



UNIVERSITY OF KWAZULU-NATAL

Planned, Local Development Corridors within eThekweni Municipality: The case of Bellair
Road Development Corridor, Cato Manor, Durban.

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DECLARATION

I, Sireena Ramparsad declare that

- (i) The research reported in this dissertation, except where otherwise indicated, is my own.
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ABSTRACT

There is a growing concern in urban growth management as cities around the world are rapidly becoming [or have become] urbanized. Placed within the context of sustainable urban form and development, this study demonstrates the implementation of planned local development corridor initiatives using the Bellair Road Development Corridor case study. The main aim is to explore the factors responsible for influencing the extent to which the corridor is achieving its objectives.

Using research methods such as interviews, observation, land use surveys, statistics and secondary data, it was found that the Bellair Road Development corridor is complex with various facets of land use and transportation planning. All these aspects need to function in cohesion to reach initial objectives. Also, changing local dynamics influence the functionality of a corridor which may alter the status quo, hence constant monitoring and evaluation is imperative. Importantly, it was found that management and market forces play a major role in the corridor reaching its objectives. This is true especially when the private sector is incorporated.

While the initial anticipation was for the area to progress to a mixed income environment to support economic activity, this has not been attained. Market forces and affordability have kept business slow and crime is driving away private sector investment. While in certain instances there is interest from private sector to purchase property, this is hampered by lack of registered land which needs township registers to be opened and land to be consolidated and subdivided to be sold via public tender. Other land related issues include land invasion and the pressing needs to provide homes to an ever increasing informal settlement. Business support is available to aid small business in the area. Here an important lesson is learnt, while infrastructure and access to services is made available, in such a context, there needs to be further assistance to would-be investors. The lack of suitable trip attractions along the corridor/activity street creates a poor number of people spending their money within the local area and travel outside to obtain goods and services. Road/street upgrades and links are needed to de-isolate the community and accelerate integration with other areas. The attractiveness of the corridor is also poor with an unkempt natural environment, pollution and increased informality, which drives investors away.

A common vision and integration of different actors is a key factor towards the positive implementation of this initiative. It was also found that the development corridor concept and principles exhibit sustainable urban form. Also, within South Africa, there is a widespread consensus on the positive impacts of the corridor for integration and sustainable resource allocation as seen through local and regional policies and strategic frameworks.

TABLE OF CONTENTS

| | |
|--|-----------|
| ABSTRACT..... | iv |
| LIST OF FIGURES..... | vii |
| LIST OF TABLES..... | viii |
| LIST OF ACRONYMS | ix |
| CHAPTER 1: INTRODUCTION AND RESEARCH METHODOLOGY | |
| 1.1 INTRODUCTION | 2 |
| 1.2 BACKGROUND | 2 |
| 1.3 STUDY AREA..... | 4 |
| 1.4 MOTIVATION | 7 |
| 1.5 LIMITATIONS OF THE STUDY | 7 |
| 1.6 PROBLEM STATEMENT | 8 |
| 1.7 RESEARCH QUESTION | 8 |
| 1.8 RESEARCH OBJECTIVES..... | 8 |
| 1.9 SUBSIDIARY RESEARCH QUESTIONS | 9 |
| 1.10 RESEARCH METHODOLOGY..... | 9 |
| CHAPTER 2: CONCEPTUAL FRAMEWORK | 16 |
| 2.1 INTRODUCTION | 16 |
| 2.2 MODERN, POST-MODERN AND SUSTAINABLE CITIES: HISTORICAL CONTEXT AND IMPACT ON CURRENT URBAN LANDSCAPES..... | 16 |
| 2.3 SUSTAINABLE CITIES | 17 |
| 2.4 PRINCIPLES OF URBAN RESTRUCTURING AND SUSTAINABLE URBAN FORM..... | 18 |
| 2.4.1 SUSTAINABLE URBAN FORM: DESIGN CONCEPTS..... | 19 |
| 2.4.2 COMPACT CITIES AND RELATED APPROACHES | 21 |
| 2.4.3 RELATED CONCEPTS | 23 |
| 2.5 THE SOUTH AFRICAN CITY | 25 |
| 2.5.1 THE EVOLUTION OF DEVELOPMENT CORRIDORS IN SOUTH AFRICA | 26 |
| 2.6 POST-APARTHEID POLICIES, STRATEGIES AND PLANS | 28 |
| 2.6.1 NATIONAL LEVEL | 29 |
| 2.6.2 PROVINCIAL LEVEL | 30 |
| 2.6.3 ETHEKWINI LOCAL STRATEGIC PLANNING | 30 |
| 2.6.4 CATO MANOR LAND USE MANAGEMENT FRAMEWORK (LUMF), 2003..... | 36 |
| 2.6.5 CATO MANOR LOCAL ECONOMIC DEVELOPMENT FRAMEWORK REVIEW AND DEVELOPMENT OF A SUSTAINABILITY SUPPORT MODEL, 2011 | 37 |
| 2.7 CONCLUSION | 38 |
| CHAPTER 3: LITERATURE REVIEW | 40 |
| 3.1 INTRODUCTION | 40 |
| 3.2 DEFINITION AND SCALE..... | 40 |
| 3.3 KEY CORRIDOR ELEMENTS FOR ACTIVITY STREETS AND LARGE URBAN CORRIDORS..... | 43 |
| 3.4 KEY CHARACTERISTICS OF CORRIDORS..... | 43 |
| 3.5 OTHER IMPORTANT CONSIDERATIONS | 44 |
| 3.6 IMPACTS OF CORRIDOR DEVELOPMENT | 45 |
| 3.7 PRECONDITIONS FOR ESTABLISHING SUCCESSFUL DEVELOPMENT CORRIDORS..... | 47 |
| 3.8 KEY PERFORMANCE VARIABLES AND SUCCESS FACTORS IN CORRIDOR DEVELOPMENT..... | 49 |
| 3.8.1 ECONOMIC ACTIVITIES..... | 50 |
| 3.8.2 TRANSPORT ACTIVITIES | 51 |
| 3.8.3 NATURAL ENVIRONMENT | 51 |
| 3.8.4 SOCIAL ENVIRONMENT | 51 |
| 3.8.5 URBAN RESTRUCTURING AND PHYSICAL/BUILT ENVIRONMENT OBJECTIVES | 52 |
| 3.8.6 INSTITUTIONAL CONSIDERATIONS | 53 |
| 3.9 STAGES OF CORRIDOR DEVELOPMENT AND THE PLANNING LIFE CYCLE OF A CORRIDOR | 54 |
| 3.10 CRITICAL CONSIDERATIONS OF CORRIDOR DEVELOPMENT | 55 |
| 3.11 EXISTING RESEARCH ON CORRIDORS IN CATO MANOR | 57 |

| | | |
|--|--|------------|
| 3.12 | CONCLUSION | 57 |
| CHAPTER 4: BELLAIR ROAD DEVELOPMENT CORRIDOR CASE STUDY | | 59 |
| 4.1 | INTRODUCTION | 59 |
| 4.2 | HISTORY OF DEVELOPMENT IN CATO MANOR..... | 59 |
| 4.3 | EXPERIENCE WITH SPATIAL AND DEVELOPMENT PLANNING AND IMPLEMENTATION MECHANISMS | 60 |
| 4.4 | ENVISAGED EXTENT AND CHARACTER OF THE BELLAIR ROAD CORRIDOR | 65 |
| 4.5 | PARTNERSHIPS AND FUNDING..... | 67 |
| 4.6 | LAND USE MANAGEMENT SYSTEM..... | 67 |
| 4.6.1 | LAND LEGAL ISSUES..... | 69 |
| 4.7 | INSTITUTIONAL ENVIRONMENT..... | 69 |
| 4.8 | EXPERIENCES WITH IMPLEMENTATION PRE 2007 AND KEY CONSTRAINTS | 71 |
| 4.8.1 | CHALLENGES | 71 |
| 4.8.2 | SUCCESS FACTORS | 74 |
| 4.9 | CONCLUSION | 75 |
| CHAPTER 5: FINDINGS AND ANALYSIS | | 77 |
| 5.1 | INTRODUCTION | 77 |
| 5.2 | SOCIO-ECONOMIC PROFILE..... | 79 |
| 5.2.1 | DEMOGRAPHIC PROFILE | 79 |
| 5.2.2 | EMPLOYMENT STATUS, 2011..... | 80 |
| 5.2.3 | ANNUAL HOUSEHOLD INCOME, 2011 | 81 |
| 5.3 | TRANSPORT ASSESSMENT..... | 82 |
| 5.3.1 | NON-MOTORISED TRANSPORT..... | 82 |
| 5.3.2 | ON-STREET PARKING..... | 83 |
| 5.3.3 | TRAFFIC CALMING | 83 |
| 5.3.4 | SURVEILLANCE..... | 83 |
| 5.3.5 | VEHICLE OWNERSHIP | 83 |
| 5.3.6 | SUPPORTING TRANSPORT INFRASTRUCTURE | 85 |
| 5.3.7 | FUTURE PROJECTS..... | 85 |
| 5.3.8 | ACCESSIBILITY AND ROAD HIERARCHY..... | 86 |
| 5.3.9 | KEY AREAS FOR CONSIDERATION | 91 |
| 5.4 | LAND USE ASSESSMENT | 92 |
| 5.4.1 | HOUSING | 92 |
| 5.4.2 | NATURAL ENVIRONMENT | 99 |
| 5.4.3 | AESTHETIC ENVIRONMENT AND GENERAL CHARACTER OF THE CORRIDOR | 103 |
| 5.4.4 | SOCIAL ENVIRONMENT..... | 105 |
| 5.4.5 | INFRASTRUCTURE..... | 108 |
| 5.4.6 | ECONOMIC ENVIRONMENT | 109 |
| 5.4.7 | SURROUNDING NODES OF ECONOMIC ACTIVITY | 115 |
| 5.4.8 | LAND USE MANAGEMENT AND LAND RELATED ISSUES | 118 |
| 5.5 | EXISTING LAND USE | 120 |
| 5.6 | INSTITUTIONAL ASSESSMENT | 122 |
| 5.7 | DISCUSSION OF KEY FINDINGS..... | 123 |
| 5.8 | CONCLUSION | 129 |
| CHAPTER 6: CONCLUSION AND RECOMMENDATIONS..... | | 131 |
| 6.1 | CONCLUSIONS..... | 131 |
| 6.2 | RECOMMENDATIONS | 133 |
| 7 | BIBLIOGRAPHY | 136 |
| 8 | ANNEXURE A – CORRIDOR DEFINITIONS..... | 143 |
| 9 | ANNEXURE B – QUESTIONNAIRE SCHEDULE | 145 |

LIST OF FIGURES

| | |
|--|-----|
| Figure 1: Locality map of bellair road development corridor (Source: ramparsad, 2010) | 6 |
| Figure 2 - Model of the Apartheid City (Source: Google Images) | 25 |
| Figure 3: Hierarchal Suite of Plans (Source: eThekweni Municipality IDP 2012/13-2016/17) | 32 |
| Figure 4: Central Spatial Development Plan Map (Source: eThekweni Municipality Central SDP, 2013) | 35 |
| Figure 5: The generic Components of a Corridor (KZN PPDC, 2008 <i>and author, 2012</i>) | 41 |
| Figure 6: Preconditions for successful integration of transit and land use (Source: Cervero, Luchi and Suzuki, 2013)..... | 49 |
| Figure 7: Planning Life Cycle of a Corridor (Source: Reconstructed by the author from KZN PPDC, 2008)..... | 54 |
| Figure 8: Bellair Road Corridor Concept (Source: A Policy Framework for Greater Cato Manor 1992) | 66 |
| Figure 9: Left image: Cross section of Bellair Road Corridor, Right image: Street Level Scene of Bellair Road Corridor (Source: A Policy Framework for Greater Cato Manor, 1992) | 66 |
| Figure 10: Bellair and Booth Road Node (Source: A Policy Framework for Greater Cato Manor, 1992) | 67 |
| FIGURE 11: PROPOSED COMPREHENSIVE PLANNING SCHEME FOR THE BELLAIR ROAD NORTH CORRIDOR PROJECT | 69 |
| Figure 12: Study Area Delineation (Source: author, 2014) | 78 |
| Figure 13: Employment and unemployment rates 2011 (source: census south africa, 2011) | 80 |
| Figure 14: employment sector 2011 (source: census south africa, 2011)..... | 81 |
| Figure 15: Image showing road reserve (Source: Author, 2012) | 82 |
| Figure 16: Non-motorised transport (Source: Google Earth Images, 2014 and Author, 2012) | 83 |
| Figure 17: Image showing public transport infrastructure (Source: Google Images, 2014 and Author, 2014) | 86 |
| Figure 18: Map showing the Road Hierarchy and IRPTN Routes (Source: Author, 2014) | 88 |
| Figure 19: Dwelling Types, 2011 (Source: Census South Africa, 2011)..... | 93 |
| Figure 20: Image showing one-house per plot typology (Source: Google Earth Images, 2014)..... | 93 |
| Figure 21: Image showing verticle mix of activitIES in double storey semi-detached buildings (Source: google earth images, 2014) | 94 |
| Figure 22: Image showing informal settlements along vusi mzimela road (Source: Author, 2013)..... | 94 |
| Figure 23: images showing double storey attached units (Source: Author, 2015)..... | 95 |
| Figure 24: Tenure Status of Households in Study Area (Source: Census, 2011) | 96 |
| Figure 25: Cato Manor Housing Plan Map showing planned housing developments (Source: ethekweni housing department, 2014 and Author, 2015) | 99 |
| Figure 26: Image showing polluted environment (Source: google Earth images, 2014) | 100 |
| Figure 27: image showing dense vegetation along the corridor (Source: google earth images. 2014) | 101 |
| Figure 28: environmental map of the corridor (Source: Author, 2015) | 102 |
| Figure 29: Image showing lack of street frontage creating barriers (Source: google earth images, 2014) | 103 |
| Figure 30: Image showing derelict building (Source: google earth images, 2014) | 104 |
| Figure 31: Image showing unkempt natural environment (Source: google earth images, 2014) | 104 |
| Figure 32: Substation (Source: author, 2014)..... | 104 |
| Figure 33: Images showing cultural land uses within the corridor (Source: author, 2014)..... | 105 |
| Figure 34: Image showing Ekhupheleni clinic (source: google earth images, 2014) | 106 |
| Figure 35: Social Facilities map (source: author, 2014) | 107 |
| Figure 36: Image of bellair shopping centre showing closed retail space during the day (source: google earth images, 2014) | 110 |
| Figure 37: Bellair market (source: google earth images, 2014)..... | 110 |
| Figure 38: Images showing inside of the market facility (source: author, 2014)..... | 111 |
| Figure 39: Image showing utilized and unutilized informal trader stalls within the wiggins/Bellair Node | 112 |
| Figure 40: Image showing informal economic activity at the wiggins/bellair node (source: google earth images, 2014)..... | 113 |

| | |
|---|-----|
| Figure 41: Image showing formal and informal economic activity at the wiggins/bellair node(source: google earth images, 2014) | 113 |
| Figure 42: Map showing surrounding nodes of activity (source: author, 2015)..... | 117 |
| Figure 43: Land Use Zoning Map (Source: Author, 2015)..... | 119 |
| FIGURE 44: MAP OF EXISTING LAND USE WITHIN THE BELLAIR ROAD CORRIDOR (SOURCE: AUTHOR, 2015) .. | 121 |

LIST OF TABLES

| | |
|--|----|
| TABLE 1: LIST OF KEY INFORMANT INTERVIEWEES | 12 |
| TABLE 2: PERCEIVED BENEFITS AND PROBLEMS WITH SUSTAINABLE URBAN FORMS (SOURCE: CASSWELL, 2009) | 20 |
| TABLE 3: KEY CHARACTERISTICS OF GREATER CATO MANOR (SOURCE: ETHEKWINI MUNICIPALITY CENTRAL SDP, 2013)..... | 35 |
| TABLE 4: STATEMENTS OF INTENT FOR RESPECTIVE CORRIDOR PRECINCTS (SOURCE: CATO MANOR LUMF, 2003)..... | 37 |
| TABLE 5: CORRIDOR ELEMENTS FOR URBAN SCALE CORRIDORS (SOURCE: KZN PPDC, 2008) | 43 |
| TABLE 6: LAND USE PROPOSALS FOR ACTIVITY CORRIDORS IN CATO MANOR (SOURCE: CATO MANOR STRUCTURE PLAN, 1997 IN CATO MANOR LUMF, 2003 AND WIGGINS SPATIAL PRECINCT PLAN 1994) | 60 |
| TABLE 7: ENVISAGED CHARACTERISTICS OF THE BELLAIR ROAD DEVELOPMENT CORRIDOR..... | 63 |
| TABLE 8: POPULATION (SOURCE: CENSUS SOUTH AFRICA, 2011)..... | 79 |
| TABLE 9: POPULATION DENSITY PER HECTARE (SOURCE: CENSUS SOUTH AFRICA, 2011) | 79 |
| TABLE 10: ANNUAL HOUSEHOLD INCOME 2001 – 2011 (SOURCE: CENSUS SOUTH AFRICA 2001, 2011) | 81 |
| TABLE 11: ACCESS TO A MOTOR VEHICLE (SOURCE: CENSUS, 2011) | 84 |
| TABLE 12: TRANSPORT MODE OF CATO MANOR RESIDENTS (SOURCE: ETHEKWINI HOUSEHOLD TRAVEL SURVEY, 2008) | 84 |
| TABLE 13: JOURNEY TIMES DURING AM PEAK (SOURCE: ETHEKWINI HOUSEHOLD TRAVEL SURVEY, 2008) | 85 |
| TABLE 14: HIERARCHY AND ACCESSIBILITY TO BELLAIR ROAD | 89 |
| TABLE 15: NUMBER OF HOUSEHOLDS (SOURCE: CENSUS SOUTH AFRICA, 2011)..... | 95 |
| TABLE 16: HOUSEHOLD DENSITY PER HECTARE (SOURCE: CENSUS SOUTH AFRICA, 2011) | 96 |

LIST OF ACRONYMS

ABM – Area Based Management
CBD – Central Business District
CMCO – Cato Manor Community Organisation
CMDA – Cato Manor Development Agency
CMDF – Cato Manor Development Framework
CSIR – Council for Scientific and Industrial Research
CSP – Central Spatial Plan
D'MOSS – Durban Metropolitan Open Space System
FAR – Floor Area Ratio
FET – Further Education and Training
IDP – Integrated Development Plan
IRPTN – Integrated Rapid Public Transport Network
ITP – Integrated Transport Plan
KZN – KwaZulu-Natal
KZNDOH – KwaZulu-Natal Department of Human Settlements
LED – Local Economic Development
LUMF – Land Use Management Framework
LUMS – Land Use Management System
MDC – Maputo Development Corridor
NGP – National Growth Path
NMT – Non-Motorised Transport
NSDP – National Spatial Development Plan
NUDF – National Urban Development Framework
PGDP – Provincial Growth and Development Plan
PGDS – Provincial Growth and Development Strategy
PPDC – Provincial Planning and Development Committee
PSEDS – Provincial Spatial Development Strategy
SAPS – South African Police Service
SDB – South Durban Basin
SDF – Spatial Development Framework
SDI – Spatial Development Initiative
SDP – Spatial Development Plan
SMME – Small, Medium and Micro Enterprise
SOI – Statement of Intent
SPLUMA – Spatial Planning and Land Use Management Act
TOD – Transit Oriented Development

CHAPTER ONE: INTRODUCTION AND RESEARCH METHODOLOGY

1.1 INTRODUCTION

This dissertation is focussed on the implementation of planned development corridor initiatives as a spatial strategy to restructure South African Cities. This is done by creating accessibility to socio-economic opportunities by strategically integrating land use and transportation planning. The development corridor concept as used in the South African context is demonstrated through in-depth analysis of the Bellair Road Development Corridor, Cato Manor as a unique case in the lower income, urban context. The key lessons learnt from the analysis add to the field of knowledge intended for implementation of future initiatives.

1.2 BACKGROUND

Cities are a complex mixture of the natural, economic, social, cultural and built environment. Cities are both a user and resource as they have natural and social capital and therefore have an ecological footprint.

The average population growth rate in developing countries is three and a half times more than in developed countries (with developing countries having 82% of the world's population) (UNSHP, 2012). Ninety-one percent (91%) of the world's urban population daily increase is expected to take place in developing countries. According to the UN Habitat publication, the South African urbanisation rate in 2010 was 61.7% and is projected to reach 66.6% on 2020 and 71.3% in 2030. Durban's urban population is expected to grow to 3.026 million in 2015 and 3.421 million in 2020 with a growth rate of 1% in the period 2010-2015. This will therefore have an impact on the social and spatial restructuring of cities. There is a growing concern in urban growth management as cities around the world are rapidly becoming [or have become] urbanized.

Cities of developing countries such as Angola, Egypt, Brazil, China, Nigeria etc. are growing in a low density, dispersed, discontinuous and unsustainable urban form. This is exacerbated by automobile dependency as can be seen with South African cities to accommodate population growth. Other trends to accommodate population growth in cities include the emergence of slums¹, increased pressure on waste management and the environment², rising unemployment, increasing crime rates, increased pressure on existing infrastructure³, climate change, increasing reliance on private vehicle ownership, income disparities, poverty⁴ etc.

¹ The proportion of the urban population living in slum areas in South Africa was 23% (7.055 million),

² Linked to traffic congestion, industrial effluent, air pollution, uncontrolled development placing pressure on the environment. This is seen throughout cities such as Lagos, Lusaka, Accra.

³ Such as water, sanitation, electricity, ICT, transport etc.

⁴ Even though cities are seen as being productive and competitive there is increasing poverty levels.

Accompanying an increasingly growing population is a greater demand on and backlog for well-located socio-economic opportunities, infrastructure and facilities. Government is faced with the challenge of addressing this increasing demand coupled with scarce resources and a limited budget. This challenge is integrally added to attempts to spatially integrate South African cities whose landscapes have been left socio-spatially fragmented as a result of dysfunctional urban development patterns inherited from modernist Apartheid planning. Following modernist planning regimes which are criticized for being unsustainable and control driven, planning experienced a shift to the postmodern era in response to globalisation, urbanisation and population growth. Contemporary planning evolved to create a sustainable city which is equitable for all walks of life. One of the tools / strategies that planners use to restructure and integrate South African cities to become more sustainable in the light of planning transitions over the years is planned urban development corridor initiatives.

A development/activity corridor is, *“a linear zone of mixed use, high density urban development concentrated along a high friction public transportation route”* (Martens, 2001), *with a mix of land uses in close proximity to one another, which is reinforced and connected by nodes and edges of intense activity.*

Development corridors come at various scales and are either classified as organic (develop themselves in response to local conditions) or planned (strategically planned). The distinction between organic and planned corridors lies in the fact that ‘organic urban corridors evolve over time with no deliberate [minimal] planning efforts to achieve the development pattern created’ (KwaZulu-Natal Provincial Planning and Development Commission (KZN PPDC), 2008) whereas planned urban corridors entail carefully planned actions that are intended to achieve a clearly defined set of developmental objectives therefore acting as a means for addressing a host of urban, economic, social and land-use distortions and spatial inefficiencies (Green, 2002). Corridors aim to integrate land use and transportation planning to increase accessibility to opportunities in the least costly⁵ manner.

Many South African cities such as Cape Town, Johannesburg, Durban and Pretoria are making extensive use of the concept of development corridor as a strategy for reshaping, densifying and integrating cities for various social and economic reasons. However, Durban which is situated in the province of KwaZulu-Natal, and governed by eThekweni Municipality is the main focus in the dissertation.

Use of the development corridor as a spatial strategy has gained momentum in KwaZulu-Natal over the past decade. Public investment in infrastructure in these development corridors have been identified and addressed within policy and legislation at the national (for example, National Spatial Development Perspective, The Development Facilitation Act,

⁵ Cost in terms of financial and environmental costs.

Municipal Systems Act), provincial (for example, the Provincial Spatial Economic Development Strategy) and local (Integrated Development Plans) scales, therefore prioritising the use of development corridors in order to densify and direct investments (eThekweni Municipality Integrated Development Plan (IDP), 2012) into these development initiatives.

Within eThekweni Municipality, many corridor projects have been planned during the post-Apartheid era such as Mariannhill, Cato Manor, the Inanda-Ntuzuma-KwaMashu network of corridors, a corridor through Umlazi and in Hillcrest/Gillitts area, the N2 Growth Corridor etc. (also identified through the Provincial Spatial Economic Development Strategy). An overarching problem related to this field of study, that was made apparent in the research project carried out for the Provincial Planning and Development Commission regarding development corridors in KwaZulu-Natal, is that ‘few corridors have successfully been implemented in Greenfield [planned] situations’⁶. There are many discrepancies in implementing the development corridor concept. The term is loosely used in many aspects of the development field. The perception is that few planned corridor initiatives have been implemented successfully in South Africa for various reasons.

This indicates that corridor development is challenging when much emphasis is placed on this concept as a strategy to intervene in complex socio-economic issues⁷. This is a grave problem since much time; resources and effort go into planning these initiatives. The process involves every discipline related to planning and development, such as transport, land use planning, environment and urban design. There are a number of issues which lead to this inherent problem such as the inconsistency of the role of corridors on a local scale (KZN PPDC, 2008), the separation of disciplines such as transport and land use planning for example, lack of integration and lack of political support. Also, after meetings with municipal officials, it became obvious that municipalities are still grappling with the planning and application of projects and there is little consensus on various aspects of the topic.

1.3 STUDY AREA

This study focuses on the Bellair Road Development Corridor. It is situated in Cato Manor within eThekweni Municipality. Please see map below for an illustration of the locality in relation to eThekweni. The corridor is situated 7 kilometres from the Durban Central Business District (CBD). Strategically located, the study area lies between the major transport networks of the M7, N3 and N2 and is accessible to other areas of economic activity in Durban (such as Springfield Industrial Park, Umbilo, Pinetown, South Durban Basin etc.). **Bellair Road which has been renamed as Vusi Mzimela** Road joins the wider urban fabric via Jan Smuts Highway in the North, Edwin Swales to the South, Franscois Road to the East and Booth and Spine Roads to the west. Bellair Road therefore acts as a throughway

⁶ Concluded from speaking to various municipal officials

⁷ Such as high unemployment rates, poor quality of lives, lagging and latent economic opportunities, poor access to economic and social infrastructure etc.

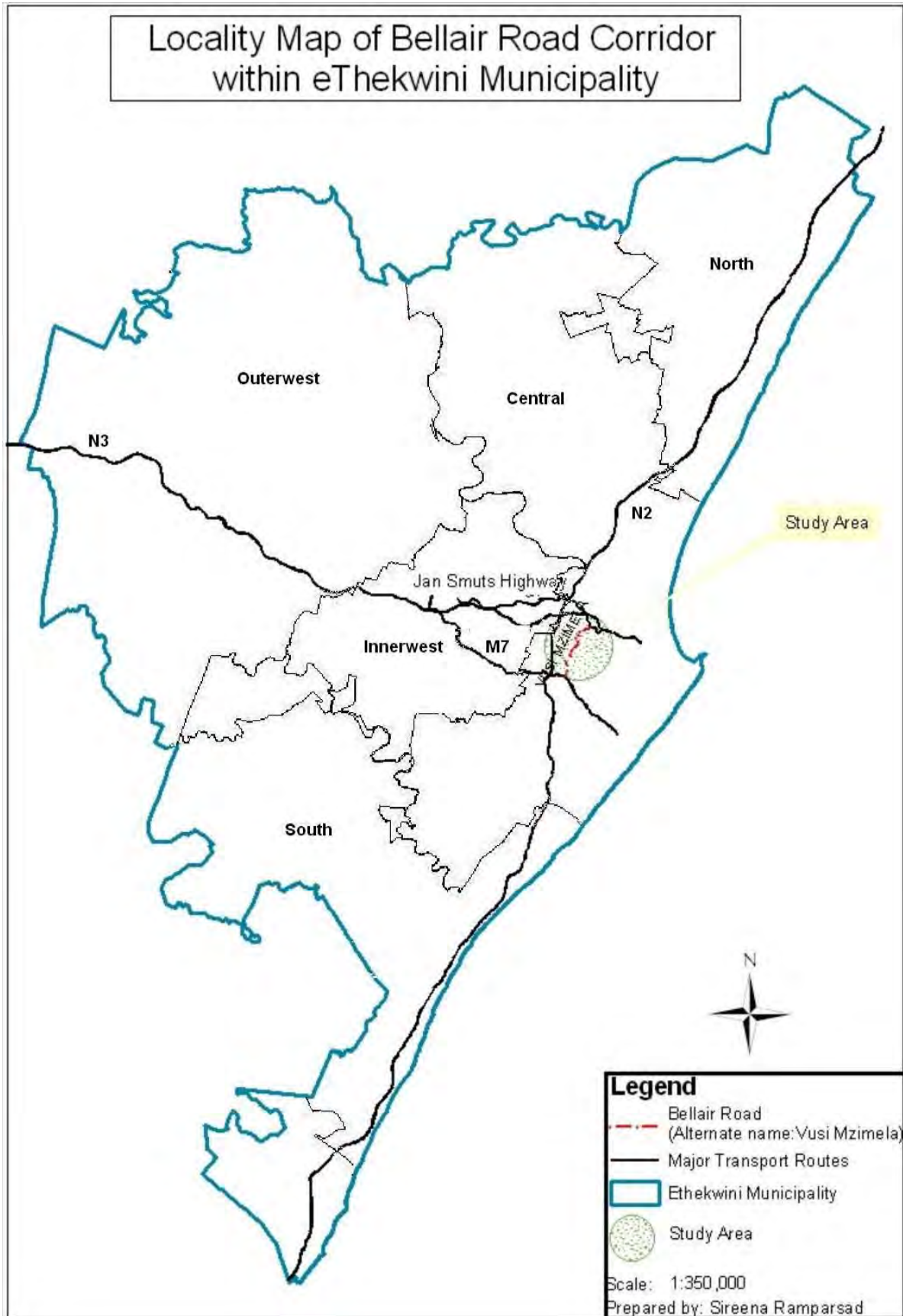
linking the Durban Central Business District to the South of Durban. Surrounding suburbs that are linked are Chatsworth to the south, Westville to the west, Manor Gardens to the east and Sydnem, Overport and Sherwood to the north. Please note that the road name for the corridor is referred to as both Bellair Road and Vusi Mzimela Road throughout this dissertation. The reason being is that the corridor was referred to as Bellair Road historically hence project related documentation refers as such. In addition, due to name changes, maps and recent documentation refer to the road as Vusi Mzimela Road.

The initial objectives for the Bellair Road Development corridor were to:

- 'Create economic opportunities for smaller enterprises,
- Improve access to facilities by public transport,
- To result in higher thresholds, which in turn contributes to economic sustainability and a more efficient public transport system,
- To integrate the area with the surrounding areas.' (Martens, 2002) and (Malulke Luthuli and Associates, 2008).

This corridor is categorised as a Greenfield project and is situated in a previously disadvantaged area which served as a buffer zone during the apartheid regime. Use of activity corridors in Cato Manor have been part of the Presidential Lead Project in an attempt to restructure a previous disadvantaged area which is highly contested. The spatial planning of Cato Manor has worked on the principles of integration and compact city development. As a result of the above mentioned problem, the scope of this dissertation lies within the local context.

FIGURE 1: LOCALITY MAP OF BELLAIR ROAD DEVELOPMENT CORRIDOR (SOURCE: RAMPARSAD, 2010)



1.4 MOTIVATION

Development Corridors and corridors in general seems to be the foci of various local and regional economic and social development strategies⁸. Bellair Road case study displays typical post-Apartheid planning in South Africa. The case study illustrates complex developmental issues that were attempted to be addressed through the development corridor concept. The case of the Bellair Road Development Corridor has been identified as not achieving its initial objectives and criticised as not being as functional as it was envisaged to be. This indicates that the concept is challenging to implement in reality.

Initiatives which are planned for and anticipated in municipalities offer limited evidence and follow up of their actual success or failure within municipalities. Lessons learnt are not documented well enough to allow for a precedent for similar future cases. As such, this dissertation is a systematic study of the corridor concept and its application in South African cities, particularly the Bellair Road Development Corridor. The purpose would be for the researcher to gain an in-depth understanding of the application of the corridor concept. This short dissertation adds to the field of knowledge in spatial planning drawing on contemporary planning practice and issues, policy etc. experienced by local government planning.

1.5 LIMITATIONS OF THE STUDY

Development corridors of all types prove to be a long term strategy which requires a vast amount of time to mature and develop in order to realise its full potential and impact on the surrounding environment within which it is planned. Considering this point, a long period of time needs to lapse before evaluation is undertaken after the initial, anticipated time to develop. However, this cannot dampen the enthusiasm to undertake research in this field as monitoring and evaluation/reviewing of the phases is pertinent to oversee the overall project successes⁹.

The development corridor concept is vast in nature and can be interpreted from varied angles. While corridors occur at different scales and contexts, this research project provides a case study in a low income urban context (inner city). This is a unique case as inner city land is scarce and restructuring efforts near places of employment (CBD) is difficult to achieve due to high land prices.

Although there is a fair amount of guidelines and working papers, there is still a long way to go before the concept is applied and managed appropriately.

This study will therefore investigate the use of Development Corridors;

- a) On a local scale,

⁸ Such as Spatial Development Frameworks and IDPs as well as LED strategies.

⁹ Reviewing of projects and strategies are seen as imperative in the South African context given that IDP reviews are carried out on a yearly and five yearly basis to track progress and update political, social, economic and institutional issues.

- b) In the urban context,
- c) In the low income context.

1.6 PROBLEM STATEMENT

An overarching problem related to this field of study, that was made apparent in the research project carried out for the Provincial Planning and Development Commission regarding development corridors in KwaZulu-Natal, is that 'few corridors have successfully been implemented in Greenfield [planned] situations'¹⁰. There are many discrepancies in implementing the development corridor concept. The term is loosely used in many aspects of the development field. The perception is that few planned corridor initiatives have been implemented successfully in South Africa for various reasons.

The case of the Bellair Road Development Corridor has been identified as not achieving its initial objectives and criticised as not being as functional as it was envisaged to be. This indicates that the concept is challenging to implement in reality.

1.7 RESEARCH QUESTION

What are the factors responsible for influencing the extent to which the Bellair Development Corridor is achieving its developmental objectives?

1.8 RESEARCH OBJECTIVES

1. To understand current planning practice and historic trends related to corridor initiatives;
2. To explore the development corridor and nodes concept so as to ascertain the following aspects;
 - a. The strengths, weaknesses, opportunities and threats of the concept in practice,
 - b. The key components and elements necessary in the positive functioning of the concept [including preconditions and success factors],
3. To provide an up-to-date policy review indicating the practicality of the use of the concept as a strategic tool within eThekweni and South Africa.
4. To analyse the Bellair Road Development Corridor:
 - a. To determine the current state of the Bellair Road Development Corridor, whether it is moving toward achieving its objectives or not, measured against the corridors initial objectives,
 - b. To determine the processes involved and mechanisms used in implementation and monitoring and evaluation.
5. To contribute to an updated and fresh perspective to this field and provide a set of recommendations to the set of issues identified (how can these issues be mitigated to move toward a more positive outcome?).

¹⁰ Concluded from speaking to various municipal officials

1.9 SUBSIDIARY RESEARCH QUESTIONS

1. Relevant to objective 1 - How has the development corridor and nodes concept been applied in the South African context, and eThekweni in specific?
 - a. How has legislation and policy enforced and promoted this concept in eThekweni?
 - b. What are the strengths, weaknesses, opportunities and threats of the concept in practice,
 - c. What are the key components and elements necessary in the positive functioning of the concept (and preconditions and success factors),
2. Relevant to objective 3 - Has the Bellair Road Development Corridor achieved its objectives?
 - a. What are the indicative factors of success or failure?
3. Relevant to both objectives 2 and 3 as well as the above subsidiary questions - what are the possible pitfalls/issues in the application of development corridors and nodes in the Bellair Road development corridor?
4. Relevant to Objective 1 and 4 - what can be done to mitigate the issues and constraints discovered?

1.10 RESEARCH METHODOLOGY

Research methods are the tools used to conduct research and collate information and research methodology is the logical sequence, design and structure undertaken to carry out the research intended and the collection of relevant data to be analysed.

1.10.1 DATA SOURCES

The data sources represent the research methods used to carry out the research outlined above. This relates to the way in which relevant information is to be collected for the requirements of the study. For the purposes of the scope of the current dissertation both qualitative data will be collected. The collection of information is to be carried out for the case study and the literature review/conceptual framework.

Secondary Sources

Secondary sources of data include sourcing information through books, journals, conference papers, minutes of meetings, internet articles, project plans and documentation, relevant unpublished dissertations, planning guidelines and maps generated using GIS as well as aerial photography. The secondary data used is specific to the case study

Libraries and search engines on the internet were used to collect and search for data which has due authority, is viable and which holds substantial information. Secondary data was also obtained from key informants who had access to certain project specific information such as past project plans and project documentation.

Primary Sources

Primary sources of data were collected in two distinct ways; by observation and land use surveys and by interviews with key informants.

- Observation and Land Use Surveys** of current land use activities were undertaken through windshield inspection and walking through the study area. In addition a reconnaissance study was undertaken which involves documenting dynamics of the case study precinct. These data sources informed a local area analysis of the study area. A tool used for observation took the form of a checklist as shown below. The purpose of this checklist was to determine the land uses, activities and trends observed along the development corridor in order to use this information as a basis for evaluation. It also served as a method of recording information gathered in order for it to become data to be analysed. Observation was carried out in phases and hence multiple sets of observation were made. Images were taken in various days as well. In addition, when it was impossible for the researcher to take photos, or failed to capture clear images while driving through, Google Earth, 2014 imagery was used from Streetview. This made the task easier and more orderly.

