THE CAPE TOWN BICYCLE MASTERPLAN

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ABSTRACT

The Bicycle Masterplan came to being as Volume 8 Minor Transport Systems in the 1980-1985 Transport Plan. It made the statement that "the most likely future scenario with a large population, decreasing wealth and a high fuel price, makes it very important to exploit the bicycle and pedestrian system.

In general it was concluded that the following bicycle facilities are needed and would be beneficial to the metropolitan transport system.

1. The establishment of a plan for a Metropolitan Bicycle System comprising cycleways supported by a feeder system of cycle tracks and cycle lanes.
2. The provision of secure bicycle parking at railway stations.
3. The planning of a first stage implementation scheme."

The development of a system of routes in the Claremont, Newlands and Rondebosch around the number of schools in the area was a pilot project that included lock-up facilities at rail stations along the southern suburbs rail line.

During 2005 the Mobility Strategy, a joint strategy between the Western Cape Government, Department of Transport and Public Works and the City of Cape Town was developed. This strategy is formed around the concepts of "Putting Public Transport, People and Quality of Life First" and involves integrating all modes of public transport including non-motorised transport which includes cycling.

Chapter 7 of the City of Cape Town Integrated Development Plan (2005/06) has Access and Mobility as one of the key programmes. The implementation of low-cost mobility initiatives in the form of cycle and pedestrian facilities and linkage to public spaces is priorotised.

1. THE 1980-1985 TRANSPORT PLAN

Introduction to Minor Transport Systems was included in Volume 8 of the 1980-1985 Transport Plan. (City of Cape Town, 1979)

While the overall transport system of Metropolitan Cape Town, as in most western cities, comprises three major modes, namely, the highway system, the railway system and the bus system, there are two minor transport modes which play an important part in the overall movement system of the city. These are the bicycle system and the pedestrian system.

Some objectives which relate to the non-motorised transport mode in the 1980-1985 Transport plan were:

- to improve the mobility of the transport disadvantaged (eg. The young and the old, the infirm, the handicapped and the poor).
- To keep the real cost of transportation to a minimum and within the affordable limit of captive users.
- To increase non-user benefits.
- To conserve energy resources

It is obvious that the bicycle and pedestrian have limitations on their own as a means of transport and can only be fully exploited if they form part of an overall balanced transport system.

There is no single or specific optimum transport mode for distances between 0.5 and 5 kilometres, this distance range is capable of being effectively served by car, bus, bicycle and walking.

The conclusions in this document were the following:

The potential for substantially increased bicycle usage probably exists only for certain trip purposes. The dangers inherent in using the existing street system for bicycle usage are self-evident and, in the author's opinion, are major contributory factors to present day low bicycle usage. Separate bicycle facilities, while providing the necessary infrastructure for bicycle usage, will not by themselves result in substantial bicycle usage. The general public must be made aware of the attributes of various transport mode options available and, if significantly increased bicycle usage is to be achieved, considerable publicity must be given to the advantages of the bicycle generally and of bicycle facilities specifically in order to change public attitude to the bicycle.

1.1 The Bicycle Masterplan

The Bicycle Masterplan is made up of a number of sub-metro plans, some completed and detailed below, and some still to be completed. The first plan that was drawn up was included in the 1980-1985 Transport Plan and was only for the then City of Cape Town area stretching from the CBD in the north to Muizenberg in the south, the mountain range in the west and Phillippi in the east.
The plan indicated a network of Class 1 regional cycle ways that included lock-up facilities at stations.

In general it was concluded that the following bicycle facilities are needed and would be beneficial to the metropolitan transport system.

- The establishment of a plan for a metropolitan bicycle system comprising cycle ways supported by a feeder system of cycle tracks and cycle lanes.
- The provision of secure bicycle parking at railway stations.
- The planning of a first stage implementation scheme.

Investigations show that a system of bicycle paths should be developed which could expand to meet metropolitan needs.
Cycle Ways located on separate right-of-ways, which would link the central city area with various suburbs across the city, should form the basic framework. This then resulted in a Demonstration Project which is detailed below.

