



NMT Policy and Strategy

Volume 1: Status
Quo Assessment

City of Cape Town

October 2005



The City of Cape Town's Transport Authority

Executive summary

Introduction

Non-motorised transport (NMT) includes all forms of movement that do not rely on an engine or motor for movement. This includes walking, cycling, rickshaws, animal-drawn carts (especially in rural areas) and rollerblading or skating for recreational purposes. Ultimately, NMT grows liveable communities - it is the most basic part of the transportation system and pedestrians in particular contribute to the vibrancy of a community.



NMT is generally recognised as a valuable component of the transportation system and the environment we live in due to the various benefits it holds. These benefits include environmental benefits, increased liveability, improved health, economic gains and transportation benefits.

NMT can address a large range of transportation needs ranging from regional mobility to neighbourhood access. There are various types of trips where NMT may be used as part of or for the entire journey, whether by choice or out of necessity. People who commonly use NMT are commuters (trips to and from work), learners (trips to and from educational institutions, including libraries and sports fields), service users (these include trips to shops, markets and other service destinations) and recreational users (trips by locals or tourists to recreational destinations).



In the Cape Town context, NMT is represented mainly by walking and cycling. As such, the policies and strategies are mostly developed around the needs of these users. However, the policies, strategies and resulting design and implementation projects should strive for improved universal access that also takes into consideration the needs of other users such as the special needs people that include the disabled, women with perambulators, shopping trolleys, etc.

The City of Cape Town has until now not had a comprehensive plan guiding the planning and implementation of programmes and facilities to respond to the multiple needs of NMT users. The Mobility Strategy of the City of Cape Town responded to this critical shortcoming and identified it as one of the key elements in an improved transport system for Cape Town.



The NMT Strategy for the City of Cape Town aims to address this critical shortcoming in two ways. Firstly, it presents a policy, accompanied by a set of objectives and strategies to realise an improved NMT environment and culture in Cape Town. Secondly, it develops a Strategic NMT Plan for Cape Town that would identify areas and routes that should be considered as key NMT routes and places in Cape Town where NMT users would receive a certain degree of consideration, if not priority.

City of Cape Town NMT vision and objectives

The City's response in recognising the needs of NMT users in Cape Town is addressed in the following vision statement for NMT:

“Cape Town will be a city where all people feel safe and secure to walk and cycle, NMT is part of the transport system, public space is shared between all users (NMT, special needs people and motorised users) and everyone has access to urban opportunities and mobility.”

An important goal in realising this vision, as set out by the City, is to:

“Increase cycling and encourage walking by creating a safe and pleasant bicycle and pedestrian network of paths to serve all the citizens in the Cape Town Area.”

The primary objectives of this goal are as follows:

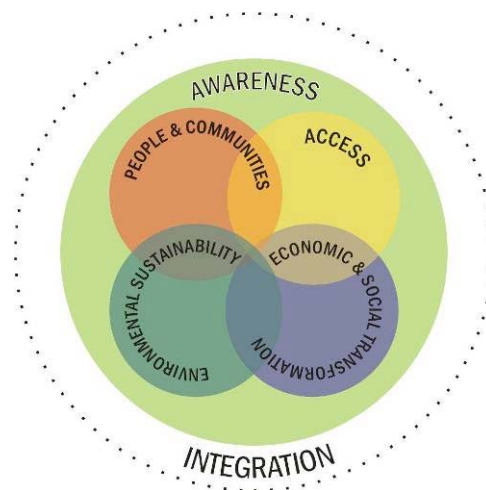
- Increase cycling and enable walking as modes of travel;
- Create safe pedestrian and cycling environments
- Develop a quality, attractive and dignified environment; and
- Promote a changed culture that accepts the use of cycling and walking as acceptable means to move around in the city and elicit more responsible NMT behaviour.

Further secondary objectives of the policy that could be achieved through the successful implementation of the policy, are:

- Integrated land use development appropriately suited for non-motorised transport.
- The social and economic empowerment that non-motorised transport can affect through improved low-cost mobility.
- The development of a safer streetscape that allows non-motorised transport users their fair share of the available public space in the mobility network environment.

Key strategic themes

Based on the priorities and strategic direction identified by the City of Cape Town in its Integrated Development Plan and a review of current NMT problems areas, key themes have been identified to guide the required interventions. Interventions are required that emphasise **access** for all, the importance of **people and communities**, the role of **economic and social transformation**, **environmental sustainability**, **integration** and **awareness**. These themes are intrinsically linked and cannot be viewed in isolation.



Contextual analysis and problem statement

The contextual analysis has been used to develop a comprehensive problem statement for NMT in the City of Cape. The issues have been described according to the strategic themes.

Access

Owing to historical reasons, access for all citizens of Cape Town is becoming more problematic and is fundamentally a result of inequity on various levels. These trends are continuing and exacerbated with the development of low-cost housing and informal settlements on the outskirts of the cities, removed from employment opportunities and public amenities, thus increasing the demand for travel, especially the demand for public transport. Where public transport cannot be afforded or communities do not have access or have limited access to public transport, people and learners have to walk long distances to their destinations.

On more local levels, access across railway lines, freeways and major arterials create major barriers for NMT users. This leads to unsafe NMT environments when people are forced to either cross these physical obstacles in an unsafe and invariable high risk manner or to follow long paths to safe crossing points.



People and Communities

The NMT environment in Cape Town is generally characterised as a poor quality environment, with the standards of NMT environments being lower in poorer communities. Public spaces, including NMT routes within road environments, are often not sociable, are poorly maintained, seldom used and suffer from the infiltration of crime. This is often due to poor infrastructural planning, lack of integrated design approach, and difficulties experienced in operation and marketing of public spaces.

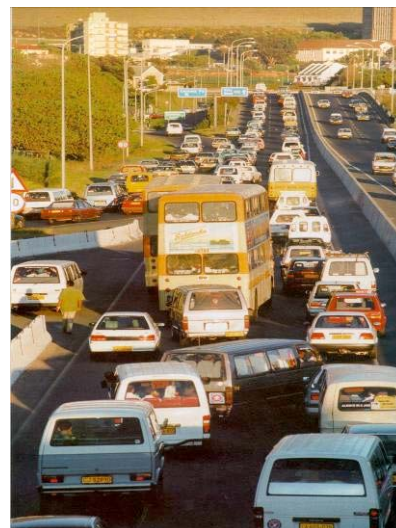
Social and economic transformation

Although the economy for the City of Cape Town has significantly improved over the past decade, social and economic conditions continue to be greatly disparate. There are many that have increased their income and living conditions, but for a large majority, unemployment, lack of housing and poor social services remains a reality. This disparity in conditions is also reflected spatially, with the poor continuing to live on the outskirts of the City. They are required to travel long distances and are captured public transport riders because they cannot afford private vehicles. NMT has the potential to contribute to economic transformation by providing opportunities for small businesses linked to NMT support services, as well as through the promotion of NMT activities in the tourism and local economic development sectors. NMT infrastructure can also provide quality environments to support social transformation.



Environmental sustainability

The State of Energy report for Cape Town⁵ listed some of the issues facing the transport sector in Cape Town and stated that "*urban sprawl causes long commutes, which result in higher transport energy consumption and a corresponding high release of carbon and other emissions*". Long commutes also require longer days away from home, less productive time which decreases quality of life, primarily for the poor. These current levels cannot be sustained by the City in the future and remedial measures have to be implemented to arrest the current trends. NMT is a form of sustainable transport that is currently not receiving the necessary recognition in transport planning.



Awareness

NMT is still not recognised as a mode of transport. This lack of recognition is manifested in a general lack of consideration for pedestrians by motorists and lawless and reckless attitudes of pedestrians. This lack of consideration for NMT needs is also inherent in infrastructural planning and design of transport elements and the conscious introduction of the culture of walking, cycling and NMT in the mobility environment and the respect towards NMT users in the streetscape environments, are required.

The lack of NMT awareness is also resulting in a culture/societal behaviour in Cape Town that NMT use is negative, not desired and only for the poor.

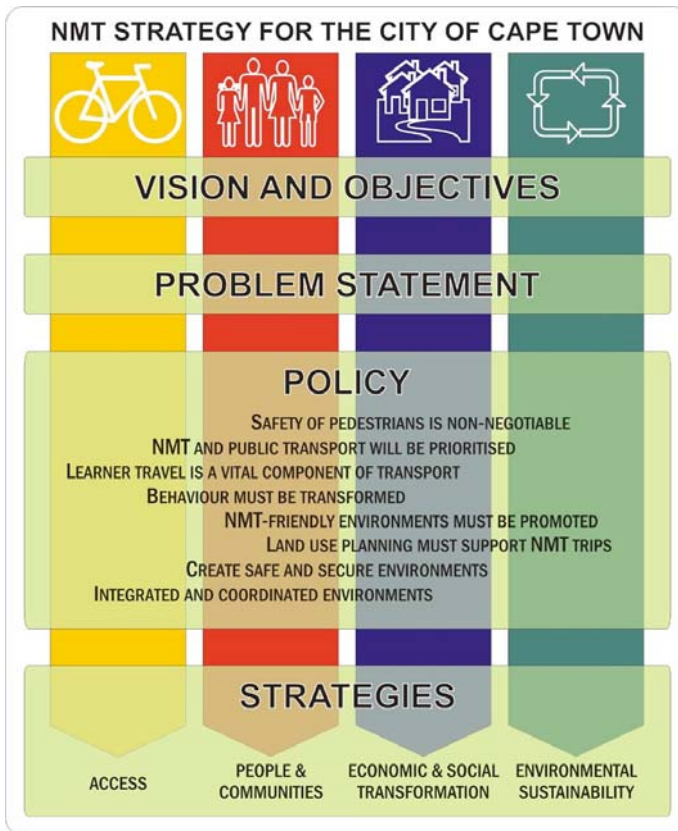
Integration

The lack of an integrated planning approach is viewed as the most significant contributor to the poor NMT environment Cape Town is currently experiencing. The lack of integrated planning has also resulted in the development of unsustainable and hostile residential environments with inadequate transport, civil services, shops, work opportunities, etc.

The lack of NMT consideration is also displayed in development planning where NMT is not given sufficient attention in the design of buildings, traffic impact assessments, etc. The lack of institutional integration, project coordination and non-alignment of budgets are also impacting negatively on the quality of the NMT environments and the implementation of NMT and public space projects.



The city's policy and strategic responses



This NMT Strategy provides a strategic tool to guide NMT thinking, planning and project implementation in the future. The Plan will enable the City to define programs and prioritize actions and to more proactively meet the City's NMT requirements. The diagram below shows the structure of the NMT Policy Framework and the various elements that have been included as part of the NMT framework package. Firstly, the "Vision and Objectives" is one of the key drivers of the NMT Plan since it encompasses "how the City visualises NMT". The NMT Vision is the "ideal" that the City aims to achieve. Various objectives have been identified that are measurable and can evaluate how successful the City has been in realising this NMT vision.

A concise problem statement has been developed that describes the NMT concerns in Cape Town. The City's proposed policies for the City of Cape Town in response to the concerns facing NMT users are indicated hereafter. NMT strategies have been

identified to achieve the City's NMT vision and objectives. Strategies have been identified along the same themes that have been identified in the problem statement and policies. The NMT strategies are cross-cutting and may impact across a number of themes. NMT must be part of an integrated solution and the accountability for various interventions lie with various sectors (private, public), various spheres of government (local, provincial, national) as well as various departments (transport, urban design, spatial planning, etc.).

Access

The Access theme aims to improve connectivity and mobility within the City through NMT. This involves planning and implementing infrastructure that supports access through NMT.

- Policy 1.1: All people are entitled to reasonable access to other people, places, goods and services including those using NMT.
- Policy 1.2: Safety is a priority for all NMT users, especially learners, cyclists and pedestrians.
- Policy 1.3: NMT will not to be compromised over of the needs of motorised traffic.
- Policy 1.4: Transport Impact Assessments must respond and address the needs of universal access and NMT requirements.

People and Communities

NMT can promote social and economic transformation by generating economic opportunities and uplifting social conditions. The strategies for this theme have been divided into economic and social opportunities that are promoted through NMT infrastructure development and other low cost mobility initiatives.

The people and communities theme promotes livability and equity for citizens within the City through NMT. Strategies therefore include elements such as quality of environment, people safety and security.

- Policy 2.1: All people and communities in Cape Town are entitled to equal levels of service such that the basic needs of all people, especially women, children, the poor and the physically challenged should be provided for.
- Policy 2.2: The public realm should be designed, built, managed and maintained in a way that protects the well-being (physical, mental and social) and safety and security of all people, enhances the quality of life in communities and increases the accessibility and primarily the walkability of the whole of Cape Town.
- Policy 2.3: All individuals should be committed to making responsible choices in the interest of their personal well-being as well as for the greater good of the environment.
- Policy 2.4: NMT needs and requirements take priority in development and management of residential areas and public space networks.

Social & Economic transformation

NMT has always been closely associated with environmental sustainability because of its minimal impact on fossil fuel usage, noise and air pollution. NMT is also best supported by sustainable land use development principles.

- Policy 3.1: NMT will be employed as a tool to maximise economic gain through the promotion of low cost mobility and the creation of NMT-related employment opportunities.
- Policy 3.2: NMT considerations will be taken into account to enhance social transformation and the development of a more equitable society through contributions to improvement of quality of life and the provision of independent mobility for captive users.
- Policy 3.3: NMT planning and design should take cognisance of the informal trading policy of the City of Cape Town.

Environmental sustainability

Lack of awareness discourages the use of NMT in the City. The inconsiderate behaviour and unlawful attitude of motorists and NMT users is problematic. This contributes to the high pedestrian accidents that currently exist. NMT needs to be marketed and promoted as a positive transport alternative accompanied by appropriate user behaviour.

- Policy 4.1: NMT will be employed as a tool to support environmentally sensitive transport solutions.
- Policy 4.2 NMT should be aligned and support Travel Demand Management Strategy of the City of Cape Town, as well as the City of Cape Town Energy and Climate Change Strategy.

Integration

NMT cannot be implemented in isolation and success relies on an integrated approach i.e. within government departments and between public and private sectors.

- Policy 5.1: An integrated development planning approach will be followed when implementing NMT in Cape Town.
- Policy 5.2: Through integrated planning, NMT considerations should be addressed with all developments in Cape Town, in particular the Integrated Human Settlements Programme.
- Policy 5.3: Through integrated systems design, planning and implementation, NMT networks and facilities should integrate modes of transport, with particular focus on public transport facilities and interoperability.
- Policy 5.4: Funding for NMT should be prioritised and coordinated with external and internal parties.

Awareness

- Policy 6.1: NMT shall be recognised as an essential mode of transport.
- Policy 6.2: The culture and respect of NMT must be promoted throughout Cape Town through example by political leaders of City of Cape Town, evidence of projects, supportive law enforcement and visibility of NMT.
- Policy 6.3: The City of Cape Town should support and reinforce programmes and projects that target key markets/sectors and promotes public life and NMT, such as events to reclaim public space, like "Vehicle Free Days" and Night Markets.
- Policy 6.4: The City of Cape Town shall promote and support training of officials and stakeholders with respect to NMT planning and infrastructure design.
- Policy 6.5: The City of Cape Town shall promote NMT by example through the provision of NMT support facilities such as showers and bicycle parking at municipal buildings that include depots, offices and the development of incentives promoting NMT, such as public transport allowances, bicycle travel allowances, etc.

NMT network development

The Metropolitan Bicycle Plan and the Pedestrian Safety Plan was used as informants to develop the City of Cape Town Strategic NMT Plan, illustrated in Volume 2. This Strategic NMT Plan aims to identify strategic locations/ areas in Cape Town where NMT should be prioritized. The priority is determined by the degree of people concentration, the special consideration given to learner travel to and from school, the needs of the tourism sector and the role of NMT recreation. The Strategic NMT Plan highlights the areas with NMT priority, which also comprises strategic nodes with Cape Town favouring NMT use and the Metropolitan Cycle Masterplan.

This plan is only developed at a strategic level and does not include focus areas at local community/ neighbourhood levels. The NMT priority areas at neighbourhood levels should be developed through the development of local area NMT network plans. The NMT Strategic Plan forms a framework for the development of local area NMT network plans. It should be a dynamic plan that is guided by the development of the local area NMT network plans.

Areas where NMT priority should be given consideration include the following:

- Public transport interchanges, bus and rail stations
- School accesses and key access routes to schools (school priority zones), as well as tertiary educational institutions.
- Areas of intense pedestrian activity such as CBD areas, shopping/service districts, community centres and facilities, etc.
- Tourism sites (where appropriate), heritage sites, conservation areas (where appropriate), and recreational areas/ routes.

All of these sites within Cape Town are not shown in the Strategic NMT Plan, only those of metropolitan significance.

Nodes and links in Cape Town that is significant within a metropolitan context are highlighted in the Strategic NMT Plan. It must be noted that these nodes and links are only illustrated in a notional manner and that the exact boundaries of these special NMT nodes and links, should be finalised only through the development of NMT local area network plans.

NMT facility design guidelines

Various design guidelines are available in South Africa that includes the NMT Facilities Guideline⁸ and the Southern African Development Countries Road Traffic Signs Manual⁹. These guidelines should always be consulted and referred to during NMT planning and design processes. However, certain issues are highlighted hereafter to illustrate priority NMT considerations. Design guidelines have been included for general NMT, Pedestrian and Bicycle Facilities.

Public participation

As part of the participatory process, key stakeholders and role-players have been identified and targeted to provide the necessary inputs into the development of this strategic plan and policy framework. A greater stakeholder forum was also convened on 29 September 2005.

Stakeholders and role-players were represented by sectors that has NMT as a key element within there sector of influence. Internal City sectors include transport planning, local economic development, urban design, spatial planning, disability desk, NMT planning, public transport and heritage management. External departments consulted include the Department of Education, Cape Town City Partnership, Department of Community Safety, South African Rail Commuter Corporation, Provincial Government of the Western Cape, Department of Transport and Public Works, Bicycle Empowerment Network and Metrorail.