CHECKLIST FOR OBSERVATION

| Elements explored | | Description | Comments and general perceptions |
|---|---|-------------|----------------------------------|
| Mix of land Uses | What land uses exist along the corridor? | | |
| Residential | | | |
| Commercial | | | |
| Offices | | | |
| Open Space | | | |
| Community facilities | | | |
| Other | | | |
| Linkages | How is the corridor linked to surrounding areas and transport routes? | | |
| Along a public transport route / accessibility to public transport (multi modal transportation?) | | | |
| Intensity of land uses | How concentrated are the uses? Are they scarcely distributed or not? | | |
| Nodes | What activities are present and dominate the node? | | |
| Surrounding environment | | | |
| Pedestrian activity | | | |

- **Key constraints to observation and land use surveys:** Safety is a key issue within the study area as it is perceived to be ridden with crime and hence became too dangerous for the researcher to walk the streets alone. There was an incident where passers-by had sworn at the researcher. The researcher sourced alternate ways of observing such as driving through the study area, accompanied by a relative, during the peak morning and afternoon traffic times when the area was less isolated. In addition, the researcher found out that the Durban University of Technology Town and Regional Planning Diploma students had a site visit planned for one of their projects and decided, with permission of the lecturer, to walk the study area with the group. This allowed the researcher to gain a greater depth of understanding of the study area as well as to mitigate the safety issue. At times it was impossible to get photographs, and these were sourced from Google Earth imagery.
- **Semi Structured Interviews** - These interviews were undertaken as a means of gaining a greater depth of knowledge with regard to the project dynamics and obtain various opinions that will be considered during analysis of the information. Semi-structured interviews were undertaken with key informants involved with the implementation and management of the Bellair Corridor project. The purpose of the interviews/discussions held was to unpack the various observations undertaken through the land use survey.
 - Interviews were conducted face to face and through electronic communication. The first option offered to participants was a face-to-face interview/discussion and the second was over electronic email at the convenience of the participant. At times email conversations were held to gather necessary information at the convenience of the interviewee.
 - Key informants were selected for their specialised knowledge on the topic or components of the topic. Key informants were broken down into themes emanating from the literature and Development Corridor concept. The researcher tried to gain input from senior staff at eThekweni Municipality and staff who have been involved with the study area intimately. The private practitioners sourced were specifically chosen given the past involvement in the project. For example, Professor Peter Robinson was the Chairman of the Cato Manor Development Association which was a special purpose vehicle to fast track development in Cato Manor and the Bellair Road corridor.
 - The interview questions were tailored according to respondent and knowledge of the case study as well as the information required from the respondent. Please see Annexure B for the base questionnaire.
 - Interviewees were provided with a background to the study and given an informed consent form. Only some of the interviewees signed and returned the form to the researcher.

- Recording of information was done through note taking and recording subject to the permission of the respondent.
- Key informants were broken down into themes, where one or more key informants were interviewed per theme. The details of interviewees are tabulated below. In addition to these interviewees, informal discussions were held with consultants and practitioners about the topic.

TABLE 1: LIST OF KEY INFORMANT INTERVIEWEES

| Area of Interest | Name | Theme |
|---|----------------------------------|-----------------------------------|
| Planner - Private | Professor Peter Robinson | Strategic Planning |
| EThekwini Real Estate | Neil Hazel Vanessa Wood | Land and Real Estate |
| Cato Manor Area Based Management | Nathi Zondi | Economic Development |
| Cato Manor ABM | Mhlengi Gumede | Institutional Management |
| EThekwini Department of Human Settlements | Mxolisi Tshabalala | Housing |
| EThekwini Transport Authority | Manoj Rampersad Logan Moodley | Transport |
| EThekwini Business Support | Michael Hlangu | Informal Economy/Business Support |
| Drake and Scull (FM)(SA)(Pty)Ltd | Anonymous | Facilities Management |

- **Key constraints to interviews:** At times it was difficult to get responses from the correct point of contact within a specific timeframe. A mitigation used by the researcher was to continuously follow up with the point of contact. In some cases the researcher opted to breakdown the questions in an email format to initiate an electronic conversation, and prompt further responses. Alternatively, the researcher attempted to source alternate points of contact who were knowledgeable about the required information. There was one incident where a point of contact took over a year to respond to the researcher. In addition, some points of contact have not responded to the request for an interview/discussion and hence were not included.

Another issue was the snowball effect of referrals. The researcher was referred to many people who kept referring back to the original point of contact. This back and forth process caused a delay. More often than not, key informants had to be approached at different angles; hence questions had to be revised before each interview or information gathering session. Interviewees had to often squeeze in time from busy schedules to accommodate the research. Some interviews, while being semi structured would often go array based on the discussion. The researcher

often found that she had to redirect questions to steer the conversation as well as probe for necessary information.

- A general questionnaire is attached which was adapted to suite the respondents area of expertise and type of information required (See Annexure B). The land use survey therefore assisted in informing the questions posed to respondents.
- **Maps and Imagery:** were used to illustrate findings which assisted in evaluation. Maps were generated using the ArcGIS programme with relevant latest shapefiles obtained from the EThekweni Municipality website: Available [Online]: <http://citymaps.durban.gov.za/internetwebsite/index.html>. Google Earth images were also utilized for analysis.

1.10.2 RESEARCH DESIGN AND STRUCTURE OF DISSERTATION

This dissertation has six chapters. The structure is outlined below¹¹.

CHAPTER ONE: INTRODUCTION

This chapter functions as a prelude to the entire dissertation. It begins by contextualising the study, providing a background and introduction. It substantiates the research problem and includes the main aim and objectives which the study aspires to achieve. In addition, the research methodology adopted is defined upfront.

CHAPTER TWO: CONCEPTUAL FRAMEWORK

This chapter contextualises the stance the study takes. It does this by defining the relative concepts and related urban debates. It includes policy, legislation and strategy reviews relevant to development corridors in eThekweni Municipality and South Africa. The concepts that inform the study include sustainable urban form and structure, strategic and integrated development planning. Spatial trends are also highlighted through the eras of Modern, Post-Modern planning through to the Sustainable Cities debate.

CHAPTER THREE: LITERATURE REVIEW

This chapter aims to provide an in-depth understanding of the development corridor concept by discussing the scale and definition of development corridors as used in South Africa and globally, the key components necessary in the positive functioning of the concept in practice which are deemed imperative to create an enabling environment for a corridor to be successful and preconditions for establishing successful development corridors.

¹¹ The research design differs slightly from the original proposal. Reasons for this include; the researcher sees no need for there to be a separate Research Methodology Chapter as this is described in Chapter 1.

CHAPTER FOUR: BELLAIR ROAD DEVELOPMENT CORRIDOR

This chapter describes the Bellair Road Development Corridor dynamics, history and background.

CHAPTER FIVE: DATA FINDINGS AND ANALYSIS

This chapter focuses on presenting and analysing the information collected.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

This chapter is structured to reflect how the research questions and objections were met. The chapter concludes with recommendations, for the Bellair Road corridor in eThekweni which will aid planning, implementation and management of future development corridors.

CHAPTER TWO: CONCEPTUAL FRAMEWORK

2 CHAPTER 2: CONCEPTUAL FRAMEWORK

2.1 INTRODUCTION

This chapter contextualises this study by providing a historical overview of planning in the modern and post-modern eras to contemporary sustainable city planning and the structural impact on cities and urban form today. It also provides a historical overview of planning of South African Cities and the origin of the corridor concept and related strategies (at an international and national context), to determine the importance of the use of the concept as a strategic tool within eThekweni and South Africa through legislation and policy.

2.2 MODERN, POST-MODERN AND SUSTAINABLE CITIES¹²: HISTORICAL CONTEXT AND IMPACT ON CURRENT URBAN LANDSCAPES

Approaches to planning have evolved over time from rational comprehensive modernist planning which advocated orderliness to radical planning theories (Cloke et al., 1999) where community participation was essential to planning in the public interest. These planning theories have progressed to a situation where the concern is on integration, enhanced quality of life as well as sustainable development as the centre of planners' attention worldwide. In addition to that there is no one theory and approach to planning in the 21st century, and approaches vary according to context for both developed and developing countries.

Modernity rested on the notion that world problems can be known, understood and therefore controlled and is associated with "rationalism, technocratic and positivistic thinking, ethnocentrism, the standardisation of knowledge and production, a belief in linear progress and universal absolute truths" (Ofosu-Kwakye, 2009). Dewar (2000) discusses the urban characteristics of modernism (imported from the United Kingdom, Europe and United States) to include; a pro-suburban ethos, separation of land uses to avoid conflict and segregation of sectoral disciplines [fragmented planning]. In addition Dewar (2000) notes the promotion of the neighbourhood unit linked by movement networks, the emphasis on technological improvement and the disregard for social and environmental issues as well as the scaling of neighbourhoods to the private vehicle as aspects of modernism.

In contrast to modernism, post modernity is seen to respond to flexibility, change and uncertainty, social and cultural diversity, and responding to minority and disadvantaged groups (Goodchild, 1990). Themes which Soja (2000)¹³ discusses that exemplify post-modern planning include; globalisation of capital, labour, culture, and information flows and

¹² The focus on sustainability stems from the current urban debates and policy and planning focus of cities today (which inextricably links to the corridor concept).

¹³ Also see Dear and Flusty (1998).

Post-Fordist economic restructuring, restructuring of urban form and social order focussing on the interrelated social and spatial outcomes of the 'new' urbanisation processes (sprawl, segregation, and poly centric cities etc.) and urban hyper reality. Post-modern planning is criticised to be eclectic and vague and is still adapting to post-modern challenge (Allmendiger, 2001) and is also criticised as having a 'dark side' which can exacerbate inequalities, segregation, exclusion, reinforce socio-economic gaps and to only aid the markets.

2.3 SUSTAINABLE CITIES

As discussed through the UNHSP (2010) a principle of urban planning is to promote sustainable development. Sustainable cities intrinsically deal with the notion of sustainable development. Sustainable development is defined by the Brundtland Commission as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Other definitions include such as, it refers to "the long term survival of the planet and its processes of dynamic evolution" (Haughton, 1999). As Satterthwaite (1997) argues, this is broken down into two main components; a) development and b) sustainability. Development refers to human development encompassing the economic, social, cultural, environmental and institutional aspects of life. Satterthwaite (1997) defines the 'meeting the needs of the present' aspect of the Brundtland definition as addressing the:

- Economic needs relating to adequate livelihood or productive assets,
- Social, cultural, environmental and health needs which includes access to services, adequate housing, infrastructure, healthy living environments, equitable distribution of resources and where peoples social and cultural priorities are met,
- Political needs which relates to community participation and inclusive decision making,

Satterthwaite (1997) goes on to define the 'without compromising the ability of future generations to meet their own needs' aspect of the Brundtland definition as addressing the following aspects; minimising use or waste of non-renewable resources including the consumption of fossil fuels (industry, housing, commerce, transport etc.), sustainable use of finite resources relating to a minimal ecological footprint with regard to land consumption, biodegradable wastes not overtaxing capacities of renewable sinks and non-biodegradable wastes not overtaxing the capacity of global sinks to absorb or dilute them without adverse effects.

Sustainable development seems to be an overarching notion and has therefore been criticised for being too vast and there are problems with implementation. In addition approaches to sustainability have failed to analyse the various aspects adequately (physical, social, political) (Rees, 1995). Suffice to say the sustainable development concept has been on the agenda for over two decades and is the present and future concept to adhere to and

implement based on local conditions (Satterthwaite, 1997). Haughton (1999) provides an overview of models of sustainable cities with a focus on environmental sustainability and equity principles. The article mentions that environmental problems are linked to poor design of the urban fabric with special concern for sprawl and the increased usage of the private motor vehicle and mentions corridors increased densities, mixed land use among other strategies to create more sustainable cities (Haughton, 1999).

Examples of South African planning tools relating to sustainable development include policies such as the Green Economy Strategy, National Sustainable Development Plan, National Strategy for Sustainable Development and Action Plan etc. as well as the wide use of the concept in local planning tools such as Integrated Development Plans, Local Economic Development Plans etc.

2.4 PRINCIPLES OF URBAN RESTRUCTURING AND SUSTAINABLE URBAN FORM

As Martens (2001) and KZN PPDC (2008) advocates, the use of corridors was and is still being used as a tool for restructuring the Apartheid city and the Apartheid space economy¹⁴. The Research Report and Guidelines document on Development Corridors in KZN (KZN PPDC, 2008) provides an important consideration of the need for a defined consensus of urban restructuring in South African cities. This is seen and agreed by the researcher as being imperative to understand and infiltrate recent research so as to carry through a trend of uniformity in understanding of concepts especially in the urban context. As advocated in recent research by KZN PPDC (2008) and advocated through past research such as Martens (2001), urban restructuring and hence the urban model has six main requirements, that is; embrace intensity and higher densities, fostering of non-motorized and public transport movement as dominant modes of transport, encouraging mixed land use of urban activities, achieving higher levels of integration, promoting equity and convenience through creating access and taking new opportunities to people. The objectives of the Bellair Road Development Corridor fit perfectly within these requirements and these will be therefore be discussed in detail later in Chapter 3.

According to Todes (2003), approaches to urban restructuring have emphasised infill and densification within the city: in central areas, around areas of economic activity and along major transport routes. The development of nodes and activity corridors across the city is intended to integrate the city, to create good routes for public transport and to provide accessible locations for the development of economic activity and services.

Important to note are the constraints to urban restructuring in the South African context. These as discussed by Martens (2001) include; conflict around core city development whereby low-income housing developments in the central areas are resisted by established middle and high-income residents, reluctance of the private sector to move away from

¹⁴ See also Rogerson (1998) and Harrison (1995).

established and centralised commercial and industrial areas closer to population concentrations due to security and poor environmental conditions, resistance from upper income suburbanites and informal land invaders to urban containment due to the accessibility and availability of peripheral land, resistance to mixed use development whereby commercial uses expand into existing residential areas, political violence on the urban periphery, which slows down the planning and development process and raises costs, lack of co-ordination within local government structures around development initiatives and public investment, highly restrictive planning and land use regulations, which have restricted low-income development and created mono-functional land use patterns and the co-existence of various ownership models.

2.4.1 SUSTAINABLE URBAN FORM: DESIGN CONCEPTS

It has been demonstrated that spatial form helps or hinders sustainability through land use arrangements. According to UNHSP (2010), urban trends of developing countries point to cities forming new spatial configurations. These include three principal forms: **mega-regions**, **urban corridors** and **city-regions**, which act as agglomerations of activities where global and regional flows of people, capital, goods and information come together (UNHSP, 2010).

According to Casswell (2009) and Jabereen (2006) the interrelated design concepts of sustainable urban form include;

- **Compactness** – this relates to limiting the expansion of urban areas (Casswell, 2009). Density is a strategy to achieve compactness. Key arguments include; a) to promote quality of life by increasing access to services and increased social interaction, b) reducing energy consumption, c) reducing greenhouse gas emissions by lessening trip lengths and frequency of trips.
- **Sustainable Transport** – encourages cities to support walking, cycling, and efficient public transport to promote human health. Due to the socio-economic status of lower income earners, and reliability on public transport to commute to and from economic opportunities. This phenomenon is evident in many cities in South Africa for example in Cape Town (KZN PPDC, 2008), where informality is rife near public transport and closer to Central Business Districts near job opportunities. A number of authors have argued that the available evidence suggests that there is a correlation between higher urban densities and lower fuel consumption by reducing travel distances and facilitating public transport. This is due to the closer proximity of people, facilities and jobs, which promotes walking and cycling and reduces car trip lengths, and the increased population thresholds, which increases the viability of public transport services (Newman and Kenworthy 1989: 25 in Martens, 2001).
- **Density** – Aids with creating a climate in which small business can flourish in response to increasing unemployment. Higher densities are encouraged to create

‘intense and vibrant local markets’ and would achieve greater efficiencies in service delivery. Higher densities along **continuous** infrastructure channels also promote public transport and non-motorized movement. Turok (2011) identifies six motivations for promoting higher densities. These include less resource consumption, viable public transport, equitable access to opportunities, a more efficient economic environment, improved housing choice and more liveable and safer places.

- **Mixed Land Uses** – this indicated that compatible land uses, such as housing, commercial areas, and offices, should be located close to each other. The implications of this include reducing automobile dependency and hence less pollution (Deelstra, 2007). Key benefits of mixed use development include; convenient access to facilities, improved social interaction, greater surveillance, energy efficiency etc.
- **Housing Diversity** – creates choice within urban areas through offering different house typology, tenures and densities.
- **Social Diversity** – refers to mixed income environments as well as mixed cultures.
- **Passive Solar Design**¹⁵ – the design, siting, orientation, layout and landscaping of buildings should be optimized to reduce the demand for energy.
- **Greening** – suggests that development should integrate nature into design through parks, street trees, etc. to increase the attractiveness and preservation of an area and has health benefits.

The table below provides an overview of the benefits and problems associated with the above design concepts. This helps with understanding the pros and cons that may be experienced with implementation of such designs.

TABLE 2: PERCEIVED BENEFITS AND PROBLEMS WITH SUSTAINABLE URBAN FORMS (SOURCE: CASSWELL, 2009)

| Design Concept | Benefits | Problems |
|------------------------------|------------------------------|---------------------------------|
| Greening | Aesthetically Pleasing | Initial And Maintenance Cost |
| | Less Stressful And Healthier | Crime/Homeless |
| | Clean Air And Environment | Loss Of Developable Land |
| Passive Solar Design | Saves Money (Long Term) | Initial Cost Of Installation |
| | Cleaner Environment | Bad Design / Aesthetics |
| | Less Energy Consumption | Unpredictable Supply |
| Sustainable Transport | More Exercise | Not Convenient |
| | Less Air Pollution | Limited Access |
| | Lower Transport Costs | Schedule Not Flexible |
| Mixed Land Use | More Access To Services | Traffic And Noise |
| | Less Driving More Walking | Incompatible Uses And Conflicts |
| | Convenience | Crowding |
| Housing Diversity | Cultural Diversity | Culture Clash/Conflict |
| | Economic Diversity | Lower Sense Of Community |
| | More Housing Options | Crime/Safety |
| Social Diversity | Multicultural Education | Conflict |

¹⁵ This is currently on the national and provincial agendas in South Africa through the green economy and sustainable energy concept.

| Design Concept | Benefits | Problems |
|--------------------|------------------------------------|---------------------------------|
| | Equality Of Access To Schools | Fear/Crime/Safety |
| | Cultural Diversity | Intolerance/Prejudice |
| Compactness | Less Car Travel | Crowding |
| | Closer To Services And Amenities | Less Personal Space And Privacy |
| | More Physical Activity And Walking | Rise In Housing Prices |
| Density | Stronger Sense Of Community | Crowding |
| | Closer To Services And Amenities | Less Personal Space And Privacy |
| | Less Pollution | Noise And Health Issues |

2.4.2 COMPACT CITIES AND RELATED APPROACHES

2.4.2.1 COMPACTION AND THE COMPACT CITY APPROACH

The concept has been initiated in response to urban spatial restructuring and the adverse social, economic and environmental effects of sprawling cities both internationally in American, Australian and U.K cities and within South Africa with sustainable development being the basis for the argument of the compact city¹⁶. According to Jabareen (2006), the compact city strategies aim to create compactness and density. This assists with combating problems associated with modernist design of cities. Compactness on the other hand proposes density and intensification of land use activity through mixed use development and efficient transport systems.

Compact cities exhibit sustainability as there is enhanced social interaction, efficient use of resources, transport efficiency and less agricultural land space used. These imply that the compact city is socially (social interaction), ecologically (less use of land space), and economically (reduces costs to commute) viable and more likely to achieve sustainability. Disadvantages of the compact city include; stress and sick building syndrome. Other key arguments for compaction in South Africa as discussed through Martens (2001) include:

- Need to generate employment for the growing small business sector. Dewar (2000: 212) in Martens (2001) argues that compaction provides the basis for ‘intensive, vibrant local markets’, which are a ‘precondition for small business to thrive’.
- Efficient pedestrian orientated environments,
- And resolve the current public transport problems.

A key constraint to applying the compact city approach is the commitment to upgrading informal settlements and the decentralisation of places of employment (The Republic of South Africa: The National Department of Human Settlements, 2005).

The compact city approach “...envisaged that the Cato Manor area would create opportunities for previously disadvantaged people to gain access to land, housing, social facilities and economic opportunities based on the **principles of the compact integrated city approach**” (Greater Cato Manor Development Framework, 1992 in: Gordon and Hansmann

¹⁶ See Martens (2001), Jenks and Burgess (2000) and Jabareen (2006).

2001). From this statement it can be seen that the compact city approach is important in understanding the corridor concept. The compact city approach in South Africa, initiated by Dewar and Uytenbogaardt and other anti-apartheid planners (Todes, 2003) aims to address issues of equity and social change through urban spatial restructuring and integrating the fragmented spatial form adopted from the Apartheid regime since the 1970's. In addition as discussed above under urban restructuring, an approach includes densification and integration within the South African city which is related to the compact city approach. The compact city approach has also been carried through in policy, as will be discussed below.

Examples of this approach can be seen in Curitiba, Brazil through integrated transport systems, the Netherlands through implementing compact, eco-villages and eco-city policies and multifunctional space etc. The Curitiba example is seen as a model for South African cities as it is a successful third world spatial restructuring effort which accommodates urban growth and fosters a vibrant public transport system while incorporating open space.

While the concept has been advocated in South Africa and eThekweni specifically, there is a growing debate as to whether the concept is feasible with implementation of policy in Durban having mixed results with growing unemployment, inequalities and poverty¹⁷. Todes (2003) concludes that compaction is important with some well-located housing developed in eThekweni and urban policy needs to 'embrace the diversity of housing needs'. Compaction in South Africa and eThekweni specially has been attempted through formal processes which has been difficult to achieve and needs to accommodate **informality**¹⁸. Martens (2001), provides a detailed analysis of the criticisms of the compact city approach which exist in South African cities today. These include:

- Social problems (growing unemployment, HIV/Aids, crime),
- Cultural attitudes to land, including high income residential and gated estates on the periphery of cities,
- Resistance of low income housing projects adjacent to high income settlements,
- Lack of well-located land for lower income housing development,
- Well located land is expensive, pushing economic development to the periphery perpetuating urban sprawl,
- The capitalist market system has allowed the city to be shaped by market forces and not by planning policy,
- Economic development trends are not consistent with compaction efforts (decentralisation of commercial, retail and office space), the postmodern trend of edge cities,

¹⁷ See Todes (2003), Dewar (2000), Dewar (2001) and Gordon and Hansmann (2001).

¹⁸ See Todes (2003) and Jenks and Burgess (2000) for an intense discussion of compact cities in the developing world. Also see Gordon and Hansmann (2001) for a discussion on the characteristics of modern and postmodernity evident in the compact city approach and a discussion of a critique on the compact city debate. In addition see Martens (2001) for an in-depth analysis of the compact city debate and associated critiques.

- Private sector investment avoiding township and informal areas due to perceptions of crime etc.,
- Limited dictatorship of urban planning by local government and planners,
- Development control system is not adequately informed and results in the planning and implementation gap,
- Lack of effective incentives and measures to promote densification,
- Politics and public participation.

An article by Markewicz et. al (2011) provides an example of the compact city approach as implemented in eThekweni through corridor development strategies, namely the Northern Urban Development Corridor (NUDC). This article outlines the various land use and transportation strategies adopted to achieve the 'compact city' while focussing on transportation interventions adopted to achieve compact city form. It has done so by enabling a planning and development process that is proactive, integrated and forward looking by identifying and assessing long and short term land needs for transport corridors, environmental sustainability, economic and residential development as well as strategic and proactive interventions by a number of private and public stakeholders.

2.4.3 RELATED CONCEPTS

It is important to touch on related concepts to understand the broader context and similar strategies used in urban spatial restructuring to make cities more sustainable. The concepts briefly discussed in this section include the Neo-Traditional Development, namely; Transit Oriented Development commonly referred to as TOD, New Urbanism and Smart Growth. These concepts are being used in the international and South African context. These strategies utilize the same sustainable urban form and design concepts discussed above as the compact city approach and also act as stewardships for sustainable development.

- **TRANSIT ORIENTED DEVELOPMENT (TOD)**

TOD, a predominantly North American concept refers to mixed use, compact development around an existing transit station with diverse housing typologies and promotion of public transport and walkability. This type of development is said to decrease pollution and infrastructure costs. The TOD concept relates to corridor development as corridors deal with linear development along transit routes and TOD deals with development around station creating nodes of activity which reinforce development corridors. Examples of applications of the TOD concept in South Africa can be seen in Wilkonson (2006) and Marks and Wilkinson (2007) where the concept is investigated in the South African context within Cape Town Atlantis Corridor. Another example of TOD in S.A is in the city of Johannesburg's "Corridors of Freedom". The "Corridors of Freedom" concept is centred on the Rea Vaya Bus Rapid Transit System transport infrastructure (Group Communication and Tourism Department, 2013). The strategy aims to address the spatial imbalances adopted from Apartheid planning through implementing TOD to combat sprawl and will include high

density, mixed land use (residential, recreational, commercial etc.). These examples provide interesting examples whereby development and mobility corridors are reinforced by TOD around transit stops and stations creating nodes of intense activity at each stop and create increased reliability on public transport. International examples include Munich's Central Corridor¹⁹, India and Singapore among others²⁰.

While TOD has not explicitly been implemented in South African policy and practice in comparison to development corridors, there exists a case for further investigation into the use of the concept in South Africa in planning paradigms in relation to the development corridor concept. The TOD concept has entered the development realm in Durban. This is specifically seen through the Bridge City development which has been planned as a mixed use development centred on a new train station which was recently completed.

- **SMART GROWTH AND NEW URBANISM**

It is useful to understand similar planning approaches used internationally. This includes the Smart Growth movement which is similar to the Compact City ideal which is used in the United States of America government planning policies to combat sprawl and associated environmental impacts of increased automobile usage and loss of prime agricultural land. The guidelines for Smart Growth include; "mix land uses, take advantage of compact building design, create housing opportunities and choices for a range of household types, family size and incomes, create walkable neighbourhoods, foster distinctive, attractive communities with a strong sense of place, preserve open space, farmland, natural beauty, and critical environmental areas, reinvest in and strengthen existing communities & achieve more balanced regional development, provide a variety of transportation choices, make development decisions predictable, fair and cost-effective, encourage citizen and stakeholder participation in development decisions" (Deelstra, 2007).

Smart Growth is intertwined with the New Urbanism concept that advocates walkable neighbourhoods and increase land uses mix. New Urbanism is however a design concept used through the world in developed and developing countries as can be seen in South Africa²¹. Examples in South Africa include Melrose Arch in Johannesburg and Umhlanga Ridge in Durban.

These concepts relate to corridor development as they possess similar principles as compared to the compact city approach and are used as strategies for corridor development throughout the world. Examples of this include densifying development along a traffic corridor along New Urbanist principles.

¹⁹ See Hale (2010).

²⁰ See Shastry (2010) and Cervero, Luchi and Suzuki (2013) for examples of case studies of TOD in developing countries.

²¹ See Ofosu-Kwakye (2009) for a comprehensive study about New Urbanism.

2.5 THE SOUTH AFRICAN CITY

“South African cities are some of the most inefficient cities in the world as a result of the spatial planning which was adopted by the apartheid regime” (Maharaj, no date).

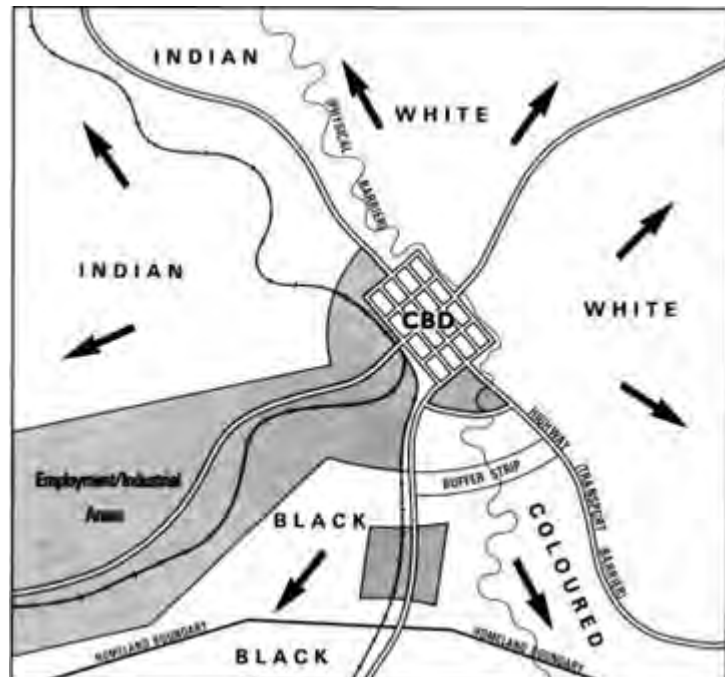
According to Brown (2007), racially-based apartheid spatial planning affected the lives of the urban poor through;

- “Forced removals which destroyed community networks on which the poor depend for survival. (this was the case in the broader Cato Manor Area),
- Zoning and planning laws placed restrictions on trading and retail activity in the townships and ensured that commercial activity was concentrated in rich white suburbs. This forced resources out of black areas into white suburban areas and ensured that black townships remained economically underdeveloped,
- The unequal provision of services,
- The design and layout of the apartheid city also resulted in a long time spent travelling to and from work, because of the location of settlements for the poor and as a result the poor began locating themselves in informal settlements near employment opportunities” (Brown, 2007).

See the adjacent map for an indication of the spatial structure of the racially segregated Apartheid city.

Figure 2 - Model of the Apartheid City
(Source: Google Images)

This ultimately shaped the structure of South African cities into becoming inefficient allowing for inequity and marginalization. It is important to note the influence of Apartheid Planning by the Modernist regime which according to Dewar (2000) has allowed Apartheid planners to exacerbate and use the urban form



characterizing modernist planning for preferences of racial discrimination²².

Since 1994 South Africa shifted to a democratic era with inclusive governance and a new constitution²³. Government’s initiative of seeking to reverse the spatial and therefore social

²² See section 1 above detailing modern cities. Dewar Modernist planning termed ‘Blue Print’ or ‘Master planning’ as referred to by authors such as David Dewar, Vanessa Watson and Alison Todes, has been critiqued for its failure to accommodate urban growth and informality in light of increasing urbanization as well as focusing on planning and not implementation and neglecting the incorporation of the social, economic and natural environment

²³ The African National Congress came into power in 1994.

implications of the apartheid regime began in an attempt to devise policies to deal with the increasing inequalities, spatial inefficiencies that apartheid planning has put forward by attempting to correct spatial patterns (Pieterse, 2004).

Following this shift saw the end of influx control²⁴ which controlled the amount of people entering the city, migration and urbanisation into urban areas increased at an alarming rate which in turn allowed for the growth of South African cities which also resulted in a massive growth of informal settlements and increased movement of people²⁵. This unprecedented population growth resulted in a great demand for resources, economic opportunities, a search for a 'better' life and infrastructure (see section above for population trends and implications).

The response to this modernist master planning [and the inability to accommodate urban expansion and informality] was the introduction of a new approach. This approach includes the following concepts as discussed by Todes et. al (2009) and KZN PPDC (2008)

- “a focus on sustainability;
- integration between sectors and with budgets;
- participatory planning, bringing in a wide range of stakeholders; [decentralised governance]
- understanding markets and producing credible plans, backed by public investment where appropriate;
- recognition of the reality of informal settlements and slums;
- development of contextually appropriate, affordable, strategic and effective forms of planning and land use management;
- pro-poor and inclusive planning, recognising diversity” (Todes, 2009 and KZN PPDC, 2008).

2.5.1 THE EVOLUTION OF DEVELOPMENT CORRIDORS IN SOUTH AFRICA

As researched by Martens (2001), Todes (2000) and Taylor (1993) the corridor concept was introduced in South Africa in the 1970's by a group of planners at the University of KwaZulu-Natal, in particular David Dewar and Roelof Uytendogaardt. The author David Dewar as indicated by Martins (2001) produced many publications based on the corridor concept advocating the use for them in the South African context in response to dysfunctional apartheid planning (Todes et. al, 2000: 233 in: Martens, 2001). David Dewar, published various articles with the corridor concept as the subject including the policy document, A Manifesto for Change. Amongst some of his findings and key arguments is **accessibility** to activities and facilities, and are summed up by guidelines which Dewar created in response

²⁴ Influx control was a mechanism used by the apartheid government to control blacks and people of colour from entering the city. They could only enter if they had a pass which was only given to individuals that were employed.

²⁵ See Todes, (2000), Roy, (2008), Statistics South Africa (2006), Boraine et. al (2005).

to inequitable urban forms which impacted the poor and that would improve the quality of lives of people. The guidelines are as follows:

- 'definition and control of a fixed urban edge
- creation of an efficient public transportation network
- co-ordination of movement modes to create a hierarchical order of
- accessibility
- creation of activity arms or spines
- creation of a system of public spaces to structure urban development
- (and the celebration of these)
- identification of major social institutions
- introduction of more complex processes of city development' (Dewar, 1984: 49-52 in: Martens, 2001).

The corridor concept gained momentum and was given attention as an alternate form of spatial restructuring in South Africa by organizations such as CSIR and the Urban Foundation [also advocated through transport agendas in response to urbanization patterns and the need to integrate land use and transport planning²⁶] to combat the spatial fragmentation and socio-economic disparities.

2.5.1.1 SPATIAL DEVELOPMENT INITIATIVES

The concept of Spatial Development Initiatives, also referred to as a development corridor originated in South Africa in 1996 to address South Africa's transition from an inward-looking import-substitution economy throughout the apartheid era. Here, the intention was to focus export-oriented industrial development in zones along the coast, to optimise on transport linkages. This will allow the country to participate in global markets. In southern Africa the Maputo Development Corridor²⁷ (MDC) was the first SDI to be implemented at the regional level.

SDIs were viewed as an integrated planning tool which was aimed at promoting investment in underdeveloped regions of the country which had potential for growth. Key principles and elements of SDIs which need to be taken into consideration when planning such initiatives according to Thomas (2009) and Maputo Corridor Logistics Initiative (2013)²⁸ are as follows;

- ***“There must be real economic potential to enhance competitive and comparative advantages:*** either under-utilized natural resources or some other such financially viable and quantifiable qualities,
- ***Private sector resources should be mobilized:*** in the form of public-private partnerships (PPPs), or exclusively for private sector investments,

²⁶ See policy and legislation/integrated development planning below.

²⁷ See De Beer (2001), Rogerson (2001), Thomas (2009) and Maputo Corridor Logistics Initiative (2013).

²⁸ See also De Beer (2001), Rogerson (2001).

- ***Focussing of scarce public sector resources:*** which includes efficient use of limited public financial and human resources in areas where they are likely to have a greater advantage/more pronounced impact,
- ***The benefits of economic growth should be shared with the previously disadvantaged and marginalised:*** This refers to SMME involvement to generate employment opportunities for local communities,
- ***Ensuring political support,*** commitment and buy-in from the highest levels of government in order to facilitate fast and focused planning,
- ***Packaging of projects*** to be effectively marketed to private investors,
- Densification of the corridors to increase thresholds to broaden the catchment area and beneficiaries;
- ***Creation of backward and forward linkages for industries and natural resources*** and re-investment of resource rents into Human Resource Development and Research and Development for technology development to capitalize on linkages opportunities” (Thomas, 2009 and Maputo Corridor Logistics Initiative, 2013).

As discussed by Thomas (2009), SDIs are subject to difficulties which may cause problems for implementation. These include “political instability of the region, poor political buy-in, lack of capacity of the officials in participating countries to effectively develop and manage the process, weak investment climate and poor regulatory environment, a weak (or absent) domestic private sector, incapable of seizing upon opportunities created by foreign investors and participating in investment opportunities where these occur”(Thomas, 2009).

2.6 POST-APARTHEID POLICIES, STRATEGIES AND PLANS

This section discusses the key policies and strategies that were developed in response to the above mentioned issues of inequality and limited opportunities through distorted spatial patterns. These policies were developed to ensure efficient planning processes and sought to restructure the apartheid city, promote efficient and integrated land development. Policies also sought to promote compact city development, enhanced mix of land uses and increased densities where job opportunities would be easily accessible to cut costs of travel and to discourage urban sprawl which is seen as unsustainable (Godehart, 2006). The Development Corridor concept and related concepts contributing to the definition and purpose of development corridors have been mainstreamed and referred to as a spatial strategy in order to reintegrate South African Cities and reverse the effects of Apartheid Planning.

This political transition also had immense implications for governance and institutional processes related to spatial planning which is also as mentioned above important to understand for the processes beyond planning (implementation, management and monitoring and evaluation).

2.6.1 NATIONAL LEVEL

Nationally development corridors and underlying principles have been supported and instituted through national policies and strategies which include the National Infrastructure Plan 2012, the Policy on the development of Special Economic Zones in South Africa, 2012, the New Growth Path 2011, the National Spatial Development Perspective (NSDP) 2006, National Urban Development Framework (NUDF) and Draft Spatial Planning and Land Use Management Bill 2011 and the National Development Plan 2030 as well as the Moving South Africa Action Agenda, 1999 and National Land Transport Act (Act No. 5 of 2009).

For example, South Africa's National Development Plan 2030 mainstreams infrastructure development through "promoting mixed housing strategies and more compact urban development to help people access public spaces and facilities, state agencies, and work and business opportunities and investment in public transport, which will benefit low-income households by facilitating mobility" among other strategies for employment creation and an increased quality of life and access to services. This can also be seen in the fifth principle of the NSDP (2006) which identifies the prioritisation of higher settlement densities along transport corridors and the 5th Job Driver of the NGP (2011).

The Draft Spatial Planning and Land Use Management Bill refers explicitly to development corridors by indicating that the Municipal Spatial Development Framework must "identify current and future significant structuring and restructuring elements of the spatial form of the municipality, including development corridors, activity spines and economic nodes where public and private investment will be prioritised and facilitated". In July 2015 regulations were adopted for the Spatial Planning and Land Use Management Act (2013) - SPLUMA. SPLUMA was developed to provide a single integrated planning tool for the country. This Act was brought about to aid spatial transformation in South African cities by guiding the formulation of Spatial Development Frameworks (SDF) and Land Use Management Systems (LUMS). This will have a direct impact on planning for the development corridors in South African cities. The importance of LUMS and SDFs will be discussed further on in this chapter.

The Moving South Africa Action Agenda and The National Transport Transition Act advocated the promotion of an efficient public transport system and other mechanisms for developing an integrated approach (KZN PPDC, 2008) and addressing the need for corridor densification to overcome strategic challenges (Marrian, 2001).

The National Transport Transition Act (2009) gives direction to the realization of the importance of the integration of land use and transportation planning and recognizes densification along development corridors. It is clear to see from the objectives of key transport policy and legislation described above, that the integration of land use and transportation planning are a priority area to enhance society and access to opportunities.

