

# **INTEGRATED PUBLIC TRANSPORT FACILITIES – MENLYN SHOPPING CENTRE**

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## **Abstract**

The development of the Menlyn Shopping Centre provided limited accommodation for public transportation and pedestrian access, relative to private vehicle parking. It was therefore necessary to accentuate the issue of public transportation for the centre, in line with the National Land Transport Transition Act, 2000. It is however, an accepted fact that the local authorities initiated this effort in reaction to the development instead of proactive involvement.

The number of home-base work trips by public transport is significantly greater than private vehicle trips in the Menlyn Node. Therefore, a high number of employees in the Menlyn area are public transport captive. Also, a number of social and/or non-work trips by public transport are significant during the weekend, especially on Saturdays.

The quality of the existing public transport facilities in the Menlyn node was poor. The existing access point into the Menlyn Shopping Centre on Lois Road yielded the highest pedestrian/passenger movement in the Menlyn Node during the weekday peak period.

The delayed attempt to improve public transport facilities at the Menlyn Shopping Centre realised that unlike for generation of private traffic, the Traffic Impact Study Guideline of the City Council of Pretoria did not mandate a developer to provide the necessary public transport facilities. Hence, the initial approval process for the development of the shopping centre trivialised public transportation, while the developer remained uninformed, until the intervention of the Greater Pretoria Metropolitan Council. The developer then realised the invaluable significance of an improved public transport facility specifically for employees working through extended shopping hours.

This paper describes the conceptualisation and construction of the integrated public transport facility at the Menlyn Shopping Centre, that includes paved sidewalks, direct access for passengers and pedestrians into the mall from the adjacent streets, the provision of shelters for passengers, and ramps for wheelchairs. The paper also discusses the addendum to the Traffic Impact Study Guideline for the City Council of Pretoria to mandate future developers to provide the necessary public transport facilities.

## **1. Background**

Rapid land use developments in the East of Pretoria, specifically the Menlyn Node resulted in a saturated road network system. The existing transportation infrastructure is inadequate to sustain the traffic generated by the new developments in the Menlyn Node, and thus initiated an extensive transportation planning study, namely, the Menlyn Node Urban Transport Study. Among others, a one-way street network for the Menlyn Node was proposed and investigated in detail. Further, a public transport study was carried out that provided conceptual designs for bus and mini-bus taxi facilities, and the movement of high volumes of pedestrians in the Menlyn precinct. The public transport study only provided short-term improvements to the proposed new road network.

However the inherent transportation engineering culture in South Africa lacks a regulated public transportation system. The public transport study for the Menlyn precinct simply recommended typical designs for bus and mini-bus taxi bays, proposed locations for holding facilities for buses and minibus taxis, and included an academic effort on high occupancy vehicle (HOV) lanes (*1*). The simple proposals for the

Menlyn Node is typical of public transport officials and consultants in South Africa, that is, no motivation to design a higher standard public transport system, like that for example, in Curitiba, Brazil\*. This is due to the poor leadership in Public Transportation matters at National and Provincial Government level, and is a debate on its own.

In South Africa the most popular mode, not necessarily the safest and cheapest, is the minibus taxi, which is also not subsidised. The other modes lower in the hierarchy are the conventional bus, and commuter rail, which are subsidised by National Government. In North America and Europe, rail (light rail, heavy rail, and commuter rail) is the backbone of public transportation while bus, minibus, park-and-ride, and non-motorised modes feed into the rail system.

A revolution in South Africa's public transport system is inevitable. However, change is not possible without dynamic and competent leadership at the National Department of Transportation, let alone a funding policy for the Macro-Transportation Policy-*Moving South Africa*\*.

Therefore the public transportation proposals for the Menlyn Node were just an academic effort. The database for that study however, determined the desire lines of passengers and the location of public transport facilities for the Menlyn Shopping Centre.

This paper, therefore, focuses on the salient development in the Menlyn Node, the Menlyn Shopping Centre. The shopping centre doubled its capacity to 600 hundred stores and added over 6000 parking bays. The expansion intuitively generated new private vehicle trips, and employment opportunities. The significance of employment opportunities is that most vacancies are lower income, most of who travel by public transportation.

