

THE ROLE AND POTENTIAL OF ISIPINGO AS AN INTER-MODAL TRANSPORT NODE WITHIN THE DURBAN METROPOLITAN AREA

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DECLARATION

Submitted in fulfillment / partial fulfillment of the requirements for the degree of Masters in Town and Regional Planning, in the Graduate Programme in the Faculty of Humanities, Development and Social Science, University of KwaZulu-Natal, Durban, South Africa.

I declare that this dissertation is my own unaided work. All citations, references and borrowed ideas have been duly acknowledged. It is being submitted for the degree of Masters in Town and Regional Planning in the Faculty of Humanities, Development and Social Science, University of KwaZulu-Natal, Durban, South Africa. None of the present work has been submitted previously for any degree or examination in any other University.

Rowena Heeralall-Bhoora

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List of Acronyms

CBD	-	Central Business District
SDB	-	South Durban Basin
CA	-	Central Area
SLC	-	South Local Council
HPPTN	-	High Priority Public Transport Network
MSA	-	Moving South Africa
MTRC	-	Mass Transit Railway Corporation
PTI	-	Passenger Transport Interchange
SCR	-	South Coast Road
MTAB	-	Metropolitan Transport Advisory Board

CHAPTER 1: RESEARCH FRAMEWORK

1.1 INTRODUCTION

An initial impression of Isipingo is one of a bustling and somewhat chaotic urban centre with heavily trafficked roads, a neglected built environment, and a myriad of informal activities. Yet Isipingo has been identified, by eThekweni Municipality, as a significant inter-modal transport node within the Durban Metropolitan Area¹.

The aim of this dissertation is to investigate this apparent disjuncture and to assess the extent to which Isipingo performs the functions expected of an inter-modal transport node in Metropolitan Durban. This will provide the basis for identifying what planning interventions may be needed, if any, to revitalize the area and enable it to function more effectively.

This chapter outlines the purpose of the dissertation, the reason for the study, the main research question, sub questions, and the hypothesis. It also provides the reader with an introduction to the case study area of Isipingo.

1.2 MOTIVATION

eThekweni Municipality is currently revising its Draft South Spatial Development Plan (2008), which identifies Isipingo as an important node within the Durban Metropolitan Area. It is also currently embarking on initiatives to revitalize Isipingo town centre. During 2002 - 2004, the eThekweni Economic Development Department initiated a programme aimed at facilitating renewal within the Isipingo town center, and appointed Suretrac Consulting to manage the preparation of an Urban Design Framework to cohere development action within the center. Iyer Rotaug Collaborative and Iliso Consulting were subsequently appointed to

¹ The Durban metropolitan area falls under the jurisdiction of eThekweni Municipality and is therefore also referred to as the eThekweni municipal area.

undertake the urban design and transportation planning for this process. In 2004, Iliso KZN in association with C.S. Roebuck, conducted a Public Transport Needs Study within Isipingo. The findings of this study were used to prepare the said Urban Design Framework.

In 2007, SiVEST, a private consultancy, was appointed by eThekweni Municipality to undertake a basic assessment of the proposed construction of Inwabi Road linking Isipingo and Umlazi. This project is part of eThekweni Traffic Authority's capital project's aiming to improve infrastructure in eThekweni Municipality. It is also expected to improve linkages between Isipingo and Umlazi with positive transportation benefits for commuters traveling in terms of shorter travel time. The proposed road will link R1702 and existing Inwabi Road between Umlazi and Isipingo, respectively. The proposed road is approximately 700m long and 7m wide. (SiVEST. 2007. Basic Assessment Report. Proposed Inwabi Road Linking Isipingo and Umlazi, Erf 13 of Umlazi Mission Reserve A)

According to a Traffic Impact Assessment prepared by Maxplan KwaZulu Natal, who were appointed by the City Engineers Unit of eThekweni Municipality to undertake 'a comprehensive traffic impact assessment of extending Jooma and Inwabi Roads in Isipingo, to Umlazi's S and T Section' in July 2000, (contained in SiVEST. 2007), the Isipingo Rail area has long been recognized as a major focal point for commercial and public transport activity in the sub-regional context. Communities from areas such as Folweni, Umbumbulu, KwaMakhuta and Umlazi utilize this node as an interchange point and for convenience shopping.

Findings of the Traffic Impact Assessment, relevant to the study at hand, are as follows:

- Two major arterials pass through the catchment area of the proposed link roads, namely, the Mangosuthu Highway (M30), which is the only access into Umlazi residential township, and Old Main Road (MR197)², which runs along

² Old Main Road (MR197) is also referred to as Old South Coast Road

the eastern fringe of the Isipingo Central Area (CA) and carries metropolitan and regional traffic into the Isipingo centre and beyond.

- Both of the above roads have metropolitan significance and are major links to the large residential townships to the west and south of the Durban Metropolitan Area.

The researcher, as a general member of public and as a member of staff of the eThekweni Municipality, is ardently interested in planning and is aware of current land use trends in Isipingo, and was thus inspired to investigate how and why Isipingo has been identified as a node, and to what extent it is performing the specific functions expected of an inter-modal transport node.

Richard Philip ('Dick') King was an English trader and colonist at Port Natal, a British trading station in the region now known as KwaZulu –Natal. He is best known for a historic horseback ride in 1842, where he completed a journey of 960 kilometres in 10 days, in order to request help for the besieged British garrison at Port Natal (now the Old Fort, Durban). In recognition of his services, King was given a farm at Isipingo, where he managed a sugar mill until his death in 1871 (<http://en.wikipedia.org>: 2008/08/04). Hence, while one is aware that Dick King was buried in Isipingo, which gives the area historical value, the researcher is interested to investigate how Isipingo evolved from a small town on the rural periphery of Durban to its present role as an important metropolitan node.

1.3 MAIN RESEARCH QUESTION

The main research question is:

'To what extent does Isipingo function effectively as an inter-modal transport node within the Durban metropolitan area?'

1.4 SUB-QUESTIONS

Sub-questions, which aid to answer the main question, are:

- 1) How did Isipingo evolve from a small town on the rural periphery of Durban to its present role as an important metropolitan node?
- 2) What range of land uses and activities are currently taking place in Isipingo?
- 3) What networks of transport linkages exist between Isipingo, its surrounding suburbs and the rest of the metropolitan area?
- 4) What is an inter-modal transport node in the context of metropolitan Durban and what functions is such a node expected to perform?
- 5) To what extent does Isipingo match up to the expectations of an inter-modal transport node and what are the main problems, if any, which impede its functioning as a node?
- 6) What interventions could be undertaken to improve the functionality of Isipingo as a metropolitan node?

1.5 HYPOTHESIS

The hypothesis of this dissertation is as follows:

While the urban centre of Isipingo appears to be degenerating physically, it plays an important role as an inter-modal transport node within the eThekweni Municipal area. The area requires planning intervention in order to enhance its potential to meet the residents, businessmen's, commuters, and other users of the area's

wants and needs, which will make it a more thriving and sustainable urban environment.

1.6 ISIPINGO: THE CASE STUDY AREA

The case study area of Isipingo has been chosen due to the current nature of use of the area, and the fact that it has been identified by eThekweni Municipality as an inter-modal transport node within the eThekweni municipal area. (Illiso KZN in association with C.S. Roebuck.2004; Iyer Rotaug Collaborative & Illiso Consulting.2004)

eThekweni Municipality is currently embarking on initiatives to revitalize the urban centre of Isipingo due to the area's role and potential as an inter-modal transport node. The municipality has taken a collaborative approach, where the public is incorporated into the planning process. Such a collaborative approach assists in the analysis of Isipingo, via the researcher, as all the affected and interested parties need to be taken into account when revitalization efforts are being undertaken. The Updating of Isipingo Public Transport Needs Study was done by Illiso KZN in association with C.S. Roebuck, and it involved a structured participation process. The Consultants had to obtain consensus amongst stakeholders, and entered into negotiations with landowners and public transport operators, prior to finalizing detailed plans and designs for the town center upgrade. (Illiso KZN in association with C.S. Roebuck.2004)

Due to time constraints and the nature of a dissertation, the researcher was unable to undertake a fully participative approach. However, key stakeholders and role-players have been identified, and their opinions and views have been incorporated into this Dissertation, hence, the researcher has been able to formulate practical recommendations.

Isipingo appears to be degenerating in terms of its physical appearance, due to misuse of sites, dilapidated buildings, and littered streets, which make it unappealing. Isipingo does, however, play a major role as an inter-modal transport node, and its location and the potential of the area needs to be utilized advantageously in terms of bringing revenue into the area, attracting residents, potential investors and businesses, and to increase the overall quality of life of both residents and passers-by of the area.

1.7 CHAPTER OUTLINE

This dissertation has been arranged in 6 chapters.

Chapter 1: Research Framework

This current chapter has outlined the purpose of the dissertation, the main research question, sub questions, and the hypothesis. It has also given the reader a clearer picture of the case study area of Isipingo.

Chapter 2: Research Methodology

This chapter outlines the methodology that will be utilized to fulfill the research aim and to successfully answer the research questions. There are a number of steps involved in this process and this chapter provides a description of these steps, which are essential in order to conduct the research. It also provides the reader with additional information such as the limitations to the study and suggestions to improve the study.

Chapter 3: Conceptual Framework

This chapter provides the foundation upon which the research is based, and highlights the relevance of certain concepts, theories, national and international

precedents related to the research topic at hand. This chapter illustrates how the conceptual framework informs the research undertaken.

Chapter 4: Isipingo: The Case Study Area

This chapter provides the reader with a detailed analysis of the area with regard to its spatial, economic, social and historic background.

Chapter 5: Isipingo: An Inter-modal Transport Node

This chapter presents the results of interviews conducted with relevant stakeholders, and findings from field observations.

Chapter 6: Recommendations and Conclusions

This chapter formulates recommendations based on the information collated from the previous chapter.

CHAPTER 2: RESEARCH METHODOLOGY

2.1 INTRODUCTION

In order to undertake an informative analysis of the study area, it was necessary to utilize both primary and secondary sources of information. This was achieved by means of interviews with relevant stakeholders, field observations by means of a physical analysis, and consulting relevant literature, which included eThekweni Municipality's Spatial Development Plans, and eThekweni Traffic Authority's survey data. The information to be collated had to be from relevant and reliable sources.

These steps are further discussed, below, in the sequence that they were carried out.

2.2 LITERATURE REVIEW

The first step was to gain relevant literature on towns and nodes and how they have evolved, in particular, inter-modal transport nodes and their function.

It was also necessary to obtain relevant history on Urbanization and Apartheid planning, considering the case study of Isipingo is of a South African context. Other concepts such as the integration of land use and transport also had to be investigated.

Sources of information included internet articles, and books and journals from the University of Kwa-Zulu Natal Libraries, the Campbell Collections Library, and the eThekweni Municipality's Libraries.

The second step was to consult earlier documentation such as the South Local Development Plan (1998), eThekweni Integrated Development Plan (2004),

Spatial Development Framework (2004), and the current Draft South Spatial Development Plan (2008). It was also necessary to consult transport related survey data such as the Isipingo Public Transport Study (1987), eThekwini Traffic Authority's Current Public Transport Records (2003) and Updating of Isipingo Public Transport Needs Study (2004), and the Census 2001 demographic data.

These sources of information were available from the offices of the eThekwini Municipality, in particular, the Development Planning and Management Department, Geographic Information & Policy Unit, eThekwini Traffic Authority, and Metro Rail.

This step provided an understanding of what networks of transport linkages exist between Isipingo, its surrounding suburbs and the rest of the metropolitan area. It also gave insight as to what an inter-modal transport node is in the context of metropolitan Durban, and what functions such a node is expected to perform.

2.3 A PHYSICAL ANALYSIS OF ISIPINGO

Once the literature review process was complete, it was necessary to physically analyze the town of Isipingo. This required the researcher to map out the geographic boundary of the study area, both physically and by means of a cadastral map and an aerial photograph.

A physical analysis of the study area provided the researcher with a context within which to undertake field observations and land use surveys. The cadastral and aerial maps were available on the eThekwini Municipality's website (www.durban.gov.za).

The physical analysis of Isipingo town center, that is, the core study area, involved analyzing the location of the railway station and its influence on the activities in the area. The location of taxi ranks both formal and informal was also

investigated. The residential component of the area was analyzed in terms of the range of dwelling types, and the condition thereof. It was also necessary to observe the formal commercial activities, and informal trade in the area. Further observations were of the streetscape, pedestrians, and general physical appearance of the town center.

2.3.1 LAND USE SURVEY

At this stage, it was necessary to conduct a land use survey, and to compare the existing Town Planning Scheme Map and Clauses, which was available from the eThekweni Municipality offices with that of actual land uses.

Prior to conducting the land use survey, the researcher had in her possession a copy of the Braby's Business Directory for the area. This helped in terms of knowing exactly what types of businesses to expect. The Braby's Directory was quite accurate; however, some panel beaters were omitted. This is due to the fact that these panel beaters are using their residential properties to conduct their businesses. Other home businesses, such as tuck-shops, have also been omitted.

The aim of this survey was for the researcher to gain knowledge of the range of land uses that exist in Isipingo, and if there is any apparent disjuncture from what was planned for the area in terms of the Town Planning Scheme. The survey also assisted in determining what formal and informal activities exist in the area.

2.3.2 FIELD OBSERVATIONS

On conducting the land use surveys, it became apparent which areas specifically required further field observations. These observations were necessary to identify specific problems areas, which impede Isipingo functioning as a node.

Field observations resulted in the compilation of a series of maps which, for example, show taxi and bus stops, the railway station, and so on, in order to determine what the different modes of transport are that prevail in Isipingo.

It was also necessary to observe commuters in order to find appropriate persons to be interviewed, even-though those that were chosen were not necessarily willing to participate. They appeared suspicious of the researcher's presence at the ranks, and scared to divulge information about the public transport services provided in the area, assuming that the researcher had a hidden agenda.

Photographs had to be taken to provide the reader with a picture of the area, and provided a clearer understanding of existing facilities, the condition of buildings, existing land uses, and so on.

An analysis of these observations provided the researcher with an understanding of whether or not Isipingo matches up to the expectations of an inter-modal transport node; which in turn led to recommendations in terms of interventions that may be undertaken to improve the functionality of Isipingo as a metropolitan node.

2.4 INTERVIEWS

Face-to-face interviews had to be conducted with the relevant stakeholders of the area. The following categories of people were interviewed:

- ✓ City Officials and Private Consultants

The aim of interviewing these persons, in particular, is the fact that they are involved in development and transport planning, and currently intimately involved in the revising of the Spatial Development Plan for the area, as well as, the current initiative by eThekweni Municipality to revitalize Isipingo Town Centre.

The City Officials included Mr Andrew Aucamp (Senior Engineer: Strategic Public Transport Planning: Traffic Authority), Mr John Dennison (Traffic & Transportation Technician: Procurement & Infrastructure: Traffic Authority), Mr Manoj Rampersad (Traffic Engineer Technician: Procurement & Infrastructure: Traffic Authority), and Mr Puvendra Akkiah (Manager: Spatial Development and Land Use: Development Planning & Management). The Private Consultant interviewed was Mr Nathan Iyer (Iyer Rotaug Collaborative).

The sample size was determined by a snowball sampling method. The City Officials mentioned above, are responsible for projects in the Isipingo area, and the Private Consultant, Mr Iyer, is responsible for the preparation of the Urban Design Framework for the Isipingo Town Centre, which is currently in the process of being implemented.

- ✓ Business owners, who are residents and land owners within the study area

The aim of interviewing these persons was to provide important insight on the area considering their day-to-day dealings with the area. Persons that have been residing or owning businesses in the area for a period of 10 – 20 years or more definitely provided qualitative data with regard to the transition of Isipingo from earlier days to present.

A stratified sampling method was used in choosing interviewees. The different types of businesses were identified and thereafter a sampling size of 30 was chosen. The different types of businesses were identified from the Braby's Business Directory of the area and these confirmed while conducting the land use survey.

Table 1: Quantification of businesses in the core study area

Business Types	No.	%
Retail stores (incl. supermarkets / general dealers / clothing stores / butcher)	71	28.7%
Professional Offices	44	17.8%
Other services (incl. Florist / locksmith / etc.)	31	12.6%
Motor Car spares / repairs / accessories / dealers	29	11.7%
Builders Supplies / Hardware	21	8.5%
Manufacturers	16	6.5%
Restaurants / take-aways / bar	13	5.3%
Medical / Health Services	9	3.6%
Garages / Service stations	6	2.4%
Banks / Financial Services	4	1.6%
Public facilities (church / school)	2	0.8%
Scrap metal merchants	1	0.4%
Total	247	100.0%

Source: Braby's Business Directory (2006/2007); Fieldwork (2007)

From Table 1 above, it can be deduced that there are approximately 247 formal businesses in the core study area, and that Retail trade is the most dominant type of business (28.7%).

On the basis of this (the stratified sample frame) and a sampling size of 30 (limited due to time and resource constraints), the stratified sample contained a specific number of interviewees (refer to Table 2 below) from each category of business type. The number of interviewees per business type, as indicated in Table 2, was determined by whether or not the business owners have been residing or owning businesses in the area for a period of 10 – 20 years or more, and secondly on an availability basis.

It should be mentioned that while the informal traders have been excluded from the stratified sample frame (due to inconsistency in numbers and location of stalls on a day to day basis), that they do perform a major function in terms of attracting commercial activities to the core study area.

Table 2: Sample size per business type

Business Types	Sample size	%
Retail stores	15	50.0%
Professional Offices	2	6.7%
Other services (incl. Florist / locksmith / etc.)	5	16.7%
Motor Car spares / repairs / accessories / dealers	2	6.7%
Builders Supplies / Hardware	1	3.3%
Manufacturers	2	6.7%
Restaurants / take-aways / bar	1	3.3%
Medical / Health Services	1	3.3%
Garages / Service stations	1	3.3%
Banks / Financial Services	0	0.0%
Public facilities (church / school)	0	0.0%
Scrap metal merchants	0	0.0%
Total	30	100.0%

Source: Fieldwork (2007)

✓ Taxi Associations / Railway Services / Bus Services

The aim of interviewing persons associated with modes of travel was to determine the distance that people travel to and from the area.

With regard to interviewing taxi, bus, and rail associations, the following technique was used to select interviewees. The number of taxi associations had to be established. Thereafter, depending on their willingness to participate a snowball sampling method was used. Once the researcher had found a taxi driver or conductor, for example, who was willing to participate, the researcher then depended on that person to refer her to the next driver / conductor who was willing to participate. Here a maximum of 10 interviewees sufficed. It was possible to use this method as taxis often wait at stops to fill-up completely before departing, which gave the researcher time to conduct interviews. According to eThekweni Traffic Authority's Current Public Transport Records, there are 33 taxi associations that operate within the Isipingo area.

