INVESTIGATING THE PUBLIC TRANSPORT SYSTEM IN CAPE TOWN WITH REFERENCE TO SPECIAL NEEDS PASSENGERS

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DECLARATION

I, Deidre Ribbonaar, hereby declare that the contents of this thesis represent my own work, and that it has not previously been submitted for academic examination towards any qualification at any tertiary institution. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

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ABSTRACT

Inadequacies of the current public transport system cause an inconvenience for "normal able-bodied" passengers; however, it arguably isolates Special Needs Passengers (SNPs) from employment opportunities, recreational and educational opportunities.

This research study focuses on what one might term mobility-handicapped persons who find it difficult to move around, or to hear and see. The term SNP or mobility-handicapped persons encompasses more than just disabled persons. It includes customers laden with shopping bags, pregnant women, or someone with a broken leg, inter alia. The public transport system should enable persons with disabilities to experience the most optimal level of independence.

It is crucial to have an accessible public transport system, because this is the first step in achieving independence for many SNP's. At present the system does not even satisfy the needs of able-bodied persons. How then is it supposed to respond to Special Needs Passengers?

The public transport system can be divided into 4 categories namely, Infrastructure, Shared Road and Pedestrian Environment, Information and Vehicles. At present, these components of the system do not function efficiently.

This research study was undertaken from three main perspectives in regard to the City of Cape Town:

- The performance of the public transport system with reference to SNPs,
- The performance of the city in terms of it's urban qualities and SNPs, and
- The adequacy of the existing legal provisions and policy frameworks with reference to SNPs.

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DEFINITIONS AND CONCEPTS

Access/Accessibility

Good access or accessibility in planning terms is defined as being able to reach a range of activities, people, resources, opportunities and information with the least effort and cost. This may require a degree of mobility to avoid unnecessary wastage of energy and time in getting from origin to location along public ways or crowded lines of communication where long queues may prevail. This may also require overcoming non-physical obstacles such as lack of information (about goods or a service) or improving the affordability of goods and services (City of Cape Town, 1996a).

Disability

"Disabled persons are all persons who suffer from the consequences (handicap) of the effects (disability) of a physical, mental or psychological condition which is not typical for the respective age. The not typical condition is defined as the loss of impairment of normally existing physical, psychological or mental structures" (Democratic Alliance, *s.a.).*

Mobility

This refers to the ability to move relatively swiftly and at an acceptable speed and travel time with freedom to manoeuvre without undue interruption and at acceptable levels of comfort, convenience and safety. This concept applies to all modes of transport. Giving people mobility is one means of overcoming lack of accessibility especially when trip distance or travel times between origin and destination are unacceptable (City of Cape Town, 1996a).

Public Transport

The term is used to describe the movement of a large number of people at one time, usually by bus or train. These are transport systems with fixed routes and schedules, available for use by all persons who pay the established fare. Most common examples are bus, light-rail transit, and rapid transit (Vuchic, 1982).

Special Needs Passenger (SNP)/Mobility Handicapped Person

This term comprises of a broad spectrum of passengers, in that it includes people who by reason of accident, disease or congenital condition find it difficult to move around, or to see or hear or understand. This includes people who have temporary impairment, which could encompass anything from a broken leg or having many shopping bags (Oxley, 1999). In other words, at some point in one's life you are more than likely to be termed as a SNP, in that you have a special requirement, such as speaker system to announce arrivals and departures of public transport modes if you are hearing impaired, in order to make use of the public transport system, safely and effectively.

Sustainable Development

This refers to the process of meeting the development needs of the present generation without compromising or jeopardising the ability of future generations to meet essential needs. This includes management and maintenance of a wide range of resources on a continuous basis (City of Cape Town, 1996a).

Universal access

"Universal access is the goal of enabling all citizens to reach every destination served by their public street and pathway system. Universal access is not limited to access by persons using automobiles. Travel by bicycle, walking or wheelchair to every destination is accommodated in order to achieve transportation equity, maximise independence, and improve community liveability" (Human Transport Committee, d.u.)

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Chapter 1: Position Statement

1.1 Problem Statement

Public transport makes unsatisfactory provision for Special Needs Passengers (SNPs) in the Cape Metropolitan Area (CMA) and this isolates them from employment, recreational, educational and other opportunities.

1.2 Background to the Problem

This research project specifically focuses on Special Needs Passengers (SNPs) and the barriers faced by them with reference to the public transport system, and more importantly, what is considered as being good practice in achieving accessibility for SNPs.

In order to address or analyse the public transport system, one needs in the first place to be aware that it comprises of certain components, which collectively have been described as the "travel chain". These components need to be viewed simultaneously if a seamless journey is to be planned. However, many problems experienced currently within the public transport system, can be attributed to the system not having been viewed in this light in the realm of public transport management.

For the purpose of this study the public transport system is divided into four categories identified by the European Conference of Ministers of Transport (ECMT) (Oxley, 1999).

For the most part the components were used as is, however, the ECMT does not refer to the shared road and pedestrian environment, and only referred to the road and pedestrian environment. The author, however, felt it necessary to clarify that the road and pedestrian environment is shared by various modes and consequently altered the name of the component (Oxley, 1999).

These components are:

- Information
- Shared Road and Pedestrian Environment
- Infrastructure
- Vehicles (Oxley, 1999).

"It is the first time that the needs of South African transport customers have been placed at the heart of the decision-making process. For most of our history, government transport policy has taken a modal view of the sector, concentrating its efforts on what is good for operators and the interests of the white minority" (South Africa, 1999:6).

The erstwhile apartheid planning policies collectively constituted the foremost negative factors that influenced public transport, in that previously disadvantaged people were moved some distance from job opportunities and amenities. The input of passengers, by means of public survey processes, so as to ascertain their needs, was neither sought nor obtained during this displacement period. Hence, end-user contributions as to real needs were virtually non-existent and as a result, proper planning for the divergent needs of the full spectrum of passengers could not materialise.

"There has been a lack of research and analysis into the needs of specific customer segments or groups" (South Africa, 1999: 6).

One consequent heritage is that at the time of writing even average able-bodied persons in Cape Town experience many obstacles and hindrances in the current public transport system of the CMA. With this in mind, the plight of SNPs becomes that more comprehensible, in the light of their mobility limitations in an inefficient public transport system. This sub-optimal condition includes unsafe travelling conditions, high fare prices, inadequate modes of public transport at peak times, and the extensive distances travelled to places of opportunity.

The term "SNP" represents a broad spectrum of passengers, who in essence have particular needs when travelling. This category of passengers refers to people with disabilities: those who experience difficulty in moving around due to an accident; or broken limb; or to a congenital condition; pregnant women, the elderly or persons laden with bags (Oxley, 1999). It should be noted that SNPs have additional needs but the same wants as able-bodied persons, and want as much to be integrated into society. It is argued in this thesis that a public transport system has the potential to achieve such integration. It is argued moreover that at present everyone is disadvantaged in a deficient public transport system in Cape Town.

An important aspect that should be investigated for the purpose of integration is that of universal design and universal access principles. Universal design and universal access principles promote the design of a product or an environment that is widely usable and without bias.

Universal design and universal access principles in the public transport context, aim at achieving accessibility, and relate to the ability of a passenger to use all parts of the public transport system. In brief one needs to consider an aspect such as those SNP's, who have for instance impaired physical strength or stamina, yet are enabled through innovative and compensatory designed systems of operation. This can promote ease of movement by in many ways addressing barriers such as ramps with steep gradients, as a practical instance.

"People who could benefit from more universal designs include many, both with and without disabilities" (Vanderheiden, 1990: 3). According to the Disabled Persons Transport Advisory Committee (DPTAC), everyone has the right to be able to use public transport. However, it is in fact common cause that poor design and management in fact deny many disabled people this opportunity (The Centre for Universal Design, 1997).

Therefore, in order to benefit properly from job opportunities, social activities, shopping facilities and social services, SNPs need to be suitably enabled; bearing in mind the only difference between able-bodied persons and SNPs in the transport context, is the ease with which able-bodied persons can move around.

The disabled population, which encompass a large portion of SNPs, are according to the Integrated National Disability Strategy, capable individuals who contribute substantially to the development of society. Therefore it is appropriate to ensure that they are given the opportunities that able-bodied persons are awarded (South Africa, 1996).

It might appear that the problem is not all that significant. Statistics, however, prove otherwise. It has been suggested that there could be at least 700 000 SNPs in the Cape Metropolitan Area. Further, it noted that about 100 000 of these passengers are people with disabilities (Cape Metropolitan Council, 1999b). One in every twenty people in our country has some kind of disability. In the local context (Western Cape) there are estimated to be more than 145 000 people with disabilities of any kind (South Africa, 1997b). It is impossible to give an exact figure with regard to the number of SNPs, in any geographical area.

The absence of a well-developed body of knowledge with reference to SNPs to guide upgrades and development seems to be a major factor in perpetuating the plight of SNPs. As a consequence, inappropriate measures are implemented and public money is wasted in the face of already severely constrained funds (South Africa, 1997b).

"...The lack of accessible transport is a serious barrier to the full integration into society of people with disabilities" (South Africa, 1997b:32). The South African Government therefore acknowledges this barrier to integrating disabled people. The Cape Metropolitan Council has accordingly accepted a policy whereby accessible transport facilities are to be phased in over time according to the availability of resources and the actual demand for these facilities and services

With reference to the Integrated National Disability Strategy, 1997, costs are often cited as the reason for the failure to provide a barrier-free transport environment. Yet, when accessibility for SNPs is incorporated in the original design, the additional cost does not generally exceed 0.2% of the overall costs of development (South Africa, 1997b). It appears then that costs are given as one of the reasons for the slow implementation of a barrier-free transport environment, yet there are new upgrades still being implemented without taking cognisance of SNPs.

A preliminary investigation into this research problem shows instances of recent upgrades in the Cape Metropolitan context at the Mowbray Transport Interchange, and the Athlone Station area, where even after upgrading; these areas still display sub-optimal accessibility for SNPs.

Urgent advances should now be made to improve access for people with mobility handicaps. Improvements in access for SNPs would not only benefit more people, but also meet certain objectives of the National Government, such as reducing congestion, and more importantly, lessening social exclusion (Oxley, 1999).

It is important to note that public transport systems do not differ fundamentally between those for able-bodied people and those for SNPs, in that both need reliable and frequent public transport. This is reinforced in the Moving South Africa document, where it is stated that most SNP's – 11, 6 million people – are passengers for whom the system must improve in general, without substantial additional requirements for infrastructure or vehicles (South Africa, 1999). The improvements referred to as "general", include aspects such as fares, regularity of modes or protected travelling conditions. In essence, the problems identified appear to be common to all, yet the difference is that SNPs are at a greater disadvantage and for them the problems are more often than not accentuated, rather than different.

Furthermore it has been stated that: "There is, at present, no coherent or comprehensive legislation pertaining to people with disabilities and their rights" (South Africa, 1997b:57). This being so, the public transport system requires a standard set of objectives and aims when improvements are introduced into the system for SNPs. Arising from the lack of coherent goals and what one might perceive to be poor communication, services for disabled people are being duplicated (South Africa, 1997b).

1.3 Objectives of the Study

These objectives have to do with eventual application, and comprise the following:

1.3.1 To provide a body of knowledge to assist the public and authorities in decision-making on the subject of the transport problems facing SNPs,

through highlighting how SNPs are excluded from daily activities due to the deficient public transport system of the Cape Metropolitan Area

1.3.2 To show how planning criteria and principles can assist in making the environment and specifically the public transport system as an element of the urban environment, conducive to special needs passengers (SNPs).

1.3.3 To show the fundamental elements of policies and legislation that the author views relevant in governing public transport with particular reference to Special Needs Passengers (SNPs), and investigate the adequacy of these laws governing accessibility and anti-discrimination practices in terms of the public transport system.

1.3.4 To illustrate what the perceptions are of SNPs with regard to the public transport system.

1.4 Research Questions

In essence, the function of a public transport system is to provide travellers with accessible, reliable, safe and convenient ways of moving from departure points to destinations. Unfortunately, there are basic requirements that appear not to be met in order to achieve the goal of an efficiently functioning public transport system in the CMA, which accentuate the difficulties confronted by SNPs.

It is with this in mind that the following research questions arise:

Part A

Research Question One: Are there problem areas in the public transport system which affects special needs passengers (SNPs)?

What are the problem areas in the public transport system of the Cape Metropolitan Area with reference to Special Needs Passengers?

What planning or design theories and principles related to the public transport system have bearing on urban places that affect the quality of life for special needs passengers?

Part B

Research Question Two: What enabling mechanisms are in place to alleviate the problems endured in the public transport system by SNPs?

What enabling legislation and policies are in place to address the plight of SNPs and are they in fact properly implemented towards a positive result?

What upgrades or improvements are then required in the public transport system in the Cape Metropolitan Area for Special Needs Passengers to ensure an equitable system?

1.5 Significance of the Study

1.5.1. In order for South Africa to develop economically and socially, everyone needs to have access to various opportunities regardless of age, disability, level of education or gender. A proper public transport system should be viewed as a major precondition for achieving proper levels of access and opportunity. This research is therefore aimed at establishing whether there are enabling mechanisms or guidelines that can be employed incrementally, which seemed not to exist in Cape Town, or South Africa as a whole, to an acceptable degree.

1.5.2. "Everyone in Cape Town, from politician to student, is affected in one way or another by the standard of our public transport system" (City of Cape Town, 2002:5). This statement further reinforces the need for such research in that it is not a minority of people that is affected by public transport, but the country as a whole. Public transport is a way of addressing many pressing issues, such as redressing the imbalances of the previous government's policies and a problematic city structure, by providing people with an effective means of accessing opportunities

without being discriminated against, and by providing people with universal access, irrespective of their location.

1.5.3. At present, according to the Cape Metropolitan Council, there is a lack of awareness of the requirements of SNPs by relevant professionals, transport operators and the general public (Cape Metropolitan Council, 1999b). As a consequence of this ignorance, certain inefficiencies have emerged. For instance, many of the organisations and special schools catering for the needs of the disabled are forced to operate their own transport fleets, thereby often duplicating services and in general resulting in economically inefficient operations. This research aimed at equipping all relevant role-players and stakeholders with the information needed to plan and utilize the public transport system better, to the benefit of every traveller.

1.5.4. Improvements to the public transport system that have thus far been introduced are seemingly not entirely effective. Therefore it is important to have a set of standard objectives and aims when improving the system for SNPs, which appear to be absent, and which this research aimed at resolving.

1.6 Concluding Thoughts

"A major contributing factor to the challenges facing improvements in access and mobility in Cape Town is the lack of dedicated institutional structure to co-ordinate and manage the current fragmentation of roles and responsibilities. Like other cities in the world, the Cape Town transport system has many stakeholders and operators with multiple users, views, expectations and agendas. The fragmentation of roles and responsibilities has a serious impact on the development of comprehensive and integrated policies formulated to manage and regulate transport in the city. The City of Cape Town, as the planning and implementing authority, needs to address the fragmentation of responsibility and ensure that access and mobility needs in its area of jurisdiction are well managed, delivered and met in a sustainable and equitable manner" (City of Cape Town, 2005:26)

If the City of Cape Town's public transport system is unsafe, inaccessible and uncomfortable, then the fault ultimately lies with the city authorities; it is the city's domain to plan for, regulate, to provide and to manage its public transport system.

It is apparent that cities often respond to pressures in fairly predictable ways, where nothing changes without a demand for change, and additional demands are generated as a response to crises. At present, as a result of the inadequacies of the public transport system in Cape Town, a crisis is looming.

Chapter 2: Research Design and Methodology

2.1 Introduction

Stated generally, the research study has been approached in terms of a problem:

- What caused it (identified in literature, interviews, reports)
- Who are those that experience it and what do they experience (based on surveys)

The process of research followed here therefore needed in the first place to ascertain:

- Where the information needed to address the research questions was available or who had it, i.e. what sources were available (publications, internet, etc),
- How much detailed data had to be collected, at the minimum,
- How much time was available,
- What techniques are available for data collection,
- What theories have a bearing on the problem?

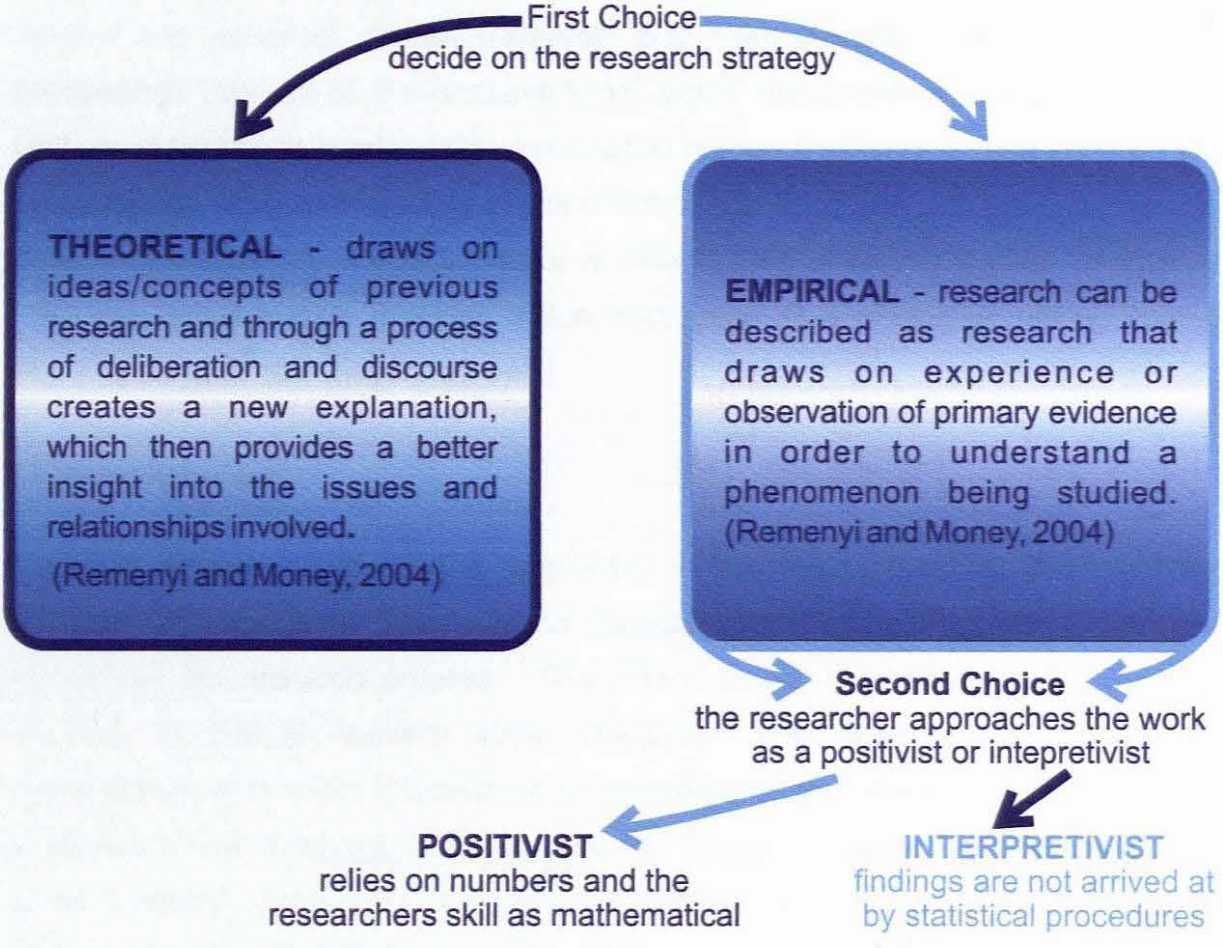
In resolving the foregoing, the researcher was then equipped to undertake the full investigation and meet its stated objectives. These have been stated in paragraph 1.3 of chapter one and from which it should become clear to the reader why the study was undertaken from three main perspectives in regard to the City of Cape Town:

- The performance of the public transport system,
- The performance of the city in terms of it urban qualities, and
- The adequacy of the existing legal provisions and policy frameworks.

The sequence of the chapters in this document has thus been structured in accordance with these three main perspectives.

Once research questions have been identified, it is necessary to decide which research strategy would best satisfy the objectives of the research as well as the answering of the research questions.

"A research strategy may be defined as a high level approach to the research that determines much of the detailed work, which the research degree candidate will subsequently undertake. This high level approach or research strategy is often thought to be the researchers' basic philosophical beliefs and understanding of the nature of the research that will be undertaken" (Remenyi and Money, 2004:58).



This research is essentially empirical as the:

- Aim is to provide an in-depth understanding of the research subject, namely SNPs,

- Method used to collect data involves close contact between the researcher and the subject (SNPs)

2.2 Research Methods

In gathering evidence for analysis, the research methods or tactics employed so as to answer the research questions, included:

Literature Study:

The Cape Peninsula University of Technology (CPUT) inter-library department and the Research Information Support Centre "R.I.S.K." Unit was approached to perform nation-wide library and internet searches for literature on the public transport system and universal access nationally and internationally, and for conference proceedings relevant to the research topic, policy documents and legislation. The Unit concentrates on mostly online information resource delivery to researchers. The research unit assisted in a study of international scenarios with reference to how they have successfully achieved universal access. This is largely based on Internet searches for up-to-date material, which were used as a means of making contact with international role-players as well.

Personal Interviews:

Personal interviews with SNPs, specialists in the fields of Urban Design, Town Planning, Transportation Planning and Transportation Engineering were undertaken throughout the research process. This was a crucial component of the research process, in that all relevant stakeholders and role players could relate their perspectives (and were informed as to the stage of the research and what future endeavours are envisaged for the relevant research topic). Interviews proved to be a means of building a network of professionals involved in SNP's, and the various disability organisations. A database of questions and responses were thus developed.

Site Investigations:

An examination of the existing situation, in terms of the accessibility of the public transport system, lays the foundation for the research process. Certain strategic areas were investigated as case studies. Cape Town Station was examined with regard to the information aspect and how this is relayed to travellers. Adderley Street was explored with the view to observing how the shared road and pedestrian environments function, whilst Mowbray Transport Interchange infrastructural components such as ramps, seating, and kerbs as to their effectiveness for SNPs were examined. Other interchanges such as Wynberg, where all three public transport modes are present were also inspected, and the public transport vehicles themselves were inspected.

Essentially, the components of the public transport system were investigated to ascertain their positive and negative characteristics with regard to able-bodied travellers and more importantly, SNPs. This process was performed by carrying out observations with the aid of a checklist, which refer to certain requirements necessary for effective commuting by SNPs. The questions in the checklist were based on what is considered to be best practice in achieving an accessible public transport system.

The checklist was categorised according to the four components, and there were certain requirements under each component that the researcher regarded as necessary for effective commuting by SNPs. These identified areas that were studied were then rated according to a predetermined scale as to their relative conduciveness for SNP commuting.

Surveys:

Surveys by way of a questionnaire were conducted among SNPs of the Cape Metropolitan Area in order to assess their level of mobility in terms of perceived ability to negotiate the existing public transport environment, and to determine what particular problems and difficulties they experience in this regard.

- Field surveys were conducted with the assistance of B-Tech Town and Regional Planning students. Questionnaires were designed to ascertain the

problems experienced by SNPs. This, in the researcher's opinion was fundamental in determining users opinions as to the problems of accessibility encountered by them.

Through the survey a comprehensive set of barriers at each component of the public transport system as experienced by SNPs, was identified.

Analysis of Inclusive design and access principles:

The components of the public transport system (information, shared road and pedestrian environment, infrastructure and vehicles) will also be analysed according to Universal Design Principles and Universal Access Principles.

Universal Design Principles

- Equitable use - The question asked with reference to this principle is whether the design is useful and appealing to people with diverse abilities.
- Flexibility in use - The design should accommodate the preferences and abilities of a wide range of people.
- Simple and Intuitive - The design should be without undue complication based on irrelevant premises, in other words no assumptions should be made with regard to the user; it should be a simple design that anyone can use regardless of their experience, knowledge, or level of sophistication.
- Perceptible Information - All information necessary for the efficient use of the design should be readily available, again without any prejudice.
- Tolerance for Error – The design should minimise any hazards, by providing warnings of hazards.
- Low Physical Effort – The design should not require too much physical effort by the user, again so as not to be biased against SNPs.
- Size and Space for Approach and Use – The design should accommodate variations in the user type, for example for someone in a wheelchair or a

person laden with bags, with differing mobility needs (The Centre for Universal Design, 1997).

Universal Access Principles

- Universal access to destinations – this principle stresses that all pedestrians and all vehicles (including bicycles) should have access to destinations served by the public road system.

- Equal rights of use – no road should be biased to a particular mode it should be meant for vehicles of heavy load, fast moving vehicles, lighter weight modes, slow paced vehicles and pedestrians. In essence it must serve a diversity of users.

- Integration of modes – this principle states that travelling by different modes should not be segregated. Law and design should not segregate modes unless there is compelling, objective, scientifically valid evidence of operational advantages of segregation that outweigh the disadvantages.

- Uniformity and simplicity – a transport system should be simple and intuitive, designs and regulations should be uniform across facilities.

- Accessible surfaces – the principle stresses that road and pedestrian surfaces should be practical and accommodate pedestrians, those in wheelchairs and road surfaces should accommodate all types of vehicles be it a car or bicycle.

- Crossable roadways – crossing distances at non-signalised access locations should not exceed the distance that can be covered at walking speed before traffic arrives from beyond sight distance.

- Appropriate space for use – in a road environment there should be adequate space for manoeuvring incorporated for all vehicle operators and for pedestrians including wheelchair users (Human Transport Committee, 2000).

As mentioned in chapter one, this research comprises of two parts; namely

Part A - Establishing if there are problems in the public transport system with reference to special needs passengers (SNPs). This is addressed by Chapters One, Three, Four and Seven.

Research Question One: Are there problem areas in the public transport system which affect special needs passengers (SNPs)?

- What are the problem areas in the public transport system of the Cape Metropolitan Area with reference to Special Needs Passengers?
- What planning or design theories and principles related to the public transport system have bearing on urban places that affect the quality of life for Special Needs Passengers?

Part B – Ascertain whether or not, enabling mechanisms are in place to address the problems within the public transport system with reference to SNPS. This is addressed in Chapters Five, Six, and Eight.

Research Question Two: What enabling mechanisms are in place to alleviate the problems endured in the public transport system by SNPs?

- What enabling legislation and policies are in place to address the plight of SNPs and are they in fact properly implemented towards a positive result?
- What upgrades or improvements are then required in the public transport system in the Cape Metropolitan Area for Special Needs Passengers to ensure an equitable system?

Research Method And/or Activity	Part A: Establishing if there are problems in the public transport system with reference to SNPs.	Part B: Ascertain whether or not enabling, mechanisms are in place to address the problems within the public transport system with reference to SNPS.
1. Literature search and review.	1. Literature related to the broader public transport environment.	1. Literature specific to accessible public transport.
⇩		
2. Consultations with specialists	2. Confirmed relevance of identified literature and helped with attaining more literature.	2. Explanation of responsible authorities and operational issues.
⇩		
3. Determining the Town Planning applicability to the research study	3. Investigation into how planning and design theories and principles can assist in making urban environments positive, and also the public transport system.	
⇩		
4. Institutional applicability to research study.		4. What enabling legislation and policies are in place to address the plight of SNPs?
⇩		
5. Consultations with specialists as to structure and progress of research study.		
⇩		
6. Analysis of existing situation in terms of the public transport system and its accessibility.	6. Observations with the aid of a checklist (Qualitative), based on what is considered to be best practice in achieving an accessible public transport system.	6. Analysis of the 4 public transport components according to universal design and access principles.

7. Questionnaire design (quantitative)

7. Literature, consultations and the checklist, regarding best practice access standards informed the structuring of the questionnaire.

8. Administration of the questionnaire.

8. Determining end-user perceptions as to what they view as problems in the public transport system.

9. Analysis

9. Analysing if the questionnaire results concur with the checklist results.

10. Review and analysis

10. Ascertaining if all research questions relating to the problems were answered.

10. Ascertaining if all research questions relating to whether any enabling mechanisms are in place to address the problems, were answered.

Figure 2.1: Flow-chart depicting research methods and/or activities in order to realise specific objectives.

2.3 Research Methods Employed for each Chapter

Chapter 3: Significance of the Public Transport System with Reference to Special Needs Passengers

Chapter Three explores the importance of public transport to SNPs. Reasons for the inadequacies in the public transport system with reference to SNPs, as mentioned in chapter one are revisited. Then an investigation into whether SNPs should be dealt with separately, i.e. create a separate system for them or include them into the mainstream public transport system is undertaken.

An extensive literature review highlighted inadequacies within the public transport in general. Personal interviews with specialists in the fields of Urban Design, Town Planning, and Transportation Planning suggested certain literature, mainly published by Government that explored the public transport system with regards to the mobility disadvantaged individuals of society.

Chapter 4: Town Planning Principles and Perspective

The profession of Town and Regional Planning and its accompanying theories were explored as to show how it can assist in making the environment and specifically the public transport system (as an element of the urban environment) conducive to special needs passengers (SNPs).

An extensive literature review highlighted certain author's to be most relevant in determining accessible and high quality urban environments. The combination of literature relating to positively performing environments and the public transportation system was very minimal. Therefore, a selection of town planning author's work, which was deemed relevant; however, not specific to evaluating the public transport system, which, however, shows applicability to the research was used. Urban design literature was also explored, in terms of accessible design principles.

Personal interviews with town and regional planning practitioners confirmed the chosen town planning literature and made suggestions of additional authors that could be used.

Chapter 5: Legislation and Policy Concerning Special Needs Passengers

This chapter endeavoured to show the foundation of policies and legislation at all levels of government that the researcher viewed relevant in governing public transport with reference to Special Needs Passengers (SNPs). The adequacy of the laws governing accessibility and anti-discrimination practices in terms of the public transport system was also explored. Internet searches on numerous government websites, with the key word "accessible legislation", highlighted the legislation and polices that could be relevant to the research study. Additionally, reviewing documents published by government that highlighted certain legislation and policies that could be relevant to the research study was explored. Then the relevance and usefulness of the various legislation and polices was analysed. An analysis of the numerous legislation and policies, led to the specific legislation and policies that were chosen for discussion. The particular relevance of the legislation and policies to SNPs was identified.

Chapter 6: Critical Observations: Existing Legislation and Policies

In the overview of all pertinent legislation and policies given in the previous chapter, certain questions arose that the researcher felt compelled to address: These questions arose, due to the very discriminatory urban and transport environment that still exists despite what the researcher views as an extensive legislative environment in terms of the research study.

Answering the questions warranted further discussions with town planners, and additional internet searches with the key words "disability legislation" and "disability rights".

Chapter 7: Survey Process

The objectives of this chapter were to determine what exactly special needs passengers (SNPs) view as problems in terms of the public transport system, and to investigate the problems in each component of the public transport system, namely information, vehicles, infrastructure and the shared road and pedestrian environment with the aid of a checklist.

The survey findings in terms of the observational checklist and the face-to-face personal interview with the aid of a structured questionnaire were critical to the research study, therefore great emphasis and care was taken to ensure the validity of the survey method.

The checklist was compiled from the determinants as to what needs to be in place to achieve a fully accessible public transport system. The checklist was formed by certain requirements, regarded necessary for effective commuting by SNPs. In essence, the process of determining the inefficiencies was therefore undertaken by conducting personal observations with the aid of this predetermined checklist.

A similar method as the one used to formulate the content of the observational checklist was used for the questionnaire. The elements regarded as necessary in order to have a fully accessible public transport system as dictated by successful international best accessibility practice standards, informed the structure of the questionnaire.

An exposition of the survey process is provided in Chapter Seven.

Chapter 8: Conclusion

It is felt by the researcher that it was beyond the realm of this research study to make recommendations to address the vast problems highlighted in this research. Therefore, Chapter Eight's objective was to revisit the research questions and to ascertain whether these questions had been answered adequately.

As mentioned, this research study is divided into two parts, namely:

Part A – Establishing if there are problems in the public transport system with reference to SNPs. This is addressed by Chapters One, Three, Four and Seven.

Part B – Ascertain whether or not enabling, mechanisms are in place to address the problems within the public transport system with reference to SNPS. This is addressed in Chapter Five, Six, and Eight.

Chapter 3: Significance of a Public Transport System with Reference to Special Needs Passengers

3.1 Introduction

This chapter aspires to give an account of why public transport is so vital in the lives of SNPs. It explores whether or not SNPs should be dealt with separately, i.e. create a separate system for them or include them into the mainstream public transport system. Furthermore, it revisits the reasons briefly mentioned in chapter one, for the current inadequacies faced by SNPs with reference to the public transport system.

3.2 Why the focus on Public Transport?

It is a fact that almost any activity that people engage in outside the home, such as working or socialising, relies on access to transport of some kind. Movement in modern cities is a necessity.

Isolation of SNPs is one of the main reasons why public transport should be made a top priority by our government. Many people are "detached" from society due to an inefficient public transport system. SNPs are unable to reach various opportunities, such as employment, recreation, or health care. With this in mind, it is important to note that SNPs represent a broad spectrum of people, though, with one common need and this is to be independent. Public transport can be seen as a channel to achieve this independence.

Furthermore, public transport can be aligned with the goals of South Africa's government at all levels, of protecting the environment, conserving energy, and providing for the health, safety and security of its citizens. This is, however, compromised with the status of our current seemingly inadequate system.

An additional objective of South Africa's national government is that SNPs become equal, active and as much as possible, contributing members of society (South Africa, 1999).

In order for this to materialise, SNPs need to be given equal opportunities in an integrated social, political and economic environment. This is only possible if any barriers that prevent this are removed and any form of alternatives is encouraged and promoted. Therefore the encouragement of enabling mechanisms with regard to improved access to public transport is vital to transforming the lives of SNPs.

This research probes the accessibility of certain crucial places within the travel chain, inclusive of the traveller's complete journey, which therefore includes all walking, waiting and in-vehicle facilities without any bias or discrimination on any grounds. The figure below provides a graphical representation of the travel chain being referred to, and has been included so as to highlight the importance of addressing the system as a whole and not looking at individual sections in isolation of one another.

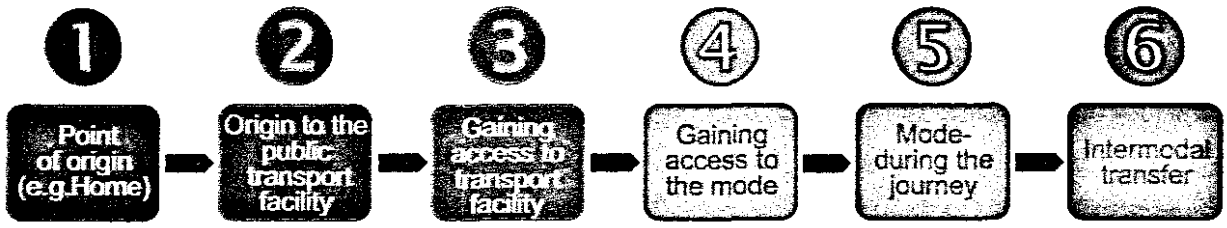


Figure 3.1: Representation of the travel chain adapted from the Moving South Africa Document (South Africa, 1999)

Ahead of discussing the diagram above, it is important to mention again that the public transport system comprises of four components, namely information, the shared road and pedestrian environment, infrastructure and vehicles. The discussion below will incorporate how the four components relate to the travel chain.

1. A point of origin is wherever the journey starts.

2. Journey from origin (home) to the public transport facility (Train station/terminus). More than most it would be from home, i.e. the environment outside of the origin point, like the pavement directly outside of one's home, which forms part of the shared road and pedestrian environment.

   This portion of the journey also forms part of the shared road and pedestrian environment. Included in this section of the journey is the information

component as well, which relates to how information about where the public transport facilities are, is relayed to people?

Where one would gain access to a public transport facility/terminus. This forms part of the infrastructural, as well as the informational component of the public transport system. Are there ramps with suitable gradients for SNPs, and is information relayed in an audible and visual manner?

Where one would gain access to a public transport mode, (train, minibus taxi or bus). This is what has been termed as the vehicle component of the public transport system.

This is in the mode one is travelling in. This also forms part of the vehicle component of the public transport system. It also incorporates the informational component. Here things such as the presence of mechanisms inside the mode which indicate to the operators that he needs to stop are looked at. Informational matters, like escape routes and whether they are in audible and a visual manner are also pertinent. Furthermore, things such as level access to the modes are looked at, as well as the presence of devices such as grab rails, to aid with boarding and alighting.

Inter-modal transfer is when one changes from one mode to the next. This forms part of all four components, because the transfer from one mode to the next can occur at any point within a public transport facility or in the shared road and pedestrian environment. Additionally, the presence of the informational component regarding information relating to the time, frequency, and suchlike about modes is to make the transition from one mode to another easier. The infrastructural component also relates to inter-modal transfer, because to get from one mode to the next there needs to be ramps and not only steps if there is a change in level from one mode to the next, for instance.

What prevails at present is a irregular public transport environment, implying patches of accessible and inaccessible areas. In the light of the travel chain concept the entire system needs to be addressed in an integrated way or the result will be patches of accessible and inaccessible areas. As a result of this sporadic system,

private developers may be reluctant to spend money on making their development accessible if the public transport system fails to properly contribute towards accessibility.

Furthermore, there appears to be a link between poverty and disability, in that people with disabilities that cannot access many daily activities required for a normal standard of living are more than likely not able to find employment, which leads to a deeper level of poverty. This has a spiralling affect in that, not being able to afford basic necessities such as good nutrition, access to health facilities leads to a more desperate situation. The following figure merely highlights how disability and poverty is linked.

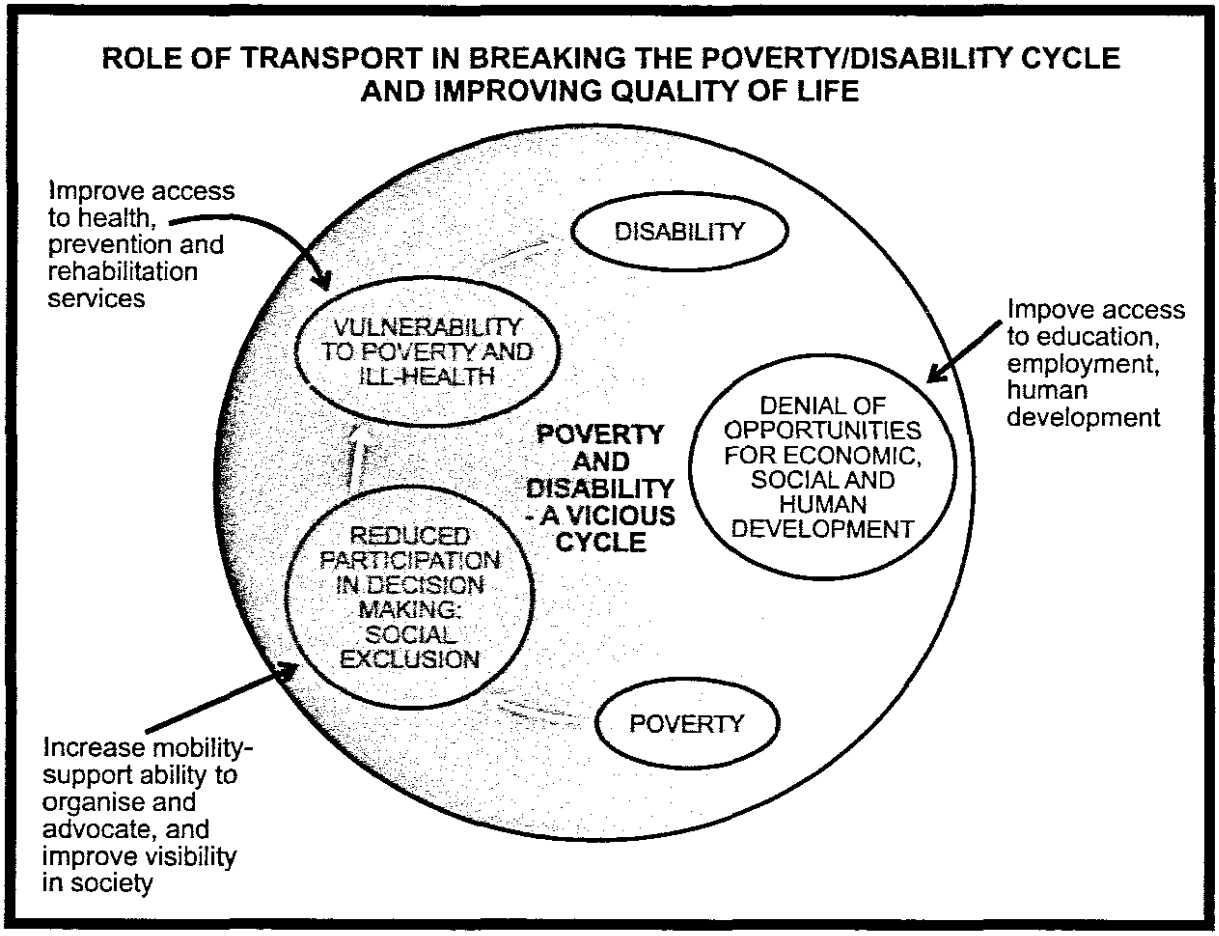


Figure3.2: Poverty and Disability – A vicious cycle (Venter, C., Rickert, T., Maunder, D., 2003)

A consequence of poverty is the issue of an individual's deteriorating quality of life. In essence, with a hindering, or inaccessible public transport system one can show how many SNPs will remain in a cycle that could easily be broken by making the public transport system accessible. Furthermore, it can be shown the pivotal role

public transport plays in bettering the quality of life for many special needs passengers, simply because it allows them to access many opportunities that able-bodied persons take for granted.

Additionally, there is also the moral or ethical argument in terms of exclusion of SNPs from the mainstream public transport system, in that exclusion leads to inequity and discrimination against people with special needs. This also simply leads to unfairness, in that, many special needs passengers are liable to pay tax, have voting power, contribute as much as possible to community life both socially and economically, so why is it that they are not afforded the same opportunities as able-bodied persons in terms of accessing all the opportunities?

These people need to be afforded the opportunity to earn a living, which is very important, be accepted by society, fulfil goals and improve their independence, as is the case with most able-bodied persons. This could be made possible by an accessible public transport system.

3.3 Affects of public transport on SNPs

A high quality or world class transport system is the one that would respond to the needs and requirements of the travelling public without discrimination (Maluleke, 1998). At present in Cape Town, we do not have a world-class public transport system as explained above. The present system is in total contrast to this definition, as discrimination is still experienced, and the system does not adequately respond to passenger's needs and requirements. Details on these inadequacies will be investigated in subsequent chapters.

"Construction of the man-made environment is based on the assumption that there exists an "average" person. However, there is no standardised person. Every individual deviates from the norm in one-way or another: age, height, width, strength, speed, sight, hearing, stamina or mental faculties. Consequently, facilities built for the average person are not necessarily equally accessible for everybody" (Independent Living Institute, 2000:1).

It is with this quote in mind that the researcher made the assumption that there are possibly gaps in the system, which need to be researched, in order to know exactly what the needs are of all passengers.

The severity of the problem is suggested further in the following paragraphs:

The number of elderly and disabled people is rapidly growing. Often plans being implemented are inefficient and take years to implement. Provisions for accessibility are regularly treated as special and are not integrated enough into general transportation plans. Furthermore, the number of private automobiles is still rapidly increasing and at the same time, the number of elderly people driving has largely increased (Transportation Research Board, 2003).

"Studies have shown that at any one time, between 20 and 30 percent of people travelling have a mobility impairment for one reason or another – including people with temporary health conditions, frail elderly people, pregnant women, parents with young children and people carrying shopping bags or goods (Oxley, 1999:7).

In summary, the preceding paragraphs suggest the pervasive problems confronting public transport systems throughout the world, in terms of the lack of integrating the needs of SNPs as well as of the lack of knowledge about the difficulties special needs passengers face, and that the private automobile is seen as the only solution. Furthermore, these statements highlight the enormity of the problem by suggesting just how many people have "special needs" when it comes to travelling.

What can be concluded at this stage is that the creation of a barrier-free public transport system is still in its rudimentary stages due to a number of factors, which include the following:

- lack of resources,
- lack of commitment,
- lack of full understanding of the scope of the problem,
- lack of awareness and exposure to disability issues.

It is important to comprehend who SNPs are; they may not be all of us but what we inevitably will be at some stage in our lives: Disease, an accident and old age will arguably come to everyone or a loved one, therefore, people regarded as a SNP are not "they", they are us or our relatives.

"Just one street crossing that lacks a suitable curb cut is a major barrier. A six-inch curb may as well be a six-foot cliff when you are pushing yourself in a wheelchair. The result is islands of accessibility. People with disabilities can travel within an area, but may have trouble getting from one area to another. Lesson: An accessible transport network is only as good as its weakest link" (Victoria Transport Policy Institute, 2003:1).

Those in the planning and related professions should be clearly aware that in the built environment, the design of buildings, sidewalks, paths, roads, and vehicles, largely determines whether people are truly enabled in terms of accessibility and quality of life.

3.4 Inclusion or Separation of SNPs from Mainstream Public Transport

A fundamental question in the researcher's mind was how the mainstream design of the public transport system could include consideration for special needs passengers? Answers to the following could, it was felt, throw light on this:

- Who is included in the category of special needs passengers?
- How large is this special needs passenger population?
- Can the needs of special needs passengers can be handled separately or as exceptions?
- Is it economically and practically feasible to include special needs passengers in the design process of mainstream public transport systems?
- What are the benefits to the city or indeed the country of including special needs passengers in mainstream public transport?
- What is the additional cost involved is likely to be?

These issues are discussed in the remainder of this chapter.

It has been said that there is no clear distinction between people who are categorised as "disabled" and those who are not. "It is important to note that each aspect of ability has a separate distribution. Thus, a person who is poor along an ability distribution in one dimension (e.g. vision) may be at the other end of the distribution (i.e. excellent) with regard to another dimension (e.g. hearing or IQ)" (Vanderheiden, 1990:2).

It is clear though that no public transport system can realistically cater perfectly for everyone; some individuals will never have the capacity to travel independently, and these would inevitably be excluded from the system to at least some degree.

However, the total number of special needs passengers is relatively large, according to Census 1996, there were at least 700 000 SNPs within the Cape Metropolitan Area, which represents almost 28% of the area's total population (Cape Metropolitan Council, 1999b). It is important to note that each individual special need or impairment represents only a small portion of the population.

One is clearly not dealing with one large homogeneous group of people but with smaller groups, which together represent a sizeable portion of the population, which still leaves one with the question as to the most effective way of addressing these individual problems.

Decision makers are therefore left with two questions, namely, whether it is better to design the public transport system so as to make it accessible to everyone, or whether it is more effective to design for the able-bodied population and then create special and additional systems for persons with specific types of impairments?

What appears to be a major obstacle in answering these questions is the fact that there is limited information and statistics with which to make an informed choice. There seems to be a lack of awareness, a lack of knowledge and indeed specialists working in the field of accessible public transport. In order to develop this expertise, one needs a much wider range of information than we presently possess.

It has been said that accessible design can increase the functionality of public transport systems for able-bodied users. What follows is two examples extracted

from a paper entitled *Thirty Something (Million): Should they be Exceptions?,* which relates to the topic in discussion about isolation or inclusion.

Example 1: One of the most accessible designs is the dropped curb on pavements. The initial reason for adding a dropped-curb was for people in wheelchairs, to access pavements without assistance from anyone. According to the authors of this paper, somewhere between ten and one hundred bicycles, skateboards, shopping carts, prams use the dropped-curb. They further state that it is not uncommon to see individuals walk slightly out of their paths in order to walk up a dropped-curb rather than stepping up onto the curb, which they feel indicates a preference for the dropped-curb even for normal pedestrians (Vanderheiden, 1990).

Example 2: Elevator design is another example where just a little closer attention could provide accessibility to special needs passengers. It was found that people on crutches or in wheelchairs could not enter the elevator in time, and the doors would close too quickly. This led to the proposal of increasing the time the elevator doors stood open. However, if they were made to stand open longer, then additional elevators would have had to be installed in the building to meet the level of service standards. It was noted then that the problem was not that individuals in wheelchairs or on crutches were unable to enter an elevator within the time the door normally remained open. The problem emerged as to knowing which elevator was coming first so they could then position themselves in front of the elevator door. This was then resolved, quite simply, by adding a signal which indicates the location of the elevator, which then allows people time to position themselves (Vanderheiden, 1990).

There is a cost to society in providing the means of personal mobility, there is also a cost to society if the means of mobility are not provided (DPTAC, 1990). A recent report suggests that dismantling the barriers to the use of public transport "may cost society less than keeping those barriers in place" (Fowkes et al 1993:1).

There are thus consequences to not providing accessibility for SNPs. Society suffers in terms of costs due to individuals not being able to function independently in normal daily activities. The costs in terms of what society has to give are included in tax increases so as to pay for special assistance to a disabled person not being able

to access employment opportunities because of an obstructive public transport system. These people are also in most instances potentially economically active individuals but with the hindering public transport system are not able to contribute to the economy.

The provision of accessible public transport has the potential to release significant resources currently spent, inter alia, on home care services, residential care and hospital out-patient transport. When enabling disabled people to get around it could arguably have considerable implications for their ability to earn an income, as well as reduce or eradicate their dependence on government grants (Fowkes et al, 1993).

Many are beginning to realise that the provision of accessible public transport will assist many people other than those who are disabled, including individuals carrying heavy shopping or luggage and women with young children. It has been argued that much can be done at no great cost by modifying the vehicles and infrastructure of mainstream public transport services, and the manner of operating them, to make them accessible to disabled people. What inevitably then happens is that the system is easier to use for everyone else at the same time (DPTAC, 1990).

The preceding paragraphs highlights that the purpose of transport is to provide people with a means of accessing their jobs, shops, recreational activities, health facilities, and their homes and isolation for certain groups would therefore be overcome.

In essence, the problems highlighted previously should not necessarily steer government towards creating a separate public transport system that caters for SNPs but rather to explore the option of integration into the mainstream system, as is mentioned in the following paragraph:

"Some segments of the SNP group can readily be served through appropriate upgrading of the mainstream public transport system and road network for all passengers. This is true principally for many of the life-cycle passengers like children and the elderly. The goal is to bring these passengers into the mainstream public transport system by making the required adjustments to meet their needs. Examples of this could be additional security for scholar transport, conductors to help the

elderly and the frail, and audio information systems to assist those with visual impairments" (South Africa, 1999:46).

3.5 Concluding Thoughts

This chapter explored the issue of including SNPs within the mainstream public transport system as opposed to accommodating them in a separate system dedicated to their specific needs. Furthermore, issues as to why the system is so discriminatory and its consequences were highlighted.

What has become perceptible when investigating the public transport environment is the fact that it was intended for normal, healthy adults in their prime: persons of normal stature and dimensions, with normal agility and stamina, and with physical physique that can cope with "normal" pedestrian activities without unusual difficulty. What is interesting is that the remainder of the population is, by this characterisation, handicapped as pedestrians.

Two observations emerged from the foregoing. Firstly an integrated approach to the planning and management of the public transport system appears to be the most suitable response to the issues faced in terms of SNP's. Secondly, the theme of improving the system for SNPs and thereby making it more efficient for the average person has come up in many sources, as the best option when addressing the past imbalances of the public transport system.

Chapter 4: Town Planning Principles and Perspective

4.1 Introduction

This chapter endeavours to show how planning criteria and principles can assist in making the environment and specifically the public transport system as an element of the urban environment; conducive to special needs passengers (SNPs).It addresses three principle themes, namely:

- The quality of life of SNPs
- Equity within the public transport system
- The efficiency of the public transport system in relation to SNPs

This discussion indicates how public transport systems can be approached from a town planning perspective. Brief mention is again made of the problems inherent in the public transport system of Cape Town and the difficulties encountered by SNPs. As will become clear, there are numerous coinciding and naturally reinforcing objectives in terms of town planning and what one would want to achieve in public transport systems.

This chapter is by no means exhaustive, but deals with a selection of works in town planning, in particular the literature that deals with layout planning concerns and principles.

4.2 The Role of Town and Regional Planning

At this critical point in time in terms of South Africa's history, town and regional planning is an essential platform for the rectification of many imbalances created by previous government policies. A consequence of that era of town planning is inefficient and under-performing living environments, whereas town planners, in terms of both their professional expertise and code of ethics should in the first place be concerned with creating high quality urban environments.

Town planners are concerned with creating high quality urban environments. The public transport system forms part of those urban environments and therefore numerous principles and criteria are common to both.