The Metropolitan Public Passenger Transport Division of the Tshwane Metropolitan Municipality identified the lack of pedestrian access from the peripheral streets and also the exclusion of integrated or improved public transport facilities for the Shopping Centre itself. Amidst the fragmented public transport system in South Africa, it was necessary to accentuate the issue of public transportation for the Shopping Centre, in accordance to the *National Land Transport Act, 2000*.

The objectives of this process were to:

- ◆ Provide an effective public transport facility for the Menlyn Shopping Centre.
- ◆ Initiate an informal public-private partnership with the developer (Old Mutual Properties), to provide an integrated public transport facility for the Shopping Centre.
- ◆ Involve the bus and mini-bus operators in the Menlyn area in the basic planning of these facilities.
- ◆ Set a standard for future developments in South Africa as regards to integrated public transportation projects.

## 2. Status Quo

### 2.1 Local Road Capacity

The current peak period congestion in the vicinity of the shopping centre is apparent, and there is inadequate space to add lanes. The intersection capacity at Atterbury and Lois (figure 1) is saturated and is functioning with a four-phase traffic signal. New access and egress for the additional parking facilities in the Menlyn Shopping Centre are provided on Lois Road at Gobie Street and Frikkie De Beer Street.

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\* The rapid urbanisation brought with it formidable problems of sprawling slums and pollution, a strain on energy resources and public services, and traffic congestion. Believing in his people's dignity and capacity for change, Jaime Lerner has built Brazil's greenest and most livable city (2).

\* South Africa's National Transport Strategy leading to 2020.

## 2.2 Public Transport Operators in Menlyn

There are three mini-bus taxi associations operating in Menlyn, viz., Eesterust, Mamelodi, and Menlyn Taxi Associations. The Menlyn Taxi Association operates from Menlyn to the Pretoria CBD. There is no rank or holding facility in the Menlyn node for mini-bus taxis, as a result, taxis park on the sidewalks and the road reserve. The Eesterust Taxi Association operates from an informal rank in Eesterust and traverses three routes to the Menlyn Node, via the eastern suburbs of Pretoria and passes the Menlyn Shopping Centre on Atterbury Road. The Mamelodi Taxi Association operates from Denneboom Station rank in Mamelodi and circulates the eastern suburbs of Pretoria, including the Menlyn Shopping Centre on Lois Road. Mamelodi taxis do not wait in Menlyn for a full load but returns to Denneboom immediately.

There are several bus services to the eastern suburbs of Pretoria and the Menlyn Shopping Centre, namely, Atteridgeville, Pretoria City, Mamelodi, Putco, Bothlaba Tswana, Batswane Gare, and Thari. All services except for Pretoria City operate from predominantly Black residential areas (previously disadvantaged areas). This confirms that most of the captive bus passengers travel more than twenty kilometres shared capacity per direction to the Menlyn Node. The majority of trips are home-base work trips in the peak periods. The main boarding and alighting points at the Shopping Centre are on Atterbury and Lois Roads.



Figure 1: Road Network around Menlyn Shopping Centre

## 2.3 Public Transport Facilities

The Menlyn Public Passenger Study indicated the existing public transport facilities in the Menlyn area comprising mainly of combined bus and mini-bus taxi bays. The quality of the facilities, especially protection from the elements is poor (figure 2). Commuters board and alight between 6am and 9am, and 3pm and 6pm on weekdays, on Lois Road (L1 & L2), and Atterbury Road (A1, A2, A3) (figure 1). It was also evident that social trips by public transport are constant at A1 and A3 on Saturdays between 7am and 2pm.



Figure 2: Typical Public Transport Shelter in Pretoria

The A3 stop is mid-block and forces people to cross the double carriage-way street into the shopping centre. Lois Road in the Menlyn Node yields the highest pedestrian/passenger movement in the weekday peak periods. L2 is conveniently located but do not allow direct protected access into the shopping centre. Further, there were no paved sidewalks on most of Lois Road and Atterbury Road.

