

THE BICYCLE – NOT ONLY A TOY, BUT A MODE OF TRANSPORT: CHANGING THE PERCEPTION



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ABSTRACT

In many cities in South Africa a perception exists that a bicycle is a toy. This is because many children get a bicycle as a present, and cycling is primarily a recreational activity due to lack of cycling infrastructure, awareness and training. Given the potential of the bicycle to enhance economic and social development, this perception must be changed. The City of Tshwane Metropolitan Municipality identified Atteridgeville for the implementation of such a project, which is aimed at getting people to accept the bicycle as a mode of transport and use it together with other modes of transport.

This project, a first in Gauteng, faces major challenges. Firstly, cycling as a mode of transport is new to South Africa in general. This calls for buy-in from the community, government and especially the taxi industry. Secondly, cycling facilities will have to be introduced in the existing roads and road reserves in established townships.

To overcome these challenges, a tour was undertaken to the City of Delft to obtain guidance on the preparation of a master plan for the implementation of the project. Several partnerships were established, including that with Intersite, a development company of the South Africa Rail Commuter Corporation, to provide storage facilities at stations, and those with provincial and national authorities to provide co-funding for the project.

The success of the project depends on sustained training as well as promotion and awareness campaigns to break the old and establish the new perception. Furthermore, it is important to provide a bicycle-friendly environment and to make bicycles available and affordable (possibly with subsidisation).

The project will provide opportunities for the development of entrepreneurship, job creation and empowerment, and is expected to assist in establishing an industry to distribute and service bicycles in an economically sustainable way.

This paper presents the full project cycle, from needs analysis to international best practice, master planning, infrastructure, poverty alleviation, intergovernmental cooperation, community buy-in, awareness raising and training.

1. BACKGROUND

The City of Tshwane Metropolitan Municipality (City of Tshwane) is a newly established municipality in South Africa and comprises a mixture of well-developed areas and areas severely disadvantaged in various ways due to the previous political dispensation. It was created in December 2000 when 13 former city councils, town councils, transitional councils and regional councils, including the former City Council of Pretoria, amalgamated. Since then its Roads and Stormwater Division, who is responsible for the provision of roads and transport infrastructure, has been working on a project to promote cycling as a mode of transport.

With the development of the State of the Environment Report¹ for the City of Tshwane it was realised that non-motorised transport is neglected as a means of ensuring a cleaner city and that it is essential to promote non-motorised transport. Furthermore, the city does not have a cycling culture in terms of transport. Moreover, various surveys² found that cycling to school had dropped to very low levels due to lack of road safety, infrastructure and facilities. In contrast, there had been a comfortable growth of cycling as a sport and for recreational purposes.

The Shova Kalula (Zulu for “pedal easy”) project was initiated by the National Department of Transport. The City of Tshwane entered into a joint-venture pilot project with the national and provincial government to promote cycling as part of the Shova Kalula project. The aim of the pilot project was to integrate cycling into the total transport system. Therefore a suitable site had to be selected to introduce cycling as a feeder mode for rail transport.

The Atteridgeville Township was selected as the most suitable area for the pilot project because a railway line and three stations serve the township. It afforded an ideal opportunity to provide bicycle routes and facilities as a feeder system for the rail system. Atteridgeville is located on the western side of the City of Tshwane, about 12 km from the Pretoria Central Business District (CBD).

The project will consist of the following elements:

- Bicycle infrastructure: construction of cycling infrastructure and a cycling network before the large-scale distribution of bicycles, and expansion of the network to encourage more people to start cycling;
- Storage facilities: provision of guarded low-cost storage facilities at the stations;
- Marketing and promotion: creation of community awareness of cycling as a means of transport together with its advantages, and the changing of perceptions;
- Education: training the community how to cycle in normal traffic, and how to repair and maintain a bicycle.

The first objective was to evaluate the feasibility of integrating the bicycle with other modes of transport, in this instance rail transport. This integration was aimed at bringing centres of economic activity within easier reach of the poor by helping them to get to rail transport without having to walk there. Moreover, cycling could enhance their health. (Income in the Atteridgeville community varies from very low to medium affluent. The main areas of employment are the Pretoria CBD, Centurion, eastern Pretoria and Johannesburg.) The project would also offer employment opportunities for construction workers, and a storage facility manager and a security guard would be required. In addition, it would provide safety training for cyclists, allocate 750 subsidised bicycles to commuters and run a public awareness programme. Storage facilities would be provided at the stations and a bicycle shop would be established. The goal of the project was to increase and facilitate the movement of residents by means of the promotion of the bicycle as a transport mode.