Volume 1: Status quo assessment (this document)

Volume 2: Policy framework

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List of acronyms

BEN	:	Bicycle Empowerment Network
City	:	City of Cape Town
MBM	:	Metropolitan Bicycle Master Plan
Muni-SDF:		Municipal Spatial Development Framework
NMT	:	Non-motorised transport
PGWC	:	Provincial Government Western Cape
SNP	:	Special needs people
TSB	:	Traffic Safety Bureau of City of Cape Town

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- MCA Planners in assisting with GIS
- MMA Architects in developing typical NMT examples
- Participants at the stakeholder workshop held on 29 September 2005.
- Representatives of the following who were willing to be interviewed as part of this process:
 - City of Cape Town officials
 - Provincial Government Western Cape, Department of Transport and Public Works
 - South African Rail Commuter Corporation
 - Cape Town Partnership
 - Bicycle Empowerment Network

1. Introduction

1.1 Background

Although planning and implementation for bicycle and pedestrian facilities in Cape Town have been undertaken in the past, these initiatives have not been carried out under the guidance of an overall framework or policy for the broader metropolitan area. Whilst, pedestrian and cycle issues are briefly described in the City of Cape Town's Integrated Transport Plan, a contextual analysis of non-motorised transport (NMT) issues in Cape Town, the City of Cape Town's (hereafter referred to as the City) policy responses and strategies, have not been comprehensively addressed.

Pendulum Consulting has been appointed by the City to undertake the development of the City's NMT Strategy.

1.2 Objective of study

The objective of the study is two-fold, firstly to develop a policy, accompanied by a set of objectives and strategies to realise an improved NMT environment and culture in Cape Town, and secondly; to develop an Strategic NMT Plan for Cape Town which would identify areas and routes that should be considered as key NMT routes and places in Cape Town where NMT users would receive a certain degree of consideration, if not priority.

1.3 Scope of study

NMT includes all forms of movement that do not rely on battery and/or fuel combustion driven mechanisms to be propelled¹. This includes walking, cycling, rickshaws, animal-drawn carts (especially in rural areas) and rollerblading/ skating for recreational purposes. However, in the Cape Town context, NMT mostly comprises of walking and cycling, hence the policies and strategies are mostly developed around the needs of these users, but also takes cognisance of the needs of other users.

Furthermore, in this study NMT is viewed as growing liveable communities. NMT forms part of the transportation system and pedestrians especially contributes to the life of the community. These two paradigms are key considerations in developing this policy framework.

1.4 Methodology

The methodology followed in the compilation of status quo analyses and the resulting policy and Strategic NMT Plan, was guided by the strategic nature of the project. Primary data collection was not undertaken, but desktop analyses of existing literature and studies, as well as existing development frameworks, were used to inform the development of policies and the Strategic NMT Plan. Where primary data was collected as part of previous work undertaken, it was also used as a source. Furthermore, stakeholders were interviewed to assist in developing a qualitative understanding of the nature of the NMT concerns in Cape Town.

1.5 Layout of report

This report is one of two volumes that together comprise the NMT Strategy for the City of Cape Town. Volume 1: Status Quo Assessment summarises the legal, policy and existing conditions that surround NMT in the City. It also provides a basis to develop a comprehensive NMT problem statement for the City. Volume 2: The Policy Framework provides the City's response to this problem statement.

Volume 1 has been divided into the following sections:

- Section 1, *Introduction*, discusses the background, scope, objectives and methodology for the NMT study
- Section 2, *NMT Grows Liveable Communities*, is a summary of a theoretical review on NMT. It includes a definition of NMT, its benefits as well as the potential roles it could play at a City level.
- Section 3 *Existing Legislative, Policy and Planning Framework* summarises key legislative and policy documents at national, provincial and local levels, as well as planning studies undertaken to date, as they have relevance to NMT.
- Section 4, *Contextual Analysis*, describes current NMT conditions and trends in the City. For example, it provides analysis on pedestrian and bicycle accident statistics, mobility trends and key NMT problems that currently face the City.
- Section 5, outlines the *Way Forward*.

2. NMT grows liveable communities

The concept of liveable communities typically includes public spaces and people, their comfort and convenience and activities that would attract them. It places greater priority on the quality on the public realm than on the private realm.

Liveable streets are key components of liveable communities. However, from a transportation planning and traffic engineering perspective, the presence of people in the street environment is often overlooked when it comes to developing liveable streets and communities. In the transport system historically, the needs of the private car user have priority over the public transport system.

NMT is a common element in developing liveable streets and communities. NMT planning has to take cognisance of the transportation system requirements, the public space realm and quality of life requirements and ensure that a socially just balance is achieved.

2.1 Definition of NMT

NMT is a form of active transportation. Active transportation consists of human-powered forms of travel such as walking, cycling, rickshaws, skating/ roller-blading, shopping trolleys and manual wheelchairs. However, this could also be extended to include forms of transportation that do not rely on battery and/or fuel combustion driven mechanisms to be propelled¹ This also includes animal-drawn carts (especially in rural areas).

The policies, strategies and resulting design and implementation projects should strive for improved universal access that also takes into consideration the needs of other users such as the special needs people that include the disabled, women with perambulators, shopping trolleys, etc.

2.2 Benefits of NMT

NMT is generally recognised as a valuable component of the transportation system and the environment we live in owing to the various numerous benefits it holds. These benefits include environmental benefits, increased liveability, improved health, economic gains and transportation benefits.

2.2.1 Environmental benefits

The environmental benefits of NMT are primarily gained because it results in reduced pollution. Increased NMT movement in heavily congested urban areas can result in a reduction in CO₂-emissions.

It is also spatially more efficient as it is conducive to the development of more liveable communities. It supports effective land use patterns and results in improved accessibility and independent mobility.

2.2.2 Increased liveability

NMT use also increases the liveability of CBD environments and community areas. The presence of pedestrians in streets, public spaces and buildings gives life to all public spaces and contributes greatly to the conditions that make a city or community liveable.

2.2.3 Health benefits

NMT is a more active form of transportation and can result in improved societal health from increased physical activity. Health benefits can also be gained through the reduction in motorised traffic, the resulting reductions in CO₂-emissions and the generally improved quality of life. The reduction in motorised traffic could also result in reduced accidents.

2.2.4 Economic benefits

NMT is economically cheaper. It is more affordable than motorised traffic owing to reduced operating cost and the savings in parking fees. In congested urban areas it can also result in time savings.

2.2.5 Transportation benefits

Increased NMT usage accompanied by a traffic congestion reduction can result in improved mobility for non-drivers such as young people and the elderly.

NMT forms part of any transport trip and in particular is a feeder to public transport. The use of NMT to improve inter-modality of the transportation system can increase the overall efficiency of the transportation system.

NMT is an independent form of public transport and facilitates low-cost mobility to the poorer communities, especially in developing countries.

NMT also forms a part of the private transport trip. This includes the journey from the origin to a parked private vehicle and from the parked private vehicle to the destination. Vuchic² stated that "*walking is the most convenient form of travel between close buildings or points or within high density areas.*" In developed environments where vehicle ownership is high and congestion levels are high in urban areas, NMT can also add to the quality and convenience of the private vehicle trip especially in CBD environments.

2.3 NMT as part of the transportation system

In the Klipfontein Corridor project, N Mammon et al¹ concluded that to ensure that NMT forms an effective link as part of the transportation system, it has to address mobility at three levels. These include regional mobility, sub-metropolitan mobility and local neighbourhood mobility.

- Regional mobility requires movement across a city-wide level. Owing to the long travel distances involved, it is a fast movement and typically addresses access to work opportunities and higher order amenities and institutional facilities. In the transportation system NMT can provide this level of access through good NMT access to public transport facilities such as major bus, minibus taxi and rail links and efficient inter-modality between the various forms of public transport. In exceptional circumstances, but not be excluded, NMT in the form of cycling, can also provide this level of mobility.
- Sub-metropolitan mobility ensures and facilitates movement between residential neighbourhoods and surrounding areas. It also provides access to work opportunities, as well as higher order amenities and institutional facilities, but is undertaken over shorter distances. As shorter distances are typically involved, these sub-metropolitan trips can be undertaken on foot, by bicycle, as well as public transport.
- Neighbourhood NMT mobility provides the local linkage and the full range of NMT modes can be used to undertake this local trip. It is primarily a short-distance trip and includes learner trips to schools, crèches, libraries, clinics, local shopping and other service activities. At neighbourhood level, NMT also becomes a form of recreation, especially for younger users.

2.3.1 Different types of NMT users

As viewed from the previous section, NMT can address a larger range of transportation needs ranging from regional mobility to neighbourhood access levels. There are various types of trips which NMT may be used as part of or for the entire journey. These typically include:

- Commuters, which are trips to and from work.
- Learners, which are educational trips to and from school. It may however also include trips by learners to the library or sports fields.
- Service users include shopping trips or to the supermarket and other services.

- Recreational trips which include trips by locals or tourists to recreational destinations.

These users can further be categorised in captive and choice users. Based on Vuchic's² definition of choice and captive users in relation to public transport, NMT choice and captive users are defined as follows:

NMT choice users:

The choice user chooses to use NMT, primarily cycling, as a form of transport because of the many benefits associated with NMT use. These are based on:

- Environmental considerations - it is a more environmentally form of transport.
- Economic considerations - NMT is cheaper than private transport.
- Recreational requirements – active recreational forms of transportation such as cycling, walking, rollerblading, etc can be undertaken in attractive environments or in sporting events for recreational purposes.
- Health considerations – when more active forms of transportation is essential for improved health

Captive users:

Captive users are those NMT users forced to use NMT because of:

- Affordability – In poorer communities, the poorest of the poor cannot afford public transport.
- Distance –In the outlying areas of communities individuals are forced to walk or cycle long distances to access more formalised forms of public transport.
- Non-accessibility of the transport system – These users include special needs people such as the disabled, learners and the elderly, mothers with perambulators, people pushing shopping trolleys, etc.

2.4 NMT in the public space realm

NMT is a form of transportation that operates as a component in a larger city-wide land use and public space system that adds to the development and growth of a city. The larger city-wide public space system comprises elements that include sub-systems of public space, green spaces, civil amenities, institutional facilities, transportation, etc.

Dewar et al³ concluded that “a system of public spaces can only make sense if it is conceptualised within a broader system of safe places and routes that re-connect the city and its communities”. Therefore, the benefits of a public space system can only be reaped if it is integrated with sustainable land use, a sustainable high quality public transport system and further connected by a network of convenient, attractive and safe pedestrian and cycle routes. This requires regional mobility within the system as well as local accessibility.

At a local level, public spaces should be located in a system of places and facilities that are well connected. From a quality of life and NMT perspective, this requires clustering of spaces and facilities around key significant nodes and connected by well-defined pedestrian/ NMT routes. Efficient land use planning, supported by a good NMT environment reduces travel requirements and improves the quality of the journey.

2.5 NMT Movement in Public Space

Gehl⁴ developed key requirements to assess the quality of public space. These include access and linkage, comfort and convenience, uses and activities and sociability. The latter is especially important as sociability is not necessary a given, but is a positive result of a combination of the other considerations.

2.5.1 Access & Linkages

The accessibility of a place can be assessed by its connections to its surroundings, both visual and physical. A successful public space is easy to get to and get through; it is visible both from a distance and up close. The edges of a space are important as well, for example, a row of shops along a street is more interesting and generally safer to walk by than a blank wall or empty lot. Accessible spaces have a high parking turnover and, ideally, are convenient to public transport.

2.5.2 Comfort & Image

Whether a space is comfortable and presents well - has a good image - is key to its success. Comfort includes perceptions about safety, cleanliness, and the availability of places to sit - the importance of giving people the choice to sit where they want is generally underestimated. Women in particular are good judges on comfort and image, because they tend to be more discriminating about the public spaces they use.

2.5.3 Uses & Activities

Activities are the basic building blocks of a place. Having something to do gives people a reason to come to a place and return. When there is nothing to do, a space will be empty and that generally means that something is wrong.

2.5.4 Sociability

This is a difficult quality for a place to achieve, but once attained it becomes an unmistakable feature. When people see friends, meet and greet their neighbours, and feel comfortable interacting with strangers, they tend to feel a stronger sense of place or attachment to their community - and to the place that fosters these types of social activities.

2.6 NMT through Streetscapes

NMT users are impacted by various qualitative factors that include safety and security, accessibility, convenience, comfort, attractiveness and demand for space.

2.6.1 Safety and security

The security and safety needs of NMT users are the most fundamental of all needs⁵.

Security

NMT users would enjoy areas where enforcement or natural surveillance is present and mugging and theft are discouraged, sight lines are adequate and parking and storage facilities, especially for cyclists, are provided.

Safety

Users prefer facilities that are well-designed and safe of hazards such as slippery surfaces and protruding obstacles. This is especially a concern for SNP users.

Traffic safety

NMT users are at their most vulnerable in the road reserve. This is primarily owing to the speed differential between NMT users and motorised traffic. Users need to feel safe in crossing roads and comfortable in walking along roads or else they will not use these facilities. This sense of safety can be built in the environment through appropriate road markings, dedicated signalised pedestrian crossings, adequate sidewalk space, adequate phasing at signalised intersections, grade separation where required and appropriate, SNP provision, streetlights, etc. However, this sense of safety can also be gained through the development of a sense of trust between NMT users and the drivers of motorised vehicles. Awareness and education are tools to develop this. Law enforcement's contribution to traffic safety for NMT users should not be underestimated.

2.6.2 Accessibility

Accessibility for all users is important. This includes able-bodied persons, SNP, the elderly and children. This can be accomplished through adequate space provisions for movement aides, way-finding for blind people and continuity along the travel corridor.

2.6.3 Convenience

Routes should generally be convenient and direct to use. Infrastructure and links should be part of a system of routes that allows for uninterrupted movement, especially for SNP users. Of paramount importance is the connection with other transport systems and the ability to reach destinations in the direct manner possible. The logistics of NMT travel, especially bicycles, should also be taken into consideration. These include bicycle storage and parking facilities, hiring facilities and support amenities that includes ablution facilities for cyclists.

2.6.4 Comfort

Facilities should be comfortable to use for NMT users. The pavement and surface of NMT facilities should generally be smooth and well-maintained. Topography has to be considered as a gradient >5% becomes uncomfortable for an NMT user. Vertical level changes that typically include stairs, steps and ramps can become uncomfortable for older and SNP users. Owing to the impact of weather conditions, shelters are important, especially for public transport users.

2.6.5 Attractiveness

The attractiveness of the streetscape is reliant on the presence of other people and the quality of the environment. The presence of other people improves the sense of security. The quality of the environment attracts more people, increases its activities and improves the social ability of the environment. The quality of the environment does not only include the physical infrastructure such as amenities, but also relies on the interesting activities and the cleanliness of the environment

2.6.6 Demand for space

NMT users require a fair share of the road space, especially in areas where pedestrian activity is high. This is in the form of sidewalks, bus stops, medians, crossing areas, etc. The adequate provision of space will increase the sense of belonging of the pedestrian in the street, increase their confidence and result in responsible road usage. In heavily congested areas, users have to compete for space in the road reserve environment with other motorised vehicles, including public transport. In these areas, the demand for space has to be managed in a more equal manner.

Separation also allows for confident and faster movement, especially for commuters. This separation can be achieved in the form of delineation such as level differences (such kerbs and pedestrian bridges), painted lines, change in surface colour, surface texture, bollards, other forms of street furniture and landscaping.

However, separation also detracts from socialising and mingling of recreational users. Hence separation should be site specific and tailored to the more dominant users.

3. Existing legislative, Policy and planning Framework

The aim of the Transport Plan⁶ for the City is to provide *“An effective, efficient, equitable and affordable metropolitan transport system that promotes sustainable social and economic development in an environmentally responsible manner”*. This statement recognises the need for improving facilities for non-motorised transport, ie. bicycles and pedestrians, and also recognises the contribution of these modes to the overall efficiency of the transport system. This aim is also inherent in national, provincial and other local transport policy as briefly indicated hereafter.

3.1 National Legislation and Policy

The recognition of NMT as a mode is embodied in certain national legislation, policies and frameworks as discussed, not necessarily comprehensively, below.

The National Department of Transport’s (NDoT) Green Paper on Transport⁷ of 1996 states as its vision: *“Provide safe, reliable, effective, efficient and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being environmentally and economically sustainable.”* NMT is not directly referred to; however, it requires that transport operations should support government strategies for social and economic development and also being environmentally and economically sensitive. The national transport strategy, Moving South Africa⁸ of 1998 states as vision *“provide and effective and sustainable urban transport system, planned and regulated through the lowest possible level of government, based on competition and largely private sector operation, which reduces system costs and improves customer service in order to meet customer and national objectives for user cost, travel times, choices, and safety”*. NMT is once again not directly mentioned, but an effective and sustainable urban transport system is required.

The regulations⁹ supporting the National Land Transport Transition Act, No 22¹⁰ also identifies NMT as a key principle to be taken into account when undertaking transport planning and the Rural Transport And Development Strategy For South Africa¹¹ (2002) has as one of its development programs the Promotion of non-motorised transport. The latter guiding documentation therefore is more specific in its requirements for NMT.

Furthermore, the Road to Safety 2001-2005¹² strategy has as its mission *“To ensure an acceptable level of quality in road traffic, with the emphasis on road safety, on the South African urban and rural road network.”* A key outcome required of this strategy is identified as *“We want safer pedestrians and cyclists”*. The Shova Kalula (Pedal Easy) Project¹² forms part of the program to promote the safety of cyclists and pedestrians.

3.2 Provincial Legislation and Policy

In response to the national directives with respect to NMT and the restructuring required within land transport planning and operations, the Provincial Government Western Cape (PGWC) is also recognising NMT as a mode and this is embodied in certain provincial legislation, policies and frameworks as discussed, not necessarily comprehensively.

The provincial White Paper on Transport Policy¹³ of 1997 states as a vision *“The establishment of an integrated, accessible, well managed and maintained transport system throughout the Western Cape, which is recognised as making efficient use of resources and being socially just, in a way which advances broader developmental aims and objectives.”* The requirements for integration and accessibility within the provincial White Paper derive a place for NMT within the transport system.

The Provincial Vision For Public Transport Five-Year Strategic Delivery Program (2003)¹⁴ further states that *“Province will investigate the requirements of non-motorised transport through the necessary consultation and technical studies, with a view to formulating a detailed delivery plan”*. The delivery plan further states *“Particular attention will be given to providing infrastructure to enable pedestrians to use walkways and access routes in a manner that is safe and convenient”*. The provincial delivery plan for NMT has now culminated in the drafting of the Provincial Strategy on promotion of non-motorised transport use¹⁵.

