

**AN APPLICATION OF PEDESTRIANISATION AND
TRAFFIC CALMING MEASURES TO AN AREA
OF CHANGE: A CASE STUDY OF
FLORIDA ROAD IN DURBAN**

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To my parents

For your love, support, and encouragement



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ABSTRACT

This dissertation is to determine the most appropriate type of Pedestrianisation and Traffic Calming measures to address vehicle and pedestrian related conflicts in an urban area, using Florida Road in Durban as a case study. Based on the conceptual framework in the field, participant observation, questionnaires and interviews were used as research methods to investigate this situation and to obtain a holistic understanding of the area.

After analysing and evaluating the physical and social factors according to the criteria presented, the findings indicate that there is a necessity to meet the needs of pedestrians in the Florida Road area. As such, different recommendations are made in an attempt to create a pedestrian-friendly environment and a healthy community through a detailed Pedestrianisation Scheme and Traffic Calming measures.

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CHAPTER 1

INTRODUCTION

1.1 RESEARCH TOPIC

An application of Pedestrianisation and Traffic Calming measures to an area of change: A case study of Florida Road in Durban.

1.2 BACKGROUND

Is everyone a pedestrian? Everyone walks at certain times in their daily lives, but few of us realise the importance of walking as part of our trip. At the beginning of the 20th century, people lived in cities and walked long distances. At the end of the century, the reasons people walked were fundamentally different. Today, although most people have some choices - private automobile, taxi transit, bus, train or bicycle - walking is still the primary mode of transportation for many people. Everyone is therefore a pedestrian.

In some cities, walking is a pleasant mode of commuting, shopping, visiting friends and enjoying recreation. In many cases, however, walking and cycling are not a viable option. For most of the second half of the 20th century, traditional planning practices focused on motor vehicle travel - people built entire cities for cars without thinking of transit, bicycling or walking (Richard Blomberg et al, 1999). Transportation construction primarily served the motor vehicle network. Stores, schools, parks and churches were separated by arterials carrying cars at high speeds. As homes and offices were built farther out, traffic speed increased with the development of fast mobility roads such as freeways

These road designs typically included travel lanes, often with more than four lanes, shoulders, and possibly parking spaces. People walking along and across streets that lacked adequate pedestrian facilities were at risk of vehicle accidents. Accommodation for the elderly, the children, the poor and the people with disabilities was rarely considered. This raises the question of whether pedestrians and cyclists have an equal right with motor vehicles users to road use or to demand special design features.

There is increasing recognition that balanced transportation choices are important to individual travellers and to society as a whole. Non-motorised modes are being incorporated into transport planning practices, and these changes are sweeping across towns and cities all over the world. The public, policy-makers, planners and engineers are becoming increasingly sensitive to street design and traffic arrangement. Pedestrian planning and Traffic management have taken root in transportation practice as methods to tailor streets to multimodal use. This positive development is a necessary step in order to return towns and people to sensible, “smart growth”, sustainable and people-focused transportation and land use practices.

In today’s planning, Pedestrianisation and Traffic Calming as well as Traffic Free Zones are important subjects. The concept of Pedestrianisation and Traffic Calming originated in European countries, and which has since been applied to many places where there is existing conflict between pedestrians and motor vehicles. There are many benefits that can result when people shift from driving to walking and cycling, and these include reduced traffic congestion, road and parking facility savings, trip cost saving, and a better environment.

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The other benefit of Pedestrianisation is that it is likely to provide substantial improvement in quality of life. Evidence from many studies shows that regular walking is healthy for people of all ages, genders and races. Even moderate walking lowers blood pressure, improves lipid profile, reduces body fat and enhances mental well being. Walking as a form of transportation is therefore an important area of interest to the public health community (Department of the Environment Transport and the Regions, 1996).

Adequate pedestrian and cycling conditions are essential, if all are to be guaranteed a minimal level of mobility (Litman et al, 2002). The following quote illustrates this point well:

“Pedestrians are a part of every roadway environment, and attention must be paid to their presence in rural as well as urban areas...Because of the demands of vehicular traffic in congested urban areas, it is often extremely difficult to make adequate provisions for pedestrians. Yet this must be done, because pedestrians are the lifeblood of our urban areas, especially in the downtown and other retail areas. In general, the most successful shopping sections are those that provide the most comfort and pleasure for pedestrians.”(*Policy on Geometric Design of Highways and Streets*, 1994:97).

1.3 RESEARCH PROBLEM

In urban areas, particularly in areas of change, the potential for conflict between pedestrians and vehicles is increasing. Pedestrianisation and Traffic Calming have been adopted as measures to address this conflict

and to enhance the pedestrian-orientated environment. Therefore, this study seeks to assess the value of these measures in addressing this problem.

1.4 NEED FOR THE STUDY

Florida Road is one of the oldest streets in Durban. It is architecturally diverse, having once been a traditional upper class residential area. At the end of 18th century and at the beginning of the 19th century, many large residences were built along the road in Victorian and Edwardian styles, which created a unique identity for the road in the Durban landscape.

Although the Florida Road area is zoned for residential use in terms of the Town Planning Scheme, the area has gradually assumed a more commercial orientation. Many of the old mansions and colonial houses have remained, but are now prestigious head-quarters for multinational and national corporations, or have been transformed into restaurants. The commercial influence has therefore certainly had an effect on this street.

Florida Road appears to have grown organically. Development in terms of land-use zoning has encountered a new challenge: The combination of offices, restaurants, bars and homes has resulted in a road that is challenging to develop in terms of land-use zoning. Florida Road appears to have been unable to adequately accommodate the increase in people and in traffic, and lacks well-connected pedestrian walk-ways.

The quality of our lives, the future health and vitality of children, the accessibility of those with disabilities, and the ability to deal with our

urban environment are at stake (*Florida Pedestrian Planning and Design Handbook*, US, 1999). Retaining people and rebuilding streets where people find accessibility, safety, convenience, comfort, and attraction, could be achieved by well-designed pedestrian-oriented streets. The challenge is huge, and the mission is clear here: transform Florida Road into a walkable and healthy community.

1.5 AIM OF THE RESEARCH

The aim of this research was to investigate the current traffic management plan in the Florida Road area with reference to participant observation, questionnaire and interview data, in order to determine the most appropriate type of Pedestrianisation and Traffic Calming measures to incorporate into the traffic management plan for this area.

The study can provide direction about pedestrian and cycling issues to various stakeholders, such as planners and community members. As a result of a study such as this, communication between technical staff and users could be initiated, potential conflicts could be addressed, and an on-going framework for pedestrian and cycling planning in the Florida Road area could be created.

1.6 RESEARCH QUESTIONS

The initial question that is posed by the research is the key to formulating the research problem, and providing an understanding of what it is that the study aims to achieve. It is necessary to establish a few questions that reflect what the study hopes to achieve or find out. The main question is broad, and the subsidiary questions that follow filter in to the central issues that are contained within the main question.

1.6.1 Main Question

To what extent can Pedestrianisation and Traffic Calming measures address vehicle and pedestrian related conflict and create a pedestrian-orientated street and healthy community?

1.6.2 Subsidiary Questions

The following questions aim to unpack the main question:

- What kind of conflict exists between vehicles and pedestrians, and will Pedestrianisation and Traffic Calming techniques reduce such conflict?
- Are there sufficient pedestrian facilities, e.g. wide pavements, street lights, crosswalks, to meet pedestrian's needs?
- What effect can Pedestrianisation and Traffic Calming have on existing land use?
- Does Pedestrianisation and Traffic Calming improve the safety of streets?
- Does Pedestrianisation and Traffic Calming result in a better and easier walking environment, and increase community interaction as a result?
- What other plans could be put into place to reduce or deal with the traffic problems, in order to accommodate pedestrians and motorists better?

1.7 HYPOTHESIS

Current urban planning and traffic management plans create conflict. Pedestrianisation and Traffic Calming measures are appropriate to address this conflict and would enhance a liveable environment in urban area.

1.8 CHAPTER OUTLINE

The dissertation is divided into seven chapters:

Chapter 1: Provides a brief introduction, which comprises the background and need for the study, the research problem and research questions, objectives and the hypothesis.

Chapter 2: Looks at the origins of the concepts and the critical theories of development. An overview of the international literature and of the South African literature is also given.

Chapter 3: The methodology used in the research is explained, and the methods through which data was collected and analysed are outlined.

Chapter 4: Presents the overall context in which Florida Road is located.

Chapter 5: Provides an analysis of the study area – Florida Road – with particular reference to the participant observation.

- Chapter 6:** Using the questionnaires to assess the perception of the residents, users and tenants/assistants in the Florida Road area.
- Chapter 7:** Offers the comments and opinions from the interviews regarding urban planning and traffic issues from the experts point of view.
- Chapter 8:** Develops a set of basic criteria for the evaluation obtained in the research process.
- Chapter 9:** Focuses on the findings of the investigation of the implementation of pedestrian planning and traffic calming practices.
- Chapter 10:** Concludes with a brief summary as to the success of the research process and provides suggestions for redeveloping Florida Road and for future research.

CHAPTER 2

CONCEPTUAL FRAMEWORK

2.1 INTRODUCTION

This section serves as a review of existing literature that is of direct relevance to the research. The need for this type of investigation is to develop an understanding of the theories, concepts, precedents and past research findings in the field, which can inform the study. Furthermore, the approaches of Pedestrianisation schemes and Traffic Calming measures will be described in order to develop a set of evaluation criteria for this specific study.

2.2 KEY CONCEPTS

In order to explore and explain a theoretical position and processes of change, the following concepts should be defined in the context of the theories discussed.

2.2.1 Working Definitions

Every trip begins and ends as walking—whether walking to a shop or to a parking lot. Georgia State Law defines a **pedestrian** as: “Any person who is afoot.” (Georgia State Pedestrian Safety Plan, US, 2000)

Walking is the most basic means of transportation. Everyone walks at some time, but few people realise how important walking is as part of life. In the Florida Pedestrian Safety Plan (US) it is noted that:

“Walking provides free, immediate, healthful, energy-efficient motion. Evidence shows that when neighborhoods and communities are designed at a human scale to support walking trips, there are increases in

community interaction and involvement. There are also reduced costs of transporting the elderly, children, the poor, and the physically challenged. A walking community also greatly increases the success of transit. These increases in walking and transit greatly reduce the congestion of roadways, and hence help maintain the mobility of all.”
(Florida Pedestrian Safety Plan, 1992: 1-4)

Pedestrianisation is the restriction of vehicle access to a street or area for the exclusive use of walking. It provides an attractive and safe environment for pedestrians and for shopping, social and cultural activities such as street markets and fairs.

According to Pharaoh and Russell (1991:83), **Pedestrianisation** is a strategy that involves reducing the dependence on the automobile in commercial streets as a primary mode of transport and switching to an alternative mode, namely walking.

Traffic Calming involves installing engineering approaches such as carriageway narrowing, speed bumps, traffic circles, etc, in a street or area to slow cars down and ensure that pedestrians are safe. According to Richards (1990:31) “**Traffic Calming** is intended to make streets safer to cross, by reducing vehicle speeds through minor alterations to the geometry of the road.”

According to the Institute of Transportation Engineers (ITE, 1998), **Traffic Calming** involves changes in street alignment, installation of barriers, and other physical measures to reduce traffic speeds and/or cut-through volumes, in the interest of street safety, livability, and other public purposes.”

Definitions of Traffic Calming vary. Some include all three “E’s”, viz. traffic education, enforcement and engineering.

According to the Canadian Guide to Neighbourhood Traffic Calming: “**Traffic Calming** involves altering of motorist behaviour on a street or on a street network. It also includes traffic management, which involves changing traffic routes of flows within a neighbourhood.”

2.2.2 The Forms of Pedestrianisation

Accommodating pedestrians is an essential factor in the quality of a community. The pedestrian environment provides public space where people can see and be seen. There are various forms of Pedestrianisation (Hong Kong Transport Department, 2001):

- *Full Pedestrianisation* whereby all vehicles are prohibited to enter the zone at all times and on all days. There are numerous examples in the newly developed area such as in some new towns in Hong Kong, where pedestrian precincts have been planned at the outset.
- *Part-time Pedestrianisation* where vehicle prohibition only applies at certain hours of the day and/or certain days of the week.
- *Partial Pedestrianisation* in which some types of vehicles are prohibited, but not all. This type of scheme is often supplemented with amenity/beautification features and artificial road curves/obstacles to slow the passage of vehicles.

2.2.3 Types of Pedestrians

Pedestrian movement is extremely important for many kinds of journeys in urban and rural areas. Pedestrians have special characteristics that must be considered. According to Litman *et al*, (2000:28), “Pedestrian traffic on a typical walkway may have travel speeds ranging from 1 – 5 km/hour, more if there are joggers, plus people stopping for various

reasons.” Pedestrians can be quite dissimilar, and can include runners, strollers, people carrying goods, the elderly and children.

2.3 BRIEF HISTORY OF PEDESTRIANISATION AND TRAFFIC CALMING

2.3.1 History of Pedestrianisation

Walking has deep roots in human history. Virtually everyone is reflected as a pedestrian, at least for a part of every trip, and for many people walking is their primary form of transportation. Julius Caesar prohibited the movement of carts in Rome in the hours of daylight. Claudius extended this ban to the other municipalities of Italy, and Marcus Aurelius to every city in the Empire (Plowden, 1972:11) which all reflects a primary concern for pedestrian welfare. Some pioneers made a great contribution to transport planning in urban areas. According to Mumford (1961:121) Leonardo da Vinci was the first known planner to suggest the separation of pedestrians from heavy traffic arteries to solve the traffic problems of Milan during the fifteenth century. Plowden (1972: 11) further notes, that in the 1600s, civic planners in Paris warned that “the number of carts is growing from year to year; in a few years we will be paralysed.”

In many metropolises, such as London, traffic has been a source of complaint and concern for several centuries. After the Second World War, the first serious attempts were made to set out principles to deal with the problems caused by the use of motor vehicles in towns. The pedestrian streets were introduced in the early twentieth century due to rapid expansion of streets. It is important to note that there are two important sources of thinking on transport planning in Britain. One is *Design and Layout of Roads in Built-Up Areas* issued by the Ministry of War Transport in 1946. The other is Sir Alker Tripp’s book, *Town Planning and Road*

Traffic, published in 1942. Both provide guidelines as to the general shape that a town's road system should assume.

During the 1960s and 1970s the demand for restraining of motor vehicles emerged in some countries such as Holland, Germany and Britain. When motor vehicles began to increase in urban areas, pedestrian areas came fully into existence. Early forms of Pedestrianisation, for instance road closures and traffic-free streets, were connected with pedestrian safety as well as improved urban environments. Through a more sensible management of motor vehicles, Pedestrianisation aims to restore the historic function and quality of life in urban and rural areas.

2.3.2 Origins of Traffic Calming

Dutch Woonerven Experiment

European Traffic Calming began as a grassroots movement in the late 1960s (Schlabach, 1997:38). Angry residents of the Dutch city of Delft resisted traffics through turning their streets into "woonerven" or "living yards", extending their homes into the streets and creating an obstacle course for motor vehicles (Kraay, 1986:20-29).

The Dutch government officially recognised "woonerven" in 1976. Over the next decade the idea has spread to many other countries - Germany, Sweden, Denmark, England, France, Japan, Israel and Austria. By 1990 there were more than 3500 shared streets in the Netherlands and Germany, 300 in Japan, and 600 in Israel (Ben-Joseph, 1995:504-515).

The Dutch tried to find out whether the design principles of "woonerven" could be used to a broad extent in streets. They experimentally compared two types of approaches of "woonerven":

- Altering streets to one-way streets;
- Adopting Traffic Calming treatments involving humps.

As a result of such measures, the Traffic Calming alternative was judged the most effective for neighbourhood streets.

German Area-wide Traffic Calming

As the Institute of Transportation Engineers (ITE, 1998) notes, Germany experimented in the late 1970s with neighbourhood Traffic Calming. The Germans quickly learned that calming individual streets resulted in traffic diversion. They decided to test the feasibility of area-wide Traffic Calming, by extending calming principles to main roads.

According to Institute of Transportation Engineers (ITE, 1998), In the 1980s a long-term experiment was conducted in six German towns. A 30-kph speed limit was applied over large areas. Local streets and collectors were installed, as well as speed tables and pinch points. The demonstration had a positive impact, and has encouraged many cities around the world to adopt area-wide Traffic Calming programmes.

British Environmental Traffic Management

A 1963 British government document, "Traffic in Towns", is often credited with initiating the modern Traffic Calming movement. The reports author, Colin Buchanan, is widely regarded as the father of Traffic Calming. Although the solutions offered in the report were in some cases shortsighted, the document was a significant milestone. It is regarded as the first official document to recognise that the growth of traffic threatens the quality of urban life.

It is surprising that Britain only started to implement the range of measures slowly. The 1969 Housing Act and a 1977 street design manual reflected Buchanan-inspired Traffic Calming plans. The Urban Safety Project was a Traffic Calming initiative launched in 1982 to decrease accidents and control traffic volume. The changes of law and regulations and the "Children and Road Safety" campaign played a critical role in

promoting Traffic Calming in the 1990s, and resulted in the designation of 20 mph zones, which were introduced for the first time.

2.4 INTERNATIONAL LITERATURE REVIEW

Many articles have been written which review trends and recommendations for Pedestrianisation and Traffic Calming. They provide an interesting introduction to the literature. Some of these are listed below.

According to the 1993/95 National Traffic Survey in Britain, walking accounts for 29% of journeys, and for 82% of journeys under 1 mile (U.S. DOT, 1996). Walking is the most frequently used mode of transport after the car. Drivers of cars only walk half the distance of adults living in households without cars. Women walk slightly more than men due to there being more male than female drivers (Department of the Environment Transport and the Regions, 1996).

In 1995, 47029 pedestrian casualties occurred in Britain: 1 038 pedestrians were killed, 11255 were seriously injured, and 34 736 were slightly injured (Department of Transport, 1995). In the United States from 1986 to 1995, approximately 6 000 pedestrians were killed by automobiles annually, and more than 110 000 were injured (NHTSA, 1996). Pedestrian safety issues recommend that the overall safety picture needs to take into account traffic flows and Pedestrianisation, which may increase safety on the relevant streets (Jensen,S. 1998).

According to Cleary and Hillman (1992) walking (and cycling) are less socially divisive, because most people can use these modes of transport, which are not dependent on levels of income. Walking can also increase feelings of independence. At a time when curbing car use is high on the transport agenda, walking appears as one of the options of an integrated approach (Hillman, 1996). Furthermore, walking is the only mode

available to everyone regardless of income, age or location. Walking is non-polluting, consumes few natural resources, is highly efficient in its use of urban space and energy, and rarely causes injury to others. Moreover, walking is important to the local economy, as 29% of shopping/personal business journeys are made entirely on foot (Department of the Environment Transport and the Regions, 1996).

Ullrich (1990) envisages a pedestrian town - incorporating an integrated system of pedestrian ways, cycle networks and public transport - as an environmental alternative to motorised travel. In this line of thinking, walking will not complement motorised travel but replace it. Yet reality is far removed from this ideal. Hanna (1990) affirms that despite the fact that pedestrians outnumber vehicles, the design and layout of shopping and residential areas often gives dominance to cars.

Sylvia Trench's *Current Issues in Planning* (1990) observes lessons from Copenhagen, one of the most successful European cities as far as introducing Pedestrianisation policies is concerned, and where walking and cycling are actively encouraged. Shopkeepers are described as having "changed sides" and become supportive, and the importance of having a long-term strategy is underscored. Other experience with Pedestrianisation schemes is also mentioned, including that in Barnsley, Manchester (Arndale) and Delft (woonerfs), and new towns such as Corby and Washington, where integrating networks for working with Pedestrianisation have been successful.

Hass-Klau and Crampton (1988) examined the effects of Pedestrianisation and Traffic Calming in three medium-sized towns in Germany (50 000 to 250 000 population). In the past, many business people, wanting maximum access, insisted that motor vehicles come through the centre of town. Roads were widened in the places where schools, parks and shops were located. Safety, efficiency and mobility of all users were regarded as secondary. Yet many people have come to understand the need for

attractive streets that can flow traffic safely and efficiently as well as accommodate pedestrians and cyclists. As a result, Pedestrianisation has had a strong influence on the turnover of traders in these areas.

The most straightforward approach to traffic management is to lower the speed limit. Several European studies (Litman, T. 2001), which examine the broad implementation of lower speed limits, note that this measure could be well accepted by all road users.

As Jensen (1998) describes, in Denmark, general speed limits were introduced in 1974, and urban speed limits were reduced in 1985. In both cases, when urban speed limits dropped to 10 km/hr, corresponding speeds dropped 2 – 3 km/hr, consistent with a reduced number of overall crashes and pedestrian injuries.

