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- South African National Roads Agency Ltd. (SANRAL)
- Passenger Rail Agency of South Africa (PRASA)
- TRANSNET
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1 INTRODUCTION

1.1 BACKGROUND

The eThekweni Transport Authority (ETA) completed its first full Integrated Transport Plan (ITP) in 2005. A comprehensive revision of the 2005 ITP was completed in June 2010, for the period 2010-2015, in line with requirements gazetted by the National Department of Transport - which requires type 1 planning authorities to prepare a Comprehensive Integrated Transport Plan (CITP). Entire new chapters were included in the 2010 revision and the document reformatted to reflect the minimum content for CITP's.

Since the completion of the 2010 ITP document, various data-set have been updated; plans and studies have been completed and hence needed to be incorporated into the relevant chapters of the of the 2010-2015 ITP. Therefore, the key objective of the 2013/14 ITP update is to:

- Update programmes, key performance indicators (KPI's) and budget (transport infrastructure strategy);
- Summarize the IRPTN suite of plans and programmes and incorporate into the relevant chapters.

The following important chapters updates, in line with the above are:

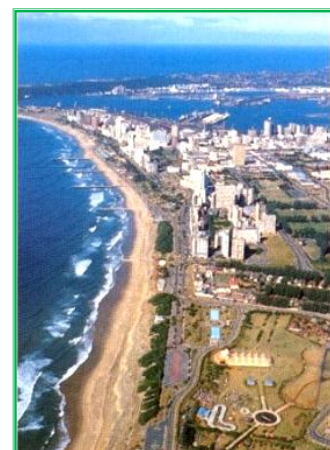
- Chapter 6: Public Transport
- Chapter 7: Transport Infrastructure Strategy
- Chapter 12: Funding Strategy, Proposals and Programmes.

While the above chapters have been updated in detail, other chapters have been summarised for ease of reference, and it must be noted that the 2013/14 Update document must be read in conjunction with the 2010-2015 ITP.

1.2 ETHEKWINI MUNICIPALITY

eThekweni Municipality covers approximately 2 300km² and is home to 3,44 million people (Census, 2011), just over one third of the population of KwaZulu-Natal and accounts for 60% of economic activity within the province.

The eThekweni municipal area extends from Tongaat in the north to Umkomaas in the south and from the coastline in the east to Cato Ridge in the west.



1.3 OUTLINE OF THE ITP UPDATE DOCUMENT

The summaries of sections 2 to 5 and 8 to 11 of the ITP update highlight key aspects of each section in order to give a comprehensive but broad overview of the ITP.

Section 2: Transport Vision and Objectives

Section 3: Transport Register

Section 4: Spatial Development Framework (SDF)

Section 5: Transport Needs Assessment

Section 6: Public Transport Operational Strategy

Section 7: Transport Infrastructure Strategy

Section 8: Transport Demand Management (TDM)

Section 9: Freight Transport Strategy

Section 10: "Other Transport" Related Strategies

Section 11: Road Safety

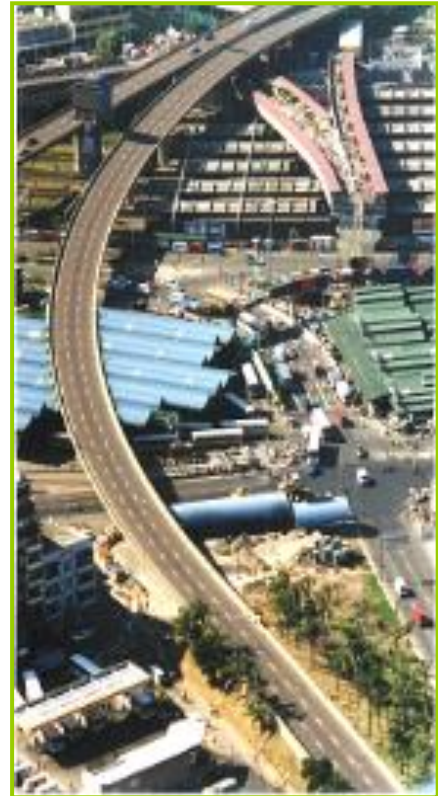
Section 12: Funding Strategy for Proposals and Programmes

2 TRANSPORT VISION AND OBJECTIVES

2.1 THE ETA TRANSPORT VISION STATEMENT

The ETA's transport mission statement creates the framework for the setting of goals and the development of policy for the various components of the ITP. The mission statement has been developed within the context of the following documents and more directly, the national and provincial visions for transport:

- White Paper on National Transport Policy (1996)
- Provincial Land Transport Framework (2001)
- National Land Transport Strategic Framework (2006 - 2011)
- Public Transport Strategy and Action Plan (2007)
- Scoping Study for the Implementation of an Integrated Rapid
- Public Transport Network (IRPTN) in eThekweni, January 2008
- National Land Transport Act (5/2009)
- National Development Plan (2012)
- Provincial Growth and Development Plan (2012)



Transport has a major influence on development. At the same time it is impacted by development and land use. Consequently, the ETA's mission for transport recognises the imperatives of the IDP vision and sets a framework for goals and related policy which will have a positive impact on social and economic development and activities in the municipal area.

2.2 NATIONAL AND PROVINCIAL CONTEXT

Key issues and concerns for transport that emerge from the National and Provincial visions, mission, values, strategic objectives and statements on the need for transport systems and services that meet the needs of the end user and that are:-

- safe
- reliable
- effective
- efficient
- accessible
- affordable
- integrated

Further, such systems and services need to:-

- improve quality of life for all
- support government strategies for economic and social development
- improve levels of accessibility and mobility
- minimise time spent in transit
- be economically and environmentally sustainable
- make provision for community participation

Collectively, these perspectives on transport give direction to the local authority in terms of their mission, goals and policy for transport.

Further direction is provided by the eThekweni IDP vision as set out in the following section.

2.3 eTHEKWINI IDP VISION & CITY DEVELOPMENT STRATEGY

2.3.1 IDP VISION

The following is eThekweni's IDP vision statement:-

IDP Vision for eThekweni:

By 2030, eThekweni will enjoy the reputation of being Africa's most caring and liveable City, where all citizens live in harmony.

The ways in which transport can contribute to a high **quality of life** in terms of the broad objectives of the IDP vision are:-

- Meet people's needs through:-
 - Increased access to opportunity for poorer communities through provision of an efficient and effective public transport system that is reliable, convenient, safe and affordable.
- Grow the economy through:-
 - dependable public transport supporting a stable workforce for industry
 - creating opportunities for growth within the transport industry
- Build people skills and technology by:-
 - providing assistance and creating opportunities for Small, Medium and Micro Enterprises (SMMEs) to participate in various aspects of the transport industry
 - applying effective technology for security, good communications to passengers, operating safety and efficiency

2.3.2 KEY CHOICES

The eThekweni IDP discusses the making of key choices in order to achieve the vision it has for eThekweni. Those choices, relating specifically to transport, are listed in full, for information.

CHOICE ONE: Improving our port and logistics infrastructure

Improving the Municipality's logistics infrastructure will ensure that we maximise the opportunities presented by the existence of the Port and other enterprise to partner us in increasing economic opportunities. The Port and its environs is the greatest job-creating opportunity at present. The improvement of the logistical infrastructure will:

- Improve connectivity in the Municipal area.
- Increase the scope and opportunity for learning.
- Increase economic opportunities.
- Act as an employment generator for the municipality as well as the province

CHOICE TWO: Promoting Densification and Strategic Management for New Growth Areas

The Municipality is striving to ensure that the people are brought closer to where they live, work, study and relax. While the Council is committed to bringing people closer to areas of economic activity, the principal of sustainability will be the driver to ensure that the people are living in harmony with the environment.

Using the municipal Spatial Development Framework (SDF) and supporting package of plans, the Municipality is committed to the zoning of land in appropriate areas in order to increase densities and reduce urban sprawl.

The Municipality will also limit urban sprawl and associated development costs through the prioritization of infrastructure provision to support new growth areas. Brownfield's developments, regeneration, and reclaimed land will also be supported through infrastructure upgrades in specific areas with economic value. The SDF and supporting plans will ensure that:

- There is more effective use of facilities
- The Municipality reduces the need to build new facilities
- People live closer to amenities and work opportunities

CHOICE FOUR: A good public transport system

One of the objectives of the 2020 vision is to improve the ease of movement for the commuters to and from work, leisure and school. Our vision is to implement a fully integrated public transport system that utilise appropriate modes and technology in terms of ticketing to ensure seamless experience

2.4 THE ETA'S TRANSPORT MISSION STATEMENT

Within the context of the national and provincial visions for transport and eThekweni's IDP vision the following is the ETA's mission statement for transport. The mission statement recognises and responds to this wider role and responsibility for transport.

ETA's Transport Mission Statement:

"To provide and manage a world-class transport system with a public transport focus, providing high levels of mobility and accessibility for the movement of people and goods in a safe, sustainable and affordable manner".

2.4.1 THE ETA'S TRANSPORT GOALS

The extension of ETA's vision into goals for transport has identified five basic goals which directly support the main thrust of the IDP. They are the following:

Goal 1: Effective Transport

- Needs driven
- Promotes PT over private transport
- Increases mobility and accessibility
- Targets effective use of transport subsidies
- Recognises needs of the poor and supports poverty alleviation

Goal 2: Efficient Transport

- Improves transport system cost efficiency
- Integrates transport systems
- Regulates public transport and optimises role/positioning of modes
- Integrates land use and transport activities

Goal 3: Sustainable Transport

- Financially
- Environmentally
- Technologically
- Adequate skills & resources
- Adequate maintenance

Goal 4: Safe & Secure Transport

- Provides safe infrastructure and operating environment for all modes of transport (including non-motorised transport) and all passengers
- Ensures adequate regulation and levels of enforcement on services moving goods and people
- Promotes public transport passenger security systems and services

Goal 5: Black Economic Empowerment

- Provides for participation in contracts
- Encourages and creates investment opportunities
- Promotes and provides training and support

2.5 2.5 KEY FOCUS AREAS IN THE INTEGRATED TRANSPORT STRATEGY

2.5.1 OVER-ARCHING STRATEGY

Sustainability is the fundamental strategy that over-arches and gives a context to the five driving strategies for transport. Sustainability is widely recognized as having three components: social, economic, and environmental concerns, all of which must be addressed in working towards a sustainable future. These components are underpinned by Transportation Demand Management (TDM) strategies that result in the efficient use of transportation resources that can be used to achieve social, environmental and economic objectives.

It focuses on reducing overall trips by private transport and demand for road space whilst maximising the effective utilisation and efficient operation of road infrastructure for purposes of private and public transport use. It also places an emphasis on strategies which support and encourage use of public transport.

2.5.2 KEY FOCUS AREAS

The following are five central themes in the ITP around which strategies and plans have been developed to meet the overall transport mission of the ETA.

- Public Transport
- Freight
- Safety
- Transport Infrastructure
- Traffic Management and Control

3 TRANSPORT REGISTER

3.1 DEMOGRAPHIC AND SOCIO-ECONOMIC

The demographic and socio-economic information in this section is based on the Census (2011), eThekweni Household Travel Survey (EHTS) 2007/2008, eThekweni Municipality Demographic Forecasts (2011).

3.1.1 SALIENT FACTS (CENSUS 2011)

Some salient demographic and socio economic facts are:

- There are 956 700 households with 3 442 000 people, with an average household size of 4, within the eThekweni municipal area.
- Just over 70% of the population are Blacks whilst Asians are just under 20%, Whites are about 7% and Coloureds are just over 2% as shown in figure 3.1.

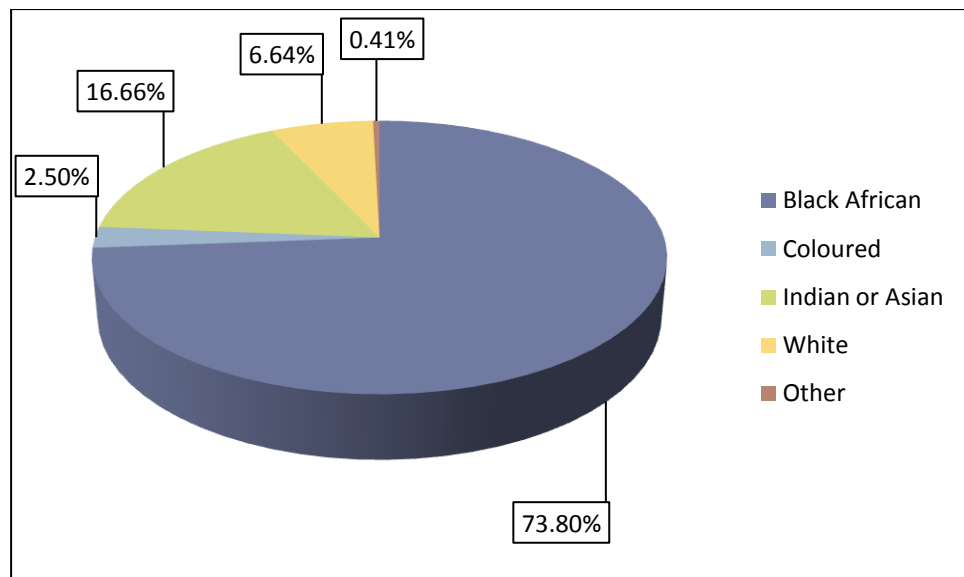


Figure 3.1 Population by Race Profile

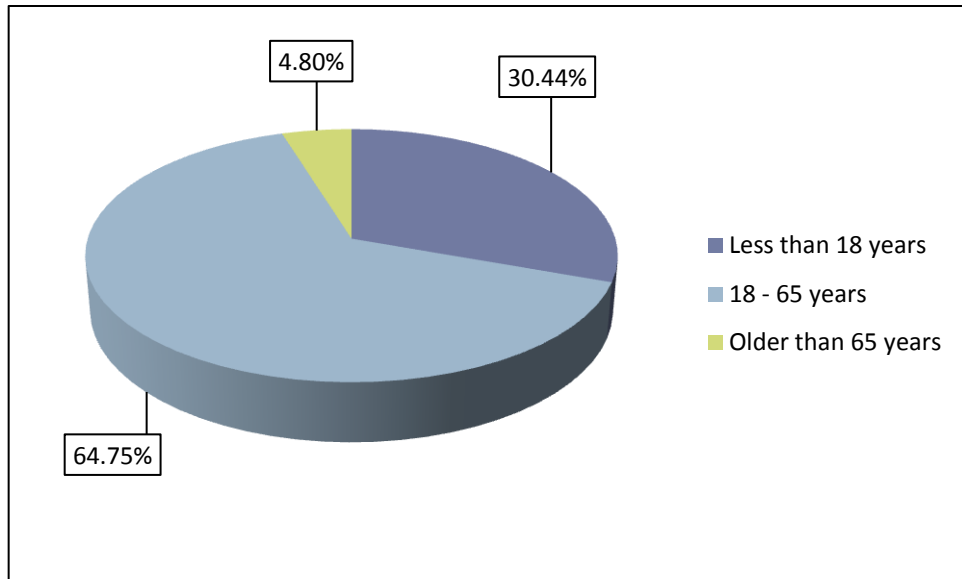


Figure 3.2 Summary Age Profile of the Population

- Figure 3.2 shows that about 65% of the population are in the economically active age group of 18 to 65 followed by almost a third of the population being under 18 years.

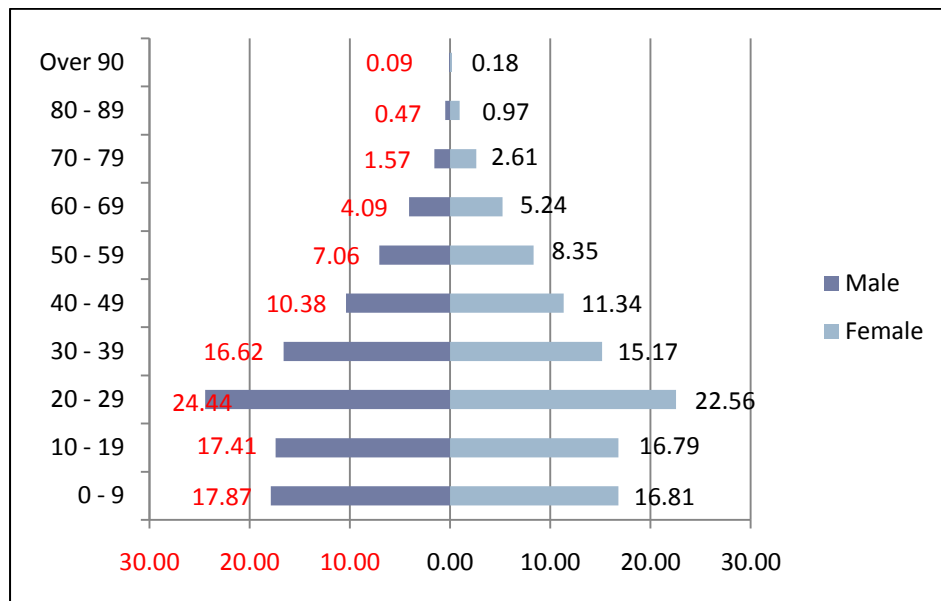


Figure 3.3 Detailed Age Profile by gender of the Population

- Figure 3.3 indicates the 20-29 year age group for both male and females is predominant.

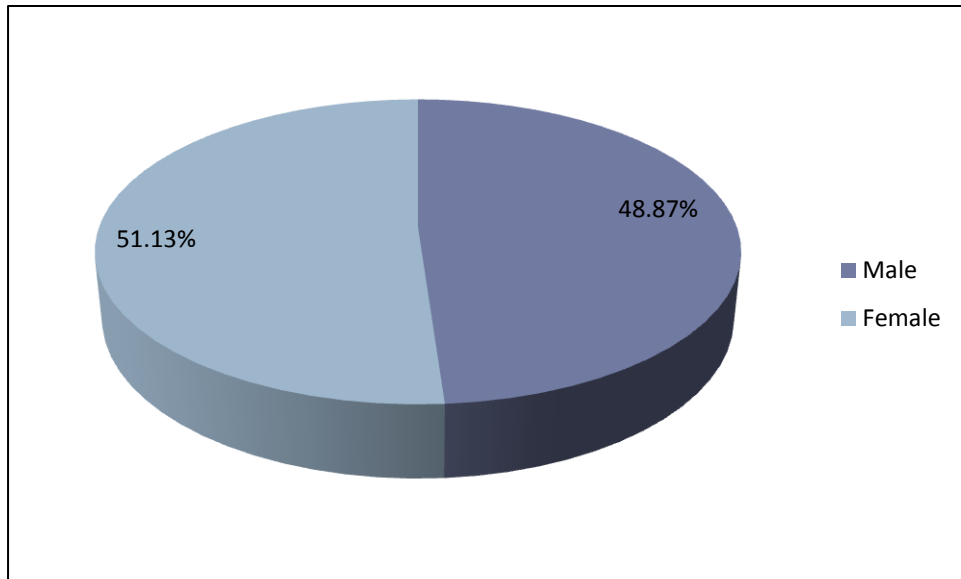


Figure 3.4 Gender Profile

- 51% of the population are Females as indicated by figure 3.4.

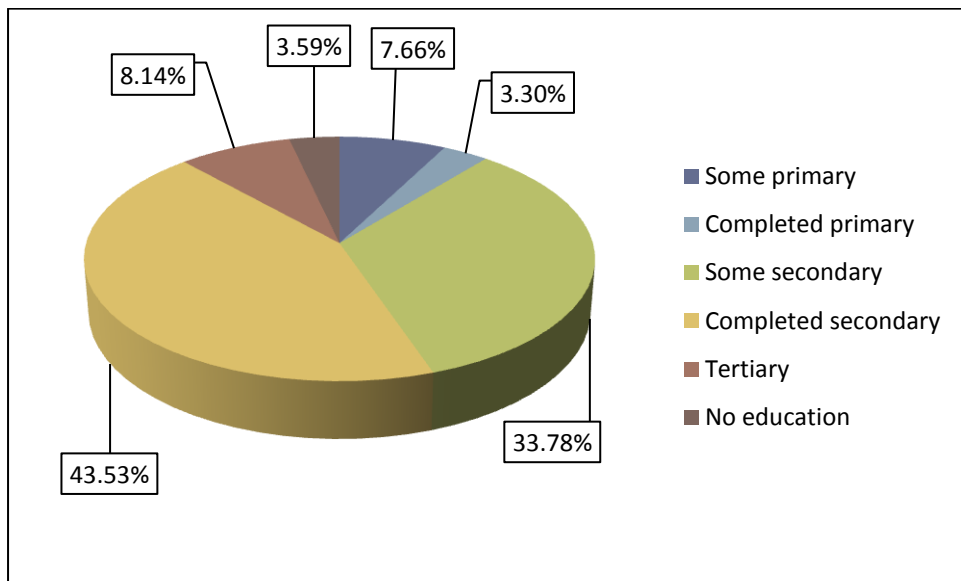


Figure 3.5 Education Profile of the Population

- Figure 3.5 shows that over 88% of the population have, at the least, completed their primary education.

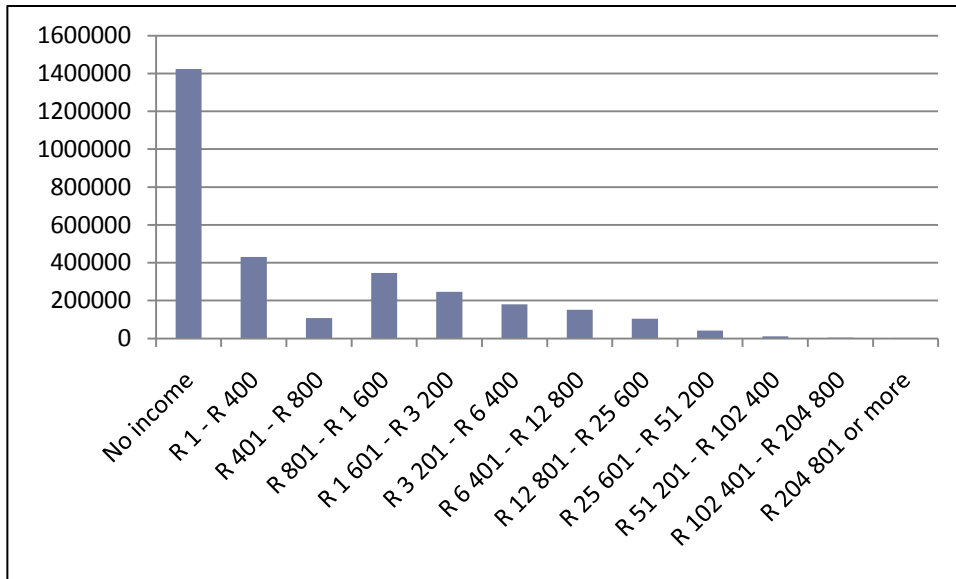


Figure 3.6 Monthly Income per person

- Figure 3.6 show that approximately 1.4 million people have no income.

3.2 TRANSPORTATION SYSTEM DEMAND AND SUPPLY

The Transportation System Demand and Supply information is based on the eThekweni Household Travel Survey (EHTS, 2008).

3.2.1 SALIENT FACTS

- Just under a third of the population walks (this includes few people cycling), a minimum one way distance of 1kilometre, to their destinations.

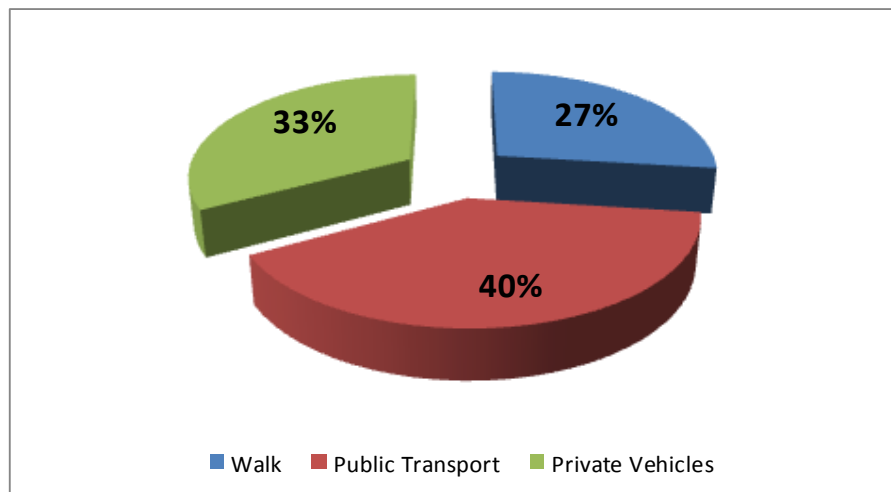


Figure 3.7 Modal Spilt (All Day)

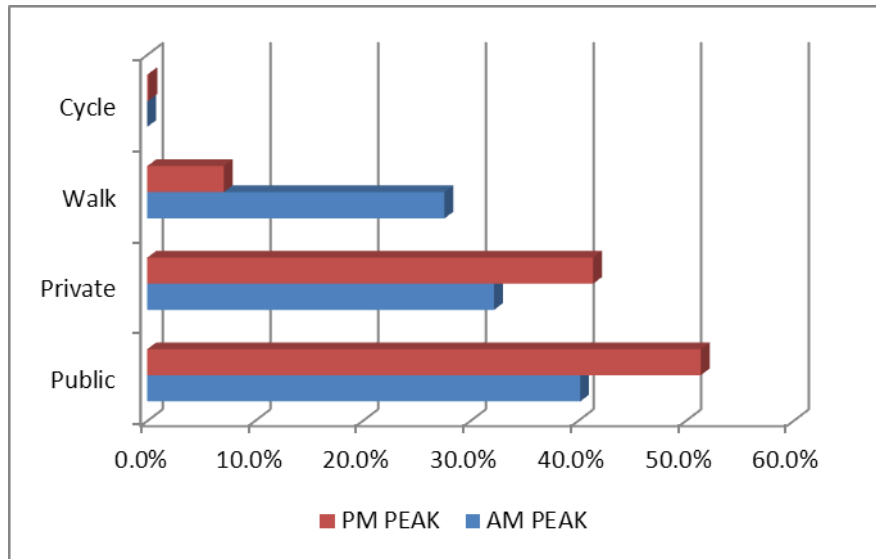


Figure 3.8 Modal Split by Peak Periods

- During the afternoon peak period, walk as a mode is reduced drastically as most scholars return home before the afternoon peak period. Further, most adults also prefer not to walk during the twilight hours due to safety and security issues.