3.3 City’s Legislation and Policy

In response to national and provincial policies and legislation, the City has been addressing the needs of pedestrians and cyclists more directly in local policy formulation. NMT is specifically mentioned in the following guiding documents that include amongst others, the 1980-1985 Transport Plan¹⁶ for Cape Town Metropolitan Transport, Metropolitan Spatial Development Framework¹⁷ (MSDF), Integrated Metropolitan Environmental Policy¹⁸, City’s vision statement¹⁹, the City’s traffic calming policy for the City Calming Residential Streets²⁰ and the City’s Pedestrian Plan²¹. Recently, the City has also developed the Mobility Strategy which provides the guidelines for the development of transport policy and in this strategy, NMT users, along with public transport users, have been identified as priority modes in Cape Town’s transport system.

3.4 Existing Planning Framework

NMT awareness is apparent in various planning frameworks undertaken at national, provincial and local levels. These are mostly driven by various objectives such as pedestrian safety and quality of the environment considerations. It is quite apparent from the various NMT-related plans, that NMT is viewed as a significant contributor the quality of life of Cape Town.

The various plans and their relevance to NMT planning are discussed in Table 1.

Table 1: Various NMT related planning frameworks

Planning Framework Document		Relevance to NMT planning
1.	Road to Safety 2001-2005 strategy ¹²	NDoT has identified “safer pedestrians and cyclists” as one of the key outcomes of the strategy towards improving the safety on South African Roads.
2.	Provincial NMT Strategy	PGWC, Transport Department has developed a Provincial NMT Strategy. This provides the framework for the development and promotion of NMT within local governments.
3.	Provincial Pedestrian Plan ^{22, 23}	The overall aim of this plan was to reduce the number of pedestrian fatalities on the road network in the Western Cape and the formulation of a long-term pedestrian safety strategy.
4.	The Metropolitan Spatial Development Framework ¹⁷ (MSDF)	The MSDF attempted to rectify Cape Town’s unsustainable land use planning (owing to apartheid city and town planning) through the promotion of corridor development in Cape Town. The corridor development concept required that it be supported by an effective public transport system to transport people. In a further attempt to address the transport inequities of Cape Town’s spatial layout, the MSDF further recommended that a fully integrated transport system is thus required which includes rail, bus, minibus taxis, private vehicles, as well as NMT.

Planning Framework Document		Relevance to NMT planning
5.	Municipal Spatial Development Framework ²⁴ (Muni-SDF)	<p>The Muni-SDF²⁵ developed for the City of Cape Town indicated that the creation of pedestrian based and friendly environments is the starting point when considering a framework of movement.</p> <p>It further states that high quality public spaces, which include streets, squares, promenades and green spaces, serve as the meeting places in an urban environment. In poorer communities its importance is even greater, as it serves as an extension of the dwelling unit.</p>
6.	City of Cape Town's Integrated Transport Plan	Currently in the process of being updated. Provides policy framework for transport in the City of Cape Town. It includes all transport sectors e.g. public transport, general traffic, freight, etc. NMT is recognised as a transport mode and will be included as an ITP chapter. This study will be used to inform the ITP chapter on NMT.
7.	City of Cape Town Pedestrian Safety Plan ²¹	The Pedestrian Safety Project aimed to develop the strategic direction and implementation plan to comprehensively address pedestrian safety in Cape Town. This plan has identified as its key objective the reduction in pedestrian casualties, specifically fatalities. The strategic plan has identified 5 focus areas, namely institutional integration, planning, road environment, awareness, education and enforcement and a set of strategic actions have also been developed for each focus area.
8.	Metropolitan Bicycle Master Plan	The Metropolitan Bicycle Master Plan (MBM) was developed in 2002 by the City of Cape Town. The MBM was developed on the basis of connecting potential bicycle trip generators and attractors such as residential communities, places of work and strategic facilities around Cape Town through a metropolitan bicycle network. This MBM should be further supported and connected by local area bicycle networks. The MBM is a dynamic plan that adjusts as the local area networks are designed. It complements existing bicycle planning in local areas and will form an important consideration and guide in the development of local area bicycle planning where it does not exist.
9.	Klipfontein NMT Plan Corridor	The underlying premise is that <i>"if the transport system works for NMT, then it would work for all modes of transport."</i> was used to develop this local area NMT plan and was based on key informants of integration, different levels of access and linkage with public places and attractors. Furthermore, it concluded that the success of NMT lies with the restructuring of Cape Town. Therefore, the key principles that informed the development of the Integrative Network were continuity and integration, equitability, generosity, compatibility, legibility, sustainability, human scale and comfort.

Planning Framework Document		Relevance to NMT planning
10.	Uluntu Plaza Program ²⁶ .	The Muni-SDF recommended a focus on public space enhancement in an attempt to reverse the inequities of apartheid and its resulting social and environmental decay. A public space improvement program was developed which aimed to create a city-wide system of livable public spaces and a people's places. This program further concluded that "a system of public spaces can only make sense if it is conceptualised within a broader system of safe places and routes that re-connect the city and its communities". Therefore, the benefits of such a program can only be reaped if it is integrated within a sustainable high quality public transport system and further connected by a network of convenient, attractive and safe pedestrian and cycle routes.
11.	State of Energy report for Cape Town ²⁷	The State of Energy report for Cape Town ²⁸ listed some of the issues facing the transport sector in Cape Town and stated that "urban sprawl causes long commutes, which result in higher transport energy consumption and a corresponding high release of carbon and other emissions". Long commutes also require longer days away from home, less productive time which decreases quality of life, primarily for the poor. The State of Energy report for Cape Town ²⁹ further identified that a more compact city design with higher residential densities and the development of multifunctional habitats will reduce the need to travel long distances and improve the quality of life and access to urban goods. Furthermore, it also concluded that "local planners and developers have not adequately integrated walking and cycling in the planning, design and operation of streets, which has resulted in low uses of these energy efficient modes of transport."

Apart from the Klipfontein Corridor Project and the NMT Plan developed as part of this, other NMT-related projects were also developed recently in Cape Town. These included the development of local area bicycle network plans such as the Blaauwberg Bicycle Network³⁰ and the Khayelitsha Bicycle Network³¹, as well as a Schools Safety Project³² in Mitchell's Plain.

4. Contextual analysis

The contextual analysis summarises the key issues, trends and conditions for NMT in the City of Cape Town. It therefore provides the basis for developing an NMT problem statement that will inform the City's policy response and strategies around NMT. Although no primary data was collected, the contextual analysis utilises NMT information that was assembled as part of other studies or from surveys previously carried out in the City of Cape Town. Strategic interviews with major stakeholders were also undertaken to assist with the identification of key-issues surrounding NMT.

The contextual analysis has been divided into the following sections:

- Road safety – which summarises pedestrian and bicycle accident statistics.
- Mobility patterns – which include levels and trends in pedestrian and cycling activity.
- Movement patterns and trends for specific users – which discusses the focus areas and the key issues for various NMT users.

4.1 Road safety

It would be a gross generalisation to state that engineers and planners do not consider the provision of pedestrian facilities when new projects are planned. However, owing to car-orientated engineering and planning, pedestrian facilities do not always receive the attention that they deserve. This is also reflected in pedestrian road safety statistics.

4.1.1 Pedestrian road safety statistics

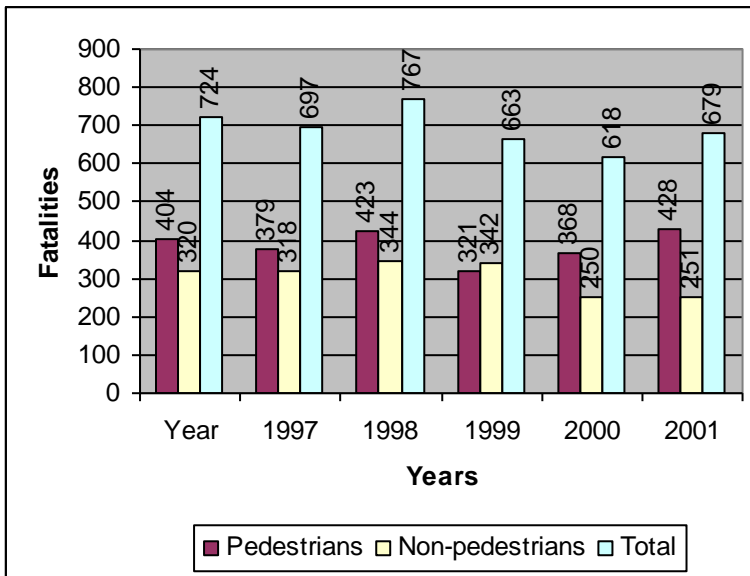
Historic road traffic accident statistics have indicated that pedestrian casualties (inclusive of pedestrian fatalities and injuries), especially fatalities, have consistently been one of the most significant contributors to the overall road traffic accident situation in South Africa. In the Western Cape Province, which is one of the most developed provinces in the country, the pedestrian accident problem is severe. The ratio of pedestrian to total road accident fatalities of 45% for the Western Cape Province which is also higher than the national rate of 38%³³.

In Cape Town, the largest urban centre in the Western Cape Province, historic road traffic accident statistics have also indicated that pedestrian casualties, especially fatalities, have consistently been one of the most significant contributors to the overall road traffic accident situation. The ratio of pedestrian fatalities to total road accident fatalities in the Cape Metropolitan Area was 63% in 2002³³. This forms part of an increasing trend with 48.4% in 2000 and 59% in 2001³³.

Pedestrian safety statistics for 2002

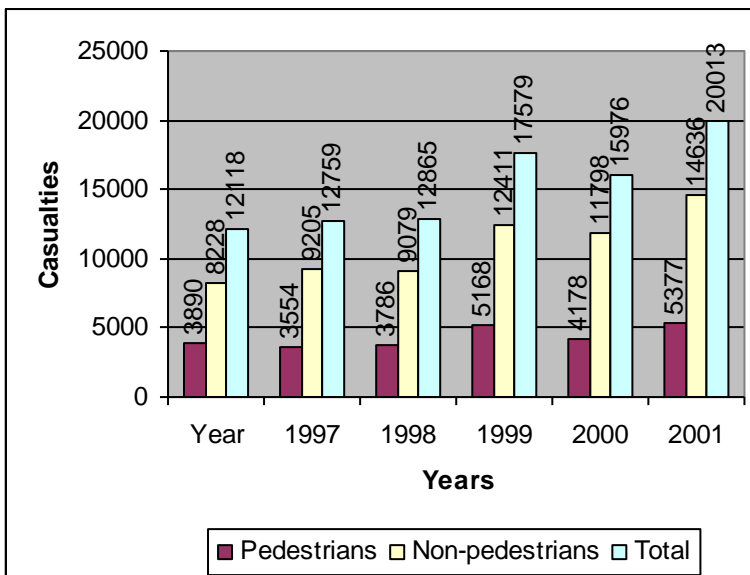
The following pedestrian accident statistics³³ have been obtained from the Traffic Accident Statistics for 2002 prepared by the City.

- An analysis of the pedestrian fatality statistics indicate that the number of pedestrian fatalities have increased by 1.2% per annum for the period 1997 to 2002. Refer to Figure 1. However, the pedestrian casualty rate for the same period increased by 6.7%. Refer to Figure 2.



Data source: Traffic Safety Bureau, City of Cape Town³³

Figure 1: Number of fatal accidents in Cape Town



Data source: Traffic Safety Bureau, City of Cape Town³³

Figure 2: Number of casualty accidents in Cape Town

- The highest number of pedestrian fatalities occurred within the boundaries of the Cape Town Region (32% of all pedestrian fatalities). However, the highest number of pedestrian fatalities per 100 000 people occurred within the boundaries of the Oostenberg Region with a fatality rate of 36 pedestrian fatalities per 100 000 people. Refer to Figure 3 and Table 2. The 2001 population estimates used in Table 2 were obtained from the 2002 traffic accident statistics report³³.

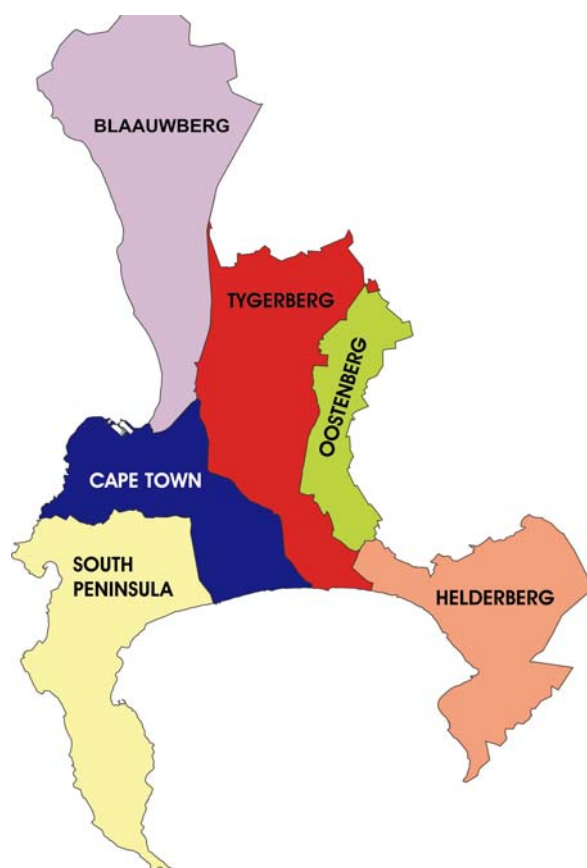


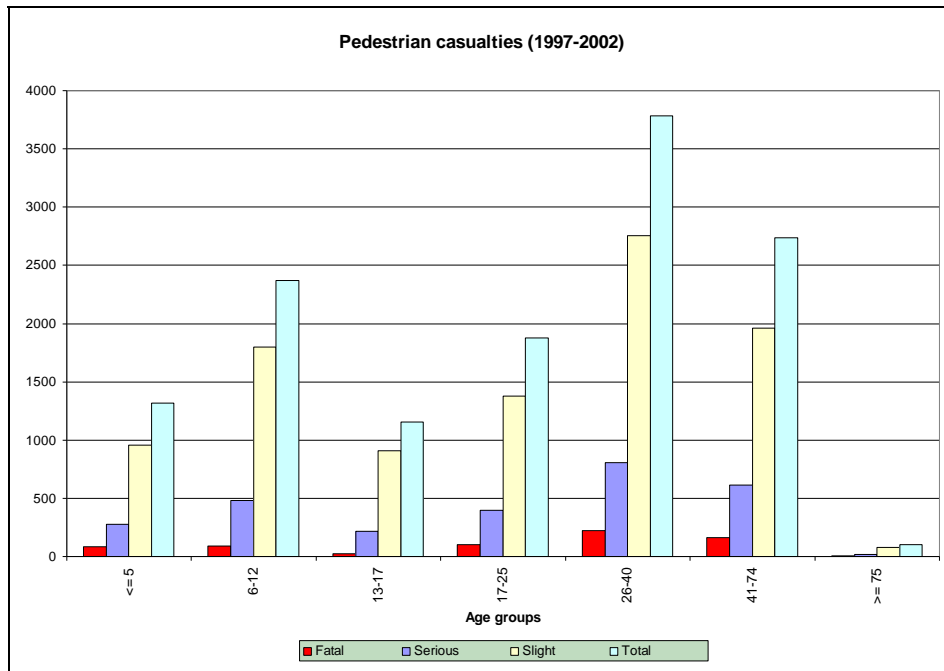
Figure 3: Boundaries of the municipal administrations of Cape Town

Table 2: Pedestrian fatality rate per 100 000 people

Administrations	2002 Pedestrian fatalities	% of total pedestrian fatalities	2001 Population estimate	Fatality rate per 100 000 people
Cape Town	137	32%	1063117	13
Tygerberg	131	31%	927795	14
South Peninsula	39	9%	356178	11
Oostenberg	84	20%	233265	36
Blaauwberg	23	5%	150743	15
Helderberg	14	3%	146964	10
TOTAL	428			
<i>Data source: Traffic Safety Bureau, City of Cape Town³¹</i>				

Analysis of all pedestrian casualties for different age groups

An analysis of all pedestrian casualties for different age groups over a 6-year period (1997-2002) has also been completed by the Traffic Safety Bureau of the City. The results are illustrated in Figure 4 which illustrates the number of pedestrian casualties for different age groups, as well as the severity of the casualties. *(It should also be noted that a high proportion of the pedestrian casualty reports has the age group listed as unknown.)*



Data source: Traffic Safety Bureau, City of Cape Town

Figure 4: Pedestrian casualties for different age groups

Figure 4 indicates that slight injuries are by far the most in all age groups. The highest % pedestrian fatalities per age group occurs in the age groups <=5, 26-40 and 41-74. The % fatalities for these age groups are 6% of all pedestrian casualties. These age groups are assumed to be the age group that is the most economically active. 25.8% of pedestrian fatalities where age is known were between the ages 26 and 35. Further investigation of the data indicated that children between the ages 0-15 have a higher degree of fatality compared to casualties.

4.1.2 Worst pedestrian accident location

The worst pedestrian accident locations with the number of pedestrian casualties in Cape Town are shown in Table 3. These were obtained from extracting pedestrian accident statistics obtained from the City's Traffic Safety Bureau (TSB), over a 6 year period (1997-2002). The sites were also listed in order of the highest number of fatalities.