Due to the sporadic operating method of minibus taxis, it is also appropriate to indicate that there were no holding facilities for mini-bus taxis in the Menlyn Node, that resulted in mini-bus taxis parking on sidewalks, the road reserve, and even in the pull-out bay (figures 2 & 3).



Figure 3: Informal Taxi Parking at L1



Figure 4: Unpaved Sidewalk on Atterbury Rd

### 3. Planning of New Public Transport Facilities

The argument may seem like ‘stirring a storm in a tea-cup’, but consider a billion Rand development explicitly attracting private vehicles (with a parking fee), and ignoring basic infrastructure for the employees, most of whom are public transport captive. This omission contradicted the *Traffic Impact Study Guideline of the City of Pretoria*, the *Integrated Transport Plan of the Tshwane Metropolitan Council*, and the *National Land Transport Transition Act no. 22 of 2000*.

The following are appropriate excerpts from the *National Land Transport Transition Act Chapter 2 part 2(4) and part 6(26) (3)*.

- ◆ Subject to the general principals for transport planning, and its relationship with land development, land transport planning must be so carried out as to cover both public and private transport and all the modes of land transport relevant in the area concerned, and must focus on the most effective and economic way of moving from point to point in the system.
- ◆ Public transport services should be planned where possible so that subsidies are aimed to assist currently marginalised users and those who have poor access to social and economic activity.

- ◆ For the purposes of land transport planning and the provision of land transport infrastructure and facilities, public transport must be given higher priority than private transport by ensuring the provision of adequate public transport services and applying travel demand management measures to discourage private transport.
- ◆ Transport plans must be so developed as to enhance accessibility to public transport services and facilities, and minimise adverse effects on the environment.

Considering the above principles in the National Land Transport policy, it was necessary for the Tshwane Metropolitan Municipality to respond to an opportunity to incorporate a higher-grade public transport facility at the Menlyn Shopping Centre with the support of the futuristic ideas of the developer.

#### **4. Upgrading the Public Transport Facility for Menlyn Shopping Centre**

Development in Menlyn was by the process of accretion rather than visionary planning and subsequently prioritised private vehicles, instead of public passenger vehicles. The Integrated Transport Plan of the Tshwane Metropolitan Municipality required private and public transport development to improve access for social and economic activity for the currently marginalised users, with minimum adverse effects to the Menlyn Shopping Centre. This project signifies the social obligation of the developer, but not enforcing charity or threat. The integration of public transportation into the Menlyn Shopping Centre could be a model for Greater Pretoria.

It was however, an accepted fact that the local authorities intervened in reaction to the development instead of proactive involvement. The Tshwane Metropolitan Municipality realised that the most cost effective solution was necessary, rather than an expansive mass transit transfer facility. At the bare minimum pedestrians/passengers should have direct access into the Shopping Centre.

##### **4.1 Access from Atterbury Road (A1, A2, A3)**

Bays A1 and A2 as in figure 4 and 5, are located near a signalised intersection. Direct access from the intersection and from A2 into the mall was necessary. There was also a need to increase the number of passenger shelters at A2 since most boarding occurred at this bay. A3 is located at mid-block and is redundant (figure 3). Sidewalks on both sides of the street were unpaved. However, due to anticipated changes on Atterbury Road in the near future, it was justified to initially pave the sidewalk on the near side of the Shopping Centre only.



Figure 5: Atterbury 1



Figure 6: Atterbury 2

##### **4.2 Access From Lois Road (L1 & L2)**

The Menlyn Public Transport Study revealed that most passengers alight at L1. The sidewalk on both sides of Lois Road required paving and pedestrian rails to encourage pedestrians to cross at the signalised intersection. L2 is not an exclusive pull-out bay, but functions as an extended slip lane into Atterbury Road from Lois Road. Due to the high volumes of traffic at this intersection, this function should not be altered. Nevertheless, the existing shelters at L2 required expansive upgrading due to the high volume of boarding passengers. The sidewalk could be widened to allow flow of pedestrians and to accommodate passengers. Direct access from L2 into the Shopping Centre is ideal for the general public and passengers.