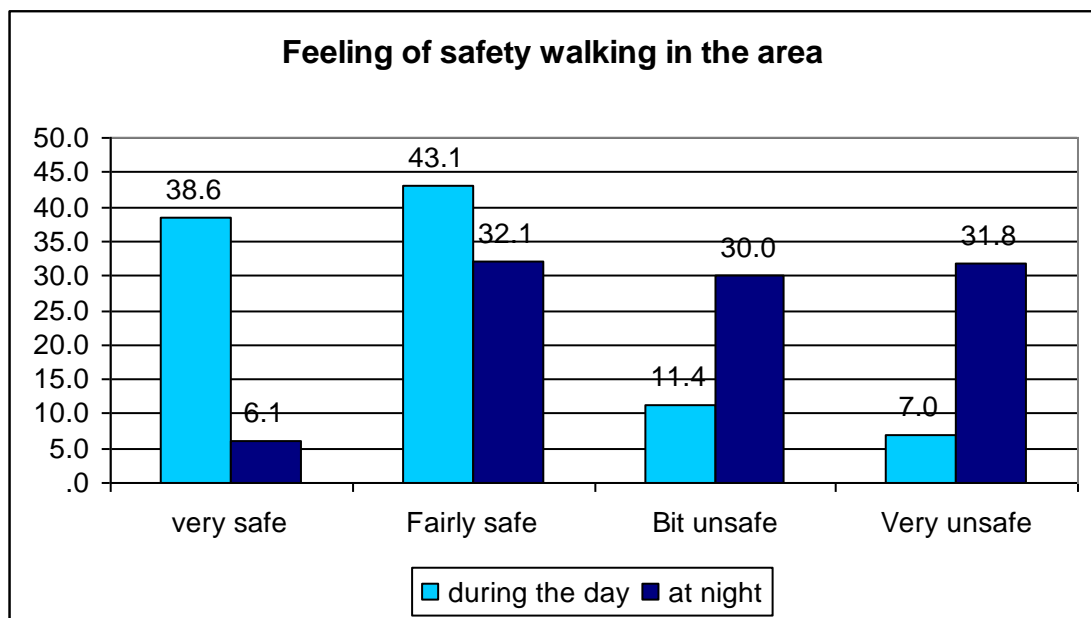


Figure 3.9: Feeling of Safety Walking in the Area

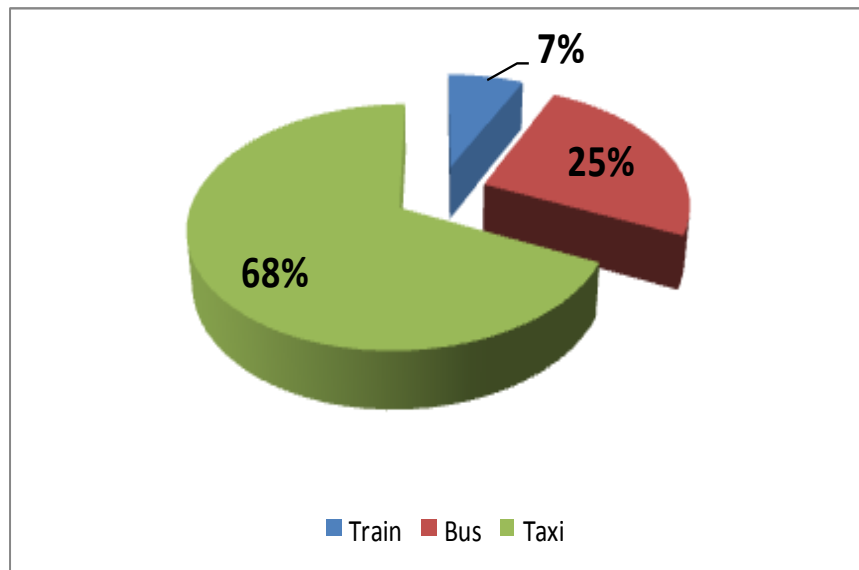


Figure 3.10: Public Transport Modal Split

- Mini-Bus Taxis is the most popular choice of public transport.

Table 3.1 Trip Purpose

TRIP PURPOSE	ORIGIN OF TRIP			DESTINATION OF TRIP		
	AM PEAK PERIOD	PM PEAK PERIOD	ALL DAY	AM PEAK PERIOD	PM PEAK PERIOD	ALL DAY
Home	98.1%	3.2%	50.1%	1.8%	96.4%	49.5%
Work	1.1%	83.1%	22.5%	45.6%	2.2%	22.8%
School or college	0.1%	9.1%	22.3%	48.0%	0.2%	22.4%
Firm's Business	0.0%	0.4%	0.2%	0.2%	0.1%	0.2%
Serve a passenger	0.6%	0.3%	0.6%	0.7%	0.2%	0.6%
Shopping	0.1%	1.6%	2.1%	0.9%	0.3%	2.1%
Social/recreational	0.0%	0.8%	0.7%	0.5%	0.3%	0.7%
Looking for work	0.0%	0.5%	0.5%	1.0%	0.0%	0.5%
Medical purposes	0.0%	0.4%	0.5%	0.8%	0.0%	0.6%
Other	0.0%	0.6%	0.5%	0.5%	0.3%	0.6%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Yellow highlights the major trip purposes

- In Table 3.1, the trip purposes are indicated by the origin and destination per time of day. Home, Work and School/Based Trips are prominent.

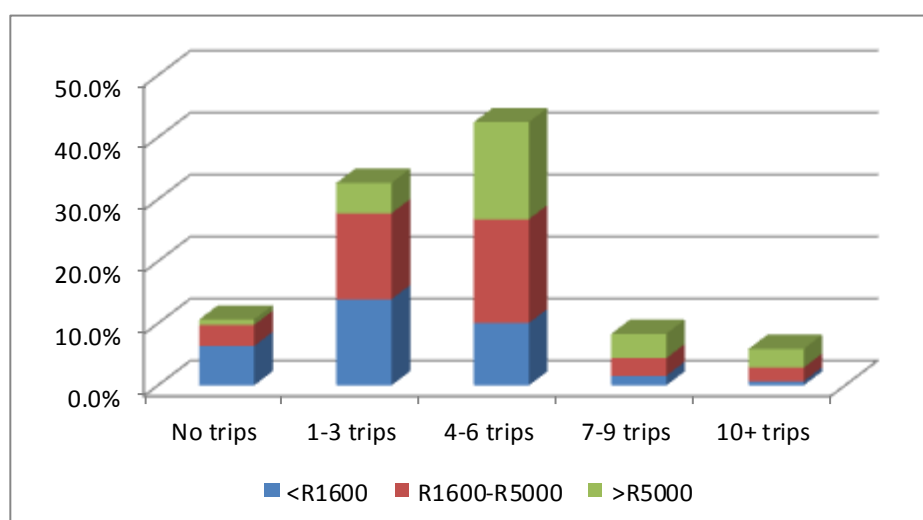


Figure 3.11 Number of Daily Trips Undertaken by Households per Household Income Group

- Most people undertake 4 to 6 trips per day; the higher income group generally undertake more frequent trips.

3.3 CURRENT PUBLIC TRANSPORT RECORD (CPTR)

The ETA completed its first CPTR in 2003. A comprehensive CPTR (2012) is being undertaken. Surveys have been conducted for the three hour AM peak period (05:00-08:00) and where demand warranted, the three hour PM peak period (15:30-18:30). The information will be captured in the eThekweni Municipality's Public Transport Management Information System (PTMIS), which is further supported by the municipality's Geographical Information System (GIS), and thereby facilitates interactive analysis for transportation studies.

Preliminary outputs are indicated in Table 3.2 and Table 3.3 below.

Table 3.2 Number of Taxi Associations

Number of Taxi Associations	
Region	Taxi associations
North	29
Inner West	10
Outer West	10
Central	21
South	32
Total	102

The survey identified 102 taxi associations in the various regions within the municipal area.

Table 3.3: Comparison of Public Transport Facilities

Suburb Name	Identified 2003 Facilities				Identified 2012 facilities			
	Buses	Mini-bus Taxi	Mini bus Taxis and buses	Total	Buses	Mini-bus Taxi	Mini bus Taxis and buses	Total
Central Region	117	208	32	357	84	289	21	394
Inner West Region	30	48	10	88	33	48	4	85
North Region	27	14	4	45	29	9	2	40
Outer West Region	6	39	13	58	7	29	13	49
South Region	12	42	8	62	10	41	0	51
Grand Total	192	351	67	610	163	416	40	619

The survey results indicate that bus facilities have reduced from 192 to 163, while mini-bus taxi facilities have increased from 351 to 416 over the last ten year

4 SPATIAL DEVELOPMENT FRAMEWORK

4.1 SPATIAL DEVELOPMENT FRAMEWORK (SDF)

Spatial Development Framework (SDF) of the eThekweni Municipality's Integrated Development Plan (IDP) is illustrated in Figure 4.1.

To summarise, the Spatial Development Framework's defining features include:

- A compact city model;
- An Urban Core, being the urban centre, which generally has servicing capacity and thus opportunity for densification and to support thresholds for a range of services, industry and public transport.
- An Urban Development Line (UDL) concept used not only to demarcate the extent to which urban development will be permitted to establish within the metropolitan area in the long term, but more specifically to promote a more convenient, efficient, equitable and sustainable settlement form. Whilst the line indicates the outer limit to which urban development will be restricted, there will be areas within the UDL that will not be permitted to be developed (e.g. environmentally sensitive areas).
- The UDL implies that there is a rural periphery or hinterland the different in character and which has different servicing needs and servicing constraints and which supports different lifestyles. The UDL is important for enforcing density targets and physical development patterns within specific time horizons and is to be used to manage the growth patterns of a city over time. Within the UDL, the development phasing line demarcates interim spatial limit to which development will be allowed to establish in accordance with infrastructure availability and capacity.

An important implication of the SDF strategy is that all development proposals that require the municipality to extend platform infrastructure (including transport infrastructure) to new areas, will need to be carefully assessed within context as to whether they are cost effective, sustainable, and in the best interest of the municipality.

4.2 FEATURES OF THE SDF

The SDF has many features and components. These are discussed below.

- Identification of future land uses including areas for industrial expansion, mixed use development and residential infill. Future residential land use outside the UDL supports different lifestyles and has different servicing needs and constraints as opposed to those within the UDL which are urban in nature.
- Regeneration of existing developed areas such as Warwick Junction, the Inner City and the Sports Precinct, Cato Manor and South Durban Basin.
- The Port of Durban, Dube Tradeport and Cato Ridge as economic investment areas which require major investment.
- The provision of investment opportunity areas within Hammarisdale, Bartletts, Shongweni and Cornubia as a way of encouraging private investment and partnerships within the city subject, to servicing and phasing limitations.
- Smaller urban investment nodes which provide convenient and efficient access to a hierarchy of commercial, community and social facilities. These nodes have a number of characteristics and may include higher residential densities, mixed use, public transport, pedestrianisation, public amenities and good infrastructure.
- Support for the integrated public transport network by improving viability with densification along routes either within the urban core or distinct investment corridors.
- Emphasis on accessibility and convenience in more densely populated urban areas including the provision of priority routes and rail linkages.
- The promotion and preservation of upper catchment open space areas that provide free services and support the health of the entire metropolitan area.
- The promotion of coastal, mixed use and tourism corridors that provide diverse opportunities for development and lifestyle.
- Any development in areas of sensitivity such as the coastal corridors and areas adjacent to our important environmental assets will require careful scrutiny to ensure no negative impacts notwithstanding the current zoning that may apply.

4.3 KEY NODES AND CORRIDORS

The IDP supports a system of development nodes and corridors that are highly accessible to public transport. This implies the need to increase development densities along the corridors and encourage multi-purpose development at the key transport nodes in the public transport system.

The “wall to wall” Integrated Rapid Public Transport Network (IRPTN) covering the entire eThekweni Municipal area comprises a system of trunk, feeder and complementary routes that have been designed to respond to the resultant demand of the existing and forecasted activity patterns in accordance with the municipality’s Spatial Development Framework.

4.4 KEY DEVELOPMENT PROJECTS WITHIN THE CITY

There are four Key City Projects in various stages of planning and development that will have a major impact on the pattern and extent of travel and land use in the municipal area. They are:-

1. Warwick Junction modal interchange
2. Linkage from the port to the hinterland
3. Integrated Rapid Public Transport Network plan (IRPTN)
4. Inner city distribution system

These are discussed briefly below.

4.4.1 WARWICK JUNCTION MODAL INTERCHANGE

This major modal interchange has developed in a somewhat haphazard manner over the years and is characterised by informal trade, very high volumes of private vehicles, buses and taxis, all competing for space and roadway capacity, with very high pedestrian flows. The whole node is very congested, pedestrian unfriendly, dangerous and degraded. Amongst other programmes, to date, the inbound and outbound flyovers and associated road-works have been completed and commissioned and this has already brought relief to the area.



4.4.2 PORT / CITY LINKAGES

The Port of Durban is the largest general cargo port in Africa and it is a major generator of employment and income in the eThekweni area. There are several issues in and around the port which are affecting productivity and efficiency. Both the Municipality and Transnet have recognised these problems and various improvement schemes have been planned and implemented jointly.

4.4.3 INTEGRATED RAPID PUBLIC TRANSPORT NETWORK (IRPTN)

The eThekweni Transport Authority is driving this national public transport initiative in terms of a full wall-to-wall Integrated Rapid Public Transport Network within the eThekweni municipal area. This is discussed further in detail in Chapter 6: Public Transport Operational Plan.

4.4.4 INNER CITY DISTRIBUTION SYSTEM

The Inner City Distribution System provides a high mobility, highly accessible, public transport service in the inner city. The aim is to reduce noise, congestion, and pollution levels, thereby improving the pedestrian and general public environment. The System consists of public bus transport services with state-of-the-art vehicles that connect the Warwick Precinct with the beachfront and major commercial, transport, and activity centres of the city.

4.5 LONG TERM DEMOGRAPHIC TRENDS

Table 4.1 and the following graphs show the mostly likely growth scenarios for population and employment in the Municipality.

Table 4.1 Population and Employment (1 000's) Most Likely Scenario (Years 2007- 2035)

Years and Respective Growth Rates (%) since 2007											
	2007	2010	Growth	2015	Growth	2020	Growth	2030	Growth	2035	Growth
Population	3584	3625	1.14	3667	2.32	3782	3959	4145	15.65	4324	20.65
Employment	1082	1102	1248	1248	15.34	33	1675	1964	81.52	2261	108.96

Source: NDA Consulting Engineers, January 2010

- Previous projections for population from 2001 to 2020 have shown a net decrease in the Municipality largely due to the impact of AIDS.
- Current projections as shown in the above table and by the graph below (Figure 4.2) indicate a net expected growth, largely due to in-migration.

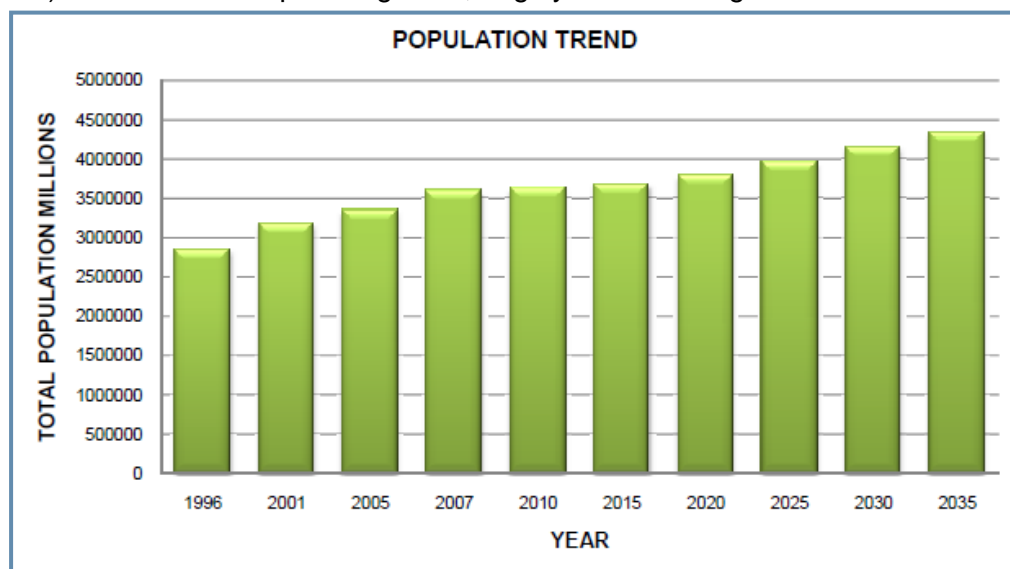


Figure 4.1 Population Trends

- Residential areas that are expanding include Hillcrest to the west, Cato Manor, central, Welbedacht to the south, Cornubia, Waterloo and Ballito to the north and Lovu/KwaMakhuta to the south.

- Regarding the future, considerable employment growth is predicted for all income groups over the period 2007 to 2035 and a decrease in unemployment is expected. Figure 4.3 below shows the 'middle road' economic growth scenario forecast of employment growth. As shown in the graph, the anticipated growth will be highest in the formal income group.

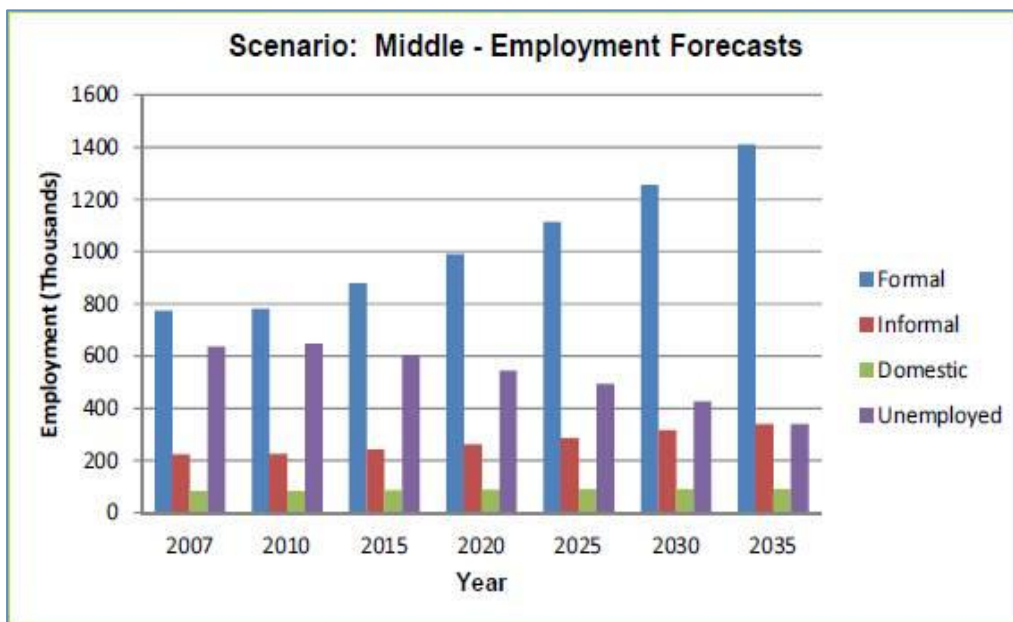


Figure 4.2 Employment Forecasts

- An estimated 759 000 additional jobs, representing a net increase of 70% (2007-2035), will be located throughout the municipal area in the categories of General Commercial, General Industrial and Light Industrial.

In recent years the trend has been characterised by a move of commercial development from the Durban central area to the Berea, west of the CBD and to the Umhlanga area to the north. Further, there has been a deterioration of, and move away from, the South Durban Basin to the Pinetown/Westmead industrial area and the Effingham, Avoca industrial areas north of the Umgeni River.

Figure 4.4 shows where future employment growth is expected. Clearly areas to the west and north feature as growth areas, whilst central, with the exception of the Point and the south, do not.

5 TRANSPORT NEEDS ASSESSMENT

The Transport Needs Assessment information in this section on attitudes of residents with regard to municipal service is based the eThekweni Municipal Service and Living Conditions Survey (2011/12) and with engagements with transport stakeholders.

5.1 MUNICIPAL SERVICES AND LIVING CONDITIONS SURVEY

Most (90%) commuters travelling to work or educational institutions take no more than an hour to reach their destination and just over 60% take no more than 30 minutes. Almost 60% of these commuters claim that traffic congestion during this trip is a problem.

There is a perceived need to improve the safety, reliability and accessibility of public transport as well as to improve road infrastructure.

Table 5.1: Travel Time to Place of Employment/Educational Institution

Travel Time to Employment / Educational Facility					
	African	White	Coloured	Asian	Total
	%	%	%	%	%
Less than 15 min	16.9	11.1	25	13.3	15.8
15 - 30 minutes	48.9	59.3	53.1	36.3	47.2
30 - 60 minutes	20.8	29.6	15.6	40.7	26.7
1 - 1.5 hours	10		3.1	8.8	7.9
1.5 - 2 hours	2.6				1.4
2+ hours	0.9				0.5
Work from home				0.9	0.2
Works in a another province			3.1		1.2
Total	100.0	100.0	100.0	100.0	100.0

Seventy eight percent of respondents have used public transport. Four out of every five respondents use minibus taxis and just over 75% claim to be satisfied with this form of transport. The other common forms of public transport are metro and private buses and the people mover which have a 25% usage and trains which has 10% utilization. For the population as a whole the mini-bus taxi is the main form of transport for all age segments except scholars where the majority walks to and from school.

Table 5.2: Main Transport Mode

Main Mode of Transport	
	Percent
Minibus taxi	49.0
Walk	21.1
Motorcar	17.4
Bus	6.0
Lift club	4.0
Train	2.5
Motor cycle / bicycle	0.1
Total	100.0

Table 5.3: Public Transport Use and Satisfaction

Public Transport Usage and Satisfaction							
	Use	Very Satisfied	Satisfied	Slightly Satisfied	Dissatisfied	Very Dissatisfied	Total
	%	%	%	%	%	%	%
Minibus taxi	90.6	19.8	56.3	15.9	7.5	0.5	100.0
Venture/bakkie taxi	2.6	7.7	76.6	11.7	4.0		100.0
Metered taxi	0.8	26.3	36.2	12.7	24.8		100.0
Metro bus/Mynah	14.4	21.4	60.7	9.4	7.8	0.7	100.0
People Mover	1.5	40.2	53.1	6.8			100.0
Private Bus	9.6	19.3	62.6	12.8	4.2	1.1	100.0
Train	9.6	23.3	61.8	10.6	3.2	1.0	100.0

Note: Use may sum to more than 100% due to multiple mentions

Respondents were asked to rate the performance of the Municipality on aspects related to the safety, reliability and accessibility of public transport and safety issues related to the road infrastructure. With the exception of public transport affordability more than 50% of the respondents felt that all aspects of public transport were good. With regard to road infrastructure, over 50% of respondents thought that the infrastructure was good. The only exception was the speed with which street lights are repaired when faulty where less than 50% felt that the service was good.

Table 5.4: Municipal Performance with respect to Public Transport and Road Infrastructure

Municipal Performance - Public Transport and Road Infrastructure						
	Very Good	Good	Fair	Poor	Very Poor	Total
	%	%	%	%	%	%
Providing Safe public transport	4.0	49.0	33.6	10.5	2.9	100.0
Providing affordable public transport	3.8	39.8	35.0	16.5	4.9	100.0
Providing easy access to public transport	7.3	50.4	27.2	11.3	3.8	100.0
Providing reliable public transport	6.0	46.8	30.9	13.1	3.2	100.0
Providing frequent public transport	6.3	44.9	32.6	11.7	4.4	100.0
Traffic lights being in working order and fixed speedily when faulty	8.3	41.1	32.3	12.7	5.6	100.0
Ensuring that roads are regularly maintained around your area	11.2	42.6	22.4	14.2	9.5	100.0
Providing clear road signage	16.9	41.5	19.2	15.2	7.2	100.0
Providing clear road line markings	17.6	40.3	19.7	13.1	9.3	100.0
Providing sufficient street lighting where you live	13.1	41.8	18.2	16.5	10.4	100.0
Street lights being quickly fixed when they stop working	10.9	36.7	22.7	19.1	10.7	100.0

5.2 RAIL OPERATIONS

There are extensive commuter and freight rail services in eThekweni along the North – South rail corridor and along the Port – Inland rail corridor. These are operated by PRASA and Transnet Freight Rail, respectively. The following feedback has been received from PRASA.

Table 5.1 Needs Assessment Identified by Rail Operator PRASA

Needs Assessment by PRASA
<ul style="list-style-type: none"> ➤ Increased funding ➤ Increase in ridership/commuters (preferred mode of choice) ➤ Make rail attractive to other income groups / users (including improving security and park and ride facilities) ➤ Ensure appropriate land uses / densification along rail corridor to make rail mode sustainable ➤ New railway technology to meet demands of a modern society ➤ Better rolling stock / infrastructure / signaling ➤ Form part of an integrated public transport system ➤ Generate more revenue to deal with subsidy reduction (Intersite) ➤ Flexibility in fare structures for different users (scholars, pensioners) ➤ Make entire rail experience on a par with first world travel (access, station facilities, ticketing, journey, customer service, reliability, punctuality)

5.3 SOUTH AFRICAN NATIONAL ROADS AGENCY LIMITED (SANRAL)

The N2 and N3 National Roads traversing the Municipal area are under the ownership and management of the South African National Road Agency Limited. SANRAL has engaged with Municipal Authorities on the possibility of permitting safe pedestrian activity along the National Routes because the need clearly exists.

Several hazardous locations have been identified in eThekweni and already, SANRAL has provided for pedestrians at Higginson Highway underpass bridge and at Blackburn, just north of Mount Edgecombe where a new cable-stayed bridge across the N2 is being constructed for pedestrians.



The needs assessment of SANRAL is given in Table 5.6 below:

Table 5.2 Needs Assessment Identified by SANRAL

Needs Assessment by SANRAL	
<ul style="list-style-type: none"> ➤ Protection of the national network as long-haul routes ➤ Protection of NMT by provision of separate facilities ➤ Removal of hazardous loads to other modes of transport (pipeline/rail) ➤ Land use and transport integration through: <ul style="list-style-type: none"> ○ Definition of a roads master plan for a balanced road network ○ Enforceable municipal policy for engineering service contributions for external services (roads) to mitigate full impact of new developments ○ Integrated land use planning to limit and pro-actively manage potential NMT conflict with mobility routes ➤ Promotion of multi-modal traffic ➤ Improve vehicle occupancy rates and promote use of public transport 	

5.4 TRANSNET PORTS AUTHORITY

The Port of Durban is recognised as a major traffic generator in the municipal area with most of the land-side activity being road freight transport. Although the hinterland of Gauteng and

cross-border destinations account for 60 – 70 % of freight movement to/from the port, very little of this movement is by rail.

This is seen as a key issue requiring strategic intervention at national level, as the achievable capacity on the road system could become a constraining influence on development of the Port.

The port is known as a clean cargo port handling general cargo, break bulk cargo, and liquid bulk. It is a major point of export and import of motor vehicles and also handles ship repairs.

Although development proposals for upgrading the capacity of the port remain within the footprint of the port, the impact on external transport infrastructure is significant.

