taken into account. Private Transport however does not form part of this plan but should be considered in future plans as an improvement on this ITP.

The general purpose of the study is to gain an understanding of the public transport status quo and medium-term or current passenger desire lines (O-D needs). The study should incorporate generic policies developed at the provincial level. Specific policies relevant to the district municipalities can evolve depending on the outcome of the status quo assessment. The relevant generic policies are as follows:

Policy 1: Minimise trip lengths

Trip lengths are the "gaps" that have to be bridged and arise through the pattern of land-use development. Trip lengths can be minimised through land use interventions, public transport service improvements or appropriate infrastructure investments.

Matters arising: there is an obvious need to adjust/control land-use development. The main problem at present is that NLTTA and the various land-use development acts are not synchronised.

Policy 2: Encourage use of most cost-efficient mode mix

Different modes of transport are economically efficient at different patterns of demand. Different modes also have different levels of service to the public transport user. The provision of service needs to be optimised such that it cost efficient whilst still delivering on the service needs of public transport customers. Destructive competition between modes should be avoided but this need not necessitate that only one mode can provide service on a corridor.

Policy 3: Prioritise high LOS infrastructure

The prioritising of road infrastructure needs to take account of public transport (PT). Because of the high cost per unit length of roadways this is only feasible for a limited network and specifically to high PT usage elements of the transport system(s) - "track" and "terminals". The PTP should prioritise infrastructure investments, which will improve the viability of public transport.

Policy 4: Minimise Subsidies

Minimise needs for subsidy by encouraging development of conditions that are conducive to financial viable PT at an acceptable LOS.

1.5 Chapter Overview

The ITP is divided into several chapters and is summarised as follows:

Chapter 1: Introduction

This chapter provides an overview of the study, the study area and nature of services under consideration, objective of the study, the scope of the study and the study approach and methodology followed. This section also provides a background on previous work.

Chapter 2: Land Transport Vision, Goals and Objectives

The outcome of the public participation process yielded a Vision for Transport in uThungulu as well as goals and objectives.

Chapter 3: Spatial Framework

In Chapter 3 of the ITP, general information on the study area as well as demographic information, information on roads, local municipalities, land use, physical attributes, social facilities and public transport facilities are presented. The existing and future land use frameworks are considered and reviewed in conjunction with the subsequent needs analysis considering all land transport modes and facilities.

Chapter 4: Land Transport Status Quo

In this section of the ITP, land transport status quo based on the CPTR, and the following aspects relating to the Land Transport Service in uThungulu are presented:

- The analyses of operating licenses and subsidised public transport undertaken as part of the OLS and RatPlan;
- The development of a PTP.
- Private transport, freight, institutional structures and all transport modes are considered.

Chapter 5: Needs Assessment

The needs assessment is reviewed together with the existing and future land use frameworks and all land transport modes and facilities are considered. Candidate future alternative, integrated multi-modal solutions are developed and evaluated resulting in a preferred alternative to implement.

Chapter 6: Towards Public Transport Proposals

The minimum requirements prescribed in the NLTTA for an OLS, RATPLAN and PTP were applied to prepare the plans as part of the ITP. The public transport proposals are reviewed and the final public transport proposals are detailed in alignment with the preferred alternative.

Chapter 7: Private Transport and Freight Proposals

Private transport and freight proposals in alignment with the preferred alternative are detailed and include proposals with respect to institutional structures, freight and enforcement.

Chapter 8: Stakeholder Consultation

The extent of and the results of consultation with the operating licensing board, adjacent planning authorities, operators, commuters and the general public are described.

Chapter 9: Prioritised Proposals

The prioritised multi-modal transport proposals and implementation programme resulting from the above analyses are described for the next five years.

Chapter 10: Financial Implications

An indication of the financial implications is provided.

1.6 Methodology

The Terms of Reference received from uThungulu, the associated KZN-DOT guidelines and the requirements in the NLTTA 2000 states that consultants are responsible to assist both District and Local Municipalities with the following:

"*an analysis of planning requirements for current transport plans, an operating license strategy, rationalisation plan and a PTP in terms of the NLTTA, 2000 and the assessment of these requirements in terms of other existing or concurrent national and provincial legislation.*"

"*determination of the practical provincial and municipal implementation of planning requirements, including but not limited to the utilization of planning in the delivery of the Local Road Transportation Board,*" and

"*an investigation into the most cost-effective data collection and modelling methodologies to assist the Department with the practical implementation of planning requirements and development of an operating licensing strategy.*"

"*In addition to the principles states in the Act, the following principles apply to the preparation of ITPs-*

plans must pay due attention to the development of rural areas; and

transport for special categories of passengers must receive attention."

"*the ITP must take cognisance of the fact that rail is currently a national competency until devolved in terms of section 28 of the Act, and subsidised bus services is a provincial competency until devolved to transport authorities in terms of section 10(13)(f) of the Act.*"

"*The ITP must be synchronised with other planning initiatives and it must indicate how it is integrated into the municipal integrated development plans, the land development objective processes and the municipal budgeting process.*"

"*The preparation of the ITP must include the consultation and participation of interested and affected parties required for the preparation of Integrated Development Plans (IDPs)*"

The first step in the planning process was to set up a project management team. The project management team included officials from uThungulu and the six local municipalities as listed below and representatives from KZN-DOT as well as the National Department of Transport. The six local municipalities are:

- KZ 281 Mbonambi;
- KZ 282 uMhlathuze;
- KZ 283 Ntombanana;
- KZ 284 Umlalazi;
- KZ 285 Mtonjanemi, and
- KZ 286 Nkandla,

The consulting team was responsible for management of the process and ensuring continuous progress on the project.

Additional information relating to the road network and land use combined with public transport information collected through the CPTR provided the background for preparing the Status Quo report. Due to the number of public transport routes in uThungulu it was decided to develop Public Transport Corridors (PTC) thus reducing the number of Public Transport Routes for detailed investigation.

A detailed description of the methodology used to determine these PTC is provided in Section 4.3 of the ITP. The KZN-DOT developed delay and operational cost models that were to be used as part of the assessment of the public transport services in uThungulu and these were used for the assessment of the PT status quo.

2. LAND TRANSPORT VISION, GOALS AND OBJECTIVES

2.1 Introduction

The Department of Transport introduced the NLTTA (Act 22 in 2000) and the associated regulations to enable Local Governments and Planning Authorities to engage in preparing PTPs and ITPs to further PT within their areas. These planning authorities in turn are required to develop a Vision, Goals and Objectives relating to National and Provincial policy. This section of the ITP presents the Vision, Goals and Objectives of the Integrated Transport Plan.

Through the public Participation process (Chapter 8), the consultancy team developed the following Vision, Goals and Objectives for Land Transport within uThungulu. These were debated at the Project Steering Committee meetings and adopted for the ITP.

2.2 Vision

In order to work towards the same goal a clearly defined vision is needed to prepare an ITP. The following vision has been adopted during the ITP preparation process:

"*Implement a safe, reliable, effective and sustainable Transport Service which addresses the transport needs of the people, supports integrated development and is affordable to public transport users and government*"

2.3 Goals

To enable uThungulu to attain it's vision several goals were developed taking into account the packaging of subsidised services and the associated policy, the levels of service to be provided, the integration with land use development, addressing travel demand management and the modal integration of services where applicable, hence the following goals. These goals have been divided into four broad categories namely:

- Public transport infrastructure and policy;
- Planning and development;
- Road infrastructure; and
- Public transport demand and safety.

2.3.1 Goal 1: Public transport infrastructure and policy

"Improve and invest in public transport infrastructure based on the identified needs and develop a policy towards the funding and provision of public transport service"

2.3.2 Goal 2: Planning and development

"*Provide assistance and guidance to the planning authority with the implementation of the Integrated Transport Plan and ensure the integration with land use development*"

2.3.3 Goal 3: Road infrastructure

"*Improve the accessibility to the public transport service by investing in road infrastructure especially in rural and deep rural areas*"

2.3.4 Goal 4: Public transport demand and safety

"Ensure a safe, reliable, affordable and sustainable public transport service based on the public transport demand"

2.3.5 Goal 5: Funding strategy

"Commit sufficient funding to Public Transport Projects to ensure effective implementation of project proposals for sustainable Public Transport"

Objectives

In order to attain the above goals, objectives have been formulated and are also based on the four broad categories. These objectives are the following:

2.4.1 Public transport infrastructure and policy

Objective 1: Develop guidelines for public transport facilities based on passenger demand taking into account the available infrastructure and considering both Provincial and National Guidelines for proving public transport facilities.

Objective 2: Plan, design and implement public transport infrastructure based on these guidelines. The provision of public transport infrastructure will be based on the passenger demand at the different public transport facilities.

2.4.2 Planning and Development

Objective 3: Identify and agree to the role and responsibilities of all stakeholders regarding infrastructure provision, funding, policy development, operation and maintenance.

Objective 4: Assist local government with implementation of the PTP and ITP and ensure the integration with land use planning and future development.

Objective 5: Facilitate and implement the operation and rationalisation strategy developed by uThungulu to ensure safe, reliable, effective and efficient public transport service.

Objective 6: Agree on the scope and extent of additional studies required while improving and implementing the ITP.

Objective 7: Annual review of operating strategy and rationalisation plan and the re-prioritisation of identified projects and proposals.

2.4.3 Road Infrastructure

Objective 8: Conduct corridor studies to provide detail information on the current conditions of infrastructure and future demand for public transport.

Objective 9: Ensure continuous upgrading and maintenance of infrastructure to increase the accessibility to public transport service for all users in uThungulu.

2.4.4 Public Transport Demand and Safety

Objective 10: Promote proactive law enforcement at provincial and local government level to reduce illegal operations and improve road safety to all road users. Encourage the upgrading and maintenance of public transport vehicles.

Objective 11: Continuous revision of the OLS and RatPlan based on public transport demand to ensure public transport sustainability.

2.4.5 Public Transport Funding

Objective 12: Continuous revision of the Project Proposals and alignment with the IDP to ensure sustainable Public Transport implementation.

3. SPATIAL FRAMEWORK

This section of the ITP provides an overview of the study area in terms of general orientation, physical attributes, social facilities, public transport facilities and land use information. The study area is the uThungulu District Municipality comprising the six local municipalities as shown in **Figure 3.1**. These local municipal areas are:

- KZ 281 – Mbonambi Municipality – with a predominantly rural characteristic,
- KZ 282 – uMhlathuze Municipality – predominantly an urban characteristic,
- KZ 283 – Ntambanana Municipality – with a predominantly rural characteristic,
- KZ 284 – Umlalazi Municipality – with a predominantly rural characteristic,
- KZ 285 – Mtonjaneni Municipality – with a predominantly rural characteristic,
- KZ 286 – Nkandla Municipality – with a predominantly rural characteristic.

3.1 Demographics

The study area of uThungulu (DC28) comprising of six local municipalities and has the third highest population of all Districts in the KwaZulu-Natal province, namely (9% - 819 915) in KwaZulu-Natal after eThekwini Municipality (33% - 3 045 515) and Umgungundlovu (10% - 974 874). **Table 3.1** illustrates the demographic profile of each local municipality. The general demographic information for uThungulu as well as the breakdown of male and female respectively are presented. The census 2001 information is also given and the discrepancies between the two different sources of data can be seen. These figures are based on demographic information obtained from the Department of Water Affairs and Forestry's National Information System (DWAF NIS) 2001.

Table 3.1: Demographic Profile of uThungulu DM

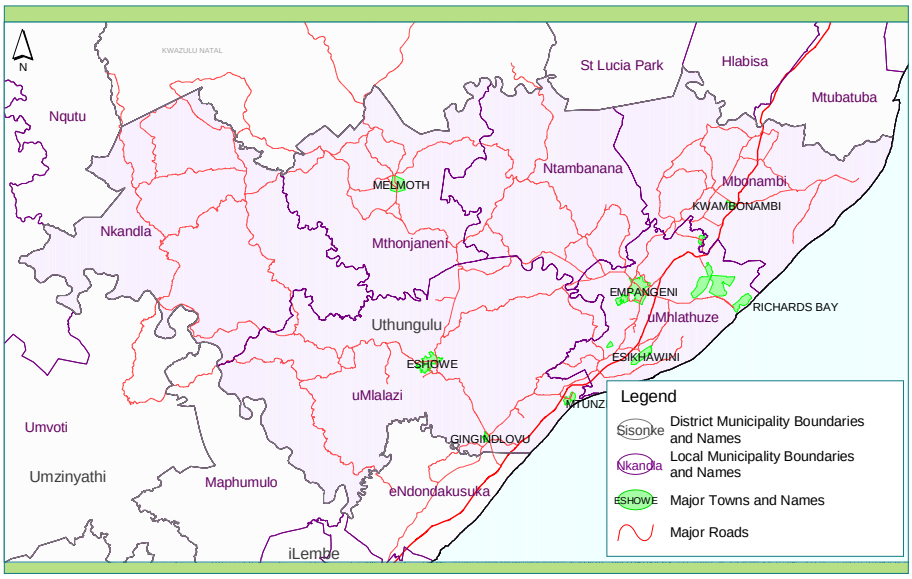
Local Municipality	Population (DWAF NIS 2001)	Population (Census 2001)	Percentage of the District	Male (%)	Female (%)	Average Monthly Income
Mbonambi	120 603	106 930	14,7	46,6	53,4	R1500 – R2000
uMhlathuze	212 156	289 186	25,9	48,5	51,5	> R 4500
Ntambanana	66 326	84 767	48,0	45,3	54,7	R1500 – R2000
Umlalazi	230 731	221 070	28,1	45,3	54,7	R1500 – R2000
Mtonjaneni	43 874	50 387	5,4	45,2	54,8	R1500 – R2000
Nkandla	146 225	133 598	17,9	43,1	56,9	R1500 – R2000
uThungulu	**819 915**	**885 938**	**100,0**	**45,7**	**54,3**	**R2000 – R3000**

It has been found that in the rural areas, people can hardly afford public transport. Far more than 50% of their disposable income is allocated to public transport.

3.2 Settlements and Urbanisation

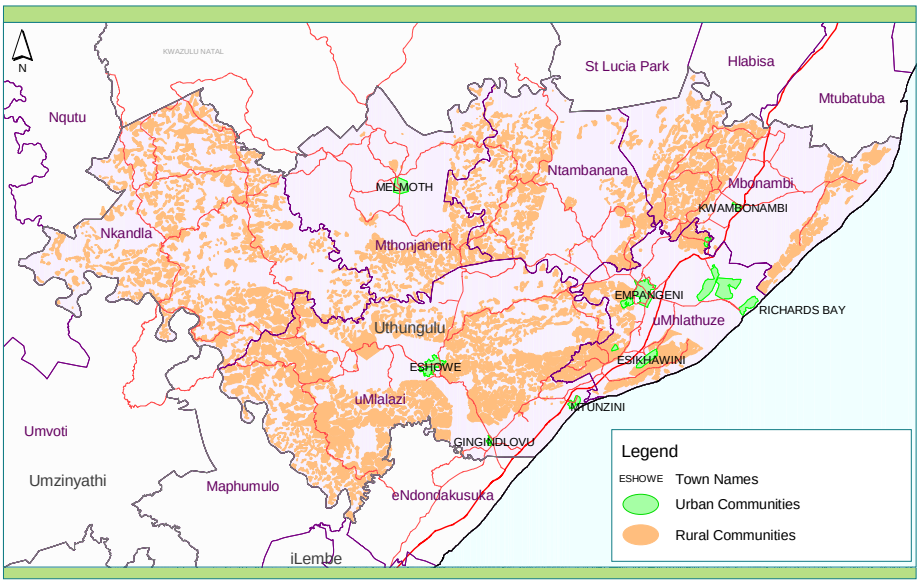
Informal settlement areas are scattered throughout uThungulu in 1 477 communities. These settlements account for 86,1% of the total population. Settlement patterns were largely determined by the traditional settlement pattern and former apartheid policies. There are large disparities in settlement concentration where Umlalazi is home to 28,1% of the population whilst Mtonjaneni is home to only 5,3% of the population. Levels of urbanisation are low at just 14% of the total uThungulu population. **Figure 3.2** overleaf shows the urban and rural settlement patterns for uThungulu.

Figure 3.1: Study area with local municipalities



Map 2 illustrates the six local municipalities.

Figure 3.2: Urban and Rural Settlements



Map 3 illustrates the urban and rural communities.

3.3 IDP Linkage

This IDP recognises the vision and broad goals of the IDP as one of the key tools of planning in uThungulu. The IDP identifies the responsibilities of the various spheres of government and other stakeholders and has specific sector plans that have an impact on the PTP and ITP processes. The IDP was therefore used as a starting point in the status quo assessment. Once the potential project proposals are developed through this study, feedback will be given to incorporate these into the IDP. Specific attention was given to the Spatial Development Framework (SDF) of the uThungulu and extensive use was made of the information. To ensure that the interpretation of information was correct, the IDP representatives were invited to be part of the Project Steering Committee. The development nodes and corridors are presented in **Figure 3.3** overleaf**.**

3.4 Land Use Information

Figure 3.4 overleaf illustrates the land use throughout uThungulu, indicating that most of the interior is covered by rural communities that practice predominantly subsistence agriculture. Forests cover large portions of the Mtonjaneni and Mbonambi LMs. Other land users include commercial farmers and mining companies (North of Richards Bay).

3.5 Physical Attributes

uThungulu has a wealth of natural assets, which makes the area very attractive for tourism as well as for agricultural development. Substantial forestry and agricultural activities are performed in an area that ranges from a flat to extreme mountainous area. The details are discussed below.

3.5.1 Topography

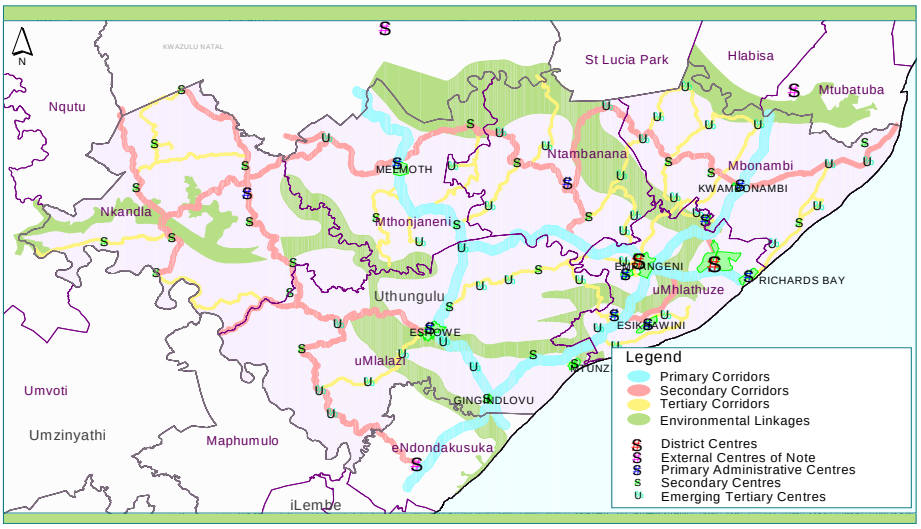
The topographic features of uThungulu are complex. The flat coastal region comprises of the Natal Coastal Belt and Zululand Coastal Plain with altitudes ranging between sea level and 450 metres. Adjacent to the coastal belt, the Lowveld of Zululand to the northeast and Eshowe Block to the west are characterised by hilly topography with altitudes increasing to 900 metres. The terrain becomes more extreme towards the north west of the study area and includes the Melmoth – Nkandla Block, the Babanango Block and Msinga – Qudeni Massif that are characterised by steep valleys with altitudes between 900 and 1400 metres. The Tugela River valley bounds the district on the southwest.

The topography of uThungulu is presented in **Figure 3.5**. Due to the extreme slopes (**Figure 3.6**) and the scarcity of formal roads in the area, many communities have to cover great distances and/or very steep slopes to get access to a road.

3.5.2 Rainfall and Temperature

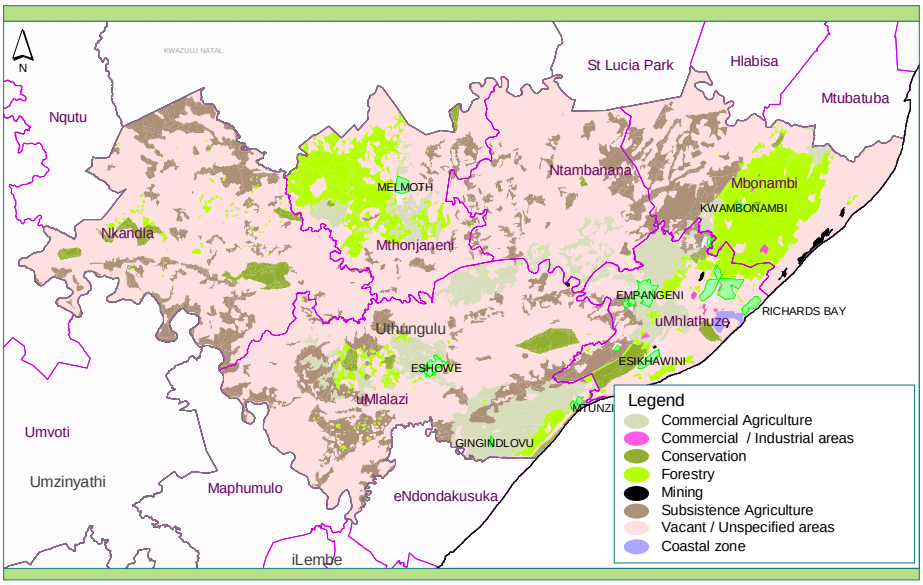
The climatic conditions of the district are very diverse due to the topography, which plays a major role in modifying rainfall and temperature. The mean annual rainfall decreases from an average of between 1200 mm – 1400 mm along the coastal region to an average of 650 mm inland. The rainfall along the mountains in Nkandla receives more than 1200mm per annum. Similarly, the mean annual temperatures decrease from 21°C along the coast to 16°C inland.

Figure 3.3: Development Nodes and Corridors



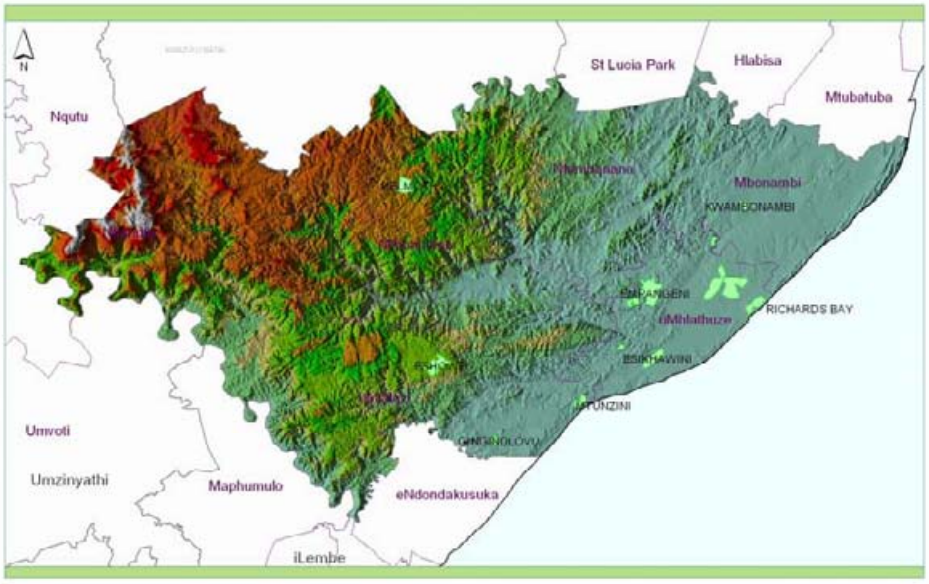
Map 4 identifies the development nodes and corridors.