2. CAPE TOWN DEMONSTRATION PROJECT

The main aspects of the Bicycle Demonstration Project can be summarised as follows:

- A network of bicycle paths in the Rondebosch/ Newlands/ Claremont area – to cater mainly for schools.
- Bicycle paths along 13km of Lansdowne Road to cater mainly for adult commuters.
- Bicycle parking requirements.
- Standards for signs, markings and signals. (City of Cape Town, 1991)

Four classes of bicycle paths were recognised and signs, markings and traffic signals developed.

Bicycle parking facilities are essential if this mode of transport is to be encouraged. Short and long-term parking needs were addressed resulting in 3 classes of parking being developed.

Probably the most important lessons learnt from this project are the various guidance standards that emerged as the project developed. Signs giving regulatory, warning or information instruction were refined after lengthy discussions and erected along all bicycle paths.

Road Markings (whether lines, symbols or arrows) have been used very successfully to channel traffic movements and keep bicycles separated from general traffic.

Bicycle traffic signals are based on European standards and have been developed to operate only on demand and in conjunction with pedestrian signals.

The combination of signals, markings and signs are extremely important at intersections, as these crossing points are the danger areas for cyclists.

The overall conclusion is that this bicycle demonstration project has been a success in that it has increased scholar and adult cyclists safety, contributed to increased ridership in the area and greatly enhanced the understanding of bicycle facility planning.

Since the Demonstration Project various studies have been completed which has resulted in the original Bicycle Masterplan being added to and more bicycle projects being implemented. The following details some of the studies completed.

3. KHAYELITSHA BICYCLE STUDY

This study was done to provide local connections in Khayelitsha to the metropolitan bicycle masterplan. The reason that this planning was done in Khayelitsha was to support the Shova Kalula project, initiated by the National Department of Transport (NDOT). While the focus is on the Harare area of Khayelitsha, a wider network was also presented. (City of Cape Town, 2002)

From a transportation perspective, Khayelitsha has a mature network of roads, offering good accessibility and mobility to the community. However, much of this network is aimed at motorised transport, which caters for both public transport, as well as the private vehicle.

The approach to this study has been to investigate the existing road network and land- uses, and thereby fully understand the opportunities and constraints facing the implementation of a bicycle route within Khayelitsha.

Khayelitsha has numerous community facilities such as schools, clinics and libraries etc. which community members might visit on a regular basis. If the use of bicycles can be successfully promoted, it is these institutions that could generate desire lines of bicycle travel on a regular basis.

It is important to note that the 'green belt' areas provide excellent linkages for all the community for walk trips to and from schools, public transport facilities and the local workplace. There is an informal network of footpaths through this green belt, alongside existing recreational facilities, and to and from the residential neighbourhoods which clearly permit community interaction. While these pedestrian linkages at this current stage are frequented rarely by bicycles, there is a great opportunity to extend their use to the bicycle.

The aim of the Khayelitsha bicycle route network is to be complementary to the metropolitan bicycle network. In this regard, the currently designated scenic routes of the Cape Metropolitan Area offer natural cycle routes and the main numbered routes offer a network of roads that cyclists may use, although it is important to ensure personal safety and security wherever possible. Cycle routes within Khayelitsha will form the next 'layer' down from the general metropolitan cycle routes.

The nature of a dedicated bicycle lane requires a certain discipline by all road users, if the cyclist is to be able to utilise the facility, confident that his 'space' remains secure and safe. Bicycle routes would be a new concept within Khayelitsha and the current informal use made of the road reserve suggests a likelihood that any such 'bicycle dedicated lanes' could be abused by alternative uses such as for public transport lanes, parking, minibus taxi drop-off and pick-up points or even for over-taking purposes. It remains a concern that if cycle routes were to be demarcated along the road and the number of cyclists remains low, drivers will use the bicycle lane with little thought or care for an infrequent cyclist.

Due to these reasons, it is suggested that the introduction of cycle routes throughout Khayelitsha should be 'demand driven' rather than 'supply driven'. By this, it is meant that an increased use of bicycles should drive the need to provide infrastructure. The

pilot project for the Harare area, should proceed any general introduction of cycle routes or facilities throughout Khayelitsha.