2.6.2 PROVINCIAL LEVEL

“The KwaZulu-Natal Cabinet resolved in July 2005 to pursue the concept of corridor development as a stimulus to economic growth in the Province” (PSEDS, 2012). On a provincial scale corridor development has also been advocated through the KwaZulu-Natal Provincial Growth and Development Strategy 2011 (PGDS) and related implementation guideline; Provincial Growth and Development Plan, 2012 (PGDP) and the KZN Provincial Spatial Economic Development Strategy (PSEDS), 2012. The frameworks identify nodal and corridor development as crucial to economic development through infrastructure development (roads and rail). In addition corridor and nodal development is seen as a means to achieve spatial equity. In addition, corridor development aims to provide accessibility to services, facilities and amenities.

While this is regarding corridors on a much larger scale, it provides a context within which development corridors are utilized as a strategy in KwaZulu-Natal. This has implications for the intention of the corridor, which will be different for different scales of corridors. The scale of a corridor is important in determine the exact intention of the effects of the corridor and what it hopes to achieve.

2.6.3 ETHEKWINI LOCAL STRATEGIC PLANNING

EThekwini Municipality has embarked on a process of strategic long term planning which will be illustrated in this section and integrally linked to development corridors.

2.6.3.1 INTEGRATION AND MUNICIPAL INTEGRATED DEVELOPMENT PLANNING

According to the research document by KZN PPDC (2008) land use and transportation planning were seen in silos until the 1990’s when the notion of integrated development planning was introduced in terms of the Municipal Systems Act (Act No. 32 of 2000)²⁹.

Municipal integrated development planning has become a focus in South African cities and guides land use decisions by providing a framework for development. Integrated development planning requires sector plans such as Housing plans, Land Reform initiatives, Water Services Development Plans, Transportation Plans, and Local Economic Development Plans etc., to be amalgamated and related into a single plan, that is, the Integrated Development Plan (IDP) and spatially represented on a Spatial Development Framework (SDF).

²⁹ The Municipal Systems Act (Act No 32 of 2000) provides for facilitation of internal operations of municipalities to address the objectives of local government. Section 28 mandates that each municipal council must adopt and integrated development process plan to guide the planning, drafting, adoption and reviewing of its Integrated Development Plan. The Act also states that the municipal council must review its IDP annually in accordance with an assessment of its performance measurements in terms of section 41.

The integrated development plan is a flexible instrument that manages urban growth within municipalities. Spatial frameworks are spatial representations showing current and expected growth patterns based on the interventions identified in the IDP.

According to the KZN PPDC (2008), at the local level, the use of corridors and nodes is evident as a spatial structuring tool in the preparation of IDP's and SDFs. Integrated development planning is especially important for corridors utilized in eThekweni as a corridor is defined by various land uses with the need for integration of various sectors. IDP's reflect the development objectives, strategies and budgets of government as a whole, which requires joint intergovernmental prioritization, coordinated resource allocation and synchronized implementation' (KZN PPDC, 2008).

Integration with relation to development Cato Manor is advocated by the following as indicated by the book Urban Reconstruction in the Developing World (ed. Forster, McCarthy and Robinson, 2004):

- “Reintegration of the apartheid city (spatially fragmented city)
- Integration between races and income groups,
- Integrated living environments (integration between residential, economic and social development,
- Integration of all urban needs (residential, education facilities, public open space, commercial and community facilities,
- Integration to create urbanity,
- Integration of land use and transportation planning with particular reference to public transport,
- Integration between departments and between planning and implementation” (ed. Forster, McCarthy and Robinson, 2004).

Integration can mean two things in exploring the development corridor concept, the planning for spatial integration and allocation of resources [in response to segregated socio-spatial planning and resource allocation due to Apartheid] and the integration through institutional processes of implementation and management form various sector departments and disciplines such as land use and transportation. Despite the positive and negative aspects facing integration, it is key to the South Africa agenda presently and the need exists for it to be investigated through monitoring and evaluation techniques which could also be achieved through investigating the use of the spatial strategies to achieve restructuring and integration in light of the dysfunctional spatial form.

2.6.3.2 ETHEKWINI INTEGRATED DEVELOPMENT PLAN 2012/13 – 2016/17

The municipal vision for eThekweni is:

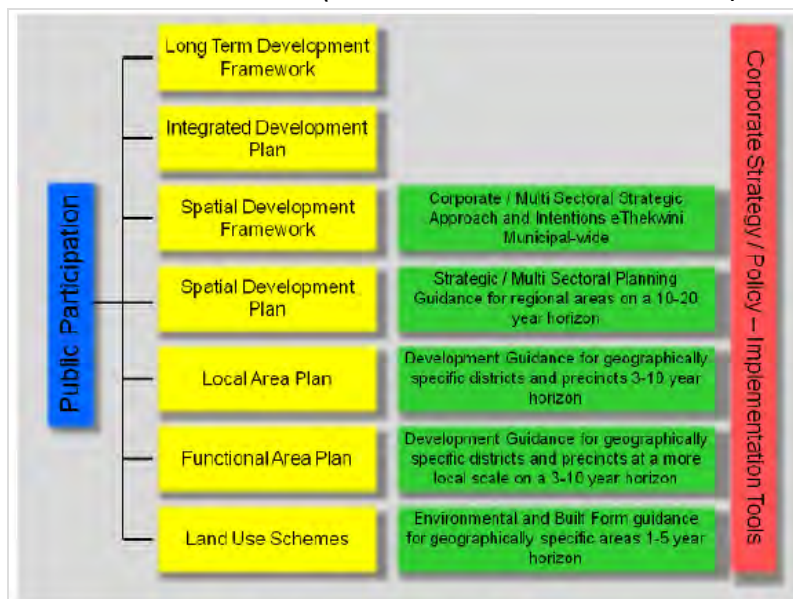
“By 2030, eThekweni will enjoy the reputation of being Africa’s most caring and liveable City, where all citizens live in harmony” (EThekweni Municipality IDP, 2012).

The IDP encompasses six development Dialogues in order to achieve the vision and an eight point plan for delivery. The development corridor concept is addressed as a spatial strategy to achieve two of the development dialogues namely, to create an accessible city and creating sustainable livelihoods through the densification of activity these corridors to promote accessibility to services and facilities in order to increase the quality of lives of residents. In addition, the nodes and corridor concept is seen as a mechanism to provide guidance on the spatial characteristics of economic development. A Cato Manor regeneration project has been identified as a strategic priority area for the city.

2.6.3.3 ETHEKWINI LAND USE MANAGEMENT SYSTEM (LUMS)

EThekwini has embarked on a Land Use Management System for the “purpose of updating, refining and establishing appropriate mechanisms for managing land use and development in the Municipal area” (EThekwini Municipality IDP, 2012:91). This system involves the formulation of a Planning and Development Management Toolbox. It includes a Hierarchy of Plans also seen as an implementation tool. The figure below provides an illustration of the hierarchal suite of plans used in the LUMS. The Land Use Management Framework (LUMF) provides the link between the Scheme and Spatial Development Framework proposals. The LUMF translates the strategic objectives to a level that will provide spatial representation and quantification of SDF proposals to guide the preparation of the Scheme and decision-making on applications for land use change. The LUMF translates the SDF into a detailed set of broad land use areas that direct the future development of areas and provides the basis for the formulation of the detailed zones for the Scheme. It ensures that operational guidance is provided for planners responsible for implementing the SDF.

FIGURE 3: HIERARCHAL SUITE OF PLANS (SOURCE: ETHEKWINI MUNICIPALITY IDP 2012/13-2016/17)



2.6.3.4 SPATIAL DEVELOPMENT FRAMEWORKS

The purpose of a Spatial Development Framework is to guide all decisions of a municipality relating to the use, development and planning of land. See Todes (2009) and Forster, McCarthy and Robinson (eds.) (2004) for a critique of spatial development frameworks which include; weak understanding of space economy and dynamics/trends, use of concepts of nodes and corridors loosely e.g. the production of 'button and zip zip' plans.

2.6.3.5 ETHEKWINI SPATIAL DEVELOPMENT FRAMEWORK (SDF) 2013/2014

The eThekwini SDF is the main tool for Land Use Management in the municipality. The SDF is based on a **compact city model**, underpinned by two important concepts:

- o Urban core - central urban area which generally has servicing capacity and thus opportunity for densification and support thresholds for a range of services.
- o Urban edge - a tool to curb urban sprawl, promote compaction, public transport, protect environmental assets and prevent inefficient expenditure on infrastructure' (EThekwini Municipality SDF, 2013).

The eThekwini Municipality SDF (2013) identifies that eThekwini is a port city and economic growth and development is based on the Durban port. It makes explicit use of the corridor concept as a spatial structuring tool to target a host of socio-economic and spatial problems that the city faces. These strategies involving corridor development are discussed in further detail below:

a) EThekwini Densification Strategy

As part of the Spatial Development Strategy, the EThekwini Municipality SDF (2013) makes explicit use of the nodes and corridor concept and densification of these nodes and corridors. The purpose is to make efficient use of existing infrastructure and create a threshold for public transportation. EThekwini has a Densification Strategy which aims to achieve a more equitable, compact and integrated city form to combat sprawl, target scarce resources and manage urban growth and migration through densification around activity nodes and mixed use activity corridors. It also aims to improvement economic opportunities and infrastructure provision, clustering and accessibility to opportunities and services (health, education, housing etc.).

b) Increasing Accessibility

The above relates to improved accessibility to jobs and other opportunities through an efficient public transport system. This aspect of the EThekwini Municipality SDF (2013) defines the movement route hierarchies which are useful to the corridor concept as it defines the characteristics of the route and associated function and land uses.

- **The Integrated Rapid Public Transport Network (IRPTN)**

The IRPTN provides an application of the integration of land use and public transportation was formulated in 2011 in response to the Public Transport Action Plan (2007 – 2010). The objectives are to realise, equity of access to facilities, reduce overall impact of transport on the environment, promotion of a liveable city and enhancing spatial structure. The IRPTN initial phase included selecting modes of transport to promote through the IRPTN and one of the criteria was the ability of the mode to, support Transit Orientated Development and modes which support further land use development and densification along modes of transport routes (EThekweni Transport Authority ITP, 2011).

The modes of transport selected for the IRPTN focus on rail and existing road based corridors. According to the EThekweni Municipality IDP (2012) land use strategies that support the development and performance of an effective and sustainable transport system are focused around the major IRPTN corridors and include the following:

- “Protecting existing employment opportunities within these corridor areas;
- Maintaining the quality of high value investment, office, retail, residential and tourist areas within the corridors;
- Discouraging the development of major employment opportunities outside the corridor areas- at least in the short term until the corridor investment has gained momentum;
- Stimulating higher employment and residential densities within these corridors in particular, as well as the promotion of residential densification within the core urban area in general;
- Renewing areas around major stations and modal interchanges as high density residential, office and retail uses” (eThekweni Municipality IDP, 2012).

- **Development Corridors:**

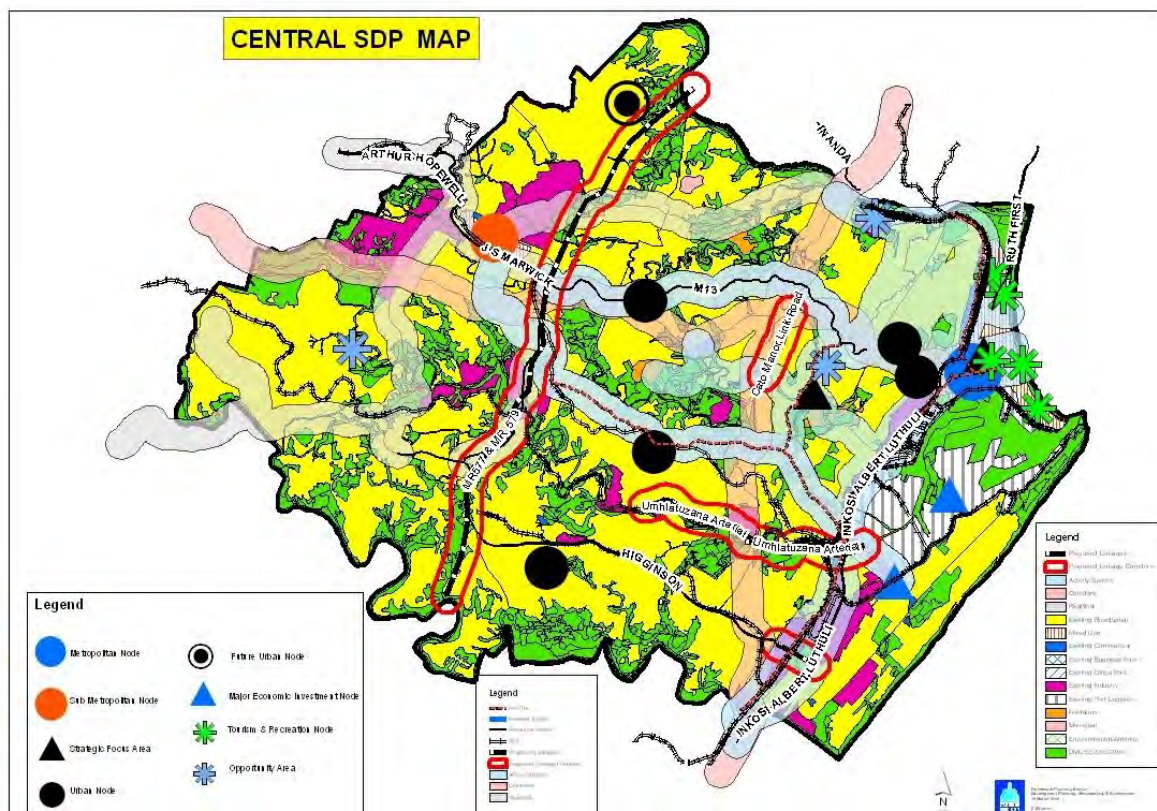
The EThekweni Municipality SDF (2013) identifies that development corridors are viewed as growth axes with robust mixed activity that serves the municipality. These include:

- “Urban Service Nodes and Corridors supporting mixed use urban activities;
- Rural Service Nodes and Corridors supporting local level services;
- Coastal Corridor consist of high quality natural coastal assets and consist of mixed uses including
 - mixed density residential, recreation, entertainment and tourist oriented activities;
 - Tourism Corridors supporting tourism activities;
 - Industrial Corridor supporting primarily industrial activities;
 - Agriculture Corridor ; and
 - Airport Noise Zone” (eThekweni SDF, 2013).

2.6.3.6 CENTRAL SPATIAL DEVELOPMENT PLAN (CSP) 2012 – 2013 REVIEW

eThekweni is broken down into four functional regions (Central, South, North, Outerwest planning regions) a spatial development plan is prepared for each as a form of land use management with the package of plans as described above. Three Area Based Management (ABM) areas fall within the Central Spatial Region namely; Inner eThekweni Regeneration and Urban Management Programme (iTrump), **Cato Manor** and part of the South Durban Basin (SDB). The figure below illustrates the Spatial Plan of the central region within which Cato Manor falls.

FIGURE 4: CENTRAL SPATIAL DEVELOPMENT PLAN MAP (SOURCE: ETHEKWINI MUNICIPALITY CENTRAL SDP, 2013)



The map illustrates the activity corridors identified through the spatial plan as a structuring tool for purposes to direct investment into opportunity areas. One of the priorities of the CSP is to ensure that Cato Manor still represents an opportunity for well-located mixed-use development and the promotion of higher densities. In addition, the CSP aims to promote densification within the central region especially along public transport nodes and corridors. The map shows the intersection of Bellair and Booth roads had been identified as a strategic focus area and Bellair road has been identified as an opportunity area.

The table below derived from the CSP provides an overview of the characteristics of the Cato Manor Local Area.

TABLE 3: KEY CHARACTERISTICS OF GREATER CATO MANOR (SOURCE: ETHEKWINI MUNICIPALITY CENTRAL SDP, 2013)

| | |
|----------------------------|---|
| Key Characteristics | <ul style="list-style-type: none"> • Medium to low density residential • Lower income earners • Presence of informal dwellings |
| Role of Local Area | <ul style="list-style-type: none"> • Residential • Future intent: mixed use zone to support higher densities and economic upliftment • Contains a number of social facilities |
| Proposed Mixed Use | Encourage a range of mixed uses to provide income-generation opportunities for the districts residents |
| Proposed Movement System | Public transport would be a major mode of transport for its residents the services provided must be integrated into an effective municipal public transport system that ensures accessibility to residential, economic, social and community opportunities. |
| Open Space | Existing nature reserves |
| Services | Plans to upgrade existing infrastructure to ensure on-going capacity |
| Current Projects | Cato Crest Social Housing |
| Proposed interventions | Roosfontein Development |
| Overall Strategy | Infill, densification, service provision, social housing and LED opportunities |
| Land use (Area – Hectares) | <ul style="list-style-type: none"> • D'MOSS: 564 ha • Existing Commercial: 4.04 ha • Existing Industry: 2.60 ha • Existing Residential: 1285.73 ha • Institution: 182.83 ha • Total: 2039.05 ha • Existing Density: 30 |

2.6.4 CATO MANOR LAND USE MANAGEMENT FRAMEWORK (LUMF), 2003

The Cato Manor Land Use Management Framework intends to 'contribute towards co-ordinated, harmonious and environmentally sustainable development in the area'. It is used to guide the preparation of planning schemes for the area and to guide town planning decisions in Cato Manor (Cato Manor LUMF, 2003). The LUMF is based on the Policy Framework for Greater Cato Manor, a Spatial Concept (1992) developed, a Structure Plan (1997) prepared and related research and detailed studies undertaken in the area³⁰. A spatial concept prepared for Cato Manor informed the structure plan and include the following spatial elements (Cato Manor LUMF, 2003):

- *'Development corridors along main transport spines*
- *Residential precincts of varying densities*
- *Social facility nodes*
- *An open space system*
- *An appropriate service infrastructure*
- *Economic development areas intended to promote job creation'.*

³⁰ See Forster, McCarthy and Robinson (eds.) (2004) for a detailed list of studies undertaken.

The Cato Manor LUMF (2003) shows land use zones for Cato Manor. The land use zones proposed include 'mixed use' along the stretch. The table below provides an overview of the statements of intent for the corridor precincts as defined from the Cato Manor LUMF (2003).

TABLE 4: STATEMENTS OF INTENT FOR RESPECTIVE CORRIDOR PRECINCTS (SOURCE: CATO MANOR LUMF, 2003)

| | |
|---------------------------|---|
| Precinct | Bellair Road North Activity Spine, Bellair North Activity Spine Precinct Development Plan - November 1995 |
| Function | To offer a variety of residential and economic opportunities to meet the needs of the surrounding community and passing trade. |
| Character / Impact | Finely grained high intensity mixed-use activity spine offering medium to high density residential, commercial, offices, informal sector, service industry, educational, civic and social, environmental, and sports facilities with multiple access onto Bellair rd. |
| Built Form | Human scale, 2 - 4 storey, street orientated buildings that provide pedestrian protection via use of verandahs where possible. Integration of public and private spaces along the street frontage. Development and maintenance of public space. |
| Time Frame | Short term: concentrate non-residential development around vehicular and pedestrian interceptory points with residential infill between these. Medium to long term: Encourage mixed-use development to infill between nodes. |

2.6.5 CATO MANOR LOCAL ECONOMIC DEVELOPMENT FRAMEWORK REVIEW AND DEVELOPMENT OF A SUSTAINABILITY SUPPORT MODEL, 2011

A recent LED framework was completed for Cato Manor. The vision is;

“By 2016 and beyond Cato Manor will be a preferred investment destination with superior and continuing quality service delivery; thereby providing sustainable employment opportunities and addressing social challenges for the majority of its residents” (Cato Manor LED Framework and Review of a Sustainability Support Model, 2011).

This framework provides a thorough overview of the local economy and key interventions to address weaknesses identified. Interestingly the previously planned corridors in Cato Manor were not mentioned in this document. However, the application of corridors was identified as a key strategic focus area to reduce inequality, enhance spatial integration and efficiency of priority nodes and corridors. The LED Framework addresses economic issues through a strategic framework. Key opportunities identified for the Greater Cato Manor area include:

- The LED identifies that Cato Manor will become a significant logistics hub,
- Growth in property demand likely to increase,
- Increase in housing developments will increase demand for retail activity. The area is seen as having a limited variety of shopping facilities,
- Increase in development will increase the demand for construction material,
- There is a demand for warehousing and logistics infrastructure,
- Potential for tourism is high,

- Potential to foster the informal economy.

Key strategic interventions which has potential to impact the corridor include;

- Fostering SMME development and providing support through a savings and credit facility,
- Developing a cultural tourism route,
- Upgrading of signage and entrances to Cato Manor and enhancing environmental awareness through recycling and
- Land Release and Acquisition Project.

2.7 CONCLUSION

This chapter has provided an overarching framework within which the development of the Bellair Road corridor concept is placed. The following key points emanate from the above research which informs the remainder of this thesis.

- a) An overview of the evolution of city planning from a modernist city to postmodernist city and related trends provides an international and national perspective into the trends seen in cities today. South African cities are still characterised by modernist Apartheid planning as well as post-modern trends such as suburbanisation and incorporating the mix of land uses etc. This impacts the structure of cities which the development corridor concept aims to target and amend to create more efficient use of space.
- b) A discussion on the current sustainable development debate places corridor concept in the broader contemporary sustainable city debate which emphasises the use of sustainable urban form. This sustainable urban form incorporates the characteristics of development corridors and has thus been discussed. The compact city debate which informs the corridor concept in South Africa has been discussed. An overview of similar concepts has also been provided to provide a broader understanding of similar concepts being applied based on similar principle to the corridor concept internationally and nationally to combat similar socio-economic problems. This provides an international view on the approaches related to the concept.
- c) A historical overview of planning of South African Cities and the origin of the corridor concept as a spatial strategy to restructure South African cities has been provided. This allows the researcher to understand the origin and context within which the use of the development corridor concept is being used as a planning tool. A review of Spatial Development Initiatives also provides a historical context of the application of this concept at a regional level.
- d) A review of policy and strategies provides an overview and importance of the use of the concept as a strategic tool within Cato Manor, eThekweni and South Africa through legislation and policy.

CHAPTER THREE: LITERATURE REVIEW

3 CHAPTER 3: LITERATURE REVIEW

3.1 INTRODUCTION

The sections above discuss the approach to corridor development, placing the concept in a broader sustainable development debate and tracing the origin of the concept in relation to planning in South Africa. Importance of the concept in South Africa is seen through the policy and strategic framework review above. There has been a significant amount of research based on the theory of corridors as a planning strategy with some lessons learnt from case studies. This chapter reviews existing literature on the topic and is structured as follows:

- Definition and scale of corridors,
- Key physical components,
- Key elements of corridors,
- Benefits of corridor development,
- Preconditions and success factors.

The aim of this section is to explore the development corridor and nodes concept so as to ascertain the following aspects:

- The key components and elements necessary in the positive functioning of the concept,
- The strengths, weaknesses, opportunities and threats of the concept in practice.

3.2 DEFINITION AND SCALE

The following definition of a development corridor has been adopted and applied in context for purposes of this dissertation.

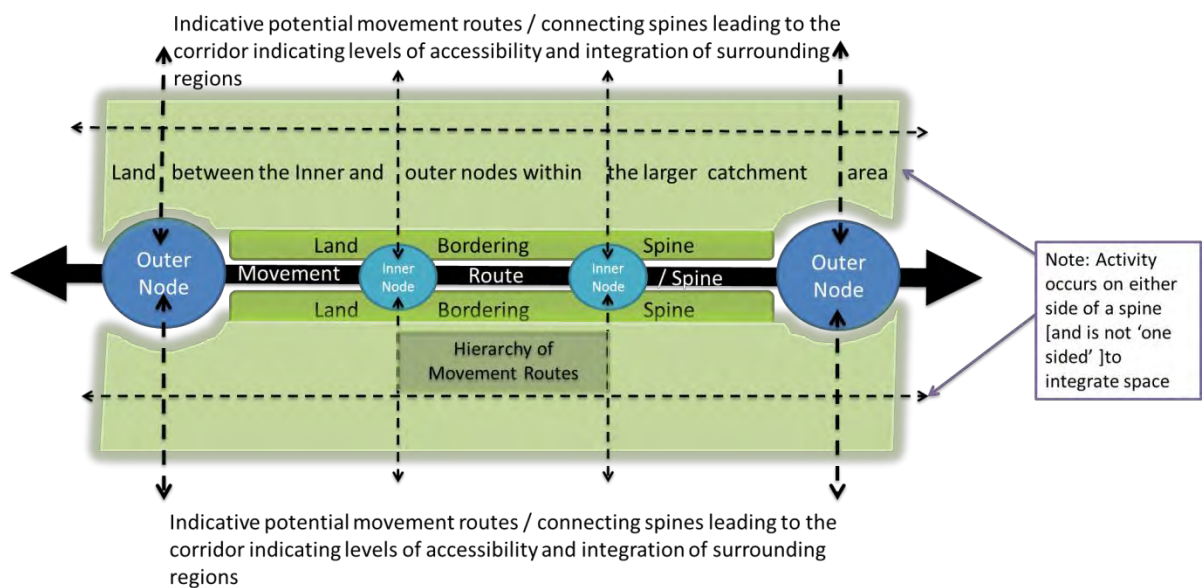
A development corridor is, a linear zone of mixed use, high density urban development concentrated along a high friction public transportation route with a mix of land uses in close proximity to one another, which is reinforced and connected by nodes and edges of intense activity (Martens, 2001; Marrian, 2001 and KZN PPDC, 2008).

Various definitions exist from various South African sources which were reviewed and the definition used above is a culmination of these various resources including the policy review above. A key consideration is the scale of a development corridor to understand the extent of the opportunities and limitations as well as objectives that lie within the scope of the corridor. For example a national corridor integrates different countries and economies attracting large business of regional importance whereas urban corridors provide access to more localised opportunities. Corridors are planned at varied scales and reinforced by nodes of activity. The distinction between the scales of corridors is provided in Annexure A.

The scale that applies in the context of this dissertation is termed an ‘activity street’ or ‘local corridor’. These are defined as individual roads within urban areas with the principles of linearity, accessibility and market threshold apply but where there are much lower levels of opportunity. Activity streets occur at the residential scale (usually at least one kilometre wide (It must be noted that the entire catchment characteristics impact on a corridor) and are primarily of local significance. These local corridors are characterised by low speed movement, a multiplicity of transport modes (particularly public transport and non-motorised transport) and a high level of economic activity and social interaction and are related to the stimulation of investment (KZN PPDC, 2008).

The figure below shows the generic components of a corridor. This conceptual diagramme has been reconstructed amalgamating components identified by KZN PPDC (2008). As shown by the diagram, a corridor consists of a mix of land use activity forming on land along a movement route or ‘**activity spine**’ connected by ‘**nodes**’ to form the ‘beads on a string’ pattern of development. These concepts are discussed below.

FIGURE 5: THE GENERIC COMPONENTS OF A CORRIDOR (KZN PPDC, 2008 AND AUTHOR, 2012)



An **activity node** ‘is a place of high accessibility and advantage (for example, at transport interchanges or traffic intersections) where both public and private sector investment tends to concentrate. Activity nodes are seen to provide optimal locations for shops, offices, community facilities and the informal sector and act as growth points for the development of activity routes by stimulating movement and passing trade (Martens, 2001).

An **activity spine/transport** route is a continuous activity spine which carries the ‘major road-based public transport and consequently provides the best locations for more intensive activities such as businesses and community facilities, as well as high-density housing. In addition, these are the arteries of corridors that carry the flow of people and finance that are critical for the financing of a corridor (Martens, 2001 and KZN PPDC, 2008).

The **'beads on a string pattern'** is characterised as such due to the hierarchal nature of transport routes that make up the corridor where nodes of intense activity agglomerated due to points of increased accessibility. This implies that activity does not agglomerate evenly along a corridor (KZN PPDC, 2008).

Corridors generally have land use activity occurring on both sides with increased accessibility. On a micro-scale a corridor is dependent on the ***existence of forces of attraction*** drawing people from one point of the corridor to another and without such interaction there can be no corridor (Meyer and Oranje, 2001).

This implies the clustering of compatible movement generating facilities along identified local routes is needed to stimulate the emergence of corridors over time. The components/land uses along a corridor act as either 'Attractors' or 'Senders' of people or both (Marrian, 2001).

As discussed through Marrian (2001) forces of attraction can occur at one or more of the generic components of a corridor, that is, the nodes and the stretch of land bordering directly on the spine. Corridors are characterised as single, dual, multiple, the strip and total area attractors (Meyer and Oranje, 2001 and KZN PPDC, 2008). Corridors are also characterised in terms of socio-economic status of residents. To ensure that development takes place within identified corridors strict regulatory controls need to be imposed in non-corridor areas.

Looking at various definitions, there seems to be a general consensus of the main elements of the corridor concepts, and no real gap with regard to the definition from a spatial planning perspective. When searching for information internationally, the corridor concept is referred to as Transit Oriented Development (as discussed in previous sections) or growth corridors therefore secondary research on these concepts has also been considered for this dissertation. According to municipal officials, a development corridor is defined according to scale. When the topic in question was discussed through general discussions with officials, concern was expressed for the terminology of a development corridor, and more 'appropriate' reference to activity streets and activity/mixed use corridors was suggested. On a national scale there has been a misuse of the terminology across various professions, and is often used interchangeably with various connotations (Gerrit, 2003). For example, the corridor concept in previous research has been referred to as 'Mixed-Used Activity Corridor', 'Activity Corridor', activity street³¹ etc.

The reason why these concerns need to be identified at the very beginning is that a definition is needed to direct the study. For purposes of this dissertation the concept will be referred to as a 'Development Corridor' on a local scale as the literature advocates its intention to foster development and the publication of Development Corridor Research

³¹ See Dewar and Todeschini (2004) for an explanation of the concept of streets instead of roads.

report by KZN Planning Commission (KZN PPDC, 2008) broadly refers to all scales of corridors within an umbrella term of ‘Development Corridor’.

An important point that needs to be made is that development corridors may occur along any public transport route that is road or rail. The focus of this dissertation is however on road transport, for no apparent reason as opposed to choosing a rail system, however the researcher is not aware of any planned local corridors surrounding rail in South Africa other than the Gautrain, but this is not in a low income context. Needless to say, rail is playing an increasing important role in South Africa and attempts to revamp rail systems have been under discussion³².

3.3 KEY CORRIDOR ELEMENTS FOR ACTIVITY STREETS AND LARGE URBAN CORRIDORS

Key elements for activity streets and large urban corridors at an urban scale are listed in the table below.

TABLE 5: CORRIDOR ELEMENTS FOR URBAN SCALE CORRIDORS (SOURCE: KZN PPDC, 2008)

| Corridor Elements | Activity Street | Large Urban |
|----------------------------|--|--|
| Spine | High Street | Limited access Metropolitan Highway, High Access City Corridor, major urban transportation route |
| Node/Cluster | Shopping Centre, Cluster of independent non-residential activities, minor transport terminal, important public space, square or building | Major transport terminal, Village/Town Centre, Regional Special Shopping Centre |
| Threshold/Catchment | Immediately adjacent residential or industrial development. Outlying residential areas and passing traffic. | Surrounding mixed use urban settlement. Urban through traffic. |

3.4 KEY CHARACTERISTICS OF CORRIDORS

When studying corridors it is important to identify the key characteristics of corridors to identify with corridors in practice. According to Gerrit (2003) the key characteristics of corridors include:

- Connectivity between nodes,
- Density and continuity,
- Priority investments (catalytic projects) and appropriate land uses,
- Existence of multi nodal transportation as well as NMT (non-motorised transport),

³² Railway transit is also used by mainly low income earners due to the low rates. An example is the station at Umgababa which is used frequently as a means of transport for local commuters.

- Propensity of development,
- Strategic socio-spatial generators,
- Absence of inhibitors,
- High level accessibility and mobility,
- Mixed use activity (corridors thrive on mixed use with increased diversity being more advantageous).

Importantly, density plays a major role with regard to creating the necessary thresholds needed to enable a corridor to develop and reach its objectives. Socio-spatial generators produce high thresholds of people to an area with an efficient public transport system which increase the attractiveness of an area and the market demand for further development. These include schools, sport and other amenities, economic hubs (both informal and formal activity) and transport nodes/stops. This mixed use of activity indicates convenience and makes the corridor more attractive drawing people to it. Corridors create a balance between mobility, access and activity is important to be created to generate sustainable urban form (Gerrit, 2003).

Corridors involve the implementation of various programmes and projects as listed below.

- Promotion of public transport and Non-Motorised Transport,
- Land rationalisation projects (releasing unused land for corridor projects),
- Housing infill projects (higher density housing provision to ensure vibrant local markets and viability of public transport),
- Provision of public facilities (in relation to adequate thresholds),
- Public spaces programmes (improvement of public spatial environment to improve quality of life) and,
- Promotion of small businesses (including business support, skills development, urban markets, manufacturing hives etc.).

Corridor development is a long term process and develops over time through an approach which creates an enabling environment conducive to growth and involves strategic actions. They inform annual budgets across government sectors and require public private partnerships. Public sector investment is critical in lower income areas to enable private sector investment and confidence.

3.5 OTHER IMPORTANT CONSIDERATIONS

- **Land assembly:** According to KZN PPDC (2008) land assembly is important to consider when studying activity streets as access to land is critical to ensure desirable development can occur. 'Activity streets often involve the redevelopment of private or publically owned land which require land assembly and (sometimes) the transfer of development rights to achieve the desired density and a viable mix of

uses' (KZN PPDC, 2008). Here changes in zoning and development controls may also be required. Land reform and land claims are important to consider since they could hinder or fast track the corridor development process.

- **Land Use Management:** land use management is critical in the corridor development and implementation process as it involves the zoning of land. Zoning should allow for flexibility in land use allowing for compatible uses to be clustered together. Zoning of these mixed use areas provide implementation guidelines as to building controls and limitations of development on site in accordance with the initial corridor plans and vision.
- **Urban Design Elements:** urban design relates to the actual functioning of a corridor on ground. It deals with creating a liveable, quality built environment in terms of 'safety, comfort, convenience and legibility for humans' (KZN PPDC, 2008). Urban design element of corridors have been discussed implicitly, relating to planned densities, the planning for mixed uses, a walkable neighbourhood, public open space, parking, access to amenities, favourable street image and creating a legible and permeable streets.

3.6 IMPACTS OF CORRIDOR DEVELOPMENT

The impacts in terms of advantages and perceived benefits of corridor development have been envisaged in many planning and related research. While corridors of varied scales may yield varied impacts there are some common impacts. For example, an international corridor such as the Maputo Development corridor may yield critical cross border economic and social impacts in terms of international trade and cross boarder integration whereas a local corridor would impact the quality of life of specific communities and increase access to social amenities.

As seen above by the policy review corridors aim to promote urban restructuring, spatial integration and socio-economic opportunity in local areas through creating accessibility to services in the South African context. It also aims to accommodate urban population growth while increasing population densities and establishing a greater variety of housing typologies and options.

Another important aspect as identified through the Land use corridor and Nodes study (Green, Aberman and Naude, 2001) is the containment of sprawl by reducing the number of subsidized public transport routes which entice people to live along these routes and promoting the optimal use of land in an area based on increased population density and high intensity of land use and high levels of access (Verster and Warnich, 2005).

Transport has been identified as one of the main priority areas for socio-economic development such as unemployment, lack of access to healthcare and educational opportunities etc. Corridors are meant to promote sound public transport systems and efficient public transport further strengthens the forces underlying the development of

corridors. Investment in transport infrastructure brings about economic growth both during and after construction and stimulates investment in other sectors such as land development and construction, housing, public facilities etc.

The mix of land uses increases convenience which reduces the demand for motorised transport therefore shorter trip lengths and therefore making public transport more viable by increased thresholds (Marrian, 2001).

Corridors promote local economic growth³³ and helps contain spending in the local area. This is done through increased densities providing thresholds to support both informal and formal economic activity (this is especially important for middle to low income areas). Corridors also increase business opportunities to be visible and accessible to passing traffic. Forward and backward linkages are also created between larger and smaller businesses. While large scale commercial activity is primary generators of movement smaller activities leverage of this.

A key outcome of corridor development is to create a certain degree of accessibility to enhance socio-economic opportunities and convenience. Accessibility is advantageous in many ways. Points of greatest accessibility increase in land value and increase competition with a range of land prices (KZN PPDC, 2008).

Corridors assist in locating activity along existing bulk infrastructure routes which will assist with service delivery targets. In return, the intensive land use assists with recovering the costs of bulk infrastructure provision along movement routes (Marrian, 2001).

In addition, based on research by KZN PPDC (2008), Marrian (2001) and Warnich (2005) other positive benefits include:

- Increased thresholds and economic potential corridors are an effective form of decentralisation,
- Discouragement of land speculation (discourage monopolisation by very large land activities),
- Promotion of social opportunities based on increased population and demand for facilities,
- Linear systems have the ability to handle growth and change well,
- A vertical mix of activity is encouraged,
- Enhancing integration,
- Property development,
- Convenience,
- Accessibility to services and infrastructure,

³³ See Beck, Binns, and Nel (2009) and Rogerson (2008) for a more in depth understanding of LED and LED initiatives in South Africa.

- Higher land values near areas of greater accessibility,
- More competition and increased land value as well as growth of land rents,
- Reduced environmental impact,
- “as high accessibility and mass exposure is stretched across the whole metropolitan area, opportunities are created for informal activities, small-scale operators and operations in peri-urban areas to enter the economy” (Marrion, 2001).

It is evident the characteristics of corridor development are advantageous on a social, economic and environmental scale. These benefits are due to increased accessibility caused by integration of land use and transportation. This is also considered in relation to sustainable urban forms discussed in the sections above to combat postmodern trends of sprawling and fragmented cities with the increased use of private automobiles and suburbia.

While the benefits of corridors have been well documented for use in South Africa to accrue advantages for the lower income group, there are disadvantages associated such as:

- *“... improved access leads to higher land values as a result of increased demand. This in the long run becomes an entry barrier for poorer households to access such land” (Mokonyama, 2008).*
- *“Increased development densities lead to increased volumes of travel per unit of space in the corridor. In order to efficiently cater for increased travel demand, large capacity travel modes are required, which are often more expensive to implement than lower capacity modes and in turn requiring state interventions through transport subsidies in order to keep them affordable” (Mokonyama, 2008).*

These disadvantages can have a negative impact for low income communities if the corridor is successful creating a barrier to investment and access of well-located land.