Figure 3.4: Land Use Patterns



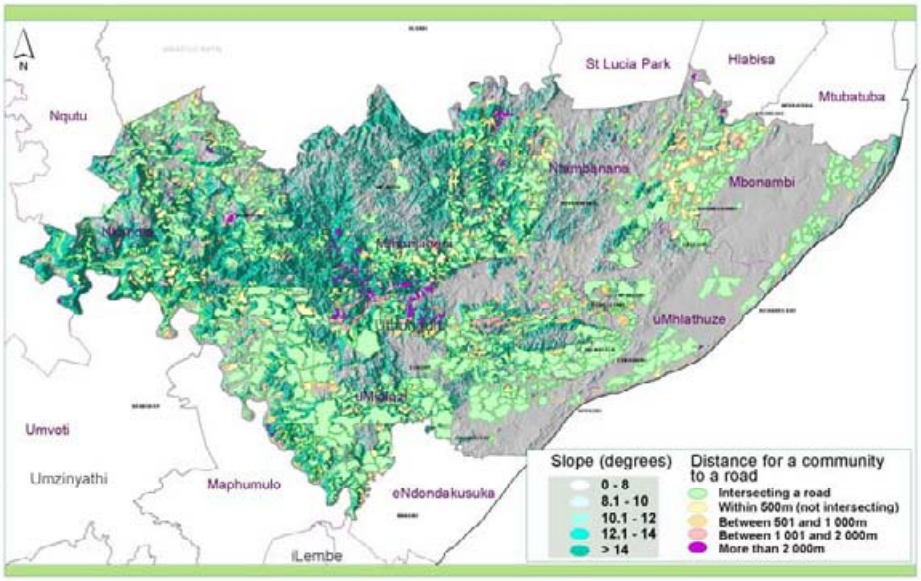
Map 5 illustrates the land use patterns.

Figure 3.5: Topography of uThungulu



Map 6 illustrates the topography.

Figure 3.6: Terrain Analysis - Slope



Map 7 illustrates the slope of the area.

3.5.3 Soil Conditions

The coastal belt areas include sand stone, shale and mudstone, which soils have a high agricultural potential. This high potential is however yielding poor road surface materials is used for gravel wearing course of when roads are in-situ roads. Low potential soils occur along the Tugela River as well as along portions of the Mhlatuze River. High rainfall, steep slopes and poor conditions result in extremely poor road conditions for unsurfaced roads. There are not proper and well-documented information available on quarries within uThungulu and there is little material available for road building.

3.6 Social Facilities

Facilities that are both community and public transport destinations include schools, clinics, police stations, pension payout points and voting stations. **Figure 3.7** to **Figure 3.11** show the respective location of the social facilities in uThungulu.

3.6.1 Schools

Schools are situated in or close to the numerous settlements in the district. Most of the access roads to the schools are in poor condition as presented in **Figure 3.7**.

3.6.2 Clinics

The rural communities are served by 37 clinics scattered throughout the uThungulu. The access roads leading to the majority of these clinics are in poor condition. See **Figure 3.8** for the location of the clinics and the condition of the relevant roads. Specialist medical services are provided mainly in the centre of Richards Bay and Empangeni.

3.6.3 Police Stations

See **Figure 3.9** for the location of the police stations. The conditions of the roads are not available and therefore not illustrated as in the case of schools and clinics.

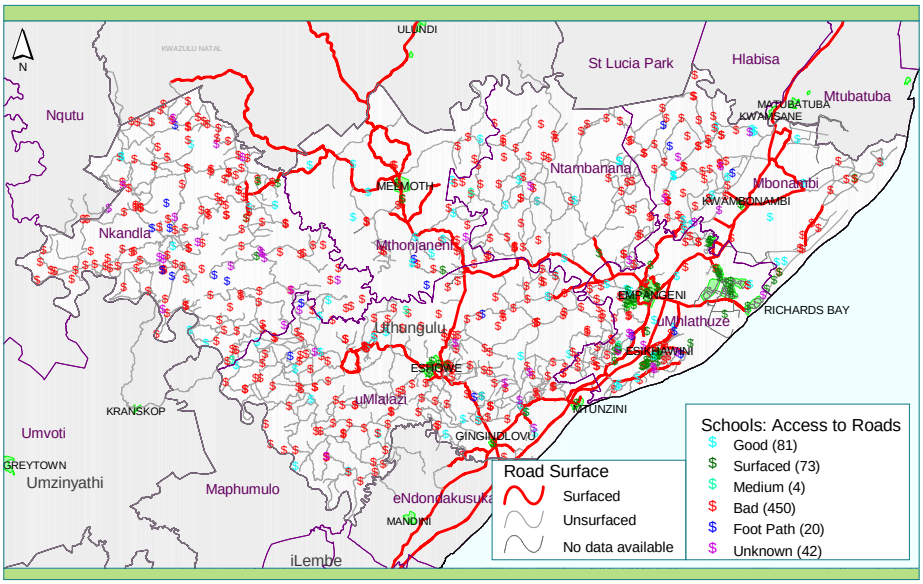
3.6.4 Pension Payout Points

See **Figure 3.10** for the location of the pension payout points. The conditions of the roads are not available and therefore not illustrated as in the case of schools and clinics.

3.6.5 Voting Stations

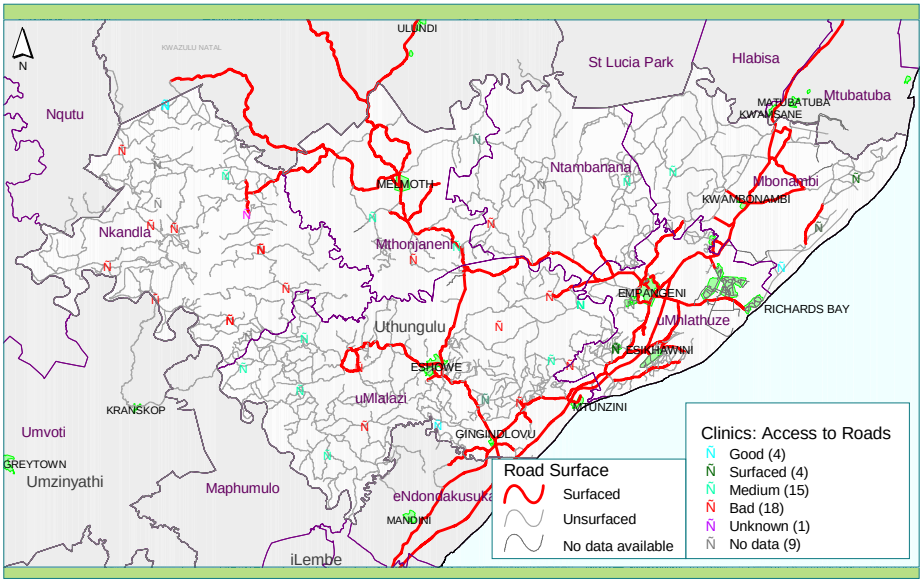
See **Figure 3.11** for the location of the voting stations. The conditions of the roads are not available and therefore not illustrated as in the case of schools and clinics.

Figure 3.7: Social Facilities – Schools



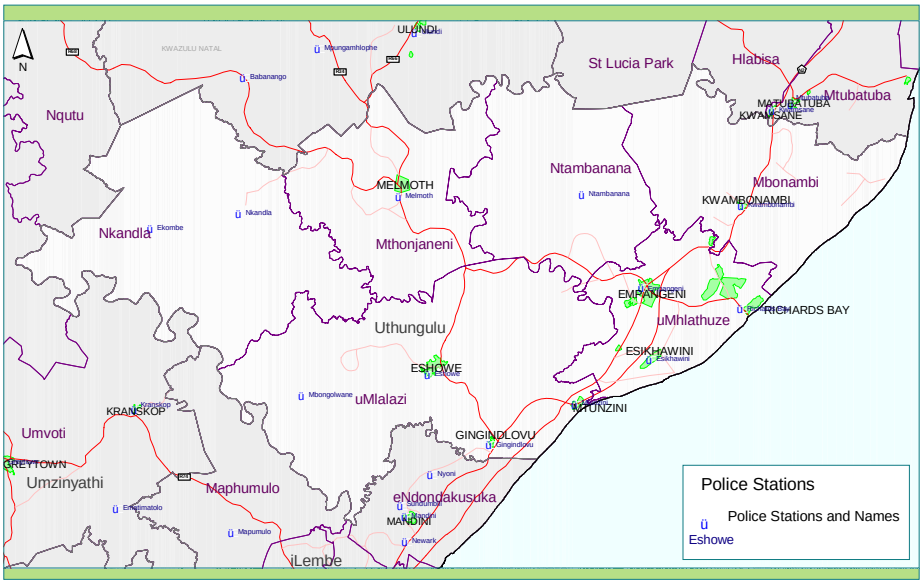
Map 8 illustrates the formal road access to the schools.

Figure 3.8: Social Facilities – Clinics



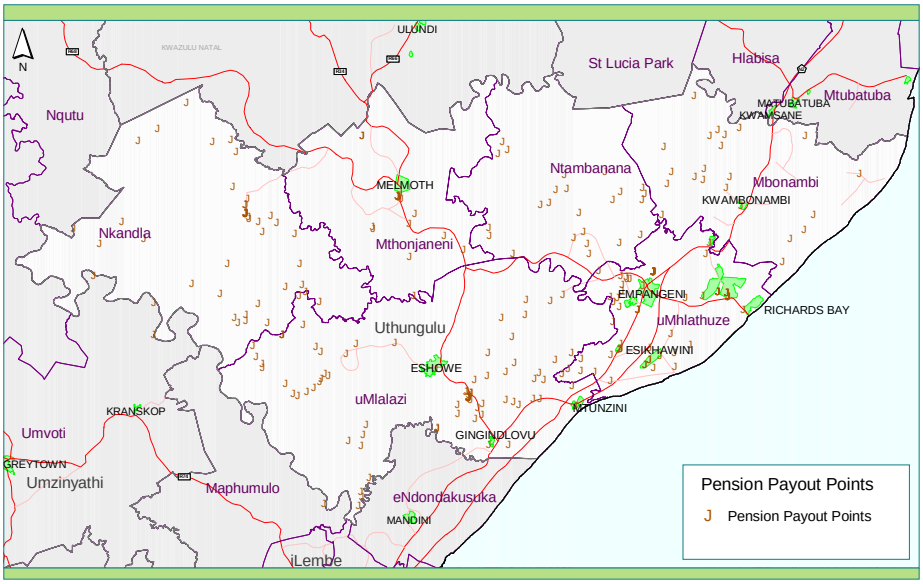
Map 9 illustrates the formal road access to clinics.

Figure 3.9 Social Facilities – Police Stations



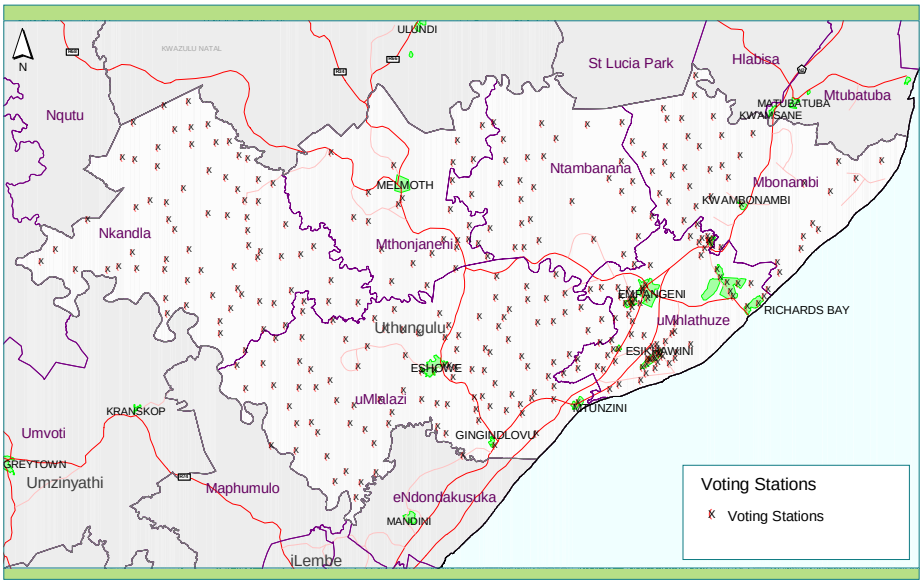
Map 10 shows the locality of Police Stations.

Figure 3.10 Social Facilities – Pension Payout Points



Map 11 shows the locality of Pension Payout Points.

Figure 3.11 Social Facilities – Voting Stations



Map 12 shows the locality of Voting Stations.

4. LAND TRANSPORT STATUS QUO

The Land Transport Status Quo, based on the CPTR done by uThungulu, describes the analyses of the operating licenses and subsidised public transport as part of the OLS, RatPlan and PTP. Private transport, freight, institutional structures and all public transport modes are included in the following format to form the Land Transport Status Quo.

- Public Transport Facilities Status Quo;
- Road Infrastructure and Network Status Quo;
- Public Transport Services according to PTC Status Quo
- Freight and Private Transport Status Quo;
- Institutional Structures Status Quo.

4.1 Public Transport Facilities Status Quo

This section of the ITP focuses on the road and public transport infrastructure, public transport provision and utilisation and public transport demand. The OLS and RatPlan form part of this section.

4.1.1 Public Transport Facilities and Operations

4.1.1.1 Public Transport Facilities

There are a total of 33 public transport facilities within the uThungulu with 21 minibus-taxi or bakkie ranks, five bus ranks and seven ranks that cater for both minibus-taxis and buses. The majority (19) of these facilities fall within the uMhlathuze area, while six are in Umlalazi, four in Mbonambi, two in Mtonjanemi and only one facility for both Nkandla and Ntambanana.

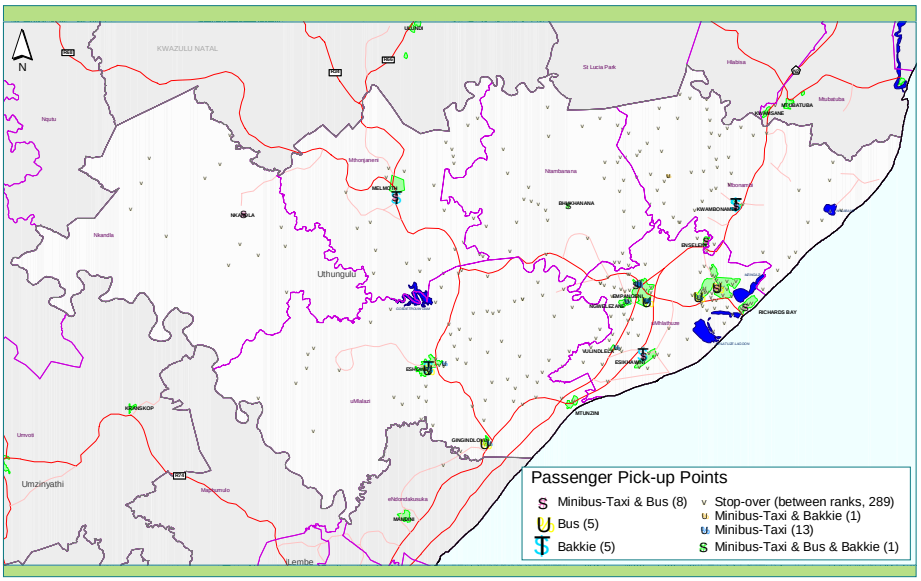
Detail information on the relevant Public Transport Facilities is available in the CPTR document and is not repeated in the ITP. The Public Transport Facility information was gathered using Global Positioning System (GPS) and is linked to the Geographic Information System (GIS). **Figure 4.1** shows the location of all the Public Transport Facilities in uThungulu. The following information on each Public Transport Facility was gathered:

- Facility Name;
- Status of the Facility; (Formal refers to ranks with paved surfaces and standard amenities e.g. Bay Plaza and Informal refers to ranks that has no paved surface of any amenities);
- Type of Facility;
- Ownership;
- Available Amenities and the Conditions; and
- Dimensions of each Facility.

4.1.1.2 Minibus-Taxi Ranks

The status and ownership of the Minibus-taxi facilities is shown in **Table 4.1**. The CPTR contains detailed information on each public transport facility. For the purpose of the ITP only the status, ownership and location of the facility has been included.

Figure 4.1: Public Transport Facilities



Map 13 illustrates the Public Transport Facilities.

Table 4.1: Status of Minibus-Taxi Facilities

Name	Status	Ownership	Location
Bay Plaza Richards Bay	Formal	Private	Off-street
Dondotha Rank	Formal	Private	Off-street
Kwambonambi Rank	Formal	Municipal	Off-street
Buccanana Rank	Informal	Municipal	On-street
Melmoth Rank	Formal	Municipal	Off-street
Gingindlovu Rank	Formal	Municipal	Off-street
Eshowe Rank	Informal	Municipal	Off-street
King Dinuzulu Rank	Formal	Municipal	Off-street
Alton Industrial Rank	Formal	Municipal	Off-street
Biyela Street Rank	Informal	Municipal	On-street
Old Eshowe Road Rank	Informal	Municipal	Off-street
KFC Informal Rank	Informal	Municipal	Off-street
Ngwelezane Rank	Formal	Municipal	Off-street
Zululand University Rank	Informal	Municipal	Off-street
LAC Rank	Formal	Municipal	Off-street
B Rank	Formal	Municipal	Off-street
A Rank	Formal	Municipal	Off-street
Lot 63 Rank	Formal	Municipal	Off-street
Esikhawini Rank	Informal	Private	Off-street
Nseleni Rank	Informal	Municipal	Off-street
Nkandla Rank	Formal	Municipal	Off-street

4.1.1.3 Minibus-taxi Trips and Passenger Volumes

The **Figures 4.2** and **4.3** refers to the Minibus-Taxi service frequency and daily number of Minibus-Taxi passengers transported.

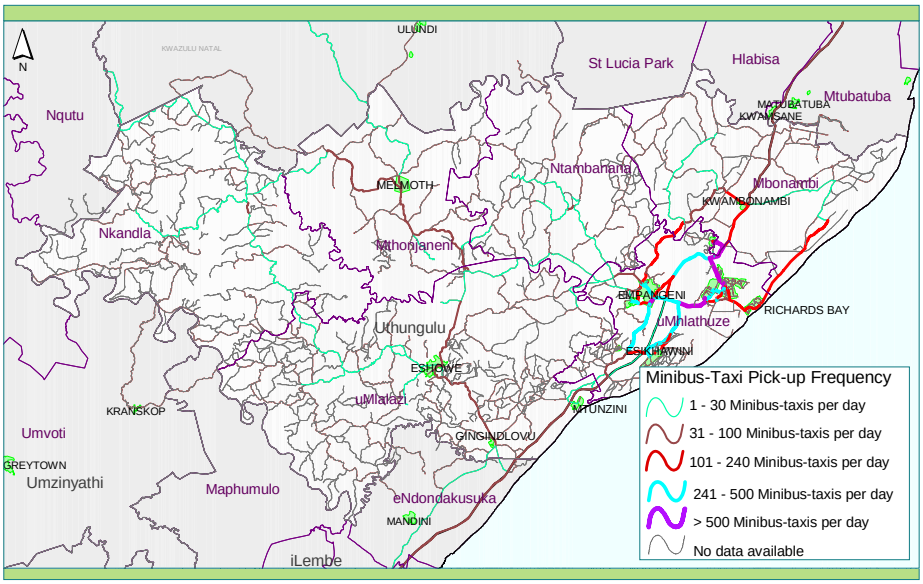
Map 14 shows that the area surrounded by Enseleni, Empangeni, Vulindlela, Esikhawini and Richards Bay enjoys a high frequency of minibus-taxi trips with more than 100 minibus – taxi trips per day on the different routes. In the vicinity of Eshowe and Melmoth the frequency is getting lower with Nkandla in the mountains having the lowest frequency of minibus-taxi trips.

Map 15 shows the highest number of minibus-taxi passengers in the area surrounded by Enseleni, Empangeni, Vulindlela, Esikhawini and Richards Bay. (More than 800 passengers per day on respective routes.) In the vicinity of Eshowe and Melmoth the daily number of passengers is lower than in the other areas (less than 800 passengers on the respective routes.)

The results of the 12-hour minibus-taxi surveys showed that approximately 113 500 minibus-taxi passengers are transported by 13 843 minibus-taxi trips in both directions within uThungulu. This equates to an average of 8 (average of 8,2) passengers per minibus-taxi excluding those picked up and dropped off along the route. **Table 4.2** illustrates the number of minibus-taxi trips, unique minibus-taxis and the number of passengers transported for each facility. These passenger numbers are likely to be understated since there is extensive passenger movements along any given route that never go through any rank where surveys were conducted. No detailed on-board surveys were done on minibus-taxis and thus no discussion on the extent of these figures is presented in the ITP.

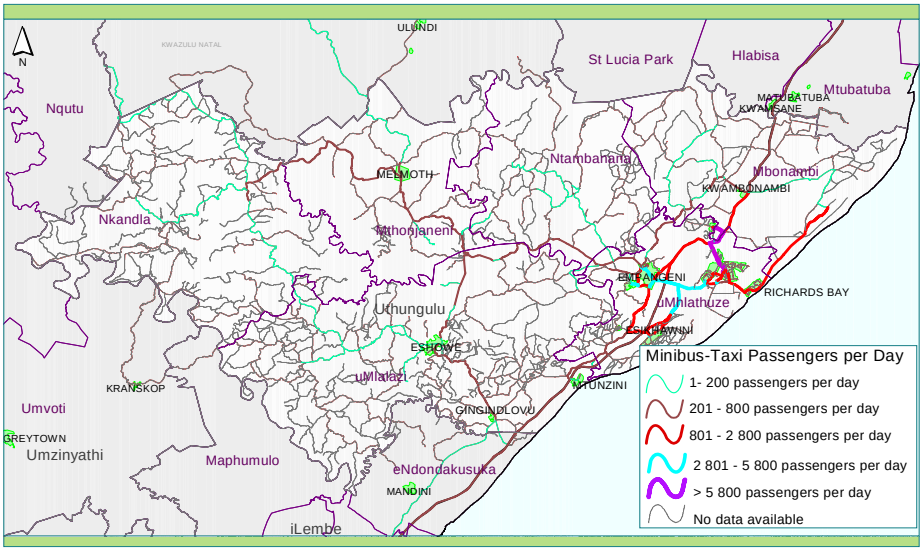
The numbers reflected in the table only account for minibus-taxis that are making a trip carrying passengers. Trips made with no passengers e.g. going to have vehicle washed or going home at the end of the day are not included in these figures.

Figure 4.2: Minibus – Taxi Service Frequency



Map 14 illustrates the taxi service frequency for the minibus-taxis.