With regard to Bus Services, the owners sufficed as interviewees, as these businesses are more limited as compared to taxi associations in the area. Therefore, once the different bus services that operate in the area were established, telephonic interviews were conducted with the respective operators. According to eThekweni Traffic Authority's Current Public Transport Records, there are 6 bus operators that operate in the Isipingo area.

With regard to the Railway Service, there is only one service provider, Metro Rail; therefore the most appropriate person in charge was interviewed. The interviewee was Mr Danny Hattingh (Market and Customer Planning Manager), who is responsible for Stakeholder Management, which includes Transport Authorities, Local and District Municipalities and Provincial and National Department of Transport, and any other stakeholders involved in the public transport environment. He is also responsible for Train Planning, Research and looking for opportunities to expand the business.

✓ Commuters

The aim of interviewing commuters was to gain insight as to where persons are commuting to and from, and whether or not Isipingo is just a point of convergence from which they diverge to other areas of employment and residence.

A systematic sampling method was used to select commuters to be interviewed. Taxis and buses, for example, often stop in specific spots depending on their destination and/or they have signs displayed on the wind-screen mentioning to where or from where they are traveling. Once the researcher had done field observations at the taxi rank, she was aware of the different taxis from the different areas. A sample size of 50 was chosen at a ratio of every 5th person. In order to collect qualitative data, sampling had to take place during morning and afternoon peak periods and at midday on a Monday, Friday and Saturday of the

same week. A replacement policy had to be adhered to as sampling had to be done as consistently as possible. Therefore if a particular commuter was not willing to participate, the next person was chosen.

It should be noted at this stage that relevant information was also obtained from Current Public Transport Records, which was readily available from the eThekweni Traffic Authority, as commuters and public transport operators were not willing to divulge answers to all questions posed to them due to suspicion and security reasons.

2.5 DATA ANALYSIS AND RECOMMENDATION FORMULATION

Data collected had to be considered in terms of its relevance to the research problem and questions.

The questions posed to the City officials and private consultants were specific and directly related to the research topic, and were therefore used accordingly. Their information, however, also aided with regard to comparing international experience and trends with that of Durban in terms of what is expected of an inter-modal transport node.

Data collected from business owners had to be categorized according to the number of years they had been residing or owning businesses in the area. For example, if they had been residing in Isipingo for the past 20 – 30 years, they were considered to have invaluable input with regard to the transition from earlier to current spatial and economic trends in the area.

The data collected from the commuters and taxi, bus, and rail associations were coded in order to be analyzed more effectively. Typical answers from open-ended questions were also coded.

The final task was to prepare and propose recommendations, based on the data collated. These recommendations can be found in Chapter 6 of this dissertation.

2.6 LIMITATIONS TO THE STUDY

The majority of interviewees, that is, the commuters in particular, were reluctant to provide exact details of trip origins and destinations mainly due to security reasons and prevalent taxi violence. They were afraid that they could be followed home and robbed.

It was also difficult to translate the questions directly into Zulu so answers to prompts were not necessarily relevant. It would have been ideal to have Zulu speaking research assistants; however, funds were not available to employ the services of research assistants.

The main difficulty experienced with this type of data collection stems from the minibus taxi industry's apparent general distrust of the intentions of the exercise. Also, the fragmented nature of the industry makes communication difficult.

Furthermore, taxi violence at the time of the research, led to further time constraints and the researcher was forced to abandon interviews with certain taxi operators.

The evolution of Isipingo's development has not been documented extensively. In spite of the researcher's efforts it was not possible, in the time available, to find an autobiography of an Indian who lived in Isipingo, consequently, this section on the history of the area is somewhat limited.

2.7 SUGGESTIONS TO IMPROVE THE STUDY

The use of experienced interviewers could assist although this must be traded off against cost.

It is advisable to communicate research intentions to rank managers, for example, prior to surveys of this nature so that operators are aware of the researcher's presence, and do not become suspicious of the outcome of the interviews.

Furthermore, time frames need to be adhered to with regard to the collating of information and interviews so that counter-measures can be taken if tasks cannot be fulfilled.

CHAPTER 3: CONCEPTUAL FRAMEWORK

This chapter discusses concepts and theories relevant to the dissertation topic at hand, and it is this theoretical framework or foundation upon which the dissertation is based. The concepts and theories that are discussed are roles of town centres and nodes (3.1), integration of land uses and transport (3.2), and land use theories as applied to South Africa (3.3). These concepts and theories are relevant as one is able to ascertain that Isipingo bears typical characteristics of nodes and town centres hence, reinforcing the notion that Isipingo has great potential to be an inter-modal transport node (3.4).

It was necessary to draw on international (3.5.1) and national (3.5.2) precedents in terms of nodes, how they function, and what is expected of them in order to ascertain Isipingo's potential as an inter-modal transport node. It makes the reader aware of the fact that the potential of Isipingo functioning as a successful inter-modal transport node is great as it shares similar characteristics as those successful case studies mentioned in the latter part of this chapter, and reveals the benefits of having such nodes.

3.1 ROLES OF TOWN CENTRES AND NODES

It is important to gain a comprehensive understanding of nodal development by first acknowledging the fact that there are different types of nodes that prevail, for example, mixed-investment nodes, commercial nodes, tourism nodes, inter-modal transport nodes, and so on, each with their respective characteristics. It is also vital to know the significance of nodes in relation to a metropolitan area, and its neighbourhood, district or regional importance.

Within a city there are differences between areas, which require varying kinds of intervention due to these differences. An understanding of local dynamics is essential both to acknowledge the strengths which particular areas display and to

build on opportunities that these present. (eThekweni Municipality.1998:32) This is evident from the different types of nodes mentioned above. For example, a mixed-investment node offers an opportunity to capitalize on a range of commercial, industrial, and perhaps residential activities as there is no single focus. A mixed-investment node may develop due to the area being highly accessible. On the other hand, a commercial node may exclude industrial activities and concentrate only on commercial activities such as offices and shops. A tourism node is one that develops due to a distinctive character or rather the presence of a natural feature, such as a coastline, which may attract tourists all year round. Locals may capitalize on this by building hotels to accommodate these tourists, and restaurants and curio shops to entertain them.

Nodes and corridors provide the framework within which to locate and capitalize on areas of opportunity, especially with respect to building on the economic generation potential of the Durban Metropolitan Area. Transport linkages help to reinforce the system of nodes, to minimize travel, to maximize social and economic interaction, and to integrate areas of need to wider metropolitan opportunities. (Urban Econ.1998: 33)

Nodes are places of high accessibility usually located at important transport interchanges and characterized by a concentration of a mix of uses. Sometimes, transport interchanges generate a node, and other times, a node may encourage transport development. Well-planned activity nodes allow people to conduct different activities in one place, thereby improving overall accessibility to a range of goods and services. Nodes are priority areas for densification, integration, intensification and improvement of environmental quality. (Urban Econ. 1998: 34)

On investigating nodal development, it was established that the identification of nodes can be based on a number of characteristics such as:

- Public transport trip generation;

- Concentration or intensity of land use;
- Mix of land uses;
- Mode interchange points;
- Confluence of public transport routes; and
- Specific geographic location, for example, a town centre or a major corridor.

According to a Public Transport Study conducted in Isipingo in 1987, the Isipingo town centre was a vibrant commercial area catering not only for its own residents but also drawing a great deal of trade from the Black population beyond its boundaries to the south and west. Large numbers of commuters from the Black residential areas to the south and west of Isipingo either come to or pass through Isipingo in the course of their daily business, to work, shop, etc. The town centre is a focus for public transport trips, serving both as a terminal point as well as a transfer point for rail passengers who make use of Isipingo Station as a convenient point to transfer from rail to bus or taxi to complete their journey. It can therefore be concluded that Isipingo has evidence of a number of the characteristics mentioned above, and therefore can and should be considered an important node. (Stanway Edwards Associates.1987:1)

Iliso KZN and C.S. Roebuck reiterated the observations mentioned above in the Updating of Isipingo Public Transport Needs Study in 2004. The following is a summary of relevant development issues and influences contained in the said Study:

- The Isipingo Central Business District (CBD) is the major transport and commercial node in the southern Metro.
- The area is located in close proximity of major metropolitan and regional transport routes, metropolitan industrial areas and major areas of employment.
- Existing transport amenities in the Isipingo CBD are largely informal and unstructured.

- Existing conflicts in the CBD are mainly between vehicular and pedestrian movement and informal market activities.
- The public environment in the CBD is inadequate and deteriorating and insufficient accommodation is made for market activities.
- There is an informal incursion of taxi, commercial and business into surrounding residential development. (Iliso KZN in association with C.S. Roebuck. 2004:7)

According to the South Local Council's Local Development Plan (1998), the historic development of the South Local Council (SLC) economy can be attributed partly to its location in relation to transport routes, transport activities and regional economic activities. For the South Local Council to continue taking advantage of its location it would be necessary to upgrade linkages with the rest of the Durban Metropolitan Area. The development, upgrading and maintenance of transport routes within the SLC aims at increasing accessibility, relieving congestion, and encouraging integration of communities.

The South Local Council's Local Development Plan (1998) maintains that the future development of transport systems in the SLC is important for both maintaining existing levels of development as well as for future economic growth. It has been indicated that transport routes are the key structuring component of the Spatial Development Framework (2004). The primary impact of transport is seen to be spatial. Improved transport routes and systems will undoubtedly improve quality of life related to reduced traveling times and improved safety; reduced travel costs and thus an increase in disposable income; and through increased linkages between communities it will encourage integration. (Urban Econ.1998:26)

Settlement planning should ensure that employment opportunities are located in such a way that the need for travel is minimized and the use of public transport maximized in cases where travel is required. This implies that employment

opportunities in formal enterprises / industries beyond the small and micro-sector should preferably be clustered into a few nodes or corridors so as to create the critical mass that public transport requires to function in a cost-effective way. (CSIR. 2003:6)

According to Dewar and Todeschini (2004), the points where people change modes of transport and direction, that is, transport interchange points, are particularly important points of opportunity. By definition, interchange points attract and generate large flows of people and are highly accessible. Because of their high accessibility and generative potential, these interchanges or points of crossover represent the places of greatest potential to create a decentralized pattern of urban opportunities. These places need to be reinforced through public spending. For example, because they generate large flows of people, interchanges should always be associated with a pleasant landscaped public space which also operates as an informal market. Whenever possible, pension payout points should also be located at these places to reinforce the market function. The pleasantness of the places and their market function increases the number of people which are attracted to them. Secondly, because of the large numbers of people that they attract, these are also ideal places for all spheres of government and other service providers to reach their constituencies. Accordingly, clusters of social services should be associated with these points. This is typical of the Isipingo town centre as it offers social services such as a pension payout point, hospital, police station, clinic, and so on. The precise makeup of the cluster will vary with the hierarchical level of accessibility of the point. The lowest level of hierarchy should be associated with lower order facilities.

There are two major advantages associated with social facility clusters of this kind. The first is that they provide a 'one-stop' form of service. People can engage in a range of activities in a single trip. This, itself, is an important form of promoting greater accessibility. The second is that it promotes multi-functional

use and sharing of facilities. It is no longer possible to think of separate facilities for every activity or for every user constituency. Particularly important is sharing among schools and between schools and the surrounding community. Sports facilities, libraries, multi-purpose-halls, and so on should all be shared in order to obtain much greater utilization over the day and week. This is essential to increase the efficiency and sustainability of social service delivery. (Dewar and Todeschini. 2004)

This concentration of public investment, associated with good design, will beneficially impact on investor confidence. They become attractive places for retailing, commercial and manufacturing opportunities generated by the private sector, as well as for high density housing, which increases local levels of support for goods and services. Hence, over time, the original interchange point is transformed into a high activity urban centre or node. These centres become places where people go to socialize and are the focus of public activities and events, both formal and informal. If appropriately designed and made, they give dignity to all people and to the settlement as a whole, regardless of levels of poverty in surrounding areas. (Dewar and Todeschini. 2004)

The National Land Transport Transition Act No.2000 lists a number of general principles for transport planning in relation to land use. It is these principles that provide a policy context and give guidance on the development of criteria for identifying nodes on utilization of public transport, densification, mixed land uses, and corridor development. The principles are as follows:

“26 (3) Transport plans must be developed as to –

- (a) enhance the effective functioning of cities, towns and rural areas through integrated planning of transport infrastructure and facilities, transport operations including freight movement, bulk services and public transport services within the context of those integrated development plans and the land development objectives set in terms of section 27 of the Development

Facilitation Act, 1995, or, where applicable, land development objectives of that nature set in terms of relevant provincial laws;

- (b) direct employment opportunities and activities , mixed land uses and high density residential development into high demand public transport corridors interconnected through development nodes within the corridors, and discourage urban sprawl where public transport services are inadequate;
- (c) give priority to infilling and densification along public transport corridors;
- (d) give higher priority to public transport than private transport by ensuring the provision of adequate public transport services and applying travel demand management measures to discourage private transport;
- (e) enhance accessibility to public transport services and facilities; and
- (f) minimize adverse impacts on the environment.” (National Land Transport Transition Act No.2000:20)

However, according to Dewar and Todeschini (2004) the recognition of public transport interchange points as instruments of urban restructuring raises a major issue in relation to South African transportation policy. At the present time, different modes of transportation, as well as different hierarchical levels within road transportation, are all funded by different agencies, which frequently have different agendas. Both intelligent, creative integration of transportation modes and unambiguous commitment to a reinforcing set of priorities are absolute pre-conditions for improved movement systems and for better urban living conditions. Their achievement will be greatly facilitated by the establishment of unified urban transportation authorities, with control over funding for all modes. (Dewar and Todeschini.2004:58)

Tomalin (1998) suggests that there is a link between the design of urban spaces and the success of town centres. The process of achieving successful urban spaces in town centres is to embrace all the elements of ‘good’ urban design including functional, social, perceptual, spatial, contextual, visual, and

morphological aspects. Monitoring is seen as critical to the successful implementation and management of projects.

According to Punter and Carmona (1997) cited in Tomalin (1998:32), “issues of active frontages, mixed uses, connectivity and vitality of public routes, surveillance and safety, servicing and access control, shelter and lighting can all be integrated with considerations of accessibility and the need to make streets and spaces easy to use, safe and comfortable for the young, old and disabled...encompass the wide range of uses and functions which need to be addressed by policies on the public realm.”

In Tomalin’s article (1998) a comparison is made between English and French planners and what they deem important with regard to what a town centre should comprise. English planners appear to be more concerned with attracting employment and economic activity to the town centre while the French appear to prioritize housing, parks and green spaces. Furthermore, policies promoting bus lanes, pedestrian zones, cycle ways and cycle parking are prevalent in England while in France there are policies on increasing car parking in town centres.

A comparative study of Bordeaux and Hanover demonstrates the importance of planning policy in the overall success of the city centre. In Hanover, the strategy and plan for the city centre brings together land use, environmental and transport issues in a coherent way, which provides the context for broader post - 2000 development. However, in contrast Bordeaux development issues have been tackled on a ad-hoc basis, which has proved ineffective, especially considering there has been little support from central government.

The comparison between the English and the French planners is relevant to South Africa as it is apparent that the English planners are concerned with the same issues as South African planners. South African planners, in particular those involved with the Urban Design Framework for the Isipingo town center,

are also concerned with attracting employment and economic activity to the town center, while promoting the use of public transport. As in the case of Hanover, the Isipingo town centres' success will depend on the implementation of the strategic plans which have been formulated specifically for the area in terms of the function that it performs.

Tomalin concludes, "it is important that strategic plans for the town centre which focus on management and funding issues sit along-side the traditional development plans where land use is the central issue. To support this, monitoring should become a regular activity in all town centres, not only to evaluate past improvement schemes but to generate ideas for future development. The implementation of these mechanisms will bring the goal of the sustainable town centre closer." (Tomalin.1998:41)

According to the Integrated Development Plan (2006-2011), the overall goal for transport in eThekweni is to implement an effective, efficient, sustainable, safe and secure public transport plan to promote public transport over private transport and to develop a public transport system with services which are customer-focused and needs-driven in both urban and rural areas.

Strategies that support the development and performance of an effective and sustainable transport system are focused around the High Priority Public Transport Network (HPPTN), of which Isipingo is a part of, (see Chapter 3.2) are:

- Protecting existing employment opportunities
- Maintaining the quality of high value investment, office, retail, residential and tourist areas
- Discouraging the development of major employment opportunities outside the HPPTN area
- Stimulating higher employment and residential densities
- Renewing areas around major stations and modal interchanges as high density residential, office and retail uses

- Steering public sector investment (schools, clinics, hospitals and police stations) towards nodes on the HPPTN. (eThekweni Municipality.2006:48.(A))

3.2 INTEGRATION OF LAND USES AND TRANSPORT

Sustainability and Integration are key issues that inevitably needed to be investigated. Hence, it was necessary to explore literature on land use management and how it responds to transportation planning.

The National Land Transport Transition Act 2000 is a comprehensive piece of legislation aimed at land transport planning and the institutional, regulatory and funding requirements for the policies and frameworks envisaged. The Act devotes a chapter to integrated transport planning procedures, and includes specific principles for transport and its role in land development. National Land Transport principles highlight the need for land transport to be planned in an integrated process with environmental protection and market development named as two objectives to be achieved. Furthermore, with regard to Local Economic Development, the location of trading, more generally, is most influenced by transport systems and commuter volumes.

According to the CSIR Report (2003) the Moving South Africa (MSA) Strategy, which has as its primary aim ensuring that transport services are sustainable over the long term, identified the development of high intensity / density, mixed land use transport corridors in urban areas as of strategic importance. To some extent the corridor-model is also based on the realization that both the inherited urban shape and persisting decentralization, especially of workplace locations, complicates the task of creating compact cities, and that a more pragmatic response would be to strive for 'focused compacting' in corridors. In addition to this, corridors already exist to some extent in South African cities.