3.7 PRECONDITIONS FOR ESTABLISHING SUCCESSFUL DEVELOPMENT CORRIDORS

Corridor development is a planned effort that requires certain conditions to flourish and be sustained over time to achieve the objectives initially set out. These conditions include economic, institutional, physical/transport, behavioural and planning requirements which are discussed below within the South African context.

In order for a corridor to grow spontaneously there needs to be a high market demand and existing economic strength and must be free of inhibitors. Corridors should be economically viable and offer investors returns on their investments making it more attractive than other available opportunities (for example, what makes this destination stand out as compared to other options?). In addition, corridors need to be planned with comparative and competitive advantages in mind to attract investment. This implies that the location plays a major role in corridor development and therefore needs to be strategic in nature.

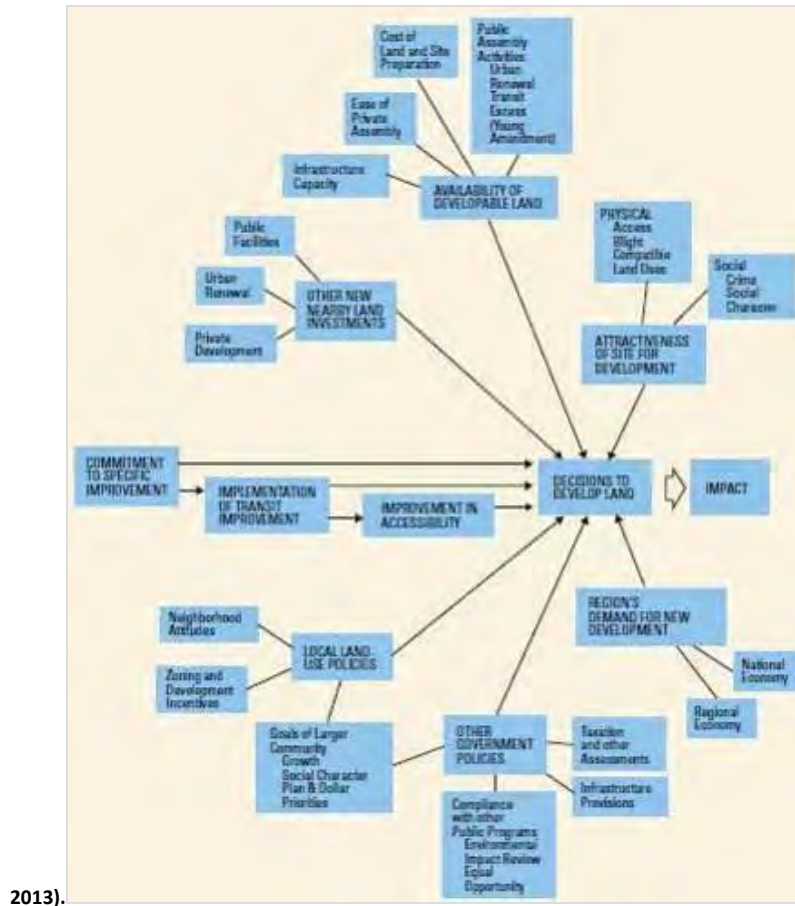
Key physical and transport requirements include making land available for low cost housing. In addition land that is in demand should be made available at sizes that are in demand. Corridors should also be easily accessible to non-corridor areas via public transport. The downfall here is that if a corridor is struggling to build an economic base, high accessibility to surrounding areas can allow for leakage of income into other service centres. Also, if public transport is to be promoted, there must already be a strong culture of the use of public transport in the targeted communities. This will move away from the aim of circulating income in an area. Another important aspect is strong connectivity between nodes to necessitate reason for movement.

Another precondition as discussed by Marrian (2001) and many other authors engaged with corridor research, is the importance of mixed intensive land use to ensure increased choice, economies of scale, public transport thresholds, etc. In addition an implementation plan is essential with time frames for key corridor infrastructure projects to be rolled out. This will ensure private sector commitment. Lastly, certainty with regard to zoning is important.

It must be noted that a corridor is a long term initiative and in order for corridor plans to be implemented successfully, a 'non-programmatic spatial plan' (KZN PPDC, 2008) is needed to adapt to changing local conditions. Detailed spatial planning is essential with smaller scale corridors such as an activity street and relates into structure, precinct plans with development guidelines and controls, urban design guidelines, architectural concepts and bills of quantities (KZN PPDC, 2008). These also provide land use management guidelines for the development of a corridor. Institutional considerations are discussed in the next section.

The diagramme on the next page illustrates a summary of the key preconditions for successful corridor initiatives.

FIGURE 6: PRECONDITIONS FOR SUCCESSFUL INTEGRATION OF TRANSIT AND LAND USE (SOURCE: CERVERO, LUCHI AND SUZUKI,



2013).

3.8 KEY PERFORMANCE VARIABLES AND SUCCESS FACTORS IN CORRIDOR DEVELOPMENT

This section provides a useful set of indicators to track corridor performance strategically placed within a sustainability framework targeting the key economic and financial, social, environmental, physical and transport objectives of corridor development. These are discussed by the KZN PPDC (2008) for corridor development, other local guidelines³⁴ and international publications³⁵.

Success with regard to corridor development is subjective and varied scales of corridors will achieve varied results. For example at a regional level, a corridor may lack social diversity or community development whereas, on a more local scale, a corridor may achieve social diversity, access to community facilities, provide opportunities for small informal or formal trade. The focus on performance indicators will be such that it relates to local corridor initiatives in this section based within a sustainability framework. The outcomes of this section will provide a set direction to the research taken out in the next chapter. The results of the case study will build on these indicators as lessons learnt for future initiatives. Success

³⁴ See Green, Aberman and Naude (2001).

³⁵ See Renne (2009) and Cervero, Luchi and Suzuki (2013).

should be monitored and evaluated (tracked) at regular intervals based on the performance indicators identified for local corridor initiatives.

3.8.1 ECONOMIC ACTIVITIES

The objective of promoting economic growth through increased economic opportunities in disadvantaged areas aims to emanate favourable impacts on the surrounding catchments. The economic indicators focus on the range and success of local business, the amount, affordability, and tenure of housing, property values, taxes, and percent of income spent on housing and transportation.

The key indicators for increased economic opportunities includes number of Small, Micro and Medium Enterprises as well as informal traders within the corridor catchment and number of jobs in the corridor as corridors aim to provide key locations for growth of business. Due to accessibility of corridors, costs for the poor are meant to be reduced, this includes cost of transportation. Accessibility is measured by the linkages to a route which influences the amount of people moving through the route thereby creating more opportunities for investment of and access to social and economic opportunities. Another key indicator is the spin off investment within a corridor. This includes public and private sector investment (commercial and residential). Incentives are also an important factor in attracting investment into a corridor.

Property valuations are useful in determining growth or decline in the success of a corridor initiative. The growth in office and retail floor space is an indicator of the attractiveness of the corridor, the same applies for rentals. Commercial and retail building vacancy rates are also important in determining demand for space within corridors and acts as a measure for the attractiveness of a corridor. Important to touch on is the presence of multinationals in a corridor which will act as an attractor for various other businesses and links the corridor into the global economy.

Housing density/number of units and typology coupled with tenure is important to understand the economic status and affordability of residents in an area as well as changes in land value and the physical as well as economic characteristics of a corridor. Density and thresholds support economic activity within corridors as they influence the demand for activity along a corridor and are influenced by origin-destination travel patterns (KZN PPDC, 2008) and land use mix as well as the local catchment it intends to serve. Propensity to spend within a corridor is also influenced by the attractors within a corridor. Household expenditure on transit and residential services are also important in understanding the impact of the corridor on cost. Examples of this can be seen through the Curitiba example in Brazil, which demonstrates that higher densities within corridors which increase the intensity and demand to support activity. Other examples include investment in public transport infrastructure which creates temporary economic opportunities can be seen through the Curitiba and Bogotá examples.

In the context of affordable suburbs where the informal economy and informality is rife, key considerations need to be taken into account to include the second economy.

3.8.2 TRANSPORT ACTIVITIES

The importance of the integration of land use and transport within a corridor initiative cannot be over emphasised³⁶. This as a guiding principle can be seen through the Klipcor in Cape Town which associates the integration of transport, land use, mobility and accessibility in the management of the corridor. The aim here is to create a more efficient public transport system and to encourage non-motorised transit from one point to another due to increased accessibility to employment and other activity to shorten trip lengths. This increases modal choice as opposed to encouraging a car-orientated community which is seen as unsustainable. When assessing the transport effects of a corridor initiative it is important to consider pedestrian movement, traffic flow and public transport nodes. Peak hour trips are used to monitor if people are attracted to work in the corridor or travel out of the corridor catchment for employment opportunities. This can therefore be used to monitor economic growth within the corridor.

3.8.3 NATURAL ENVIRONMENT

Another aim of corridor development is to provide healthy living and working environments through compact development and mixed land uses while protecting the natural environment. Corridors should ideally make provision for open and recreational space to create the 'live-work-play' environment and a higher quality of life. Key indicators of this include air quality and pollution of the natural environment (including solid waste, noise and storm water retention). River water quality is also important as an indicator of pollution of the water system. Reduced trip lengths through efficient public and non-motorised transport systems reduce the impact on the environment. The amount of open space is a measure of environmental quality and richness of living and working environments. eThekweni municipality has a Durban Metropolitan Open Space System (D'MOSS) whereby the natural environment is managed. D'MOSS is a system of open spaces that incorporates areas of high biodiversity value linked together in a viable network of open spaces. This attribute of eThekweni natural environment management is important in demarcating possible D'MOSS areas within a corridor.

3.8.4 SOCIAL ENVIRONMENT

The social environment objectives within corridors planned for low income areas is an immensely important as it assists in alleviating poverty, reducing inequality and social exclusion by improving access to social and economic facilities/infrastructure and improving

³⁶ See CSIR Red Book (2005) and Cervero, Luchi and Suzuki (2013) for in depth reading on the integration of land use and transport planning as well as sustainable transportation and associated case studies.

quality of life of the previously disadvantaged. Measures include safety and security, ownership, residential diversity and opportunity for advancement. Key indicators include perceptions of crime in the neighbourhood, recorded incidents of crime and accidents and ownership of buildings. Residential diversity indicators include the breakdown of population by age, education, ethnicity and income level as well as household size. Measures for opportunities for advancement include number of community facilities, any tourism related activity (festivals and events etc.) and other educational opportunities. The numbers of jobs in the corridor for designated groups, travel costs as well as educational indicators are key measures for social impacts of corridor development.

3.8.5 URBAN RESTRUCTURING AND PHYSICAL/BUILT ENVIRONMENT OBJECTIVES

As discussed above the benefits of urban restructuring includes creating increased access to community facilities and services to previously disadvantaged areas. Restructuring is achieved by integrating former informal areas to zones of economic activity. Variables used to monitor restructuring goals include; the take up of vacant land to measure growth of a corridor in terms of property development and monitoring of formal development in terms of household services such as access to electricity, water etc. as a measure of formalisation of areas and new dwellings. Dwelling unit density and employment density are important in measuring restructuring goals as increased density improves cost efficiency of provision of services and employment density shows the role of the area in terms of generating employment especially important for low income areas.

A greater job to residential ratio reduces commuting distances and impact on transport infrastructure (Green, Aberman and Naude, 2001). In addition, the value / number / type of residential units indicate residential growth and economic profile of residents. The mix of land use is an important indicator of access to facilities and activity hence influencing choice and quality of life (urbanity). New infrastructure within the corridor is a measure of confidence in the corridor (both public and private initiatives). Improved legibility and aesthetic quality of the urban landscape is also important for the viability of corridors at a local scale. As discussed through Cervero, Luchi and Suzuki (2013), higher densities must be combined with a mix of land use, including public spaces and pedestrian friendly street design which shortens trips.

Potential built environment indicators include vibrancy, attractiveness, safety, mix of uses and social interactive space. These are measured by population density, number of vacant land parcels, and amount of pedestrians within the corridor. Attractiveness of a corridor relates to the amount of heritage buildings preserved, quality of the street scape etc. Safety of environments is measured through surveillance measures such as lighting, crime perceptions and statistics within the area, presence of security and other urban design concepts used to increase surveillance in an area.

As mentioned before a defining feature of corridor development is mix of land uses with variables such as number of mixed use buildings within an area as well as housing and population density as indicators of the intensity of mixed land use. Interactive spaces for people are measured through presence and amount of parks and open space, amount of pedestrian/auto oriented land uses, bicycle parking and presence of bicycles, traffic speed and volume.

3.8.6 INSTITUTIONAL CONSIDERATIONS

One of the most important preconditions to developing a successful corridor initiative is the presence of sustained institutional mechanisms to make an impact. These factors include strong partnerships, strong leadership, a common and shared long term vision and objectives, and commitment to a sustained investment programme (KZN PPDC, 2008).

In terms of institutional conditions, inter-governmental integration and aligning to a single vision is of key importance. This implies that all necessary role players (multi-disciplinary) need to be involved throughout the corridor lifecycle. Local government is the level of government that will be assigned to implement the objectives of a corridor. In addition, other relevant stakeholders such as national and provincial government, non-governmental agencies, private sector etc. must also be aligned and integrated into the process. Other institutional conditions would be to avoid unnecessary administrative issues (red tape) which hamper implementation after lengthy planning processes. Of key importance is capacity to implement corridor projects. This also relates to alignment of budgets from varied sector departments involved.

As a corridor is an interdisciplinary planning concept, an integrated planning approach to planning and implementation is essential in achieving corridor objectives through cooperative governance. This is related to the integrated planning process described in previous sections. What is important here is that corridor plans need to be collectively agreed upon and formalised through this process 'by a body able to manage and ensure implementation...' (Marrian, 2001). This will ensure that coordinated implementation efforts in keeping with a single vision. These factors can be seen through the Curitiba, Brazil and Bogotá, Columbia example where a single city vision which focussed on directing growth, and the integration of public transport and land use was demonstrated in the implementation (Ewing and Mammon, 2006). Public private partnerships and participatory planning between various government sectors were also important to the success of Curitiba and Bogotá corridor examples.

While a coordinated vision is important in achieving implementation goals set out, it is important that the corridor is constantly monitored and evaluated. Depending on results of the monitoring and evaluation, key changes can be made to mitigate any issues experienced with implementation.

Clear commitment is needed throughout the corridor planning and implementation phases by all stakeholders in order to move toward a common vision to achieve the desired outcome. Here political will is very important to influence community buy in, hence a political leader needs to be help drive implementation.

While initial public investment is needed to create an enabling business environment and attract private investment, long term, on-going investment (public and private) is necessary to sustain the continued development and maturity of a corridor to meet its objectives. Examples can be seen through the Lubombo and Maputo Development Corridor.

These aspects are also highly emphasised through Cervero, Luchi and Suzuki (2013) exploring land use and transport integration initiatives in developing countries such as India and Columbia.

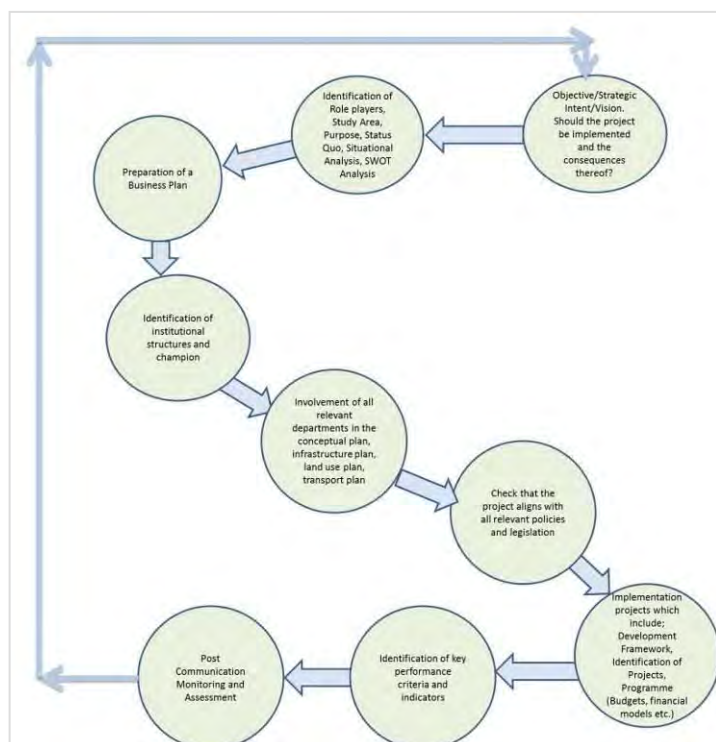
3.9 STAGES OF CORRIDOR DEVELOPMENT AND THE PLANNING LIFE CYCLE OF A CORRIDOR

This section sums up the above discussion by placing the planning of a corridor in perspective. The diagramme below taken from the KZN PPDC Development Corridor Guidelines (KZN PPDC, 2008) indicates the planning life cycle of a corridor initiative.

As indicated in previous sections, corridor development is a strategic initiative which fits into a longer term vision with clear commitment and intent. While it has been noted that many initiatives differ in reality than the plan, an informed, versatile strategic plan with key projects and programmes is necessary to direct growth and development in a demarcated space.

As indicated by the adjacent diagramme, the strategic process begins with a clear intent, objectives and strategic vision. As indicated in the above sections these variables indicate the level of success that a corridor brings about in keeping with a common goal and outcome. This intent needs to be clearly aligned to relevant regional policy and legislation.

Figure 7: Planning Life Cycle of a Corridor
(Source: Reconstructed by the author from KZN PPDC, 2008)



The next step in the strategic planning process is to gain an in-depth understanding of the local area and characteristics, stakeholders and current growth trends indicating the key strengths, opportunities, weaknesses and threats of the local catchment area. Based on this step in the process, the next step entails developing a business plan for the development of the corridor which will identify institutional structures to implement and monitor the development of the corridor over a long period of time.

Another step determining the success of a corridor initiative is the integrated planning process involving all relevant line departments involved in the concept plan, transport plan, infrastructure and land use plans. These are important in developing a unified integrated development framework and identifying sector specific and cross cutting projects and catalytic interventions to spur growth. These interventions require implementation plans indicating budgets, timeframes and key role players as well as key performance indicators per project.

The corridor is an on-going cyclical process and does not have a definitive end as it has to be continually monitored, evaluated and assessed to keep abreast with changes in the local environment.

3.10 CRITICAL CONSIDERATIONS OF CORRIDOR DEVELOPMENT

The study of corridors and integration of land use and transport planning has become increasingly evident in post graduate and other research. The growing emphasis placed in the marriage of these professions is argued as beneficial on various levels; such as creating socio-economic opportunities through increased accessibility to community and job opportunities in both the first and second economies and within a sustainable development agenda; decreasing the use of fuel consumption while creating healthy liveable neighbourhoods. The documented impacts and benefits of corridor development seem holistic in nature, as if it is a one size fits all solution to varied social, economic, and environmental problems faced by cities. This however varies with context and is difficult to achieve in reality with many challenges experienced with implementation of the concept. These challenges evident in developing countries as discussed by Cervero, Luchi and Suzuki (2013: 8) [which are also evident with initiatives in South Africa] include:

- *“Lack of regional coordination at the metropolitan level*
- *Sector silo behaviour and practices at the city level*
- *Inadequate policies and regulations for strategically creating “articulated densities” (densities that are strategically distributed across parts of a metropolitan area)*
- *Restrictive national regulations and administrative constraints*
- *Inconsistencies in the planning instruments and deficiencies in their implementation*

- *Inadequate policies, regulations, and supporting mechanisms for redeveloping built-up areas, particularly brownfields or distressed and blighted districts*
- *Neglected urban design at the neighbourhood and street level*
- *Financial constraints” (Cervero, Luchi and Suzuki, 2013: 8).*

Other challenges experienced at a local context as discussed by Martens (2001: 150) which are largely still applicable today as mentioned through general discussions with planners include;

- Lack of strategic focus,
- *“The concept is being questioned from an academic perspective in terms of its apparent technocratic approach to planning and its modernist assumption that urban change can be controlled by policy, which appears to be ill-founded in the light of continued urban sprawl and spatial fragmentation not only in South Africa but also internationally” (Martens, 2001: 150),*
- *The multi-sectoral nature of corridors means that a corridor initiative involves many role-players with different agendas and a key challenge is stream lining these sectors and budgets to reach a common goal (KZN PPDC, 2008),*
- Inappropriate use of the concept in strategic planning processes without careful analysis of the designated areas development potential,
- The disjuncture between public spatial policies and the form and location of public sector investment such as the commitment to develop high density housing when the housing subsidy promotes low density development,
- Economic development is market related and driven with limited restructuring objectives and undermines community related economic development in low income areas.

In addition, as mentioned above a key issue that professionals are still trying to grapple with is a uniform definition of a corridor among professions. Another challenge is adapting a corridor to local conditions and political context. Therefore, while these common challenges have been identified, context specific challenges are experienced when or during implementation of a corridor. This reiterates the need to constantly monitor and evaluate a corridor throughout its life span in order to identify challenges and issues that arise and address these accordingly so as to realign objectives to the common vision.

A successful corridor will appear disorganised (although different sets of activities will have their own logic); and will fluctuate over time (during the day; different days of the week, month); and will evolve over time (Robinson, P 2014, pers. comm., 23 July). This is a powerful statement when it comes to evaluating corridors.

3.11 EXISTING RESEARCH ON CORRIDORS IN CATO MANOR

There are two research projects which deal with the Bellair Road corridor. These are the research projects undertaken for the KwaZulu-Natal province (KZN PPDC, 2008) and an unpublished thesis by A. Martens (Martens, 2001). The research project for KZN uses the Bellair Road North activity spine as one of eight case studies in developing guidelines for the planning and implementation for corridors at various scales. It attempts to understand the nature of the corridor and provides lessons learnt. This research will provide a useful background to the early intent and planning of the Bellair Road corridor. It also provides an important list of lessons learnt and key successes of the corridor in practice until seven years ago - 2008.

The research undertaken by A. Martens provides a useful understanding of the use of the corridor theory and planning practice in the Durban Metropolitan area by means of using Bellair road as one of six case studies at varied scales. This piece of research provides a good historical overview of the planning and implementation of the corridor until the year 2000.

3.12 CONCLUSION

The above review of the corridor concept provides an overview of the corridor concept and related theory. Key social, environmental, economic and institutional factors required for a corridor to function effectively were discussed. This section draws key success factors from existing case study research undertaken with regard to implementation of corridor initiatives. These factors confirm some of the theory related to corridors and adds critical elements to consider for this research project.

From the review of corridors above it can be seen that the corridor concept is a direct relationship between transportation infrastructure and land use. The scale of spine determines or influences the type, density and scale of land use. This relationship can determine the success of a corridor. In addition, the success of a corridor is based on a number of interrelated factors ranging from local institutional factors such as political influence and drive and leadership structures, socio-economic status of surrounding catchment communities relating to economic and buying power to support a corridor, funding and integration of sectoral budgets, a clear commitment and intent by all stakeholders, spatial factors of density, appropriate thresholds to support a corridor, a non-pragmatic and adaptable spatial plan, compatible land use mix, origin-destination travel patterns, continuity and topography.

There has been a significant amount of research based on the theory of corridors as a planning strategy with some lessons learnt from case studies. This section has addressed objective 2 which aim to explore the development corridor and nodes concept.

CHAPTER FOUR: CASE STUDY: BELLAIR ROAD CORRIDOR

4 CHAPTER 4: BELLAIR ROAD DEVELOPMENT CORRIDOR CASE STUDY

4.1 INTRODUCTION

Previous chapters have outlined the case and argument for development corridors as a spatial strategy to restructure South African cities that provide access to varied opportunities through the integration of land use and transport planning disciplines. This is done in the context of integrated development planning of allied and related professions and broad urban debates of sustainable development.

This chapter demonstrates the implementation of such local initiatives through the Bellair Road Development Corridor in Cato Manor. The purpose is to provide an applied case study to guide similar planned initiatives. The Cato Manor example is unique in that it seeks to provide opportunities close to the CBD. This is seen in the light of limited well located land available in and near Durban inner city. The issue that planners have to grapple with is providing access to opportunities in a well located area which is highly in demand in the light of scarce available land.

4.2 HISTORY OF DEVELOPMENT IN CATO MANOR

The Bellair Road corridor was a major aspect and structuring element of Greater Cato Manor spatial planning. It is therefore important to understand the overall history of development in the broader study area. The area has a vast history of forced removals and land invasion and has been one of the most studied areas due to its uniqueness which lies in its history and political significance³⁷. It was known as *“one of South Africa’s largest peri-urban slums, one of the uglier of the urban scabs left by Apartheid, one of the largest undeveloped areas in a South African city, an area of tremendous political symbolism and more recently, a model of best practice in urban reconstruction”* (ed. Forster, McCarthy and Robinson, 2004:27). While this statement is generally accepted due to extensive planning efforts, funding and national and international significance, it is not without grave issues still. This can be seen through the recent political assassination and riots regarding services.

In the 1880s land was leased or sold to Indian market gardeners who began letting plots of land to Africans, who erected shacks and sublet. This allowed for the rapid growth of informal settlements in Cato Manor up to 1948. There is also a history of violent riots (Durban riots) in the area between Africans and Indians in what was once a thriving mixed race community. The promulgation of the Group Areas Act of 1948 forcefully removed Blacks and Indians (about 100 000 people) to townships such as KwaMashu and Chatsworth

³⁷ See Forster, McCarthy and Robinson (eds.) (2004), Cele (2010) and CMDA (2002) for an in-depth review of the history of Cato Manor.

with Cato Manor serving as a transit camp. Cato Manor was zoned as a white area thereafter.

Further riots were held and for about 30 years, Cato Manor was left largely vacant with a few scattered houses, corner shops, and religious sites [and demolished buildings, rubble and overgrown bush]. Remaining residents formed the Cato Manor Residents Association to resist further removals. It can be seen how Cato Manor was transformed from a vibrant mixed race community to a derelict contested space characterised by forced removals, violence and segregation.

By the mid-1980s major parts of Cato Manor were officially identified for Indians³⁸ and some houses were built in Wiggins and Bonela. Also, during the late 1980s land invasions took place and the growth of informal settlements initially in Wiggins and Cato Crest with people seeking refuge and accommodation near employment opportunities (CMDA, 2002).

The early 1990s sparked interest from many interest groups including NGOs and public communities in the redevelopment of Cato Manor. To this end the Greater Cato Manor Development Forum (CMDF) was formed in 1992 to undertake planning for the development in Cato Manor which through stakeholder engagement in the planning and development process. A policy framework was formulated to guide the redevelopment. This included programmes to acquire land, funding and secure development rights. In 1993 the Cato Manor Development Association (CMDA) was established as a Section 21 company to mobilise development in Cato Manor as the CMDF did not have legal status. This was done through extensive planning, political will power and funding. The CMDA initially had extensive problems with large scale land invasions in 1993 resulting in invasions of houses in Wiggins as well. Cato Manor was designated as a special Presidential Lead Project and received substantial funding from the Reconstruction and Development Programme (RDP) and in 1996 received funding from the European Union.

4.3 EXPERIENCE WITH SPATIAL AND DEVELOPMENT PLANNING AND IMPLEMENTATION MECHANISMS

The Cato Manor Development Project was envisaged to unfold in three overlapping stages; the planning and preparation stage, a public investment stage and a private investment and capital formation stage. A series of planning documentation was produced to manage the implementation of the Cato Manor Development Project. These include;

- a) A Policy Framework for Greater Cato Manor (1992),
- b) Business Plan 1994 – 2000 (1994), with subsequent updates,
- c) 5 year Implementation Strategy Plan (1995),

³⁸ The South Africa Indian Council made representations to government to deproclaim land in Cato Manor for Indian ownership and occupation which took place in 1979 with one third of Cato Manor reserved for Indians (ed. Forster, McCarthy and Robinson, 2004:33,34)

- d) Annual Implementation Plan (from 1995 onwards),
- e) The Cato Manor Structure Plan (1994-1995),
- f) Precinct Spatial Framework Plans,
- g) Precinct Development Plans,
- h) Policy Plans.

A number of these plans were prepared for the Bellair Road North Corridor. Key planning documentation prepared, as cited by KZN PPDC (2008) include, a precinct plan which included urban form directives and sketch proposals etc., Physical Framework Plan, Land Release Plan, and Land Use Management Plan. Design and development briefs were also produced for every project undertaken with the aim of aligning to the original concepts and vision. The excessive planning was aimed at enabling effective and efficient implementation.

The corridor concept stemmed from the Policy Framework for Greater Cato Manor and was later articulated in the Cato Manor Structure Plan. As stated by Forster, McCarthy and Robinson (eds.) (2004:61) the development vision set out in the policy framework is summarized as, *“an integrated, compact development in the heart of Durban, offering a range of life cycle, residential, recreation and employment opportunities particularly for the poorer residents of greater Durban”*, and in qualitative terms the vision was to develop Cato Manor as a *“place where people want to live and work in a distinctly urban environment, where one can enjoy a full lifestyle and reach most parts of the metropolitan area without needing to own a car”* (ed. Forster, McCarthy and Robinson, 2004:61).

The spatial elements to achieve this vision included a spatial framework comprising of activity corridors, nodes and precincts with increased emphasis on mixed land uses, public transport, affordable housing, low rise higher densities, variety of housing types, increased opportunities for Small, Medium and Micro enterprises etc. (ed. Forster, McCarthy and Robinson, 2004:61).

The aim of the structure plan was to translate the vision and policy guidelines into a coherent document which facilitates ‘coherent and co-ordinated spatial planning’ and communicates the vision set out to all interested and affected parties (Cato Manor LUMF, 2003). Hence, consensus about the concepts put forward was reached.

The activity spines and nodes concept was suggested as one of the four key structuring elements of the Cato Manor Spatial Framework. The Structure Plan for Cato Manor outlined the key objectives of the Bellair Road Development Corridor as:

- *“The creation of economic opportunities for smaller enterprises to enter the market as linear development results in differing land values along its length,*
- *Improved access to facilities by a largely public transport reliant population*
- *Higher thresholds which contribute to economic sustainability and a more affordable and efficient public transport system*

- *Integration of GCM with the surrounding urban fabric, rather than becoming an inwardly oriented, low income, 'no-go zone', through the encouragement of public transport through the area and attracting non-residents to the economic and social opportunities created along the activity streets” (CMDA, 1997 in Martens, 2001).*

Activity corridors were to be situated along main transport routes of Bellair and Booth Roads characterised by horizontal and vertical mixed use high intensity of development opportunities with a “finely grained urban fabric that operate on the basis of an efficient, affordable public transport system running along their length and a high level of environmental quality to encourage people to access opportunities” (Structure Plan, 1997 in Cato Manor LUMF, 2003). Nodes along the routes were envisaged at interceptory and highly accessible areas with a major node at Booth/Francois intersection. The activity corridor concept as cited in the Wiggins Spatial Precinct Plan (1994) was “in contrast to the typical inward town planning orientation of schemes”. This suggests that this concept was in actual effect a change of the way in which planning was typically carried out to enhance integration of into the greater scheme of land use.

As part of the land use proposals set out in the structure plan, given the active spine status the corridor had been demarcated by cadastral boundaries. The land use proposals for Bellair Road North were set out as follows:

TABLE 6: LAND USE PROPOSALS FOR ACTIVITY CORRIDORS IN CATO MANOR (SOURCE: CATO MANOR STRUCTURE PLAN, 1997 IN CATO MANOR LUMF, 2003 AND WIGGINS SPATIAL PRECINCT PLAN 1994)

| Precinct ³⁹ | Existing Development [1997] | Land use proposals | Development zones proposals |
|-------------------------------------|--|--|--|
| Bellair North Activity Spine | <ul style="list-style-type: none"> • Businesses • Temples • Mosque and school • Police Station • Informal Housing | Finely grained, high intensity mixed use activities | Redevelopment of existing residential development through more intensive land use. Subdivision into smaller more economic plots. |
| Cato Manor Road Office Park | <ul style="list-style-type: none"> • Informal settlements | Office park | |
| Central Node | <ul style="list-style-type: none"> • Petrol Service Station • Telkom site • University workshop | <ul style="list-style-type: none"> • Civic centre • Cultural/entertainment centre • Public transport transfer station • Offices • Commercial • High density residential • Social facilities | |

³⁹ Cato Manor was broken down into 19 planning precincts to facilitate more detailed planning.

The table below summarises the characteristics identified for Cato Manor which inherently impact on the activity corridor concept for Cato Manor.

TABLE 7: ENVISAGED CHARACTERISTICS OF THE BELLAIR ROAD DEVELOPMENT CORRIDOR

| Component | Description |
|-------------------------------|--|
| Transport | <p>The corridors as structuring elements were seen as a means of integration into the greater Durban area which created increased accessibility via public transport. Envisaged population thresholds informed the use of road based corridors with anticipated 35 000 peak-hour trips. Also, increased accessibility is created based on envisaged economic and social activity along the corridor spine. The public transport system provides access from the main employment centres of Durban Central Business District, South Industrial/commercial areas and western employment areas. Major routes were set for Booth/Francois and Bellair Roads (envisaged to cater for 190 public trips per peak hour).</p> |
| Housing | <p>The aim was to provide diversity of housing types in the local are by a mix of income groups targeted. To this extent a range of typologies and tenure options was planned to maximise yield at 60 du/ha. Diverse tenure options planned ranged from full ownership, rental, social housing and private ownership with associated delivery systems. Along corridors, low rise 2-3 storey apartment blocks with commercial activities on the ground floor was planned and medium rise 4 – 6 storey apartment blocks at key nodes along the corridors. Overall yields envisaged projected figures of up to 35 150 units housing some 179 000 people.</p> <p>High density housing development near the corridor in the Wiggins Precinct was envisaged to be 100-150du/hectare, 2700-4050 units. The intention was to create a spatial form which allowed for increased densities near activity corridors and lower densities as distance increased from corridors.</p> |
| Economic Opportunities | <p>Informed by the integrated urban development principle location of economic activity is influenced by an efficient public transport system. The activity nodes and corridor concept was used as the main spatial strategy for location and distribution of economic activity in Cato Manor. Economic activity were envisaged to be located in mixed used areas to reduce travel time and cost, at nodes and the central node at Bellair and Booth intersections. Economic activity was planned at activity corridors where thresholds were planned to be high so that economic activity and public transport could be sustained. In addition, along mixed use corridors and nodes, increased exposure to passing traffic and trade make it desirable for smaller enterprises. Smaller enterprises are also allowed to enter the land market at nodes of higher value land at subsidized rates. Hence opportunities for Small Medium and Micro Enterprises</p> |

| Component | Description |
|--|--|
| | <p>(SMMEs) was also planned for informal markets, business hives etc.</p> <p>In addition, it was envisaged that economic opportunity would be created where local community members are skilled through training programmes and used in the construction process within the local area.</p> |
| Community Facilities | <p>Social facilities were planned in agglomerations to maximise cost effectiveness. Due to the rich history of Cato Manor a tourism centre (cultural/entertainment centre) was planned for the Bellair Road corridor.</p> |
| Infrastructure and service delivery | <p>In particular, adequate street lighting was planned for activity corridors to ensure safety. The community was serviced with all basic services.</p> |
| Open Space System | <p>An open space system was planned to incorporate recreational amenity, assist with storm water management and on site management of environmental problems, conservation etc. in the local area. Natural systems along Bellair Road were planned to be incorporated into the natural corridor system. This included sports fields. Significant amounts of public space, especially along floodplains, D'MOSS, sidewalks, markets, bus stops etc. have been envisaged (Physical Framework Plan in KZN PPDC, 2008).</p> |
| Public participation | <p>Consultation with varied interested and affected parties from residents to environmental conservationist groups, private investors, unions etc. was planned for.</p> |
| Nodes | <ol style="list-style-type: none"> 1. Wiggins-Bellair Node (Commercial Heart – secondary node with a possible informal market and activity centre) 2. Mayville Substation –Bellair Node (Social Heart) 3. Jan Smuts-Bellair Node 4. Horley-Bellair Node 5. Francois-Booth Road Node – Primary commercial, business and service industrial node. |
| Land Release | <p>This plan detailed the sequence of land release for the corridor. First was the upgrading of Bellair Road divides into 3 phases. The road upgrading affected land acquisition.</p> <p>According to the land release plan, release of land within nodes had to be prioritised due to social and commercial importance. Land at the centres of nodes were to be held in public ownership and recommendations for the proper packaging of land parcels was given. With regard to the size of sites, smaller sites with diverse activity were encouraged.</p> <p>Land was envisaged to be released incrementally due to the risk carried with regard to investment along the corridor. Land markets were considered here and there was a need for flexibility in terms of size, use management and ownership. Development yields and uses per land parcel were identified for</p> |

| Component | Description |
|--------------------------------|--|
| | the corridor precinct. Built form directives (including bulk, coverage, edge condition, land use, urban design, parking, land use etc.) and environmental controls were also formulated. |
| Implementation Planning | These programmes identify projects with associated budgets, target dates, implementation agents etc. |
| Urban Design | Urban design guidelines were prepared for circulation and movement (sidewalks and access roads, parking etc.) |
| Extent of Corridor | According to KZN PPDC (2008), in terms of the original land use plan for the area, 42% was planned for public open space, roughly 28% for mixed use and some 16% for roadways. The remaining 14% includes religious sites, social infrastructure, etc. |

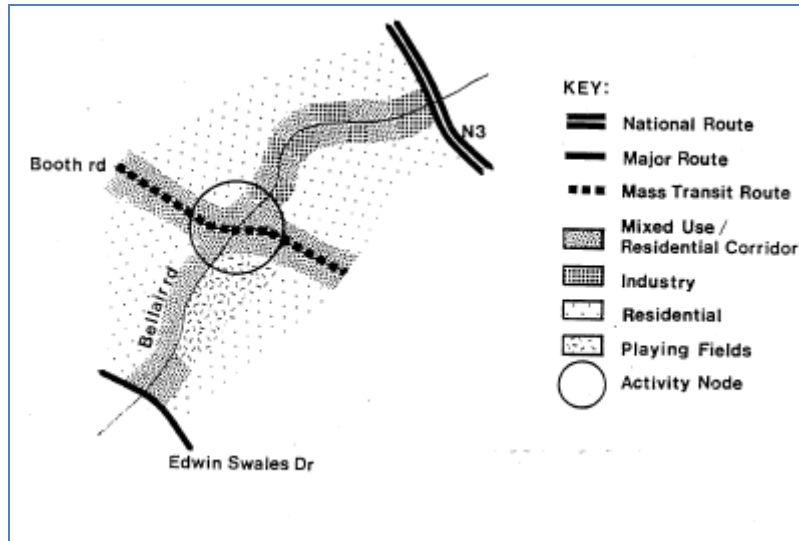
4.4 ENVISAGED EXTENT AND CHARACTER OF THE BELLAIR ROAD CORRIDOR

According to KZN PPDC (2008) originally the corridor was bounded by Edwin Swales V.C. Drive in the south, Jan Smuts Road in the north and by residential areas to the east and west. Further into the planning process attention was focused on the stretch between Booth Road and Jan Smuts Highway, as it became apparent that constraints such as the Albert Luthuli Hospital, unstable land and the existing municipal sports fields would inhibit the development of a corridor between Booth Road and Edwin Swales V.C. Drive (KZN PPDC, 2008). The extent of the corridor was planned to cover approximately 30 hectares, and is \pm 2 km long and 250 metres wide.