Figure 4.3: Daily Number of Minibus-Taxi Passengers



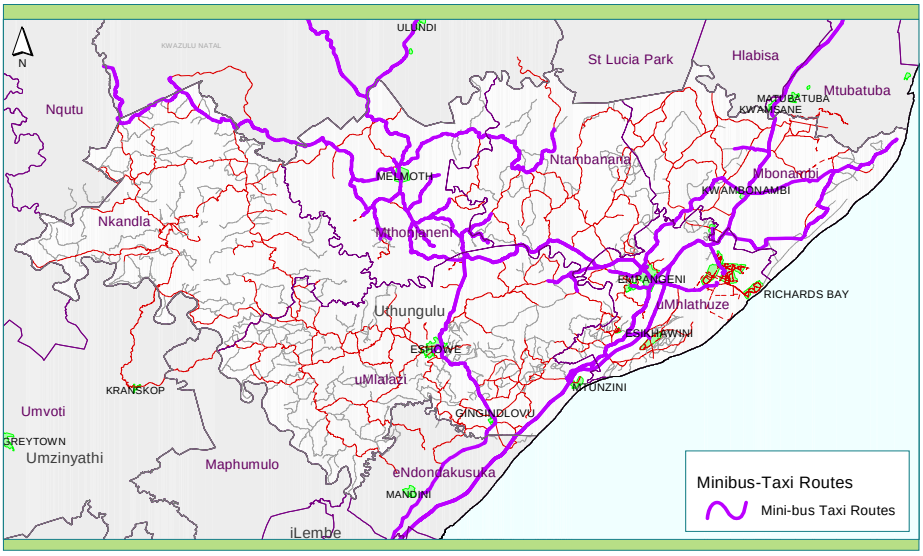
Map 15 illustrates the daily number of minibus-taxi passengers.

Table 4.2: Minibus-taxi Trips, Passengers and Taxi's at a Rank

Survey Location	Number of Vehicle Trips	Unique Taxis	Number of Taxi's At Rank (Random time)	Average number of Trips / Unique Taxi	Passengers departing per day	Average number of Passengers / Taxi
Esikhawini Rank	2 672	741	29	3,6	20 978	7,9
Bay Plaza	1 939	537	132	3,6	16 499	8,5
Lot 63	1 867	649	135	2,9	17 170	9,2
B Rank	1 676	601	185	2,8	13 870	8,3
Nseleni Rank	918	166	68	5,5	9 467	10,3
Ngwelezane Rank	685	149	21	4,6	7 575	11,1
Melmoth Rank	673	169	77	4,0	4 794	7,1
A Rank	597	324	713	1,8	4 194	7,0
Eshowe Rank	462	223	86	2,1	2 347	5,1
Alton Industrial Rank	455	186	9	2,4	4 923	10,8
Nkandla Rank	407	140	46	2,9	2 820	6,9
King Dinuzulu Rank	301	26	16	11,6	1 898	6,3
Gingindlovu Rank	270	117	43	2,3	1 343	5,0
Old Eshowe Road Rank	264	45	12	5,9	2 170	8,2
Kwambonambi Rank	194	62	16	3,1	1 100	5,7
Dondotha Rank	119	31	3	3,8	353	3,0
Zululand University Rank	113	26	5	4,3	1 030	9,1
KFC Informal Rank	100	31	17	3,2	476	4,8
Buccanana Rank	71	30	3	2,4	464	6,5
Biyela Street Rank	60	22	42	2,7	20	0,3

Figure 4.4 shows all the taxi association routes on one map.

Figure 4.4: Minibus – Taxi Routes



Refer to Map 16 for the all the taxi association routes.

4.1.1.4 Bakkie & 4+1 Ranks

There are no formal bakkie ranks within uThungulu. All bakkie operations fall under the minibus-taxi association within the respective areas. The majority of bakkie operators share facilities with minibus-taxis with only a few informal bakkie facilities. The bakkie facilities available in uThungulu and those shared with minibus-taxi ranks are shown in **Table 4.3.**

Table 4.3: Bakkie Facilities (7 facilities)

Name	Status	Ownership	Location
Dondotha Rank	Formal	Municipal	Off-street
Kwambonambi Rank	Informal	Municipal	Off-street
Buccanana Rank	Informal	Municipal	On-street
Melmoth Rank	Informal	Municipal	On-street
Gingindlovu Rank	Informal	Municipal	Off-street
Eshowe Rank	Informal	Municipal	Off-street
Esikhawini Rank	Informal	Municipal	Off-street

Although bakkie transport is illegal in accordance with current legislation, several bakkie operators exist in uThungulu and operate together with the minibus-taxi associations. Bakkie operators mainly provide a public transport service to people within the deep rural areas where the road infrastructure is of such a poor condition that other means of transport is not feasible. The survey results showed that 10 348 passengers were transported within the 12-hour survey period by means of bakkies. The distribution of bakkie passengers is mainly confined to the areas of Ntambanana, Eshowe, Melmoth, and Nkandla and to a lesser extent in the Dondotha area. These passenger numbers are likely to be understated since there are extensive passenger movements along any given route that never go through any rank where surveys were conducted. No detailed on-board surveys were done on minibus-taxis and thus no discussion on the magnitude or accuracy of these figures can be made in the ITP.

Table 4.4 shows the number of bakkie trips, unique bakkies and passengers' volumes.

Table 4.4: Bakkie Trips and Passengers

Survey Location	Number of Bakkie Trips	Unique Bakkies	Average Number of Trips / Unique Bakkies	Passengers departing per day	Average Number of Passengers / Bakkie
Buccanana Rank	296	126	2,3	1 629	5,5
Dondotha Rank	162	49	3,3	322	2,0
Esikhawini Rank	108	64	1,7	424	3,9
Eshowe Rank	879	339	2,6	3 831	4,4
Gingindlovu Rank	231	95	2,4	967	4,2
Kwambonambi Rank	87	40	2,2	295	3,4
Melmoth Rank	694	231	3,0	2 880	4,1

4.1.1.5 Bus Ranks

As mentioned earlier, several public transport facilities cater for both minibus-taxi and bus operations. There are five ranks for the use of buses only and seven ranks that could accommodate buses and minibus-taxis. The details are listed in **Table 4.5** and **4.6.**

Table 4.5: Status of Bus Facilities

Name	Status	Ownership	Location
Bay Plaza Richards Bay	Formal	Private	Off-street
Kwambonambi Rank	Formal	Municipal	Off-street
Buccanana Rank	Informal	Municipal	On-street
Melmoth Rank	Formal	Municipal	Off-street
Gingindlovu Rank	Informal	Municipal	Off-street
Eshowe Rank	Formal	Municipal	Off-street
Alton Industrial Rank	Formal	Municipal	Off-street
Esikhawini Rank	Informal	Municipal	Off-street
LAC	Formal	Municipal	Off-street
B Rank	Formal	Municipal	Off-street
A Rank	Formal	Municipal	Off-street
Nseleni Rank	Informal	Municipal	Off-street
Nkandla Rank	Formal	Municipal	Off-street

4.1.1.6 Bus Trips and Passenger Volumes

Figure 4.5 and **Figure 4.6 (Map 17** and **Map 18)** refer to the bus service frequency and daily number of bus passengers transported.

Map 17 shows that more than 200 buses per day travel between Meerensee and Enseleni and between 101 to 200 buses travel from Meerensee to Empangeni and Richards Bay respectively. The area north of Richards Bay has frequent bus trips. The rest of uThungulu does not have light frequency bus trips on the respective routes. These passenger numbers are likely to be understated since there are extensive passenger movements along any given route that never go through any rank where surveys were conducted. No on-board survey has been done for bus operators within the Mhlatuze area.

The aim of the survey was to determine the possible effect that passengers boarding and alighting along the major public transport routes have on the utilisation of the bus service.

Buses leaving ranks/termini not fully utilised may show higher utilisation figures on the route because of passengers boarding and alighting along these routes. According to the figures used in the ITP an estimated 64 000 passengers travel on buses within Mhlatuze. The on-board surveys showed that just more than 5 800 (5 875) passengers boarded and 5 665 alighted buses along those routes surveyed. This amounts to a further 9% more passengers travelling on buses on what were actually counted at the ranks/termini. Detail information regarding the on-board surveys is discussed in detail in the CPTR document.

Map 18 shows the bus passengers per day and it corresponds with Map 17

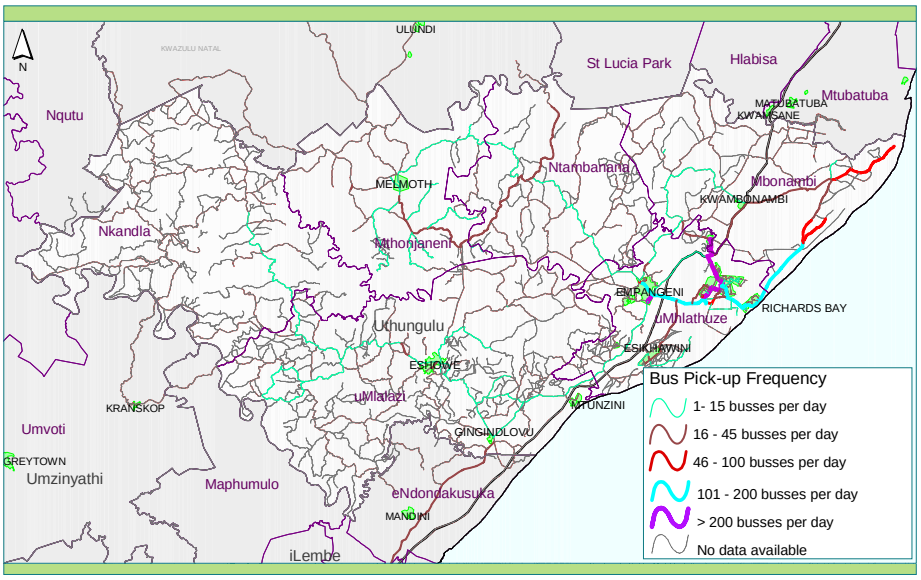
Table 4.6 shows the number of trips, unique buses and passengers transported.

Table 4.6: Bus Trips and Passengers

Survey Location	Number of bus Trips	Unique Buses	Average number of Trips / unique Bus	Passengers departing per day	Average number of Passengers / Bus
Bay Plaza Richards Bay	694	252	2,8	20 261	29,2
B Rank	644	202	3,2	15 033	23,3
A Rank	528	189	2,8	13 670	25,9
LAC	207	84	2,5	3 542	17,1
Alton Industrial Rank	142	112	1,3	4 026	28,4
Esikhawini Rank	125	69	1,8	2 752	22,0
Nseleni Rank	125	48	2,6	4 349	34,8
Dondotha Rank	117	38	3,1	5 356	45,8
Melmoth Rank	105	33	3,2	4 144	39,5
Gingindlovu Rank	95	23	4,1	1 757	18,5
Eshowe Rank	87	33	2,6	3 175	36.5
Kwambonambi Rank	48	38	1,3	1 530	31,9
Buccanana	36	14	2,6	2 005	55,7
Nkandla Rank	32	6	5,3	1 442	45,1

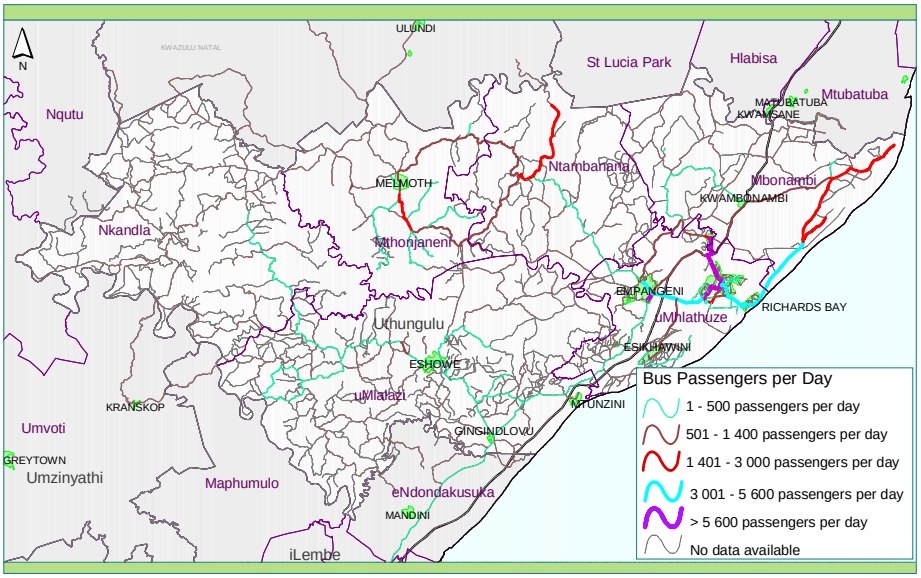
Figure 4.7 shows all the bus routes and the total daily number of bus and taxi passengers on the road network is shown in **Figure 4.8.**

Figure 4.5: Bus Service Frequency



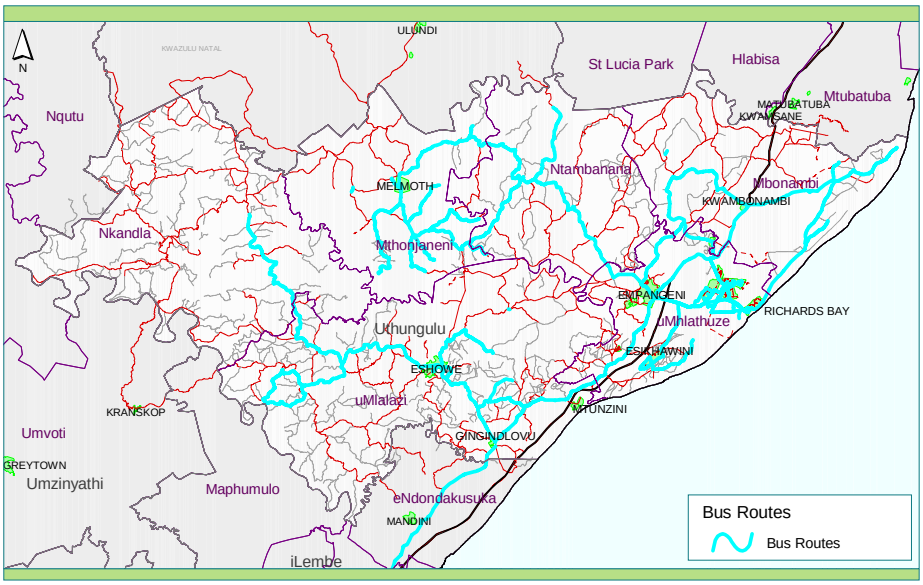
Map 17 shows the bus pick – up frequency in the area.

Figure 4.6 Daily number of Bus Passengers



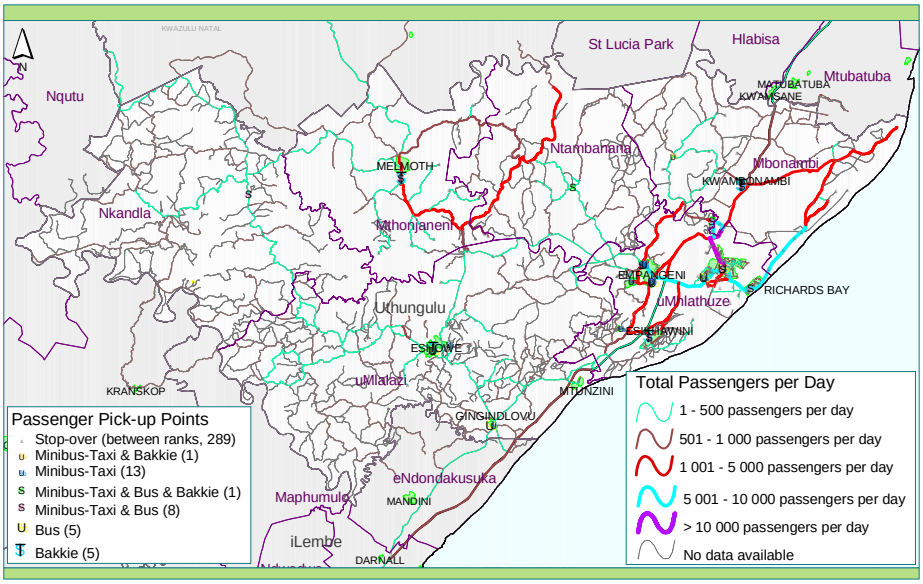
Map 18 illustrates the daily number of bus passengers in the area.

Figure 4.7 Bus Operator Routes



Map 19 refers to the bus operator routes.

Figure 4.8 Total Daily Number of Bus and Taxi Passengers



Refer to Map 20 for the total daily number of bus and taxi passengers.

4.2 Road Infrastructure and Network Status Quo

An extensive road network gives access to most of the settlements in uThungulu. A number of communities are further than 2 km away from any formal access road. The network consists of the national road (N2), declared provincial roads of various classes (e.g. R102, R34 and R66) municipal roads and other public roads and tracks. Most of the access roads to community localities are unsurfaced.

This section of the ITP focuses on the road infrastructure in the study area and will provide detail information of the following:

- Road Classification;
- Road Surface; and
- Traffic Volumes.

4.2.1 Road Classification

The primary road network consists of National Roads, Provincial Roads Application Roads and Municipal Roads. These types are described below:

4.2.1.1 National Roads

These are the responsibility of national government and declared as such by the DOT. These are numbered and identified with a prefix N, for example the N2 between Richards Bay and Mtunzini.

4.2.1.2 Provincial Roads

These are the responsibility of provincial government and include the following:

- Provincial Main Roads: Numbered and identified with a prefix P. For example P425 between Empangeni and Kwambonambi;
- Provincial District Roads: Numbered and identified with a prefix D. For example D885 close to Vulindlela; and
- Provincial Local Roads: Numbered and identified with a prefix L, for example L344 in the Kwambonambi area.

These roads are declared as such by KZNDOT.

4.2.1.3 Application Roads

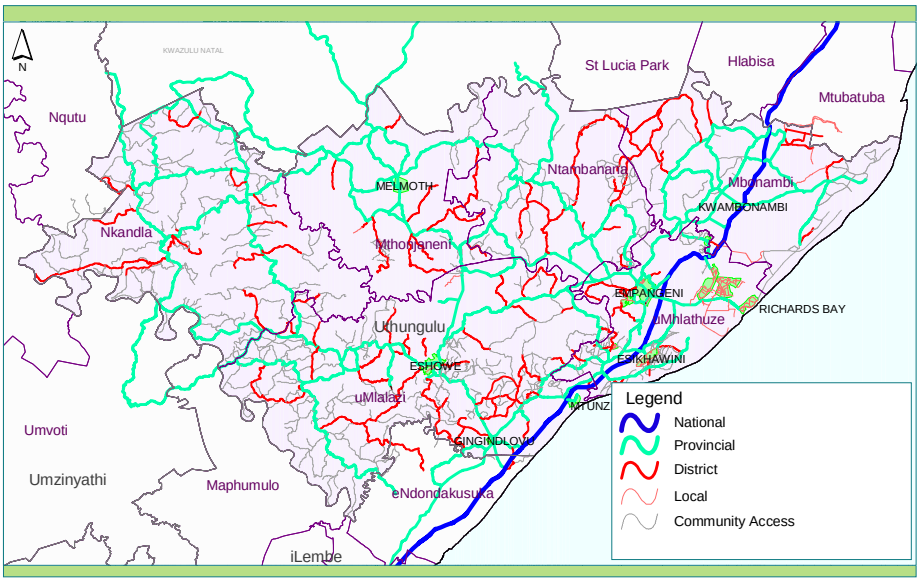
Application roads are identified as needed by the communities or the department and assessed as complying with the criteria to be declared as a provincial road but have not yet been built / upgraded and therefore not yet declared. These are called “application roads” and are numbered and appear on provincial records with a prefix A. Once constructed these will be declared as P, D or L roads; for example A3505 near Nkandla.

4.2.1.4 Municipal Roads

Municipal roads are currently a grey area. Within urban areas, public roads that are not declared national or provincial roads are municipal roads. Outside urban areas there are a significant number of public roads for which neither provincial nor municipal government is claiming responsibility. There is an urgent need for authorities to provide clarity on this

aspect of responsibility. **Figure 4.9** illustrates the road classification of the roads in uThungulu. These roads are often referred to as "orphan" roads.

Figure 4.9: Road Classification



Refer to Map 21 for the road classification.

4.2.2 Road Surface

The national and most provincial main roads are surfaced whilst some provincial district roads and most provincial local roads are unsurfaced. Outside the urban area all "orphan" roads are not surfaced.

See **Table 4.7** below for the split between surfaced and non-surfaced roads. Most of the community access unsurfaced roads are not constructed to proper geometric design standards due to rough terrain. Furthermore, these roads are predominantly used by public transport vehicles resulting in high maintenance costs to owners and unsafe travel conditions for passengers. This further aggravates the likelihood for accidents. Poor stormwater drainage is widespread in the area. Unsurfaced roads are often very slippery during the rainy season due to flooding and the poor in-situ soil conditions, which results in the rural communities having no vehicle access or an unreliable public transport.

Table 4.7: Surfacing of Roads within uThungulu (Outside former Transitional Local Council areas i.e. outside urban areas)

Local Municipality	Surfaced Roads (km)		Unsurfaced Roads (km)		Total Length (km)
Mbonambi	81,4	17%	395,1	83%	476,5
UMhlathuze	184,3	32%	383,7	68%	568,1
Ntambanana	34,7	7%	434,5	93%	469,3
Umlalazi	169,8	13%	1 168,5	87%	1 338,3
Mtonjanemi	121,8	39%	187,4	61%	309,2

Local Municipality	Surfaced Roads (km)		Unsurfaced Roads (km)		Total Length (km)
Nkandla	13,4	1%	927,5	99%	940,8
uThungulu DM	605,4	15%	3 496,7	85%	4 102,1

Data Date (2001)

4.2.3 Traffic Volumes

The highest traffic volumes are on the John Ross highway linking Richards Bay and Empangeni (R34) and Ngwelezane. More than 10 000 vehicles per day use this portion of the road. It is important to note that the N2 road carries less traffic than the roads serving the surrounding Empangeni and Richards Bay. Most heavy vehicles use the national route, suggesting that the route is predominantly used for freight rather than for public transport. Refer to section 4.4 for a detailed description of freight transport. **Figure 4.11** illustrates the total traffic volumes.

4.3 Public Transport Services according to PTC Status Quo

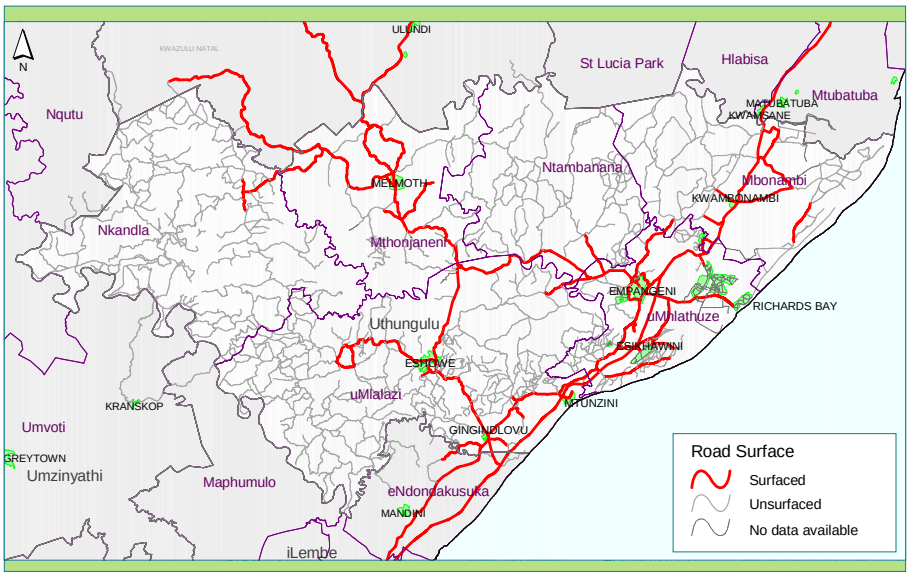
The assessment of the public transport service is dealt with in this section. Public Transport Corridors (PTCs) were identify based on public transport operating information, land use information as well as taking physical attributes into account. To enable useful reporting on route and node utilisation, levels of service and user cost it is necessary to combine the approximately 800 public transport routes into more manageable PTCs. These PTCs were developed using the identified IDP development corridors, the existing road network, topography as well as the requirements for public transport routes.