## **5. Informal Public-Private Partnership**

The need for integrated public transportation and land use development is adequately covered in the current *Guidelines for Traffic Impact Studies for the City of Pretoria 1998* (4), except for the cost apportionment for public transport facilities. The guideline mandates the developer to provide access for private vehicles and commercial vehicles, and also requires the developer to finance its traffic impact on the local road network. Although the current guideline prioritizes the integration of public transportation and development, the developer is not obligated to provide public transport facilities; neither are public-private partnerships for the development of public transport facilities encouraged. Rather, public transport facilities are considered as bulk services from the local authority. (Public transport facilities includes, direct vehicle and passenger access, including bays, stairs, ramps, pedestrian crossings, protected corridors, etc.)

Although the upgrading and improvement of the basic infrastructure is the responsibility of the local authority, the developer can as a result of the impact study, be instructed to implement specific mitigation measures. Where a development is large enough to warrant public transport facilities the developer is required to design and construct the facilities. The developer should acknowledge that a public transport facility is in the interest of its commercial function, when social externalities like safety and comfort of its labor force are accommodated.

Thus, the developer, Old Mutual Properties, was requested to design and construct the following:

- Bays A2 and L2.
- Access (ramps and stairs where necessary) into the mall at A2 and L2.
- Traffic calming measures and pedestrian crossings on the internal ring road of the Shopping Centre.

It was further recommended that the Tshwane Metropolitan Municipality design and construct the following:

- Paved sidewalks
- Improvement of shelters

## **6. Implementation**

Fortunately, the landscape design for the Shopping Centre was in process and the developer arranged to harmonise the design of the accesses and public transport facilities in the landscape design. Although the facility on Lois Road was planned with the typical shelters, it was found necessary to provide a roof structure over the ramps and staircase. The Tshwane Metropolitan Council funded a portion of the materials for the roof structure, paving blocks for the near side of Atterbury Road and Lois Road, while Old Mutual Properties funded the construction of the accesses and the roof structure. Figures 7-10 describes some of the improvements.



Figure 7:Passenger Access from Atterbury Road



Figure 8:Ramps and Sidewalk on Lois Road



Figure 9:Pedestrian Access from Menlyn Road



Figure 10:Staircase on Lois Road

The comparative costs, without a detailed balance sheet, realises that Old Mutual Properties was generous in its contribution to the development of the public transport facility on Lois Road.

## 7. Lessons Learnt

- ◆ The transportation planning study for Menlyn Node Urban Transport and Land Use Study showed serious congestion in 2015 on the proposed network. There is a desparate need for a long term public transport plan for the Menlyn Node, Tshwane region, and other cities and towns in South Africa.
- ◆ In future, local government officials should ensure that public transportation is prioritised in all development rights applications as stipulated in the South Africa National Department of Transportation Guidelines for Traffic Impact Studies.
- ◆ It was found that, in general, priority to public transportation, was traditionally a bus/taxi bay on streets adjacent to the development. This however is not consistent with the current TIS Guidelines and the *National Land Transport Transition Act No. 22 of 2000*. The provision for public transport facilities is the first criteria for approval in the *TIS Guideline of the City of Pretoria*. However, officials and consultants fail to prioritise public transportation and integrated development, for various inherent reasons.
- ◆ Futher to prioritisation of public transport, the site development plan for development rights applications should consider the aims and objectives of the affected operators (taxi, bus, train, and aeroplane), and the desire lines of pedestrians.
- ◆ The design of pedestrian facilities must include ramps for wheel chair access, street furniture, and signage for the physically handicapped.
- ◆ One of the more important aspects of the TIS is to acquire infrastructure improvements. Although the upgrading and improvement of the basic infrastructure is the responsibility of the local authority, the developer can as a result of the impact study, be instructed to implement specific mitigation measures. The currently version of the *TIS Guideline for the City of Pretoria* discusses the cost apportionment for the impact of private vehicles only.
- ◆ To avoid negligence on the part of municipal government, an addendum to the *Traffic Impact Study Guidelines for Pretoria (the City of Tshwane)* is currently in preparation. This also includes the developer's required contribution towards public transportation facilities. The approval of land-use rights applications is an opportunity for developers who create major trip generators, to participate in Travel Demand Management. Developers in a particular node may be requested to function as a Transportation Management Association (TMA). TMA's provide an organizational framework for private sector intervention into transportation for the suburban centre (5). The effectiveness of a TMA depends on improvements to the public transport service, infrastructure, and the planning principles of the local authority. The TMA must liaise and influence employers within the node to participate in promoting public transport alternatives for their employees. The objectives of the TMA are focused on reducing single occupancy vehicles as one solution to reduce traffic congestion, promote mass transit, and coorporately improve environmental conditions. Some actions of the TMA could include employer subsidies, advertising on public transport vehicles, promote carpool programs, engage in individualised marketing (incentive programs for mass transit for example, free parking on weekends for carpoolers, etc.).