Projected growth in all cargo handling aspects of port activity suggests the need for additional road capacity and rail service. Some of these projected transport system requirements may not be achievable in the context of competing demands from other activities in the area.

Additional road capacity to the Port has been provided by the construction of Khangela Bridge connecting Bayhead Road to Sydney Road. This will significantly reduce congestion on South Coast Road and provide easy access from Bayhead to the M7 connecting the N2.

Planning priorities include new access routes into Durban's port, allowing for segregation of freight from other rail traffic, and building new hubs or inland terminals. The Strategic Infrastructure Projects 2 (SIP2) identifies and supports the development of the freight Corridor from Durban to Gauteng and associated infrastructure projects. SIP2 aims to strengthen the logistics transport corridor between South Africa's main industrial hubs; improve access to Durban's export and import facilities, raise efficiency along the corridor and integrate the Free State Industrial Strategy activities.

5.5 INTER-SECTORAL PERSPECTIVES AND ASSESSMENT (MUNICIPAL)

This section gives a brief overview of the focus of the various development and service sectors that impact on, and are affected by, transport in the municipal area are set out below.

5.5.1 ECONOMIC DEVELOPMENT SECTOR

Spatial and transport issues related to the economic development programme is recognised by congestion in the South Durban Basin (SDB) as well as poor transport infrastructure, and the inordinate emphasis on road over rail freight transport.

Attention was also drawn to the importance of strengthening public transport links to the north in support of the future King Shaka international Airport and Dube Tradeport.

5.5.2 HOUSING SECTOR

This key development sector has a major impact on the need for and location of transport and in itself is greatly impacted by the provision of transport infrastructure and services.

A major challenge exists for the housing sector to address the backlog in the municipal area. Against an increasing housing backlog, the municipal Housing Unit is programming 16 000 new and upgraded housing units per year. However, apart from the extent of the backlog there are

location issues which are inclined to perpetuate the problem of large numbers of people being located in parts of the municipal area not easily served by cost-efficient, affordable public transport.

Of the 200 000 families currently living in informal settlements, approximately 20% live outside the City's urban development line. Although relocation to more accessible areas may make economic sense, it is not acceptable to many of the families. Where greenfield sites are considered part of the solution, land cost is also an issue.

Currently some 120 000 greenfield sites (6000 ha of vacant land) are needed over the next 12 to 15 years and clearly these anomalies need to be addressed in a way that will support economic development and affordable transport for the poorer communities.

Cost of land is a major issue and in this regard some creative approaches are needed which take into consideration not only the cost of providing land but the on-going costs of servicing the community in a municipal context.

Plans to pilot types of projects in appropriate areas of the City, it would be useful to undertake a pilot project where selected sites that support the Integrated Rapid Public Transport Network can be evaluated in terms of cost/benefit analyses which consider the travelling needs of the community and the appropriately adjusted subsidisation of land, and if necessary, housing.

5.5.3 THE ENVIRONMENTAL SECTOR

This sector has highlighted a number of generic issues that relate directly or indirectly to transport. These are:-

- climate change mitigation and adaptation
- development densification and rural development/accessibility issues impacting on urban sprawl
- protection of open space
- development of density thresholds and protection of catchment areas
- use of appropriate modes
- energy efficiency
- pollution reduction
- hazardous transport routes
- extension of public transport to attract medium and high income residents in the longer term

Clearly the process of integrating land use and transport planning recognises and needs to respond to these issues. Some of these are already being addressed in this current ITP.

5.5.4 AREA-BASED MANAGEMENT (ABM) SYSTEMS

The municipality has, for some time, been operating area-based management systems to address specific problems and needs of certain districts within its jurisdiction.

The intent of the ABM programme is to enhance service delivery while addressing social and spatial inequalities specific to the uniqueness of each area. In each ABM there is also a range of transport issues unique to the characteristics of that area. There are briefly highlighted for each of the ABM's as follows:-

For the **CBD/iTRUMP** have identified the need for the following programmes:-

- (i) an efficient multi-modal public transport system focussed on maximising the accessibility of the inner city
- (ii) the development of 'corridors of excellence' focussed on gateways and key routes through the city. Such routes would require effective public transport and accessibility to adjacent land use.
- (iii) support for and development of mixed land use which will improve security in the CBD and establish higher thresholds of activity in support of public transport and higher order facilities.

Within the context of an efficient multi-modal public transport system there is the need to address pedestrian mobility and safety which could also be a part of the Safety Plan in the ITP.

For **South Durban Basin ABM** - a highly industrialised elongated zone within the coastal corridor, south of the CBD, problems include the excessive use of road as opposed to rail freight transport causing congestion in industrial areas, degradation of residential areas and the environment and the need for improved connectivity between the Port and the industrialised area to the south. In addition, the lack of adequate roads and public transport infrastructure are seen as having a negative impact on the area.

The **Inanda-Ntuzuma-KwaMashu (INK) ABM** has identified the following transport issues:

This residential area comprises mostly low quality housing and informal settlements characterised by:-

- limited basic service infrastructure
- inadequate and limited social and recreational facilities and amenities
- low levels of economic activity
- high levels of unemployment

Traffic and road safety issues are considered amongst the key issues faced by this area.

Addressing transport and related issues has been identified as one of the main strategies to be developed in:-

- improving living conditions for INK residents
- enhancing human capacity/potential of residents

In addressing the transport issues the planners have identified specific projects of interest and include:-

- The extension of the north-south rail line from Duffs Road to Bridge City which will then become a primary multi-modal interchange.
- Improved access roads to the Bridge City development node in support of proposed hospital and the regional magistrates offices and municipal office
- Strong support for MR577 which links the INK area with Pinetown and New Germany crossing of the Umgeni River.



The **Cato Manor residential** area - is a hilly area, six kilometres south of the city centre. It houses people in low to high income areas with many informal settlements. Although there is a good major road network, public transport service for movement within the community is limited, as is service to significant external destinations. Access to the regional road system is also seen as deficient, negatively impacting on the potential development of Cato Manor.

6 PUBLIC TRANSPORT OPERATIONAL STRATEGY

6.1 INTRODUCTION AND BACKGROUND

The following legislation, strategies and plans guide the provision of public transport within the eThekweni Municipality:

- National Land Transport Act (5/2009)
- National Public Transport Strategy (2006)
- National Land Transport Strategic Framework (2006 - 2011)
- Public Transport Action Plan (2007) ¹
- Scoping Study for the Implementation of an Integrated Rapid Public Transport Network (IRPTN) in eThekweni, January 2008 ²
- Restructuring of Public Transport Services in the eThekweni Metropolitan Area: Operational Design, September 2008 ³
- IRPTN , “Wall to Wall Plan”, 2012

The goal for public transport, inter alia, is the use of appropriate modes of transport for different levels of demand, elimination of inefficient competition between modes, promotion of public transport over private transport, catering for the needs of travellers, including the special needs of some and the management and regulation of all modes of transport.

The National Department of Transport has set out a process to assist in translating the public transport vision articulated in the NLTA. The strategy is aimed at the development of a new, fully integrated public transport system incorporating all modes within a formal, contract based public transport system. Specific provision has been made to incorporate the existing minibus taxi and small bus operators into the new restructured system which implies a formalisation of the industry and eligibility to benefit from available public transport subsidies, currently restricted to commuter rail and certain tendered commuter bus contracts.

The key objectives of restructuring the PT system are:-

- To provide an adequately frequent scheduled service for passengers in terms of national government policy:
 - To ensure a more reliable service through the operation of monitored contracts
 - To eliminate the uncertainty inherent in non-contracted services and to reduce duplication and efficiencies
- To increase the use of rail services, thereby benefiting from the massive investment in infrastructure which exists and at the same time reducing the traffic load on the road network

¹ Public Transport Action Plan, Phase 1 (2007-2010): Catalytic Integrated Rapid Public Transport Network Projects: Department of Transport, February 2007

² Implementation of an Integrated Rapid Public Transport Network (IRPTN) in, eThekweni: TRC Africa / Namela Projects, January 2008

³ Restructuring of Public Transport Services in the eThekweni Metropolitan Area: Operational Design, Goba, September 2008

- To improve passengers' travel experience so that there is less incentive to use private cars
- To eliminate over-trading on PT routes

In May 2011 the eThekweni Transport Authority completed a wall-to-wall public transport plan for the eThekweni Municipality. The wall to wall PT plan encompassed the development of an Integrated Rapid Public Transport Network (IRPTN) which will form the backbone of the future restructured public transport system. The IRPTN proposes the implementation of an integrated public transport system utilising a Bus Rapid Transit System operating on dedicated lanes in trunk corridors and integrated with the existing commuter rail system. The North-South Rail corridor in EThekweni will serve as one of the main corridors of the IRPTN.

6.2 PUBLIC TRANSPORT STATUS QUO

The existing public transport system in the eThekweni Municipal area, shown in the following Figure 6-1, comprises of three primary transport modes; commuter rail, bus and minibus taxi systems.

The taxi and bus major route system provides extensive coverage throughout the metro area including services parallel to and in direct competition with most of the rail services. In most locations the bus and taxi services follow similar routes except in the Outer West, west of Pinetown. In these areas most of the routes are taxi routes with limited or no bus services, with the exception of bus services to Mpumalanga from Durban and Pinetown.

The metropolitan area has four major public transport nodes with a number of other nodes of local significance. The major nodes are located at:-

- Isipingo
- Durban CBD (Berea Station)
- Bridge City
- Pinetown

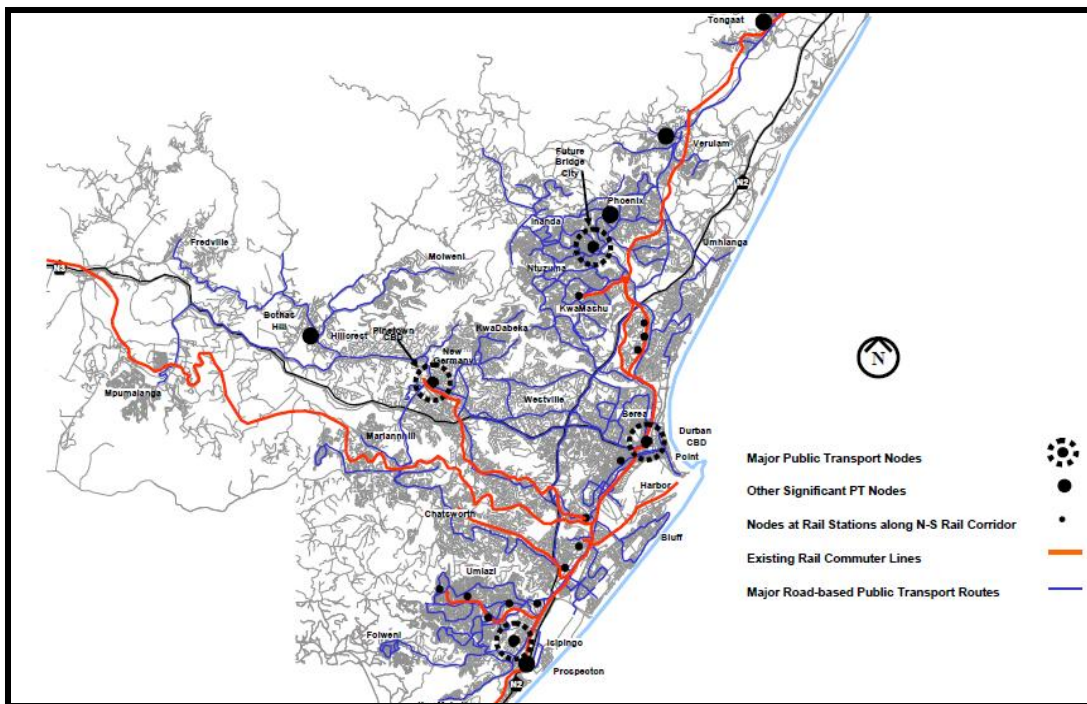


Figure 6-1: Existing Public Transport Routes

Isipingo in the south and Bridge City in the north define the limits of the major north-south coastal public transport corridor. The Durban CBD (Berea Road Station) located in the middle of this corridor is a major attractor for trips from both the north and the south.

The inland major node is Pinetown Central which is largely a hub for services from the Outer West and industrial and residential areas to the south of Pinetown central and to the north-east.

6.2.1 RAIL SYSTEM, SERVICE CHARACTERISTICS AND ISSUES

The existing rail system is focused on the Durban CBD and extends as far as Stanger on the north coast, Kelso to the south and Cato Ridge to the west. The spatial distribution of economic activity and the population in KZN means that certain transport corridors within the province are better suited to rail since it delivers the best results when it transports high volumes of people along corridors of high density of population and employment. The 2008 EThekwini HTS shows that rail accounts for 5.5% of household trips in the AM Peak and 4.2% for the PM Peak.

The Umlazi corridor represents the busiest rail corridor within eThekwini. Kwa Mashu presents a significant rail corridor although significantly less than the Umlazi line. With the completion of Bridge City, some trains will continue to the new Bridge City station.

The north coast, south coast and Cato Ridge lines experience similar problems of long journey times and poor quality. The implementation of new rolling stock on these lines will help make rail a more attractive choice for longer journeys in these corridors. This will be supplemented with changes to timetable to provide faster limited stop services to improve journey times.

There has been a major improvement in funding over the past 5 years as a result of the Public Transport Infrastructure and System (PTIS) Grant and the Passenger Rail Agency of South Africa (PRASA) has invested a lot in rolling stock, infrastructure and upgrades to facilities at four major Durban Metrorail stations and aesthetic improvements to many other stations as part of the “Accelerated Rolling Stock Investment Programme”

PRASA has prepared a strategy for the implementation of short-medium and long term plans. The premise for this was to develop a more integrated and holistic approach to planning public transport services.

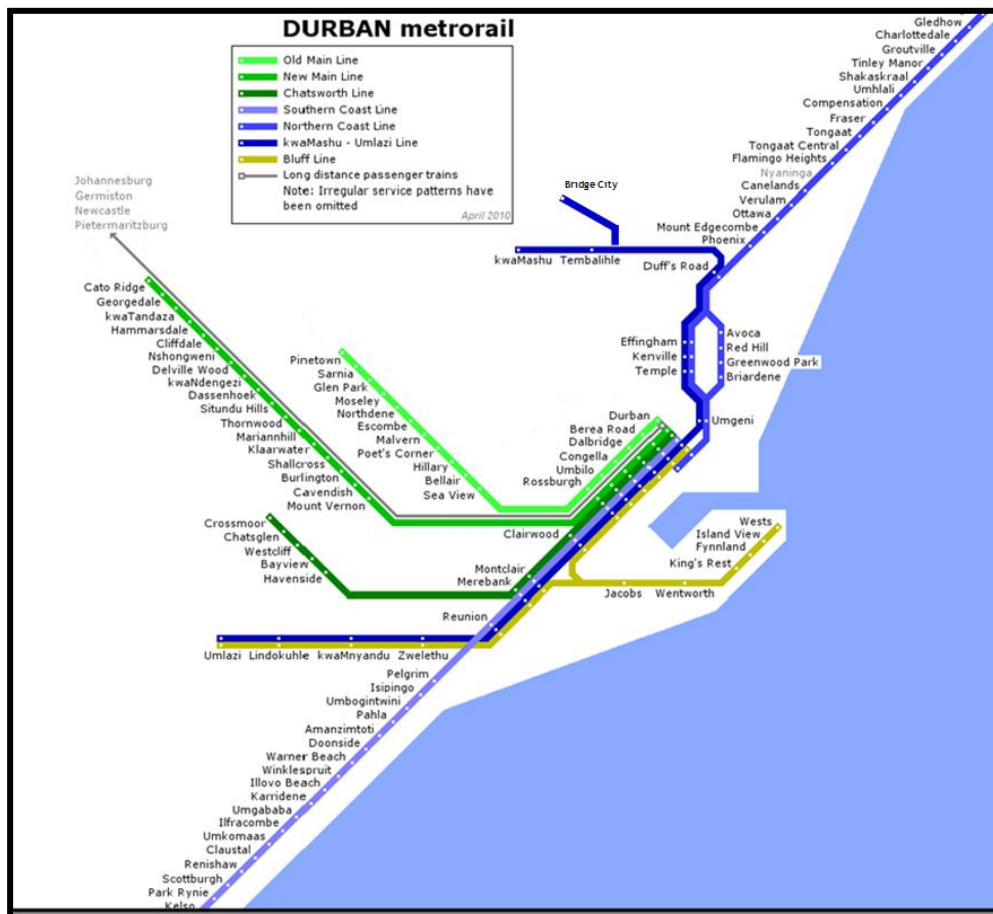


Figure 6-2: Existing Rail Network

6.2.2 BUS SYSTEM, SERVICE CHARACTERISTICS AND ISSUES

The existing bus services for a system comprising some 1 400 uni-directional routes are provided by approximately 200 operators in a mix of subsidised contracts and unsubsidised services provided in terms of the operator route permits.

Currently there are eleven subsidised bus contracts excluding Durban Transport which is operated by Transnet, covering approximately 70% of the metropolitan route system. Some 170 unsubsidised bus operators in thirteen associations, along with approximately 20 independent operators, provide services on the remaining 30% of the route system. Approximately 40% of travellers use public transport to travel distances greater than 1km. Of the public transport

users, approximately 25% use bus services, while 68% use minibus taxis and 7% travel by rail. Durban Transport is the largest bus contract in the Municipality and operates on approximately half of the contracted bus routes in the Municipality. At this time there are no unsubsidised commercial contracts.

Over recent years efforts to contain rapidly escalating subsidies, accompanied by reducing levels of service have been addressed in part by formal subsidised bus contracts. The most recent of these was the privatisation of Durban Transport which accounts for over one third of the bus fleet in the metro area, operating on approximately half of the bus routes. Durban Transport is currently operated by Transnet.

Durban Transport services cover an average of 2,1 million kilometres per month across 486 routes around eThekweni. These routes are divided between four key categories: Central, Mynah, Northern and Southern routes (the Mynah service is operated by midi-buses on the fringes of the City). The buses are owned by the Municipality and sit within City Fleet in the Treasury Cluster. The current fleet consists of 450 peak standard buses and 40 Mynah (midi) buses. A small fleet of Sukuma buses are also available.

Apart from subsidised service contracts, operators who are experiencing decreasing ridership and profit margins are unable to upgrade their fleet and struggle to maintain service levels with ageing vehicles.

Major issues concerning the bus system are that bus and rail services operate in direct competition and that unsubsidised bus services are deteriorating and many bus trips operate with low passenger loads even in peak periods.

6.2.3 TAXI SYSTEM, SERVICE CHARACTERISTICS AND ISSUES

There are approximately 120 taxi associations serving the municipal area. Generally the taxi industry operates in direct competition with bus and rail services throughout the metro area. Peak period passenger loads on most routes are high, although not always over the full extent of the journey. According to the 2008 EThekweni HTS, taxi accounts for 37% of household trips in the AM Peak and 27% for the PM Peak.

Notwithstanding the high passenger loads, the unsubsidised taxi industry does not generate profit margins for regular fleet replacement. Most of the fleet is old and breakdowns are frequent. Safety is a major concern.

The recent taxi recapitalisation programme (TRP) has had some effect in this regard and many owners have taken advantage of the scrapping allowance and have purchased the new larger, safer vehicles.

In a number of areas the taxi associations 'roster' their operators who operate in terms of some form of schedule at different times on a combination of lucrative routes and low profit routes. On this basis, association members are assured of their fair share of the potential fare revenue.

Issues around the taxi system and service relate to the overall deterioration of the taxi fleet, resulting in reduced safety and reliability of service, over-trading in some areas which results in below average profit levels and taxi associations compete for new routes or services which

often leads to aggressive confrontation and violence. Ongoing competition with subsidised public transport services also reduces the profitability of subsidised services (bus and rail). This causes pressure for increased subsidy in future bus contracts.

6.2.4 COMBINED SYSTEM ISSUES

Overall, the public transport system is economically inefficient with many services in direct competition with each other, resulting in unprofitable rail and bus trips and in taxis competing fiercely on some routes for passengers.

There has, however, been good progress over the last 5 years in the recapitalisation of rolling stock with the new taxis, municipal buses and particularly, with the commuter rail fleet.

Against this background, proposals have been developed to rationalise and restructure the public transport system and services in order to address the fundamental issues highlighted in this section. The systems tested and the adopted recommended system, are described in the following sections.

6.3 RESTRUCTURING OF DURBAN TRANSPORT

Durban Transport currently provides passenger bus services for the eThekweni Municipality on a month to month basis pending the introduction of new operating arrangements.

Durban Transport is a part of the broader public transport strategy and must support the implementation of the Integrated Rapid Public Transport Network.

The buses operated by Durban Transport are owned by the eThekweni Municipality and will continue to meet passenger demand until the implementation of the IRPTN, following which they will provide support services to the IRPTN.

6.4 INTEGRATED RAPID PUBLIC TRANSPORT NETWORK

6.4.1 INTRODUCTION

The eThekweni Transport Authority is re-structuring its Public Transport in eThekweni Municipality in line with the vision of the National Department of Transport. The National Department of Transport has set out a process to assist in translating the public transport vision articulated in the NLTA (National Land Transport Act) which consists of a three phased strategy as follows;

- Accelerated Recovery and Catalytic Projects (2007-2010)
- Promote and Deliver Basic Networks (2010-2014)
- Advance and Sustain Accessible Networks (2014-2020)

The above strategy is aimed towards the development of a new fully integrated public transport system incorporating all modes within a formal contract based public transport system. Inherent in the strategy is the need to incorporate the existing minibus taxi industry into the new restructured system which implies a formalization of the industry and eligibility to benefit from available public transport subsidies currently restricted to commuter rail and certain tendered commuter bus contracts.

Twelve wide-ranging challenges or issues plague public transport in eThekweni and countrywide which require attention in the provision of an integrated public transport system:

- Increasing costs of operations
- Lack of integration of services
- Rail transport is faced with poor image and security
- Public transport systems are generally supply driven
- Poor levels and standards of service due to economics
- Limited regulation and co-ordination within the public transport industry
- Wide scale uncontrolled competition
- The taxi industry is becoming unsustainable
- Safety issues affect passengers
- Lack and quality of infrastructure
- Lack of integration of ranks
- Law enforcement is ineffective

The eThekweni Transport Authority has completed the wall-to-wall Public Transport Plan in 2011 and the preliminary design of Phase 1 of the IRPTN system. The detailed design for phase 1 of the system is currently in progress.

6.4.2 IRPTN DESIGN PRINCIPLES

The broad principles listed below form the basis for the eThekweni Municipality IRPTN:

- Segregated infrastructure (median)
- Signal priority or grade separation at intersections
- A system of feeder and complementary routes
- Public transport facilities that are convenient, comfortable, accessible, secure and weather-protected, and that facilitate integration
- Convenient and secure private transport facilities at public transport stations
- Improvements to nearby public space, pedestrian and cycle facilities to support non-motorised access to public transport.
- Frequent and rapid peak and off-peak services between major origins and destinations
- Sufficient vehicle capacity
- Rapid boarding and alighting
- A distinctive identity or brand
- Excellent customer service.
- Provision for universal accessibility for the disabled, children and the elderly.
- Clear route maps, signage and/or real-time information displays at facilities and on vehicles.
- Low-emission and low-noise vehicle technologies.
- Pre-board fare collection and verification to prevent delays on entering the vehicle
- Fare integration between mass public transport and feeder services
- An independently operated and managed fare collection system.

- System management through a centralised control centre using Intelligent Transport System (ITS) applications.
- Public transport quality control oversight from an independent entity or agency.
- Universal accessibility

There is still a pressing challenge to locate and develop transport/development corridors, in particular public transport corridors, where growing densities of development and opportunities can be increased to lower the cost and improve the efficiency of public transport. The City is currently in the process of developing a policy on densification within the IRPTN corridors.

6.4.3 OPERATING CHARACTERISTICS

In planning the IRPTN, a number of assumptions have been made regarding the proposed public transport services in relation to:

- Service frequency
- Operating hours;
- Vehicle type / capacity;
- Journey times / distances;
- Number of vehicles required (peak vehicle requirement and fleet numbers);
- Number of drivers and other staff;
- Revenue collection arrangements
- Universal accessibility of the routes

6.4.4 TYPE OF SERVICE

The eThekweni IRPTN route network, as indicated in the following figure aims to use the advantages of the existing transport links with a strong emphasis on interchanges to facilitate a wide range of journey opportunities.

In addition to the major nodes of the CBD and Warwick Junction / Berea Road station, other centres have a major hub role including Bridge City and Pinetown, particularly for journeys to work. Corridor C2 comprises the core north - south rail route which will provide considerable capacity once the upgrading of the system has been achieved. This is complemented by corridors C1 between the CBD and Bridge City, C3 between Pinetown and Bridge City, C4 between Merebank / Rossburg and Bridge City, C5 between Merebank and the CBD, the latter meeting demand from the Chatsworth area, C6 between the CBD and Mpumalanga, C7 between Chatsworth and Hillcrest, C8 between the CBD and Tongaat which has been realigned to serve the airport rather than replicating the rail route with demand to and from the airport being a growth market in future years and C9 between Umhlanga and Bridge City. The IRPTN is shown in Figure 6-3.

There are many other trip movements which need to be catered for and which are not aligned with the trunk corridor system. Included in this set of routes are those within approximately 10km of the CBD, such as Chesterville and the Berea, where it would not be worthwhile for large numbers to transfer onto a trunk corridor service for a few kilometres. Similar considerations apply to the many trips from Clermont / KwaDabeka to Pinetown. In this instance, these routes will be catered by feeder and complementary routes.