The metropolitan significance of Cato Manor can be summarised as providing opportunities with regard to affordable housing and employment opportunities, restructuring Durban as a sprawling and segregated city, developing Cato Manor in a holistic manner which was symbolic to the people of Durban (ed. Forster, McCarthy and Robinson, 2004:60). In addition, Cato Manor was seen as an opportune area to provide metropolitan scale activity which could create an attraction business and other uses.

The Bellair Road corridor was identified through the Policy Framework as a potential activity corridor which would link with the nearby Brickfield Road (an existing organic corridor of intense economic activity) to the north and Edwin Swales to the south – linking Cato Manor to the South Coast Corridor. The figure on the next page provides an indication of the initial concept for Bellair Road Corridor.

FIGURE 8: BELLAIR ROAD CORRIDOR CONCEPT (SOURCE: A POLICY FRAMEWORK FOR GREATER CATO MANOR 1992)



The figure below provides an illustration of the envisaged cross section and street level scene of the Bellair Corridor.

FIGURE 9: LEFT IMAGE: CROSS SECTION OF BELLAIR ROAD CORRIDOR, RIGHT IMAGE: STREET LEVEL SCENE OF BELLAIR ROAD CORRIDOR (SOURCE: A POLICY FRAMEWORK FOR GREATER CATO MANOR, 1992)



The route was envisaged to follow the beads on a string pattern with nodes at every 1 km along the route with the land uses within nodes envisaged to be 3-4 storey high density residential with a vertical mix of activity (commercial on ground floor and residential on top) with institutional uses as well (hospital and technical college). Residential densities were to be highest closest to the street gradually decreasing outward.

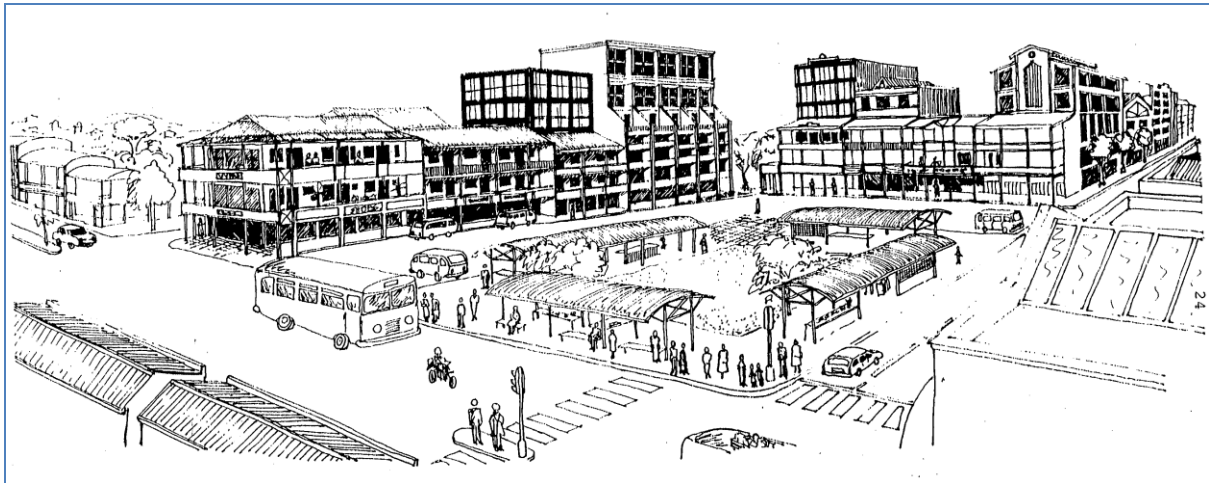
Nodes of intense activity were identified at intersections of main routes namely Booth Road and Bellair Road amongst others. It was envisioned that at this node there will be transport interchanges, informal and formal employment, markets and shopping, residential and community uses. The figure below provides an illustration of this vision.

Mixed land use was envisaged to be promoted through vertical mix, a variety of uses on a site (allowing land to be used for both commercial and residential) and compatible land uses adjacent to one another. In addition urban design⁴⁰ was to be given specific attention in

⁴⁰ Public Spaces such as squares, pavements for periodic markets, transport termini, local streets.

design of precincts with particular attention to the edges to integrate the precinct with the existing urban fabric (Manor Gardens, Sherwood etc.).

FIGURE 10: BELLAIR AND BOOTH ROAD NODE (SOURCE: A POLICY FRAMEWORK FOR GREATER CATO MANOR, 1992)



4.5 PARTNERSHIPS AND FUNDING

This initiative was part of a larger restructuring project which received funding from a mix of sources. These include donor funding from the European Union, public sector funding from the Department of Education, the Reconstruction and Development Programme and the Durban Metropolitan (CMDA, 2002 and KZN PPDC, 2008). Other key funders included; the South African government, the European Union, the Provincial Housing Department, eThekweni Municipality, USAID, Swedish International Development Agency, the Independent Development Trust and the Development Bank of South Africa (CMDA, 2002). In addition key partnerships had been formed with Non-Governmental Organisations, Community Based Organisations, Development Committees, Universities and government departments such as health, education, housing etc. A key partnership with regard to planning in the interests of the community was reflected in the involvement of the Cato Manor Community Organisation (CMCO) which was established to represent the interests of the Cato Manor residents on the CMDA board (CMDA 2002). This mix of role-player and increased support has led to the success of the overall initiative.

4.6 LAND USE MANAGEMENT SYSTEM

A critical component which ties together all the planning concepts envisaged for the local area and corridor is the land use management system (LUMS) developed for Cato Manor and the Bellair Road Development Corridor. A pilot project LUMS scheme was developed to guide the development objectives of the corridor as little consideration was given to the actual implementation of mixed use corridors. The approach taken was seen as 'flexible and adaptable' (KZN PPDC, 2008). The revised and extensive vision for the Bellair Road corridor as determined through the LUMS is:

“A vibrant linear strip development or corridor along a collector road which demonstrates a sustainable balance between the natural and built environment and is a place where pedestrian and vehicular traffic is given equal priority in terms of safety and accessibility. It provides for a mix of land use and activities which provide for an appropriate variety of local economic development, residential, social and recreational opportunities which are accessible to all income groups and makes provision to meet the needs of the broader community and passing trade. Within the corridor a common approach to the built form is proposed which actively defines and encourages the integration of the public and private spaces along the street frontage. It includes the small scale (four storeys) street oriented buildings that provide pedestrian protection and recognizes the need to develop and maintain public spaces as part of an integrated urban environment” (Von Riesen et. al, 2000: 16).

This rather long drawn out vision inherently describes the, then, objectives that the professionals were trying to achieve through the corridor concept.

The proposed scheme for the Bellair Corridor had the following zones (Von Riesen et. al 2000: 17):

- Active Public Open Space
- Civic and Social which includes Worship sites
- Education
- Medium Impact Mixed Use
- Medium Impact Residential
- Multi Use Retail and Office
- Passive Public Open Space
- Transportation and Access
- Utilities and Services
- Future Mixed Use

As seen from the above list, there is a diverse mix of activity which is key element of a corridor as shown in the literature review above. The land use management framework therefore translates intents into a mechanism which can be easily implemented.

This land use management system differed from previous systems by allowing for integration of land uses. It therefore makes recommendations for the nature of a mixed used zone. This difference was made possible by vision statements and statements of intent (SOI) which set out the desired future development for the zones so that it is encouraged in areas. The SOI also incorporates urban design issues. For each zone identified in the LUMS, a Development Schedule or Matrix was developed which detailed land use activities and building types that were permitted on site and what activities require consent.

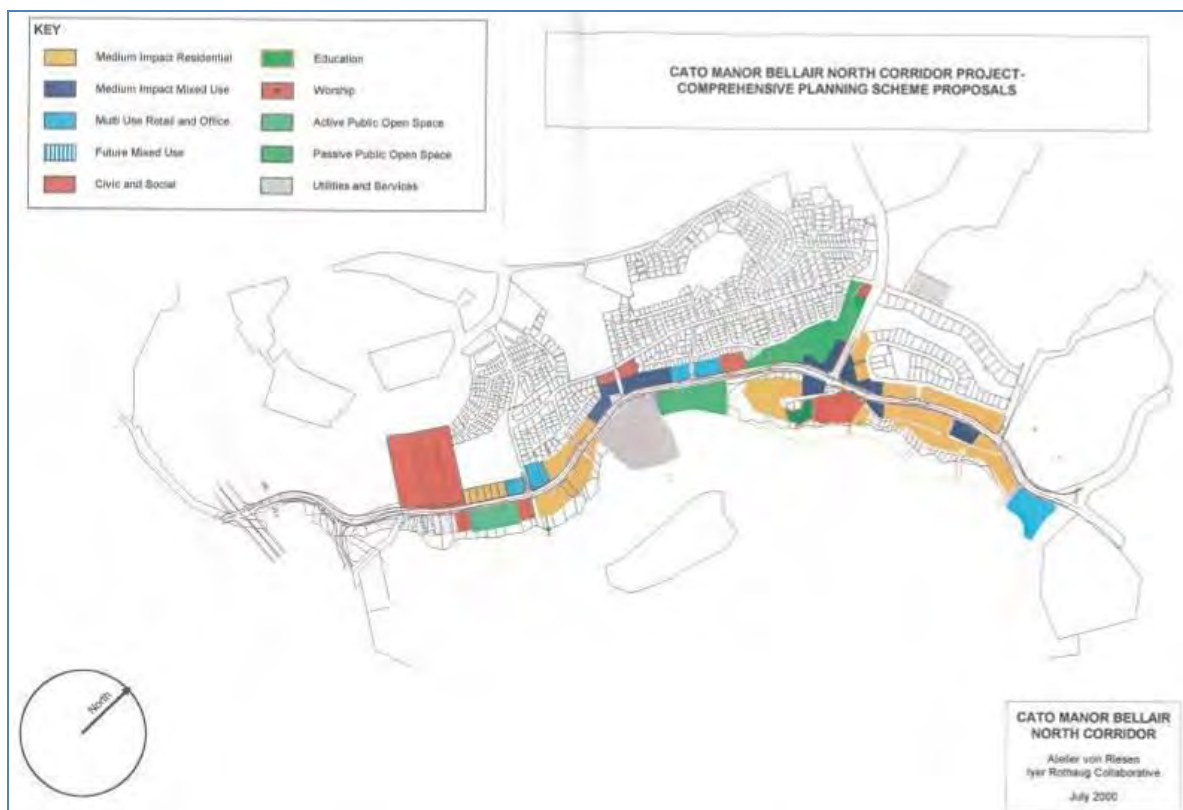
The LUMS for the corridor explicitly incorporated the issue of urban design aspects through the Urban Form - SOI. SOI also included FAR, Height, side spaces etc. which also assisted in

demonstrating the desired urban form. Overall templates were developed guiding implementation and management.

In addition, legally the Town Planning Ordinance (No. 27 of 1949) was used to prepare a planning scheme and the Development Facilitation Act (Act No. 67 of 1995) to clear land/legal issues. These pieces of legislation are however no longer in use.

The figure below depicts the comprehensive planning scheme proposals for the corridor based on the recommendations.

FIGURE 11: PROPOSED COMPREHENSIVE PLANNING SCHEME FOR THE BELLAIR ROAD NORTH CORRIDOR PROJECT



4.6.1 LAND LEGAL ISSUES

Given the history of forced removals during Apartheid, some of the land parcels along the corridor were under land claims.

4.7 INSTITUTIONAL ENVIRONMENT

Pre 2003, the Cato Manor Development Association (CMDA)⁴¹, a Section 21 Company, was tasked to administer development of Cato Manor as a presidential lead project. The CMDA became a special purpose vehicle and agent for the provincial housing board and the municipality.

⁴¹ For a detailed history and description of the CMDA please see Forster, McCarthy and Robinson (eds.) (2004)

The CMDA was responsible for the re-planning of the area, construction of a new road network, construction of pre-schools, primary and secondary schools, libraries, community halls, sports fields, an urban market, two container parks, an entrepreneurial support centre, a shopping centre, an administrative complex, a clinic, a health centre, business parks and housing projects. The project was severely hampered by land claims, by the presence of informal settlements and by frequent attempts to invade the land. In addition, there was a lack of confidence in the CMDA to deliver expectations, crime became increasingly severe, the changing socio-political context was volatile coupled with 'anti-developmental attitude of shacklords resulting in increased density of informal settlements and lastly changes in the political environment and low income housing industry resulted in delays in housing delivery and housing standards (ed. Forster, McCarthy and Robinson, 2004:80).

The Cato Manor Development Association (CMDA) was responsible for the planning of the Bellair Road corridor (a mixed use zone) together with three other 'business parks' namely Edwin Swales Business Park, Booth Central Business Park and Booth West Business Park. As far as the Bellair Road area was concerned, attention was given to the Bellair Shopping Centre and the Market on the corner of Bellair and Wiggins Roads.

In 2003 the CMDA ceased to exist and the municipal operated Cato Manor Area Based Management Office (Cato Manor ABM) was established to carry on with certain aspects of the development. This will further be discussed in 5.5 below.

Public Participation

According to KZN PPDC (2008) and Forster, McCarthy and Robinson (eds.) (2004), the community was directly involved in the process through representation on the CMDA board through an organisation referred to as the Cato Manor Community Organisation (CMDO). In addition through a series of committees and structures set up during the project. There was also community public participation regarding the structure plan with the aim to communicate the vision of Cato Manor to a wide range of interested and affected parties as well as to gain consensus on the concepts identified. The main issue however with public participation is that 'people were more interested in specific projects than strategic planning' (KZN PPDC, 2008). Significant community participation was also required through the upgrading of Bellair Road (relocation of informal settlers). The forums mentioned above and the political structures in place (which have representation in strategic meetings) all point to the incorporation of the local community. This is a very important point to consider as the vision of an area needs political and community buy in, to be realised. This allows the community to have a stake in the development and take ownership.

4.8 EXPERIENCES WITH IMPLEMENTATION PRE 2007 AND KEY CONSTRAINTS

According to KZN PPDC (2008) the implementation of the Cato Manor project started in the 1990's. A series of public investment projects intended to encourage private investment for Bellair Road which have been completed include:

- upgrading of Bellair Road,
- a park and market at the intersection of Wiggins and Bellair Roads,
- a clinic,
- a shopping centre of 2 500m² of commercial floor space⁴²,
- a Health Care Centre in the central node,
- Bellair Market and Cato Crest container Park,
- High density housing and,
- Inthuthuko Junction which comprised an office complex in the central node of Cato Manor at the intersection of Booth and Bellair Roads.

The corridor had been envisaged to follow an incremental growth approach, i.e. it was expected to take roughly twenty years for the corridor to develop (Markewicz, English and Associates, 1995 in KZN PPDC, 2008).

4.8.1 CHALLENGES

KZN PPDC (2008) and Martens (2001) provide a comprehensive overview of the key challenges experienced with implementation of the corridor which is presented below. Although the plans and visions for Bellair Road, and Cato Manor in general, were very clear and articulate, there are always differences between a projects design, and the final result.

- **Economic aspects**

Lack of spontaneous private sector investment: reasons for this included the economy of the city, a loss of confidence in the city resulting in a shift of business to the suburbs, lack of investor confidence in Cato Manor due to crime, land invasions, lack of investor potential in the immediate vicinity and the fact that land for economic activity had only just been marketed (Dewar and Kaplan, 2004: 137 in KZN PPDC, 2008 and ed. Forster, McCarthy and Robinson, 2004). In addition, the propensity for private sector investors to focus on more upmarket commercial developments (Foster pers. comm., 2001 in Martens, 2001) such as the Gateway shopping and entertainment complex and the La Lucia Ridge Office Park drove investment interest away.

Low economic potential and lack of density: Up until 2008 it was believed that the low thresholds and densities in this area have also restrained the development of this corridor. The density of population in the area is not sufficient, nor did the population have the

⁴² A commercial feasibility study was done suggesting a size of 4 500m².

buying power to support the corridor and ensure economic viability of businesses moving into the area. This could be seen by the high turnover of tenants in the centre (Masson pers. comm., 2001 in Martens, 2001).

High costs of low cost alternatives: The Cato Crest Container Park provides a number of containers for small business operators in the area and was originally intended to provide a low-cost alternative to formally constructed spaces for accommodating local businesses (Masson pers. comm., 2001 in Martens, 2001). The development of the Container Park has shown, however, that this option is not as cost effective as originally anticipated due to the costs of site preparation and servicing and the provision of adequate access arrangements. As a result, the container park is unlikely to provide a replicable or sustainable model for supporting and promoting community economic development (Masson pers. comm., 2001 in Martens, 2001).

High levels of crime: limited the potential for passing trade along Bellair Road due to the reluctance of middle and upper income commuters to the utilisation of roadside commercial activities (Masson pers comm., 2001 in Martens, 2001).

Macro-economic environment: this includes general political uncertainty and other investment opportunities.

- **Urban Design**

Some urban design requirements such as a zero building line, created congestion at the vehicle entrance due to its limited access, and made it difficult for people to queue (as it was built right up to the pavement) (KZN PPDC, 2008).

- **Transport⁴³**

Public transport: Public transport differs from what was planned, due to a variety of factors including: 'little co-ordination between various transport authorities, low densities, territorial taxi associations and weak transport generators or anchors' (Dewar and Kaplan, 2004: 138 in KZN PPDC, 2008). Frequent public transport requires high density development and strong generators which Bellair Road and Cato Manor did not have.

Origin destination patterns: cannot have a corridor if people do not travel along the route.

High speed of traffic along the corridor: is one of the reasons for the very slow development of this corridor as the traffic along Bellair Road was too fast moving. This

⁴³ A Cato Manor Transportation Study was conducted

impacts on safety as it makes it difficult to cross the street and limited stop go traffic make the corridor less interactive.

Lack of numerous side roads: there was an inherent lack of the number of side roads branching of Bellair Road which indicates limited interconnectivity also leading to high speed traffic as indicated above.

- **Social Aspects**

As indicated by Martens (2001), Todes et. al (2000: 234) notes that; 'Land invasions, weak and unstable leadership structures within informal settlements, crime and violence, resistance by adjacent higher income communities, and competing claims to land by past victims of forced removals have all slowed down the rate of development'.

- **Built Environment and Land Use**

Factors inhibiting the desire to create quality spatial environment in Cato Manor and Bellair Road, includes: a lack of funds, programmatic plans and lack of co- ordination (Dewar and Kaplan, 2004: 139 in KZN PPDC, 2008).

Life cycle of the corridor: given that the planning of Cato Manor was quite rapid issues such as lack of demand and what should be done with the land in the period between planning and private investment. One of the options was that the land be used for housing that could be converted into mixed and business use in future (KZN PPDC, 2008).

Low density housing⁴⁴ and low rise buildings: due to the limited national subsidy scheme amount allocation, this did not warrant high rise buildings due to high building costs resulting in low density housing also limiting typology options initially envisaged. Vertical mixed use was therefore difficult to achieve. This resulted in a lesser number of people accommodated in the area. Also to achieve high density and higher rise buildings, a much more skilled base was needed. Although local contractors were skilled to produce housing in the local area, they did not have the expertise to deal with high rise buildings (Masson pers comm., 2001 in Martens, 2001). Also the reluctance from the community to live in high rise was evident (ed. Forster, McCarthy and Robinson, 2004).

- **Institutional**

Multiple connotations of 'corridors' across different built environment professions: This was specific to transport as the road was designed as a four lane fast moving route focussing more on movement instead of slowing traffic (KZN PPDC, 2008). This does not fit the corridor concept which advocates slow moving traffic.

⁴⁴ While some higher density residential development in the form of 240 social housing units was implemented this was done through top up funding. Social housing was, however for a different target market group (Masson pers comm., 2001 in Martens, 2001).

Unrealistic timeframes: timeframes were underestimated.

High financial risk: CMDA was independent of the local authority and therefore at higher risk since majority of funding was sourced separate to municipal processes.

Land invasions and land claims: this impacted on the CMDA as a land agent and the timeframes and release of land.

Emergence of shacklords: resulted in more dwellings to be erected while the area was undergoing immense pressure with regard to eradicating the backlog.

4.8.2 SUCCESS FACTORS

- **Strategic Planning**

According to Robinson (2014), the experience for Cato Manor (and hence Bellair Road Corridor) with regard to strategic planning was conducted under 'intense pressure for development to proceed as fast as possible'. This was due to a rapidly changing political environment, urbanisation pressures and a public housing delivery backlog in the face of immense uncertainty. The key strategic decisions that were dealt with include:

- "Adopting a strong integrated policy framework,
- Shift from a negotiation forum to a development agency,
- Strategic partnerships for delivery,
- Using spatial planning as a tool for integration,
- Operating as land agent rather than land owner,
- Securing funding from multiple sources,
- Pursuing 'hard' projects first,
- Changing course on local economic development" (Robinson, 2014).

As Robinson (2014) discusses, these are some of the major strategic decisions that needed to be made to fast track and holistically direct development in Cato Manor and hence the Bellair Road corridor. Robinson (2014) also indicates that this method of strategic planning relates to 'on-going management using strategic planning thinking'. This case of strategic decision making indicates that strategic planning processes can be effective in unstable conditions (Robinson, 2014:260). Therefore strategic planning is deemed one of the key successes in the planning and implementation of Cato Manor.

Other success factors included:

- Spatial planning instruments such as the Spatial Development Framework were deemed to be valuable tools in directing spatial development and mainstreaming integration (Robinson, 2014 and KZN PPDC, 2008),
- Evidence of a clear and shared philosophy is apparent in the Cato Manor/ Bellair Road experience. One will note that in general, most people followed the goals and visions set by the CMDA,
- Providing necessary infrastructure,
- The CMDA as a special purpose vehicle to fast track development.

4.9 CONCLUSION

This chapter has reviewed the planning and implementation of the Bellair Road Development Corridor and relevant historical documentation. It has also reviewed literature on the case study and summarized key challenges and successes documented with regard to implementation. This has provided a useful exploration of the case study dynamics.

CHAPTER FIVE: FINDINGS AND ANALYSIS

5 CHAPTER 5: FINDINGS AND ANALYSIS

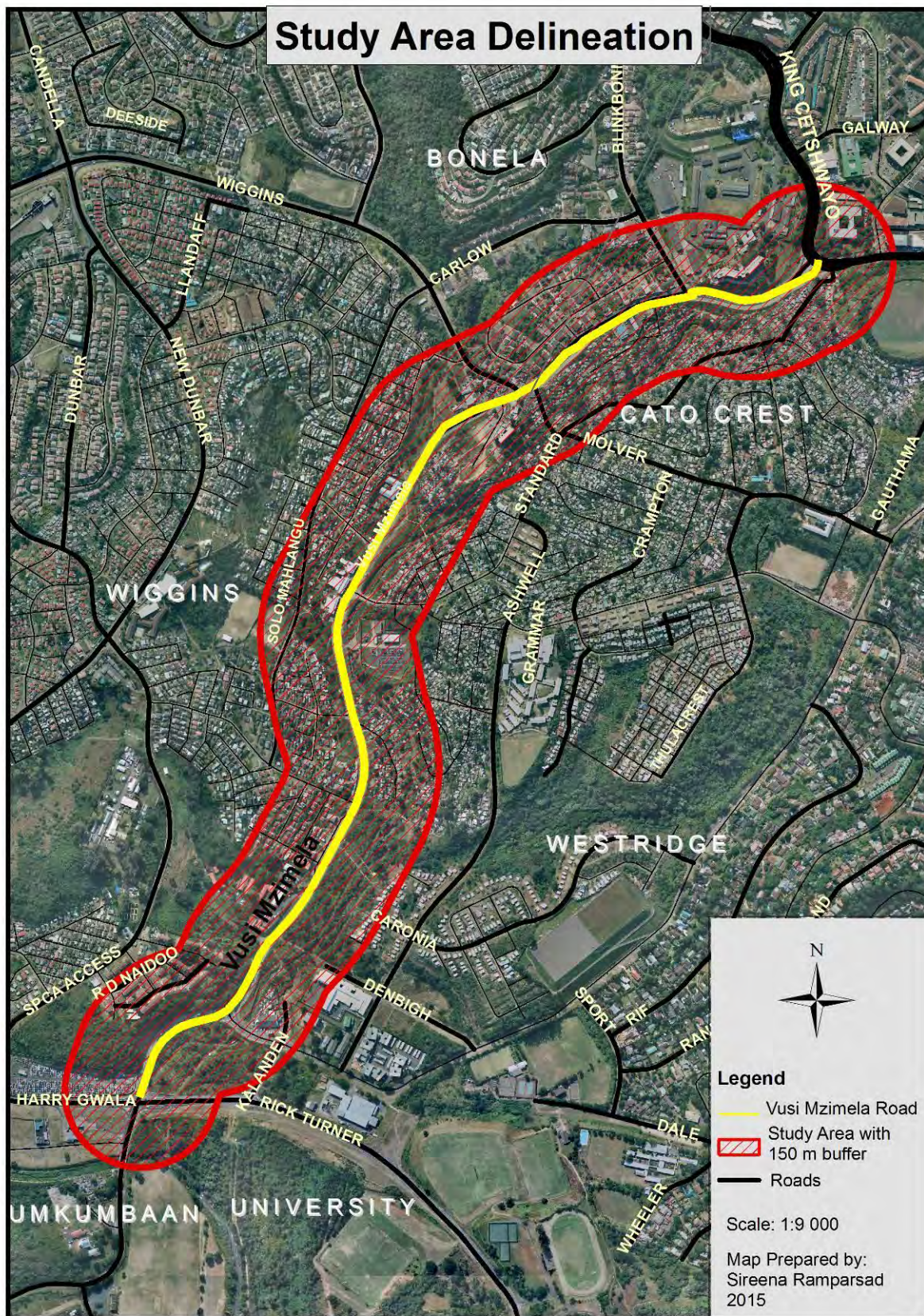
5.1 INTRODUCTION

This chapter presents the land use and transport assessment based on the key corridor components discussed in the literature review in previous chapters.

As discussed in previous chapters, the Bellair Road corridor has undergone changes in delineation. The reason being is that there were constraints affecting continuity such as the Albert Luthuli Hospital and a lot of open space as well as unstable land. For purposes of this dissertation, the researcher has opted to use the new designation as the primary study area for which the land use survey will be undertaken. The researcher believes that the Bellair Road Corridor has a direct sphere of influence which is affected by activities within the corridor. This is shown on the map below. The reason for this is that the Bellair Road Corridor cannot be looked at in isolation given the micro and macro spatial and socio economic trends.

The sphere of influence includes the sub places of Cato Crest, Wiggins, Umkumbaan, Chesterville and Bonella for which socio-economic data is used. Statistics are available for sub place and ward level. The researcher chose to use sub place data as ward level data included areas outside of the corridor catchment delineation. The primary study for which the land use survey is undertaken is shown in the figure below. The portion ultimately planned as the corridor covers approximately 30 hectares, and is roughly 2 km long and 250 metres wide (Markewicz, English and Associates 1995 in KZN PPDC, 2008). This will be the extent of the survey and observation.

FIGURE 12: STUDY AREA DELINEATION (SOURCE: AUTHOR, 2014)



5.2 SOCIO-ECONOMIC PROFILE

This section uses statistical data from Statistics South Africa Census publications for 2001 and 2011. The aim is to outline the socio-economic and demographic profile of the sphere of influence. This will provide an indication of the demographic trends, purchasing power, skills, types of households and employment of the sphere of influence. This will in turn inform the possible factors related to the growth of the corridor.

5.2.1 DEMOGRAPHIC PROFILE

The table below shows the population for the local impact area of the Bellair Road corridor. The areas as mentioned above include Cato Crest, Wiggins, Bonela, Umkumbaan and Chesterville. As shown by the table the population has increased by over 20 000 people over a ten year period (2001-2011) growing at an average annual growth rate of 2.7% which is higher than the eThekweni population average annual growth rate of 1.5%. In 2011 the local study area made up 2.5 % of the total EThekweni Metro population. Interestingly population household sizes have decreased over a ten year period. The same trend is seen for eThekweni Metro.

TABLE 8: POPULATION (SOURCE: CENSUS SOUTH AFRICA, 2011)

| Sphere of Influence | Historical Data | | | Average Annual growth Rate (10 year period) |
|---------------------|-----------------|-------------|-------------|---|
| | Census 1996 | Census 2001 | Census 2011 | |
| Population total | 50 296 | 66 391 | 87 079 | 2.7 % |

The table below shows the population density per sub place. It is expressed in number of people per hectare. In addition a ten year growth rate is shown to indicate the growth over time. As indicated by the table all of the sub-places have experienced an increasing density over time. Also the sub-places all have higher densities than the greater eThekweni Metro. Wiggins and Cato Crest have the highest densities in comparison to the other sub places.

TABLE 9: POPULATION DENSITY PER HECTARE (SOURCE: CENSUS SOUTH AFRICA, 2011)

| Sub-Place | Population density | | |
|--------------|--------------------|-------|----------------------------|
| | 2001 | 2011 | 10 year annual growth rate |
| eThekweni | 13,5 | 15,0 | 1,1% |
| Bonela | 49,8 | 50,2 | 0,1% |
| Cato Crest | 197,2 | 288,6 | 3,9% |
| Chesterville | 65,3 | 76,0 | 1,5% |
| uMkumbaan | 3,5 | 24,1 | 21,2% |
| Wiggins | 102,7 | 132,3 | 2,6% |

For every sub place except for Cato Crest there is over 50% female population. Over 94% of the population for Cato Crest, Chesterville, Wiggins and Umkumbaan are black whereas Bonela has only 41.3% Black residents and 44.4% Indian residents.

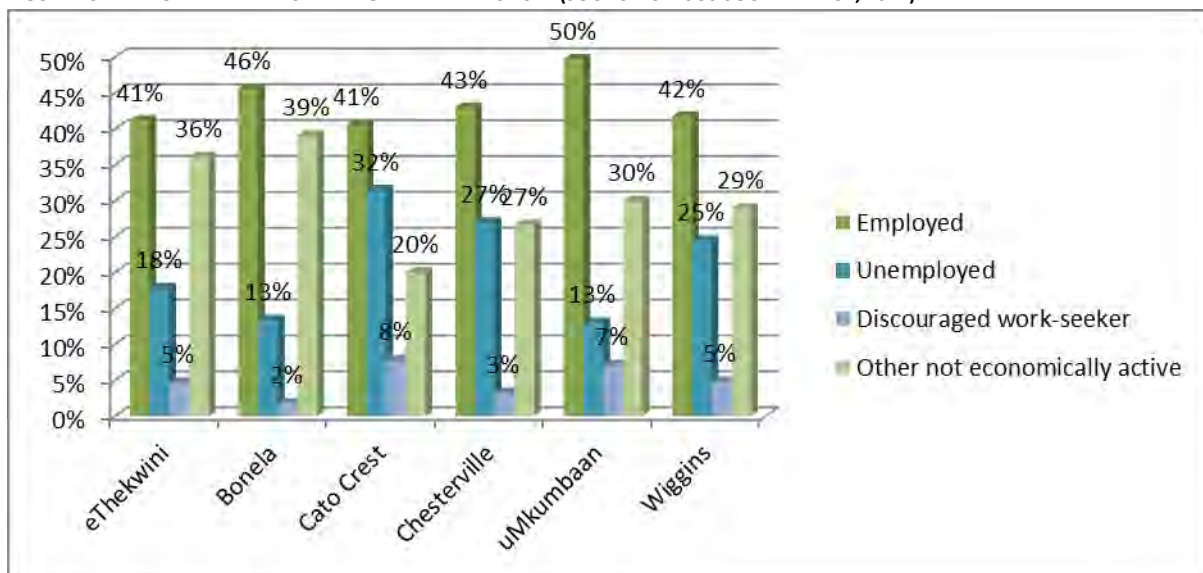
Over 70% of people in the local study area fall within the working age population category of 15-64 years of age. This indicates a relatively young population able to take on employment.

The education profile of residents for the local study area in 2011 shows majority of the population has some secondary education and grade 12. In terms of higher education, Cato Crest has the least number at 2% of the residents with a higher education as compared to Umkumbaan at 25% and Bonela at 16% and Wiggins at 6%.

5.2.2 EMPLOYMENT STATUS, 2011

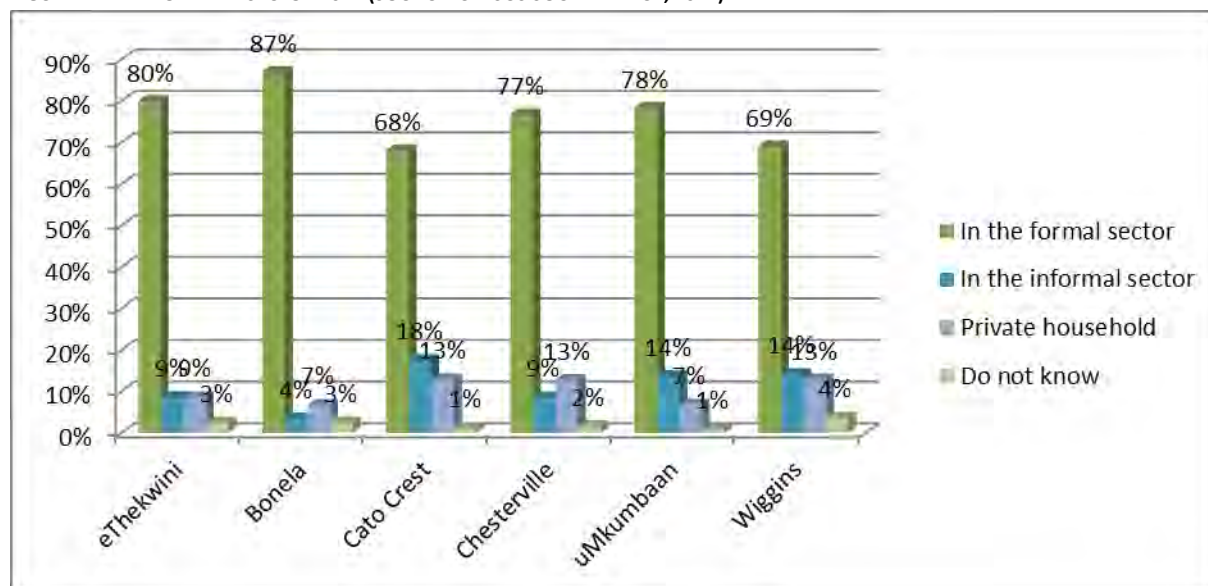
As shown by the graph below, there is an unemployment rate of between 22% and 32% in all sub places other than Bonela which stands at 13%. In comparison to eThekwini with an unemployment rate of 18%, majority of the surrounding sub places have a much higher unemployment rate than the city's average. Interestingly, employment rates are above 41% on par and above the eThekwini average in some cases.

FIGURE 13: EMPLOYMENT AND UNEMPLOYMENT RATES 2011 (SOURCE: CENSUS SOUTH AFRICA, 2011)



The graph below shows that majority of people of working age are employed in the formal sector and a fraction in the informal sector. Cato Crest and Wiggins have the highest percentages of people employed in the informal sector.

FIGURE 14: EMPLOYMENT SECTOR 2011 (SOURCE: CENSUS SOUTH AFRICA, 2011)



5.2.3 ANNUAL HOUSEHOLD INCOME, 2011

The table below shows the annual household income for the study area catchment over a ten year period. The percentage of people who do not earn an income has decreased since 2001 by 3%. The general trend is that all lower income categories have decreased since 2001 and higher income categories have increased slightly. For example, households earning between R 153 601 and R 307 200 per annum has increased by almost 6%. 63.6% of the population earns below R 3 200 per month indicating high levels of poverty decreasing from 82.2% in 2001. 24.8% of households earn between R 3 200 and R 12 800 per month increasing from 16% in 2001. Only 11.2% of households earn over R 12 800 per annum increasing from 1.8% in 2001.

TABLE 10: ANNUAL HOUSEHOLD INCOME 2001 – 2011 (SOURCE: CENSUS SOUTH AFRICA 2001, 2011)

| Annual household income | EThekweni | Study area catchment | |
|-------------------------|-----------|----------------------|-------|
| | 2011 | 2001 | 2011 |
| No income | 17% | 24,6% | 21,6% |
| R1 - R4 800 | 4% | 6,4% | 4,2% |
| R4 801 - R 9 600 | 6% | 14,0% | 6,0% |
| R9 601 - R 19 200 | 14% | 19,4% | 14,0% |
| R19 201 - R 38 400 | 17% | 17,8% | 17,8% |
| R38 401 - R 76 800 | 13% | 11,4% | 14,0% |
| R76 801 - R153 600 | 11% | 4,6% | 10,8% |
| R153 601 - R307 200 | 9% | 1,4% | 7,2% |
| R307 201 - R614 400 | 6% | 0,4% | 3,0% |
| R614 401 - R1 228 800 | 2% | 0,0% | 0,8% |
| R1 228 801 - R2 457 600 | 1% | 0,0% | 0,0% |
| R2 457 601 and more | 0% | 0,0% | 0,2% |

5.3 TRANSPORT ASSESSMENT

In terms of transport, Bellair road is a four lane road which consists of many pinch points allowing the four lane road to narrow down to two lanes at regular intervals. The road was originally four lanes, however due to the fast speed traffic, parking and pinch points were introduced to slow down the traffic. Initially there were only two sets of traffic lights along the road excluding the traffic lights at the booth road intersection. Additional street lights have been placed at the Wiggins node which was erected due to high accident rates and the need to regulate pedestrian congestion as well as the lack of pedestrian crossings. This also creates traffic calming in a busy part of Bellair. The photo below shows an illustration of the lanes.