2. PLANNING PROCESS

After selection of the area, planning started. As this was a new initiative for the City of Tshwane and a new concept for people without a cycling culture, it was essential to carefully plan the entire process. The document Low-Cost Mobility in African Cities³ was used as the basis for the planning.

According to a literature review,⁴ "in cities without an established cycling culture, the construction of a network of separated bicycle tracks has a high chance of resulting in failure. Opening of such networks does not mean that there will immediately be a high volume of cyclists using it". This emphasised the need for careful planning.

The project plan is outlined in Figure 1 below.

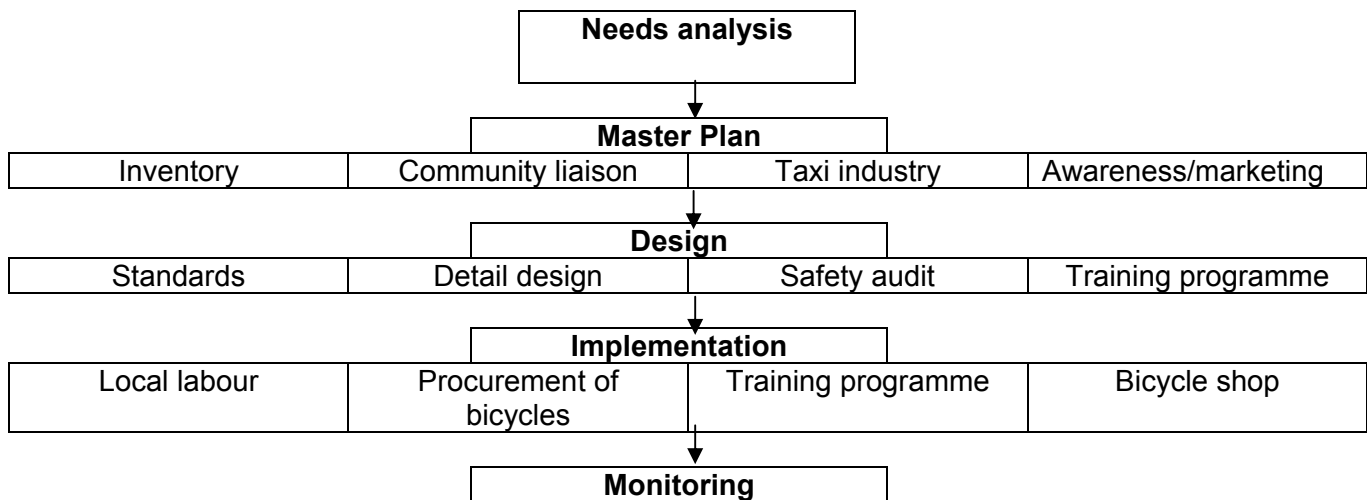


Figure 1: Project plan

2.1 Needs analysis

The needs analysis focused on the "needs" of pedestrians at the stations. Surveys indicated that between 06:00 and 07:00, 2 225 pedestrians entered the Saulsville Station to board trains to their respective destinations, and between 06:00 and 18:00 there was in-and-out movement of over 11 300 pedestrians per day at this station. This was an indication of the potential for establishing the bicycle as a mode of transport between residents' homes and stations, and from the latter back to their homes. The numbers of users of this and two other stations are indicated in Figure 2 below.

	Saulsville Station		Atteridgeville Station		Kalafong Station	
Movement	In	Out	In	Out	In	Out
Morning peak (06:00 - 07:00)	2225	429	379	70	341	234
Afternoon Peak (16:00 -18:00)	185	2221	73	453	267	328
Total pedestrians	4450	6852	912	1213	988	1224

Figure 2: Pedestrian numbers at three stations

Apart from the "need" indicated above, the drive to promote the use of bicycles is also based on the National Environmental Management Act, 1998 (Act 107 of 1998), which holds that sustainable development requires inter alia that air pollution and degradation of the environment be minimised and remedied⁵ – more cycling means less air pollution and traffic congestion.

2.2 Master Plan

From the findings of the needs analysis in respect of desire lines, it transpired that radial routes to the different stations would be the most appropriate routes. See Figure 3 below. As part of the planning exercise, an inventory was compiled of facilities along the identified routes, their physical layout and possible constraints.

A very important step in the planning was the involvement of the local community. Atteridgeville is divided into seven wards, with an elected ward councillor per ward. Each ward has an elected ward committee, which gives input to specific projects in the ward. The ward councillors were involved in the planning process and endorsed the principles used to develop the Cycling Master Plan. The local taxi industry was also involved to ensure their buy-in and to explain that cycling would not compete with the taxi industry as a mode of transport, as it served a different market segment.