An example of a focused compacting corridor in eThekweni is the South Coast Road Corridor. South Coast Road (R102) forms a major activity spine within the South Durban Basin (SDB), with an intense concentration of commercial and industrial activities (refer to Figure 1 below). The South Durban basin comprises the City's largest manufacturing node. The presence of the port and the airport provides the area with international infrastructural and communication links. In addition, the SDB is home to approximately 22000 households and 100000 people, therefore making it an important residential node within the City. (eThekweni Municipality.2006:3.(B))

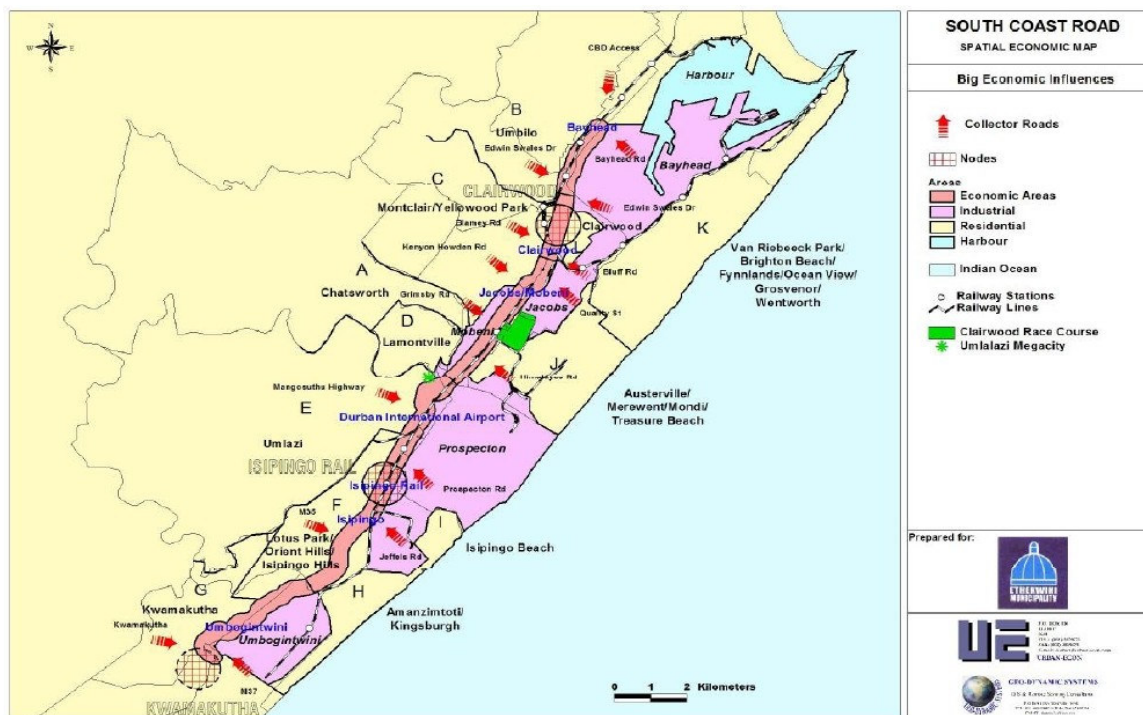


Figure 1: Main Economic, Residential and Industrial areas along South Coast Road
Source: eThekweni Municipality. South Coast Road Corridor: Development Framework Plan (2006)

The real strength of the South Coast Road Corridor lies on the existing nodes of activity – Bayhead, Rossburgh, Clairwood, Jacobs, Mobeni, and Isipingo. (eThekweni Municipality.2006:7.(B)) The road forms part of an urban corridor

within the South Durban Basin, along with the M4 Southern Freeway that forms the mobility route, and the railway line. Together, these movement systems accommodate public and private transportation. This urban corridor extends from the Durban Port in the north to Umbogintwini in the south, and comprises a variety of land use activities, but is dominated by industrial and commercial activities. Interspersed between this are a number of residential areas such as Clairwood, Merebank and Isipingo. (eThekweni Municipality.2006:10.(B))

Three main economic nodes exist along the length of the South Coast Road, in terms of the level and type of economic activity, their strategic location along South Coast Road, the existing infrastructure, and the potential contributions that they can make towards the economic regeneration of the area: Clairwood, Isipingo and Kwamakhutha. (eThekweni Municipality.2006:11.(B))

In broad terms the corridor-strategy proposed in MSA argues for the densification of existing corridors and the creation of new corridors between existing nodes and major new developments. For this strategy to succeed it is essential that no major developments take place outside these corridors, which requires a well-planned and managed intervention in the location, type, intensity and density of all future land development.

Partially in response to the MSA policy directive, but also due to a local realization of this need, a so-called Fundamental Restructuring Project was launched by the National Department of Transport, the KwaZulu-Natal Provincial Government and the eThekweni Municipality with the explicit aim of addressing the inefficient public transport system in the metropolitan area. (CSIR Transportek.2003:9) A key component of the project entailed the identification and development of a High Priority Public Transport Network (HPPTN) consisting of the primary nodes and connecting corridors in the metropolitan area (refer to Figure 6). As part of this exercise a number of studies were commissioned. One of these was the development of a set of strategies and instruments by which a

land use regime in support of the HPPTN could be established and maintained. A key component of this strategy was to develop a set of ideal corridor types that could be used to evaluate each of the corridors in HPPTN and to make proposals as to what they should ideally become.

The argument put forward is that on a micro scale a corridor is dependent on the existence of forces of attraction drawing people from one point in a corridor to another. Without such interaction, there can be no corridor. The greater the number of forces of attraction at work in a corridor, the more successful it is likely to be. On a macro scale, a corridor is dependent on the existence of forces of attraction drawing a diversity of land uses into the corridor, which can ensure that it becomes a magnet for activities in the wider urban area. (CSIR Transportek.2003:9) These different types of land use set in motion forces of attraction on a wider level, leading to the movement of people and freight via feeder routes into the corridor. If land uses that can set in motion forces of attraction do not settle in a corridor, there can be no corridor. The greater the number of forces of attraction at work in a corridor relative to the forces at play in the wider urban area, the more successful the corridor is likely to be. (CSIR Transportek.2003:10)

Each of the components of a corridor acts at a given point in time as either an 'Attractor' or 'Sender' of people, or both. The key objective of public investment in corridors is to transform 'Senders' into 'Attractors,' or to further increase the attractiveness of existing 'Attractors.' To 'make (more) attractive' requires substantial, sustained and costly public intervention in the form of infrastructure investment and incentives in corridors for a prolonged period. At the same time, increased attractiveness may necessitate the imposition of tight controls / regulations on the location of activities in non-corridor areas so as to ensure that enough development takes place within the identified corridors. (CSIR Transportek. 2003)

According to Dewar and Todeschini (2004), an important part of creating more efficient, integrated settlements is using different modes of public transportation to play the role that they are best equipped to play and integrating these. Three primary modes currently exist in South African cities and towns: train, bus and taxi. Trains are fixed line systems which are best suited to carrying large numbers of people rapidly. Their pattern of stopping is, for reasons of efficiency, relatively infrequent. Buses carry more passengers than taxis but far less than trains, they travel slower and but stop more frequently than trains. They operate best at peak movement times or under conditions where high carrying capacities are assured. Taxis are flexible, stop at will, operate best over short haul trips, have a high trip frequency, lower running costs than buses and have a lower carrying capacity, which enables them to operate efficiently in non-peak periods. (Dewar and Todeschini.2004:56)

Traffic volumes and choices of mode of travel are influenced by the location, density and mixture of land uses. Towns and cities that separate land uses increase the need for travel and reinforce the private car as a mode of choice. Municipalities have the legal authority and regulatory instruments to enforce urban development that is supportive of public transport. In terms of integrated development plans it is important that development proposals be reviewed in the light of traffic generation, and the potential and ease of operation for public transport.

There is a strong synergy between land use and transport demand. The location and size of traffic flows are strongly related to the location of activities. Similarly, traffic management has an influence on land-use patterns. (CSIR Transportek. 2003:4) For example, investment in roads or rail can affect the type of development that occurs within an area. Therefore, if transport demand is to be influenced, it is important that transport and land-use planning are integrated. The manner in which the transport system has developed is a major determinant influencing urban form. In South Africa large cities are reaching a size and level

of car ownership where road capacity can no longer be supplied to maintain the level of mobility desired. As a result, an excessive number of vehicles compete for the same limited road space. In order to address these transport problems it is necessary to concentrate on moving more people and goods on the same amount of road space. Together with a desire to enhance passenger transport and to promote the use of sustainable modes of travel, there has been a growing commitment to land-use policies that promote the use of public transport and minimize the number and length of the trips that people make. (CSIR. 2003:4)

The following factors can be considered central to achieving integration. The first is continuity of the urban fabric. An intense and relatively continuous fabric is a pre-condition for a viable and efficient public transportation system. Secondly, is the way in which connector routes are used as city structuring elements. Within cities, urban energy is expressed largely in terms of flows of people, of goods, and of investment, and it is this energy which determines the distribution of the most intensive activities – those activities (economic enterprises, commercial and social facilities, cultural activities, and so on) which are dependent upon high levels of public support for their existence. Intensive activities like this should respond directly to the movement flows by locating along them – to allow a symbiotic and mutually-generative relationship between movement –intensive flows and human-intensive activities, resulting in linear corridors of activities. When the movement system is clearly identifiable, through traffic naturally gravitates towards them, and different sized enterprises and activities can find viable locations along them. Large enterprises tend to dominate most desirable points along the line, while smaller, more fragile activities can benefit by taking up interceptor locations between, or adjacent to, the major generators. (Dewar and Todeschini. 2004)

Furthermore, this type of corridor system promotes equity, in the sense that it has the potential to reach a greater number of people than exclusively node-based forms of development. It also promotes a high degree of integration of different

types and scales of activity and this is highly positive. The reason for this underlines the need for the co-ordination of different modes of movement. It is important to emphasize at this point that the concept of the activity spine does not refer to single transportation routes. Such corridors may accommodate a number of forms of transport (pedestrians, cars, taxis, buses, rail, and so on). Inevitably, however, because of their connector status and the importance of public transportation to the population at large, these channels should contain forms of public transportation. Indeed, the close integration between local areas and activity corridors, together with the continuity of fabric, enables viable public transportation systems to come about. When the activity channel contains more than one line of movement (for example, a road – used for public and private forms of transport – and a fixed line public transport system such as rail) opportunities are even more complex, for the space between the routes creates the possibility of lateral integration.

If equity of access to opportunities is to be pursued seriously as a management objective, the pattern of accessibility across the urban surface needs to be consciously manipulated to achieve an equitable pattern. The co-ordination of different movement modes and particularly the distribution of terminal points (bus terminals, major taxi ranks, rail stations, and so on) therefore become a powerful tool of urban design and management. (Dewar and Uytendogaardt.1991:16)

3.3 LAND USE THEORIES AS APPLIED TO SOUTH AFRICA

It was necessary to draw on literature that deals with land use theories, especially those that are applicable to the South African context. Given the historic development of South African cities it is clear that dispersed and low-density development has resulted in the costly provision of public transport services that struggle to provide effective coverage. (Dewar and Uytendogaardt.1991:64) At metropolitan level it is important that settlements should be as continuous as possible and not leapfrog land, as has occurred in

the past, and continues to do so with regard to low-income settlements and new commercial developments.

The changing nature of city form also poses a major challenge to land-use and transport planning. The former uni-centric cities are making way for cities containing a multiplicity of nodes that serve different functions in the urban fabric. Ensuring that these nodes are both large enough in terms of floor area and compact in coverage is important in ensuring public transport viability.

The socio-political policy of Apartheid determined urban form and structure in South Africa. Firstly, different race groups were uprooted and relocated in racially exclusive enclaves, and unfortunately, it was the poorest people who were moved to the periphery of urban settlements, often 60 – 70 kilometres from places of employment and of commercial and social opportunities. Secondly, large tracts of open space, which acted as spatial buffers, surrounded neighbourhood units or cells, and increased separation. Furthermore, the limited number of access and egress points to and from these cells proved useful from a security perspective in times of social unrest. Thirdly, the system of apartheid depended on high-speed routes in terms of linking the fragmented parts of the city, and included rail and road systems. The three spatial characteristics, most commonly used, to describe South African cities and towns are sprawl, fragmentation, and separation. It is this low-density, sprawling nature of urban growth which militates against pedestrian movement, and which makes the use of fixed line movement modes such as trains non-viable. The birth of the mini-bus industry became well-suited to navigate these complex and de-centred metropolitan areas. (Dewar and Todeschini.2004:20)

But political transformation in South Africa has opened the door for equitable and sustainable transportation policies. New government policies seek to reverse apartheid policy by dramatically expanding and improving public transport and

discouraging urban motoring. However, the application of these policies across the country is uneven. (Dewar and Todeschini.2004)

South Africa is experiencing very rapid growth and change. Amongst the most far-reaching dynamics of change has been urbanization. Significantly, the majority of this urban explosion is occurring amongst the poorest people: the dominant demographic tendency is towards a younger and poorer urban population. Accompanying this dynamic of growth, therefore, are high and increasing levels of poverty and unemployment. (Dewar and Uytendogaardt.1991:16) Increasing numbers of people struggle daily to satisfy basic needs, while having to accommodate and inculcate changes in almost all dimensions of their lives, that is, behaviourally, socially, culturally, economically and politically.

According to Dewar and Uytendogaardt (1991), any significant improvement in urban performance in future is dependent on, at minimum, the achievement of the following five aspects. Firstly, the compaction of settlements is necessary in order to contain indiscriminate lateral sprawl. Secondly, it is necessary to increase densities significantly in order to increase the support for economic and social opportunities and to create intense and vibrant local markets. Thirdly, strong intensification along more lengthy movement routes will ensure the greater viability of public transportation. Fourthly, the integration of different modes of public transport will ensure that each mode plays the role it is best suited to play, while recognizing that there are inconveniences in switching modes. Lastly, the creation of structural opportunities for a more decentralized pattern of economic and social opportunities is necessary.

The growth of South African cities, according to Dewar and Todeschini (2004), has primarily been moulded by three interrelated forces, namely, market-driven responses, public planning, and informal settlement formation. Market-driven responses have dictated the distribution of middle and upper class development

and economic activity, while public planning has determined the distribution of lower income townships and their facilities. And, consequently, informal settlement formation has taken the form of break-away responses to the inadequacy of the townships and to problems of entry into the urban system.

According to Dewar (1992) the sprawling, fragmented urban system generates an enormous amount of movement, but fails to create the preconditions for viable, efficient and widely accessible public transportation systems to emerge. The costs of this movement to urban dwellers, in terms of time and money, are becoming increasingly intolerable: the structural system is aggravating significantly the major development issues of poverty, unemployment and inequality. Because of the high degree of planning and control, the settlements are inevitably sterile, monotonous, and boring, despite attempts to provide variety through design techniques such as convoluted road configurations.

Major patterns of residential differentiation emerged from a study of Durban by McCarthy (1984). His deductions were that a major pattern of differentiation according to race and class (high income white versus low income non-White); differentiation according to ethnic and class within the Whites was evident, with the upper income English and lower income Afrikaans tending to live in different nodes and sectors; differentiation according to ethnic and class criteria within the Blacks; and differentiation according to family status or stage in life cycle. Hence, he is of the opinion that the change from a more zonal pattern to a sector pattern would have taken place without the enforcement of the apartheid laws. Durban is a relatively young city (McCarthy and Smit.1984) and studies by Hoyt indicated that cities develop in sectors and his theory was a more accurate description of the form a city would take than a zonal theory. According to his theory, differentiation within the Indian residential areas happened because of 'natural' processes and the Group Areas Act had nothing to do with that process. Similarly, the White population group also shows a tendency to live in different sectors following the pattern of cities in other countries.

According to Leisch (1968), travel in every city is accommodated by a combination of private motor vehicles and public transport. The proportion handled by each mode varies from one urban area to another. It is suggested that the prevailing modal split in a particular city is an inherent characteristic of that city and is a by-product of its historical development, land use arrangement and population density. Cities that matured before the advent of the motor vehicle tend to be oriented more heavily toward public transport while cities that grew up afterward are more likely to depend on private motor vehicles. Thus, the ratio of public transport to private vehicle usage is not necessarily a function of city size alone. It is further suggested that the permanence of major transportation corridors is one of the striking features of the history of cities. Many routes established more than a century ago have been retained and transformed to modern carriers of traffic. Today they accommodate freeways and rail facilities.

3.4 RELEVANCE FOR ISIPINGO

The concepts and theories discussed above will act as a framework against which the researcher will compare characteristics prevalent in Isipingo. This will be done in order to ascertain whether or not Isipingo is an important node within the Durban metropolitan area, and to investigate the influence of transport on land use in Isipingo.

The following chapters (Chapters 4 and 5) will define Isipingo along these concepts and theories. For example, the researcher will use Isipingo to reinforce Dewar and Todeschini's argument, that transport interchange points are particularly important points of opportunity. The researcher will also indicate that while the location of Isipingo may not have been deliberate, but a result of Apartheid planning, it is highly accessible, and offers an opportunity for a decentralized node or rather corridor-type development.

According to Jacobs (1993) in order to support a vibrant street life and a variety of shops and businesses it is necessary to have mixed-use activity, and, while one might assume that Isipingo is an unsuccessful chaotic town centre, the following chapters will show that Isipingo does offer this.

3.5 INTERNATIONAL AND NATIONAL PRECEDENTS

Examples of international and national precedents as related to inter-modal transport nodes are discussed below.

3.5.1 INTERNATIONAL PRECEDENTS

The following case studies, namely, European Countries, Singapore, and Hong Kong were chosen to relay international precedent as related to inter-modal transport nodes due to their successful implementation and ultimate benefit to the respective countries' at large.

3.5.1.1 EUROPEAN COUNTRIES

With regard to international experience, according to the European Commission (1997) the role of transnational transport links, particularly road and rail, is acknowledged by all European Countries both in terms of dealing with congestion in urban areas, and in improving accessibility to more peripheral regions. Increasing attention is being paid to the need for sustainable development, which has focused attention on the environmental impact of transport infrastructure and the need to reduce dependency on private road transport through spatial planning policies. The lack of integration between land use planning and transport in order to achieve sustainable growth and development is a key issue in many European Countries and one which is being addressed. (European Commission.1997:139)

The development of inter-modal links is a key factor for countries such as France, Germany, Netherlands and Spain. A key feature of transport policies in nearly all European countries is the promotion of the rail network. Both passenger and freight movements are encouraged through upgrading existing lines, provision of new links and service improvements. (European Commission.1997:139) The Netherlands is proposing to create 'transport regions' from groups of municipalities who will prepare integrated transport plans for local and regional public transport, roads, parking, and to integrate these with other elements of spatial planning. Policies for integrating land use with transport policy are identified in Germany, Ireland, Netherlands and the UK. The strengthening and improvement of public transport at the regional level, particularly in cooperation with adjoining regions is a key feature in Denmark and Germany. Key nodes for road, rail, water and air transfers, that is, a multi-modal approach, are identified, for example in Germany (regional freight haulage centres), the Netherlands, and Spain (transport logistics centres) and the UK.

Urban municipal authorities are looking at ways of reducing cars in towns and cities, improving public transport and improving conditions for pedestrians, cyclists and less mobile persons. (European Commission.1997:140) There is a clear trend in many European Countries to take a more integrated and multi-modal approach to transport sectoral policies at both the national and regional levels. This finds an expression in the identification and promotion of bi-modal and multi-modal nodes for interchanges between one transport mode and another. As part of this integration trend in sectoral policy, there is a clear recognition in many European Countries of the need for the integration of land use, transport and sustainable development policies, and for this to be incorporated in national, regional and local plans.

3.5.1.2 SINGAPORE

Singapore is a city-state located in South East Asia, with a population of 4.13 million in 2001. It had an area of 682.3 square kilometers in 2001; and the built up area accounted for nearly 50 percent of its total land use. (<http://ekhr.unep.org> – 2007/10/30)

The objective of the planning process in Singapore was an integrated approach that assimilated urban, transportation and environmental planning.