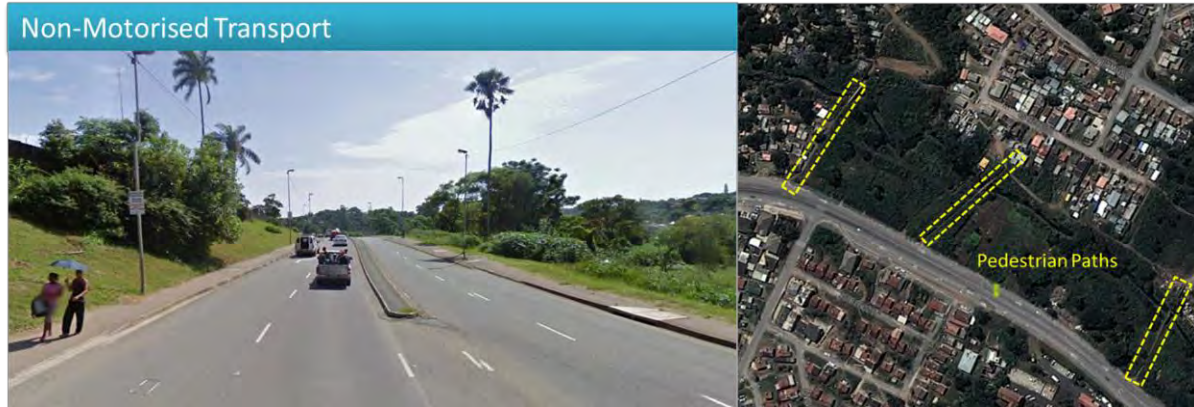
FIGURE 15: IMAGE SHOWING ROAD RESERVE (SOURCE: AUTHOR, 2012)



5.3.1 NON-MOTORISED TRANSPORT

Non-motorised transport provision is evident by pavement reserves and informal pedestrian paths (See photographic evidence below for an illustration of these). Along Bellair Road there is a continuous pavement reserve allocation for pedestrians in a predominantly public transport-reliant community. From observation and discussion with municipal officials, it can be seen that these pavement reserves are well used by the communities and passers-by which is also evident from observation. There are also numerous pedestrian routes leading from Bellair Road to adjacent residential settlements. Road safety is an issue as there is a lot of pedestrian movement and roads are straight hence allowing for fast moving traffic. It is evident that people encroach onto sidewalk space as there is no demarcated pedestrian crossing or traffic lights to calm pedestrian movement.

FIGURE 16: NON-MOTORISED TRANSPORT (SOURCE: GOOGLE EARTH IMAGES, 2014 AND AUTHOR, 2012)



5.3.2 ON-STREET PARKING

On street parking is allocated in certain areas of the corridor, for example, near the community health centre. Here the intentions were to create intense activity along the corridor, which warrants the need for parking along the street as seen along activity streets such as the Sparks Road corridor. Parking facilities are currently largely vacant and not utilised effectively. What is evident though is the use of the parking spaces by the taxi industry to stop and collect commuters.

5.3.3 TRAFFIC CALMING

Traffic calming is evident by pinch points, stop streets and robots along the route to ease fast moving traffic. There is signalisation at Harry Gwala Road and Vusi Mzimela Road, Vusi Mzimela Road and Mary Thirpe Road, Vusi Mzimela Road and Mission Lane/Cato Crest Road, Vusi Mzimela and Wiggins Road and Jan Smuts Highway and Vusi Mzimela Road.

5.3.4 SURVEILLANCE

Surveillance along the route takes the form of street lighting, CCTV, a police station and constant police patrolling as seen through observation.

5.3.5 VEHICLE OWNERSHIP

From the table below it is evident that majority of the population in the study area do not own a motor car and is therefore reliant on public transport. This is reiterated by the mode of transport statistics available from the eThekweni Household Travel Survey (2008) with over 50% of trips using public transport in Cato Manor.

TABLE 11: ACCESS TO A MOTOR VEHICLE (SOURCE: CENSUS, 2011)

| Households: Motorcar Computer | or | Household motorcar computer | owns and | Household owns motorcar only | Household owns computer only | Household owns none |
|-------------------------------------|----|-----------------------------------|-------------|---------------------------------|---------------------------------|------------------------|
| eThekwini | | | 19% | 14% | 6% | 62% |
| Bonela | | | 27% | 28% | 9% | 36% |
| Cato Crest | | | 1% | 3% | 1% | 96% |
| Chesterville | | | 5% | 8% | 7% | 80% |
| uMkumbaan | | | 18% | 15% | 11% | 55% |
| Wiggins | | | 3% | 7% | 6% | 85% |

As shown by the table below the trips by transport mode in Cato Manor is public transport at 52% during AM peak and 67% during PM peak periods. This is mainly through the taxi industry as shown by the eThekwini traffic counts for Bellair Road. The nearest formal taxi rank is the Chesterville Taxi Rank, 24% of trips in Cato Manor are made by foot/walking during AM peak and 7% during PM peak, as fewer scholars travel during the PM peak period. The total number of trips for the peak afternoon period is 19 952 which is almost half of the anticipated peak hour trips of 35 000 (trips anticipated through previous planning exercises for the Bellair Road corridor). The Durban CBD attracts 3 600 trips per hour from Cato Manor during AM peak⁴⁵ (EThekwini Integrated Transport Plan, 2010-2015).

TABLE 12: TRANSPORT MODE OF CATO MANOR RESIDENTS (SOURCE: ETHEKWINI HOUSEHOLD TRAVEL SURVEY, 2008)

| | Private | Public | Walk | Cycle | Total |
|---------|--------------|--------------|--------------|-------|--------|
| PM Peak | 5 268 (26%) | 13 339 (67%) | 1 345 (7%) | | 19 952 |
| AM Peak | 21 465 (23%) | 47 526 (52%) | 22 250 (24%) | 112 | 91 353 |

When assessing the transport effects of a corridor initiative it is important to consider pedestrian movement, traffic flow and public transport nodes. Peak hour trips are used to monitor if people are attracted to work in the corridor or travel out of the corridor catchment for employment opportunities. This can therefore be used to monitor economic growth within the corridor.

The journey times indicate the distance travelled by households in the Cato Manor local area to the varied destinations. 47% of the household population travel to their destinations for over 30minutes indicating that most activity is relatively far away from their place of residence during the morning peak period. Over 50% travel within walking distance during the morning peak period. Conversely, only 29.9% travel for less than 30 minutes during peak time in the afternoon. This is mainly due to the lack of school traffic during peak afternoon time. Reasons for longer afternoon trips from work are mainly due to traffic congestion, waiting periods for public transport etc. (eThekwini Household Travel Survey, 2008). This

⁴⁵ AM peak period = 04:30 – 08:30 PM peak period = 15:30 – 18:30

also indicates that majority of households in the local area work or travel outside the local area for employment opportunities and services.

TABLE 13: JOURNEY TIMES DURING AM PEAK (SOURCE: ETHEKWINI HOUSEHOLD TRAVEL SURVEY, 2008)

| | 1-15 | 16-30 | 31-45 | 46-60 | >60 | Total |
|---------|-------|-------|-------|-------|-------|-------|
| AM Peak | 16.1% | 36.0% | 21.0% | 18.5% | 8.4% | 100% |
| PM Peak | 6.8% | 23.1% | 16.6% | 30.9% | 22.6% | 100% |

5.3.6 SUPPORTING TRANSPORT INFRASTRUCTURE

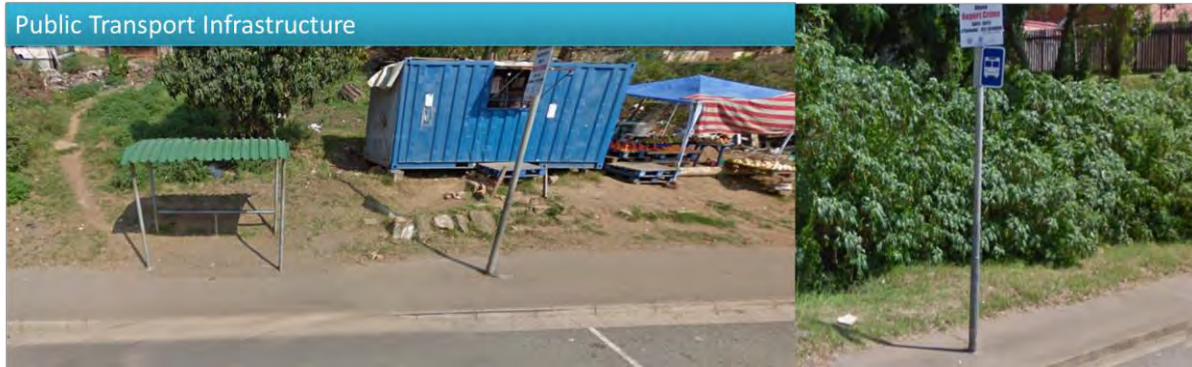
Taxi/Bus Stops/ranks and routes: there are no formal taxi ranks along the as the route is used as a through route (Rampersad, M 2014, pers. comm., 23 May). Bellair Road currently functions as service function only. This can be due to the lack of appropriate land use attractors along the corridor. There was an informal taxi rank along the route which no longer exists. In addition, it was observed that there are numerous taxi stops along the route with vacant parking being used as a stop for a number of taxis. There is sufficient bus stop signage and shelters, however, these are not in perfect condition. There are no laybys for busses and taxis which is seen by taxis stopping to pick up people on the road causing slow traffic movement and delays. The reason for lack of formal taxi rank and laybys is the lack of household population thresholds. Given that Bellair Road forms a part of the feeder and connector routes earmarked for eThekwin’s most recent public transport strategy (the Integrated Rapid Public Transport Network-IRPTN), future studies will be undertaken for the need for laybys, stops and ranks along the route based on demand and future thresholds.

5.3.7 FUTURE PROJECTS

The only projects that are currently planned for Bellair Road are; a taxi rank at the Albert Luthuli Hospital to the south of Bellair Road past the Booth Road intersection and the widening of Bellair Road from the hospital to Booth Road intersection due to high through traffic volumes. In addition, non-motorised transport is planned for Booth Road (Rampersad, M and Moodley, L 2014, pers. comm., 23 May).

According to the Integrated Transport Plan (2011), the Cato Manor ABM planning team has identified several transportation issues relating to that district. The Cato Manor planning team have identified and developed provisional budgets for three programmes to address some of the issues identified. These are; (i) to promote the N2/Harry Gwala (Booth) Road interchange in order to improve access throughout the municipal area via the regional road network (ii) to develop a programme of community-based infrastructure maintenance which could include aspects of road and public transport infrastructure maintenance (iii) to develop additional public transport facilities

FIGURE 17: IMAGE SHOWING PUBLIC TRANSPORT INFRASTRUCTURE (SOURCE: GOOGLE IMAGES, 2014 AND AUTHOR, 2014)



There seems to be a general understanding of the activity corridor concept and importance of land use/transport integration. This can be seen through eThekweni's recent Integrated Rapid Public Transport Network (IRPTN) plans which are currently in the design stage. The city transport department is working closely with land use planners to determine land use mixes along the IRPTN and nodes of accessibility. Bearing this in mind, please see map below showing Bellair Road within the IRPTN planned routes. The IRPTN has connector, feeder and trunk routes which make up the hierarchy of the public transport network. The feeder routes provide access to long haul connector routes which are linked to the main employment centres. Bellair Road has been identified as both a feeder and collector route. Implications for Bellair Road are possible future upgrade based on travel demand studies and need for infrastructure. This may or may not have an impact on surrounding land use and function of the route.

5.3.8 ACCESSIBILITY AND ROAD HIERARCHY

This section analyses the accessibility of the Bellair Road Corridor in terms of road hierarchy, surrounding linkages and layout. The road hierarchy classification is adapted from the eThekweni SDF (2013). The aim of this hierarchy is to facilitate movement and ensure accessibility to social and economic opportunities to communities. The Bellair Road Corridor falls within a larger movement corridor referred to as the M10. While the M10 serves a mobility function, reference is made purely as a signage guidance system and does not mean that Bellair Road holds a mobility function. The corridor makes up ± 2.2 kilometres. Using the eThekweni definition for road hierarchies, Bellair Road functions as a 'Collector Street – Commercial and Residential'. It satisfies the following key requirements of such as stated in the eThekweni SDF (2013):

- i. Intersection spacing of $> 150\text{m}$ with access to property (larger property in the case of the commercial properties),
- ii. Parking if conditions allow,
- iii. Speed limits of between $50\text{-}60\text{ km/h}$,
- iv. Intersection control - Traffic signal/round about,
- v. Typically a 2/3 or 4 lane with a road reserve/width of $20\text{-}40\text{m}$,

- vi. With regard to public transport, it is allowed on this route, anywhere or at intersections,
- vii. Pedestrian paths are evident as well as cycle lanes,
- viii. Traffic calming is also evident in the form of curved road ways, narrow lanes, raised pedestrian medians etc.

The road network and hierarchy linked to Bellair Road is discussed herein the table below. There is a limited presence of busses traveling along Booth Road than Bellair Road. Also, Bellair Road has off street access in terms of individual properties. There is micro scale economic activity along this route and natural barriers do not allow for continuous and interactive development. Interestingly, the adjacent Booth Road when compared to Bellair Road are taking different forms as originally envisaged which are related to market forces. This trend may result in market forces completely changing the original concept objectives. As seen, there are truck yards for example in close proximity to Bellair Road.

As indicated by Professor Robinson (2014, pers. comm., 23 July) turf rivalry in the taxi industry has affected travel routes. This means that people may not be able to get a direct taxi from one place to another and will as a result have to travel to the Durban Central Business District to get a taxi to their destination. This creates added expense and inconvenience through increased travel time. An example provided by Professor Robinson (2014, pers. comm., 23 July) is that you cannot get a taxi from Cato Crest or Bellair Road to central Westville or Berea West.

The map below shows the road hierarchy of routes linking to Bellair Road as well as the planned Integrated Rapid Public Transport Network (IRPTN)⁴⁶. The aim is to determine levels of accessibility and to show the relationship of future integrated land use and transport planning in eThekweni. The thickness of the lines on the map shows the levels of hierarchy. As shown, Bellair Road feeds into a larger system of national mobility routes (N3), highways such as Jan Smuts Highway, main roads such as Edwin Swales (M7), and minor arterials such as Brickfield Road. The table below the map provides a useful description of the relationship each route has to Bellair Road. The routes in general, easily link Bellair Road to surrounding areas of employment and high end services. Further analysis is given below.

⁴⁶ Note that the study area delineation has been made transparent in order to view layers, hence the pink colouring is a transparent red.

TABLE 14: HIERARCHY AND ACCESSIBILITY TO BELLAIR ROAD

| Movement Route | Classification | Relationship to Bellair Road |
|---|--|---|
| N3 | <p>National Mobility Route – Freeway</p> <p>Primarily a mobility route with strict access control on property frontage (CSIR Red Book, 2000).</p> | <p>Links to Bellair Road via Jan Smuts Highway to the North and Harry Gwala Road to the West. This creates access to the east west linkages of eThekweni.</p> <p>The N3 also links to the N2 and hence makes the road accessible to the wider north and south of eThekweni.</p> |
| Jan Smuts Highway/King Cetshwayo Highway | <p>Major arterial – Highway</p> <p>Primarily a mobility route with strict access control on property frontage (CSIR Red Book, 2000)</p> | <p>Links to Bellair Road in the North linking Bellair Road to the Durban Central Business District, and other central suburbs such as Overport, Berea etc.</p> |
| M7/Edwin Swales V.C Drive/Solomon Mahlangu Drive | <p>Minor Arterial – Main Road</p> <p>Feeds traffic from major arterials into and from the main urban districts and provide linkage between them. These are ideal for public transport functions and have some restraint on frontage access and street parking (CSIR Red Book, 2000).</p> | <p>Links to Bellair Road in the south connecting the surrounding suburbs to southern suburbs of Chatsworth, Sarnia, Malvern, Sea View etc. as well as the major arterial of South Coast Road and the South Durban Basin.</p> |
| Felix Dlamini/ Brickfield Road | <p>Minor Arterial – Main Road</p> <p>Feeds traffic from major arterials into and from the main urban districts and provide linkage between them. These are ideal for public transport functions and have some restraint on frontage access and street parking (CSIR Red Book, 2000).</p> | <p>Bellair continues as the M10 to reach Felix Dlamini in the north eventually linking to M19 – Umgeni Road (and Springfield Industrial Park)</p> |
| Booth Road (Booth Road is at the same hierarchy as Bellair Road) | <p>Collector Road – link main road system and arterials. These routes penetrate neighbourhoods and are the ‘appropriate level of in the road</p> | <p>Links to Bellair Road in the south and connects Bellair to Inner West suburbs such as Westville and Pinetown.</p> |

| Movement Route | Classification | Relationship to Bellair Road |
|--|---|---|
| | hierarchy upon which public transport services...should be provided' (CSIR Red Book, 2000). | |
| <p>To the left of Bellair Road:</p> <ul style="list-style-type: none"> • 105954 Street • Phuphumabar Walk • Inswempebar Walk • Wiggins Road • Harcombe Road • Blinkbonnie Road <p>(Distance between each road not less than 350 m)</p> | Local Access Streets – direct linkages to households with typically low speed movement with limited traffic calming. Holds a 10-16m road reserve. | <p>These access streets are evident to the left of Bellair Road toward the north. They divert off Bellair Road to create access to local residential settlements.</p> <p>Of these streets, Harcombe and Blinkbonnie fall within Bonela and the other 4 fall within the Wiggins sub-place.</p> |
| <p>To the right of Bellair Road:</p> <ul style="list-style-type: none"> • Ahmedia Place • Ashwell Road (500 m from Ahmedia) • Mary Thiphe Street (900 m from Ashwell)⁴⁷ | Local Access Streets – direct linkages to households with typically low speed movement with limited traffic calming. Holds a 10-16m road reserve. | <p>These access streets are evident to the right of Bellair Road toward the north. They divert off Bellair Road to create access to local residential settlements.</p> <p>All these streets fall within Cato Crest.</p> |

The road hierarchy shows a clear relation to surrounding suburbs and areas of employment creating accessibility to opportunities. Also, given that Bellair Road falls within the IRPTN hierarchy (see map above), there is increased accessibility to the broader public transport system of eThekweni and to major employment centres. Focusing inward and among the community, there are links to surrounding communities via access roads which lead to Bellair Road. While this is true, there are limited side roads for example, to the right of Bellair Road which creates a hindering factor in terms of accessibility to the road. The road layout does not allow access off Bellair Road in all instances as shown by the layout on the map above. As shown there is direct access off Ashwell Road in most instances to the right of Bellair Road. This is possibly due to the natural barriers evident such as the Mkubane River. This creates a hindering factor for the role of Bellair Road as an activity street as it does not allow for numerous side roads which slow down traffic. The layout of the left side of Bellair Road shows a better picture in terms of side roads and potential for development.

⁴⁷ Looking at organic corridors, the average distance between access routes of the main corridor route is less than 200m. For example, Sparks Road has 3 access roads within a 700m distance between Randles Road and Felix Dlamini Road

Instantly in terms of layout and number of side roads one can see that the corridor is one sided in terms of activity and lack of a robust layout. Hence while there exists a hierarchy the layout is not robust in terms of supporting road connections and local access streets flowing off Bellair Road.

5.3.9 KEY AREAS FOR CONSIDERATION

Key issues that were identified with corridors in general and Bellair Road Corridor are:

- ix. Low employment rates which create less of a need to use routes, therefore less movement along routes. This indicates low buying power of the local community and inability to sustain adequate spend within the corridor. This also indicates the need to create employment generating activity to decrease unemployment rates.
- x. Bellair is mainly a through fare and does not attract passing traffic as there is limited desirable economic activity along the route. In addition, the high crime rates and numerous informal settlements act as push factors. This indicates that there is a poor mix of uses in terms of attracting people to and retaining spend within the corridor. In addition, the character of the area is not attractive to capture passing trade.
- xi. There is a perception that the concept is imported and not adequately adapted in the South African context. It is evident that the concept is applied in different contexts as seen through the literature review.
- xii. In order for public transport to work efficiently, people need to get off and on throughout the day. The corridor lacks sufficient origin and destination attractors. With regard to Bellair Road, this is not currently taking place due to the poor character and lack of land use options available to passers-by (people travel to engage in activity and if there is no activity then public transport will not be viable). In order for public transport to be viable there needs to be sufficient mix of land uses. The land use mix is currently not trip attractors, as there is limited density and diversity of uses.
- xiii. The thresholds to support a public transport system are lacking. Given the short distance of the corridor it is more suited to non-motorised transport along it.
- xiv. As discussed above the trips generated are not locally generated. People are moving outside the area.
- xv. The perception is that there is a mismatch between planning and implementation due to lag time between reviews, full structure and central management.
- xvi. The evidence of non-motorised transport and use of public transport indicates the minimal reliance on private vehicles hence less emissions and air pollution. However, since people are not attracted to activities within the corridor, travel is still used to get to other areas of activity.

- xvii. While there is a high public transport-reliant community in and around the study area, the spine is still used by private vehicles passing by as a through route, creating more emissions and pollution along the route.

The route is not a designated public transport route and mainly functions as a through-fare. There are no specific planning standards or guidelines for movement route networks for corridors. Local planning follows best practice/international literature. Officials indicate that while the corridor has not achieved its original objectives in terms of transport based on the strict definition of an activity corridor, a different sort of corridor may be evolving which caters to the local demand and nature of activity.

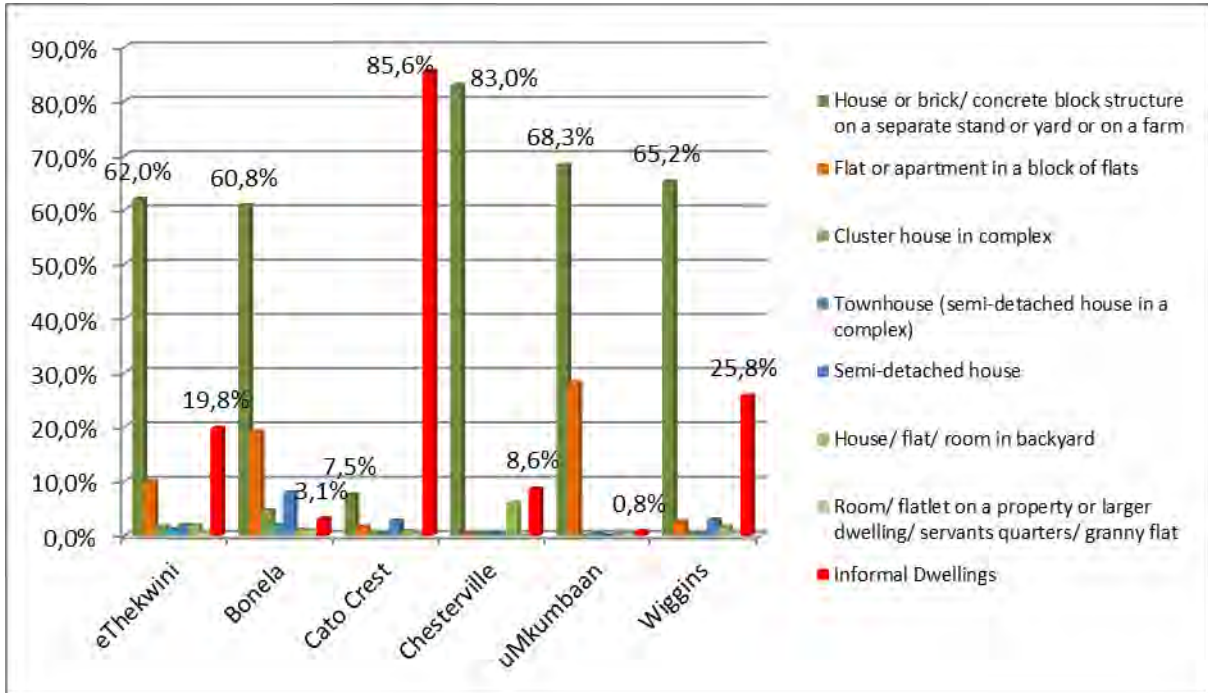
5.4 LAND USE ASSESSMENT

5.4.1 HOUSING

One of the major challenges and key components of the Bellair Road corridor is the provision of housing in a predominantly informal environment. Densities, typologies and housing types are important to understand the experience with corridor development which advocates high densities, vertical mixed use and a mix of typologies.

The graph below shows the predominant dwelling types in the study area. Majority of the sub-places have formal housing structures accounting for over 60% of housing stock. There are also a significant number of informal settlements with 85.6% of housing in Cato Crest being informal. This is significant as Cato Crest lies along the upper right portion of Bellair Road therefore impacting directly on the corridor. Informal dwellings are higher than the eThekweni average of 19.8%.

FIGURE 19: DWELLING TYPES, 2011 (SOURCE: CENSUS SOUTH AFRICA, 2011)



With regard to typology, majority of dwelling units are situated on individual stands. This is mainly due to the nature of housing development in Cato Manor, that is, low income government subsidized housing provision.

FIGURE 20: IMAGE SHOWING ONE-HOUSE PER PLOT TYPOLOGY (SOURCE: GOOGLE EARTH IMAGES, 2014)



There is also a strong presence of flat or apartment type buildings evident in Bonela and Umkumbaan which is due to the presence of social housing schemes such as River View flats

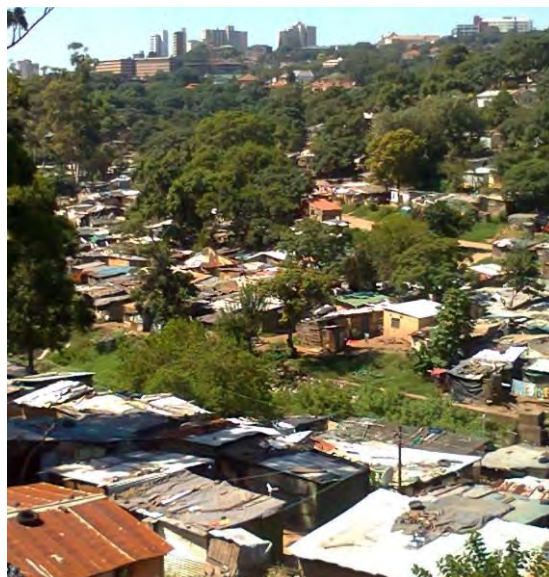
developed by SOHCO⁴⁸. A small percentage (2.6%) of dwelling units are flat or apartment type in Wiggins mainly due to the Shayamoya Social Housing project.

From the land use survey and observation it can be seen that the typology along Bellair Road fits the same profile. While there is the presence of flat type apartments in the Shaymoya Social Housing project, this is situated on steep topography. This does not create a presence and frontage on Bellair Road itself. Hence there is no continuous high rise dense built form along Bellair Road. There have been attempts to create vertical mix of residential and commercial activity as seen by the double storey semi-detached double storey units, however this still does not create the high-rise character of a corridor (see photo below) and is not continuous. The left side of Bellair Road consists of low density, one house per plot with scattered attached units. The right hand side of Bellair road mainly consists of dense informal settlements along the road (see picture below).

FIGURE 21: IMAGE SHOWING VERTICLE MIX OF ACTIVITIES IN DOUBLE STOREY SEMI-DETACHED BUILDINGS (SOURCE: GOOGLE EARTH IMAGES, 2014)



FIGURE 22: IMAGE SHOWING INFORMAL SETTLEMENTS ALONG VUSI MZIMELA ROAD (SOURCE: AUTHOR, 2013)



⁴⁸ Not for profit distributing company.

There is also the Tin House Transit Camp opposite Bellair Market where eThekwini Municipality Human Settlement, is installing showers, toilets and water connections. The Transit Camp has been set up for the Imikhukhu informal settlement for which RDP housing is being constructed.

There have been high rise attached double storey units at the Jan Smuts and Bellair intersection. However these have been invaded by informal structures attached to these units (see photos below).

FIGURE 23: IMAGES SHOWING DOUBLE STOREY ATTACHED UNITS (SOURCE: AUTHOR, 2015)



5.4.1.1 NUMBER OF HOUSEHOLDS AND DENSITIES

The table below shows the number of households for the local impact area of the Bellair Road corridor. The areas as mentioned above include Cato Crest, Wiggins, Bonela, Umkumbaan and Chesterville. The amount of households shows an upward trend with an average annual growth rate of 4.3% increasing by 9 906 households over a ten year period (2001-2011). In 2011 the local study area made up 3 % of the total EThekwini Metro households. Interestingly population household sizes have decreased over a ten year period. The same trend is seen for eThekwini Metro.

TABLE 15: NUMBER OF HOUSEHOLDS (SOURCE: CENSUS SOUTH AFRICA, 2011)

| Sphere of Influence | Historical Data | | | Average Annual growth Rate (10 year period) |
|---------------------------|-----------------|-------------|-------------|---|
| | Census 1996 | Census 2001 | Census 2011 | |
| Households total | 15 445 | 18 975 | 28 881 | 4.3 % |
| Population household size | 3.25 | 3.49 | 3.01 | -1.5% |

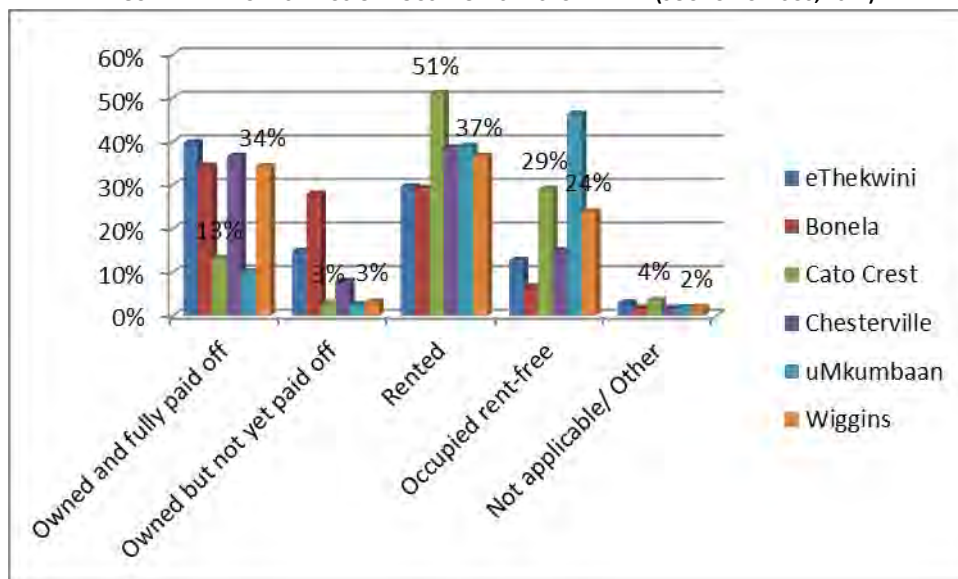
The table below shows the household density per sub place. It is expressed in number of households per hectare. In addition a ten year growth rate is shown to indicate the growth over time. As indicated by the table all of the sub-places have experienced an increasing density over time. Also the sub-places all have higher densities than the greater eThekwini Metro. Wiggins and Cato Crest have the highest densities in comparison to the other sub places. Cato Crest had a household density of 123 du/ha in 2011 grown from 62 du/ha in 2001 and Wiggins a household density of 43 du/ha.

TABLE 16: HOUSEHOLD DENSITY PER HECTARE (SOURCE: CENSUS SOUTH AFRICA, 2011)

| Sub-Place | Household Density | | |
|--------------|-------------------|-------|----------------------------|
| | 2001 | 2011 | 10 year annual growth rate |
| eThekwini | 3,6 | 4,2 | 1,5% |
| Bonela | 12,5 | 13,6 | 0,8% |
| Cato Crest | 62,3 | 123,0 | 7,0% |
| Chesterville | 16,2 | 22,6 | 3,4% |
| uMkumbaan | 1,0 | 7,2 | 21,4% |
| Wiggins | 31,4 | 43,0 | 3,2% |

The graph below shows the tenure status of households in the study area. Interestingly, over 51% of households in Cato Crest pay a rental for their premises. Under 40% of all households own houses.

FIGURE 24: TENURE STATUS OF HOUSEHOLDS IN STUDY AREA (SOURCE: CENSUS, 2011)



5.4.1.2 CURRENT HOUSING DELIVERY SYSTEMS IN CATO MANOR AFFECTING BELLAIR ROAD

The project linked subsidy is used to fund the development of most housing in Cato Manor particularly in Cato Crest. Exceptions are made for rental, social housing which allow for institutions to apply for institutional linked subsidies.

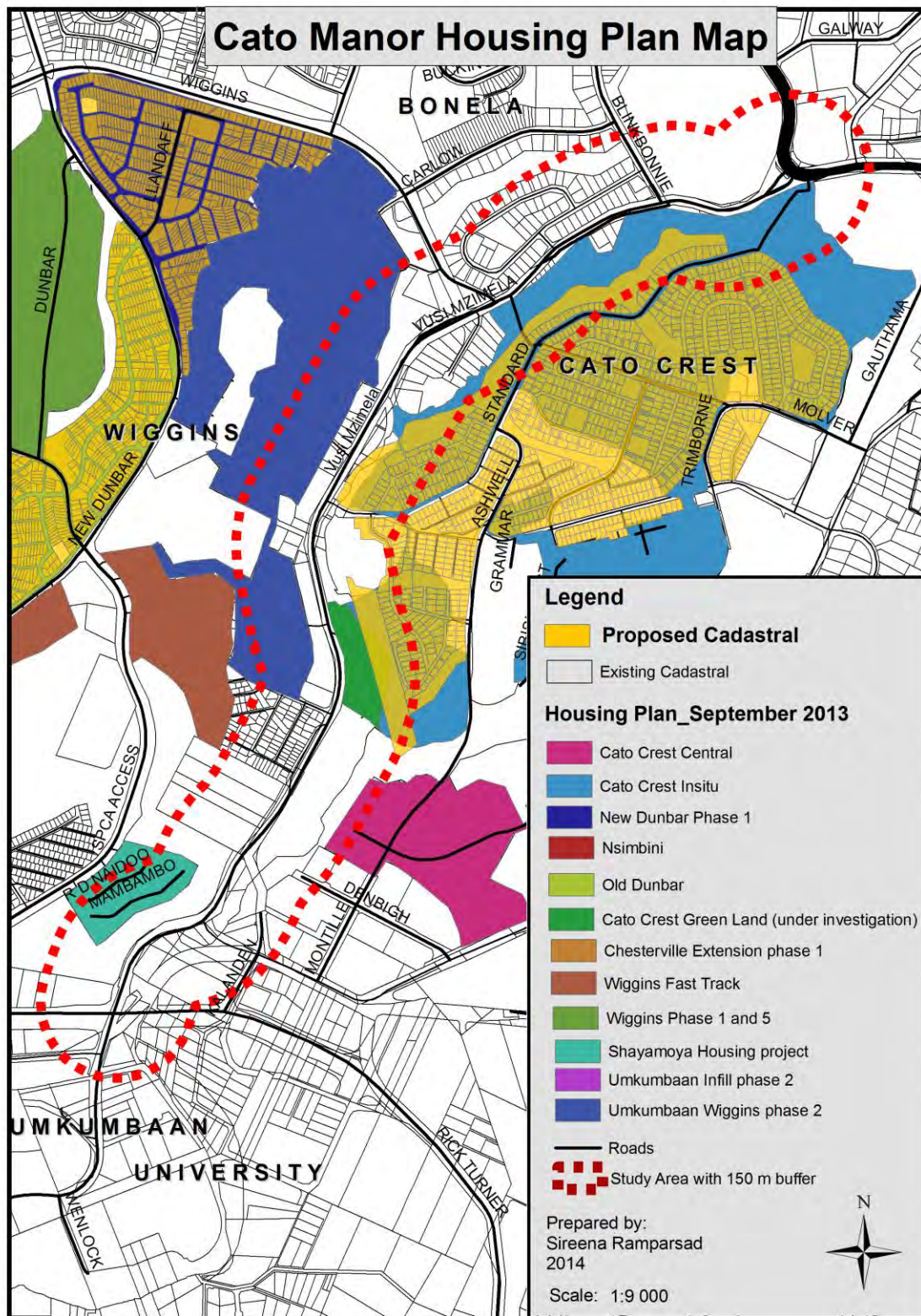
The main responsibility of the eThekweni Human Settlements department is to provide quality living in the area and in Cato Manor. Upgrading is a priority in Cato Crest by providing informal settlements with the necessary quality settlements that the municipality can offer. The most relevant housing project in Cato Manor currently is the Cato Crest in-situ upgrade where the municipality is trying to upgrade the informal settlements. This was planned as 1 500 improvements however as more families occupy the settlement the plan may increase to 2 200 improvements. There are currently ± 6 000 families with 5 people per household on average. This project is fully subsidized and funded through the project linked subsidy. It was initially approved to consist of double storey semi-detached houses (Tshabalala, M 2013, pers. comm., 6 September)

The issues hampering the ability to densify housing in Cato Manor and Bellair Road generally include:

- Cultural issues with densification where people want to live as individual households. The department has addressed this issue by redesigning units. Resign of units include semi-detached double storey housing accommodating two families (Tshabalala, M 2013, pers. comm., 6 September).
- Political tensions initially stagnating housing development. Thereafter, the Cato Manor Area Based Management team worked with communities and the housing process began (Tshabalala, M 2013, pers. comm., 6 September).
- Pressure is experienced with over-subscribed beneficiary listings which increases demand. This makes it difficult to meet an ever increasing backlog.
- Land specified for housing or informally settled land cannot be cleared for business use based on the reaction from communities. For example, communities feel that housing should be a priority (Tshabalala, M 2013, pers. comm., 6 September).
- There are restrictions to development such as funding models. Funding models do not allow for higher density housing typologies. The current subsidy is R 63 000 for the top structure and R 25 000 for services for a free standing 40m² dwelling unit. The issue with semi-detached is that the subsidy is not enough to cover increased construction costs for the foundations etc. (Tshabalala, M 2013, pers. comm., 6 September).
- There are also environmental issues, wetlands and floodplains. The department cannot provide for all settlements as some are within low lying areas and may have to be relocated.
- The issue of people erecting informal extensions to houses provided is being addressed through law enforcement as it is out of the control of the municipality. This attempts to manage informal structures with city provided housing (Tshabalala, M 2013, pers. comm., 6 September).
- The beneficiary mind set about higher density living.
- People from neighbouring suburbs complain about the lowering of property values, for example, Manor Gardens.