The marketing and awareness raising plan was also conceptualised during this phase, but will be discussed later in the report.

2.3 Design

During the planning phase and compilation of the inventory a number of challenges and constraints along the selected routes were identified. These included:

- Narrow road reserves and roadway width;
- High pedestrian volumes (pedestrians dominated the road reserve)
- Safety of cyclists along these routes;
- High taxi volumes, as the routes also served as distribution routes for taxis;
- Storage facilities at the stations;
- Lack of infrastructure to support cycling as a mode of transport;
- Drivers often showing minimal respect for other road users, including cyclists.

Appropriate design standards had to be determined given the constraints. This included a road safety assessment to identify problematic areas along the route and the development of remedial measures to provide a safe cycling environment. To obtain first-hand exposure to international best practice a study visit was undertaken to the City of Delft in the Netherlands. The details are given below.

Various design standards were considered, including dedicated cycling facilities, cycling facilities within the roadway, cycling facilities along the sidewalks, safe crossings, storage facilities at stations, traffic calming measures and appropriate signs and markings.

The following principles were applied, as far as possible, in terms of quality criteria:

- Coherent network of facilities;
- Direct routes to destinations;
- Attractiveness: shade, absence of mud and dust, social security, little exposure to cars;
- Safety: minimising encounters with motorised transport;
- Comfort: steady speed, smooth surface.⁶