Ewing and Kooshian (1997) reviewed Traffic Calming sites within the United States and provide a practical summary of the results. Over 16 sites, they found speed control measures, such as speed humps, roundabouts and chicanes, more popular than volume controls, such as street closures and one-way streets. Therefore, Traffic Calming was usually found to be quite popular with residents.

The Traffic Calming Act of 1992 led to the 1993 Highways (Traffic Calming) Regulations in the United Kingdom. These regulations provided guidelines for pinch points, ramble devices, gateways, chicanes, islands, buildouts and overrun areas, along with prior guidelines for roundabouts, pedestrian refuges, varying roadway widths, and road humps (DOT-TAU Traffic Advisory Leaflet, 7/93). Other issues, such as community participation, landscaping, signing and monitoring were also addressed.

2.5 THE EXPERIENCE OF SOUTH AFRICA

This section provides literature related to Pedestrianisation and Traffic Calming in South Africa's cities. It should be noted that the practice of pedestrian-orientation in towns in South Africa (SA) is still at the preliminary stage of implementation compared with its application in developed countries. Therefore, relevant reference to these measures and studies on these programmes are not abundant. However, a number of examples will be presented where Pedestrianisation and Traffic Calming have been adopted as a means to deal with the conflict between pedestrians and motor vehicles.

The idea of traffic-free streets in town centres was imported from European countries in the 1940s and 1950s. Until the 1970s, traffic-free shopping streets of the inner city were pioneered by pedestrian-orientated urban planning. Randburg, Johannesburg adopted Pedestrianisation of the central areas as a means of curbing the problems inherited from its gridiron street layout. According to Fry (1976:2), traffic management in the city was posed with several challenges, which necessitated the use of drastic measures in order to render the city a safe and convenient urban environment. Afterwards, other South African streets such as St Georges Street in Cape Town, Church Street in Pietermaritzburg, and Hill Street in Pinetown, were turned into people-oriented zones, in which the basics of personal mobility, safety and freedom were prioritized.

Ribbens (1996) reviewed pedestrian facilities in South Africa. Approaches were distinguished according to the integration of pedestrians with traffic or the separation of pedestrians and traffic. The report comprises operational problems, intersection, midblock, wide area plans and solutions. Overall improvements examined in recent years are attributed to the development of a research-based pedestrian facility manual and its guidelines.

2.6 APPROACHES TO PEDESTRIANISATION AND TRAFFIC CALMING

Reducing vehicle speeds may have a significant influence on pedestrian accidents and injuries. Hence Traffic Calming, combined with Pedestrianisation, can be a powerful tool to diminish the negative impacts of motor vehicles in urban areas with respect to non-motorised participants in traffic. Since the 1960s, Traffic Calming measures and Pedestrianisation schemes have been implemented in many developed countries – for instance, Britain, Germany, and the Netherlands. The following approaches were designed to increase pedestrian and motor vehicle safety as well as to create a pleasant environment (Literature Review on Vehicle Travel Speeds and Pedestrian Injuries; Hass-Klau et al, 1992; and Barden, 2001):

2.6.1 Pedestrianisation Schemes

Shared Space

The public space is the glue that holds society together. Public space creates essential visual symbols and mental images of our neighbourhoods and towns. These places, such as intersections and well-designed corners, can be simple, and most urban public streets should be built and maintained as public spaces. The importance of creating the necessary surroundings, low traffic noise and easy street access. For instance, the most highly rated liveable city in the world, Melbourne, Australia, requires all homes to be within 1/8 mile of a public park.

Sidewalks/Pavements

As mitigation for motor-impacts, sidewalks are essential tools to cope with an environment which it is unpleasant and unsafe for pedestrians. Sidewalks must comfortably carry two people walking side-by-side in one direction at a time. the minimal width for a sidewalk is 1.5m. With higher

volumes of pedestrians in commercial and school districts, sidewalk widths should be at least 3m(Hass-Klan, et, al, 1992). Sidewalks require ideal street buffers and edges. Adequate maintenance is also necessary after a certain period of time.

Street Crossings/Crosswalks

Simple street crossings should be present to help people navigate a crossing point, make entry easy, and detect the exit. Pedestrians seek means to cross streets without going more than 45m out of their way(Hass-Klan, et, al, 1992). For this reason well designed crossing points are required every 90m. This spacing is especially important on main streets.

Compact Intersections

Intersections are designed to remain efficient for pedestrians crossing streets and traffic vehicle flows. The following approaches are commonly implemented, namely channelled island and median noses, post mounted and masthead signal placement, and stop bar placement. Good signals, markings and lighting are essential to enhance pedestrian motion and reduce motorist turning speeds on streets.

Bike Lanes

Today, many western countries are realising that the most efficient, safe and workable roadways include paved shoulders as bike lanes. Cycling improvements can be integrated into roadway planning by establishing design standards such as the minimum width of 1-3m for bike lanes to safely accommodate cyclists. In all roads cycling facilities should be considered and cycling should be planned as well as possible(Barden, 2001).

Green Streets

Pedestrians have a great need for green, shade and ambience. Motorists, too, are affected by the presence or absence of street trees, as motorists

use urban trees to help assess and gauge their speed. Trees should have a clear stem height of about 2.5m so that pedestrians are not obscured. In general, trees make roads feel more wholesome.

2.6.2 Traffic Calming Measures

Road Humps

Road humps are the most commonly adopted Traffic Calming measures. They can be successful in reducing vehicle speeds and in eliminating crashes and injuries. According to Hass-Klau, et, al, (1992), road humps are typically about 3.7m in cross-section, flat or round on top and 75-100 mm high.

Speed cushions

Speed cushions have the same positive speed-reducing impact as road humps but avoid the main disadvantage for buses and ambulances. They are normally 75-100 mm in height and do not affect cyclists and motor cyclists. They are cheaper to build than flat-top road humps. In some German towns, speed cushions have been implemented in both two-and one-way streets (Hass-Klau, et, al, 1992).

Roundabouts

Roundabouts or traffic circles are forms of intersections at which traffic travels around the circle until they find their desired exit point(an other term is "traffic circle"). Hass-Klau, et, al, (1992)suggested that roundabouts range in size from mini-roundabouts, which have centre islands of four metres in diameter or less, to full-sized ones, with a central diameter of 25 metres or more.

Pinch points

Pinch points reduce the carriageway at a specific part of the road. Pinch points can reduce the carriageway width to 4.2-4.4m where two cars can

pass each other slowly. More commonly, the carriageway width is 2.75-3.2m, and allows only one car to pass through at a time.

Carriageway narrowing

Roads, which are broad and straight, encourage higher speeds. Making roads narrow and less straight encourages motorists to travel at lower speeds. Roads can be narrowed by physical measures in the form of:

- Widening the pavement;
- A central reservation;
- Cycle and bus lanes;
- Lane-width reductions;
- Multi-purpose side strips; or
- Planting trees.

Chicanes

When Traffic Calming was first developed in the Netherlands, chicanes were commonly used in residential areas. The basic idea behind chicanes was that a curved road could reduce motor vehicle speed. Chicanes can be created by traffic islands, narrow lanes, short stagger, and visual restrictions.

Rumble strips

Rumble strips were used in a number of applications beyond speed control. They work by alerting and warning drivers rather than forcing speed reductions. Rumble strips are formed by a vertical change in road surface material and applied across the carriageway, at a 90-degree angle to the travel direction.

Surface design

A changed road surface can be adopted by using different materials and/or colours on the carriageway. Brick and Purbeck stone are commonly used to reduce motor vehicle speeds as a soft Traffic Calming measure. This treatment enhances safety and promotes liability as well

as saving money in the long run by not having to carry out frequent repairs.

Parking

Parking facilities can have a strong influence on the visual character and attractiveness of the local environment. In most cases motor vehicle speed can be reduced when parking is on one or both sides. Thus, we often hear the argument that the best Traffic Calming measure is to implement car parking on both sides. Parking can be categorised as: curb parking—where vehicles are parked on streets, such as angle parking and parallel parking; and, site parking—where areas are set for parking such as parking lots and garages.

Most of the techniques already reviewed focus on ways of changing existing streets/roads. The other Traffic Calming measures commonly created are road closure, entrance treatment, raised junctions and mountable shoulders. When entire areas have been redesigned for slower traffic, it is important to alert approaching drivers so that their expectations and driving behaviours are adjusted.

2.7 EVALUATION CRITERIA

The evaluation criteria to be used is important as it reflects the goals and objectives of the study and links between the conceptual framework and evaluation of the case. It allows the researcher to address specific issues in relation to their supportiveness of pedestrian activities in the context of the subject area.

The following criteria have been noted by Pharaoh and Russell (1991) and in *The Pedestrian Planning and Design Guidelines in Florida, U.S.* (1999), namely, accessibility, safety, comfort, convenience, and attraction.

2.7.1 Accessibility

Streets function to facilitate the access of people, goods and services. Different modes of transport provide different kinds of access in urban and rural areas. Public perception often focuses on the accessibility by motor vehicles, which has been recognized for a long time. However, this is a misconception, because in cities, particularly larger cities, it would be impossible to base accessibility on car-use as a result of the density and complexity of urban spaces, which limits necessary space for car use.

Another concern is parking. Parking causes various effects on accessibility and the street environment. Roadside parking contributes to reducing vehicle speed and makes effective use of parking space in urban and rural areas. Pedestrian streets should have good access to parking. It should be located in a pedestrian-friendly area.

2.7.2 Safety

The fear of crime is almost the greatest concern for the public. No one wants to walk down a street that appears cold and dangerous. People avoid walking in places that are dark, too quiet, 'dead corners' or open parking lots. The perception may result from a lack of other pedestrians, weak street lighting, or inadequate neighbourhood police patrol. Cars should not travel too fast, nor make too much noise. Pavements, pathways, and crosswalks should be designed free of hazards, and to minimise conflict with external factors such as traffic speed.

2.7.3 Comfort

Comfort is a functional sensation. People have different opinions about what is unpleasant or intolerable. The basic factors of pedestrian environments are wide sidewalks, separation from the street, canopies for

pedestrians to shield from rain, shade in summer and protection from cold winds in the winter.

Comfort is also visual. A rich line of green trees not only offers shade, but also enhances the street with needed colour and an edge. In addition, street furniture should be pedestrian scale. Block pavement, safe crosswalks, benches, public telephones, even public toilets, which may contribute to pedestrian-friendly streets should all be used.

2.7.4 Convenience

Streets must offer convenience with a pedestrian walking scale. According to Dan Burden (2001), history has proven that distances of a quarter-mile radius form a near perfect place for people to interact. This scale allows people to reach destinations in 5-10 minutes walk. Thus, if people would like to combine 6 – 8 shopping destinations and a meal or a stop for coffee, all within walking distances of lodging, the pedestrian network should be designed to find a convenient route to a destination easily. This could include homes, shopping areas, public services, schools, and transit. It should also ensure that it meets the needs of all users, regardless of age or ability.

2.7.5 Attraction

Attraction is a sensate quality base on the land uses and functions in the physical environment. Desirable landscape and well-equipped infrastructure contribute greatly to attractiveness. For this reason it is important to establish livable environments which are strategically associated with specific developmental themes. For instance, streets should have a theme--an architectural style is as essential to the street as it is to any place of attraction.

CHAPTER 3

RESEARCH METHODOLOGY

“Do not put the cart before the horse, select the method as the means of achieving your objective rather than because you like the idea of using it or feel most comfortable with it as a methodological tool”

--- Brewerton & Millward, 2001, p. 69.

3.1 INTRODUCTION

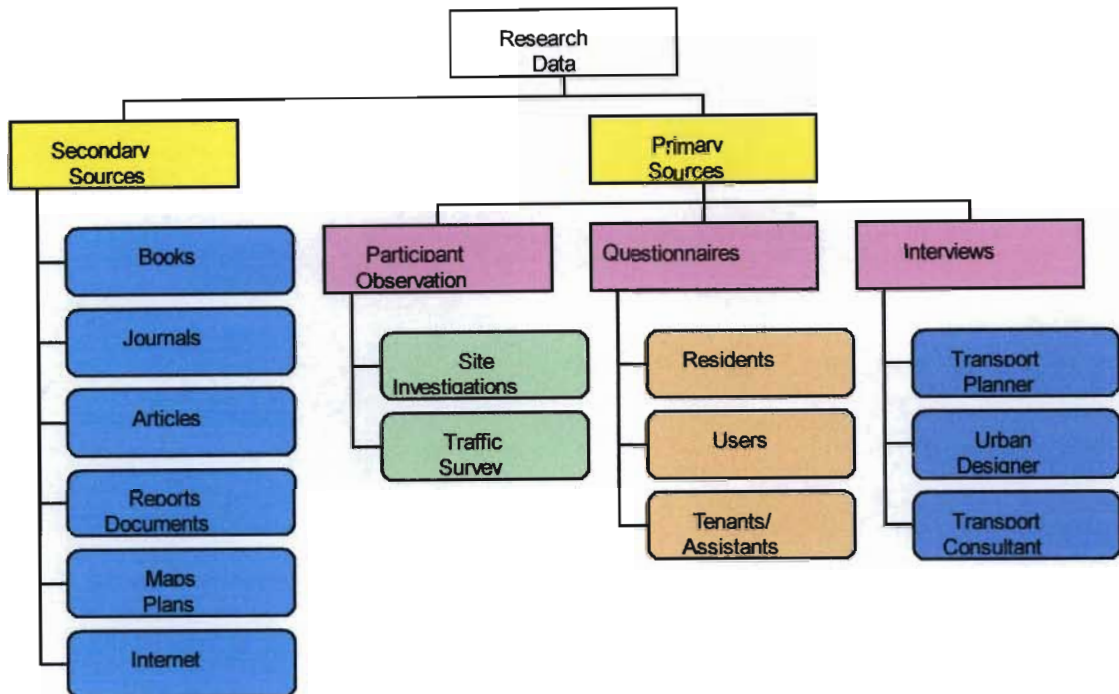
The range of research methods and techniques is extremely wide. Deciding what to do here is largely dependant on the aims and objectives of the research as well as the sources which are available. The research process used in this study has the aim of developing an understanding of the relevant concepts, through the use of theoretical research and a case study approach. Two types of data sources can be used, namely, primary sources and secondary sources (Figure 3.1).

In the research process, it is highly unlikely that the necessary data will be found in only one of these sources. More often, the relevant material is compiled from several different sources, in order to obtain a better understanding of the subject matter under study.

3.2 SECONDARY SOURCES

Data collected using the desk study method are secondary sources. These comprise textbooks, magazines, newspaper articles and handbooks. The advantages of using secondary sources include that

Figure 3.1: Data Collection



less cost and less time is used than in primary research investigation. In this study, secondary sources of information are utilised primarily in the construction of a conceptual framework, which will be used to provide background information on the area and to supplement and interpret the primary data. This information is collected from the following sources:

- Books
- Journal articles
- Reports/documents
- Maps/plans
- The internet

3.3 PRIMARY SOURCES

Primary sources are the major component of research, and may take

various forms. They are original works of research or raw data without interpretation. In order to answer the research questions and attempt to present the position to be investigated, the three data collection tools used in original research are participant observation, questionnaires, and interviews. All of these tools were used in this study. When the primary sources are used, they should reflect truly representative information for research.

3.3.1 Participant Observation

Participant observation is one of the best techniques for ascertaining what people do and how people interact with other people in a study area. It is the only method available to gather certain types of information. As Brewerton and Millward (2001:96) point out, observation is a highly skilled activity, which should not be considered lightly. The observation process may be a guide, a set of analytical codes or checklists, and may be completely unstructured. Researchers must be clear about what it is that is of interest, as it is impossible to record everything. Issues to consider include:

- **Sampling.** The researcher needs to make a decision about sampling, and this depends on the particular event that is the focus of the research. In case of time sampling, select times and duration for observation of the pedestrian activities and vehicle movements in the research area are required. For example, every 15 minutes could be used as a record period for counting pedestrians and traffic vehicles.

The participant observation in this study was completed on two successive days. The first on Wednesday October 16, 2002, from

07h00 to 18h00, and the second on Thursday October 17, 2002 from 07h00 to 23h00.

- **Method of recording.** The way in which observations are recorded is a matter of personal preference. The researcher developed a checklist scheme to assist the recording of pedestrians and traffic vehicles. A shorthand system or symbols can make the recording task a little easier. The specific behaviour pattern of people, vehicle flows, street furniture, and parking in the area were also assessed.
- **Location of observer.** The location of the observer is irrelevant in participant research, but is of crucial importance for observation. The researcher's position should enable them to see and hear all behavioural processes during the time allocated for the research. Refer to Figure 5.1 (p. 50), two sites were chosen that represented varying the activities and movements of the pedestrians and traffic vehicles on Florida Road, namely the First National Bank (FNB), near the Spar supermarket; and the intersection of Florida/Gordon Road.

The significance of participant observation, for this study in particular, lies in the fact that it considers the qualities of a place from the perspective of ordinary users, and enables an observation of how various activities affect people - children, adults, the elderly and the disabled. Using a sample record sheet on map and photograph is the most straightforward method, which can help to assess the activities related to the area.

3.3.2 Questionnaire

A questionnaire is probably the most commonly used research tool within the social sciences. It is a printed list of questions which respondents are asked to answer. Low cost, minimal resource requirements and potentially large sample capturing abilities make questionnaires an attractive research option. A questionnaire is usually standardized, and is an indispensable tool when primary information is required about people, their behaviour, and opinions. The sampling design of the questionnaire generally includes simple random sampling, systematic sampling, stratified random sampling, and cluster sampling. According to Brewerton and Millward (2001:99), various types of information can be obtained via questionnaires:

- **Background data** - Almost all research questionnaires require respondents to provide some background information relating to themselves, such sex, age, race, and educational level. In the context of Florida Road, this data is required in order to ensure a representative sample of the population.
- **Attitudinal information** - Any measure of attitude is based on key assumptions about the respondent. In order to capture the respondent's attitudes, a variety of techniques were used in the study, which included point attitudinal scale, diagrammatic rating and forced-choice questions.
- **Behavioural data** - Respondents must have a reasonable knowledge of the area of interest, otherwise they may not report its incidence accurately. With regard to questionnaire design, "Use of the area" and

“residence” is tailored to different groups, in order to pursue their perception of Florida Road.

The purpose of the questionnaire used in this study is to understand the stakeholders - the road users, residents, and tenants/assistants who engage in the study area for a variety of reasons - and their experience of living in the Florida Road area. A structured interview process, administered in the form of an open-ended questionnaire, was completed in the area with 60 totally systematic dispersed stakeholders, namely 15 from the residents, 15 from the tenants/assistants, and 30 from the users.

These stakeholders were chosen in order to achieve a more holistic interpretation and opinion of the issues from an ordinary point of view. Different stakeholder groups consider issues based on different perspectives. What one stakeholder group considers positive may be considered negative by another. The details of the questionnaire, including the sampling technique used and details of its administration are dealt with in the following chapter.

3.3.3 Interviews

Interviewing is an effective research tool for collecting information and opinions. It is a face to face interpersonal role situation and relies on the research question being asked and the availability of resources. Unlike questionnaires, which have a set of fixed questions and responses, interviews are tailored to individual circumstances. The explanatory power of interviews can therefore be unlimited. The advantages of interviewing are flexibility, rich data, and co-operation. The disadvantages of interviewing are that it can be time-consuming, costly,

and open to bias. Brewerton and Millward (2001:69) describes three types of interviews:

- **Structured interviews** involve a prescribed set of questions, which the researcher asks in a fixed order. This method ensures rapid data coding and analysis, and guaranteed coverage of the area of interest.
- **Unstructured interviews** allow the researcher to address any or all of a given number of topics, which may be of interest to the research. Questions and their order are not fixed and may evolve during the interview process.
- **Semi-structured interviews** (Open-ended interviews) incorporate elements of both quantifiable, fixed-choice response and the facility to explore and probe in more depth certain areas of interest. In the context of this study, semi-structured interviews have been undertaken by the researcher.

The purpose of the interview in this study is to obtain information on existing circumstances, as well as to probe into the possibility of Pedestrianisation and Traffic Calming measures in Florida Road. Structured and semi-structured interviews were conducted with three people who were involved in the planning process, and are outlined below.

An interview was conducted with a transport planner in the Traffic and Transportation Department in Durban in order to obtain his assessment on the issues of Pedestrianisation and Traffic Calming.

An interview was also conducted with an urban designer in an attempt to investigate the view of urban design with regard to Pedestrianisation and Traffic Calming in Florida Road.

The third interview provided an understanding from the perspective of a transport consultant who has made great efforts on the particular cases to enhance the quality of transport management in urban area.