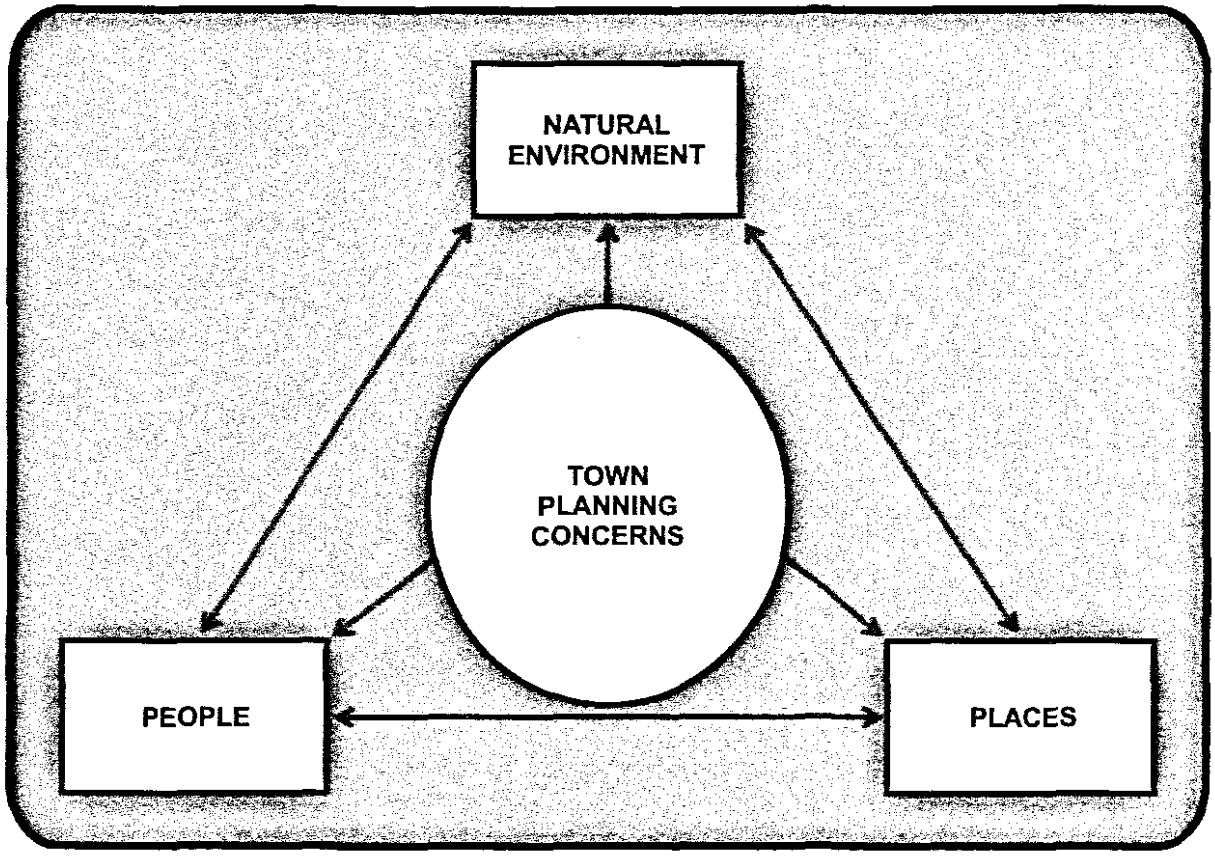


Figure 4.1: Town Planning Concerns.

The above figure gives an indication of what town planners primarily are concerned with at the broad scale down to a certain level of detail v.i.z. people, places, and the natural environment, and the aim of enriching the lives of people in terms of quality places and a sustained natural environment.

It is in essence the harmonious relationship between these three realms that planners are fundamentally concerned with.

People influence the environment, both positively and negatively, and conversely, the natural environment influences people. The same can be said for the mutual relationship between places, the natural environment and people. An example of where the natural environment influences people and places is the geographical context, of Cape Town, influenced by the location of Table Mountain and the sea.

Development is therefore confined in many ways. Unique physical places, depending on their attributes, affect people in terms of allowing them access or acting as a barrier. They can create lasting positive memories or in fact function as hostile places with dangerous pathways or offering no relief from the elements such as rain and wind.

Figure 4.2: Influences that inform land development. (City of Cape Town, 1999a: i)

Mention was made earlier of the role of planners operating at a particular range of scales. It should be acknowledged at this point depending on the scale in particular contexts, the professions of the architect and urban designer could well also lay claim to the concerns and activities outlined in the above.

It is claimed here that the unique position that the town planning profession occupies in relation to architects and urban designers is such that, as a general principle, the former usually operates at the broader, (often strategic) spatial scale, in a longer time frame and certainly with the broadest client responsibility which refers to society generally, and not merely a few or a single client. This is not to deny the role of others nor a position of partnership and a multidisciplinary approach in undertaking projects. It is in this light that this chapter must be read. Further on, brief mention is also made of the approaches of those in the engineering disciplines.

In many instances particularly at the broader context, town planners play a managing role, in terms of facilitating the relationship between the three variables, namely,

people, places and the natural environment, and that the one is not promoted unduly at the expense of the others. The challenge lies in achieving a balance.

All this leads to the question whether and how, planners could contribute to the objectives of a:

- Sustainable and accessible public transport system, and
- An equitable public transport system for special needs passengers

Planners manage an ongoing competition of various types of land uses for space, at the same time ensuring that all places have clear identity and optimal value. They deal with the unique characteristics of places, ensuring sustainability by looking at short, medium and long term issues, while integrating knowledge, objectives and actions and taking heed of the wide range of people involved in planning.

They often manage an inter-disciplinary team of professions so as to create accessible environments; for example they work with architects and urban designers to ensure that pavements are free from obstacles that hamper the free movement of people with varying needs, and also aim to create accessible public buildings with architects.

Figure 4.3: Pedestrian orientated environments. (Pedestrian and Bicycle Information Center, *s.a.*)

Another instance of town planning intervention is where an equitable public transport system can be achieved by for instance creating certain patterns of land use in the city through locating public facilities and services at appropriate and convenient

locations for all people. This role of a planner is further emphasised with what Vuchic states; " Towns or suburban areas with land use planned and facilities designed for convenient pedestrian travel to schools, neighbourhood stores, business areas, and major activity centres, which also are served by transit, can offer more efficient and liveable environments than unplanned areas with extensive urban sprawl, which rely solely on facilities for travel by car"(Vuchic, 2000:50).

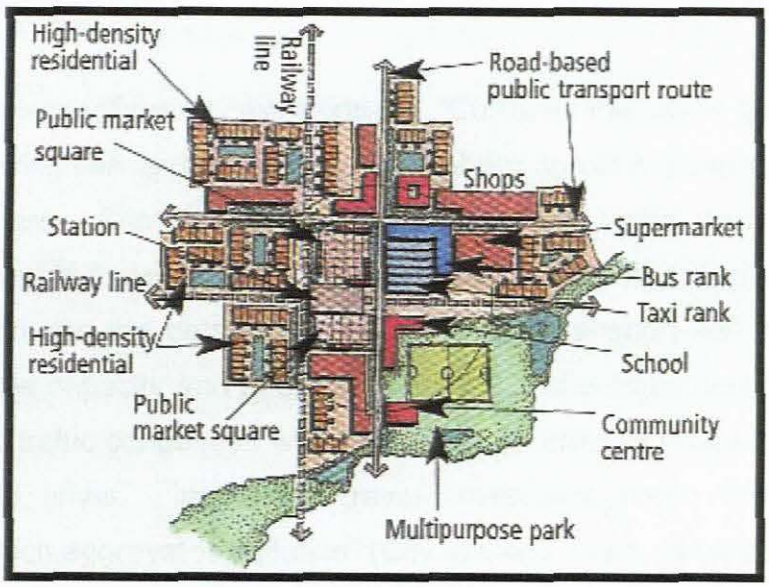


Figure 4.4: Town planning intervention i.e. mixed use development. (*City of Cape Town, 1999b:7)*

In summary, town planners have the tools to provide at least the basic preconditions for sustainable public transport systems by increasing densities, by clustering complementary facilities, managing processes of public participation and bringing together various professions with the aim of creating accessible, enriching and efficient urban environments.

The town planner's contribution in terms of an optimally functioning public transport system, including that for SNPs, is discussed in more detail further on in the chapter, on the basis of certain criteria and principles.

4.3 General Overview of the Problem Areas in the Public Transport System of the Cape Metropolitan Area

In a later chapter, the findings emanating from the surveys undertaken will be presented. In this section, however, some observations are given based on what appears to be consensus views of personal communications with various parties and that described by a number of writers, and these may well ultimately be verified or not.

The position is succinctly put in the following: "Currently the city is grappling with the pressure of growing demand for access and mobility due to a growing population and increasing tourism. The increase in demand is not being met by the current investment in transport, especially in public transport. This has resulted in worsening traffic congestion and the deterioration of the public transport service. Inadequate infrastructure, low capacity and poor traffic control and enforcement are contributing to the growth in traffic congestion with high costs in terms of hours lost in traffic and long commuting times. Increasing travel times also mean increasing energy consumption which aggravates pollution" (City of Cape Town, 2005:26).

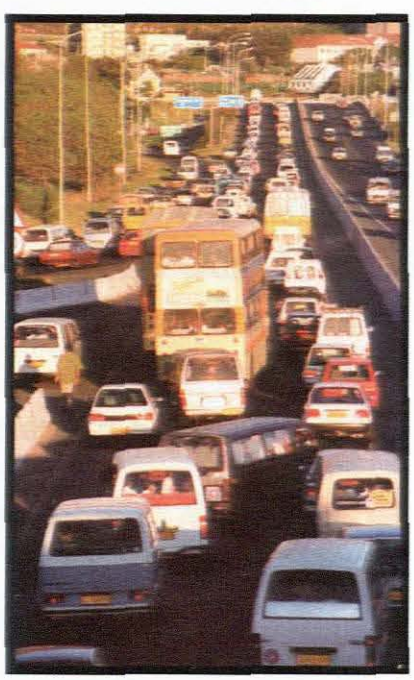


Figure 4.5: Example of a problem caused by an inefficient public transport system.
(Cape Metropolitan Council, 1999a:10)

In regard to the situation described above, it is clear that public transport is fundamentally influenced by how efficiently the system is in fact managed, by the capacity of the system and by varying conditions under which it must operate, and by the geographical characteristics, the population size, and the financial resources of the city.

There have been various suppositions as to what the causes are for Cape Town's deteriorating public transport system over the years. It has come down to many accumulative issues:

- High rates of urbanisation,
- Exponential population growth rates,
- Racial segregation which left the disadvantaged at the periphery of the city,
- Inferiority of public transport in terms of the low priority status given to it by the previous government,
- Increased private vehicle ownership, and
- Insufficient funds allocated to the public transport sector, perhaps for political reasons.

These issues constitute the root problems of the public transport system, and have generated what could be consequential problems. These consequential problems include the following:

- The poor and deteriorating condition of public transport modes,
- Inaccessible public transport,
- Crime in the system,
- Insufficient frequency of public transport modes,
- Traffic congestion,
- Widespread poor operator behaviour through lack of adequate training,

- The lack of regard for traffic regulations,
- The common absence of adequate road signs and markings, and
- A growth of uncontrolled street hawker activities.

Here it should be pointed out that all of these are of considerable significance for SNPs. The aggravation of these problems is taking place at a pace far in excess of the rate in which investments occur to rectify them.

The forgoing analysis is further supported by the following statement made in the Intergrated Development Plan that, "Under-investment in new transport infrastructure in both public transport and roads is compounded by inadequate maintenance and degradation of existing assets, resulting in a decrease in the level of service and poor safety standards. Poor access and mobility have a serious impact on the city's economy, with areas of job opportunities, economic development and housing developments located outside the established radial transport corridors (both rail and road based corridors). An integrated transport network is required to link activities and people"(City of Cape Town, 2005:26).

As is elaborated on in chapter 3 and in chapter 7, and in line with the problems mentioned above, SNPs, which form part of the vulnerable groups of society in terms of impaired mobility, are confronted with particular difficulties. Their particular challenges in terms of the public transport system can be summarised as follows:

- Physical distance to transport facilities,
- Prohibitive access onto public transport modes (mode specific problem),
- Ineffective system that does not make allowance for citywide access (city wide problem), and
- Ability to meet the expenses of the public transport services (the linkage between poverty and disability).

Figure 4.6: Few examples of the vulnerable groups in our society, (SNP).
(Pedestrian and Bicycle Information Center, *s.a.*)

The authorities responsible for the management of the public transport system are now faced with seriously aggravated problems. The inadequate co-ordination among the various role players and an absence of a single co-ordinating unit, which guides and regulates all public transport matters, further compounds the problem.

"The current public transport system and service is unreliable and infrequent with tidal morning and evening peaks, yet over 60% of travellers depend on the rail, bus and taxi service. A large number of the urban poor who live on the outskirts of the city have limited access and choice with regard to the mode of transport most suited to their access and mobility needs" (City of Cape Town, 2005:26).

4.4 Town and Regional Planning based Perception of the Urban Public Transport Problem

Though this section refers to the approaches, perceptions and activities of town and regional planners, the reader is reminded of the brief comments earlier concerning the relative roles of other design professions, namely architects and urban designers. Brief reference to design objectives in engineering should perhaps also be ventured at this point. Harsh critics have accused engineers as designing with the purpose of maximisation of efficiency in terms of time, capacity and finance, regardless of human consequences. Though the author is not disposed to this extremist and perhaps unjustified sentiment, the implication once again is that there are important merits in the multidisciplinary approach. The issue of multidisciplinary design processes, however, lends itself to a separate investigation beyond the scope of this thesis. In what follows, the approach is that planners do not and should not function alone.

The role town and regional planning would fulfil in terms of investigating the public transport system is to look at how it impacts the city through a range of scales, and therefore from a metropolitan perspective *(does it cater to varying individual needs and provide access to all areas?)* to the localised impacts on communities *(is it efficient in terms of providing safe, convenient and affordable access to all opportunities?)* and the environment, *(does it alter the environment adversely?)*.

At other levels, in the context of the public transport system, town and regional planners also concern themselves with:

- The social, economic and community impacts of public transport on people (poor, underprivileged and disadvantaged groups),
- Whether public transport serves the basic needs of people and how public transport impacts urban development, and
- The role of government and other relevant organisations in terms of guiding and managing the public transport system.

"This broad-brush approach almost inevitably places the planner in a position of conflict with those economists and engineers who tackle local urban transport problems outside a pre-agreed city-wide planning framework or set of policies. Given the physical planner's broader perspective, he views many of the urban transport problems, particular problems of traffic congestion, as mere symptoms of wider urban developments warranting a more comprehensive approach to problem resolution than conventionally advocated by the engineer." (Dimitriou 1992:173).

The statement above shows how those involved in the social sciences are more focused on soft issues of equity, political reality and appropriate development, rather than technical efficiency.

Inappropriate solutions are often sought in first world countries and this has led to certain problems planners are faced with today. Furthermore, there is the division in terms of the role players tasked with dealing with transportation issues, who have varied overarching objectives; engineers for instance, are for the most part confined in their briefs with maximising the efficiency and operation of the infrastructural

elements, whereas town planners often concern themselves with socio-economic implications as well. The result is that there is an interdisciplinary barrier that needs to be overcome. It has been claimed in some circles that this has not always been the case in South Africa in the last few decades, whether one is referring to the professions or the public authorities concerned.

4.5 Planning Principles and their Influence on Public Transport and Broader Urban Environment

This section deals with issues that the author has selected as being the most relevant in terms of problems of the public transport system with reference to SNPs and the most appropriate planning principles and criteria that can be used to address and evaluate the identified problems.

As has been said, planners are at the general level, principally concerned with the quality of city life. Those reliant on public transport are affected in terms of their quality of life by the very system they are dependent on. It is this system which allows them access to the things in life that they need and want. Without it they are stranded and unable to gain access to employment, recreational and educational opportunities and health facilities.

Additionally, the previous government's influence of who gets what, where and how, has major implications, even today, on the quality of life of the previously disadvantaged and vulnerable members of society, who together form the majority of people in the research study area, that is in the Cape Metropolitan Area, and indeed in South African cities as a whole.

The phenomenon of spatial separation, underlying the physical structure of the Cape Metropolitan Area today has an economical and social impact on the previously disadvantaged and vulnerable parts of society; in essence it detracts from their general well being. An example of this today is the concentration of economic activities and job opportunities in large centres such as Cape Town City Centre and Bellville, which penalises those living far way in places such as Khayelitsha and Mitchell's Plain. This has resulted from both economic forces and discriminatory practices, evident in other South African cities as well. Now discrimination has been

diverted towards people with special needs, i.e. persons not only separated physically but also whose needs have largely been neglected.

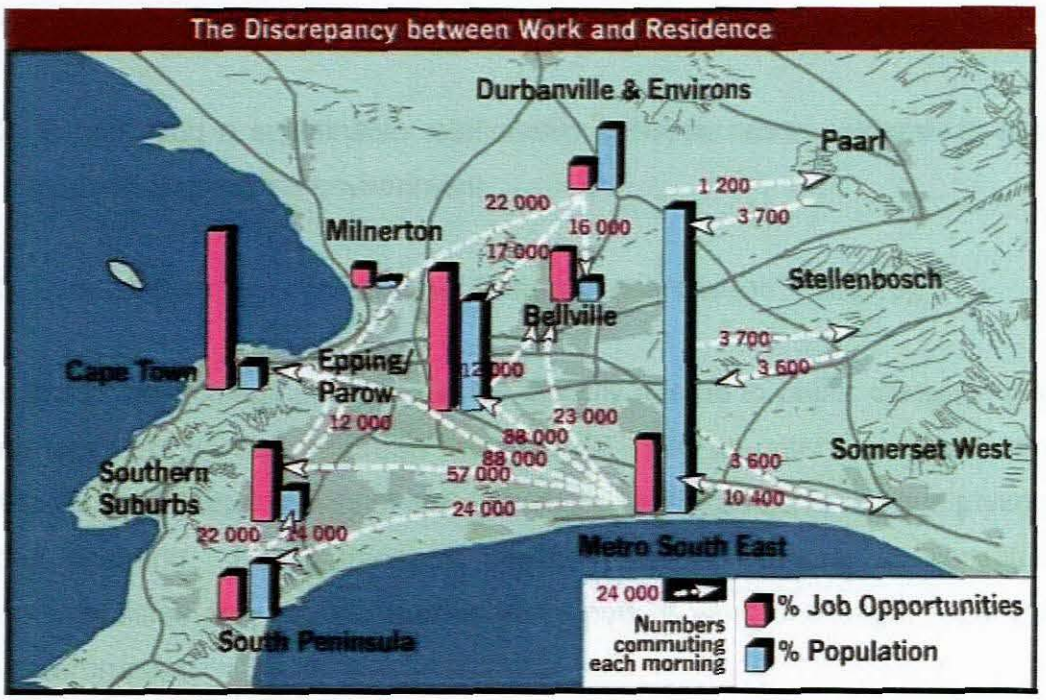


Figure 4.7: A statistical illustration of the discrepancy between work and residence as shown in the MSDF. *(Cape Metropolitan Council, 1996:19).*

Planners, amongst other professionals, face questions of what is it that contributes to peoples' social well-being and gives them happiness and satisfaction. People have a full range of needs that have to be met, such as adequate health care, housing, education, and economic opportunities. To this end, planners must endeavour to structure the relative location of these facilities in a manner so as to achieve a "spatial distribution of social well being" over the city.

The issue of welfare is moreover related to the concepts of equality and social justice, which refers to how all citizens are treated and how benefits (or payment for these) are distributed amongst them. According to the ethical stance of the planning profession, a "fair" distribution of benefits and burdens to all individuals regardless of race, age, gender or disability, is advocated.

In summary, these general notions and sentiments form the basis of the planner's concern with a properly efficient and equitable city, and likewise a public transport system.

"Development and management of urban settlements, generally, should be motivated by three overarching concerns:

1. Satisfaction of human needs and for an improvement in the human condition

2. Establishing a sustainable relationship between urban settlements and their surrounding natural environment

3. Most efficient use of resources" (Behrens and Watson, 1996:10).

These three overarching concerns can be directly related to public transport planning and management as well, and can therefore be used as criteria in determining the extent to which a "better quality of life" for people has been achieved in a given public transport scenario. Public transport systems, which are after all constituted of numerous facilities and various modes, form part of what one might regard as the urban environment.

In the remainder of this chapter therefore, a general overview of selected spatial design and layout planning principles are presented, particularly those seen as relevant to public transport.

In the literature search regarding the spatial and design principles in planning, cetain sources have been identified which are particularly useful in addressing the concerns surrounding the notion of "quality of city life", and in particular in the context of SNPs.

The first publication referred to above namely "Making Urban Places", discusses universal layout principles in terms of six over-arching or normative concerns; place making, scale, access, opportunity, efficiency, and choice. The rest of this chapter gives a discussion on these criteria suggested by the authors, and examples in Cape Town are described.

4.5.1 Place making

Place making is one of the most important principles of town planning and urban design, as it is important to try to undo the damage of the past town-planning era in South Africa of sterile environments, which are often car-

orientated. Place making is largely focused on the creation of urban environments with a unique sense of place.

"The creation of urban settlements which reflect sense of place and express the unique nature of their natural and cultural setting, should be one of the central concerns of layout planning and, in fact, a central concern of all professions concerned with the urban environment" (Behrens and Watson, 1996:11).

Hence, with what was said previously about such principles being applied to any urban environment, it becomes apparent that our settlements should be designed for people, with welcoming public spaces, which are not biased toward any particular end-user. Planning should similarly ensure that a public transport facility, which forms part of our urban environment, also adheres to these principles.

Figure 4.8: A few examples of places that create a good sense of place.
(Pedestrian and Bicycle Information Center, *s.a.*)

"The creation of a sense of place is neither a luxury nor a romantic concern - it is essential. The concept does not equate simply to the creation of picturesque landscapes or pretty streets, but to recognition of the importance of a sense of belonging. Different places offer different life experiences, and these experiences should mould people's perceptions, values and self-identity. Urban places are records and expressions of the cultural values and experiences of those who create and live within them. In essence, the place of which people are part is a part of them" (Behrens and Watson, 1996:11).

The character of urban spaces is either inviting and friendly, or hostile. Creating, maintaining and enhancing an inviting and friendly space is an important aspect of town planning. The urban environment does send messages to people who utilise it, and people interpret these messages in different languages. People with disabilities may use different dialects in reading messages from the environment and respond differently. Therefore special attention to detail such as street furniture or seating should be given to accommodate such people.

In essence someone with a disability, such as a person in a wheelchair could interpret a public transport interchange as hostile and unreceptive if it is one in which he cannot properly operate.

Many urban environments that man has designed have arguably failed in terms of providing conditions of maximum comfort and optimal use for the full spectrum of humanity. There is no average person, yet whose needs, design has attempted to address. An example, of this is a blind person at a train station who cannot find enough auditory and tactile indications to interpret what is around him, may find himself acting inappropriately for the setting. This could inevitably be hazardous aside from the environment being portrayed as inhospitable.

Figure 4.9: Examples of different signs available, especially for disabled persons. (Pedestrian and Bicycle Information Center, *s.a.*)

A common problem confronting a physically disabled person such as a person in a wheelchair is that he is denied the outright opportunity to everything that a

particular unique and special place has to offer merely because of some or other barrier such as an inadequately designed level access. One should not underestimate the psychological impact of a lowered self-regard that results from such situations.

4.5.2 Scale

Scale in the context of planning deals primarily with the design of urban environments that are at a human scale, i.e. to the person on foot.

Pedestrian scale refers to size of spaces that seem comfortable in proportion to the human body. Good pedestrian scale is measured or acquired along a street by providing street furniture that is proportionate to people and appropriate for their activities. The overall principles that town planners strive for in creating good scale in urban environments is that of convenience, safety and comfort for the pedestrian.

Good human scale is accomplished by designing with the size of the human body. With that in mind design should be universal which is unbiased to any human characteristic such as age, physical ability, or height. All types of people should therefore be catered for.

Figure 4.10: Good human scale can be created by tree planting, public furniture etc.
(Pedestrian and Bicycle Information Center, *s.a.*)

Linking soft open spaces and playing fields, strives for creating continuous walkways, which threads through the urban environment. An objective in terms of this principle is providing defined pedestrian paths that facilitate easy movement. This principle relates to the study at hand when our attention

moves to the shared road and pedestrian environment, which is a component of our public transport system.

This shared road and pedestrian environment should be incorporated into these continuous walkways, again with universal design principles in mind, which is discussed in the final chapter of this research study.

Providing multi-functional roads aims at having the majority of the routes within a road network accommodating numerous functions and users.

Figure 4.11: Multi-functional roads. (Pedestrian and Bicycle Information Center, *s.a.*)

What in essence is being said is that roads should not be viewed as mere movement channels, with their main function being a passageway for vehicles. It should in fact be a place for socialising and where economic opportunities can occur as well.

"Roads should be planned to reconcile the needs and requirements of a multiplicity of users, recognising that no one use will operate with optimum efficiency" (Behrens and Watson, 1996:74).

Related to the statement above, it is apparent that the intention is to create "fair" spaces. Roads should be equitable, in that the design of roads, including main roads, should not be uni-functional nor discriminate against anyone (except in the case of freeways). It should serve the needs of a woman pushing a stroller, a person in a wheelchair, the private vehicle as well as public transport modes.

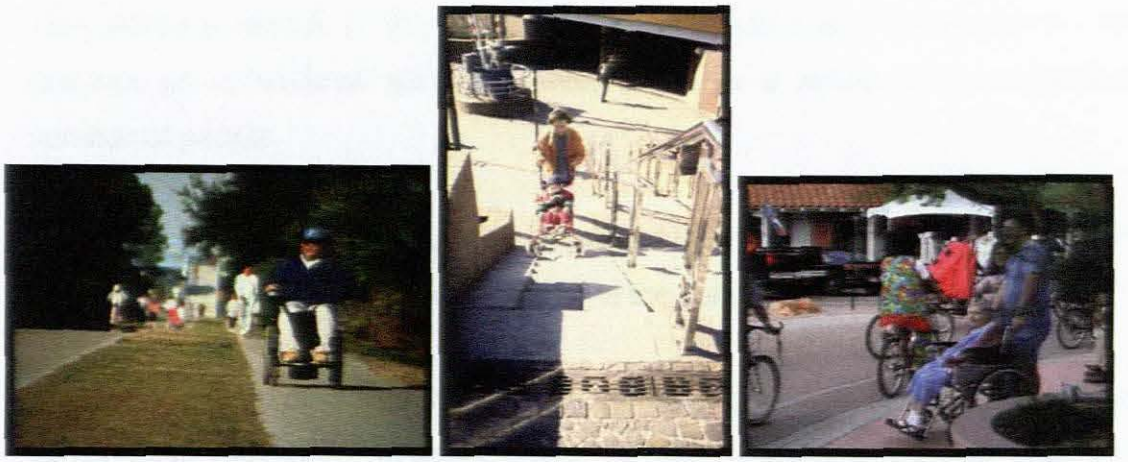


Figure 4.12: Roads or walkways that cater for everyone.
(Pedestrian and Bicycle Information Center, *s.a.*)

4.5.3 Access

In terms of social justice, everyone has an inherent and incontrovertible right to access. What this research primarily aims at is the encouragement of design that provides accessibility to all in terms of the public transport environment. Just as roads are designed for use by a wide range of vehicles, so should we design pavements, crossings, and other types of facilities for use by a wide range of pedestrians at all levels of capacity to negotiate the environment.

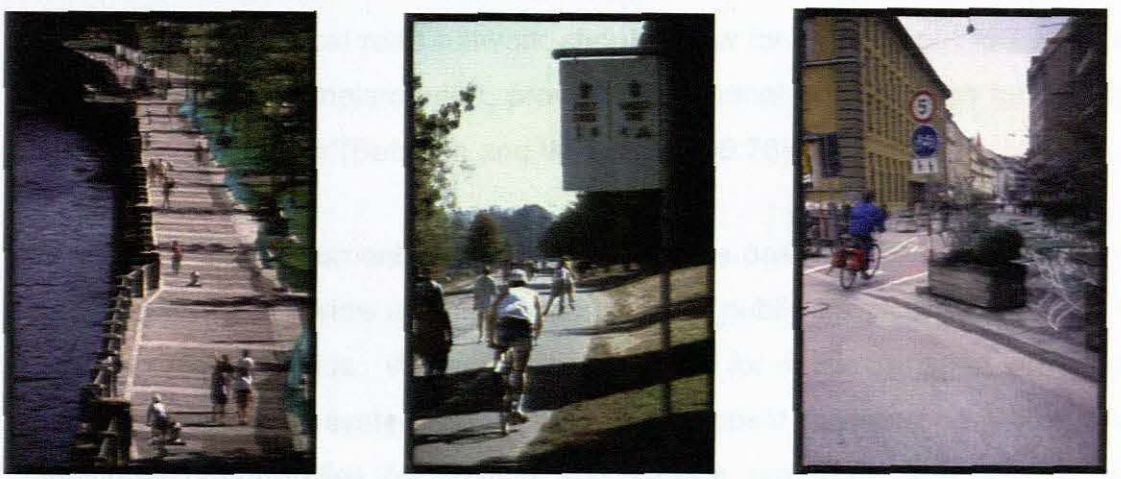


Figure 4.13: Pavements that can cater for all types of pedestrians and cyclists.
(Pedestrian and Bicycle Information Center, *s.a.*)

This principle relates to the achievable level of ease and convenience that ensures an unhindered ability to enter and use a space for the greatest number of people.

The levels of access within the public transport environment, and how this can be achieved, are investigated in greater detail in the concluding chapter of this thesis.

This principle is also concerned with integrating the road layout with the surrounding movement system. "The various movement facilities provided should form an integral part of the overall system of movement in the larger area, and should not be regarded as an independent sub-system merely linking or connecting to the larger surrounding movement system" (Behrens and Watson, 1996:75).

With that in mind, any form of improving access by integrating road networks clearly has positive implications for SNPs. When road networks are integrated, movement can become more efficient and convenient, this consequentially makes it more suited for those that have special needs when it comes to travelling, because a shorter more direct link between places is provided. If the integrated road system is designed properly, it could aid in creating a seamless journey.

"In particular, the local road network should allow for existing public transport operations to be complemented, providing additional opportunities for routing and service provision"(Behrens and Watson, 1996:76).

In essence, the statement above shows that it is possible for the design of a road network to provide an environment where public transport is seen as a complementing service. When making provision for public transport in a more structured way, the system could hold more appeal to users. By providing additional opportunities for routing and service provision, operators would benefit and could thereby also make provision to accommodate more accessible features on their modes.

A more structured and integrated road network has many positive affects, in that the design impacts on the safety of all road users. When the road network is designed so that various modes don't compete for the same space, but are able to share it, SNPs benefit.

Facilitating effective and efficient public transport services is a basic principle, which relates to accessibility. "An efficient public transport service is an effective mechanism for improving general inter-district accessibility, increasing potential development opportunities, integrating different neighbourhoods, and reducing the need for congestion and polluting motor car travel" (Behrens and Watson, 1996:76).

Providing a more effective and efficient public transport system can be achieved by the design of open and flexible movement systems, which is a further principle that provides users with alternatives in reaching their destinations. It provides more direct links between places, which makes it more convenient for all.

"Open road geometries offer the greatest advantages to pedestrians, by allowing generally unrestricted and direct pedestrian movement to all principle activities. By comparison, closed geometries do not provide direct connections between areas – unless a separate pedestrian footpath system is provided (with associated security risks and cost implications)" (Behrens and Watson, 1996:77).

Another principle in some contexts is to prioritise pedestrian movement, because they are the more vulnerable road users. SNPs have an added disadvantage because of their mobility handicaps, which is worsened by the hindrances found within the urban environment, and more specifically the public transport environment. With hindrances such as the lack of pedestrian crossings, public transport modes and private vehicles all competing for space, the SNPs are left in a potentially hazardous environment.

Figure 4.14: Examples of pedestrian pathways that cater for the SNP.
(Pedestrian and Bicycle Information Center, *s.a.*)

Therefore, where pedestrians and vehicles share spaces, the layout should clearly show that pedestrians have precedence. This can be achieved by a change of road surface, which is distinguishable, and the raising of the surface of a road at crossings, for instance.

Figure 4.15: Roads that give pedestrians precedence.
(Pedestrian and Bicycle Information Center, *s.a.*)

Exposing the facility system in terms of prominence and visibility is another principle that promotes the idea for facilities to be accessible to the greatest number of end-user households as possible. This means that people with special needs benefit as well.

"The majority of public facilities should be located in positions with maximum exposure, along main public transport routes – as opposed to being located to serve only a spatially defined residential cell" (Behrens and Watson, 1996: 78).

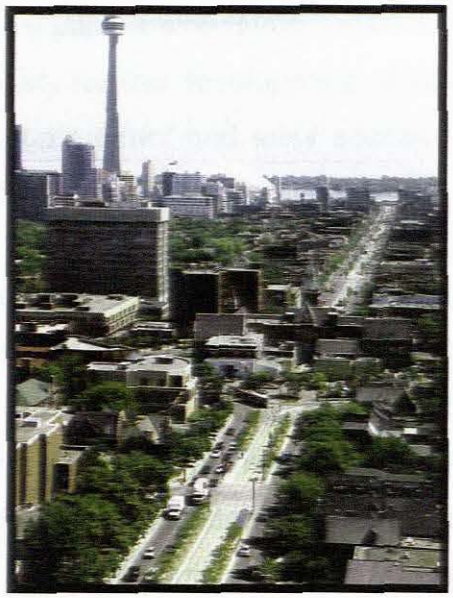


Figure 4.16: An example of a main public route which creates high levels of exposure. (Pedestrian and Bicycle Information Center, *s.a.*)

This kind of exposure aims at alleviating the isolation and exclusion felt by many SNPs. This again can be related directly to this specific research, in that; the location of public transport facilities is paramount in achieving integration for many SNPs. When these facilities are placed at convenient locations, on the same paths as employment, recreational, health, social facilities, SNPs benefit.

4.5.4 Opportunity

"Economic opportunity across space is closely related to the accessibility of various locations to consumers. In this regard, the design and location of inter alia intersections, public transport stops, pubic facilities that attract movement, and the treatment of public spaces, are of importance in creating these conditions" (Behrens and Watson, 1996:12).

The majority of SNPs have the same general needs and wants as able-bodied individuals, and therefore the placement of facilities is very important to them and their inclusion into society. SNPs, like the "normal able-bodied" person needs access to opportunities of work, hospitals and shopping facilities. These facilities need to therefore be positioned at highly accessible points, which offer optimal levels of opportunity.

"The overriding aim in designing a circulation network should be to create the spatial conditions necessary for the development of vibrant urban economies, and to enable people to gain direct and easy access to urban opportunities" (Behrens and Watson,1996: 80).

As far as economic opportunities are concerned, planners can play a vital role in the placement of commercial opportunities. Wherever the intensive movement routes are found, is characteristically where one would find commercial activities and therefore planners should take the lead from this natural process that can be described as a reaction process that has developed over time. These routes should of course be conducive to comfortable and safe movement for all.

Places where commercial activities occur need to be inviting to everyone and if properly integrated with public transport facilities such as stations and termini it's almost guaranteed that thresholds of opportunity are generated. If combined with uninterrupted, barrier-free movement channels, a single trip, can ensure access to a range of opportunities.

The statement below gives us an indication as to how one should plan road networks that aid in creating the opportunities for viable public markets:

"Viable public markets depend on concentrations of consumers, and are therefore most successful in geometric road layouts which concentrate rather than disperse pedestrian and vehicular movement. Public transport-orientated, open-road geometries, with a few dominant activity routes which enable stop-start traffic and pedestrian circulation, are most effective in concentrating pedestrian flow"(Behrens and Watson, 1996:82).

4.5.5 Efficiency

"A concern for efficiency – the cost effective utilisation of land and financial resources – has implications for inter alia land use policies, transport policies, and capital investment programmes" (Behrens and Watson, 1996:83).

Ironically, efficiency is often sacrificed due to cost. However, the cost implications of not having an efficient system are arguably greater. Efficiency in terms of the frequency of public transport modes has an impact on time as to how fast one moves from one place to the next, although it also has to do with service quality.

Certain public transport facilities have various infrastructural components that are inefficient, such as ramps without a shallow enough gradient and sufficient landings as is the case at the revamped Mowbray Public Transport Interchange. Money was spent on the upgrades, yet there are still inefficiencies. Another example is the Athlone station area that also went through upgrading yet there are no ramps, so there is no way of getting from the Rondebosch side of the station to the Athlone Central Business District area, for certain SNPs.

When designing universally accessible public transport systems, one inevitably makes the system more efficient for "normal" passengers as well as for SNPs. A positive consequence of an efficient movement system is that it creates higher levels of support for goods, services and social facilities.

Inefficiencies in the context of public transport have costs attached to it, in the sense that if the system is not made efficient, more people will opt for using their private vehicles. Those in need of the public transport system with special needs will not be able to use the system properly and therefore be cut-off from opportunities and necessities, and become a financial burden to the government.

It is important to note that when resources are used to upgrade the system, this should also be undertaken with view to efficiency. This would mean that the various components, namely information, infrastructure, vehicles and the shared road and pedestrian environment, need to be properly integrated in any such upgrade project which can then be dealt with in a holistic manner. The observed position at the moment is that upgrades have only occurred in an *ad-hoc* and disjointed manner leading to patches of accessible and inaccessible areas.

It is of course unrealistic to overhaul the entire public transport system simultaneously and at once, though the expenditure of thousands of rands into one or two public transport facilities is on the other hand seriously inefficient. The resources should preferably be split among as many of the prioritised facilities as possible, within the framework of an upgrade project, as for instance the creation of an accessible corridor. Certain corridors can be earmarked (ones used more frequently by SNPs, close to hospitals etc.) and therefore made a priority in terms of creating accessibility. SNPs can in turn be guaranteed that the entire journey within this corridor they can carry through independently.

Town planners have certain design concepts at their disposal in terms of making layouts more conducive to efficient public transport travel. This is achieved with open road networks as apposed to close road networks. The gridiron layout is an open road network, without a clearly defined hierarchy of through -routes. Roads are long and straight, and intersections take the form of 90-degree cross-sections. The layout is designed to facilitate the optimal circulation of pedestrians and public transit.

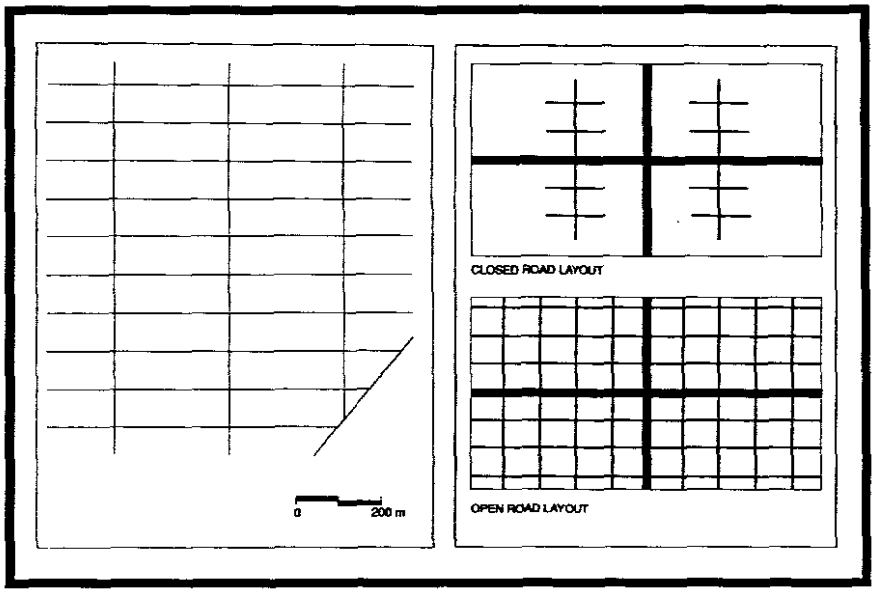


Figure 4.17: Open road network (Behrens and Watson, 1996:16-17)

The opposite and undesirable scenario is presented by a closed road network or otherwise known as a limited access network, comprised of a network of functional hierarchy of roads within which higher order roads do not intersect

with lower order roads. With this road system clearly defined movement routes are established between any two points within the network, and this offers few or no alternatives. The benefit of an open road network on the other hand is that it consists of a system of roads of differing widths and importance intersecting freely with one another. As a consequence, there is a choice of numerous alternative routes between any two points within the network, and this benefits all travellers, including SNPs in terms of efficiency.

4.5.6 Choice

Choice can occur at various levels. Insofar as road layout systems are concerned, the following is worth noting: "Layout plans that offer as many different choices as possible, regarding housing consolidation, service provision, urban surroundings, and movement modes and so on, are more likely to meet the diverse range of household needs that exist, than layouts that offer limited choices. Very often minimalist public intervention in layout planning results in maximisation of private choice" (Behrens and Watson, 1996:12).

Improving public transport gives people greater opportunity to choose how they travel. As was discussed under efficiency, open road layouts are more conducive to efficient and well patronised public transport travel and provide more choices of routes.

Choices are also increased when upgrades occur resulting in more than one mode being made accessible; hence people with special needs are likely to have additional choices in terms of what mode is better suited for their needs.

These additional choices and options in public transport, particularly for those with limited mobility (i.e. the elderly, young, people with disabilities, and low income groups) and more sustainable ways of travelling, inevitably implies an enhanced quality of life for the people concerned.

Presently, SNPs have very limited choices if any choice at all in terms of travelling. No public transport mode provides level access and public transport facilities are not all accessible. There is a door-to-door transport

service for people for whom other forms of public transport are not suitable as a result of their special needs, called Dial-a Ride, which operates from Mondays to Fridays between 06h00 and 19h00. It is funded by the City of Cape Town, the Provincial Government of the Western Cape and the National Department of Transport. It is operated by iKapa Tours & Travel (Pty) Ltd (Cape Gateway, 2005).

Dial-a-Ride can be used by anyone who lives in the municipal area of Cape Town and cannot use other forms of public transport because of a visual impairment or a physical disability. Bookings are generally accepted on a first come-first served basis not more than seven working days in advance of the day of the trip and not less than one working day before the trip. If there is a need to travel regularly to and from work, a repeat booking can be made on a month-to-month basis for up to six months (Cape Gateway, 2005).

4.5.7 Equity

Kevin Lynch refers to equity as "The way in which the environmental benefits and costs are distributed among persons, according to some particular principle" (Lynch, 1981:118). Therefore in essence it implies the distribution of impacts (benefits and costs), and the degree to which that distribution is considered fair and appropriate, or stated otherwise: treating everybody equally, regardless of factors such as race, gender, income or disability.

It is therefore an ethical planning concern that needs to be included in this research, as equity encompasses many important planning principles.

When one considers public transport and how the principle of equity relates to the public transport system, the importance of having an equitable system becomes apparent. The public transport system needs to be equitable, and therefore not discriminate against any person. When equity exists a community's total quality of life is influenced positively because it implies that the distribution of penalties and benefits is distributed evenly. Public transport as an instance should be a benefit to communities that is shared fairly amongst communities and members of communities.

Transport planners and other relevant professionals should therefore be aware of conditions that could undermine the goal of equity – a few instances are:

- The quality of transportation available (condition of modes and facilities, frequency, cost, time) which affects people's opportunities and their quality of life,
- Household expenditure, burdened by public transport expenditures and the fare structures significantly affect human welfare,
- Development in terms of the type and location and land values are inevitably affected by transport planning decisions, and
- The negative economic impact on a city, if not everyone is allowed equal access to opportunities.

The creation of equitable conditions can prove to be a complex task, having regard to the diversity of people, with varying needs and abilities. A proper evaluation of the extent to which equity in fact occurs can only be undertaken on a context-by-context basis. This thesis though is specifically concerned with public transportation equity issues.

Transport planners need to keep focused on the people they plan with and for, as each community will differ and place different values on different objectives. It is argued that the communities themselves are best informed as to what objective carries more weight. Thus, although transport planners need to adhere to the legislative environment and at the same time find common ground on which to base decisions, these decisions should be subjected to a proper public participation process in order that community needs and values are incorporated in planning and funding strategies. In this way equity could be achieved in a credible way.

"Equity analysis may involve prioritising transport activity, recognizing that some travel, called *basic*, *essential* or *lifeline* transport, is particularly important to society. This usually includes access to essential services,

education and employment opportunities, plus service vehicles and fright transport. *Basic access* means that people are able to reach activities considered important to society. *Basic mobility* refers to physical travel that provides basic access. Basic access can be considered a "merit good" and even a right" (Litman, 2005:6).

This distinction in terms of what are basic needs is important when evaluating equity. This is evident when one looks at our study area, or the country at large, in that public transport services are subsidized, because the system acts as a tool to provide access to essential services for large amounts of people. Currently its efficiency is questionable; however its objectives are central in achieving equity.

The importance of equity in terms of public transport has already been emphasised. Litman describes the following steps to be taken by the professionals dealing with public transport planning:

- Identify disadvantaged groups (minority, low income, car-less, disabled, single parents),
- Identify disadvantaged geographic areas using census data ("Environmental Justice Areas"),
- Identify degrees of disadvantage in each geographic area, with five levels of severity,
- Identify location of important public services and destinations (transit, highways, employment centers, hospitals, daycare centres, etc.), and
- Evaluate specific transportation plans according to how they affect accessibility between disadvantaged communities and important destinations (Litman, 2005:13).

A considerable number of studies were undertaken in the last decade in South Africa in terms of the prevalence of disability and related issues. These studies will be discussed in greater detail in the following chapter. However, upon examination of the documentation relating to these studies, the author has come to the conclusion that the information required for undertaking the

aforementioned steps has yet to be gathered. The Moving South Africa document in fact itself confirms the fact that there is a lack of data in terms of accommodating SNPs.

4.5.8 Other city performance criteria

Further principles relating to urban design are discussed in this section, referring specifically to the works of Bentley et al (1985) and Kevin Lynch (1960). It has already been inferred that the planning profession encourages good design and securing good design is really central to good planning. Successful urban places, in terms of SNPs within the public transport environment are examined further here.

"Responsive Environments" is a widely acknowledged work, directed at architects, urban designers and planners; its relevance in terms of town planning in particular is discussed here. The relative role of planners, architects and urban designers was given brief discussion in the introductory sections to this chapter

The authors of the work are designers that seek to integrate the behavioural, economic and aesthetic needs with regard to particular people in particular places. Reference is made to the dimensions of place, expressed as a set of design guidelines that contribute to responsive environments–i.e., places that provide their users "with an essentially democratic setting, enriching their opportunities by maximizing the degree of choice available to them" (Bentley *et al*, 1993:9).

The argument made by the authors is that a physical environment can affect this degree of choice in terms of seven qualities of the built and human environment: (1) *permeability*, (2) *variety*, (3) *legibility*, (4) *robustness*, (5) *richness*, (6) *visual appropriateness*, and (7) *personalization*.

Certain guidelines given by the authors will be investigated to show how they affect SNPs specifically. The authors ardently believe that the design of a place affects the choices people can make, at many levels:

- "It affects where people can go, and where they cannot: the quality we shall call permeability" (Bentley *et al*, 1993:9). Permeability is characterized by the ease with which one can move through a place and get to other locations.

Permeability involves pedestrian and vehicle circulation within a city district as a whole, and therefore is important, insofar as it affects convenience, time, and efficiency. A town planning principle that relates to this guideline is access that is maximised for the greatest number of people.

When access is properly provided in terms of the alternatives offered by the quality "permeability" in parts of the city such that, for instance, road networks are fully integrated, the ultimate practical results for SNPs are positive. When the 'average able bodied" person experiences difficulties in terms of being able to access a place, or in this case the public transport system, the plight of SNPs is usually worse.

It has been said that where pedestrians, have precedence over vehicles, they should be given the shortest practical routes between activities, and that there should be links throughout the area that are direct, clear and convenient, connecting and integrating the place with surrounding areas.

Another design principle is that of open and flexible movement systems, which provide users with alternatives in reaching their destinations, whereas closed geometries, do not provide direct connections between areas. Basically, the greater the number of alternative routes, the greater a persons freedom of movement and, therefore, the greater the responsiveness of that place.

- Another criterion focused on by the authors is "variety": "It affects the range of uses available to people: the quality we shall call variety (Bentley *et al*, 1993:9). In practical terms this would include the fundamental activities and services normally provided in the city, such as employment, recreation, educational, or health facilities. One of the yardsticks with which to measure the success of a place is the mix of activities it offers to the widest range of possible users.

The guidelines encapsulated by the concept "variety" tie in with the town planning principles of opportunity and choice. By the same token, easily accessible places are of little use if the choice of experiences is limited. The interrelationship of principles is demonstrated in the instance of efficient public transport which if accessible, can also give people greater opportunity to choose the mode of travel.

The point to be made is that the quality of life for SNPs can be improved if the access and choices are increased and more sustainable ways of travelling are provided. The authors aspire to maximise the variety of uses by demonstrating how one can assess the level of demands for various uses and, then, determining the widest mix of uses feasible economically and functionally. This again is what town planners do in terms of assessing the end-users needs and wants and then do planning accordingly, via a public participation process. With regard to the public transport system, a vital process is to investigate the requirements of passengers, especially SNPs, so as to achieve an unhindered seamless journey.

There are many advantages to having a variety of activities in one place; the advantages include, maximising the use of the space available, and promoting the efficient utilisation of space, greater social interaction, greater convenience (access to facilities). Once arriving in such places, a person has a range of choices within easy reach, an aspect important for SNPs.

- A further criterion suggested is 'legibility', referring to the ease with which people can understand the spatial layout and relationships in any component of the city. A place should have clear imageability and should provide clues for orientation. "It affects how easily people can understand what opportunities it offers: the quality we shall call legibility" (Bentley *et al,* 1993:9)

The American planner, Kevin Lynch, identified five physical features, which play a key role in creating legible places. These are:

- Paths
- Edges
- Nodes
- Landmarks
- Districts (Lynch, 1960).

The authors of "Responsive Environments" draw largely on Kevin Lynch's "Image of The City", in order to present practical ways whereby any designer can establish and improve the observable clarity of the paths, landmarks, boundaries, etc. that have emerged through consideration of permeability and variety.

Legibility is clearly an important aspect when considering SNPs, who would be particularly disadvantaged when faced with uncertain routes under conditions where they lack the physical capacity to explore alternatives as opposed to finding their way the first time.

- The authors refer also to the quality of "robustness". "It affects the degree to which people can use a given place for different purposes: the quality we shall call "robustness" (Bentley *et al,* 1993:9). When an environment is robust, it simply means a place which can be used for many different purposes by different people and can change and adapt for different uses. To design for robustness is "to make...spatial and constructional organization suitable for the widest possible range of likely activities and future uses, both in the short and long term" (Bentley *et al,* 1993:10). Robustness is critical in terms of building and facility design for SNPs, in our changing environment, urban-spatially or otherwise.

- "Visual appropriateness" is another concept introduced by the authors. This concept relates closely to the criterion "legibility" discussed earlier though with a specific meaning. The meaning is that the appearance of a building should

be such that its function is clear. In this way the detailed appearance of the environs makes people aware of the choices available (Bentley *et al,* 1993).

A public transport facility like a station area or bus/minibus taxi terminus should be recognisable and not look like an office block or hotel. SNPs, because of their mobility disadvantages, often feel insecure when travelling and therefore one should not add to this insecurity by confusing inappropriate designs that are hard to comprehend.

This concept of visual appropriateness thus relates to the avoidance of confusion in space, when one interprets the environment. Time and energy is wasted if there is any confusion. SNPs, with their mobility constraints are not afforded the luxury of wasting time or energy, or to decipher what the intended use of a place is. The appearance of a building should demonstrate what could be expected internally.

The forgoing may be summarised with the observation that man responds to his physical environment and that this response could be positive or negative. Illustrative examples in Cape Town are discussed in the next section, though a comprehensive analysis of the city could form the subject of a separate thesis.

4.6 Planning Principles in the Cape Town Context

This section examines examples in Cape Town based on the principles described in the earlier sections of the chapter. In these examples it will be discussed in particular how the urban environment of which the public transport system forms part, restricts people from accessing opportunities. Prior to analysing the study area however, it is felt by the author that providing some background information about the study area would be appropriate.

Cape Town was chosen as a study area because it is where the author resides and it is a place the author is familiar with. Secondly it forms part of the Western Cape, which is the second most urbanised province in South Africa, where 3 516 026 (88.9%)people reside in places defined as urban (Statistics South Africa, 1996).

A consequence of this high degree of urbanisation is the challenge presented regarding public transportation systems.

The urban forms of Cape Town are the result of a number of historical factors, including political ideology and inappropriate professional approaches, often borrowed from abroad. People belonging to different racial groups (White, Black, Coloured, and Indian) still tend to live in separate areas; with the city largely divided according to race. In the earlier years, the previous "whites" lived in suburbs mainly on the Atlantic seaboard, while the majority of the coloured and black population lived in townships on the Cape Flats.

The areas under investigation to determine the quality of the public transport environment are mostly on the Cape Flats. These township areas are situated approximately 10 to 30km from the city centre. The conditions under which these previously disadvantaged people live is a combination of living conditions characterised by harsh local climates, poor infrastructure and services, and locational disadvantages. The people residing here have to travel distances that range up to almost two hours to reach their places of employment. Most are dependent on the public transport system.

4.6.1 Place making

As was stated in Chapter 3, a place can either be inviting or hostile. The creation of an environment that is meaningful, equitable and that enables people to carry out their everyday activities is what planners strive toward. The public transport system in Cape Town presently, is not unique in nature, and in fact it can be considered sterile and boring environments. One of the reasons for this is because of the low priority given to public transport inter alia in the previous era of government.