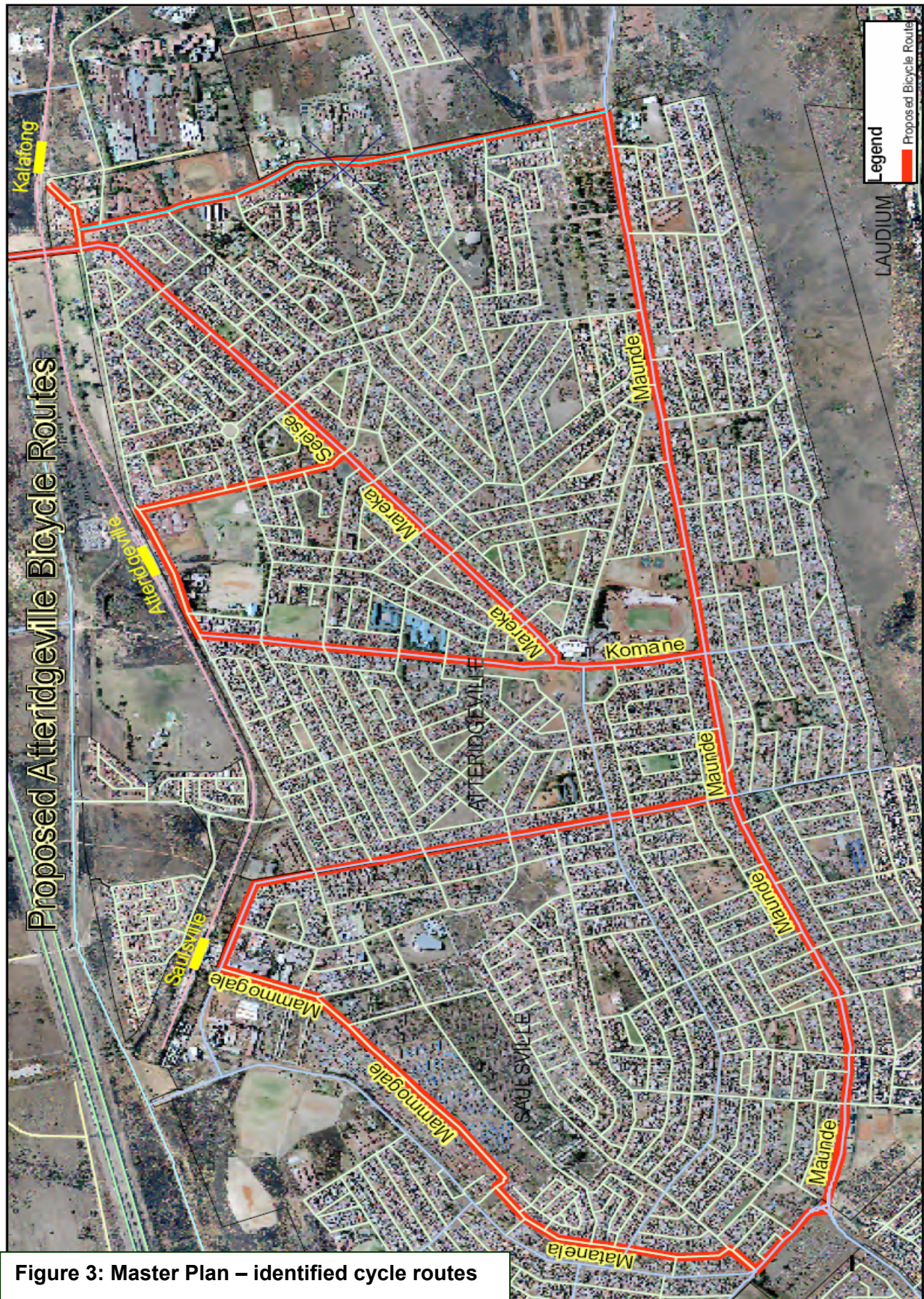


Figure 3: Master Plan – identified cycle routes

2.4 Implementation

The focus during implementation is on involving local labour in labour-intensive construction of the infrastructure. This will assist in creating awareness and ownership of the project in the community.

Procurement of bicycles is a major challenge. Bicycles will be procured through a tender process and allocated to individuals. The basis of allocation is also being explored. Allocation must ensure sustainability of the project. This also raises the issue of subsidisation, which will form part of the allocation process. The City of Tshwane has a sister city agreement with the City of Basil in Switzerland. Discussions are underway to obtain used bicycles from the City of Basil. A part of the consignment can be allocated to the Atteridgeville project.

Maintenance of the bicycles is another very important component in sustaining the project. A bicycle shop will be established in the area, and the shop owner will be trained. The shop owner will in turn run workshops to empower the community to maintain their bicycles. A training programme is being developed to teach bicycle owners and prospective bicycle owners the art of cycling.

2.5 Monitoring

Monitoring of progress on the project will play a major role in ensuring the success and sustainability of the project and to determine if future interventions are required.

3. INTERNATIONAL BEST PRACTICE

It was realised during the planning process that limited expertise and knowledge are available in South Africa to provide guidelines for the design of cycling facilities and that international best practice should be utilised to set up design guidelines.

The City of Tshwane has a sister city agreement with the City of Delft in the Netherlands. As the Netherlands and in particular the City of Delft was considered one of the best examples of cycling expertise regarding networks, promotion of cycling and infrastructure, a study visit was arranged with the following objectives:

- To gain exposure to cycling infrastructure and explore international best practice;
- To explore the sharing of facilities between motor vehicle drivers and cyclists and obtain guidelines in that regard;
- To explore the development of storage facilities at stations;
- To gain exposure to international cycling initiatives;
- To explore awareness and marketing campaigns that were successful in promoting cycling;
- To explore safety aspects that are essential in the design of cycling infrastructure.

The preliminary designs were workshopped with experts of the City of Delft and adjusted to improve safety and incorporate other practical considerations.

During the visit to the Netherlands the importance of bicycles both as an affordable and effective means of transport and as a tool to fight air pollution was reinforced. The positive practical experiences during the visit were underpinned by guideline documents that were provided.

4. INFRASTRUCTURE AND JOB CREATION

The project entails the design and construction of bicycle infrastructure in Atteridgeville. About 3 km of high-standard bicycle lanes will be constructed along routes leading to the three railway stations in Atteridgeville. The objective is to create a core network of bicycle lanes through labour-intensive methods in Atteridgeville before the large-scale introduction of bicycles. (The network could be extended later.) The linking of public transport with cycling is a core aspect of this project.

A very important principle in the provision of cycling infrastructure is consistency and continuity along a route. The attractiveness of a route for pedestrians and cyclists depends on the quality of the entire route. If parts of it are in a bad condition, users will be averse to using the route.

The provision of infrastructure consists of the following elements:

- Construction of new bicycle lanes outside the roadway on the road verge or sidewalks;
- Widening of existing pedestrian walkways to allow for sharing by cyclists and pedestrians;
- Demarcation of the existing roadway to provide for bicycle lanes, and provision of traffic calming;
- Job creation through labour-intensive construction, which will include training.

Construction of bicycle paths on Maboia Street in Atteridgeville began in November 2005. Figures 4, 5 and 6 below show a typical narrow street section, labour-intensive construction work and a bicycle lane leading to the station.



Figure 4: Typical narrow street section



Figure 5: Labour-intensive construction of walkways



Figure 6: Existing bicycle shop which could be upgraded for the project

5. STAKEHOLDER BUY-IN

Creating communities where people cycle does not mean the provision of space for doing so anywhere. One has to take a look at where there are opportunities to walk and cycle safely and conveniently, and where these opportunities are lacking.