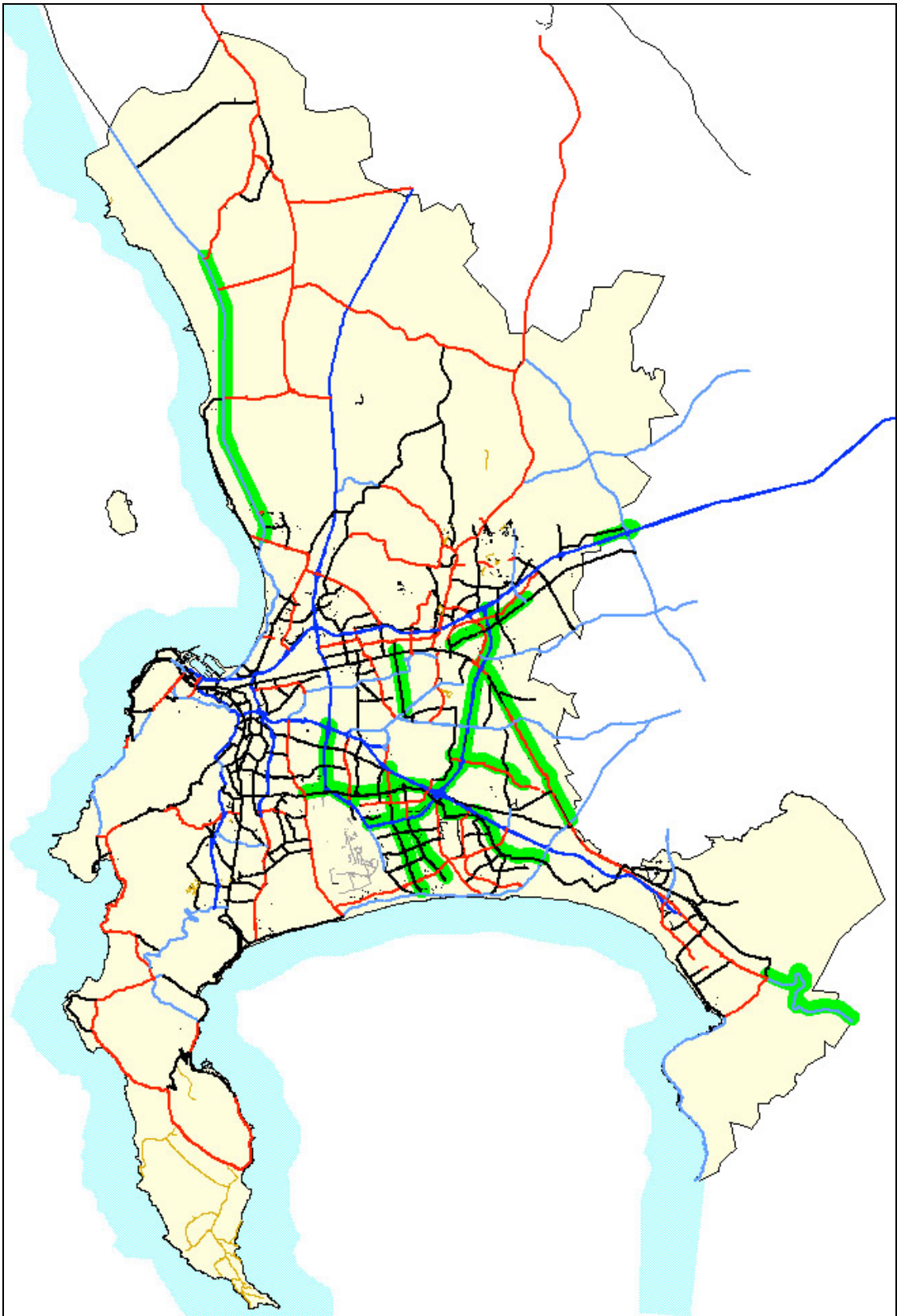
Table 3 indicates that the site with the highest number of pedestrian fatalities over the last 6 years is along the N1, followed by Lansdowne Road between Strandfontein Road and Baden Powell Drive. However, this section of Lansdowne Road is also the route with the highest number of pedestrian injuries in Cape Town. The route in Cape Town that has the second highest number of pedestrian injuries is Van Riebeeck Road between the R300 and Baden Powell Drive.

Table 3: Worst pedestrian casualty locations in Cape Town

Road Name	Suburb	Fatal	Serious	Slight	Total Injuries
N1-North	CoCT To R304	87	29	75	191
N1-South	CoCT To R304	70	55	181	306
Lansdowne Road	Old Strandfontein To Baiden Powell	84	266	1075	1425
N2-East	CoCT To Sir Lowry Pass Rd	82	49	103	234
N2-West	CoCT To Sir Lowry Pass Rd	77	54	112	243
Kuils River Freeway-North (R300)	N1 - N 2	61	56	72	189
Kuils River Freeway-South	N1 - N 2	45	15	27	87
Vanguard Drive	Weltevreden Rd To N2	47	64	180	291
Van Riebeeck Road	R300 To Baiden Powell	42	69	202	313
Cape Flats Freeway-N	N2 - M7 (Vanguard)	34	14	31	79
Old Paarl Road	Bill Bezuidenhout To Okavango Rd	31	56	141	228
Eisleben Road	Klipfontein To Baden Powell	29	53	171	253
AZ Berman Drive	Mitchell's Plein	28	31	77	136
West Coast Road	Blaauwberg Rd To (Past) Dassenberg Rd	25	9	19	53
Hindle Road	Delft Main Rd To Blue Downs Rd	23	38	45	106
De La Rey Road	Voortrekker To Modderdam	21	39	132	192

Data source: Traffic Safety Bureau, City of Cape Town

The sites in Table 3 have also been plotted in Figure 5 and indicate that the bulk of the pedestrian accident hazardous locations are located on the outskirts of the Cape Town metropolitan area. These are also the areas where primarily the poorer communities of Cape Town live. These sites have also been independently confirmed through the identification of priority areas in City of Cape Town Pedestrian Safety Project.



Prepared by City of Cape Town, Directorate Transport, Roads and Stormwater's GIS section

Figure 5: Worst pedestrian casualty locations in Cape Town

4.1.3 Pedestrian rail fatalities

Owing to the apartheid history of South Africa, the railway lines have often been used to provide a physical barrier between communities of different races. This led to a high degree of illegal crossing of railway lines and pedestrian fatalities on railway lines accounted for 96% of all fatalities on railway lines in 2001. Refer to the accident statistics tabulated in Table 4. This has reduced to 91% in 2002, which is at a similar level than in 2000.

Table 4 also indicates that pedestrian casualties on railway lines for the period 1997 to 2002, peaked in 1998, but decreased in the following years. Pedestrian fatalities along railway lines account for more than 90% of all rail fatalities, with the exception of 1999 (89%).

Table 4: Metrorail casualties by accident type³⁴

ACCIDENT TYPE	YEAR											
	1997		1998		1999		2000		2001		2002	
	Inj.	Fat.	Inj.	Fat.	Inj.	Fat.	Inj.	Fat.	Inj.	Fat.	Inj.	Fat.
Detraining/Entraining	76	2	78	1	69	6	109	7	153	3	135	6
Hanging on trains	76	4	44	4	30	2	10	4	22	1	16	2
Struck by trains (involving pedestrians)	57	131	51	139	61	108	48	113	65	96	44	117
Level crossings	0	2	1	0	1	5	1	0	0	0	19	4
TOTAL	209	139	174	144	161	121	168	124	240	100	214	129
% pedestrian fatalities	94%		97%		89%		91%		96%		91%	

Pedestrians can cross railway lines in one of the following manners, pedestrian bridges, and pedestrian subways, at legal and warranted level crossings and through the illegal crossings of the railway lines.

- **Pedestrian bridges** are generally constructed at more densely trafficked railway stations and where a pedestrian subway is considered undesirable for various reasons.
- **Pedestrian subways** are generally provided at all railway stations to allow pedestrians to safely move between the railway lines travelling in different directions.
- Presently, **level crossings** are a contentious issue, as this facility poses a danger to the public if used incorrectly. This facility generally provides vehicles the opportunity to cross the railway line and such a crossing is designed for this purpose. However, pedestrians can also use it.
- Lastly, pedestrians also cross the railway lines at **illegal crossing points** and this factor is primarily responsible for the high number of pedestrian fatalities on railway lines.

4.1.4 Bicycle accident statistics

Presently, TSB cannot extract accident locations for cyclists in a similar manner that it is obtained for pedestrians. TSB is presently updating their database to provide more detail on accident information pertaining to cyclists. However, TSM reported in 2002 that 0.7% of all accidents occurring in Cape Town involved a cyclist. This represents 926 accidents. Out of a total of 593 fatalities, only 8 involved bicycles, which accounts for approximately 1% of all accident fatalities.

The low accident number involving cyclists is not an indication that cyclists are experiencing good levels of safety on the roads in Cape Town. The accident exposure rate, ie. the number of accidents involving bicycles relative to the total number of bicycles on the road would provide a more accurate indication of the road safety levels for bicycles on the roads of the City.

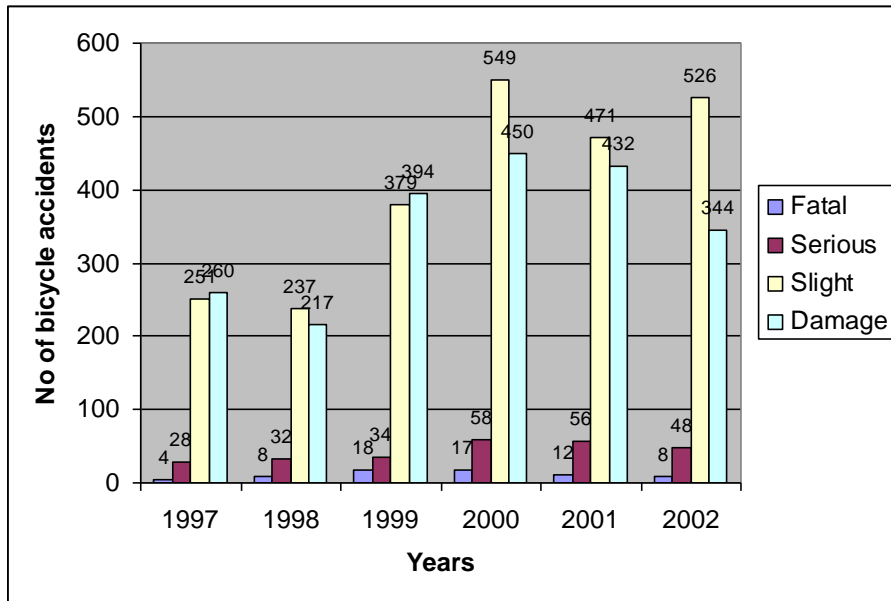


Figure 6: Degree of severity of bicycles accidents per year

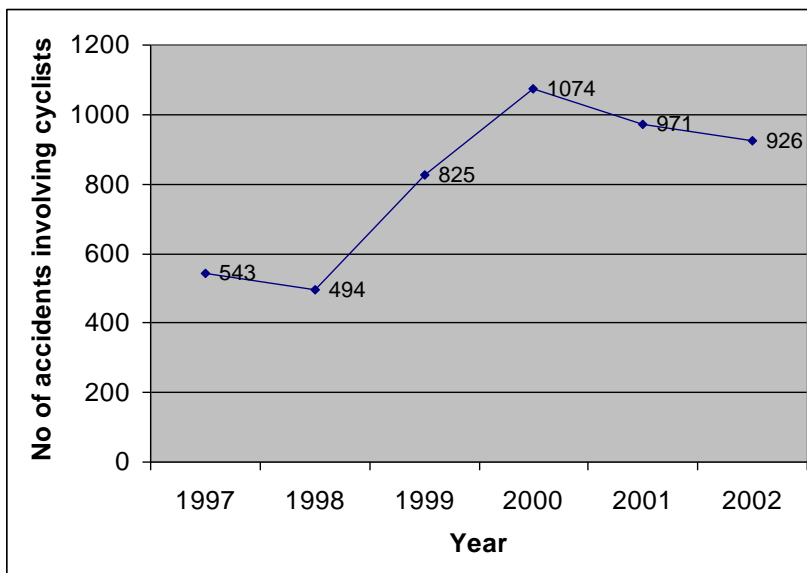


Figure 7: No of accidents per year involving cyclists

Figure 6 and Figure 7 indicate that the number of accidents involving cyclists peaked in 2000 and there has been a remarkable increase in the number of accidents during the period 1999 to 2002.

4.2 Mobility patterns

Historically, there has been little focus on NMT as a mode, thus little data has been collected in a usable way that could accurately describe the movement patterns for NMT in the City. However, the publication of the results of the National Household Travel Survey³⁵ undertaken by the Department of Transport, have provided more insight in the scale of NMT in South Africa. Inferences have been made from surveys undertaken at a provincial level as part of the Provincial NMT Strategy and other smaller localized surveys in the City. The results from the various sources of information are discussed hereafter.

4.2.1 NMT usage in the Western Cape Province

As part of the National Household Travel Survey, it was found that 54.5% of households in the Western Cape do not have access to a private car. This results in a vehicle ownership rate of 0.68. This sector of the population is forced to use public transport and/ or to use a form of NMT. This is significant and is illustrated by the fact that about 20.5% of commuters walk to work and 36% use a form of public transport to get to work³⁶. For learners, this figure is higher as close to 50% of learners walk to school.

As part of the Provincial NMT strategy a comprehensive data collection of the mobility patterns of a cross-section of people in the Western Cape Province was undertaken. The survey distinguished between deep rural, rural and urban environments within the province, but, it excluded the City of Cape Town. However, the following results were indicated for urban areas, which could possibly inform the development of an NMT strategy for the urban areas within Cape Town.

- 56% of all participants interviewed made use of NMT. See Figure 8.

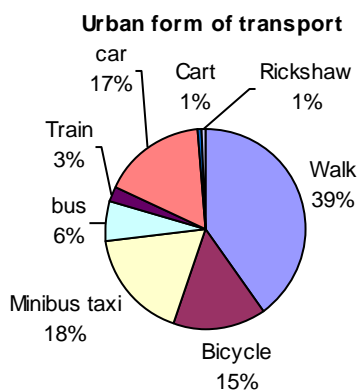


Figure 8: Urban forms of transport in Western Cape Province

- The most common problems experienced by those that walk are that the trip distances are too great; secondly that there is no protection from the elements and thirdly, that personal security is a great concern. Refer to Figure 9.

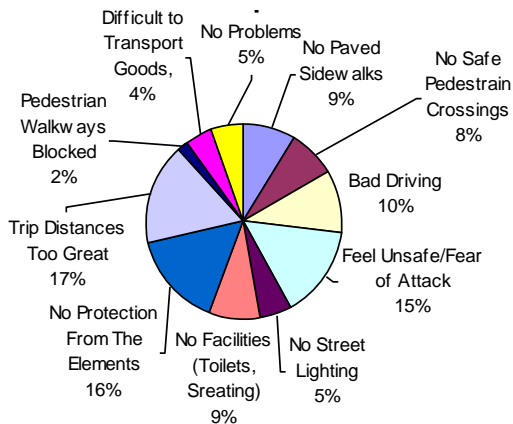


Figure 9: Problems experienced while walking

- Only 32% of those interviewed that live in an urban environment own a bicycle. However, the main reason cited for bicycle owners for not using their bicycle for more frequent trips are once again the issue of personal security. See Figure 10.

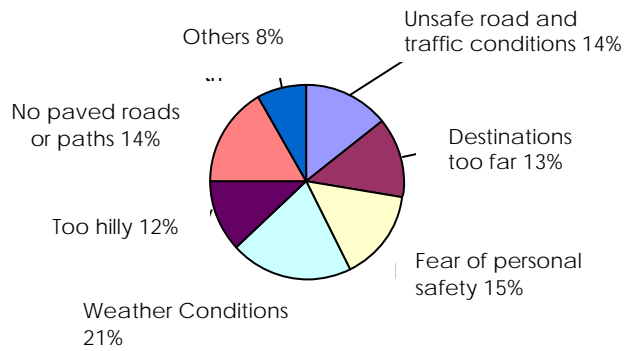


Figure 10: Reasons for not using bicycle more frequently

4.2.2 NMT usage in Cape Town

With the national census in 2001³⁷, Statistics South Africa included a question in the census questionnaire regarding the mode of travel to school or work. For each person in households and institutions, the question was asked: "How does the person usually travel to school or to his/ her place of work?" If more than one mode of travel was used, respondents were asked to indicate the mode that covered the longest distance. If a person had used different modes during the week, e.g. certain days had a lift and other days went by minibus taxi, respondents were asked to indicate the mode that the person used most frequently or the one related to the longest distance. The options listed included walking, cycling, motorcycle, private car (either driving or as a passenger), mini-bus taxi, bus, train or another mode.

The Cape Town results of the national census in 2001 undertaken by Statistics South Africa indicated that 19% of all respondents to this particular question walk to work or to school and that 0.5% cycle to work or to school. Figure 11 and Figure 12 obtained from Statistics SA, also provide a spatial overview of NMT demand patterns in Cape Town.

