



NON-MOTORIZED TRANSPORT FOR CAPE TOWN

Project Team

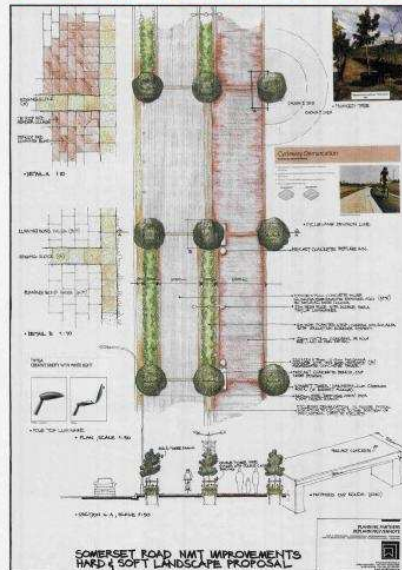
Client: City of Cape Town

Civil Engineers: Gibb Africa, Aurecon, HHO Africa, Arup

Landscape Architects: Planning Partners, Ian Ford Landscape Architects, OVP Associates

Non-motorised transport (NMT) is a form of active transportation and includes all forms of movement that do not rely on an engine or motor for mobility. Active transportation consists of human-powered forms of travel such as walking, cycling, rickshaws, skating, roller blading, manual wheelchairs and animal-drawn carts.

Although NMT is recognised as a valuable component of transportation systems, it has historically not been included in traditional transport planning, with walkways and cycle paths generally implemented as afterthoughts, and sometimes not at all. There was also little infrastructure to accommodate the needs of the physically challenged (the elderly, people in wheelchairs, the blind, deaf and young children) and this is being addressed by applying the principles of universal access.



Somerset Road landscape proposal



With worldwide emphasis on reduction of the carbon footprint, the environmental benefits of NMT are primarily gained because it results in reduced pollution in heavily congested urban areas and lower CO₂ emissions. It is also more efficient from a spatial point of view as it is conducive to the development of more liveable communities and improved inner city environments. The presence of pedestrians in streets, public spaces and buildings gives life to these areas. Health benefits can also be gained from NMT due to increased physical activity and fewer accidents.

Landscape architect Jaco Jordaan of Planning Partners comments: "South Africa has a serious traffic problem. Whereas the affluent society spends a great deal of time in single occupancy vehicles at a crawling pace along major routes into the city, the poor spend 30% of their income on taxi fares in order to get to work. If there were safe cycling paths, an increasing number of commuters would cycle, creating a culture of cycling as a means of transport. The Netherlands, with far worse weather than Cape Town, is an excellent example of what can be done. In Cape Town, less than 1% of commuters cycle; in Groningen, the Netherlands, it is as high as 50%".

Strategy, vision and objectives

The City of Cape Town has recently embarked on an NMT strategy which includes a comprehensive plan to guide the implementation of programmes and facilities that will respond to the needs of NMT users. The strategy also identifies areas that should be considered as key NMT routes in and around the city, as well as priority locations determined by:

- the concentration of people in an area;
- travel demand patterns;
- known desire lines through public open spaces;
- learners travelling to and from school;
- the needs of the tourism sector; and
- the role of recreation.

The following is Cape Town's vision for NMT: "Cape Town will be a city where all people feel safe and secure to walk and cycle, making NMT part of the overall transport system where public space is shared between all users and everyone has access to urban opportunities and mobility." In realising this vision, an important goal as set out by the City is to encourage cycling and walking by creating a safe and pleasant bicycle and pedestrian network of paths. The City also aims to promote a changed culture that is more accepting of cycling and walking as modes of travel.

Key stakeholders and role players were consulted to provide input into the development of the City's strategic plan. These were the transport planning sector, local economic development, urban design, spatial planning, disability desk, NMT planning, public transport and heritage management, the Departments of Education and Community Safety, South African Rail Commuter Corporation, Provincial Government of the Western Cape, Department of Transport and Public Works, the Bicycle Empowerment Network and Metrorail.

Role of landscape architects

Planning Partners were involved in three projects where NMT facilities have been implemented. These are Somerset Road, the Granger Bay Boulevard and the Integrated Rapid Transport Facility (IRT). Jordaan explains the three types of NMT:

- painted cycle lanes on road surfaces where pedestrians walk on sidewalks between the road edge and boundary kerb separating vehicles (cars and cycles) from pedestrians;
- shared pedestrian cycle ways, usually on verges between the road edge and boundary, away from the vehicle lane. The two uses can be separated in some cases by different materials or a separator edge; and
- a separate cycle way, separated from the sidewalk in the verge.

Somerset Road was purely an NMT project, not coupled with a road upgrade, and was earmarked as an important road as it links the CBD to the new 2010 stadium. It is sometimes referred to as the 'fan mile' and was previously a derelict tar sidewalk with an informal gravel area. "It was not a pretty sight," says Jordaan. The concept was to create a parallel pedestrian/cycle facility and



Above: Cycleway under construction running parallel to the IRT route
Below: Cycle lane painted alongside the raised pedestrian pathway



Above: NMT facilities along the new Granger Bay Boulevard
Below: NMT under construction through the Paarden Island industrial area



Planning Partners designed linear planters to keep the two uses apart. Extensive tree planting was undertaken to improve the Cape's micro-climate.

Jordaan chose specific materials to clearly indicate pedestrian and cyclist usage. An exposed aggregate concrete paver was chosen for good traction and a red clay paver for the pedestrian path, in accordance with the City of Cape Town's road verge material master plan where different zones are to be paved with zone-specific materials. A precast concrete demarcation block has been used to create a physical 'bump' between cyclists and pedestrians. Concrete information pavers were designed and specially manufactured to indicate the two uses on ground level.