## **8. Goals Yet to be Achieved**

- ◆ During the off-peak periods there is vacant parking space that could function as a holding facility for mini-bus taxis.
- ◆ The Menlyn Taxi Association is interested in implementing a system where taxis can park at a holding facility in Menlyn and communicate with other taxis at Belle Ombre Station in the Pretoria CBD via two-way radio to relieve passengers off longer waiting times at both ends of the route.
- ◆ This project realised the need to issue an addendum to the *Guidelines for Traffic Impact Studies for the City of Pretoria* to elaborate on the subject of Mass Transit, the integration of public transportation facilities with land use development, and the obligations of a developer to provide integrated public transport facilities.
- ◆ It is therefore required of the Tshwane Metropolitan Municipality to enact this addendum into the city by-laws, hence, a new schedule in the Town Planning Scheme.

## **9. Conclusion**

The 80:20 public to private transport priority principle for public transportation is ambitious, but the consistent objective of public transportation authorities is to continuously improve the public transportation system, specifically the quality of service, infrastructure, and regulations. There is already a relatively high public transport patronage and so the priority is to focus on improving public transportation service and infrastructure to maintain this patronage.

Further, the 80:20 priority principle for public transportation is in the interest of national development. The following excerpt confirms the need for a detailed, holistic Traffic Impact Study.

*"A last factor to be considered is the fact that local authorities are dependant on developers to pay tax, create job opportunities, and contribute to the general economic well-being of a community. It is thus understandable that a local authority wants to attract developers and does not want to be too prescriptive with regard to the extent of the TIS, which is directly related to the cost of the TIS. On the other hand, the local authority has a responsibility to the community as a whole and should see that the road infrastructure can cope with generated traffic volumes in the long term. A road network with insufficient capacity can effectively strangle an area. In conclusion, a fine balance exists to ensure that the requirements for a TIS serve both the interest of the developer and the community at large (6)."*

Finally, the main objectives of the project were achieved. The facility is an improved standard and image for public transportation. The facility provides convenient and protected access on Lois Road directly into the shopping centre, including ramps for wheelchairs. Menlyn Management negotiated with the taxi associations operating in the Menlyn precinct to operate late hours specifically for employees working through extended shopping hours. Thus, the facility provides convenience and safety for commuters working late. The integrated facilities are now an example to future developments.

## **10. References**

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6. Manual for Traffic Impact Studies RR93/635, Department of Transport, Chief Directorate Roads, p.2.1

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## **RESUME OF KOLLAN PILLAY**

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3. Graduated from University of Natal in 1995.
4. Employed by the National Department of Transport in 1996.
5. Graduated from Texas A&M University 1999.
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7. Seconded to the Tshwane Metropolitan Municipality for experiential training in Transportation Planning and Road Construction.
8. Currently functioning as a resident engineer on the Upgrade of Dr Swanepoel Road north of Pretoria.