The following data sets were used to develop the PTCs as illustrated in **Figure 4.12**:

- IDP Development Corridors
- Road Classification
- Public Transport Routes
- Topography

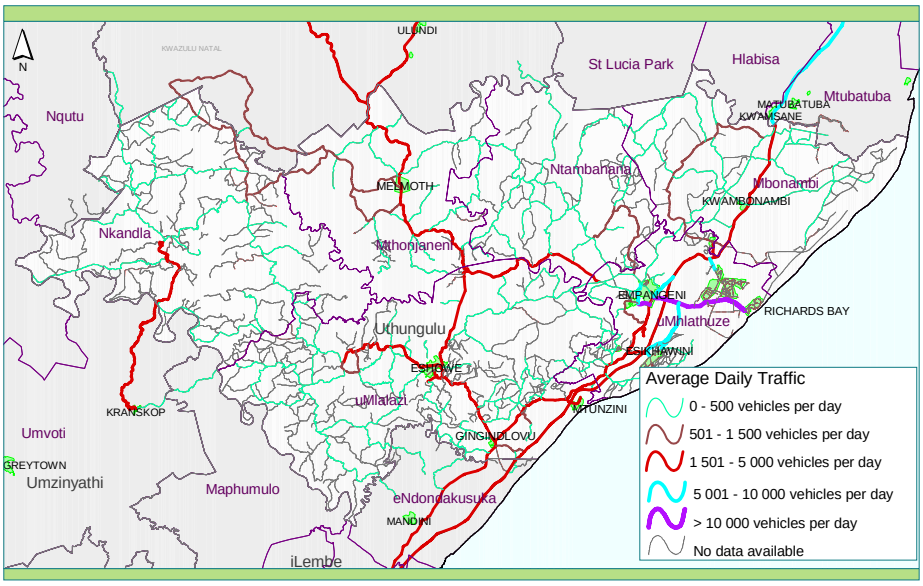
It should be noted that the impact of freight and other vehicle usage was not considered as part of the PTC development. Refinement of the PTCs may be required at a later stage of the project. The combination of the different datasets resulted in the identification of the PTC network that will be used to determine public transport utilisation, the level of service and user costs.

Figure 4. 10: Road Surface



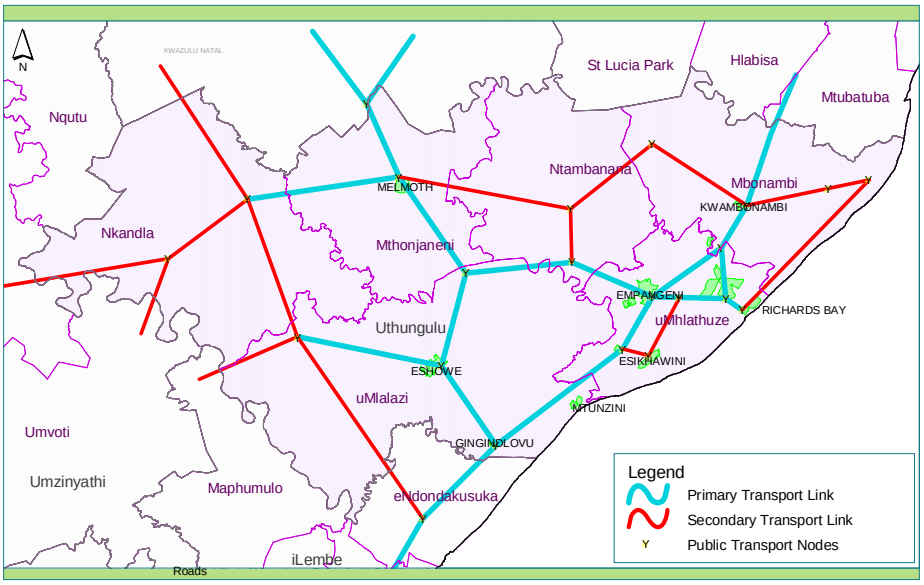
Map 22 illustrates the road surface in the study area.

Figure 4.11: AADT volumes of roads in uThungulu



Refer to Map 23 for the AADT volumes of the roads in uThungulu.

Figure 4.12: Public Transport Corridors



Refer to Map 24 for the Public Transport Corridors.

4.3.1 Description of PTC Links

In order to determine the public transport utilisation of each link of any corridor, it was necessary to relate the public transport routes and road network with the public transport corridor. A public transport link (e.g. P1) was defined by a public transport corridor that represents several public transport routes and considers the various characteristics of the individual public transport routes. Public transport route distances have been based on the proximity of the public transport route to the public transport corridor keeping in mind any physical attributes of the area.

4.3.2 Description of Operational Cost

In order to determine the operational cost of the public transport service the KZNDOT in association with Prof Del Mistro (then lecturer at the University of Pretoria) developed a cost model taking into account several parameters. The user cost is determined for each public transport corridor and averaged for the district.

4.3.3 Public Transport Route Distance Estimation

The actual public transport routes as determined through the public transport surveys at rank facilities has been captured in the GIS and linked to the Public Transport Corridors.

Ranges of Origin Destination (O-D) distances were used to present the total distance (the sum of all the distances of each public transport route) of public transport routes. The figures presented in the tables below show the road distance of all the unique public transport routes as well as the average distance of public transport routes. The average distance however does not relate to the total distance divided by the number of routes but can be discussed as follows.

Table 4.8: Nkandla Municipality: Route Distance Estimation

Range of O-D distances	Road Distance		Number of PT Routes
	Total Distance of Unique Roads	Average Distance of Route	
0-5km	0,0	0,0	0
5-15km	0,0	0,0	0
15-30km	122,5	30,6	22
>30km	109,9	36,6	12

Table 4.9: Mtonjaneni Municipality: Route Distance Estimation

Range of O-D distances	Road Distance		Number of PT Routes
	Total Distance of Unique Roads	Average Distance of Route	
0-5km	0,0	0,0	0
5-15km	0,0	0,0	0
15-30km	59,9	30,0	59
>30km	120,5	40,2	72

Table 4.10: Umlalazi Municipality: Route Distance Estimation

Range of O-D distances	Road Distance		Number of PT Routes
	Total Distance of Unique Roads	Average Distance of Route	
0-5km	0,0	0,0	0
5-15km	0,0	0,0	0
15-30km	186,4	26,6	195
>30km	104,3	52,1	51

Table 4.11: Ntambanana Municipality: Route Distance Estimation

Range of O-D distances	Road Distance		Number of PT Routes
	Total Distance of Unique Roads	Average Distance of Route	
0-5km	0,0	0,0	0
5-15km	16,6	16,6	23
15-30km	79,6	26,5	353
>30km	54,9	54,9	35

Table 4.12: Mbonambi Municipality: Route Distance Estimation

Range of O-D distances	Road Distance		Number of PT Routes
	Total Distance of Unique Roads	Average Distance of Route	
5-15km	0,0	0,0	0
5-15km	9,8	10,7	154
15-30km	144,4	48,1	281
>30km	40,9	40,9	83

Table 4.13: uMhlathuze Municipality: Route Distance Estimation

Range of O-D distances Range	Road Distance		Number of PT Routes
	Total Distance of Unique Roads	Average Distance of Route	
0-5km	4,	4,4	102
5-15km	60,8	12,2	981
15-30km	38,0	19,0	459
>30km	40,9	40,9	83

The aggregated desire line and road distances for uThungulu were determined using the sum of all the above-mentioned distances and is presented below.

Table 4.14: uThungulu: Route Distance Estimation

Range of O-D distances	Road Distance		Number of PT Routes
	Total Distance of Unique Roads	Average Distance of Route	
0-5km	4,4	4,4	102
5-15km	8781	12,4	1158
15-30km	585,7	32,5	1070
>30km	330,8	41.35	206

The total distance represents the distance of unique routes only and where there are no duplications of services. For example: There are two routes between Dondotha and Kwambonambi. Route A is from Dondotha to Kwambonambi via P511 and P232 and is 32km long. Route B is via P494, P499 and P232 as is 48 km long. The P232 (12km long) is however the road, which is used by both these routes and is therefore not added twice to the “Total Distance of Unique Roads” column.

The “Total Distance of Unique Roads” is therefore 68km but the average is 40km per route. The average distance is therefore not merely the division of the total distance by the number of routes, but it means that the higher the difference between the “Total Distance of Unique Roads” and the “Average Distance of the Route” the less overlapping of routes and that origins and destinations can be served via several other routes.

4.3.4 uThungulu Passenger Utilisation of the different Public Transport Corridors

The utilisation of Public Transport Corridors (PTCs) based on the number of passenger kilometres will enable the reader to compare which PT C in terms of the length of the PTC but also the number of passengers transported. The total passenger kilometres travelled based on the plan distances of public transport corridors are compared to that of passenger kilometres travelled based on actual road distances. The results are shown in the following two tables. It can be concluded that the P3 corridor and S4 corridor are the most important in each of the route classes due to the high number of passengers using these corridors.

Table 4.15: Passenger kilometre – Primary Public Transport Corridors

Public Transport Corridor		Road Distance	Passengers on route	Passenger Km Travelled
No.	**O-D**			
P1	Richards Bay - Meerensee	4	20 247	80 989
P2	Richards Bay – Empangeni	15	37 753	566 297
P3	Empangeni - Lower Umfolozi	20	45 053	675 791
P4	Nkwaleni – Lower Umfolozi	25	10 525	263 126
P5	Nkwaleni – Melmoth	31	10 046	311 428
P6	Melmoth – Ulundi	21	5 532	116 164
P7	Falls outside study area			
P8	Empangeni – Enseleni	18	29 718	534 922
P9	Nseleni – Kwambonambi	10	18 291	182 909
P10	Kwambonambi – Mtubatuba	88	5 846	514 474
P11	Richards Bay – Nseleni	13	26 883	349 477
P12	Empangeni – Vulindlela	14	38 354	536 962
P13	Vulindlela – Gingindlovu	36	2 727	98 163
P14	Gingindlovu – Mandini	21	3 293	69 151
P15	Mandini – Stanger	16	1 724	27 588
P16	Gingindlovu – Eshowe	22	8 308	182 771
P17	Eshowe – Nkwaleni	20	8 370	167 407
P18	Eshowe – Mankumbu	40	12 520	500 795
P19	Melmoth – Thalaneni	45	1 675	75 367

Table 4.16: Passenger kilometre – Secondary Public Transport Corridors

Public Transport Corridor		Road Distance	Passengers on route	Passenger Km Travelled
No	**O-D**			
S1	Richards Bay - Esikhawini	14	37 151	520 118
S2	Esikhawini – Vulindlela	6	8 382	50 289
S3	Richards Bay –Manzamnyama	41	19 834	813 182
S4	Kwambonambi - Manzamnyama	27	72 375	144 749
S5	Kwambonambi – Mhlana	29	21 754	630 871
S6	Mhlana – Bhukhanana	34	13 441	456 996
S7	Bhukhanana –Lower Umfolozi	17	6 846	116 380
S8	Melmoth - Bhukhanana	55	14 446	794 543
S9	Mandini – Mankumbu	68	2 467	167 749
S10	Mankumbu – Thalaneni	41	420	17 230
S11	Qudeni - Ngutu	43	649	27 902
S12	Dlowana – Thalaneni	31	72	2 225
S13	Falls outside study area			
S14	Falls outside study area			

In general it appears that PTCs with shorter road distances transport a significant higher number of passengers and PTCs with long distances transport less passengers.

4.3.5 uThungulu Public Transport Utilisation

The public transport modes within uThungulu transport are providing a service to approximately 203 000 passengers on a daily basis. The table below shows the distribution of passengers and trips based on the different O-D distance ranges as presented in the previous section. The number of vehicle trips without passengers have been excluded from this assessment.

Due to the nature of the surveys it could not be establish if an empty vehicle is actually leaving a facility for the sole purpose of picking up people along the road between his origin and destination or if the vehicle is actually performing a "dead" trip e.g. going to a filling station, car wash or going home. In the case of buses they regularly make "dead" trips since they travel between the actual bus depot and the termini. Therefore for the purpose of determining the PT Utilisation figures, the number of vehicle trips without passengers have been excluded from this assessment. These utilisation figures below therefore do not correlate with the figures shown in Table 4.2 and 4.6 where "dead" trips have been included in the calculations. "Dead" trips account for approximately 12% of all vehicle trips per day.

Table 4.17: uThungulu Public Transport Utilisation

Range of O-D distances	Number of Vehicle Trips	Number of Passengers	% Vehicle Utilisation (Peak Period)	% Vehicle Utilisation (All day trips)
0-5km	490	9 229	89,1%	71,1%
5-15km	5 282	88 578	94,6%	52,3%
15-30km	5 144	82 629	82,5%	48,1%
>30km	1 207	23 447	86,9%	81,4%

From this table it can be seen that in general the public transport service operates at very high levels of vehicle utilisation especially during the peak period. The vehicle utilisation for all trips indicates a high utilisation (occupancy) for routes less than 5km. Routes between 5km and 30km have lower utilisation (approximately 30%). Routes longer than 30km have the highest vehicle occupancy. The table also clearly illustrates the tidal nature of public transport utilisation with peak periods substantially higher utilised than non peak periods.

4.3.5.1 Levels of Service (Delay) (LOS)

The levels of service (LOS) can be described as the average delay passengers experience at the different public transport facilities. The table below provides the average delay experienced at each facility. The average delay is an indication of the efficiency of the public transport service. There are passenger delays of more than one hour especially for the longer distance trips. On the basis of the above delay times, the following levels of service are suggested:

- Level of Service A – < 5min
- Level of Service B – 5 – 10 min
- Level of Service C – 10 – 30 min
- Level of Service D – 30 – 60 min
- Level of Service E – > 60 min

Level of Service A represents in reality "No Delay" and a Level of Service E represents an "Unacceptable Delay".

Table 4.18: Average delay at Public Transport Facilities

Municipality	Facility / Rank	Average Delay (minutes)	LOS
Nkandla Municipality	Nkandla	23	C
Mtonjaneni Municipality	Melmoth	17	C
Umlalazi Municipality	Eshowe Taxi	18	C
	Eshowe Bus	13	C
	Gingindlovu	21	C
Ntambanana Municipality	Buccanana	19	C
Mbonambi Municipality	Dondotha	18	C
	Kwambonambi	41	D
uMhlathuze Municipality	A Rank	26	C
	B Rank - Bus	15	C
	B Rank Local	09	B
	B Rank Long	45	D
	Biyela street	12	C
	Old Eshowe Rd	22	C
	KFC	03	A
	Lot 63	16	C
	Ngwelezane	04	A
	Meerensee	12	C
	Nseleni	05	B
	Alton Industrial	05	B
	Bay Plaza - Taxi	11	C
	Bay Plaza - Bus	17	C
	Esikhawini	13	C
	Zululand University	07	B
uThungulu DM		**16**	**C**

4.3.5.2 Passenger User Cost

The cost of travelling was determined by calculating the fare paid for the distance travelled. The user cost resulting for the different municipalities is shown below.

Table 4.19: Average User Cost per kilometre travelled per Local Municipality

Local Municipality	Cost / Km travelled
Nkandla	R 0,41
Mtonjaneni	R 0,40
Umlalazi	R 0,44
Ntambanana	R 0,40
Mbonambi	R 0,46
uMhlathuze	R 0,38
uThungulu DM	R 0,42

The average user cost per kilometre travelled is very uniform across the local municipalities.

Table 4.20: Average User Cost per kilometre travelled according to O-D distance ranges

Local Municipality	0-5km	5-15km	15-30km	> 30km
Nkandla	N/a	N/a	R 0,48	R 0,43
Mtonjaneni	N/a	N/a	R 0,43	R 0,38
Umlalazi	R 0,44	R 0,54	R 0,37	R 0,36
Ntambanana	R 0,00	R 0,43	R 0,46	R 0,31
Mbonambi	R 0,00	R 0,51	R 0,46	R 0,37
UMhlathuze	R 0,57	R 0,49	R 0,41	R 0,37
UThungulu DM	R 0,57	R 0,49	R 0,41	R 0,37

N/a = not applicable due to no trips in this range.

In **Table 4.20** it is shown that the shorter O-D distance ranges result in higher user cost per kilometre. Long distance trips (>30km) have the lowest cost per kilometre. Certain O-D distances travelled that are more than 100 kilometres, result in lower risks to the operators to generate income.

4.3.5.3 Public Transport Trip Purpose

The purpose of public transport trips within uThungulu area is summarised in **Table 4.21**and is based on the Origin-Destination surveys conducted. The purpose of these trips has been classified as work and non-work purposes only.

For uThungulu, only 35,5% of all public transport trips are work related trips. The facilities are generally located within the major economic centres of uThungulu and therefore experience the highest utilisation of work related trips. It is important to note however that in Nkandla and Mtonjaneni, there are no trips less than 15 km indicating that work related trips are further than 15 km.

Trip purpose was also established for the peak and off peak periods. **Table 4.22** shows the distribution of work and non-work related trips during the peak and off-peak periods. The morning peak has been taken from 07:00 to 08:00 while the afternoon peak was taken as between 16:30 and 17:30.

Table 4.21: Trip Purpose according to rank facilities

Municipality	Facility / Rank	Work (%)	Non Work (%)
Nkandla Municipality	Nkandla	6,35%	93,65%
Mtonjaneni Municipality	Melmoth	24,44%	75,56%
Umlalazi Municipality	Eshowe Taxi	42,86%	57,14%
	Eshowe Bus	28,57%	71,43%
	Gingindlovu	72,73%	27,27%
Ntambanana Municipality	Buccanana	41,46%	58,54%
Mbonambi Municipality	Dondotha	25,00%	75,00%
	Kwambonambi	31,90%	68,10%
uMhlathuze Municipality	A Rank	68,18%	31,82%
	B Rank-Bus	50,00%	50,00%
	B Rank Local	80,95%	19,05%
	B Rank Long	25,00%	75,00%

Municipality	Facility / Rank	Work (%)	Non Work (%)
	Biyela street	58,82%	41,18%
	Old Eshowe Rd	57,69%	42,31%
	KFC	25,00%	75,00%
	Lot 63	29,41%	70,59%
	Ngwelezane	21,43%	78,57%
	Meerensee	76,09%	23,91%
	Nseleni	61,54%	38,46%
	Alton Industrial	80,00%	20,00%
	Bay Plaza - Taxi	30,53%	69,47%
	Bay Plaza - Bus	30,77%	69,23%
	Esikhawini	10,87%	89,13%
	Zululand University	15,38%	84,62%
uThungulu		35,49%	64,51%

Table 4.22: Trip purpose per period

Trip Purpose	Peak	Off-peak
Work	28%	16%
Non Work	72%	84%

From this table it can be seen that only 28% of all passenger trips during peak period are work related trips. The other 72% of passengers travelling in the peak period therefore utilises peak capacity of Public Transport system for non work related trips. This can be attributed to the fact that subsidised services only operates during peak periods and therefore also being used for non work related trips.

4.4 Freight and Private Transport Status Quo

The freight component of the ITP requires that the freight movements within uThungulu be assessed to provide:

- An analysis of the main freight generators within the municipal area;
- An assessment of the level of usage of the supply system; and
- The status quo of the planning and management of freight transport within uThungulu.

The above assessments and evaluations are based on existing data and information and included interviews with representatives from the National Ports Authority at Richards Bay Harbour. An overview is given here of some key factors that influence the scale of freight movement in uThungulu.

The information contained in this report stems from the KZN Freight Data Bank developed by the KZN Provincial Department of Transport: Freight Directorate. **Figure 4.13** show the Average Daily heavy Traffic.

4.4.1 Freight Volumes and Tonnages

According to the surveys done as part of the KZN Freight Study the majority of heavy vehicles carrying freight occurs on the N2/28 in the region of Mtunzini and the R34 between Empangeni and Melmoth. **Table 4.23** below shows the distribution of vehicle type for both inbound and outbound heavy vehicles for uThungulu.

Table 4.23: Heavy Vehicle Volumes according to Vehicle Type

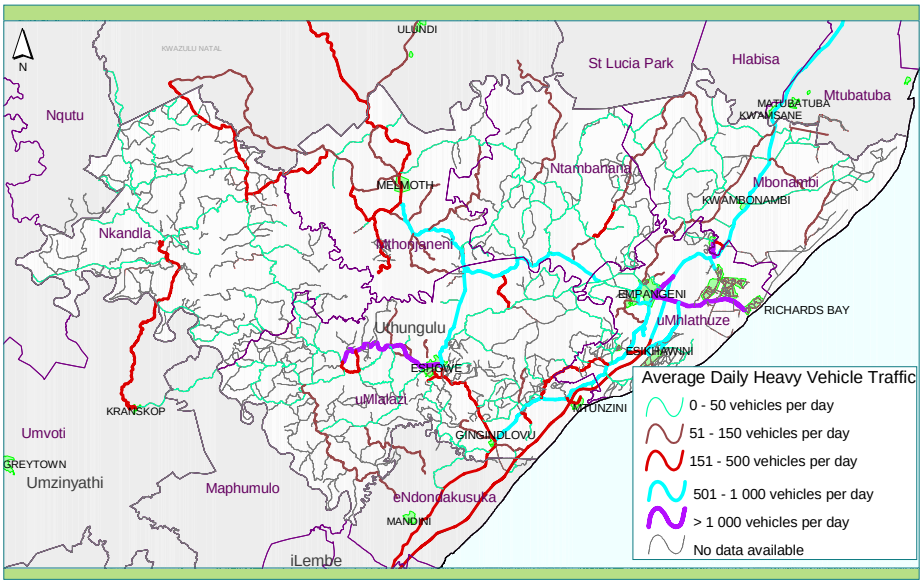
Vehicle Type	Direction	N2/28	N2/31	P47/3	P47/4	P48	P52/2
Rigid Truck	Inbound	70,395	32,332	24,112	78,912	2,740	18,906
	Outbound	64,404	40,552	16,714	41,100	6,028	12,604
5 Axle Truck	Inbound	11,314	14,248	8,768	13,152	1,096	1,644
	Outbound	14,881	7,398	8,220	10,412	274	3,288
6 Axle Truck	Inbound	14,922	20,824	5,480	4,110	274	1,096
	Outbound	12,296	24,386	4,384	2,192	0	1,644
Interlink	Inbound	58,417	69,870	23,290	60,828	1,918	2,192
	Outbound	64,139	54,800	22,742	59,184	1,096	4,384
Total	**Inbound**	**155,048**	**137,274**	**61,650**	**157,002**	**6,028**	**23,838**
	Outbound	**155,720**	**127,136**	**52,060**	**112,888**	**7,398**	**21,920**

(Source: KZNDOT: Freight Transport Databank KwaZulu Natal, 2003)

According to the heavy vehicle volumes 84% of vehicles are rigid (44%) or interlink (40%) trucks. The distribution of vehicle type according to vehicle volumes is shown in **Figure 4.14**. It is however important to note that although only 40% of all heavy vehicles are interlink vehicles the majority of cargo are transported by these vehicles and will thus have a significant impact of freight movement in uThungulu.