3.4 LIMITATIONS OF THE STUDY

Participant observation not only requires watching activities which unfold in front of the researcher's eyes, and recording the impressions of these activities in notes, maps and photographs. It also relies on the researcher's skill, time and experience at a level that is demanding, particularly with regard to managing time and selecting observation sites. Spending only two days counting pedestrians/traffic vehicles at two observation sites and spending only a few days observing the area can be seen as a potential source of bias. Observation and systematic survey on a weekly basis can be seen as being more reliable in providing creative and evolving evidence in the research.

Conducting a survey is a weighty responsibility. An understanding of how much information is collected is important. As one can not wish to conduct a survey to cover many issues. A particular problem with the questionnaire used in this study is that each questionnaire is four pages in length. This can be quite long and inconvenient for some respondents, especially in the case of the users on the street. The length may cause research bias and data errors as the respondent may become impatient when she/he answers the questionnaires. Carefully designed questions, which avoid wasting the respondent's time and which obtain accurate

data, are essential for conducting good research.

3.5 CONCLUSION

Data collected from the Participant observation, questionnaires and interviews are presented separately in chapters 5, 6 and 7. Collection of data plays a very significant role in moving forward the research. Data analysis can produce new insight and information by careful description. which will form the basis for evaluation and recommendations to be made. This may provide a possibility of applying this plan of Pedestrianisation and Traffic Calming in Florida Road in the future.

CHAPTER 4

CASE STUDY: FLORIDA ROAD

4.1 INTRODUCTION

An urban area, particularly in a rapidly changing area, has existing or potential conflicts between pedestrians and traffic vehicles which are increasing. This chapter is intended to present the case study area, which is Florida Road in Durban. The focus of this research is an analysis of the specific situation presented in this area, endeavouring to assess the existing problems between pedestrians and traffic vehicles, and offering various solutions to address these problems.

In order to obtain a basic perception of the nature of this area, the study commences with the overall context in which Florida Road is situated. Developing and applying research methods should be much more than only following a simple set of recipes, so data study is placed to develop ideas for applying research techniques as well as to create rational procedures for this study.

4.2 LOCATION OF STUDY AREA

Florida Road is situated in the Berea North area of Durban and is a thoroughfare on the Berea ridge. It forms a part of the Greyville District, which is one of Durban's oldest suburbs. Umgeni Road is a major arterial road to the east of the study area. Argyle Road (M17) which connects Springfield Road to Umgeni Road acts as a major arterial road as well. Musgrave Road is a major arterial road runs to the east. Florida Road is a collector road with a range of activities, which have become an important office/commercial corridor. It neighbours Robert Jameson Park and

Mitchell Park to the north, and Greyville Race Course to the south (Map 4.1).



Map 4.1: Location of the study area (Source: <http://www.durban.org.za/about/maps>)

4.3 CONTEXT OF THE AREA

In this contextual area, the Florida Road area is characterised by sloping topography and rich vegetation (City Engineers Department, 1982:4). Travelling north along Florida Road, from Argyle Road to Musgrave Road, the gradient becomes steeper. Florida Road serves various residential, official and commercial land uses such as the offices of the many small business that use Florida Road as a central base at present. Windermere Shopping Centre is the nearest shopping mall within walking distance from Florida Road (Map 4.2).



Map 4.2: Context of the study area (Florida Road)
 (Source: <http://www-gis.durban.gov.za/website/corp/viewer.htm>)



Plate 4.1: Victorian Style



Plate 4.2: Edwardian Style

With regard to the historical background, according to Brian Kearney (1984), the area of Greyville had been laid out along the Umgeni Road axis before 1867. The entire area was a rich depository of local variation of domestic architecture. The Florida Road tramline was

opened in 1891 which stimulated its development. Because of the tramline, initial shops developed at every tram stop at regular intervals, which directly influenced the commercial clusters developed along the road later on. Further up the slope, the sizes of houses

increased, and occur as

Victorian villas, Cape Dutch Revival houses and other types of residential buildings. Since then, various architecture character were associated with an interesting townscape appeared in this area (Plate4.1-3).

Florida Road is relation to attraction people to live, work, shop, and play. It is recognised as the result a blend of a variety of historical character which

have influence on changing land use. According to Katsikoyiannis (1999:70) there are 22 listed historical buildings along Florida Road. They represent various architectural styles between 1840 and 1920, each with unique features to contribute to the urban landscape. This gives Florida Road a special aesthetic identity and makes it a well defined historical conservation precinct. It should be treated sensitively and historically in the future. When development is to occur, it needs to be beneficial to the function of the area and the historical integrity to be maintained.



Plate 4.3: Union Style

CHAPTER 5

PARTICIPANT OBSERVATION

5.1 INTRODUCTION

Participant observation aims to discover the way of life of actual people, from the inside, in the context of their everyday living experiences. Participant observation will be recorded and related to the research proposal. A formal participant observation was carried out by the researcher in Florida Road. The observation period fell over one week, from the 11th to the 18th of October 2002.

5.2 SITE INVESTIGATION

In order to glean some basic information concerning pedestrian and traffic vehicle issues, it was useful to conduct a site investigation when the research project commenced.

With regard to land use, a residential pattern is observed along Florida Road, likewise, a pattern of commercial activities also occurs along the road, such as offices, restaurants, shops, and hotels. As indicated in Map 5.1, there are four shop/restaurant clusters on the road. At the upper end of Florida Road, near Mitchell Park, there is a cluster of formal shops. Southward along the road, between Lambert Road and Cottam Grove is the Spar Supermarket/the FNB cluster, which is the busiest site of the road during the day. Another busy cluster of the road is the Steers fast food restaurant, which is situated between Gordon Road and Tenth Avenue, and spreads to Ninth Avenue. There is a mix of commercial activity that attracts the users in the area with restaurants/take-aways, shops, a pharmacy, etc. Surrounding Eighth Avenue is a cluster which includes several elegant restaurants and shops such as Christina's and Baan Thai.



Florida Road

Map: 5.1 Existing Land Use

LEGEND

- Detached housing
- Maisonette/Duplex/Attached Housing
- Flats
- Florida Road Commercial Clusters
- Commercial - Office Offices
- Commercial - Restaurants / Bar
- Hotel Accommodation
- Shops and Restaurant Financial Service
- Education
- Place of Worship
- Local Authorities
- Petrol Service Station
- Open Space

Source: Development and Planning Unit
30/11/2002

The existing land use reveals that three office clusters can be identified. Around the Cottam Grove, there is a cluster of conserved houses being used for professional offices such as Quantity Surveyors, Architects, and Attorneys who are primarily visited by appointment. The central office cluster is located between Gordon Road and Lambert Road, which comprises travel agencies and estate agencies such as Dinners Club, Overseas Visitors Club and Broll Real Estate, etc. At the bottom of the road, the commercial activity becomes more public in nature, with specialised businesses, such as the Voice Clinic, Ear Institute and Hotel.

Florida Road is currently dominated by commercial activities, thus there is a high amount of traffic vehicles driving along the road. It consists of private cars, buses, taxis trucks, motorbikes and other modes of traffic.

The section of Florida Road under consideration in this research is a four-lane road. It has a standard collector road cross-section with a 12 metre traffic lane in the North of the Florida Road/ Gordon Road intersection; 16 meter traffic lane in the South of the Florida Road/ Gordon Road intersection, and 4 metre wide paved sidewalks.

5.2.1 Traffic Speed

Traffic research clearly points out that higher vehicle speeds results in an increased number of accidents. The most serious pedestrian accidents occur when people are struck by speeding vehicles (National Highway Traffic Safety Administration, 1996).

Florida Road is a sloping road, steeper on the northern part and becoming flatter on the southern part, where it meets Argyle Road. In addition, it is straight and wide – between 12 metres and 16 metres - creating the potential for speeding traffic vehicles. People using the

buses and those walking to and from their parked vehicles are at considerable risk from passing traffic. High-speed traffic vehicles make it difficult and dangerous for pedestrians to cross the street. Considering the intensive traffic on Florida Road, there are few pedestrian crossing points. Hence, the traffic speed problem is a primary concern in this area.

Preliminary investigations showed that traffic noise did not appear to be a problem in Florida Road.

5.2.2 Parking



Plate 5.1: A exclusive office parking site



Plate 5.2: Patrons park on the street

The historical character of the area, as well as the several entertainment precincts that have emerged in this area originally attracted the owners and developers of offices, shops, hotels and restaurants. The office and bank buildings normally have their own parking for staff and customers. They enjoy controlled on-site parking in their back yards (Plate 5.1). However, the restaurants and shops, in particular, experience problems with a lack of parking. Most patrons are forced to park on the street where cars are often targeted by crime (Plate 5.2). The

commercial activities result in a critical parking problem in this area (Map 5.2). However, the existing parking shortage and exclusive parking sites form a sharp contrast, which can be seen that there was the lack of community actions to cope with the parking issues in this area.

The following time periods are extremely difficult for parking: 12h00 – 14h00 (lunch-time), 16h00 – 18h00 (after work shopping time) and 18h00 – 1h00 (supper and late night entertainment). The most problematic parking sites in this area are in the vicinity of Spar Supermarket and also further south in the vicinity of Steers, where there is a concentration of commercial activities and restaurants/take-aways.



The access roads and service lanes that connect with Florida Road are quite narrow: for instance Eighth, Ninth and Tenth Avenues. These roads are used for parking as they are close to the restaurants and shops (Plate 5.3). There is also an increase in the likelihood of

Plate 5.3: Parking on the narrow access road


accidents as a result of these roads. Furthermore, the increase in noise decreases the quality of living for residents near these nodes.


MAP 5.2

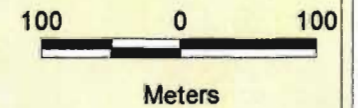
Conflict Areas of Pedestrian and Vehicle



LEGEND

 Dangerous Intersections

 Areas of parking congestion



5.2.3 Intersections



Plate 5.4: Only one traffic light on the road

There are seven existing intersections along Florida Road: off Seventh, Eighth, Ninth and Tenth avenues, Gordon Road, Lambert Road, and Holden Avenue. Of these, two are major intersections – Florida Road/Gordon Road and Florida Road / Lambert

Road. However, the researcher discovered that there is only one set of traffic lights on the Florida/Gordon Road intersection, apart from the

Argyle Road intersection.



Plate 5.5: Intersection chaos

There are no traffic lights or other traffic signals at the other junctions, and large vehicles block the view (Refer to Plate 5.4-5).

The major problematic intersections indicated on Map 5.2, show Florida Road to be inefficient with

regard to traffic vehicle flow and pedestrian crossing.

5.2.4 Street Furniture



Plate 5.6: Unpleasant sidewalk

The researcher walked around the study area to assess the condition of street furniture. Sidewalks for pedestrians are wide on both sides of the road, normally 4 metres in width. However, in some portions



Plate 5.7: Overgrown vegetation

the roots of large trees destroy the surface and the surface texture is fragmented; commercial advertisements, street trader's stalls and overgrown branches, obstruct pedestrian movement. Litter can be

found at bus stops, at the parks and around the Spar Supermarket, which detracts from the otherwise pleasant environment (Refer to Plates:5.6 to 5.8).

As mentioned earlier, a circulation conflict between traffic vehicles and pedestrians occurs in crosswalks, with the result that accidents occur with vehicles travelling at high speed. Traffic lights are the most common and effective traffic control tool, and the lack of traffic lights at certain intersections makes it difficult for pedestrians and traffic

vehicles to cross the road, as discussed above. Florida Road could be termed a green area, as trees contribute to a pleasant living area, as well as helping motorists to gain a sense of motion as the vehicles travel fast. However, it should be noted that on quantifying whether the trees provide shade for pedestrians and cyclists, the researcher found ambiguous results.



Plate 5.8: The obstruction of pedestrian movement

Street lighting should be treated as one of the most important issues relating to the quality of the area. The visual impact of the pavements is weak, both from close by and from a distance. This investigation also found out that the



Plate 5.9: Under utilised park

condition of the bus stops is not ideal—most of them are without benches and shelters, which may result in them not performing their function properly.

5.2.3 The Park/Open Space

The park/open space at the junction of Florida Road and Gordon Road provides limited shade as there are only a few trees (Plate 5.9). From the observation, this park does not attract residents, as one can see

vagrants sitting or sleeping on the grass. The reason could be attributed to the size of the park being small, a lack of facilities, such as benches and play equipment, and too much traffic nearby.

5.3 TRAFFIC SURVEY

One of the most important aims of a traffic survey is to determine how many people and vehicles travel in the area.

Pedestrian and traffic counts were undertaken over two days at the junction of Florida and Lambert Roads (near the First National Bank); as well as at the junction of Florida and Gordon Road. On Wednesday, 16th of October 2002 and Thursday, 17th of October 2002, assessments were made of the response to the study area. The reasons for choosing the two observation sites are as follows: The first one at the Lambert road intersection was chosen as result of the Spar cluster, which is the most busy portion along the road during the day. The second observation site was chosen due to it being opposite to the Steers cluster, which is the busiest portion along the road during the night (Figure 5.1). However, the days were randomly chosen without any particular intention. The researcher and his assistants sat at the observation sites, without direct contact with the users, and counted and categorised the pedestrian groups and the type of vehicle flow with a specific observation form – pedestrian/traffic vehicle count. Pedestrian and traffic movement in both directions were recorded. As one of the data sources, this observation form will combine with other data to help present the varying situation of the area during specific time periods.

Observation Site: Florida /Lambert Road and Florida /Gordon Road
 Observation Date: 16/17 October 2002 Period: 07h00 – 23h00
 Units: Persons & All vehicles Weather: Fair
 School Holiday: No

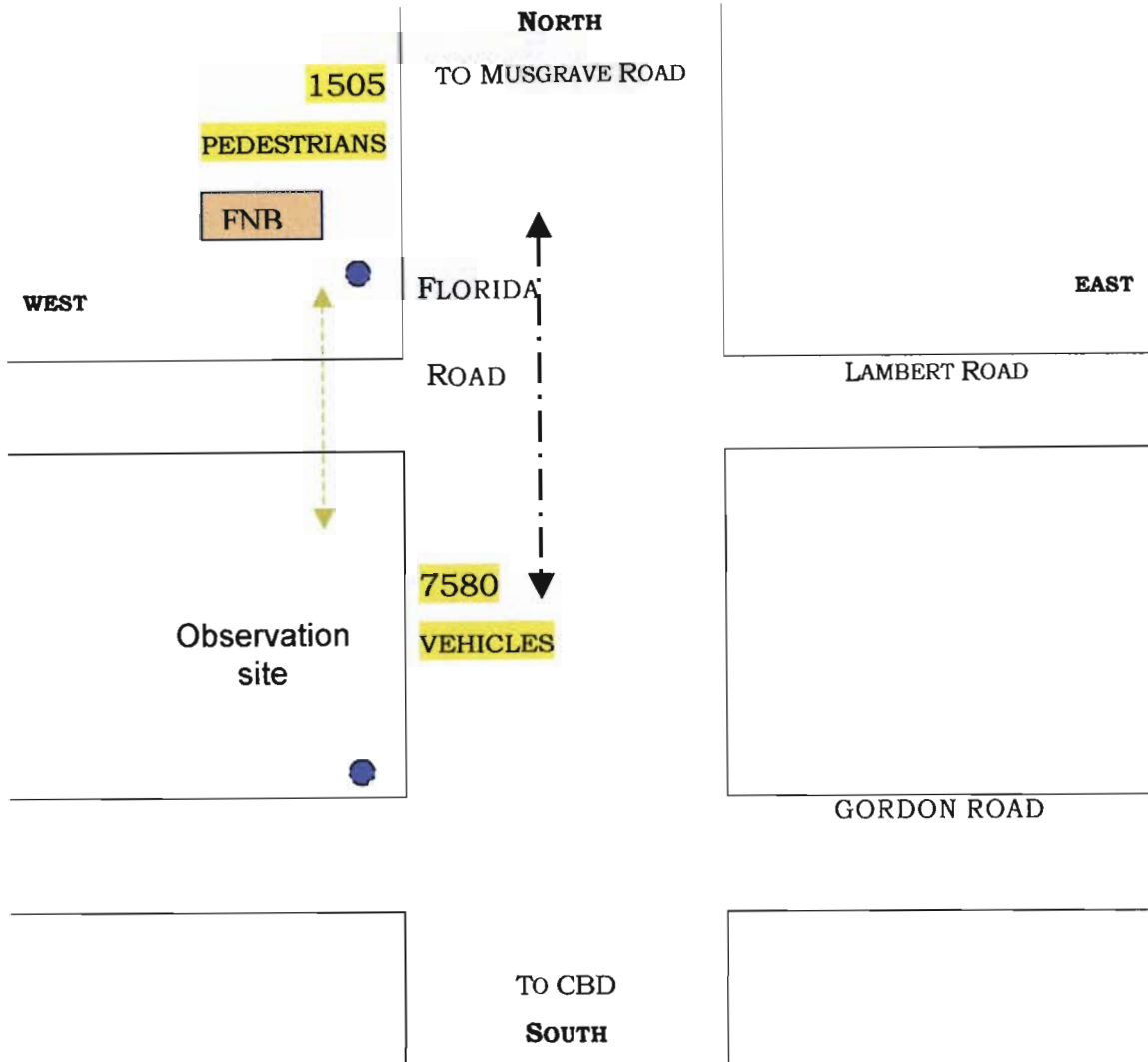


Figure 5.1: Pedestrian/Traffic Vehicle Flow

Note: Average per day from the two days count, and 2-way count.

Source: Data from the Participant Observation(2002)

5.3.1 Pedestrian Flow

This survey aimed to look at the specific behaviour patterns of the people who come to this area. These formed the basis of determining

how many users from each group needed to be included in the survey questionnaire. Unobtrusive measures were made in regard to the number, age, race and sex of pedestrians.

Race: Four race groups were used, namely Black, White, Indian and Coloured.

Sex: Male and female.

Age: Five age groups were chosen, namely children, teenagers, young adults, mature adults and the elderly.

During 15-minute intervals, from 06h00 to 23h00, the observer counted and classified everyone who walked past the observation site according to age and sex (Table 5.1).

Table 5.1: Breakdown of Sample According to Sex and Age of two sites (average of 2 days) (Unobtrusive Observations)

Sex	Number	%
Male	749	49.7
Female	756	50.2
Total	1 505	100.0

Age	Number	%
Children (under 12)	61	4
Teenagers (13 – 19)	64	4.2
Young Adults	253	16.8
Mature Adults	997	66.2
Elderly	130	8.6
Total	1 505	100.0

During these periods, male pedestrian numbers were almost equal to female pedestrians. Mature adults amounted to 66.2% of the

pedestrians; 16.8 per cent were young adults; and children, teenagers and the elderly accounted for the remaining pedestrians. Mature adults were therefore the majority of pedestrians. This is related to the character of the commercial area which offers job opportunities for people. With regard to race, Black pedestrians dominate on the whole, most of them rely on walking or public transport as their major transport mode.

The results are also presented in Appendix 1. The two-way 17-hour pedestrian flow at the two observation sites on Florida Road totalled 1505 people. The pedestrian flow was not heavy during the day. In the afternoon, especially after 16h00, there were a higher number of Black walkers than from other groups. After 18h00 the street became quieter, and only a few people were seen walking on the street. Security is becoming more and more of a concern for the public, and this reflects the fear of crime in urban areas (and even in the suburbs and in the countryside), and the dramatic increase in crime in South Africa today.

5.3.2 Traffic Vehicle Count

The traffic vehicle count showed that the volume on Florida road was in excess of 7 000 vehicles per day, including 7 026 private cars (Appendix 1). From Table 5.2 it can be seen that the volume (from 06h00 to 18h00) increased from 4 199 vehicles per day in 2000 to 5 763 in 2002. This represents an overall increase of 1 564 vehicles, an increase of 37.3%. Moreover, there was an average hourly increase of 131 vehicles or 37.5%.