In the 1960s, car ownership doubled and motorcycle ownership tripled, while the public transport system was slow and unreliable. Traffic congestion was at its peak in 1975, with 19km/hour the average vehicular speed during peak hours. Realizing that a growing economy needs sound long-term city planning in land-scarce Singapore, planners commissioned a four-year State and City Planning (SCP) Project, a concept plan for the next 20 years, and the project was completed in 1971. For the transportation sector, the project found that by 1992 it would be environmentally unacceptable and physically impossible to build road infrastructure to meet prevailing private automobile growth. It suggested easing traffic congestion within the business centre, developing a rapid transit system in addition to expressways, and that buses alone would not be able to meet public travel demand.

Following the recommendations from the SCP, the Singapore government implemented a number of measures between 1972 and 1992, including private vehicle ownership restrictions by high import duties, a vehicle quota system, private vehicle use restrictions in city centres by the Area Licensing System, revamping of the public transportation system, expansion of expressway systems, and construction of 67km of rail-based Mass Rapid Transit.

In the 1960s and 1970s, public transportation was being provided in Singapore principally by three groups: a large British-owned bus company, eleven smaller Chinese-owned companies, and a fleet of unlicensed taxis. The result was a slow, inadequate and unreliable system. Efforts to organize public transportation were made by the government in 1970, ultimately resulting in the forceful merging in 1973 of all into a single company held by the government. These measures imposed by government improved the quality of public transportation and encouraged private motorists to abandon the idea of owning a car due to high ownership and running costs. To introduce competition, the government later allowed one more bus company, and today two bus companies and four taxis companies are operating in Singapore, in parallel with the rail-based Mass Rapid Transit services. (<http://ekhr.unep.org> / 2007/10/30)

The Ministry of Transport's aim is to achieve a quality, integrated and efficient land transport system by undertaking the following major initiatives:

- Make public transport a choice mode
 - Optimise road network and enhance its accessibility
- (<http://www.mof.gov.sg> / 2007/10/30)

3.5.1.3 HONG KONG

Recent designs for rail stations in Asia have demonstrated the benefit of integrating various modes of transport such as buses and light rail with metros. Passengers benefit from integration by traveling seamlessly through stations that, due to their attractiveness to the passenger, increase revenue for the operator. The local government benefits by the additional property values that accrue at such nodes and with the decrease in private car ownership.

Many governments in Asia have realized that railway operators benefit the most if their stations are planned at an urban design level to be integrated with other modes of transport and passenger generators such as retail or residential

developments, and base their town planning on this approach. The designer's role is therefore to produce stations which are attractive, provide a safe experience for passengers, is convenient to use with easy connections, optimizes revenue-generating opportunities, and demonstrates value for money.

One example is the Hong Kong Mass Transit Railway Corporation's (MTRC) new station at Po Lam. This terminal station was master-planned by government to be adjacent several passenger generators. An adjacent passenger transport interchange (PTI) is a drop off for taxis and buses. The PTI is underneath a shopping mall and is directly connected by escalators and lifts. In turn, the shopping mall is linked by a single level bridge to the station ensuring that passengers are kept within an air-conditioned retail-lined route. There is a seamless journey from bus or taxi to the station and vice versa. The many residential towers positioned over the retail mall, whose lifts are directly connected to the shopping mall and thus the station, further enhance ridership figures. The station is designed to increase in size over time to meet the predicted rising passenger demand due to these developments. Furthermore, as the government auctions land in Hong Kong, the revenue from the adjacent property to the station is increased if attractive links as described above are incorporated. (<http://www.unescap.org> – 2007/10/30)

3.5.2 SOUTH AFRICAN PRECEDENT

Gauteng was chosen as an example of national precedent as the City of Tshwane is currently embarking on initiatives to improve the inter-modal transport system within Gauteng province. These initiatives are at an advanced stage and are a good example for eThekweni Municipality to follow.

In terms of the Metropolitan Spatial Development Framework for the city of Tshwane, (<http://www.gauteng.gov.za> – 2007/10/30), the rail system has become

the basis of public transport throughout Tshwane and it is, therefore, an important structuring element of the city.

The positions of the majority of metropolitan activity nodes, especially the urban cores, purposefully coincide with major railway stations. The proposed metropolitan vehicular movement system should be designed to support the rail system, that is, to enable convenient transport of people to and from the railway stations.

Local nodes should, as far as possible and where applicable, be located around local railway stations and precinct Spatial Development Frameworks for these nodes should give due consideration to transit orientated developments in order to enhance and support the viability of the rail system.

The two most important elements of the rail system that contribute to the overall spatial structure are; the ring rail system; and the proposed rapid railway line linking Tshwane with Johannesburg and Johannesburg International Airport (Gautrain).

The rail network in the Tshwane metropolitan area comprises a circular system around the inner city (that is, the ring rail), which is linked via feeder lines to communities on the periphery of the municipal area.

The aim of the Ring Rail is to optimally utilize the existing, centrally located rail infrastructure to enhance public transport in the metropolitan area through the integration of land uses and transport modes. The ring rail provides an ideal opportunity for densification and mixed-use development in the central part of the metropolitan area, and more specifically the roughly 1km influence area around the network.

The aim of the Gautrain Rapid Rail Link is to serve as a commuter link between cities and to enhance the accessibility to the major centres in Gauteng. It is envisaged that the Gautrain Rapid Rail Link will contribute to the development of the Gauteng Province in the following three ways:

- i. Regeneration of CBD's;
- ii. Strengthening of existing nodes and infrastructure; and
- iii. Creation of new growth areas.

As such, the Gautrain will have a major impact on the demarcated destinations in Tshwane (that is, Centurion Station, Pretoria Station and Hatfield Station) in terms of future development of these areas. To ensure the viability of these stations, the area around the stations will have to comprise a specific land use mix (with a strong emphasis on residential development) at a specific intensity and density with a strong focus on pedestrians and inter-modal transfer facilities. They will also have to comply with specific urban design requirements.

The Metropolitan Spatial Development Framework has also identified a number of vehicular routes that should link the metropolitan activity nodes and, more specifically, the major railway stations and therefore become the most important vehicular public transport routes. In order to increase the viability of public transport on these routes, as well as, to exploit the full potential of highly visible and accessible sites along them, these routes should become important activity spines.

According to the City of Tshwane Integrated Transport Plan 2004 – 2009, the following general principles, guidelines and directives are applicable to public transport from a spatial planning perspective:

- i. Public transport throughout Tshwane must contribute to spatial and social integration of the metropolitan area.
- ii. The rail system should become the basis of Tshwane's public transport.

- iii. The Municipality should negotiate with the Spoornet, South African Rail Commuter Corporation, Intersite, MetroRail, the taxi and bus industries as well as other important role players about:
 - a) The expansion of the existing railway lines;
 - b) The conversion of non-commuter lines into commuter ones; and
 - c) Upgrading of the related facilities.
- iv. The rail public transport system must be supported by a road-based feeder and distribution system, that is, by a system of public transport routes converging on railway stations.
- v. All types of high density and high intensity developments should be encouraged and stimulated in the vicinity of (that is, within walking distance from) railway stations.
- vi. Road-based public transport routes should coincide with activity spines in order to ensure the integration of land use and transport.
- vii. All modes of public transport should be integrated in terms of both routes and operations.
- viii. Termini and stops of different modes of public transport should be directly related to each other and even shared where possible.
- ix. All public transport facilities, such as railway stations, bus stops, taxi ranks, etc. must be well lit by night and furnished / equipped with minimum public amenities, such as canopies (shelters) and benches. Bigger facilities, such as stations, termini and taxi ranks, must also have public toilets and drinking fountains.

Strategies must be devised to increase the feasibility of public transport and its attractiveness across all income groups (and to discourage the use of private transport).” (City of Tshwane Integrated Transport Plan 2004 – 2009. Page 17 in <http://www.gauteng.gov.za> – 2007/10/30)

3.5.3 CONCLUSIONS

A common thread in both international and national experience is the need to integrate land use management with that of transport planning. In other words, nodal development, with intense economic activity and dense residential use, centred around public transport facilities or terminals, ensures greater viability in terms of use of public transportation. This may be a valuable lesson for the future development of Isipingo.

The use of a rail system as the main mode of transport combined with taxi and bus services is also common among the case studies. Fortunately, Isipingo is already equipped with these modes of public transport and associated facilities, and like in the case studies, the fixed rail line acts as a structuring tool for present and future development.

CHAPTER 4: ISIPINGO: THE CASE STUDY AREA

4.1 INTRODUCTION

Thus far, the preceding chapters have dealt with the research framework, research methodology, and the conceptual framework. It is, however, now necessary to focus on the case study area, to which this ground work has been applied. This chapter therefore provides the reader with an overview of Isipingo in terms of its geographic location, historic development, and its current function.

The reader also becomes aware as to the researcher's reasons for choosing Isipingo as the case study area as compared to any other node within the eThekweni municipal area due to the core study area, which is the town centre, being influenced by the secondary study area, which are the surrounding areas of Prospecton and Umlazi.

4.2 ISIPINGO TODAY

Isipingo is approximately 15 kilometres south of the Durban Central Business District. It is situated directly adjacent to the R102 and in close proximity to the N2 freeway. Isipingo enjoys high accessibility, hence its prime function as a multi-modal transport node.

Isipingo was initially inhabited by Khoi-San people before the 1800s and by Zulu peoples at least by the 1820s, before being ceded to Dick King in 1843 for sugarcane production. (<http://www.h-net.org> – 2008/08/04) Due to Apartheid planning, the Isipingo Beach area along the east coast, with its pristine and secluded sea fronts was inhabited by Whites only. Across the freeway, inland to the west, was where the Indians, who were forcefully removed from other parts of KwaZulu-Natal, were relocated, that is, the Isipingo Rail and Isipingo Hills areas. However, due to the advent of industrialization and urbanization, the white race group

relocated to the city centre, and surrounding areas such as Amanzimtoti. Around the turn of the century, the Isipingo Beach area, and Isipingo as a whole, was eventually invaded by Indian families, who realized the economic potential of the area due to its accessibility and the increase in volume of people into the area. By 1919, the Indian community had formed the Isipingo Indian Society, later to become the Indian Civic Association. (<http://www.h-net.org> – 2008/08/04) Trading began with fruit, vegetable and livestock but led to tailors, supermarkets and eventually current trends that include industrial activities. The rail facility stimulated further economic opportunities due to the large volumes of people it brought into the area, and the local municipality began investing in the area by providing housing for the residents. Hence, Isipingo became a convenient economic and social hub, and has since become a thriving town centre.

The study area, which has a radius of 3 kilometres is broadly defined as the Isipingo town centre, with the Isipingo Railway Station being the focal point, and includes part of the Prospecton industrial area as well as Umlazi. Refer to Figure 2, which illustrates Isipingo's location within the eThekweni Municipal area, and Figure 3, which illustrates the extent of the case study area.

It should be noted though that the case study area is made up of the core study area and the secondary study area. The core study area refers to the town centre, where the hub of the inter-modal transport facilities are located, and the secondary study area is that of Prospecton and Umlazi, which influences activities within the core study area.

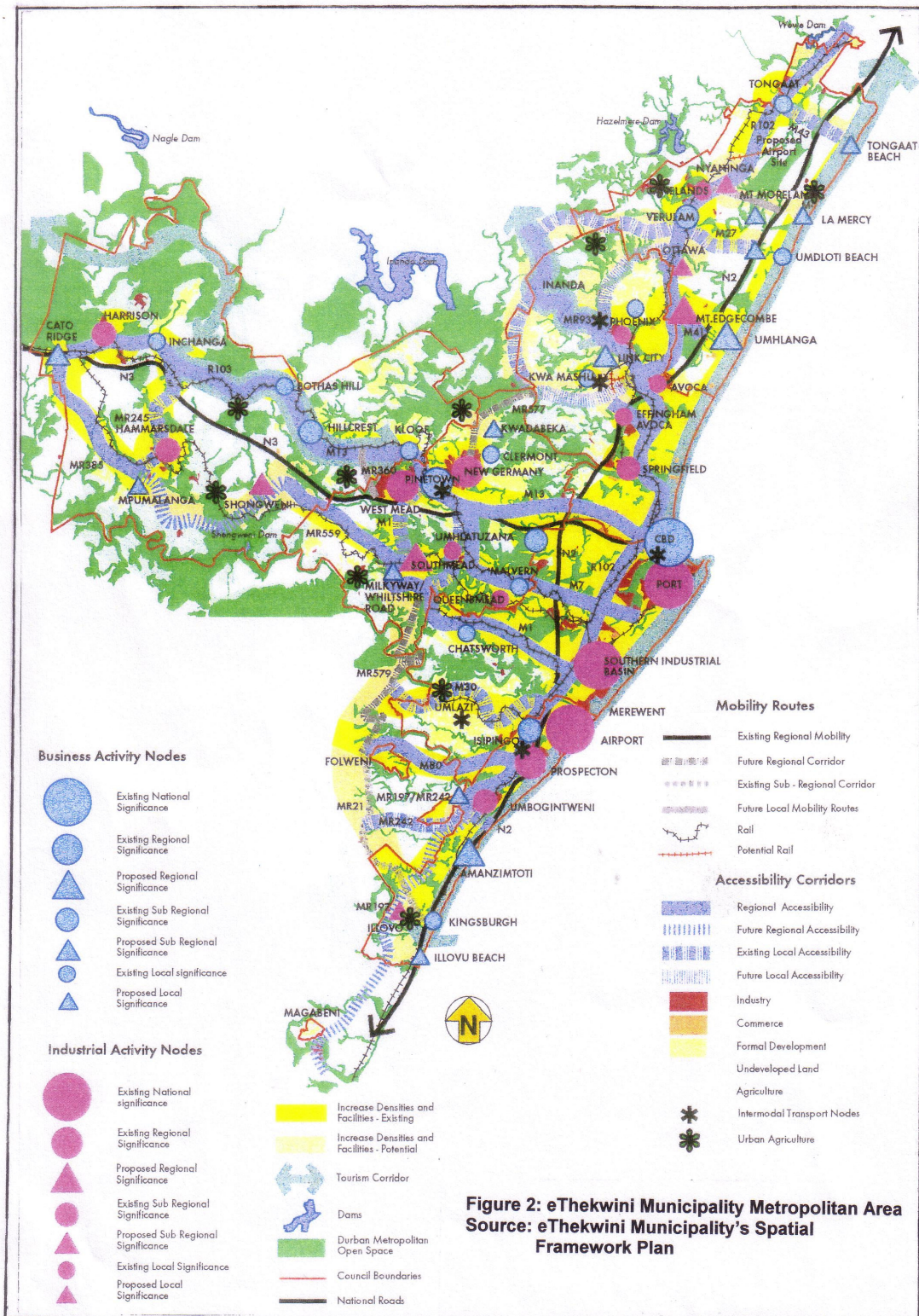


Figure 2: eThekweni Municipality Metropolitan Area Framework Plan
 Source: eThekweni Municipality's Spatial Framework Plan

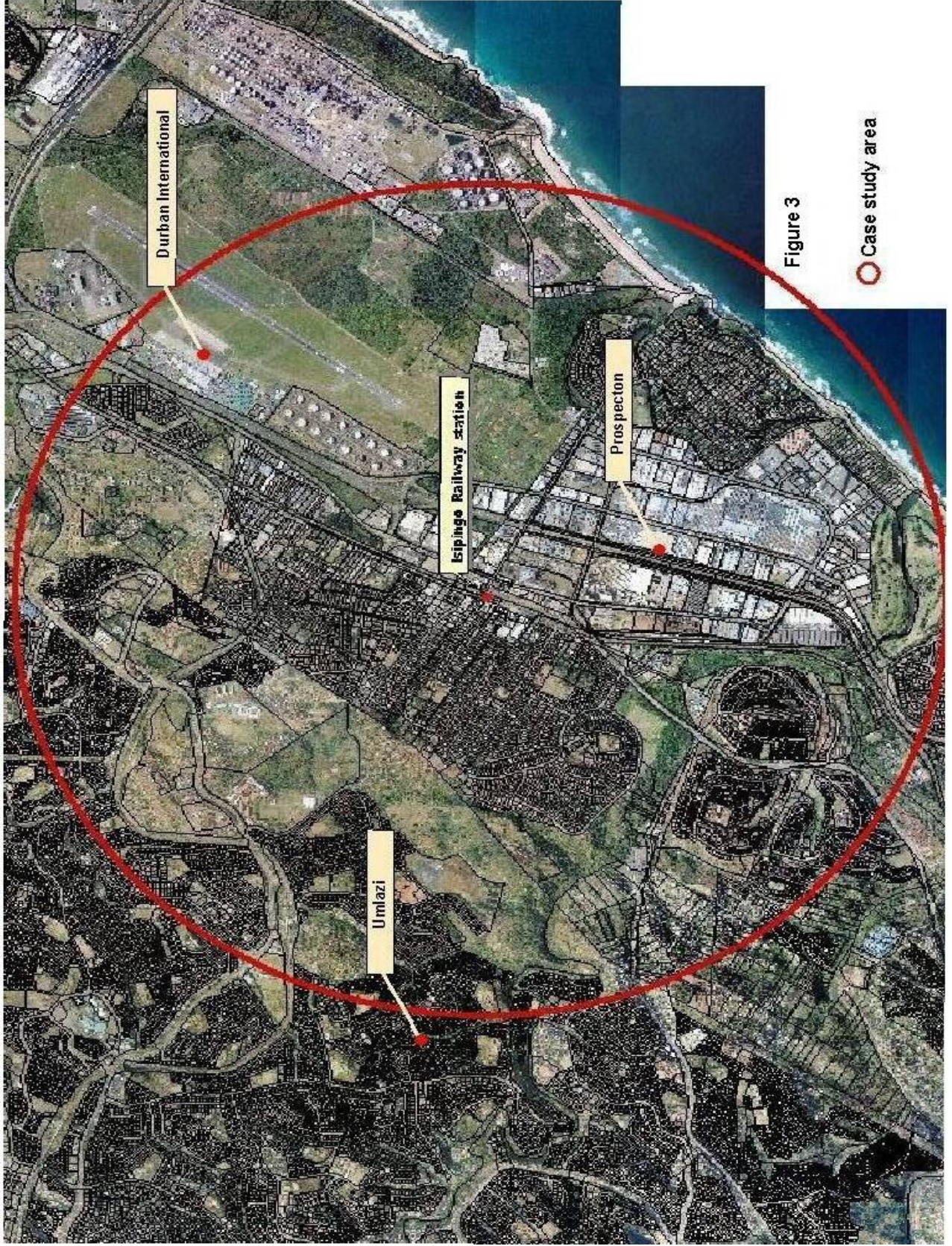


Figure 3

○ Case study area

Figure 3, above, shows the total extent of the case study area. The core study area is in the immediate vicinity of the Isipingo Railway Station, while the secondary study areas are in the immediate surrounds, namely Prospecton and Umlazi.