Figure 4.15 shows the vehicle type distribution based on the tonnages transported. Rigid trucks, contributing to 40% of all heavy vehicle movement in uThungulu, only transport 16% of all cargo.

Figure 4.13: Average Daily Heavy Traffic



Refer to Map 25 for the average heavy vehicle traffic.

Figure 4.14: Vehicle Types according to Volumes

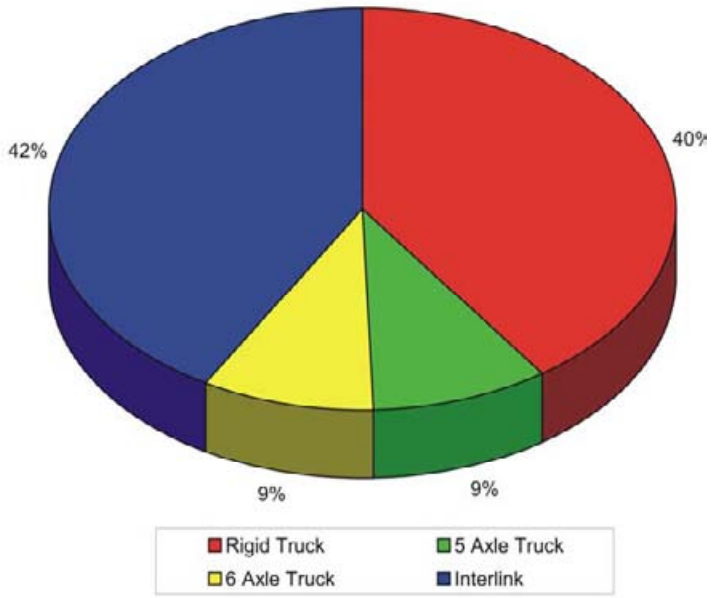
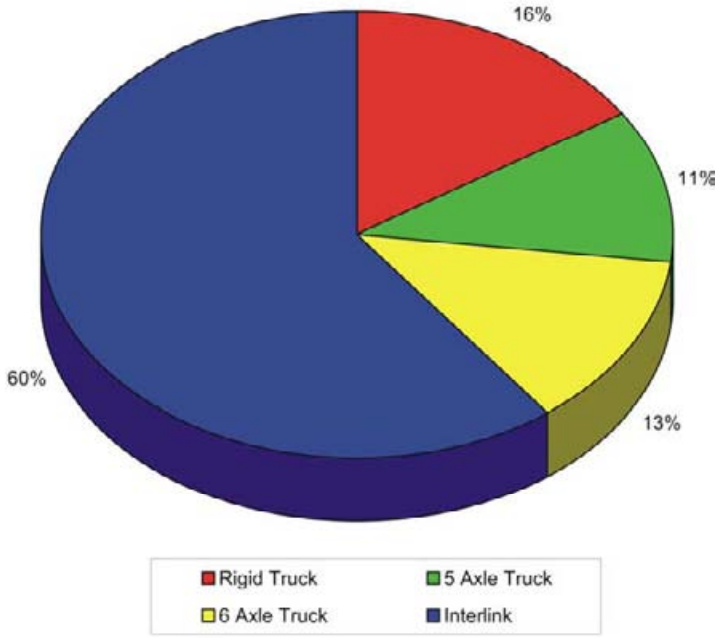


Figure 4.15: Vehicle Types according to Tons Transported



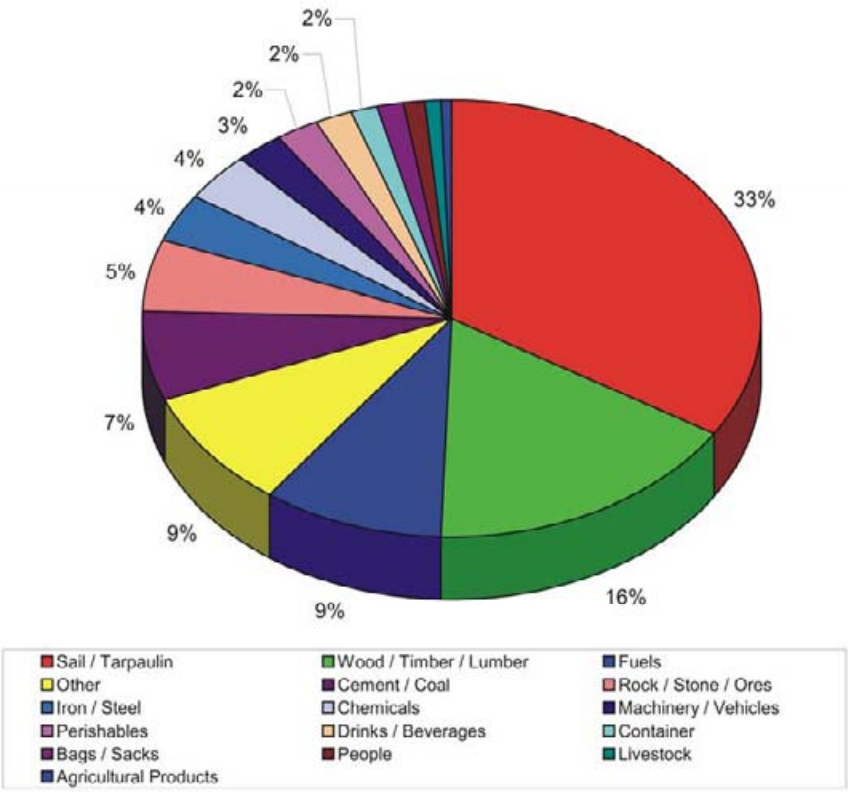
The N2 freeway carries the highest tonnages within uThungulu with more than 5 million tons in both directions. The R34 between Empangeni and Melmoth carries in excess of 3 million tons of cargo in both directions. **Table 4.24** shows the tonnages transported passed these survey locations.

Table 4.24: Heavy Vehicle Tonnages According to Vehicle Type

Vehicle Type	Direction	N2/28	N2/31	P47/3	P47/4	P48	P52/2
Rigid Truck	Inbound	563,160	214,816	144,672	374,832	15,344	92,064
	Outbound	515,232	219,200	81,104	221,392	19,728	87,680
5-Axle Truck	Inbound	271,536	282,768	177,552	111,792	13,152	19,728
	Outbound	357,144	131,520	124,944	217,008	0	78,912
6-Axle Truck	Inbound	373,050	506,900	116,450	68,500	6,850	6,850
	Outbound	337,400	479,500	47,950	47,950	0	34,250
Interlink	Inbound	1,635,676	1,787,576	590,744	1,595,776	46,032	15,344
	Outbound	1,795,892	943,656	214,816	951,328	7,672	84,392
Total	**Inbound**	**5,686,844**	**2,792,060**	**2,058,836**	**4,301,800**	**162,756**	**267,972**
	Outbound	**6,011,336**	**1,773,876**	**937,628**	**2,875,356**	**54,800**	**570,468**

Figure 4.16 shows the distribution of tonnages according to commodity type for all the commodities transported in uThungulu.

Figure 4.16: Tonnage Distribution According to Commodity Type



4.4.2 Freight Commodities: Forestry Industry

The forestry industry in KwaZulu-Natal covers 8.2% of the total 9 million hectare area of the province with 6,2% of planted timber and a further 2,1% yet unplanted. The industry contributes 10,7% of the province's R 57 billion income through forest products and a further 1,5% through forestry.

The industry has a capital investment in KwaZulu-Natal of R 14 billion of which R 10 billion is in timber processing and R 4 billion in plantations. The industry is one of the provinces largest employers, using 1,7% (43,000 people) of the total 2,8 million labour force of the province. The industries pays R 662 million per annum to the staff and it is estimated that 250 000 people in the province are in some way dependent on the industry.

If timber processing were to be added to the above figures the total impact on the employment of people in the province could be doubled. There are currently 10 000 small growers in KZN with an area of 14 000 hectares under timber and a current investment of R 30 million from which they earn R 24 million per annum.

The small grower population is being encouraged through schemes such as Sappi Forests Project Grow, Mondi Forests Khulanathi Scheme and the SA Wattle Growers Union scheme, which are adding about 2 000 new small growers and 3 000 hectares each year.

From the national perspective the KZN timber industry is of great importance as 38% of all plantations are in KZN and 45% of all new forestation. Forty percent (40%) of total plantation output comes from KZN, the wattle industry is focussed in KZN and 56% of all pulpwood is produced in the province. Fifty-five percent (55%) of all timber used is processed in KZN and of the 13 pulp, paper and board processing plants in South Africa 10 are located in KZN namely:

- The 2nd largest pulp and paper mill in SA (Mondi - Richards Bay);
- The 2nd largest newsprint mill in SA (Mondi - Merebank, Durban);
- The World's largest producer of rayon pulp (Sappi-Saiccor);
- The Largest hardboard plant in SA (Masonite - Estcourt);
- The only 2 SA woodchip export plants (CTC & SilvaCel Richards Bay); and
- The 2 largest SA producers of charcoal for export (Richards Bay) and local consumption.

4.4.3 Freight Commodities: Sugar and Sugar Cane Industry

The South African Sugar industry plays an important role in the economy of South Africa and in particular KwaZulu Natal. In a normal season the sugar industry produces a crop of 23 million tons of sugar cane annually, which can be translated to approximately 2,5 million tons of sugar and other associated products. The sugar cane supply to all the mills in KwaZulu Natal is by road with the exception of Felixton.

The road deliveries are performed by a range of vehicles configurations and tractor-trailer combinations. The transport of sugar and other products produced by the mills is also transported by road with the exception of Amatikulu and Felixton mills, which use rail transport to transport these products to the Sugar Terminal at the Port of Durban.

The closure of the Entumeni Sugar Mill, as a result of a recent rationalisation programme within the Tongaat Hulett group has exacerbated the position of the small-scale farmer community. Over 80% of the 231 000 people in the uMlalazi Municipal region, live in the rural areas and have high illiteracy rates, are highly impoverished and generally depend on the agriculture sector for their economic well-being. There is thus an urgent need to stimulate, in an organised and sustainable manner, an enabling environment to provide the means for this population to start climbing out of this poverty trap. The development of the agriculture potential in the uMlalazi area has been identified as the first priority in the IDP for uMlalazi Municipality. The report on the Entumeni Agricultural Transport Route has identified three agricultural transport routes in consultation with uThungulu and uMlalazi Local Municipality, the Department of Transport and the Department of Agriculture and Environmental Affairs, for construction and upgrading:

- Kangela Street in Eshowe – emergency remedial "holding" repairs
- Construction of the proposed Eshowe Northern By-Pass and,
- Upgrading and construction of the alternate route for small growers to Amatikulu Mil

The roads identified are considered vital for the continued production of sugar cane and other agricultural products by providing suitable transport routes for access for the development of small farmers and the maintenance of access for commercial farmers. **Table 4.25** shows the annual tones of sugar and sugar related products transported by heavy vehicles within the uThungulu area.

(For a comprehensive explanation see attached report summary on Entumeni Agricultural Transport Route)

Table 4.25: Annual Tons Transported by Road (Sugar)

Sugar Mills	Inbound (Million Tons)	Outbound (Million Tons)	Total (Million Tons)
Amatikulu	1.70	0.30	2.00
Entumeni	0.40	0.05	0.45
Felixton	1.76	0.33	2.09
Umfolozi	0.46	0.15	0.61
Total	4.32	0.85	5.17

4.4.4 Freight Commodities: Coal Industry

The coal mining industry in KwaZulu-Natal is located primarily in the northern areas of the Province and in Zululand such as Newcastle, Dundee and Durnacol. Coal is one of South Africa's main export commodities and 65 million tons are exported annually through the port of Richards Bay. Most of this tonnage is transported by rail on the CoalLink line from the Witbank area to Richards Bay. Some 2 million tons of coal are also imported through Richards Bay for the steel industry.

The coal mining industry uses rail transport wherever possible and for several of the newer mines this means the necessity to transport coal by road to a point where it can be railed. Rail lines were built to service the mines that existed at the time they were constructed, but with the passage of time many mines have become played-out and are now dormant. An increasing trend, due to current railway policies regarding minimum consignment size, is for coal to be transported on road. Large fleets of tippers are currently running on KZN roads delivering coal from the KZN mines and from the Mpumalanga area, to industries all over the Province. Only a small percentage of coal is being transported by road within uThungulu. **Table 4.26** shows the extent of coal transported by road.

Table 4.26: Annual Tons Transported by Road (Coal – KZN)

Mining Area	Tons per Road	Tons per Rail	Total Tons
Dundee	100,000	470,000	570,000
Kwambonambi	30,000	220,000	250,000
Utrecht	180,000	882,000	1,062,000
Mahlabatini		300,000	300,000
Total	310,000	1,872,000	2,182,000

The majority of coal exports and imports are shipped from Richards Bay Harbour. Coal is normally stored in open storage at the coal terminal prior to export. The current export

capacity of Richards Bay Harbour is approximately 72 millions tons per annum. **Table 4.27** shows the current coal exports and imports at Richards Bay Harbour.

Table 4.27: Annual Coal Exports and Imports

Harbour	Exports	Imports	Total
Richards Bay	65,369,218	2,182,700	67,551,918
Durban	2,185,314	122,158	2,307,472
Total	67,554,532	2,304,858	69,859,390

4.4.5 Freight Commodities: Aluminium Industry

The Bayside aluminium plant established in 1971 is based at Richards Bay. The company produces aluminium in extruded and rolled forms such as bars, ingots, billets, rods and flat coils, plain or anodised. Annual production is 180 000 tons of which is combined with the 500 000 tons from the Hillside smelter to give 680 000 tons of raw material. Exports total 520 000 tons of which 104 000 tons is railed to the port of Durban and 420 000 tons is exported through Richards Bay.

The South African market of 165 000 tons includes 150 000 tons consigned to the Aluminium plant in Pietermaritzburg. Of 150 000 tons about 90 000 are railed and the balance transported by road. The inputs to the process are 350 000 tons of Aluminium Oxide, 40 000 tons of coke, imported through Richards Bay. In addition 40 000 tons of liquid pitch is transported by road from Sasolburg and a range of other inputs such as refractory blocks are imported through Richards Bay or received by road.

The Hillside Aluminium smelter, opened in 1996, has a yearly output of 520 000 tons, which will be increased to 640 000 tons by 2004. The entire production is transported to the Bayside Plant in specialized rail and road. The inputs to the process are 1,1 million tons of aluminium oxide imported through Richards Bay. **Table 4.28** shows the annual tons of aluminium transported.

Table 4.28: Annual Tons of Aluminium Transported

Commodity	Bayside (Tons)	Hillside (Tons)	Total (Tons)
Aluminium Oxide (Input)	350,000	1,100,000	1,450,000
Coke (Input)	40,000	0	40,000
Refractory Blocks (Input)	10,000	0	10,000
Pitch (Input)	40,000	0	40,000
Aluminium Castings (Output)	624,000	170,000	794,000
Aluminium Forms (Output)	240,000	350,000	590,000
Total	1,304,000	1,620,000	2,924,000

4.4.6 Freight Commodities: Other Minerals and Products

Within KwaZulu-Natal there are several mining operations for the extraction of lime, titanium, granite and sand and stone quarries for construction materials. There are also

production facilities for Ferro silicon, Ferro, manganese, aluminium, and titanium, zircon and rutile especially within uThungulu. The titanium mining operations occur in the Richards Bay area producing about 1,5 million tons of export products per annum. The mineral sand is transported 25 kms to the plant by road and the final product is moved by rail to Richards Bay terminal 210 000 tons of inbound goods are also received on rail.

4.4.7 Private Transport

There is no data available for Private Transport at the moment as it was not part of the CPTR. Therefore the scope of this ITP does not include Private Transport.

4.5 Institutional Structures Status Quo

The status quo of institutional structures can be summarised based on the capability to perform planning, regulatory and administrative tasks in terms of transport. **Table 4.29** shows the capabilities of the six local and district municipalities.

Table 4.29: Current ability to perform specific functions with the current Institutional Structures

Municipality Name	Function performed		
	Planning	Regulatory	Administrative
KZ281 – Mbonambi LM	No	No	Yes
KZ282 – uMhlathuze LM	Rudimentary ability	Rudimentary ability	Rudimentary ability
KZ283 – Ntambanana LM	No	No	No
KZ284 – Umlalazi LM	No	No	Yes
KZ285 – Mtonjaneni LM	No	No	No
KZ286 – Nkandla LM	No	No	No
uThungulu DM	Rudimentary ability	No	No

Table 4.29 shows that the most of the local municipalities have limited capabilities in terms of planning, regulatory and administrative functions. uMhlathuze Municipality currently has capacity to perform all three functions relating to public transport.

Against the background of the Constitution, the development of a transport policy and legislation creates the framework within which the roles and responsibilities of the various levels of government are defined with regards to matters of transport and within this context, public transport. The roles and responsibilities of the institutional structures are evolving within the context of the legislation set out in the first instance in the Constitution, the Municipal Structures Act and the Municipal Systems Act. Further, the development of the National Department of Transport (NDOT) White Paper on National Transport Policy 1996 followed by the National Land Transport Transition Act (NLTTA 2000) establishes an expanded definition of roles and responsibilities for public transport at all levels of government. A draft Provincial Transport Framework is currently being finalised and when available this document should give further direction to this evolutionary process within KwaZulu-Natal.

The Act Section 20(1) defines a **Planning Authority** as the body, which is required to prepare transport plans defined in the Act for its area. This section identifies three categories of planning authorities in urban areas, these being: -.

a) Transport authorities, in respect of their transport areas;

b) Core Cities, in respect of their Metropolitan Transport Area (MTA);

c) Other Municipalities, where their jurisdictional areas have not been included wholly or partly in transport areas or MTAs, in respect of their jurisdictional areas and, where such areas are partly included in a transport area or MTA, in respect of that part of such area that is not so included.

The specific plans which must be prepared in terms of the Act and the gazetted regulations of August 2003 which apply to them are the following: -

Clause 19(1):

c) *Current Public Transport Records provided for in section 23;*

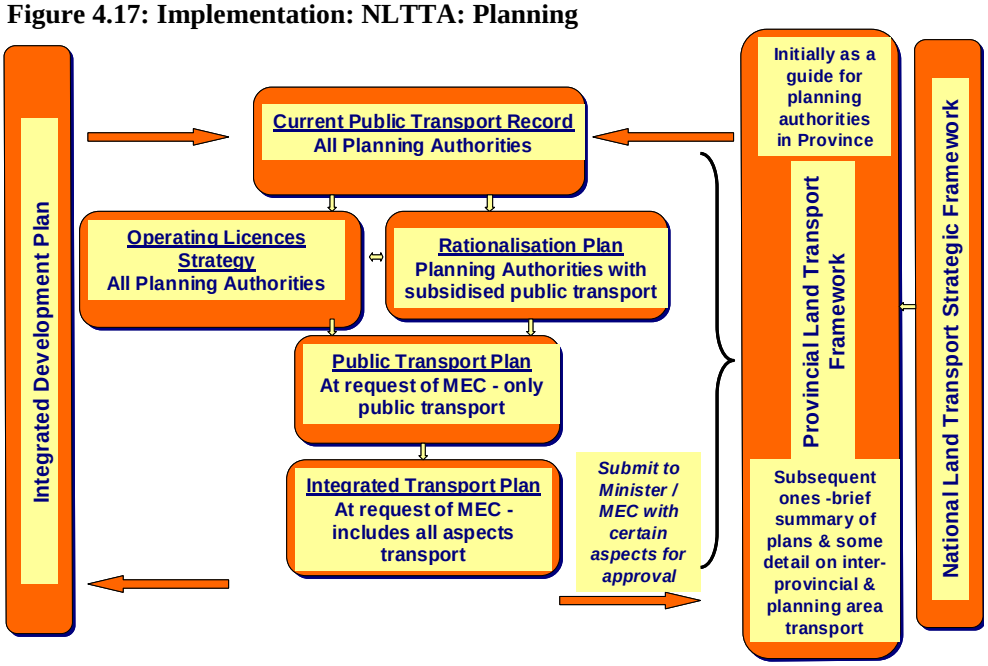
d) *Operating Licences Strategies provided for in section 24;* Regulations (Gazette 25245; No 1090)

e) *Rationalisation Plans provided for in section 25;* Regulations (Gazette 25245; No 1091) *and where required,*

f) *Public Transport Plans provided for in section 26;* Regulations (Gazette 25245; No 1093)

Integrated Transport Plans provided for in section 27. Regulations (Gazette 25245; No 1092). **Figure 4.17** illustrates the implementation of the NLTTA.

Figure 4.17: Implementation: NLTTA: Planning



Prior to publication of the gazetted regulations, interpretation of the term Municipality in Clause 20(1)(c) was open to debate. The regulations however clearly state that the preparation of NLTTA plans is a District Municipality responsibility. Notwithstanding, in terms of Clause 20 (2):

> "*A planning authority may enter into an agreement with any other planning authority or the provincial department to assist it in performing its functions in terms of this part,*" nevertheless
>
> "*Such an agreement does not detract from the planning authority's ultimate responsibility for the functions entrusted to it by this Part.*"

Clause 20 (6) states that:

> "*In the case of a district municipality as defined in the Local Government: Municipal Structures Act, 1998 (Act No. 117 of 1998), such a municipality and its relevant local municipalities must agree as to which of them must prepare the plans contemplated in section 19(1)(c) to (g) above*."

A Transport Authority (TA) is a different category of planning authority and is defined in the Act in Clause 10(1) as being responsible for a defined Transport Area in terms of a written founding agreement between the MEC and a single municipality or the MEC and municipalities whose areas of jurisdiction fall wholly or partly within the transport area.

In terms of Clause 10(3):

> "*Transport authorities may be established if the effect is to improve transport service delivery in the local sphere of government by grouping transport functions into a single, well-managed and focussed institutional structure.*"

Clause 10(8) states that:

> "*A transport authority so established is a juristic person separate from the participating municipality or municipalities.*"

and Clause 10(10):

> "*A transport authority is governed and controlled by the governing body appointed for it in accordance with its founding agreement, which must consist solely of councillors of the constituent municipality or municipalities, the number of which is determined in the founding agreement*"

Clause 10(11) states that:

> "*The technical, professional, administrative, clerical and other work of a transport authority may be performed by: -*
>
> *a) the municipal administration of one of the participating municipalities specified in that agreement;*
>
> *b) any one or more specified departments in the municipal administration of one or more participation municipalities so specified; or*
>
> *c) a transport executive as a separate body under the auspices and subject to the control of the transport authority."*

The Transport Authority is responsible for performing certain functions in terms of Clause 10(13), which states: -

"Subject to legislation applicable to local government, a transport authority must perform the following functions, as well as those assigned to it by provincial laws: -

a) Prepare transport plans for the transport area, and be responsible for the implementation thereof, and monitor its performance in achieving its goals and objectives;

b) develop land transport policy within its area based on national and provincial guidelines, which includes its vision for the area, and incorporate spatial development policies on matters such as densification and infilling as well as development corridors;

c) perform financial planning with regard to land transport within or affecting the transport area, with particular reference to transport planning, infrastructure, operations, services, maintenance, monitoring and administration;

d) manage the movement of persons and goods on land by co-ordinating such movement;

e) encourage, promote and facilitate public consultation, participation or involvement through hearings, seminars and workshops and any other means that are appropriate to ensure effective communication with customers, communities, organised labour and transport operators, and the Minister may prescribe requirements and procedures in this regard;

f) subject to section 20(4) and (5), call for tenders for public transport services to be operated in terms of commercial service contracts and subsidised service contracts, prepare tender specifications and documents for that purpose, evaluate the tenders received and the award of the tenders …."