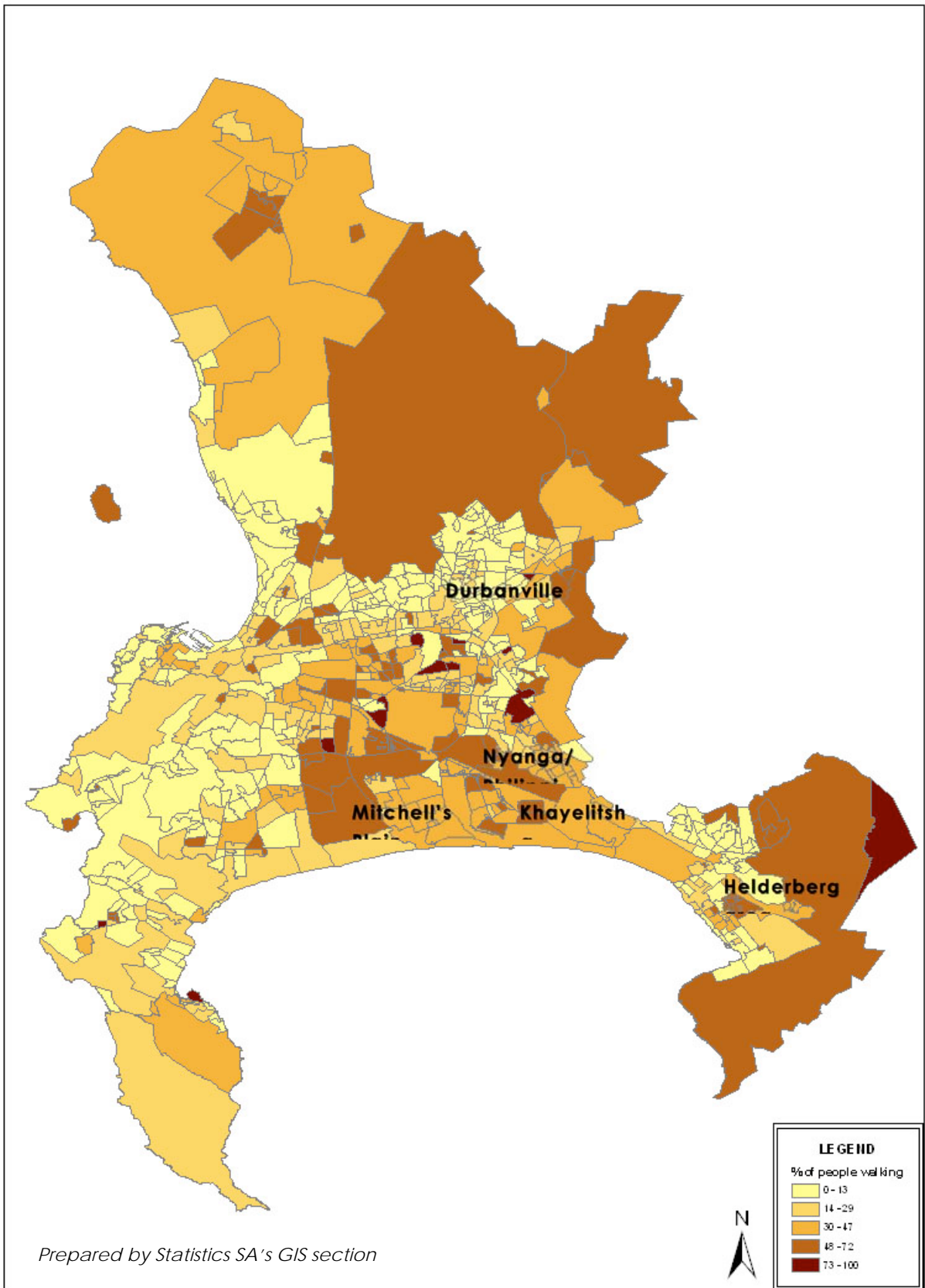


Figure 11: Number of people walking to school or work

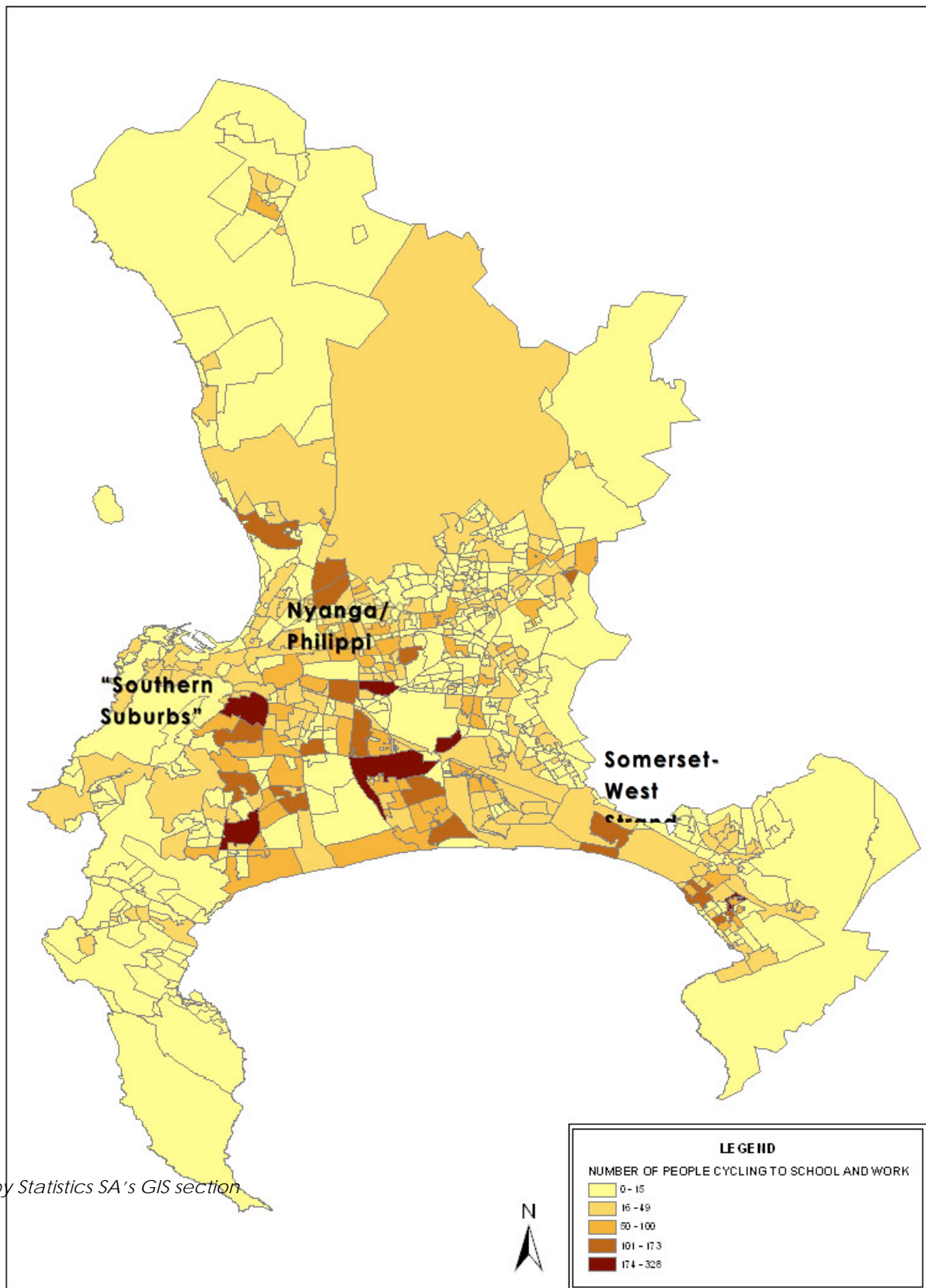


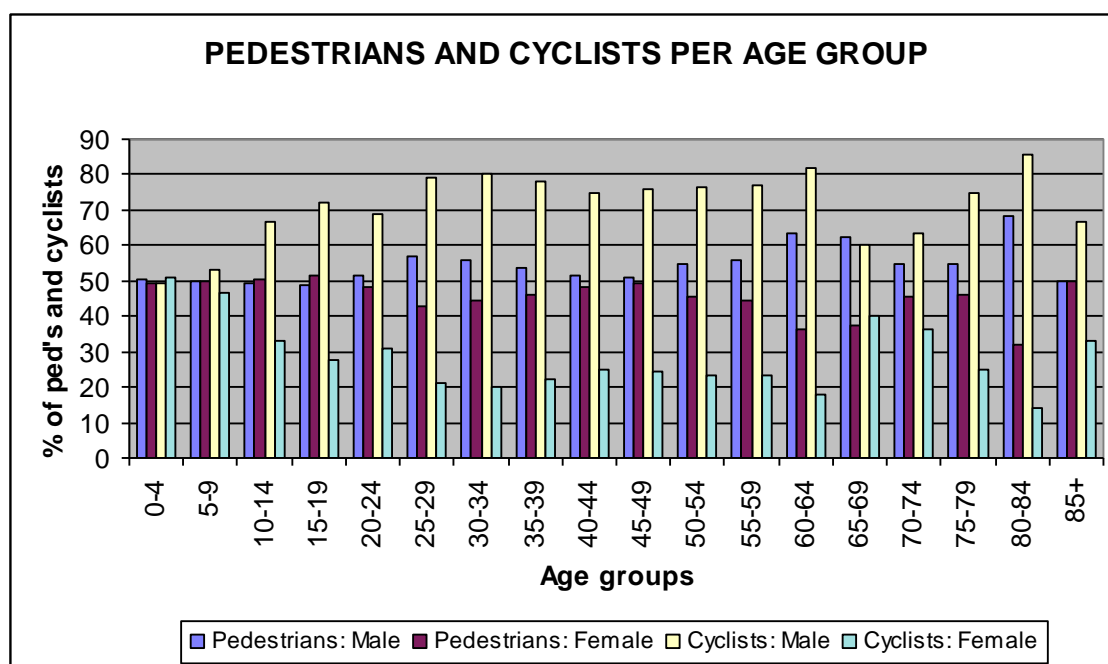
Figure 12: Number of people using bicycle to school or work

The NMT demand for walking travel to work or to school in the Nyanga/ Philippi areas, as well in Khayelitsha and Mitchell's Plain are clearly illustrated in Figure 11. This high demand is also indicated in the areas located north of Durbanville, as well as the greater Helderberg areas, primarily rural environments.

Furthermore, Figure 12 also indicates a high number of bicycle users that travel to school or to work are located in the Nyanga/ Philippi area and the larger Cape Flats area, as well as the "Southern Suburbs". There is also a high level of bicycle use in the Somerset-West and Strand areas, as well as in the Inner City area.

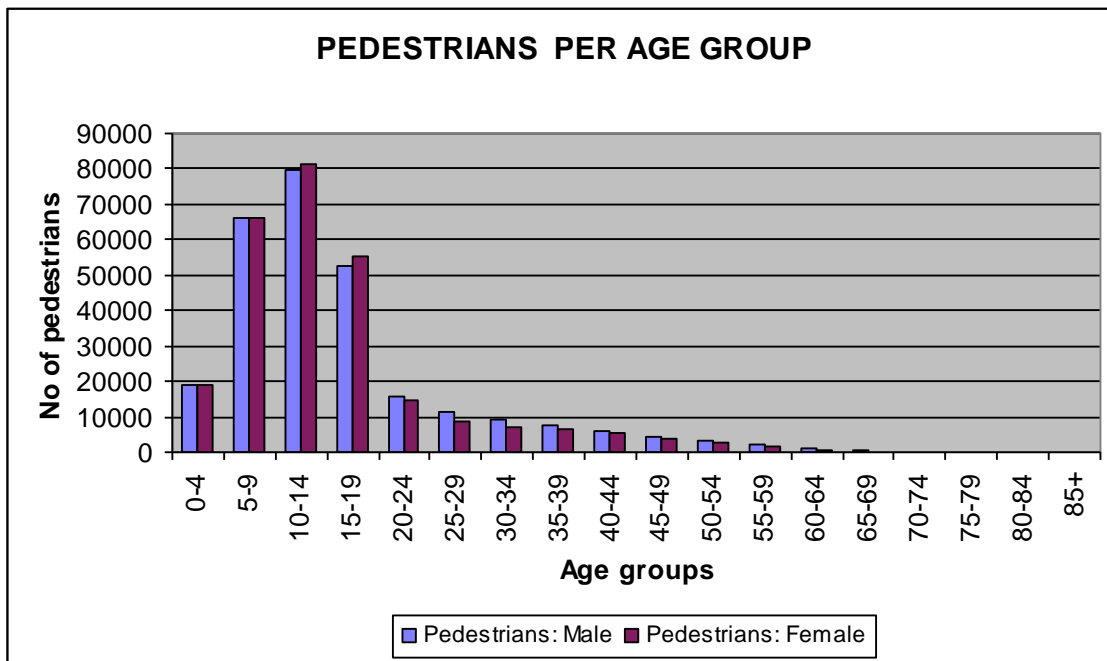
4.2.3 Age and Gender

The national census in 2001³⁷ undertaken by Statistics South Africa, also provided some insights into the age and gender profiles of those commuters and learners travelling to school or to work through either walking and cycling. The sample size is 550548 pedestrians and 14441 cyclists. The results of the statistics are displayed in the Figure 13, Figure 14 and Figure 15.



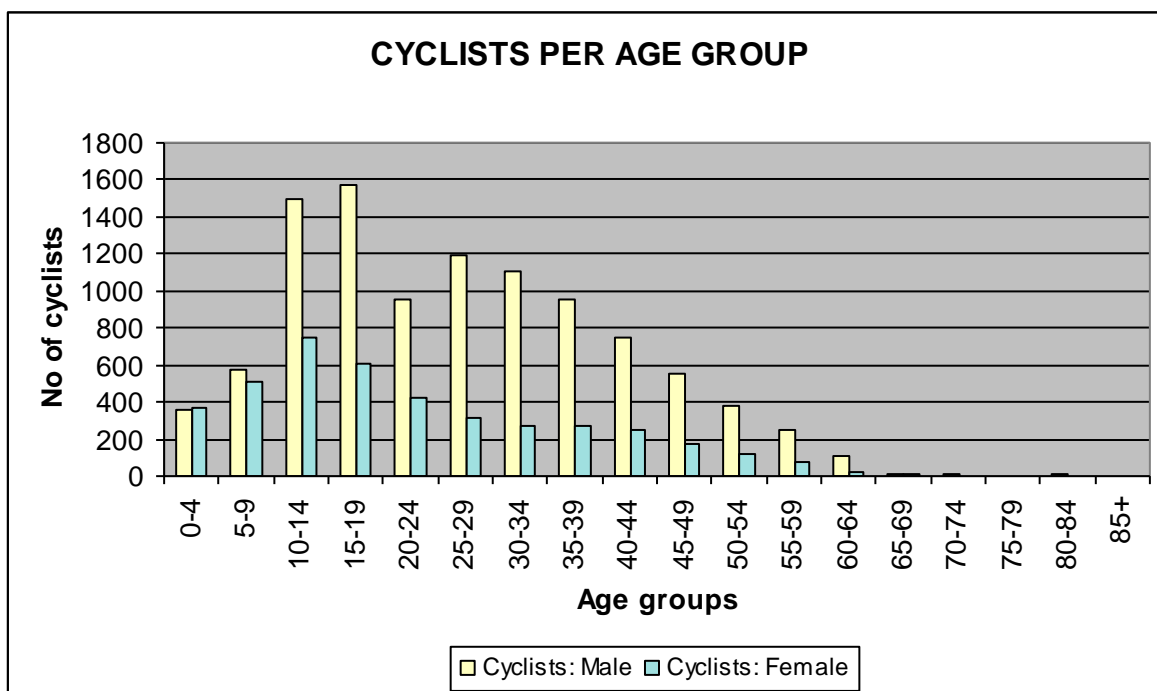
Data source: Stats SA³⁷

Figure 13: % of Pedestrians and cyclists per age group



Data source: Stats SA³⁷

Figure 14: Number of pedestrians per age group



Data source: Stats SA³⁷

Figure 15: Number of cyclists per age group

From the graphs presented in Figure 13, Figure 14 and Figure 15, the following is deduced:

- Pedestrian mobility is evenly balanced between male and females in all age groups.
- From the age of 5 and older, the % use of bicycles by males, exceed the usage for females. The % usage of bicycles by females are less than 40% for the age groups 5 years and older
- For the age groups 10 and younger, there is no real difference in the NMT mobility between male and females. However, at the age of 10 there is a sudden increase in

the % use of bicycles by males and an accompanying drop in the % use of bicycles by females.

- For males, the age group with the highest % use of bicycles is 15-19 years. The age group for females that display the highest % usage of bicycles is 0-4. From this it can perhaps be concluded that the use of bicycles by females are accompanied by gender perceptions or cultural perceptions.

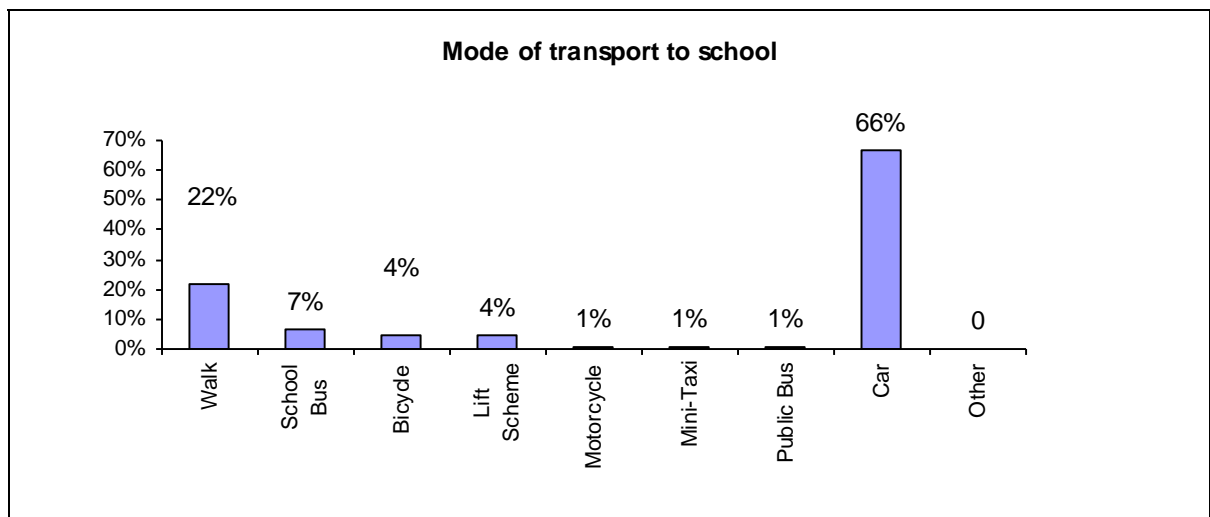
Cultural perceptions can influence bicycle usage by women. Work by Afribike (a non-governmental organisation) in townships in South Africa identified that prevailing cultures create even greater barriers for women, as women are discouraged from travelling by bicycle³⁸.

- The age group 10-14 is the age group with the most walking and pedestrian activity.

4.2.4 Scholar Bicycle Trends

Recently the City has undertaken various bicycle network planning studies (Blaauwberg Bicycle Study³⁰ and Khayelitsha Bicycle Network³¹) across the metropolitan area of Cape Town. The bicycle studies completed have targeted learner bicycle usage and have contained travel surveys which collected data on gender, bicycle ownership, mode of transport to school and issues that dissuade learners from using bicycles more frequently.