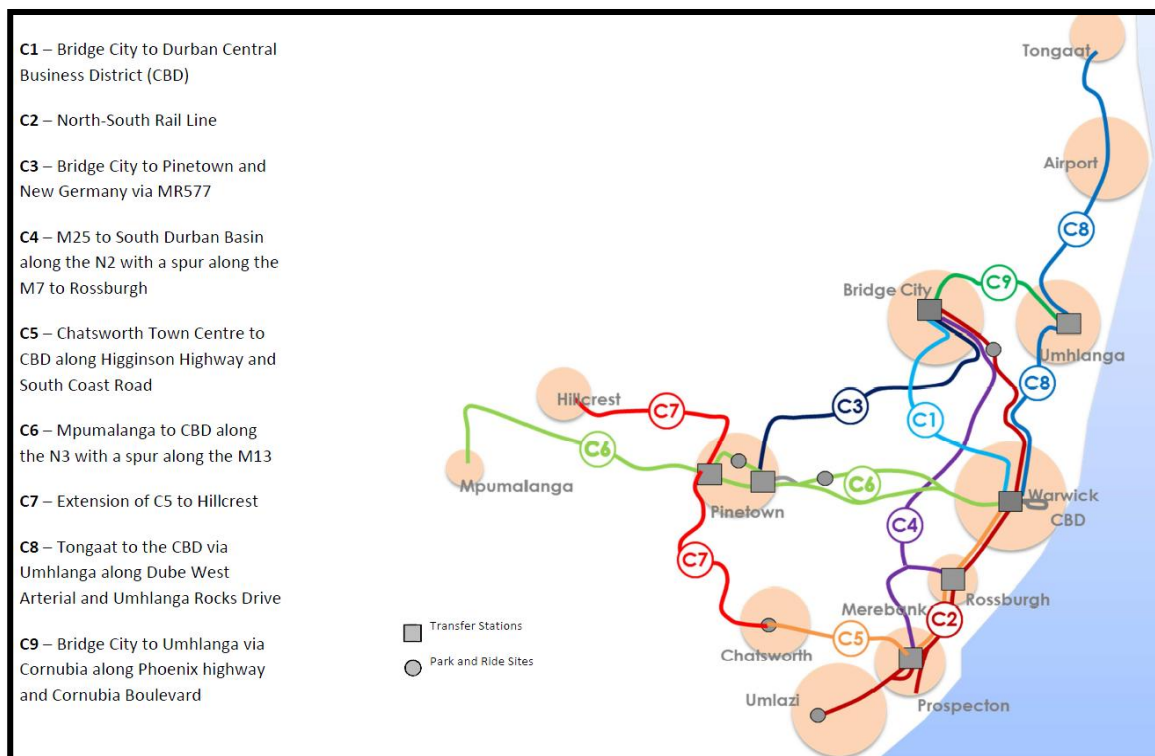


Figure 6-3: The eThekweni IRPTN Trunk Route Network

6.4.5 SYSTEM COMPONENTS

This section provides an overview of the infrastructure components of the network necessary to operate the trunk corridors (other than a corridor “C2” which is operated by rail). The section covers the right of way of bus corridors and how this can be segregated from general traffic to increase operational speeds and reliability. It also considers the indicative station and interchange designs which are necessary for an integrated network and also the initial depot design.

6.4.5.1 RIGHT OF WAY

Buses operating on the trunk road network will operate for the most part on the highway. It is intended that buses will be segregated from other traffic wherever possible by a variety of means, either by a linear separation from other traffic lanes or, on some routes, by placing the right of way off the highway.

The high level standard for all trunk corridors is an unguided lane with a width of 3,5m in accordance with Bus Rapid Transit – Planning Guide 2007. BRT lanes at stations would also be ideally 3,5m wide, although it should be noted that this could be reduced to 3,0m where vehicle speeds are lower.

Where a bus lane is mixed with other traffic lanes, a 600mm wide separation zone has suggested. This will accommodate a high kerb to discourage inadvertent entry and use of the busway for general road traffic.

6.4.5.2 INTERCHANGES AND STATIONS

The table below indicates the number of stops/ interchanges/ terminal stations identified per trunk corridor as well as an estimation of the number of required feeder stops which will be confirmed at the preliminary design stage. Feeder stops are located 800m apart, allowing for a 400m walking distance to the nearest stop.

Table 6-1: Schedule of interchange and station facilities

Corridor	Number of stops/transfer stations/terminal stations	Estimated number of feeder stops
1 - Phase 1	16	132
3 - Phase 1	18	106
9 - Phase 1	9	59
Total Phase 1	43	297
2	Existing Rail Stations	1,437
4	9	
5	21	
6	28	
7	19	
8	24	
Total All Corridors	153	1,734



Figure 6-4: A Modern IPT System

6.4.5.3 DEPOTS

Four municipal bus depots currently exist within the boundary of the eThekweni Municipality and will be used as part of the infrastructure requirements for the IRPTN. These depots are located in the following areas:

- Alice Street
- Rosburgh
- Umlazi
- Ntuzuma

6.4.6 DEMAND ANALYSIS

There are two sources of origin/ destination data as follows:

6.4.6.1 CURRENT PUBLIC TRANSPORT RECORD (CPTR)

The CPTR incorporates all minibus-taxi, bus and rail routes in the eThekweni Municipal Area. The last record was completed in 2004 which is currently being updated. The following table shows the number of passengers boarding between 05:00 to 08:00.

Table 6-2: CPTR 2004 PT Passengers (AM Peak Period – 3hrs)

Mode	Passengers
Minibus-Taxi	161 100
Bus	132 300
Train	56 000
Total	349 400

The major movements are from the Inanda-Ntuzuma-KwaMashu and Umlazi areas to Durban CBD, using the north-south movement corridor. The large number of Durban CBD origins in the morning peak arises primarily from the numerous transfers. There are relatively few alternative arterial routes available to carry area to area movements.

6.4.6.2 HOUSEHOLD TRAVEL SURVEY (HTS)

The HTS 2008 was the first metro-wide O-D survey since the on-trip interview surveys undertaken in 1980. 15 000 household interviews were conducted representing a sample of approximately 1.7%.

The HTS provided demographic information covering population by age group, employment, car ownership and income group in respect of each household. In addition for every member of the household the trip start time, origin, destination, trip purpose and travel mode were recorded.

The morning peak hour and peak period person trips are summarized in the following table.

Table 6-3: Morning Peak Period (05h00 – 08h00) Person Trips 2008 (nearest hundred)

Mode	Peak Period	Peak Hour	Peak Hour %
Public	607 400	295 600	49
Private	484 500	316 700	65
Total	1 091 900	300	56

6.4.6.3 DEMOGRAPHIC GROWTH FORECASTS

The eThekweni Demographic Study 2008 (report of January 2011) provides the total population, employment and car ownership as shown in the following table. Data is also available by traffic zone.

Table 6-4: Forecast Year Demographic Totals ('000 s)

	2007	2010	2015	2020	2025	2030	Factor 2007-30
Population	3584	3622	3665	3779	3955	4141	1.155
Employment	1070	1080	1194	1326	1469	1640	1.533
Car Ownership	493	515	558	606	654	703	1.426

6.4.6.4 TRAVEL FORECASTS

It is apparent that the proportion of all person trips to be undertaken by public transport will continue to gradually decline, without an intervention. One of the objectives of the IRPTN is to attract a proportion of car users to PT by making the PT experience more desirable and the car experience less attractive, in terms of the NDOT objective of shifting 20% of car peak period work trips to PT within 10 to 15 years.

This will be a progressive shift as elements of the IRPTN are brought on stream. It has been assumed that the proportions of the HBW car trip matrices to be deducted and added to the PT matrices will be 2% in 2015, 10% in 2020 and 20% in 2025, remaining at 20%.

6.4.6.5 TRUNK CORRIDOR DEMAND ESTIMATES

Demand for the trunk and feeder network was estimated based on public transport trip matrices for the forecast years 2015 and 2025. A summary of annual demand and passenger kilometres travelled, for the modelled year of 2015, is shown in the following table

Table 6-5: Annual Demand and Passenger Kilometres for Trunk Services 2015 (millions per annum)

Corridor		Demand 2015	Passenger Kilometres	Average Trip Length
C1	Bridge City to Warwick/CBD	31.13	301.13	9.7
C2	Bridge City/KwaMashu to Umlazi/Pelgrim	103.46	1 218.89	11.8
C3	Bridge City to Pinetown	20.56	170.65	8.3
C4	Bridge City to Merebank and Rosburgh	11.57	123.87	10.7
C5	Chatsworth & Merebank to Warwick/CBD	26.27	225.55	8.6
C6	Mpumalanga & Pinetown to Warwick	16.86	205.64	12.2
C7	Hillcrest & Pinetown to Chatsworth	25.96	196.5	7.6
C8	Tongaat & Umhlanga to Durban	11.76	106.62	9.1
C9	Bridge City to Umhlanga	12.94	86.76	6.7
Total		260.5	2,635.60	10.1

The growth in demand for trunk services between 2015 and 2025 are shown in the following table.

Table 6-6: Growth in Demand for Trunk Services 2015 and 2025 (million per annum)

Corridor		Demand 2015	Demand 2025	Demand Growth %
C1	Bridge City to Warwick/CBD	31.13	34.26	10.1
C2	Bridge City/KwaMashu to Umlazi/Pelgrim	103.46	112.27	8.5
C3	Bridge City to Pinetown	20.56	24.15	17.5
C4	Bridge City to Merebank and Rosburgh	11.57	13.46	16.3
C5	Chatsworth & Merebank to Warwick/CBD	26.27	29.94	14.0
C6	Mpumalanga & Pinetown to Warwick	16.86	21.49	27.5
C7	Hillcrest & Pinetown to Chatsworth	25.96	30.5	17.5
C8	Tongaat & Umhlanga to Durban	11.76	14.82	26.0
C9	Bridge City to Umhlanga	12.94	15.71	21.4
Total		260.5	296.61	13.9

6.4.7 VEHICLE SPECIFICATIONS

6.4.7.1 CORRIDOR MODE CHOICE

The various modes were analysed and finalised for the different corridors. A summary is listed below:

Rail based on existing infrastructure

- C2 Bridge City/ KwaMashu to Umlazi/Isipingo

Intensive/high capacity BRT or LRT

- C5 Chatsworth & Merebank to Warwick Junction/ CBD
- C7 Hillcrest & Pinetown to Chatsworth

Bus Rapid Transit

- C1 Bridge City to Warwick/CBD
- C3 Bridge City to Pinetown
- C4 Bridge City to Merebank and Rosburgh
- C6 Mpumalanga & Pinetown to Warwick Junction/CBD
- C8 Tongaat & Umhlanga to CBD
- C9 Umhlanga to Bridge City

6.4.7.2 FLEET COMPOSITION

All trunk corridors apart from C2 would be bus-based, although a rail-based option for C5 is still being explored. With regard to fuel, buses are currently assumed to use 100% diesel fuel.

The following capacities for each vehicle type have been assumed which includes both seated and standing passengers, based on manufacturers' data:

- Non articulated diesel bus – 87;
- Single articulated diesel bus – 112; and
- Double articulated diesel bus – 160.



Figure 6-5: Typical Diesel Bus

6.4.8 LEVEL OF SERVICE, VEHICLE CAPACITY AND FLEET REQUIREMENTS

The following table shows for each corridor, the estimated vehicle capacity, the peak and off peak headways required to maintain passenger loadings within vehicle capacity and the maximum vehicle load carried. The maximum load is based on a peak hour volume within each time period.

Table 6-7: Vehicle Capacities, Service Headways and Maximum Loads 2015 and 2025

Corridor	Vehicle Capacity	Peak Headway (min)	Off Peak Headway (min)	Maximum Load 2015 (per veh.)	Maximum Load 2025
C1	160	1	2	148	168
C2	2,000	6	6	2,007	2,137
C3	112	1	3	77	78
C4	112	2	4	91	101
C5	160	1	2	148	175
C6	112	2	4	95	134
C7	112	1	2	115	137
C8	112	1.5	3	87	108
C9	112	1.5	2	107	114

6.4.9 HOURS OF OPERATION

Appropriate operating hours would be based on local circumstances, including working hours, hours of educational institutions, social and recreational services. The operating hours should allow for night trips such as home from restaurants, cinemas and evening classes.

6.4.10 FARE COLLECTION AND TICKETING TECHNOLOGIES

The following principles will be used for the fare collection system:

- All train and trunk bus services will have pre-board fare collection and verification.
- All other services operating on the IRPTN and its feeders will at least have on-board fare collection using contact-less smart card technology.
- Detailed specifications for fare collection and ticketing technologies will be developed to ensure interoperability between the various public transport modes and operators.
- Passenger fare revenue will be collected by a separate company or transport agency.

6.4.11 INTELLIGENT TRANSPORT SYSTEMS (ITS)

The Support Systems Plan for the IRPTN comprises a Command Control and Communication system. The control and communications systems will be fully integrated for all identified transport modes, with the central control room providing the coordinated command point to form an Integrated Transport System for the municipality.

The Transport Modes identified include:

- Train network
- Bus Rapid Transit
- Feeder services (Bus and Mini Bus Taxi)
- Road network

These systems will be integrated to provide the operators with the necessary information and controls to manage the transport networks in the municipality.

Aspects considered in the support system include;

- Control and communications (control room illustrated below)
- Train systems
- Bus transport systems
- Road network systems
- Integrated transport monitoring control centre
- Value added services

6.4.12 SAFETY STANDARDS

- Public transport drivers would be required to hold a National Certificate in Professional Driving and attend an annual recognized refresher course on advanced driving skills and changes in road traffic legislation.
- Operators would take measures to minimise driver stress levels
- The frequency of medical fitness tests for drivers would be increased with improved quality of the medical screening.
- Operators would be required to include an HIV/Aids programme for their employees.
- Public transport vehicles would undergo roadworthy tests at an acceptable public vehicle testing stations every 6 months.

6.4.13 SECURITY STANDARDS

- All stops, stations, terminals and interchanges would ensure passenger security by maximising light, openness and visibility.
- Closed-circuit security cameras in and around rail and bus stations, terminals and interchanges will be provided.
- Permanent security personnel will be provided at rail and bus stations, terminals and interchanges, and security personnel within trains and larger buses.
- Information that indicates the nearest available help point (e.g. police station, operator office/ depot, etc.) will be displayed on vehicles and at facilities.
- Operator staff and staff at facilities would be trained by their employers on the procedures to follow if a security issue arises (e.g. contacting security personnel and police, emergency services, etc.)



Figure 6-6: An Accessible Transport System

Table 6-8: Network summary for Phase 1

Characteristic		C1	C3	C9
Route Length (km)	BRT	24.4km	28.2	12.33
	Feeder	86,9	60,25	33,78
	Complementary	0	299,6	153,29
Stops (number)	BRT	16	18	9
	Feeder	132	106	59

6.4.14 OPERATIONAL STANDARDS

The following parameters will be required to ensure adequate operation standards:

- Reliability
- Punctuality
- Vehicle Cleanliness and State of Repair
- Operator-Passenger - Public Interface
- Integration: - Service integration;
- Infrastructure integration;
- Fare and service integration; and
- Branding and marketing integration.

6.4.15 IRPTN PHASE 1 BUSINESS PLAN

6.4.15.1 INTRODUCTION AND PURPOSE

This chapter provides a summary of key aspects contained in the IRPTN Business Plan. The Business Plan should be consulted for further detail.

6.4.15.2 NETWORK PHASING PLAN

A 15 year project lifespan commencing in 2013 has been assumed which includes an initial 3 year infrastructure development phase and a further 12 years of transport operations. It is envisaged that the proposed IRPTN will be implemented in the following phases:

Table 6-9: Network Phasing Plan

Phasing		% Trunk – Feeder Trips	Planned Operational Year
Phase 1	C3	25	2016
	C1		2017
	C9		2018
	C2 (Rail)	40	2016
Phase 2	C5,C7	20	2022
Phase 3	C4,C8	9	2025
Phase 4	C6	6	2027

6.5 OPERATING LICENCE STRATEGY (OLS)

The IRPTN will be the backbone of the PT system in eThekweni. When the IRPTN is implemented, operating licences will still be provided. It is also important where services are to be rationalised that licences can be transferred or cancelled (i.e. dealing with the impact of the IPTS).

The IRPTN will be developed in phases. During the process it is the intention that existing public transport operators (bus and taxi) will be afforded the opportunity to participate in the initial negotiated contracts. Operators will have to formalise as business entities in order to participate and existing vehicles will either have to be incorporated in the IRPTN system, subject to certain criteria, or will have to be scrapped and operators compensated.

During the course of this process, the Provincial Regulatory Entity or Operating Licence Board will need to cancel existing competing operating licences and issue new licences for the operation of the IRPTN. Existing operators will be required to restructure their routes in other areas in order to provide feeder services to IRPTN modal interchanges. In

other areas, operating licences may be unaffected and operators will continue to provide internal services within communities not served by the IRPTN.

The framework within which operating licences are issued may well change fundamentally in future, however there is still an ongoing requirement for the consideration and awarding of operating licences.

The current operating licence principles and strategies are documented below.

The primary purposes of the OLS are:-

- To act as a framework for the eThekweni Transport Authority (ETA) to give direction to the Municipal Regulatory Entity (Operating Licence Board - OLB)
- To provide a tool for the ETA to implement the requirements of the Public Transport Plan and the IRPTN.

6.5.1 GENERAL PRINCIPLES

The following policy items relates to general principles that set the framework for consideration and allocation of road-based public transport licences. The ETA will make its recommendation and any representations it considers fit, having due regard to the Passenger Transport Plan and any other relevant investigations carried out, and submit them to the OLB within the required period.

- Licence Allocation Principle
- Licence Validity Period
- Transfer of Licence
- Number of Taxi Routes per Licence

6.5.2 CONDITIONS FOR GRANTING OF LICENCES

The following policy items relate to conditions that will need to be met for a licence to be approved. All regulations within the Road Traffic Act (1996) will need to be complied with.

- Person Qualifying for Operating Licence
- Membership of a specific association per Route
- Vehicle Standards, Replacement and Equipment
- Access to Ranking and Rank Permits
- Access to Holding areas for Minibus Taxi Operators
- Service Levels for Minibus Taxi on existing routes
- Timetable and Fare Data

6.5.3 LICENCE APPLICATION AND APPROVAL PROCESS

The approval process involves the Provincial Regulatory Entity (PRE), the KZN Department of Transport and the eThekweni Transport Authority as summarised below:-

The applicant submits application to the PRE in terms of required content and defined procedures;

- the PRE supported by the KZNDOT evaluates the application in terms of the defined criteria detailed in KZNDOT's document 'Operating Licence Strategy'
- the ETA will make recommendation to the PRE for approval, deferment or rejection based on their own assessment of the application.

6.5.4 PUBLIC TRANSPORT ENFORCEMENT STRATEGY

Public transport enforcement is a specialised area of law enforcement executed by the Durban Metro police according to a set of defined laws and by-laws. The development of a Quality

Service Charter and Passenger Service Charter will also integrate into the enforcement strategy framework.

6.5.5 OPERATING LICENCE STRATEGY ANALYSIS - PARAMETERS AND CRITERIA

Full analysis of the CPTR and the preparation of the OLS are contained in the Operating Licence Strategy.

In evaluating PT system performance there were several parameters for which values were required; these being:-

- Utilisation rate
- Passenger volume
- Frequency/headway and waiting time
- Fleet factor with average speed and turnaround time

In analysing route performance for each survey period, it is the peak hour for each route that is critical. Parameter values for the morning or afternoon peak hour were therefore used in the analysis.

6.5.6 CATEGORIES OF EVALUATION

Three categories of evaluation were carried out in preparing the OLS. These will be discussed further in the following sub-sections.

- Corridor analysis of movements between significant residential and employment areas.
- Individual route evaluation of performance with recommendations, including contracted bus services and routes running through Pinetown CBD, split for analysis purposes.
- Taxi association evaluation to assist in consideration of applications by an association not specifically for an individual route.

6.5.7 CORRIDOR ANALYSIS

The corridor analysis focuses on the peak hour commuter movement between 55 residential and 23 employment areas of significance.

- There are only seven employment areas that attract more than 1 000 public transport passengers per hour from any of the individual major residential areas.
- Four of these employment areas are Tongaat Central, Verulam Central, Isipingo and Hammarsdale.
- Pinetown CBD is the only other employment area apart from Durban Central which attracts volumes of > 1 000 passengers per hour from remote residential areas.
- Durban CBD attracts volumes of > 1 000 per hour passengers from 21 of the residential areas located throughout the Municipality.

6.5.8 EVALUATION OF INDIVIDUAL ROUTES

The area to area corridor analysis provides a good overview of service utilisation throughout the Municipality but it is not detailed enough to consider applications for route licences. The OLS therefore evaluates each individual route giving comments and recommendations for each

route. The taxi industry is over-traded; therefore recommendations support the issue of new licences only in proven cases of shortage of capacity on a particular route.

6.5.9 TAXI ASSOCIATION EVALUATION

Currently many taxi licence applications refer to an association and its routes rather than to one specific route. The aim should be to encourage operators to apply for a specific route licence, particularly when larger vehicles commence operation. However, this would reduce an association's flexibility of operation, particularly in situations where marshals are in radio contact and call for vehicles to cater for passenger demand.

For many years bus owners associations have pooled resources and shared routes. The list of approved routes accompanies the licence approval and is kept in the vehicle. This procedure may also work for taxis.

6.5.10 SUBSIDISED BUS CONTRACTS

In recent years, bus operations which were subsidised on the basis of multi-journey tickets have been converted to contracts wherein subsidy is paid on the basis of bus kilometres travelled. There are currently 11 bus contracts in the eThekweni Municipality excluding Durban Transport. These are: Combined Transport (operating 5 different contracts),

Thokomala Transit, KZT Country Cruiser (operating 2 different contracts), Two Line Trading, KZT bus service and the South Coast bus Service.

It is noteworthy that, to give a reasonable frequency, 46% of surveyed contracted routes would be better served with 35 seater vehicles and 38% with 18 seaters. Only 3% appear to need more buses to improve service capacity.

6.5.11 RAIL SERVICES

There are 8 basic rail routes, all radiating from Durban. There are 51 rail routes in the database with trains in either or both peak hours, but with different start or end points on the 8 basic routes. Some services on the KwaMashu and north coast lines run via Redhill, the majority running via Effingham.

The largest number of peak hour passengers is 7 000, from Umlazi to Durban in the morning peak. Even so, average utilisation on this route is only half of capacity. Only three other routes with more than one train have utilisations over 50%: Stanger and Cato Ridge to Durban in the morning peak, and Durban to Stanger in the afternoon peak. The one train from Umlazi to West in the morning peak is full. A larger train (1 530 capacity) would be appropriate.

6.6 IMPLEMENTATION STRATEGY

6.6.1 INTRODUCTION

The planning of the IRPTN will have a major influence on the Implementation Strategy as previously proposed in the Public Transport Plan and the ITP. With rail and bus rapid transit providing line haul services in the major corridors, bus and taxi services will provide feeder services and complimentary services in areas not served by the IRPTN. The Implementation Strategy will therefore require revision as the roll out of the IRPTN proceeds. Although the Implementation Strategy that follows is based primarily on the Public Transport Plan as previously proposed, comment has been provided on the likely impact of the IRPTN. The overall Implementation Strategy will be reviewed and revised in the next major update of the ITP.

The following public transport implementation strategy is documented within the context of the modal strategies and key aspects of the Public Transport Plan. In effect, it catalogues the recommended initiatives and projects forming part of the PTP, highlighting where appropriate key issues around the roll-out of the Plan in the short to medium term. Comment on the impact of the IRPTN is also provided.

6.6.2 UNFOLDING OF THE PUBLIC TRANSPORT STRATEGY

The following figure gives a broad context to the roll-out of the long term restructured public transport system for the metropolitan area:

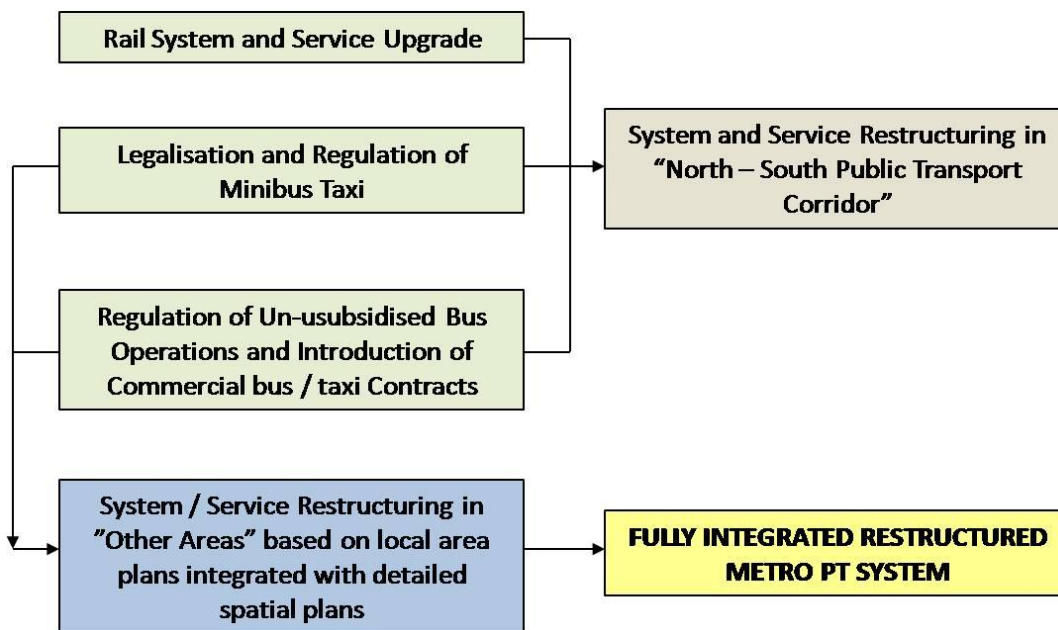


Figure 6-7: Roll-Out Strategy for the Restructured eThekweni Public Transport System

The timeframe for delivery of the restructured metropolitan-wide system depends on achieving various milestones in the development of each modal strategy. These milestones are identified in the following sections. System restructuring mentioned in the above diagram will be based on the recommendations arising from the IRPTN "wall to wall" plan just completed.

For the public transport plan to be properly integrated with the full range of land use development strategies, the development of such strategies should run concurrently. The Spatial Development Framework (SDF) which interprets the development strategies in geographic terms also provides the framework for the preparation of detailed local area spatial plans. As these plans are being developed, local area public transport plans can also be prepared and integrated as part of a parallel process.

6.6.3 IRPTN PHASE 1 IMPLEMENTATION STRATEGY

The extent of the network clearly requires a phase implementation approach. In this regard, the network phasing was based on some of the following considerations:

- Demand and Ridership
- Spatial Development Plan and other Planned Projects
- Physical constraint to infrastructure implementation
- Investment Intensity
- Job Creation
- Opportunity for Densification/Regeneration and creation of Transit Orientated Development

CORRIDORS

Based on the above, Phase 1 of the IRPTN will comprise the introduction of services in corridors C1, C2, C3 and C9 as highlighted below.