The somewhat hostile public transport environments are at present characterised by pedestrians having to compete for space with public and private modes of transport, and by limited space within public transport interchanges that add to congestion and pollution.

An example of a poorly performing public transport environment is in the southern suburbs of Cape Town, namely the Claremont Public Transport Interchange. The interchange has no sense of place in that, the public transport modes (bus and minibus taxi) dominate and take precedence within the interchange. There is minimal street furniture and the interchange does not relate to the view of Table Mountain. This hard public space should facilitate social interaction. This is, however, inhibited by the unsafe environment caused by the competition for space between pedestrians, informal traders and public and private transport modes. SNPs are hindered because of the inaccessibility of the interchange and the informal traders that encroach onto the pedestrian pathways.

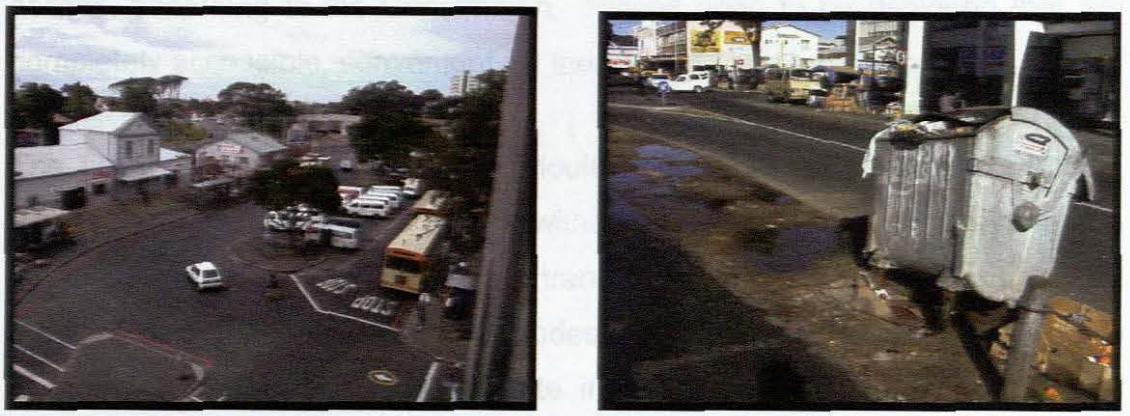


Figure 4.18: Claremont Public Transport Interchange

Contrary to the situation described above is the Salt River/Woodstock area, which possesses certain qualities, needed to create a good sense of place, in that the shared road and pedestrian environment, (Main Road) has diversity in the architectural styles of the buildings, which is located in the shadow of Table Mountain. The frontages of buildings along Main Road provide protection for pedestrians from rain and sunlight because of the overhangs. There is a designated public transport lane in Main Road as well, but this is not enforced, neither are many of the traffic rules. There are urban elements that detract from the sense of place as well, such as the formal shops that spill over onto the pedestrian pathways, causing a hindrance, and potentially hazardous situations.

An example of poor pedestrian scaled environment is that of the Mowbray Transport Interchange. The area is not positively defined in that it is bounded by shops on the north, a busy road on the south, and the Simons Town railway line on the east. It therefore does not provide a good sense of scale, nor of enclosure. The sense of safety which is of paramount importance for people, especially SNPs at Mowbray Public Transport Interchange is therefore compromised. When an environment has good pedestrian scale, safety is enhanced.

4.6.3 Access

Everyone, regardless of age, gender, and disability has an inherent right to access, according to the Constitution. Places need to be designed that are completely accessible, convenient for the greatest number of people.

The public transport environment should be accessed with ease for SNPs. Pedestrians should be given priority within the public transport environment to aid in achieving an equitable public transport system. Most public transport facilities and all public transport modes are inaccessible, according to the findings of this study, based on site inspections, discussions with related professionals, and communication with end-users. Within the shared road and pedestrian environment there are hindrances such as pavements without dropped curbs, and informal traders situated in the pedestrian pathways.

An example of the hazardous shared road and pedestrian environment is Voortrekker Road in Cape Town. It is congested, filled with informal traders that hinder the free flowing movement of pedestrians and it is hazardous because of the various modes competing for the same space.

Figure 4.21: Wynberg Transport Interchange

Wynberg transport interchange is also inaccessible because access to the facility is up-stairs, which implies difficulty of movement among many categories of SNPs. Certain pavements within the interchange and surrounds, do not all have dropped curbs. Informal traders although situated on the edges of the pavements still pose serious problems for the high volumes of pedestrians that utilise the interchange. Main Road, and the roads that surround the Wynberg interchange, that form part of the shared road and pedestrian environment, are congested and lack suitable pedestrian crossings.

Athlone city sub-centre is well situated for easy access by road, rail and bus. Klipfontein Road by-passes the centre, and carries a substantial bus service linking the Cape Flats with Mowbray, Woodstock, Salt River and the central city. The centre is also served by Athlone Station (Cape Flats) railway line. Although good access in general is provided along the road, bus and rail systems, there are still hindrances, which hamper accessibility. The Athlone Station facility, although upgraded can only be approached via stairs. In order to approach the bus and taxi terminus in Klipfontein Road, one needs to pass through the central business district, which offers many obstacles for SNPs.

These all impact on the permeability of an environment; the inefficiencies in terms of access in Athlone's public transport environment dictates where people can go, and where they cannot, and also the ease with which this movement occurs.

4.6.5 Efficiency

Bonteheuwel is an inwardly orientated area, which is spatially distinct from the rest of the metropolis, due to it reflecting the neighbourhood unit concept (Dewar, D *et al*, 1989). It is an area that displays a limited capability for change because of the dominant routes (both road and rail) on the boundary of Bonteheuwel which operate solely as movement channels, and that prevent activities from locating on them. This is not therefore very efficient as the clustering of compatible and mutually supportive public facilities around the Bonteheuwel public transport facilities is made difficult.

Bonteheuwel's public transport environment is therefore not entirely robust, because robustness implies an area that can be used for many different purposes by different people and can change and adapt for different uses. Incorporating accessibility into the transport environment requires the area to have a certain degree of robustness, for the purpose of redesigning the past apartheid motivated plans.

Mowbray public transport interchange has been upgraded, yet there are still inefficiencies in the way it operates. The ramp at the interchange does not have suitable landings, which according to the Manager of Chesire Home in Hanover Park (Ivan, 2003) is not suitable for people in wheelchairs. Moreover, when resources are used to upgrade the system these must also be utilised efficiently.

Figure 4.23: Ramp at Mowbray Public Transport Interchange

The public transport environment should also be legible, in that people need to understand what opportunities are offered and movement is minimised. In essence, a legible environment allows people to enjoy more opportunities because time is not wasted trying to interpret the environment and therefore the time to experience more opportunities is created, making the environment more efficient in that sense.

Examples of interchanges that are not very legible would be the Bellville and Athlone public transport interchanges. These places have their public transport modes separated. At Bellville and Athlone, the bus terminus and minibus taxi termini are quite a distance from the rail stations, so one does not form a clear image especially if unfamiliar with the area. As has been mentioned, legibility is important when considering SNPs, because they need to efficiently utilise their financial and others resources such as time, and not spend these unduly on trying to understand the environment.

4.6.6 Choice

Choices within the public transport environment in Cape Town do exist. However, the quality of these choices is questionable. There are three public transport modes that operate in Cape Town, namely train, bus and minibus taxi. Able-bodied people thus have certain options as to which mode to use. SNPs on the other hand confront limited choices if indeed any choice at all in terms of travelling because none of the public transport modes provides level access and public transport facilities most often offer hindrances to accessibility as described earlier.

Figure 4.24: Bus and train – no level access present

Suitable upgrades in the public transport system that aim to achieve accessibility increases choice. For instance when there is more than one mode made accessible, people with special needs then have a choice in terms of what mode is better suited to their needs.

At present, with the general inaccessibility that prevails, it could be argued that SNPs are likely to travel to the most convenient opportunities and necessities and not to destinations that are most suitable for their requirements.

Quality of life is also improved when more choices in the public transport are available for SNPs, because they inevitably have choices in terms of shopping, recreational and social activities, apart from the positive consequences of more employment opportunities that are within reach.

Variety implies the range of experiences and uses that a place provides, including employment, educational, recreational, and socialisation activities. A mixed use place where activities interrelate and mutually support each other is certainly one that would effectively contribute to the positive performance of the city. It is observed in this regard how criteria such as variety, access, efficiency and opportunity are all met in a complex city environment that also offers choice.

Parow public transport Interchange offers many economic opportunities to passengers, though its inaccessible nature compromises the otherwise potential choices for SNPs at facilities such as these.

Figure 4.25: Parow Public Transport Interchange

A further contributory factor to the existence of choice is the visual appropriateness of the urban forms including buildings, in the surrounds. This quality helps to avoid confusion, because such visual appropriateness is closely related to the criterion of legibility discussed earlier.

Therefore public transport facilities need to have a certain degree of recognizable style in their design, so that passengers are able to distinguish public transport facilities from shopping malls, for example. The majority of public transport facilities in Cape Town is though readily recognizable and in this regard can be said to display visual appropriateness.

4.7 Concluding Thoughts

The profession of town planning concerns itself with efforts to identify how the design of the physical environment can support all members of society, including SNPs and how this can contribute to the latter, participating and contributing as members of society. This environment includes the public transport facilities; indeed the entire travel chain.

A number of planning criteria have been described in this chapter, which contribute to better urban places. It has been pointed out that properly performing spaces should facilitate the full spectrum of urbanity, including social development of SNPs. Planners need to create urban places in which they feel at home and it should be possible for SNPs to become thoroughly familiar with the city, without having to confront barriers of movement that perpetuate the problems of the past.

The planning professional should be aware of the different levels of capacity of normal city dwellers, the elderly, the very young, the disabled and even those marginally incapacitated such as pedestrians pushing strollers.

It is also important for planners to appreciate that in order to address the dominant role in the use of private vehicles, with all its consequences, there must firstly be a better alternative. In order to compete with the private car, public transportation has to be more convenient, faster, less expensive, and at least as comfortable. At present this is not the case for able-bodied travellers and even less so for SNPs.

Where the city or any part of it fails to perform optimally, SNPs are the first to suffer. Every aspect of the city's urban design, built fabric, organization of streets, or pattern of transportation impacts on SNPS. Deprived of the general opportunities of mobility, SNPs are also deprived of employment opportunities, social interaction or any other activities that enables them to sense that they are included in the community. If planners have succeeded in making cities liveable for SNPs, then they will also have created cities that are healthy and liveable for everyone else.

Chapter 5: Legislation and Policies Concerning Special Needs Passengers

5.1 Introduction and Background

We live in a democratic state where the ultimate goal and purpose of our state is to enhance welfare and create order. In essence, continued existence is the fundamental goal.

The South African democratic state has scrapped all the previous apartheid laws of which isolation for many people was a consequence. What remains, however, is that barriers of various kinds have not all been scrapped, particularly for people that are disabled. The Constitution of the Republic of South Africa, Act 108 of 1996 makes provisions that cater for all, though, needs as yet to be fully implemented and become a reality in the every day life of people.

This chapter endeavours to:

- Show the fundamental elements of policies and legislation that the author views relevant in governing public transport with particular reference to Special Needs Passengers (SNPs),
- Investigate the stance expressed as explicit objectives that has been taken by government at various levels in terms of anti-discrimination laws and universal accessibility in regard to the public transport system,
- Investigate the adequacy of these laws governing accessibility and anti-discrimination practices in terms of the public transport system, and
- Furthermore, to investigate whether such enabling legislation in fact exists at all levels of government.

The chapter is structured according to legislation and policies that:

- Give a general background or philosophical approach to SNPs: the policies and legislation expressed generally as mission statements, without specific or practical regulations or interventions.

- Are marginally relevant to SNPs: policies and legislation that cover anti-discriminatory practices that are to some extent relevant to SNPs, sufficiently to have bearing on this thesis.

- Are directly or specifically relevant to SNPs: these are policies and legislation that provide practical solutions to deficiencies in terms of SNPs.

As is well known, much legislation has been included in the statutes of South African law over the years and, researchers are confronted with the challenge of identifying the legal provisions most pertinent to a particular study area. In this instance, this task was considerably facilitated and simplified on the basis of personal communications with specialists and documentation referred to by them. This point will be returned to in the chapter on methodology.

It bears mention that in these discussions, the concept of SNPs was broadly interpreted as extending beyond disabled persons, as has been mentioned in the introductory sections of this thesis. Virtually all of the policies and legislation that have been identified address disabled and vulnerable members of society, though this can be defended on the grounds that disabled people form a sizable category of SNPs. The reader is referred to the all inclusive definition of a SNP given in chapter one.

In the interests of logic and structure, the following section describes the responsible public authorities, before proceeding legislative provisions themselves in the later sections.

5.2 General Functions of the Three-Tier Government in South Africa

Government at the various levels in South Africa have the responsibility of ensuring inter alia the promotion of social welfare, ensuring that law and order is upheld to avoid chaos and lawlessness, protecting its citizens against foreign aggressors, to ensure peace and prosperity and to protect the environment. Government should therefore both ensure a sound and enabling legislative framework, as well as proper implementation. In the following chapter, some common problem areas in this regard are discussed.

"In South Africa original legislation may be passed by two bodies, firstly, parliament itself, and secondly, the provincial legislatures. Neither parliament nor the provincial legislatures may pass legislation that is contrary to the Bill of Rights" (Smit et al, 1997:3). It can thus be presumed that by-laws and regulations passed by local governments are not included in the concept of "original legislation", though arguably such provisions do form a part of legislation, namely subordinate legislation.

This quote above has been included to highlight the importance of the South African Constitution, as no legislation can be inconsistent with it. As one of the cornerstones of social justice in the country, the Constitution is clear concerning the elimination of discriminatory practices of any kind, which is seen as a fundamental premise for that which is ultimately proposed in this thesis.

The responsibility for certain matters of legislation relates to the entrenched often historical powers given to the various levels of government, and some details concerning this are set out in the table: Government Levels and Legislative Powers: South Africa. In brief legislation emanating from the central government level is concerned with issues regarded as being of national concern, provincial legislation concerns itself with matters delegated to and pertaining to the interests of the province, whilst local authorities pass regulations and by-laws on matters of a purely local and comparatively minor nature.

"It should therefore be clear that those bodies are only able to legislate on the basis of powers delegated to them from the bodies having original legislative powers, such as parliament" (Smit et al, 1997:3).

Government Levels and Legislative Powers: South Africa

Government Level	Legislative Powers
Parliament	"Parliament can make legislation on any matter except where the Constitution specifically provides that only provincial legislature can make legislation regarding specific aspects. Parliament can "assign" any of it's legislative powers to a provincial legislature, ministers, premiers, ministers of the provinces, local authority or other government bodies. "Assigning " of legislative power means that the parliament decides to give certain legislative powers to any of the government bodies mentioned in the previous sentence" (Smit et al, 1997:15).
Provincial Authorities	"The provincial legislature can make legislation in respect of matters, which are exclusively for provincial governments. Not even parliament can pass legislation in respect of these matters" (Smit et al, 1997:15-16).
Local Authorities	"They can only make legislation and exercise powers in respect of matters specifically contained in the Constitution unless other legislative powers have also been assigned to them. Parliament and the provincial legislature, however, oversee and may regulate the exercise of local authorities of their powers, functions and duties granted in terms of the Constitution" (Smit et al, 1997:16).

Table 5.1: Government Levels and Legislative Powers: South Africa

5.3 Legislation and Policies Relevant to SNPs

This section outlines legislation and policies from all levels of government that in some way allude to or provide for the provision of an accessible and inclusive public transport system. The analysis of the legislation and policies do not include those deemed to be remote in terms of relevance to this study.

5.3.1 General legislation and policies concerning SNPs

As mentioned earlier there is a general level where philosophical approaches including mission statements are given without specific or practical regulations or interventions. These are described in this sub-section.

5.3.1.1 Constitution of the Republic of South Africa, Act 108 of 1996

Every South African, including the government and all laws must adhere to the Constitution.

South Africa has since the 1994 change of government developed new legislation and policies that aim at a non-discriminatory and inclusive society, consistent with the spirit and intentions of the Constitution of 1996, which states: "The state may not unfairly discriminate directly or indirectly against anyone on one or more of the following grounds, namely race, gender, sex, pregnancy, marital status, ethnic or social origin, colour, sexual orientation, age, disability, religion, conscience, belief, culture, language and birth" (South Africa, 1996b:5).

It should be noted that the above stipulations as to who may not be discriminated against encompasses all the categories of what has been termed a "special needs passenger".

Our Constitution has been described internationally as progressively equitable and one that addresses the earlier injustices faced by the majority of South African citizens. This is evident in the Bill of Rights, where no allowance is made for wronging anyone in South Africa.

The following quotes further indicate the awareness of and concerns with disability that the drafters of the Constitution bore in mind:

"The inclusion of disability in the equality section of the Constitution is a result of the relentless struggle that people with disabilities waged during the oppressive apartheid regime. It is a result of organised disabled people who fought to be heard and who mobilised to achieve this victory" (Maclain, 2002:1).

"In addition to the Constitution and more specifically section 9, the equality clause, we have a range of enabling pieces of legislation that protect and promote the rights of people with disabilities" (Maclain, 2002:1).

The non-discriminatory objectives of the Constitution should be read as encompassing all spheres of life, be it public transport, housing, health, to mention a few examples of the full range of societal needs. As has already been mentioned, all laws and policies must be consistent with the Constitution.

The Integrated National Disability Strategy, (described in the next paragraph) states that equality and dignity are enshrined in the Constitution and that the objectives enshrined in these principles must be met through the enactment of legislation, the scrutiny and, where necessary, amendment of existing legislation and the monitoring of constitutional and legislative provisions (South Africa, 1997b).

5.3.1.2 The White Paper on an Integrated National Disability Strategy (1997)

In the forward to the White Paper the following is stated:" Among the yardsticks by which to measure a society's respect for human rights, to evaluate the level of its maturity and its generosity of spirit, is by looking at the status that it accords to those members of society who are most vulnerable, disabled people, the senior citizens and its children" (South Africa, 1997b: i).

This strategy advocates for an inclusive society, aimed at the upliftment and improvement of conditions of the vulnerable members of society. It takes cognisance of the fact that there are minimal services and opportunities for these members of society. The White Paper accordingly advocates development of disabled people and the promotion of their rights.

The White Paper on an Integrated National Disability Strategy is chiefly focused on disability in general and is not inclusive of all the categories of SNPs. However, mention is made of other categories as well. It is expressive of anti discrimination practices and legislation, which is essentially the central focus of this chapter. It is therefore felt that it is a valuable source of information for this research, in that it represents an investigation of a large percentage of the categories that constitute SNPs, namely the disabled.

Mention is made in the strategy of the fact that limited information exists on the nature and prevalence of disability in our country. This is a significant observation as the implications for appropriate planning and interventions are abundantly clear namely, that uncertainty in regard to magnitudes, particular problem areas and numerous variables would inevitably render any planning strategy ineffective if not inappropriate.

There are certain key policy areas identified by the INDS, which include:

- prevention of disability,
- health care,
- rehabilitation,
- education,
- barrier free access,
- transport,
- communications,

- social welfare, and
- community development.

Furthermore, the INDS developed policy objectives, strategies and mechanisms for each of these areas, intending to rectify the inadequacies plaguing these various policy areas. They also suggest, which in the author's opinion is crucial, that existing legislation should be scrutinised whilst the need for new clauses should be considered. Monitoring and appraisal of legislation should be an ongoing process.

As tends to be characteristic of policy documents, the White Paper spells out broad principles where even the stated objectives are in no way sufficiently explicit in terms of plans of action, role-players, responsible parties or targets of any kind, tied to budgets and dates. History will in the end have to show the extent to which the strategy has succeeded and if not where the remaining obstacles lie. On the other hand it would be unjustified to forward criticism regarding its clarity for the purposes of interpretation.

The INDS concurs with the Constitution in terms of the rights of SNPs and certain objectives in terms of righting the wrongs of our previous apartheid regime. The question arises at this point as to how it deals with the public transport system and disabled people, as well as creating barrier-free access.

In terms of the document, the policy objective for transport is stated as follows:

" to develop an accessible, affordable, multi-modal public transport system that will meet the needs of the largest numbers of people at the lowest cost while at the same time planning for those higher cost features which are essential to disabled people with greater mobility needs" (South Africa, 1997b:32).

This statement clearly indicates awareness amongst the drafters of the White paper concerning the plight of disadvantaged and excluded people and a degree of political will to set enabling policies in place in terms of public transport and its accessibility.

From a town planning perspective, the most pertinent of the aforementioned policy areas in the strategy appears to be "barrier-free access". This policy objective is stated as:

"... to create a barrier free society that accommodates the diversity of needs, and enables the entire population to move around the environment freely and unhindered" (South Africa, 1997b:31).

The document makes reference to certain specific problem areas and significantly the lack of expertise and awareness in providing barrier-free environments amongst the design professionals and development agencies. This thesis aims to forward some proposals, particularly for the purposes of the planning and design professionals, as the recommendations in the White Paper do not, as has been mentioned, proceed beyond generality.

One is again reminded that an investigation into the performance of the public transport system of a city should not be detached from an appraisal of the performance of the city itself. The White Paper certainly does not in any event appear to deliberately separate the urban environment in terms of barrier-free access and transport.

5.3.1.3 Constitution of the Western Cape (1998)

The erstwhile Premier of the Western Cape Mr. Hernus Kriel assented to the Constitution of the Western Cape on the 15th January 1998. The Constitution aims at firstly recognizing and then striving to heal the many injustices of the past so that a better quality of life can be experienced by those living in the Western Cape.

The chapter deemed most relevant to this research is the directive principles in chapter 10. Though not legally enforceable, as stated in the Constitution of the Western Cape they are intended rather as a guide to the Western Cape Government when making and applying laws. If properly implemented and enforced, these provisions would in deed be beneficial, in so far as the objectives become a living reality for people.

Relevant principles identified in the constitution include the following;

- "Safety and security,
- the protection or advancement of persons, or categories of persons disadvantaged by unfair discrimination,
- realising the right of access to:
    - adequate housing,
    - health care services,
    - sufficient food and water, and
    - social security, including appropriate social assistance for people who are unable to support themselves and their dependants.
- an environment in which all children:
    - are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity.
- an environment in which all frail and elderly persons:
    - are protected from maltreatment, neglect, abuse, degradation or involuntary seclusion.
- a system of taxation which is fair, transparent and accommodates the capacity of people to pay" (Western Cape (South Africa) Legislature, 1998:43).

It is clear that these directives are meant to address discriminatory practices, and a number of them can indeed be related to the public transport system. It can fairly be stated that an efficient, safe, accessible, affordable, and reliable public transport system is a necessary precondition for achieving some of these objectives. Regarding safety and security, the pubic transport system plays a direct role in the safety of people in everyday life. Movement is a

certainty, be it form home to work, to recreational facilities. The public transport system in Cape Town is at present not very safe.

A further instance of how the public transport system impacts the protection or advancement of persons, or categories of persons disadvantaged by unfair discrimination, is that it could limit either who is allowed to use the system or their capacity to use it if it is not universally accessible in the way it is designed or operates.

Realising the right of access to health care services, for example, is generally also dependent on the public transport system, again because if it is subject to hindrances in terms of access, it makes it harder and in some instances impossible to get to health care facilities, or even job opportunities.

There are also implications for particular groups in society such as frail and elderly persons who are dependent on how freely circumstances allow these people to use the public transport system, and not to be isolated from society and the various opportunities and necessities offered outside of the home environment.

5.3.1.4 National Land Transport Transition Act 22, of 2000

The National Land Transport Transition Act, 2000 (Act No 22 of 2000) (NLTTA) came into operation on the 1st December 2000. The Act is divided into 4 chapters, namely:

- Chapter 1: Introductory matters
- Chapter 2: Matters of national concern
- Chapter 3: Matters of Provincial concern
- Chapter 4: General matters

The National Land Transport Transition Act, 2000 (Act No 22 of 2000) presents actions needed to change and to reorganize South Africa's land transport system (with the emphasis on public transport), also to give effect to

the national policy concerning the first phases of the process; and to consequently attain a smooth switch to the new system applicable nationally.

This is yet another critical prescriptive legislation that makes provision for people with special needs when it comes to commuting. The NLLTTA requires the:

- National Land Transport Strategic Framework (NLTSF) to set out a general strategy for transporting disabled persons,
- Member of the Executive Council of the Province responsible for public transport (MEC : Transport) to ensure that their Provincial Land Transport Framework (PLTF) and all other transport plans produced by planning authorities within their jurisdiction address the needs of special categories of passengers.

Certain principles set out in the NLTTA that need to be highlighted, and that has specific bearing on the research are:

- That planning should be carried out in a way that allows certain marginalized individuals to be subsidized, and that passengers with special needs should be considered in terms of providing public transport infrastructure and services which should be met as far as possible in the main stream public transport system, and
- That public participation must be promoted, inclusive of vulnerable and disadvantaged persons, while taking heed of the fact that people need to be given the opportunity to develop the understanding, skills and capacity required to attain equitable and effective participation (South Africa, 2000a).

5.3.1.5 Provincial Vision for Public Transport and Five-year Strategic Delivery Programme (2002)

During 2002 a Provincial Vision for Public Transport and a Five Year Strategic Delivery Programme was published by the Provincial Government of the Western Cape's Department of Transport and Public Works.

There are 22 delivery plans, although only the ones most relevant to the provision of an accessible system relate to this investigation. The following delivery plans could be viewed as directly relevant to attaining a fully integrated public transport system, and are therefore seen as relevant to objectives raised in various sections of this chapter.

Safety and Security on Public Transport

For passengers to have a sense of safety throughout their journey there needs to be law and order within the entire system (stations, terminals and all the modes of public transport). The employment of Public Transport Safety Officers should be considered. They can operate as safety personnel on the entire system as well as afford a useful service to SNPs.

Strategic co-operation, consultation and awareness creation

Comprehensive data of all the necessities and preferences of passengers, business and community organizations that are dependent on the system needs to be assembled.

Social and quality charter

The service type and the extent of coverage, inclusive of aspects such as service frequency, times of day operated, price, level of comfort, and safety and security need to be determined.

Institutional structures, legislative framework and planning requirements

The timeframes set and the necessary approval processes as set out in the National Land Transport Transition Act need to be adhered to and is the responsibility of the Province.

Financing of public transport

The financial requirements for public transport operations and infrastructure and any additional funds required should be administered by the Province and local authorities.

Learner public transport

The Department of Transport and Public Works should provide for the needs of disabled/special needs learners within the greater public transport system, that is currently being provided for by various institutions and the private sector.

Empowerment, labour and training

The registration of drivers of all public transport services as well as the setting of minimum training and skill standards should be provided for in Provincial legislation.

Integrated operation management system

A complaints management system and suitable information centres must be formed.

Special Needs Public Transport

- A policy towards catering for SNPs on the public transport system must be developed by the Province in collaboration with the City of Cape Town and other local authorities.
- There needs to be an investigation into the current standing of the scope of SNPs within the Province, as input into the policy.
- The Department of Education must equally partake with a special focus directed towards the transport needs of special schools.

- A priority of the province must be to engage in a joint partnership with the City of Cape Town to expand the Dial-a-ride service which is proposed to be provided on contract.

- A suitable way of including the provision for SNPs into scheduled public transport services contracts must be considered.

Non-motorised transport

As a component of the planning of public transport services and infrastructure the Province must give due consideration to the pedestrian needs, routes and facilities necessary for SNPs to function independently and efficiently.

It is apparent that there was proper consideration given to the requirements of SNPs within the Provincial Vision for Public Transport and Five-year Strategic Delivery Programme (Western Cape (South Africa) Legislature, 2002b).

5.3.1.6 Human Rights Commission Act 54 of 1994

With the transformation from a minority regime to a democratically elected government, emphasis was placed on the need for new constitutional arrangements to ensure that the appalling human rights abuses of South Africa's past could not be repeated. The Human Rights Commission Act emanates from sections 115 to 118 of the previous Constitution and, amongst others provides for the establishment, appointment of members, powers, functions, staff and reports of the Human Rights Commission. Once the new government of national unity led by the African National Congress (ANC) took office legislation was drafted, and President Nelson Mandela signed the Human Rights Commission Act, No. 54 of 1994, into law on November 24, 1994. The act came into force in September 1995 (South Africa, 1994).

The South African Human Rights Commission (SAHRC) is a national institution, which derives its powers from the Constitution and the Human Rights Commission Act of 1994. The commission serves as both a watchdog and a tool of information through which people can access information about

their rights. The Commission manages complaints concerning human rights violations and monitors and develops standards of human rights law.

Furthermore, what is relevant to mention in terms of this research is the fact that SAHRC has the power to:

- Investigate and to report on the observance of human rights
- To take steps to secure appropriate redress where human rights have been violated.

What could be termed as the overarching objective of the SAHRC is that of ensuring that the principles voiced in the Constitution are enjoyed by all South African citizens.

The Commission is concerned inter alia with issues of accessibility of the built environment and subsequently published a report entitled "Towards a barrier-free Society" in November 2002. The relevance of this report can once again arise from the fact that the public transport system in any city forms part of its built environment. Therefore issues affecting accessibility in terms of the built environment has direct bearing on the public transport system.

The report states in no uncertain terms that if the built environment is universally accessible, people with disabilities could experience independent living, and the secluded lives often lived by them as well as the discrimination they experience will cease. The report dispenses with the various myths and recognises the real difficulty experienced by those with disabilities, and presents the repercussions of the discrimination suffered by disabled persons. Furthermore, the report recognizes that poverty causes disability and disability causes poverty within our society, and suggests that the "social model of disability" rather than the medical model be adopted (South African Human Rights Commission, 2002).

5.3.1.7 An Integrated Provincial Disability Strategy (2002)

The Integrated Provincial Disability Strategy (IPDS) is seen as one of the most important documents ever published by the Provincial Government of the Western Cape. The IPDS was approved by cabinet on the 8 May 2002. The IPDS emanates from a need for a disability strategy for the Western Cape. The decision was made by provincial government departments and nongovernmental organisations during 1997. This Disability Strategy relates to the White Paper on the Integrated National Disability Strategy, though focusing on the provincial level of concerns.

An aim of the IPDS is to bridge the gap between the disability sector and mainstream society. It also concurs with many other policies, in that the lack of access really means exclusion, which is believed to be just another form of discrimination.

The document comprises of four areas namely:

- "the context within which government departments should respond to disability,
- the prevalence of disability in the Western Cape,
- the current status of government's response to disability in the Province, and
- strategic objectives and related actions in response to challenges posed by the human rights and development approach to disability" (Western Cape (South Africa) Legislature, 2005:2).

More specifically in terms of the research at hand, the vision of the IPDS in terms of public transport is, *"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 that advances broader development aims and objectives"* (Western Cape (South Africa) Legislature, 2002a:44).

The IPDS expresses at a relatively detailed level the actions required that relate to the provision of accessible public transport:

- "promotion of road safety,
- self-representation of people with disabilities on standing transport committees,
- determination of specific user requirements and identification of public transport systems that respond to these requirements,
- establishment of provincial minimum acceptable operational standards,
- ensuring that all public transport plans formulated in the Province make provision for transport that is suitable for use by persons with disabilities and conforms to provincial minimum standards,
- co-ordination and implementation of improvements to the transport system so as to be in phase with the timetable for the regulation and tendering of public transport services throughout the Province,
- consideration of the fare structure applicable to persons with disabilities,
- education and regulation of operators to understand and accommodate the needs of persons with disabilities,
- establishment of specific funds for:
    - assisting social services agencies to provide transport,
    - demonstration projects in rural and urban areas, and
    - training of transport personnel.
- lobby South African Rail Commuter Corporation and Metrorail to further their programs for providing accessible transport,
- establishment of minimum requirements for the provision of dedicated parking spaces for persons with disabilities, and

- involvement of the private sector in public transport upgrades for persons with disabilities "(Western Cape (South Africa) Legislature, 2005:2).

As can be seen by the preceding points these actions are comprehensive and all encompassing, of the accessibility issues in terms of disabled people with reference to the public transport system.

5.3.2 Marginally relevant policies and legislation for SNPs

These are policies and legislation that cover anti-discriminatory practices and that are to some extent relevant to SNPs, and could not be excluded from this study.

5.3.2.1 Employment Equity Act 55 of 1998

This Act has been included in this section, to highlight its importance in alleviating discrimination in the workplace. However, it is felt by the author that in order for the objectives of this act to fully materialise, it is vital that people with disabilities in fact are able to gain access to the various employment opportunities.

This can be realised if the public transport system is made fully accessible for these people and they are able to travel to work independently. It is important to realise that it is not the employer's responsibility to ensure that their employees have a way to get to work. It is, however, government's responsibility to ensure a safe, efficient, accessible and reliable public transport system that both employers and employees can rely on.

Employment equity or the absence there-of has many roots, apartheid being one of the major reasons for this discrimination in the workplace. It is estimated in the Act that only 1% of disabled people are employed in the formal sector of the economy. This has serious repercussions in that these disabled people are not contributing to the economy nor given the fair opportunity to earn a living, which then makes them generally reliant on the state.

This is evident not only from the statistics but also from an obstructive public transport system which does not enable them to access work opportunities nor give potential employers incentives to employ disabled people. The same could be said for other categories of people with special needs as well, namely those temporary impaired with a broken limb, or the pregnant female in the last stages of pregnancy that is still allowed to work.

The stated goals of the Act are:

- the elimination of unfair discrimination in employment,
- ensuring the implementation of employment equity to redress the effects of discrimination,
- achieving a diverse workforce broadly representative of our people, and
- the promotion of economic development and efficiency in the workforce (South Africa, 1998).

It can therefore be seen that this Act is pivotal in addressing our nation's discriminatory practices in the workplace. However, its objectives cannot be achieved in a vacuum, divorced from an effective and supportive public transport system. It is generally accepted that the more vulnerable section of society are mostly reliant on public transport. It is apparent that the Act is in line with other legislation in terms of eradicating discrimination, though cannot work in isolation of other legislative actions.

5.3.2.2 UN Standard Rules on the Equalisation of Opportunities for Persons with Disabilities (1993)

South Africa is a member country of the United Nations and is therefore party to the United Nations Standard Rules on the Equalisation of Opportunities for People with Disabilities. In essence, South African lawmakers, policymakers and disability organisations are guided by the rules in fulfilling their responsibilities to disabled persons, these rules are, however, not compulsory. What is implied is that there is a strong moral and political commitment on

behalf of States to take action for the equalisation of opportunities for disabled persons.

The overall purpose of the rules is to ensure that all persons with disabilities, may exercise the same rights and obligations as every able bodied person in society. The rules can be viewed as a framework for policy-making and a basis for technical and economic co-operation. There are 22 rules summarising the message of the World Programme of Action, which is divided into 4 chapters, namely:

- preconditions for equal participation,
- target areas for equal participation,
- implementation measures, and
- the monitoring mechanism, which covers all the aspects of life of any disabled person (United Nations, 1993).

The relevance of these rules to this particular research lies in the fact that they provide a guide to all responsible role-players and stakeholders as to how to accommodate disabled people in all spheres of life.

5.3.3 Direct or quite relevant policies and legislation for SNPs

As mentioned, these include legislation and policies that provide practical solutions to addressing shortcomings in terms of SNPs.

5.3.3.1 National Building Regulations and Building Standard Act 103 of 1977

The reason for including this Act into the investigation is because barriers in our built environment prevent many disabled people from enjoying equal opportunities. The overall aim of these regulations is inter alia to provide guidelines for structural soundness and other aspects such as how particular buildings have to include disabled-friendly features. Stated otherwise the purpose of the act is to provide uniformity in the erection of buildings throughout the country. There are different sections to the regulations, dealing

with a specific topic. The section that deals with facilities that must be set out for disabled people is part S.

The accessibility of the built environment in South Africa is administered by a legislative framework that has three principal components, namely the:

- National Building Regulations and Building Standards Act 103 of 1977, last amended in 1989 is what could be termed as the enabling Act under which the National Building Regulations are made. The Act provides a framework within which the Regulations can be administered, and enforced.

- National Building Regulations aims to ensure that buildings are designed and built to be safe, healthy and convenient for users. This should be taken to include members of society suffering from disabilities or impairments of any kind.

- Code of Practice SANS 10400/SABS 0400:1990 – The application of the National Building Regulations is a non-statutory set of guidelines giving technical information for the practical application of the National Building Regulations.

The South African Human Rights Commission's report "Towards a barrier-free society" published in November 2002 cited problems they identified in 16 of the 22 parts of the National Building Regulations and the SANS Code of Practice including Part S.

Examples of the problems included:

- "Inadequate administrative enforcement mechanisms for the approval of public building plans that have resulted in many public buildings being in contravention of the Regulations,

- Deficient regulatory measures that fail to ensure public safety and protection from fire for persons with disabilities, and

- Insufficient definition of the specific requirements for particular disabled user groups as provisions are primarily for people using wheelchairs with other

users frequently ignored" (South African Human Rights Commission, 2002:30).

Certain shortcomings have since been resolved in the publication of the SANS 10246/SABS 0246:1993 – Accessibility of buildings to disabled persons.

5.3.3.2 White Paper on National Transport Policy (1996)

The White Paper on National Transport Policy was approved by Cabinet and Parliament in September, 1996. It is another pivotal piece of legislation in terms of SNPs and their transportation rights.

The process in developing this White Paper was very participatory in terms of the various methods of communication used with which to consult the various stakeholders. It included workshops, plenary meetings, and policy working groups. A strong message that has evidently been brought across by disability organisations are that no planning should be made without the input of disabled persons.

The White Paper also reiterates what is said in other legislation and policies referred to in this study, that we have an inadequate public transport system that needs immediate attention, and that also needs to be one of the top priorities of our national government.

One of the reasons for the dismal state of our current public transport becomes evident when reviewing the White Paper in that it is stated that the last time major analysis and formulation of the transport policy in South Africa took place in the mid 80's.

Minimal upgrades and improvements have therefore taken place in the last twenty or so years for the public transport passengers of South Africa and therefore one could well suppose that even less thought was given to those passengers with special needs, as discrimination against people with special needs was almost common-place under the previous government. It has been said that the needs of the majority of South Africa, which is known as the previously disadvantaged was largely ignored for that of the white minority.

The vision for South African transport given in the White Paper on National Transport Policy, is of a system which will:

"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" (South Africa, 1996b:5).

The White Paper not only describes the vision for transport in South Africa, but also sets out strategic objectives for the system and the individual modes.

More specifically in terms of this research, the White Paper states that:

" the needs of special categories of passengers should be identified by the responsible transport authorities, especially at metropolitan and local level, and these should be addressed in their passenger transport plans" (South Africa, 1996b:26).

Moreover it states the public transport system should be shaped by the needs of the passengers, and it is argued here that when upgrading of the public transport system occurs with SNPs in mind, it becomes so much more efficient for everyone. The White Paper commits to mobilising scarce resources to best meet the needs of those passengers who need them most, clearly the vulnerable members of society, namely the elderly, women, children, disabled, and previously disadvantaged.

5.3.3.3 White Paper on Western Cape Provincial Transport Policy (1997)

The White Paper on Western Cape Provincial Transport Policy recognizes the problems facing the public transport system today though incorporate objectives consistent with national strategic objectives. The policy opens up with stating what problems are experienced in the province and why it is that we are faced with them presently.

- The vision stated in the White Paper mirrors the visions of many other policies, which advocates for "An integrated, accessible, well managed and maintained transport system throughout the Western Cape, which is recognized as making efficient use of resources and being socially just, in a way that advances broader developmental aims and objectives" (Western Cape (South Africa) Legislature, 1997:3).

The mission of the policy is "To utilize available knowledge, skills and competence to advise and assist transport authorities throughout the Western Cape to realise their aims and objectives by:

- promoting a unified transport culture and ethic which is characterised by excellence and professional competence and which respects and is responsive to broader public needs and requirements,

- ensuring that appropriate capacity and capability is established in all transport authorities so that they become fully competent to fulfill assigned transport roles and functions,

- guiding and informing all planning authorities to ensure that the products of strategic planning initiatives meet declared provincial standards and requirements, and

- defining minimum acceptable operational standards and requirements to which the various aspects of the transport system should conform" (Western Cape (South Africa) Legislature, 1997:3).

- One of the key principles in the policy is that "discriminatory practices against specific groups, such as women and the disabled must cease, and their special needs must be identified and addressed in all transport plans and programmes" (Western Cape (South Africa) Legislature, 1997:5).

- Consistent with this, one of the objectives is to "respond to specific user requirements and needs, including the young, the old, women, the disabled, as well as other special categories of users" (Western Cape (South Africa) Legislature, 1997:7).

5.3.3.4 The Promotion of Equity and Prevention of Unfair Discrimination Act 4 of 2000

Discrimination has been defined in this Act as:

"Any act or omission, including a policy, law, rule, practice, condition or situation which directly or indirectly –

(a) Imposes burdens, obligations or disadvantage on, or

(b) Withholds benefits, opportunities or advantages from any person on one of more of the prohibited grounds" (South Africa, 2000:4).

The Promotion of Equity and Prevention of Unfair Discrimination Act, thus advocates for the prevention and more importantly the prohibiting of unfair discrimination and the promotion of equality.

The following paragraph highlights the importance given of this legislation for the disability sector.

"The Constitution requires that enabling legislation be promulgated to further substantiate the equality clause. To this end, the Promotion of Equality and Prevention of Unfair Discrimination Act of 2000 (PEPUDA) has been promulgated. While not in force in its entirety this Act is of critical importance for people with disabilities. PEPUDA addresses issues around environmental accessibility as well as reasonable accommodation in the workplace. Chapter 2 of PEPUDA is undoubtedly an important tool for combating discrimination against people with disabilities" (Maclain, 2002:3).

This specific Act is of vital importance in terms of this investigation as it clearly stresses what should not be done and what allowances should be made in terms of people with disabilities. Section 9 of the Act clearly prohibits discriminating by denying or removing enabling devices necessary for the functioning of disabled people in society. Furthermore it states that discrimination encompasses the failure to eliminate obstacles that unfairly limit

or restrict persons with disabilities from enjoying equal opportunities or failing to take steps to reasonably accommodate the needs of such persons. In the author's opinion this has specific reference to the public transport system, in that it becomes apparent that when the Act is used as a checklist or frame of reference with which to measure the public transport system, it fails in making reasonable strides in preventing discrimination.

Another section in the Act that proves to be very useful in this investigation is that of Section 14, where questions are put forward which could be used to determine the extent of discrimination being experienced . Examples of the questions put forward in this section are, whether the discrimination impairs or is likely to impair human dignity, if the discrimination happens regularly or systematically, for example. The point to this is the fact that when applying these questions to our public transport system it is again evident that the system definitely discriminates unfairly to those with special needs.

Achieving the goals a democratic society, where there is equality, fairness, social progress, justice, human dignity and freedom, is what this Act endeavours to do, and why it was included in this investigation

5.3.3.5 Transport for Disabled People (1992)

This report published in 1992 by the Department of Transport, was prepared as a consequence of an earlier report of the Department of Health and Population Development published in 1986 as part of the Year of the Disabled. Its purpose was to contribute to the comprehension of the transport needs of disabled people and include guidelines for usable transport facilities for disabled people in South Africa.

This report acknowledges the fact that effective mobility is an essential part of living, and that the private vehicle is only an option for a small percentage of disabled people, whilst there have been minimal adaptations and design that have taken place for disabled people in the public transport system.

The report also reiterates the fact that there is limited information about the transport requirements of disabled people, and provides four possible reasons for this lack of information.

- The report presents a definition of disability, which has been used as a basis by many later studies done on disability. The definition states that, "A disabled person is anyone having physical, psychological or sensory disabilities which affect mobility, including hidden disabilities such as cardiac or respiratory problems, women in difficult stages of pregnancy and those with mental handicaps or illness and the aged suffering from degenerative conditions which affect mobility" (Western Cape (South Africa) Legislature, 2005:3).

The report echoes the views of other similar publications, in that people with disabilities need specific facilities to enable them to utilize transportation facilities safely, conveniently and with confidence and dignity.

A comparison of the public transport system in 1992 to other western countries was made. Concluding that we were nowhere near their level of integration, it suggested that we can look to them for best practice scenarios.

The view expressed in the report is that legislation is a prerequisite but not sufficient for success. Legislation is used to formalise, regulate and to oblige those who remain indifferent. It is also concluded that the method best suited for South Africa is for it to develop from the level of local authorities to regional and national acceptance. These views are as a result of investigating other western countries and how they have successfully integrated disabled people into the public transport system.

The report also heeded the financial constraints of the rail and public bus services at the time, and stated that total accommodation of the needs of disabled persons would not be feasible then.

Details as to the specific recommendations made in the report will not be discussed, as it is not the primary focus of this chapter. However, the

conclusion made in terms of the relevance of this report is the fact that it was one of the earlier investigations undertaken by the government in rectifying the discrimination of disabled persons. It makes realistic recommendations so as to integrate disabled people into the public transport system, mindful of the financial constraints at that time.

5.3.3.6 Guidelines for Transport of the Disabled (1997)

The Department of Transport in 1997 published a draft document TPG 13 entitled Guidelines for Transport of the Disabled. It forms part of a series of documents (Transport Planning Guidelines) written for transportation planners, based on South African experience and research and described the recommended practice in selected aspects of transport at that time.

As the title illustrates, the document presents guidelines on transport for disabled persons. Its aim is to create awareness of the transport needs of disabled persons for the transport authorities, so that they can integrate the planning of facilities in an all-inclusive manner.

- This report, as the preceding reports that were investigated, addresses the issue of discrimination in the public transport system by providing recommendations as to how to integrate disabled persons. It reports on the facilities needed for disabled people and presents in general terms areas that should be investigated in the implementation and planning of facilities (Western Cape (South Africa) Legislature, 2005).

5.3.3.7 Study to determine the transport needs of mobility disadvantaged persons.

A study was carried out by the Cape Metropolitan Council in January 1999, to establish the transport needs of what they term mobility disadvantaged persons.

The method of attaining this information was through interviews. There were 156 respondents that conveyed their problems and requirements in terms of the public transport system at that time

The conclusions gathered after the interviews, were that there was often duplication of services. This was as a result of the lack of services, and organizations having to operate their own transport fleets, and thereby duplicating services that could otherwise have been shared. Another conclusion was that the existing system did not provide an accessible service for SNPs.

Arising from this study, a draft policy was proposed to improve the accessibility of public transport, which was adopted by the City in March 1999. The policy stated that:

- "The Council should, in planning, regulating and co-ordinating public transport services, recognise that accessible transport is essential for the full integration of all people into all levels of society,

- A multi-disciplinary intersectoral committee should be established under the leadership of the appropriate directorate of the Council (possibly Economic and Social Development or Planning; Environment and Housing) to liaise with the disabled community and to advise the Council on matters pertaining to provision of facilities and services accessible to the disabled, which should include the development of an accessible transport service,

- The transport service should comprise of an accessible primary (high frequency high volume) and secondary (mainly feeder and distributor/collector) public transport network, complemented by a Special Transport Service provided by a combination of dial-a-ride type public transport contracts and non-governmental service organisations,

- All new facilities should be planned to be accessible to Special Needs Passengers and, if it is an identified key facility within the primary transport network, it should be constructed so in the short to medium term. A programme to make existing key facilities on the primary public transport network accessible should also be prepared. In drawing up the programme the relative importance of the location to Special Needs Passengers and when the facility is due for renovation must be taken into account,

- Accessibility standards for new road vehicles and rail coaches should be formulated in conjunction with the relevant transport authority (currently the Provincial Administration) and appropriate legislation enacted,

- Minimum standards for the number of Special Needs Passengers that should be able to be carried on any designated public transport route should be formulated. These standards should be implemented in stages reflecting the remaining life of existing vehicles and the importance of the key facilities on that route,

- The minimum standards concerning a requirement that new and existing key facilities must be accessible to Special Needs Passengers should be included within the tender documentation for future public transport contracts and concessions; · Further investigation on how best to co-ordinate, support and enlarge the existing Special Transport Services should be carried out, and

- The relevant authorities and organisations should be approached in order to improve and/or revise existing policies and standards; and Planners and operators associated with the transport of Special Needs Passengers should be made more aware of the needs and problems of their passengers" (Western Cape (South Africa) Legislature, 2005:20).

This is yet another comprehensive policy that looks at the requirements and problems faced by SNPs and makes recommendations to address these issues.

5.3.3.8 Moving South Africa: The Action Agenda (1999)

Moving South Africa: The Action Agenda is a strategic framework that was formulated at national level, to realise the long-term vision set for the transport system in South Africa. The document could be described as a framework to which the National Department of Transport was to work with all interested and affected parties (transport providers, transport customers and other levels of government) in terms of the transport system in the country.

The framework was built on the objectives and vision set out in the White Paper on Transport in 1996, and to develop a twenty-year strategy to realise it.

This vision is:

"By 2020, transport in South Africa will meet the needs of freight and passenger customers for accessible, affordable, safe, frequent, high quality, reliable, efficient and seamless transport operations and infrastructure. It will do so in a constantly upgrading, innovative, flexible and economically and environmentally sustainable manner. In so doing, transport will support and enable government strategies, particularly those for growth, development, redistribution, employment creation and social integration, both in South Africa and in the Southern African region" (South Africa, 1999:12).

The framework has a specific section that focuses on customers with special needs. This was included in the framework because the majority of South Africans were marginalized in the development of transport systems in previous decades of the country's history, and the needs of SNPs were largely ignored. A result of this was a hurriedness to improve the system for the majority of previously marginalized individuals, again with the previously marginalized minority, namely the disabled being the ones with special transport needs being overlooked.

The specific goal for Special Needs Passengers was stated as:

"By 2020, the transport system will meet the requirements of passengers with special needs, particularly those with disabilities. This will be achieved within the mainstream transport system, and where appropriate, through dedicated systems" (South Africa, 1999:44).

The strategy identified certain strategic actions to cater for SNPs. Briefly these actions entail the following:

- Action1: This is to come to an agreement as to what the general requirements (health, employment, education) are of SNPs, for which transport is required,

- Action 2: Absence of data in terms of SNPs has been identified and appropriate steps to rectify this so as to be able to target key SNP customer segments have been earmarked,

- Action 3: This is to identify the additional costs of servicing SNPs. There are certain categories of SNPs that can be catered for in the mainstream system with some modification, and then there are those that need specific additional upgrades. Identifying the costs and finding funding is the aim so as to realise the twenty-year integration goal,

- Action 4: This action step comprises of incorporating the requirements for SNPs into transport plans so that data about travel patterns, locations, and requirements of SNPs can be incorporated and be made a priority in transport planning. Additionally, these requirements of SNPs must be incorporated into tendering contracts, because as things are the transport system already needs to upgrade and replace its assets, and

- Action 5: It is felt that government can create a situation in which innovation can take place without always requiring the definition of formalized norms, standards and transport plans. Giving operators and transport authorities information about international best practices in terms of universal accessibility for example, to aid in this approach.

This is another important document, granted that there are some ambitious goals for public transport. However, it again reinforces the fact that there are anti-discriminatory policies and practices to achieve enabling environments. Additionally, it shows that role-players are taking heed of the inconsistencies and bias created by the public transport system.

5.3.3.9 National Land Transport Strategic Framework (2002–2007)

The National Land Transport Strategic Framework 2002-2007 ((NLTSF) is a document that gives direction on transport planning and land transport delivery by all spheres of government. It is a requirement of the National Land Transport Transition Act (NLTTA), 2000 (Act No 22 of 2000), in terms of Clause 21.

Included in the framework are issues of transport for disabled persons. The policy for transport for disabled persons is that:

- "The needs of special categories of passengers must be considered in planning and providing public transport infrastructure, facilities and services, and these needs should be met as far as may be possible by the system providing for mainstream public transport. The participation of all interested and affected parties, including vulnerable and disadvantaged persons, in transport planning must be promoted. To this end, such people must be given the opportunity to develop the understanding, skills and capacity necessary to achieve equitable and effective participation" (Western Cape (South Africa) Legislature, 2005:4).

Furthermore the general strategy for the transport for persons with disabilities given in the draft NLTSF is for:

- "Government policy to promote the inclusion of people with disabilities into the mainstream activities of society. Legislation requires government to take "reasonable" steps to accommodate the needs of persons with disabilities. In terms of transport, this should be achieved firstly by improving the user-friendliness of public transport for all users, and secondly by incrementally implementing the accessibility features specifically required to serve people with disabilities" (Western Cape (South Africa) Legislature, 2005:4).