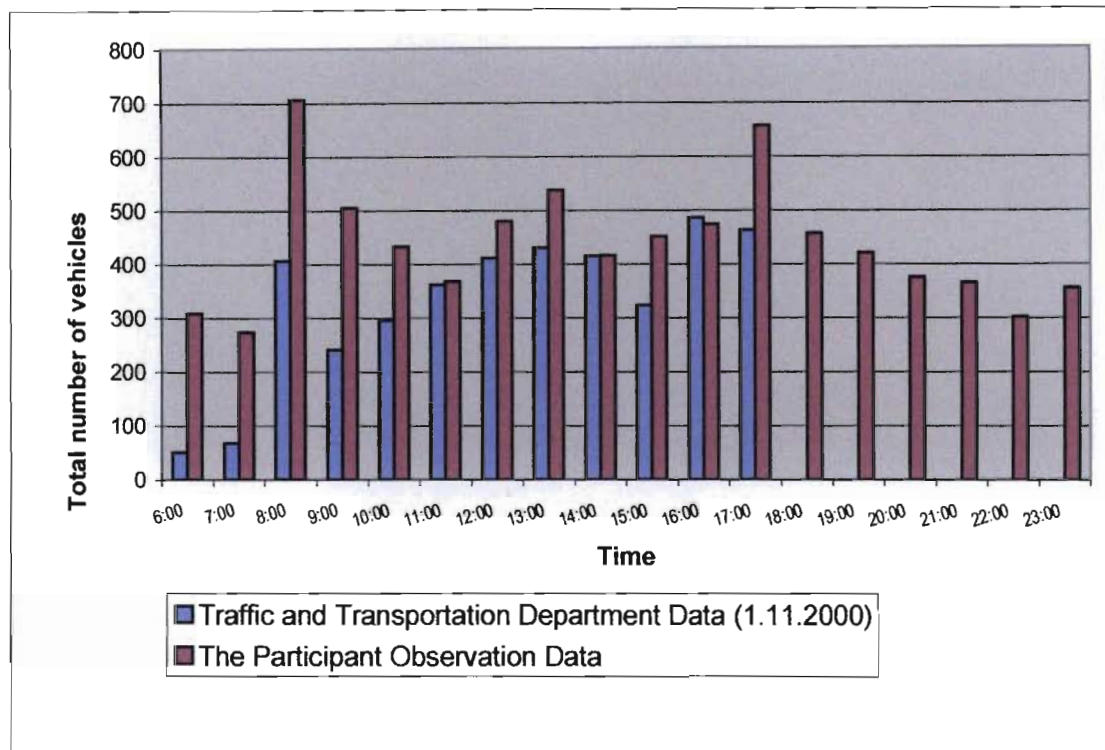
Table 5.2: Comparison of Traffic Vehicle Flow between 2000 and 2002

	2000	2002	Percentage Increase
06h00 – 07h00	68	223	228
07h00 – 08h00	406	766	88.7
08h00 – 09h00	241	505	109
09h00 – 10h00	301	432	43.1
10h00 – 11h00	295	367	24.4
11h00 – 12h00	362	480	32.5
12h00 – 13h00	411	537	30.6
13h00 – 14h00	430	416	-3
14h00 – 15h00	414	451	8.9
15h00 – 16h00	323	473	46.4
16h00 – 17h00	485	657	35.4
17h00 – 18h00	463	456	-1
Total	4 199	5 763	37.3
Average/hour	349	480	37.5

Source: Data from Traffic and Transportation Department (2000), and The Participant Observation (2002).

Peak hour traffic volumes are shown in Figure 5.2 below, in the morning, the number of vehicles reached a maximum of 766 between 07h00 and 08h00. The afternoon peak hour ranges from 537 to 456 vehicles per hour. Future volumes are likely to exceed the 2002 volumes, as they will be affected by the diversion of development in the area.

Figure 5.2: Traffic Vehicle Flow



Source: Data from Traffic and Transportation Department, and the Participant Observation

5.3.3 Safety and Traffic Accidents

**Table 5.3: Accident Statistics on Florida Road
01.01.2001 – 31.12.2001**

Type of Accident	Number of Incidents	Percentage	Casualties by Injury	Percentage
Same direction	39	34.8	1	5.9
Parking/reversing	30	6.8	1	5.9
Opposite direction	11	9.8	2	11.8
Right angle	23	20.5	9	52.9
Fix object/overturning	4	3.6	0	0
Pedestrian/vehicle	5	4.5	4	23.5
Total	112	100	17	100

Source: Data from Traffic and Transportation Department

Details of the accidents that have occurred in 2001 on Florida Road are given in Table 5.3. There have been no fatal accidents during this period. Casualties by injury was 17 people. The same direction accidents are the highest at 34.8% and can be attributed to speeding. Parking/reversing (26,8%) and right angle accidents (20.5%) occur as a result of vehicles parking on the street and insufficient traffic lights at the intersections.

5.4 CONCLUSION

Attention has been focussed on several aspects of the site investigation and traffic survey, and provides insight into this area. The negative impressions about traffic speeding, shortages in parking sites, intersection chaos and maintainable street furniture, can be seen as the major problems. Pedestrian flow, traffic vehicle count and traffic accident data reveal the current and potential conflict between pedestrians and traffic vehicles, which provide a detailed understanding of this area. In addition, the lack of co-operation between different stakeholders also had certain impacts on issues such as parking and safety, which should not be underrated. Participant observation was regarded as a necessary step in preparing a plan for improving the area's image and making it more attractive and desirable. It is a solid basis for further research.

CHAPTER 6

QUESTIONNAIRES

6.1 INTRODUCTION

Questionnaires are frequently used as the data collection method in planning practice and related areas of research. It is popularised when analysis of people's perceptions became a major task in developmental planning process. Questionnaires are not always for the purpose of collecting information, but also act as a means of transmitting information to the respondents during its process.

The aim of the questionnaires here is to assess the perception of the residents, users and tenants/assistants in the Florida Road area. This chapter discusses the process of conducting the questionnaire survey as well as the presentation and analysis of questionnaire data, which can help to perceive the comments and opinions of pedestrian activities related to the research questions.

6.2 SAMPLING TECHNIQUE

In order to collect a reasonable amount of information, three types of questionnaires were designed: namely, a residents questionnaire, a user needs questionnaire, and a tenants/assistants questionnaire. The structure of the questionnaire was determined by the aims and objectives of this research. A systematic sample was designed to obtain information for each group. The survey contained a sample size of 60 respondents, 15 from residents, 15 from tenants/assistants and 30 from users. The reason for selecting these stakeholders is in order to obtain a more holistic interpretation and understanding from ordinary users' points of view.

With regard to the tenants/assistants survey, the researcher walked around the office and shop/restaurant clusters in the study area and approached every 3rd office/restaurant/shop as systematic sample.

For the residents sample, the researcher chose every 5th house as a sample interval along the road, starting at the Argyle/Florida Road intersection, and ending at the Holden Avenue intersection.

With regard to the user needs questionnaire, the sample method used also was that systematically to interview every 10th walker at the observation sites on the street.

The questionnaire investigated several areas:

- Personal particulars of the respondent
- Stakeholder status for different groups
- The respondent's activity patterns/how are they engaged in this area
- Their perception of the area
- Their overall comments on pedestrianisation schemes and traffic calming measures

The open-ended questions (See the questionnaires – Appendix 2 to 4) have the great advantage of facilitating respondents to express their views and opinions in the survey. No particular age, sex or race group was targeted. The sample was dependant on who was likely to be found in the area when the survey was conducted. The research period was from Friday, 11 October to 18 October for one week.

6.3 FINDINGS

This section focuses on the analysis of data obtained through the questionnaires. Data analysis methods demand careful consideration as they play an important role in a research project. The presentation of the questionnaires is analysed under the following aspects: personal

particulars, resident status, activity patterns, perception of area, and overall comments on pedestrianisation schemes and traffic calming measures. Considering the aim of the questionnaires in this study is to assess the perceptions and opinions of people in terms of pedestrian and traffic issues. Likewise, to obtain a more holistic understanding of the area, the analysis of the stakeholder group is presented first, and then the personal particulars, activity patterns, perceptions of the area and overall comments of the residents, tenants/assistant, and users.

6.3.1 Stakeholder Groups

In order to investigate the specific pattern of different stakeholder groups in the study area, a brief summary of residents, tenants/assistants, and users status for the studying perceptions is as following:

6.3.3.1 Resident Status

A brief summary of resident status for studying their perceptions as follows:

(a) How long have you lived at your present address?

More than half of respondents (53%) have been here for less than 2 years. The remaining 47% of the respondents have lived in this area for more than 3 years.

(b) In the time that you have lived in this area, have you noticed a change in the overall appearance of your area?

A large number of the respondents (40%) recognised that the appearance of the area has deteriorated. The rest of the respondents commented that it was unchanged (34%) or improved (26%).

(c) Have you ever considered moving to another area?

The majority of those questioned (60%) have not considered moving to another area. The remaining respondents (40%) do think of moving out of this area.

The residents, especially those that lived in the area before the business intervention in the last decade, are concerned that too much commercial activity is happening in the area and it may destroy the residential amenity and quality of living.

6.3.1.2 *Tenants/ Assistants*

(a) What is your business/ work?

The predominant business sectors are restaurants/take-aways and offices, which share 60% of the respondents. The remaining businesses are hotel, beauty salon, shops, etc. Which indicated that this is a mixed commercial use area.

(b) How long have you engaged in it in Florida Road?

Sixty per cent of the respondents have engaged their business between 1-5 years. Others are new business (20%) and more than 5 years business (20%).

6.3.1.3 *User Needs*

(a) Where do you live? How long does it take you from home to get here (by what mode of transport)?

The majority of respondents (73%) came to this area by motor cars. Of these, nearly half of them travelled within 30 minutes from home to Florida Road. The remaining of the respondents (27%) are on foot.

(b) What do you do most often when you are here?

The major reasons for the respondents to come this area are work (30%) and use of restaurants (27%). The balance of the respondents came for shopping, recreation and other activities.

These responses indicate that the users were attracted to this area mainly for work and restaurants due to the offices and the restaurant clusters.

6.3.2 Personal Particulars

Data was obtained from each respondent regarding sex, age, race, occupation and educational level.

Table 6.1 Breakdown of sample according to sex and Educational level of respondents

Sex	Number	%
Male	33	55
Female	27	45
Total	60	100
<i>Educational Level</i>	<i>Number</i>	<i>%</i>
Std 8 or less	5	8
Std 10/Grade 12	25	42
Technikon	13	22
University	11	18
Other	6	10
Total	60	100

Of the 60 people questioned, gender distribution showed almost equal numbers (55% were male and 45% were female). These results are inconsistent with the sex profile of participant observation, which accounted 49.7% male and 50.3% female.

With regard to education level, the largest group (42%) had achieved Std 10/Grade 12, and the second largest (22%) a Technikon qualification.

Figure 6.1 below indicates that most of the respondents (57%) were White. Black and Indian people accounted for 23% and 17% respectively. Coloured/other accounted for the remaining population. The results are quite different to the participant observation study. Which evidenced that this is a traditional 'white area' and white people was predominant in the local population.

Figure 6.1: Race Group

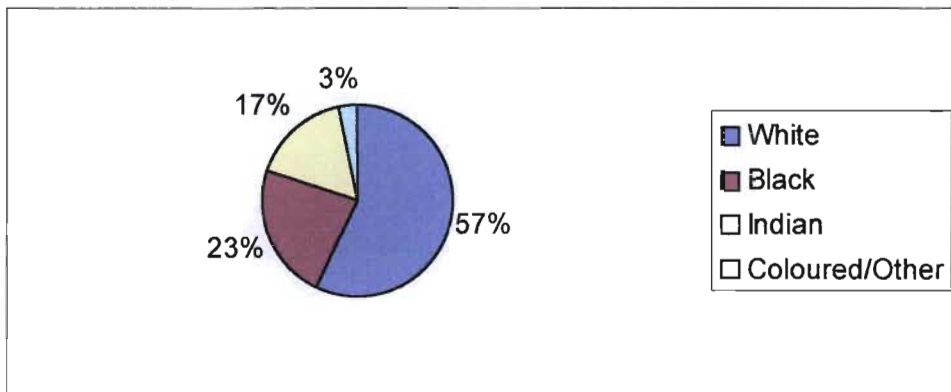
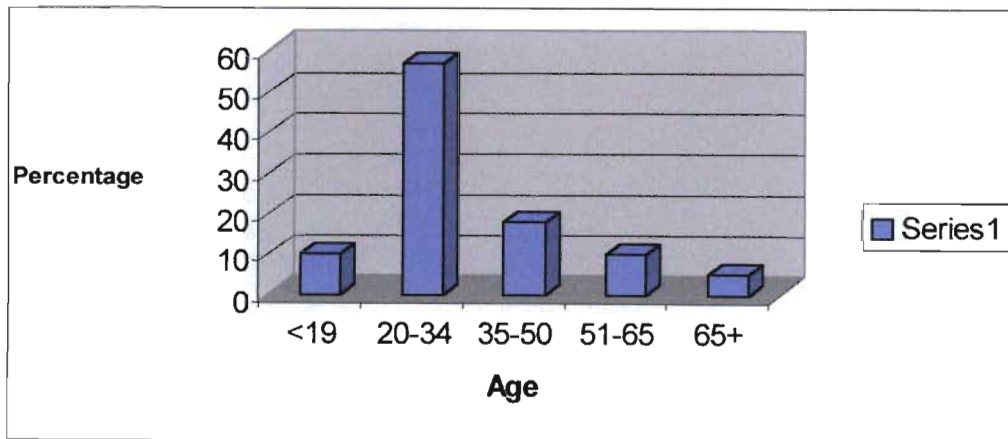
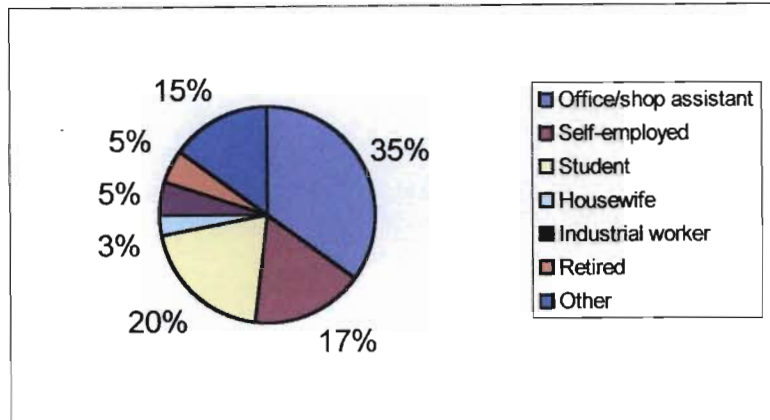


Figure 6.2: Age of Respondents



From Figure 6.2 above, the most noticeable finding is that the 20 – 34 age group is dominant at 57%, followed by 35 – 50 age group at 18%. This shows that most of the people attracted to this area are adults because this is a commercial and employment area.

Figure 6.3: Occupation



As indicated in Figure 6.3 above, most of the respondents (35%) were engaged in office/shop assistant for work-related reasons. 17% of the respondents were involved in self-employment. Students and others accounted for 20% and 15% respectively. This figure shows that Florida Road is an area with mixed activities.

6.3.3 Activity Patterns

Activity patterns provide an indication of what existing features and behaviour are important enough to be identified and exploited. In this regard the following investigations are presented: use of parks/open spaces, frequency of use of the area, satisfaction of pedestrian facilities, safety/comfortable, and circulation difficulties.

Use of Parks/Open Spaces

Table 6.2: Use of Parks/Open Spaces

	Number	%
Daily	8	18
Weekly	10	22
Seldom	24	53
Other	3	7
Total	45	100

Over half the respondents stated that they seldom use the parks/open spaces. 22% of respondents visit parks/open spaces weekly. This result indicated that most people felt the open spaces are not attractive any more, a finding which is similar to the participant observation study.

Frequency of Using the Area

From table 6.3 below, it is observed that almost half the respondents (49%) were involved in walking daily in this area. 28% of the respondents walk weekly. The result also indicated that most of the people seldom do exercise such as running/cycling in this area, while another 28% do such exercise weekly. For the majority (32%) of pedestrians who walk/run/cycle, the duration is between 15-30 minutes.

Table 6.3: Frequency of Using the Area

		No.	%
Walk	Daily	29	49
	Weekly	17	28
	Seldom	11	18
	Other	3	5
	Total	60	100

		No.	%
Exercise (run / cycle)	Daily	12	20
	Weekly	17	28
	Seldom	23	38
	Other	8	14
	Total	60	100
Duration	<5 mins	14	23
	5-15 mins	8	13
	15-30 mins	19	32
	30-60 mins	11	19
	60+ mins	8	13
	Total	60	100

Satisfaction with Pedestrian Facilities

As seen in Table 6.4 below, of the 60 people questioned, more than 50% of respondents expressed their positive impression of this area and were satisfied with the pedestrian facilities. The highest satisfaction rate is with trees (75%). The second highest satisfaction rate is with sidewalks (67%). The respondents expected that crosswalks and traffic lights could provide better quality. The result of this table further provides proof that Florida Road offers amenities and attractive features to people.

Table 6.4: Satisfaction with Pedestrian Facilities

		No	%
Sidewalks	Yes	40	67
	No	20	33
	Total	60	100
Crosswalks	Yes	32	53
	No	28	47
	Total	60	100
Traffic Lights	Yes	31	52
	No	29	48
	Total	60	100
Trees	Yes	45	75
	No	15	25
	Total	60	100
Street Lights	Yes	41	68
	No	19	32
	Total	60	100

Safe/Comfortable

Figure 6.4: Perception of Safety/Comfort

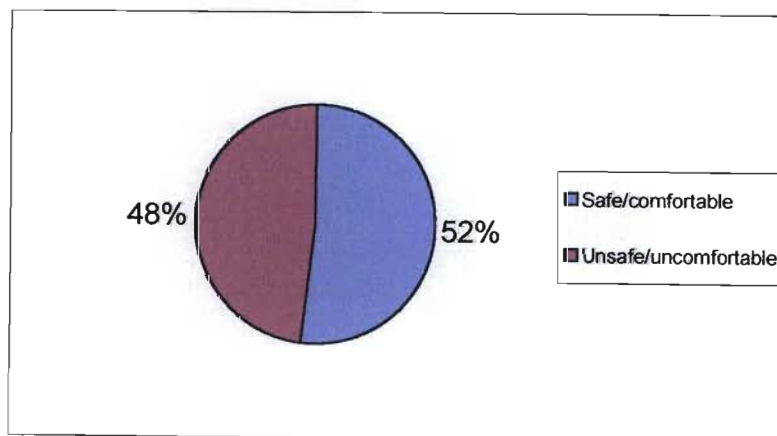
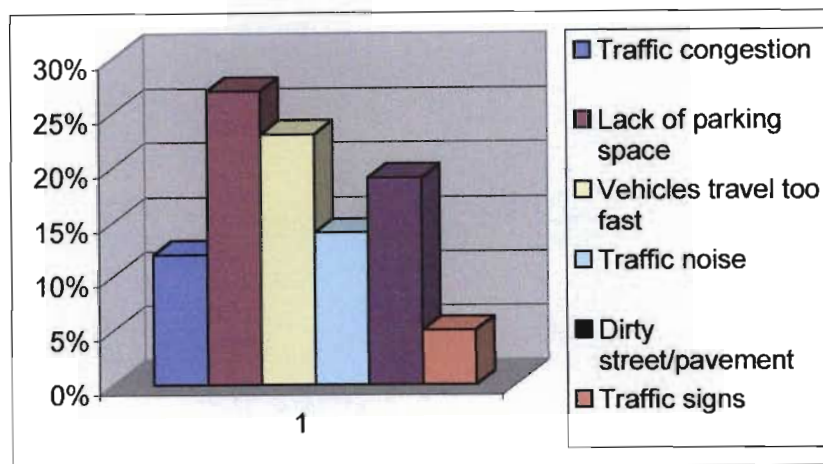


Figure 6.4 indicates that more than half of the respondents agreed this area is safe/comfortable (52%) and considered the environment of the area as liveable. In comparison, 48% of respondents rated safety as poor. Many of them commented that increasing crime cases will destroy the living quality of the area.

Circulation Difficulties

Figure 6.5: Circulation Difficulties



Twenty-seven per cent of the respondents experienced difficulty with lack of parking space, and 23% of those thought that the traffic vehicles travel too fast. This factor indicates that people perceive parking and traffic speeds as the most difficult problem in the area, which is commensurate with the finding of Participant Observation mentioned earlier.

6.3.4 Perception of Area

This section is to ascertain the perception of area from users' point of view. By trying to obtain information about how they feel and what they think about the area. The rating features of the area are presented as follows: access to shops, a good place to live, public transport system, and historical character of the area.

Table 6.5: Rating for Access to Shops

Rating	No	%
Very good	26	43
Good	20	33
Neither Good nor Bad	10	16
Bad	2	4
Very Bad	2	4
Total	60	100

From Table 6.5, seventy-six per cent of the 60 respondents thought that the area had very good/good access to shops. Of these, 43% of the people said there was very good to access to shops. This is because these people can get access to shops such as Spar supermarket, Windermere Shopping Centre and corner shops within walking distance.