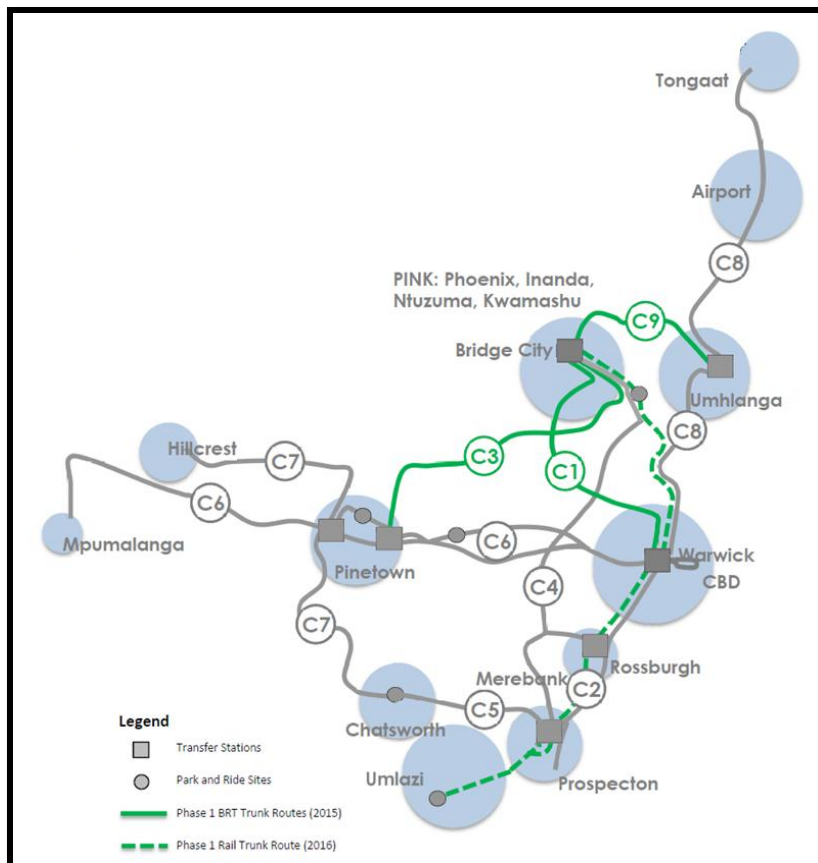


Figure 6-8: Phase 1 Corridors

Commuter rail will continue to provide the main mode of transport in the north–south corridor, C2. Upgrading of both rolling stock and infrastructure is needed in order for this to be achieved. PRASA is investing approximately R1.5 billion in re-signalling of the rail system in KZN. It is an ongoing requirement that modal interchanges at stations are upgraded to accommodate interchanges between IRPTN and feeder services. PRASA will be undertaking an *Integrated Station Access Management Solution* project which will include speed gates, PA systems, electronic information systems and CCTV’s etc which will cost R1.9 billion nationally with KZN being allocated a significant budget. Planning for the modernisation of the N-S corridor is currently underway which will be followed by the detail design and implementation. The conceptual design of the feeder system for the N-S rail corridor is currently being undertaken by EThekwini Municipality. A feasibility study for a new rail linkage for the northern area and beyond is currently being planned.

Bus Rapid Transit will be the primary mode of transport on the C1, C3 and C9 corridors. New articulated buses will be provided and existing operators will be provided the opportunity to participate in the system. Existing bus services, where they do not conflict with the IRPTN system, will continue to operate as feeders or complimentary services.

Bus and Minibus Taxi will continue to be playing an important role as feeder services to the IRPTN and as complimentary services. Regulation and control are important factors in the

formalisation of the taxi industry to empower them to participate in the BRT contracts. Feeder-distribution services in particular will benefit from the high frequency quick turn-around type of service that can be offered by the minibus taxi mode.

In the areas beyond the IRPTN minibus taxi will play an important role in the integrated system of bus and taxi services. However, to become an effective part of the integrated systems, the minibus taxi industry needs to become fully legalised and regulated.

INFRASTRUCTURE

The infrastructure related to Phase 1 of the IRPTN is a system of various physical components that have been designed to function not only at their best as individual components but also together, as a seamlessly integrated system. The infrastructure components of Phase 1 is essentially a Bus Rapid Transit service supported by road based feeder and complimentary services, comprise:

- Bus Right of Way (Dedicated bus ways and associated priority infrastructure)
- Station, Station Precincts and Park and Rides Facilities
- Terminal Facilities
- Depots
- Information Communication Technology and Integrated Fare Management
- Control Centre

A) Bus Right of Way

The Right of Way involves BRT lanes for the 3 routes

- C1 – Bridge City to Durban CBD (23km)
- C3 – Bridge City to Pinetown and New Germany (27.9km)
- C9 – Bridge City to Umhlanga New Town Centre (11.5km)

B) Station, Station Precincts and Park and Rides Facilities

The Transit Station includes station structures and transition areas, linkages within station precincts. Park & Ride facilities and feeder stops will be located close to the stations. A total of 46 stations precincts will be provided.

C) Terminal Facilities

Terminal stations form a critical component of the public transport corridor. It defines the beginning and end of each of the corridors where vehicles start their return leg of the journey. In phase 1, three Terminal Stations were identified:

- Bridge City Terminal Facility
- Umhlanga Ridge Terminal Station
- Bram Fischer Terminal Facility

D) Depots

Sixteen depots will be provided to satisfy the requirements of the fleet of BRT, feeders and complimentary network within the C1, C3 and C9 Corridors. These depots are envisaged to be state of the art facilities, strategically located to enhance and achieve operational efficiency of the BRT network fleet as well as within the depot itself, complimenting the goal in reduction in operating and maintenance cost of the fleet.

E) Control Centre

The control centre will be a bold interpretation of a new vision for public transport within the Municipality. The control centre is to accommodate some 500 persons within a facility in the Central Business District.

F) Information Communication Technology (ICT) and Integrated Fare Management (IFM)

ICT/IFM is a vital success in a modern public transport system. ICT include everything from on-route traveller information to CCTV camera monitoring operation. The IFM is based

The Preliminary Design Cost is summarised below:

Table 6-10: Phase 1: Road Based Infrastructure and Land Costs

Work Package	Corridor 1 (R)	Corridor 3 (R)	Corridor 9 (R)	Total (R)
ROW	1 292 729 429	1 435 147 962	769 980 190	3 497 857 581
Station	171 533 000	109 528 000	85 200 000	366 261 000
Terminals	64 571 000	231 048 000	10 000 000	305 619 000
Depots	1 041 583 000	121 455 000	288 430 000	1 451 468 000
Control Centre	251 732 000			251 732 000
Control and Fare Systems	166 193 000	166 190 000	94 395 000	426 778 000
Land Acquisition	307 000 000	195 000 000	216 190 000	718 190 000
Total	3 295 341 429	2 258 368 962	1 464 195 190	7 017 905 581

Table 6-11: The phasing roll-out plan for Phase 1 is as follows:

Phasing		% Trunk – Feeder Trips	Planned Operational Year
Phase 1	C3	25	2016
	C1		2017
	C9		2018
	C2 (Rail)	40	2016

6.6.4 SPECIAL NEEDS PUBLIC TRANSPORT STRATEGY

Special needs public transport passengers may include not only those with physical challenges, but children, the elderly, pregnant women, the illiterate and foreign tourists unable to communicate in any locally used language.

A range of initiatives will be introduced as a part of the IRPTN to meet these different needs as follows:

Strategy 1: Develop universally accessible corridors

- Identify system needs
- Develop and implement a prioritised, phased implementation programme
- PRASA has developed a policy that will ensure that all future infrastructure and rolling stock developments make provision for full accessibility standards.

Strategy 2: SUKUMA Project - Umlazi and KwaMashu

- The Western service has now been introduced serving Clermont and Pinetown to Durban.
- Introduce service contracts in a phased programme for extending this service

Strategy 3: Accessible Buses in New Bus Contracts

Strategy 4: Driver Training Programme

Strategy 5: Dial-a-Ride using minibus-taxi

6.6.5 INTER-MODALISM STRATEGY

Inter-modalism is an inherent aspect of the restructured, rationalised public transport system. In its broadest application in the N-S Corridor it includes rail, bus and minibus taxi.

The rail strategy for the N-S public transport corridor will include all modes forming a part of the corridor system solution. Further, the system solution will incorporate sub-systems essential to the effective performance of the overall system, including inter alia:-

- Information systems (Phase 1 - A Call Centre)
- Through ticketing
- Security systems

Apart from the N-S corridor, inter modalism will be incorporated into other parts of the metropolitan public transport system. These sub-systems will be developed and implemented as various parts of the overall public transport system are implemented.

The integration of modes of transport and the planning and implementation of support systems are important elements of the IRPTN. These aspects are included in the IRPTN planning and

implementation. Supporting systems such as the integrated ticketing system can be extended to other modes and will play an important role in the provision of feeder systems.

Strategy 1: Public Transport Information System

- A system has recently been introduced, involving a centralised PT Call Centre and remote, touch screen information terminals. Information can also be accessed via a website. This facilitates easy access to PT information and, in time, it will be rolled out across the entire metropolitan area

Strategy 2: Through-ticketing System

- The new Automated Fare Collection system, branded Muvo, has been successfully piloted on the PeopleMover buses and the eThekweni Transport Authority (ETA) has started to roll its public transport smartcard to all other Durban Transport commuters.
- The Muvo card, with its slick, energetic design, is a first for South Africa as it can be loaded with cash and transit products. The Muvo card will eventually be used for transport on trains and even taxis.
- The Muvo card has been certified by Mastercard and the National Department of Transport's (NDoT) Compliance Agency. The compliance agency conducted a full certification of NDoT's Data Structure functionality on the Standard Bank Card as well as the Almex Electronic Fare Collection system (EFCS).
- The cards can be obtained from Muvo Kiosks at Bus Depots, 10 of the Municipal Sizakala Centres and from the Muvo Smartvans, situated along key routes and transfer stations throughout the city. Commuters can load their "tap and go" Muvo cards with cash or transit products and pay for their bus trip by tapping their card against the electronic ticketing device installed on the bus. The device will then issue a receipt.
- The Muvo card also functions like an electronic wallet and can be used at retail outlets to buy goods and services wherever the Mastercard sign is displayed.
- Initially the Muvo card will be used on Durban Transport buses only but as the IRPTN is phased in, the smartcard will eventually be usable on all modes of public transport, including trains. The IRPTN is intended to make eThekweni Africa's most liveable and caring city by the year 2020.

6.6.6 TDM STRATEGY

Whilst TDM projects have been identified for implementation in the short term programme, there is a need to identify other projects as the various bus and taxi routes and services are restructured. Projects in this section address this need.

Strategy 1: Develop and implement TDM Programme

6.6.6 BUS SUBSIDY STRATEGY

For some of the subsidised bus services the benefit does not reach many of the poor. Consequently, there is a need to investigate ways in which the available subsidies can be

focussed on defined areas/services impacting on a larger segment of this sector of the commuter market.

Strategy 1: Investigate and implement a Targeted Subsidy Project

6.6.7 LAND USE RESTRUCTURING STRATEGY

A number of public transport policies related to user-side subsidy, more efficient public transport, and land use policies in support of these principles were set out earlier in this document.

There is need to introduce a pilot project on more efficient residential land use and densification in support of public transport. In effect this will be achieved by subsidising land costs.

Strategy 1: Subsidised Low Income Housing

- Investigate location opportunities for low income housing which will be highly accessible to public transport and reduce the trip distance for essential travel.
- Recognising the reduced need for expenditure on essential services for such communities, consider various models for subsidising such development.
- Implement a pilot project.

6.6.8 CUSTOMER FOCUS STRATEGY

Apart from cost, the major concerns of public transport passengers are for safe, reliable, convenient service. Two projects identified under Policy, focus on these aspects of public transport. They are the development and adoption of:-

- A Passenger Service Charter
- A Quality Service Charter

Strategy 1: Quality Service Charter

Engage operator forums and prepare the Charter
Adopt and implement

Strategy 2: Passenger Service Charter (PSC)

- Taking into consideration the national initiative to develop a PSC, engage local passenger/community forums and adapt the national charter as necessary
- Adopt and implement Charter

Strategy 3: See also Customer Call Centre - Strategy 1

6.6.9 TOURISM STRATEGY

The public transport needs of tourists are recognised as quite different from those of daily commuters and residents. At the same time unique modes and/or service for tourists can add to the attractiveness of eThekweni as a tourist destination thereby having a positive impact on the local economy. The following project is a particular application meeting this need.

Strategy 1: Develop People Mover System

- This has been done within the CBD by the introduction of distinct and attractive buses with specific branding that can easily be recognised by locals and tourists alike.

6.7 MONITORING AND KEY PERFORMANCE INDICATORS

Part of the Integrated Development Plan vision includes "...growing the economy and meeting peoples' needs so that all citizens enjoy a high quality of life with equal opportunities..."

Public transport's contribution to achieving this vision requires performance on the delivery of the PTP, as well as performance of the system in achieving the various public transport goals. Consequently, performance monitoring using various key performance indicators (KPI's) is an essential part of the delivery of the PTP.

6.7.1 KEY PERFORMANCE INDICATORS (KPI'S)

The table below sets out a range of KPI's for the five key public transport goals.

Apart from defining each goal this table notes the probable source of data needed to measure performance and the recommended frequency of measurement. These KPI's will be monitored as the IRPTN is rolled out beyond 2016.

Table 6-12 Monitoring of the ETA's Public Transport Plan Key Performance Indication (KPI's)

Output to be Evaluated	Key Performance Indicator				
	KPI No	Description	Source	Comments	Report Frequency
Goal 1 – Effective Public Transport:					
Passenger satisfaction with public transport service	1	No of complaints/1000 passengers per month	Monitored in Durban Transport contract Requires call centre for system	Needs call centre	Monthly
Promotion of use of public transport	2	Modal split (% of motorised transport users on public transport in peak)	ETA	Part of annual monitoring programme	Every 3-5 years
	3	Average age of subsidised bus and commuter rail coach fleet	KZNDOT and PRASA	KZNDOT (becomes ETA responsibility as bus contracts are taken over)	Annual
Promotion of access to public transport	4	Kilometres of roads used for PT per hectare in rural areas	ETA	-	Every 2-3 years
Promotion of accessibility to public transport	5	% of households spending more than 10% of disposable income on PT	ETA	-	Annual
Accommodation of Special Needs Groups	6	No of corridors with fully accessible P.T.	ETA / KZNDOT	-	Annual
		No of dedicated vehicles for special needs			
	7	% of contracted bus fleets fully accessible in select areas still to be determined	KZNDOT	-	Annual
Goal 2 – Efficient Public Transport:					
Efficient PT operations	8	Average travel time to work for all public transport commuters	Quality of life survey	-	Annual

Output to be Evaluated	Key Performance Indicator				
	KPI No	Description	Source	Comments	Report Frequency
Efficient bus operation	9	Average no of passengers carried per subsidised bus per day	KZNDOT	-	Annual
Efficient rail service	10	Average number of rail passengers per service per day	Metrorail	Currently Metrorail function. Info available only when provided	2-3 years
Taxi-Recapitalisation progress	11	% of minibus taxi fleet re-capitalised	OLB	-	Annual
Good delivery of public transport projects	12	% of capital projects delivered within time and budget	ETA	-	Annual
Effective regulation and control of public transport vehicles	13	% fully legal public transport operators	OLB	Measurable once provincial taxi database is fully updated	Annual
Goal 3 – Sustainable Public Transport					
Road-based public transport service regulation and legislation	14	% of services operating with a fixed route permit	OLB	Currently an OLB function; available only when Board provides	Annual
Land-use restructuring (for monitoring)	15	Development density along PT priority corridor(s)	-	Exact measures to be developed	5 years
Goal 4 – Safe & Secure Public Transport:					
Improved public transport security	16	Reported incidents monthly per 10 000 passengers	SAPS	Access procedures need to be set up	Annual
			Railway Police		
Improved public transport safety	17	Various KPI's from Road Safety Plan	ETA	To be developed in Road Safety Plan & incorporated into ITP	Annual
		See full list of KPI's and targets in the Road Safety Plan			
Goal 5 – Black Empowerment in Public Transport:					

Output to be Evaluated	Key Performance Indicator				
	KPI No	Description	Source	Comments	Report Frequency
Extent of ownership and participation in public transport and related activities	18	Number of contracts and value by type of contract	ETA	-	Annual
Procurement of services	19	% of budgets allocated to PDI firms	ETA	-	Annual

6.8 METERED TAXI

6.8.1 INTRODUCTION

Although in South Africa metered taxis are not a commonly used form of transport by the local population for a variety of reasons, the industry in eThekweni is nonetheless well established and performs an essential role in the transportation of both residents within, and visitors to, eThekweni. The function of metered taxis within the municipal transport system, however, is not clearly defined and the institutional structure of the industry on all levels is fragmented.

This section of the ITP looks at the current status of the metered taxi industry. In addition, the framework for developing policy and strategy is considered, which will assist in positioning the industry to perform effectively in serving future demand, in particular extraordinary demand from special events.

6.8.2 SIZE OF ETHEKWINI METERED TAXI INDUSTRY

There are approximately 150 metered taxi operators in eThekweni that operate some 600 metered taxis. The South African Metered Taxi Association (SAMTA) has approximately 80 operators as members, the eThekweni African Metered Taxi Association (TAMTA) has approximately 70 operators as members and the Durban Metropolitan Taxi Association (DMTA) has approximately 70 operators as members. It is estimated that the total legal metered taxi fleet in eThekweni is 600 vehicles.

There are an estimated 60 permanent taxi drivers who do not have permits but are known to operate in the Inner City area. There are also moonlighters that operate mainly at night and target the low end of the market.

6.8.3 METERED TAXI ROUTES AND OPERATIONS

The metered taxi industry provides a 24 hour service throughout the week in eThekweni. The companies with larger vehicle fleets use their vehicles on a 24-hour basis with drivers working 12-hour shifts. The smaller operators, who have one dedicated driver per vehicle, and owner-drivers, also work a 12-hour day but their time is flexible to the market they serve and also changes according to seasonal demands. The off-peak period across all market sectors including seasonal demands is from 02:00 to 06:00 in the morning. The average flag fall fee is R5-00 whilst the average fee per kilometre is R10. In most cases fees are negotiable to be discounted or as a flat fee.

The most popular metered taxi return routes in eThekweni are listed in the table below.

Table 6-13 Metered Taxi Routes

Route No.	Origin		Service
1	CBD	King Shaka International Airport	Business and tourist markets
2	CBD	Pavilion Shopping Centre	Private and tourist markets
3	CBD	Gateway Shopping Centre	Private and tourist markets
4	CBD	Berea / Overport	Private and tourist markets
5	CBD	Sun Coast Casino	Private and tourist markets
6	CBD	Internal CBD	Private and tourist markets
7	CBD	Residential Suburbs	Private, work & leisure

6.8.4 RANKS IN ETHEKWINI

There are a total of 50 designated formal metered taxi ranks in the Inner City area containing about 150 bays. Most of the Inner City ranks are on-street parking areas that have been designated as metered taxi ranks. None of the metered taxi ranks have shelters or ablution facilities.

There is also a major rank at King Shaka International Airport that contains 25 bays.

6.8.5 POLICIES AND STRATEGIES

The following papers and reports have been prepared by the Metered Taxi Working Group, a sub-committee of the National Taxi Task Team:-

- “The Metered Taxi: Problems and Solutions. Preparation for Provincial Workshops - June 1996”
- “Supplementary Final Recommendations relating to Metered Taxis - May 1997”
- “Report and Recommendations on 4+1 Vehicle - May 1997”

In addition to this, the National Department of Transport produced a “Position Paper on the Regulation and Democratisation of the Metered Taxi Industry” in October 2002. This paper made recommendations on the following:-

- National registration and democratisation of the metered taxi industry
- Clear definition of the services rendered by the metered taxi industry
- Law enforcement
- Legislative amendments
- Arrangements for a national summit or indaba of all role players to initiate the representation process.

In 2009, NDOT produced a document “Developing the Metered Taxi which is undergoing a comment phase. To date none of the institutional or operational recommendations have been formally implemented.

The KwaZulu-Natal Department of Transport at present does not have any policies or strategies for the metered taxi industry; however a Provincial Bill has been approved by the KwaZulu-Natal cabinet. The public consultation phase for this Bill was initiated, following which it will be tabled

before Parliament by the Minister. The KwaZulu-Natal Department of Transport also is in currently formulating Provincial regulations that will govern the metered taxi industry.

6.9 WAY FORWARD

In accordance to the National Department of Transport, the IRPTN will be implementation to address public transport within eThekweni Municipality. The wall-to-wall plan and the preliminary design have been completed in August 2012. The detailed planning and design will begin in the latter part of 2012 thereafter which will be implemented starting mid-2013. This will include both road and rail based public transport as the North-South rail corridor is the back-bone of the public transport system.

The IRPTN will be the backbone of the PT system in eThekweni. Nevertheless operating licences will still be required to be granted on all other routes. It is also important where services are to be rationalised that licences can be transferred or cancelled.

The metered taxi industry in eThekweni is well established and performs an essential role in the transportation of both residents within, and visitors to eThekweni. The metered taxi industry provides a 24 hour service throughout the week in eThekweni and will still continue to provide a service even after the IRPTN in operation.

7 TRANSPORT INFRASTRUCTURE STRATEGY

7.1 INTRODUCTION

This section of the ITP update addresses the development and maintenance of all types of transport infrastructure including major roads and public transport facilities and infrastructure.

The planning and provision of transport infrastructure in eThekweni is seen as part of an integrated programme for delivery of a holistic transport solution for the Municipal area. In developing a prioritised programme these differing needs of the various stakeholder groups are recognised and considered within the context of the development imperatives expressed in the IDP vision; these being:-

- Meeting people's needs;
- Growing the economy.

Further, within the framework of national transport policy, embraced within the IDP, the transport infrastructure programme responds to the directive to prioritise the needs of public transport commuters over the use of private motor vehicles.

The transport infrastructure programme in this section of the ITP is discussed under five categories. In many instances projects can be identified within more than one category which increases the overall benefit of such a project. The five categories are:-

1. Accessibility

Relates to upgrading that improves access primarily to isolated rural and peri-urban communities or new routes required to link areas of greatest need to well-resourced areas.

2. Freight

This focuses on projects which will improve the safe and efficient movement of heavy vehicles into and through the City and accessibility to major freight generators and attractors.

3. Economic Impact Focus Projects, Bottleneck Elimination and Road Safety

The focus of this category is to ensure that effective functioning and planned growth of key economic activity centres within the City are not constrained by bottlenecks in the road system.

4. Public Transport

The prioritisation of public transport over the private motorist highlights the need for certain roads projects to provide additional capacity for public transport or enable some form of priority movement of public transport.

5. Capacity

Within the context of managing demand for road space through various strategies including promoting public over private transport, there is need for a number of road projects to address current and pending capacity issues that negatively impact on the effective and efficient functioning of the City.

These categories are discussed individually below indicating cost estimates and 2013/14 expenditure.

7.2 PUBLIC TRANSPORT INFRASTRUCTURE

Public transport infrastructure forms an important part of the public transport system upgrade. Key projects that form a part of this multi-modal system upgrade include bus and taxi ranks and holding areas as well as selected rail stations.

These projects are summarised in Table 7.1. Public transport infrastructure will be part of the IRPTN project in the future. This is detailed further in section 7.3.4.

Table 7-1 Public Transport Infrastructure Projects

Project Description	Responsibility	Estimated Cost (R mill)	2013/14 Expenditure (R mill)
Public Transport Ranks resurfacing (various)	E	20.0	20.0
Public Transport Ranks fencing, ablutions, and roof upgrades (various)	E	15.25	15.25
Taxi Rank structural upgrade (various)	E	22.75	22.75
PT laybys & Shelters: Construction of Bus laybys Citywide	E	4.5	4.5
Total		62.5	62.5

Note: E = eThekweni Municipality

7.3 ROAD INFRASTRUCTURE

This section tabulates the roads projects in terms of the five categories described above.

7.3.1 ACCESSIBILITY FOCUSED PROJECTS



Most of the following projects (shown in Table 7.2) are proposed to upgrade local roads, ensuring a reasonable standard of surfaced, all weather roads providing access to the major road network and improving the quality of life of local residents. An important aspect of these projects is the ability to improve public transport service to areas accessed from these roads.

Table 7-2 Accessibility Focused Road Projects

Project Description	Responsibility ⁽¹⁾	Estimated Cost (R mill)	2013/14 Expenditure (R mill)
MR577 (KwaDabeka to Umgeni River)	K	996.5	50.0
Municipal Sidewalks and NMT Infrastructure	E	13.5	13.5
Pedestrian Facilities on the N3	S	0.9	0.9
D403 Link Road – Phase 5	E	33.0	6.0
Total		1043.9	70.4

Note 1) E = eThekweni Municipality
 K= KZNDOT
 S= SANRAL

7.3.2 FREIGHT MOVEMENT FOCUSED PROJECTS

Currently there are two projects under consideration which are part of the main freight haulage route system in the metropolitan area. These are shown in the following table 7.3:-

Table 7-3 Freight Movement Focused Projects

Project Description	Responsibility ⁽¹⁾	Estimated Cost (R mill)	2013/14 Expenditure (R mill)
Freight Route, Port to Cato Ridge	C	3 708	2.7
Freight Management Infrastructure	E	5.0	4.7
Total		3 713	7.4

Note 1) E = eThekweni Municipality
 C = Public/Public combo or Public/Private combo

7.3.3 ECONOMIC DEVELOPMENT, BOTTLENECK ELIMINATION AND SAFETY PROJECTS

Projects in Table 7.4 address bottlenecks and missing links/connectivity in the system which causes accessibility problems, negatively impacting on economic activity in the City. In some bottleneck locations safety is also a related issue as well as being a consideration on its own merit.

Table 7-4 Economic Development, Bottleneck Elimination and Safety Projects

Project Description	Responsibility ⁽¹⁾	Estimated Cost (R mill)	2013/14 Expenditure (R mill)
N2: Road Rehabilitation Umkomaas to Lovu (incl. Mnini I/C)	S	10.0	10.0
N2: Road Rehabilitation Umlaas Canal to EB Cloete I/C	S	38.1	10.0
N3: Road Rehabilitation Spine Road to Cato Ridge	S	6.0	6.0
N3: Road Rehabilitation Candella Road to Pinetown	S	51.3	31.3
P1-P506: Hillcrest – Waterfall Upgrade to Blacktop	K	190.0	150.0
Road Rehabilitation: eThekweni Roads	E	641.0	641.0
R102 Upgrade: DTP to Phoenix	K	681.0	60.0
Harry Gwala Road (Booth Road)	E	80.0	11.0
Bayhead Road link to Solomon Mahlangu Drive (Edwin Swales VC Dr)	C	255.0	106.0
Mazisi Kunene Road/Loudon Road - intersection improvements	E	1.0	1.0
Rinaldo Road - traffic circle	E	1.2	1.2
Armstrong Drive/Ridge - traffic circle	E	1.5	1.5
Stella Road/Piet Retief Road - intersection upgrade	E	1.0	1.0
Badulla Road/Travencore Drive/Marine Drive/Warangal Road - traffic circle	E	0.5	0.5
King Cetshwayo Avenue/Locksley Drive/45th Avenue - intersection upgrade	E	2.15	2.15
Western Freeway/Sherwood Interchange - upgrade	E	0.15	0.15
Total		1959.9	1032.8

Note 1) E = eThekweni Municipality
S = SANRAL
K = KZNDOT
C = Public/Public combo or Public/Private combo

7.3.4 PUBLIC TRANSPORT RELATED ROADS PROJECTS

The projects in Table 7.5 are existing heavily trafficked public transport routes that require reconfiguration and upgrading to more effectively handle prioritised public transport.