The following specific actions to achieve the above strategic outputs are proposed:

- Ongoing consultation will take place with the disability sector:
    - The National Department (NDOT) of Transport will continue working closely with the Office on the Status of Disabled Persons in the Office of the President to facilitate ongoing consultation with key national disability organisations.
    - Local authorities will be encouraged to identify user groups representing persons with disabilities in order to consult with them on an ongoing basis through the ITP process.
- Implementing authorities will be empowered to improve accessibility across all modes through the Integrated Transport Planning process:
    - The NDOT will update draft TPG13 ("Guidelines for Transport of the Disabled") to provide more technical guidance on implementation.
    - The SABS will finalise uniform standards for accessible vehicles.
- "Reasonable accommodation" of persons with disabilities will be initiated by prioritising high-impact, lower-cost actions:
    - Each metropolitan municipality will be encouraged to designate two "strategic accessible corridors" with high trip densities in which they should aim to achieve a reasonable level of door-to-door wheelchair accessibility.
    - The Integrated Transport Plans (ITP's) of metropolitan municipalities should specify how improvements in pedestrian infrastructure, public transport facilities and vehicles will be co-ordinated in these corridors to achieve "reasonable accommodation".
- Mode-specific actions:
    - Bus: All new buses in subsidised contracts will comply with the recommended standards for general accessibility (including step height,

grab rails, signage, driver training, etc.), initially excluding wheelchair accessibility. Where wheelchair-accessible buses are included in bus contracts, they will preferably be deployed first in "strategic accessible corridors" to allow for the co-ordination of infrastructure upgrades.

- Taxi: All new taxis will have basic accessibility features (low steps, grab rails, signage, driver training, etc.) as part of the taxi recapitalisation programme. In addition, the NDOT will strive for wheelchair accessibility to be included in the recapitalisation programme.

- Rail: The South African Rail Commuter Corporation/Intersite will continue to upgrade the accessibility of rail stations and rail carriages, through their upgrading programme, with particular focus on "strategic accessible corridors.

- Pilot projects will be launched in rural areas to test solutions and develop a rural accessibility strategy:

- The NDOT will develop and test appropriate accessibility solutions for users with special needs as part of the rural transport interventions in the ISRDP nodes. The NDOT will incorporate the findings into an accessibility strategy for rural areas, as part of the rural transport and development strategy" (Western Cape (South Africa) Legislature, 2005:4-5).

Again, it can be seen that suitable consideration is given to persons with disabilities in terms of public transport travelling in the 2002 – 2007 National Land Transport Strategic Framework.

5.3.3.10 Special Needs Passengers: Policy for Commuter Rail in South Africa (2003)

The South African Rail Commuter Corporation (SARCC) drafted its policy to improve the accessibility of commuter rail to Special Needs Passengers, in June 2003.

Included in the policy, the SARCC

" acknowledges the access requirements of passengers with special needs and undertakes to incorporate these requirements into the planning, provision and management of a rail system that is universally accessible to all its passengers over the longer term through incremented and continuous improvements to the provision of passenger information, station facilities, rolling stock and passenger response services" (Western Cape (South Africa) Legislature, 2005:16).

The policy concurs with many of the previous policies in that they believe SNPs can travel independently if the system is conducive to their travelling needs, and if the entire travel chain is accessible.

The SARCC will therefore seek partnerships with local authorities to improve the entire travel chain of which travel by commuter rail forms part. In the long term they envision the entire system to be accessible in order for SNPs to travel with dignity and enjoy the same comfort and ease of access as any 'normal able-bodied passenger'.

A Priority Network for SNPs will be developed on which SNPs can travel with dignity and with confidence that they can complete their journey, within the medium term. The policy will be revisited so as to take into consideration comments by organizations that add value to the quality of service provided.

The "Total Service" that SARCC would like to provide to all customers regardless of any disability, age, gender, race, etc can be achieved through the provision of:

- "fully accessible station facilities,
- level access to rolling stock, and
- fully accessible rolling stock supported by –

- appropriately trained assistance from the operator,
- the availability of accessible active and passive communication and information systems and material, and
- encapsulated within the prevailing rail operational environment" (Western Cape (South Africa) Legislature, 2005:16-18).

Furthermore, the SARCC are realistic in terms of not saying that they will improve the entire regional commuter rail system simultaneously. They have, however identified key stations in the Western Cape that are to be made more accessible for SNPs. This policy is very comprehensive in its approach to attaining a fully accessible rail system. This policy is also indicative of the approach being taken in South Africa in terms of catering to the needs of SNPs.

5.4 Disability Desks and Committees

There are numerous disability desks that have been established in prominent administrations starting with the Presidents office, and extending to numerous Premiers' offices. This section aims at providing an example of a disability desk as well as a committee that strives to create equality amongst citizens of South Africa. In essence, the objective is to show the existence of such organisations, bearing in mind that it is not comprehensive.

5.4.1 The Office on the Status of Disabled Persons (OSDP)

A most noteworthy development in government was the establishment of the Office on the Status of Disabled Persons (OSDP), based in the Presidency in South Africa. Similar offices have been established in all the provinces of the country, based in the Premiers' offices. These offices work together with, and parallel to, the various state bodies, departments and disability NGO`s in order to further the development of a disability-friendly environment. Their responsibility includes the monitoring and implementation of the Integrated National Disability Strategy (INDS), and raising awareness on disability.

The OSDP is thus a vital component in redressing the discriminatory practices endured by disabled people. They advocate for mainstreaming equality, and organised the first biennial access conference and exhibition held in 2002. The OSDP is responsible for establishing and funding a Provincial Disability Co-ordination Forum. The forum co-ordinates matters related to the Integrated Provincial Disability Strategy. The OSDP supports various commemorative days to raise awareness. The International Day of Disabled Persons is the highlight of the OSDP's annual awareness and education campaign since the establishment of the office in 1999. The OSDP is therefore yet another forum to ensure an enabling environment for disabled people (Cape Gateway, 2005).

5.4.2 Parliament's Joint Monitoring Committee on the Status and Quality of Life of Children, Youth and Disabled People (1999)

In October 1999 the National Parliament established the Joint Monitoring Committee on the Status and Quality of Life of Children, Youth and Disabled Persons.

The Joint Monitoring Committee serves as a monitoring body in Parliament to review old and new legislation and to ensure that all government departments meet their stated objectives and goals with regard to children, youth, and disabled persons.

According to the Rules of Parliament, the Joint Monitoring Committee,

a) "must monitor and evaluate progress with regard to the improvement in the quality of life and status of children, youth and disabled persons in South Africa, with special reference to the Government's commitments in respect of any applicable international instruments and to duties and responsibilities in respect of any applicable legislation, and

b) may make recommendations to both or either of the houses, or any parliamentary committee on any matter arising from paragraph (a)" (Children First, 2001).

This is thus yet another organisation that strives to attain equity in South Africa. The details of its activities in regard to public transportation are worthy of further investigation.

5.5 Conclusion

With this investigation into the legislative environment regarding access issues and discrimination surrounding SNPs, it is apparent that there is a plethora of legislation and policies around these issues. It is thus apparent that at least since 1994 there have been great strides taken to enhance and strengthen legislation with the purpose of ensuring that people with disabilities will not be subjected to the exclusion and discrimination as in the past. This is evident when looking at the dates of the legislation and policies since 1994.

However, this study shows that despite comprehensive legislation, the disabled person still remains one of the most marginalised and neglected individuals of South African society. It has been stated earlier that legislation and policies may well be a necessary condition to alleviate the situation, but certainly not necessary an adequate condition to solve the problems.

Another observation is that the laws, policy frameworks and guidelines seem for the most part to be addressed more at a conceptual and philosophical level rather than at the detailed levels of action and implementation. Herein may well lie one of the fundamental reasons why legislation can fail in that intentions are not translated into clear instructions for actions.

Evidently, the situation faced by people with disabilities in South Africa is one, which is as yet still characterised by extreme levels of inequality and discrimination. As has been said, one would no longer expect this situation which is still as serious as it is.

In essence, discrimination in any form and any inequitable situations should not characterise the lives of persons with disabilities because of overarching legislation and policies determining the approach of the rest:

- The Bill of Rights
- Establishment of the Human Rights Commission,

And enforced by the courts in particular the Constitutional Court.

Another striking observation is the lack of knowledge about disability issues, in terms of their needs and the problems they experience. This kind of information is essential in order for the responsible role-players to implement measures to remove any discriminatory and unfair practices.

Chapter 6: Critical Observations: Existing Legislation and Policies

6.1 Introduction

In the overview of all pertinent legislation and policies given in the previous chapter, certain questions seem to arise that one feels compelled to address:

6.1.1 How comprehensive is the legislation?

From the investigation it is apparent that South Africa has a very liberal Constitution with legal and constitutional protection. Our laws can be enforced through the courts. The Human Rights commission serves as both a watchdog and a tool of information through which people can access information about their rights. They also have the power to rectify any human rights violation, and they monitor the observance of human rights. The Office on the Status of Disabled People (OSDP) also monitors the implementation of policies by government departments.

It needs to also be remembered that the disability legislation is still quite new and therefore many disabled people may not be aware of their rights. It can in any event be stated that a comprehensive framework of legislation with clearly stated intentions is in place.

6.1.2 With a Constitution and other legislation that prohibits discrimination on the basis of disability, has life changed for people with disabilities within the public transport system?

Currently, within the Cape Town context the answer would have to be no. We do not have universal access, which is necessary for any significant change in the lives of disabled people to occur with reference to the public transport system. We have what has been mentioned previously in the thesis, a system made up of patches of accessible and inaccessible areas.

Relatively recent reports such as Moving South Africa: Action Agenda and others discussed in the previous chapter and issued by the government

mention the fact that we have an inadequate public transport system. They have in these reports made promises and stated intentions to create a safer, more reliable and efficient public transport system, precisely because these things are not deemed to be in place. The findings of the surveys that included consultations at the end-user level; described in detail in chapter seven strongly confirm this.

As another instance, the National Land Transport Transition Act, 2000 states that planning in the public transport system should be carried out in a way that allows certain marginalized individuals to be subsidized, and that passengers with special needs should be considered in terms of providing public transport infrastructure and services which should be met as far as possible in the main stream public transport system. This could leave one with the assumption that consideration of SNPs has not been adequately given thus far (South Africa, 2000a).

A further instance is the White Paper on National Transport Policy 1996 likewise expressed a vision for a public transport system that would inter alia provide safety, reliability and efficiency, once again in order to address conditions considered unsatisfactory at the time. This leaves the author with questions surrounding the time lag between the passing of a law and its implementation on the ground for a range of reasons (South Africa, 1996b).

6.1.3 What could be the problems that are hindering the realisation of all this anti-discriminatory and accessible legislation?

It is obvious that more effort and dedication is needed to make disability legislation a reality, we are however ten years into our democracy. The poor and unbalanced allocation of resources to implement this enabling legislation might be one of the reasons for this slow advancement.

Another important factor to heed is that legislation cannot on its own change mindsets, especially of those that remain indifferent. Disabled people may not themselves be aware of the rights and legislation available to them nor of

applicable policies, and have not formed sufficiently powerful lobby groups to speak on their behalf.

In the literature concerning public administration and administrative law a number of reasons are advanced why the mere existence of a body of administrative law does not guarantee that the objectives of the legislators will be achieved. Reasons for this could include the following:

- The degree to which it is humanly possible to effectively apply all relevant legislation on any particular matter involving a large number of acts administered by different departments at central, provincial and local level.
- A lack of efficiency by the officials in the department involved in interpreting and executing the intentions of the law.
- Low public awareness and indifference towards support and assistance in applying the law.
- The degree to which officials are adequately trained and insufficient numbers to ensure that the intentions of the law are carried out (Theunissen, 2005).

An added reason for the failure of implementation could in principle be the lack of political will. This issue is difficult to assess in the context of South Africa and also in Cape Town, in view of all the levels of political decision-making. It could, however, arguably be stated with some confidence that this political will is evidenced by the establishment of the Office on the Status of Disabled Persons in the Vice Presidents Office.

With reference to the public transport system and special needs passengers, another possible reason for the slow realisation/implementation of legislation is the fact that the government does not have one overarching public transport authority. At present the responsibility of providing rail, bus and minibus taxi transport services in Cape Town are vested in separate independently functioning organisations:

- Department of Transport's main functions include formulating policies and strategic planning, regulating competition within the system and ensuring safety within the entire system. (South Africa, 1996b).

- Provincial government is responsible for transport at the provincial level.(South Africa, 1996a)

- At the local level the Uni-city of Cape Town has the responsibility of public transport matters.

This partitioned management of public transport is illustrated in the table entitled transport services and responsible authorities.

Service	**Responsible authority**
Rail Services	National government is responsible for subsidising rail services. South African Rail Commuter Corporation, mission is to ensure that, at the request of the National Department of Transport or any local government body designated as a transport authority, rail commuter services are provided in the public interest. SARCC is also responsible for the management and development of commuter rail assets, which include rolling stock (4 500 coaches), rail tracks, 374 stations, land and property in and around stations. During 1992, a wholly owned subsidiary, Intersite Property Management Services (IPMS), was formed to manage and develop SARCC's property and land portfolio (South African Rail Commuter Corporation, 2005).
Bus Services	Golden Arrow Bus Services, serves the entire Metropolitan Cape Town area with services provided from six depots. As the sole provider of scheduled bus transport in the Western Cape metropole, the company plays a significant role in

	meeting basic needs as well as building the economy of the region (Golden Arrow Bus Services, 2005).
Mini bus taxi	These are private operators who obtain licenses from the Operating Licensing Board to operate a passenger service.

Table 6.1: Transport Services and Responsible Authorities.

Based on various sources it has emerged in this study that although these major organisations communicate in regard to certain issues usually of a minor nature, the really significant decisions which relate to the larger projects and their budgets are taken independently and therefore that joint decision making in fact does not occur. Here once again the original intentions of transport legislation could well be lost.

6.1.4 Does legislation need to be more specific about what must be done and who must do it?

As was mentioned in the conclusion to the previous chapter, most of the legislation or policies tend to cover objectives more at the abstract level than giving detailed instructions or guidelines that require hardly any interpretation for implementation. With the exception of the National Building Regulations (Part S) which were recently revised and updated, and to a point the City of Cape Town: Policy on Public Transport for Special Needs Passengers (1999), virtually no specific details are expressed. This fact combined with other factors already mentioned such as a lack of awareness amongst the officials as well as SNPs themselves suggest the importance of greater clarity in legislation and guidelines.

6.1.5 Just how well are the laws and policies integrated?

This question arose in the course of perusing all documents referred to in the previous chapters. Three observations could be made concerning this. Firstly, it is in fact very difficult for one to determine a clearly integrated approach in

regard to what is legislated or proposed in terms of guidelines. The second observation relates to this, namely, the considerable duplication in terms of stated intentions, though of course as has been mentioned these intentions have not been taken further into the level of action. The third and positive observation was that no contradiction in terms of intentions, as far as these could be interpreted, seemed discernable.

Chapters 5 and 6 presented an outline of policies and legislation and explored the adequacy of these laws and policies that govern accessibility and anti-discrimination practices in terms of the public transport system with reference to SNPs.

Chapter 8 will expand on this investigation by analysing the comprehensiveness of these laws and policies with the aid of the Overseas Road Note 21, which is a report that aids governments with implementing accessibility into the public transport environment (Department for International Development, 2004). This document will assist in ascertaining whether the research questions have been answered adequately. It provides specific guidelines that could be used as checklist with which to measure the policies and legislation in South Africa, in regard to disabled people.

6.2 Conclusion

It is common cause that the only constant in the world we live in is change itself. By the same token, no legal provisions and policy recommendations are likely to be permanently valid. More detailed examination of the legal provisions discussed in this thesis is probably already overdue, in an integrated way, and this is indeed a subject for further research.

Another field for study, at a financial level, is to determine the path followed subsequent to the approval of budgets for items such as public transport, and which projects actually are implemented with these funds. As an instance in the 2004/2005 Western Cape Transport and Public Works budget, public transport is allocated 195.9 million which is a 48% increase in the previous year. The shear magnitude of such a budget certainly seems to raise questions concerning the failure of implementation (South African Government Information, 2004).

Chapter 7: Survey Process and Findings

7.1 Introduction

Research could prove to be worthless if the methods being employed are not efficient. For this reason great emphasis and care was taken to ensure the validity of the survey method and the subsequent survey findings.

This chapter has as its objectives to determine what exactly special needs passengers (SNPs) view as problems in terms of the public transport system. This was done by investigating the problems in each component of the public transport system, namely information, vehicles, infrastructure and the shared road and pedestrian environment.

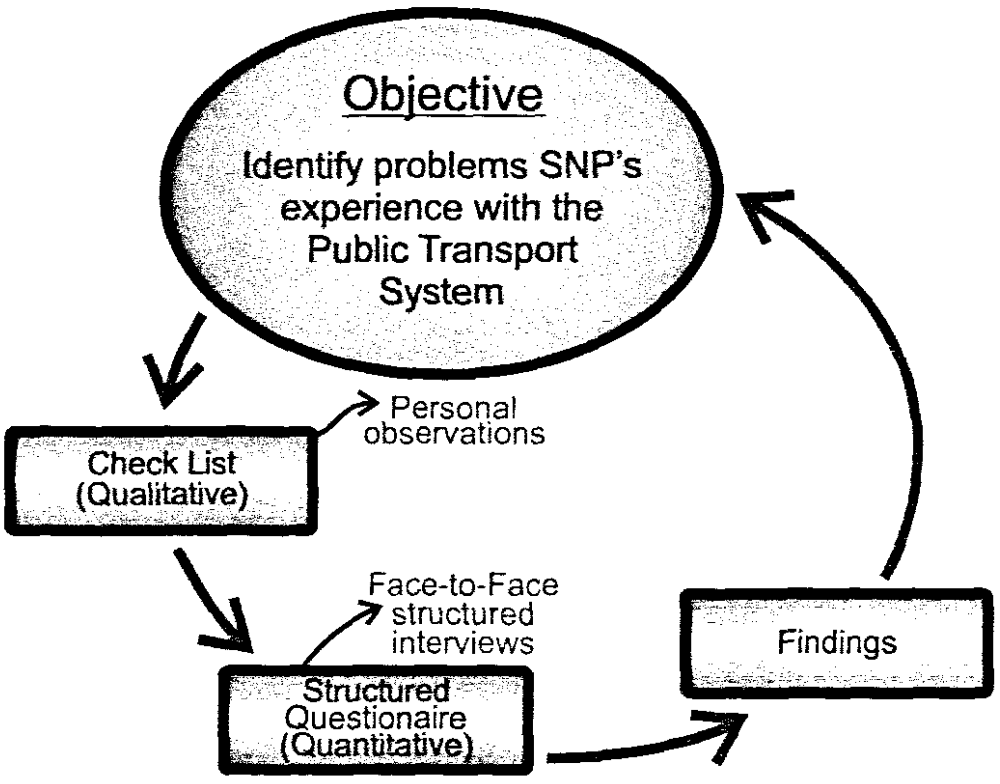


Figure 7.1: Research Methodology

7.2 Determining Public Transport Inefficiencies through Observational Research

To achieve the objective of determining the inefficiencies of the public transport system would require the collection of qualitative data. Qualitative research can be described in layman terms as a research method used to gather data of a descriptive nature.

It includes descriptive text data (words) and image data (photographs), which are necessary to satisfy the objectives of highlighting the inefficiencies in the public transport system. This research method is contextual and prescribes that data collected should occur in the respondent's natural setting or "site", which in this instance would be the public transport facilities (train stations, bus and minibus taxi termini) (Creswell, 2003).

The specific method of the qualitative approach utilised to satisfy the aforementioned objective is the normative survey method, where data is collected using personal observations.

Observational research can be described as a social research technique that involves the direct observation of phenomenon in their natural setting (Leedy, 1980). The intention of using this research method was to assist in answering the first research question, namely, what are the problem areas in the public transport system of the CMA with reference to SNPs?

Furthermore, it was decided to gather information in terms of a checklist. In essence this first section of the research could be described as an access audit, where essentially the level of barrier free access provided by certain facilities was investigated. The checklist component was completed, in terms of what is regarded as good practice in terms of an accessible public transport system.

Reasons for using the observational research approach were because findings are considered to be strong, in terms of validity, because the researcher is able to collect a depth of information about the subject being observed. This is evident when one views the extent of information regarding accessibility standards gathered from the checklist. Annexure 1 indicates the scope of questions incorporated

into the checklist, ranging from questions concerning information to infrastructural components.

In addition, observations are usually flexible and do not necessarily need to be structured around a hypothesis (hypothesis is a statement about what you expect to observe). Although there was a preconceived idea of what to expect in terms of the accessibility of the public transport system, this approach allows flexibility to incorporate any issues that cannot be predetermined. (Verster, 2005).

Some shortcomings of this research method is the generalisability or external validity, which is described as the extent that the study's findings would also be true for other people, in other places, and at other times. In observational research, findings may only reflect a unique situation and therefore cannot be generalized to others (Verster, 2005). For this reason the checklist was done at various interchanges around Cape Town, representing various situations.

Researcher bias is also another problem characteristic of this research method because often it is assumed that the researcher may "see what they want to see." This bias can, however, be overcome with training. For this reason, the research team which included the researcher together with four research assistants (4^{th} year town and regional planning students) spent considerable time in preparing for the checklist. The researcher had two workshops with the research assistants, to familiarize them with each question on the checklist and to comprehend the reasons for the inclusion of each question (Verster, 2005).

Overall, personal observations are a valuable tool for researchers, and for these reasons mentioned above seemed the more appropriate research option.

7.2.1 Reason for using a checklist as a research method and the process followed

There was a need to determine what the actual inefficiencies were in terms of the current public transport system in Cape Town, at the outset of this research. Before commencing the investigation in terms of the inefficiencies it was necessary to determine what was regarded as necessary for an efficient and fully accessible public transport system. This was achieved by means of the Research Information Support Centre Unit of the Cape Peninsula University of Technology to gather information on the internet, in terms of what is regarded as best accessibility practice standards internationally. Parallel to their investigation, the researcher ran a similar investigation on the internet and consulted relevant professionals as to ascertain their perceptions with regards to what the requirements are in achieving a fully accessible public transport system.

The determinants to what needs to be in place to achieve a fully accessible public transport system were compiled from the aforementioned sources. From this information it was possible to compile a checklist, which consisted of certain requirements, regarded necessary for effective commuting by SNPs. The process of determining the inefficiencies was therefore undertaken by conducting personal observations with the aid of this predetermined checklist. The checklist was categorised according to the four components (i.e. Information, Shared Road and Pedestrian Environments, Infrastructure and Vehicles), and there were certain requirements under each component that the researcher extracted from the aforementioned sources, which dictated the necessary requirements for effective commuting by SNPs.

Certain areas, again representing all the components (i.e. Information, Shared Road and Pedestrian Environments, Infrastructure and Vehicles) of the public transport system were investigated to ascertain their positive and negative characteristics with regard to able-bodied travellers and more importantly, SNPs.

Examples of the areas included:

- Cape Town Station, which was investigated with regard to its information, and how this is relayed to travellers. Cape Town Station was used because it's the busiest interchange in Cape Town presently.

- Roads adjacent to the public transport interchanges were explored with a view to observing how the shared road and pedestrian environments function. The roads surrounding the interchanges were used merely because of its proximity to the public transport facility, with the view to testing the accessibility of roads around the interchanges.

- The Mowbray Transport Interchange infrastructural components such as ramps, seating, kerbs, etc. were examined as to there effectiveness for SNPs. This interchange was chosen as it was one of the most recent interchanges that were upgraded and because, through an interview with the manager of Chesire Homes, (Ivan, 2003) certain inefficiencies about the upgrades were mentioned.

- Various other interchanges were also visited, such as Wynberg, where all three public transport modes are present, and the public transport vehicles were inspected. The choice of interchanges in order to investigate the vehicle component was made on the basis of gaining a wide geographic perspective, in essence to get an indication from interchanges, both in the northern and southern suburban areas.

The interchanges and surrounds covered in this observational checklist survey were: Bellville; Blackheath; Bonteheuwel; Cape Town; Claremont; Elsies River; Khayelitsha; Kuils River; Mowbray; Parow; and Wynberg.

Objectives for the checklist exercise are:

- Firstly, to give the researcher an indication as to where the problematical areas are with each component and with the public transport system as a whole,

- Secondly, to provide role-players and decision makers with a guide as to where to start in terms of achieving accessibility within the public transport system, and

- To illustrate the challenge to be confronted in achieving universal accessibility, i.e. to show how far or near we are in achieving an accessible public transport system.

7.2.2 Structure of the observational checklists

To reiterate, the questions incorporated into the checklist address the most basic requirements for a fully accessible public transport system. The questions are based on thorough research from successful international case studies as to what is required to achieve accessibility. This was determined by investigating successful international countries that have fully inclusive and accessible public transport systems (A list of references used is provided under the practical guidelines of chapter eight). What these countries viewed as necessary in achieving fully accessible systems, was compared amongst each other, so as to ascertain if they were in agreement. Then the most basic requirements in the researcher's opinion were converted into questions so as to check the availability of these standards in certain public transport facilities/areas areas in Cape Town.

The questions are structured in a way that simply required a "yes" or "no" answer. This approach enabled the analysis to be undertaken in an uncomplicated way, in that a high percentage of positive responses, indicate how closely the present system offers accessibility to all categories of travellers.

7.2.3 Findings of the Observational Checklist

A "yes" would mean an overall response of more than 50% "yes" answers in the checklist and vice versa. (Refer to Annexure 1 – Checklist)

Vehicles

		Yes	No
1	Bellville		
2	Blackheath		
3	Bonteheuwel		
4	Cape Town		
5	Claremont		
6	Elsies River		
7	Khayelitsha		
8	Kuilsriver		
9	Mowbray		
10	Parow		
11	Wynberg		
	TOTAL	7	4

The vehicle component of the public transport system has a few inadequacies, the most problematic of which is the absence of level access. The percentage of areas without level access in Cape Town is 100%.

The modes are, more than most, in need of repair. However, there are certain minimal requirements in terms of accessibility present. The bus and rail systems have certain accessibility requirements in place such as certain trains where the center poles to the entrances of the trains have been removed. The buses have bell-pushers; however, the positioning and the number are for the most part problematical. There are also destination displays on the outside of buses indicating the routes.

The minibus taxis are the most problematical mode of public transport in terms of accessibility standards. As mentioned, there is no level access, no grab-

rails are present, no colour-contrasting markings on the entrance/exit of the mode, and no ramps are present to enter/exit the mode.

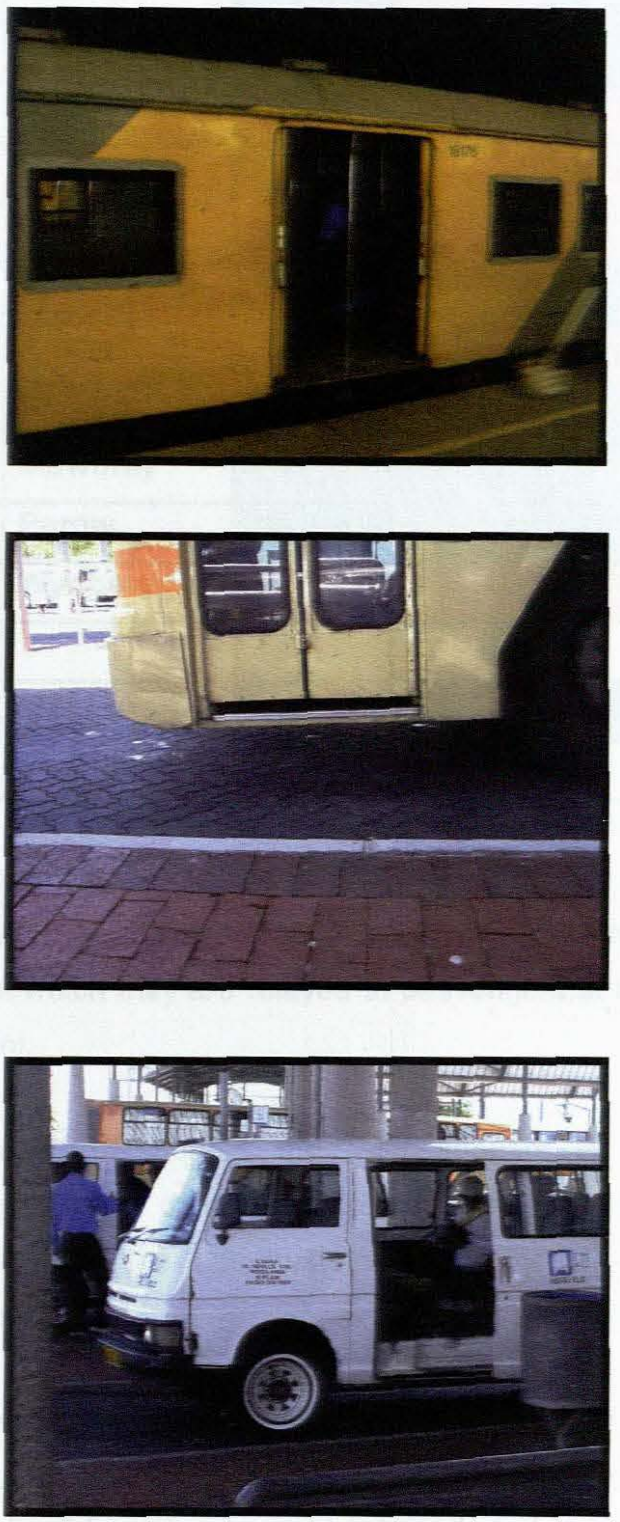


Figure 7.2: No level access on trains, buses and minibus taxi's

Information

		Train		Bus		Taxi	
1	Bellville						
2	Blackheath			N/A			
3	Bonteheuwel						
4	Cape Town						
5	Claremont						
6	Elsies River						
7	Khayelitsha						
8	Kuilsriver						
9	Mowbray						
10	Parow						
11	Wynberg						
	TOTAL	Yes	No	Yes	No	Yes	No
		8	3	3	7	6	5

These findings are representative of the information at public transport interchanges. In essence it is an investigation of the prevalence of information and the manner in which they are relayed to passengers at train stations and minibus/bus termini.

With the information component the train appears to have the more positive response in terms of the observational checklist. The taxi had six positive responses and the bus system lagged behind with only three positive responses.

Bonteheuwel, Claremont and Cape Town are examples of where problems occur in terms of information. Information at Cape Town station on the electronic boards is all in uppercase which is not easily legible for those with low vision. This is based on the guidelines in achieving accessible facilities as dictated by international best accessibility practice.

Both, Bonteheuwel, and Claremont have insufficient information on the various modes in terms of times and fares. General problems with the information component within the public transport system seem to be the lack of low enough ticket information counters for people of restricted height, or wheelchair bound passengers. The ticket counters were included in this component because it's a means of accessing information. At certain interchanges there are no audible announcement systems.

Figure 7.3: Cape Town station electronic information boards are all in uppercase and the ticket counter at Claremont station is not low enough for certain categories of SNPs

Infrastructure

		Train		Bus		Taxi	
1	Bellville						
2	Blackheath			N/A			
3	Bonteheuwel						
4	Cape Town						
5	Claremont						
6	Elsies River						
7	Khayelitsha						
8	Kuilsriver						
9	Mowbray						
10	Parow						
11	Wynberg						
	TOTAL	Yes	No	Yes	No	Yes	No
		9	2	3	7	3	8

The rail system appears to have the most adequate infrastructure in terms of the checklist results. This comes as no surprise because Cape Town has a history of strong and extensive rail infrastructure. However, at the train station the ramps have insufficient landings. The bus and minibus taxi facilities need serious improvement since out of the eleven places only three had positive results. Examples of the inadequacies in the bus and minibus taxi facilities include the lack of adequate seating for passengers to rest, insufficient provision of lifts, and seating not appropriate for the elderly and young.

Infrastructural components in areas such as Elsies River and Kuilsriver for example have stairs with open treads, no ramps provided, a lack of adequate walkway for entrance for wheelchair passengers, and the lack of colour-contrasted handrails.

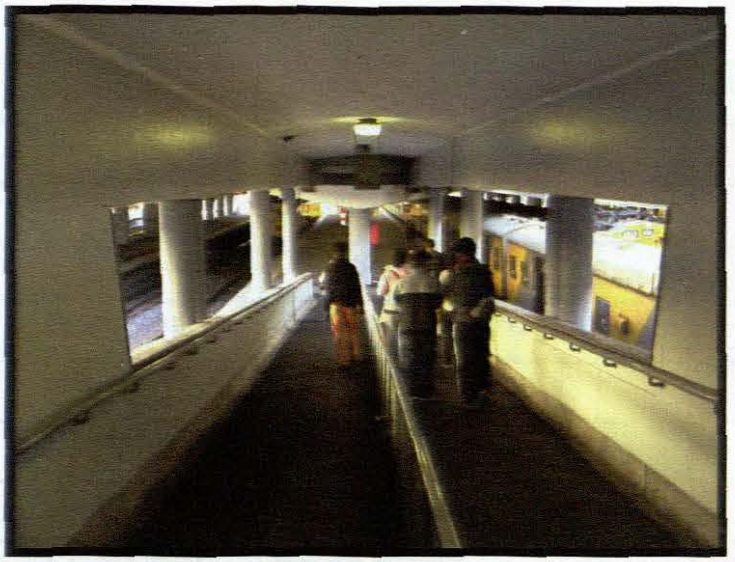


Figure 7.4: Ramps at Cape Town train station do not have sufficient landings.

Figure 7.5: Seating at the Cape Town bus terminus is not suitable for SNPs because of the height and design.

Shared road and pedestrian environment

			YES	NO
1	Bellville	Wilshammer Road		
		Charls Malan Road		
		Church Street		
2	Blackheath	Station Road		
		Road at Taxi Facility		
3	Bonteheuwel	Bluegum Street		
4	Cape Town	Adderley Street		
5	Claremont	Ralph Street		
6	Elsies River	Station Road		
7	Khayelitsha	Khwezi Street		
8	Kuilsriver	Station Road		
9	Mowbray	Upper Durban Road		
10	Parow	Connaught Street		
11	Wynberg	Broad Street		
	TOTAL		6	5

From the observation of the shared road and pedestrian environment 6 out of the 11 areas that were observed were positive. The areas with minimal accessible features included Bellville, Cape Town, Claremont and Mowbray.

General problems encountered, were with pedestrian pathways without the minimal width of 3m at bus stops, and poorly maintained surfaces with holes. As an example, Claremont's inadequacies included not having lowered curbs at all pedestrian crossings, the pavements are cluttered with informal traders that hamper the free flow of pedestrians, and the absence of grab-rails at intersections.

Figure 7.6: Poorly maintained surface at Claremont and Cape Town Public Transport Interchange

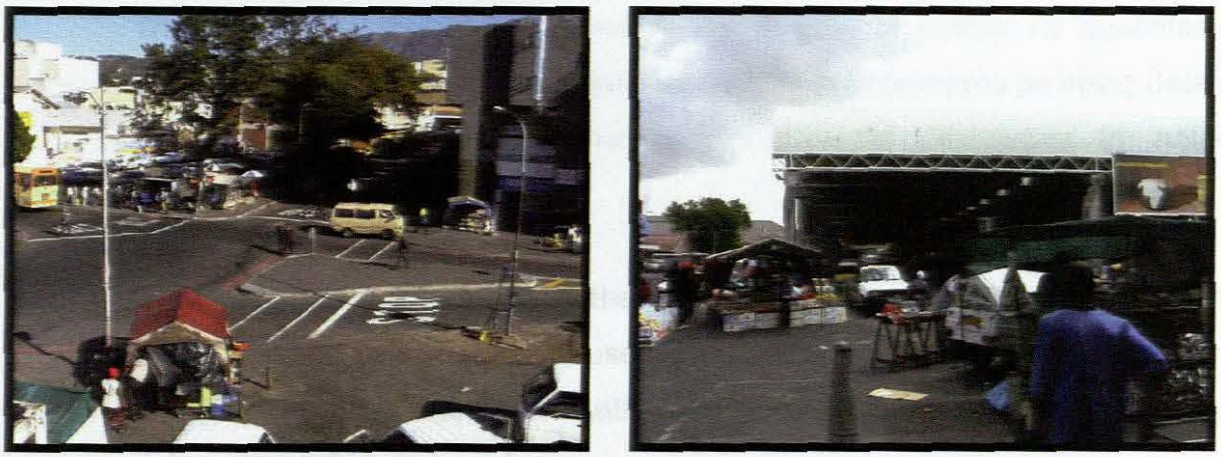


Figure 7.7: Informal traders hampering pedestrian movement at Claremont and Bellville Public Transport Interchange

Figure 7.8: No grab-rails/guard rails present at intersections at Claremont and Bellville Public Transport Interchange

7.3. Determining Special Needs Passenger Concerns

7.3.1 Introduction

Once the general inefficiencies of the public transport system was identified with the use of the observational research method (checklist), it was necessary to fulfil the second objective of this chapter, namely to reflect the concerns of the end-users (SNPs).

7.3.2 Survey Methodology

The information required from end-users can be described as quantitative data. Quantitative research can be described in layman terms as being data of a numerical nature rather than explanatory or descriptive in nature (Creswell, 2003).

It was decided that in terms of the quantitative information required from the end-users, the best method to use would be face-to-face interviews, using a structured questionnaire. Alternative methods of gathering this quantitative data were considered, such as;

- Telephone interviews. However, this method was not employed because it could arguably cause an under-representation of a certain category of the end-user group because they are economically disadvantaged members of society that cannot afford a telephone. Additionally, there are those that might not like being questioned over a telephone and be uncooperative because of the many telemarketing ploys in existence,

- Focus groups were decided against because the reality is that human nature dictates that certain people will be shy and therefore be inhibited by others and there may be one person in the group that appears highly confident and persuasive and therefore influence the opinions of others,

- Questionnaires via the postal service were also decided against because the literacy levels of people vary, and this could influence the respondents willingness or capability of replying and also the expense involved in

mailing the questionnaires and providing return mailing costs (Creswell, 2003).

As mentioned, the preferred method was therefore the face-to-face interview, with the aid of a structured questionnaire because:

- It is arguably easier to conduct, with direct feedback, and results are guaranteed as opposed to the mailing survey method,
- The interviewer is present to clarify any uncertainties the respondent may have, and
- The survey is targeted at a specific group, (SNPs) and therefore an interviewer is necessary to identify the potential respondent.

It is accepted that this method can be time consuming and expensive as well, in terms of employing interviewers, training the interviewers, and travelling to the specific places to carry out the interviews. This method was, however, specifically chosen because of the importance of this information to the overall research objectives.

Population and Sample

Potential respondents had to adhere to two basic characteristics, namely:

- Had to be an SNP, which represents a broad spectrum of passengers, who in essence have particular needs when travelling. This category of travellers refers to people with disabilities: those who experience difficulty in moving around due to an accident; or broken limb; or to a congenital condition; pregnant women, the elderly or persons laden with bags (Oxley, 1999).
- Had to be a public transport user.

Further to the above, to avoid bias, an attempt was made to be as representative with regards to gender and age as possible. The representative population included both genders and all age groups.

There were a number of variables within the sample population of which the most important would be the classification of SNP groups.

The Sampling Technique:

"The population consists of definite strata, each of which is distinctly different..." (Leedy, 1980: 118). In this study the population is made up of all the end-users and the strata would be the specific SNP category.

Stratified Random Sampling Technique is used when there are different types of individual units within a specific strata; SNPs are divided into various categories.

The Sample Size:

It is believed that the larger the sample the better. However, there are many variables that restrict one from achieving a larger sample size. These variables include:

- Limited resources (available funding, number of people to conduct the surveys, time constraints). With this particular study, there were only four, fourth year Town and Regional Planning students made available to assist with the surveys, and they had to do it between class times. Due to of the places that the survey would be conducted, namely Goote Schuur Hospital and Mowbray Maternity Hospital, there were time constraints because surveys could only be conducted at times that were most suitable for the hospitals. Furthermore there were financial constraints as only R2500 was approved for survey purposes)
- Willingness of respondents
- Literacy levels of respondents

It is for the reasons mentioned above that the sample size would have to be practical as well as manageable.

One of the methods employed to determine an appropriate sample size was to investigate whether any surveys of this nature were done. It was found that there was only one similar survey commissioned by the Cape Metropolitan Council; it was a study to determine the transport needs of mobility disadvantaged persons in 1999. The study comprised of 156 individuals from ten service organisations. It is felt necessary at this stage to provide reasons for what might appear to be duplication by this study in terms of the CMC study (Cape Metropolitan Council, 1999). It is argued that the survey commissioned by the Council focused on mainly disabled people as is evident from the locations where the surveys were conducted. The surveys were conducted at disability service organisations and therefore were not representative of the many other categories of SNPs, namely pregnant women, those laden with bags, elderly, young and those with temporary impairments such as a broken leg. The study commissioned by the Cape Metropolitan Council, is already six years old.

The next step was to consult the researcher's supervisors, as one of them had recently gone through a similar survey process. Both supervisors concluded that there is no straightforward answer to the calculation of a sample size, and since the Council's sample size was merely 156 respondents, it was decided that a similar sample size would suffice in terms of the objectives of this study. It was therefore concluded that the aim in terms of this studies sample size would be to double the one commissioned by the Cape Metropolitan Council.

Three areas were identified, namely;

Mowbray Maternity Hospital - 108 questionnaires completed.

Groote Schuur Hospital –110 questionnaires completed.

Sanlam Centre and the surrounding public transport facilities, namely Tygerberg Station and the minibus taxi facility outside the shopping centre – 105 questionnaires completed.

Survey Instrumentation

The survey instruments used to collect data were the:

- Observational Checklist, and
- Structured questionnaire with face-to-face personal interviews

The elements as to what is necessary in order to have a fully accessible public transport system as dictated by successful international best accessibility practice standards, informed the structure of the questionnaire.

A combination of open and closed questions was used; however, the majority were closed ended questions. It was not entirely known what the literacy levels of the respondents would be and to make the analysis of the data less complicated, it was decided to make the questions as simple and understandable as possible, therefore closed ended questions were preferred.

In order to develop proper insights regarding the respondents, it was deemed necessary to include basic demographic data such as gender and age. The rationale for this was for example the fact that females could have a different perception as to males in terms of how they perceive the public transport environment. Annexure 2 indicates the scope of questions incorporated into the questionnaire.

Training the interviewers

The research team included the researcher together with four research assistants (4th year town and regional planning students). A similar process of training was followed in terms of the checklist survey. Considerable time was spent in preparing for the survey, as the outcome of the findings to the research is critical in terms of the objectives of this research. The interviewers were given background information as to the reason for doing the survey, and what would be done with the findings. Each question and the reasons for including it into the survey were discussed. The interviewers were trained in terms of how to approach potential respondents and establish rapport with the

respondents. They were to give a short introduction to respondents as to the reason for the survey and to ensure the respondents that not much of their time was expected.

Testing the Questionnaire

Objectives of Pilot Study	Identify problems with questionnaire (Is it structured simply enough? Etc.) Time it takes to complete one questionnaire Level of understanding in terms of the respondents Test the interviewer Willingness of respondents Check availability of respondents
Where	Cape Town Station
Why Cape Town	All modes of public transport are available at the station, as it is also the busiest station in Cape Town (City of Cape Town, 2002)
When	The pilot survey was done on Monday 11th April 2005, between 8:00 – 13:30.
Method	Specific Interception

Problems encountered with the pilot survey

The initial thought when embarking on the pilot survey was that the willingness of respondents would more than likely be the biggest challenge. What transpired was that the finding of and identifying special needs passengers became the biggest challenge.

The researcher and the survey team, found it increasingly difficult to find and also identify which passengers had special needs. The obvious SNP respondents were the elderly, pregnant women, those laden with bags and people with temporary impairments such as broken limbs. What the

researcher ironically failed to see was that there would be a shortage of disabled people at the interchange. It took approximately five hours to acquire 12 SNP respondents.

The level of understanding in terms of the respondents proved not to be a problem, and generally neither was the time it took to complete the questionnaire (5-10minutes per questionnaire). Interviewers initially felt uncomfortable. However, generally after the 3rd questionnaire they felt more at ease and comfortable with the questions.

On returning from the pilot survey it was concluded that an alternative method to the interception method would be required. It was decided to do the surveys at places where SNPs would frequent and where a large enough group could easily be found.

Executing the Survey

After discussions with the research team it was concluded that Mowbray Maternity, Groote Schuur Hospital and the transport facilities around Sanlam Centre Parow would be ideal places at which to conduct the surveys. These places were identified because they are places that many SNPs would need to visit:

Mowbray Maternity Hospital – guaranteed to have pregnant women.

Groote Schuur Hospital – guaranteed to have elderly people, those physically, hearing, sight, and temporary impaired because it is a provincial hospital that caters to all health related issues.

Sanlam Centre and the surrounding public transport facilities, namely Tygerberg Station and the minibus taxi facility outside the shopping centre – because there are schools in the surrounding facility and you are guaranteed to get those laden with bags using the transport facilities.

Another reason for choosing hospitals was because they are places where for the most part there is no choice but to wait. The waiting period in government hospitals in Cape Town is known to be lengthy, which presents ideal conditions under which to carry out the interviews.

The surveys were arranged with hospital personnel, in terms of dates and times, and the staff made announcements in the waiting areas about the purpose of the research team's questions and the cooperation of the patients was requested. This made the task at hand much easier and people were for the most part cooperative and responsive. The survey was also generally welcomed as it gave people something to do while they were waiting to either see the doctor or get their medication. There was no substantial problems in terms of the language used, namely English as most respondents were able to communicate in either English or Afrikaans.

It took 5 days to do the surveys, two days at Mowbray Maternity Hospital, two days at Groote Schuur Hospital and one day at Sanlam Centre. The surveys were not dependent on factors such as good weather conditions. The hospitals were also consulted as to their busiest days, and the availability of respondents was more than sufficient.

Data Capturing and Analysis

The data capture and analysis can be regarded as the most important part of a survey process, as any errors that are made in this part of the survey process will influence the outcome of the physical survey done. The process should be structured in such a way that the information and the interpretation thereof is done in such way as to minimise the possibility of corrupting the data. The data capture and the structure of it influences the analysis that can be done with the data obtained. It is thus necessary to make sure that the data is captured in such a way as to provide the most flexibility but still be reliable.

The method used in the data capturing process was with a database created in Microsoft Access. The reason for the utilisation of Access is

because of its simplicity and also it's easy integration with other parts of the Microsoft Office package.

Data Capture

The first thing that needed to be done was to sort the data according to the actual place where the survey was conducted. The process of creating the database was the most time consuming in that all the possible combinations of data should be foreseen. With this in mind, there should also be a means of securing information (ensuring it is in the right format) when entered into the database. The reason for this is that if it is done incorrectly and a query is run in order to gather specific information from the data base, it could create errors and result in incorrect representation of data that has been entered.

There are different ways of ensuring that data are secured, which includes specifying the integer type and also the value that it should consist of.

The fact that the survey was undertaken in a questionnaire format, made the security and also the entering of the data easier as the number of variables applicable to each section or question of the questionnaire is limited. The personal information of the database was the most troubling in that the numbers of variables are not that limited and this had to be accounted for.

The next step in the creation of the database was to choose a unique identifier. This was problematical as there was no means of obtaining this directly from the questionnaire. Therefore it was decided that each questionnaire will be allocated a unique identity. This identity included an alphabetical letter and numeric number in order to be sure that the identifier used was unique in order to limit the possibility of repetition. The alphabetical letter that was used was chosen according to the first letter of the location of the survey. The number was more random as it started at 1 - X, with X representing the total number of surveys undertaken at the location. For example, Cape Town Station's unique identity number is e.g. C 12. This enables that data capturer to easily verify if the correct information has been entered.

This method is fast, yet reliable, because using drop-down menus ensures that the data capturer is only allowed to choose the correct field for that question. This method is well suited in situations where there is either a "yes" or "no" answer.

The final stage of the development of the database entailed the entering of data and also trying to force an incorrect entry in order to see how the database "reacts" and also the way it interprets it. After testing the integrity of the database it seemed necessary to create a norm in the database to enable any person to add data to the data base. The reason for this is that the entering of data into the data base will be time consuming due to the large number of surveys completed.

The fact that each location of the survey has a unique identity, made it possible to seperate the information entering into these various locations and then having one person responsible for entering the information of each location. The end result was that there were numerous databases for the information added by each person to a specified location. The next step was to combine these different databases into one. This was not a problem due to the fact that each data entry in the database had a unique identity.

Data Analysis

The analysis process was also a very time consuming process as there had to be queries created within the data base for the information that was to be produced in order to illustrate the outcomes of the survey. The most logical process was by grouping the information in terms of the order of the questionnaire and according to the categories of the questionnaire. There were queries created for the following categories;

- personal information and mode used,
- mode and SNP category, and
- SNP category with regard to aspects such as information, vehicles, infrastructure, which was done independently.

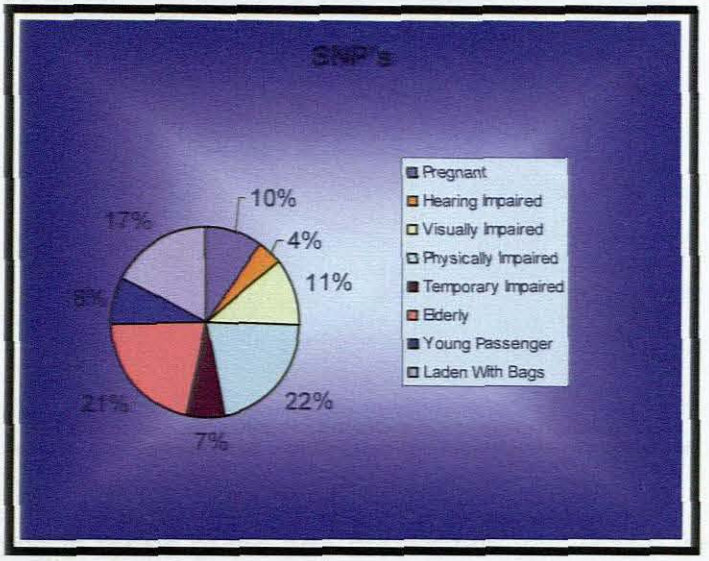
The outcome of this process was that there were a large number of graphs created in the process that could lead to some confusion in the report itself and thus it was decided to create graphs formed by a combination of different outcomes that would best illustrate the best presentation of the current reality faced by SNPs.

These graphs were created as a result of the outcomes of the queries run and according to the specifications created in the creation of the different queries. The results were then transferred into a Microsoft excel worksheet. The reasoning for this is that excel provides a further mathematical means to analyse the information in the database in order to create a visual representation of the information gathered in terms of the current situation and difficulties that are experienced by SNPs.

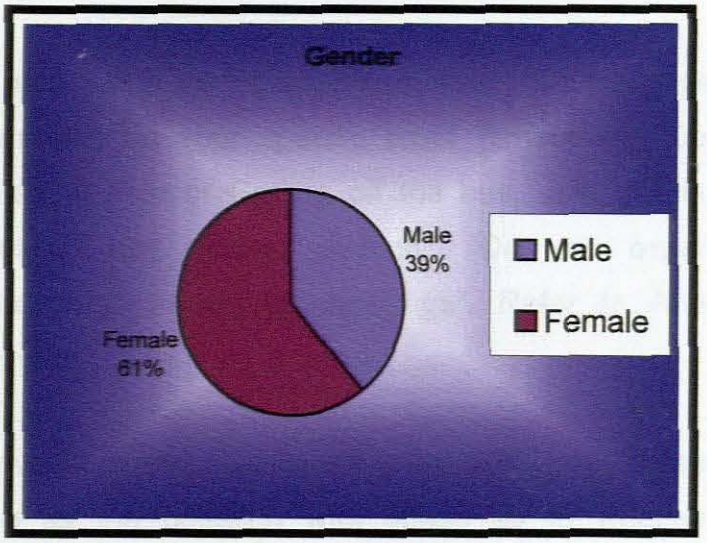
The graphs created were added to the excel document on a new sheet. Though, keeping the relationship between the two. The reason for this is that it provides an opportunity for the information to be changed in the excel document if necessary and these changes will also be reflected on the graphs; this results in integrity of the data and the visualisation of the outcomes of the analysis of the data.

The reason for using a Microsoft excel worksheet is that it provides an easy method of converting the table format information into graph format and also that these graphs that are created are easily added into a word document providing more stability and means of reflecting the analysis and its outcomes in a document format.

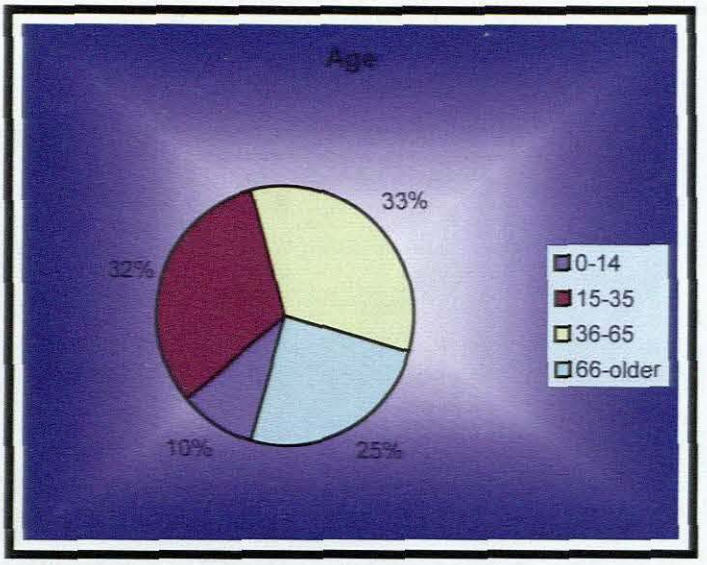
7.4 Findings of the Survey



The results in terms of the breakdown of the SNPs is indicative of the specific category in that the not-so-common categories or the category that is not easily identifiable such as those with a hearing impairment, represent a much smaller percentage of the total of surveyed respondents.