Table 6.6: Rating for A Good Place to Live

<i>Rating</i>	<i>No</i>	<i>%</i>
<i>Very good</i>	20	33
<i>Good</i>	19	32
<i>Neither Good nor Bad</i>	13	22
<i>Bad</i>	8	13
<i>Very Bad</i>	-	-
<i>Total</i>	60	100

Sixty-five per cent of the respondents considered the area to be very good/good to live, of these, 33% of the respondents considered the area is very good. Most of the people displayed their positive impression of living conditions in this area which is quite similar to the finding as mentioned before. It is also interesting to note that no one thought this is a very bad area. The reason could be related that the area

traditionally has been residential with some gradual commercial activity, and is aesthetically attractive.

Table 6.7: Rating for Public Transport System

<i>Rating</i>	<i>No</i>	<i>%</i>
<i>Very good</i>	16	27
<i>Good</i>	25	42
<i>Neither Good nor Bad</i>	10	16
<i>Bad</i>	8	13
<i>Very Bad</i>	1	2
<i>Total</i>	60	100

Referring to Table 6.7 above, most of the respondents were satisfied with the public transport system. Forty-two percent of the people thought the public transport is good and 27% of them agreed it was very good. This is because both municipal buses and Mynah buses constantly service people as well as mini taxies run throughout the road, so they provided convenient transport service to these people.

Table 6.8: Historical Character of the Area

<i>Rating</i>	<i>No</i>	<i>%</i>
Very good	21	35
Good	24	40
Neither Good nor Bad	9	15
Bad	4	7
Very Bad	2	3
Total	60	100

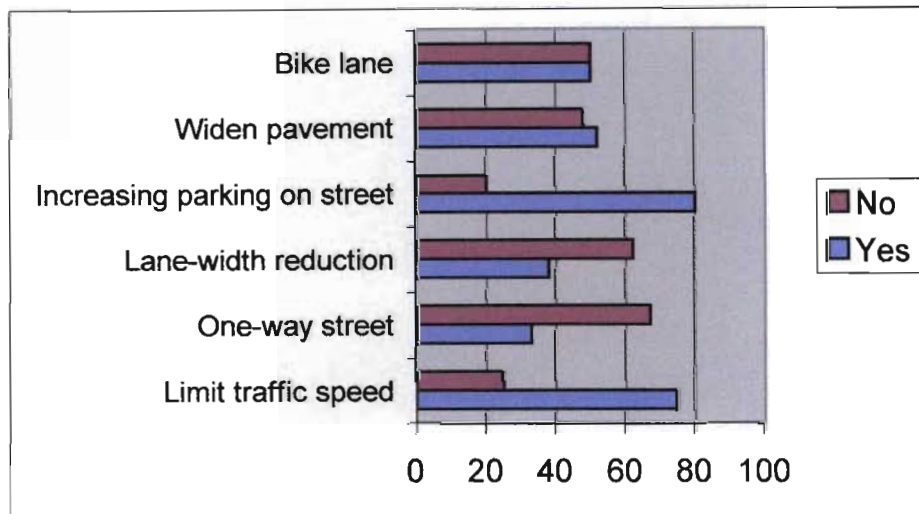
The majority of the respondents (75%) rated the historical character of the area as good or very good. Of these, 35% said it was very good. This comment further provided proof that the historical character of the area, such as early domestic buildings is part of a unique identity and

contributed to the urban landscape. It's no doubt that we should be more sensitive to it with future planning and development.

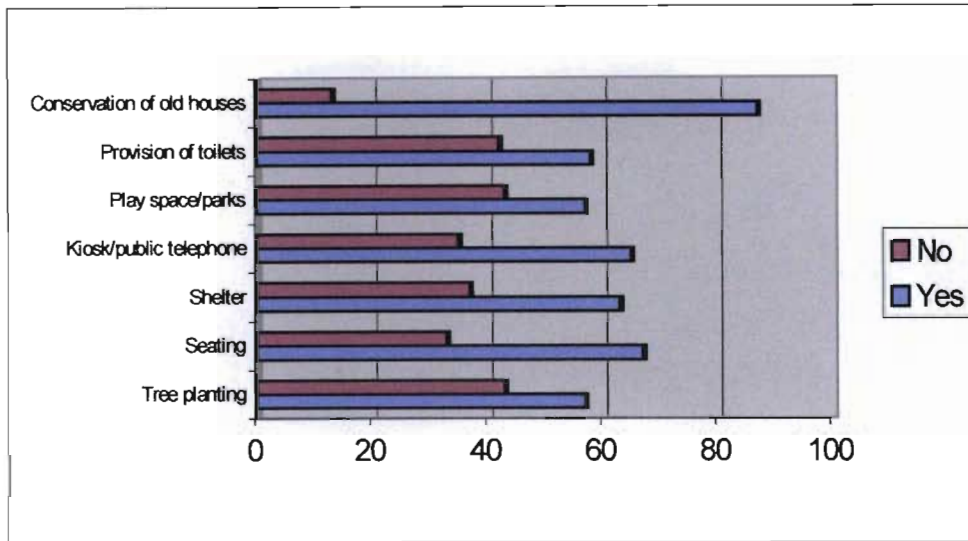
6.3.5 Overall Comments

In order to enhance the quality of the area and its unique identity, some Pedestrianisation and Traffic Calming measures were supported by the respondents in the questionnaires. The comments and ideas will be useful to better accommodate traffic vehicles and pedestrians in this area.

Figure 6.6: Comments on Traffic Calming Measures



The majority of the respondents (80%) were in favour of the idea of increased parking on the street. Seventy-five per cent of the respondents suggested limiting traffic speed. The two highest inappropriate measures which can be adopted are one-way street (67%) and lane-width reduction (62%). It is clear from Figure 6.6 that people treat traffic speed and parking issues as the most critical problems in this area, which was uniformly emphasised in the Participant Observation undertaken earlier on.

Figure 6.7: Comments on Pedestrianisation Scheme

The majority of respondents (87%) are in favour of conservation of old houses. Hence the emphasis of maintaining historical character in the area were the significant goals for building a more attractive place for people. Sixty-seven per cent of the respondents suggested providing seating facilities for people, which is also a priority for improving comfort and satisfaction to the public. The lowest levels of support were for tree planting (43%) and play spaces/parks (43%), which can be attributed to green street already existing and the public preference away from parks/open space due to the fear of crime.

6.4 CONCLUSION

The questionnaire survey was undertaken with the purpose of the research as a key means of obtaining information from the residents, tenants/assistants, and users within the population of Florida Road area. Each questionnaire took approximately four minutes to complete. The responses to the questionnaire were good, and are consistent with the findings from the Participant Observation survey. The parking problem, traffic speed and conservation of old buildings were emphasised by the residents, tenants/assistants and users during the survey process. Some issues outside the questionnaire were also raised

and commented on by the respondents, which can be seen as a contribution to this research. This survey therefore provided an important input to the research.

CHAPTER 7

INTERVIEWS

7.1 INTRODUCTION

After obtaining information from the participant observation and the questionnaire survey, the task was to continue to discover as much as possible about the pedestrian and traffic issues related to this subject area. The adoption of the interview method is to enable the researcher to obtain a richer understanding through direct procedures, which would allow the interviewee more scope for elaboration and general discussion on the research issues. The interviews were conducted with three key individuals involved in urban design, transport planning and consultation. These semi-structured interviews provide qualitative information, which is based on their in-depth knowledge and experience relating to the study. This process entailed probing for substantial responses.

Interviews were undertaken during the research period, between the 11th and 18th October 2002. Each interviewee was selected beforehand and all were asked the same questions (See the questions – Appendix 5). The most important feature of these questions is that it enables respondents to refer to their own situation and work.

The questions for the interviews include:

- The interviewee's responsibility, knowledge or understanding related to the subject area.
- Specific description from the point of view of their work (transport planning, urban design, transport consultant).
- The difficulties between pedestrian flow and traffic vehicle circulation in the case of Florida Road.
- Their view of Pedestrianisation scheme and Traffic Calming measures as a solution.

- The possibilities and problems with the application of Pedestrianisation scheme and Traffic Calming measures in this area, and the assessment of these measures in the context of Florida Road.

7.2 INTERVIEW WITH TRANSPORT PLANNER

Interviewee: Jelle Meintsma

As a manager of Transportation System Planning in Durban, Meintsma has much experience in urban transport planning in practice. According to him, Florida Road is a major road on the Berea which carries a fair amount of through traffic. It is not only Florida Road which has a high traffic volume, but also roads off Florida Road such as Lambert Road, Gordon Road, and Ninth Avenue. The reason for this is that motorists prefer to use short-cuts between Windermere and Argyle/Springfield Road (traffic from Berea to Greyville).

Florida Road has changed from a traditionally residential area to commercial land use. As Meintsma pointed out, “Yes, we are aware that it’s become quite a popular restaurant and entertainment area, even so that’s developed now like a restaurant centre.”

The insufficient parking problem has been discussed earlier. Jelle emphasised that the Council has had many complaints about parking in the area. He said: “Driveways are being blocked up, people coming out the restaurants, bars, especially when Bonkers is a nightclub there, people even urinated all over the place.” From that point, the problem is that a residential area developed into restaurants area so there is insufficient parking. So all the people have to park on the street and of course, there’s only limited parking available. Consequently the parking goes out into the residential area where people live and that courses a problem. He further points out that from a traffic point of view, we need to try and increase the amount of parking. The solution to this issue could be the insertion of angle parking to replace the

existing parallel parking on the street, or to convert the park at the junction of Florida and Gordon Roads to a parking lot.

Street furniture is important to the urban landscape. The pavements of Florida Road are the same as other places. According to Meintsma, "There's no urban design in the area. The Council has done nothing, there's no improvement, everything is the same like it was fifty years ago."

With regard to the traffic lights, the City Council has a whole process to put them in - It's like a warrant. Discussing the pavements, he suggested that perhaps where it is busy, the pavements can be extended, so that the sidewalk is made a lot bigger and it is possible to park there. In that area it would also be possible to have tables and chairs for people.

Florida Road is quite wide (12 metres, 4-lanes). It is not easy for pedestrians to cross the road. Pedestrian safety is also an issue raised by Meintsma: "Traffic islands would help people to cross the street safely".

In terms of traffic calming measures, he strongly objected to closing off the whole street. He explained that those businesses (especially restaurants) look at where there is a reasonable traffic flow past their shops as they rely on passing trade. One-way streets are also a bad idea. He said: "One-way street is a bit of a problem, because then you're getting people going in a circle." Traffic vehicles would go through the residential area to come back to a place if they missed it the first time. It may increase the traffic quite a bit, and would be disadvantageous. Meintsma reminded the researcher that any proposed plan for Pedestrianisation and Traffic Calming for the whole street would need to be carefully studied before being implemented as it could have a negative impact on the businesses in the road. Furthermore, "it's not going to work in a real world."

Many people are concerned about security. In terms of how to increase the level of security, Meintsma also provided some ideas from a design point of view. He said, firstly, that if it's designed properly you don't get corners and dark alleys where criminals can hide. Secondly, proper street lighting is important in the area. Thirdly, it is most important to have a police presence on the road. These are effective and common methods to prevent crime.

To sum up, the provision of parking, pedestrianisation and traffic calming on the whole street could be regarded as the major problems and opportunities in Florida road, which in turn leads to conflict between traffic vehicles and pedestrians, as well as affecting businesses if it is not implemented properly.

7.3 INTERVIEW WITH URBAN DESIGNER

Interviewee: Arthur Gammage

Mr Arthur Gammage is at present the Principal Urban Designer at the City Engineers Unit in Durban. He serves the role of urban designer and is responsible for overall urban planning and design.

Gammage advised that the Florida Road Corridor itself be referred to as an Architectural Conservation Zone which was one of the former historical white areas of the Berea. According to the relevant document of historical houses in Durban, there are 22 historical houses on Florida Road. However, Gammage pointed out that there were actually one or two more assessments done in the original survey of historical buildings, but not added to the official list, so there might be a few more buildings that form part of groups. He also stated that the opening of the Florida Road tramline as far as Mitchell Park in 1891 stimulated this development. Therefore, Florida Road is a unified area with an historical character.

When consulted about the issue of parking, Gammage also pointed out that his impression was that it was a very quiet street, in which there are not many indigenous trees, but there are some problem uses such as insufficient parking which causes trouble for the people. Some residents find it intrusive, and then, the Spar Supermarket generates quite a bit of parking.

As an urban designer, Gammage stated some possibilities for solving these problems. He said it might be more useful to think of turning the park over to car parking. This point is similar to that of the previous interviewee (Meintsma). Gammage explained that the conversion of park to parking lot must be granted by the Parks Department for the area. Angle parking could also be implemented to increase parking space on the street.

In the context of Florida Road, many old houses are being converted to commercial, official and restaurant uses. Gammage described that the conversion of old houses must be approved with a specific condition. He said all the remaining space on the car park and even then if they haven't got it right, those cars are going to come out on the street and park. So all those things should come up or should have already been looked at on an overall level in those proposals.

With regard to Pedestrianisation and Traffic Calming, Gammage believed that the concept of traffic calming could be two things: to restrict traffic volume or to reduce traffic speeds. He introduced a couple of plans using those measures which had been done in a small scale in Durban, e.g. in Cathedral Road, Marine Parade and part of West Street. In these cases, the usual ways of traffic calming are speed humps, narrowing road, chicane, block paving and traffic circles.

Meanwhile, the resistance from stakeholders is "a big issue with many debates and unhappiness" he said. Business in these Traffic Calming and Pedestrianisation areas persuaded the Council to re-open the road

to traffic vehicles as they felt that if the traffic was diverted they didn't get the exposure. However, the City Council is faced with a serious problem: "We didn't think that after so few years we'd have to re-open it again", Gammage said.

It is interesting to note that he feels that the community should work together and organise themselves in order to improve the quality of urban living, and deal with some social problems such as preventing crime. He said the central West Street and beachfront have such organisations entitled "Urban Improvement Precincts" (UIP) which work quite well in those areas.

The Council is focusing on the issue of re-zoning in urban areas, e.g. Florida Road. He emphasised that recently a project -the Urban Core Extension - had been undertaken in the Berea, Berea North and Berea South. The project identified areas on the Berea that have been subject to change towards business use, and there's a framework plan to help rezoning of these areas.

Overall, the Pedestrianisation and Traffic Calming measures have been positively adopted by the Council, although on a small scale. Of course, there are some mixed views from the different stakeholders. The issues of parking and the provision thereof has been raised again. In addition, the conflict resulting from the conversion of land use must be paid enough attention in the planning process.

7.4 INTERVIEW WITH TRANSPORT CONSULTANT

Interviewee: Mike van Tonder

Mr van Tonder has a good understanding and is an expert on transport consultation who has had many years of practical experience.

According to van Tonder, Florida road is quite important as a strategic road in this part of the Berea and there are mixed uses along the road.

It's changing all the time. He said, first of all, that it must be understood that the road is playing two functions – the function of traffic movement and commercial spine. It should be ensured that these two can co-exist when any plan is proposed.

Meanwhile, there is a dilemma with traffic calming and capacity of the road. Van Tonder explained that the more capacity you give the road, the higher speeds and more dangerous it is for pedestrians. Likewise, with lower speed you're going to affect the capacity of the road. So this needs a very fine balance. Furthermore, he pointed out that to pedestrianise the road or introduce traffic calming is going to affect the roads surrounding Florida road, e.g. Argyle Road, Musgrave Road.

Van Tonder emphasised that, as a researcher, you need to identify the area first. And the principle is generally that where the road is straight, wide and you can get a good distance sight, people will travel fast. Where the road winds and you don't have a good sight distance, people tend to travel slower. There are some measures, which can be adopted from a traffic point of view.

Parking is at a premium, which affects the side roads. With regard to increasing street parking, van Tonder suggested narrowing the road in some areas, which may create extra parking spaces as well as widening footpaths in order to help pedestrians to cross the road safely.

Although angle parking may create more parking space than parallel parking, van Tonder did not recommend converting existing parallel parking to angle parking in the context of Florida Road. Imagine someone coming at high speed down Florida Road and someone reversing, which is extremely dangerous. The foundation for putting angle parking in the road is to slow down traffic. He is not in favour of one-way streets, traffic islands and speed humps in these areas, because this is an important road. It plays an important role in the area. Any plans should be carefully considered.

In order to build up pleasant cross walks and calming traffic vehicles, intersections can be a major site to achieve this goal. Van Tonder described traffic lights as assisting pedestrians and traffic vehicle movement effectively and efficiently at intersections. There is only one traffic light on the whole of Florida Road apart from the one at Argyle Road. Block paving or changed surface can be an ideal measure to deal with the problem and keep the capacity of the intersections. In the meantime, he said that the intersections of Florida/Argyle Roads and Florida/Musgrave Roads could not be altered because of the capacity needs of these intersections.

Although people criticised the minibus (taxi) very much with regard to road safety and pollution, van Tonder felt that they are good from a traffic point of view. He said: "In order to cope with traffic congestion, the easiest way is to build wider roads and bigger roads, but eventually you say it's not enough as land is limited. The other way to deal with traffic congestion is to change people's mode of transport – let people change from private car to public transport. We're very lucky in South Africa because we have the minibus taxis. This is good because you don't need so much road space to accommodate passengers as they've got 15 people in one minibus instead of half of them having to catch a bus and the other half being in cars".

In summary, the possibilities of applying Pedestrianisation and Traffic Calming to the study area have been usefully discussed by the interviewees. This can greatly contribute to solving the existing conflict between pedestrians and traffic vehicles in the area.

7.5 CONCLUSION

Interviews enhance participant observation undertaken and questionnaires conducted. Responses that were received through a series of semi-structured interviews with the key role players involved in

the planning and transport issues were discussed. Analysis of the results indicated the following:

The provision of parking and traffic speeding are the primary concerns in the area. Although there appear to be some mixed views from different interviewees, they indicated a positive impression of Pedestrianisation and Traffic Calming measures in the study area. However, the various impacts need to be assessed from different stakeholders' interests, such as business people when adopting a plan for this road.

In general, the interviewees felt that the possibility of applying Pedestrianisation and Traffic Calming measures in this area could be regarded as a useful approach to facilitating progress towards a solution.

CHAPTER 8

ANALYSIS OF THE CASE STUDY AREA

8.1 INTRODUCTION

This chapter aims to present and analyse the research findings of the previous chapters, on attitudes and opinions towards the issues of pedestrians and traffic vehicles in Florida Road. An important part of this study has been to summarise and evaluate these results according to different criteria as well as to ascertain the possibilities of implementing a Pedestrianisation scheme and Traffic Calming measures in the Florida Road area. It is necessary to obtain the views of those in the area on the existing situation, in order to make adequate provision for the area in terms of pedestrianisation and traffic calming.

A further important element of this evaluation is to develop a set of criteria for planning the environment in the Florida Road area. It may be useful to conclude with a list of typical criteria as follows: accessibility, safety, comfort, convenience, and attraction.

8.2 ACCESSIBILITY

Whilst all traffic vehicles have access to the road, there is a need for restrictions based on the time of day and type of vehicle. Streets should enable good access to public transport and appropriate parking. The pedestrian network should be accessible to all. Pavements, pathways, and crosswalks should ensure the mobility of all users by meeting the needs of people, such as the young, the elderly, and the physically challenged. Keeping traffic moving should be considered as important as the motion of pedestrians and cyclists.

From the questionnaire survey it is evident that the majority of people were satisfied with the public transport system in the Florida Road area. It can be seen that municipal buses, Mynah buses and mini taxis, meet the needs of the area.

The road network in the Florida Road area is arranged in a regular layout, which is vibrant and active, with vehicles continually moving through the area. There is a large amount of traffic along the road, which consists of private cars, buses, taxis, delivery trucks, motorbikes and other types of traffic. Of these, the dominant users are private vehicles. Some of the negative impressions indicated from the questionnaires are that vehicles travel too fast and that a lack of traffic lights at the major intersections makes crossing the street difficult for pedestrians.

Another concept regards parking shortage. On most days - except during certain periods, such as Saturday and Sunday mornings - the parking capacity considerably exceeds demand. The most problematic parking sites are two clusters, one in the vicinity of Spar supermarket and the other further south, in the vicinity of Steers where there is a concentration of commercial activities and restaurants/take-aways. In addition, parking on the narrow access road and service lanes results in an increased likelihood of accidents and affects the living conditions in the neighbourhood.

From the participant observation and questionnaire survey, it was indicated that people perceive the parking shortage and speeding traffic as the most critical problems in the area. Therefore appropriate management schemes need to be considered in order to enhance the accessibility of the Florida Road area.

8.3 SAFETY

Safety relates to the perception of personal risk and traffic safety in the context of the study area. Firstly, the fear of being hit by a traffic vehicle is a major concern to most pedestrians, who regard high-speed vehicles and failure to control vehicles as the major hazards for traffic safety. Florida Road is straight and wide, creating the potential for speeding traffic vehicles. The lack of crossing walkways also increases the likelihood of traffic accidents. Accident statistics on Florida Road indicate that during 2001, 112 traffic accidents occurred and 17 people were injured. Traffic Calming would therefore be an option for dealing with this problem.