In line with the IRPTN, some of the design principles include:

- Segregated road infrastructure
- Signal priority or grade separation at intersections
- A system of feeder and distribution vehicles
- Convenient and secure private transport facilities at public transport stations
- Improvements to nearby public space, pedestrian and cycle facilities to support non-motorised access to public transport.
- An independently operated and managed fare collection system.
- System management through a centralised control centre using Intelligent Transport System (ITS) applications.
- The IRPTN project is also shown in this table.

Table 7-5 Public Transport Related Roads Projects

Project Description	Responsibility ⁽¹⁾	Estimated Cost (R mill)	2013/14 Expenditure (R mill)
IRPTN (Phase 1)	E	6598.0	778.0
Total		6598.0	778.0

Note 1) E = eThekweni Municipality

7.3.5 CAPACITY RELATED ROADS PROJECTS

The projects in Table 7.6 relate mostly to areas where there are currently or projected to be within the 2020 roads programme, major capacity problems on a section of the system, as opposed to localised bottlenecks.

Table 7-6 Capacity Related Roads

Project Description	Responsibility ⁽¹⁾	Estimated Cost (R mill)	2013/14 Expenditure (R mill)
N3: Keyridge Realignment (Link)	S	30.0	10.0
N2: Adding Lanes from Mhloti to Tongaat (Link)	S	270.9	230.4
N2: from Isipingo to Edwin Swales (Link)	S	19.6	4.6
N2: from Umgeni to Mt Edgecombe (Link)	S	15.1	15.1
EB Cloete Interchange	S	14.8	13.8
N3: Mahogany Ridge Interchange	S	48.0	0.2
N3: Mlaas Road Interchange	S	7.7	0.9
N2: KwaMashu Interchange	S	40.5	13.8
N2: Isipingo Interchange	S	4.0	1.0
N2: Adams Road Interchange	S	4.0	1.0
N2:Umgeni / Inanda Interchange Improvement	S	465.0	232.7
N2: Mt Edgecombe Interchange	S	919.5	262.1
Total		1839.1	785.6

Note 1) S = SANRAL

7.4 PROGRAMME SUMMARY BY CATEGORY

Table 7.7 shows a summary of estimated capital expenditure by project category for the 2013/14 financial year.

Table 7-7 Infrastructure Expenditure for 2013/14

Category Focus	No of Projects	Estimated Cost (R mill)	2013/14 Expenditure (R mill)
1. Public Transport Infrastructure	4	62.5	62.5
2. Accessibility	4	1043.9	70.4
3. Freight ⁽¹⁾	2	3713	7.4
4. Economic Development, Bottleneck Elimination, Safety	16	1959.9	1032.8
5. Public Transport ⁽²⁾	1	6598.0	778.0
6. Capacity	12	1839.1	785.6
TOTAL 2012/13 PROGRAMME		15216.4	2736.7

Note:1) Additional projects will be identified on completion of future phases of the Freight Plan

2) Additional projects will be identified as detailed planning of IRPTN system progresses

8 TRAVEL DEMAND MANAGEMENT

8.1 BACKGROUND

Travel Demand Management (TDM) may be described as a system of actions and interventions used to alleviate traffic congestion-related problems through improved management of vehicle trip demand.



In the South African context this translates into a variety of 'carrot' and 'stick' interventions focussed broadly on increasing the use of public transport in the peak and decreasing the use of private transport.

Clearly the type, extent and severity of actions taken at any point in time needs to be considered against the severity of the problems being addressed.

8.2 IMPLICATIONS OF 'DO NOTHING'

8.2.1 GROWTH TREND

Estimates place the trend growth in peak period person trips 22% between 2005 and 2020. This translates into a 50% increase in trips by car and a 3% decrease in trips by public transport.

8.2.2 IMPLICATIONS OF 'DO NOTHING'

In the event that no actions are taken to address the trend of increased use of private transport and decreased use of public transport, a number of problems will result, these being:-

- A progressive deterioration in all forms of transport services throughout the city, including public transport, freight transport and private transport.
- Road congestion affecting all forms of transport.
- Road based public transport will become increasingly costly and inefficient as sprawling land use patterns continue to dilute the effectiveness of public transport.
- The demand for road capacity will exceed affordability of providing additional road space.
- A significant reduction in accessibility and mobility for the public
- Reduced accessibility for freight movement with the concomitant effect of increased cost for commercial and industrial activities and reduced attractiveness for commercial/industrial development in eThekweni.

Overall, these and other consequences of a 'do nothing' approach to the current trend will have significant negative implications on key components of the IDP vision, these being:-

- Providing a high quality of life
- Meeting peoples needs
- Growing the economy

8.3 TARGET MODAL SPLIT

Recognising the trend of declining use of public transport, a more realistic target of reversing the trend and achieving a positive growth in public transport, has been set. Reversing the trend modal split in year 2020 of 42:58 (public: private) to 55:45, will result an improvement on the current modal split of 52:48.

The following graph shows the effect of achieving this target on peak person trips by public transport.

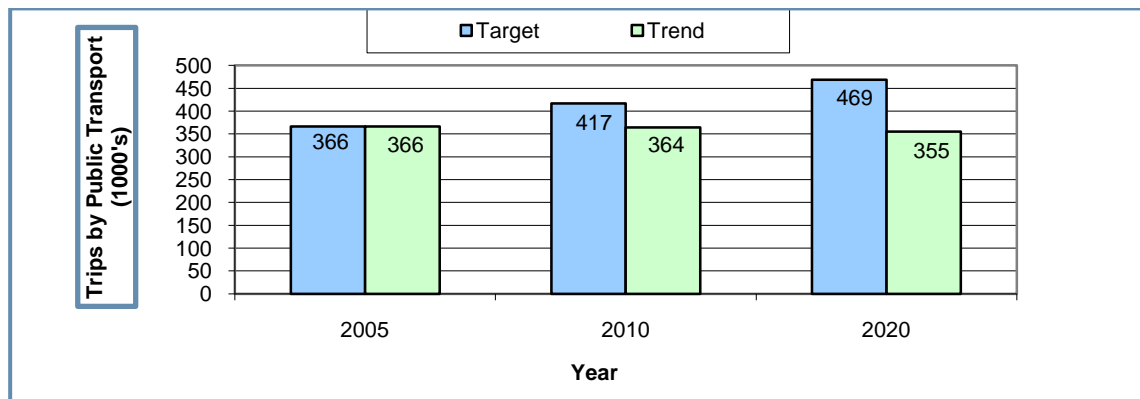


Figure 8.1 Person Trips by Public Transport (1000's) Peak Period (2 Hours) - Years 2005 to 2020 Trend vs Target

If the 'target' modal split is achieved a growth in person trips by public transport of 103 000 will result as opposed to the 'trend' decrease of 11 000.

The significant growth of 28% in public transport demand will need to be taken up by the restructured public transport system which is described earlier in the ITP.

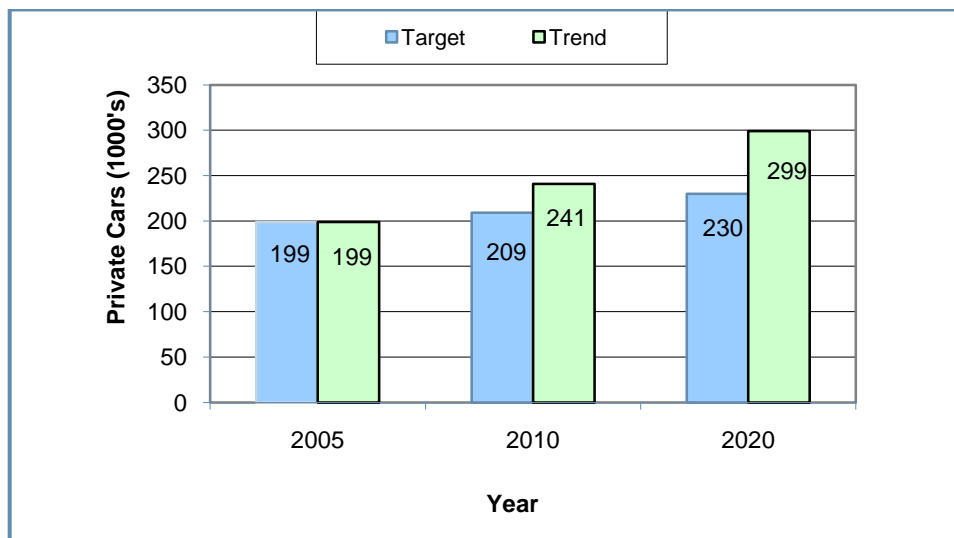


Figure 8.2 Private Cars on Road System Peak Hour –Trend vs Target

As shown in Figure 8.2, the demand for private transport by car in the peak hour translates into a 'target' growth in cars of 31 000 as opposed to the 'trend' demand for an additional 100 000 cars.

8.3 MODAL SPLIT MONITORING



Modelled figures for total trips by mode throughout the municipal area, such as the above, are useful for establishing overall targets. However, for monitoring purposes, measured modal split across cordons or screen lines is more effective. For this purpose, the five kilometre cordon, which intercepts the major roads and rail lines around the CBD, is used.

8.4 TDM MEASURES

Apart from TDM measures which are needed to reduce the demand for private transport, there is a range of concomitant measures needed to retain current public transport ridership whilst attracting new riders from the private transport group. Certain measures are also needed to manage the extent and location of demand for freight transport movement. In many instances issues of system efficiency, effectiveness, safety, affordability and sustainability under-score the need for effective TDM measures. Many of the measures will be introduced on a phased basis and often extend over the short term periods.

The four main categories of TDM measures identified in the ITP, these being:-

8.4.1 PRIVATE TRANSPORT MEASURES

Used to improve system performance, reduce need to travel, particularly during peak periods and various restrictive measures which would result in a reduction in travel by private transport.

The restrictive interventions are directed towards active discouragement of the use of private cars. If such interventions are not to be unduly restrictive they must be accompanied by provision of attractive public transport alternatives as discussed in Public Transport Measures.

8.4.2 PUBLIC TRANSPORT MEASURES

Contains a range of measures directed towards improving the public transport system and services in order to provide a more attractive service to current riders and to encourage existing private motorists to use public transport. Generally, attracting the private motorists onto public transport would also require a variety of disincentives directed at the motorist such as those identified under the private transport measures.

8.4.3 LAND USE DEVELOPMENT AND MANAGEMENT MEASURES

Land use plays a key role in the location and demand for various forms of transport. Measures which in effect are land use planning and development guidelines encouraging and supporting efficient transport in a city, with the focus on public transport.

8.4.4 POLICY AND INSTITUTIONAL MEASURES

Which relate to one or more of the other categories and addresses issues of appropriate institutional arrangements, regulation of transport, pricing, cost recovery and preservation of valuable transport assets.

8.5 ETHEKWINI'S TRANSPORT DEMAND MANAGEMENT STRATEGY

The ETA's TDM strategy comprises a series of projects defined within the context of various possible measures that could be implemented in the short, medium and long terms.

Although the transportation planning process has identified a range of short to long term projects in the various aspects of public and private transportation, the ETA's TDM strategy focuses on those projects that should be initiated in the short term period, years 1 to 5. These form a part of the implementation programme in the ITP.

9 FREIGHT LOGISTICS STRATEGY

9.1 INTRODUCTION

An efficient integrated transportation system is critical to the sustainability of any economy. Globally, it is no longer companies merely competing with other companies, but rather supply chains competing with supply chains to ensure success in global markets. Durban is the trade gateway for the Southern African region as the busiest port in terms of value and shipping activity. It is crucial for the eThekweni Transport Authority to develop an efficient and integrated freight transport system that will ensure regional economic sustainability, promote local economic growth and minimise negative externalities associated with freight transportation. The region's transportation system requires the optimum integration of the different modes of transport that includes road, rail, aviation, maritime and pipeline with the appropriate modal balances.

The purpose of this chapter is to show how the eThekweni Transport Authority plans to address the current inefficiencies in the freight transport system, in an endeavour to develop an efficient and integrated transport system. This chapter is structured as follows:

- The Status Quo on the Freight Transport System with the primary focus on existing demand, utilisation and operating issues.
- A basic understanding of the existing inadequacies of the freight system.
- Insight into perceived problems from the perspective of operators, users and service providers.
- Insight into possible freight impacts of proposed new developments within the Municipality.
- Highlights the problems and gaps that plague the freight transport system with the associated recommendations to resolve these issues.

9.2 FREIGHT TRANSPORT SYSTEM

The development of an effective, sustainable and integrated transport system inclusive of all modes of transport is crucial to the sustainability of the eThekweni region, the country and the Southern African region. An introduction and the status quo of each mode of transport are discussed below.

9.2.1 THE PORT OF DURBAN

The Port of Durban is the second busiest port on the African continent in terms of vessels activity and container moves over the quayside. The port offers a combination of port facilities and services. Transnet Ports National Authority, formerly known as the National Ports Authority (NPA), is the custodian of all the national ports, while Transnet Port Terminals manages the terminals and port operations of the country's imports and exports.

South Africa's long term success and ability to achieve sustainable growth, increased employment and improve our global competitive advantage are heavily dependent on the success and viability of our logistics and supply chains to and from the Port of Durban. It is therefore absolutely crucial to ensure the efficiency, cost effectiveness and ease of freight

movements within and through the Municipal Area. Forty four per cent of South Africa's breakbulk cargo and 61 % of all containerised cargo flows through the Port of Durban. The Port of Durban employs roughly 6 000 people and 37% of the South African economy relies solely on the Port of Durban.

With the rise of containerisation in maritime logistics over the last two decades, one cannot deny the logistics and supply chains to and from the Port of Durban have become the foremost driver of freight movements within the eThekweni Municipal Area and the country. As a consequence of this growth in containers, both the port and related logistics sector have also grown considerably in the last couple decades. The logistics sector now plays a very significant role in local GDP contributions and employment creation within the city (particularly in the South Durban Basin.) It is therefore paramount to improve and ease the port-city interface and related logistics and supply chain movements. To ensure the global competitiveness of the port, Transnet embarked on a series of capital expenditure projects. The deepening and widening of the entrance channel is the most strategic project amongst all the projects, as it will be the catalyst for future expansion within the port precinct. The widening of the channel commenced in May 2007 and was completed in February 2010. The Port of Durban can now safely accommodate the post-panamax vessels that can carry up to 9200 TEUs containers. Added to this is the many Port expansion projects planned in the year come, most prominently being the expansion of the Port at the old Durban International Airport site in Reunion.

The Port has a major influence on the level and types of freight movement in the eThekweni region. The port is accessible by both rail and road. Road access is via the Central Business District and the South Durban Basin which is located immediately adjacent to the Port. Historically, rail has transported a larger volume of freight, however over the last two decades a significant volume of cargo has migrated from rail to road. The reasons for this migration of cargo will be discussed in Section 9.2.3 The Rail Network.

9.2.2 THE ROAD NETWORK

Road transport is the most dominant mode of freight transport in the country. The eThekweni region, as the host of the busiest port on the continent, has one of the busiest and most strategically important road networks in the Southern African region. The eThekweni road network is a comprehensive network comprising of municipal, provincial and national roads. The majority of the heavy freight movements are either destined to or originate from the port. In addition, there is a fair volume of local freight movements within the eThekweni region. The road freight corridors traversing the eThekweni region are extensive and diverse. A brief discussion on each of the important road freight corridors within this region is provided hereafter:

DURBAN – GAUTENG CORRIDOR (N3/N11/R103/R23)

The Durban to Gauteng corridor includes the N3, the N11 route from Ladysmith to Volksrust , the R23 from Volksrust to Heidelberg, the R103 and the M13 via Fields Hill. The N3 is the main route within this corridor. The other roads mentioned above are used interchangeably, predominantly as alternative routes to avoid tolls and weighbridges located along the N3. The Durban-Gauteng corridor is the busiest corridor in South Africa carrying approximately 1.4million freight vehicles per annum. The estimated annual tonnage conveyed ranges from 50 million tons at the southern end near Durban to 35 million tons in the vicinity of Harrismith and 21

million tons at Villiers (Natmap, 2008). The large articulated interlink vehicle is predominantly used by industry. Natmap (2008), reveals that there are also 6-7% interlink tipper combinations transporting bulk coal and ore in a southerly direction to the port and returning to the interior with bulk grain and other commodities. Liquid bulk tankers make up approximately 14% of the vehicles and transport an estimated 3.5 million tons of fuel northbound. Flat-deck combinations are extensively used for general cargo and containers. The fact that this route provides ample opportunity for two way loads between the port and the hinterland further promotes the use of road transport in this corridor. The costs of transporting on this corridor are lower than elsewhere due to the fact that only 8% of vehicles are running empty.

N2 NORTH CORRIDOR

The N2 North from Durban to Pongola is the busiest section of the route, with a significant tonnage on the southern section to Richards Bay. The annual tonnage is approximately 7.4 million on the lower section with about 530,000 tons at the Golela border with Swaziland.

N2 SOUTH CORRIDOR

The N2 south corridor serves the southern eThekweni Region, the southern KZN region, the Eastern and Western Cape areas. Containers, wood, cement, coal and some agricultural products are the cargoes primarily conveyed in this corridor. The volumes of freight transported on this corridor are significantly lower in comparison to the previously mentioned corridors.

9.2.3 THE RAIL NETWORK

- The rail freight network falls under the jurisdiction of Transnet Freight Rail, formerly known as Spoornet. The main lines that traverse the eThekweni region are discussed below: The Durban - Gauteng line (NATCOR) is a critical link between the port and City Deep in Gauteng and provides accessibility to the port for the SADC region as well.
- The Durban - Golela (Swaziland) line links Durban, Richards Bay, Phalaborwa and Swaziland.
- The Durban - Port Shepstone line links Durban to the southern coastal area of KwaZulu Natal.

The local rail network that connects the Point to the southern industrial areas was designed to carry import and export cargo however this line is no longer extensively used. The KZN Road Rail Study (2004) found that rail branchlines in the province form a network that is 1 007 kilometres in length. The efficacy of these rail branchlines is unsatisfactory as the network is grossly underutilised. The volume of cargo on the branchline network has dwindled substantially with a number of branchlines no longer operational. The National Freight Logistics Strategy 2005 (NFLS 2005) reported that rail has lost much of its container and higher value commodities to the road freight sector over the previous ten years. The NFLS (2005) further elaborates that the main reason for the decline in rail freight volumes is the poor operational performance of Transnet Freight Rail. Rail customers that were interviewed as part of the NFLS (2005) study reported that rail operations were significantly below expectations, the most recent statistics indicate that rail account for less than 20% of all container movements leaving the Port of Durban. In addition, the five most serious issues faced by Transnet Freight Rail customers were:

- Reliability
- Equipment availability
- Price structure
- State and reliability of rolling stock
- Rolling stock availability (NFLS, 2005: 12-14)

9.2.4 PIPELINES

Transnet Pipelines, formerly known as Petronet, are the custodians of the national pipeline network. The pipeline network is a bulk transporter of liquids and gases. The three major national pipelines that emanate from Durban are:

- The Refined Products Pipeline from Durban to Sasolburg.
- The Crude line that conveys crude oil from Durban's offshore mooring buoy to the Reef storage and inland refinery.
- The Gas line from Secunda, via Richards Bay to Durban.

Due to an increase in demand and coupled with the capacity constraints of the existing aging infrastructure, Transnet Pipelines have constructed a new multi-product pipeline (NMPP) to convey petrol, diesel and jet fuel between Durban and Gauteng. The new pipeline will augment the parastatal's ability to serve the transport needs of the refined petroleum products industry. The NMPP will provide additional capacity to meet forecasted fuel needs of the inland market up to 2030. The project included a 554km, 24 inch pipeline, from Durban to 5km north-east of Heidelberg. A second 160km 16 inch steel pipeline will be laid from Kendal to Waltloo and Jameson Park to Langlaagte via Alrode. The project also includes four mainline pump stations and 25 storage tanks. The coastal terminal will have an initial capacity of 228,000 m³ and 188,000 m³ at the inland terminal. The completion of the NMPP will almost double petroleum pipeline capacity from the current 4,4 billion litres to 8,7 billion litres per annum (Transnet Financial Results Presentation, 2010) .

Pipeline transport is the safest mode for all bulk petroleum products and it is envisaged that this new pipeline will remove a significant volume of road tankers of the road network as these fuels will be transported by the NMPP pipeline.

9.2.5 AIR TRANSPORT

The Durban International Airport, situated 16km south of the Durban CBD, closed on 30 April 2010. The new King Shaka International Airport (KSIA), at La Mercy, approximately 30 kilometres north of Durban, was commissioned on 1 May 2010. Adjacent to the King Shaka International Airport is the state of the art Dube Tradeport. The primary objective of the Dube Tradeport is to provide long haul international flights to and from Durban (KSIA) to cater for the increasing air freight demands. The Trade Zone is linked to the airport's freight component that provides dedicated space for the imports and exports of high value goods. It is envisaged that the Trade Zone will capture local freight currently utilising the OR Tambo Airport. In addition, it is forecasted that the freight handling capabilities of the development will attract industries such as motor components, electronics, clothing, textiles and perishables, all of which are dependent on time sensitive travel.

The Dube Tradeport is a strategic investment which intends to serve as a major stimulus for regional economic growth. The key objectives of the Dube Tradeport are:

- To provide new international air services.
- To create platforms for new export supply chains, including high-value manufacturing.
- Support for perishable goods sectors.
- The establishment of an electronic trading platform and be the incentive for private sector investment in KwaZulu Natal.

The Cargo Terminal and Perishables Centre will have direct air-side access that will allow for rapid export and import of time-sensitive products. It has the capacity to handle approximately 100 000 tons of cargo per annum in 2010. The facility has the potential to increase its capacity to 400 000 tons should the need arise in the future. The Trade Zone Precinct is a controlled area used for value-adding and logistics processes of the Dube Tradeport.

Essentially, the specialist freight-oriented Trade Zone will provide an all-new export environment through which tenants, operators and service industries may achieve high levels of productivity, logistics efficiencies and improved competitiveness. This multi-modal logistics platform will assist in creating economic opportunities and will be an attractive location for both manufacturing and service-based investment by businesses requiring quick access to air cargo and passenger services, particularly those conducting their business within global value chains.

9.3 FREIGHT DEMAND AND USE OF THE SUPPLY SYSTEM

9.3.1 ROAD FREIGHT

The annual traffic volumes on the main routes into the municipal area convey indicate that the busiest freight route is the N3 eastbound and westbound in the eThekweni.

9.3.2 FREIGHT THROUGH THE PORT OF DURBAN

The volumes of all cargo handled by the Port of Durban in the past decade are reflected in Table 9.1 that follows. It is evident from the data presented that the volume of cargo handled by the port has substantially increased over the past decade. As a result of the recent global recession, some of the cargo volumes have marginally declined in 2009, however the recent upturn in global markets should increase cargo volumes in 2010. Containers and vehicles dominate the high-value end of the cargo spectrum and they are the fastest growing component of the port's traffic. To a large extent, vehicles and containers are distributed by road rather than rail. The high volume of petroleum products handled at the port constitutes a substantial volume of the total tonnage through the Port. Petroleum products are predominantly discharged to the refineries and onwards by pipelines.

Break-bulk or conventional cargos represents a shrinking market in Durban's freight base as the container market increases and as some break-bulk and conventional cargoes are now exported via Richards Bay.

Table 9.1 Cargo Volumes through the Port of Durban

Port of Durban		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Description	UOM	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual
Containerised Cargo	TEU	1,223,601	1,313,290	1,565,606	1,686,554	1,899,065	2,198,600	2,479,232	2,642,165	2,395,175	2,553,392	2,734,535
Dry Bulk Cargo	Tons						6,087,621	6,582,013	7,202,886	7,179,548	8,098,657	
Liquid Bulk Cargo	Tons						2,277,456	2,335,799	1,918,200	1,841,969	1,969,383	
Pertrol and Petroleum Gas	Tons						22,828,362	22,773,593	22,763,759	21,851,578	23,379,259	
Breakbulk (excl. vehicles)	Tons						3,707,002	3,697,734	2,100,910	2,591,151	2,652,603	
Vehicles	Tons						3,777,048	3,658,347	3,356,829	1,893,429	3,197,754	

9.4 PROBLEMS, ISSUES AND RECOMMENDATIONS

Survey was undertaken with major stakeholders within the freight industry represented the following groups:

- Infrastructure authorities
- Infrastructure users
- Enforcement agencies

The survey, in conjunction with a detailed desktop study and information solicited from key stakeholders, as part of the update to this ITP, revealed a host of problems and issues as documented below.

9.4.1 ROAD/RAIL MODAL IMBALANCE

In an ideal transportation system there needs to be an optimum modal split between road and rail transport. In South Africa and eThekweni, over the past decade or so, there was a major migration of cargo from rail to road such that there is a modal imbalance between road and rail transport. The migration of cargo from rail to road has radically increased the number of heavy vehicles on the road network which has inevitably resulted in higher social costs, as a result of the negative externalities of excessive road usage. The external costs of excessive road transport include the premature deterioration of the road network, an increase in congestion, accidents and harmful gas emissions into the environment.