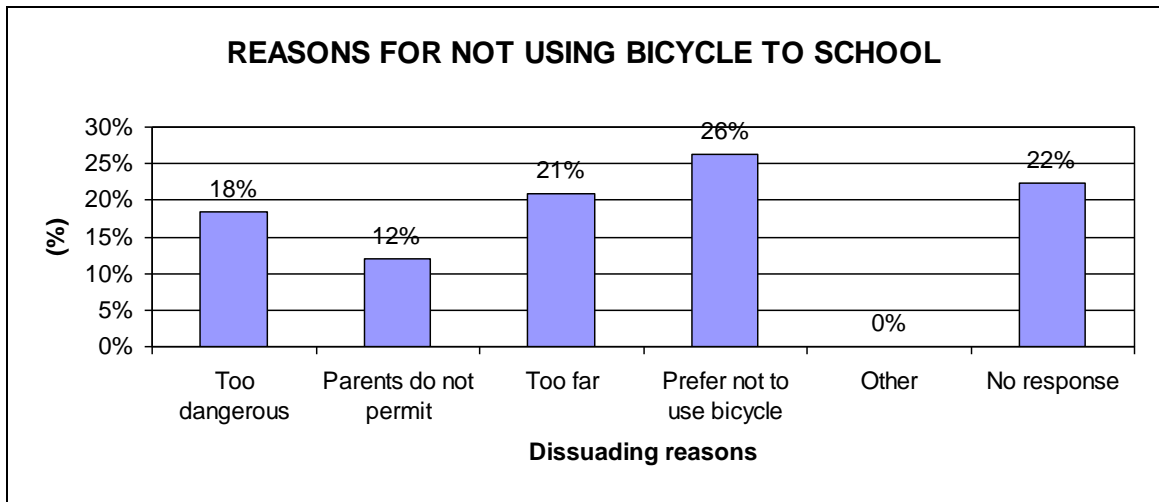
Of the planning studies completed to date, the Blaauwberg Study contained the most comprehensive sample size with 1151 learners responding to the survey of which 53% were female and 47% were male. The respondents further indicated that 67% of the learners owned a bicycle. The choice of travel mode to school for learners is illustrated in Figure 16. It indicates that 22% of respondents walk to school and only 7% cycle to school. This further indicates that 29% of learners are independently mobile and use NMT as a mode of transport to school. It also clearly indicates that 66% of all scholars travel to school by car and are not independently mobile.



Data source: Kantey & Temple³⁹

Figure 16: Learner transport mode to school

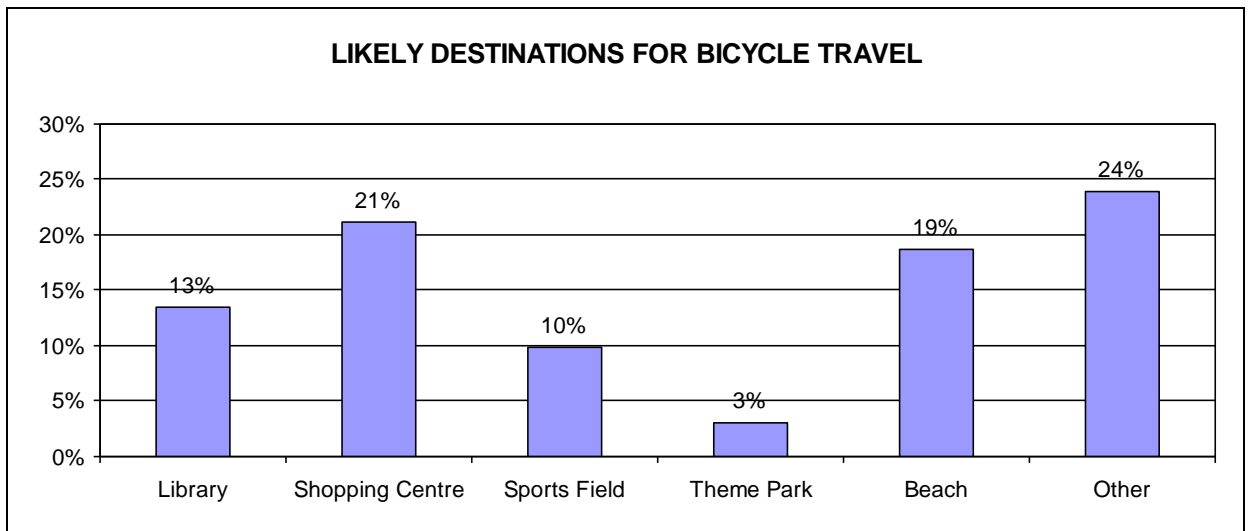
Of the 78% of respondents who provided reasons for not using their bicycle to travel to school, the most likely reason was that learners preferred not to use their bicycle. This reason, as well as other reasons dissuading learners from using their bicycles, is illustrated in Figure 17.



Data source: Kantey & Temple

Figure 17: Reasons for not using a bicycle to school

The favourite destinations for bicycle travel are illustrated in Figure 18.



Data source: Kantey & Temple

Figure 18: Likely destinations for bicycle travel

Another conclusion reached from this survey is that only 30% of the respondents would prefer cycle paths for cycling.

As part of a pilot project for Cities for Climate Protection, the City of Cape Town commissioned the investigation of possible CO₂ emission reduction through the introduction of bicycle facilities at schools within the Mitchell's Plain area. This resulted in the compilation of the Schools Safety Project³² completed by the Bicycle Empowerment Network (BEN). This project included a survey to scholars in Mitchell's Plain and the results of the survey are discussed hereafter.

The Mitchell's Plain School Safety project has been the most comprehensive sample size to date. A sample of 14 secondary schools was targeted, representing a total of 18309 secondary schools learners. 7 000 questionnaires were distributed of which 3674 suitable questionnaires were returned, resulting in a response rate of 52% and a 20% sample of the secondary school learner population.

The survey results concluded that:

- Most (65%) secondary school learners walk to school, followed by 11% that travel by MBT.
- The gender also does not influence the transportation mode as the gender split is approximately 50/50
- Most learners are dissuaded from their current mode mostly by their concern over firstly personal safety and secondly, travel time followed by thirdly, road safety.
- The number of bicycles per household is 0.6 bicycles per household, which represents 1 bicycle per 1.6 households.
- It is a concern that with a 60% bicycle ownership level, 65% of learners still walk to school.

4.3 Key NMT Problems in the City

This section summarises the key problems which currently face NMT users in the City and largely builds on responses obtained during key stakeholder interviews. Interviews were undertaken with various sectors and departments which impact NMT.

It was recognised that NMT activity would be dominant during the following trip types and in the following types of land uses:

- Public transport trips, particularly around modal interchanges, rail stations, bus and taxi stops/termini,
- Learner trips, particularly around schools, libraries and sports fields.
- Shopping trips, particularly around informal market places, commercial shopping strips and malls.
- Service trips, particularly around public services and facilities.
- Recreational trips particularly around beaches, tourist attractions and community parks or sports fields.

Key issues and problems that currently surround NMT are discussed below.

4.3.1 NMT is not successfully incorporated in all aspects of Planning

Past apartheid planning forced the poor and disadvantaged to locate on the periphery of the City and continues to create long travel distances i.e. in excess of 15km to employment, shopping, recreation and other opportunities. NMT as a mode is most effective and comfortable for shorter distance, thus the spatial layout of the city discourages NMT use. A transformation in land use planning to a better mix of land-uses which will generate shorter trip lengths will need to be undertaken in order to promote NMT travel.

Past planning also created insular or inward oriented neighbourhoods with adjacent high speed railway lines and roadways. These forms of infrastructure were designed to separate the racial group areas, but continue to function as barriers that limit connectivity for NMT users in the City. This phenomenon is most prevalent in the southern and northern suburbs that were designed to be accessed largely by motorised transport.

In addition, the forced removals to residential areas on the Cape Flats did not provide for quality public spaces and NMT facilities. These residential neighbourhoods continue to have limited public spaces which are poorly maintained, under-utilised and unsafe.

Transport planning to date has prioritised the motorised vehicle. This has resulted in a city with many roadways that are expansive and are designed for high-speed motorised movement. Limited provision has been made for pedestrians, cyclists and other NMT users in the current road space. Even in low income areas such as Mitchell's Plain and Khayelitsha where affordability limits the number of private vehicles, roadways have been designed around cars rather than people.

4.3.2 There is a lack of infrastructure and facilities which inhibits NMT use

There are many reasons why NMT is problematic in the City of Cape Town, but one of the main reasons is the obvious lack of investment in NMT facilities or infrastructure. All areas have been designed to accommodate for the private vehicle with roads, parking, driveway access, traffic reticulation, traffic impact and level of service all necessary considerations to local plans. NMT has not been provided for with the same level of consideration where standard NMT infrastructure may include a narrow 1-meter sidewalk with pedestrian-crossings. In majority of cases, NMT is just an add-on to the final road design and continuity or quality of NMT movement is rarely considered. Safe and comfortable NMT movement with good connectivity to destinations generally remain difficult within the City of Cape Town and the lack of NMT investment has resulted in an unfriendly and hostile NMT environment.



Figure 19: Hostile and unfriendly NMT environments

The poor level of NMT infrastructure in the city is particularly problematic in areas where NMT is most prevalent due to land use or services. For example public transport facilities are oriented towards vehicles rather than passengers. Although it is recognised that NMT is an important feeder to the public transport system, infrastructure around interchanges or termini are mostly designed to improve the efficiency of public transport vehicles, rather than support boarding and alighting passengers. This lack of NMT consideration is not only apparent at the public transport facility, but also in the lack of NMT infrastructure linking or connecting the surrounding urban fabric as well as along public transport routes. Current public transport is still largely a commuter-based system, but a large amount of commuters would immediately benefit from NMT improvements in and around public transport facilities. Current plans to improve level of service on public transport extending quality and hours of operation would mean that other trips such as shopping and recreation would also increasingly be undertaken with public transport. NMT improvements around public transport facilities would thus impact a large portion of the population.

Clear guidelines for NMT infrastructure, particularly around public transport facilities are currently not available and will need to be developed and implemented.

Learners and other special needs groups (people with disabilities, elderly, people with prams, etc.) are the most vulnerable NMT users. Limited infrastructure mostly impacts these users since they have fewer motorised options. Connections to schools are particularly problematic, with poorly equipped NMT facilities that do not safely accommodate walking or cycling learners en-route to school. This together with increasing negative perceptions of

safety has resulted in an increasing shift to motorised school trips that greatly contribute to the growing traffic congestion within the city.



Figure 20: Inadequate provision of infrastructure

People with disabilities are excluded from a large part of the city due to a lack of suitable infrastructure. Wheelchairs, the blind and other disabilities are not accommodated, since:

- Buildings, public transport and other major destinations are not adequately equipped with ramps or lifts, safe road crossings, entrance or access points, audible traffic signals or boarding facilities on public transport vehicles/stations.
- Disability design guidelines have not been correctly implemented with ramps that are too steep, discontinuous dropped-kerbs, insufficient wheelchair turning space, etc.

4.3.3 Unfriendly NMT Environment in the City

Environment is quite a broad and cross-cutting term. It refers to the quality of the surroundings that the NMT trip occurs within. There are many factors that impact the environment and so either promote or discourage NMT usage. Unless a person is a captured user and is forced to use a particular public space en-route to a destination, they will not choose to use a space that has an unpleasant environment. The NMT environment is problematic in most parts of the City, since it does not contain the necessary “comfort and convenience elements” that would support walking, cycling or other NMT movement.

The lack of infrastructure that was discussed above, clearly impacts the “friendliness” of the NMT environment, but there are other aesthetic considerations that also affect the user’s perception of the setting. These include elements such as paving, lighting, landscaping, street-furniture, public art, signage and activities that promote the sociability of the NMT spaces.



Figure 21: Environments designed for cars and under utilised public spaces

The City contains limited locations where NMT has been recognised as a priority mode. People are discouraged from using NMT because of the following reasons:

- Spatial design of the City results in long commuting distances (approximately 10-20km) between home and work.
- Lack of NMT infrastructure makes conditions unsafe and inconvenient.
- Residential areas on the slopes of the mountain tend to be quite steep making NMT trips difficult.
- Climatic conditions in Cape Town can be quite harsh with strong south-easterly winds and rainy winter months.

In addition, the design of existing spaces also discourages NMT. These generally involve:

- Poorly maintained public spaces and public transport facilities.
- Poorly designed environments with little or no NMT functional or aesthetic considerations and with little consideration for special needs people.
- Poorly lit spaces with street lighting that has been designed for cars rather than pedestrians.
- Limited and discontinuous shelters providing minimal protection from sun and rain.
- Poorly equipped and badly managed informal trading facilities that are dirty and detracts NMT activity.
- “Dead” spaces or underutilised spaces that create unsafe environments.
- Sidewalks that are restricted by illegally parked cars or informal traders.
- Minimal landscaping, particularly in the poorer residential areas.

These inadequate NMT environments are particularly felt in the lower income areas where there is a greater reliance on walking and informal or sidewalk trading is more prevalent.

The CBD by comparison to most other areas in the City is more NMT compatible. It includes various major public transport interchanges (Cape Town Station, Bus and Taxi termini) with various pedestrian priority areas i.e. green spaces (Company Gardens, Green Point Common, etc.), public squares (Grand Parade, Thibault Square, Green Market Square, etc.) and pedestrian malls (St Georges Mall). However, for the amount of pedestrian activity or the potential NMT activity that could be generated in the CBD, there are still many other NMT provisions that could be introduced. A major concern in the CBD is the connectivity of various precincts e.g. public transport, V&A Waterfront and Foreshore that needs to be improved.

4.3.4 Lack of safety and security discourages NMT usage

Safety and security is a grave concern in the City of Cape Town and one of the main deterrents to NMT usage. This refers to road traffic safety as well as personal safety as a result of crime.

Road traffic accident statistics discussed in previous sections indicates that accidents involving pedestrians are unacceptably high. The ratio of pedestrian fatalities to total road accident fatalities in the Cape Metropolitan Area was 63% in 2002³³. This is showing an increasing trend with 48.4% in 2000 and 59% in 2001. Rail safety is also a major concern with pedestrian rail crossings one of the main reasons for fatalities or serious injuries within the City's rail safety statistics.

There are various factors that contribute to the unsafe road and rail conditions for pedestrians and other NMT users, which include among others:

- Road safety planning has been focused around traffic and not pedestrians.
- Infrastructure such as pathways and pedestrian crossings are not adequate and do not support the safety of NMT users.

- Most roadways are designed to support high-speed motorised travel and do not make provision for pedestrians and other NMT movement. For example freeways, do not allow for pedestrian activity along them, but this does not prevent pedestrians walking along or wishing to cross the N1 and N2.
- Insufficient or inconvenient rail crossings which in many cases require the person to have a valid rail ticket.
- Taxi passengers board and alight vehicles at any location en-route.

NMT users are vulnerable and are the most susceptible to being targeted by crime. Crime in the City of Cape Town continues to be problematic and is consistently mentioned as the main reason to not utilise NMT as a mode. The design of the physical environment can however, either increase or reduce opportunities for crime. It can also play a significant role in influencing the perceptions of safety. The problems that is prevalent in the City of Cape Town around security:

- Spaces are often not designed around crime prevention with good sight lines, lighting and natural surveillance.
- Poor land use planning creates activities that do not promote natural surveillance of public spaces.
- There is an increasing trend towards surveillance camera equipment in the City, but often these displace the safety problem to periphery of the protected zone.

4.3.5 Lack of Integration and Coordination with Government Departments

NMT issues and interventions cut across many government departments and sectors such as transport, public transport, urban design, local economic development (LED), tourism, community safety and education. The problems that arise in NMT planning and facility provision are in part due to a lack of coordination of efforts among these sectors. Some of the problems that result as a lack of integration include the following:

- Activities that impact NMT are being undertaken in various sectors or departments with limited coordination of interventions, particularly around capital budgets, actions and projects.
- Integration within government is poor, but it also extends to the lack of coordination with other institutions, authorities, the private sector and NGO's.
- The location of NMT facilities in the City is not conducive to promote informal trading and other local economic development opportunities. Plans for NMT improvements need to be better coordinated with LED plans.
- A continuous network of NMT facilities which have good linkages and connections to destinations does not exist. This is particularly apparent around public transport interchanges and rail stations where different authorities or sections are responsible for infrastructure provision.
- There is a trend against learners walking and cycling to the nearest school which is increases congestion. Transport and Education departments need to coordinate their strategies and efforts.
- Provision for special needs people, particularly the disability sector, is a cross-cutting responsibility and modification to the environment should be coordinated amongst the various sectors as well.

4.3.6 Poor Information and Signage

Information and signage largely focuses on guiding motorised vehicles through the City or warning them against traffic violations. Information or way-finding for other modes are extremely poor in the City.

The City's public transport system is particularly poorly signed. Little or no markers are present directing passengers to bus, taxi or rail services or informing them of route

information. This impacts commuters or other NMT users that carry out a portion of their trip on public transport. It also affects tourists or visitors to the City who in many cases rely on public transport to access major attractions or places of interest.

Way-finding to major tourist destinations or boards that interpret the historical or cultural value places is also significantly lacking in the City. A number of walking tours have been identified within the CBD precinct that is currently being packaged and will require supporting information and signage.

4.3.7 Lack of Awareness and Education

Little tolerance or awareness of NMT as a mode exists at most levels of planning, infrastructure or service delivery or by users on the ground. A successful shift in NMT will require an increase in awareness and education of NMT related issues.

Previously, NMT was not considered to be a mode of transport. Lack of awareness within government sectors that were responsible for planning and implementation resulted in the NMT problems that exist within the City today. There has recently been an increasing shift in NMT awareness particularly in the transport fraternity, but this needs to continue to other departments, other sectors and within the community.

The attitude and behaviour of both motorised and non-motorised modes is a major problem that impacts the safety as well as the level of NMT use in the City. There is a general lack of consideration by motorists toward pedestrians or cyclists. Motorists are often not aware of pedestrian rights and consider them to be an unnecessary hindrance in "their road space". Turning vehicles are often not aware that pedestrians have the right of way and that they need to wait until the crossway is clear or the pedestrian crossing phase of the traffic signal is over.

The reckless or lawless attitude of pedestrians is also problematic and the reason for the high pedestrian accidents. Pedestrians in Cape Town do not adhere to rules when crossing roads or railway lines. Weaving between cars to cross high speed roadways has become a norm in the City.

Awareness of the special needs of people with disabilities remains low in most sectors of government and the community. All citizens have the right freedom of movement and to access opportunities in all parts of the City. This is often not possible for people with disabilities because of limitations in infrastructure or supporting facilities. People with disabilities are an important consideration for NMT and should be included as part of the awareness campaigns.