The map below shows the proposed public housing plan for Cato Manor as well as settlements that have been upgraded. As shown by the map the Cato Crest settlement is an approved in situ upgrade with the proposed cadastral overlay on the map. The timeframe on this is unknown but there has been progress in terms of erecting double storey attached units. This indicates increasing densities in future as well as creating a formalised environment [albeit still with a degree of informality].

FIGURE 25: CATO MANOR HOUSING PLAN MAP SHOWING PLANNED HOUSING DEVELOPMENTS (SOURCE: ETHEKWINI HOUSING DEPARTMENT, 2014 AND AUTHOR, 2015)



5.4.2 NATURAL ENVIRONMENT

The natural environment along the corridor is imperative for the creation of a sustainable and quality living environment. In addition the natural environment acts as a barrier to

continuous development with associated sensitive land which needs to be preserved. Along Bellair Road, undulating topography is evident which breaks continuity in development. For example the higher density social housing is located along Bellair Road was built on the top of the hill whereas the lower density free standing units are located on flatter land along the corridor. This is also shown by the darker contours on the map below. This does not create the image that was initially envisaged.

From observation it can be seen that the overall natural environment appears to be polluted with solid waste and the bushes are unkempt (see pictures below).

FIGURE 26: IMAGE SHOWING POLLUTED ENVIRONMENT (SOURCE: GOOGLE EARTH IMAGES, 2014)



There is the Durban Metropolitan Open Space System⁴⁹ which is apparent along the corridor as seen by the map below. This open space system has been identified as a means to accommodate environmentally sensitive areas especially along rivers and streams and indigenous vegetation space as well as to endure adequate habitats for indigenous species. Open space has been planned for within the corridor, this space is well utilized as observed by pedestrian movement and children playing soccer. Open space is important for social interaction and recreation. Interestingly, some houses were chosen to have solar water heaters installed at no cost by the municipality in partnership with ESKOM. The aim was to reduce the amount of energy the houses use to heat water.

There seems to be a lot of vacant and open spaces directly off Bellair Road, that is, the land parcels impacting directly on the street. This activity and usage of this land is important to achieve the envisaged image of the corridor.

Dense vegetation is evident on the right hand side of Bellair Road as shown below.

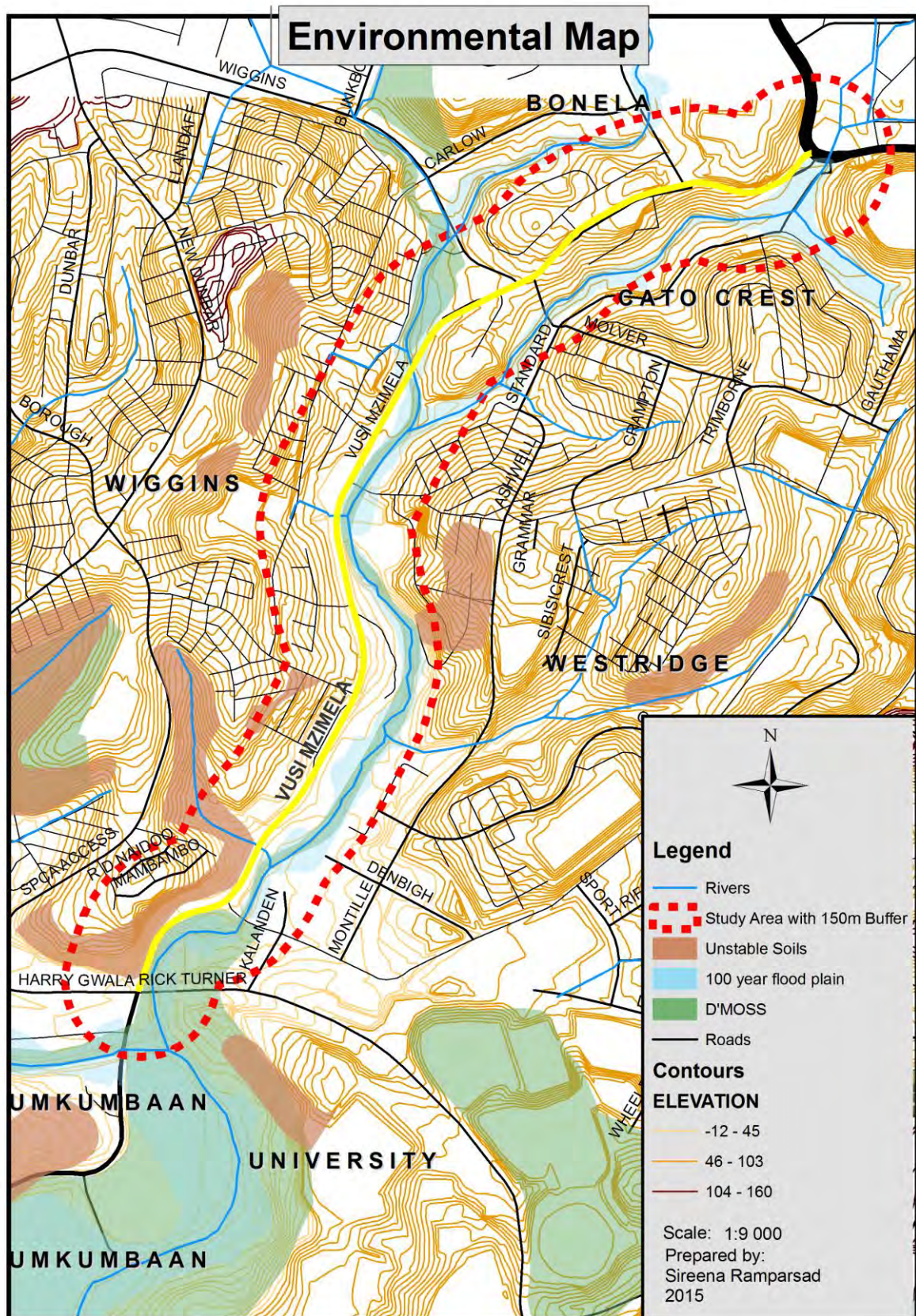
⁴⁹ EThekweni municipality has a Durban Metropolitan Open Space System (D'MOSS) whereby the natural environment is managed. D'MOSS is a system of open spaces that incorporates areas of high biodiversity value linked together in a viable network of open spaces. This attribute of eThekweni natural environment management is important in demarcating possible D'MOSS areas within a corridor.

FIGURE 27: IMAGE SHOWING DENSE VEGETATION ALONG THE CORRIDOR (SOURCE: GOOGLE EARTH IMAGES. 2014)



The environmental map below shows the rivers and streams running through the study area, unstable soils, 100 year flood plains and D'MOSS within the study area. The Umkumbaan River and Bellair Stream runs throughout the study area parallel to Vusi Mzimela Road as shown on the map below. The 1:100 year flood lines illustrated on the map below indicate flood prone areas which ideally should not be developed. This creates a barrier to development. Informal settlements are evident all along the river buffers. Rivers naturally attract informal settlements due to the access to water for various uses. The map below also shows some unstable soils which should not be developed without careful consideration.

FIGURE 28: ENVIRONMENTAL MAP OF THE CORRIDOR (SOURCE: AUTHOR, 2015)



5.4.3 AESTHETIC ENVIRONMENT AND GENERAL CHARACTER OF THE CORRIDOR

From observations it can be seen that the overall aesthetic environment is poor and does not lend itself to the idea of an activity corridor as described in the literature review above.

Firstly, individual properties are fenced off creating barriers and break in continuity and are not facing the street. The land use structure of the corridor does allow for this in certain instances as some of these properties are privately owned residential and commercial and for possible reasons of crime and violence would naturally want to protect their property. Other reasons include the type of land use such as the storage yard at the corner of Bellair and Booth Roads (that is, Vusi Mzimela and Harry Gwala Road). Please see photos below for an illustration.

An ideal activity street will allow for accessibility and openness to activity along the street.

FIGURE 29: IMAGE SHOWING LACK OF STREET FRONTAGE CREATING BARRIERS (SOURCE: GOOGLE EARTH IMAGES, 2014)



Secondly, there are derelict and under-utilized buildings along the route with some directly next to formal buildings of residence as shown by the picture below. These buildings seem to be used for business purposes however it is uncertain.

FIGURE 30: IMAGE SHOWING DERELICT BUILDING (SOURCE: GOOGLE EARTH IMAGES, 2014)



Thirdly, the natural environment is polluted and the vacant spaces are unkempt.

FIGURE 31: IMAGE SHOWING UNKEMPT NATURAL ENVIRONMENT (SOURCE: GOOGLE EARTH IMAGES, 2014)



Fourthly, the land uses are not suitable specifically in regard to the electrical sub-station in the midst of the corridor which also breaks continuity and creates an eye sore in what was meant to be an area of compatible mixed use activity (see photo below).

FIGURE 32: SUBSTATION (SOURCE: AUTHOR, 2014)



Lastly, one side of the corridor has a large stretch which is below level with various activities such as urban agriculture and informal settlements.

The corridor does not have a good split of commercial activities along it. The northern section is more alive with commercial activity be it of a formal or informal nature. And the lower end closer to the police station is quieter with less activity. This is due to various reasons including topography and the natural pull of activity to the Wiggins/Bellair node. The corridor breaks continuously due to natural barriers and topography as well as barred property.

A beautification plan is in place, however, when street furniture in the form of planted trees etc. are placed on islands and in open space, it is normally vandalised by communities and thrown aside (Municipal Official 2014, pers. comm., October).

5.4.4 SOCIAL ENVIRONMENT

The social facilities map below shows the social and community facilities available within the Bellair Road Corridor and in close proximity to the study area. These consist mainly of educational facilities, halls, religious sites, security services, historical sites, institutional uses, libraries, sport facilities and healthcare services. As it can be seen there are limited facilities within the corridor itself. This indicates a lack of trip attractors within the corridor.

There are a number of educational facilities in the study area catchment however none within the corridor study area. These include primary (Mayville and Wiggins) and secondary schools (Mayville and Wiggins) as well as tertiary education facilities such as the University of KwaZulu-Natal further up Rick Turner Road and the Cato Manor Thekwini FET campus at the corner of Booth and Ridge Road. There is also the Umkhumbaan Entrepreneur Training Centre along Booth Road near Bellair Road. There is also a library in close proximity near Wiggins.

With regard to cultural and historical sites the places of worship include temples and Mosques as well as a Shembe Church within the corridor.

FIGURE 33: IMAGES SHOWING CULTURAL LAND USES WITHIN THE CORRIDOR (SOURCE: AUTHOR, 2014)



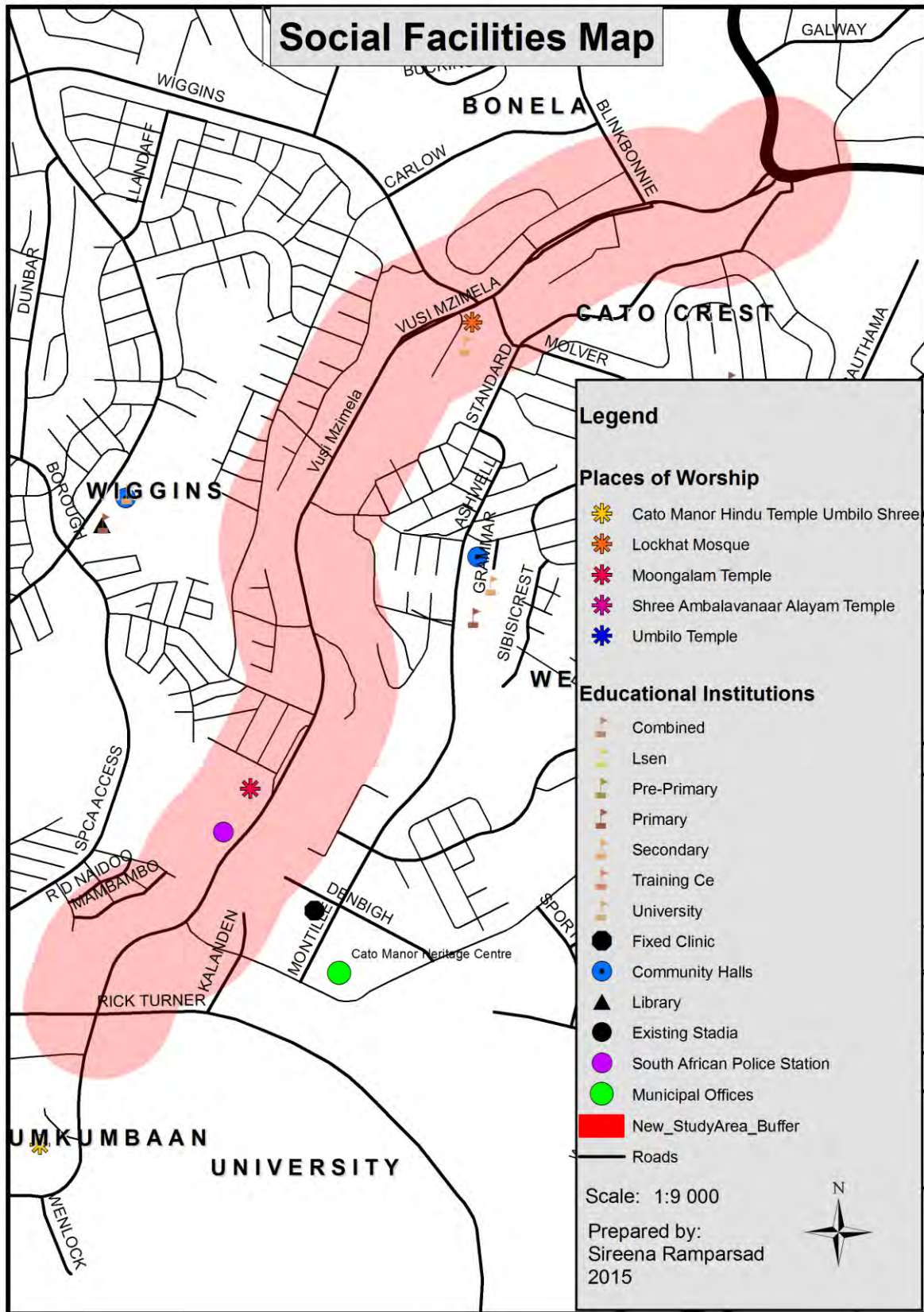
There are also temples further along Bellair Road moving toward Edwin Swales. This is a symbol of the past heritage and diversity of the area. These are also classified as heritage sites within Cato Manor. There is also the Cato Manor Heritage Centre located along Mary Thirpe Road. A new museum is currently being constructed at the corner of Bellair and Booth Road. In addition, a dilapidated building within the corridor may be considered to be kept as a monument in future (Hazell, N 2013 pers. comm., 29 July). There are various other heritage sites in close proximity to the study area which include the Elizabeth Sneddon Theatre, Howard Memorial College etc. within the University of KwaZulu-Natal.

The Ekhupheleni Clinic is located along the corridor which is currently not used as a clinic but rather as shelter for the Ark (see photo below). Services have been transferred to the Umkhumbane Clinic near the Intuthuko Junction (which is where the Cato Manor Heritage Centre is located along Mary Thirpe Road). There is also the Inkosi Albert Luthuli Central Hospital further along Bellair Road toward Edwin Swales Avenue. There are also small private practices along the corridor, which are unclear if they are in use as building look somewhat unkempt.

Figure 34: Image showing Ekhupheleni clinic (source: google earth images, 2014)



FIGURE 35: SOCIAL FACILITIES MAP (SOURCE: AUTHOR, 2014)



There are two community halls on either side of the corridor as seen from the map below which are located in close proximity to the corridor but not within the immediate study area.

Existing sports facilities can be seen from stadia in surrounding areas further along the Bellair Road Corridor past the Booth/Bellair Road intersection moving toward Edwin Swales and near Westridge further north of the corridor.

Security is a major issue in Cato Manor as indicated by the general community and informants. There is a police station (SAPS) within the corridor as well as CCTV and police presence along the corridor. This is especially seen during peak am and pm periods at the intersection of Jan Smuts Highway and Bellair Road and at the traffic lights at Wiggins Road.

Institutional uses are also present around the corridor as seen by the development of the Cato Manor municipal offices (Intuthuko Junction) along Mary Thirpe Road. In addition there are provincial offices evident at the intersection of Jan Smuts and Bellair Road and along Jan Smuts Highway across Bellair Road to the north.

The social ills of the area include crime, unemployment, poverty, highest rates of HIV positive people, politics, operational issues, people not paying rent, lack of ownership of the multipurpose centres at Wiggins and Cato Crest etc. (Hazell, N 2013 pers. comm., 29 July). These issues can be seen up until recently where violent riots broke out regarding service delivery (June 2014 and October 2013).

According to the Crime Stats website (Available Online: <http://www.crimestatssa.com/> Accessed: [Online] 7/7/2014), 2 629 crimes were reported for Cato manor in 2013 which dropped from 2 965 in 2012. Majority of the crime was related to drug related crime, burglaries, robbery, assault, theft and sexual crimes.

5.4.5 INFRASTRUCTURE

Over 97% of households in Bonela, Chesterville and Umkumbaan have access to a flush toilet and are connected to a sewer system whereas Wiggins the percentage is 76%. This is much higher than the city as a whole which has an average 63% of households with access to flush toilets. In stark contrast, most likely due to the informal nature of Cato Crest only 6% have access to a flush toilet connected to a sewer system. Most households in Cato Crest use the pit latrine system (without ventilation) followed by the bucket latrine at 17% and chemical toilet at 16%. In Wiggins ±5% of households use the bucket latrine, pit latrine without ventilation and chemical toilets respectively. Other means of sewage disposal is assumed to be within existing natural water bodies/rivers.

There is also evidence of temporary toilets within settlements. Given that basic services affect the health of residents, Cato Crest is in need of proper systems.

Over 70% of households have their waste removed by the local authority at least once a week. All sub-places except Cato Crest are above the municipal average of 86%. This however seems to be less effective along the corridor as observation indicates poor waste management (see section on natural environment above).

In all areas except Cato Crest, households have access to piped water inside their dwellings. This is due to the informal nature of the settlement. Cato Crest however has mainly access to water via community stand pipes. This can also be seen from ladies washing clothes at stand pipes along the pavements within the corridor. This again does not provide a good image for the corridor. The rivers and streams running through Cato Manor and the corridor are also used as a source of water for cooking and cleaning.

There is evidence of storm water drainage throughout the study area. As seen through observations. Majority of households in all except the Cato Crest sub-place have access to electricity. This again is due to the informal nature of the sub-place with the dominant source of energy being candles. There seems to be some illegal connections with lines running across streets. Most areas having access to hand held mobile phones only which is in line with eThekweni's trend.

5.4.6 ECONOMIC ENVIRONMENT

The physical economic environment within the study area comprises informal and formal economic activity. The Cato Manor LED Framework (2011) provides a useful indication of the state of the economy in Cato Manor in addition to observation, discussions and interviews. The most dominant form of economic activity is retail, light manufacturing and services. The three dominant types of activity along the corridor include informal, formal and small business activity. Informal activity occurs both within a regulated and unregulated environment, that is, within formal structures constructed by the municipality and informal structures such as containers or temporary tin structures.

Formal business takes place either on private property or municipal built structures such as the Bellair Shopping Centre. This section provides an overview of the existing economic activity. The Cato Manor vision was to service the lowest to highest markets with Bellair Market being the lowest for fresh produce and storage space, followed by 2 container parks at Cato Crest and Wiggins with low rental for informal activity which is a next level up from the market, the Bellair Shopping Centre: supposed to be anchor tenant in and offices on top which is currently not as envisaged (reasons discussed further in this section).

The Bellair Shopping Centre as shown in the picture below was built as one of the strategic projects by the CMDA. The centre currently has many issues such as businesses not paying rental due to low affordability levels and hence, services (water and electricity) have been cut off, theft, drug pedalling etc. There is hence a lack of investment due to violence and crime that is perceived from the area (there have been many service delivery protests

recently). While there is a demand, businesses cannot afford to pay rentals. There have been no evictions of businesses (Hlangu, M 2014, pers. comm., 28 July). There is potential for upgrading the building. Current activity in the centre includes repairs, clinic, a gym and retail stores. The current condition of the shopping centre is that the space is underutilized and vandalised. This is seen by shop spaces closed during the day (see picture below). Previous research indicates that the store sizes were too small.

FIGURE 36: IMAGE OF BELLAIR SHOPPING CENTRE SHOWING CLOSED RETAIL SPACE DURING THE DAY (SOURCE: GOOGLE EARTH IMAGES, 2014)



The facility was managed by a Facilities Management Company up until December 2013 and is now managed by the municipality. This centre is being vandalised by the community nearer to it. eThekweni Municipality Council took a resolution that it should be sold as is. This decision was taken after an estimation of R18 million was made to revamp the facility (Zondi, N 2014, pers. comm. 23 July). The property is being packaged for sale. People are interested in buying but they have to go through the land tender process (criteria based) which is seen to hamper the process.

The Bellair Market was built by eThekweni Municipality to assist informal traders in formalising their trade by providing proper facilities (see photo below).

FIGURE 37: BELLAIR MARKET (SOURCE: GOOGLE EARTH IMAGES, 2014)



The facility is completely fenced off which should not be the case along an activity corridor as it restricts entry as shown by the figure above. The image below shows the inside of the facility. The pictures show that there are a lot of vacant spaces and some used space.

FIGURE 38: IMAGES SHOWING INSIDE OF THE MARKET FACILITY (SOURCE: AUTHOR, 2014)



A study undertaken by Urban-Econ Development Economists (2011) on behalf of eThekweni Business Support indicates the following features of the market:

- It is an active market established in 1996.
- There are 27 traders. Trading days are Monday to Sunday from 06h00 to 20h00,
- Products traded include food, upholstery, sewing, herbs, salons and tuck shops,
- Market structure is in a good condition, well maintained; functioning as an SMME light-service facility,
- The market is well supported by residents from Cato Manor however has no linkages to other markets,
- Issues include; trading stalls are seen to be a bit small, there is no parking space allocated and consumers park outside which is deemed as very risky due to cases of theft recorded. Accessibility for cars and pedestrians (3 entrances) is good as the market is located along the main road,
- There are no loading and storage facilities and the market is fenced with 24hour security,
- There is access to water, electricity, waste removal and toilets available,
- Rentals are charged at R 206 per month with a lease agreement in place,
- There is a screening application procedure, room allocation and usage of permits,
- The strength of the facility is that business is based on quality processes and procedures,
- The weakness of the facility is that there is a lack of marketing expertise and some poor quality goods and services,
- There are opportunities for the facility such as mergers, joint ventures or strategic alliances and the use of internet for marketing,
- Threats are high crime rates and new innovative competitors.

The Bellair Market upgrade is being redesigned to attract traffic to get access to the centre. Presently traffic is just passing by without getting inside. A safety plan will have to be in place to protect customers. At the present moment the area is a scene of crime as there are

many incidents reported to the Cato Manor Police Station. An initiative to market the hive in a form of Billboards will be put in all wards of the Cato Manor area (Zondi, N 2014, pers. comm. 23 July). Key challenges currently faced by the Bellair Market are marketing and slow business which is the case with the informal trader stalls as well (Hlangu, M 2014, pers. comm., 28 July). The positive outcome of the Bellair Market initiative is revenue generation for the municipality as well as economic growth.

Informal Trader Stalls which were constructed by the municipality are provided along the corridor mainly on the side of the road opposite the Bellair Market near Bassa's. As shown by the picture below, observation shows that only a few of these stalls are being utilized.

FIGURE 39: IMAGE SHOWING UTILIZED AND UNUTILIZED INFORMAL TRADER STALLS WITHIN THE WIGGINS/BELLAIR NODE



Due to affordability, people are less likely to rent. Merchandise traded includes; fruit and vegetables, clothing, hardware etc. The positive outcome of the informal trader stall initiative is that a conducive environment is created for small business operation. Rentals are subsidized at R 75 per month for informal trader stalls (Hlangu, M 2014, pers. comm., 28 July). Trader shelters do not have any facilities besides the shelter.

There are 15 formally constructed trader stalls with 10 vacant. People normally occupy spaces for more than 3 years (Hlangu, M 2014, pers. comm., 28 July). Business support is provided by the municipality by providing business management skills training, access to finance and other training. There is sufficient demand for such facilities (Hlangu, M 2014, pers. comm., 28 July). Informal traders have permits to trader in formal shelters. There is selection process to pick tenants for the informal trader stalls by using an allocation policy (Hlangu, M 2014, pers. comm., 28 July). All traders are from the local area. Vacant stalls indicate slow business. There are by-laws within which informal traders with permits operate hence the informal environment is regularised. Dominant skills available in the informal sector are financial management, customer care, computer training, waste management etc. there is a business forum for informal businesses as well as cooperatives in the area (Hlangu, M 2014, pers. comm., 28 July).

In addition, there are spaza shops scattered along the corridor in containers (see picture below). Other informal activity evident is car repairs, servicing, carpentry, retail in informal structures within the corridor etc. which takes places ad hoc. Economic activity mainly occurs to the north of Bellair Road and at the Wiggins/Bellair node. The pictures below show informal and formal activity at the node.

FIGURE 40: IMAGE SHOWING INFORMAL ECONOMIC ACTIVITY AT THE WIGGINS/BELLAIR NODE (SOURCE: GOOGLE EARTH IMAGES, 2014)



The picture below shows the formal and informal activity within the Wiggins/Bellair node.

FIGURE 41: IMAGE SHOWING FORMAL AND INFORMAL ECONOMIC ACTIVITY AT THE WIGGINS/BELLAIR NODE(SOURCE: GOOGLE EARTH IMAGES, 2014)



The Umkhumbane Entrepreneurial Centre is located in close proximity to the corridor accessible via Booth Road. It is an incubation facility with manufacturing hives. There are also two container parks, namely, Cato Crest and Wiggins Container parks.

There is activity such as a gym and bottle stores within the Bellair Shopping Centre and some activity in dilapidated buildings. There is a BP petrol filling station north of Bellair, at the Mary Thirpe intersection and at the Booth/Bellair Road central node. There is the Bassa's hardware (shown in the picture above) and wholesaler as well as Khans gearbox

specialists which are fully functioning businesses in formal privately owned buildings. There are also retail shops along Wiggins and Blinkbonnie Road leading off Bellair Road. There is a business park at Edwin Swales node.

There is a storage and container holding depot at the Bellair/Booth intersection which is a walled facility (this should not be the case along an activity corridor). There is a truck yard opposite the Caltex garage on Mary Thirpe Road. This is a hazardous land use and trucks frequenting the roads are a cause of potential danger as well as wear and tear on existing road infrastructure. Initially there was limited demand from private sector due to threat of land invasions and banks refusing to give bonds (N Hazell 2013, pers. comm.). In these cases land was bought and left vacant and resold with land being used for parking and storage whereas it was envisaged that the land was for light industrial purposes.

Land along Booth Road is in high demand due to proximity to port with MSC buying up some land (N Hazell 2013, pers. comm.). The reason for the success of the Edwin Swales Business Park located at the far end of Bellair Road (not within the study area) is that the land was packaged and marketed for private sector investment. There were building clauses which allowed for local employment, timeline for structures to be built etc. Penalties in the clauses included for example, if the land was not developed shortly after being bought, property rate were charged on the land for a developed property. Land sales were fast tracked as an income needed to be derived from the land.

There is vacant land on either side of the Bellair shopping Centre for business purposes. There are surrounding nodes of activity such as the regional Pavilion Shopping Centre and Westville Business Park and Westville hospital to the north of Bellair Road and Westridge commercial activity along Jan Smuts Highway to the north of Bellair Road.

The three industrial parks, located on Booth Road West, Edwin Swales Drive and a smaller one on Booth Road Central yields approximately 20 hectares of industrial zoned land. Development in these industrial parks are of higher order with larger established businesses from inside and outside Cato Manor such as a BMW showroom, cold storage, parking etc. Land was often left vacant due to the initial lack of building clauses. The clause would have indicated the time period for which to build within hence land would have not been left vacant for large periods of time. As a result there was a lot of resale of land leading to development shifting away from initial plans. The attractive factor of these sites is their proximity to the Durban CBD, port and ease of accessibility to national freeways. This indicates private sector investment within Cato Manor along the Booth Road corridor and the southern section of Bellair Road however not along the study area. These nodes of activity however impact on the future and function of the study area. Adjacent industrial land indicates that the changing land use pattern in the adjacent corridor which may impact the study area in future creating demand for supporting activity.

Given the heritage associated with the study area, tourist attractions include an interpretation centre and accommodation within the corridor. The site at the corner of Bellair and Booth Road has been earmarked as a museum and is currently under construction⁵⁰.

As shown above there is a mix of formal and informal business within the corridor study area as well as in surrounding corridors and nodes. There is however more evidence of informal trade. There are ward based business forums and trader committees in place. Incompatible land use observed by the truck yard on Kalanden Road impacting the current road and may have implications for safety and issues with road widening. It also does not suite the road hierarchy and fit in with the general character of the area. A possible reason for this could be the land use management scheme allowing for the use. The rapidly developing nodes and activity along adjacent corridors shows a possible future occurrence of land use trend focused on industry and larger business. The economic activity within the corridor needs to respond to the changing market.

While there is an array of scattered activity both informal and formal, evidently there is a lack of innovative economic activity within the corridor. A key feature that the corridor has achieved is the amount of informal activity and SMME presence. In contrast, there is a lack of private sector investment. There is however a trend of growing economic activity in surrounding areas which the corridor should leverage off. There is an interest however in investment relating to developing new shopping centres. This latent private sector investor attraction to the area must be harnessed and expanded to improve the character, image and vibrancy of the corridor to fit into surrounding economic activity.

5.4.7 SURROUNDING NODES OF ECONOMIC ACTIVITY

The map below indicates the main economic nodes of activity around the corridor as well as planned for within the corridor as identified in section 4.3 (Table 7) above. These include the Durban CBD, Pavilion regional shopping centre and Westville office park, Westridge economic activity and municipal offices as well as the business park at the corner of Edwin Swales and Bellair Road.

The location of such nodes provides an understanding of the pull and push factors in relation to the corridor as well as demand for different economic types of activity. The surrounding nodes of activity are commercial in nature with a range of services offered as well as higher end office space. The Durban CBD offers both higher order and lower order services and is a centre of employment opportunities. It includes office space,

⁵⁰ At this site, Mother of King Zwelithi Zulu is being re-buried, which was investigated for quite a long time. She was found at Ezinkawini Cemetery. She left the Royal Family when the King was 6 months old. What is happening now, is that the contractors are busy with phase 1 of Museum construction.

accommodation, services such as vehicle repairs, tyre fitment, motor sales, tertiary institutions, informal trade etc. While it is a hub of activity, there is a lack of space and not as appealing to businesses looking for office space. The Pavilion shopping centre is largely for bulk groceries, pharmacies, fast food, clothing, shoes, and specialist products and does not cater to FMCG (fast moving consumable goods), informal trade, construction and building services, training etc.

Westridge economic activity consists of specialist stores and factory shops as well as some informal trade and services. The surrounding nodes of economic activity are at a regional scale and thus the function that is provided is for a range of higher order and lower order goods. In addition, continuous economic development with Brickfield Road (now, Felix Dlamini Road) did not transpire as anticipated.

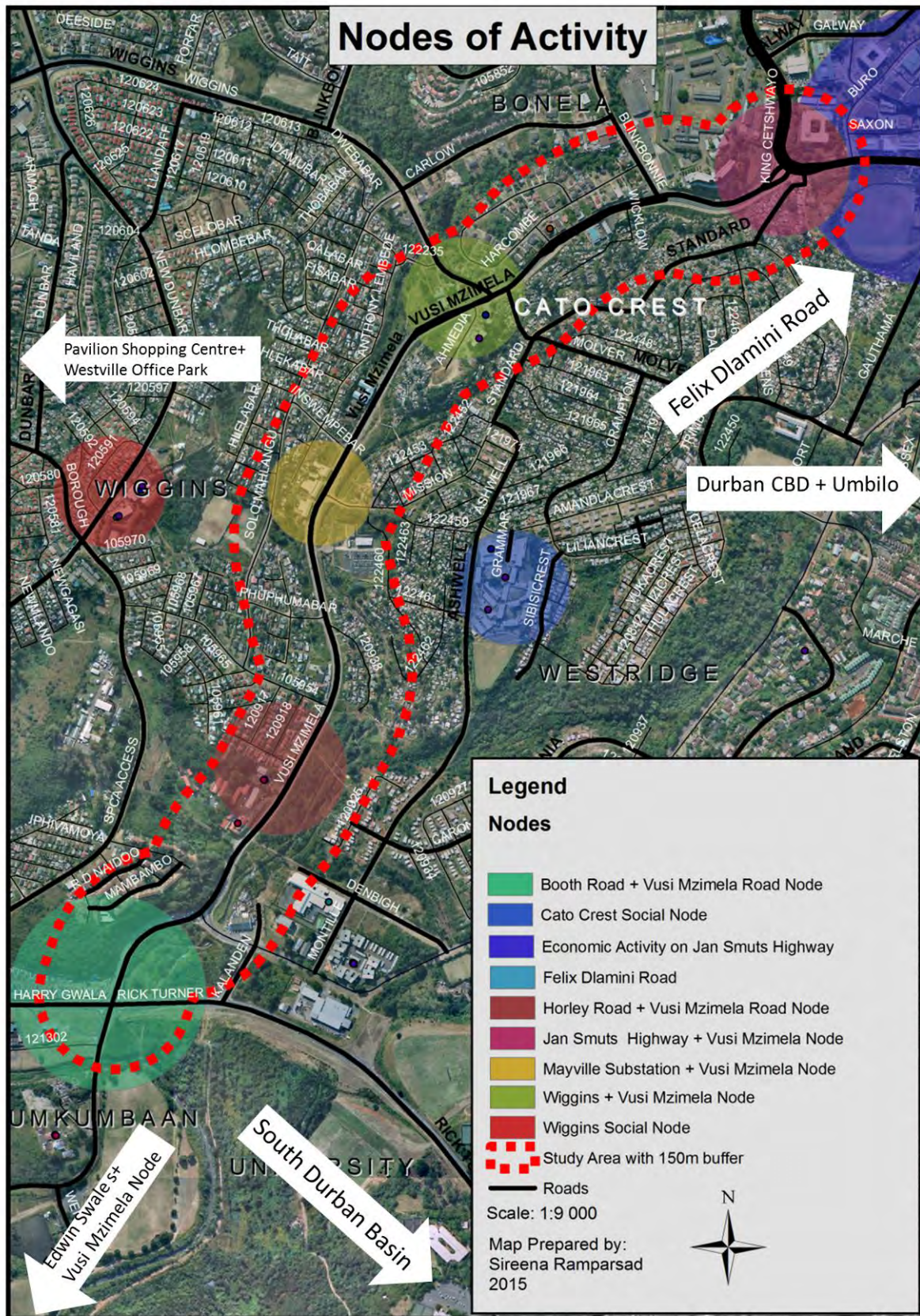
In addition, two social nodes of activity are shown which are in close proximity to the corridor. These are the Cato Crest and Wiggins Multi-Purpose Centres which consist of community halls and education facilities.

The presence of such nodes indicates pull factors to surrounding areas of activity offering a range of activity. When compared to activity along Bellair Road, one can see the difference, with Bellair Road offering FMCG through local superettes, spaza shops, gym facilities etc.

The map further illustrates the 'Beads on a string' corridor pattern that was envisaged to be achieved. Each of the nodes take different forms. For example, the Wiggins node is rife with formal and informal activity from informal activity and SMMEs as well as a worship site. The other nodes are not as robust with activity. For example, the Mayville substation node consists of the Bellair Shopping Centre on one side which is not used to its full capacity. The Horley Road node has unused on-street parking with scattered economic activity and low density housing. Lastly, the Booth Road node has economic activity which does not fit the character of a corridor. For example, there is a car storage space at the intersection.

The nodes as points of accessibility have a poor image and are not as robust as they should be to ensure successful functioning of the concept. A key observation is that there are limited strong sender and attractor nodes linking the corridor.

FIGURE 42: MAP SHOWING SURROUNDING NODES OF ACTIVITY (SOURCE: AUTHOR, 2015)



5.4.8 LAND USE MANAGEMENT AND LAND RELATED ISSUES

As described above, various land related issues have been encountered within this corridor, hampering development. These include land claims and land invasions results in informal settlements and dilapidated buildings left defunct. The corridor, as a result was exposed to various challenges related to land which hampered processes. Ownership of land along the corridor is split between public and private sector. The KwaZulu-Natal Department of Human Settlements owns a large portion of land and eThekweni Municipality owns some land. The local level department of Human Settlements administers the land for the provincial department to which the land belongs. A lot of the land under ownership of the Department of Human Settlements is used for commercial activity.

A key issue with property/ land along the corridor is that land and property is not registered. Currently consolidation⁵¹ of land is being undertaken by the municipality for plots within the corridor to allow for the 'opening of various township registers to enable to be given to the occupants of the houses in the area as well as to allow for the sale of business sites by public tender in accordance with the Municipal Finance Management Act' (Wood, V 2014, pers. comm., 30 September). Given that a lot of land within the corridor is under public ownership and is zoned residential (as discussed below), land needs to be registered and consolidated to be sold to potential purchasers. Once this takes place, new business sites can be created to be sold off (Wood, V 2014, pers. comm., 30 September).

A lot of interest has been shown by local business people to purchase sites with the corridor and currently a Municipal circulation is being carried out to see if the sites are required for Municipal purposes, if not they will be disposed of by public tender (Wood, V 2014, pers. comm., 30 September).

The land tender processes seem to be hampering the buying of sites due to lengthy processes. In addition, to sell via private treaty, there needs to be political buy in.

Another issue identified by (Hazell, N 2013 pers. comm., 29 July) is that the size of properties within the Bellair Road corridor was considered too small. Also, four different wards fall in study area which creates problems with politics and misrepresentation.