9.4.2 ROAD CONGESTION

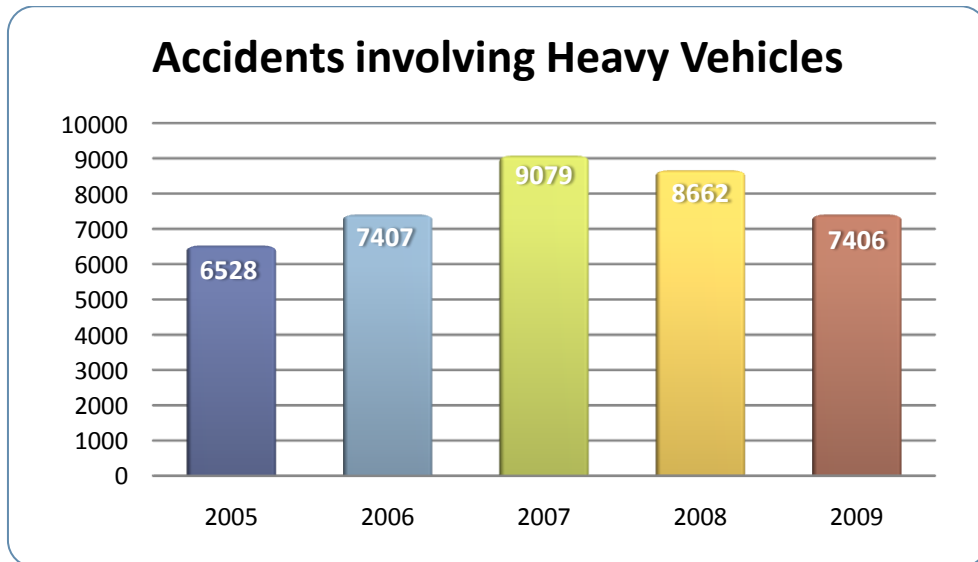
The eThekweni road network, especially during peak periods, experiences severe congestion with no viable alternatives. Heavy vehicles by virtue of their volume, size and tortuous speeds often largely contribute to congestion especially at strategic areas such as the port, CBD and industrial areas. The result is often a complete gridlock of the road network, as the road network exceeds its operational capacity. A costly consequence of congestion is the additional time and fuel that is consumed during these congested periods. The cost of congestion to industry and employers is a direct consequence of employees arriving late for work, deliveries being delayed; missed appointments and higher transportation costs, which all inevitably result in a loss of productivity. The total cost of transport increases as higher costs are incurred due to the need for additional trucks and drivers as a result of longer turnaround times for existing vehicles. South African industries will be at a competitive disadvantage if congestion problems are not resolved. Furthermore, these businesses will have either to absorb these higher costs by reducing profitability or pass on the costs to consumers through higher prices. In addition, the lack of a proper strategy to address the congestion problem in the eThekweni region will result in job losses as businesses will either liquidate or relocate to other areas. The region as a result will lose the ability to attract new enterprises which will negatively impact on other businesses and suppliers throughout the eThekweni region and state.



9.4.3 ROAD ACCIDENTS

The carnage on South African roads is unacceptable and eThekweni is no exception to the pandemic. It has been estimated that on average 18% of all vehicle accidents in the eThekweni

municipal area involve heavy vehicles, often resulting in fatalities. The graphs below depict the high volume of accidents within the eThekweni region that involve heavy vehicles.



Source: ETA Road Safety Branch, 2010

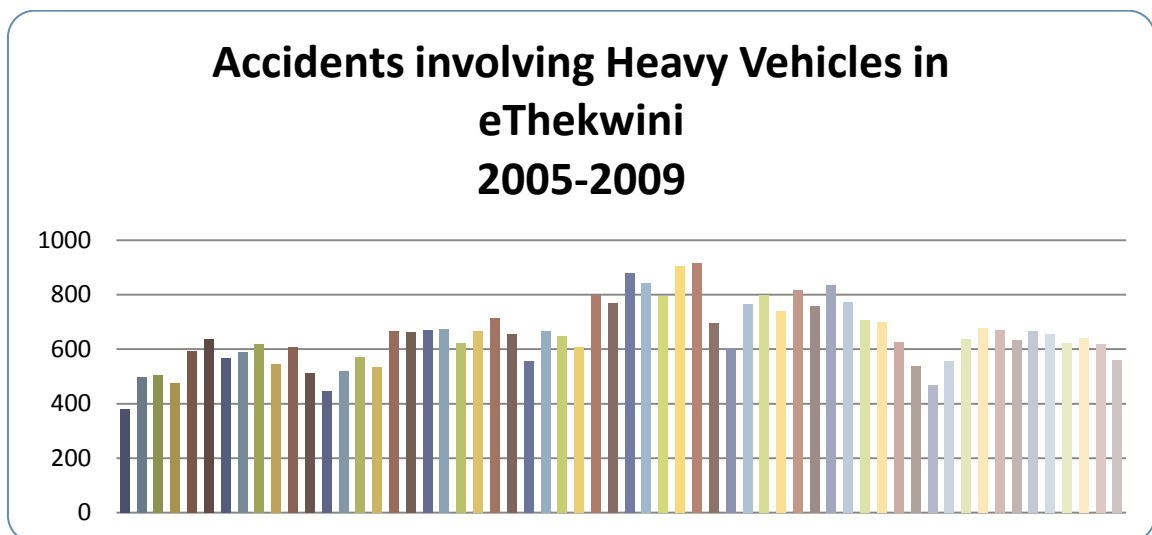


Figure 9.1 : Heavy Vehicle Accidents Source: ETA Road Safety Branch, 2010

A number of factors contribute to the high accident rate involving heavy vehicles:

- Congestion and associated driver frustration accompanied by lack of visible law enforcement leads to irresponsible driver behaviour.
- Excessive speed and reckless driving.
- Unroadworthy vehicles as a result of defective equipment in the primary safety systems of vehicles including brakes, steering, tyres, lights and other defects.
- Driver Fatigue is quite often a cause of road accidents. Drivers often drive excessively long hours without proper rest to maximise the number of trips driven for higher remuneration.

- The use of alternate routes to avoid tolls and weighbridges. Many of these lower category roads were never designed for the large freight vehicles currently used thereby posing a greater road safety threat.
- The common practice of overloading increases the risk of accidents. Overloading reduces the operational and handling capabilities of heavy vehicles often resulting in accidents.

The cost of road accidents to society and the economy is disturbing. Increasingly, accidents involving heavy vehicles result in the total closure of crucial road corridors within the eThekweni region costing the economy millions of Rands. The direct costs include:

- Hospital and medical costs for the victims.
- Damage to vehicles.
- Damage to the road and road furniture.
- The cost of emergency response teams and enforcement officials.
- Judicial costs in prosecuting offenders and imprisoning offenders.
- Funeral costs for the fatalities.

The output costs includes loss of productivity for injured employees, traffic delays as a result of accidents and costs involved in training and recruiting new staff. The psychological and social costs include trauma counselling, permanent mental and physical scarring.

9.4.4 OVERLOADING

Overloading is a major issue not only contributing to accidents involving heavy vehicles but to the premature deterioration of the road network. The net effect is an unnecessarily high cost of road maintenance, a cost which is currently treated as an externality cost and not built in to the cost of road freight transport.

A lack of conveniently located weighbridge facilities and a lack of manpower at the existing facilities contribute to the high rate of overloading in this region. The eThekweni region has four weighbridges located within its jurisdiction. A weighbridge is located to the north of the region on the N2 at Umdloti, while the Kingsburgh weighbridge is situated to the south of the region. The Westmead weighbridge is located in the vicinity of the N3 on the western side of the region. A small weighbridge facility is located within the port precinct.

As with many of the other weighbridges in the country, weighbridges in the eThekweni region are predominantly operated from 06:00 to 22:00, as these are the official working hours of the RTI officers that operate these facilities. Occasionally, there is a skeleton crew that operates throughout the night. During these twilight hours, overloaded offenders travel on the road network relatively freely and avoid prosecution. Furthermore, even during normal operational hours, a large volume of trucks travel past these facilities quite unscathed as these facilities can handle only a small sample of trucks at any given time. Although the port precinct handles the largest truck volume in the Southern African region, it perhaps has the poorest weighbridge in the Durban region. The port weighbridge is non-operational and has been out of operation since 2010, the weighbridge lacks a stacking area for trucks and therefore operates inefficiently. If a large volume of trucks is stacked then the queue lengths will spill over onto the road that will gridlock Langeberg Road and Bayhead Road. Transnet National Port Authority (TNPA) along with the eThekweni Metro Police have initiated a process to re-initiate the weighbridge at Bayhead Road, with TNPA increasing the land size to create space for truck stacking.

The South African judicial system, in respect of overloading control, further exacerbates the overloading pandemic. The current legislation only provides for the prosecution of the driver of the overloaded vehicle. The consignor, consignee and the vehicle operator all of whom largely profit from an overloaded trip and who in most cases instruct the driver to drive the overloaded vehicle, all avoid prosecution as a result of gaps in the current legislation. Furthermore, the fines that the drivers receive are not in the least way proportionate to the damage caused to the road network. In addition, due to the intense technical nature of overloading cases, the prosecutors and magistrates quite often lack the technical knowledge to successfully prosecute these offenders; hence many of these offenders are acquitted.

9.4.5 HAZCHEM ROUTES

The lack of dedicated dangerous goods routes within the Municipal area is a serious shortcoming in the transport system. It is a legislative requirement to have dedicated freight routes that are fully equipped with all the necessary emergency response teams to mitigate any Hazchem incident that may occur. Furthermore, law enforcement officers are not properly trained to inspect Hazchem vehicles and respond to Hazchem incidents.

9.4.6 PERSONNEL AND STAFFING

The skills shortage in the road freight industry is a growing concern as a result of the high mortality rate of drivers due to HIV Aids pandemic. The lack of adequate training of new drivers further compounds the problems experienced in this industry. Simultaneously, there is a growing concern about the ineffectiveness of the driver training systems and institutions in the country which are failing to supply adequate numbers of trained drivers of a mature age. The large number of inexperienced drivers is proportionate to the high number of heavy vehicle accidents.

9.4.7 THE PORT OF DURBAN

The Port of Durban is rapidly expanding its infrastructure and operational capability to gear the port to handle significantly larger vessels and volumes of cargo. The widening of the harbour channel, deepening of the port and the construction of new berths all signal higher freight volumes passing through the port in the near future. More significantly the expansion of the port at the old Durban International Airport site in reunion is a major concern and requires appropriate planning.

PLANNING

Both the Port Authority and Municipal officials have expressed concern that strategic planning by the other party is largely carried out in isolation; with limited opportunity to influence the other's strategic planning proposals. Expansion strategies for the port have far reaching impacts on the Municipal road system and road users as well as the ability to maintain a reasonable standard of access to the Port. Whilst national and provincial policies recognise the need for integrated and coordinated planning at all levels of government, the interpretation of this in practical terms needs to be pursued further.

PORT ACCESS

Container Terminal access via Langeberg and Bayhead Roads was identified as the most serious current problem by the various stakeholder groups with serious capacity limitations resulting in:

- Long queues and delays into and within the container terminal
- Substantial downtime
- Additional running costs and overtime
- Delayed deliveries
- Loss in operator revenue
- Trucks accessing the SA Container Depot (SACD) and Mediterranean Shipping Company (MSC) off Langeberg Road were also delayed in the main queue to the container terminal
- Pedestrian and heavy vehicle accidents attributable to bad driving behaviour in part due to driver frustrations and lack of visible law enforcement
- Possible closure of access in the event of a serious accident on Bayhead Road

Durban Harbour access was also raised as a problem of lesser severity. The associated problems were defined as:-

- No alternative route to the southern areas of the Port
- Congestion at the intersection of Bluff and South Coast Roads
- High volume of trucks carrying containers and illegal parking of these vehicles particularly along South Coast Road contribute to severe congestion in the greater port area, including the CBD
- Poor road infrastructure maintenance in vicinity of rail crossings as well as faulty traffic signals,

9.4.8 POLLUTION

Road transport is recognised as a major contributor to air pollution and noise pollution in large cities and heavy vehicles are largely responsible for this pollution.

9.4.9 LAW ENFORCEMENT

The level of resources affects the extent of policing possible and the visibility of law enforcement on the road system. The lack of visible traffic law enforcement was identified as a contributing factor to illegal and dangerous driving and parking on the main access road to the Durban Harbour container depot.

The movement of abnormal loads is managed by Durban Metro Police and the Provincial Road Traffic Inspectorate. The lack of manpower and unwillingness to pay overtime means that abnormal loads often need to be moved during the day including peak periods, when there is a much higher level of conflict with other vehicles.

9.4.10 EMERGENCY SERVICES

The emergency services have limited resources, particularly at night to deal with road accident emergencies, especially those required to deal with hazardous goods spills.

9.5 PROPOSED INTERVENTIONS

- At national and provincial spheres, Government has been actively pursuing initiatives to revive rail transport in the country in an effort to reverse the modal imbalance between road and rail. The eThekweni Municipality is strategically important to the national economy by virtue of the high value of goods that pass through its jurisdiction. Therefore, the eThekweni Transport Authority will, in conjunction with their National and Provincial counterparts, provide the necessary support to drive initiatives to reverse the modal imbalance between road and rail transport.

- The eThekweni Transport Authority is presently investigating the feasibility of dedicated freight routes within its jurisdiction in an effort to alleviate road congestion and the premature deterioration of the road pavement. In addition, more projects similar to the construction of the Khangela Bridge will be explored to eliminate bottlenecks in key areas of the city.

- The eThekweni Transport Authority is presently conducting an 'Integrated Freight and Logistics Strategic Framework and Action Plan for eThekweni', this plan comprises of three key stages: the first, is a detailed status quo analysis of all freight and logistics activities in the Municipal Area; the second, is developing a 20 year integrated freight and logistics strategic framework for the Municipality; and thirdly, to develop the various interventions proposed in the strategic framework into an implementable short, medium and long term action plan. This work will be completed by December 2013 and will comprise of all freight and logistics proposed interventions.

10 “OTHER TRANSPORT” RELATED STRATEGIES

10.1 INTRODUCTION

Apart from projects identified in the various sections of this ITP update and consolidated in the Funding Strategy of Proposals and Projects – Section 12, there is a category of projects that qualify as “Other Transport”. These include Non-motorised transport, rural transport and special needs transport.

10.2 NON-MOTORISED TRANSPORT

10.2.1 INTRODUCTION

Non-Motorised Transport (NMT) includes all means of transport that are human powered. Non-motorised transportation includes walking, animal-power and bicycling, and variants such as small-wheeled transport (skates, skateboards, push scooters and hand carts) and wheelchair travel (NDOT, 2008).

As a mode of transport, non-motorised transport is available to almost everyone. The majority of non-motorised class of transport modes are healthy, non-polluting, versatile and reliable. The transport sector is the most rapidly growing source of greenhouse gas emissions and is the second most significant source of greenhouse gas emissions. Therefore NMT provides significant mitigation benefits within the transport sector.

10.2.1 NMT IN THE STRATEGIC PLANNING OF ETHEKWINI MUNICIPALITY:

The importance of NMT is given credence in the strategic planning of the municipality and is acknowledged and highlighted in its key strategic documents: the “Imagine Durban” initiative and is an integral part of the Integrated Transport Plan (ITP).

10.2.2 KEY NMT INITIATIVES WITHIN ETHEKWINI MUNICIPALITY:

CYCLE POLICY

In 2006, the ETA produced a policy document, *Cycle Policy for eThekweni Municipality*, which formulated a detailed policy for cycling for the following priority areas: commuting, recreation, tourism, sport, special events, and scholars. Although, the policy was not ‘officially adopted’ by Council it was used to accelerate a few implementation projects such as the NMR Sport Cycle Training Circuit, to demonstrate the practicality of the policy.

FIFA WORLD CUP 2010™

The awarding of the FIFA World Cup 2010™ to Durban as a host city raised the municipality’s awareness of the need to develop its pedestrian and cycling facilities and systems. Out of the deliverables for the World Cup 2010, the event-led strategy for NMT partnered with the Greening Durban 2010 Programme and targeted delivery using three strategies around a theme of “Connecting”: Green Walk-Cycle Circuit; Walk-all-The-Way System (“Walking Durban”) and Connect to Rail. During the event, the potential for extending the reach of the connections had not been realized since cycling had not received enough attention.

GREEN CIRCUIT AND KEY BUILDING CONNECTIONS: PHASE 1

As a deliverable for COP 17/CMP 7 conference and as a means to reduce the challenges of climate change, the above project was initiated; to encourage the use of non-motorised transport for inner

city trips and as a step towards reducing the transport related carbon emission footprint in the city. This project involves the provision of cycling infrastructure and lanes to connect natural environmental resources and key city infrastructure in the Durban CBD. This includes the widening of the bridge across the uMgeni Estuary on the M4 route.

Within this framework that a comprehensive NMT plan has been developed, guiding the planning and implementation of programmes and facilities to respond to the multiple needs of NMT users, especially pedestrian, cyclist and special needs user movements.

It is within this context that the focus is on building upon existing policy initiatives and expanding on the theme of 'connecting' to develop a policy framework and implementation plan, inclusive of all NMT modes to identify key routes and corridors within the eThekweni Municipal Area (EMA), as part of the transportation network, within the context of city beautification and greening programme.

To enable and support walking and cycling, planning authorities need to build, expand and maintain continuous networks of formal walking (sidewalks, off-road paths, safe crossings, pedestrian bridges etc) and dedicated cycle areas along lines of high demand. A major objective of providing dedicated infrastructure is to protect walkers and cyclists from conflict with motorised modes, a leading cause of road traffic fatalities.

NMT and again particularly walking and cycling is planned to serve as an important mode of transport in the Integrated Rapid Public Transport Network.



10.2.3 RESULTS FROM THE HOUSEHOLD TRAVEL SURVEY

According to the eThekweni Municipal Wide Household Travel Survey 2008, the modal share of trips in the municipal area is as follows: public transport (40.7%); private transport (33.2%) and walk/cycle (26.1%). Both walking/cycling travel modes are very important forms of transportation as large sections of the eThekweni's population are dependent on them, with walking being the most dominant mode for educational travel whilst longer distance walking is very dominant in low-income households.

10.3 SAFETY AND SECURITY STRATEGY AS IT RELATES TO PUBLIC TRANSPORT

A policy has been developed in respect of Safety and Security for Public Transport, which focuses on the promotion of passenger safety in respect of PT operations at ranks, terminals and on board PT vehicles and passenger security at ranks, terminal facilities and on board PT vehicles.

No strategy for the implementation of this policy has, however, yet been developed and the introduction, implementation and enforcement of a Quality Service Charter have not been pursued as was recommended in the 2005 ITP.

Notwithstanding, PRASA has recently increased the railway police contingent to 700 staff at five stations plus a high command centre at Durban station in order to address passenger perceptions and fears for personal safety.

10.4 TRANSPORT FOR SPECIAL NEEDS PASSENGERS

One of the key developmental frameworks of eThekweni is to promote an accessible City by ensuring universal access to facilities and public transport for about 4.5% of the population. Apart from the current services being provided, universal access and requirements for special needs passengers form a key component of the IRPTN network and facilities

11 ROAD SAFETY

11.1 INTRODUCTION

Road safety is a cornerstone of any Integrated Transport Plan as it has a dramatic impact on the potential Quality of Life for many residents, both young and old.

Apart from the social impact on individuals and families, road accidents have a major impact on the economy of the country. The World Health Organisation projects traffic accidents as the 2nd leading cause of disability-adjusted life by the year 2020, and road traffic fatalities are predicted to rise to the fifth leading cause of death by 2030.

In South Africa alone in 2009, 10582 fatal accidents occurred.

The First Global Ministerial Conference on Road Safety was held in November 2009, to address the large and growing global impact of road traffic crashes. Participants called for the period 2011-2020 to be a Decade of Action, and for tackling a leading cause of death and disability.

The effectiveness of the various road safety initiatives undertaken in South Africa, is shown in Figure 11.1.

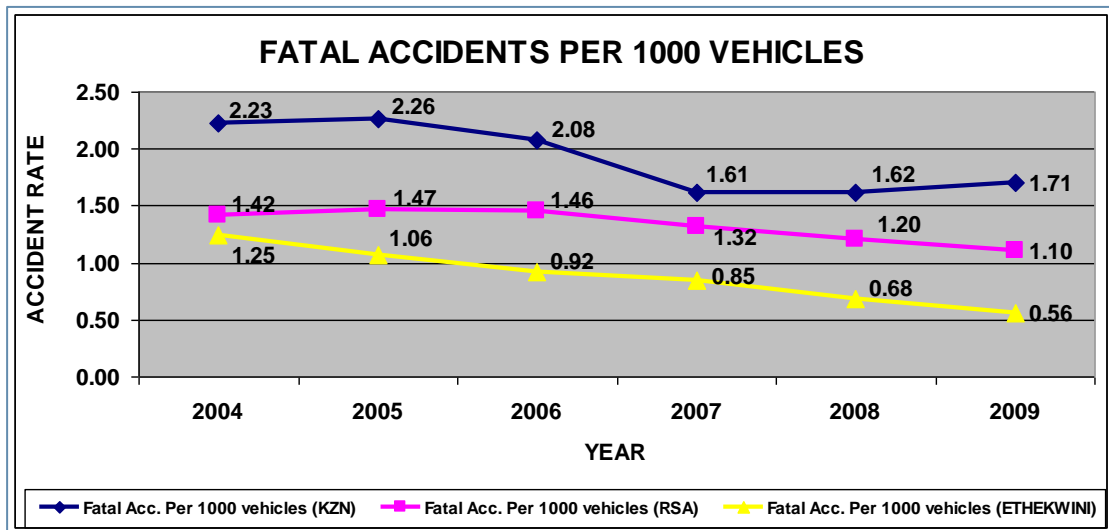


Figure 11.1: Comparison of Fatal Accidents per 1000 Vehicles– RSA, KZN & eThekweni

In eThekweni for the period 2004-2009, the number of Total Accidents peaked in 2007, and has decreased in 2008 and 2009, as shown in Fig. 2, whilst the total vehicle population trend line shows a general increase over this period. The number of Fatal Accident recorded in the same period, also appears to have peaked in 2005, and gradually decreased in the following years.

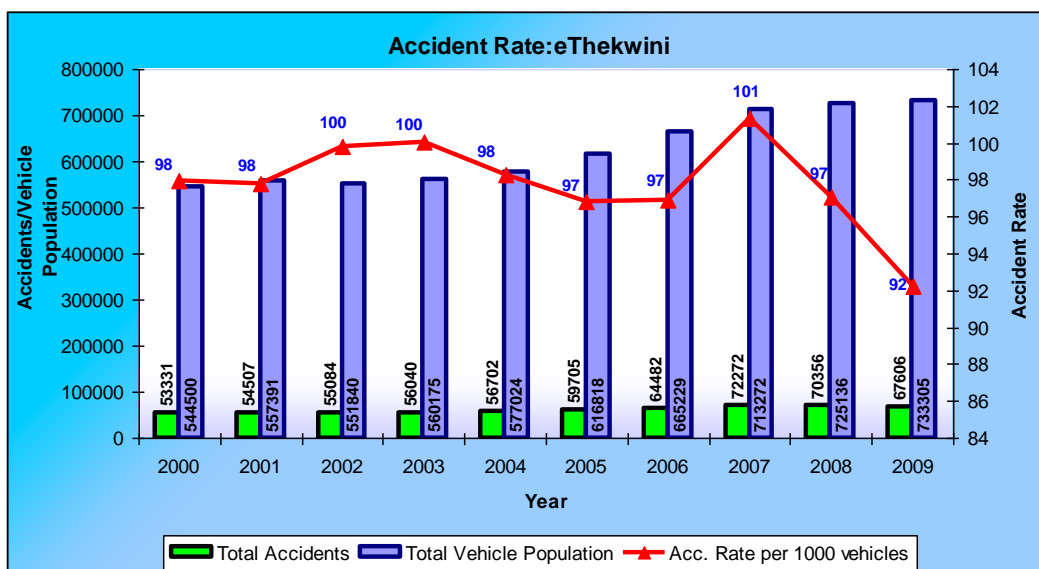


Figure 11.2. Accident Rate in eThekweni 2000-2009

eThekweni’s vision statement declares its intention to be “Africa’s most caring “ and liveable city.

eThekweni recognises the threat of road accidents to achieving this objective, and has taken a serious structured approach to address this challenge in the form of a comprehensive Road Safety Plan. This Plan which outlines a series of programmes to address Road Safety issues was implemented in 2004.

11.2 BASIC PRINCIPLES FOR DEVELOPING THE ROAD SAFETY PLAN

The following are the basic principles adopted by eThekweni in the preparation of their Road Safety Plan:-

- The Plan must be appropriate in the eThekweni context.
- Strategies in the Plan must be developed from a thorough analysis of road accident patterns and cause the road safety strategies need to be multi-disciplinary and include all stakeholders if they are to be effective.
- The plan has to be realistic in what it aims to achieve within current financial and resource constraints. It recognises that it is unlikely that there will be any immediate significant increase in resources.
- Whilst being realistic, the Plan must assess and define the entire range of strategies and actions that need to eventually be implemented. These actions need to be prioritised according to resource constraints.
- To address road safety effectively, people’s values, culture and habits need to be changed.

In adopting these principles it is recognised that many of the crucial strategies that have to be implemented immediately are unlikely to produce dramatic short-term results and that this is a process that takes time. The Plan needs to put foundations in place and then gradually build upon them.

11.3 ASSESSMENT OF THE CURRENT ACCIDENT SITUATION

Various road safety initiatives and activities are carried out at national, provincial and local levels. This section focuses on those initiatives and activities carried out at the local level for the sectors of education, engineering, enforcement, emergency services, and evaluation. The results are summarized in the following paragraphs.

It should however be recognized that the Road Safety Activities conducted in eThekweni are governed by the powers of the Road Safety Technical Committee. This committee is comprised of senior members from the ETA, KZN DOT, RTMC, KZN DOT RTI, SANRAL, Metro Police and City Health. The committee meets twice a year, and reviews the programmes and progress made each year.

11.3.1 UPDATE ON THE ROAD SAFETY EDUCATION PROGRAMME

Since the introduction of the eThekweni Road Safety Plan in 2004, the eThekweni Transport Authority has been responsible for the co-ordination and implementation of Road Safety Programmes in eThekweni.

With regard to Educational Programmes, the eThekweni Transport Authority's Road Safety Branch has targeted high pedestrian accident sites, and other high risk areas, in an effort to reduce the number of adult and child pedestrian accidents.

Pedestrian Awareness Programmes have been conducted regularly at High Accident Sites, Public Transport Facilities, and Educational Fairs, particularly at Primary Schools.

There are approximately seven hundred Primary Schools in eThekweni. Since the inception of the Road Safety Plan, the ETA has installed traffic calming packages and sidewalks in the vicinity of most primary and secondary schools in eThekweni. A schools database has been created, which records all road safety activities that take place at each school, as well as the provision of road safety material.

For the Area Wide Primary Schools Programme, the ETA presents a road safety drama to all Primary Schools in a three year cycle. This participatory theatre aims to reinforce the basic road safety rules pertaining to crossing the road, walking on the sidewalks provided, alighting/boarding public transport vehicles and seat belt usage.

The programme aims to provide primary school learners with Road Safety information, which is not currently covered by the Education Curriculum.

The Intensive Primary School Programme targets twenty-five Primary Schools representing approximately 22 000 learners, which have been selected in areas with a high incidence of child pedestrian accidents. This campaign includes a programme of combined approaches from Enforcement, Engineering and Education. The role players in this programme are Metro Police, SAPS, ETA's Road Safety Branch, and the KZN-DOT. This programme is intensive and will involve a visit to each school every second month, presenting another aspect of the programme. The campaign began in July 2008, and will continue to 2010, as a pilot programme.

The recommendation is therefore to implement programmes in the areas that have the highest number of both child and adult pedestrian accidents. It is the intention that recurring education campaigns will increase the road safety awareness of pedestrians, and reduce the high occurrence of these accidents.

Other educational role players in the eThekweni Region are the National Department of Transport in conjunction with the KZN Department of Transport. They are responsible for implementing the Governments' road safety education strategy, and the dissemination of road safety educational material to schools and communities throughout the province. Involvement of communities in road safety matters

is actively encouraged.