The suggestions contained in the report are offered as a careful encouragement to increased bicycle use. Safety needs should dominate any future implementation, however, and the initiative of BEN should be promoted and encouraged to increase cycle use and return a visible increase of bicycles on the roads within Khayelitsha.

A project along the green belt, approx. 3.5km long has been recently constructed.

4. THE BERGVLIET, MEADOWRIDGE AND TOKAI BICYCLE STUDY

The objective of the study was to determine if there was a need for a bicycle path network in the study area, to identify potential routes and problem areas, and to present proposals for a bicycle network masterplan. (City of Cape Town and Western cape regional services Council 1992)

The metropolitan ideal is to ultimately have an interlinking bicycle network to all these areas, which can then be further expanded.

The objective of the study was to determine if there was a need for a bicycle path network in this area, to identify potential routes and problem areas, and to present proposals for a bicycle network masterplan.

Data collection was required for the following:
to establish the number of cyclists using the roads
to establish the number of potential cyclists
to identify the desired travel patterns
to establish conflict points that are causing problems
to identify cycle route possibilities

A network of bicycle routes was proposed and some aspects implemented.

5. THE BLAAUWBERG STUDY

A comprehensive cycle path network was developed that caters for all categories of cyclists that include recreational, cyclo-tourist, primary school, secondary school commuter, sports racing and utility cyclists. (Report on Cycle Path Network Blaauwberg 2002)
The development of a cyclepath network for the then Blaauwberg Administration began several years ago when it was decided to improve the safety of children cycling to the numerous schools in the Table View Area. Over time the project expanded considerably with the aim of developing a comprehensive and integrated cyclepath network for the entire Blaauwberg Area.
The objectives of the study are as follows:

- To identify and establish bicycle routes for the commuting of school children and other cyclists.

- To encourage the use of these routes amongst all communities for commuting and recreational travel.
- To improve the safety of cycling by reducing the number and severity of conflict points between motor vehicles, bicycles and pedestrians.
- To actively promote the use of the cycle paths amongst school children and other target groups.
- To educate cyclists in the basic rules of traffic and the safe use of the facilities provided.

The study sought to identify all possible attractions and destinations that could be accessed by bicycles. This includes schools, libraries, shopping centres, sports fields, public parks, beaches, nature areas, theme parks, public transport facilities and concentrations of employment opportunities.

The route planning makes use of the existing road network as the base for establishing the cyclepath network. Wherever possible, the cyclepaths follow the existing road alignment.

The cyclepath network is made up of a series of public roads that are collectively deemed to be suitable for the implementation of cyclepaths. The network in turn consists of certain components that are of metropolitan significance and hence are illustrated by the Metropolitan Bicycle Route Masterplan. The remainder of the cyclepaths are of a local nature and of relevance to the Blaauwberg study area only. The Metropolitan Bicycle Route Masterplan could be considered to be the backbone of the network with the local area road network integrating with the planned network into a continuous and comprehensive network.

The planned cyclepath network for the Blaauwberg area consists of some 350km of potential cyclepaths that is well integrated

6. THE ATHLONE STUDY

The cycle plan was developed after a thorough study of the road layout in Athlone and neighbouring suburbs, all road improvements being undertaken or envisaged and the location of all schools in the area. The aim was to establish a network of bicycle paths which would improve safety for scholar cyclists and have the added advantage of improving facilities for commuter cyclists. (City of Cape Town, 1988)

Although not many cyclists were observed in Athlone and on surrounding streets, bicycle ownership amongst scholars was established at 27%. To encourage scholars to make more use of an efficient mode of transport, bicycle paths as proposed in the above report need to be established to enhance safety. Safe lock-up facilities at schools are also required.

7. THE KLIPFONTEIN ROAD CORRIDOR BICYCLE NETWORK

NMT Planning along the Klipfontein Corridor argued that NMT, walking in particular, is a daily and basic activity that all people from all walks of life are engaged in and for that reason deserves to be prioritised above (but not compromise) motorised transportation. (Provincial Government: Western Cape and the City of Cape Town, April 2004)
Principles of access, equity and sustainability form the key foundations for NMT planning along the Klipfontein Corridor.