4.4 Specific NMT Users

NMT is used in the City for various trip purposes and there are general areas which are more likely to be used by these specific NMT user types. These will include NMT user categories that were identified in previous sections of this report:

- Commuter trips which include people travelling to and from work
- Learner trips which include learners travelling to and from school, libraries and sports fields.
- Service trips which include people travelling to access public services, facilities as well as shopping trips.
- Recreational includes the other trips not covered by the above categories. For example, this would involve tourist travel to major City attractions or residents accessing beaches, sports facilities and other recreational destinations. It could also include other social trips such as visiting family or friends

It is noted that special needs people is a sub-set of all trip types i.e. should be able to carry out a commuter, learner, service or recreational NMT trip within the City.

4.4.1 Commuters

Commuting refers includes trips to and from work which currently forms the bulk of trips in the City (approximately 80%). This is reflected in the strong morning and evening peak travel activity. Various motorised and non-motorised modes are used to commute within the City and largely include public transport, private vehicle, walking or cycling. NMT is almost always a component of all commuter trips, but the trip length may vary, if:

- NMT is used for the entire trip. Currently, not many commuters utilise this option, and utilise walking or cycling as the common NMT modes.
- NMT is used to access another motorised mode (only consists of a portion of the trip). This is currently the dominant type of NMT trips in the City.

Commuting with NMT for the entire trip length is not commonly undertaken in the City because of the long commuting distances (10-20km) between home and work. There are some areas, particularly in the CBD or around other town centres in the City where there is some level of commuting on foot. The increase in residential development in the CBD is likely to see a shift in the demand for NMT commuting activity, but will need to be supported by NMT interventions.

There are also a few active people, particularly when training for events that currently run or cycle the long commuting distances. There is however a lack of a comprehensive network of paths to support the demand for long distance NMT movement. Figure 23 shows the current cycle paths in the Cape Town, the extent of which is small in comparison to the planned cycle paths contained in Cape Town's Bicycle Masterplan.

The extent that NMT serves as a component of other modes may vary depending on the mode and the actual user. Currently, private vehicles and public transport are the most commonly used motorised modes to commute in Cape Town.

A large number of people use private cars to work. Parking is becoming increasingly more costly and limited in the City, thus commuters are having to park further from their destinations. Private vehicles are also used to access public transport i.e. park and ride or stop and drop, particularly at rail stations. The NMT component for these private vehicle trips is usually minor and involves walking to and from their cars to work or public transport.

Public transport is a significant commuting mode in the City involving just over a million passengers. Commuting trips form about 80% of these trips of which Rail carries the greatest share of public transport passengers (54%) with the rest utilise road based forms i.e. minibus taxis (29%) and buses (17%). NMT plays an important role in the success of public transport and supports it as a feeder mode⁴⁰.

Figure 24 shows the broad network of rail and road based (bus and taxi) public transport in the City, but the main NMT activity would be found around public transport boarding and alighting nodes i.e. modal interchanges, rail stations, bus/taxi stops and termini. The main NMT priority areas are where the greatest passenger concentrations are located. Figure 30 displays the population densities for the City and shows the densest residential areas (Mitchell's Plain, Khayelitsha, Nyanga and Athlone). Figure 27 and Figure 28 shows industrial and commercial/retail activity areas which tend to carry the greatest employment concentrations (CBD, Saltriver, Claremont and Bellville). There is a close correlation with the transport interchanges that have the greatest public transport passenger concentrations.

Figure 24 also shows the location of public transport nodes such as modal interchanges, rail stations and taxi termini. Areas that should be prioritised for future NMT interventions should focus on is the higher passenger origin and destination activity.

4.4.2 Learners

Learners are one of the most vulnerable NMT users. School-going learners, because they are usually not of driving age, often hold the greatest demand for NMT movement. Learner trips would thus include travel to and from schools or other education facilities, but could also involve learner trips to libraries and sports fields. Travel survey data from 2001 indicate that children and learners are responsible for a significant proportion of total trip-making in

the City. Estimations suggest that school-going children account for about 22 percent of the 8.6 million daily trips undertaken by all travel modes for all purposes. In particular, 36 % of all daily generated walking trips in Cape Town for all purposes are made by school-going children⁴¹.

Figure 25 show the location of learner related facilities in the City i.e. school, libraries and sports fields. The large volumes and dispersed nature of schools in the metropolitan area (> 600 schools) is particularly notable.

The Western Cape Department of Education still operates subsidised buses in the rest of the Province. However, within the Cape Town Metropolitan area, subsidised transport is only provided when learners cannot be accommodated within localised school. A large proportion of learners still walk to school, particularly within the lower income areas. Very little basic NMT infrastructure is present e.g. sidewalks, bike paths, pedestrian crossing, to provide a safe learner journey. Road safety problems arise with learners walking in the road or crossing anywhere along the road and without adult supervision.

The Department of Education no longer enforces the rule that learners must attend schools close to their area of residence. There is an increasing trend within the middle and upper income areas, for parents to transport learners to school in private vehicles. This pattern is reinforced because of the road safety, crime and desire to send children to preferred schools irrespective of its location. Traffic congestion in popular school districts such as Rosebank and Rondebosch, is becoming seriously problematic and conflicting with work commuting trips.

These historic middle-class school areas have some of the largest network of cycle paths in Cape Town. Utilisation of these cycle facilities has decreased over time due to reduced perceptions of safety. Learner cycling trips on a whole is low for Cape Town. A number of reasons can be cited:

- Negative perceptions of safety.
- Lack of cycling infrastructure (paths, safe road crossings, and signage) and supporting facilities (bicycle lock-up, maintenance).
- Lack of availability and high cost of bicycles.
- Distances too far or level differences make cycling uncomfortably.

4.4.3 Recreational users

This category of NMT user involves local resident or visitor trips of a recreational nature. It includes trips to sports facilities, green spaces and other conservation areas, beaches, scenic routes and other major tourist destinations. It also involves activities such as running, cycling, walking and rollerblading as a means of exercise.

Figure 26 displays some of the typical recreational destinations in Cape Town. The poor tend to be geographically marginalised with most of the recreational opportunities and scenic attractions located along the coastline and around the mountain. This is a long distance from the lower income areas on the Cape Flats and is generally only accessible via private motorised vehicles. The current public transport system is largely oriented around commuter travel with a focus on peak level services and residential-employment destinations. Recreational travel in Cape Town is therefore not prioritised and destinations are difficult to reach unless you own or rent a private vehicle.

The quality sports facilities (parks, complexes, fields, swimming pools) historically are located in the higher income areas. While limited NMT infrastructure makes it difficult to access recreational facilities by NMT means in the lower income areas.

Areas around major tourist destinations in Cape Town, which include areas of cultural or historic significance, are generally not well equipped to support the large pedestrian activity that is usually generated. South Africa has always been known for its physical

beauty, but commonly does not place too much emphasis on its cultural or historic significance. Although over the past few years Cape Town has seen increase in many museums and historically significant places, these are not always well signed with limited measures to celebrate the “interpretation” or value of the places. Great potential also exists to utilise NMT modes as part of tourist packages e.g. cycling and walking tours, but will require improved facilities and other NMT considerations. The walkability and connectivity of various precincts in the City, particularly within the CBD is problematic and needs to be addressed.

4.4.4 Service users

This form of NMT trips includes travel to public services and facilities such as hospitals, clinics, post-offices, courts, etc. It also refers to shopping trips and trips to other private services.

A lack of infrastructure and connectivity in most neighbourhoods, makes accessing these public destinations difficult by NMT. Figure 29 shows the location of public facilities in the City. It is apparent that they are located in a dispersed pattern, which further disadvantages NMT. The concept of a service centre within local neighbourhood which contains all the services and facilities may make it easier to focus or target NMT investments.

Figure 28 shows the location of shopping centres, retail and commercial activity as well as activity strips. There are a number of large shopping malls throughout the City. These tend to be pedestrianised within, containing various forms of shops, movies, restaurants and fast food places. However, these shopping malls are mostly designed for service users with private vehicles and are surrounded by large parking lots. Shops within the mall are walkable and accessible, but beyond the mall boundaries, the environment becomes extremely unfriendly toward NMT use.

There are activity strips, which are commercial and retail activities together with services have located linearly along City arterials. These activity corridors e.g. Main Road and Voortrekker Roads are strongly supported by road and rail based public transport. NMT service and shopping activity in these areas is high, but infrastructure often does not adequately support it. Unsafe crossing of pedestrians are often the most problematic in these areas.

Informal shopping activities have grown significantly in recent years. This includes organised “flea” markets that sell tourist souvenirs and low cost goods as well as informal “spaza” shops that sell meat and vegetables to local. Informal trading is particularly dominant in low income areas around public transport services and along major NMT routes. The informal businesses depend on the NMT activity or volume of foot traffic passing. Adequate facilities to accommodate traders as well as shoppers are usually problematic. While poor management of informal traders create un-maintained environments and obstructed walkways which further discourages NMT use.



Figure 22: Inadequate provision for trading facilities

Figure 23: City of Cape Town Bicycle Masterplan

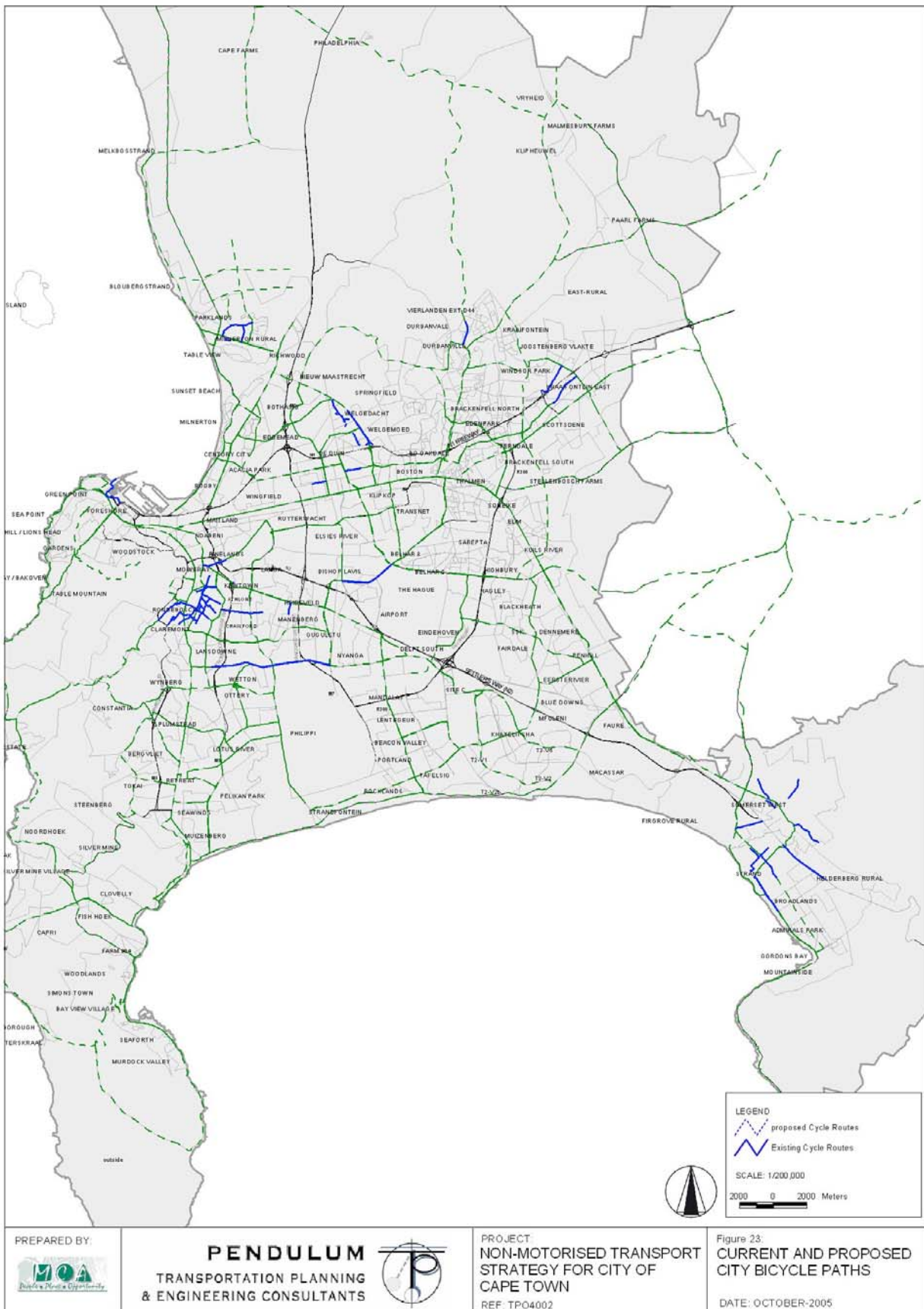


Figure 24: Location of Public Transport in Cape Town

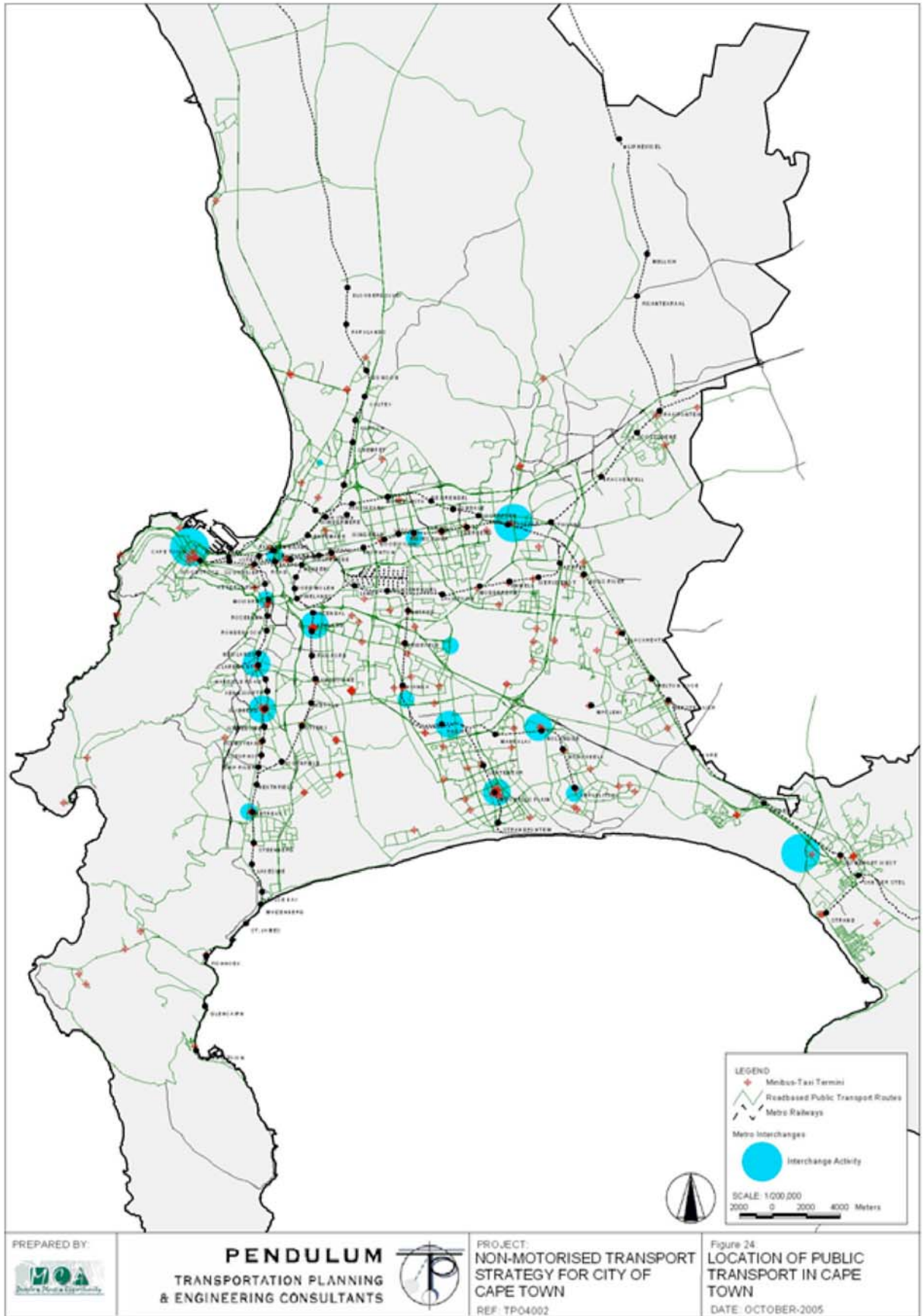


Figure 25: Learner Travel - Location of Schools, Libraries and Sports Fields in Cape Town