The Isipingo town centre is located in the area commonly known as Isipingo Rail. It forms part of the previous Isipingo Local Authority, which consisted of Isipingo Rail, Isipingo Heights, Lotus Park, Orient Hills, Isipingo Farm and Isipingo Beach. The Isipingo area contains some fairly exclusive but mostly middle income residential development, as well as peri-urban informal developments in the vicinity of Malukazi.

Isipingo Rail represents a major commercial and activity node providing services to Umlazi, KwaMakhuta, Folweni and adjacent tribal communities. Metro-wide planning studies have in the past referred to it as one of the most important commercial centres in Durban. The situation in the area can be described as a dense and somewhat chaotic commercial and retail development, and the streets are heavily congested with shoppers, commuters (rushing to change modes of transport), informal traders and parked taxis.

On first glance, it is apparent that Isipingo town centre is not the most attractive urban environment. Refer to photographs below.



Photograph 1: Unattractive streetscape

The photograph, above, illustrates an unattractive pavement, and the centre island of Old Main Road – the main street - that has been planted with palm trees by the Municipality in order to enhance the streetscape.



Photograph 2: Informal ranking of taxis

The photograph, above, illustrates taxis ranked informally in a car park, which is suppose to be for use by patrons of the shops in the background, namely, a supermarket, bakery and action bar. In terms of the Isipingo Town Planning Scheme in the course of preparation, the proprietor of the building had to provide off-street parking for patrons in order to reduce congestion on Old Main Road.



Photograph 3: Informal traders

The photograph, above, illustrates the informal traders along Old Main Road being patronized by pedestrians.



Photograph 4: Restriction on pedestrian movement

The photograph, above, illustrates informal traders at a different spot along Old Main Road. Note the fence on the centre island, which restricts the free flow of pedestrians from the railway station across the road. According to City Officials, there was no designated pedestrian crossing for those pedestrians crossing Old Main Road to gain access to the Railway Station, and it was therefore becoming dangerous for the pedestrians as well as the motorists. The fence was hence erected as a safety measure in order to limit the pedestrian crossing points along Old Main Road. Refer to Figure 4, which illustrates an aerial view of the Isipingo Station.

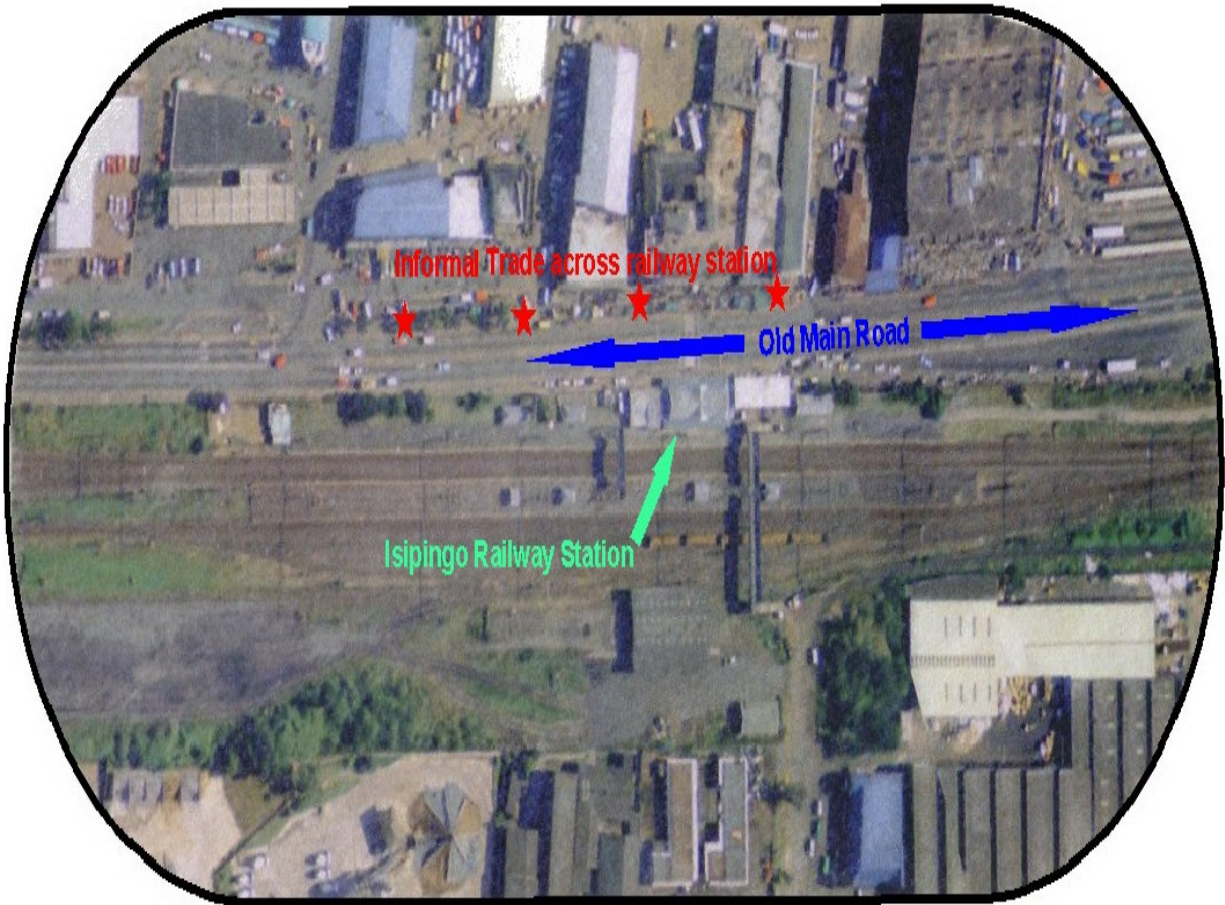


Figure 4: Aerial view of Isipingo Railway Station

Source: www.durban.gov.za

There is high-density commercial activity immediately to the west of the railway station and heavy industry (Prospecton) to the east. Isipingo Rail is the destination station for surrounding commercial and industrial land uses and origin station, mainly via transfer trips, for Durban bound trips.

Isipingo is a thriving commercial / retail node serving an extensive population. Census 2001 information shows that Clairwood accounts for the highest proportion of the population along South Coast Road (SCR) (33.6%) followed by Jacobs/Mobeni (31.0%), and Isipingo Rail (23.6%). Refer to table below.

Table 3: Population Figures in Economic Areas along South Coast Road, 2001

ECONOMIC AREA	TOTAL POPULATION	AS % OF SCR POPULATION
1. Bayhead	374	2.4
2. Clairwood	5.301	33.6
3. Jacobs / Mobeni	4.897	31.0
4. Durban International Airport	133	0.8
5. Isipingo Rail	3.719	23.6
6. Isipingo	318	2.0
7. Umbogintwini	680	4.3
TOTAL	15.785	100.0

Source: Census 2001 in South Coast Road Corridor: Development Framework Plan 2006:23

Isipingo has experienced substantial expansion in commercial / retail land uses, drawing business not only from its rural hinterland but also large numbers of commuters who use Isipingo as a mode transfer facility, particularly between taxi and rail system to eThekweni's Central Business District and surrounds.

Figure 5, below, which was obtained from eThekweni Transport Authority, illustrates the public transport routes per mode of transport within the case study area and beyond as well as the location of existing formal public transport facilities. It can be deduced that while the railway line is a fixed line, it still provides a north – south and west linkage. The bus and taxi routes are more diverse and cover a more extensive area.

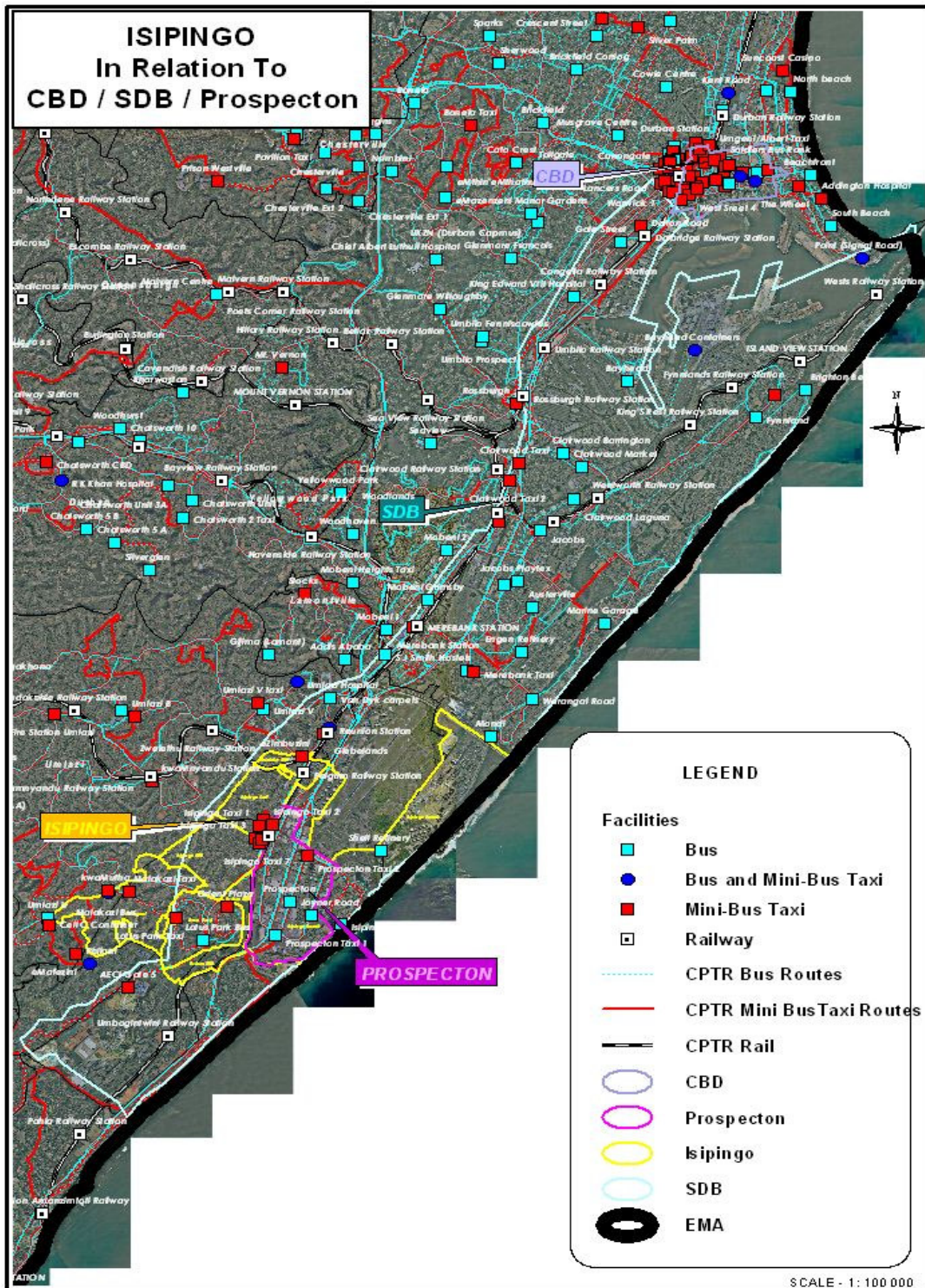


Figure 5: Formal public transport facilities within the core study area and beyond.

Source: eThekweni Traffic Authority

It is interesting to note that as far back as 1979, the Durban Metropolitan Transport Advisory Board (MTAB) initiated a study to identify public transport facilities needed in Isipingo that ultimately resulted in the building of a bus terminal and holding area. The motivation given at the time was "...Isipingo Rail area acts as a focal point for the surrounding region, particularly Umlazi. It is a thriving shopping centre for the region and is a major transfer point for passengers...to Isipingo Station. During the pm peak hour, approximately 5600 bus passenger trips are made out of the area on 74 buses and these include some 3000 rail / bus transfers..." (Durban MTAB Interim Transport Plan for 1980-1985 in Durban MTAB Updating of Isipingo Public Transport Needs Study.

2000:3) Refer to chapter 5.2 for current bus, taxi, and rail passenger trip records.

Figure 6, below, shows the existing public transport system along with the key public transport nodes, as well as highlighting the major routes and corridors. These are located within a boundary defined by the Municipality as its Urban Edge.

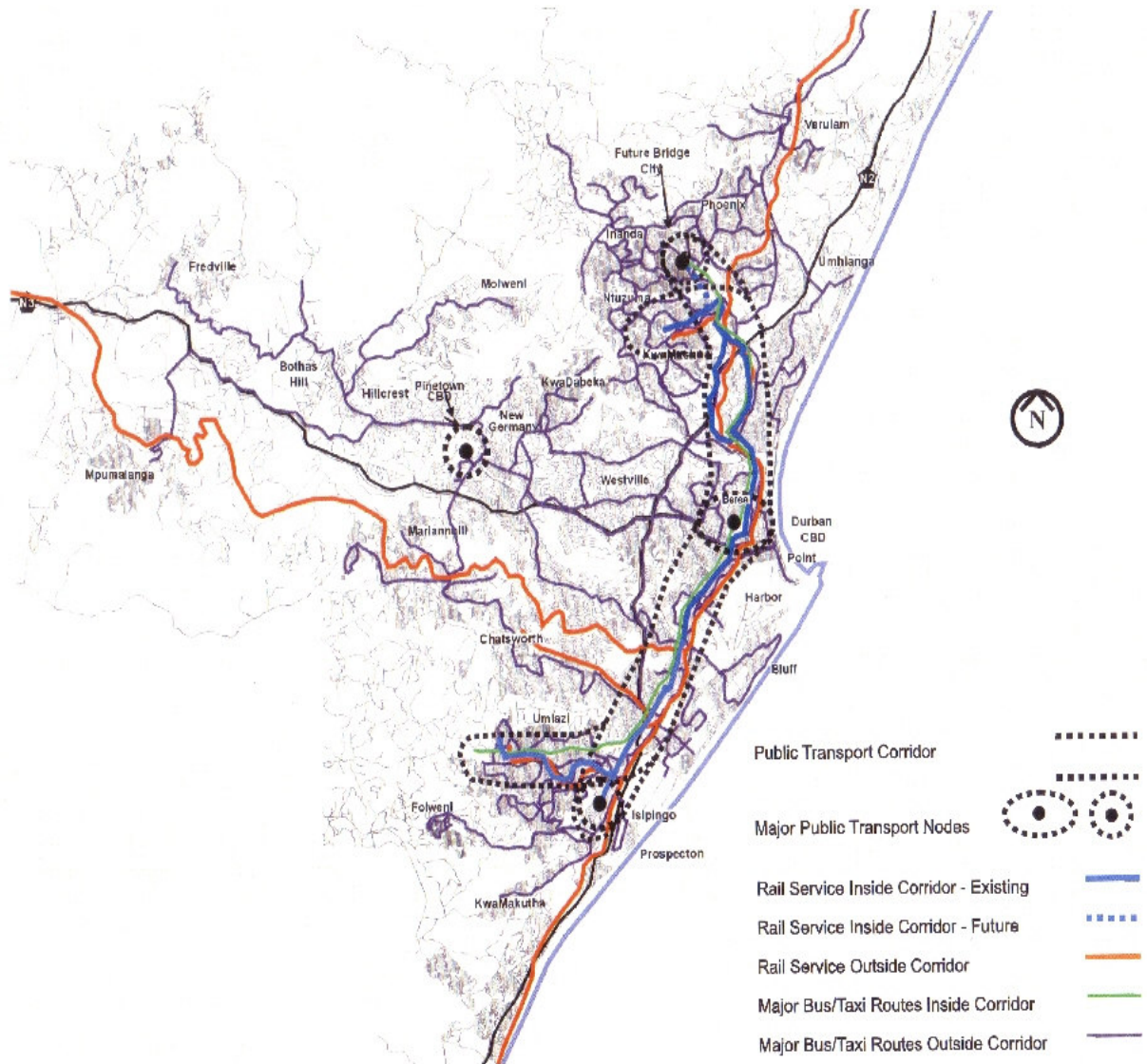


Figure 6: Existing eThekweni Public Transport System

Source: Integrated Transport Plan 2005-2010

The Isipingo node, can be described as a ‘high street’ where commercial and retail activities can be found dotted along the Old South Coast Road. The Isipingo station is a major modal interchange where commuters transfer from taxis to buses and trains, and which has also stimulated a concentration of retail activity. Facilities for public transport and for the interchange function are inadequate though, and have developed informally rather than having been

planned. Owing to the demand of public transport in this area, improvements are essential to ensure an efficient modal interchange function. Low investment in maintenance has also resulted in the low attractiveness of the area. The area has commercial and retail functions, which provide local employment. According to Census 2001, statistics indicate an unemployment rate of 25% for South Coast Road, which lies below the eThekweni Metropolitan Area figure of 43.0%. Unemployment is highest in Isipingo Rail (57.0%), followed by Jacobs/Mobeni (48.0%), and Clairwood (33.0%). Refer to table below.

Table 4: Employment Profile of Economic Areas along South Coast Road, 2001

ECONOMIC AREA	POPULATION	EMPLOYED	UNEMPLOYED	ECON. ACTIVE	ECON. ACTIVE (%)	UNEMPLOYED (%)
1.Bayhead	374	290	11	331	88.5	3.0
2.Clairwood	5.301	1.705	1.349	4.105	77.4	33.0
3.Jacobs / Mobeni	4.897	1.813	2.152	4.528	92.5	48.0
4.Durban Int. Airport	133	83	14	119	89.5	12.0
5.Isipingo Rail	3.719	1.264	322	2.730	73.4	12.0
6.Isipingo	681	150	273	482	70.8	57.0
7.Umbogintwini	680	352	54	507	74.6	11.0
TOTAL	15.785	5.657	4.175	12.802	81.0*	25.1*

Source: Census 2001 in South Coast Road Corridor: Development Framework Plan 2006:26

* Reflects the average percentage for all the economic areas

In terms of the areas located close to South Coast Road, manufacturing accounts for 25.0% of the employment opportunities in the area, followed by community, social and personal services (17.0%) and wholesale and retail trade (17.0%), as highlighted in the table below.