Secondly, people fear the risk of criminal acts if they walk on the streets. This perception of personal risk reflects the fact that members of the public suffer from all types of crime. The questionnaire survey indicated that nearly half of the respondents felt the level of safety to be poor. During the site investigation the researcher also received strong criticisms on the high crime rate, such as street robbery and theft. Inadequate street lighting, parks/open spaces and overgrown vegetation might have a negative impact on personal safety as well. These physical factors will be discussed in the following chapter, when recommending appropriate approaches for reducing or preventing the occurrence of crime.

8.4 COMFORT

Sensation should be within the range of comfort, but different people have different ideas as to what is unpleasant or intolerable. Pedestrians are sensitive to the nature and quality of the environment. If a street or route is unpleasant, it is less likely to be used on a regular basis.

Florida Road offers a pleasant environment for people to live, work or visit in. The residents of the area generally describe the environment as peaceful and quiet. Over sixty per cent of them considered Florida Road a good place to live. However, there was a negative impression from the residents about the commercial activities with regard to parking, noise and safety. Street furniture generally was regarded as positive and satisfactory by more than half the respondents of the questionnaire survey.

It is also necessary to view the problems through the needs of a pedestrian: the lack of traffic lights and crosswalks, the obstruction of sidewalks with litter, the presence of street traders and a fragmented surface texture. These problems negatively affect the pedestrian-friendly environment as well as the quality of the area. Therefore, to achieve a comfortable place for the people to live, work or shop in, pedestrian needs should be regarded as a priority in the planning and design process.

8.5 CONVENIENCE

Streets must offer convenience to pedestrians with a walking scale. The road serves as a public space. It combines a variety of functions: shopping, recreation, restaurants, work and visiting. Florida Road provides various retail shops, offices and restaurants that attract a broad range of customers and clients. The Spar supermarket, corner shops, banks, bars, offices, as well as many restaurants are sprawled along the road alongside remarkable historical houses. This creates an environment of convenience and of visual symbolism. More than seventy per cent of the respondents of the survey rated the area as having good access to shops and services within walking distance. Furthermore, the accessibility of a variety of vehicles and the road network also contributes to the convenience of the area.

Despite the physical barriers mentioned above, the overall impression of Florida Road is that it displays great diversity and convenience for the people. Evidence shows that more and more businesses are moving into the area. This provides an excellent opportunity to redevelop and revitalize the area while also providing for traffic, parking, crime, noise and other physical and social problems.

8.6 ATTRACTION

People should feel attracted to the place which should have a pleasant landscape and a well-equipped infrastructure for different users regardless of age or ability. The pedestrian environment should provide a range of artistic activities, as well as amenities such as open space, status, concerts, markets, and historical elements.

The most remarkable feature of Florida Road is the variety of historically significant dwellings with Victorian and Edwardian styles, which contribute a unique character to the landscape of Durban. More than seventy per cent of the respondents in the survey considered the historical character of the area to be good. The reason can be attributed to the owners and the city council who have made great efforts in the conservation of these old houses. Moreover, the quality of the houses is general high due to recent renovations undertaken by the commercial sector, which has sufficient capital to maintain the buildings. Therefore, the commercial activities can play an important role in the preservation of the historical features in this area.

As discussed earlier, the street furniture, such as sidewalks, street lights, trees and the parks, can enhance the look and feel of the pedestrian environment through better design and efficient management. Retaining a

safe and clean environment also encourages people to be attracted to and return to the area.

8.7 CONCLUSION

Florida Road is a case of a traditional residential area being challenged by commerce, and a new blend of functions needs to be developed for this area. The researcher has measured and monitored existing conditions and the greatest need is to improve conditions for pedestrians, cyclists and motorists.

The people generally enjoy living, working or visiting in the Florida Road area. Most of them indicate that there are some significant features of comfort, convenience and attraction, which meet the various needs of different users and create a people-oriented street. On the other hand, accessibility and safety are the most primary concerns for the people who are not satisfied with factors such as parking, crime and traffic. It would be significant and worthy of attention to look at further development. Evaluation, therefore, can assist in determining the best solution.

CHAPTER 9

RECOMMENDATIONS

9.1 INTRODUCTION

The evaluation of the study area has demonstrated that Florida Road lacks the necessary quality facilities to support pedestrian activities. Based on the conceptual framework and findings from the study, this chapter presents the recommendations of the study, which focus specifically on the possibility of applying a Pedestrianisation scheme and Traffic Calming measures in order to alleviate conflict between pedestrians and traffic vehicles. The more specific issues arising from the findings in this study are outlined below.

Physical Issues

- Speeding vehicles.
- Parking shortages.
- Dangerous intersections.
- Insufficient street lighting and traffic lights.
- Lack of maintenance of sidewalks and the park.
- Lack of clear provision of adequate crosswalks and street furniture.

Social Issues

- Improve safety.
- Co-operation between different stakeholder groups.

To ensure the area is pedestrian friendly and pleasant, several modifications are recommended in the following sections.

9.2 PEDESTRIANISATION SCHEME

A pedestrianisation scheme provides effective services to pedestrians, and enhances the quality of pedestrian facilities in urban and town areas. Good facilities and services make walking more accessible, comfortable, convenient, and safe. An enhanced and safe pedestrian area can also encourage the use and support of an area. The need to address the issues relating to pedestrians in the study area are as follows:

9.2.1 Sidewalks

Sidewalks are essential tools for mitigating traffic impact and for easing pedestrian movement. The sidewalks in Florida Road are generally wide enough to accommodate four people walking abreast in one direction at the same time. Adequate maintenance is necessary for these sidewalks. Trees and street lights on both sides make them distinctive and can enhance visually the linear character of the road. Adequate maintenance should be ensured to achieve proper functional performance after a certain period.

9.2.2 Crosswalks

Crosswalks must be made to help pedestrians cross streets easily and safely. The crosswalks on Florida Road are either ineffective or deficient. In spite of the existing zebra crossing at the intersection of Florida/Gordon Road, at least five crosswalks should be introduced on the street. Preferable crossing points are Florida Road/Holden Avenue (opposite Spar supermarket), Florida/Lambert Road intersection, Florida Road and Tenth/Ninth/Eighth Avenue, which are busy sections of the road due to a concentration of shopping and restaurants. It is necessary to create Zebra crossings or use different materials/textures, as well designed crossing points to assist pedestrians at these points.

9.2.3 Traffic Lights

Traffic lights are regulated and ensure that streets are visible and safe for pedestrians and motorists. The importance of traffic lights is not only to indicate “stop” or “go”, but also to alert the driver to be careful and aware of difficulty and potential danger. Intersections such as Florida Road/Lambert Road need traffic lights in order to signal to drivers and to help pedestrians to cross the street safely.

9.2.4 Street Lighting

Street lighting is a significant element in designing urban environments. Good lighting is needed to encourage the utilisation of public space and improve the area’s visibility and security during evening hours. Florida Road can be characterised as having insufficient lighting. Some lights are also obscured by overgrown trees.

It is acknowledged that good lighting gives a greater sense of security for street users. To reduce potential trouble and danger, the street should be well illuminated. Directional lighting is commonly introduced to prevent the direct glare generated by unshielded high or low intensity lamps. This enables products to be lit and prevents the glare from affecting drivers. In some locations, the light from shops and restaurants is cast onto the street, and this increases the lighting conditions in the area.

9.2.5 Planting

Trees are of great benefit to an urban environment, in that they provide a functional and attractive landscape. The pedestrian-orientated street needs trees to offer vital protection from wind and sun, as well as a physical barrier between pedestrians and traffic vehicles. It is also important to note that most of the plants in Florida Road are exotic (interviewee comments, 2002). A direct consequence of exotic

vegetation is the lack of local birds and insects as well as native fauna. In contrast, indigenous plants attract indigenous species of birds and insects. Thus, more indigenous trees need to be planted along the central part of the road for building up an attractive green area, as well as an integrated ecosystem development.

9.2.6 Park/Open Space

The park which is bordered by Florida Road and Gordon Road is unattractive to the people of Florida Road, although visual permeability may be described as fair and the condition of vegetation fine. Some of the modifications which could be introduced include the installation of play lots and benches for children and their parents. Although two of the interviewees suggested that the park could be altered to a parking lot, the researcher believes that it needs to be retained and maintained. This is because streets are public space and a park is the glue to hold a community together, where everyone has access and do things are vital in walking distance. The wooden fence around the park needs to be removed in order to improve visibility and give a perception of safety, which would encourage the use of the park.

9.2.7 Street Furniture

Well-designed street furniture would also provide a pleasant streetscape. Facilities such as bus stops, seating, kiosk/public telephone, mailboxes, wastebins, public toilets, should be carefully identified and consistently located at adequate sites for building up a pedestrian-friendly street.

Seating

Seating serves as one of the core street furnitures of an urban environment. Benches should be located as needed on a small scale in pedestrian areas. Benches should be introduced in Florida Road on

both sides of the street at regular intervals of approximately 20 to 30 metres. Particular attention should be paid at the bus stops, around the park, and the busy clusters, such as the Spar Supermarket and the Steers. One of the best implementation of seating is that it can be incorporated with raised tree planters, which can become an integral design feature on this street. Seating would allow people, particularly the elderly and the disabled, to rest whilst accessing facilities. This would also promote the social interaction of all people who use these benches.

Bus Stops and Canopies

Bus stops are needed to provide shelters for bus users from sun, wind and rain. A general covering - such as canopies - could increase the movement of pedestrians along Florida Road. These facilities could contribute to the amenities of the street and enhance the comfort of the area. In addition, in order to encourage the use of public transport and for the convenience of people in the area, it is necessary to place bus schedules at the bus stops.

Public Telephones, Mailboxes, Wastebins and Public Toilets

As seen in the study area, the lack of public telephones, mailboxes and wastebins has resulted in functional and visible defects on Florida Road. It is necessary to set up these facilities in order to develop a more attractive and comfortable street environment. In order to provide convenient facilities for the pedestrian, public toilets must not be neglected. Sites to be considered would be the park or the corner of Lambert Road / Florida Road. Chemical toilets and personal charges could be solutions to ensure safe and clean conditions. Neighbourhood associations or the local council should be given responsibility and accountability for the maintenance of these facilities.

9.3 TRAFFIC CALMING MEASURES

Traffic calming is an effective and efficient technique for achieving a safe, comfortable and accessible street environment. Comprehensive traffic calming measures have been discussed in the previous chapter. An important task here is to address the specific issues, which relate to traffic vehicles, raised during the study survey.

In order to create a pedestrian friendly environment, the following traffic calming measures could be applied to the study area (Refer to Map 9.1):

- Improving certain intersections along the road, namely the intersection of Florida/Lambert Road, Florida/Gordon Road, Florida Road and Tenth/Ninth/Eighth Avenue.
- As mentioned earlier, installing zebra crossings at those intersections and opposite to the Spar Supermarket can assist for pedestrians crossing easily and safely.
- Introducing carriageway narrowing and chicanes in the shop and restaurant clusters, viz, between Gordon Road and Eighth Avenue, Holden Avenue and Lambert Road, which can be adopted to reduce vehicle speeds.
- Widening the pavements between Gordon Road and Eighth Avenue, which is where the majority of restaurants are located, to give priority to the safety and convenience of pedestrians.
- Increasing parking sites with angle parking in the vicinity of the restaurants in the area between Gordon Road and Eighth Avenue, Holden Avenue and Lambert Road.



Florida Road

Map: 9.1
 Implementation of
 Pedestrianisation
 and Traffic Calming

Notes:

Carriage way: 3meters
 Parking: 45° angle parking
 & parallel parking

Drawn by:
 Yuan Qionghui

Scale 1:2500

Date: 30/11/2002

The detailed traffic calming measures will be presented in the following sections.

9.3.1 Intersections

As the volume of traffic is much higher at intersections than on regular stretches of road, these areas are important for traffic management. Drivers should be made aware of intersections through changes in road texture and lighting. The traffic lights and street lights need to clearly reveal their functional priority to provide safety to motorists and pedestrians.

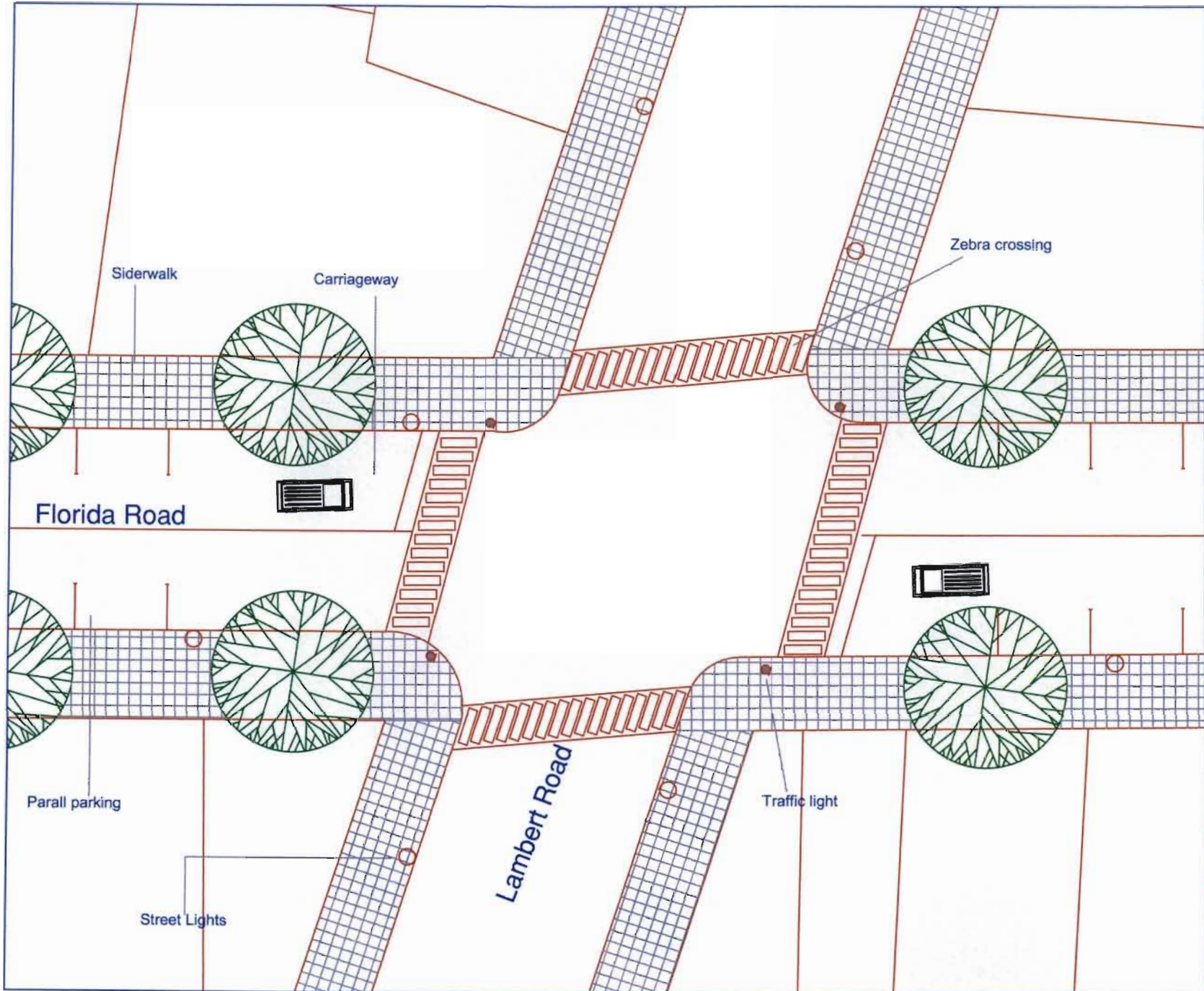
(I) Intersection of Florida Road/Lambert Road

Factors adversely affecting operations at this intersection may be summarised as follows:

- (a) The traffic volumes on Florida Road in peak periods are high and do not permit easy crossing or turning traffic.
- (b) There are no traffic lights.

The following proposal could be adopted for the upgrading of this intersection (Map 9.2).

- A set of traffic lights needs to be installed by the City Engineers Department.
- A zebra crossing or different materials/texture would give priority to pedestrians, and enable them to cross the road safely and conveniently.



Florida Road

Map: 9.2

Intersection of Florida/
Lambert Road

Notes:

- Carriage way: 3meters
- Side walks: 4meters

Drawn by: **Yuan Qionghui**

Scale 1:300

Date: 30/11/2002

(II) Intersection of Florida Road/Gordon Road

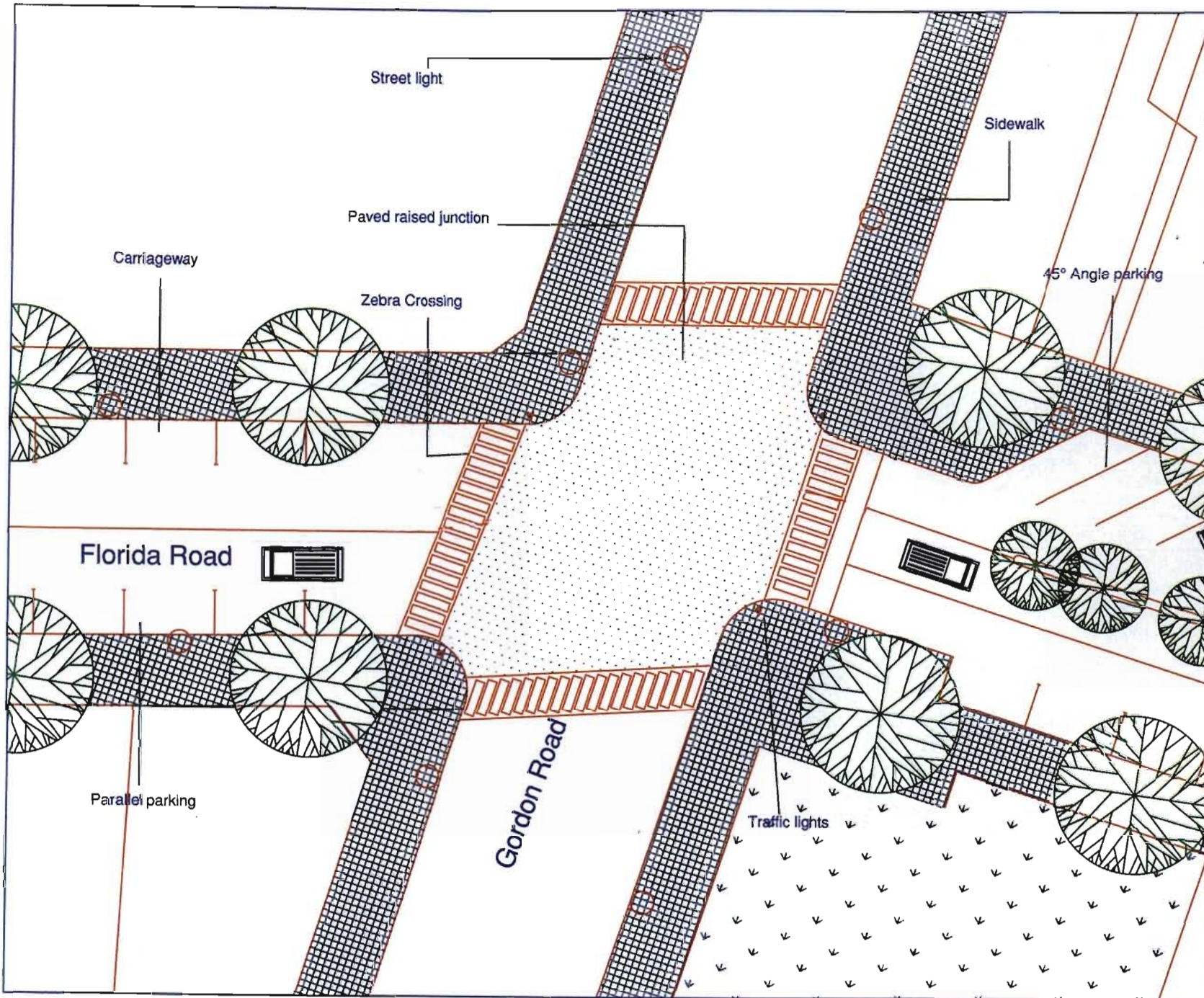
Considering traffic flows and pedestrian movement, existing factors affecting the intersection can be described as follows:

- (a) A short intersection sight distance westwards along Gordon Road, which restricts turning opportunities and causes delays at peak periods.
- (b) The unsuitability of the existing intersection layout for signalisation.