An attempt was made to have a 50:50 gender ratio, but as can be seen from the pie-chart, this was not achieved. Reasons for the failure in keeping to this objective was simply because identifying suitable respondents was quite a challenge, so it was decided to intercept any potential respondent regardless of gender.

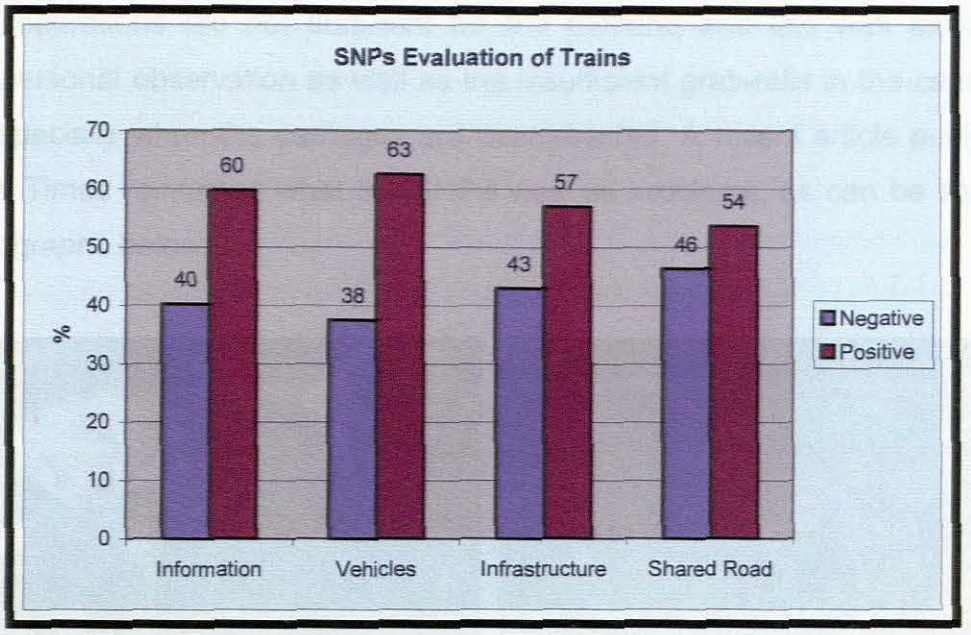


An interesting finding in terms of the age breakdown was that a large percentage of the respondents were in the economically active bracket. This is a critical finding in terms of the research study in that it has been argued in this thesis that SNPs need to be integrated into society because of their potential to contribute to the economy.

Overall perceptions of SNPs regarding the three public transport modes and their components:

Typical questions included in the questionnaire were: "Do you experience difficulties with: finding information on your specific route (timetable), "Do you experience difficulties with: Getting onto or Getting off the bus, train, minibus taxi", "Do you experience difficulties with: finding seating", "Do you experience difficulties with: crossing streets at pedestrian crossings". Refer to Annexure 2 for the complete questionnaire.

In essence, an overwhelming yes (more than 50%) would therefore indicate a negative response as the question was posed as to whether the respondent experiences difficulties, and therefore a no (more than 50%) would be positive.



According to the findings of the checklist, the trains, its facilities (infrastructure) and the surrounding shared road and pedestrian environment had a positive result. That means that there was a more than 50% positive response as to accessible features that were in place so as to attain a fully accessible public transport system.

As can be seen from the graph, the perceptions of SNPs indicate that they agree. From a holistic perspective the train, its facilities (infrastructure) and shared road and pedestrian environment according to SNPs has more positive than negative elements.

However, when one investigates the specific mode and its facilities in more detail as to each question, the results indicate problems with the following:

Information – difficulties experienced with (Q1, Q5 and Q7) finding information on your specific route, finding toilets and information offices and hearing of informational announcements. These findings were expected as personal observations made by the researcher correspond with these problems. Announcements are done; however, the quality of the sound is poor. There is generally an absence of information boards indicating where one can purchase a ticket or find ablution facilities.

Vehicles – difficulties experienced with (Q4 and Q7) crowded trains and the absence of grab-rails for support in a moving train. This was again another expected response

as peak operations are not sufficient for the demand and this was experienced through personal observation as well as the insufficient grab-rails in the carriages of trains, especially when the carriages are overcrowded. A recent article published in the Cape Times reinforces what the SNPs view as problems, as can be seen from the photographs below. .

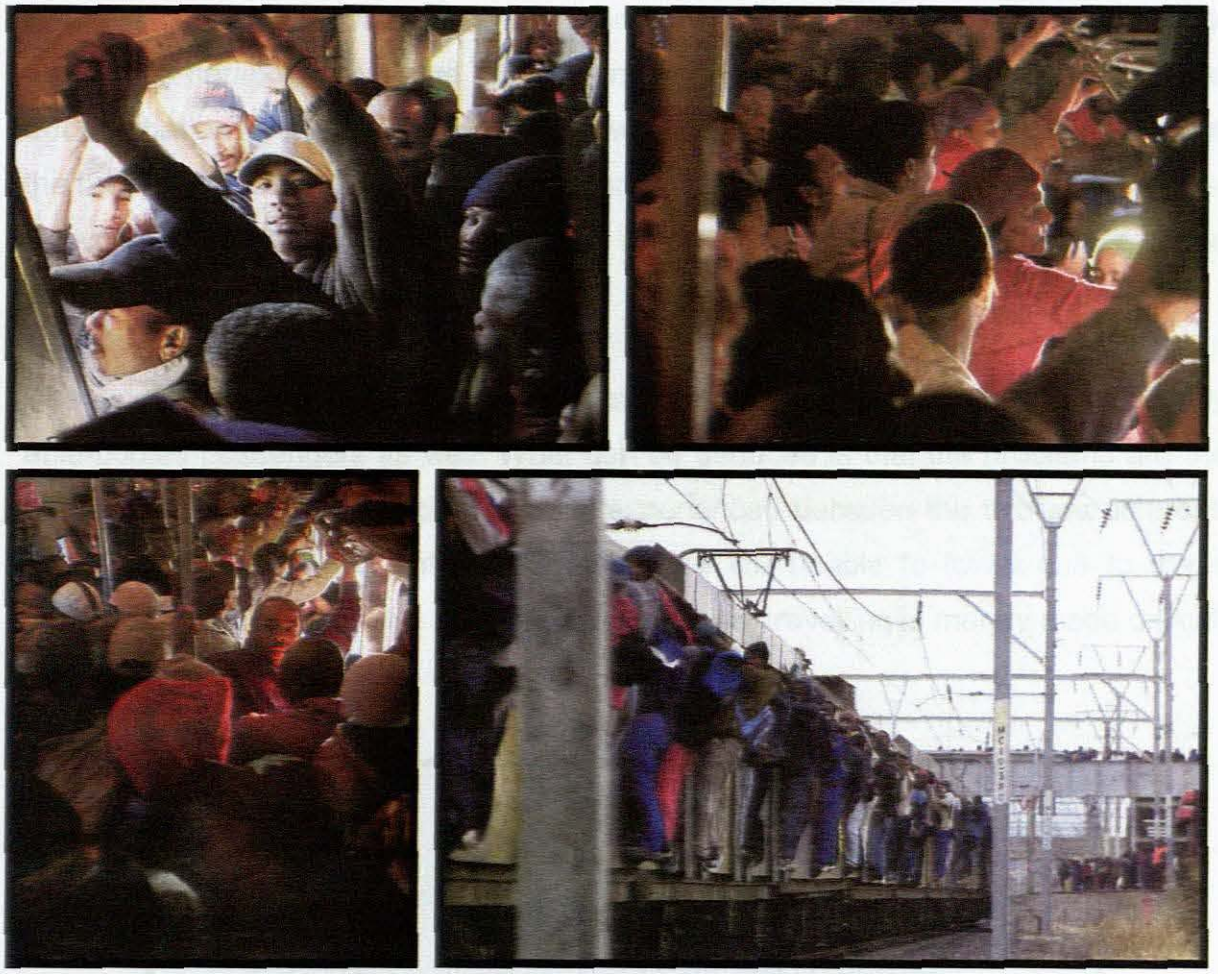


Figure 7.9: Overcrowded trains (Gosling, 2005:3)

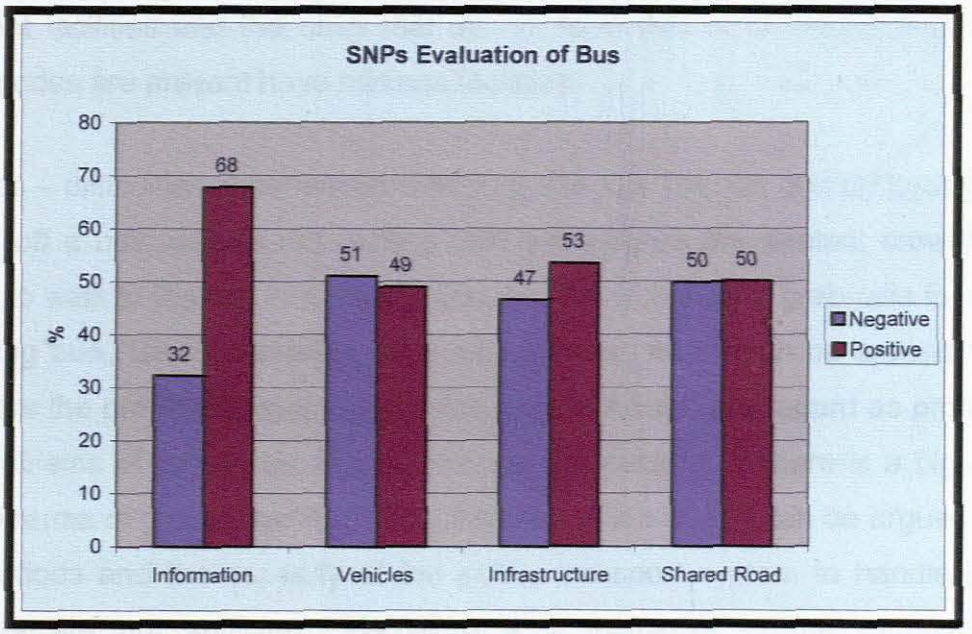
Infrastructure – difficulties experienced with (Q1, Q3 and Q7) finding seating, the absence of ablution facilities and overcrowded pedestrian walkways due to informal traders.

Shared Road and Pedestrian Environment – difficulties experienced with (Q2, Q3, Q4 and Q7) crossing streets at pedestrian crossings, crossing streets where there are no pedestrian crossings, waiting for a bus where there is no shelter and having to walk in the road due to informal traders crowding the pavements.

The findings were in some measure expected by the researcher as the train facilities in terms of the actual mode and the infrastructural components are considered to be better in comparison to other modes.

One of the unexpected findings was the very close results of the shared road and pedestrian environment. It was expected to receive an overwhelming negative response as this component, in the researcher's opinion, constitutes one of the most dangerous components of the public transport system. This is due to the informal traders that have invaded the pedestrian walkways generally forcing pedestrians into the road, the road and pedestrian environment that clearly gives precedence to cars, absence of suitable pedestrian crossings and the inconsistency in terms of dropped curbs in the pedestrian walkways.

The problems identified by the end-users are the typical problems experienced by able-bodied passengers as well. What can be deduced is that the problems are the same; however, the levels of difficulties experienced between the two are different. SNPs could be isolated entirely because they are unable to travel due to these problems; however, with the able-bodied passenger travelling is merely made difficult not impossible.



With reference to the results of the checklist, the bus had a positive response in terms of certain accessibility requirements with the actual mode, with the obvious

drawback of no level access. However, in terms of the infrastructure and shared road and pedestrian environment there was a negative response.

The findings of the graph indicate an approximately 50:50 split of positive and negative responses, with the exception of the informational component. The response in terms of vehicles (bus) is an approximate 50:50 split of both positive and negative, whereas the checklist had an overwhelming positive response. An overall positive response was expected, as generally passengers regard buses as a safer alternative to minibus taxis, though, not as safe as the train.

The specific problems in terms of the buses were:

Information – difficulties experienced with (Q1, Q5 and Q7) finding information on your specific route, finding toilets and information offices and hearing informational announcements. This is another expected finding as highlighted by personal observations of this mode and its facilities, which indicated the difficulty with finding route information and ablution facilities. Generally, bus termini in Cape Town that do not form part of a major public transport interchange such as Cape Town and Bellville are not well equipped in terms of providing information to their passengers. The approximate 50:50 split therefore is indicative of the fact that certain bus termini have sufficient facilities and the ones that do not form part of an interchange where all three modes are present have minimal facilities.

Vehicles – difficulties experienced with (Q1, Q2, Q3, Q4, Q6 and Q7) getting on and getting off a bus, drivers not waiting until passengers are seated, crowded buses, having to walk to the exit in a moving bus and the absence of grab-rails for support in a moving bus. These problems were all expected, and it can be argued again that these are the problems most able-bodied people would also regard as problematical. The problems of getting on and off the bus are evident as there is a big change in level in terms of ground level and the first step of the bus. It can be argued that peak time periods and the capacity of the public transport system to handle peak time numbers are not sufficient. Therefore it is indicative of the responses as to overcrowding and therefore the need for grab-rails that people believe are not sufficient. Drivers work according to a time schedule, that could be a possible reason why they don't appear to be considering the impacts of having to walk to the exit in a

moving bus, or the bus moving before a passenger has been seated, especially SNPs.

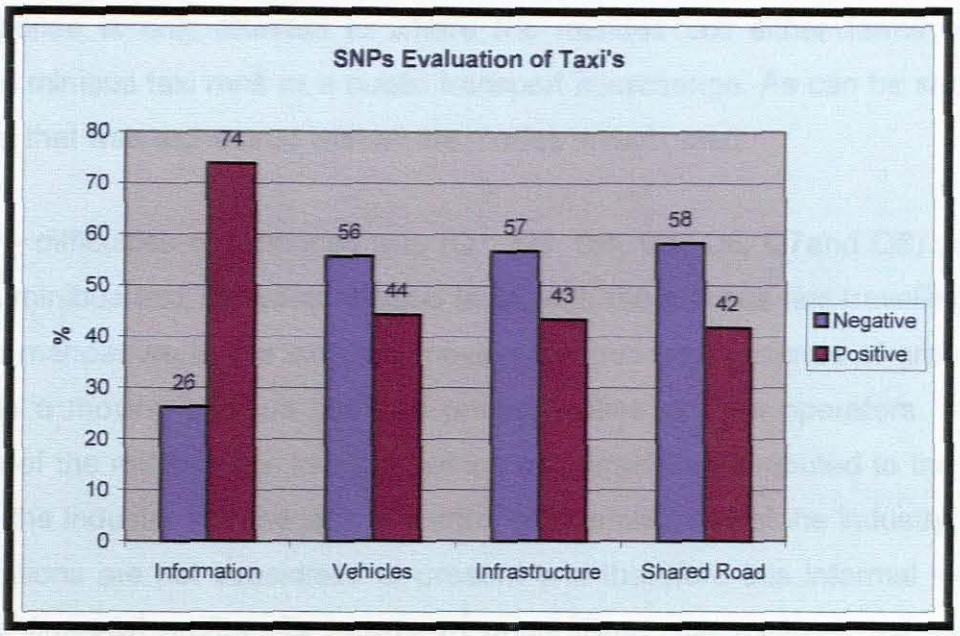
Infrastructure – difficulties experienced with (Q1, Q3 and Q7) finding seating, the absence of ablution facilities and overcrowded pedestrian walkways due to informal traders. These findings were also expected to concur with the checklist that provided an overarching negative response, because of factors such as informal traders who have become a major problem in terms of hindering pedestrian movement and insufficient seating. However, it appears that there are many that are satisfied with the current situation.

The above are problems that appear to be general for both train and bus, as was expected.

Shared Road and Pedestrian Environment – difficulties experienced with (Q3, Q4, Q5 and Q7) crossing streets at pedestrian crossings, crossing streets where there are no pedestrian crossings, waiting for a bus where there is no shelter, having to walk on pavements with poor quality surfaces and having to walk in the road due to informal traders crowding the pavements. To reiterate, SNPs, because of their mobility limitations (walking with an mobility aid such as a walking-stick, crutches, in a wheelchair) would experience difficulty crossing a street where no pedestrian crossing is present (and even with one present) as many crossings do not have conducive elements in place for SNPs such as audible and visual warnings, tactile paths and dropped curbs. Further detail as to the specific guidelines for accessible features in the public transport system is given in chapter eight.

A greater general negative response was, however, expected. Reasons for the result could be that SNPs are finding alternative methods to overcome hindrances, for instance the absence of dropped curbs, by asking help from others. It also needs to be highlighted that this result could also be because of the varying limitations of SNPs, for instance pregnant women might not regard the absence of a dropped curb to be such a big hindrance as would a person pushing a stroller or someone in a wheelchair. It could possibly also be a matter of the differing mindsets of people, as certain SNPs may view the occurrence of informal traders as normal, and something that has to be there, as one of the respondents had mentioned that these people

need to make a living so you can't blame them for putting up shop wherever there is free space. The reality is that informal traders follow pedestrian desire-lines.



The graph above depicts that there is an overall negative response with the exception of the informational component. The results of the checklist indicated a big problem with minibus taxis. An overall negative response was expected because of the informal nature of the minibus taxi industry.

The overwhelming positive response in terms of the informational component might initially come as a surprise. However, it was another expected result. This is because certain questions such as finding information on your specific route (timetable) were not applicable to this mode, again because of its informal nature.

There were certain expectations on the part of the researcher as to what the responses would be, in terms of each component, due to reasons mentioned previously, as to where there is structure in terms of operations at a public transport interchange. To reiterate what is meant, when the minibus taxi terminus forms part of an established public transport interchange, there are certain structures in place as opposed to the informal pickup and drop-off aspects attached to minibus taxi operations. Therefore it was expected that there would be disagreement amongst respondents.

The overall problems in terms of the minibus taxis were:

Information – difficulties experienced with (Q5) finding toilets and information offices. This response is only relevant to where the minibus taxi either forms part of a structured minibus taxi rank or a public transport interchange. As can be seen this is a problem that was expressed with all the modes investigated.

Vehicles – difficulties experienced with (Q1, Q2, Q4, Q5, Q6, Q7and Q8) getting on and off a minibus taxi, crowded minibus taxis, with the minibus taxi travelling to fast, having to manoeuvre to the exit in a moving minibus taxi, absence of grab-rails for support in a moving minibus taxi and uncooperative or rude operators. All this is indicative of the minibus taxi industry, which can largely be attributed to the informal nature of the industry and the lack of control government has of the industry. Minibus taxi operations are not subsidised at present and therefore this informal industry is driven by financial profits. As has been generalised, the minibus taxi industry is known for the problems identified above of rude and uncooperative operators, overcrowding, etc. and the unsafe nature of this industry in general.

Infrastructure – difficulties experienced with (Q1, Q3, Q6 and Q7) finding seating, the absence of ablution facilities, finding ramps if you are unable to use stairs or curbs and overcrowded pedestrian walkways due to informal traders.

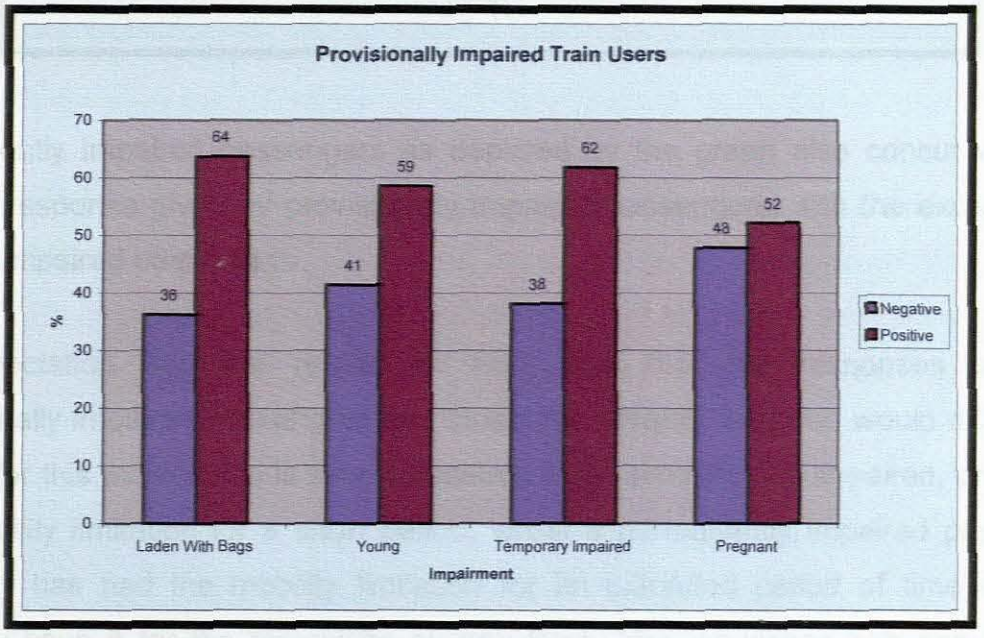
Shared Road and Pedestrian Environment – difficulties experienced with (Q3, Q4, Q5, Q6 and Q7) crossing streets at pedestrian crossings, crossing streets where there are no pedestrian crossings, waiting for a bus where there is no shelter, having to walk on pavements with poor quality surfaces, having to walk in the road due to the absence of pavements and having to walk in the road due to informal traders crowding the pavements.

Again, the problems identified with the last two components have been identified throughout this investigation, and is unfortunately how the public transport system is characterised at present.

It was decided by the researcher to divide the special needs passengers into two further categories:

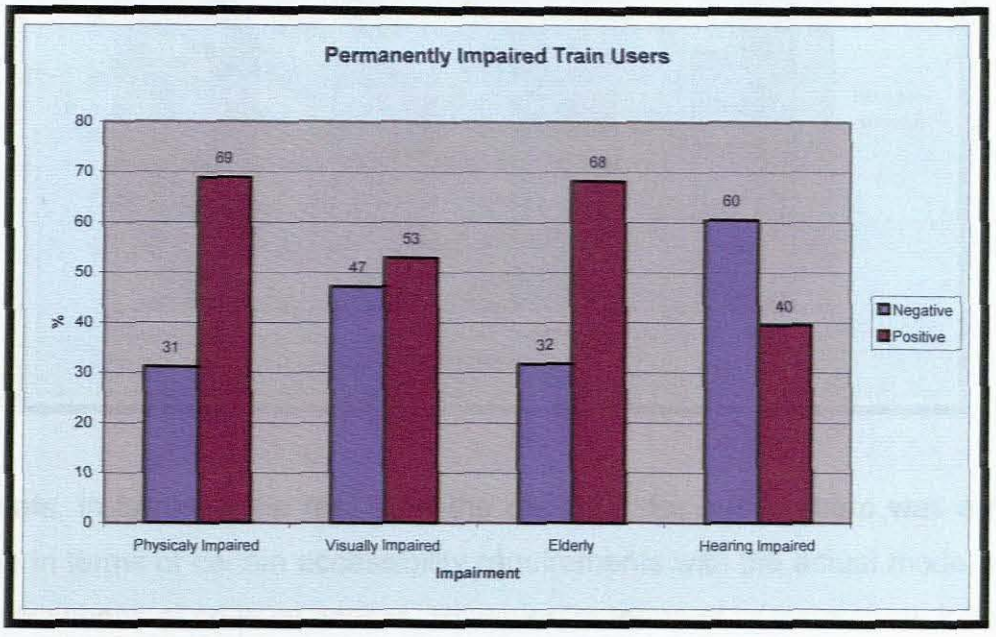
- Provisionally impaired passengers (those passengers whose mobility limitation is only temporary)
    - Pregnant, temporary impaired, young, and laden with bags
- Permanently impaired passengers (those passengers whose mobility limitation is permanent)
    - Hearing impaired, visually impaired, physically impaired, and the elderly

This division was done to assess if those with provisional mobility impairments had differing perceptions to those with permanent mobility impairments.



To reiterate, the findings of the checklist in terms of trains, its facilities (infrastructure), information and the surrounding shared road and pedestrian environment, had a positive result. That means that there was a more than 50% positive response as to accessible features that were in place so as to attain a fully accessible public transport system.

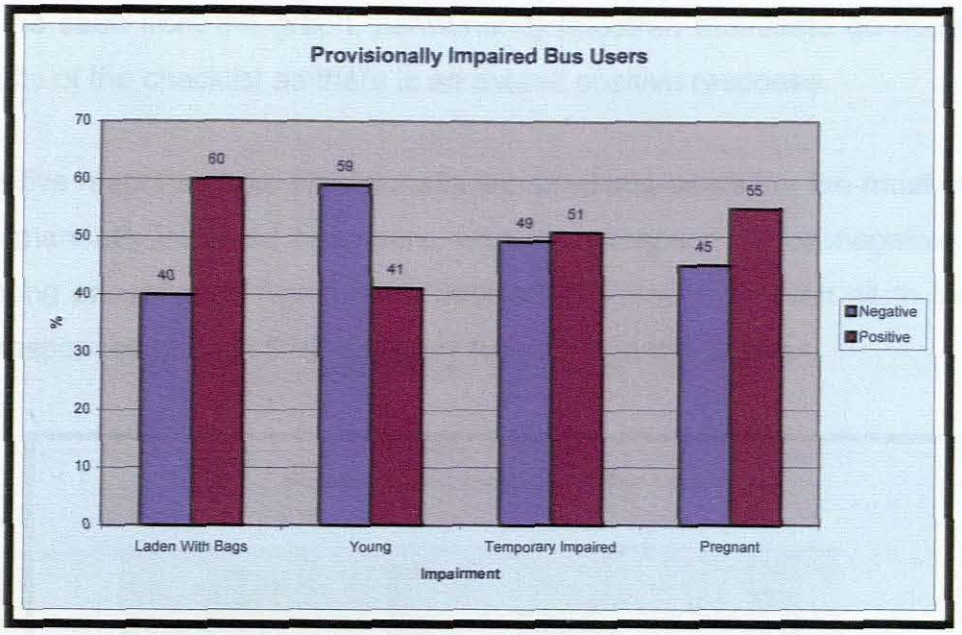
The overall response in terms of provisionally impaired train-users appear to concur with the checklist findings. A more detailed analysis is provided later of each SNP category and the various public transport modes.



Permanently impaired passengers as depicted by the graph also concur with the positive response given by provisionally impaired passengers, with the exception of hearing impaired passengers.

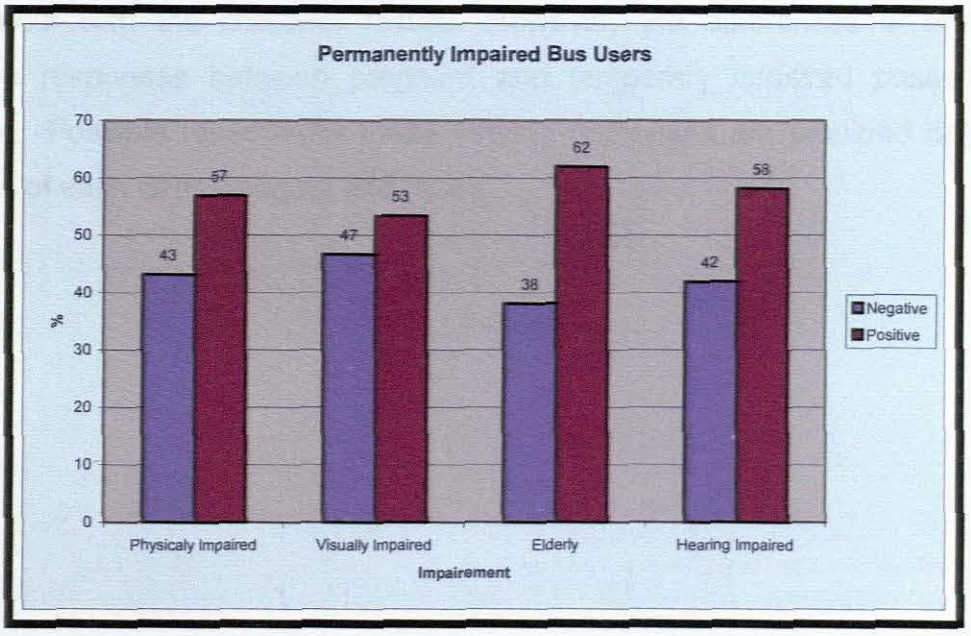
An expectation that the researcher had, was that the responses between provisionally impaired passengers and those permanently impaired would differ. The reason for this expectation is simply because those provisionally impaired, only have this mobility limitation for a short period, whilst a permanently impaired passenger generally has had the mobility limitation for an extended period of time and will arguably have it for the remainder of their lives. The responses between the two groups could be positive or negative; it is dependent on many variables.

Again, the specific problem areas will be investigated for each mode and SNP categories in greater detail, further on in this chapter.



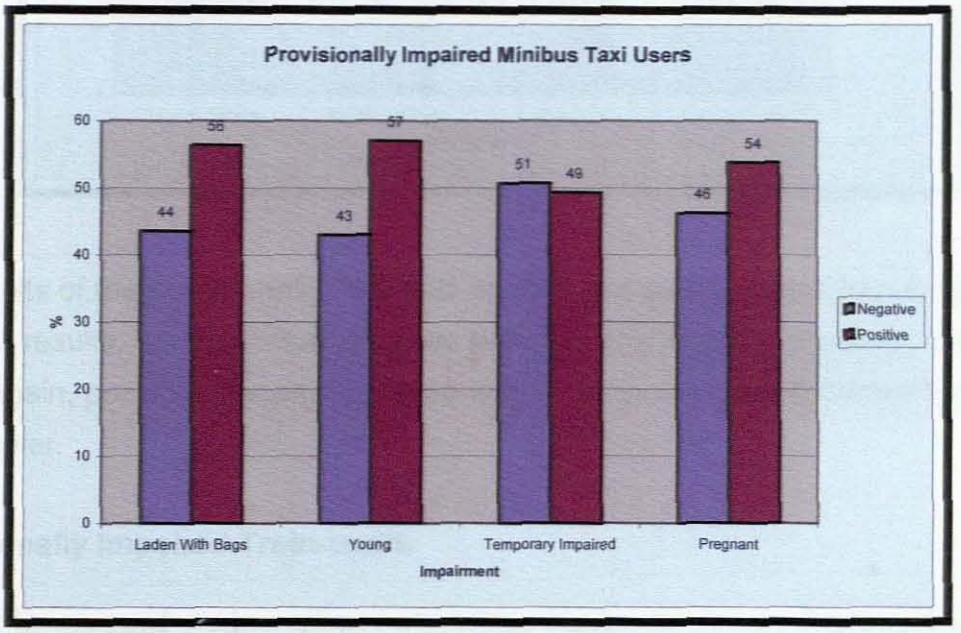
To reiterate, in terms of the results of the checklist, for buses, there was a positive response in terms of certain accessibility requirements with the actual mode, with the obvious drawback of no level access. However, in terms of infrastructure, information and the shared road and pedestrian environment there was a negative response.

The results for provisionally impaired bus-users are for the most part positive, with the exception of young passengers. Therefore, these results are not in agreement with the negative findings of the checklist. Possible reasons for these positive responses are given later in the chapter, when a more detailed analysis of each SNP category is provided.

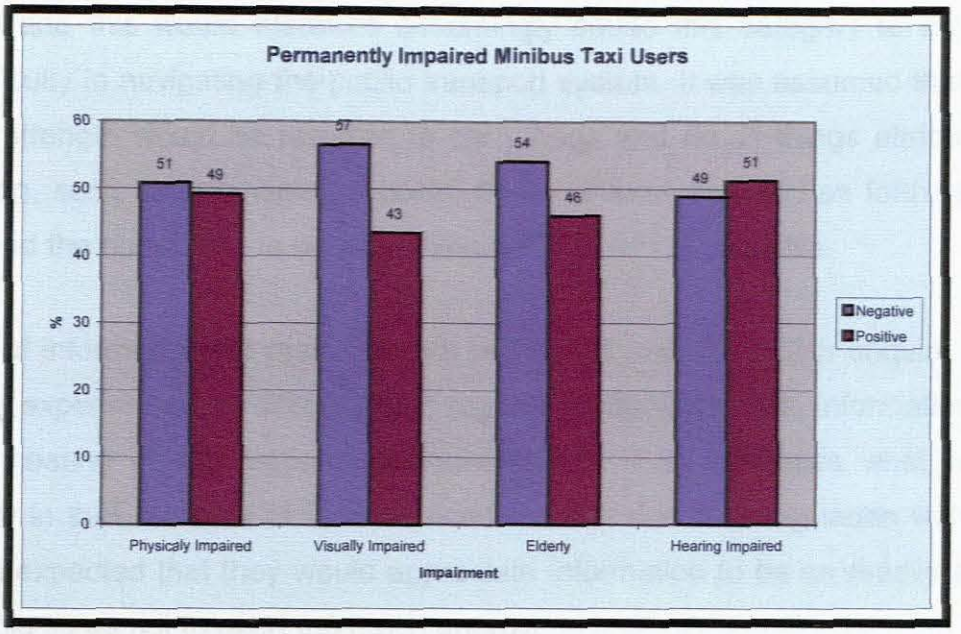


As can be seen from the graph, permanently impaired bus-users do not agree with the results of the checklist as there is an overall positive response.

The positive response from provisionally impaired bus-users, for the most part concur with permanently impaired bus-users, with the exception of the negative response from young passengers. Again more detailed information is given as to the reasons for the responses of each SNP category further on in the chapter.

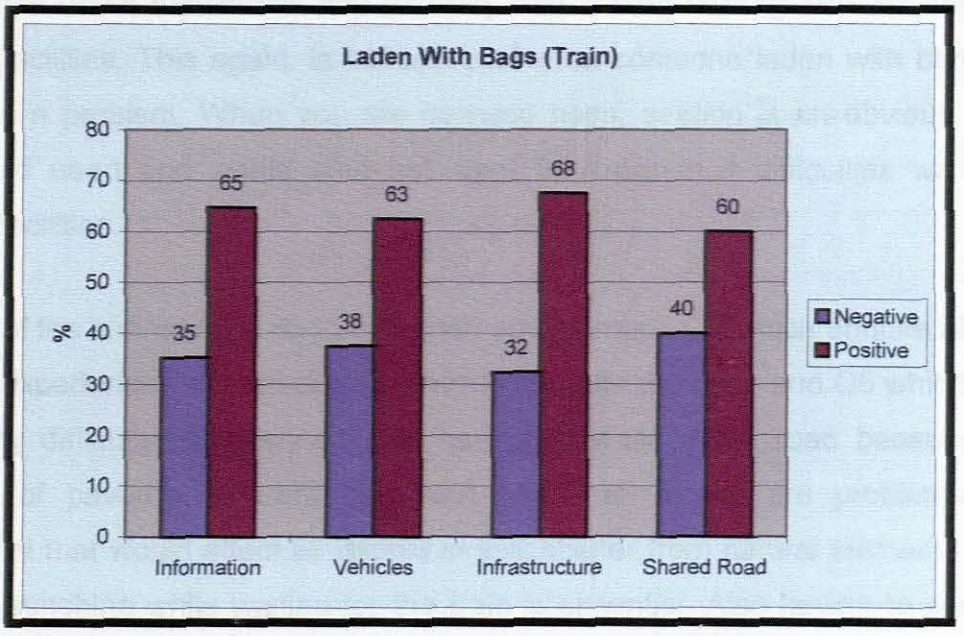


The results of the checklist indicated that SNPs generally had a problem with minibus taxis. As can be seen by the graph, the provisionally impaired minibus taxi users do not concur with the checklist results. However, the differences in positive and negative responses between pregnant and temporary impaired passengers are minimal. Possible reasons for these varying responses are provided below in the analysis of each SNP category and mode.



The results of the permanently impaired minibus taxi users appear to concur with the checklist results, and therefore disagree with the provisionally impaired minibus taxi-users. Again, possible reasons for these varying responses are provided further on in this chapter.

Provisionally Impaired Train-users



Overall findings concur with the perceptions of all SNPs with regards to trains.

The overall positive results of those laden with bags were not expected. Because a requirement for choosing someone in this category was for both hands to be

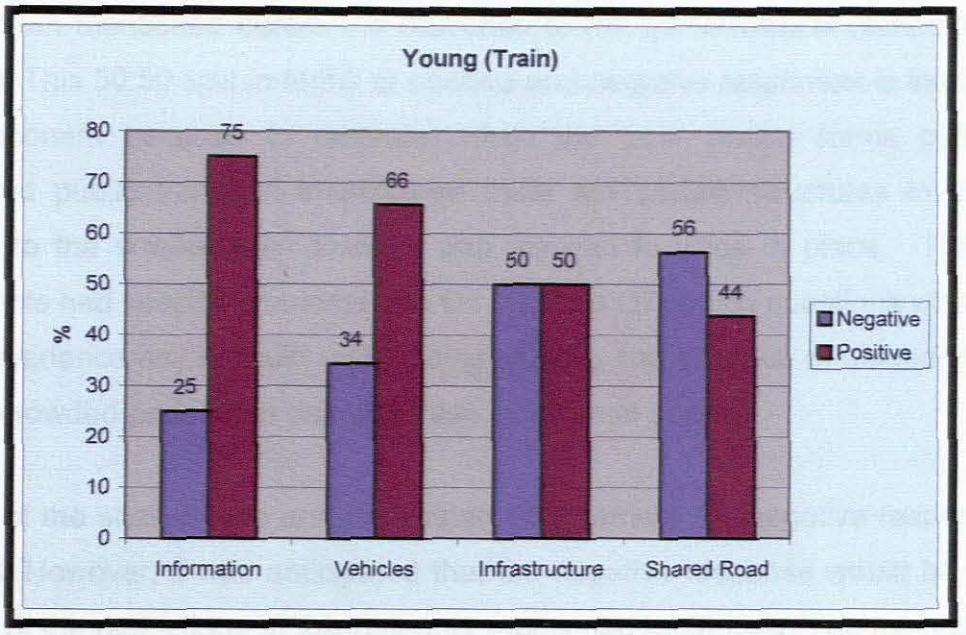
occupied and this would therefore assumingly cause this category to experience great difficulty in navigating the public transport system. It was assumed that greater physical strength would be required to carry bags and do all things attributed with commuting, such as purchasing a ticket, finding information and so forth, and they would need the operations to be as convenient for them as possible.

In terms of information the main concern is with Q5 and Q7, which enquire whether the users experience any difficulty with regards to finding toilets, information offices and the hearing of informational announcements. This reinforces what was said previously in that because of their reduced mobility due to being laden with bags it would be expected that they would appreciate information to be as readily available as possible so as not to exert too much energy.

In terms of vehicles the main concern is with Q4, which begs the question as to whether the users experience any difficulty with regard to overcrowded trains. Again, this is another expected problem for this category, being laden with bags in an overcrowded train.

In terms of infrastructure the main concern is with Q1 and Q3, which questions whether the users experience any difficulty with finding seating and the absence of ablution facilities. This again, is indicative of what someone laden with bags would regard as a problem. When you are carrying bags, seating is an obvious element one would need and would also not want to experience difficulties with finding ablution facilities.

In terms of the shared road and pedestrian environment, Q4 which enquire about any difficulty experienced with no shelter when waiting for the train, and Q6 which enquire about any difficulty experienced with having to walk in the road because of the absence of pavements, were the main concerns. These are problems in this component that would affect all people in that shelter from natural elements such as rain and sunshine while waiting for the train is essential. Also having to walk in the road because of the absence of pavements would also be expected to be a problem because more rapid movement would be reduced if you are laden with bags.



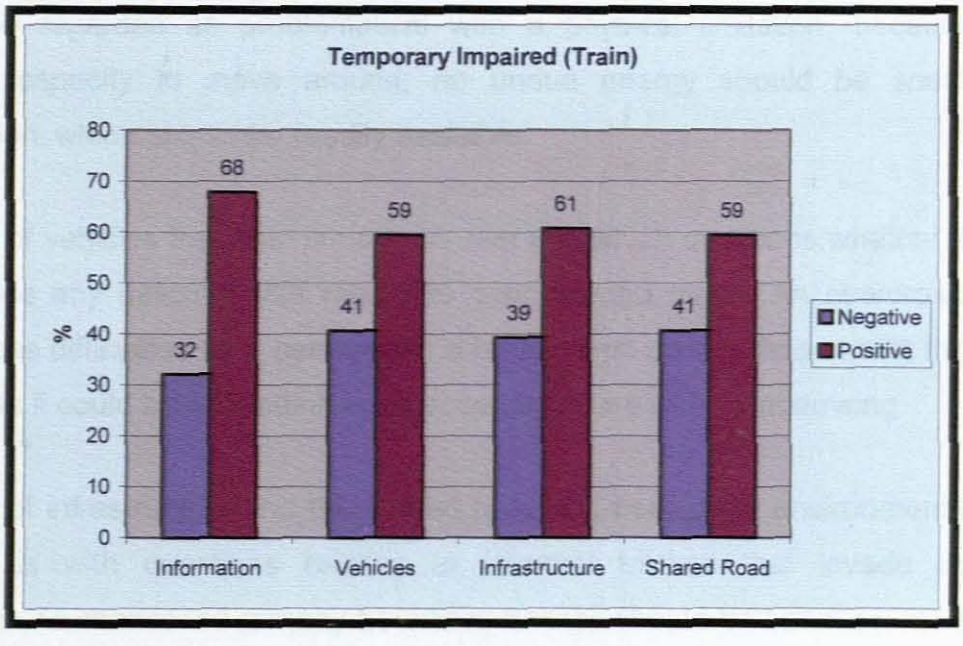
The initial expectation with young passengers is that because of their height restriction due to their ages, that any physical hindrances such as the absence of dropped curbs, getting on and off modes and understanding information would be some of the main concerns of this category.

The graph indicates certain expected results and certain unexpected ones. Firstly, it was expected that information would be a major concern, yet more than 70% of this category was satisfied with this component. This could be due to the fact that approximately half of the respondents were accompanied by an adult and those that weren't, were experienced with the route that they travelled, they travelled in the same mode and at the same time everyday(to school in the morning and going home at the same time after school). Those that indicated a problem with information, had concerns with Q5 and Q7, which enquire whether the users experience any difficulty with regards to finding toilets, information offices and the hearing of informational announcements.

Another unexpected result was the overwhelming positive response with the vehicle (train). It was expected that due to the height restrictions of young passengers getting on and off the train and overcrowded modes, this would be problematical for the majority. However, with the few that did indicate problems with the train, Q4 which questions whether the users experience any difficulty with regard to overcrowded trains was the main concern.

As has been mentioned before the response to the infrastructural component was expected. This 50:50 split in terms of positive and negative responses is indicative of this component because to reiterate, when the train station forms part of an established public transport interchange there are certain structures in place as opposed to the smaller train stations with minimal facilities in place. The young respondents had specific problems with Q1, Q3 and Q7, which questions whether the user's experience any difficulty with finding seating, the absence of ablution facilities and overcrowded pedestrian pathways due to informal traders.

In terms of the shared road and pedestrian environment the negative response was expected. However, it was anticipated that the negative response would be greater, because of the restrictions of this category mentioned previously. The main concerns of the young respondents were with Q3, Q4 and Q7 which enquire about any difficulty experienced with crossing streets where no pedestrian crossing are present, or no shelter when waiting for the train and Q7 about having to walk in the road because of informal traders crowding pavements. This response is also indicative of this category, as safety would be a major concern for young passengers.



This category was expected to have varying responses to the questions, because these are people with a physical limitation like a broken leg or arm, so navigating through the system with hindrances such as obstructive turnstiles at train stations was expected to pose great difficulties. However, what needs to be taken into

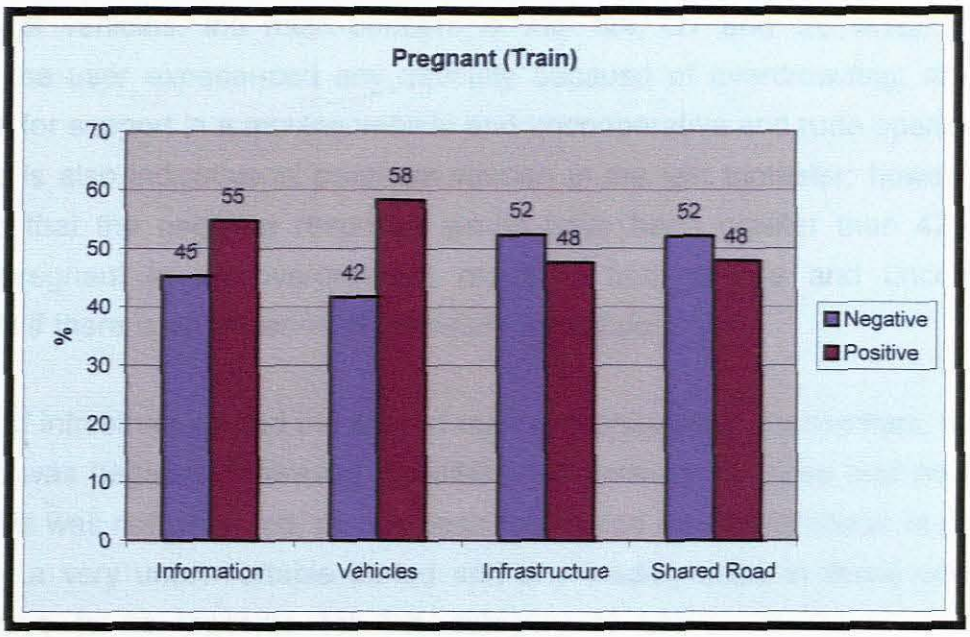
account that these respondents are only temporary impaired. Therefore, it is for a short span in their lives that they have this limitation, so for some it would be an eye-opener as to how certain "normal" occurrences such as the presence of informal traders on pedestrian paths that force pedestrian movement into the street could now be a problem.

As the graph depicts there is an overwhelming positive response to the entire public transport system. Certain generalised assumptions could therefore be made; for instance the fact that because normally they are regarded as able-bodied passengers and therefore do not place great concern on the fact that there are hindrances in the public transport system. Therefore they attribute the problems they are experiencing purely to their present physical limitations and do not regard the system as posing hindrances to them.

In terms of information the main concern is with Q5 and Q7, which enquire whether the users experience any difficulty with regards to finding toilets, information offices and the hearing of informational announcements. Again this is what has been highlighted as a problem for the majority of SNPs thus far. It is indicative of what would be regarded as problematical with a physical limitation, because of the reduced capacity to move around; no undue energy should be spent finding information, which should be readily available.

In terms of vehicles the main concern is with Q4, which questions whether the users experience any difficulty with regard to overcrowded trains. An overcrowded train would pose difficulties for a person with a broken limb on crutches or with their arm in a sling, as it could be both painful and pose difficulties with manoeuvring.

In terms of infrastructure and the shared road and pedestrian environment the main concern is with questions relating to informal traders that invade pedestrian pathways. As mentioned already no undue energy should be spent on manoeuvring around informal traders that invade pedestrian pathways when one is on crutches, especially when it's a temporary impairment and one is not accustomed to using crutches.



A variable that should be heeded with this category is the fact that perceptions might also vary because with the exception of the last trimester of pregnancy, generally they would be regarded as able-bodied persons. .

The graph depicts negative responses with two components and positive responses with the other two.

In terms of the positive responses recorded with information and vehicles, there wasn't an overwhelming positive response. This is indicative of the fact mentioned above about only being temporary impaired and therefore the responses are almost equally split in terms of negative and positive views.

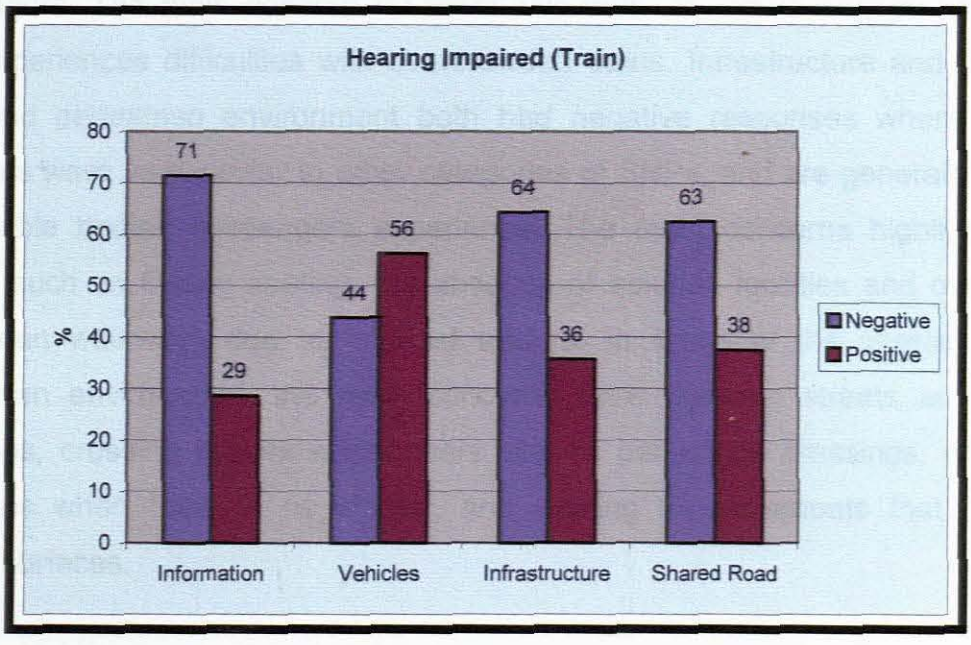
The positive response in terms of information was expected, as the physical limitation imposed on pregnant women in the last trimester does not affect sight or hearing in terms of information. However, this does not mean that information relayed to passengers is necessarily efficient or adequate. 45% of pregnant women, had main concerns with Q2 and Q7, which questions whether the users experience any difficulty with finding information that is up to date and hearing of informational announcements. As has been mentioned, it was observed by the researcher that generally information announcements at train stations are of poor sound quality.

In terms of vehicles, the main concern is with Q4, Q7 and Q8 which questions whether the user experienced any difficulty because of overcrowding, absence of grab-rails for support in a moving vehicle and uncooperative and rude operators. This response is also indicative of pregnant women in the last trimester; however it was expected that the negative response would have been greater than 42%. Being heavily pregnant in an overcrowded mode is both unsafe and uncomfortable especially if there is an absence of grab-rails for support.

In terms of infrastructure and the shared road and pedestrian environment, the overall response was negative. However, the difference between negative and positive was minor. This was not expected, as has been mentioned the last trimester of pregnancy is usually a very uncomfortable period and any inadequacies in these components could prove to be tiresome for this category of SNPs. All the main concerns highlighted, are again indicative of what a pregnant women would regard as problematical. In terms of infrastructure the main concern is with Q1, Q3 and Q7, which questions whether the users experience any difficulty with finding seating, the absence of ablution facilities and overcrowded pedestrian walkways due to informal traders.

In terms of the shared road and pedestrian environment Q3, Q4, Q6, Q7 and Q8, which enquire about any difficulty experienced with crossing streets where there are no pedestrian crossings, waiting for trains when there is no shelter, having to walk in the road due to the absence of pavements, having to walk in the road because of informal traders crowding pavements and climbing up pavement curbs were the main concerns.

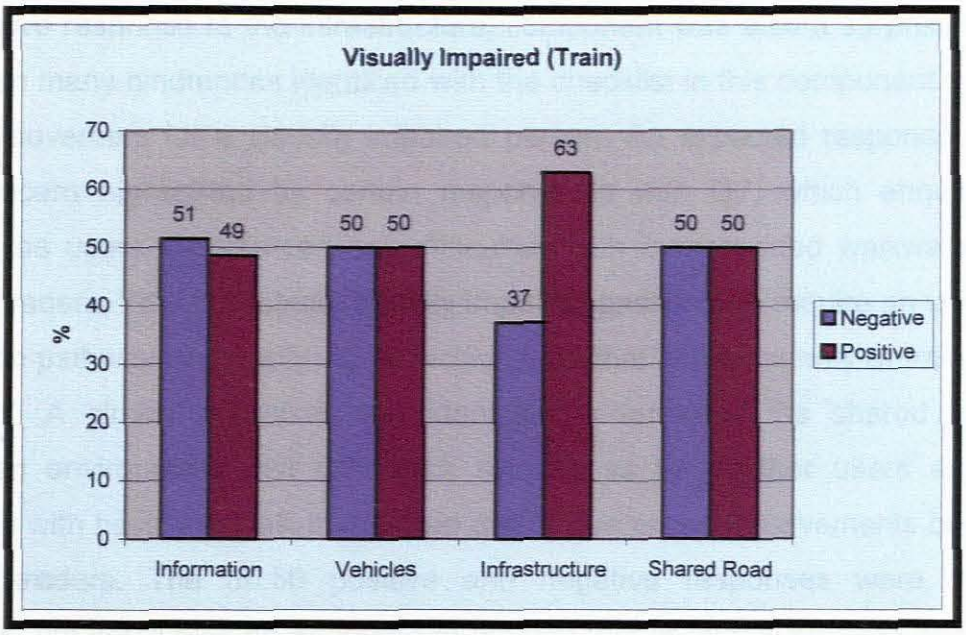
Permanently Impaired SNPs and the Train



With all the various categories of SNPs, the researcher had certain assumptions as to what their main concerns would be. In the instance of a hearing impaired passenger it was presumed that information and how it is relayed would be the main concern.