The KZN Department of Transport currently has two road safety officers in eThekweni to run their campaigns. They are responsible for Participatory Education Techniques Programme in High Schools, Scholar Patrol, and the Driver of the Year.

In addition to these programmes, Community Road Safety Councils (CRSC's) have been established with the national department's endorsement of community involvement in road safety.

Community Road Safety Councils (CRSC's) currently operate in the following areas:

- Outer West
- Ethembeni (Inner West)
- Albert Luthuli (North – Umhlanga, Tongaat, Verulam and Inanda)
- Kwa Mashu
- Cato Manor
- Durban Metro (South – Umbumbulu)
- Umlazi
- Durban South (Chatsworth, Lamontville, Merebank)

The National Department of Education does currently not have a policy on road safety education. Therefore the quality and frequency of this education is dependent on the individual educator's motivation for the subject.

Durban Metropolitan Police has 9 Police Officers involved in Road Safety Education in the 5 operational entities. Although they fall under different sections of the organizational structures in the various operational entities, their activities are directed from a central control.

The ETA holds Education Road Safety Working Group Meetings once each quarter, where representatives from each of these bodies attend. All Road Safety Programmes running in eThekweni are discussed and planned at these meetings, and there is good co-operation between all role players.

11.3.2. ENGINEERING

The National Department of Transport is involved with planning and policy related to Road Safety Engineering. The implementing agency is SANRAL. Many of the projects have their origins from maintenance or capacity concerns and are motivated only in part by safety concerns.

The Kwa Zulu Natal Department of Transport is responsible for on the ground delivery of Arrive Alive and this has included joint engineering-enforcement projects. Many of their engineering projects have been identified by community structures.

Within eThekweni Municipality at local government level, many of the implementation projects are safety related or have a strong safety element. Many are identified by councillors or members of the community and may therefore not go through the same technical evaluation/approval procedures as other projects. This could result in the overlooking of other sites more needful of attention.

The following gaps have been identified:

- Although a number of hazardous locations are identified each year, there is currently no formal municipal-wide hazardous location programme including a
- Predetermined network screening and prioritisation procedure.
- Road Safety is addressed reactively. There are few if any proactive road safety audits of new roads, public transport services and infrastructure, land developments and townships.

- There is a need for more 'Intelligence' in support of the road safety effort. Development of the Geographic Information System (GIS) is ongoing. Although the eThekweni accident data base on its own is arguably the best in the country, much work still has to be done to link the various systems, for example, traffic volume data, geometric data, accident data, offence rates etc into one information system that can provide customised support data to the various Road Safety Agencies.

The ETA holds Engineering Road Safety Working Group Meetings once each quarter, where representatives from each of these bodies attend. All Road Safety and Engineering Programmes running in eThekweni are discussed and planned at these meetings.\

11.3.3 ENFORCEMENT

Three organisations are involved in traffic enforcement matters in eThekweni:

- SAPS
- KZN DOT-RTI
- DMPS

In general SAPS only attend traffic accidents to gather evidence and prepare cases of culpable homicide. However the Accident Unit does involve itself in active traffic enforcement.

The Provincial Road Traffic Inspectorate (RTI) is involved in traffic law enforcement and attendance at accidents on national and provincial roads. They have jurisdiction on all KZN roads leaving the local roads to the Durban Metropolitan Police Services (DMPS).

The Durban Metropolitan Police Service focuses on traffic policing within the city, City Bylaw infringements and assisting the SAPS with crime prevention. They are meant to dedicate 60% to traffic law enforcement but crime prevention priorities intervene. Over and above the general force, there are 2 Special Units:

- Special Events Unit,
- Speed Timing Unit

The following is a summary of identified gaps:-

- Difficulty with recovery of outstanding traffic fines
- No dedication to road safety and traffic law enforcement as core functions of policing
- Lack of co-ordinated traffic law enforcement with SAPS Accident Unit, DMPS and RTI.
- Need for specialist traffic law enforcement personnel
- Inadequate court capacity: cases are being struck off the roll due to overloading and can be delayed for up to two years.
- Need for training in the principles of targeted law enforcement
- Need for 'intelligence' to be made available to enforcement i.e. accident and offence rate data in support of strategic deployment.
- Insufficient capacity and resources

The ETA holds Enforcement Road Safety Working Group Meetings once each quarter, where representatives from each of these bodies attend. All Road Safety and Enforcement Programmes running in eThekweni are discussed and planned at these meetings.

11.3.4 EVALUATION

There is no formal and independent "before-and-after" evaluation of road safety activities at any of the levels of government. That an activity was undertaken or a project implemented, is currently regarded as sufficient and 'successful'.

11.3.5 SUMMARY

In summary it was found that:-

- There is a lack of effective co-ordination and integration of the road safety activities carried out by various organisations and at various levels of government
- There is a lack of performance and outcomes measurement
- There is a lack of accountability with regard to road safety outcomes.
- There is insufficient supporting data to control and manage road safety
- Institutional arrangements are complex and dysfunctional in some instances.
- There are insufficient dedicated resources for road safety. For example, in engineering, safety projects must often piggyback onto capacity related projects. In enforcement, crime prevention generally takes precedence. Most agencies are 50% understaffed.

These deficiencies mean that road safety does not easily enjoy the priority as expected within the various agencies. Activities are carried out on an ad-hoc basis and are founded upon perceptions instead of the facts. A lack of co-ordination reduces the impact that integrated activities could have had and wastes limited resources.

11.4 ACTION PROGRAMME

The eThekweni Road Safety Branch as the responsible implementing agency will put together the appropriate business plans incorporating the sector plans from education and enforcement. The components of this plan are included in Table 11.1.

Table 11.1 eThekweni Road Safety Action Programme

Road Safety Branch Action Programme		
	Frequency	Activities
Engineering		
Engineering Working Group	Each quarter	Liaison between ETA depts and DOT
Sidewalk Programme	Annual - ongoing	Identification of Roads requiring sidewalks - based on Accident Ranking ped accs per km
Road Safety Schools Programme- Primary Schools	Annual - ongoing	Audits on Routes to school - prescribing remedial measures where possible. Signage, speed humps and sidewalks
Intensive Schools Road Safety Programme	Annual - ongoing	Audits on Routes to school - prescribing remedial measures where possible. Signage, speed humps and sidewalks
Road Safety Audits	10 per anum	
Before & After Studies at Audit Sites	Annual - ongoing	
Education		
Education Working Group	Every 3 months	Co-ordination between Metro Police Road Safety staff, KZN Dot and KZN DOE
Road Safety Schools Programme- Area Wide Programme	250 schools each year	Every primary school visited once every 2 years. Area Wide - Schools Drama, and provision of staff with educational material
Intensive Schools Road Safety Programme	Ongoing	Co-ordinating a range of educational projects. Providing staff with educational material and co-ordinating activities - Road Safety Drama Groups, Child in Traffic, DOT Edutainment, SAPS Road Safety Presentations
Road Safety Awareness Campaigns at Taxi Ranks	20 Campaigns per anum	Pedestrian and Passenger Education at Bus and Taxi Ranks. In addition, the creation of a database of ranks, where the occurrence of such programmes can be monitored.
Road Safety Awareness Campaigns at Fairs	6 per anum	Road Safety Education stand and Drama Presentation

Enforcement		
Enforcement Working Group	Quarterly	Liaison between ETA depts and Enforcement Agencies
Road Safety Schools Programme	Where necessary	Monitoring behaviour at School Entrance. Also involvement in the education programme.
Intensive Schools Road Safety Programme	Where necessary	Monitoring behaviour at School Entrance. Also involvement in the education programme.
5 High Accident Sites in each Region	Quarterly	Identification of Enforcement Time and Accident Monitoring at these sites
Red Light Camera Violation Sites & Monitoring	Quarterly	
Speed Timing Programme	Quarterly	Advising Metro Police of High Accident Sites
Reports/Monitoring/Evaluation		
Maintenance of Accident Database	ongoing	Collection and capturing of accident records for generation of accident reports.
Maintenance of Locations Database	ongoing	Updating road locations database. Adding new locations and editing where changes occur.
Maintenance of a Schools Database	ongoing	Tracking all educational and engineering programmes undertaken at eThekweni Schools 1.road safety audits carried out, when, results, actions 2.which education officer visited school 3.which schools have been visited 4.date and duration of visit 5.type of road safety education 6.no. of learners reached by education programme 7. material they were exposed to
Annual Accident Report	Annual	Analysis of Accident Trends for the previous Year
Public Transport Accident Report	Annual	Analysis of Accident Trends for the previous Year
Pedestrian Accident Report	Annual	Analysis of Accident Trends for the previous Year
Worst Locations Listing	Annual	Identification and analysis of high accident locations

11.5 EVALUATING SUCCESS

The Road Safety Plan recognises that success in road safety involves concern with providing “safe” infrastructure as well as changing people’s existing behaviour from “unsafe” into “safe” behaviour. Further the Plan recognises the fact that changing behaviour of large numbers of people does not happen quickly. It requires certain foundations to be laid and then built upon in order to achieve a gradually increasing and sustainable long-term impact. It is critical that this steadily unfolding and evolving process be monitored and evaluated.

The eThekweni Road Safety Plan provides a firm foundation to meet the challenge of unacceptably high accident rates.

Success will depend on commitment to implement the strategies and projects.

12 FUNDING STRATEGY, PROPOSALS AND PROGRAMMES

12.1 INTRODUCTION

Increasingly, world-wide, the importance of having an efficient transport system is recognised in terms of the vital role transport plays in economic and social development. As an essential catalyst for development, the road network must be in a sound condition as an underdeveloped or poorly maintained network will act as an inhibiting factor on sustainable development. Equally the quality of life for urban residents and their ability to access social and economic opportunity is largely determined by the transport system serving the community. In this regard public transport is of particular importance.

This section of the ITP update looks at current and possible future funding sources for capital projects in the transport sector. Within this context, limitations and a possible longer term strategy for a way forward are also considered.

12.2 CURRENT AND HISTORICAL CONTEXT REGARDING FUNDING

12.2.1 THE ISSUE OF UNDERFUNDING

It has long been acknowledged that lack of sufficient funding resources for the transport sector is one of the key obstacles to implementation and delivery.

- Poorly functioning transport systems directly and indirectly constrain economic growth and accessibility to opportunity for both urban and rural area residents.
- Negative impacts include inter alia:-
- Poor mobility and unaffordable transport, in particular impacting on the urban poor;
- Freight movements being retarded through congestion, delays and unpredictability, difficulty in conducting business and poor accessibility to labour markets;
- Efficiency reduction, such as non-business time lost to congestion, traffic accidents and air pollution; Long journey times for commuters.

12.2.2 HISTORIC AND CURRENT FUNDING LEVELS

Historically, insufficient funding from all levels of government in eThekweni Municipality has created a major backlog in the provision of public transport systems and support infrastructure as well as in upgraded and new road construction and maintenance.

With the award of the FIFA World Cup 2010™ to South Africa, dramatically higher funding was made available through the Public Transport Infrastructure and Systems (PTIS) grant which was used to accelerate spending on public transport rolling stock and infrastructure across all modes.

This funding was also made available to initiate the IRPTN concepts in many of the larger municipalities and planning and implementation of genuine public transport networks and operating systems has taken place and continues apace.

Clearly, such a rate of expenditure cannot be sustained but funds have been committed to ensure that the radical shake up of public transport, in particular, is sustained.

In general, the direct budget allocation for implementation projects is unlikely to rise significantly and in real terms is likely to decrease. Earmarking general budget funds for road infrastructure lends itself to a certain amount of uncertainty and unpredictability in the consistency of the flow of funds.

Supplementing this indirectly from eThekweni-controlled, transport-related revenue sources has limited impact on funding high capital costs of maintaining and improving road infrastructure. Furthermore much of this revenue is used to cover administration costs and the potential for generating further revenue from these sources or diverting a portion of these funds towards infrastructure improvements is relatively small.

12.2.3 POTENTIAL OF ADDITIONAL LOCALLY GENERATED REVENUE SOURCES

In the context of the levels of funding required to maintain and improve the effectiveness and efficiency of the road transport network and public transport systems, the direct budgetary capital funding allocation for ETA transport infrastructure projects is inadequate, even with the addition of funding from existing indirect sources.

In the absence of adequate funding from existing revenue sources, new methods of generating funds have been investigated. These alternative funding sources to those presently feeding into the general budget, which could be targeted towards transport infrastructure projects, are discussed below. It is strongly recommended that funds generated by any of these sources should be dedicated to transport projects and not as a means of raising general revenue.

12.2.4 PRIVATE OFF-STREET PARKING

This option targets the private motorist through a levy on private parking and is supportive of the user pays principle. Political acceptability and the impact on businesses and future developments would need to be taken into account in setting the scale of the parking levy. However, if the levy is applied to a broad stream of land-uses it can be fairly modest in nature whilst still deriving substantial revenue.

The annual revenue that can be expected is in the order of R17 million, generated from a R10 per month per bay levy across all land uses. Targeting office, industrial zones and parking garages only, which targets the main peak period traffic-generating zones, would generate around R8 million per annum. Shopping areas, where there is a high local intensity of activity, although most of the traffic impact occurs in off-peak times, could be the single largest generator of funds with an annual amount of over R6 million.

12.2.5 OFFICE RENTALS

A possible alternative to the private parking bay levy is one that can be related to general office rentals or extended to industrial locations. This levy can be related to the Town Planning Requirements as to the number of parking bays per 100m² of property being rented.

MUNICIPAL ADVERTISING:

This can take on many forms to a greater or lesser degree associated with transport. It could include such items as bus shelters and benches, taxi rank branding and street name advertising. At present, all Municipal-controlled advertising is in the process of being centralised such that all funds will be consolidated and administered under one roof. The contractual agreement is at the expression of interest stage for each category of advertising. Depending on the winning tender it could be expected that advertisements effected on transport facilities could generate initially a modest sum of R1 million per annum but could be expected to increase fairly rapidly each year to be in the region of R8 to R10 million.

TRAFFIC FINES, ELECTRONIC ENFORCEMENT:

This is essentially a law enforcement and administration issue. However, it also falls within the orbit of the Road Safety Plan including its administration and as such; a portion of the fines could be channelled away from the enforcement/general budget.

WEIGHBRIDGE FINES:

Overloading of freight vehicles causes serious damage to the road network. The use of weighbridges to evaluate the extent of vehicle overloads, along with appropriate fines, could act as a deterrent, thereby alleviating the problem. The one Municipal-owned weighbridge in Bayhead sets an example in this regard but needs revamping on its enforcement procedures to establish itself as an overloading prevention device. The funds raised will address some of the maintenance costs arising from overloaded vehicle damage.

CONTRACT BUS ADVERTISING:

Advertising on buses contracted to the ETA to operate a service can generate significant revenue (around R1 million per annum on present contracts) but accessibility to revenue may only be a possibility when the existing contracts come up for renewal in the future, or unless new contracts are awarded.

DEVELOPMENT LEVY:

A levy is raised on new property developments and collectable on plan approval. This has already been applied in fast-developing areas like Hillcrest without too much resistance but it must be shared between various municipal services such as sewerage and storm water management.

12.3 EXTERNAL FUNDING SOURCES

A number of possible external funding sources could contribute to specific transport infrastructure projects. These sources would fall outside the mainstream municipal transport budgeting sources.

Each is discussed briefly below:-

Funding Agencies, Development Banks: The following are institutions amongst others, who target transport infrastructure projects:-

- World Bank
- UK Overseas Development Association
- European Investment Bank
- African Development Bank
- Australian Agency for International Development
- Canadian International Development Agency
- Development Bank of South Africa

In general, to qualify for funds, a complex procedure follows a set of rules and guidelines which need to be in compliance with the necessary criteria for eligibility. The criteria follow strict requirements that qualify the project in terms of economic, social and environmental considerations. Projects aimed at improving accessibility, poverty alleviation and economic development are likely to rate more highly than other types of projects. The funds are however, in essence “soft” loans which are redeemable and the financing of such needs to be carefully structured in order not to compromise the general pool of funds for other projects.

BANKING INSTITUTIONS:

An innovative way to fund transport projects is from a local banking institution. Funding can be offered against the balance sheet of the Municipality on a project financed Public-Private Partnership basis or anywhere within that spectrum. Key principles would apply, including the

possibility of ring-fencing a revenue stream as a means of redemption. Large sums of funds are available, subject to project approval. A local example of such an arrangement is that of Durban Water's recycling project.

KZN GROWTH FUND:

This fund is dedicated towards projects that facilitate economic growth and development and it is applicable to projects of strategic and significant value, in line with KZN's Development strategy. A transport infrastructure project could fall within the realm of this fund, subject to proper motivation, particularly if it was related to improving the efficiency of freight movement or improving the competitive edge of the region. Significant, ongoing funds of around R1 billion per annum are likely to be made available to all sectors involved in economic development. It is a sustainable funding source, a portion of which can be applied for on an annual basis.

KZN MUNICIPAL INFRASTRUCTURE GRANT:

This source can provide sustainable funds, increasing annually for projects targeting social upliftment and economic development. Whilst concentrating on poverty alleviation, motivation may be justified on the grounds of accessibility to employment, social and recreational facilities.

SPECIFIC TAXES AND LEVIES:

This is related to the concept of the user pays principle. The concept could relate to generating funds using a simple two part tariff comprising primarily of an access fee (vehicle licence fee and a supplementary heavy vehicle levy) and a user fee (a fuel levy and fines for overloading). Extra spending of roads could then be financed by extra payments by road users. The perception is that road users in general are willing pay into a road fund provided the money is in fact spent on roads.

The most applicable surrogate component of the user pays principle is that of a fuel levy or a surcharge on licence fee. It is simple to collect (taxed at source), reflects on the distance travelled and use of roads is proportionate to the type of vehicle in terms of consumption (both private and commercial) and for a small levy can generate a large and sustainable amount of funding (3 cents a litre on fuel would generate around R50 million per annum).

Funds can also be generated from alternative funding sources such as levies on non-users who benefit from improvement and expansion of the road network. Such levies could be in the form of a payroll tax or surcharge on property tax either generally or more specifically located. Commercial development and exploitation of land in conjunction with road improvements could also bring in sizeable funds. The scope for raising debt finance has been considered and the appropriate debt instrument evaluated.

12.4 THE WAY FORWARD FOR FUNDING

In summary, the current situation reflects the following:-

- There is a growing need for capital investment in the transport systems and currently there is a backlog which traditional funding levels do not address;
- The extent of future municipal capital allocations to transport by direct and indirect funding is uncertain; indicative budgets suggest a shortfall in funding needed for the 5 Year ITP implementation plan;
- There are a variety of other potential sources for raising funds for transport at the local level; some of these based on the user pays principle. The fundamental question of such funds being dedicated to transport needs to be considered;

- There are a variety of potential external funding sources with varying requirements for repayment depending on the source and nature of the funding. Some of these have been used but only to a limited extent.

Against this background it is clear that unexploited and unexplored sources to date need to be pursued as part of a comprehensive funding strategy. Increasingly, there is recognition of the need and support for the 'user-pays' principle and where applicable this should be carefully evaluated.

Pilot funding projects may be possible and in this regard a programme will be investigated and developed.

In many instances change of legislation is required and in some instances policy at national and/or provincial levels must also need to be changed.

These are clearly initiatives which require a co-ordinated effort from local government to secure the necessary changes from senior levels of government.

Funding from Government sources is usually granted for the implementation of specific deliverables and funding applications must be accompanied by motivations and Business Plans in which priorities, programmes and outcomes are specified eg PTIS applications to the Department of Transport.

A further complication is that while funding is allocated by the Department of Transport on a multi year basis (subject to annual review) and is Gazetted in terms of the Division of Revenue Act, funding from Provincial sources for implementation of projects contained in the ITP, while indicative figures are available on a multi year basis, is only made known on an annual basis.

Municipal budgets are prepared on a three year cycle, enabling multi year budgeting, subject to annual ceilings. The Municipal budget is often prepared on the assumption that applications for external funding will be successful. These ties up Municipal funds on the expectation of matching funds, and when these are not received, budget adjustments are required in order to divert or consolidate Municipal funds to other projects, often too late to effectively utilise these funds before the end of the financial year.

In terms of a funding strategy the following is proposed:

- Project budgeting be carried out on a three year budget cycle basis to enable proper project programming and to effectively utilise available funding, on the basis that budgets are indicative and are subject to annual review and approval.
- Due to the importance of integrated planning, a specific Business Plan should be submitted to National Treasury to address the transport planning process of the Integrated Transport Plan, in terms of national requirements, including supporting planning such as the preparation of management systems.
- The funding for maintenance projects be provided in terms of a Roads and Bridge Management System to be prepared and updated every three years.
- Funding applications be submitted for individual projects in terms of a structured Business Plan that will clearly define responsibilities, deliverables and budgetary requirements. The approval of such Business Plans should be followed by entering into a Service Level Agreement between the funding parties that will define funding contributions, time frames, implementation responsibilities and deliverables.
- Alternative funding sources be investigated as detailed in the preceding section.

Section 27(1) of the NLTA provides for the establishment of a Municipal Land Transport Fund (MLTF) which must be used to defray the cost of the functions to be carried out. The following moneys shall be paid into this fund:

- Money appropriated by the Minister;
- Money appropriated by the MEC;
- User charges collected in terms of section 28 of the fund;
- Interest on invested cash balances.

Section 28 of the NLTA provides for a municipality to impose user charges (levies) and to pay the income into the MLTF. The user charges in terms of the NLTA can be raised on:

- Specified classes of motor vehicles entering specified portions of the municipal area at specified times;
- Land, buildings or other developments that generate the movement of passengers;
- The parking of motor vehicles in a building or on land in specified portions of the municipal area;
- Parking spaces for, or the use of ranks, stops and terminals by motor vehicles.

The above provision of the NLTA will enable the ETA to pursue several of the above suggested alternative sources of funding.

The allocation of funding from the national levy imposed on fuel sales to the improvement of the transport system has been proposed by several of the main Metropolitan Municipalities, primarily the City of Cape Town. The income from this levy is administered by national Treasury as a part of the fiscus. This revenue is raised directly from user charges on motor vehicles that in turn use the transport network. It is therefore argued that the maintenance and construction of the transport network should be funded from this source. Some Municipalities already receive funding from the State that is derived from the national fuel levy. It is therefore proposed that this funding be allocated to the provision and maintenance of the transport system and be paid into the MLTF.

It is recommended that alternative sources of funding, including user charges on vehicles entering the municipal area in terms of section 28 of the National Land Transport Act, 2009 and the reallocation of funding received from the State in respect of fuel levies be investigated.

12.5 MONITORING STRATEGY AND KPIS

12.4.1 INTRODUCTION

Monitoring of some aspects of the ITP will be carried out using key performance indicators (KPIs). These are set out in the relevant sections of the Plan but summarised in this section for convenience.

12.4.2 KPIS

The following are KPIs that apply to different aspects of the ITP update:-

Section of ITP	Targeted Area	KPI's
Section 8: Transport Demand Management	- Congestion monitoring	- volume/capacity - level of service - travel time
Section 6: Public Transport	Effective Public Transport:	
	- Passenger satisfaction with public transport service	- No of complaints/1000 passengers per month
	- Promotion of use of public transport	- Modal split (% of motorised transport users on public transport in peak period)
		- Average age of subsidised bus and commuter rail coach fleet
	- Promotion of access to public transport	- Kilometres of roads used for PT per hectare in rural areas
	- Promotion of accessibility to public transport	- % of households spending more than 10% of disposable income on public transport
	- Accommodation of Special Needs Groups	- No of corridors with fully accessible P.T.
		- Number of dedicated vehicles for special needs
		- % of contracted bus fleet fully accessible in select areas still to be determined
	Efficient Public Transport:	
	- Efficient PT operations	- Average travel time to work for all public transport commuters
	- Efficient bus operation	- Average no of passengers carried per subsidised bus per day
	- Efficient rail service	- Average number of rail passengers per service per day
6. Public Transport (Cont.)	- Good delivery of public transport projects	- % of capital projects delivered within time and budget
	- Effective regulation and control of public transport	- % fully legal public transport operators
	Sustainable Public Transport	
	- Road-based public transport service regulation and legislation	- % of services operating with a fixed route permit
	- Land-use restructuring	- Development density along PT priority corridor(s)
	Safe & Secure Public Transport:	

Section of ITP	Targeted Area	KPI's
	- Improved public transport security	- Reported incidents monthly per 10 000 passengers
	- Improved public transport safety	- Various KPI's from Road Safety Plan (as below)
	Black Empowerment in Public Transport:	
	- Extent of ownership and participation in public transport and related activities	- Number of contracts and value by type of contract
	- Procurement of services	- % of budgets allocated to PDI firms
11. Road Safety	General:	
	All Accidents	- 10% reduction in the 3 year average
	- Pedestrian accidents 5-19 age group in the Road Safety Management Areas	- 10% reduction in the incidence and severity of pedestrian accidents by 2010 - 10% reduction in the pedestrian accident rate (acc/pop)
	- Pedestrian accidents in the Durban CBD	- 10% reduction in the incidence and severity of accidents by 2010
	- Minibus Taxi Accidents in the Road Safety Management Areas: - Umlazi - Chatsworth - Kwamashu - Phoenix - Durban CBD	- 15% reduction in accidents by 2010
	- Driver behaviour: - - seatbelt usage - - speeding - - alcohol	- not yet available
11. Road Safety (Cont.)	Engineering:	
	- Hazloc Programme	- 10 a year (budget dependent)
	Road Safety Audits	- 10 audits a year
	- Before and after studies	- At least 1 every year dependant on resource constraints
	Education:	
	- Knowledge and Behavioural Changes	- Survey of behaviour (before-and-after), % change - Test of knowledge
	- Teach road safety to all children	- No. of children exposed to road safety material

Section of ITP	Targeted Area	KPI's
		- Duration
	- Scholar patrols at all schools where needed	- 10 additional schools per year
	Enforcement:	
	Drivers respect speed limits: - speed timing	- 1000 man hours per month
	- Minimum hours of enforcement	- 60% of DMPS non-dedicated time to traffic enforcement
	- No driving over the legal blood alcohol limit : - Deploy Booze Buses - Breathalyzer testing	- 2 road blocks per week (must include pay weekend)
	- Seatbelts and vehicle fitness: -Check for seat belt - compliance and vehicle fitness	- 2 road blocks per week
	Emergency Services:	
	- Improvement of Response times - Collect Response Time data	- Response times
	Exposure:	
	- Raise awareness of road safety: - Road safety awareness campaigns	- Measure behaviour changes in representative sample of target group size (before-and-after)
	Evaluation:	
	- Review Road Safety Plan	- Review after 3 years (Measure in terms of indicators detailed in this table)