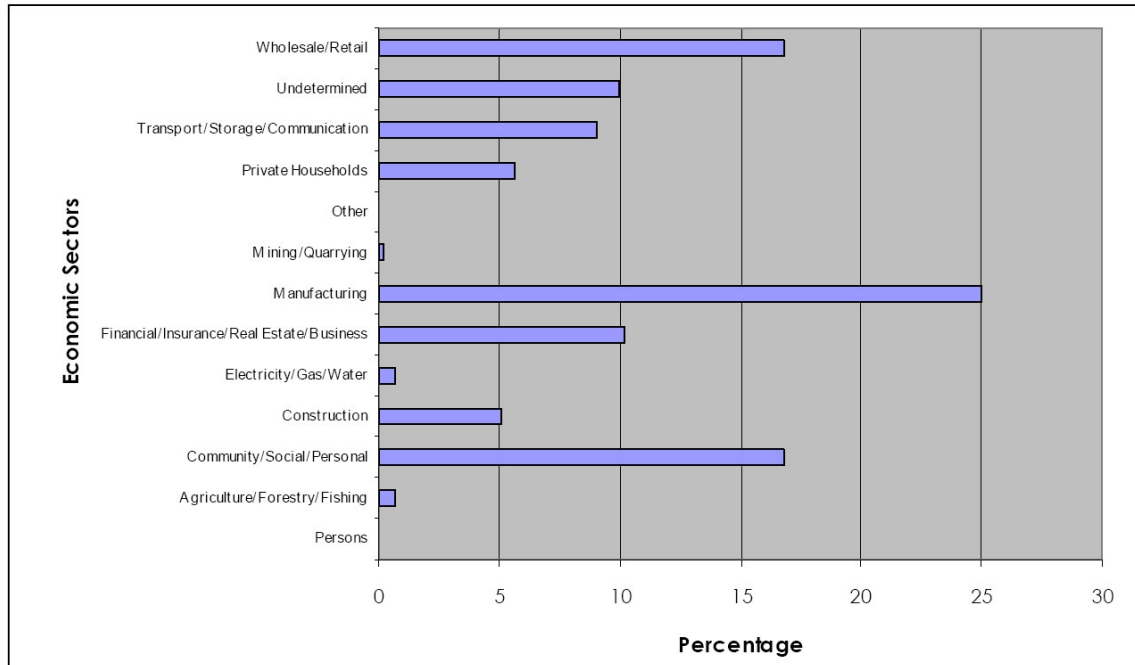


Figure 7: Employment Profile of Areas along South Coast Road by Economic Sector, 2001
Source: Census 2001 in South Coast Road Corridor: Development Framework Plan (2006)

The potential therefore exists to increase this and to transform the segment completely, into a 'strip attractor' as in this type of corridor the spine can be regarded as a linear node of intense activity as is the case in Isipingo. This type of corridor typically develops over time, owing to its high visibility and the accessibility to goods and services that it offers to potential customers. There are also typically high-volume bus and taxi movements with regular stops along the spine. Although there are higher volumes in peak periods, there is movement along the spine throughout the day. This type of corridor often has two or more spines in the corridor, as is typical of Isipingo, where one spine acts as a mobility axis and the other/s as activity streets. Refer to Figure 8. Another reason for classifying Isipingo into this type of corridor is the fact that the main roads serve high volumes of public and private transport; and typical land uses in the corridor include retail, office, take-away restaurants, motor-related activities, industries and large warehouses. (eThekweni Municipality.2006 (B))



Figure 8: Isipingo: A linear node of intense activity
Source: www.durban.gov.za; Fieldwork (2007)

4.3 ISIPINGO IS A NODE OF POTENTIAL

Isipingo has long been recognized as an important transport and modal interchange node within the Durban Metropolitan area. Past investigations by urban planners and traffic engineers conclude that this role should be enhanced, albeit in a controlled and developmentally positive / sustainable manner, to develop the Isipingo node into a major regional commercial and service centre.

(Stanway Edwards Associates. 1987; Illiso KZN and C.S. Roebuck.2004; SiVEST.2007)

Recent studies concur with earlier results, which show that Isipingo is the most active inter-modal interchange point in the eThekweni Municipal area, where the majority of all public transport trips in the area consist of transfer trips. As expected, the minibus taxi trips make up the largest proportion of all public transport trips to Isipingo. The resultant demand for ranking space within the commercial centre has placed strain on physical infrastructure and ranks have been developed on an ad-hoc basis over the years. Consequently, informal traders pounced on the opportunity posed to them, by the location of these informal taxi ranks. (SENA. 1999)

The highly accessible location of Isipingo can be attributed to spatial planning during the apartheid era, even-though, it could not have possibly been done deliberately, considering the current majority of beneficiaries of this location is Black.

The mixed – land uses that prevail in Isipingo, along with the variety in modes of transport attract a large number of people to the area, even if Isipingo is only being utilized as a point of transfer. (SENA.1999)

Due to the arrangement of the retail / commercial activities being predominantly along Old South Coast Road, Isipingo is indeed characteristic of a corridor-type

development. It is this corridor-type development coupled with the presence of a fixed linear mode of transport (rail), which runs parallel to it, that gives Isipingo its unique character.

There is no specific size, shape or combination of activities that makes an urban centre successful. Criteria vary depending on the location and context within which an urban centre has developed, and while Isipingo may appear haphazard in its arrangement of formal and informal activities, it works for the area and the people that frequent it. An aspect that makes Isipingo successful is the constant flow of people in and out of the area.

CHAPTER 5: ISIPINGO: AN INTERMODAL TRANSPORT NODE

This dissertation set out to determine how effectively Isipingo functions as an inter-modal transport node. On the basis of field work and interviews with the relevant stakeholders this chapter presents the findings.

5.1 LAND USES IN THE ISIPINGO AREA

5.1.1 ISIPINGO TOWN CENTRE

The land use survey and field observations revealed that one of the outstanding elements of the core study area, which is the town centre in the immediate vicinity of the railway station, is the pedestrian movement along the Old South Coast Road where most of the commercial activities and public transport facilities are located. The urban space where this activity occurs is not well-planned and maintained to cater for the demands which are placed on it.

The reservation of sports fields, play lots and parks is critical in the maintenance of a balanced urban environment and the case study area lacks this. There are a number of run-down or unused areas and buildings, which require rehabilitating so that the attractiveness of the area is increased, and pedestrian movement maintained.

The area is characterized by relatively low to medium-density (at least 15 – 25 dwelling units / hectare) residential land use. It can be assumed that the redevelopment of a high-density (at least 40 – 60 dwelling units / hectare) residential component along the Old South Coast Road could increase the demand for education, health and welfare and other public buildings and facilities. The implementation of such residential development will lead to a general increase in activity in the area. The location of these facilities will also increase all peak demand for public transfer services. The informal nature of the

existing public transport facilities provides the flexibility that the location of such facility is close to civic and social uses.

The types of businesses identified along Old South Coast Road vary and there does not appear to be any specific specialization. Businesses range from furniture and clothing stores to take-aways, car audio installation, tyres and spares outlets, supermarkets, medical facilities, and so on. Other land uses include public buildings such as the hospital, clinic, police station, and informal pension payout points, among others.

Figure 9, below, illustrates clearly the zoning of properties within the Isipingo town center. The predominant zones, which characterize the town center and permit the existing uses, are Administration, Enterprise Zone, General Residential, General Commercial, Light Industrial, Limited Commercial, Planned Unit Development, Special Commercial, Special Residential 1, Office Zone, and General Industrial.

Within the town center the Administration zoned sites accommodate the municipal offices, school, and other social facilities. Refer to Figure 10, which illustrates the location of social facilities within the core study area.

The Enterprise Zone accommodates a mix of uses ranging from industrial buildings to service workshops, warehouses, and shops. The General Commercial zoned sites are used predominantly for shops, wholesale shops, offices and flats. The Special Commercial zoned sites are also being used for office, shop and residential purposes. The Special Residential and General Residential zoned sites are being used for individual dwelling houses, medium density housing, and flats. The Planned Unit Development zoned sites are also being used for residential purposes. The sites zoned Light Industry accommodate light industrial buildings, offices, warehouses, commercial workshops such as watch and shoe repairers, valet services and electricians,

and service industrial buildings, which includes a builder's yard, laundry and bakery. The General Industry zoned sites also accommodate warehouses, light industrial buildings, and general industrial buildings such as those utilized by SA Breweries, Robertson's Spice, and so on. The Limited Commercial zoned sites also accommodate uses such as flats, shops, wholesale shops, used car lots, and offices.

Most of the transport facilities and activities are informal in nature and make use of the existing pedestrian area and roadway. It is apparent that the area lacks adequate formal public transport facilities in locations in close proximity to well developed civic, social and commercial uses. The area also lacks road space management in terms of parking in relation to pedestrian movement.



Photograph 5: Informal nature of public transport activities



Photograph 6: Lack of pavement / road space management and informal nature of public transport activities



Photograph 7: Lack of road space management in terms of informal activities and parking for service vehicles



Photograph 8: Lack of pavement / road space management in terms of informal activities

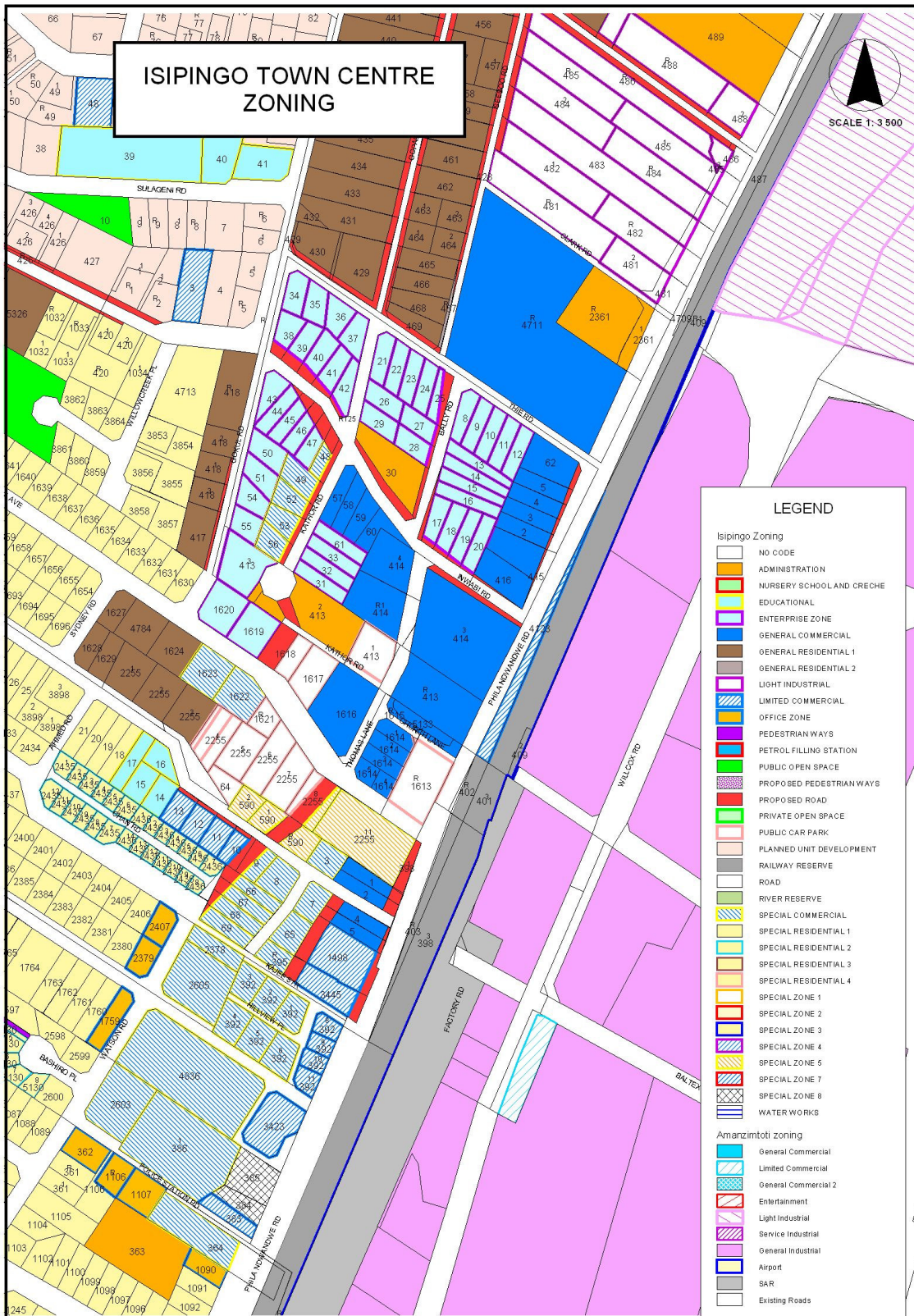


Figure 9: Zoning in the core study area

Source: www.durban.gov.za

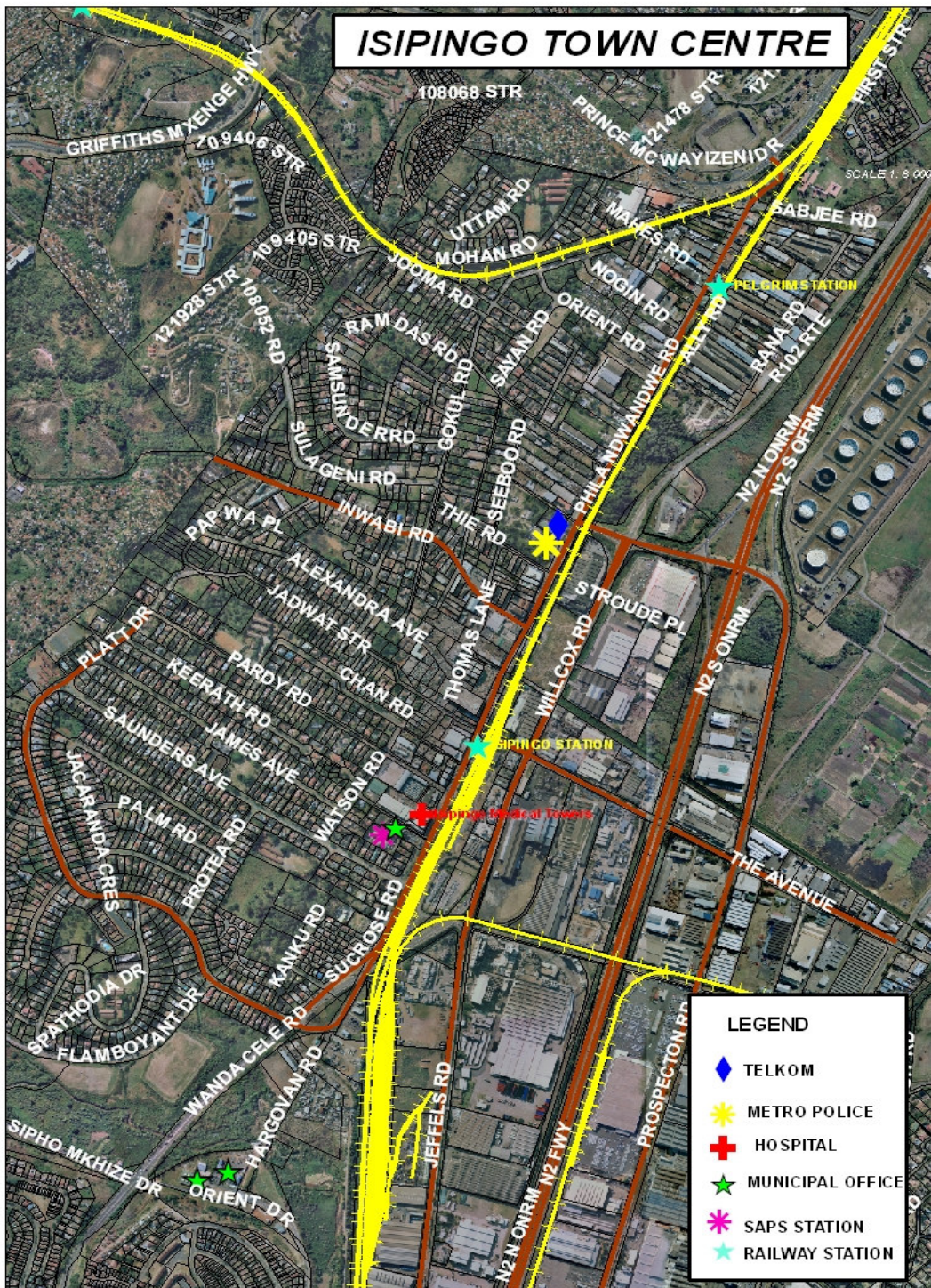


Figure 10: Social Facilities in the core study area
 Source: www.durban.gov.za

Isipingo is undoubtedly a corridor along which development has occurred over time as the following characteristics are evident:

- It has a linear urban form;
- The study area in general consists of medium to high density / intensity development;
- There are mixed land uses; and
- The area is served by high frequency public transport services.

Isipingo centre is an important modal interchange from bus to rail and taxi to rail, however, the problem is that there is no formal interchange between modes of transport.

Informal trade takes place in the vicinity of the station and on pavements as inadequate formal facilities such as shelters and ablution facilities exist. Even though eThekweni Municipality has taken the initiative to provide some formal shelters, more formal facilities, in particular ablutions need to be provided for informal traders. Photograph 9 and 10, below, illustrate the presence of formal shelters and the lack thereof in the vicinity of the Isipingo railway station.



Photograph 9: Informal traders shelters provided by eThekweni Municipality along Old Main Road



Photograph 10: Lack of formal shelters for informal traders along Old Main Road

There are also limited public sector facilities to be found in the vicinity of the railway station, which if located here will undoubtedly attract commuters due to convenience.

Low-density housing is present in-between retail and commercial activity. It appears that in order for this corridor to be more efficient, although it is not imperative, high residential densities would further encourage the use of public transport.

5.1.2 THE SURROUNDING AREA

Large companies in Prospecton (refer to Figure 3) such as Toyota, SA Breweries, Robertson's Spice, and the Airports Company South Africa occupy large tracts of land within the secondary case study area. It is these companies that contribute to the employment opportunities in the area.