As can be seen from the graph, the assumption made was verified as more than 70% of hearing impaired passengers had a problem with information. In terms of information the main concern is with Q1, Q3 and Q5, which questions whether the user's experience any difficulty with finding information on your specific route, reading or understanding informational signs and finding toilets and informational offices. The response in terms of the main concerns is similar to problems identified by other categories of SNPs, with the obvious exception of hearing informational announcements. As hearing-impaired passengers are reliant on their sight to attain information it is essential that adequate information is given. This is however not the case, as many timetable boards have lettering in upper case which makes it difficult to read, with smaller train stations the only place to find route information are A4 pages stuck to the ticket office windows which are generally in very small letters and not always up to date and therefore communication with station employers is the next option. This is, however, not as easy for a hearing impaired passenger as not all of them can lip-read, and very few people can use sign language.

The only component which had a positive response was the vehicles, which can be attributed to the fact that it generally is not the biggest concern for a hearing-impaired passengers. The main concern for them was with Q4, which enquire whether the user experiences difficulties with overcrowded trains. Infrastructure and the shared road and pedestrian environment both had negative responses where the main concerns were very similar to other categories of SNPs, and are generally problems many able bodied passengers experience. The main concerns highlighted were factors such as finding seating, the absence of ablution facilities and overcrowded pedestrian walkways due to informal traders. In terms of the shared road and pedestrian environment, the main concerns were crossing streets at pedestrian crossings, crossing streets where there are no pedestrian crossings, and waiting for trains when there is no shelter, and walking on pavements that have poor quality surfaces.

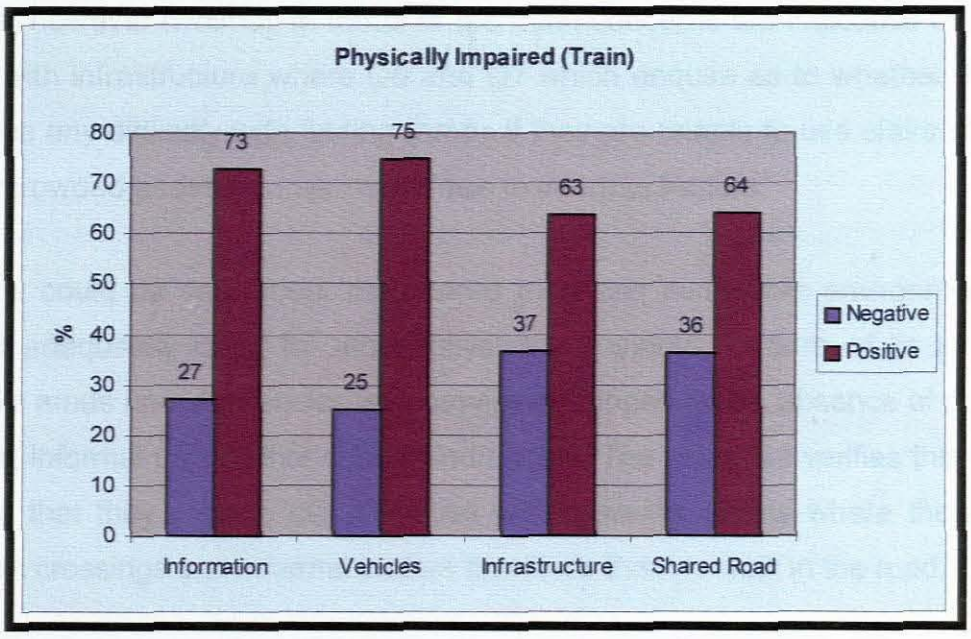


Again, the assumption made in terms of a person with a visual impairment was that information and how it is relayed would be the main concern. The findings as can be seen by the graph confirmed this assumption. However, the response was not as overwhelmingly negative as presumed it would be, especially since a visually impaired passenger is reliant on audible information which has been highlighted by many other SNPs as being a major concern because of the poor quality of sound. A surprising finding was that this category's main concerns were with Q1 and Q5, which enquire as to whether the users experience any difficulty with finding information on their specific route and finding toilets, information and offices etc., and not the hearing of informational announcements.

The response in terms of the other components was also surprising, because there are generally very few tactile warnings for visually impaired passengers and therefore it was expected that there would be an overwhelming negative response.

The vehicle component has a 50:50 positive and negative split, and the main concern is with Q1, and Q2, which enquire as to whether the users experience any difficulty with getting onto or off a train. The 50:50 split can be attributed to the fact that certain trains have colour-contrasting markings which helps visually impaired passengers to distinguish between either a change in level or a warning of an opening (entrance/exit) at the entrance to trains, and then there are the older trains that have none.

The positive response to the infrastructural component was also a surprise as there have been many hindrances identified with the checklist in this component that could hamper movement for a visually impaired person. An expected response was the main concern highlighted by certain respondents with Q7, which enquire as to whether the users experienced any difficulties with overcrowded walkways due to informal traders. This is because visually impaired passengers require an unhindered pedestrian pathway preferably with a tactile guide that in the majority of train stations is absent. A similar response was identified in terms of the shared road and pedestrian environment with Q7 which enquire as to whether users experience difficulties with having to walk in the road due to overcrowded pavements because of informal traders. The 50:50 positive and negative responses were, however, surprising, but could also be attributed to the fact that at certain stations strict control is exercised as to the allocation of informal traders out of pedestrian walkways.



The findings in terms of those with permanent physical impairments were the most surprising, as there was an overwhelming positive response. This can be attributed to the fact that train facilities in comparison to the other two modes and their facilities have more positive elements and accessibility elements in place. As has been mentioned, the minimal negative responses do however warrant investigation.

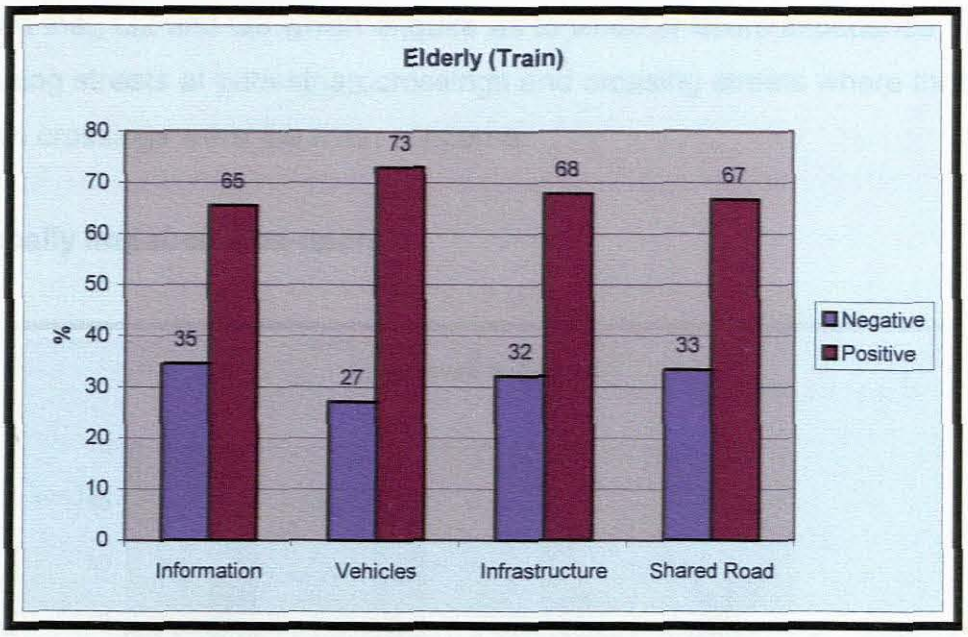
Main concerns in terms of information was with Q5 and Q7, which enquire as to whether the users experience any difficulty with finding toilets and informational

offices and hearing informational announcements. These concerns again appear to be the concerns highlighted by the majority of SNPs. This is also indicative of the low physical abilities of this category that cannot and should not be wasted on finding information.

In terms of vehicles there was a surprising finding, in that the minority of respondents experienced difficulties. Those that did experience difficulties experienced it with getting onto and off the train, having to walk to the exit in the train and with the absence of grab-rails for support in a moving train. It was expected that these would be the major concerns; however, a stronger negative response was expected because of the physical limitations of this category.

The majority of train station facilities are not equipped to deal adequately with physically impaired passengers, such as those in wheelchairs. The negative response, however minimal, in terms of the main concerns are indicative of this fact, such as with infrastructure where Q6 and Q7 which enquire as to whether the users experience any difficulty with finding ramps if they are unable to use stairs and curbs and overcrowded pedestrian walkways due to informal traders.

The same could be said about the shared road and pedestrian environment which does not adequately cater for those physically impaired, in term of its patches of accessible areas (inconsistencies with providing dropped curbs, absence of pedestrian crossings, informal traders that cause hindrances). The response verifies this as users conveyed that they experience difficulties with crossing streets where there are no pedestrian crossings and informal traders that force them to walk in the road.



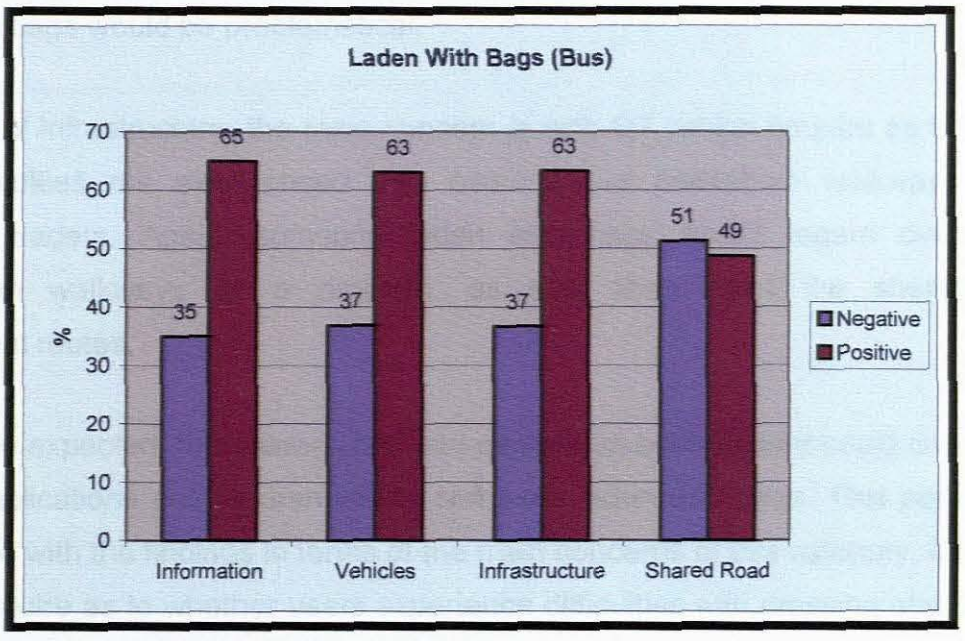
The expectation was that the response would be indicative of ailments associated with elderly people, such as being hard of hearing and reduced sight and strength, therefore a similar response was expected as with the hearing, visual and physical impairment categories. There was an overwhelming positive response from elderly passengers, which in fact was surprising. This positive response again can be attributed to the fact that the train and its facilities as has been shown with the results of the checklist, are regarded as superior in terms of quality to the other modes and their facilities.

The response from the end-users that experienced difficulties was again very similar to all the other SNPs. In terms of information the main concern is with Q1 and Q5, which enquire as to whether the users experience any difficulty with finding information on one's specific route and finding toilets, information offices etc.

In terms of vehicles, the main concern is with Q4, which enquire as to whether the users experience any difficulty with regard to overcrowding. What was expected was that difficulty with getting on and off the train would be a main concern because of the large difference in levels between the platform and the train entrance. As was the main concern for hearing impaired passengers, the elderly experienced difficulties with the absence of ablution facilities. The response to the shared road and pedestrian environment is also indicative of what elderly passengers would experience difficulties with because of their reduced physical strength; it was

highlighted that, Q2 and Q3 which enquire as to whether users experience difficulties with crossing streets at pedestrian crossings and crossing streets where there are no pedestrian crossings were the main concerns.

Provisionally Impaired Bus-users



To reiterate, the overall response of SNPs to the bus was positive in terms of certain accessibility requirements in place with the actual mode, with the obvious drawback of no level access. However, in terms of the infrastructure and shared road and pedestrian environment, there was a negative response.

The overall positive results of those laden with bags were not expected, as has been mentioned under the same investigation in terms of the train. Because a requirement of this category was for both hands to be occupied, this would therefore assumingly cause this category to experience great difficulty and that greater physical strength would be required to carry bags and do all things involved in travelling. The findings of those laden with bags in term of train-users are very similar to bus-users.

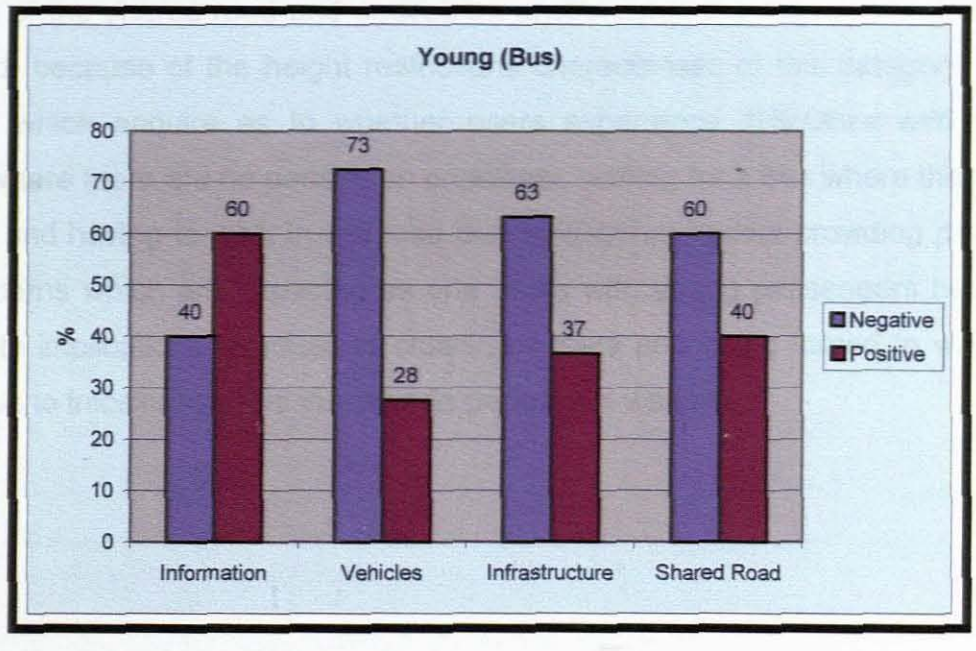
This category had the same overwhelming positive response to information and had the same concerns in terms of the difficulties they experience with Q5 and Q7, which enquire as to whether any difficulty is experienced with finding toilets, information offices etc and hearing of informational announcements. As was said under the train

analysis it would be expected that they would appreciate information to be as readily available as possible so as not to exert too much energy.

Indicative of this category, difficulty was experienced with vehicles that were crowded and with the absence of grab-rails for support in a moving bus, as was the case for train-users laden with bags, as it would be expected that being in an overcrowded train with bags would be problematical.

In terms of infrastructure, the main concern is with Q7, which enquire as to whether any difficulties are experienced with overcrowded pedestrian walkways due to informal traders. Again, someone laden with bags would regard overcrowded pedestrian walkways as a problem, as they then need the shortest most convenient routes.

As can be expected, the shared road and pedestrian environment could cause major safety implications and hindrances for someone laden with bags. This perception is reinforced with the findings in terms of the main concerns of this category. Q3 and Q7 which enquire as to whether users experience difficulties with crossing streets where there are no pedestrian crossings and having to walk in the road due to informal traders crowding pavements, were identified as the main concerns. These identified problems, are indicative of the limitations of this category and having to compete with cars when their own speed of movement is reduced because of the bags being carried, is an expected concern of this category.

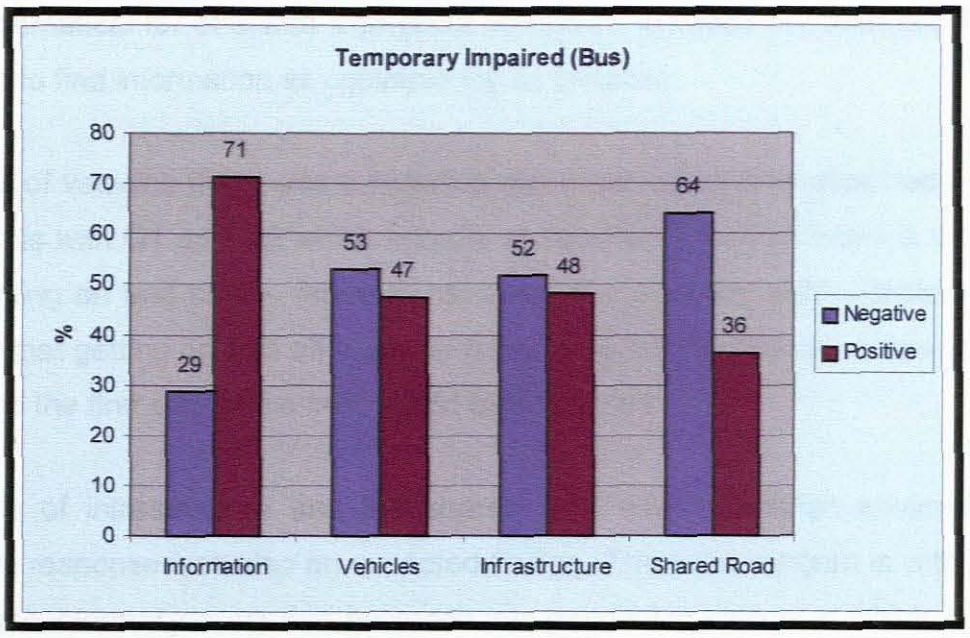


The findings are again also very similar to those of train-users. An unexpected result is that of information where 60% of this category was satisfied with this aspect. As with the train-users, this response could be attributed to the fact that some of the young passengers travelled with adults and others were comfortable and experienced with the route they travelled everyday. In terms of the users that identified problems, the main concern is with Q1 and Q4 which enquire as to whether difficulty is experienced with finding information on their specific route, (at bus termini as observed there is limited if any route information available) and purchasing of tickets (very few termini have permanent facilities to purchase weekly/monthly tickets and the counters are quite high).

An expected result was the overwhelming negative response with the vehicle (bus). It was expected that due to the height restrictions of young passengers getting on and off the bus and overcrowded modes, this would be problematical for the majority. The response concurred with the expectations as the main concern is with Q1, Q2, Q4, Q7 and Q8, which enquire as to whether any difficulty is experienced with getting onto and off a bus, crowded public transport modes, absence of grab-rails for support in moving modes and uncooperative or rude operators.

The response in terms of the infrastructural component was expected. The main concern is with Q7, which enquire as to whether any difficulty is experienced with overcrowded pedestrian walkways due to informal traders.

In terms of the shared road and pedestrian environment the negative response was expected, because of the height restrictions characteristic of this category. Q3, Q4 and Q7 which enquire as to whether users experience difficulties with crossing streets where there are no pedestrian crossings, waiting for a bus where there are no shelters and having to walk in the road due to informal traders crowding pavements are concerns which are expected as one deals with young passengers because of the safety implications attached to crossing streets and being forced to walk in the street due to informal traders that invade pedestrian walkways.



As mentioned previously, this category was expected to have varying responses to the questions, because these are people with a physical limitation that is only temporary. Therefore their responses are dependent on whether they view the hindrances in the public transport system as a mere consequence of their limitations or as a shortcoming of the public transport system.

As the graph depicts there is a negative response to three of the components, however it is not a very large difference between the positive and negative findings.

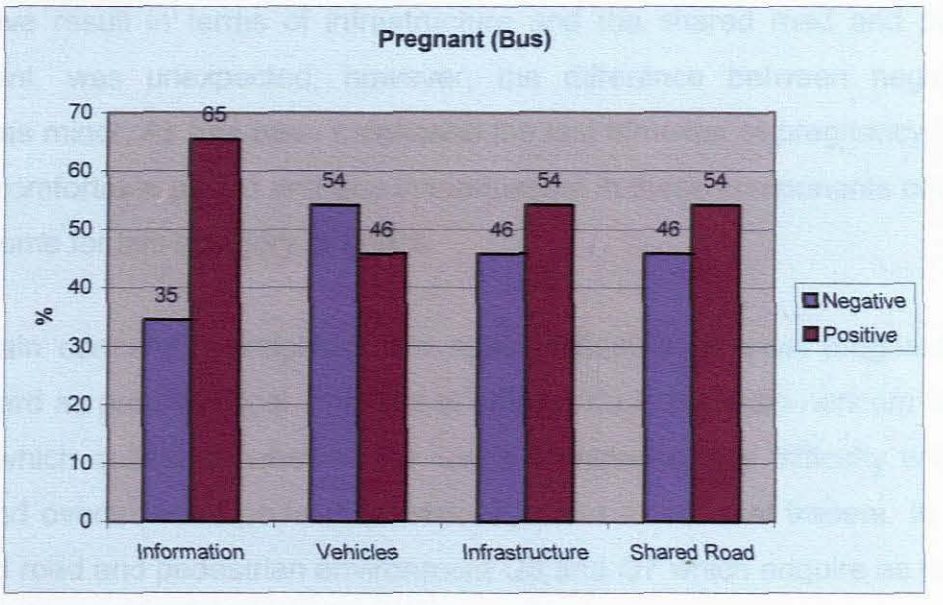
The minimal differences between positive and negative responses can be attributed to certain generalized assumptions, as mentioned with the investigation into temporary impaired train-users. For instance because normally they are regarded as able-bodied passengers and therefore do not place great concern on the fact that there are hindrances in the public transport system. Therefore they attribute the problems they are experiencing purely to their present physical limitations and do not regard the system itself as posing hindrances on them.

In terms of information there is an overwhelming positive response where the main concern is with Q5, which enquire as to whether any difficulty is experienced with finding toilets, information offices. Again this is what has been highlighted as a problem for the majority of SNPs thus far and is indicative of what would be expected

as problematical for one with a physical limitation, whereas the impaired should be enabled to find information as conveniently as possible.

In terms of vehicles there was a negative response, which was expected. The main concern is with Q1 and Q2 which enquire as to whether any difficulty is experienced with getting on and off the mode of transport. For a person with a broken limb it is evident that getting on and off a bus with the large height difference between ground level and the first step of the bus, would be a concern.

In terms of infrastructure and the shared road and pedestrian environment, the negative response was also an expected finding. The main concern is with questions relating to informal traders that encroach into pedestrian pathways which is indicative of what someone with a physical impairment would regard as a hindrance. This calls for undue energy to be spent on manoeuvring around informal traders that take over pedestrian pathways.



As can be seen with the graph the responses between negative and positive are not very pronounced. This as is with temporary impaired passengers is more than likely due to the fact that with the exception of the last trimester of pregnancy, they would generally be regarded as able-bodied persons. .

The information component shows an overwhelming positive response which was not expected as the checklist highlighted the inefficient provision of information in terms

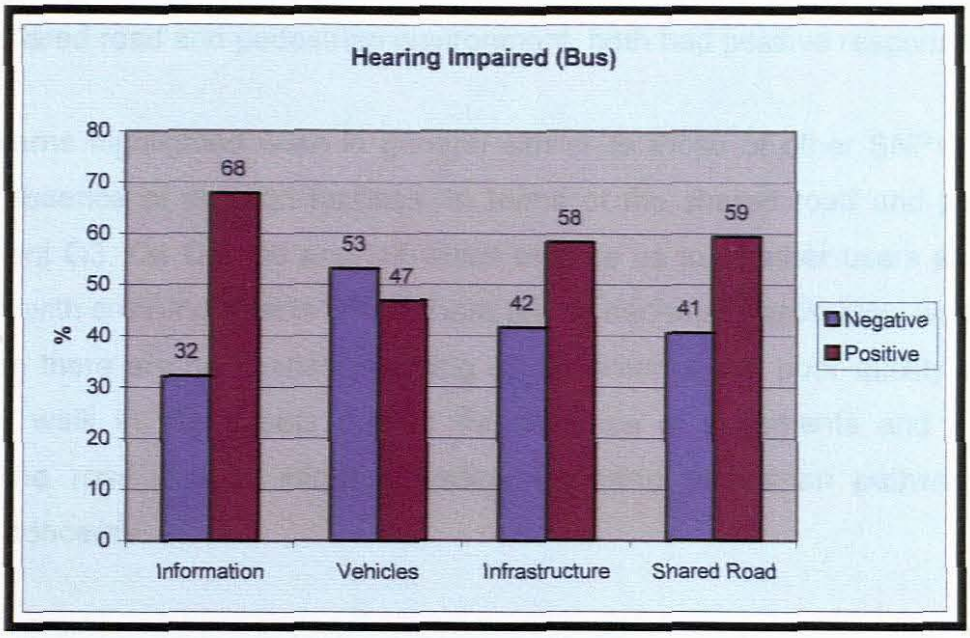
of buses and their facilities. This response could be attributed to the fact that when the bus facilities forms part of a larger public transport interchange where improved information facilities are available as opposed to the bus termini. The main concerns highlighted by those that experienced difficulties is with Q5 which enquire as to whether any difficulty is experienced with the availability of finding information on the location of the toilets and information offices. This again can be attributed to low physical strength attributed to the last trimester of pregnancy.

In terms of vehicles the response was negative with the main concerns being with Q3 and Q7, which enquire as to whether the bus driver waits for the passengers to take their seats before moving and about the absence of grab-rails for support in a moving bus. This response is also indicative of pregnant women in the last trimester; as there is the danger of falling which could cause severe injury if the driver does not wait for passengers to be seated and especially if there is an absence of grab-rails for support.

The positive result in terms of infrastructure and the shared road and pedestrian environment, was unexpected; however, the difference between negative and positive was minor. As has been mentioned the last trimester of pregnancy is usually a very uncomfortable period and any inadequacies in these components could prove to be tiresome for this category of SNPs.

All the main concerns highlighted, are again indicative of what pregnant women would regard as problematical. In terms of infrastructure the main concern is with Q3 and Q7, which questions whether the users experience any difficulty with finding seating and overcrowded pedestrian walkways due to informal traders. In terms of the shared road and pedestrian environment Q3 and Q7 which enquire as to whether users experience difficulties with crossing streets where there are no pedestrian crossings and having to walk in the road due to informal traders crowding pedestrian pathways were the main concerns, which can be attributed to the reduced speed associated with the last trimester and the safety implications of sharing space with vehicles.

Permanently impaired bus-users



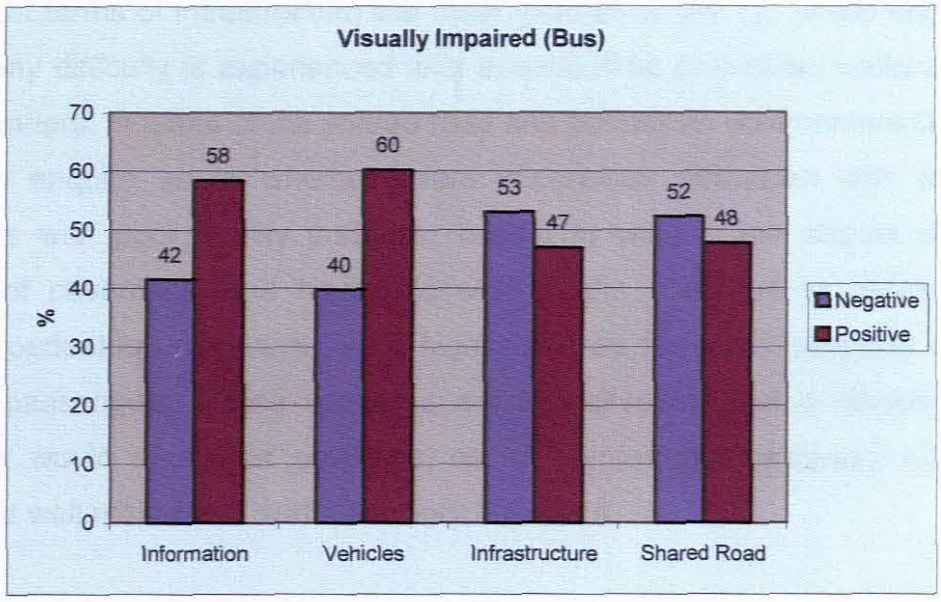
An assumption made by the researcher with this category, as mentioned previously, is that it was presumed that information and how it is relayed would be the main concern.

As can be seen from the graph, the assumption made was not confirmed as more than 60% of hearing impaired passengers did not have a problem with information. This response was surprising, but could possibly be attributed to the fact that very few audible announcements if any are made at bus termini or public transport interchanges. Most bus information if at all present, is relayed visually. The main concern recorded in terms of information is with Q5 which relates to the finding of information and toilets, as expected by the researcher as the absence of information was recorded in terms of the checklist observations.

A negative response was recorded with the vehicle component; however, the difference between the positive and negative responses was minimal. In terms of vehicles the main concern is with Q3, Q6 and Q7, which enquire as to whether the users experience difficulty with drivers not waiting until passengers are seated, having to walk to the exit in a moving vehicle and the absence of grab-rails for support in a moving bus. These are concerns that have been highlighted by many of the SNPs and can be argued to be concerns of able-bodied individuals as well.

Another finding of the surveys was the fact that generally those with hearing impairments had no physical impairments, and therefore, in terms of infrastructure and the shared road and pedestrian environment, both had positive responses.

The concerns highlighted were in general similar to those of other SNPs, such as with the absence of ablution facilities. In terms of the shared road and pedestrian environment Q3, Q4 Q5, Q6 and Q7 which enquire as to whether users experience difficulties with crossing streets where there are no pedestrian crossings, waiting for a bus where there are no shelters, walking on pavements with poor quality surfaces, having to walk in the streets due to the absence of pavements and having to walk in the road due to informal traders crowding pedestrian pathways, were the main concerns.

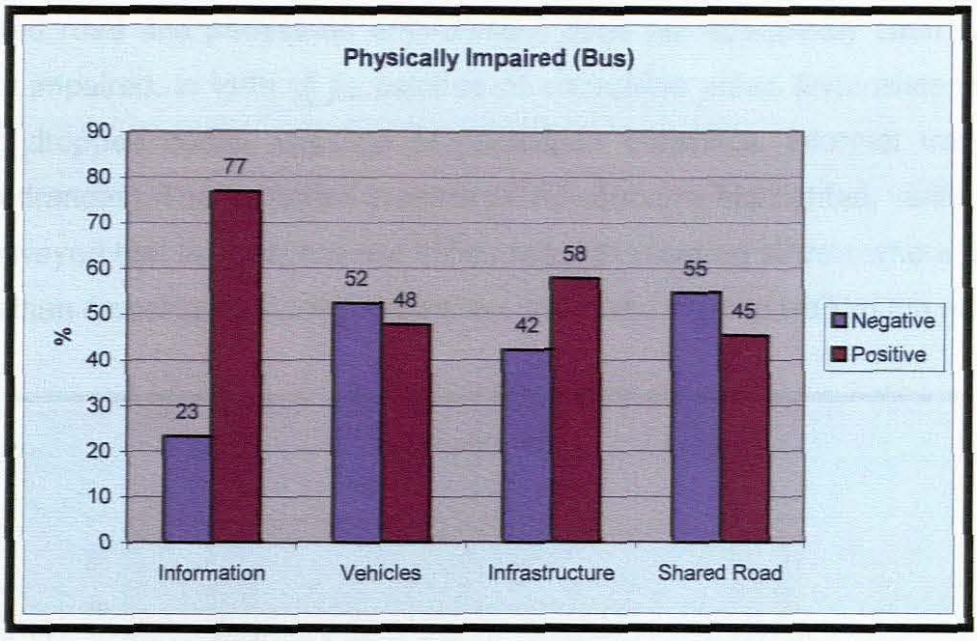


As was assumed with the hearing impaired, it was assumed that with a visually impaired person information and how it is relayed would be the main concern. As with the findings in terms of hearing impaired the response was the opposite. Almost 60% of the respondents did not have problems with how information was relayed. This was surprising because as mentioned there is very limited if any audible information at bus termini, and therefore passengers are reliant on mainly visual information. The main concern highlighted is with Q1, Q2, and Q5, which enquire as to whether any difficulty is experienced with finding information on one's specific route, finding information that is up to date, and finding toilets, and information offices. It could be

argued that this response due to the fact that people are generally satisfied with what they have because they have not experienced any better and therefore have no experience with which it can be compared.

The positive response in terms of vehicles was also surprising as not all buses have colour-contrasts at the entrances to the bus and on the noses of steps that aid visually impaired passengers. The main concern highlighted is with Q4 which enquire as to whether any difficulty is experienced with crowded buses.

In terms of infrastructure and the shared road and pedestrian environment, the response was negative, however with a minimal difference between the two. An overwhelming negative response was expected because there are generally very few tactile warnings for visually impaired passengers as has been identified with the checklist. In terms of infrastructure the main concern is with Q7 which enquire as to whether any difficulty is experienced with overcrowded pedestrian walkways due to informal traders. In terms of the shared road and pedestrian environment Q5, Q6 and Q7 which enquire as to whether users experience difficulties with walking on pavements with poor quality surfaces, having to walk in the streets due to the absence of pavements and having to walk in the road due to informal traders crowding pedestrian pathways, were highlighted as the main concerns of visually impaired passengers. These concerns are indicative of what a visually impaired passenger would regard as problems, as an uninterrupted walkway with a good quality and well maintained surface is very important.



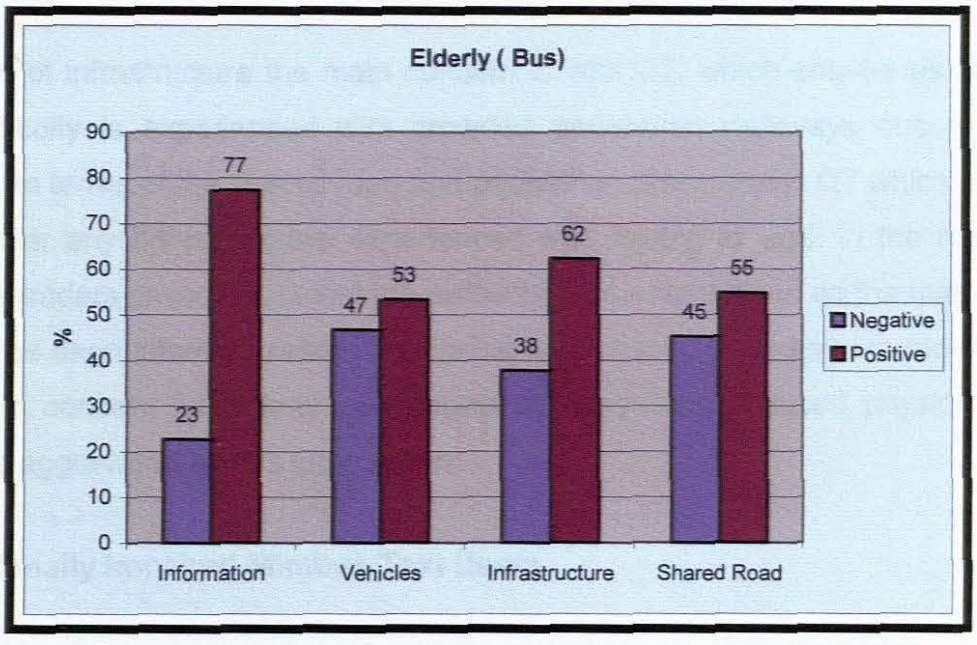
The findings of the physically impaired categories were expected to be overwhelmingly negative, because of the inaccessible nature of the public transport system as highlighted with the checklist. However, the findings varied as two components had positive results and two had a negative response.

The informational component had an overwhelming positive response, which does not concur to the findings of the checklist. In terms of information the main concern is with Q5, which enquire as to whether any difficulty is experienced with finding toilets, information offices etc., which is indicative of the low physical abilities of this category that cannot and should not be wasted on finding information.

The vehicles had a negative response; however, the difference was minor in comparison to the positive response. The main concern is with Q1, Q2, Q3 and Q6 which enquire as to whether any difficulty is experienced with getting on and off the bus, drivers not waiting until passengers are seated and having to walk to the exit in a moving bus, which are all also indicative of the physical limitations of this category.

The majority of bus facilities are not equipped to deal adequately with physically impaired passengers, such as those in wheelchairs. The positive response therefore was unexpected. The main concerns highlighted is with Q1 and Q7, which enquire as to whether any difficulty is experienced with finding seating and overcrowded pedestrian walkways due to informal traders, which evidently would hamper those physically impaired.

The shared road and pedestrian environment does not adequately cater for those physically impaired, in term of its patches of accessible areas (inconsistencies with providing dropped curbs, absence of pedestrian crossings, informal traders that cause hindrances). The response in terms of the concerns highlighted, verifies this as users conveyed that they experience difficulties with crossing streets where there are no pedestrian crossings and informal traders that force them to walk in the road.



As previously mentioned the expectation was that the response from elderly passengers would be indicative of ailments associated with elderly people, such as being hard of hearing and reduced sight and strength, therefore a similar response was expected as with the hearing, visual and physical impairment categories. Again, as was the case with the elderly train-user respondents there was an overwhelming positive response from elderly passengers. This response was surprising as the bus and its facilities rated poorly in terms of the checklist results.

Again it can be argued that this response could be attributed to the fact that generally people are satisfied with what they have because they have not experienced any better and therefore have nothing to compare it to.

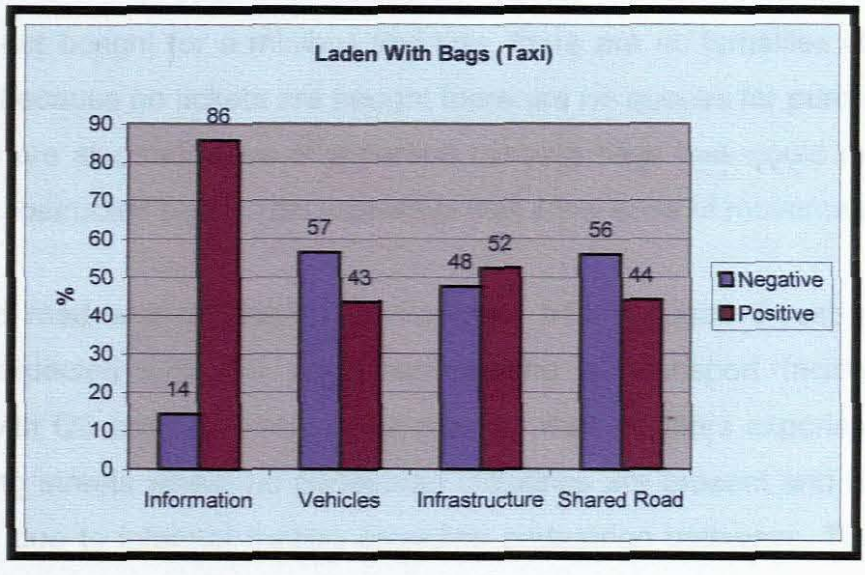
In terms of information the main concern is with Q5, which is indicative of the checklist results. It enquires as to whether any difficulty is experienced with finding

toilets and information offices etc. This response from the elderly was again very similar to all the other SNPs in terms of information.

In terms of vehicles the main concern is with Q1, Q2 and Q7, which enquire as to whether any difficulty is experienced with getting on and off the bus and the absence of grab-rails for support in a moving bus, which are all concerns characteristic of problems related to elderly passengers with reduced physical strength.

In terms of infrastructure the main concern is with Q7, which enquire as to whether any difficulty is experienced with crowded pedestrian walkways due to informal traders. In terms of the shared road and pedestrian environment Q7 which enquire as to whether any difficulties are experienced with having to walk in the road due to informal traders crowding pedestrian pathways, was highlighted as the main concern. As can be seen informal traders that cause a hindrance to pedestrian movement are the main concern for elderly passengers as they have reduced physical strength which is aggravated by this interruption.

Provisionally Impaired Minibus Taxi Users



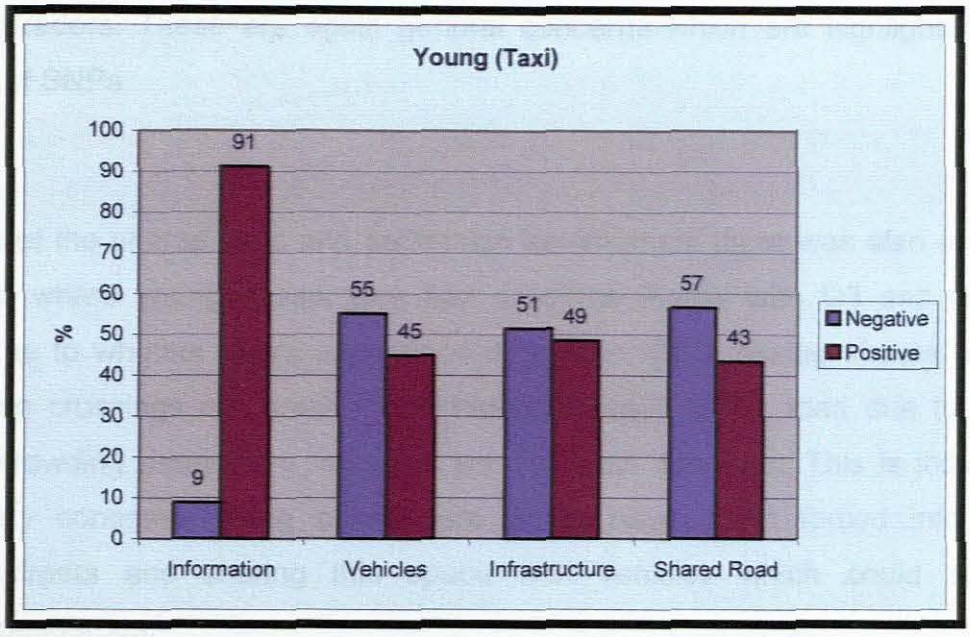
There were certain perceptions of what the findings would indicate with minibus taxi's because of the informal nature of the industry. In terms of information with reference to minibus taxis there are certain questions that are not applicable, such as Q1 because there are no timetables, therefore Q2 is also not applicable and Q4, tickets are not purchased for a minibus taxi ride. Therefore a skewed response was

foreseen in terms of the informational component. The remaining questions produced an overwhelming positive response as at many of the minibus taxi ranks and public transport interchanges there are boards present which indicate which routes are driven by the minibus taxi's and the minibus taxi conductors are also quite verbal in terms of providing route information.

The negative response in terms of vehicles was expected, however, far as can be seen the difference between the positive and negative responses are minimal. The main concerns as was expected is with Q4 and Q5, which enquire as to whether any difficulty is experienced with crowded minibus taxis and vehicles travelling too fast. These are all characteristics indicative of the minibus taxi industry, especially when a person is laden with bags.

The positive response in terms of infrastructure can be attributed to the fact that many minibus taxi termini form part of public transport interchanges which have certain infrastructural facilities in place. The main concern highlighted is with Q1 and Q7, which enquires as to whether any difficulty is experienced with finding seating and overcrowded pedestrian walkways due to informal traders. Again there were certain questions not applicable to minibus taxis such as Q2, Q4 and Q5 because tickets are not bought for a minibus taxi ride, there are no turnstiles at minibus taxi ranks, and because no tickets are bought there are no queues for purchasing tickets. The results are also indicative of a person carrying bags that would require seating and free unobstructed pedestrian walkways that allow ease of movement.

The shared road and pedestrian environment had a negative response which is generally expected with the areas surrounding all transport facilities; indicated problems with Q3 and Q7 which enquire as to whether users experience difficulties with crossing streets where no pedestrian crossings are present and having to walk in the road due to informal traders crowding pedestrian pathways. These concerns were highlighted with the investigation of the other modes as well, as being forced into the street and being laden with bags (which reduces the speed with which a person walks) has certain safety implications.



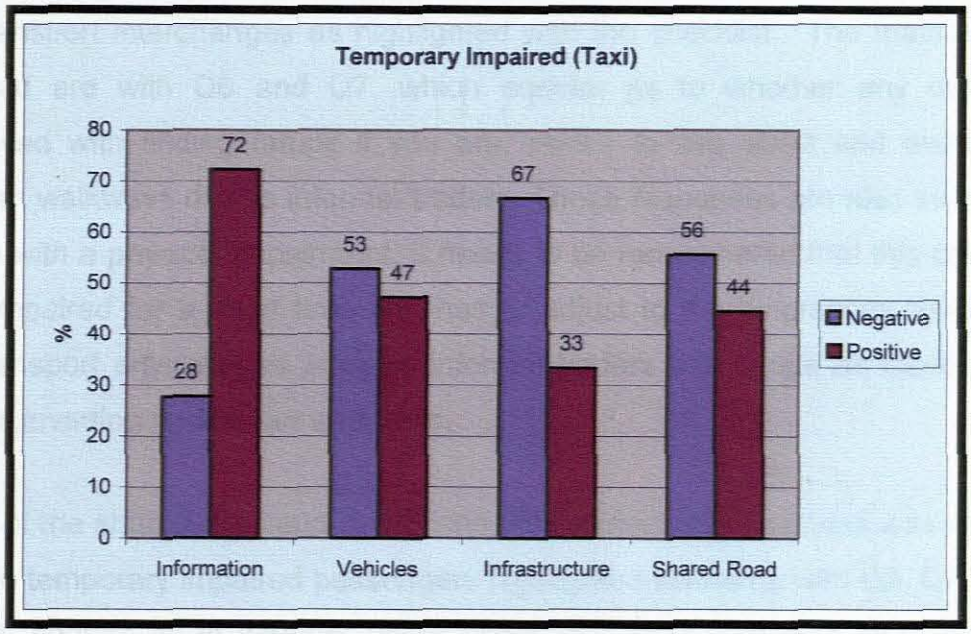
As mentioned previously there were certain questions not applicable to this mode with regard to information and a skewed response was therefore expected. The overwhelming positive response to the informational component can also be attributed to the fact that the only information needed to use this mode is to ascertain where it is going as there is an excess of this particular mode. The minibus taxi termini generally have boards indicating route information and as has been mentioned the minibus taxi conductors are quite verbal in terms of the destination.

The negative response was expected to be much larger with this mode and especially this category as this informal minibus taxi industry is fraught with problems. In terms of vehicles the main concerns highlighted by young passengers are with Q4, Q5, and Q6, which enquire as to whether any difficulty is experienced with crowded public transport vehicles; vehicles travelling too fast; and having to walk to the exit in a moving vehicle. Again there were certain questions not applicable to minibus taxis. These as can be seen are general problems that most able-bodied passengers would have difficulties with.

Again, it needs to be stressed that there were certain questions not applicable to the infrastructural component. There was an expected negative response; however, again a much larger negative response was expected. The main concerns of young passengers is with Q1 and Q7, which enquire as to whether any difficulty is experienced with finding seating and overcrowded pedestrian walkways due to

informal traders. These are again general concerns which are highlighted by the majority of SNPs.

In terms of the shared road and pedestrian environment there was also a negative response where young passengers had concerns mainly with Q3 and Q7 which enquire as to whether users experience difficulties with crossing streets where no pedestrian crossings are present and having to walk in the road due to informal traders crowding pedestrian pathways are the main concerns. This is indicative of the safety concerns young passengers would have, been forced into walking in the streets and sharing this space with vehicles which could potentially be very dangerous.

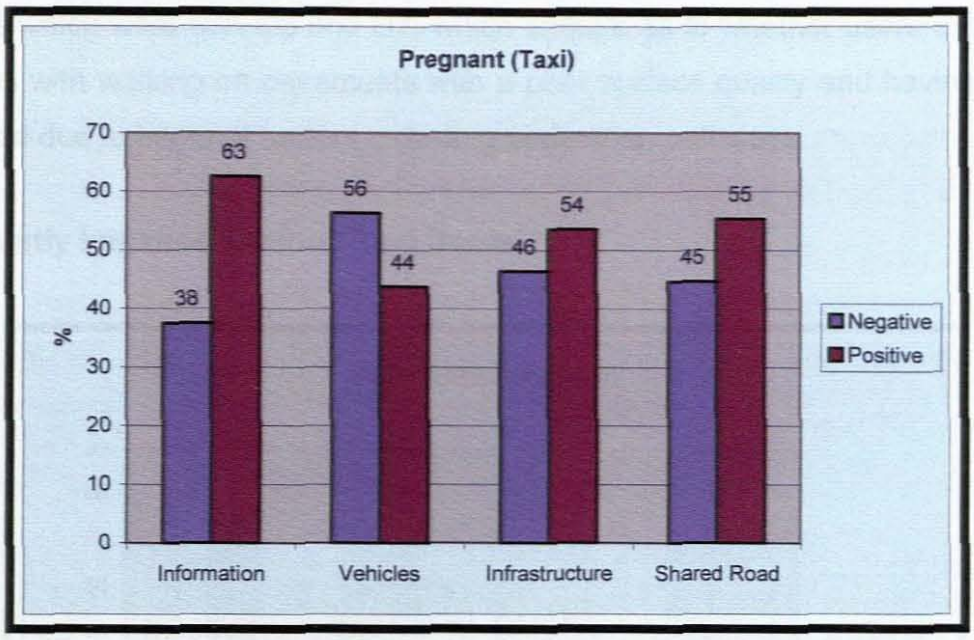


To avoid repetition, the informational component of the minibus taxi can be generalised for all the categories of SNPs, as there are many questions that are not applicable to the informal minibus taxi industry as has been mentioned. The responses in terms of information are generally positive because at the minibus taxi termini or public transport interchanges there are boards that indicate routes travelled and the minibus taxi conductors are all most verbal as to the routes being travelled by the mode.

The negative response in terms of vehicles was expected as those with temporary impairments (generally a broken limb which renders them physically impaired) would experience great difficulties with this small and informal mode of public transport, as there are no accessible features present on the mode as highlighted by the checklist results. The main concerns highlighted by temporary impaired passengers are with Q1, Q2, Q4, Q5, and Q6, which enquire as to whether any difficulty is experienced with getting on and off the minibus taxi, crowded public transport vehicles; vehicles travelling too fast; and having to walk to the exit in a moving vehicle. These are all concerns indicative of problems that would be experienced if one had a physical limitation of any kind, especially in a mode that has no accessible features present.

The overwhelming negative response in terms of infrastructure is another expected response; however, there are certain accessible infrastructural elements in place at public transport interchanges as highlighted with the checklist. The main concerns highlighted are with Q6 and Q7, which enquire as to whether any difficulty is experienced with finding ramps if you are unable to use stairs and overcrowded pedestrian walkways due to informal traders. These responses are also indicative of a person with a physical impairment. It needs to be remembered that this category is usually impaired for a short time and has to adjust to the hindrances found in the public transport environment such as informal traders that cause an inconvenience with them invading pedestrian walkways.

In terms of the shared road and pedestrian environment the response was negative , where the temporary impaired passengers highlighted concerns with Q3, Q4, Q5 and Q7 which enquire as to whether users experience difficulties with crossing streets where no pedestrian crossing are present, waiting for a minibus taxi where there are no shelters, walking on pavements with a poor surface quality and having to walk in the road due to informal traders crowding pedestrian pathways. These concerns highlighted are also indicative of someone with a physical impairment. Generally temporary impaired passengers' mobility and speed is reduced and this puts them at a greater disadvantage in terms of sharing the road with vehicles, because of the factors mentioned above.