Unlike Core Cities and Transport Authorities, the Municipalities are not responsible for tendering and award of service contracts. This remains the responsibility of a provincial department in terms of Clause 47(1).

The relationship between land transport planning and the preparation of **Integrated Development Plans** is established in Clause 18(1) of the NLTTA which in general terms states that: -

"Land transport planning must be integrated with the land development process, and the transport plans required by the NLTTA give structure to the function of "municipal planning" mentioned in Part B of Schedule 4 of the Constitution, and must be accommodated in and form an essential part of integrated development plans, with due regard to relevant sections of the Local Government: Municipal Structures Act, 1998.

Further, where the relevant planning authority is a municipality the transport plans required in terms of the Act must form the transport component of the integrated development plan of the municipality, and transport planning must cover both public and private transport and all the modes of land transport relevant in the area concerned."

Responsibility for the preparation of Integrated Development Plans is discussed under 3.4 The Municipal Structures Act.

Funding for the responsibilities of transport that can be allocated to local authorities in terms of current legislation remains a largely unresolved issue.

Although the Constitution makes provision for local authorities to receive adequate funding to perform the functions devolved to them: -

Constitution Clause 227(1) stating that local government and each province: -

a) *is entitled to an equitable share of revenue raised nationally to enable it to provide basic services and perform the functions allocated to it; and*

b) *may receive other allocations from national government revenue, either conditionally or unconditionally,*

The NLTTA under the section **Interim Funding Arrangements** for Land Transport only states that the Minister and the MEC may provide funds: -

Clause 15(1)(b) stating: -

"*The Minister may …. make moneys available to provinces, municipalities or transport authorities to assist them in performing their functions in terms of this Act or replacing provincial laws.*"

And Clause 16(1)(b) stating: -

"*The MEC may …. make moneys available to municipalities or transport authorities to assist them in performing their functions in terms of this Act or replacing provincial laws.*"

This issue of discretionary funding appears to be a key cause of concern amongst local authorities some of whom consider the responsibilities allocated to local government as unfunded mandates.The role of the National and Provincial Department as policy makes and regulators need to be confirmed to:

- In essence the following roles are envisaged;
- National and KZN-DOT : Policy making & Regulator;
- uThungulu: Strategic Planning, Transport funders, etc;
- Local Municipalities: Implementers / Funder / Providers.

The role and responsibilities for the different spheres of government is shown in **Table 4.30**.

Table 4.30: Potential Role and Responsibilities

Authority	Description	Needs assessment And Planning	Finance and Implementation	Maintenance
Private Organisations	Facilities	Yes	Yes	Yes – Contract
	Roads / Infrastructure	To an Extent	Yes	Yes – Contract
	Law Enforcement	No	Yes	N/A
	Policy	Yes	No	N/A
Local Municipality	Facilities	Yes	Yes	Yes
	Roads / Infrastructure	Yes	Yes	Yes
	Law Enforcement	Yes	Yes	N/A
	Policy	Yes	Yes	N/A
District	Facilities	Yes	Contribution	No

Authority	Description	Needs assessment And Planning	Finance and Implementation	Maintenance
Municipality	Roads / Infrastructure	Yes	Standards	No
	Law Enforcement	No	Yes	N/A
	Policy	Yes	Yes	N/A
Provincial Government	Facilities	Contribution	Contribution	No
	Roads / Infrastructure	Yes	Yes	Yes
	Law Enforcement	Yes	Yes	N/A
	Policy	Yes	Yes	N/A
National Government	Facilities	Contribution	Contribution	No
	Roads / Infrastructure	Yes	Yes	Yes
	Law Enforcement	No	Yes	N/A
	Policy	Yes	No	N/A

5. NEEDS ASSESSMENT

KwaZulu Natal Department of Transport introduced a Cost Model, developed by Prof Del Mistro, to be used as part of the assessment of Public Transport Needs in uThungulu. This cost model allowed for the incorporation of available CPTR data into this model, thus enabling a quantitative needs assessment of public transport. This Cost Model however requires substantial data that were not collected as part of the Current Public Transport Record. The purpose of the Cost Model is to answer the following questions:

- What number of vehicle seats should be provided on each Public Transport Corridor to cater for the needs of public transport users,
- Is there an under or over supply of vehicle seats on the different Public Transport Corridors,
- Between Minibus-taxi and Bus, which is the more economic mode on each corridor,
- What magnitude of Subsidy is needed per Public Transport Corridor. (It is important to note that the subsidy given by the model will be the cumulative subsidy of all the routes included in the relevant Public Transport Corridor),

In order to answer these questions a number of assumptions were made regarding the data input for specific sections of the model where data were not available. This ensured that the cost model provided useful comparative results that could be used as part of the needs assessment. The following aspects were considered in the analysis:

- Determine the number of minibus taxis required to provide the service to address the demand based on the following assumptions: 100% occupancy rate of vehicles with a minimum frequency of zero during peak hour, peak period and outside the peak. Assume a 0% standby fleet; and assume all passengers travel by taxi. Multiply the number of vehicles required by 15 to obtain the number of seats required on the corridor.
- There has been extensive research done on the cost to operate bus and minibus-taxi services and so it is assumed that the figures used in the cost model are reliable. Therefore, based on the number of passenger trips on the corridor and minimum frequencies of one vehicle per hour in the peak hour, determine the most economical mode between bus and minibus assuming: Bus occupancies of 90% with a maximum standing time of 15 minutes and a minimum 10% standby fleet. For minibus-taxi assume vehicle occupancies of 100% with no standing time allowance and a minimum of 5% standby fleet. The most economical mode is then determined by comparing the annual subsidy required at year 20. Where the subsidy required differs by less than 10% the modes are assumed to be equally economical. Again it is important to note that the subsidy results will be for public transport corridors and not individual routes.
- It was also assumed that all tickets used are cash tickets with no discounted fares for either bus or minibus-taxi users.

The results of the cost model were used as part of the Operating Strategy as well as for the Rationalisation Strategy discussed below.

5.1 Public Transport Demand

5.1.1 Passenger Needs According to Interviews

As part of the OD surveys, conducted at all the different public transport facilities, passengers where asked how public transport service could be improved. The results of the survey is summarised below:

Table 5.1 Improvements according to Passenger Survey

Description	Number of Responses	Percentage
More Taxis	601	23,0%
More Buses	510	19,5%
None	510	19,5%
Upgrade Rank Facilities	494	18,9%
Improve Vehicle Condition	247	9,4%
Educate Drivers	116	4,4%
Rank Maintenance	104	4,0%
Cheaper Fares	36	1,4%
Total	2 618	100,0%

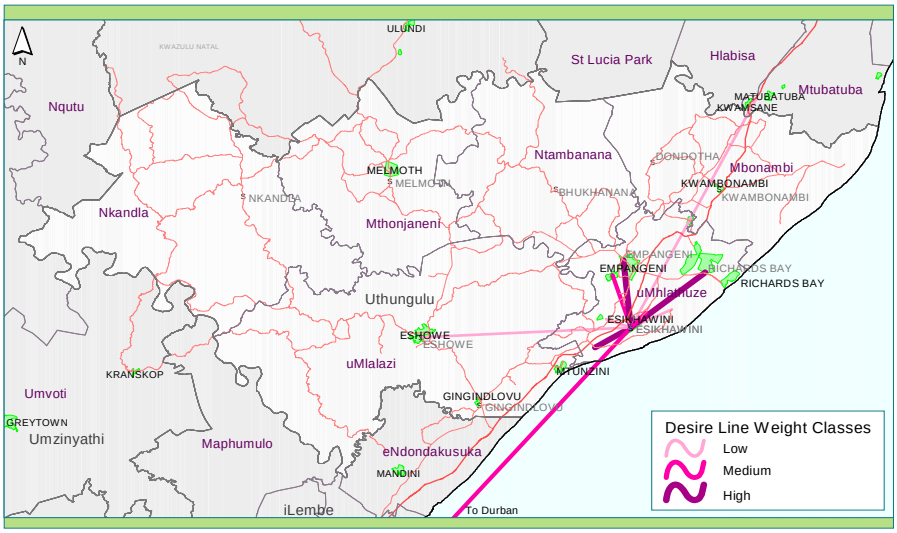
From this figures it can be seen that more than 42% of passengers interview would like to see more vehicles or an increase in the frequency of the service provided. The importance of the rank maintenance and facilities at the ranks are also a high priority for passengers utilising the Public Transport Service. Only a small percentage feels that they are paying too much for public transport. Based on the passenger surveys only 8,3% of the respondents were scholars.

5.1.2 Public Transport Demand

The demand for public transport based on the Origin-Destination surveys conducted at the different public transport facilities throughout the district is presented in this section. Passenger desire lines are compiled using the sample gathered through the surveys at each public transport facility and factored to arrive at the population (number of passengers departing form each public transport facility).

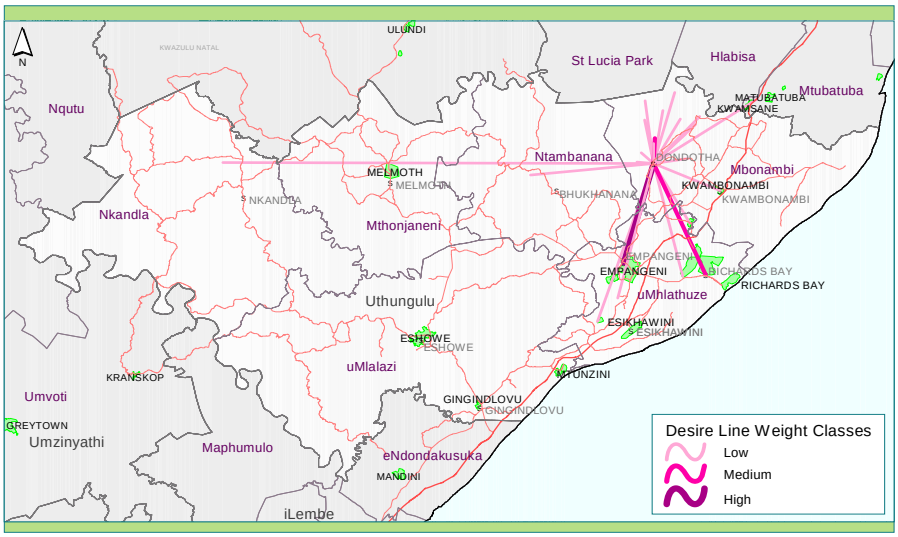
Figures 5.1 to 5.11 show the public transport desire lines based on the O-D surveys conducted at the different public transport facilities. The survey (sample) was then factored to arrive at the Desire Lines based on the population size. The population size is the actual number of passengers departing from the different public transport facilities during the survey period.

Figure 5.1: Desire Lines from Esikhawini



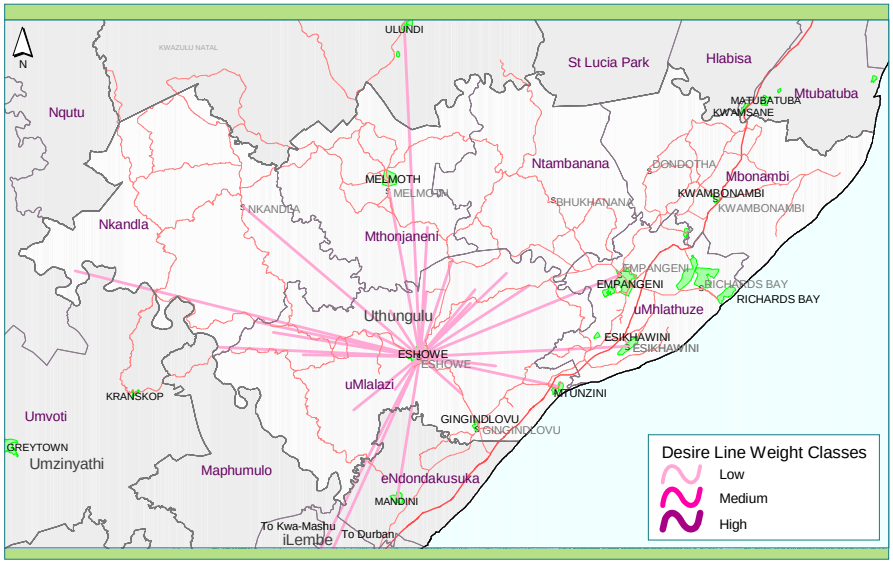
The desire lines show mostly local trips (< 20km) with two long distance trips to Eshowe and Mtubatuba. Refer to Map 26.

Figure 5.2: Desire Lines from Dondotha



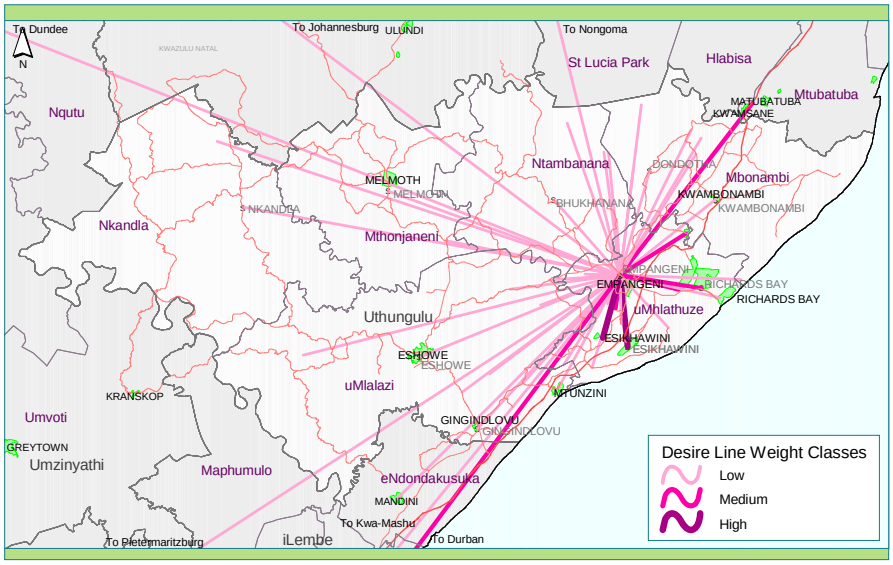
The desire lines are mostly for long distance travel with a few local lines to the North of Dondotha. Refer to Map 27.

Figure 5.3: Desire Lines from Eshowe



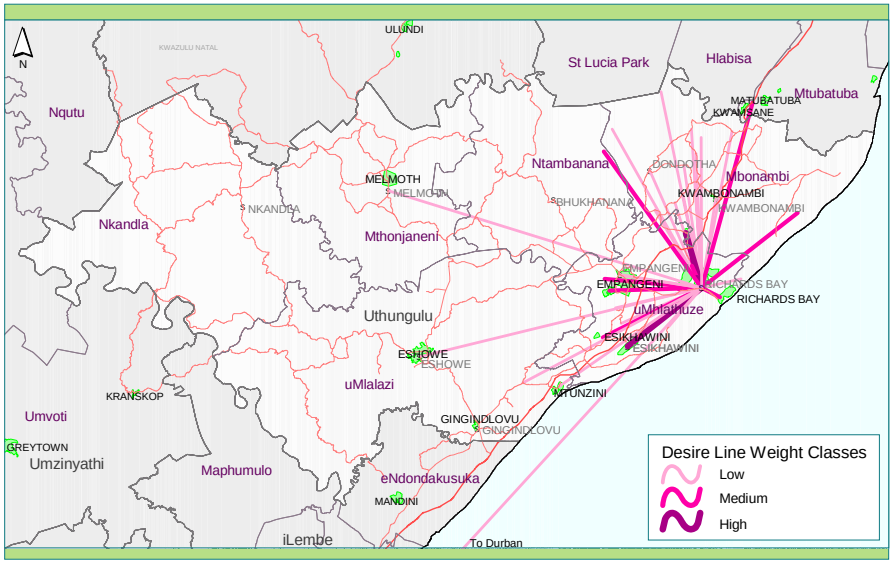
The desire lines show that the people want to travel form Eshowe to every LM except Buchanana and Dondotha. Refer to Map 28

Figure 5.4: Desire Lines from Empangeni



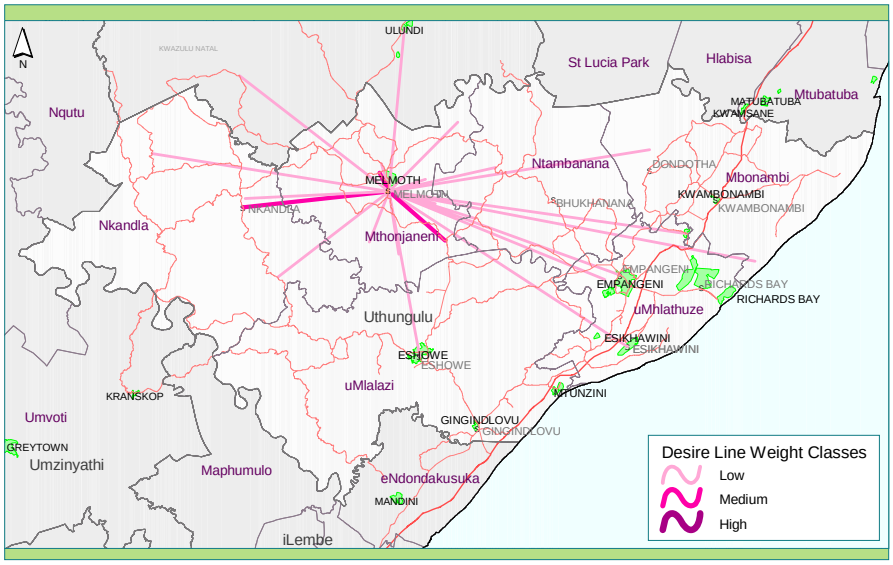
The desire lines show that Empangeni is a central node for uThungulu. Refer to Map 29.

Figure 5.5: Desire Lines from Richards bay



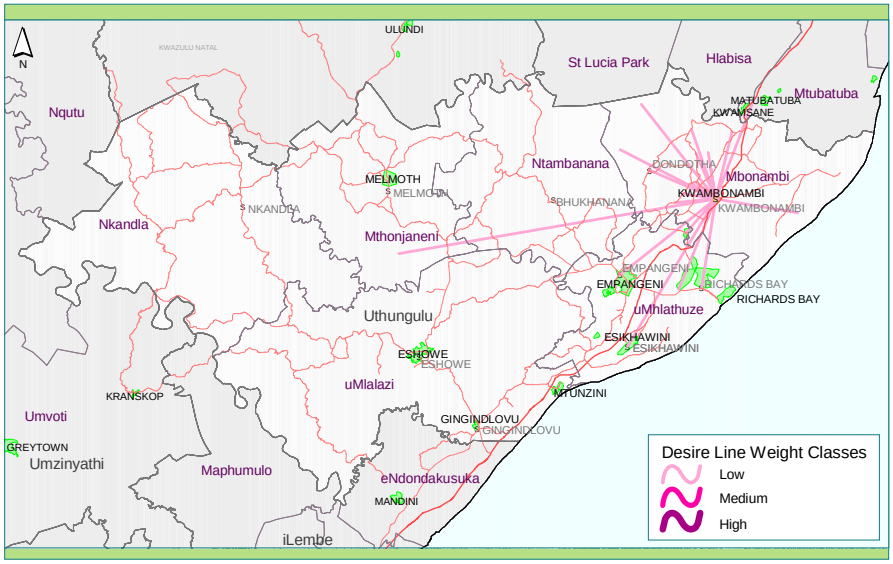
The desire lines of Richards Bay show long distance lines with a few short distance lines. (< 20km) Refer to Map 30.

Figure 5.6: Desire Lines from Melmoth



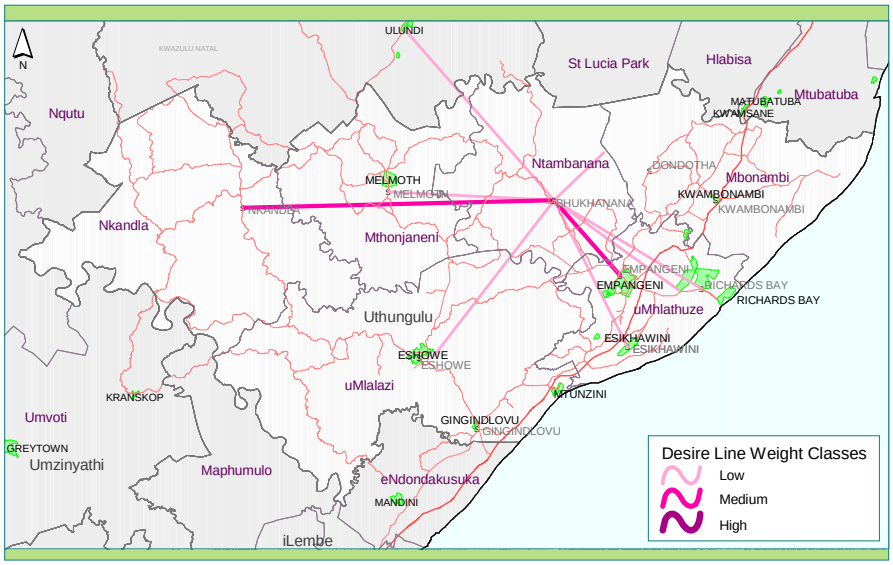
The desire lines for Melmoth show the need for a number of long distance trips. Refer to Map 31.

Figure 5.7: Desire Lines from Kwambonambi



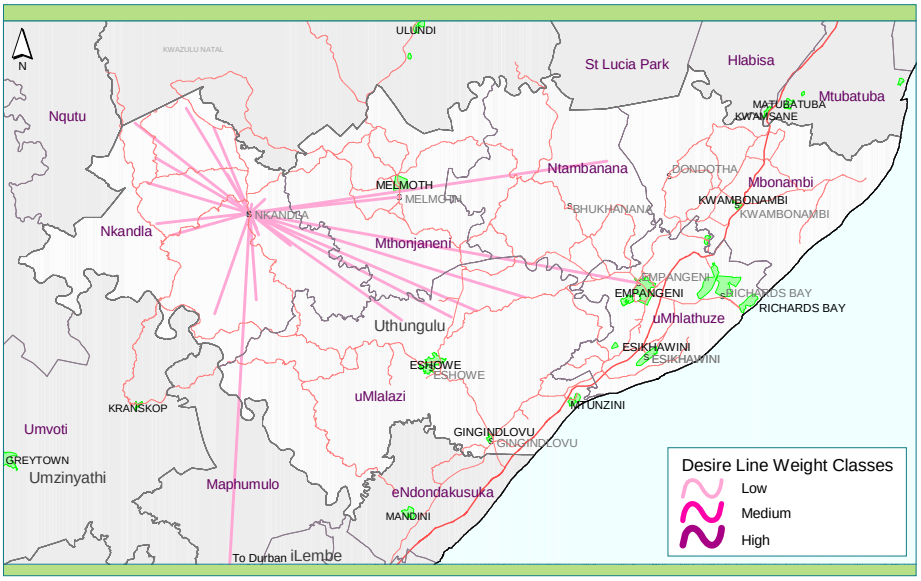
Desire lines show both local and long distance trips to all the LMs except Nkandla and Eshowe. Refer to Map 32.