More than 18000 people are employed in the 221 Prospecton firms, including the largest employers – Toyota Manufacturing, South African Breweries, and Republican Press. The Sapref refinery, Shell Chemicals, and Sasol Fibres also are important companies here. (<http://www.h-net.org> - 2008/08/04)

Manufacturing provides a large proportion of jobs in Durban (25%), the majority of which are located in the South Durban Basin (SDB) (refer to Figure 11). According to the SDB Spatial Framework 2004, the SDB provides in the order of 90000 to 120000 employment opportunities, which represents 10% of South Africa's manufacturing jobs. (eThekweni Municipality.2006:26.(B))

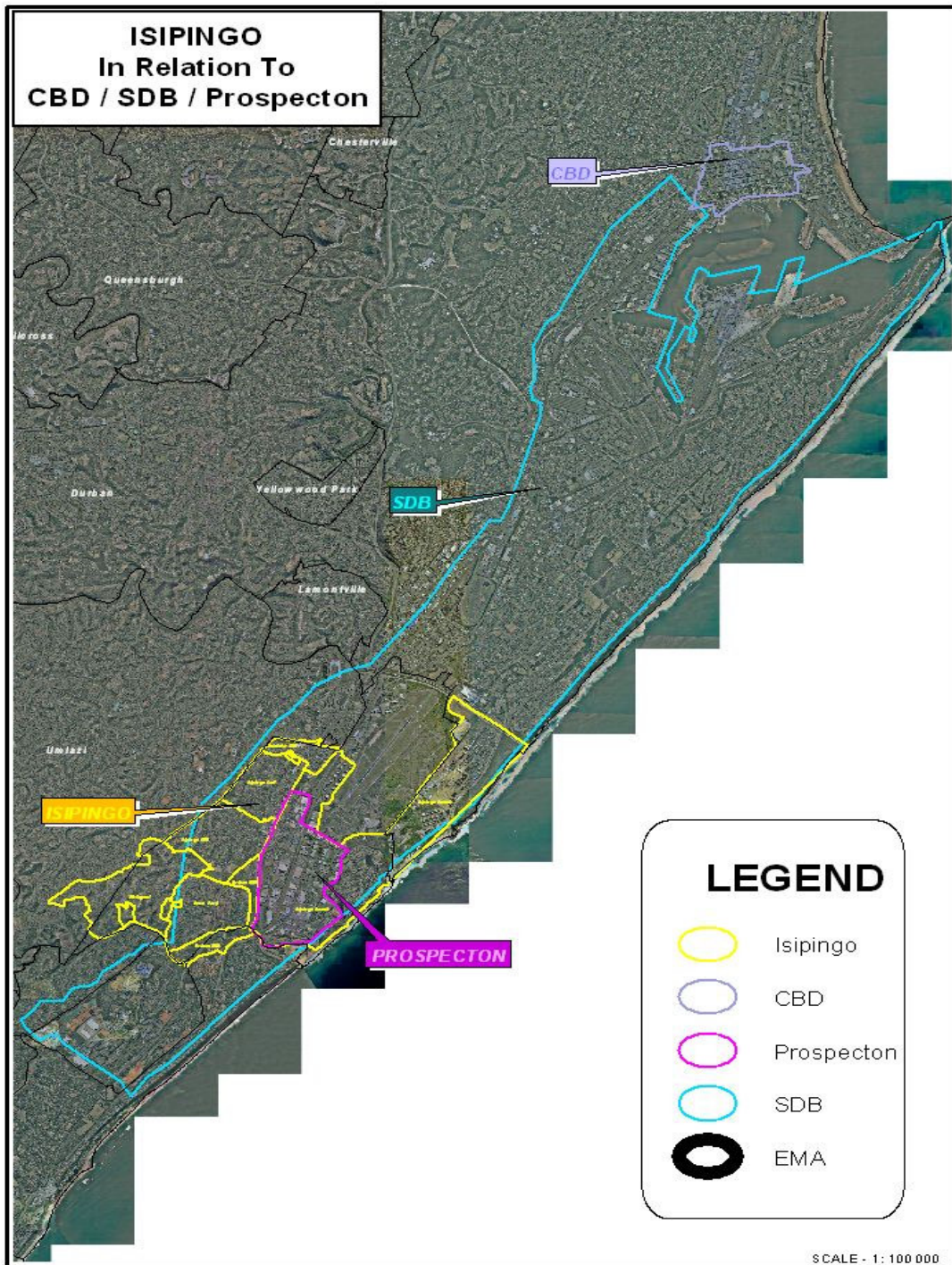


Figure 11: Isipingo in relation to Durban’s Central Business District (CBD), South Durban Basin (SDB) and Prospecton.

Source: eThekweni Traffic Authority

Due to Umlazi being a part of the 3km radius of the study area (refer to Figure 3), field observations were conducted and surveys (SENA.1999) were consulted, and the following was deduced:

Umlazi is an extensive low income (R0 - R3500) residential area with relatively high densities, (20 – 47 dwelling units/hectare). It has limited manufacturing and industrial uses and some institutional uses, these being mainly educational. It is served by a high capacity rail line and extensive taxi and bus services. This area currently acts as a 'sender' of labour to employment opportunities to the north of the area, which is to the Central Business District and the South Durban Basin. Currently, large numbers of commuters, (approximately 2870) that transfer trips within Isipingo reside in Umlazi. (SENA.1999:69)

There are a number of derelict buildings, (approximately 10), within the town centre, and the streets are heavily littered and the haphazard ranking and circulation of mini bus taxis has impacted on the immediate environment. The town manifests early signs of urban decay within the centre. The lack of basic facilities and inevitable influx of informal traders around the ranking points further adds to the degenerative conditions. By contrast, the Isipingo rail station has relatively well maintained facilities with defined commuter ticket selling points, internal circulation routes, access control and reasonable commuter convenience facilities. The permanence of the rail infrastructure combined with the relatively stable commercial sector forms the basis of future precinct planning for the location and establishment of formalized facilities within the Isipingo town centre.

5.2 TRANSPORT LINKAGES AND NETWORKS

Figure 12 illustrates the road network within the core study area and beyond. It is evident from the map that the Isipingo town centre is highly accessible due to its proximity to the N2 Freeway and the fact that Old Main Road traverses through the town centre. Prospecton Road, Jeffels Road, The Avenue East,

Wilcox Road, and South Coast Road provide access to the large industrial firms in the area.

Transfer facilities that are used by the large number of commuters include taxis, buses, and rail, while private motor vehicles still prevail to a large extent. In addition, a large number of commuters from Isipingo and surrounding areas walk to the town centre before transferring to another mode of travel depending on their destination. (Pedestrian Survey in Stanway Edwards Associates.1987:33; Field observations.2007)

While field observations have sufficed in determining the different modes of travel in the core study area, information pertaining to trip origins and destinations is based on concrete evidence, which was obtained from eThekweni Transport Authority. Refer to Figure 13.1 and 13.2 below.

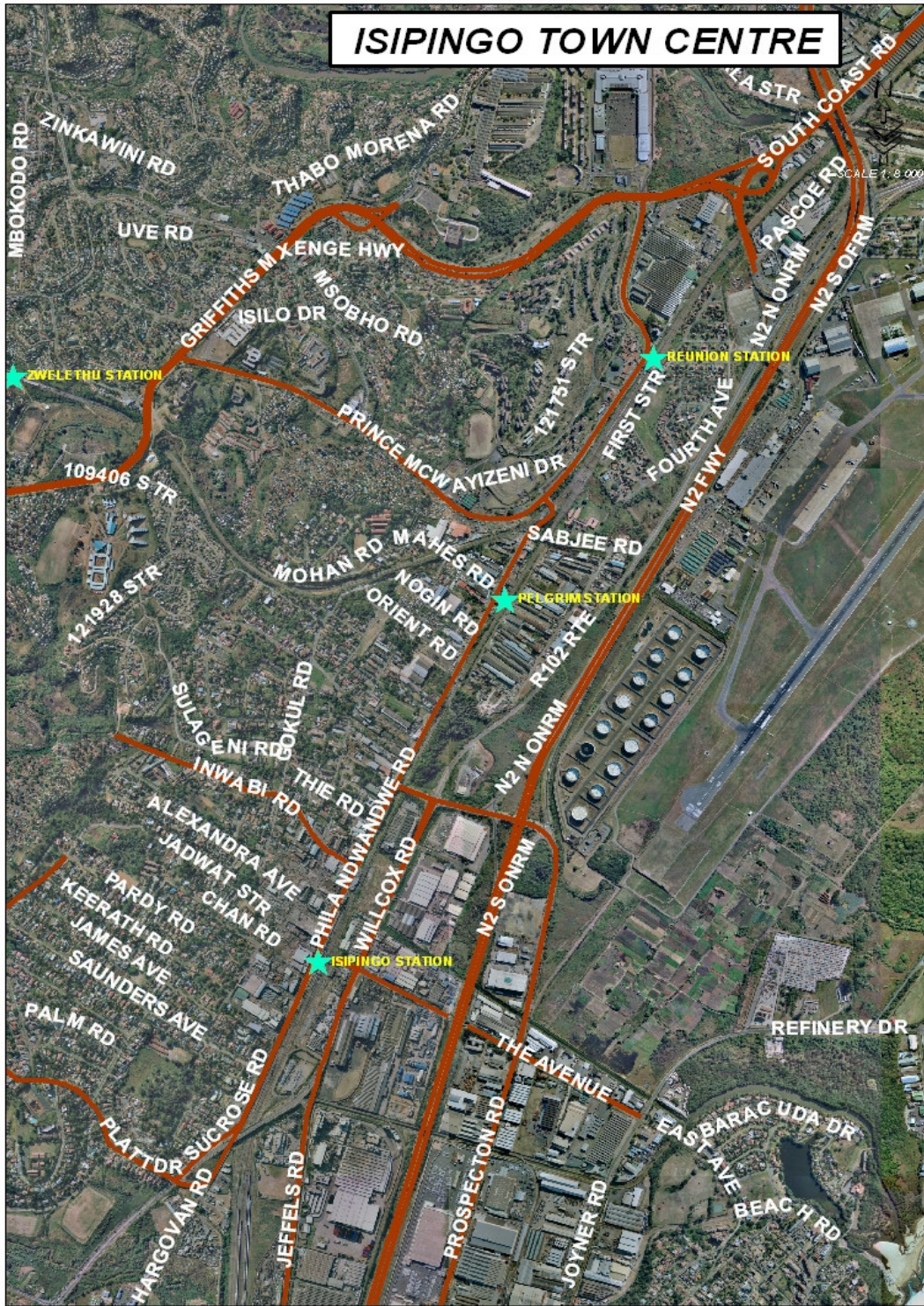


Figure 12: Road network and location of railway stations within the core study area
 Source: www.durban.gov.za

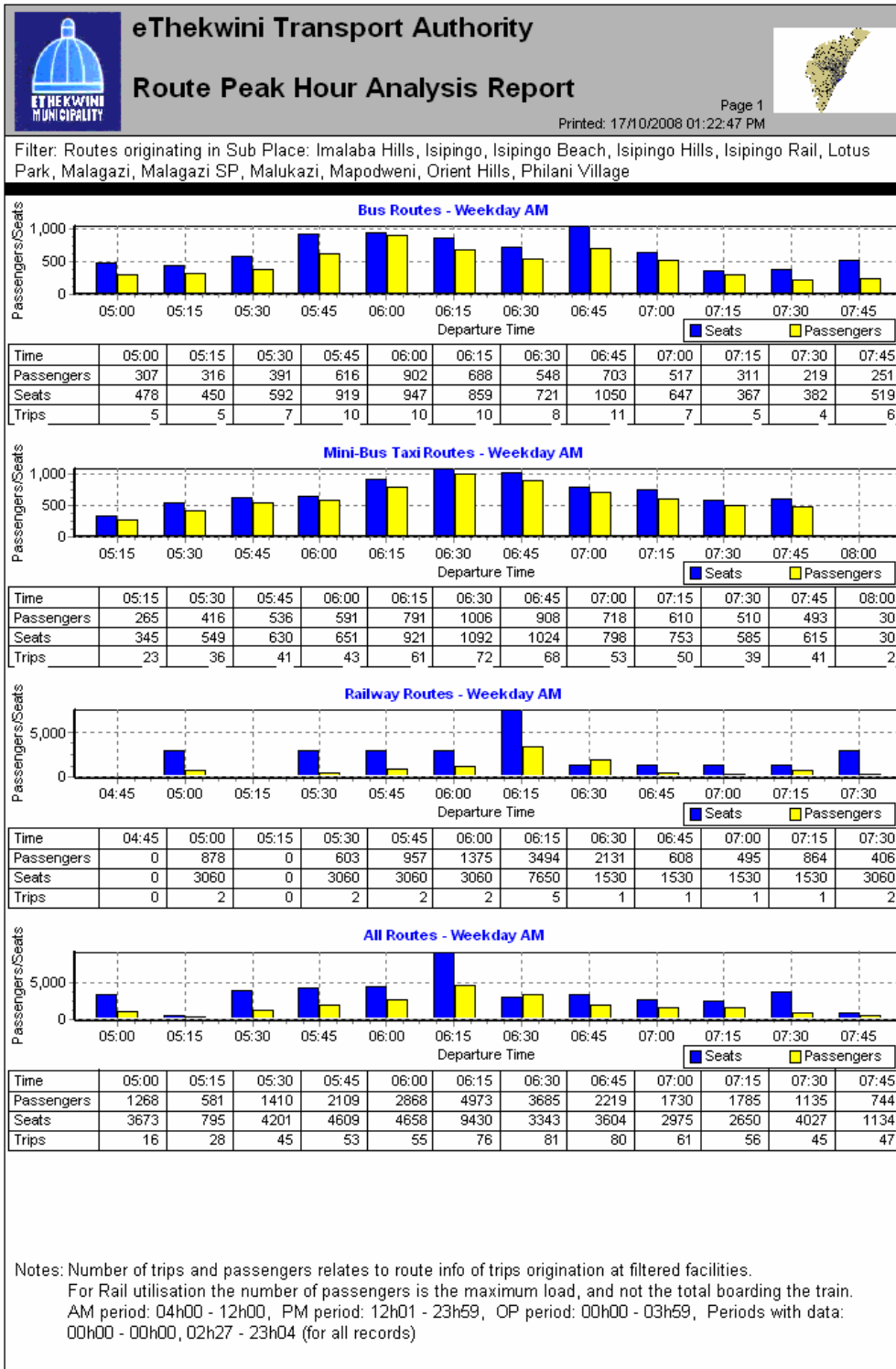


Figure 13.1: Route Peak Hour Analysis Report – Weekday AM

Source: eThekweni Transport Authority's Current Public Transport Records

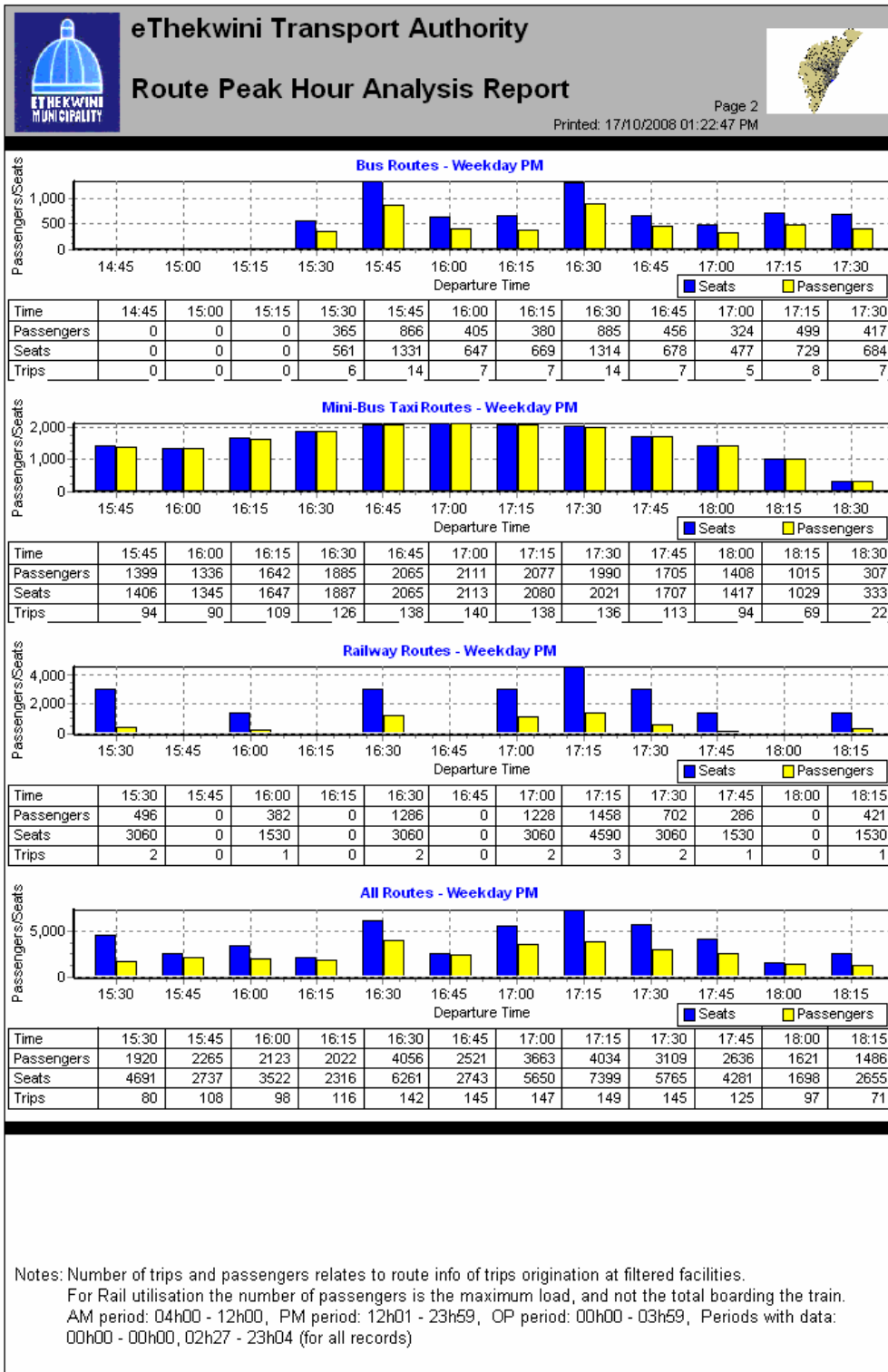


Figure 13.2: Route Peak Hour Analysis Report – Weekday PM

Source: eThekweni Transport Authority’s Current Public Transport Records

The extracts above (Figures 13.1 and 13.2), were obtained from eThekweni Transport Authority's Current Public Transport Records. These records are an indication of bus, taxi and railway routes originating from the core study area during peak hour on weekday mornings (Figure 13.1) and afternoons (Figure 13.2). From these records above, it can be deduced that during the AM peak hour, buses transport approximately 5769 passengers in a total of 88 trips, while taxis transport approximately 6904 passengers in 531 trips, and approximately 7516 passengers are transported by rail in 15 trips. During PM peak hour, buses transport approximately 4597 passengers in a total of 88 trips, while taxis transport approximately 19301 passengers in 1295 trips, and approximately 5283 passengers are transported by rail in 14 trips.

According to the Base Data Collection: Transfer Trips report by Maxplan KZN (1999:13), Isipingo has highly dispersed trip origins and destinations. According to Traffic Engineers interviewed (2007), while the statistics were collated in 1999, it is still relevant today as trip / transfer patterns have not changed significantly to date, however, percentages may have increased. The survey concluded that:

- There are 25 different origins and 44 different destinations served.
- The majority of trips to Isipingo are from Folweni – Golokodo (25%) and KwaMakhuta (19%).
- The majority of trips are to the Clairwood area (18%).
- The majority of transfers at Isipingo are between the above two areas (8%).
- Other significant points of origin include Isipingo, Umlazi and KwaMakhuta, which together with Folweni – Golokodo make up over 62% of all trips to Isipingo Rail.
- Durban CBD (7%), Berea (7%), Amanzimtoti (8%) and Congella (8%) are the other significant points of destination and together with Clairwood make up 48% of all trips leaving Isipingo.

According to the eThekweni Transport Authority and Metro Rail, the Land Use / Transport Strategy is:

- To develop Isipingo Station as a major transfer hub in the south; and
- To create a well-designed functional (integrated) inter-modal transfer facility that will distribute users efficiently to their destinations.