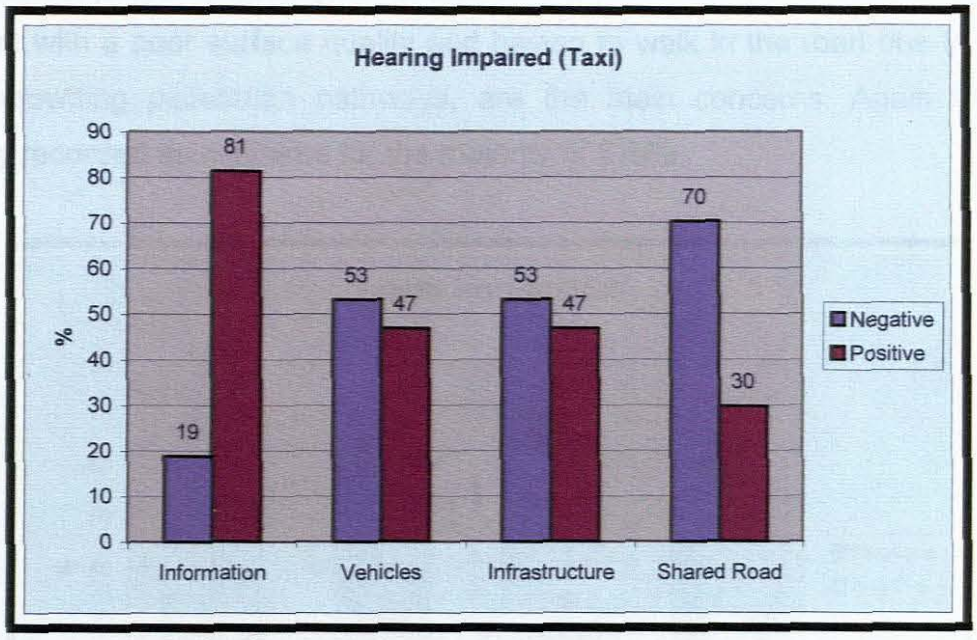
As expected, there was a negative response given to the minibus taxis by pregnant women. The main concerns highlighted are with Q3, Q4, Q5, and Q7, which enquire as to whether any difficulty is experienced with drivers not waiting until passengers are seated, crowded public transport vehicles; vehicles travelling too fast; and the absence of grab-rails for support in a moving vehicle. These are problems that pose great safety concerns as well as general uncomfortable issues for pregnant women and many other SNPs, which are also common problems associated with the minibus taxi industry

In terms of infrastructure, there was a positive response recorded which could be attributed to certain accessible infrastructural elements present at public transport interchanges. The main concern is with Q7, which enquire as to whether any difficulty is experienced with overcrowded pedestrian walkways due to informal traders. When informal traders invade pedestrian pathways, pedestrians are forced into uncomfortable and inconvenient situations.

The negative response in terms of the shared road and pedestrian environment was unexpected, as the checklist highlighted major inadequacies with this component. It needs to be repeated that pregnant women in the last trimester generally suffer from low stamina and therefore are not appreciative of being inconvenienced by informal traders that invade pedestrian pathways or poorly maintained surfaces that cause safety concerns. This is reinforced with the response recorded as their main

concerns which were with Q5 and Q7, which enquire as to whether users experience difficulties with walking on pavements with a poor surface quality and having to walk in the road due to informal traders crowding pedestrian pathways.

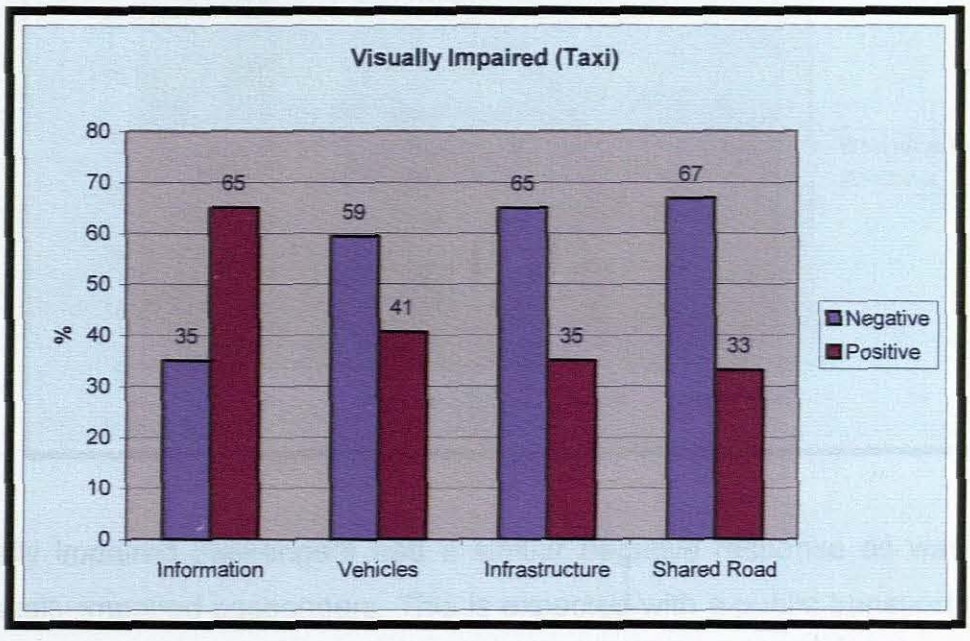
Permanently Impaired Minibus Taxi Users



This negative response (with very little difference between positive and negative responses) could be expected with hearing impaired passengers, because generally they are physically strong and can manage in this inaccessible public transport mode. Those who did experience concerns highlighted problems with Q1, Q2, Q4, and Q5, which enquire as to whether any difficulty is experienced with getting on and off the minibus taxis, crowded public transport vehicles; and with the vehicles travelling too fast. These are concerns that are generally experienced with all SNPs and arguably with able-bodied passengers as well.

There was a negative response recorded with the infrastructural component which is expected with the limited accessible features of South African public transport facilities, though not generally expected from hearing-impaired passengers. In terms of infrastructure the main concern is with Q7, which enquire as to whether any difficulty is experienced with overcrowded pedestrian walkways due to informal traders. This is a general concern for many SNPs and is attributed to convenience levels that are impacted by the informal traders invading pedestrian paths.

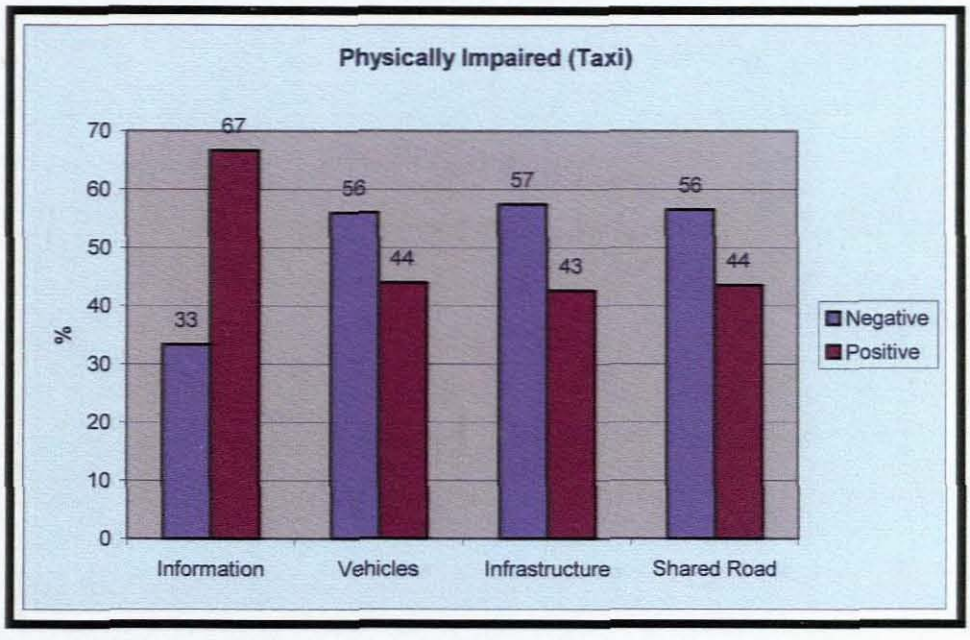
The overwhelming negative response recorded for the shared road and pedestrian environment is a response expected with any category of SNP as this component has minimal accessible elements present, as highlighted with the checklists. In terms of the shared road and pedestrian environment Q3, Q4, Q5 and Q7 which enquire as to whether users experience difficulties with crossing streets where no pedestrian crossings are present, waiting for a bus where there are no shelters, walking on pavement with a poor surface quality and having to walk in the road due to informal traders crowding pedestrian pathways, are the main concerns. Again these are generally recorded as concerns for the majority of SNPs.



All 3 components, with the exception of the informational component had overwhelming negative responses which are expected for the minibus taxi and its facilities. The concerns that were highlighted by the visually impaired passengers are all indicative of problems experienced by this category such as experiencing difficulty with getting on and off the minibus taxi, crowded public transport vehicles; with the vehicles travelling too fast, absence of grab-rails for support in a moving minibus taxi and uncooperative or rude operators, as this mode have no accessible features present.

Another indicative problem in terms of those visually impaired is with overcrowded pedestrian walkways due to informal traders that pose obstacles for these people. In terms of the shared road and pedestrian environment, difficulties with crossing

streets at pedestrian crossings, crossing streets where no pedestrian crossing are present, walking on pavements with a poor surface quality, having to walk in the street due to an absence of pavements and having to walk in the road due to informal traders crowding pedestrian pathways are the main concerns which visually impaired passengers highlighted. It can be expected that being visually impaired, these problems mentioned above could pose serious safety implications.

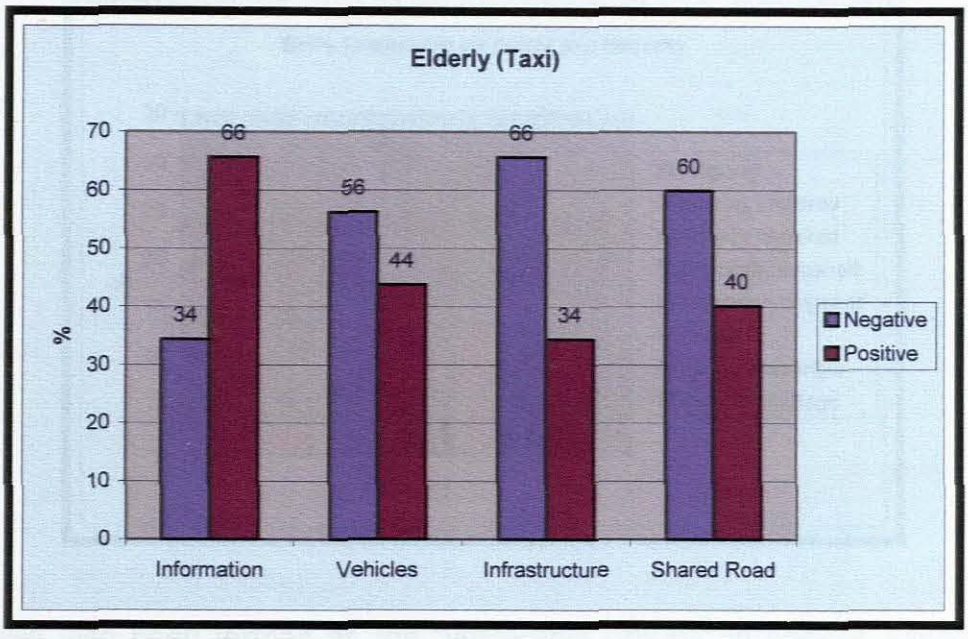


Physically impaired passengers had a similar negative response as was recorded with visually impaired passengers. This is expected with a public transport mode that has no accessible features in place and the shared road and pedestrian environment that as recorded with the checklist findings, is not conducive for travelling by SNPs.

Very similar concerns were highlighted in terms of vehicles where these were with getting on and off the minibus taxi; with the vehicles travelling too fast and uncooperative or rude operators. With reduced physical ability an inaccessible mode such as minibus taxis, the travelling experience for this category is worsened.

In terms of infrastructure, the main concern is with Q7, which enquire as to whether any difficulty is experienced with overcrowded pedestrian walkways due to informal traders which is a problem indicative of someone who is physically impaired.

In terms of the shared road and pedestrian environment, physically impaired passengers because of their reduced speed and stamina experienced difficulties with crossing streets where no pedestrian crossings are present, walking on pavements with a poor surface quality, having to walk in the street due to an absence of pavements and having to walk in the road due to informal traders crowding pedestrian pathways.

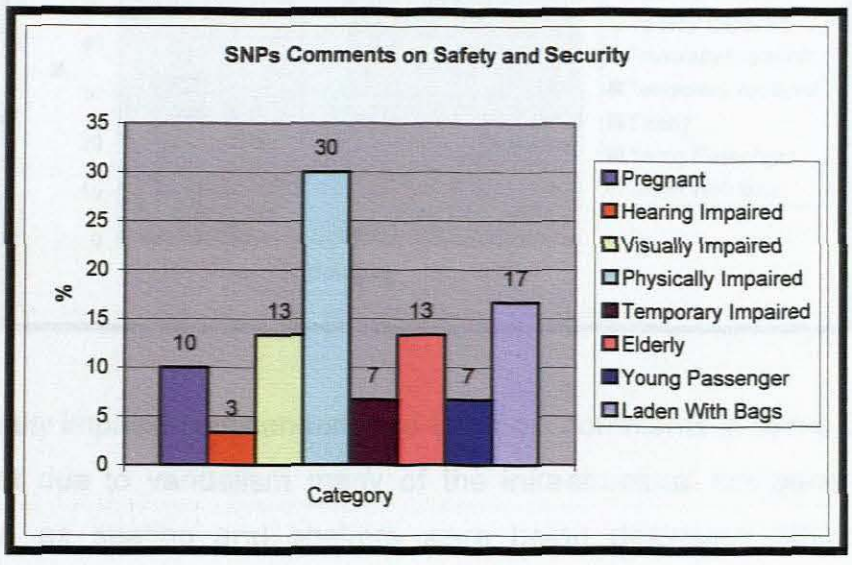


Elderly passengers generally experience similar difficulties as experienced by those with hearing, visual and physical impairments. The findings as can be seen with the graph, together with the concerns highlighted by the elderly, confirm this generalisation.

Similarly to the categories mentioned there was an overall negative response to 3 components with the exception of the informational component. The main concerns were also indicative of the characteristics associated with the elderly in terms of difficulties experienced with getting on and off the minibus taxi, vehicles travelling too fast, finding ramps when you are unable to use stairs, overcrowded pedestrian walkways due to informal traders, difficulties with crossing streets where no pedestrian crossings are present, walking on pavements with a poor surface quality and having to walk in the road due to informal traders crowding pedestrian pathways.

Comments and Suggestions

The questionnaire had an open-ended section where respondents were given the opportunity for additional comments and suggestions. Of the 323 SNPs interviewed, only 140 respondents had additional comments or suggestions. The comments were grouped into similar categories.



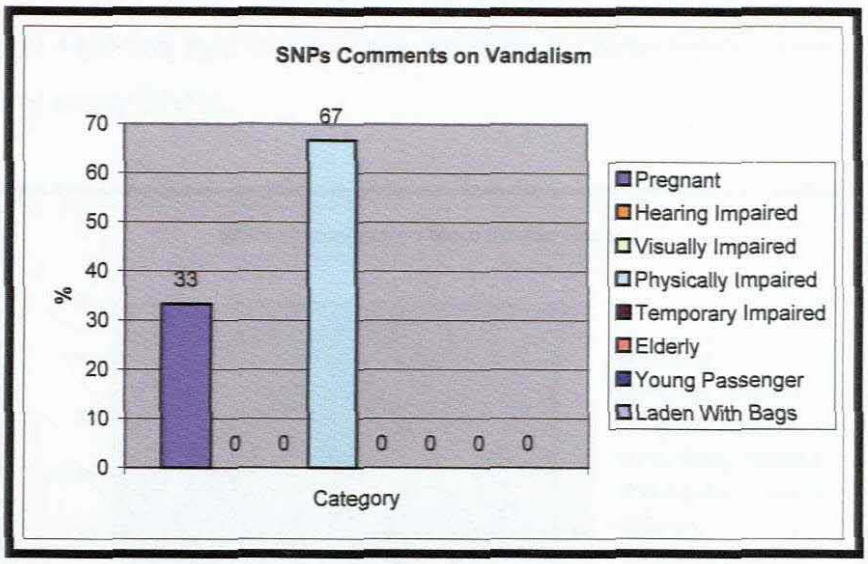
SNPs have also been termed as the "vulnerable groups" in society, which are the ones criminals usually target because of their reduced capacity to fight back. It was expected that safety and security would be commented on, in this quantitative section of the questionnaire.

The comments and suggestions in terms of safety and security comprised of what the majority of SNPs felt was a lack of policing in the public transport system, mainly at inter-peak times. As can be seen from the graph, physically impaired passengers had the most comments and suggestions to make in terms of safety and security. This is indicative of this category, because of their reduced mobility and generally reduced strength of physically impaired passengers which makes them targets of crime.

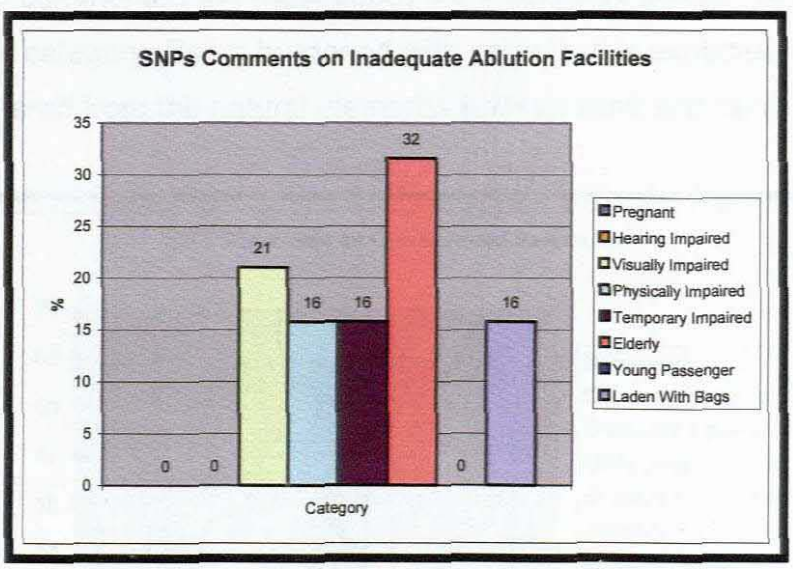
The respondents commented on how vulnerable they felt due to factors such as;

- fast travelling modes that were not sympathetic to their special needs,
- visually impaired passengers felt they were in constant threat of speeding vehicles within the public transport environment,

- those laden with bags felt especially vulnerable or as targets of criminals because of the bags they were carrying.

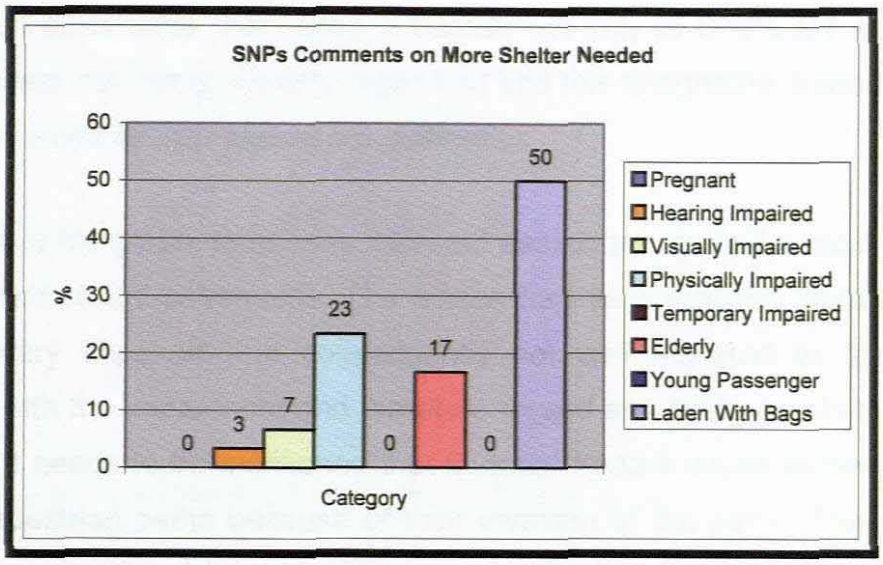


Again physically impaired passengers had the most comments in terms of vandalism. They felt that due to vandalism many of the infrastructural components that they needed such as seating and shelters were being destroyed. Pregnant women commented on informational signs that had graffiti on which therefore made it hard to read. Another comment, highlighted by these categories was that ablution facilities were being destroyed by vandalism, with toilet seats and handrails being removed.

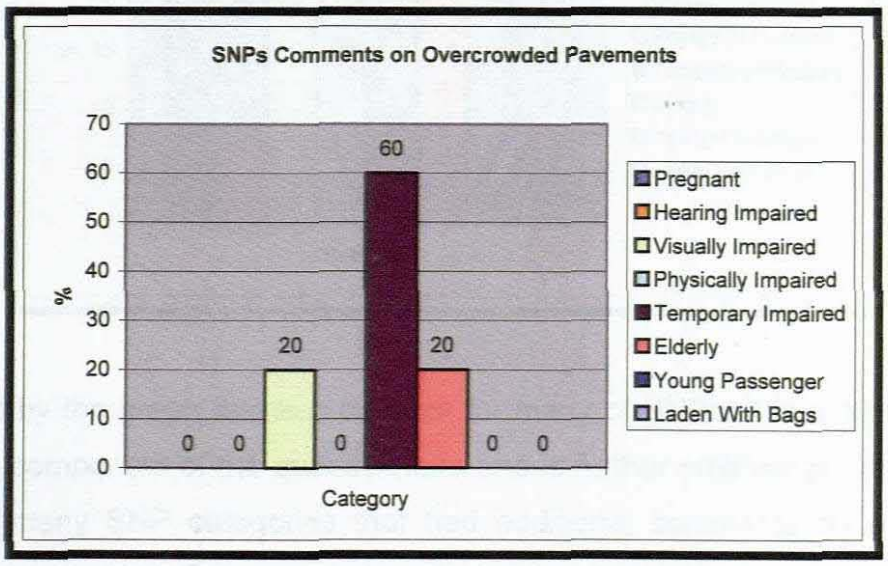


Many SNPs as depicted by the graph felt that there were inadequate ablution facilities. What was expected was that those visually impaired would comment on this

as information regarding where ablution facilities are situated were lacking at many public transport facilities as discovered through the researcher's personal observations. Another factor highlighted by personal observations was that many public transport facilities had inadequate ablution facilities which were confirmed by the response of many SNPs.



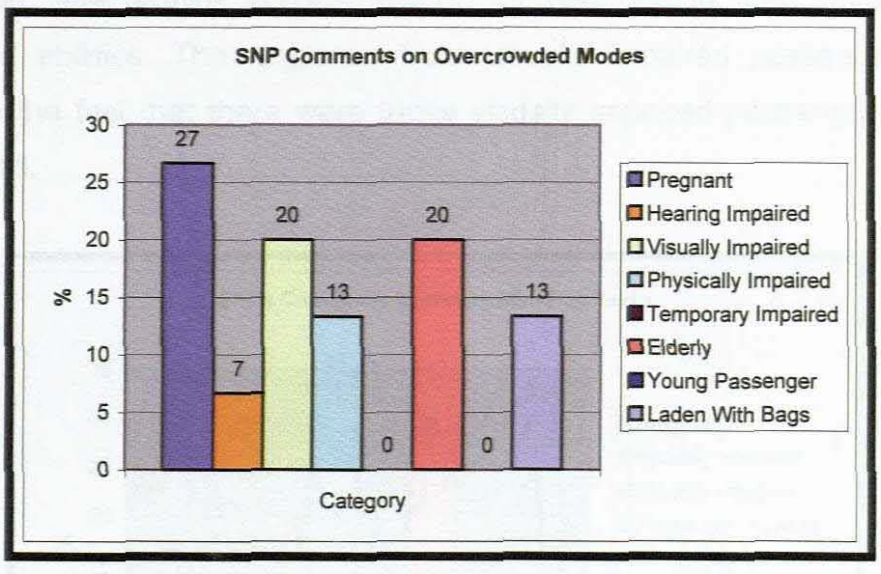
The response in terms of insufficient shelter was another question that many SNPs view as a problem. This factor of insufficient shelter is further strengthened with it being repeated in the comments and suggestions section of the questionnaire. Those laden with bags commented the most about the insufficient shelter, which is a typical response of this category. Being burdened with parcels, it is expected that one would want to be sheltered from the natural elements such as wind and rain.



Another problem that has been highlighted by the majority of SNPs, as can be seen in the preceding findings is the issue of overcrowded pavements. Personal observations by the researcher confirm this problem and the fact that it is another comment repeated in this qualitative section of the questionnaire, reinforces the importance of this problem.

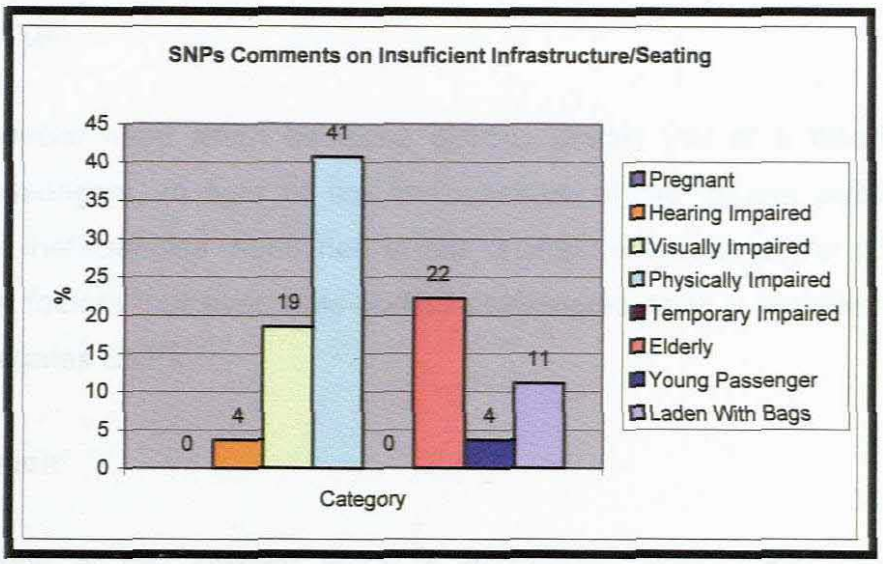
Overcrowded pavements that cause a barrier, not only to SNPs are as a result of Informal traders not being properly organised and the designated areas for them are not being enforced by the responsible authorities.

As depicted by the graph, temporary impaired passengers gave the most comment in terms of overcrowded pavements. The reason for this is arguably because they are only temporary impaired and consequently not well adjusted to the limitations associated with the impairment and therefore regard any hindrance to movement as a problem. It needs to be mentioned that informal traders cause all people to move from the pedestrian paths because of their invasion of the paths. These paths are usually the most utilised by pedestrians, as informal traders situate themselves on desired pedestrian lines and therefore are already crowded, and informal traders therefore exacerbate the problem.

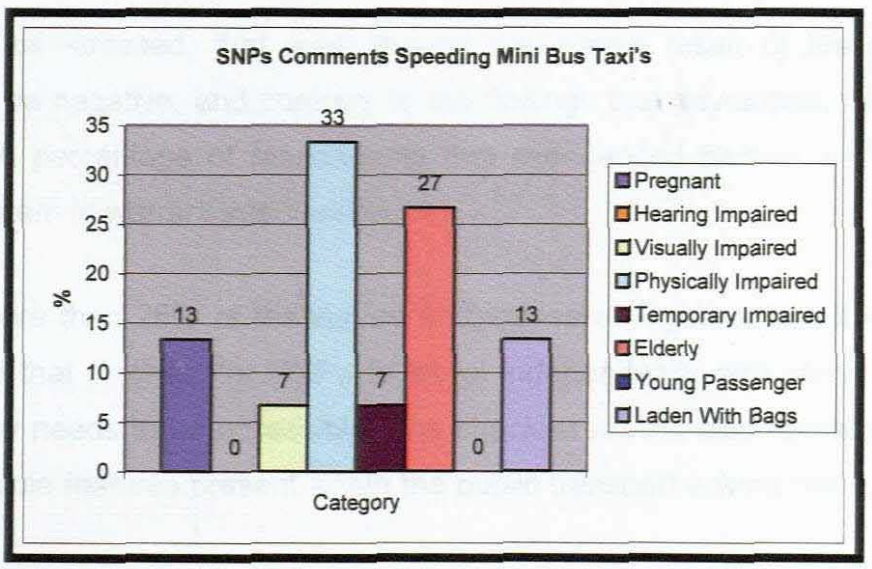


As depicted by the graph this is a problem for many of SNPs. It is a question in the quantitative component of the questionnaire and is further emphasized as a problem due to the many SNP categories that had additional comments on overcrowded public transport modes. Overcrowded public transport modes are a common problem

for all people and are a regularly reported problem in the media. The comments made above are to a large extent mirrored in the findings as discussed previously. The reasons for each category's response to this problem have also been mentioned and therefore will not be repeated in this section.



This is yet another problem repeated in the qualitative section of the questionnaire, which formed part of the qualitative section. It is presumed that this is therefore an important issue for especially those physically impaired and the elderly as depicted by the graph, that require enough seating for rest due to their limited physical strength and abilities. The response from visually impaired passengers can be attributed to the fact that there were those visually impaired passengers that were elderly as well.



Again this is yet another factor which was covered in the qualitative component of the questionnaire. It is argued that because it is mentioned again by many SNPs in the comments and suggestions section, that it is a serious problem for especially physically impaired and the elderly. It is indicative of these SNP categories that a speeding minibus taxi would cause concern for those passengers with reduced strength.

Having a special need when travelling already places you at a disadvantage to "normal" passengers, in light of the inefficiencies of the current public transport system. The inefficiencies mentioned in this qualitative section of the questionnaire are arguably factors that even able-bodied passengers have a problem with, which further segregates SNPs.

7.5 Conclusion

The objectives of this chapter were to determine exactly what special needs passengers (SNPs) view as problems in terms of the public transport system and investigate the problems in each component of the public transport system, namely information, vehicles, infrastructure and the shared road and pedestrian environment.

The objective of determining what SNPs perceptions are of the current public transport system, was met by employing the face-to-face interview technique with the aid of a structured questionnaire. The use of a checklist was employed to meet the objective of highlighting problems with each component of the public transport system.

It needs to be stressed, that even though the overall result of the survey was expected to be negative, and contrary to the findings that developed, there is still a large enough percentage of respondents that experienced barriers with the public transport system to warrant intervention.

Generally more than 25% of the survey findings were negative, and it needs to be remembered that in order for SNPs to travel independently and conveniently their entire journey needs to be accessible. The checklist results also revealed that there were accessible features present within the public transport environment; however, it

is again argued that patches of accessible areas are not conducive to an effective and safe journey for SNPs.

What also needs to be remembered is that the SNP categories have varying perceptions as to what hindrances are. A pregnant women might not view the absence of dropped curbs as a hindrance as would someone pushing a stroller or in wheelchair. Also a hearing impaired person might not view a turnstile as a hindrance as would someone with a broken leg using crutches.

There were also certain problems that were identified by the majority of SNPs with regard to all three modes. The list below is not presented in any specific order, because it wasn't expected from respondents to provide ratings to the various issues.

- finding information on your specific route,
- finding toilets and information offices,
- hearing informational announcements,
- getting on and getting off a bus,
- drivers not waiting until passengers are seated,
- crowded public transport modes,
- absence of grab-rails for support in a moving vehicles,
- finding seating,
- the absence of ablution facilities,
- overcrowded pedestrian walkways due to informal traders,
- crossing streets at pedestrian crossings,
- crossing streets where there are no pedestrian crossings,
- having to walk on pavements with poor quality surfaces, and
- having to walk in the road due to informal traders crowding the pavements.

For the most part, there is consensus between those temporary impaired and those permanently impaired with regard to the main concerns that were highlighted, with the exception of the provisionally impaired and permanently impaired minibus taxi users, which had differing responses; those provisionally impaired had an overall positive response, whereas those permanently impaired had an overall negative response. .

As has been mentioned, many of the concerns highlighted by SNPs are concerns that would be experienced by many able-bodied passengers.

Chapter 8 provides certain technical guidelines from various international best practice standards that could be implemented so as to create a fully accessible public transport system. These technical guidelines are used to highlight what interventions are necessary to ensure an equitable system.

Chapter 8: Conclusion

8.1 Introduction

The intention of this concluding chapter is to revisit the research questions and to ascertain whether these questions have been answered adequately. It is beyond the realm of this research study to make recommendations to the vast problems highlighted in this research.

The research questions aimed at uncovering the problems or inadequacies in the public transport system in terms of special needs passengers (SNPs) and to ascertain if there are enabling mechanisms in place to address these problems.

This research study as has been mentioned is divided into two parts, namely:

Part A - Establishing if there are problems in the public transport system with reference to SNPs. This is addressed by Chapters One, Three, Four and Seven.

Part B – Ascertain whether or not enabling, mechanisms are in place to address the problems within the public transport system with reference to SNPS. This is addressed in chapters Five, Six, and Eight.

Part A

8.2 Methodology used in terms of answering the research questions

To reiterate the research study has been approached in terms of a problem:

- What caused it (identified in literature, interviews, reports), and
- Who those are that experience it and what they experience (based on surveys).

Part A

Research Question One: Are there problem areas in the public transport system which affects special needs passengers (SNPs)?

- What are the problem areas in the public transport system of the Cape Metropolitan Area with reference to Special Needs Passengers?
- What planning or design theories and principles relating to public transport have bearing on urban places that affect the quality of life for special needs passengers?

Part B

Research Question Two: What enabling mechanisms are in place to alleviate the problems endured in the public transport system by SNPs?

- What enabling legislation and policies are in place to address the plight of SNPs and are these policies in fact properly implemented, towards a positive result?
- What upgrades or improvements are then required in the public transport system in the Cape Metropolitan Area for Special Needs Passengers to ensure an equitable system?

The process of research followed here therefore needed in the first place to ascertain:

- Where the information needed to address the research questions was available or who had it, i.e. what sources were available (publications, internet, etc)?
- How much detailed data had to be collected, at the minimum?
- How much time was available?
- What techniques are available for data collection?

- What theories have bearing on the problem?
- Those who cause it (literature, interviews, reports), and
- Those who experience it (surveys).

With these research aims in mind, chapters one, three, four and seven prove that there are many shortcomings within the current public transport system that affect SNPs. These chapters highlight that there is a problem, why it is a problem and for whom. Furthermore, these chapters look at what seems to have caused the problem and whether it is getting worse. The problems are structured according to the individual (chapters one, three and seven) and on a broader scale, in terms of communities/towns (chapter 4).

Chapters five and six investigate whether anything is been done about the problems and who is responsible for the problems in terms of legislation and policies. Moreover, if there are failures in terms of addressing these problems, what are the reasons for the failures?

This chapter looks at whether the objectives of the research questions have been adequately addressed.

8.3 Part A

8.3.1 Research Question One: Are there problem areas in the public transport system which affects special needs passengers (SNPs)?

When reviewing chapters one, three, four and seven, it is evident that there is a problem. Quoted extracts from various reports, confirm this: "We are also committing ourselves to working with our partners to unlock some of the obstacles to growth and development. One of these is transport... We believe that by improving public transport we will boost the economy and improve the quality of life for thousands of commuters" (City of Cape Town, 2005: i).

"...the lack of accessible transport is a serious barrier to the full integration into society of people with disabilities" (South Africa, 1997b:32). The South

African Government therefore acknowledges public transport as a barrier to integrating disabled people.

The reader is further referred to Chapter seven, referring to the process of interviews with the aid of a structured questionnaire, and where the end-users identified what they perceive to be problems in terms of the public transport system.

8.3.2 What are the problem areas in the public transport system of the Cape Metropolitan Area with reference to Special Needs Passengers?

Chapter seven addresses this research question in that detailed data is provided to the reader as to what the problems are for each SNP. Additionally, the results of the checklist highlight shortcomings in terms of achieving an accessible public transport system at each component. It should be repeated that the formulation and design of the checklist was based on what is regarded as necessary in terms of having fully accessible public transport.

Another method employed, was to answer this research question by comparing the existing situation within the public transport system, with the principles of universal design and access. The concept of universal design and universal access principles discussed in chapter two, were used to analyse the four components (information, vehicles. Infrastructure and the shared road and pedestrian environment) of the public transport system. In effect, these principles highlight the inadequacies of the public transport system in Cape Town and many of our other cities, and indicate what is in fact needed to achieve accessibility within various environments, products and services.

	Universal Design Principles	Universal Access Principles
1	Equitable use - is the design useful and appealing to people with diverse abilities.	Universal access to destinations-All pedestrians and all vehicles (including bicycles) should have access to destinations served by the public road system.
2	Flexibility in use - The design should accommodate the preferences and abilities of a wide range of people.	Equal rights of use-No road should be biased towards a particular mode and should be meant for vehicles of heavy load, fast moving vehicles, and pedestrians.
3	Simple and Intuitive - The design should be without undue complication based on irrelevant premises, in other words no assumptions should be made with regard to the users abilities.	Integration of modes-Travelling by different modes should not be segregated unless there is compelling evidence of operational advantages.
4	Perceptible Information - All information necessary for the efficient use of the design should be readily available, again without any prejudice.	Uniformity and simplicity-A transport system should be simple and intuitive, designs and regulations should be uniform across facilities.
5	Tolerance for Error - The design should minimise any hazards, by providing warnings of hazards.	Accessible surfaces-Road and pedestrian surfaces should be practical and accommodate pedestrians, those in wheelchairs, all types of vehicles (car or bicycle).
6	Low Physical Effort - The design should not require too much physical effort by the user, again so as not to be biased against SNPs.	Crossable roadways-Crossing distances at non-signalised access locations should not exceed the distance that can be covered at walking speed before traffic arrives from beyond sight distance.
7	Size and Space for Approach and Use - The design should accommodate variations in the user type, eg. someone in a wheelchair or a person laden with bags, who have differing mobility needs.	Appropriate space for use-There should be adequate space for maneuvering incorporated for all vehicle operators and for pedestrians including wheelchair users. (Human Transport Committee 2000)

Table 8.1: Universal Design and Universal Access Principles

As can be seen from the table above there is consistency in the principles, and both concepts have one common goal and that is inclusive design and operation.

It can be deduced that when analysing the Cape Town public transport system according to the universal design and universal access principles it is not accessible. Chapters 3 and 4 also reiterate the fact that the Cape Town public transport system is filled with inadequacies with respect to the needs of SNPs.

Information

The informational component within the public transport system does not in its entirety display characteristics of equity i.e. the way in which information is relayed to passengers. Some SNPs cannot access vital information regarding the timetables, or fares of the public transport modes. Facilities in Cape Town do not in general have information relayed in both an audible and visible manner and certain visually displayed information is not suitable for many passengers with special needs.

The informational component also does not show flexibility in use. The design does not accommodate the preferences and abilities of a wide range of people. For example information boards could display information with the proper size text and colour for those visually impaired as well as make use of symbols for those with limited literacy levels (young passengers).

In terms of observable information, it is also clear that the public transport system does not have all the information necessary for efficient use because this is not always readily available, and there is a degree of prejudice as to who is able to use that which is relayed to passengers.

Information is also not always simple and intuitive, because information that is relayed within the public transport system is not relayed in a way that is not dependent on passenger's levels of experience, knowledge, or level of sophistication.

In terms of the principle of tolerance for error, information within the public transport system should be designed so as not to pose a hazard to any passenger. Timetable boards and signs should be positioned out of the way of the pedestrian pathway and information should also warn people of any potential hazards. It can be argued that the design and layout of information within public transport facilities are not always according to accessible good practice standards.

Obtaining information should require low physical effort. However, the designs of many of the ticket and information counters are not conducive for use by certain SNPs, and require considerable physical effort by the user.

In terms of size and space for approach and use, many information/ticket counters do not accommodate the variations in the user type, because of the heights of the counters and the width between the rails. When queuing for the information/ticket counters, certain categories of SNPs would find it difficult to access information.

The universal access principles referred to earlier apply equally to the information system.

Shared road and pedestrian environment

The design of shared road and pedestrian environments in the CMA are by no means equitable in terms of use for people with diverse abilities. The absence of dropped curbs at all pedestrian crossings, safety that is compromised because the space is not shared optimally between pedestrians and vehicles, certain roads and pathways not being adequately maintained and potentially dangerous to SNPs and the cluttering of pedestrian pathways by informal traders and street furniture, are all examples of the inadequacies in the shared road and pedestrian environment.

Therefore in terms of the examples mentioned in the preceding paragraph it can by the same token be argued that the shared road and pedestrian

environment is not flexible in use either, as it does not accommodate the preferences and abilities of a wide range of people.

Furthermore, the information needed to efficiently use the shared road and pedestrian environment is not always present, and is often inappropriate for certain SNP categories. For example, informational text is not always replaced with symbols that do not require certain degrees of literacy.

The layout of the shared road and pedestrian environment is not always simple, as there aren't always clear direct paths given to pedestrians to the transport facilities. In order to access the transport facilities one often has to be reliant on previous experience or knowledge of the area. Therefore, SNPs are forced to exert great physical effort when using the shared road and pedestrian environment.

The design of pedestrian pathways does not in general accommodate many SNPs as it does not avoid or minimise hazards, caused by the positioning of informal traders and street furniture. Therefore, the principle related to size and space for approach and use is also compromised because the design does not accommodate variations in the user type; for example someone in a wheelchair or a person laden with bags, who has differing mobility needs, experiences all the obstacles mentioned earlier.

On account of the shared road and pedestrian environment being filled with many hindrances as mentioned in this thesis, universal access to destinations served by the public road system is made difficult and in some instances impossible. There aren't "equal rights" either; the shared road and pedestrian environment is biased towards cars with a low priority given to pedestrians.

On the principle that there should be an integration of modes, thus does occur in Cape Town in some cases. However, this does not occur to the extent that shared roads and pedestrian environments occur optimally and safely.

A common problem is poorly maintained road surfaces, which, as can be readily visualised, is particularly problematical for SNPs.

Infrastructure

Many infrastructural components such as seating and ramps do not offer equitable use for those of diverse abilities. In the design of these devices such as street furniture the preferences, abilities and capacities of a wide range of people are not accommodated simply because they were excluded from the premises of design in the first place.

As has been mentioned previously, many ticket and information counters are not at a suitable height for certain SNPs and therefore do not allow these people to conveniently use the public transport facilities. The physical effort required for the use of ramps at certain interchanges that do not have suitable landings and the dangers caused by stairs with open treads require supreme physical effort and are potentially hazardous.

Vehicles

It is evident (refer to checklist results in chapter 7) that the available public transport modes are not characterised in terms of use - equitability, as no mode has level access and many of the other access requirements as mentioned under the best practice access guidelines are not present in the modes. The design is not useful and appealing to people with diverse disabilities. Therefore it could be argued that the flexibility in use of the modes does not accommodate the preferences and abilities of a wide range of people.

The manner in which public transport modes have been designed is not accommodating to SNPs; as for example, many modes do not have colour contrasted paint on the noses of steps or the entrance doorways to the mode.

As mentioned previously, great physical effort for many SNPs is required to just board the public transport modes because of the excessive height distance from street level to the entrance of the mode. The design of modes do not accommodate for the size and space needed for approach and use for

many SNPs such as those in wheelchairs, people with strollers, and those laden with bags

Inclusive design has become a necessity because of the changes in our legislative environment, since the apartheid government was abolished. Therefore, inclusive design has to be considered from the concept phase of every project. This research has shown that we have a very inclusive legislative environment and professions such as town planning that can play an important role in creating better quality of life for all South African citizens.

This research has been motivated by the idea that inclusive public transport does not benefit only SNPs but society as a whole on account of real-life instances such as:

- "When separate street lanes with dividers are created for pedestrians, bicyclists, and motorised vehicles, each mode is safer to use. This benefits everyone, but especially assists pedestrians with disabilities.
- When a van or taxi operator brings the vehicle to a complete stop and waits while a passenger with a cane climbs on board and finds a seat, the driver has made it possible for that person to ride. But all other passengers also benefit from safe, courteous treatment by their drivers
- When a bus driver announces the most important stops to the passengers, a blind person may especially benefit, but everyone is given important information.
- When a wheelchair user rolls onto a bus at floor level, he or she is able to ride even when unable to climb steps. But every passenger gets on faster by not having to climb steps.
- Painting handrails a bright yellow on a bus or train especially benefits a passenger who is partially sighted, but also benefits every passenger who wants to quickly find a way to hold on while entering.
- Well – located signs may be especially helpful in directing a deaf person to a bus or train in a transit terminal, but these signs may be equally

important to tourists or anyone else who is not yet familiar with that terminal" (Access Exchange International, s.a:2).

8.3.3 What planning or design theories and principles related to the public transport system have bearing on urban places that affect the quality of life for special needs passengers?

Chapter four investigates how planning and design theories and principles can assist in making urban environments positive, and also the public transport system, which is an element of the urban environment of particular importance for SNPs.

The following table entitled Urban Environments: Design Principles and Objectives, highlights the main themes from that chapter; it can be regarded as a summary of the principles and theories that have bearing on urban places that affect the quality of life for SNPs.

Urban Environments: Design Principles and Objectives

Evaluation/ Performance Directives	Principles
Place-making	*Access/opportunity* (certain requirements essential to create good quality, aesthetically appealing places such as street furniture can present barriers to movement).
Scale	Multi-functional spaces, human (scale) comfort, street furniture, proportions (unbiased), linkage between (soft) spaces, continuous walkways, shared environments, multifunctional needs, all modes.
Access	Catering for the full range of humanity, many levels of access, integration of movement systems, complimentarily of modes, alternative routes, sharing of space, prioritisation of pedestrians (signals indicating pedestrians have precedence, changed texture or level of services), efficient public transport, open and flexible movement systems, open road geometries, maximum exposure of public facilities.
Opportunity	Economic access, high accessibility of facilities, uninterrupted (barrier free) movement channels, concentrated pedestrian movement.
Efficiency	Optimal utilisation of land, finances, time, suitable infrastructure (universal design/access), private vehicle dependency, spreading of capital resources in projects (earmarked corridors for an independent journey), open road networks for public transport travel (grid).

Urban Environment: Design Principles and Objectives (continued)

Choice	Choice of routes, modes, meeting a range of needs, choice through accessibility.
Equity	Freely accessible choices (of modes), access to public transport, non-discriminatory public transport, frequency, cost and time of public transport, freedom of independent travel.
Permeability	Ease of movement through a part of the city, shortest practical routes.
Variety	Range of uses in close proximity.
Legibility	Ease of understanding space(s), understanding of opportunities.
Robustness	Multi-purpose spaces, adaptable spaces for different uses.
Visual appropriateness	Direct travelling, avoidance of time and energy wastage.

Table 8.2: Urban Environments-Design Principles and Objectives

8.4 Part B

8.4.1 Research Question Two: What enabling mechanisms are in place to alleviate the problems endured in the public transport system by SNPs?

How the City of Cape Town performs in regard to planning and design principles has been a theme of many studies over the years and a fully detailed analysis would be much too extensive for the purposes of this thesis. However, in the popularised publication "Building and Equitable City" produced by the City of Cape Town the question posed above as to the performance of Cape Town in regard to planning and design principles is addressed in a fairly clear and succinct manner, though at a general level. This document is a clear policy statement directed at numerous aspects of a poorly performing city (City of Cape Town, 1999b).

It is stated that because of the physical form of the city, which is spread out, people are forced to travel long distances. A consequence of this is that money that could be better spent on improving people's lives must be spent on transport infrastructure, and also people have to spend a lot of time and money on travelling.

What transpires is that life has become inconvenient and expensive for people that cannot afford a car. On account of this dispersed form in terms of differing land uses, communities are far from facilities and services needed. Referring back to the design criteria discussed earlier, the following is suggested in the document concerning the urban conditions in Cape Town.

Place making:

- For many people the city is unpleasant and uncomfortable,
- The quality of urban spaces is poor.

Scale:

- Many public spaces are not enclosed by buildings or plants and are therefore not very comfortable, well defined or dignified.

Access:

- Segregated planning has resulted in places that are not very easily accessible. This is due to the separation of activities such as shopping from the general urban fabric,
- Public transport users often have to negotiate major barriers just to get from one place to another, and
- Many public buildings have blank sides facing onto public spaces making them difficult to access. Public spaces which are surrounded by blank walls can be dangerous places which encourage anti-social behaviour.

Opportunity:

- " past planning, political and investment decisions about land development and where activities should be located has resulted in a city which has disadvantaged its citizens, especially the poor" (City of Cape Town, 1999b).

Efficiency:

- Resources are used inefficiently, and
- Many public transport facilities and the land surrounding them are not efficiently utilised, and not as multi-functional as they can be.

Choice

- The fragmented nature of Cape Town where different parts and elements of the city act as isolated entities, and

- An inaccessible public transport system which limits choices in terms of access to employment and social facilities.

Equity

- Many people have a poor quality of life because of an unbalanced city structure and "unequal" access to opportunities, and
- Opportunities are not evenly spread, certain parts of the city have many opportunities clustered around them, while disadvantaged areas have very few.

8.4.2 What enabling legislation and policies are in place to address the plight of SNPs and are they in fact properly implemented towards a positive result?

Chapters 5 and 6 provide the reader with an overview of policies and legislation that the author has identified as relevant in governing public transport with particular reference to SNPs. The adequacy of these laws and policies that govern accessibility and anti-discrimination practices in terms of the public transport system was explored. The investigation also searched as to whether such enabling legislation in fact exists at all levels of government.

It was found that there is in fact a plethora of legislation and policies around. Furthermore, that since 1994 great strides has been taken to address the exclusion of and discrimination against people with disabilities.

A valuable source in terms of analysing the comprehensiveness of legislation and policy is the Overseas Road Note 21 (Department for International Development, 2004). To reiterate, it is a report that aids governments with implementing accessibility into the public transport environment and provides specific guidelines that could be used as checklist with which to measure the policies and legislation in South Africa, in regard to disabled people.

The principles include:

- The fact that policy and legislation can take many years to develop, therefore in the interim codes of practice can be developed (Department for International Development, 2004).

In terms of accessibility standards, South Africa has a legislative framework with three independent mechanisms that govern the built environment, namely;

- The National Building Regulations and Building Standard Act, no 103 of 1977, last amended in 1989. This is the enabling Act in terms of which the National Building Regulations were promulgated, and provides a framework within which the Regulations can be administered, monitored and enforced. The Act and Regulations must therefore be read together.

- The National Building Regulations, which aim to ensure that buildings are designed and built to be safe, healthy and convenient for users.

- The SABS 0400 Code of Practice, constituting a non-statutory set of guidelines. It provides technical information for the practical application of the National Building Regulations. In terms of the legislation governing accessibility of the built environment, the application thereof has primarily relied on one aspect of the Regulations, Part S. This was introduced in 1985 to address the needs of people with disabilities. (South African Human Rights Commission, 2002).

There are certain inadequacies that have been raised as to the effectiveness of the aforementioned accessible legislation framework. However, in its entirety, it is sufficient to provide a guide to creating barrier-free environments.

- "Access requirements can either be formulated as stand-alone legislation dealing solely with disability issues (as is the case with India's persons with Disabilities Act), or integrated with other policies and legislation (such as South Africa's Promotion of Equality and Prevention of Unfair

Discrimination Act, 2000 which prohibits discrimination on the basis of disability, race, gender, and other grounds). The former approach has the advantage of being able to give coherent and comprehensive guidance to stakeholders in many sectors whose actions need to be coordinated. The second approach has the advantage of permitting faster and more effective implementation and enforcement, through mechanisms that already exist. In many cases a combination of these two approaches will be appropriate" (Department for International Development, 2004:29).

In the preceding quote South Africa is used as an example of an approach to take when dealing with accessibility. The country thus has in terms of disability, what is termed as "stand-alone legislation". This is a term used to describe any legislation that specifically deals with disability. So our country adheres to the aforementioned principle for developing policies and legislation as set out in the Overseas Road Note 21.

- Access legislation needs to cover a diverse range of needs, including persons with physical, sensory and cognitive disabilities (Department for International Development, 2004).

Many of the policies and legislation in South Africa concur with this principle. The definition of disability given in many of the policies and legislation are all-inclusive of physical, sensory and cognitive disabilities.

- All legislation, guidelines, and standards should be developed and strengthened through consultation with people with disabilities (Department for International Development, 2004).

The consultation process followed in many of the policies and legislation of South Africa has been quite extensive. Consultants, Arcus Gibb were commissioned in 1998 by the City Of Cape Town to determine the transport needs of SNPs. This was undertaken by arranging in-depth, one-to-one interviews with 156 SNPs. This information became the basis upon which the City of Cape Town policies were founded.

A report published by the South African Human Rights Commission, entitled "Towards a barrier-free Society", states that it is required that people with disabilities should represent themselves. The Integrated Provincial Disability Strategy similarly states that there are certain actions that government will implement in terms of accessible transport, and one of these is that there is to be self-representation of people with disabilities on standing transport committees.

A key focus area of the White Paper on National Transport Policy is on meeting customer needs which will be determined and provided for by a:

"...transparent, consultative, co-ordinated and accountable process based on comprehensive information ...." (South Africa, 1996b).

- "Policy goals and legislation should recognize that true mobility requires more than just infrastructure with ramps instead of steps. Legislation should thus take account of all the design factors, operational factors, fare policies, and management practices which affect these four areas" (Department for International Development, 2004:30).

Many of the policies and legislation goals analysed in chapter five shows how inclusive policies are in terms of taking into account the various factors. Examples of such policies are the "Guidelines for Transport of the Disabled" and the "Moving South Africa: Action Agenda".

- "The typical contents of access legislation should include:
    - The prohibition of unfair discrimination against people with disabilities in the design of services, fare schedules, and operating procedures" (Department for International Development, 2004:30).

Many policies have been mentioned in the preceding chapter that provide specific interventions to attain accessible public transport. An example of these interventions occur in the White Paper on National Transport Policy which refers to providing an affordable public transport, with travellers

spending less than 10% of disposable income on transport. A comprehensive list, containing other examples, is given.