Figure 5.8: Desire Lines from Buchanana



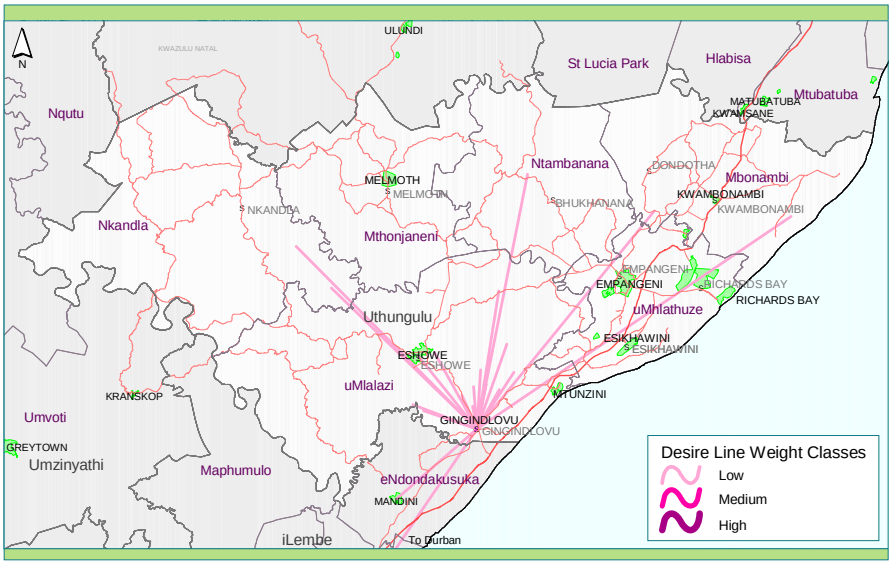
Desire lines show long distance trips to the surrounding centres. Refer to Map 33.

Figure 5.9: Desire Lines from Nkandla



Desire lines show both local and long distance trips. Refer to map 34.

Figure 5.10: Desire Lines from Gingindlovu



Desire lines show both local and long distance trips. Refer to Map 35.

5.2 Operating License Strategy (OLS)

Each district municipality that is a planning authority is responsible to prepare an OLS (either separate or as part of the PTP) and should therefore incorporate all local municipalities. The OLS should pay due attention to development in rural areas and transport for special category passengers. The OLS should therefore:

- Provide guidance to the operating licensing board in disposing of applications for operating licences with particular reference to the following:
  - Investigate the role of each public transport mode and identification of the preferred road-based mode or modes;
  - Assess the circumstances in which operating licences or permits should be allowed;
  - The use of public transport facilities within its area;
  - The avoidance of wasteful competition between transport operators;
  - The conclusion of commercial service contracts for unsubsidised public transport services; and
  - The conditions that should be imposed by the board in respect of operating licenses.

The needs assessment based on the cost model results provide useful information on the status quo of public transport services in uThungulu. The cost model results are shown in **Table 5.2.**

The cost model results suggest that the majority of PTCs have an over supply of seats. Primary PTCs with high passenger volumes in general shows an over supply of seats and vehicles. For the secondary PTC where vehicles operate on un-surfaced roads the cost model shows that there is actually an under supply of seats.

These results however only provide information on the public transport supply per corridor and not the actual demand for public transport. The results also indicate that larger (i.e. midibus and bus) would be a more suitable mode of transport. As part of the needs assessment the percentage of actual passengers on the different sections of the PTC were calculated. The results were compared with the O-D desire lines and discussed in section 5.3. The needs assessment summary (section 5.4) provides more information for all destinations with high transport demand. The reason why the terms “smaller” and “larger” rather than “bus” and “taxi” are used is that there is a range of vehicle sizes from articulated bus right down to sedan. If an applicant applies for a permit for a minibus on a route that a “larger” vehicle is recommended for, the board would advise that a “recap” vehicle should rather be used (not necessarily a bus) and the move to larger vehicles would be incremental in order to ensure operators are not disadvantaged.

Table 5.2 Cost Model results

Public Transport Corridor ID	Total Passengers Transported	Proposed vehicle size (Larger / Smaller)	Seats Required according to Cost Model	Minibus Seats Provided as per CPTR	Bus Seats Provided as per CPTR	Total Seats Provided as per CPTR	Over / Under (-) Supply
P01	13793	Smaller	1080	2685	6180	8865	7785
P02	63663	Larger	10275	11115	6780	17895	7620
P03	25382	Larger	10680	11655	6000	17655	6975
P04	10328	Smaller	4302	4623	4980	9603	5301
P05	11617	Larger	5385	2460	3540	6000	615
P06	588	Smaller	315	675	1140	1815	1500
P07	68	Smaller	15	255	120	375	360
P08	19652	Smaller	4710	12480	6600	19080	14370
P09	4893	Larger	2655	2250	6720	8970	6315

Public Transport Corridor ID	Total Passengers Transported	Proposed vehicle size (Larger / Smaller)	Seats Required according to Cost Model	Minibus Seats Provided as per CPTR	Bus Seats Provided as per CPTR	Total Seats Provided as per CPTR	Over / Under (-) Supply
P10	958	Smaller	450	750	720	1470	1020
P11	56351	Smaller	6900	14280	7860	22140	15240
P12	17597	Larger	8715	9315	6780	16095	7380
P13	2751	Larger	1260	1200	60	1260	0
P14	383	Smaller	105	1245	600	1845	1740
P15	128	Smaller	75	960	480	1440	1365
P16	2150	Larger	1050	450	2760	3210	2160
P17	859	Smaller	435	420	3060	3480	3045
P18	3500	Larger	1740	885	3540	4425	2685
P19	1355	Larger	840	270	1140	1410	570
S01	19842	Smaller	10020	8265	5100	13365	3345
S02	4688	Smaller	1740	4245	300	4545	2805
S03	34614	Larger	19290	4530	6360	10890	- 8400
S04	10536	Larger	7095	2325	1080	3405	- 3690
S05	21490	Larger	10620	10425	6780	17205	6585
S06	341	Smaller	195	960	3480	4440	4245
S07	351	Smaller	60	300	0	300	240
S08	10325	Larger	5445	810	6300	7110	1665
S09	1051	Smaller	135	105	720	825	690
S10	1265	Smaller	450	240	120	360	- 90
S11	306	Smaller	90	210	240	450	360
S12	512	Smaller	150	165	300	465	315
S13	218	Smaller	90	195	240	435	345
S14	176	Smaller	60	135	180	315	255
S15	115	Smaller	30	105	180	285	255

Similar cost assessment for the bus services were carried out and the results between the minibus-taxi and bus services were compared. This comparison is used to determine the more suitable transport mode (larger or smaller vehicles) for each PTC. The comparison between the two modes and the associated subsidy requirements will serve as input to developing the Rationalisation Strategy.

Table 5.2 shows the combination of the minibus-taxi and bus results. The table includes the following information and comparison namely:

- Public Transport Corridor Number;
- Total number of passengers to be transported on the PTC;
- The proposed vehicle size that provides an indication as to weather the PTC should favour smaller (minibus-taxi) or larger (bus) vehicles as preferred mode.
- The rest of the table combines the seats provided and seats required for both minibus-taxis and buses and again indicates if there is an over or under supply of seats.

The table clearly shows that the majority of PTCs already have a sufficient supply of both minibus-taxi and buses on the corridors. Some of the secondary corridors however clearly show that there is a need for additional seats to be provided.

This information combined with the actual passenger demand, as represented by the O-D desire lines in section 5.4, requires a further analysis. The assessment considered each PTC and its links with other PTCs in terms of passengers with a demand to travel on that single PTC link or more than one PTC.

The actual percentage of passengers travelling on a particular PTC only was established and the percentage of passengers that utilises the same PTC as part of a longer trip and a destination beyond the extents of that particular PTC was also determined. The assessment was only done for passenger demand higher than 1 500 passengers per destination. A similar cost assessment was carried out and the results in shown in **Table 5.2**.

Table 5.3 Assessment based on Passenger Demand

Public Transport Corridor ID	Passenger Volumes based on Demand *	Proposed vehicle size (Larger / Smaller)
P02a – R Bay to Esikhawini	38 198 (60%)	Smaller
P02b – Empangeni to R Bay	25 465 (40%)	Smaller
P03a – Empangeni – Short	21 574 (85%)	Larger
P03b – Empangeni – Longer	3 807 (15%)	Smaller
P05a – Melmoth – Short	8 713 (75%)	Smaller
P05b – Melmoth - Longer	2 904 (25%)	Smaller
P08a – Nseleni – Short	7 664 (39%)	Larger
P08b – Nseleni - Long	11 988 (61%)	Smaller
P09 – Long	4 893 (100%)	Larger
P11a – R Bay – Nseleni	49 589 (88%)	Smaller
P11b – R Bay - Longer	6 762 (12%)	Smaller
P12a – Empangeni – Zululand Univ	14 253 (81%)	Smaller
P12b – Empangeni - Esikhawini	3 343 (19%)	Larger
P19a – Nkandla – Melmoth	542 (40%)	Larger
P19b – Nkandla - Longer	813 (60%)	Larger
S01 – Esikhawini – John Ross Highway	19 842 (100%)	Smaller
S02 – Esikhawini – N2	4 688 (100%)	Smaller
S03a – LUC to RBM	25 821 (75%)	Larger
S03b – RBM to longer	8 793 (25%)	Larger
S05a – Dondotha – Mbonambi	6 661 (31%)	Smaller
S05b – Dondotha - Longer	14 828 (69%)	Smaller
S08a – Bhukanana – Melmoth	4 027 (39%)	Larger
S08b – Bhukanana – Longer	6 298 (61%)	Larger

* The percentage indicated illustrates the correlation with demand and supply. A high percentage illustrates that a large number of passengers want to use part of a link for which a service is provided. A low percentage illustrates that few passengers want to exclusively use this link for their travel demand.

From Table 5.2 and Table 5.3 it is clear that:

<u>PTC P2:</u>

According to the first assessment larger vehicles would be the preferred mode choice. The first assessment looked at the total number of passengers on the PTC regardless of the demand and destination. The second assessment which divides the passenger volumes based on the demand to travel to a certain destination showed that 60% of the passengers are travelling between Richards Bay and Esikhawini only and the remaining 40% between Empangeni and Esikhawini. The second assessment shows smaller vehicles as the preferred mode choice.

PTC P3:

According to the first assessment larger vehicles would be the preferred mode choice on PTC P3. The second assessment showed that 85% of the passengers are travelling short distances from Empangeni and 15% utilises the PTC P3 to travel to long distance destinations. The second assessment however preferred larger vehicles for the short distance destinations and smaller vehicles for longer destinations such as Melmoth.

PTC P5:

According to the first assessment larger vehicles would be the preferred mode choice on PTC P5. As for PTC P3 the second assessment showed that 75% of the passengers are travelling short distances from Melmoth and 25% utilises the PTC P5 to travel to long distance destinations. The second assessment however preferred smaller vehicles for both short and longer distance travel from on the PTC P5.

PTC P8:

The first assessment preferred smaller vehicles as mode choice on PTC P8. The second assessment showed that 39% of the passengers are travelling short distances between Nseleni and Empangeni and 61% uses PTC P8 to travel to long distances to destinations such as Mtubatuba. The second assessment however preferred larger vehicles for the short distance destinations and smaller vehicles for longer destinations.

PTC P9:

The second assessment showed that based on the demand all passengers travelling on PTC P9 are long distance passengers and that as for the first assessment, larger vehicles would be the preferred mode.

PTC P11:

For the first assessment smaller vehicles would be the preferred mode choice on PTC P11. The second assessment, which showed that 88% of the passengers are travelling between Richards Bay and Nseleni and 12% to long distance destinations, also favoured smaller vehicles for both short and longer distance destinations.

PTC P12:

According to the first assessment larger vehicles would be the preferred mode choice on PTC P12 for short distances from Empangeni. The second assessment however favoured smaller vehicles to transport 81% of the passengers on PTC P12 for a short distance and larger vehicles to transport 19% to long distance destinations.

PTC P19:

According to the first assessment larger vehicles would be the preferred mode choice on PTC P19. The second assessment also showed that for both short (40%) and long distance (60%) destinations the preferred mode would be larger vehicles.

PTC S1:

Both the first and second assessment preferred smaller vehicles as mode choice on PTC S1 regardless of the distance and demand of passengers travel patterns.

PTC S2:

Both the first and second assessment preferred smaller vehicles as mode choice on PTC S2 regardless of the distance and demand of passengers travel patterns.

PTC S3:

According to the first assessment larger vehicles would be the preferred mode choice on PTC S3. The second assessment also showed that for both short (75%) and long distance (25%) destinations the preferred mode would be larger vehicles.

PTC S5:

According to the first assessment larger vehicles would be the preferred mode choice on PTC S5 for passengers travelling from Dondotha. The second assessment however indicated that with the split in passengers based on the demand patterns smaller vehicles would be the preferred mode for both short and long distance destinations. It is estimated that 31% of passenger on PTC S5 travel short distances between Dondotha and Kwambonambi while 69% travel longer distances to destinations such as Richards Bay.

PTC S8:

According to the first assessment larger vehicles would be the preferred mode choice on PTC S8. The second assessment also showed that given the demand to travel both short and long distances larger vehicles are the preferred mode choice.

In awarding future licences, consideration of Table 5.3 should get presence above the recommendations of Table 5.2.

5.3 Rationalisation Plan (RatPlan)

The RatPlan focuses on subsidised interim contracts expiring in the near future and produce long term restructuring proposals for these subsidised services. There are no interim contracts in the district. A detailed RatPlan has not been prepared. It is advised that uThungulu continue with the subsidized services until such time as a detailed assessment of each public transport route has been undertaken. In order to reduce subsidy burden, it is further advised that uThungulu recommends that the KZNDOT undertakes a detailed service design for the subsidized public transport in uThungulu and puts the services to tender for a 7-year contract as soon as possible.

5.4 Needs Assessment Summary

Through the analysis of the OLS, RatPlan and the PTP status quo, the needs were identified. The ideal would be to integrate these needs for the OLS, RatPlan and PTP into detailed transport proposals for the ITP. At this stage of the development of the ITP insufficient information is available to ensure a meaningful integration.

6. TOWARDS PUBLIC TRANSPORT PROPOSALS

The success of the Public Transport Proposals depends largely on the acceptance by the stakeholders. In order to create practical solutions that will have a positive influence on the Public Transport a "state of readiness" need to be created. The state of readiness refers to ensuring that appropriate institutional structures are in place to be able to implement the public transport proposals. All local municipalities need to be actively involved in refining, improving or accepting these proposals and be prepared to act according to the implementation plan.

Five project category types were considered for the ITP:

- Type 1: Projects to create a "state of readiness" and assist local municipalities;
- Type 2: PT facilities improvements; the responsibility of the DM / LM;
- Type 3: Road infrastructure; the responsibility of the KZN-DOT or National DOT;
- Type 4: Detailed PT planning studies which are the responsibility of the District; and
- Type 5: Combined Nodal-planning studies.

These projects were identified once the status quo situation was assessed in detail and deliberated with the Interested and Affected Parties. The projects are still to be prioritised as part of the integration with the Integrated Development Plan (IDP) of uThungulu. Draft criteria for prioritisation are provided in this chapter for consideration where after a recommendation will be made to the IDP review team for inclusion in the IDP.

6.1 Proposed Projects to create a State of Readiness

Projects to create the state of readiness should include among others:

- Consultation with ALL stakeholders including operators (bus taxi & bakkie), PT users, local municipalities, other government departments;
- Establishing or investigating the establishment of the appropriate institutional arrangements to be able to implement the proposals - eg. assigning responsibility to comment on PT operating licence applications, assigning responsibility for the management of PT facilities, investigating the establishment of a transport authority, funding systems, etc; Putting in place the appropriate administrative systems and ensuring persons are trained;
- Undertaking detailed investigations on high demand corridors.
- Conduct an Act 32 of 2000 Section 78 assessment of the Institutional, Financial and other aspects within uThungulu influencing the implementation and management of Public Transport.

6.2 Proposed PT Facility Infrastructure Improvements

The suggested projects are summarised below for consideration under this project category. The local municipality is indicated for each of the proposed projects. **Figure 6.1** shows the location of the Public Transport Facilities in question.

6.2.1 Umhlatuze: Upgrading of LOT 63

Lot 63 is situated next to the Shoprite Shopping centre in Empangeni and Taxis utilise the original shopping parking bays as loading and holding bays. The passenger amenities (ablution) available at the ranking are of poor condition and needs to be upgraded. A detailed

study to establish the facility locality and associated amenities is required. An estimated 7 500 passengers travel through this rank on a daily basis.

Expected Budget: R 500 000 to R 1 500 000.

6.2.2 Umhlatuze: New Local and Long Distance Facilities at B-Rank: Richards bay

B-Rank is one of the busiest Public Transport Facilities within uThungulu and caters for local and long distance Minibus-Taxis as well as Buses. The current long distance "rank" doesn't have any shelters or proper seating for passengers. These passengers have to wait longer than local destination passengers and the improvement of the facility is urgently required. Limited ablution facilities are available and need to be upgraded to match passenger needs. The area designated for local distance commuting to the south of the long distance holding area has similar needs to that of the long distance rank. Minibus-taxis use parking bays allocated for surrounding businesses with informal shelters and seating provided. An estimated 2 500 passengers travel through this rank on a daily basis.

Expected Budget: R 500 000 to R 1 500 000.

6.2.3 Umhlatuze: New Facility at Nseleni

Nseleni to the west of Richards Bay caters for more than 10 000 passengers per day. The current informal facility has no ablution facilities, surfaced parking area or shelters for seating of passengers. With Nseleni being one of the major ranks in terms of passenger volumes a new Public Transport Facility needs to be design and developed. A detailed study with regard to the number of loading and holding bays required at the rank and type of amenities to be provided needs to be done as part of the development. An estimated 7 500 passengers travel through this rank on a daily basis.

Expected Budget: Above R 1 500 000.

6.2.4 Umhlatuze: Upgrade of Ngwelezane Rank

Ngwelezane Rank mainly serves as a loading and off loading facility for passengers travelling from Ngwelezane to Empangeni. Limited shelter and seats are provided at the rank with no ablution facilities. Passengers use the ablution facilities of the nearby service station. An estimated 3 200 passengers travel through this rank on a daily basis.

Expected Budget: Less than R 500 000.

6.2.5 Umhlatuze: Upgrade of A-Rank

A-Rank is neighbouring the Boxer Centre in Empangeni. A-Rank serves both local and long distance destinations that make this rank an important facility within uThungulu. The continuous growth in the number of taxis operating from this rank as well as the number of bus operators using this facility warrants the urgent upgrade and improvement of this facility. The amenities provided at the rank are in a poor condition and should be included in the upgrade. The possible expansion of the rank should be considered as part of the upgrade investigation. An estimated 9 800 passengers travel through this rank on a daily basis.

Expected Budget: R 500 000 to R 1 500 000.

6.2.6 Umlalazi: Implement Eshowe Rank Phase 2

Umlalazi Local Municipality recently developed a new public transport interchange where both Minibus-taxis and Buses operate. This new development is scheduled for further expansion to ensure full integration of all public transport modes operating from Eshowe. Investment in the second phase will ensure the success of providing this multi-modal interchange to the benefit of both passengers and operators. An estimated 3 600 passengers travel through this rank on a daily basis.

Expected Budget: R 500 000 to R 1 500 000.

6.2.7 Umhlatuze: Integrate Alton Bus and Taxi Facility

Alton Industrial area provides work opportunities for a significant number of people from both Richards Bay and Empangeni. These workers are predominantly use public transport for commuting. A formal bus rank with ablution facilities has been developed in Alton industrial area. Minibus-taxi are currently utilising the vacant area next to the Department of Labour offices as well as the bus rank. An estimated 4 100 passengers travel through this informal rank on a daily basis.

The bus rank however is not large enough to accommodate both minibus-taxis and buses and it should be upgraded to include minibus-taxis.

Expected Budget: Less than R 500 000.

6.2.8 Umlalazi: New Transfer Facility at Nkwaleni

Nkwaleni is situated halfway between Melmoth and Eshowe on the P47 road at the intersection with the P393 from Empangeni. This T-junction currently serves as a transfer point for passengers travelling from Empangeni to Eshowe and from Empangeni to Melmoth. Passengers travelling on minibus-taxis destined for Melmoth but wanting to go to Eshowe from Empangeni use Nkwaleni (T-junction) as a transfer point and visa versa. A formal transfer point should be developed with amenities such as ablution facilities, shelters and seating to cater for passenger needs. No formal holding area needs to be provided but should mainly cater for easy loading and off-loading areas for minibus-taxis and buses.

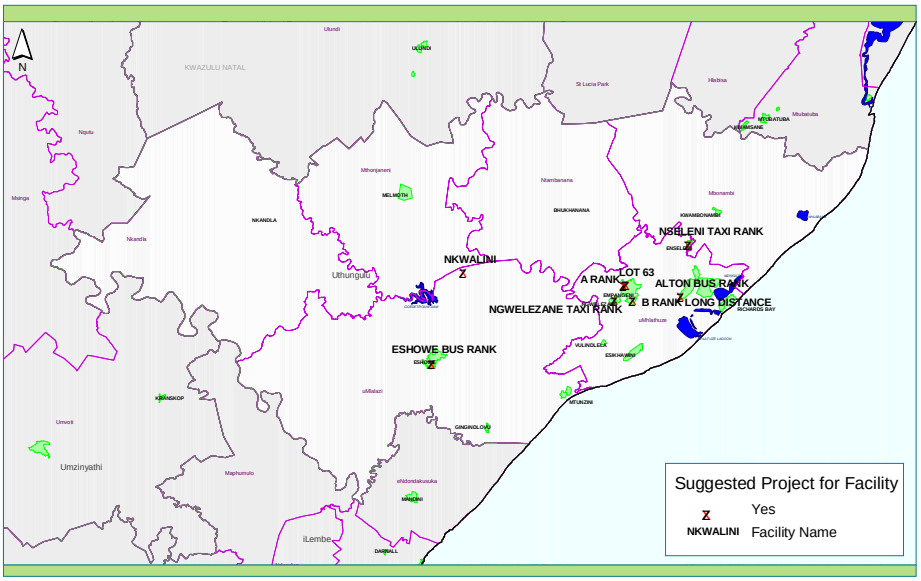
Expected Budget: Above R 1 500 000.

6.2.9 Drop-off and Pick-up Points relating to “Metered Taxi” Service

Due to the nature of the service provided by the so-called “metered taxi” within Richards Bay and Empangeni and the “door-to-door” service that is provided to passengers there is and increasing need to provide formal drop-off and pick-up points at major hotels, shopping centres and other frequently visited nodes. No formal ranking of holding areas are required but provision should be made within the parking areas of major shopping centres for “metered taxis” to park, while waiting for passengers. These parking bays should be located with easy access to facilities by passengers.

Expected Budget: Less than R500 000.

Figure 6.1 Rank Infrastructure Project Proposals



Refer to Map 36 for the infrastructure project proposals.