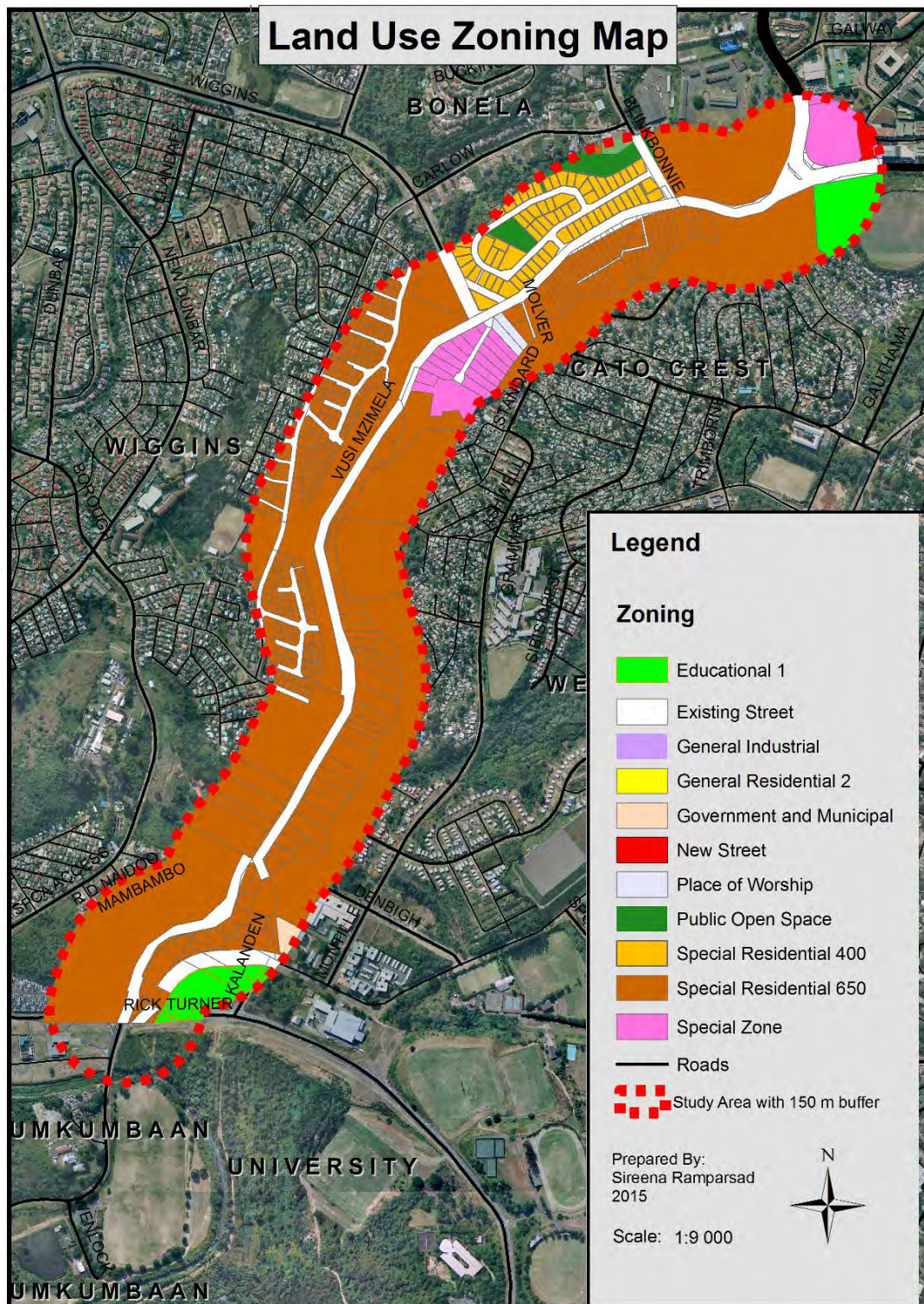
The Zoning⁵² map below provides an indication of the zones within the study area which make up the corridor. There are a few distinct zones making up the study area. These

⁵¹ Current consolidations include the consolidation of Erf 3916 comprising of 33 component properties owned by the Department of Human Settlements. Another consolidation taking place is of Erf 10010 Wiggins which is a consolidation of 3 properties with two owned by the KZN Department of Human Settlements and eThekweni Municipality. The aim is to register a new general plan creating 18 new subdivisions of which some will be zoned for business purposes. One of these new subdivisions accommodates the Bellair Shopping Centre (V Wood 2014, pers. comm.).

⁵² Please note that zoning colour scheme is taken from the KwaZulu-Natal Land Use Management Guidelines for the Preparation of Schemes for Municipalities – Update 2011 published by the KwaZulu-Natal Department of Co-operative Government and Traditional Affairs. -
http://devplan.kzntl.gov.za/General/Documents/2012Jun8/LUMS%20%20GuidelinesForMunicipalSchemes_March2012.pdf

include; Special Residential, Education, Special Zones, Government and Municipal and Place of Worship.

FIGURE 43: LAND USE ZONING MAP (SOURCE: AUTHOR, 2015)



The special residential zone basically allows for a dwelling house, ancillary unit or cluster development and through special consent allows for Place of Worship, Social Hall, Crèche,

Office, Institution, Bed and Breakfast etc. It also caters for multiple unit development and various building typologies. This assists in accommodating higher densities along corridors.

The Education Zone allows for places of instruction. The Special Zone allows for Special Zone 100, it is assumed, which is the Bellair Road Mixed Use Zone. Purposes for which land may be used include; shop, service/light industrial building, place of instruction, office, residential building (above ground floor), bed and breakfast, hotel, dwelling house, institution, medical consulting rooms, museum, place of amusement, social hall, restaurant, crèche, parking garage, funeral parlour, bus and taxi rank, private open space (Available Online:

http://www.durban.gov.za/City_Services/development_planning_management/Land_Use_Management/Town_Planning_Regulations/Special_Zones/Pages/BellAir_Road_Mixed_Use_Zone.aspx).

It can be seen that from a land use management point of view, while there are varied tools and a package of plans which informs the management of land within the corridor, it has still been a challenge to manage the use of land. As described above, there are many reasons for this. Some of the reasons are land ownership and the lack of registration of properties. Others include inappropriate zonings in place and public processes.

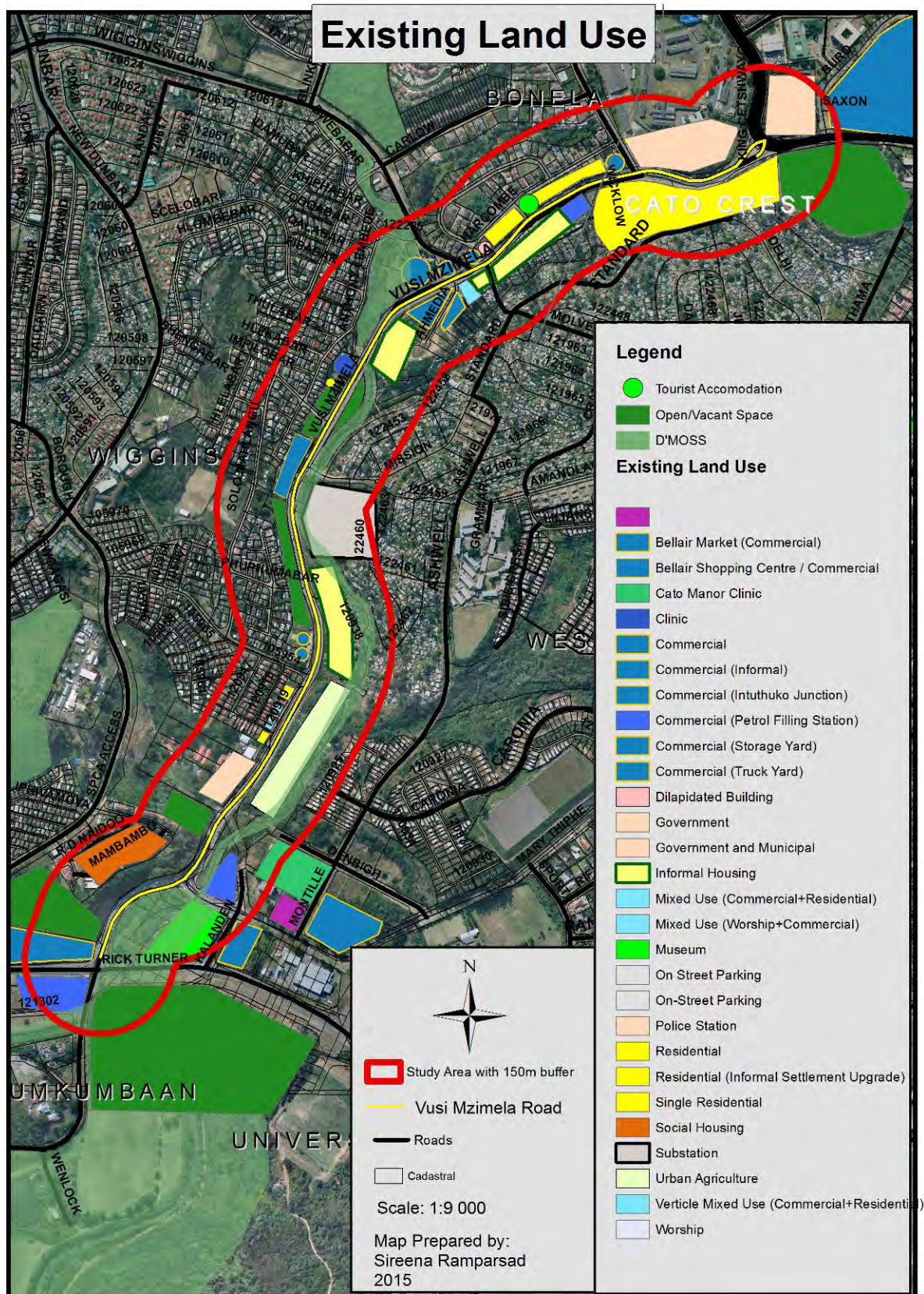
5.5 EXISTING LAND USE

The map below provides an indication of the existing land use activity within the corridor. This is done by plotting shapes files and colour coding according to the KwaZulu-Natal Land Use Management Guidelines for the Preparation of Schemes for Municipalities. This is not to scale and mainly covers land use with direct frontage onto the corridor. An account of the informal trade was not provided as this is not within the scope of this dissertation. The purpose of this map is to compare the zoning map with existing activity to illustrate the land use trends within the corridor. In addition, it shows the existing mix of activity as described throughout the chapter.

As shown, there is a poor mix of activity and it differs from the zoning map in certain instances. As shown in the Zoning map above, majority of the land is zoned 'Special Residential 650' even in areas where there land use is commercial (such as the Bellair Shopping Centre). From observation and the map below, it can be seen that not all land uses currently taking place along the corridor have been zoned appropriately. This issue is somewhat being addressed as discussed above by consolidation and registering of land. It is unclear why the proposed planning scheme presented in section 4.5 above was never incorporated into the municipality zoning GIS system. This poses a grave problem for transfer of land and transactions should private investors want to inhabit space. Three possible reasons for why the proposed planning scheme presented in section 4.5 above differs from the current zoning information are; the Less Formal Township Establishment Act or Development Facilitation Act may have allowed for the current land use, there are

illegal uses or there are non-conforming land uses which were there pre-scheme (Anonymous 2015, pers. comm. April).

FIGURE 44: MAP OF EXISTING LAND USE WITHIN THE BELLAIR ROAD CORRIDOR (SOURCE: AUTHOR, 2015)



5.6 INSTITUTIONAL ASSESSMENT

In 2004 the CMDA, the KwaZulu-Natal Department of Housing (KZNDOH) and the eThekweni Municipality signed a tri-partite agreement. In terms of this agreement, the eThekweni Municipality took over the responsibilities which the CMDA had been performing for the KZNDOH. This was initially for a period of 5 years and was renewed for another 10 years.

The EThekweni operated Cato Manor Area Based Management (ABM) Unit was formulated. The intention of the ABM is to enhance service delivery, addressing spatial and social inequalities as well as a deepening of local democracy in strategic geographically defined areas of the city in line with the municipality's Integrated Development Plan. The ABM concentrates its efforts on post-infrastructure development and consolidation processes such as social and economic upliftment, responsibility and cohesion; community planning and participation; economic development and skills development.

This is done through building capacity of stakeholders and role-players, facilitating public-private partnerships, investment attraction to enhance local economic and social development, community participation and by providing complete access to municipal services.

The Cato Manor ABM hosts meetings regularly to discuss the strategic direction of Cato Manor. These meetings serve as a form of institutional integration as it collaborates the numerous departments (such as Human Settlements, Transport, Economic Development, Business Support, Framework Planning etc.) within the municipality structure and other concerned departments to holistically discuss matters.

An example of a programme being run is the HIV/Aids forum, the Cato Manor Local Economic Development Forum. In addition there are cooperatives, business forums at ward level etc. Constant research is being carried out in terms of identification of constraints to businesses etc. The Business Support Unit is responsible for providing necessary support to the community as well. These initiatives, while area wide still impact small business situated along the Bellair Road Corridor. This shows that a corridor in this context does not take place in isolation and has a key function to fill in terms of integration and a wider community and area based vision. The programmes run by the Cato Manor ABM are crucial in the functioning environment of a corridor development especially in the lower income context. The particular importance lies in that the scale of business is small and micro and hence numerous challenges occur such as poor business skills and other skills gaps. These need to be fostered as part of the social responsibility of the government structure – in this case the Cato Manor ABM.

As seen above, the CMDA was largely responsible for the development of infrastructure to meet a holistic vision for the area. The Cato Manor ABM is however responsible for management post infrastructure development. The CMDA received external donor funding and in contrast the Cato Manor ABM uses shared resources of the municipality. This means

that a budget is allocated and competes with other developments throughout the municipality, which makes it difficult to manage resources. Here we see two distinct functions; planning and post planning (operation and management). Very important to bear in mind is that while these structures are/were in place to place to fast track development in Cato Manor and hence aspects of the corridor, they are put into place as an area wide initiative and not specific to the Bellair Road Corridor only. While the corridor was one of the main spatial concepts for integration, it was and is seen within a broader context.

5.7 DISCUSSION OF KEY FINDINGS

While there is a mix of activities in the corridor, there is a lack of intensity of the mix of uses as well as the lack of density. The character is not as envisaged for various reasons discussed in the sections above such as low housing subsidies affecting typology, lack of buying power, lack of trip attractors within the corridor etc. Given all the information presented, one can see how difficult it is to implement such an initiative within a low income context ridden with crime and politics. Suffice to say, a corridor is a complex mix of activity and hence planning and implementing such an initiative is a daunting task which needs to be carried through over a long period of time. In this case, while all the necessary tools of successful planning was in place, the initiative still does not resemble the original ideas and concept. A key factor is the changing institutional and management environment which has affected funding.

In addition, once infrastructure is built, another important and complex phase is undertaken, this phase entails operating and managing the activity in that corridor to align to initial objectives. With that point acknowledged, one needs to also be wary of the changing needs of communities and the ability to respond accordingly. In this instance, the community is in need of continuous social and economic upliftment due to lack of business skills etc. Also, the area is prone to social ills and is therefore volatile. Here it can be seen that there are concerted efforts by the municipality to address such issues. While these issues do not speak directly to infrastructure and the integration of land use and transport planning, it clearly shows that these social factors need to be taken into account as well in the lower income context.

As mentioned in earlier chapters, sustainable development is very difficult to achieve which can be seen in the Bellair Road case study. While development corridors seek to create a more efficient and accessible environments which use less resources and lessens travel time, it seems that there is limited activity to support this within the Bellair Road corridor.

Referring back to the initial objectives of the corridor:

- a) *'The creation of economic opportunities for smaller enterprises to enter the market as linear development results in differing land values along its length':*

As planned there was the construction of facilities for each business stage, that is, formal activity through the development of the small shopping centre; the market stalls;

and informal trader stalls. The roads were designed to encourage slow vehicle movement and stopping places for private vehicles, taxis and buses with wide pavements for pedestrians. After almost 2 decades these facilities are in a poor state, vandalised and underutilized. Various reasons discussed above include low affordability levels (hence people do not pay rent and as a result the services have to be cut off. The lack of trade in the formal structures provided are due to slow business and the market built will have to be redesigned due to access issues. The offices at Intuthuko Junction are being utilised by the municipality and are in good condition.

Initial nodes envisaged as described above have not being realised due to incompatible land use. For example, the envisaged node at the intersection of Bellair and Booth Road exists a car storage which is walled off on the street facing sides. However, opposite is the current construction of a museum and across is a petrol filling station with some commercial activity taking place along Booth Road.

Another important factor hampering the development of economic land use within the corridor is lack of private sector investment due to perceived high levels of crime. The one node that is vibrant with activity is the Wiggins node. Here the mix of activity creates congestion issues such as accidents with increased pedestrian traffic. The municipality has intervened by adding in traffic calming. Land management ownership and registration has also proved to be an issue. Land has yet to be consolidated in order to be sold by public tender to private investors.

Land related issues hamper further investment into the area due to inappropriate zoning and land not being registered to owners. This stifles the transfer and sale of land as well as the ability to readily trade in property.

Clearly planning, implementation and management of this objective has varied due to various reasons discussed. Lessons can however be learnt from this; initial capital injection for facilities infrastructure is important, however on-going support and facilitation is also important. The dynamics of communities are always changing and the local management body needs to be able to identify and response to these changes accordingly. In this case, the shopping centre built will be sold to a private investor after being in under operation by the municipality and the Market will be redesigned to create a more effective and robust layout to assist in the marketing of businesses. Business support has also been provided and is on-going. In addition, all due diligence needs to be taken with regard to land, for example, when a decision is taken to build, the plot must be surveyed and zoned accordingly.

- *Improved access to facilities by a largely public transport reliant population:*

Attempts to improve access to facilities included the upgrading of the road and provision of basic services. The road hierarchy and linkages link the study area to various nodes of activity. Centres of higher order activity are located in close proximity to the study area and the road creates a useful linkage, integrating a once segregated community to the surrounding urban fabric. The lack in diversity and intensity in mix of land uses does not retain activity within the corridor.

The planned IRPTN feeder route also runs through the study area, hence the corridor is falls within a public transport route planned for future attention. Lessons learnt here include road upgrades and making provision for public transport infrastructure. Issues relating to creating access to facilities also take the form of creating facilities within the corridor. These included the economic facilities. Limited interconnectivity with less side roads created an issue for accessibility to the corridor itself. The route being used as a through route creates problems for activity within the corridor and creates a dangerous environment for pedestrian movement. As indicated in section 5.3 above turf rivalry in the taxi industry has affected travel routes. This means that people may not be able to get a direct taxi from one place to another and will as a result have to travel to the Durban Central Business District to get a taxi to their destination. This creates added expense and inconvenience through increased travel time.

- *Higher thresholds which contribute to economic sustainability and a more affordable and efficient public transport system:*

This relates to housing in close proximity to the corridor (P Robinson 2014, pers. comm.). The higher densities envisaged through initial strategic planning did not materialise. Reasons for this included the housing subsidy being too low to accommodate higher rise typologies and resistance from the community to typologies envisaged (for cultural reasons, people wanted one house per plot). Regardless, housing was provided but lacked the intensity and character envisaged (such as social housing being located on a hill top hence topography was a limiting factor). In some instances semi-detached housing was constructed with a vertical mix of activity. This however is limited and on-street parking created is not being used effectively.

Currently, higher density housing is being built in close proximity to the corridor in the form of in-situ upgrading of the informal settlement along the corridor. The typology used here is double storey semi-detached units. The subsidy is still low and it is difficult to implement higher rise units. Topography remains an issue. The increasing number of people settling in the existing informal settlement makes it very difficult to provide the initial number of houses accounted for. For example, the Cato Crest in-situ upgrade may increase to 2 200 homes from 1 500 initially planned for. This issue has been seen from early stages in this project and is still taking place currently. Hence while there are concerted efforts to upgrade

and formalise informal housing within the corridor, this is a constant challenge. The threshold of people is however there but with low buying power and limited affordability levels. The high population growth rate in relation to a higher household growth rate shows that in future this problem may be of higher concern and more difficult to achieve.

While number of educated people is relatively high, the unemployment rate is also high. With an over 70% of the population within working age, this indicates a propensity to take up market opportunities and should be seen as a positive for the area. The opportunities provided by the corridor should be mobilised in order to provide further opportunities as the infrastructure is available.

- *Integration of GCM with the surrounding urban fabric, rather than becoming an inwardly oriented, low income, 'no-go zone', through the encouragement of public transport through the area and attracting non-residents to the economic and social opportunities created along the activity streets':*

As discussed in the conceptual framework, integration takes various forms, specifically the planning for spatial integration and allocation of resources and the integration through institutional processes. Taking the analysis above into consideration, there has been success in integrating the various components of Cato Manor through the corridor initiative and respective road upgrades as well as public transport infrastructure. Key linkages to surrounding areas have been created which increase accessibility to outlying opportunities and link a previously segregated area to the rest of the city. Being labelled as a 'best practice' internationally and having received donor funding increased the publicity of development in Cato Manor (P Robinson 2014, pers. comm.). Access to services also allows for integration into the surrounding urban fabric (P Robinson 2014, pers. comm.). Institutionally, the establishment of the CMDA and Cato manor ABM demonstrates various ways of coordinating resources to achieve an integrated approach. While the former was more effective due to designated resources which were concentrated in the area, whereas the ABM has to compete for resources with the rest of eThekweni.

While not explicitly indicated in concept documentation, the corridor concept exhibits sustainable development principles by integrating living environments and urban needs. This related to social, economic and environmental development and access to various land uses and facilities essential to human development. The corridor in certain instances demonstrated attempts at this often with challenges such as pollution, degradation, devoid projects due to affordability levels and crime etc.

In addition, local strategic documentation such as the Central Spatial Development Plan, Cato Manor LUMF and Cato Manor LED framework should ideally guide integration of the area. While this exists, it needs to be constantly adhered to.

The corridor shows limited signs of attracting non-residents to opportunities along the activity street. While economic opportunities have been created through the Bellair Shopping Centre, Bellair Market and trader stalls, these are not used as envisaged for various reasons discussed above. While there are social opportunities in close proximity, there are limited social opportunities within the corridor.

While there are many minibus taxis travelling along the route, there is no formal taxi rank/place for taxis to agglomerate. While taxis do use the empty parking space to informally agglomerate, this shows a need for a facility within the corridor. Interestingly, it has been observed from research that activity tends to cluster around points of greatest accessibility. Within a community which is reliant on public transport, creating thresholds and densification should take this into consideration.

The above provided a discussion of the extent to which the initial objectives of the Bellair Road Development Corridor have been met to date. It is clear to see that the attempt to evaluate the objectives is anything but clear cut. Corridors in all sense of the concept are extremely complex initiatives. There are various components making up the whole and these components are integrally related to one another. It is a perfect example of the need of and importance for an integrated effort. As seen the local environment and needs of the local community have changed and the strategy and plan needs to be flexible enough to be amended accordingly.

Timeframes of achieving these objectives were underestimated and hence there has been deviation in that respect. While the initiative has been successful in many ways such as providing formal housing and delivering on infrastructure, there has been a lot of change (and challenges) and the environment envisaged has not been achieved. Even though the objectives remain the same, circumstances have changed, more specifically the institutional and management set up as well as funding mechanisms. In addition, influx of people results in an ever challenging attempt to develop formal housing. Interestingly, the key challenges faced with this corridor identified from previous research of the initiative earlier in its life cycle, still persist today.

In discussing the extent to which objectives have been achieved, key lessons learnt from the case study are:

- The aim of such an initiative in this context is to provide an enabling environment for sustainable development to take place, which was, to an extent achieved through infrastructure provision. However, this case shows that the effort does not stop there. In a context ridden with social issues, more care needs to be taken to empower a community and foster a culture of entrepreneurship and skills development.

In the broader Cato Manor area, initiatives such as the economic hives has been developed to grow small business, there are programmes run by the municipality in terms of business support. Accompanying the infrastructure built, there are programmes which run concurrently that help skill small business. This is seen as a key lesson – that while the arrangement of land uses and relationship with transport to improve accessibility to opportunities is a pre requisite to a sustainable corridor initiative, there lies a need to empower communities to sustain such development. Hence soft infrastructure is also necessary. This will assist in increasing affordability and crime levels.

- There is an imperative need for all properties and developments to be surveyed and for a township register to be opened with appropriate zonings.
- The need for thorough strategic planning and a common area vision to work toward. This however was an earlier success factor. As identified in section 2.4.4, the Cato Manor LED Strategy does not mention or address the Bellair Road Corridor in any way. This indicates that the corridor vision has faded over the years. If initiatives are to function as envisaged by the original concept [even though the end product may differ due to various circumstances], the common vision and strategy needs to be carried through and hence the project should be branded as such.
- Collaboration between stakeholders (community, private and public sector) is key to ensuring smooth implementation.
- Responding to local needs.
- The use of design to create efficient layouts and settlements.
- In this low income context, the political environment is extremely sensitive and needs to be incorporated with utmost understanding of the concept. Hence the need for political buy-in.
- Encouraging energy efficient design through layout.
- Conserving environmental, historic assets.
- Promoting various modes of transport including NMT.
- The need to look for alternate routes of funding given small subsidies.
- When planning in a low income context, the environment needs to cater to the needs of all stages in the business lifecycle.
- The surrounding nodes of activity act as push factors from the corridor itself attracting spend away from the corridor.
- Market forces play a major role as it can be seen with the adjacent Booth Road corridor, high in demand for port related industry. Trends need to be forecasted as surrounding activity will place pressure on the corridor which may in future develop differently.

5.8 CONCLUSION

This chapter has provided the results, analysis and discussion of the primary research carried out. This chapter has addressed the objectives of analysing the Bellair Road case study to determine its current state and has explored the factors influencing the extent to which it is achieving its objectives. This was done by a local area analysis and key informant interviews. Key discussions are provided at the end of each sub-section and for ease of reference this section was broken down into a transport assessment and a land use assessment. Key lessons learnt were also discussed.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6 CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

This study aimed to explore the corridor concept through a local case study, the Bellair Road Development Corridor. The main research question relates to exploring the factors responsible for influencing the extent to which the corridor is achieving its objectives. In answering this question key objectives were addressed by exploring international and South African literature. This included research on the concept and related concepts, reviewing local policy and legislation and undertaking a detailed local area analysis coupled with key informant interviews specific to the case study. This allowed the researcher to successfully address the research question and key objectives set out. The study was carried out in a systematic manner beginning with:

- Contextualizing the study in Chapter 2 within the sustainable city debate and reviewing the spatial dynamics of South African cities, exploring the evolution of the use of development corridors as a spatial restricting tool and exploring the policy environment to understand how the concept has been advocated in the local context;
- Reviewing literature on the corridor concept in Chapter 3 to ascertain the main components to be explored, key factors and preconditions for success, and realities of such a concept;
- and using this directive to explore the case study in Chapter 4 looking at the history of the corridor and how it was planned and implemented in eThekweni Municipality;
- Chapter 5 provided an analysis of findings and a discussion of findings of the case study with key lessons learnt.

The researcher has successfully managed to address all objectives as set out in Chapter 1 through the methodology set out. This study has provided a working example of the way in which such initiatives are implemented and managed and key limitations experienced in the lower income, urban context. This chapter concludes this study by outlining the key findings, lessons learnt and presents key recommendations to guide future initiatives.

6.1 CONCLUSIONS

South Africa and eThekweni Municipality in specific have advocated for the integrated of land use and transport planning through the development/activity corridor concept through various policy and strategic frameworks (Integrated Development Planning, Spatial Development Plans etc.). The aim is to increase density, increase the mix of land uses and intensity thereof along public transport networks with the main aim of enhancing accessibility to opportunities to the previously disadvantaged communities through urban restructuring. Locally, this is done within the sustainable development agenda by using

sustainable urban forms and attempting to achieve compact cities. This is done in order to lessen the use of resources and create quality, interactive living environments. The study provided a useful interpretation of the history of the concept in South Africa and eThekweni Municipality.

The literature review identified that the corridor concept consists of a complex mix of land uses and services to ensure the positive functioning of such an initiative. An array of activity needs to be coordinated and can, most effectively be done through a dedicated management body which serves to integrate all components. Also, the Bellair corridor fits the profile of the beads along a string type corridor.

The researcher has found that answering the main research question is complex as objectives originally set out by the initiative are subject to changes in the local environment. The implementing agent has changed from the designated 'special purpose vehicle', the Cato Manor Development Association to the municipally operated Cato Manor Area Based Management. With this change came a change in the allocation of resources, where monetary resources need to be allocated throughout a city structure. This area has to therefore compete with other initiatives for funding whereas the CMDA had dedicated funding.

While the initial anticipation was for the area to progress to a mixed income environment to support economic activity, this did not materialise as envisaged. Market forces and affordability have kept business slow and crime is driving away private sector investment. While in certain instances there is interest from private sector to purchase property, this is hampered by lack of registered land which needs township registers to be opened and land to be consolidated and subdivided to be sold via public tender.

Issues such as land invasion and the pressing needs to provide houses to an ever increasing informal settlement are still in existence. The subsidy scheme still does not allow for higher rise typologies, however a move toward higher density living is somewhat being achieved. Residents are still erecting informal structures as additions to formal housing.

Inconsistency in design of buildings is driving away passers-by. For example, the Bellair Market is not easily accessible to pedestrians and not attractive either. It seems that there is a business as usual approach taken. Business support is available to aid small business in the area. This is important in this environment of high unemployment and should be noted for future initiatives. Here an important lesson is learnt, while infrastructure and access to services is made available, in such a context, there needs to be a further operationalisation and assistance created. This needs to however respond to the market and the necessary economic activity and the way communities use the space.

The lack of suitable trip attractors along the corridor/activity street creates a poor amount of people spending their money within the local area and travel outside to obtain goods and

services. In this case however, centres of economic activity offering higher order goods and services are in close proximity and is more convenience for public transport users to travel to. Hence a suitable mix of activity needs to be considered when planning for activity along a route in relation to surrounding nodes of activity.

The presence of NMT infrastructure and a highly reliant public transport community is positive in terms of discouraging the use of motorised private vehicles. Also, providing road upgrades and linking a once isolated community to surrounding suburbs is a key success of integration.

Strategic frameworks, a common vision and integration among different departments was a factor adding to the positive implementation of this initiative. However, issues are experienced with different departments working in silos and limited coordination takes place. In addition, the strategic framework and vision for the corridor has not been carried through as initially planned.

Aesthetic appeal and creating an attractive environment is important to upkeep the image of an area, which has not been achieved in the study area. While open space has been made provision for, services in terms of refuse removal is very poor.

This study indicates that in order for such an initiative to function effectively, there needs to be on-going management to facilitate development and deal with any issues that may arise. Corridors are complex and cannot be over planned as they grow according to the changing market forces which may deviate slightly from the original plans. In order to manage this, the original strategic framework and plans and approach will need to be constantly reviewed based on current research. A lot of effort is needed to achieve an integration of activities and functions on the ground hence dedicated implementing agents are necessary to coordinate such complex projects. Corridors should be planned with sufficient land available for development and line departments need to share a common understanding of the concept.

6.2 RECOMMENDATIONS

- i. The municipality needs to ensure that all land parcels within a corridor are precisely defined, demarcated and zoned appropriately. This will ensure that relevant township registers are opened and plans registered. This will also enable speedy transfer processes. A key recommendation will be:
 - a. To undertake a land audit to identify land ownership, land use and property details – taking into consideration current land use pressures and demand,
 - b. Zone and define boundaries accordingly,
 - c. Implement a land transfer and registration tracking system using GIS Zone.
 - d. Land use management needs to be effectively enforced based on zonings.
 - e. More intense mixed land uses must be promoted.

- ii. An area wide regeneration initiative needs to be undertaken to improve the image of the corridor
 - a. Undertake a community wide branding and clean up initiative with political buy-in and youth involvement.
 - b. Involve the community in effective participation.
 - c. Provide neat and proper signage along the route.
- iii. Promote trip attractor type activity within the corridor.
- iv. Fast-track private sector investment:
 - a. Package land and projects to meet the needs of the market.
- v. Ensure an enabling environment:
 - a. Implement constant policing and safety programmes to uplift the image of the area,
 - b. Ensure roads are always in good condition,
- vi. Undertake an assessment of needs in the area in terms of:
 - a. Develop a business expansion and retention plan to identify key issues and needs of micro, medium and established business and assist so that business can reinvest in the area.
 - b. Identify the trends of the area as a whole and identify the need for supporting land use within the corridor (for example, the potential of the area as a logistics hub – as indicated by the LED).
 - c. Ensure projects identified within the LED framework are implemented to include the corridor and reprioritise the corridor.
- vii. Lobby external funding for upgrading the area.
- viii. Research innovative ways in which to stimulate the informality within the corridor (for example, the informal economy).
- ix. Review the initial strategy and vision to meet the current trends in land use activity.
- x. Identify uses for unutilised space:
 - a. Repurpose existing parking space into taxi stops/taxi rank.
- xi. Utilise university students to undertake post-graduate research into the following sectors:
 - a. Undertaken a route planning exercise which determines the origin/destination patterns of people using the corridor and routes being used to identify key nodes of activity and where people live and work.
 - b. Undertaken a quality of living perception survey to identify key constraints.
- xii. Through the Cato Manor Area Based Management Unit, facilitate an integrated effort among key line departments within specified timeframes. It is important to work within specific timeframe when reviewing plans and implementing plans. Also, when working with corridors, a common working session is needed among professionals from varied disciplines to gain a common understanding of the concept and vision.

- xiii. Existing strategic documentation needs to be revised on an annual basis. This should ideally be based on current status quo of the area so that strategic planning addresses needs effectively.
- xiv. A design manual for development corridors and activity streets needs to be formulated so that there is consistent design principles used.
- xv. Corridor initiatives are on-going and need to be constantly monitored and evaluated and hence respond to changing community needs. A key recommendation is that the municipality should formulate a Monitoring and Evaluation Toolkit linked to objectives of an initiative.

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8 ANNEXURE A – CORRIDOR DEFINITIONS

Various definitions exist from various South African sources which were reviewed, such as KZN PPDC (2008), Martens (2001) and Marrian (2001) amongst others. The definition used above is a culmination of these various resources including the policy review above. A key consideration is the scale of a development corridor. Corridors are planned a varied scales and reinforced by nodes of activity. The distinction between the scales of corridors is provided below:

- **Trans – National/International and National Corridors:** aimed at opening up economic opportunities and linking economic centres across several countries along National high-speed road, national rail and/or river spines or major transport routes, where significant growth is expected, or is to be stimulated by public interventions. The corridors perform important movement functions, but also potentially attract small and large businesses, and provide a focus for activities such as small-scale agriculture. They also contain important tourist routes (Land Use Management Blue Book Manual in KZN PPDC, 2008). The SDI concept explain in previous sections are an example of this type of corridor and is on a generally large scale.
- **Provincial corridors:** aimed at restructuring the provincial space economy linking nodes/areas of economic growth and opening up areas between these centres to greater economic opportunity usually along high-speed freeways or provincial roads. These roads are usually fast moving with limited direct access off the road. The economic corridors identified through the Provincial Spatial Economic Development Strategy are an example of this type of corridor (KZN PPDC, 2008).
- **Rural corridors:** linking smaller nodes of economic opportunity and rural service centres (beads on a string) running along major provincial roads. These roads are usually fast moving with limited direct access of the road.
- **Large Urban Corridors:** linking different urban generators along a central road spine with a variation in land uses from nodes to short stretches of mixed use activity streets. The systems may also include a rail link. The R 102, South Coast is an example of this corridor.
- **Activity Corridor /Metropolitan or intra-urban corridors:** An activity corridor is a metropolitan scale linear zone, approximately 2 kms wide, of mixed use, high-density (100-300 persons per hectare (Martens, 2001) urban development concentrated along a high-friction public transportation route with residential, commercial, industrial and recreational activities in close proximity to one another. These corridors occur within urban agglomerations and link together different parts of towns and cities, and major activity nodes (KZN PPDC, 2008 and Martens, 2001).
- **Activity Streets:** along individual roads within urban areas and perhaps rural nodes. An activity street is a smaller version of an activity spine where the same principles of linearity, accessibility and market threshold apply but where there are much lower

levels of opportunity. Activity streets occur at the residential scale and are primarily of local significance (KZN PPDC, 2008 and Martens, 2001).

Local corridors, which are characterised by low speed movement, a multiplicity of transport modes and a high level of economic activity and social interaction. These may occur within both urban and rural areas.

9 ANNEXURE B – QUESTIONNAIRE SCHEDULE

I. GENERAL QUESTIONS

1. What is your understanding of the purpose of a local development corridor in the South African context (and how effective do you think this is)?
2. What in your view and according to the extent of your knowledge about development corridors, are the main components that make up a corridor?
3. Are there any key issues that you have come across in your experience as a professional planner dealing with planned corridor initiatives that you feel is inadequately dealt with in South Africa?
4. As an experienced professional planner, are there any due considerations that you feel need to be taken into account when planning corridors?
5. Do you feel that the literature and theory of corridors has been applied adequately in South Africa? And is there consensus on the general theory of corridors?

II. BELLAIR ROAD DEVELOPMENT CORRIDOR INITIATIVE

a. PLANNING

1. Could you provide me with a brief background of who you are, what you specialize in and what is/was the extent to which you were involved in the Bellair Road Development Corridor project? (and what was your role and purpose)
2. Who was responsible for planning and funding this corridor?
3. What were the challenges experienced with the planning of this project?(and shortfalls that could have been mitigated)
4. What was the rationale behind the location of this corridor (given the poor topography and natural barriers impacting in the continuity of the corridor etc.) and was Bellair Road an existing Road before the planning of this corridor?
5. What were the guiding factors when planning this corridor (the objectives and how did they influence the planning process)?
6. Did the planning of the corridor require adhering to any specific theory related to development corridors?
7. Would you classify the planning of this corridor as ad hoc or an integrated effort?
8. How successful do you think this corridor has become?

b. IMPLEMENTATION AND MANAGEMENT

1. Could you provide me with a brief background of who you are, what you specialize in and what is/was the extent to which you were involved in the Bellair Road Development Corridor project? (and what was your role)
2. Has the project been fully implemented as yet? (yes or no)
 - a. If yes, has the initial requirements been fulfilled?
 - b. If no, what is the extent of the progress of the implementation of the corridor?
3. Is there any form of monitoring and evaluation forecasted for the duration of implementation?
4. What has the duration of implementation been initially set as?
 - a. Has the project deviated from this and why?

5. Who is responsible for implementing the project and who is funding it?
6. What were the main challenges experienced during implementation of the corridor?
7. What were the less challenging issues dealt with during implementation?
8. Did implementation deviate from the original plans?
 - a. If so, how and why?

III. CONCLUSION

1. Is there any further information that you feel is important to share with me about the Bellair Road corridor that could help me with my research?
2. Any further comments on development corridors?