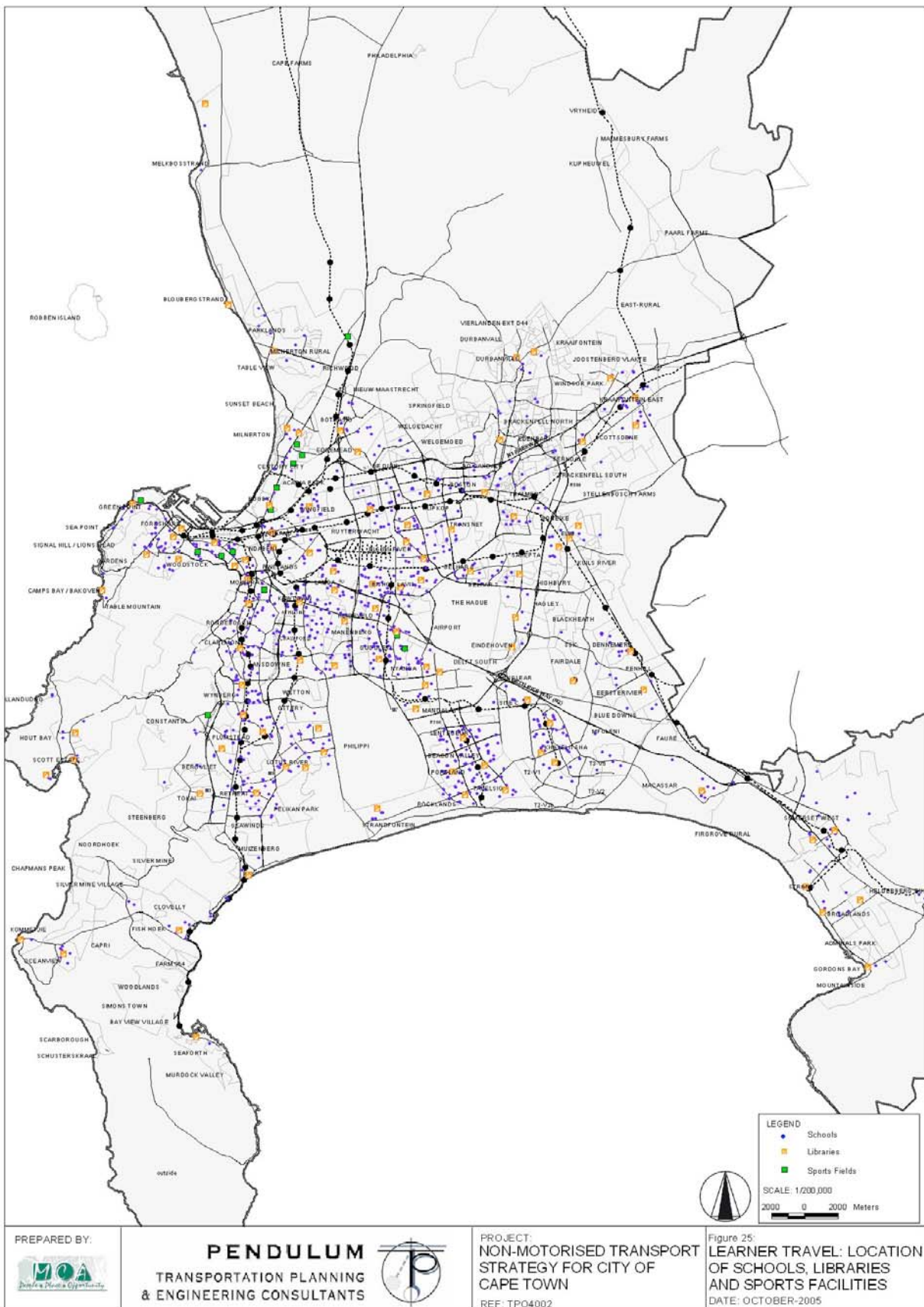


Figure 26: Location of main recreational destinations in Cape Town

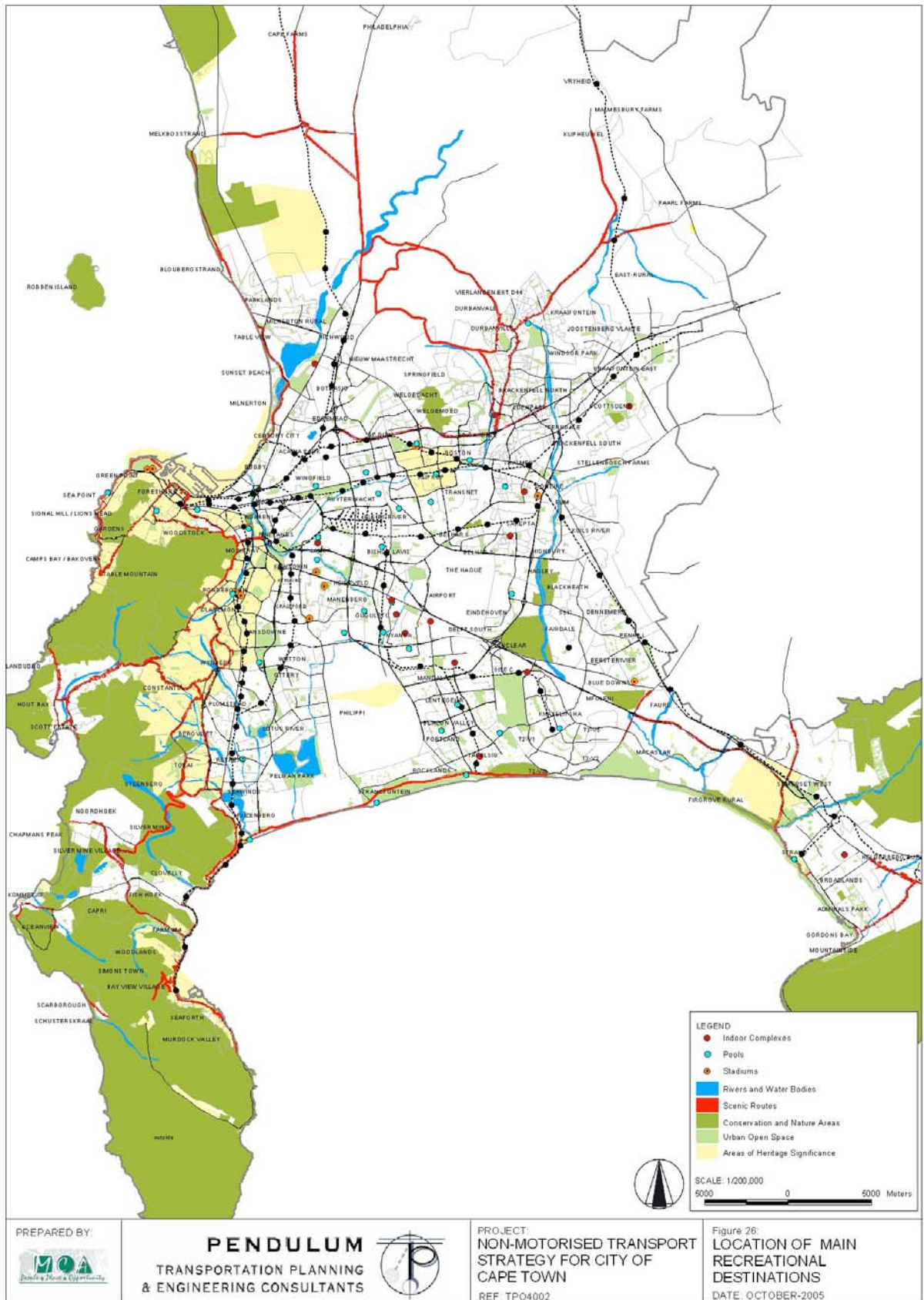


Figure 27: Location of Industrial Activity in Cape Town

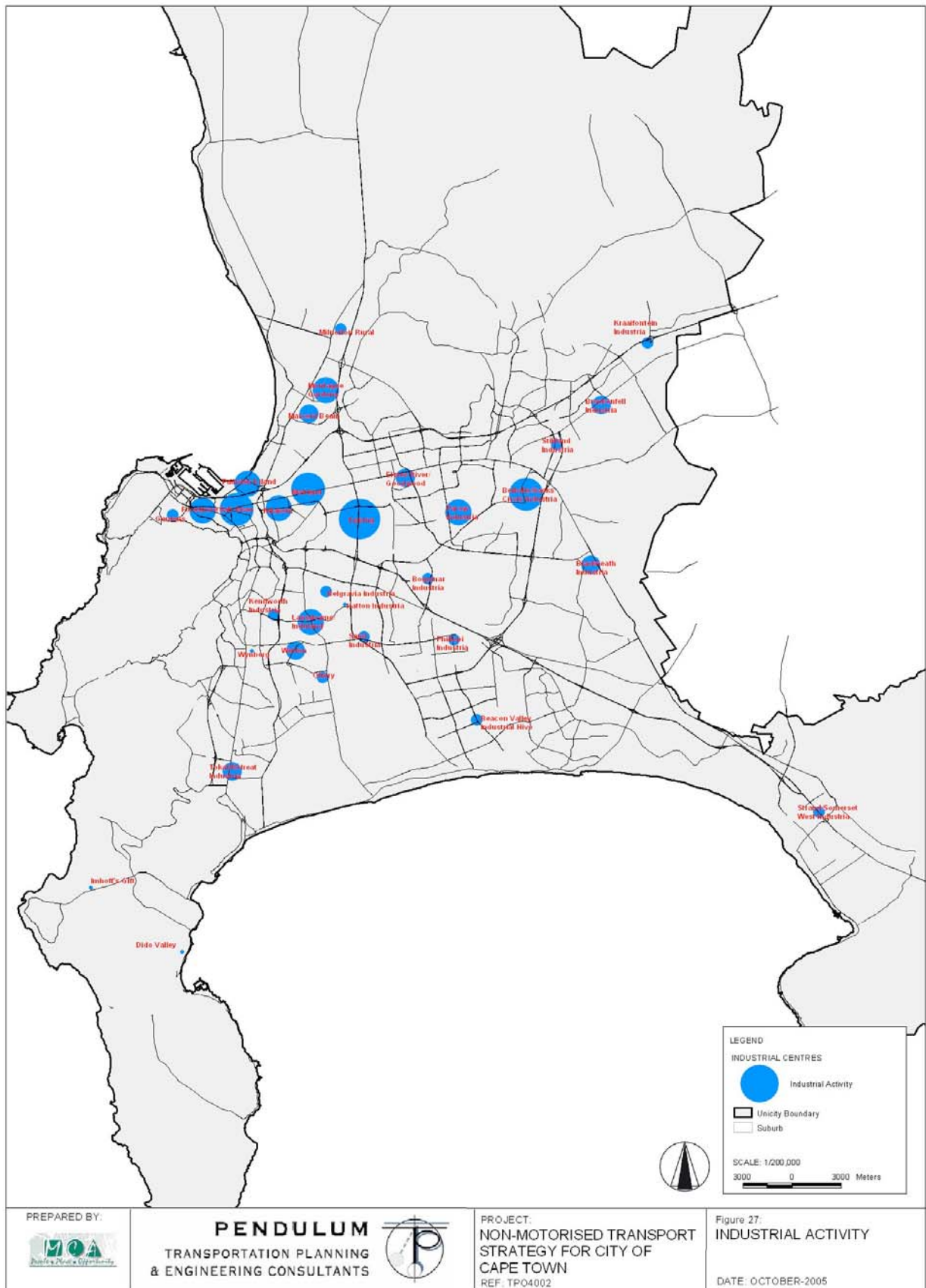


Figure 28: Location of commercial and retail activity in Cape Town

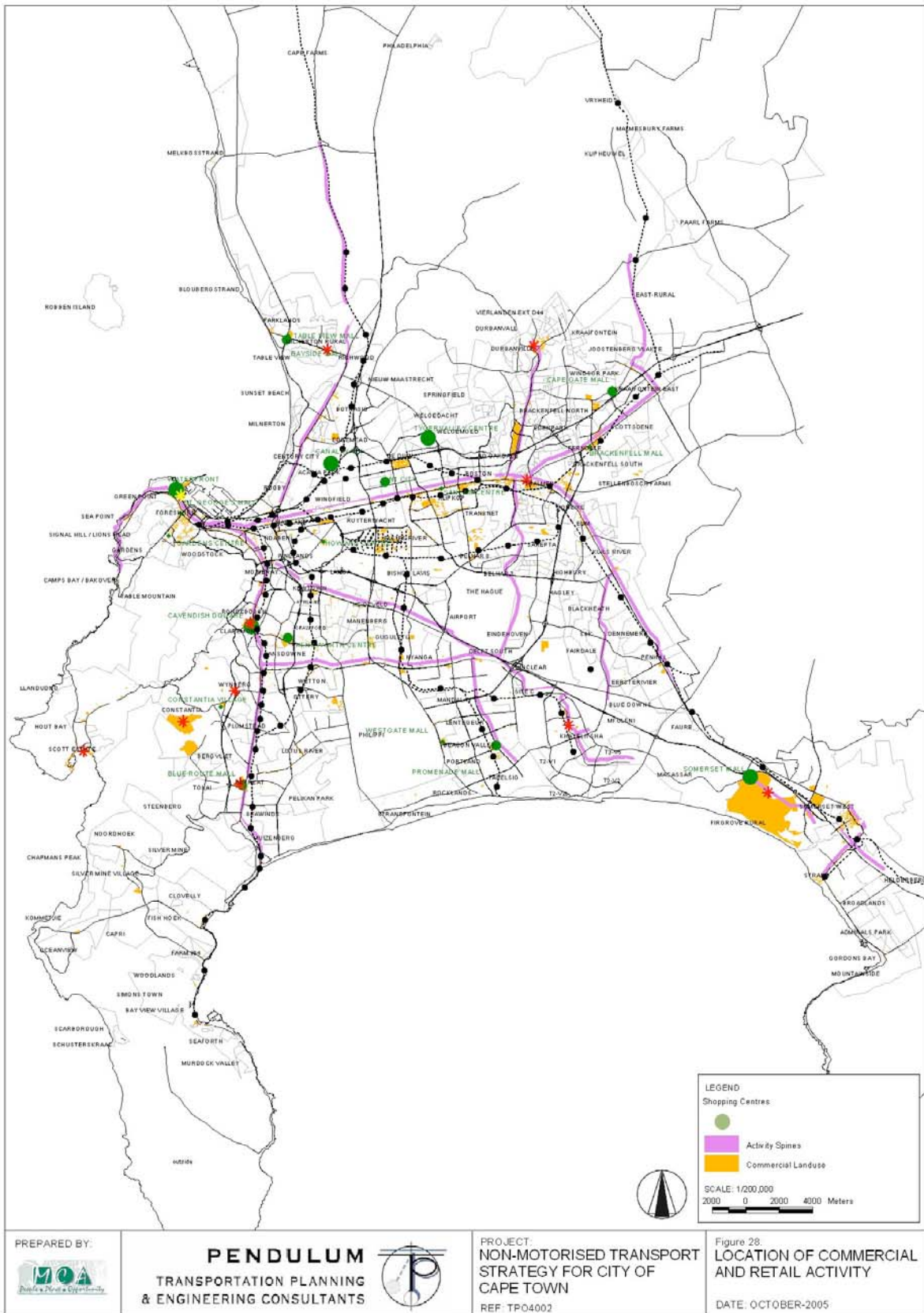
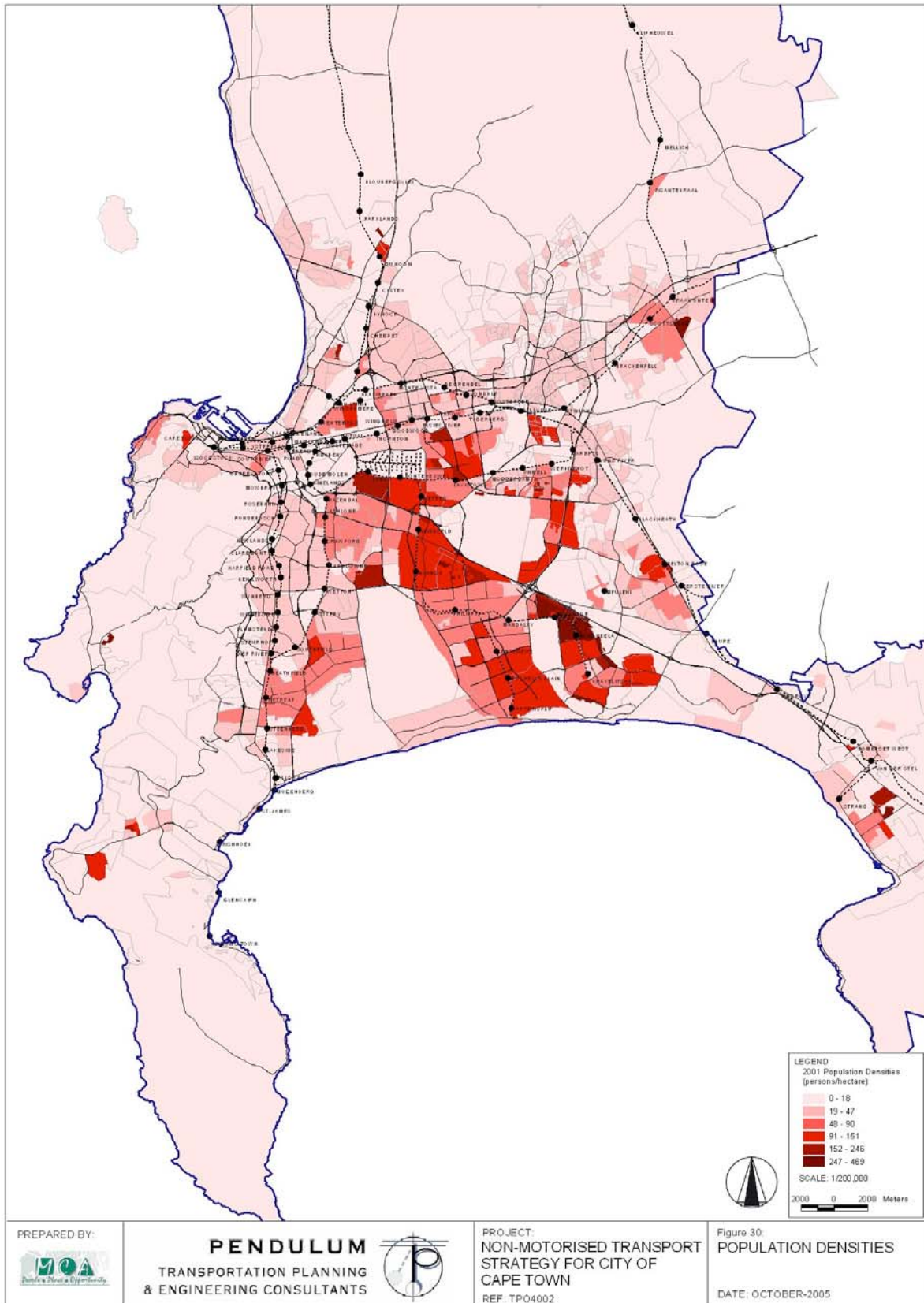


Figure 29: Location of Public Facilities in Cape Town



Figure 30: Population density in Cape Town

5.



The way forward

The theoretical review, planning and legislative framework and the assessment of the NMT context that is summarised in this Volume 1: Status Quo Assessment, provide a basis to formulate a strategy to improve NMT in the City of Cape Town. *Volume 2: Policy Framework* contains the City's vision and objectives for NMT. It also summarises policies, strategies and guidelines that will direct NMT interventions in the future.

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