Pedestrian and cycle surfaces continue over Bellmouth to reduce the speed of turning vehicles and thereby give right of way to pedestrians and cyclists

Meetings between Planning Partners and OVP Associates ensured a seamless design as the latter adopted the same layout for NMT facilities around the 2010 stadium precinct. This project is 90% complete and is being well used. It is envisaged that low speed commuter cyclists and recreational cyclists would use the safer NMT cycle lanes (that are protected from vehicles by the non-mountable kerbs), whereas the more serious high speed cyclist would still ride on the road.

Granger Bay Boulevard is a new road which links Somerset Road to the Greenpoint circle and through to Beach Road (one of the V&A entrances), a link that was planned many years ago. Part of the brief was to design NMT facilities on both sides of this new road and the same materials and design philosophy were used as for Somerset Road.

The Integrated Rapid Transport (IRT) facility refers to the combination of public transport and NMT facilities all aimed at reducing the amount of vehicles on the roads to and from town. Phase 1 of this project is presently under construction and due for completion in May 2010. The NMT portion of this contract consists of a three metre wide pedestrian/cycle lane that runs parallel to the Bus Rapid Transit system. The facility runs north from the Civic Centre in Hertzog Boulevard, through the foreshore/Culemborg precinct under the Church Street bridge, underneath Table Bay Boulevard (N1) and then into an unused railway siding. It then goes through the industrial area of Paarden Island in an unused railway servitude and over a new bridge that crosses the Salt River canal. From here the facility joins Marine Drive where it runs on the sea side of the road through Milnerton, past Sunset Beach and Flamingo Vlei and onwards to Blaauwberg Road in Table View.

The interfaces between people, cars, cyclists and buses were carefully considered at each IRT station, which is placed at major road intersections all along the route. Elements such as paving materials, safe pedestrian and cycle crossings, traffic signals, road signage, lowered kerbs and ramps, tactile paving, reinforced coloured bus lanes and street furniture were included in design drawings to ensure a safe and attractive node at the stations.

The new metropolitan cycleway along the IRT route will be asphalt-surfaced, apart from deceleration paved zones (or shared pedestrian cycle zones) which are included on the approach to and exit from intersections to reduce the speed of cyclists. The areas between these are clay-brick paved, in the form of small piazzas where pedestrians have right of way. Materials were again chosen to encourage the safe use of the facility but these have yet to be constructed.

Tactile paving specifications in the pedestrian zones in and around the IRT station intersections are in accordance with the new South African National Standard: Design for Access and Mobility (SANS 784:2008).

Mark Pinder of Arup and Andre Frieslaar of HHO Africa are involved with the non-motorised integration within the IRT. Says Pinder: "The success of any new public transport system is directly related to the ease, comfort and sense of safety when accessing and using the service". Arup's brief was to:

- assess the existing NMT facilities radiating away from each new IRT station and identify routes that required refurbishment;
- provide new street lighting where required;
- make alterations to improve safety and accommodate universal access¹;



Somerset Road links the CBD to the new Greenpoint stadium. The cycle lane is in beige and the pedestrian walkway in red.

- formalise routes along desire lines² through public open spaces; and
- introduce new cycling facilities to integrate with the new metropolitan cycleway running parallel to the IRT route.

The project focussed on facilities within a 500m catchment around each IRT station, including areas such as Woodstock, Paarden Eiland, Metro Industria, Milnerton, Royal Ascot, Sunset Beach, Table View, Killarney Gardens and Du Noon. The implementation of the new/refurbished NMT facilities is currently scheduled for 2012.

¹ Universal access refers to the designing of features into the street infrastructure that accommodate the mobility of all members of the public, including young children in pushchairs, the disabled in wheelchairs, textured paving to assist the visually impaired negotiate sidewalks, tactile paving with bubble blocks at intersections, pedestrian crossings and the bottom of ramps, audible devices at intersections to assist the blind to cross roads and push buttons that vibrate when the pedestrian green phase is active.

² Desire lines is the term used to describe routes that happen naturally without formal facilities, generally the gravel/earth pathways that meander through vacant public open spaces.

Ian Ford Deon Bronkhorst Landscape Architects are involved with the following NMT routes:

- Waterkant Street, from the Cape Town station in Adderley Street to Buitengracht, where a new pedestrian bridge is to be erected before May 2010. There will be a new pedestrian route and introduction of a bicycle route;
- St Andrew's Square extension/Waterkant Street, on the western side of Buitengracht: new pedestrian and bicycle route towards the new Cape Town stadium;
- Bree Street from Shortmarket to Hans Strijdom/North Wharf Square: improvement of pedestrian sidewalks and introduction of a bicycle route;
- Heeregragt from Old Marine Drive at the Cape Town station to Table Bay Boulevard: improvement of the pedestrian sidewalk and introduction of a bicycle route on the eastern side of the Heeregragt;
- Old Marine Drive from the Civic Centre to the Heeregragt: introduction of a proposed bicycle route.

Deon Bronkhorst's scope of work for all the above precincts included landscape sketch plans, initial working drawings, paving details and specifications, street furniture, irrigation specifications and layout, site supervision for the 24 month implementation phase and the 12 month maintenance period.

Safer streetscape

The City of Cape Town believes that the development of a safer streetscape will give non-motorised transport users their fair share of the available public space in the mobility network environment. **isa**

Information provided by the City of Cape Town, Planning Partners, Ian Ford Deon Bronkhorst Landscape Architect, Arup and HHO Africa. Visuals courtesy of Planning Partners.