Access refers to the principle of catering for the person on foot first before other modes, to gain access to urban opportunities.
Equity refers to the principle of providing equitable access to opportunities offered by the city and urban environment.
Sustainability refers to social, economic historic and environmental endurance of the city's structure and fabric as well as its people.

The National Department of Transport promoted bicycles by way of the Shova Kalula project, a nationwide initiative launched in Khayelitsha in 2002. This should see bicycles becoming a significant presence on the road system in the future. The relatively new National Land Transport Transition Act has made it necessary for transport planning to acknowledge NMT.

The COCT and the PGWC are involved in a joint initiative to implement a mobility strategy for the City of Cape Town. This mobility strategy will have public transport, non-motorised transport and the creation of improved public environments as key components.

The brief of the NMT study along the Klipfontein Corridor is:

- to address the policy gap in the current transport policy;
- to address the need for mobility improvements through the provision of NMT infrastructure and traffic calming measures;
- to emphasise the need for Sustainable Transport through investment in Low Cost Mobility;
- to formulate a clear long term low cost mobility strategy and appropriate integrated policy interventions for city-wide to local level for NMT.

The corridor was divided into five areas with a coordinating team to put the final report together. The draft NMT Integrative Framework for the Klipfontein Corridor has been determined using both a micro (bottom up) and macro (top down) analysis and conceptual planning. The five area teams collected, prepared and interpreted 13 layers of detailed local area data, which was used to establish a local area NMT conceptual network, plan for each area (bottom up approach). The NMT Integrative Framework for the corridor, highlighting strategic routes, which had the potential to achieve urban restructuring and integration of communities or local areas, was then established (top down approach).

7.1 The Integrative Network

The Integrative Network consists of routes that are considered to have potential to facilitate integration of the City in the long term. They are either existing or potential activity seams where surveillance levels are high and economic and social opportunities abundant.
The local area and integrative networks in combination facilitate the following:
The movement of children to crèches, education, sport and recreation facilities and amenities along routes that are comfortable, safe and fun to walk/ cycle along.
Movement in the off-peak periods, for those doing shopping ,etc.
The movement of employed persons using public transport on a daily basis along routes those are comfortable, safe, convenient and provide opportunities for social and economic interaction.
In the long-term, a more efficient public transport network allowing al users including the disabled to access opportunities across the City, using a combination of rail, mini-bus taxi, bus, cycle and foot.

8. THE NON-MOTORISED TRANSPORT STRATEGY

8.1 Background

The Metropolitan Bicycle Master Plan was developed on the bases of connecting potential bicycle trip generators and attractors such as tourism sites, scenic routes, residential communities, places of work and strategic facilities around Cape Town through a metropolitan bicycle network. The Metropolitan Bicycle Master Plan is a dynamic plan that adjusts as local area networks are developed. It complements existing bicycle planning in local areas and forms an important consideration and guide in the development of local area bicycle planning where it does not exist. (City of Cape Town, October 2005)

The Pedestrian Safety Plan was also developed by the City of Cape Town in response to the high pedestrian casualty rates. Areas were identified for pedestrian safety interventions and these were also considered in the development of the NMT Master Plan.

8.2 NMT Strategic Plan

The Metropolitan Bicycle Plan and the Pedestrian Safety Plan was used as informants to develop the City of Cape Town Strategic NMT plan. This Strategic NMT Plan aims to identify strategic locations/ areas in Cape Town where NMT should be prioritized. The Strategic NMT Plan highlights the areas with NMT priority, which also comprises strategic nodes with Cape Town favouring NMT use and the Metropolitan Cycle Master Plan.
The Strategic NMT Plan is shown in the document. This plan is only developed at a strategic level and does not include focus areas at local community/ neighbourhood levels. The NMT priority areas at neighbourhood levels should be developed through the development of local area NMT network plans. The NMT Strategic Plan forms a framework for the development of local area NMT network plans. It should be a dynamic plan that is guided by the development of the local area NMT network plans.

8.3 Areas with NMT priority

Areas with intense people concentration and that require a more human-scaled environment to function successfully, should be prioritised for NMT. These areas include Public Transport Interchanges, tourist attractions/recreational areas, school priority zones, CBD Areas and access links to public transport. Owing to the large number of people attracted to these nodes, these areas should be developed to be as safe, attractive and convenient as possible, adhering to the principles of good public space design.