- "Clauses mandating effective consultation with affected people with disabilities, in the preparation of transport projects and plans, and mechanisms for achieving this" (Department for International Development, 2004:30).

The way in which this takes place can be seen in the examples given above under the principle of consultation with people with disabilities.

- "Specific actions that need to be taken by designated stakeholders in removing barriers and facilitating universal mobility. Legislation could mandate, for instance, that all new transport interchanges and vehicles should be fully accessible, with gradual phasing in of low-cost features for existing transport infrastructure, vehicles and systems" (Department for International Development, 2004:30).

The National Land Transport Strategic Framework has defined specific actions which include; that all new buses in subsidised contracts will comply with the recommended standards for general accessibility (including step-height, grab rails, signage, etc). That all new taxis have basic accessibility features such as low steps, grab rails, and driver training. That South African Rail Commuter Corporation continues to upgrade the accessibility of all rail stations and rail carriages. There are many other similar interventions that have been mentioned in the preceding sections.

- "Target time frames for achieving the specified actions" Department for International Development, 2004:30).

The Moving South Africa document states that by 2020, transport in South Africa will meet the needs of freight and passenger customers for accessible, affordable, safe, frequent, high quality, reliable, efficient and seamless transport operations and infrastructure.

- "A requirement for staff training to improve the services offered to all passengers, including those with disabilities" (Department for International Development, 2004:30).

The White Paper on Integrated National Disability Strategy states that a disability awareness and orientation component of the transport industry should be developed and implemented. The White Paper on Integrated Provincial Disability Strategy includes certain action plans, one of which specifically states that transport operators and transport personnel need to be educated to accommodate the needs of disabled persons.

- "Enforcement mechanisms for promoting compliance and dealing with non-compliance" (Department for International Development, 2004:30).

The South African Human Rights Commission faces the challenge to ensure that the rights entrenched in our Constitution are enjoyed and that redress is sought if they are transgressed. The responsibility of the Office on the Status of Disable Person includes the monitoring and implementation of the Integrated National Disability Strategy (INDS), and raising awareness on disability.

- "A monitoring mechanism for reviewing progress and updating the legislation" (Department for International Development, 2004:31).

One of the objectives of the White Paper on National Transport Policy is that government will specify key performance indicators in respect of the strategic objectives. The indicators will facilitate monitoring of the progress of the authorities, both local and provincial, in implementing the mission for land passenger transport.

The action plans of the White Paper on Integrated Provincial Disability Strategy include the establishment of a mechanism to monitor implementation.

The South African Human Rights Commission monitors organs of state in the execution of their Constitutional obligations.

People in South Africa now have constitutional rights to equality and human dignity. All legislation should therefore be consistent with the provisions of the Constitution.

As was observed that though policy interventions were clearly stated at both national and provincial levels, implementation did and still does not occur at ground level as could be the case, for a host of reasons such as lack of political will and failure of interpretation.

In a review of legislation concerning the built environment, initiated by the South African Human Rights Commission to determine the extent to which people with disabilities and special needs are currently assured access to buildings and other facilities, there were certain deficiencies in the current regulatory framework for accessibility and the built environment identified:

- "Insufficient definition of disability to meet the specific requirements of various disabled user groups,
- A loophole for property developers and building professionals to evade or ignore accessibility requirements, because the non-statutory guidelines of the SABS Code of Practice are not legally enforceable,
- Lack of enforcement of Part S of the National Building Regulations by building control officers throughout the country, with the result that the majority of public buildings in South Africa are inaccessible, and
- Failure to cross-reference Part S with other sections of the National Building Regulations, resulting in further loopholes, anomalies and misconceptions in the application of regulations" (South African Human Rights Commission, 2002).

These are obviously critical shortcomings in that if not remedied, people with special needs and disabilities will not be able to equitably participate in society and fully enjoy their rights.

Failure of implementation is obviously a pervasive issue that could not be fully explored in this thesis, and is deserving of a detailed but separate study.

8.4.3 What upgrades or improvements are required in the public transport system in the Cape Metropolitan Area for Special Needs Passengers to ensure an equitable system?

In terms of this research study it can be deduced that the Cape Metropolitan area does not have a properly accessible public transport system. The mobility impaired is not fully integrated into society because there are so many barriers to their movement. Internationally, a number of countries seemingly have fully accessible public transport systems, where no one is discriminated against, as anyone regardless of their physical limitations has full and convenient access to public transport.

What follows are the best practice guidelines in terms of achieving a fully accessible public transport system, extracted from various reports produced in countries that achieved accessible public transport.

Information

Information, in terms of the public transport system is needed right from the start of one's journey, usually starting from home. This portion of the journey usually occurs within the shared road and pedestrian environment. It is important to have suitable information available to ascertain where the public transport modes can be found. Even before the journey commences there should also be a means available where a potential passenger can access information such as public transport times and fares.

As mentioned, when it comes to information, it is important for commuter's to be able to utilise the existing public transport system efficiently. This chapter will investigate whether or not the information being provided for the public transport journey is readily available to the commuter, clear and legible enough, simple and up to date. For SNPs having reliable information that

is in real time is one of the determining factors as to whether SNPs can travel independently.

The manner in which information such as timetables, fares, and general information about where ablution facilities are situated, and how it should be shown and made available to travellers, will be shown and guidelines given according to successful international examples.

Before the guidelines (specifications) are given, a brief description of good practice principles according to the Overseas Road Note 21 will be shown. The Overseas Road Note 21 provides practical guidelines for enhancing the access and mobility of people with disabilities in developing countries. The report highlights four basic principles of good access principles, namely:

- Safety,
- Accessibility,
- Reliability, and
- Affordability.

Information and Safety– all information signs and boards should not be situated in a way that causes an obstruction to people, which could potentially be hazardous.

Information and Accessibility– information needs to make allowance for any type of special requirements of passengers, that is, timetables should be in an audible, and visual manner, and the use of more than one language to relay information are a few examples.

Information and Reliability–information needs to be reliable and up to date to achieve an effective journey. The passenger needs to be made aware of what (s)he can expect in order to plan his/her journey. Unforeseen circumstances are generally not handled well by disabled passengers, and they more than likely to experience extreme difficulties when having to making alternative arrangements.

The aforementioned problems have been identified by the author through personal observations with the aid of a checklist and survey findings to ascertain the perceptions of end users. Some of the solutions suggested are those of the author, and others are mainly derived from various international best practice standards. The view is also submitted here that the proposals outlined in this paper would in fact address a vastly enhanced public transport system to the benefit of all passengers and not only the SNPs.

Bibliography on Accessibility Guidelines

Disabled Persons Transport Advisory Committee (November 2001) Accessibility Specification for Small Buses designed to carry 9 – 22 passengers inclusive. Available from DPTAC, London www.dptac.gov.uk

European Conference of ministers of Transport (1990). Transport for all; Norwegian guide to providing Transport for People with Mobility Handicaps. Paris: OECD

European Conference of ministers of Transport (1999). Improving Transport for People with Mobility Handicaps: A guide to good practice. Paris: OECD

Oxley, P.R., Gallon, C., Fowkes, A., Savill, T. (1996) Making railway stations accessible. TRL report 199. Crowthorne: transport research Laboratory.

Oxley, P.R. (2001) Inclusive Mobility: A Guide to best practice on Access to Pedestrian and Transport Infrastructure, Available from the Mobility and Inclusion Unit, DTLR, London.

UITP (Union Internationale des Tranports publics – International Association of Public Transport) (June 2001) Access to Public Transport . UITP Focus position paper. Available form the UITP www.uitp.com

Practical guidelines for Information

- General information

- Letters and symbols on a sign should contrast with the background colour,

Background	Sign board colour	Letter/symbol colour
Red brick or dark stone	White	Black, dark green or dark blue
Light brick or light stone or whitewashed walls	Black/dark	White or yellow
Green vegetation	White	Black, dark green or dark blue
Back-lit sign	Black	White or yellow

- Information on times, services and fares must be accurate and in real time,
- All information should be in an audible and visual manner,
- Adequate lighting to ensure legibility at night, and
- Visual information to be simple and concise, where possible symbols to be used – sizes of symbols can be doubled to that of letter heights.

- Audible Information
  - PA systems are recommended for vehicles over 30 seaters, under that drivers/conductors could make announcements, with certain routes that SNPs would frequent i.e. hospital routes for example drivers could be trained in sign language (average sign language training takes six months).
  - PA systems should be loud enough (hearing impaired require at least 5dB above the ambient noise levels) and clear.
- Signals
  - All traffic signals should indicate when it is clear/safe for pedestrians to cross a street. This is, however not always the case. At certain traffic

signals there is not enough time given to cross, therefore detectors should be used to increase signal times when needed.

- Signage
  - All signage should be in lowercase letters because it is much easier to read - The actual size and format of signage is dependent on the distance from which it's been read, and
  - It is recommended that the letter size should be 1% of the distance from which the sign is read.

Minimum letter height	**Application**
200mm	Route number on trains/buses
150mm	Building entrance signs
125mm	Route name/destination
50mm – 100mm	Indoor use eg. Signs at stations
50mm	Bus stop poles and shelters
15mm – 25mm	Close reading e.g. wall-mounted timetables

- Tactile Signage
  - This is information, which is perceptible to touch and is most useful for blind persons who cannot read Braille, so embossed signs should be used,
  - The letters, numbers or pictograms should be fixed against the wall or bus stop pole at a height of a meter from the ground, and
  - Characters raised about 1mm to 1.5mm from the surface, at least 15mm high in a contrasting colour.
- Placement of Signage
  - Suspended overhead signs (direction and emergency) should be higher than 2000mm or 2100mm, and

- Information (wall mounted signs) should generally be placed at a height of between 1300mm and 1600mm above floor level and not in the pathway of pedestrians.

- Printed Material

  - Generally the guidelines for format, colour, etc. of printed material are the same as the guidelines for signage above,

  - Red or green ink must be avoided; black ink on white paper is recommended,

  - Contact number for more information should always be included,

  - Information should be legible to people with low vision, and

  - Keep wording simple so that a larger typeface can be used.

Shared Road and Pedestrian Environment

The shared road and pedestrian environment is the part of a person's journey where one is most likely to be a pedestrian. It is the area where the pedestrian shares the environment with other modes of transport, namely private vehicles and public transport vehicles. It could be viewed as the most important component of the public transport system, because what would be the point of making the public transport modes accessible if SNPs cannot get there.

What this chapter aims for is an unhindered, safe and accessible journey from the origin of your journey, and to and from bus stops, taxi termini and stations. This component needs to be safe, convenient and shared in an optimal manner. This component is characterised by competition for space between pedestrians, the various public transport modes and private vehicles for the same space.

Shared Road and Pedestrian Environment and Safety- due to poorly maintained pavements, or pavements cluttered with informal traders, to

mention a few safety concerns, results in pedestrians being forced into highly dangerous situations where they have to share roads with busy traffic.

Shared Road and Pedestrian Environment and Accessibility– there are many physical barriers to full access for special needs passengers to transport facilities. Examples of these barriers are the absence of dropped curbs, tactile warning paths, obstructed pavements, to mention a few.

Shared Road and Pedestrian Environment and Reliability - there should be consistency in the shared road and pedestrian environment, i.e. there should be dropped curbs particularly at strategic points along the traveling route, tactile paths that special need passengers can rely on and take comfort in, knowing that they are there.

Practical guidelines for the Shared Road and Pedestrian Environment

- Pavements (what should not be present or avoided)
  - Pedestrian paths should be kept clear of obstacles such as trees with overhanging branches, signposts, informal traders, etc.
  - Regular maintenance should occur to keep pathways free of potholes that could possibly be hazardous,
  - Pedestrian pathways must be clear (parked cars),
  - Pedestrian paths should be as straight as possible,
  - Meter maids that are vigilant and check for any parking violations can additionally perform the most useful function of enforcing the removal of illegally parked cars and informal traders on pavements or other pedestrian routes, and
  - General pavement dimensions

Area	Dimensions
Minimum width	2000mm – 2500mm

Minimum width in front of bus/minibus taxi stops and in front of shops	3500mm
Overhangs on the pavement (tree branches, signs, etc)	height no less than 2100mm

- Pavements (what should be present)
  - In the interim where there is an absence of dropped curbs, small steel ramps should be bolted down and designed to accommodate wheelchairs at the beginning/ends of pavements,
  - Seating should be provided at regular intervals of approximately 100 meters, and
  - Lamp -posts or traffic signs when present need should not be situated in the pedestrian path, located at the edge of the path. Should have a contrasting colour to surroundings and be 140mm – 160mm wide with the lower edge 1.5 – 1.7 meters above ground level.
- Surface Quality
  - Asphalt or concrete surfaces are recommended for pavements – brick paving needs to be even,
  - Surfaces should be firm and even, and
  - Grates over storm water drains must be perpendicular to the direction of travel (prevents wheelchair wheels from falling through).
- Roads and road crossings (What should be present)
  - Dropped curbs should be provided at all pedestrian crossings, and be 2 meters wide (more if it is heavily used crossing point),
  - Tactile warnings to indicate a dangerous situation – pre-cast concrete blistered paving or "bubble blocks" can be used especially with the transition from a pathway into street crossings,

- Guard rails – at least 1100mm high and painted in contrast to surroundings , and
- Audible and tactile signals at crossings for visually impaired persons.

- Pedestrian areas (traffic free areas can also contain hazards for SNPs)
  - Gradients mentioned below apply to these areas as well,
  - With a change in level there should be steps and ramps,
  - Lift access needs to be provided to all floors,
  - Walking surface should be well lit and non-slip and well maintained,
  - All the guidelines mentioned for pedestrian pathways should be adhered to, and
  - Tactile paths should also be included in pedestrian areas as they tend to be large and open.

- Gradients
  - 8% (1 meter rise to every 12 meters horizontal distance) maximum,
  - Footways or ramps steeper than 5% - provide level areas every 10 meters, and
  - Changes in slope must be gradual so wheelchairs don't get stuck.

- Road works (maintenance of roads and pathways are unavoidable)
  - Always be barricaded off with a continuous rail approximately 1000mm above ground and a tapping rail below this,
  - Audible warnings and lamps must be provided,
  - Temporary footpaths – not less than 1200mm wide and when possible at least 1800mm wide,

- Minimum passage width of 1100mm where scaffolding is erected above pathway,
- Corner poles must be padded, and
- All vertical supports should have a band of contrasting colour approximately 150mm in depth with the lower edge 1.5 – 1.7 meters above ground level.

- Tactile surfaces to orientate visually impaired passengers
  - Should be continuous along the entire pedestrian path,
  - Should have a different texture to the rest of the path –rough for blind people to feel them through their shoes,
  - The height of the tactile surface should be approximately 5mm, and
  - Tactile path in different colour to the rest of the pathway.

Infrastructure

The infrastructural components within the shared road and pedestrian environment such as pavements that allow easy access for walking or using a wheelchair, and at the various public transport interchanges, such as ramps will be analysed.

Infrastructure and Safety - ramps with an incorrect gradient, seating too high for people of restricted height, slippery surfaces, steps without tactile warning strips, to mention a few are all infrastructural components that could lead to serious injuries for special needs passengers. The consensus with regard to an ideal gradient for ramps seems to be 1:12 (Maunder et al, 2004); anything steeper causes difficulties for manual wheelchair users.

Infrastructure and Accessibility - it is vital to make transport facilities accessible by making sure there is infrastructure in place to aid, rather than hinder accessibility.

Infrastructure and Reliability–all infrastructural components, such as toilets, ramps, that are accessible should be in a working order.

- Getting into the transport facility (train stations and interchanges)
  - Turnstiles are almost impossible for certain passengers, therefore, there should be a 900mm wide accessible route that is clearly marked,
  - Steps should be avoided,
  - Doors should be avoided at the entrances/exits,
  - If doors are used it should be automatic,
  - Minimum width of 1200mm,
  - Glass doors –marked with brightly coloured banding 150mm and 800mm – 1000mm from ground,
  - Lever type handles 900mm height and 30mm-35mm diameter,
  - Gradients of ramps as stated previously to be used,
  - Steps if the ramp length is more than 200mm,
  - Steps should be uniform in size and well lit,
  - Landings required if more than 12 steps,
  - No open treads,
  - Tactile warnings at top/bottom of stairs,
  - Maximum number of steps on flight = 12 steps,
  - Handrails on either side – minimum width between handrails = 1000mm,
  - Risers (min 100mm – max 150mm), treads (300mm deep and non slip), nosings (rounded and colour contrasted), risers should be vertical,

- There should be at least one ticket counter, public telephone, and toilets on either side of the public transport facility depending on the size of the facility, designed to be accessible to all users, and
- Counters should have a height of about 800mmm and public telephone unit tops should be about 1040mm from the floor.

- Bus/minibus taxi stops
  - Bus stops should be located as close to amenities and places frequented by SNPs,
  - Bus stops should preferably be located no more than 400 meters along a route due to the mobility limitations of SNPs,
  - Bus stops should have paved and level surface and be frequently maintained to avoid potentially hazardous situations,
  - When bus stops are positioned in areas with restricted space as is often the case in Cape Town, then the shelter can be positioned against the rear of the pathway – clear pathway between shelter and street – 1300mm,
  - Length of the bus stop should be sufficient to provide access to all entrance and exit doors of the bus,
  - Raise boarding area for low floor buses 240mm,
  - Standard curb = 125mm – 140mm,
  - Shelters provided to protect passengers – 2000mm of boarding/alighting area,
  - Seating that's at a height not exceeding 480mm, painted in a colour contrasting to its surroundings,
  - Space should be provided under shelters for wheelchair users,
  - Shelter should be well lit and transparent for security reasons, and

- Bus stops should contain timetable information (specified requirements as stated under the information section).

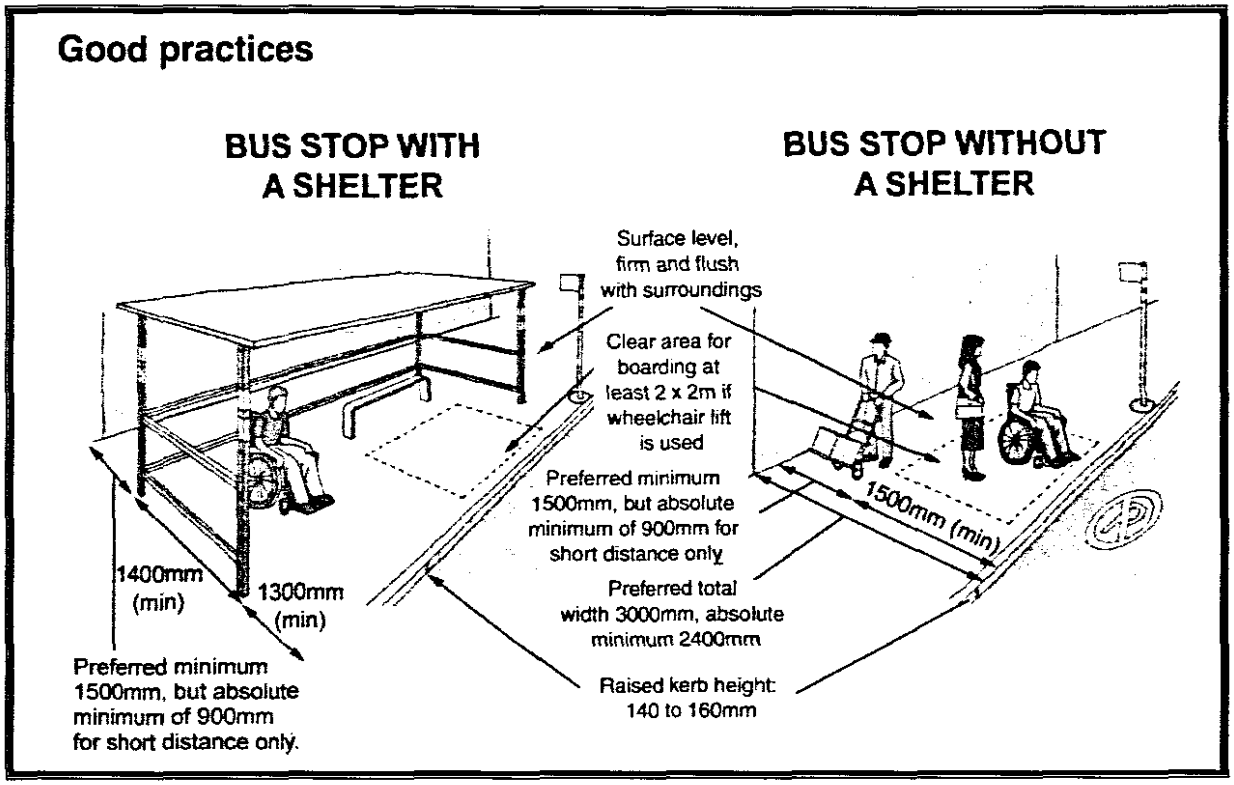


Figure 8.1: Dimensions of bus stop shelters (Department for International Development, 2004)

Vehicles

At present in Cape Town specifically, there are no public transport modes that are universally accessible. The public transport modes in operation in Cape Town are trains, buses and minibus taxis. These public transport modes present a big challenge to many SNPs as the height difference between the mode and pavements are unacceptably high.

Vehicles and Safety– the recklessness of drivers, high steps when boarding and alighting vehicles, absence of grab-rails, are further examples of hazards that expose passengers to possible injuries.

Vehicles and Accessibility– step-free access is the ultimate goal that should be strived for in terms of accessibility and vehicles.

Vehicles and Reliability– all public transport modes should be in a reliable working order and keep to their respective schedule times, and trains and buses should stop in the same place every time.

- General requirements for all public transport modes
  - Operators need to be trained on the specific needs of young children, mobility impaired, elderly people, hearing and visually impaired passengers,
  - Staff at train stations and bus termini should multitask in that security staff could aid in providing assistance to SNPs,
  - All vehicles should be equipped with grab rails and handrails with a contrasting colour to the surroundings and should not be more than 50mm in diameter,
  - Audible announcements and visual displays (specifications can be found in the information section),
  - Priority seating for SNPs,
  - Entrances/exits to be kept clear of all obstructions as mentioned earlier, and
  - Bell pushers within reach of seated passengers.
- Buses
  - Low floor buses use a kneeling system (suspension is lowered) to reduce the step height for boarding/alighting – a lift/ramp can also be used to provide level access,
  - At least one wheelchair space (wheelchair – 750mm x 1400mm),
  - Entrance (800mm wide and 1800 high),
  - Single step into bus 250mm high, subsequent steps 120mm – 200mm,
  - Gangway (750 mm minimum),

- 50% single low floor area free of steps,
- 1800mm minimum headroom, and
- Handrails to be spaced no more than 1050mm apart.

- Trains
  - Having the train and platform height the same is regarded as best practice,
  - Temporary approach is to construct a partially raised platform where the carriage that accommodates wheelchair users stop,
  - Unobstructed door width = 800mm in colour contrasted colour to surroundings,
  - Doors should open automatically and provide sufficient time for boarding and alighting,
  - Possible alternative is for one carriage to have a separate entrance and exit,
  - The same specifications for steps as given for buses, and
  - Layout of the interior of trains should be the same as in buses – adequate passageway widths, space allocated for one or two wheelchairs, priority seating near entrance/exits of train, colour contrasted handrails and steps.

- Minibus taxis

The following requirements have been recommended by the South African Federal Council on Disability for universal access to be incorporated for the proposed vehicles for the Taxi Recapitalisation Programme.

The requirements include amongst others:

- Access on the left side of the vehicle by steps and removable ramps (max gradient 1:4, min width 150mm, formed in a "u" shape facing

upwards, positioned with a gap of 330mm between the ramps to permit one person to stand and assist wheelchair user, with a safe working load of no less than 300kg),

- Width of entrance = 850mm wide,
- Steps (800mm wide, 200mm deep, first step at most 250mm above ground level, in bright colour contrasting colours,
- Wheelchair to be positioned facing forward or backward in the vehicle, with minimum dimensions given for the space needed,
- At least one seat to have a waist restraint or seatbelt, and
- Sufficient grab bars or handles.

Affordability

The criterion of affordability which as mentioned earlier is one of four best practice guidelines on accessibility identified/classified by the Overseas Road Note 21. It is discussed separately as this does not properly fit under the headings of the four public transport components (information, shared road and pedestrian environment, infrastructure and vehicles) already discussed.

It is generally contended that people with disabilities who are reliant on public transport generally fall under the lower income bracket of society and should therefore be afforded a reduction in fares. Providers of public transport can minimise costs by including access improvements in regular maintenance and with all new construction. Thorough research is needed on an ongoing basis at the most frequently used public transport areas, from which prioritised development can occur. Infrastructure should be utilised optimally as for instance, the use of selling/renting advertising space. One carriage of the train can be revamped to accommodate all SNPs, on the different lines in Cape Town. It is unrealistic to expect a total overall of all buses; three buses can be replaced with fully accessible ones that can operate in the morning, afternoon and evening peak times. These buses should operate at strategic areas where

there are facilities used by SNPs, such as hospitals and disability workshops. The introduction of an identification card for disabled passengers that indicates to operators that they require assistance could speed boarding of vehicles, and when the system can operate a bit faster it leaves the opportunity to generate more money as there is more time.

As has been mentioned it is unrealistic to expect transport operators to clear their current stock and start from scratch and make all vehicles fully accessible. Therefore an incremental approach or the first steps that need to be taken has been included.

Incremental Approach

Information	Shared Road and Pedestrian	Infrastructure	Vehicles
All newly constructed public transport facilities should follow accessible standard guidelines for information.	Identify areas (pedestrian crossings and pathways) mainly used by SNPs (schools, hospitals, disability workshops, etc) and then priorities these places for upgrading first.	All newly constructed public transport facilities should follow accessible standard guidelines for infrastructure. A good starting place is facilities close to places frequented by SNPs, such as hospitals, schools, disability workshops, etc.	Most inexpensive way to ensure accessibility on all public transport modes is to include them as specifications when new vehicles are ordered.
Maintenance of existing facilities also provides an opportunity to improve signage and information.	Maintenance of existing facilities also provides an opportunity to improve accessibility by ensuring that accessibility standards are followed.	Maintenance of existing facilities also provides an opportunity to improve accessibility by ensuring that accessibility standards are followed.	As a starting point bus/minibus taxi operators can include useful features at a low incremental cost, such as correctly designed signage or route number/ destination, colour contrasted steps noses and handrails, bell pushers and priority seating.
Initially timetables can be printed in a larger print and audio information (on tape or telephone) for major routes and routes identified to be made accessible for SNPs.	Ensuring that street signs and street furniture are located so as not to be a hindrance for pedestrians.	At minimum there should be contrasted poles at bus/minibus taxi stops identifying it as a bus/minibus taxi stop.	Training operators as to the special needs of SNPs can make the journey for these people a lot easier and the training can be done at a minimal cost.

	Ensuring that pathways are kept clear from parked cars, informal traders, and rubbish.	Accessible standards in terms of seating, shelter and painting colour-contrasting markings on steps, handrails, etc can firstly be implemented at minimal costs.	Installing extra handrails in trains, colour contrasting step noses at entrance/exits, assigning priority seating close to entrances/exits and allowing longer stopping times for SNPs to board and alight are low cost accessible features that can be starting points.
Maintenance of existing facilities also provides an opportunity to improve signage and information.	Initially installing dropped curbs where pathways cross roads, and driveways.	Street furniture and informal traders at bus/minibus taxi stops that cause hindrances to SNPs should be removed.	Providing at least one accessible carriage per train preferably close to the driver/ conductor and making sure they can be clearly identified and they should be consistently placed in the same location so that users can wait in the same spot on the platform.
	Surface all pathways in all-weather material (asphalt or concrete).	Surface all pathways in all-weather material (asphalt or concrete).	

Table 8.3: Incremental Approach for attaining an accessible public transport system

These incremental steps have been included to give those involved in the public transport system a guide as to where to start when aiming for an accessible public transport system.

8.5 Concluding Thoughts

South Africa has for the last 10 years of democracy begun the process of repairing itself after many years of discrimination, contention and conflict. The many hardships faced by the majority of South African citizens are being addressed and suitable interventions have begun or are planned for the future. Yet there are a minority that live as if the country were not into ten years of democracy and they are special needs passengers.

This research was initiated after contemplation as to why so many people remain in the grips of poverty and experience such a poor quality of life. There are of course many reasons for this. However, there is a mechanism that could vastly improve this situation that in the author's opinion is not being utilised efficiently. It is South Africa's public transport system, which is a tool that can aid people in improving their lives, and can chauffer them towards opportunities. This very statement has been made in countless reports, yet the importance attached to public transport by many politicians is not evident when investigating the public transport system.

Discrimination has festered in South Africa because in our past apartheid rule and for other reasons many were not given equal opportunities, and presently it is the same. The normal able bodied persons are able to use public transport. Yet because it is not accessible and efficient, those with special needs find it difficult and in certain instances impossible to make use of. This, as mentioned throughout the research, leads to problems of isolation, poor quality of life and the inability to integrate successfully into society for SNPs. The present South African government and citizens should not forget our past; however we should not continue to live in it.

"South Africa has made significant and impressive progress as a nation over the past ten years. We have established a functioning democracy; we have a Constitution with an entrenched Bill of Rights that protects individuals and communities; our economy is underpinned by a responsible fiscal policy that has achieved important

reductions in debt and inflation; certain basic services are now in the hands of many of the people. Once again, we are proud members of the international family of nations" (Democratic Alliance, *s.a.*).

Real civilisation in a country is, however, reflected in the quality of life experienced by those with special needs.

8.6 Future Research Topics

As mentioned in the thesis, due to the nature and extent of this research project, many new questions arose, and the following future research topics seem to suggest themselves.

It has been highlighted that town planners do not, and should not function in isolation of other disciplines in aiming to achieve an efficient public transport environment; the issue of multidisciplinary design processes is beyond the scope of this research study, however, lends itself to a separate investigation beyond the scope of this thesis.

Man responds to his physical environment and that response could be positive or negative. Illustrative examples of this response in Cape Town, with reference to the public transport system have been discussed in this research study, though a comprehensive analysis of the city could form the subject of a separate thesis.

As mentioned in the thesis, it is common cause that the only constant in the world we live in is change itself. By the same token, no legal provisions and policy recommendations are likely to be permanently valid. More detailed examination of the legal provisions discussed in this thesis is probably already overdue, in an integrated way, and this is indeed a subject for further research.

Failure of implementation with regards to legislation and policy is obviously a pervasive issue that could not be fully explored in this thesis, and is deserving of a detailed but separate study.

As mentioned, another field for study, at a financial level, is to determine the path followed subsequent to the approval of budgets for items such as public transport, and which projects actually are implemented with these funds. As an instance in the 2004/2005 Western Cape Transport and Public Works budget, public transport is allocated 195.9 million. The shear magnitude of such a budget certainly seems to raise questions concerning the failure of implementation (South African Government Information, 2004).

BIBLIOGRAPHY

Access Exchange International. *s.a. Making Access Happen.* [Online]. Available: http://www.globalride-sf.org
[4 August 2005]

Behrens, R. & Watson, V. 1996. *Making Urban Places: Principles and Guidelines for Layout Planning.* Cape Town: Urban Problems Research Unit, University of Cape Town.

Bentley, I., Alcock, A., Murrain, P., McGlynn, S. & Smith, G. 1985. *Responsive Environments: A Manual for Designers.* Oxford: Butterworth Architecture.

Cape Gateway. 2005.
http://www.capegateway.gov.za
[21 February 2005]

Cape Metropolitan Council. Department of Urban Planning. 1996. *Metropolitan Spatial Development Framework: A Guide for Spatial Development in the Cape Metropolitan Functional Region: Technical Report.* Cape Town: The MSDF Management Team.

Cape Metropolitan Council. 1998. *Moving Ahead: Cape Metropolitan Transport Plan. Part 1: Contextual Framework. A discussion document.* Cape Town: Rosemary Hare Public Relations.

Cape Metropolitan Council. 1999a. *Moving ahead: Cape Metropolitan Transport Plan: Part 2: Public Transport Strategic Component.* Cape Town: Rosemary Hare Public Relations.

Cape Metropolitan Council. 1999b. *Moving ahead Cape Metropolitan Transport Plan. Study to Determine the Transport Needs of Mobility Disadvantaged Persons:* Draft report. Cape Town: *s.n.*

Cape Metropolitan Council. 2001. *Moving ahead: City of Cape Town Transport Plan. Part 2: Public Transport – Operational Component. A discussion document,* Cape Town: Fiona Brüning

Children First. 2001. *Joint Monitoring Committee.* [Online]. Available: http://www.childrenfirst.org.za.
[5 May 2004]

City of Cape Town. Planning and Development Directorate. 1999a. *City of Cape Town: Municipal Spatial Development Framework.* Cape Town: Mills Litho.

City of Cape Town. Planning and Development Directorate. 1999b. *Urban Development Principles for The City of Cape Town, Building An Equitable City.* Cape Town: *s.n.*

City of Cape Town. (2002) Directorate: Transport, Roads and Storm Water. [2002]. *Current Public Transport Record. Cape Town: s.n*

City of Cape Town. 2005. *Draft Integrated Development Plan 2005.* Cape Town: *s.n.*

Creswell, J.H. 2004. *Research design: Qualitative, Quantitative and Mixed Methods Approaches.* 2nd ed. London: Sage.

Democratic Alliance. *s.a. Disability Alliance Manifesto.* [Online]. Available: http://www.da.org.za.
[12 September 2005]

Department for International Development. 2004. *Overseas Road Note 21, Enhancing the Mobility of Disabled People: Guidelines for Practitioners.* London: *s.n.*

Dewar, D., Uytenbogaardt, R., Hutton-Square, M., Levy, C. & Menidis, P. 1989. *Housing: A Comparative Evaluation of Urbanism in Cape Town.* Cape Town: Urban Problems Research Unit, University of Cape Town.

Dimitriou, H.T. 1992. *Urban Transport Planning – A Developmental Approach. [s.l:s.n]*

Disabled Persons Transport Advisory Committee (DPTAC). 1990. *Mobility Policy for Britain's Entire Population.* [Online]. Available: http://www.dptac.gov.uk.html
[25 March 2003]

Fowkes A., Oxley P and Heiser B. 1993. *Cross Sector Benefits of Accessible Public Transport. [s.l:s.n]*

Goddard, W. & Mellville, S. 2001. *Research Methodology: an Introduction.* 2nd ed. Lansdowne: Juta.

Golden Arrow Bus Services. 2005. http://www.gabs.co.za.htm [6 September 2005]

Gosling, M. 2005. *City Transport Heading for Meltdown-Experts.* Cape Times, *Pg:* 3, November 28.

Human Transport Committee. 2000. *Project Universal Access.* [Online]. Available: http:/www.humantransport.org/universalaccess/page3html
[21 February 2004]

Independent Living Institute. 2003. *Integration of People with Disabilities: Accessibility – Universal Design.* [Online]. Available: http://www.independentliving.org [4 October 2004]

Ivan, C. 2003. Interview with the researcher on 19 October 2003, Cape Town

Leedy, P.D. 1980. *Practical Research: Planning and Design.* 2nd ed. N.Y.: MacMillan.

Litman, T. 2005. *Evaluating Transportation Equity: Guidance for Incorporating Distributional Impacts in Transportation Planning. [s.l:s.n]*

Lynch, K. 1960. *Image of the City.* Cambridge, Mass.: MIT Press.

Lynch, K. 1981. *A Theory of Good City Form.* Cambridge, Mass.: MIT Press.

Maclain, C.V. 2002. *Governance and Legislation in South Africa: A Contemporary Overview.* [Online]. Available: http://www.disabilityworld.org/01_03_02/gov/southafrica.html [25 June 2004]

Maluluke, J.K. 2001. Enhanced Customer Service Strategies in the Transportation of Persons with Special Needs. *Proceedings of the 20th South African Transport Conference,* Pretoria, 16-20 July 2001.

Oxley, P. 1999. Improving Transport for People with Mobility Handicaps: A Guide to Good Practice. *Proceedings of the hundred and fifth Round Table on Transport Economics,* Paris, 4-5 November 1999: 3-79. Paris: OECD Publications Service.

Pedestrian and Bicycle Information Center. *s.a.* Image Library. [Online]. Available; http://www.pedbikeimages.org [23 May 2005]

Remenyi, D. & Money, A. 2004. *Research Supervision for Supervisors and their Students.* United Kingdom: Academic Conferences Limited.

SARCC, 2004. http://www.sarcc.co.za/source/frames/start.htm [6 September 2004]

Smit, E.J.P., Naude, A.V. 1997. *Law, Government and People.* Durban: Butterworth

South Africa. 1977. *National Building Regulations and Building Standard Act, no 103 of 1977.* Pretoria: Government Printer.

South Africa. Department of Transport. 1992. *Transport for Disabled.* Pretoria: Government Printer.

South Africa. 1994. *Human Rights Commission Act, no 54 of 1994.* Pretoria: Government Printer.

South Africa. 1996a. *The Constitution of the Republic of South Africa Act, no 108 of 1996.* Pretoria: Government Printer.

South Africa. 1996b. *White Paper on National Transport Policy.* Pretoria: Government Printer.

South Africa. 1997a. Department of Transport. Guidelines for *Transport of the Disabled.* Pretoria: Government Printer.

South Africa. 1997b. Office of the Deputy President. *White Paper on an Integrated National Disability Strategy.* Cape Town: Rustica Press.

South Africa. 1998. *Employment Equity Act, no 55 of 1998.* Pretoria: Government Printer.

South Africa. Department of Transport. 1999. *Moving South Africa: The Action Agenda – A 20-year Strategic Framework for Transport in South Africa.* Pretoria: *s.n.*

South Africa. 2000a. *National Land Transport Transition Act, no 22 of 2000.* Pretoria: Government Printer.

South Africa. 2000b. *The Promotion of Equity and Prevention of Unfair Discrimination Act, no 4 of 2000.* Pretoria: Government Printer.

South African Human Rights Commission. 2002. *Towards a Barrier-free Society.* Guateng: *s.n.*

South Africa. Department of Transport. 2002 -2007. *National land Transport Strategic Framework (2002-2007).* Pretoria: Government Printer.

South African Government Information. 2004. *Mr Mcebesi Skwatsha, Western Cape Minister for Transport and Public Works, maiden Budget Speech – Budget Vote 10.* [Online]. Available: http://www.info.gov.html
[4 April 2005]

South African Rail Commuter Corporation. 2003. *Special Needs Passengers: Policy for Commuter Rail in South Africa. [s.l:s.n]*

South African Rail Commuter Corporation, 2005.
http://www.sarcc.co.za/source/frames/start.htm
[6 September 2005]

Statistics South Africa. http://wwwstatssa.gov.za [6 September 2004]

The Center for Universal Design. 1997. *What is Universal Design?* [Online].
Available: http://www.design.ncsu.edu:8120/cud/univ_design/princ_overview.htm
[20 February 2004]

Theunissen, V. 2003. Interview with the researcher on 8 September 2005, Cape Town

Transportation Research Board (TRB). 2003. *General.* [Online]. Available:
http://www.transed.jp/en/general.html
[21 April 2004]

United Nations. 1993. *The Standard Rules on the Equalisation of Opportunities for Persons with Disabilities. [s.l:s.n]*

Vanderheiden, G.C. 1990. *Thirty-something million: Should they be exceptions?*
[Online]. Available: http://www.tracecenter.org/docs/30_some.htm
[10 March 2004]

Venter,C.J., Rickert, T.E., Maunder, D.A.C. 2003. *From Basic Rights to Full Access: Elements of current accessibility practice in developing countries.* [Online].
Available: http://www.transport_links/filearea/publications/1_800_PA3911.pdf
[15 February 2004]

Verster, B. 2005. *Planning Survey and Analysis.* Cape Town: Cape Peninsula University of Technology. [Unpublished course notes.]

Victoria Transport Policy Institute. 2003. *Transportation Systems that Accommodate all users, Including People with Disabilities and other Special Needs.* [Online].
Available:
http://www.vtpi.org/tdm/tdm69.htm
[21 April 2004]

Vuchic, V. R. 1982. *Urban Public Transportation: Systems and Technology.*
Englewood Cliffs, N.J.: Prentice-Hall.

Vuchic, V. R. 2000. *Transportation for Liveable Cities.* New Brunswick, N.J.: Centre for Urban Policy Research.

Welman, J.C. & Kruger, S.J. 2001. *Research Methodology.* 2nd ed. Oxford: Oxford University Press.

Western Cape (South Africa) Legislature. 1996. *The Western Cape Road Transportation Act Amendment Law, no 8 of 1996.* Pretoria: Government Printer.
Western Cape (South Africa) Legislature. 1997. *White Paper on Western Cape Provincial Transport Policy.* Cape Town: *s.n.*

Western Cape (South Africa) Legislature. 1998. *Constitution of the Western Cape.* Cape Town: *s.n.*

Western Cape (South Africa) Legislature. 2002a. *Integrated Provincial Disability Strategy.* Cape Town: *s.n.*

Western Cape (South Africa) Legislature. 2002b. *Provincial Vision for Public Transport and Five-year Strategic Delivery programme.* Cape Town: *s.n.*

Western Cape (South Africa) Legislature. 2005. *Development of Delivery Plan 20: Special Needs Public Transport and the formulation of a Provincial Public Transport Policy with respect to Special Needs Passengers.* Cape Town: *s.n.*

ANNEXURE 1

Observational Checklist

Checklist for Vehicle:

Area: .....
Student: .....

		Yes	No
1 Which Transport modes are availbale:			
	*Buses	☐	☐
	*Trains	☐	☐
	*Taxis	☐	☐
2 Is there level access at entrance/exit to assit people			
	*Buses	☐	☐
	*Trains	☐	☐
	*Taxis	☐	☐
3 Are there ramps present for boarding the vehicles?			
	*Bus	☐	☐
	*Train	☐	☐
	*Taxi	☐	☐
4 Are there clear colour contrast markings on entrance/ exit for visually impaired passengers in			
	*Buses	☐	☐
	*Trains	☐	☐
	*Taxis	☐	☐
5 Are there handrails present on entrance/ exit of			
	*Buses	☐	☐
	*Trains	☐	☐
	*Taxis	☐	☐
6 Are there Audible Announcement systems present in			
	*Buses	☐	☐
	*Trains	☐	☐
	*Taxis	☐	☐
7 Are there priority seating present for disabled passengers in			
	*Buses	☐	☐
	*Trains	☐	☐
	*Taxis	☐	☐
8 Are bell pushers present in vehicles for stopping requests in			
	*Buses	☐	☐
	*Trains	☐	☐
9 Are there destination displays present on the outsides of			
	*Buses	☐	☐
	*Trains	☐	☐
	*Taxis	☐	☐
10 Are there visual displays on the modes including, destinations or routes information?			
	*Buses	☐	☐
	*Trains	☐	☐
	*Taxis	☐	☐

Checklist for Information:

Area: .....
Student: .....

		Yes	No
1 Is there information present at the terminal, like schedules, safety procedures or facilities (toilets) etc.in a	*Audible Manner *Visual Manner	☐ ☐	☐ ☐
2 Are there information offices present?		☐	☐
3 Is the information displayed, on routes, within the terminal in	*Audible Manner *Visual Manner	☐ ☐	☐ ☐
4 Is the visual information in	*Upper Case *Lower Case	☐ ☐	☐ ☐
5 Is the visual information lettering in a contrasting colour to the background?		☐	☐
6 Are there information leaflets available that indicates	Fairs Route Information Times	☐ ☐ ☐	☐ ☐ ☐
7 If Yes, are these leaflets up to date?		☐	☐
8 Is there emergency information present?		☐	☐
9 Are the information signs well illuminated?		☐	☐
10 Are the information signs free from obsticles, etc. trees?		☐	☐
11 In which language(s) is information presented?		☐	

Checklist for Infrastructure:

Area: .....

Student: .....

MIN-BUS TAXI

	Yes	No	N/A
1 Is there a fully accessible entrance to the facility (building)?	☐	☐	☐
2 Is there a Step-free access between the Street & Entrance to the facility?	☐	☐	☐
3 Is there a ramp present for wheelchairs/ stroller/ trolley etc at the facility?	☐	☐	☐
4 Is the entrance to the facility atleast ±1,8m & clear of obstructions such as a turnstile?	☐	☐	☐
5 Is a sign present that indicates if the facility is fully accessible?	☐	☐	☐
6 Do passengers have to cross the path of any vehicle to enter the terminal?	☐	☐	☐
7 If Yes, are there clearly marked pedestrian crossings?	☐	☐	☐
8 Is there colour contrasts on the edges of steps to aid visually impaired people?	☐	☐	☐
9 Are there Handrails present at staircases?	☐	☐	☐
10 Is there a maximum of 12 steps & then a landing?	☐	☐	☐
11 Is there at least a 2m wide clear unobstructed walkway for pedestrians?	☐	☐	☐
12 Are there handrails present when queuing for tickets at the Ticket Office?	☐	☐	☐
13 Is there a tactile path present for visually impaired passengers?	☐	☐	☐
14 Are there tactile warnings present at the edges of the pavements when boarding the Taxi?	☐	☐	☐
15 Is there seating provided while waiting at the facility?	☐	☐	☐
16 If Yes, is the seating colour contrasted to that of the surrounding colours?	☐	☐	☐
17 Are there priority seats available for disabled or aged passengers while waiting?	☐	☐	☐
18 Is there a low enough ticket/information counter for children, people of restricted height or wheelchair bound passengers, at the Ticket Offices?	☐	☐	☐
19 Are there toilet facilities available for disabled passengers at the facility?	☐	☐	☐
20 Is there shelter present for varying weather conditions at the transport terminals?	☐	☐	☐

Checklist for Infrastructure:

Area: .....
Student: .....

TRAIN

	Yes	No	N/A
1 Is there a fully accessible entrance to the facility (building)?			
2 Is there a Step-free access between the Street & Entrance to the facility?			
3 Is there a ramp present for wheelchairs/ stroller/ trolley etc at the facility?			
4 Is the entrance to the facility atleast ±1,8m & clear of obstructions such as a turnstile?			
5 Is a sign present that indicates if the facility is fully accessible?			
6 Do passengers have to cross the path of any vehicle to enter the terminal?			
7 If Yes, are there clearly marked pedestrian crossings?			
8 Is there colour contrasts on the edges of steps to aid visually impaired people?			
9 Are there Handrails present at staircases?			
10 Is there a maximum of 12 steps & then a landing?			
11 Is there at least a 2m wide clear unobstructed walkway for pedestrians?			
12 Are there handrails present when queuing for tickets at the Ticket Office?			
13 Is there a tactile path present for visually impaired passengers?			
14 Are there tactile warnings present at the edge of the platform when bording the Train?			
15 Is there seating provided while waiting at the facility?			
16 If Yes, is the seating colour contrasted to that of the surrounding colours?			
17 Are there priority seats available for disabled or aged passengers while waiting?			
18 Is there a low enough ticket/information counter for children, people of restricted height or wheelchair bound passengers, at the Ticket Offices?			
19 Are there toilet facilities available for disabled passengers at the facility?			
20 Is there shelter present for varying weather conditions at the transport terminals?			

Checklist for Infrastructure:

Area: .....

Student: .....

BUS

	Yes	No	N/A
1 Is there a fully accessible entrance to the facility (building)?	☐	☐	☐
2 Is there a Step-free access between the Street & Entrance to the facility?	☐	☐	☐
3 Is there a ramp present for wheelchairs/ stroller/ trolley etc at the facility?	☐	☐	☐
4 Is the entrance to the facility atleast ±1,8m & clear of obstructions such as a turnstile?	☐	☐	☐
5 Is a sign present that indicates if the facility is fully accessible?	☐	☐	☐
6 Do passengers have to cross the path of any vehicle to enter the terminal?	☐	☐	☐
7 If Yes, are there clearly marked pedestrian crossings?	☐	☐	☐
8 Is there colour contrasts on the edges of steps to aid visually impaired people?	☐	☐	☐
9 Are there Handrails present at staircases?	☐	☐	☐
10 Is there a maximum of 12 steps & then a landing?	☐	☐	☐
11 Is there at least a 2m wide clear unobstructed walkway for pedestrians?	☐	☐	☐
12 Are there handrails present when queuing for tickets at the Ticket Office?	☐	☐	☐
13 Is there a tactile path present for visually impaired passengers?	☐	☐	☐
14 Are there tactile warnings present at the edge of the platform when bording the Train?	☐	☐	☐
15 Is there seating provided while waiting at the facility?	☐	☐	☐
16 If Yes, is the seating colour contrasted to that of the surrounding colours?	☐	☐	☐
17 Are there priority seats available for disabled or aged passengers while waiting?	☐	☐	☐
18 Is there a low enough ticket/information counter for children, people of restricted height or wheelchair bound passengers, at the Ticket Offices?	☐	☐	☐
19 Are there toilet facilities available for disabled passengers at the facility?	☐	☐	☐
20 Is there shelter present for varying weather conditions at the transport terminals?	☐	☐	☐

Checklist for Shared Road & Pedestrian Environment:

Area: .....
Student: .....

	Yes	No	Certain p.
1 Do all Pavements have dropped kerbs?	☐	☐	☐
2 Is there a minimum of 2m clear/ unobstructed pedestrian pavement present?	☐	☐	☐
3 Is the pavement wider in front of the bus stops/ taxi stop?	☐	☐	☐
4 Are there potholes present in the pavement?	☐	☐	☐
5 Are there potholes present in the streets?	☐	☐	☐
6 Is there at least a 2.1m height clearance/ unobstruction on pavements?	☐	☐	☐
7 Are there tactile guideways along pavements?	☐	☐	☐
8 Are there tactile warning surfaces at the entrance of a pedestrian crossings?	☐	☐	☐
9 Is the design of all pedestrian crossings uniform as to orientate visually impaired passengers?	☐	☐	☐
10 Are there guardrails present on pavements at road intersections?	☐	☐	☐
11 If Yes, are they painted in a contrasting colour to the surrounding area?	☐	☐	☐
12 Are the surfaces of the streets brick paved or paved with other non-slip material, to prevent slipping?	☐	☐	☐

ANNEXURE 2

Structured Questionnaire

Place: ..... Date: ..... Time: .....

Age			**Gender**		
	0-14			**Male**	
	15-35			**Female**	
	36-65				
	66-older				

The most suitable category for the respondent:			
Pregnant		Temporary impairment (Broken Limb)	
Hearing impairment		Elderly (65 and older)	
Visual impairment		Young passenger (5-14)	
Physical Impairment		Laden with bags	

Information

Do you experience difficulties with:									
		Yes	No		Yes	No		Yes	No
1 Finding information on your specific route (timetable):	**BUS**	Y	N	**TAXI**	Y	N	**TRAIN**	Y	N
2 Finding information that is up to date		Y	N		Y	N		Y	N
3 Reading or understanding informational signs:		Y	N		Y	N		Y	N
4 Purchasing of tickets:		Y	N		Y	N		Y	N
5 Finding toilets, information offices, etc.		Y	N		Y	N		Y	N
6 Finding information in your home language:		Y	N		Y	N		Y	N
7 Hearing of informational announcements		Y	N		Y	N		Y	N

Vehicles

Do you experience difficulties with:									
		Yes	No		Yes	No		Yes	No
1 Getting on to a:	**BUS**	Y	N	**TAXI**	Y	N	**TRAIN**	Y	N
2 Getting off a:		Y	N		Y	N		Y	N
3 Drivers not waiting till passengers are seated:		Y	N		Y	N		Y	N
4 Crowed public transport vehicles:		Y	N		Y	N		Y	N
5 With the vehicle traveling too fast:		Y	N		Y	N		Y	N
6 Having to walk to the exit in a moving vehicle:		Y	N		Y	N		Y	N
7 Absence of grabrails for support in moving vehicles:		Y	N		Y	N		Y	N
8 Unco-operative or rude operators:		Y	N		Y	N		Y	N

Infrastrucutre

Do you experience difficulties with:

		Yes	No		Yes	No		Yes	No
	BUS	Y	N	**TAXI**	Y	N	**TRAIN**	Y	N
1	Finding seating:	Y	N		Y	N		Y	N
2	Obtaining a ticket (ticket counter to high for example):	Y	N		Y	N		Y	N
3	Absence of ablution (toilets) facilities:	Y	N		Y	N		Y	N
4	Obstructive turnstiles that are not wide enough:	Y	N		Y	N		Y	N
5	Absence of grabrails when queuing for tickets, etc:	Y	N		Y	N		Y	N
6	Finding ramps, if you are unable to use the stairs or kerbs:	Y	N		Y	N		Y	N
7	Overcrowded pedestrian walkways due to informal traders:	Y	N		Y	N		Y	N

Shared Road and Pedestrian Environment

Getting around in Cape Town, do you experience difficulties with:

		Yes	No
1	Reading and understanding road signs:	Y	N
2	Crossing streets at pedestrian crossings:	Y	N
3	Crossing streets where no pedestrian crossings are present:	Y	N
4	Waiting for a bus or mini bus taxi where there is no shelter:	Y	N
5	Walking on pavements, due to poor quality of surface:	Y	N
6	Having to walk in the road due to an absence of pavements:	Y	N
7	Having to walk in the road due to informal traders crowding pavements:	Y	N
8	Climbing up pavement curbs:	Y	N

Comments and Suggestions