5.3 PERFORMANCE AS A TRANSPORT NODE

5.3.1 PERSPECTIVES OF CITY OFFICIALS AND PRIVATE CONSULTANTS

The Private Consultants and City Officials, appear to share similar opinions on Isipingo due to their involvement in current revitalization initiatives. A common consensus is that Isipingo bears many characteristics that match up to the expectations of an inter-modal transport node. It is a significant modal transfer point, and the mix in land use, from residential to commercial, retail, and industrial supports the viability of the node. The Municipality is optimistic that their initiatives to revitalize the town centre will attract further private investors into the area. There are, however, downfalls, which need to be addressed.

The City Officials and private consultants interviewed were in agreement about the key problems to be addressed. Firstly, while a large number of commuters utilize public transport facilities, private motor vehicles still prevail to a large extent, which is far from what is expected of an inter-modal transport node. Secondly, modal interchange facilities are still inadequate. Thirdly, the taxi industry operates in direct competition with bus and rail services, which impacts on economic sustainability of the public transport system. Taxis are unsubsidized and overtrading is an issue. Competition for new routes often leads to aggressive confrontation and violence. Lastly, safety and security of commuters at stations and ranks as well as while traveling is of great concern, while

commuters are willing to pay less fares on faster modes of transport such as taxis, they are not willing to compromise their safety.

5.3.2 PERSPECTIVES OF BUSINESS OWNERS

Business owners, who reside in the area, were able to provide valuable information with regard to the potential of the area, and problems being experienced, which appear to hamper further development.

They are of the opinion that there are inadequate public facilities being provided by the Municipality to cope with the large numbers of commuters and general users of the area. Ablution facilities and formalized shelters are needed desperately by informal traders, in particular. Furthermore, they are of the opinion that it is the informal nature of the activities around the railway station and along streets that makes Isipingo appear chaotic.

Isipingo town centre, in particular the retail areas, are not maintained, and are run-down and dirty. An association called the Isipingo Enviro Forum, is, however, attempting to deal with the problem of pollution in the area by hosting campaigns to clean the streets on a regular basis.

The Municipality appears to be hampering development in the sense that current zonings on properties do not allow multiple dwelling units on a site. Land owners are hesitant to rezone properties as the process is costly and time consuming. The result is that vacant sites are being used as dump sites while others are being invaded by squatters and are being used by taxi operators as ranks and for washing of their vehicles.

According to the businessmen Isipingo has become unsafe and dangerous. This is due to there being insufficient street lighting and police presence. Furthermore, the derelict buildings within the town centre are havens for

criminals and drug lords. They are also of the opinion that people are afraid to use the train due to there being so many incidents of violence and theft while in transit.

Businesses in the area are dependent on commuters to and from the area, including pedestrians and passers-by, who are merely transferring modes of transport. They are of the opinion that private motor vehicle drivers become too frustrated when driving through Isipingo due to taxis stopping wherever it's convenient for them to pick up or drop off passengers. People that opt not to use public transport services shop elsewhere or very rarely in Isipingo town centre. In this regard, taxis need to be controlled, and public transport in general needs to be safer so that everybody will want to use it.

The business owners agree that Isipingo has a lot of potential to be as successful as any other central business district in terms of the variety of land uses that it offers and the fact that such large volumes of people pass through the town on a daily basis. The fact that the majority of businesses are concentrated along one main street makes it convenient for shoppers. The intense industrial zone in Prospecton also makes it convenient for people to find employment in the vicinity. (See Chapter 5.1.2)

The business owners were aware of the Municipality's initiatives to revitalize the town centre as they had been to public meetings and had voiced their opinions as to what was needed to improve the area. This showed their enthusiasm to see the area flourish to its fullest potential.

5.3.3 PERSPECTIVES OF COMMUTERS

On interviewing the commuters, they were asked to rate various quality parameters in terms of importance when choosing their mode of transport. The most important parameters were safety, comfort, and price and travel time.

Walking distance and number of transfers were relatively less important. The actual data can be quantified as follows:

Table 5: Factors influencing commuter's choice of mode of transport

Quality Parameters	% (of Commuters)
Travel time	48
Price	21
Frequency	15
Safety	9
Distance to walk	4
Comfort	2
Number of transfers	1
Total	100

Source: Field work.2007

The data in Table 5, above, indicates that while commuters are concerned about their safety while traveling, being able to catch a bus, train or taxi as frequently as is needed, at the right price, and with the shortest travel time is even more important.

Commuters were of the opinion that while taxis are not the safest mode of transport, it is quick and cheap to use. Furthermore, 9% of commuters were brave enough to divulge information such as the fact that in some instances they are forced to use taxis because their lives are threatened when approaching other modes of transport.

Many commuters were of the opinion that Isipingo does not need any major changes as it is convenient for shopping and working. It offers both formal and informal trading, which means that there are competitive prices. Furthermore, they are of the opinion that Isipingo is well linked to the city centre, north and south coast, by rail, bus and taxi, which makes it very convenient.

Safety and security is, however, of great concern to commuters, both on the streets as well as while in transit, especially on the train.

5.3.4 PERSPECTIVES OF RAIL, TAXI AND BUS SERVICE PROVIDERS

According to Metro Rail due to the low cost of tickets (Isipingo to Durban: R3.20, Isipingo to Umkomaas: R3.70, and Isipingo to Stanger: R7.50), the frequency of trains, and the fact that the line that runs through Isipingo services such an extensive area, makes it a viable mode of transport. Kelso is the furthest point to the south, and the line splits in Durban Central, where it continues to Stanger in the north.

The problem is that many commuters continue to associate the rail system with lack of frequency and punctuality due to past experience, even-though improvements have been made.

Metro Rail is of the opinion that the train station needs to be upgraded in order to attract more commuters. More lighting needs to be provided and it would be ideal if an underground walkway could be created that would link the commuters to the economic facilities across Old South Coast Road. This would also be beneficial during inclement weather. Security also needs to be improved within the station.

Furthermore, according to the Market and Customer Planning Manager (Metro Rail), Metro Rail is currently working very closely with eThekweni Transport Authority in order to find ways of improving its service and promoting the use of public transport in order to ease congestion on the roads. Furthermore they are working hand-in-hand to enforce the Land Use / Transport Strategy, which is to develop Isipingo Station as a major transfer hub in the south; and to create a well-designed functional (integrated) inter-modal transfer facility that will distribute users efficiently to their destinations.

As mentioned earlier, during the interviewing phase of this dissertation, it was difficult to interview taxi operators due to friction among operators at the time. From records, such as the number and extent of routes taken by taxis from and to Isipingo and the number of passengers that utilize the taxis as a mode of travel, obtained from eThekweni Transport Authority's Current Public Transport Records, it can be ascertained that the taxi service covers a vast area and that it has great potential in terms of playing a major role within the inter-modal transport node at hand.

Currently, taxi feeder services from the surrounding area bring passengers to the station, from which rail and bus services move passengers to employment opportunities predominantly to the north. Taxi operators also do direct trips from Isipingo and surrounds to the city and other areas. This, however, creates tension among service providers due to competition and domination of the taxi industry over other modes of transport.

Bus services also play a major role within this inter-modal transport node, however, a major issue is that bus and rail services operate in direct competition. Unsubsidized bus services are deteriorating and many bus trips operate with low passenger loads even in peak periods. According to bus owners, unless initiatives are taken that restrict certain routes to particular modes of transport, the bus service is going to deteriorate completely.

5.4 CONCLUSIONS

To what extent does Isipingo match up to the expectations of an inter-modal transport node?

From the interviews conducted it became apparent that the city officials, private consultants, and businessmen, in particular, see great potential in renewing the

town centre. They are of the opinion that Isipingo is a thriving town, which has all the elements that make it a successful urban centre or node.

Residents, however, believe that there is lack of commitment from the relevant stake-holders and role-players who will ensure that the town is upgraded to its fullest potential. These residents / business owners have lived in the town for decades, and are proud of it due to the transition that has taken place from the apartheid era to date.

A common aspect that they thought needs attention was the attractiveness of the town centre or rather the lack of it.

The commuters appear to be happy with the services that are being provided to them with regard to public transport, however, they were very skeptical about providing details in terms of their trip origin and destination, obviously for security reasons, and perhaps due to current taxi violence brought about by competition for routes.

The public transport service providers, in particular rail, are extremely optimistic about future developments and plans to formalize the modal interchange facilities. Unfortunately, the same cannot be said for the taxi associations as they are very suspicious about future developments and are weary of the fact that if other modes of transport are enhanced due to public investment, that their services will be ignored by commuters, and that they will be unable to compete.

The interviews, particularly, those with city officials and Metro Rail proved very useful and informative. While Isipingo does not appear to portray any potential due to the littered streets and informal nature of the taxi ranks and informal trading, and so on, the field work revealed that Isipingo has existing infrastructure, which if enhanced upon appropriately according to its current function as an inter-modal transport node, it has the potential of becoming a

successful urban renewal initiative which planners can aspire to when developing other nodes.

CHAPTER 6: RECOMMENDATIONS AND CONCLUSIONS

6.1 INTRODUCTION

Accessibility to basic needs and economic opportunities remains one of the biggest challenges in the urban areas of South Africa. Currently 38% of all urban households, within the Durban metropolitan area, face the daily challenge of basic affordable access, as no affordable means are available to them within the current transport system. Up to 29% of the urban population use public transport, with most of these (19% of all urban dwellers) being captive to the cheapest mode of transport. This clearly illustrates the high dependence on public transport for the functioning and development of cities. (CSIR.2003.1)

In order to increase the demand for public transport, decisions as to where to locate land-use developments need to be considered carefully. For example, the location of residential areas affects the origin locations of most trips made, while the location of social and economic activities to which people travel has a bearing on the pattern of urban transport destinations.

The recommendations made in this chapter are based on the information collated in previous chapters, and are made in order to enhance Isipingo as an inter-modal transport node within the eThekweni Municipal area.

6.2 SUMMARY OF FINDINGS

In section 1.4 the researcher documented 6 sub-questions, which aid to answer the main research question. Answers to these 6 sub-questions were dealt with in a very systematic manner. The history and evolution of Isipingo from a small town on the rural periphery of Durban to its present role as an important metropolitan node was explained in section 4.2. Present day land uses were described in section 5.1, section 5.2 discussed the transport linkages and

networks that exist between Isipingo, its surrounding suburbs and the rest of the metropolitan area. Sections 3.1 and 3.4 explained the role and function of an inter-modal node within the context of Metropolitan Durban. Sections 4.3 and 5.3 discussed the extent to which Isipingo matches up to the expectations of an inter-modal transport node, and presented perspectives of relevant stakeholders, which highlighted problems that impede the functioning of the node to its fullest potential. Lastly, section 6.4 in the latter part of this chapter discusses interventions to be undertaken in order to improve the functionality of Isipingo as a metropolitan node.

The researcher has therefore managed to successfully answer the main research question, which is, 'To what extent does Isipingo function effectively as an inter-modal transport node in metropolitan Durban?' Section 6.3, below, provides conclusive evidence as to why Isipingo does have potential in terms of being an inter-modal transport node.

6.3 CONCLUSIONS

It can be concluded that Isipingo has potential in terms of a successful inter-modal transport node as:

- It is an existing and well-established mode interchange point;
- It is highly accessible;
- It forms part of the north-south corridor in the context of the eThekweni Municipal area;
- It has high generative potential as it is an established town centre that is closely linked to extensive existing industrial and commercial nodes;
- It comprises of mixed - land uses, which attracts large numbers of people to the area constantly;
- The informal traders, though they appear an eye-sore at first glance, add to the intensity and vibrancy of the local market;

- There appears to be an integration of land uses and transport, in the sense that they support and depend on each other;
- The prevalent variety / choice in modes of transport makes it extremely attractive to commuters;
- Existing infrastructure such as the railway station is a key element in this inter-modal transport node.

Movement is not an independent issue. It is only one element of urban public structure. The challenge is to integrate movement with other public elements of structure to generate broadly agreed desirable urban outcomes. Central to this is the need to generate strong decentralized patterns of accessibility in order to encourage decentralized patterns of opportunities and activities. It is necessary to seek not just the co-ordination of land use and transportation but the structural use of transport to bring about close integration between movement and more intensive urban activities. This relates directly to generating urban opportunities closer to the places where the majority of people live, more specifically, closer to where the poorer people live.

It is vital that pedestrian-friendly environments are created and to commit to the achievement of efficient and viable public transport systems.

Housing and transportation policies need to be synchronized to create the pre-conditions for efficient viable public transportation to come about. High densities have to be generated around major public transportation corridors and housing mechanisms must be found to stimulate this.

It is necessary for agencies commissioning transportation projects to forge much closer working alliances between transportation planning, urban design and urban planning. There has to be a common acceptance of the problem and of the way forward.

Transport has a major influence on development. At the same time it is impacted by development and land use. Consequently, the eThekweni Transport Authority's vision for transport recognizes the imperatives of the Integrated Development Plan 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.

One cannot deny the fact that the majority of people continue to live far from economic opportunities, are not able to access social and recreational sites and generally have poor access to government and administrative institutions. This is of course exacerbated by our persistent inadequate public transport system evidenced by the lack of integration of different modes of transportation and lack of integration of land use and transport planning. eThekweni Transport Authority's vision should be to provide a high quality public transport system and services that is responsive to the multiple needs of commuters and other transport stakeholders so that public transport becomes the preferred choice of transportation.

From the findings of the research, the hypothesis of this dissertation is apparent. While urban centres all over the world may have similar characteristics in terms of their function, physical appearances may differ. Isipingo is an example of an urban centre that may appear to be degenerating physically; however, it is a very successful town as it provides shopping and social facilities for local residents and people in adjoining areas such as Umlazi, and it is a major transport interchange point. With appropriate planning intervention from the private and public sector, Isipingo's potential will be enhanced.

6.4 RECOMMENDATIONS

What interventions could be undertaken to improve the functionality of Isipingo as an inter-modal transport node within the eThekweni Municipal area?

1. In order to develop Isipingo Station as a major transfer hub in the south; and to create a well-designed functional (integrated) inter-modal transfer facility that will distribute users efficiently to their destinations, the following measures have to be taken:
 - Formal facilities and infrastructure will have to be provided for informal traders;
 - More mixed land use segments (commercial and retail) will have to be developed along Old South Coast Road;
 - The appearance and cleanliness of the area has to be improved;
 - A well-planned modal interchange facility at Isipingo Station will have to be developed; and
 - Parking along the Old South Coast Road will have to be limited, with preference given to public transport vehicles.

2. Urban design must ensure that land-use mix and the location thereof, as well as the development of higher density residential developments is done in such a way that the use of the private car is discouraged and pedestrian movement and the use of public transport is encouraged. This could be done by providing attractive taxi and bus stop shelters, and by redesigning the Isipingo train station in such a way that it becomes a vibrant economic and social space that will be safe due to a constant presence of people.

3. The station or rather the modal interchange point must be made highly functional and aesthetically pleasing to entice private car users into using

public transport. Ease of inter-modal transfer should be ensured through the appropriate design of the station. An effective marketing campaign to boost public transport use must also be embarked on.

4. In order to achieve higher residential densities, the Municipality needs to make amendments to its Town Planning Schemes, which will permit residential zoned land to be developed to its' fullest potential.
5. Crime prevention should be promoted; there should be greater police presence, and perhaps the use of closed-circuit televisions within the town centre. Streets also require adequate lighting.
6. An effective marketing campaign to boost public awareness on the conservation of our environment and encouraging the use of refuse bins must be embarked on so that the streets of Isipingo remain clean and attractive to commuters, pedestrians and potential investors.
7. Extensive ablution facilities for pedestrians, commuters, operators and traders need to be provided, along with formal facilities at strategic trading points and ranks.
8. In order to facilitate the conflict of interest between residents and taxi operators due to a significant proportion of ranks being established on vacant privately owned lots, the Municipality needs to purchase these sites or relocate ranks. Another solution would be the rezoning of these sites so that they can be developed appropriately and not left under utilized.
9. Isipingo town centre must become the foci of civic identity of the broader area. It should be a place of highest concentration of residential,

commercial, social, cultural and other general urban activities. It must also be characterized by 24 hour activity.

10. There must be strong and passionate commitment to quality, maintenance and completion of the envisaged modal interchange facilities from all the stakeholders and role-players in order to maintain a sustainable environment.
11. In order to avoid conflict among public transport operators, all modes of public transport need to be integrated in terms of both routes and operations. A forum should be set up to facilitate communication among operators.
12. On researching the topic at hand, the researcher found that while Isipingo is such a well-established town, insufficient work has been documented on the area. This dissertation was limited in terms of length and research due to time constraints. The findings, however, conclude that Isipingo does have potential as an inter-modal transport node within the eThekweni Municipal area. It is therefore recommended that further comprehensive research be done on the role of the area as an inter-modal transport node within the eThekweni Municipal area.

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ANNEXURE A: PROMPTS FOR INTERVIEWS WITH STAKEHOLDERS

Prompts for City Officials and Private Consultants

1. Why is Isipingo considered an important inter-modal transport node within the Durban Metropolitan Area?
2. What functions are inter-modal transport nodes suppose to play within a city?
3. Is Isipingo adequately performing the functions expected of an inter-modal transport node?
4. Is it necessary to revitalize Isipingo?
5. What is the desired outcome of the revitalization of the town?
6. Do you think that a public, private, or public-private partnership should be adopted for the revitalization of Isipingo?
7. What initiatives have been taken to revitalize the town thus far?
8. Do you personally think that Isipingo has the potential to be a successful transport node?

Prompts for Business Owners

1. For how long have you or any family members' lived in the area?
2. What insight can you provide in terms of the history of the evolution of the area?
3. Is development in the area being restricted and is there any potential for development in the area?
4. How prosperous are the businesses in the area?
5. Do the businesses rely on the commuters that converge in the area?
6. What planning interventions are necessary, if any, to revitalize the area and make it function more effectively?
7. Would you be willing to enter into a public-private partnership in order to revitalize Isipingo?

Prompts for Taxi, Railway & Bus Service Providers

1. How dependent are commuters on your services?
2. What distances (from/to where) do commuters travel and at what cost?
3. Is Isipingo a commuters' final destination?
4. Is Isipingo a point of convergence at which they switch their modes of transport in order to get to the city centre and surrounds?
5. Do you think it's necessary to make changes to Isipingo?
6. What interventions or improvements to the area will aid you in terms of providing a better service?

Prompts for Commuters

1. Where do you travel to and from?
2. Is it on a daily basis?
3. How dependent are you on Isipingo for your transport?
4. Do you live, work or shop in Isipingo?
5. Is Isipingo your final destination?
6. Is Isipingo a point of convergence at which you switch your mode of transport in order to get to the city centre or surrounds?
7. Do you think it's necessary to make changes to Isipingo?
8. What interventions or improvements to the area will be beneficial to you as a commuter?
9. When choosing your mode of transport, what is more important to you: safety, comfort, cost, travel time, walking distance or number of transfers?