Areas where NMT priority should be given consideration include the following:
Public transport interchanges, bus and rail stations
School accesses and key access routes to schools (school priority zones), as well as tertiary educational institutions.
Areas of intense pedestrian activity such as CBD areas, shopping/service districts, community centres and facilities, etc.
Tourism sites (where appropriate), heritage sites, conservation areas (where appropriate), and recreational areas/ routes.
All of these sites within Cape Town are not shown in the NMT Strategic Master Plan, only those of metropolitan significance.
The priority is determined by the degree of people concentration, the special consideration given to learner travel to and from school, the needs of the tourism sector and the role of NMT recreation.

However, NMT priority should be applied in a sustainable and equitable manner. In certain cases, NMT priority can only be achieved where trade-offs between motorised traffic and NMT are achieved. This will result in a balanced street system for use by all road users. .

8.4 NMT priority nodes

NMT priority areas include nodes of intense people concentration. Generally, in these areas NMT forms are mixed with other transport forms and should be granted priority over the other forms of motorised traffic in a sustainable and equitable manner.

However, there are certain special NMT areas where pedestrian activities should be prioritised over motorised traffic. Pedestrian activities add to the creation of liveable environments and Transportation for Livable Cities[i] states that *"Cities that have a high rate of crime in streets, poor facilities for pedestrians, no protection for people from vehicles or inclement weather, and few attractions along pedestrian facilities cannot be considered human orientated, attractive or livable."* It is the latter factors that should be strived for in certain areas in Cape Town through the promotion of pedestrianisation. These include areas such as CBD Areas, public transport interchanges, tourist-favoured precincts such as the historical part of Cape Town CBD. These forms of priority should be achieved through the development of streets favouring pedestrians, such as pedestrian malls, or public transport streets, development of by-passes for vehicles, etc.
Nodes in Cape Town that are significant within a metropolitan context are highlighted in the Strategic NMT Plan. It must be noted that these nodes are only illustrated in a

notional manner and that the exact boundaries of these special NMT nodes should be finalised only through the development of NMT local area network plans.

8.5 NMT links

To ensure that NMT functions as an effective component of the transport system, links should be identified that provide a certain degree of mobility. These include cycle paths as part of Metropolitan Bicycle Master Plan, recreational routes and routes towards schools, as well as good NMT access to various modes of public transport. The links included in the Strategic NMT Plan are at a metropolitan level and neighbourhood level NMT links should be identified as part of local area planning. These NMT links include

- NMT pathways located outside of the road reserve and are separated paths (class 1), for example bicycle ways through parks.
- Paths located within the road reserve, such as paths that physically separated from vehicular traffic (class 2), as well as bicycle lanes (class 3) that are located in the travel way of the road.

9. INTEGRATED DEVELOPMENT PLAN

9.1 Access and Mobility

Integration of land use and transport through Integrated Transport Corridors

A city-wide network of nine potential "development corridors" with multiple goals has been identified through the Mobility Strategy Phase 1 is being implemented on Cape Town CBD-Klipfontein Road- Khayelitsha Corridor, focussing on the following key programmes:
Bus Rapid Transit System;
Non-motorised transport (walking, cycle ways); and
Public Space enhancement
Review of existing transport plans and policies and strategies
Support for flagship projects: N2 gateway, World Cup 201o, Cape town CBD-Airport Link, Urban Renewal Programmes.

Non-Motorised Transport and Investment in Low Cost Forms of Mobility

Promote Universal access – promote access for persons with mobility problems,
Promote walking,
Promote cycling,
Promote Public Space Enhancement Programmes,
Safe, well lit public spaces,
Discourage use of cars by reclaiming street space for social activities such as Car Free Day Events,
Reduce emissions and Air Pollution,
Promote Road safety and Education Programmes.

10. CONCLUSION

The Bicycle Masterplan is constantly being updated with the latest route selection and shows the current metropolitan bicycle links across the City of Cape Town. Separate studies like the ones described above will be concluded to reinforce the metropolitan route link to the local cycle route.
Ultimately a network of bicycle facilities will be established across the City of Cape Town.

References

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