6.3 Proposed Road Infrastructure Improvements

The suggested projects are summarised below for consideration under this project category. For each of these projects a detailed study would be required to establish the extent of the projects. **Figure 6.1** shows the proposed road infrastructure investments within uThungulu

6.3.1 P393 Upgrade (Road widening and re-surfacing)

The P393 road between Empangeni and Nkwaleni plays a significant role in the distribution of both Public and Freight Transport in uThungulu. The road has limited capacity and requires climbing lanes. After the N2, this two lane provincial road carries the highest traffic volume. The upgrade of the P393 will allow for the general improvement of safety standards. An estimated 10 000 passengers travel on this road per day.

Expected Budget: Above R20 000 000.

6.3.2 P253 Upgrade (All Weather Surface)

The P253 between the P393 and Buchanana is a major public transport route in uThungulu and carries significant passenger volumes. This road also form part of the proposed ARUPP road between Buchanana and Ulundi and will provide an all surfaced link from the P393 through Buchanana towards Ulundi. The upgrade of the section of the P253 will improve accessibility to Ulundi, reduce the travelling time and could also reduce the current traffic volumes on the P393. An estimated 500 passengers travel on this road per day.

Expected Budget: R10 000 000 to R20 000 000.

6.3.3 Upgrade John Ross Highway (Widening to dual carriageway)

The John Ross Highway between Richards Bay and Empangeni carries the highest private, public and freight transport volumes within uThungulu. The upgrading of the John Ross Highway has already been identified as one of the most critical infrastructure upgrades for uThungulu. The upgrading of this road to a dual carriageway standard status will improve public transport accessibility, improve general road safety and allow for further development. The upgrading should also include the section between the N2 and Empangeni. An estimated 64 000 passengers travel on this road per day.

Expected Budget: Above R20 000 000.

6.3.4 P494 Road and Bridge Upgrade (All weather surface)

The P494 between Nseleni and Dondotha, extending to the N2 near Mtubatuba carries high passenger volumes and provides a direct link with Richards Bay via Nseleni. The general upgrading of the road surface and especially bridge infrastructure on this road will ensure accessibility to rural and deep rural areas of Dondotha. The lack of proper bridges on this road results in an increase in travelling times, poor accessibility and an increase of fares due to higher maintenance of public transport vehicles. An estimated 500 passengers travel on this road per day.

Expected Budget: Above R20 000 000.

6.3.5 P50/2 Upgrade (All weather surface)

The P50/2 between Eshowe and Nkandla plays an important role, as this is the only direct route between Nkandla and Eshowe. The continuous deterioration of the condition of this road an increasing number of passengers are travelling from Nkandla to Melmoth before travelling to Eshowe. This results in increased public transport costs and longer waiting times for passengers. This road will form part of the ARUPP programme. The upgrading and possible all weather surfacing of the P50/2 will provide much needed access to the area. An estimated 2200 passengers travel on this road per day.

Expected Budget: Above R20 000 000.

6.3.6 P47/3/4/5 Upgrade (Widening and re-surfacing)

The P47/3/4/5 from the border of uThungulu (west of Melmoth), Eshowe and the N2 near Gingindlovu are the main access road towards Zululand and carry a significant high number of freight carrying sugar cane and timer to mills. The topography and very steep slopes along the P47 restricts safe passing of heavy vehicles and resulted in several serious and fatal accidents of this road. The upgrading of the P47 should allow for more passing and climbing lanes and the general improvement of the road surface. The upgraded road will remove the current lack of skid resistance along many sections of the road. An estimated 13000 passengers travel on this road per day.

Expected Budget: Above R20 000 000 per section.

6.3.7 P48 Upgrade (Widening and re-surfacing)

Similar to the P47, the P48 carries high volumes of freight carrying timer. The presence of these heavy and often overloaded vehicles result in the general deterioration of the structural condition of the road with potholes forming throughout the entire section between Melmoth and Babanango. The upgrading of the P48 should also allow for the improvement of capacity especially the improvement of passing opportunities. An estimated 500 passengers travel on this road per day.

Expected Budget: Above R20 000 000.

6.3.8 P90 Upgrade (All weather surface)

The P90 serves as the main link road between Nkandla, Quodeni and Kranskop. The P16/2 from Kranskop has already been identified as an ARUP road project that will improve the general accessibility to the Nkandla LM. The P90 carries the highest passengers volumes in the Nkandla LM and the upgrading of this road as part of the ARUP process will be to the benefit of both passengers and public transport operators. An estimated 500 passengers travel on this road per day.

Expected Budget: Above R20 000 000.

6.3.9 P707 and P708 Upgrade (All weather surface)

The P707 and P708 to the west of Nkandla link with the P50/3, which are currently being upgraded. Both the P707 and P708 provide much needed access to the deep rural areas of the Nkandla LM and Quodeni area that would support upliftment programmes for the poor communities in this area. An estimated 1 300 passengers travel on this road per day.

Expected Budget: R10 000 000. to R20 000 000.

6.3.10 P706 Upgrade (All weather surface)

The P706 to the east of Nkandla links the P16/2 with the P50/2 (ARUPP road). The upgrading of the P706 with provide a more suitable link between Kranskop and Eshowe and will again provides much needed access to the deep rural areas of the Nkandla LM. An estimated 300 passengers travel on this road per day.

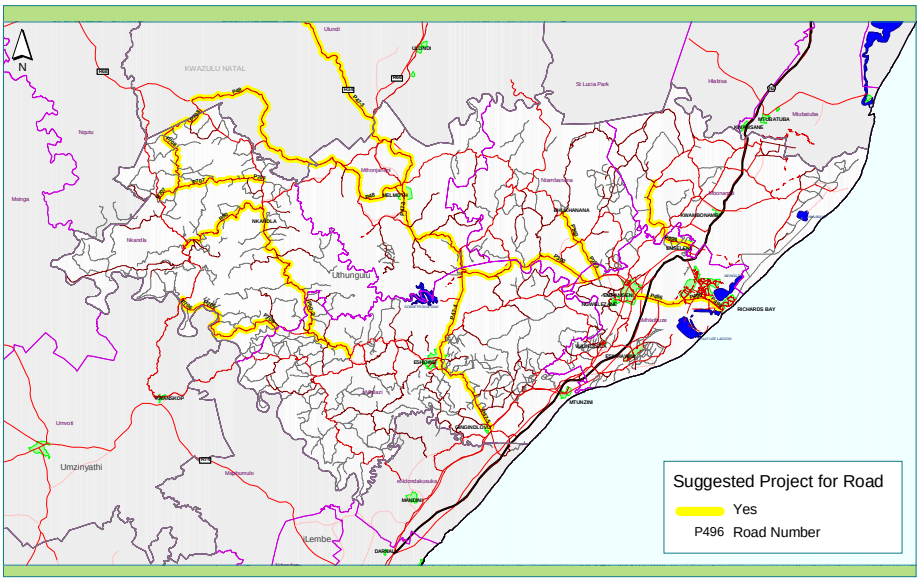
Expected Budget: R10 000 000 to R20 000 000.

6.3.11 P231 Upgrade (Widening)

Nseleni to the west of Richards Bay caters for more than 10 000 passengers per day. With Nseleni being one of the major ranks in terms of passenger volumes the P231 linking Nseleni and Richards Bay carries increasingly more minibus-taxis, the recent upgrade and introduction of the interchange with the N2 also resulted in an increase in the daily traffic volumes. An estimated 56 500 passengers travel on this road per day.

Expected Budget: Less than R10 000 000.

Figure 6.2 Proposed Road Projects



Refer to Map 37 for the proposed road projects.

6.4 Proposed PT Planning Studies

The PTP and ITP is aimed at enhancing public transport in uThungulu. A number of detailed corridor studies are required to improve the provision of PT in uThungulu. For this purpose the number of PT Corridors that were identified during the status quo investigation as reported in Chapter 3 of the ITP was assessed using the PT Cost Model that was developed by the KZN-DOT for this purpose.

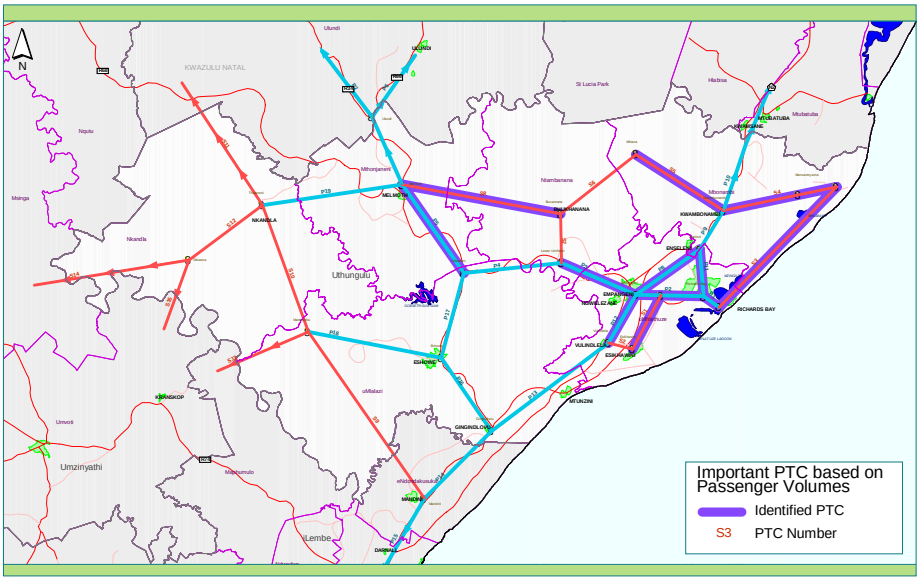
On the basis of the investigation the following PT Corridors were identified for further studies based on the results of the cost model as well as the current passengers volumes and high number of public transport services provided:

- P2, P11, S3, P3, S5, S1, P8, P12, P1, P5, S4 and S8.

The following corridors were identified on the basis of available PT seats along the corridors and are presented on **Figure 6.4** below:

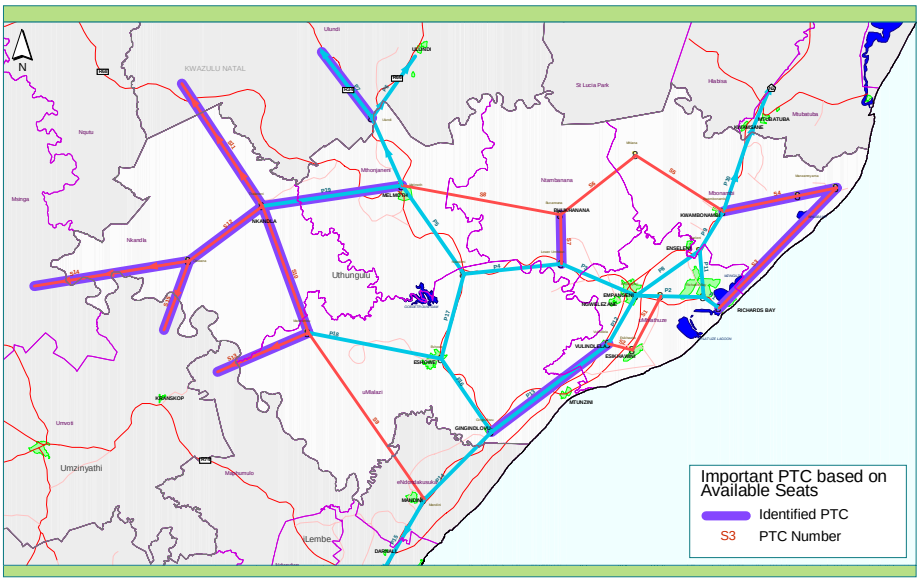
- S3, S4, S10, P13, S7, S14, S15, S12, S13, S11, P7 and P19.

Figure 6.3: PTC importance based on Passenger Volumes



Map 38 illustrates the important PTCs based on the passenger volumes.

Figure 6.4: PTC importance based on Available Seats



Map 39 illustrates the important PTCs based on the available seats.

The proposed detail Public Transport corridor studies have been grouped together for the purpose of implementation.

- Public Transport Corridor Study 1: S1, S3, S4;
- Public Transport Corridor Study 2: P2, S1, S2, P9, P10, P11;
- Public Transport Corridor Study 3: S5, S6, S7, P3;
- Public Transport Corridor Study 4: S7, S8, P4, P5

6.5 Preparation of Implementation Plans

The proposed projects are summarised below for consideration under this project category are identified to integrate the planning of the upgrading to facilities, upgrading of roads and PT corridor studies into Implementation Plans.

6.5.1 Plan 1: Empangeni Area

The uMhlatuze LM may take responsibility for the study.

- Upgrade of Lot 63 facility;
- Upgrade of A-Rank facility;
- Facilities for “metered taxis”;
- Upgrade P393;
- Upgrade John Ross Highway;
- Public Transport Corridor Study 2: P2, S1, S2, P9, P10, P11.

6.5.2 Plan 2: Richards Bay Area

The uMhlathuze LM may take responsibility for the study.

- New facility for B-Rank;
- Facilities for “metered taxis”;
- Upgrade John Ross Highway;
- Upgrade P231;
- Public Transport Corridor Study 1: S1, S3, S4.

6.5.3 Plan 3: Nseleni Area

The uMhlatuze and Mbonambi LMs may take responsibility for the study.

- New facility at Nseleni;
- Road and Bridge upgrade P494;
- Upgrade P231;

6.5.4 Plan: 4 Ngwelezane Area

The Umhlatuze LM may take responsibility for the study.

- Upgrade the facility at Ngwelezane.

6.5.5 Plan 5: Eshowe Area

The Umlalazi LM may take responsibility for the study.

- Implement phase 2 of the multi modal facility;
- Upgrade P50/2

6.5.6 Plan 6: Alton Area

The Mhlatuze LM may take responsibility for the study.

- Bus and Taxi facility upgrade in the Alton Industrial Area.

6.5.7 Plan 7: Nkwaleni Area

The Mtonjaneni and Umlalazi LMs may take responsibility for the study.

- New transfer facility for passengers transferring to Melmoth or Eshowe;
- Upgrade P393;
- Public Transport Corridor Study 4: S7, S8, P4, P5.

6.5.8 Plan 8: Buchanana Area

The Ntambanana LM may take responsibility for the study.

- Upgrade P253 to all weather surface;
- Public Transport Corridor Study 4: S7, S8, P4, P5

6.5.9 Plan 9: Dondotha Area

The Mbonambi LM may take responsibility for the study.

- P494 Road and Bridge upgrade.

6.5.10 Plan 10: Nkandla Area

The Nkandla LM may take responsibility for the study.

- Upgrade P50/2;
- Upgrade P90;
- P708 Upgrade P707 / P708.

6.5.11 Plan 11: Melmoth Area

The Mtonjaneni LM may take responsibility for the study.

- Upgrade P48 (improvement of capacity).

7. PRIVATE TRANSPORT AND FREIGHT PROPOSALS

The proposals for private transport and freight are not be included in this version of the ITP. In order to include the proposals a comprehensive workshop needs to be arranged with the stakeholders to identify the proposals. These proposals in alignment with the preferred alternatives must be detailed, but not limited to, proposals with respect to institutional structures, freight and enforcement. Particular strategies must be developed on travel demand management, road and transport infrastructure provision and maintenance and the movement of hazardous substances.

8. STAKEHOLDER CONSULTATION

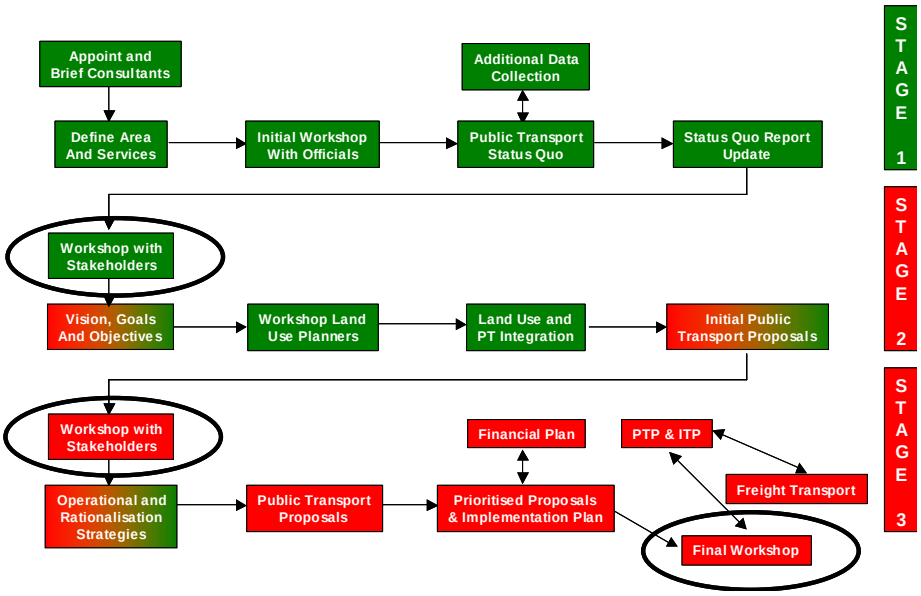
This chapter describes the consultation process followed in preparing the ITP.

8.1 Consultations and Workshops

A Project Steering Committee (PSC) has been established to manage the process of preparing the PTP and ITP. The steering committee consists of representatives from National and Provincial Department of Transport, the uThungulu, Local Municipalities and the Consulting team. Figure 8.1 illustrates the process that was followed to prepare the Integrated Transport Plan.

Regular workshops and consultations between the stakeholders took place during the developing of the ITP. The purpose of the workshops with the stakeholders were to inform the interesting parties regarding the NLTTA and the status quo report. At the workshops the accuracy of the status quo report was established and Key Focus Areas (KFAs) were identified and prioritised. A site visit was conducted to ensure all parties are familiar with local conditions.

Figure 8.1: Stages of preparing the Integrated Transport Plan



9. PRIORITISED TRANSPORT PROPOSALS AND IMPLEMENTATION PROGRAMME

At this stage of the ITP insufficient detail data exist to make quantitative prioritised multi-modal transport proposals. It is however suggested that the different project are prioritised at least according to the following five factors:

- Number of daily passenger that are using the facility (road, rank, etc.);
- The importance of rural upliftment; (high, medium, limited; this is a judgement)
- A cost factor, (cost per capita using, benefits, etc); the higher the return on the investment the higher the likelihood to implement the project; (high, medium, low; this is an estimate)
- Improvement of safety aspects; (High, medium or low; this is a judgement)
- Level of sophistication required to implement the project; (high, medium, low; this is a judgement)

The above are presented in Chapter 10.

10. FINANCIAL IMPLICATIONS

The financial funds are limited over the next three years because of the DM dealing with a backlog of projects. The following table gives an estimation of project proposals and project costs. An attempt to prioritise the projects was also done using the criteria mentioned in Chapter 9.

The following ranking criteria are suggested:

- A: Projects are extremely important and funding needs to be allocated within the next three years;
- B: Projects are important and funding needs to be allocated between three and 5 years form now;
- C: Projects are required but due to more important projects, these may only be funded after year 5.

In Table 10.1 overleaf, it was indicated that no funding has been allocated to any of these projects. This must change once these have been included into the uThungulu IDP.

Table 10.1: Project Proposals

Name of Project	Type of project	Project Estimated Cost		Project Priority	Responsibility	Funding Allocated (Yes/No)
		Minimum	Maximum			
Workshops with Taxi Operators	State of Readiness	R 20 000	R 20 000	A	DM	No
Workshops with Bus Operators	State of Readiness	R 20 000	R 20 000	A	DM	No
Section 78 Assessment	State of Readiness	R 500 000	R 500 000	A	DM	No
Umhlatuze: Upgrading of Lot 63	Facility	R 500 000	R 500 000	B	LM	No
Umhlatuze: New Local and Long Distance Facilities B-Rank	Facility	R 500 000	R 500 000	B	LM	No
Umhlatuze: New facility at Nseleni	Facility	R 1 500 000	R 1 500 000	B	LM	No
Umhlatuze: Upgrade of Ngwelezane rank	Facility	R 500 000	R 500 000	B	LM	No
Umhlatuze: Upgrade of A-Rank	Facility	R 500 000	R 500 000	A	LM	No
Umlalazi: Implement Eshowe Rank Phase 2	Facility	R 500 000	R 500 000	A	LM	No
Umhlatuze: Integrate Alton Bus and Taxi Facility	Facility	R 250 000	R 250 000	B	LM	No
Umlalazi: New Transfer Facility at Nkwaleni	Facility	R 1 000 000	R 1 000 000	A	LM	No
Drop-off and Pick-up Points relating to "Metered Taxi" service	Facility	R 250 000	R 250 000	C	LM	No
P393 Upgrade	Road	R 10 000 000	R 20 000 000	A	KZN DOT	No
P253 All Weather Surface Upgrade	Road	R 10 000 000	R 20 000 000	A	KZN DOT	No
Upgrade John Ross Highway	Road	R 20 000 000	R 25 000 000	A	National DOT	No
P494 Road and Bridge Upgrade	Road	R 20 000 000	R 25 000 000	B	KZN DOT	No
P50/2 Upgrade	Road	R 20 000 000	R 25 000 000	B	KZN DOT	No
P47/3/4/5 Upgrade	Road	R 20 000 000	R 25 000 000	A	KZN DOT	No
P48 Upgrade	Road	R 20 000 000	R 25 000 000	A	KZN DOT	No
P90 Upgrade	Road	R 10 000 000	R 20 000 000	A	KZN DOT	No
P707 and P708 Upgrade	Road	R 10 000 000	R 20 000 000	A	KZN DOT	No
P706 Upgrade	Road	R 10 000 000	R 20 000 000	A	KZN DOT	No
P231 Upgrade	Road	R 5 000 000	R 10 000 000	A	KZN DOT	No
Public Transport Corridor Study 1: S1, S3, S4	Planning	R 1 500 000	R 1 500 000	A	DM	No
Public Transport Corridor Study 2: P2; S1; S2; P9; P10; P11	Planning	R 1 500 000	R 1 500 000	A	DM	No
Public Transport Corridor Study 3: S5; S6; S7; P3	Planning	R 1 500 000	R 1 500 000	A	DM	No
Public Transport Corridor Study 4: S7; S8; P4; P5	Planning	R 1 500 000	R 1 500 000	A	DM	No
P1 Empangeni Nodal Study	Planning	R 32 750 000	R 47 750 000	A	DM	No
P2 Richards Bay Nodal Study	Planning	R 27 250 000	R 37 250 000	A	DM	No
P3 Nseleni Nodal Study	Planning	R 26 500 000	R 36 500 000	A	DM	No
P4 Ngwelezane Nodal Study	Planning	R 500 000	R 500 000	B	DM	No
P5 Eshowe Nodal Study	Planning	R 20 000 000	R 25 000 000	B	DM	No
P6 Alton Nodal Study	Planning	R 250 000	R 250 000	B	DM	No
P7 Nkwaleni Nodal Study	Planning	R 12 500 000	R 22 500 000	A	DM	No
P8 Buchanana Nodal Study	Planning	R 11 500 000	R 21 500 000	A	DM	No
P9 Dondotha Nodal Study	Planning	R 20 000 000	R 25 000 000	B	DM	No
P10 Nkandla Nodal Study	Planning	R 40 000 000	R 65 000 000	A	DM	No
P11 Melmoth Nodal Study	Planning	R 20 000 000	R 25 000 000	A	DM	No