In order to build a pedestrian-oriented street and for better operation of pedestrian and traffic vehicles, introducing a raised junction in the block paving would be a good measure, as it slows traffic down and makes crossing easier for the pedestrians. Furthermore, using different materials or colours such as bricks or purbeck stone, can contribute to making an attractive and pleasant streetscape and urban environment (Map 9.3).

9.3.2 Parking

Parking is a major concern in most mixed land use areas and there is no easy way to deal with the parking problem. Drivers normally attempt to park their vehicles as close as possible to their destinations, such as shops, restaurants, and bars. The commercial activities have resulted in a parking shortage in the Florida Road area. Although there is no perfect solution for solving this problem, increasing parking capacity to meet the demand of the people is a possibility which could be introduced by carriageway narrowing and widening pavements to incorporate into the angle parking on the street.



Florida Road

Map: 9.3

Intersection of Florida/
Gordon Road

Notes:

Carriage way: 3meters

Side walks: 4meters &
3.5 meters

Drawn by:
Yuan Qionghui

Scale 1:300

Date: 30/11/2002

(I) Carriageway narrowing and angle parking

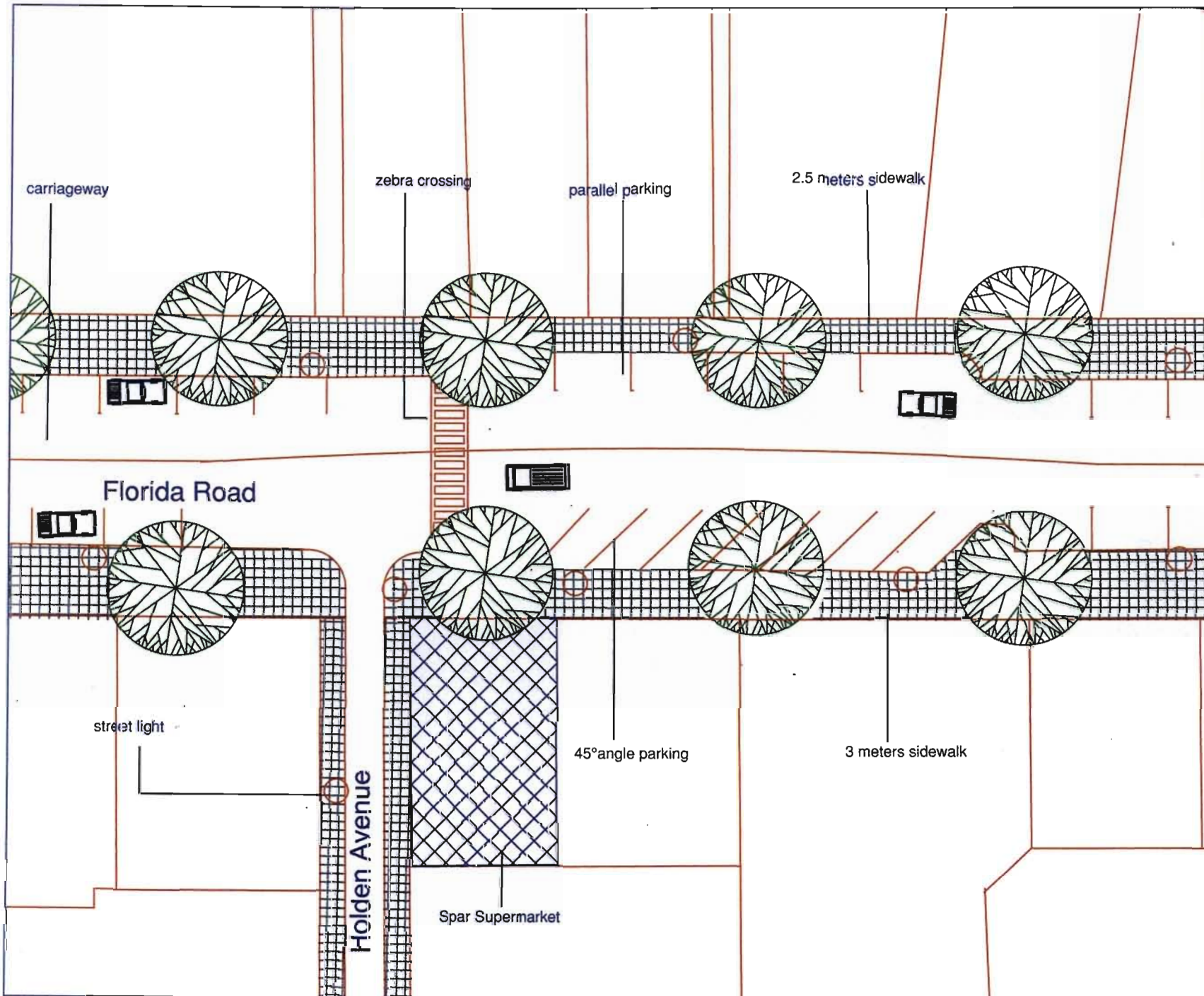
To achieve the aims of controlling speeding traffic vehicles and building up a pedestrian friendly street in Florida Road, in comparison with other techniques, such as introducing a one-way street or street closure, etc, carriageway narrowing could be one of the best tools to keep vehicle speed low.

Partial carriageway narrowing (chicanes) will be considered along Florida Road opposite to the Spar Supermarket. The sidewalk on the east side of the road would be reduced to a two metre width, so two people may walk side-by-side at a time (the minimum width is 1.5 metres). The sidewalk on the west side of the road would be kept to a three metre width as it is close to the Spar Supermarket. Additional parts of the pavement will be required for parking sites, that is 45 degree angle parking on the west side of the road and parallel parking on the east side of the road (Map 9.4).

(II) Widening pavement and angle parking

Widening the pavement is a physical measure of carriageway narrowing which has been widely adopted in town centres and commercial precincts in many countries. In the context of Florida Road, widening the pavement combined with chicanes can support a traffic calming effect. It is therefore suggested that the pavements should be widened to at least seven metres in width on one side of the road. The partial pavement widening will only be considered as follows:

- (a) On the east side of Florida Road between Gordon Road and Tenth Avenue (where there is a concentration of shops and restaurants).
- (b) On the west side of Florida Road between Ninth and Tenth Avenues (where there are some popular restaurants and bars).



Florida Road

Map: 9.4

Carriageway narrowing and angle parking

Notes:

Carriage way: 3meters

Side walks: 3meters & 2 meters

Drawn by:

Yuan Qionghui

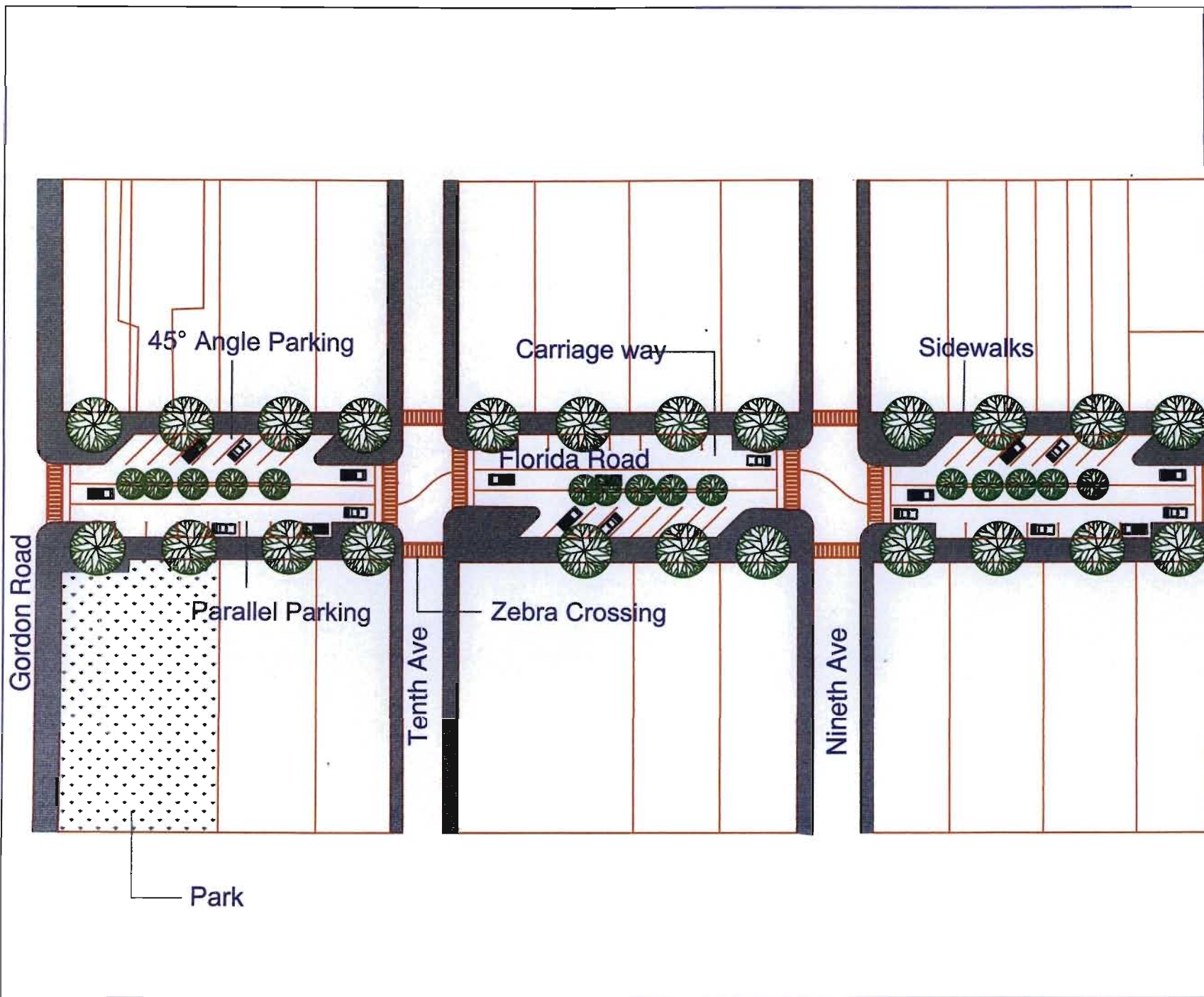
Scale 1:300

Date: 30/11/2002

- (c) On the east side of Florida Road between Eighth and Ninth Avenues (close to some restaurants/take-aways).

The reason for widening the pavement to seven metres in width is to try and increase parking sites at these sections.

Refer to Map 9.5, sidewalks would be kept to a four metre width on one side and three point five metre on the opposite side. So it is easily accommodated more than two people walk side-by-side in one direction at a time. It is important to use special materials such as local stone or bricks to replace the existing worn out materials. This may increase safety and promote liveability, and save money on long run maintenance. Carriageway will be kept to a three metre width on two way directions. Additional parts of the pavements will be required for parking sites, that is 45 degree angle parking and parallel parking on the both sides of the street. In order to obtain a better understanding on applying the traffic calming measures on the road, Map 9.6 presents that a specific portion of widening the pavement and angle parking, which is located between Gordon Road and Tenth Avenue. In addition, effective street lighting and adequate trees will be essential for traffic calming measures and will provide an attractive and visible environment for motorists and pedestrians.



Florida Road

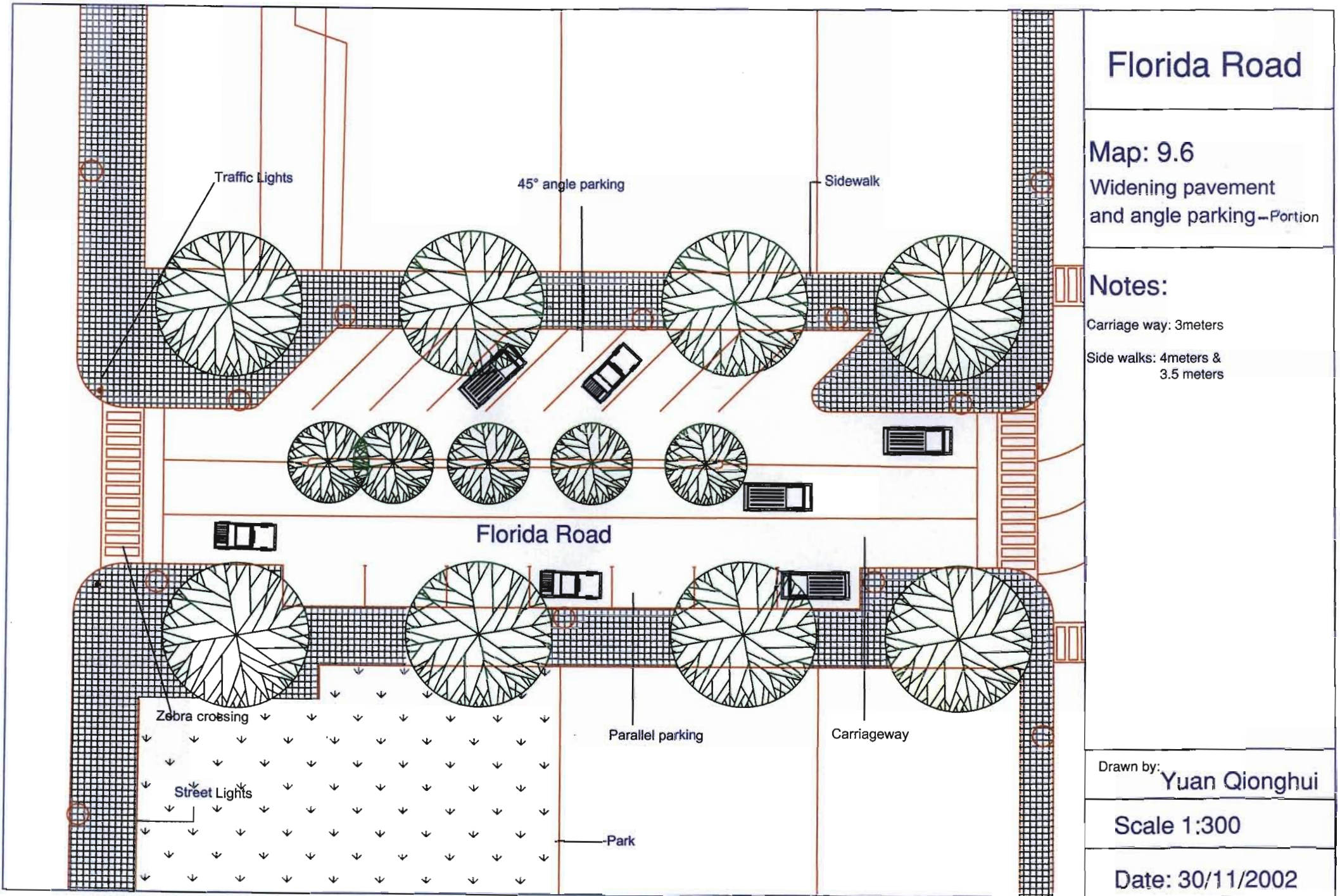
Map: 9.5
 Widening pavement
 & angle parking

Notes:
 Carriage way: 3meter
 Side walks: 4meter &
 3.5 meter

Drawn by: Yuan Qionghui

Scale 1:1000

Date: 30/11/2002



Florida Road

Map: 9.6

Widening pavement and angle parking - Portion

Notes:

Carriage way: 3 meters

Side walks: 4 meters & 3.5 meters

Drawn by: Yuan Qionghui

Scale 1:300

Date: 30/11/2002

9.4 IMPROVE SAFETY

There is great emphasis placed on safety in Florida Road. A pedestrianisation scheme and traffic calming measures would increase traffic safety on the street but the overall picture needs to take into account the urban design for pedestrians as well. It is very important that consistently satisfactory physical security is maintained in careful design and layout. This can help to improve natural surveillance and build up a defensible environment. Guidelines to create a secure street environment are as follows:

- Sidewalks should be open to view and with adequate provision of lighting, to avoid dark corners or hiding places. Vegetation needs to be low and not overgrown to present unobstructed sign lines, especially for trees under two metres high.
- Street lighting is essential to reduce the fear of crime. Lights must be carefully located in order to cover paths and avoid potential danger spots and darkness.
- Parking areas must be grouped and open view. It's strongly suggest that trained car guards can help to prevent the vehicles from being targeted by crime.
- Twenty-four hour security guards can be hired to patrol the area on foot, bicycle or motorbike, with an emphasis on the road. These guards should be paid by residents and the commercial sectors, thereby providing 'hired surveillance' in an attempt to deter vagrants and potential burglars.
- It is important that police patrol in the area, particularly where there is a lot of commercial activities and pedestrian movement. This would increase the protection of the public, especially women

and children, and thereby add to the pursuit of a crime-free environment.

- Closed Circuit Television (CCTV) is a new technology tool with a system of cameras installed to monitor activity on the street for reducing the opportunities for crime. It can be adopted at the major intersections and the commercial clusters in Florida Road. Experiments with CCTV cameras have been undertaken in Durban's CBD. It is evident that this is an effective and efficient tool to build up defensible spaces.

Crime is a serious social tumour affecting public life. Florida Road at least needs to start the first step to crime reduction and building a pedestrian-friendly street. A more radical approach to prevent the occurrence of crime is needed.

9.5 PUBLIC PARTICIPATION

The issue of public participation should be highlighted in this study. It is an essential component in any plan to pedestrianise or apply traffic calming measures. Public participation has the effect of encouraging people to care for and take an interest in the area in which they live, play and work. It can be achieved by community involvement during the planning and decision-making process. Each of the stakeholder groups should therefore play a role in ensuring successful projects and health community development regarding their own versions and particular needs. Some guidelines which can be adopted are as follows.

At present there is no intervention or management in effect in the Florida Road area. "Urban Improvement Precincts" (UIP) could be an association to encourage community interaction and neighbourhood links. UIP can build up close co-operation with different stakeholder groups which includes the resident and commercial sectors. It can deal not only with physical environment problems, such as street lighting

and street cleaning, but also neighbourhood management issues such as security and parking.

Pedestrianisation and Traffic Calming are not in everyone's interests. For instance, the effects of pedestrianisation and Traffic Calming are that there is an immediate impact on traffic- which can negatively affect on trade (interviewee's comments, 2002). However, the medium and long-term benefit could make a great contribution to the turnover of traders in the pedestrianised and traffic controlled areas (Hass-Klau and Crampton, 1998). It is important to have an understanding of the commercial interests, and to create links between the public, private, and other social groups. Considering the number of offices, shops and restaurants on Florida Road, there could be a group focus on 'Business Improvement' or 'Business Against Crime', so that the best community decisions and street designs can be made.

It is necessary to note that good community co-operation can help to establish meaningful management for solving the parking problem in the area. The offices and banks can arrange to make parking available in the evening to the restaurant goers where possible. This is one of the best solutions for releasing the shortage of parking.

It is important to keep the communication channels open, in order to allow people to express their views and receive information relating to pedestrians and traffic issues. This can firstly be achieved by conducting special projects for pedestrians, which is a necessary way of increasing the awareness of planners on pedestrian issues. Secondly, two information boards near the Spar Supermarket and the park need to be erected in order to display notices of neighbourhood watch and community activities. This could act as a defence against crime and reinforce the consolidation of the area.

Information and further research on the needs of pedestrians should be conducted. Seminars, public meetings and workshops could be held for

stakeholder groups to explain how planning and management works by using accessible tools as well as providing opportunities for collecting comments and opinions from the community. This may enhance the active participation of people in the area.

The capital input on the operation could be sourced from residents, offices, shops, restaurants and other stakeholder groups. The local council could also agree to a certain contribution. The funds would be directed towards ensuring a safe, comfortable and attractive environment in this area.

9.6 CONCLUSION

This chapter has outlined a detailed pedestrianisation scheme and traffic calming measures, which could be adopted in the study area. Not all programmes for the implementation of the proposed works may take place at one time, as funding for development is limited. The urgency of specific aspects of the upgrading proposed, in particular sidewalks, crosswalks, traffic lights, and increasing parking sites. Funds need to be collected from commercial sectors, residents, prospective investors, and the local council.

These recommendations comprise physical and social issues, which are important in relation to the needs of the pedestrians in Florida Road and the purposes of planning. It can help to discriminate between alternative solutions. In addition, it must be noted that the above methods are those which contribute to an area's accessibility, safety, comfort, convenience and attraction to enhance the qualities of a pedestrian-oriented environment.

CHAPTER 10

CONCLUSION

Everyone is a pedestrian. Understanding the needs of pedestrians is fundamental when applying urban planning and development programmes and in creating urban environments of better potential. This dissertation has aimed to investigate an application of a Pedestrianisation scheme and Traffic Calming measures to an area of change, namely Florida Road. In order to obtain a more holistic interpretation and understanding of the area, participant observation, questionnaires, and interviews were used as research methods.