5.1 Perception

In many cities in South Africa a perception exists that a bicycle is a toy. This is because many children get a bicycle as a present. Cycling is also mostly regarded as a recreational activity due to lack of cycling infrastructure, awareness and training. Given the potential of the bicycle to enhance economic and social development, this perception must be changed.

There are a number of long-run trends that pose a threat to non-motorised transport. For example, the increase in per capita income led to higher values being put on time and comfort, causing a shift towards faster and more comfortable modes of transport. Vehicle ownership per 1000 population has increased by nearly 20% over the past 20 years. With the estimated 50% increase in population, this means that there has been an increase of about 80% in the number of vehicles in the country.⁸

This calls for addressing the perception of the bicycle and cycling at school level – the more kids learn of the benefits of cycling, such as less air pollution and a much healthier community, the better the chances of changing the perception. In addition, South Africa's new Gautrain initiative is a perfect opportunity to include non-motorised transport, as this will diminish the demand for land for parking space, etc. The ultimate benefit of making conditions safer for cycling and walking is that we will encourage a greater number of people to make physical activity a regular part of their lives.⁹

5.2 How to influence the current perception

To be able to change or influence perceptions you need to answer the following questions: What does a community look like where conditions are favourable for cycling or where conditions can be made favourable? What would need to change in the area before you would see people cycling?

As with driver's education, a multi-pronged approach is required to reach the broadest possible target audience. Apart from the initiatives suggested, other possibilities are:

- Specific examples in the *AA Directions* magazine of situations where cars and bicycles share the road surface (eg at intersections);
- Regular cycling features in major newspapers, eg a monthly cycling column;
- A pamphlet highlighting cycling issues that is to be given to all new drivers (safety campaign);
- Enhanced promotion of cycling through a national bicycle week and a cycling-to-work/school campaign;
- Safe-routes-to-schools programmes, designed to make school journeys safer through a combination of engineering, education and enforcement, aimed at parents, children and other road users;
- Local road safety advertising and enforcement campaigns.

Other engineering and enforcement measures that can help to modify road user behaviour are:

- Better marking of bicycle lanes, especially at intersections, to clarify where motorists and cyclists should go;
- Targeted police enforcement (preferably by police on bicycles) to constrain motorists and cyclists who behave irresponsibly towards each other, which will require greater police awareness of cyclists' needs;
- More use of coloured surfacing to clearly identify bicycle lanes on the road;

- Changes to traffic rules (and subsequent public education) to clarify the legal status of various cycling facilities, signs and markings.

Changing the perception of motorists entails that they be made aware that bicycles are small and difficult to see, especially at night, and that cyclists –

- can feel threatened by inconsiderate driving;
- may drive away from the kerb or occupy the next lane to avoid obstacles, to make themselves visible when they reach side road entries, or to discourage drivers from squeezing past where the road is too narrow;
- are exposed and need extra consideration from motorists when the latter change direction;
- can be forced into faster traffic streams by vehicles parked in bicycle lanes, on broken yellow lines or near intersections;
- are dazzled by full-beam headlights, just like other road users;
- are capable of travelling at speeds of 40 km/h or more;
- have a right to use the road and to travel safely and enjoy the ride.

Cyclists will have to accept that motorists –

- expect cyclists to obey road rules;
- usually travel faster than cyclists and therefore have less time to react to hazards;
- may not always see cyclists;
- can be unsettled by the behaviour of some cyclists.

A programme is being developed to change the perceptions of motorists and cyclists based on the principles discussed above.

The government acts upon traffic policies at the national, provincial and local level. The provision of cycling infrastructure and regulations regarding road users not respecting each other will assist in changing perceptions. Currently motor vehicle users perceive themselves as having more right to the road than other road users, thus putting pedestrians and cyclists at risk.

6. CONCLUSIONS

The following conclusions regarding the promotion of cycling can be made from this paper:

- The promotion of cycling as a mode of transport is essential to reduce air pollution. However, vehicle ownership in South Africa has increased drastically over the past few years, which poses a threat for cycling. Concerted efforts are required to address this threat.
- The construction of a network of separated bicycle lanes has a high chance of failure where there is no cycling culture and disregard for the reality and demands of this mode of transport. The opening of such networks does not mean that a great number of cyclists will immediately start using them. Changing perceptions through marketing, training and awareness raising as well as community involvement is essential to make cycling sustainable as a mode of transport.
- A structured planning process, as described in this paper, is essential to successfully address all aspects of the project.
- Safety and continuity of routes are an essential element of a cycling project.
- The value of international cooperation and partnerships should not be underestimated – sharing of information and expertise regarding international best practice is important to promote cycling in countries without a cycling culture.

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