After analysing and evaluating the different factors according to the five criteria, viz, accessibility, safety, comfort, convenience, and attraction presented. The significant features of comfort, and convenience and attraction, which can meet the various needs of different users. On the other hand, accessibility and safety are not satisfied by the people. The study thus revealed that there is a need to provide an improved street environment for the pedestrians of Florida Road, through Pedestrianisation scheme and Traffic Calming measures. Particular issues include: traffic speeds, parking shortages, intersection chaos, the quality of street furniture, as well as social issues such as safety and neighbourhood alienation.

Everything starts with the streets, and the need to create a pedestrian-oriented street should be emphasised in urban planning and management processes, as opposed to seeing these areas as spaces left over after a city has been built. This view is adopted here, and as a result the recommendation plan drawn up in this study is an attempt to be rational and integrated. In order to add value to both residents and tenants, and to be more accessible to a variety of users, pedestrian facilities - mainly sidewalks, crosswalks, traffic lights, tree planting and street furniture – needs to be appropriately developed and maintained. To encourage street use and to enhance the quality of urban life, an

attempt must also be made to upgrade the existing physical environment through Traffic Calming measures, such as narrowing carriageways, improving intersections and increasing parking sites.

The research question which seeks to understand the extent to which Pedestrianisation and Traffic Calming will address pedestrian and traffic vehicle related conflicts, and enhance the quality of urban life, is definitely appropriate for Florida Road, due to its potential and significant value. The sub-questions have assisted in answering the main question as well as more enlightening pedestrian needs, which have been fully responded during this study process. It is therefore necessary for making a better, easier and safer walking circumstance for the pedestrians in the Florida Road area.

In accordance with these findings, the research hypothesis has proven correct – the problems of pedestrian and traffic vehicle conflict are related largely to traffic management and urban planning. It has been determined that the approach of Pedestrianisation and Traffic Calming has several contributions to make in terms of building a pedestrian-friendly environment.

Great emphasis is placed on safety in this study. Pedestrianisation and Traffic Calming are effective and efficient forms of decreasing the number of motor vehicle-related accidents and providing a safe environment for pedestrians, particularly children, the elderly and the physically challenged. Furthermore, adequate pedestrian facilities, security patrol and the use of Closed Circuit Television (CCTV) can assist in the achievement of a secure street environment, as well as encourage the utilisation of the public space.

However, Pedestrianisation and Traffic Calming approaches are not magic tools which solve the conflict between pedestrians and traffic vehicles. They have unavoidable constraints. These measures can work successfully, but only in conjunction with other approaches, such

as public participation. Therefore, public participation should be a considerable basic issue in an urban planning and decision-making process. Each of the stakeholder groups - residents, tenants, assistants and other users - should have equal rights involving and working with the local council. The more comprehensive the public participation, the less likely it is that there will be conflict among the different stakeholders concerned. Additionally, traffic management, policies, urban redevelopment, public transport priority, and safety education also play an important role in building up a healthy community and liveable environment.

It is important to ensure that the implementation of a Pedestrianisation scheme and Traffic Calming measures, while improving the street environment within its own boundaries, does not cause problems in nearby streets due to diverted traffic. The importance of conducting further investigation of traffic flows in the Greyville District should therefore be underscored. This could assist in the development of a dynamic urban transport strategy and policy, and could result in forms of urban development that are life enhancing and sustainable.

Another lesson that can be drawn from this study is the role of decentralisation, which has resulted in the spread of commercial activities into residential areas. Florida Road is a case of a traditionally residential area, which has been challenged by commercial activities, which have caused traffic accidents, parking shortage and crime. It is anticipated that this trend will continue in South African cities in the future. On the one hand, it needs to be accepted that the nature of the old residential area is changing to one of mixed use by offices, shops, and restaurants. On the other hand, planners, engineers, political leaders and other stakeholder groups need to understand the reality and devote their efforts to improving urban planning and services.

Many people are beginning to recognise that Pedestrianisation is civilisation and walking is likely to be the major mode of transport in

the future, due to it is sustainable and is efficient in building a healthy community. In order to help achieve this goal, it is necessary to adopt a pull and push approach – or a carrot and stick approach – in order to support it. Pedestrianisation could represent the ‘carrot’; Traffic Calming could represent the ‘stick’. Planners must therefore fully understand the local conditions and place pedestrians (and cyclists) in a priority position. Public transport, such as buses and trams, should be placed second, and private cars third in the urban planning and development process.

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APPENDIX 1: OBSERVATION COUNTS

Observation Post: Florida Road/Lambert Road

Observer: Yuan & Assistants

Date: 16 October 2002

	Pedestrians										Type of vehicles						Note
	Children		Teenage		Young Adult		Mature Adult		Elderly		Bus	Private car	Truck	Taxi	Motorbike	Bicycle	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female							
6:01-6:30							3					60					
6:31-7:00							8		2		2	160		1			
7:01-7:30	1	1		3		3	12	5	1		9	360	3	5	1	1	
7:31-8:00	1			1			26	30	3	2	6	365	8	7	2	2	
8:01-8:30	1	1				9	14	17	16	1	1	10	240	7	8	4	
8:31-9:00		1				2	8	13	15	4	3	7	215	6	3	5	
9:01-9:30	2	1				2	4	12	17	2	3	3	225	6	4	8	
9:31-10:00						7	8	16	13	1	2	4	163	8	4	7	1
10:01-10:30	1	1				3	5	17	21	7	3	5	183	7	4	4	
10:31-11:00		3				1	5	11	14	5	7	7	140	6	5	6	
11:01-11:30		2				1	4	11	15	4	5	6	198	8	6	4	
11:31-12:00	1	1		1		3	6	12	13	3	2	4	235	9	4	6	
12:01-12:30	1	1	1			4	7	13	14	3	3	7	260	12	5	10	1
12:31-13:00	1	1		1		4	5	11	15	2	2	5	217	10	4	7	
13:01-13:30	1	4	3	2		3	11	15	13	2	4	6	213	6	4	8	2
13:31-14:00		1	2	1			3	6	10	2	2	3	160	7	4	5	
14:01-14:30	3	3	2	3		3	5	9	15	2	2	6	163	4	5	8	
14:31-15:00	3	6	1	4		8	4	17	28	1	3	9	230	8	9	9	2
15:01-15:30	1	3	5	4		4	6	20	32	3	4	8	233	7	6	10	1
15:31-16:00	1	1	5	2		3	2	24	18	5	4	7	180	9	6	7	1
16:01-16:30		2	1	1		7	8	58	36	4	3	6	258	3	6	4	4
16:31-17:00		1	3			12	7	28	14	5	1	6	360	5	5	4	2
17:01-17:30			3	1		6	17	13	16	5	1	12	253	3	5	3	1
17:31-18:00	1	1	4	1		2	4	23	13	3	1	7	165	1	5	2	1
18:01-18:30				1		5		37	26			3	195	1	4	2	2
18:31-19:00	2	3		1				12	29			3	210		2	1	2
19:01-19:30		1	1			3		20	10		2		225		1	1	2
19:31-20:00			2	1		2	1	24	10		1		145		2	1	
20:01-20:30		1	2	1		2	4	7	3				185				1
20:31-21:00						3	8	5	6		1		180				
21:01-21:30								2					150				
21:31-22:00						2	1	15					150	1			
22:01-22:30							2	4	3				185		1	3	
22:31-23:00								3	1				165		1		
Sub Total	21	40	35	29	101	152	524	473	68	62	151	7026	145	126	132	26	
Total										1505							7580

APPENDIX 2: THE RESIDENTS QUESTIONNAIRE

Pedestrianisation and Traffic Calming in Florida Road

Residents Questionnaire

Hello, my name is **Yuan Qionghui**. I am a master student at University of Natal working on a survey of Florida Road to find out information on pedestrian and traffic issues. I would appreciate your opinions on some questions I have here. (Please cross-where appropriate)

Section A: Personal Particulars

1. Gender

Male

Female

2. Race

Black

White

Indian

Coloured

Other

3. Age

< 19

20-34

35-50

51-65

65+

4. Occupation

Office/shop assistant

Self-employed

Housewife

Student

Industrial worker

Unemployed

Retired

Other Please specify: _____

5. Education

Std 8 or less

Std 10/Grade 12

Technikon

University

Other

Please specify: _____

Section B: Residence

1. How long have you lived at your present address?

- | | | | |
|----------|--------------------------|-----------|--------------------------|
| < 1year | <input type="checkbox"/> | 1-2years | <input type="checkbox"/> |
| 3-5years | <input type="checkbox"/> | 5-10years | <input type="checkbox"/> |
| 10+years | <input type="checkbox"/> | | |

2. In the time that you have lived in the area, have you noticed a change in the overall appearance of your area?

- | | | | |
|--------------|--------------------------|----------|--------------------------|
| Unchanged | <input type="checkbox"/> | Improved | <input type="checkbox"/> |
| Deteriorated | <input type="checkbox"/> | | |

In which way has it changed(Improved/Deteriorated)?

3. Have you ever considered moving to another area?

- | | | | |
|-----|--------------------------|----|--------------------------|
| Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
|-----|--------------------------|----|--------------------------|

➤ If not, what do you like most about this area?

➤ If yes, what are the worst things about this area?

Section C: Use of area

1. How often do you make use of the parks/open spaces in the area?

- | | | | |
|--------|--------------------------|--------|---|
| Daily | <input type="checkbox"/> | Weekly | <input type="checkbox"/> |
| Seldom | <input type="checkbox"/> | Other | <input type="checkbox"/> Please specify:_____ |

2. Do you walk around the Florida Road area?

- | | | | |
|---------------|--------------------------|--------|---|
| If yes, Daily | <input type="checkbox"/> | Weekly | <input type="checkbox"/> |
| Seldom | <input type="checkbox"/> | Other | <input type="checkbox"/> Please specify:_____ |

3. Do you run/exercise (cycle) in this area?

If yes, Daily Weekly
Seldom Other Please specify: _____

How much time do you spend generally on this activity during the day?

<5 minutes 5 minutes-15 minutes
15 minutes-30 minutes 30 minutes-60 minutes
60 minutes+

4. Are you satisfied with the following pedestrian facilities as it is now?

Sidewalks	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Street lighting	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Traffic lights	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Trees	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Crosswalks	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

If not, what needs to improve them/ what specific facilities will be need?

5. Do you feel it is comfortable/ safe when walking on Florida Road?

Yes No
If not, why?

6. Which of the following do you experience difficulties with?

Traffic congestion
Lack of parking space
Vehicles travel too fast
Traffic noise
Dirty street/pavement
Traffic signs
Other? Please specify: _____

Section D: Perception of Area

How would you rate the following features of your community?

	Very Good	Good	Neither Good nor Bad	Bad	Very Bad
Access to shops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public transport system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A good place to live	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Historical character of the area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section E: Overall Comments

1. How would you enhance the living quality of the area, what would you suggest?

Limit traffic speed	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
One-way street	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Lane-width reduction	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Increasing parking on the street	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Widening sidewalks	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Bike lane	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Tree planting	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Seating	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Shelter	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Kiosk/Public telephone	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Play spaces/parks	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Provision of toilets	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Conservation of old houses	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

Other? Please specify: _____

2. Are there any other things that need to be done that would improve things for this area?
(Comments/ suggestions)

Name: _____

Date: _____

Address: _____

Thank you for your time and co-operation.

APPENDIX 3: THE TENANTS / ASSISTANTS QUESTIONNAIRE

Pedestrianisation and Traffic Calming in Florida Road

Tenants/Assistants Questionnaire

Hello, my name is **Yuan Qionghui**. I am a master student at University of Natal working on a survey of Florida Road to find out information on pedestrian and traffic issues. I would appreciate your opinions on some questions I have here. (Please cross-where appropriate)

Section A: Personal Particulars

1. Gender

Male Female

2. Race

Black White

Indian Coloured

Other

3. Age

< 19 20-34

35-50 51-65

65+

4. Occupation

Office/shop assistant Self-employed

Housewife Student

Industrial worker Unemployed

Retired Other Please specify: _____

5. Education

Std 8 or less Std 10/Grade 12

Technikon University

Other Please specify: _____

Section B: Use of area

1. .What is your business/work? Please state: the type of business _____
the name _____
Address _____

2. How long have you engaged in it in Florida Road?

- Less than 1year 1-5 years
More than 5 years

3. Do you walk around the Florida Road area?

- If yes, Daily Weekly
Seldom Other Please specify:_____

4. Do you run/exercise(cycle) in this area?

- If yes, Daily Weekly
Seldom Other Please specify:_____

How much time do you spend generally on this activity during the day?

- <5 minutes 5 minutes-15 minutes
15 minutes-30 minutes 30 minutes-60 minutes
60 minutes+

5. Are you satisfied with the following pedestrian facilities as it is now?

- | | | | | |
|-----------------|-----|--------------------------|----|--------------------------|
| Sidewalks | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Street lighting | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Traffic lights | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Trees | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Crosswalks | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

If not, what needs to improve them/ what specific facilities will be need?

6. Do you think it is comfortable/ safe when walking on Florida Road?

- Yes No

If not, why?_____

7. Which of the following difficulties have an impact on your business?

- Traffic congestion
- Lack of parking space
- Vehicles travel too fast
- Traffic noise
- Dirty street/pavement
- Traffic signs
- Other? Please specify: _____

Section C: Perception of Area

How would you rate the following features of your community?

	Very Good	Good	Neither Good nor Bad	Bad	Very Bad
Access to shops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public transport system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A good place to live	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Historical character of the area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section D: Overall Comments

1. If you would improve the business opportunities of the area, what would you suggest?

- Limit traffic speed Yes No
- One-way street Yes No
- Lane-width reduction Yes No
- Increasing parking on the street Yes No
- Widening sidewalks Yes No
- Bike lane Yes No

Florida Road Questionnaire

Tree planting	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Seating	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Shelter	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Kiosk/Public telephone	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Play spaces/parks	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Provision of toilets	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Conservation of old houses	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Other?	Please specify: _____			

2. Are there any other things that need to be done that would improve things for this area?
(Comments/ suggestions)

Date: _____ Name: _____

Thank you for your time and co-operation.

APPENDIX 4: THE USER NEEDS QUESTIONNAIRE

Pedestrianisation and Traffic Calming in Florida Road

User Needs Questionnaire

Hello, my name is **Yuan Qionghui**. I am a master student at University of Natal working on a survey of Florida Road to find out information on pedestrian and traffic issues. I would appreciate your opinions on some questions I have here. (Please cross-where appropriate)

Section A: Personal Particulars

1. Gender

Male

Female

2. Race

Black

White

Indian

Coloured

Other

3. Age

< 19

20-34

35-50

51-65

65+

4. Occupation

Office/shop assistant

Self-employed

Housewife

Student

Industrial worker

Unemployed

Retired

Other Please specify: _____

5. Education

Std 8 or less

Std 10/Grade 12

Technikon

University

Other

Please specify: _____

Section B: Use of area

1. where do you live? Please state the suburb/district: _____

2. How long does it take you from home to here?

Minutes: _____

What form of transport did you use? _____

3. What do you do most often when you are here?

- | | | | |
|------------|--------------------------|--------------------------------|--------------------------|
| Work | <input type="checkbox"/> | Shopping | <input type="checkbox"/> |
| Restaurant | <input type="checkbox"/> | Recreation | <input type="checkbox"/> |
| Visiting | <input type="checkbox"/> | Other <input type="checkbox"/> | Please specify: _____ |

4. How often do you make use of the parks/open spaces in the area?

- | | | | |
|--------|--------------------------|--------------------------------|--------------------------|
| Daily | <input type="checkbox"/> | Weekly | <input type="checkbox"/> |
| Seldom | <input type="checkbox"/> | Other <input type="checkbox"/> | Please specify: _____ |

5. Do you walk around the Florida Road area?

- | | | | |
|---------------|--------------------------|--------------------------------|--------------------------|
| If yes, Daily | <input type="checkbox"/> | Weekly | <input type="checkbox"/> |
| Seldom | <input type="checkbox"/> | Other <input type="checkbox"/> | Please specify: _____ |

6. Do you run/exercise(cycle) in this area?

- | | | | |
|---------------|--------------------------|--------------------------------|--------------------------|
| If yes, Daily | <input type="checkbox"/> | Weekly | <input type="checkbox"/> |
| Seldom | <input type="checkbox"/> | Other <input type="checkbox"/> | Please specify: _____ |

How much time do you spend generally on this activity during the day?

- | | | | |
|-----------------------|--------------------------|-----------------------|--------------------------|
| <5 minutes | <input type="checkbox"/> | 5 minutes-15 minutes | <input type="checkbox"/> |
| 15 minutes-30 minutes | <input type="checkbox"/> | 30 minutes-60 minutes | <input type="checkbox"/> |
| 60 minutes+ | <input type="checkbox"/> | | |

7. Are you satisfied with the following pedestrian facilities as it is now?

- | | | | | |
|-----------------|-----|--------------------------|----|--------------------------|
| Sidewalks | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Street lighting | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Traffic lights | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Trees | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Crosswalks | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

If not, what needs to improve them/ what specific facilities will be need?

8. Do you think it is comfortable/ safe when walking on Florida Road?

Yes No

If not, why? _____

9. Which of the following do you experience difficulties with?

Traffic congestion

Lack of parking space

Vehicles travel too fast

Traffic noise

Dirty street/pavement

Traffic signs

Other? Please specify: _____

Section C: Perception of Area

How would you rate the following features of your community?

	Very Good	Good	Neither Good nor Bad	Bad	Very Bad
Access to shops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public transport system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A good place to live	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Historical character of the area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section D: Overall Comments

1. If you would improve the quality of the area, what would you suggest?

- | | | | | |
|----------------------------------|-----|--------------------------|----|--------------------------|
| Limit traffic speed | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| One-way street | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Lane-width reduction | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Increasing parking on the street | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Widening sidewalks | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Bike lane | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Tree planting | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Seating | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Shelter | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Kiosk/Public telephone | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Play spaces/parks | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Provision of toilets | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| Conservation of old houses | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

Other? Please specify: _____

2. Are there any other things that need to be done that would improve things for this area?
(Comments/ suggestions)

Date: _____

Name: _____

Thank you for your time and co-operation.

APPENDIX 5: INTERVIEW QUESTIONS

INTERVIEW

Key Questions:

1. Could you please tell me what is your responsibility/knowledge/understanding in respect of Florida Road?
2. What do you think of Florida Road from your point of view (transport planning, urban design, transport consultant)?
3. What difficulties have you found, if any, between pedestrians and traffic vehicles? Is that at particular places of Florida Road?
4. Is there any plan for the better accommodation of traffic vehicles, pedestrians, parking and to enhance the living quality in this area? Please explain what information you have, e.g. objectives, data collection, challenges/ difficulties, evaluation, and the consequence.
5. What do you think of the application of Pedestrianisation and Traffic Calming measures to this area?-- Such as Limit traffic speed, One-way street, Lane-width reduction, Increasing parking on the street, Widening pavement, Bike lane, Tree planting, Seating, Shelter, Kiosk/Public phone, Play spaces/Parks, Provision of toilets.
6. Are there any other comments that would improve things for this area that you want to add?

Data:

Interviewee:

Thanks for your time and co-operation.

APPENDIX 6: PHOTOGRAPHS



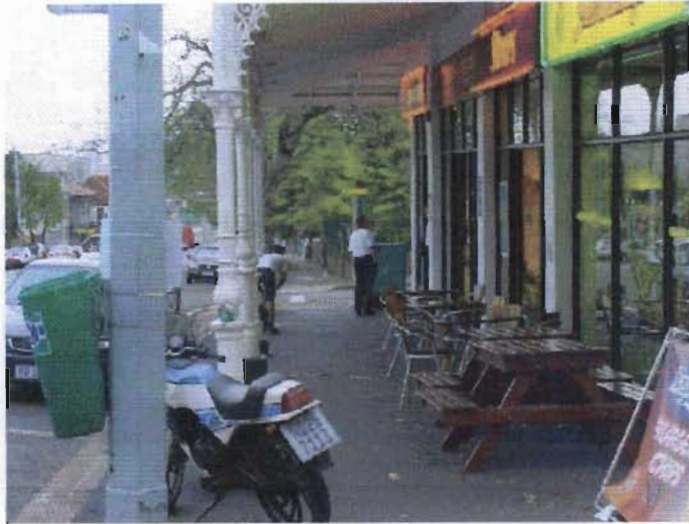
Two storied hotel, originally a house with articulated front veranda.



Single storied house of the Edwardian period.



An exclusive parking site.



Insufficient space for pedestrian movement.



The parking of car on the sidewalk obstructed pedestrian flows.



The lack of crossing point outside of the Spar Supermarket.