TRANSPORTATION POLICY, PLANNING AND IMPLEMENTATION CASE STUDY

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ABSTRACT

"…if high-density is high-calorie, then Jozi is a couch potato who shuns exercise yet can't stop gorging on rapid-growth koeksisters."

('Gridlock' – Sunday Times Lifestyle 22 April 2007)

The above, perhaps humorous, quotation, vividly captures the setting in Johannesburg, and in fact, in Gauteng province as a whole. As one of the continent's fastest growing economies, development in Gauteng has far out-run the available road infrastructure. The traffic conditions in many parts of Gauteng are long past critical, and ironically, the very growth that has resulted in the voracious demand for road infrastructure is threatened by the conditions resulting from that demand. For example, it is estimated that over R 930-million every year is lost through wasted work hours of commuters held up in congestion on the Ben Schoeman highway between Johannesburg and Pretoria. (Engineering News)

The intricacy of any transportation problem cannot be over-stated. As such, the issue of congestion is a complex one. Congestion, as experienced in Gauteng, is the result of many factors. Some technical factors such as poor infrastructure design may be held responsible for the congestion experienced in some places. If identified, these technical faults can be easily remedied, the only constraint being financial. The more complex factors responsible for congestion are socio-economic. These relate to economic development trends, societal perceptions and values, and transportation policies across all levels of government. The complexity of the issue is exacerbated by the fact that as there are different aspects contributing to the problem there are varying opinions on how best to deal with the problem.

Before discussing a specific case study of the congestion problem in Johannesburg, it is necessary to describe the policy context in which the issue of road traffic congestion exists.

1. SUSTAINABLE TRANSPORTATION

It is impossible to address any transportation issue today without being confronted by the term 'Sustainable Transport'. The notion of 'sustainability' forms the core of transportation policy, practice and implementation the world over. In the past, the focus of transportation planning was on the supply of transportation infrastructure to meet the demand arising from economic and population growth. Critics of this approach to transportation planning cited environmental degradation and wastage of resources as reasons to campaign for a shift of focus by transportation planners and transportation policy makers. As a result, over the past decade, the emphasis in public spending has been shifted away from building and supply, to travel demand management.

As in the rest of the world, transportation policy in South Africa has been shifted and amended, emphasising the importance of the environment and promoting travel demand management measures.

The debate thus arises as to whether the physical infrastructure currently in place in South Africa is sufficient to accommodate the forecast growth in all sectors of the economy, or whether economic growth will grind to a halt unless additional infrastructure is constructed.

2. TRANSPORTATION POLICY IN SOUTH AFRICA

The following documents directly or indirectly influence the manner in which the issue of congestion is addressed in Gauteng and in the whole of South Africa.

White Paper on National Transport policy

The White Paper states: “The Department of Transport is committed to an integrated environmental management approach in the provision of transport”. It is also stated that a goal of infrastructure and modal planning is to optimise capacity utilisation and to achieve modal integration.

The government’s vision relating to Transportation Infrastructure, as stated in the White Paper, aims to structure transportation infrastructure in a way that will ‘encourage public passenger transport and discourage excessive private passenger transport in urban areas’.

National Land Transport Transition Act (NLTTA)

National land transport principles and policy as set out in The Act, includes the following statements:

- ‘Public transport must be given higher priority than private transport, and all spheres of government must promote public transport’.
- ‘Investments in land transport must promote economic, financial, technical and environmental sustainability’.

Johannesburg Integrated Transport Plan – 2003/2008

In the ‘Needs Assessment’ section of the ITP, in the context of the state of transport and traffic in the City of Johannesburg (CoJ), two principal features to consider are identified. The first is the active promotion of viable and efficient public transport services. The second, in parallel with the first, is the effective management of private transport and commercial modes of transport to ensure a balanced, integrated transport system for Johannesburg.

The Johannesburg ITP also points to the importance of rail in alleviating the existing widespread congestion in the CoJ, highlighting, in particular, the Gautrain project.

The Spatial Development Framework

The Spatial Development Framework (SDF) does not relate directly to transportation infrastructure policy. With current emphasis on integrating transportation planning and land use planning, however, the SDF policies have a key influence on the issue of congestion in the CoJ. The SDF is a fundamental component of the Integrated Development Plan (IDP) of the CoJ. In directing and facilitating both public and private development, investment and growth within the CoJ, the SDF policies are key in the formulation of a transport plan for the city. The following are some of the key objectives of the SDF:

- Combat urban sprawl
- Support Public Transport
- Reduce Travel and transport costs
- Ensure that movement systems link with and are supported by strong high intensity nodes and higher density residential development
- Focus on in-fill and redevelopment
- Promote the optimal use of existing and future infrastructure and resources

The policies, strategies and objectives of the four documents highlighted above clearly show the demand management-oriented approach to transportation planning across national, provincial and local government authorities.

Case Study: Cedar Road, Fourways

Cedar Road (D1027; R552) is a provincial road that runs in a predominantly north-south direction between Dainfern and Witkoppen Road in Fourways. Figure 1 shows the locality of Cedar Road. Cedar Road is classified as a Class 3 minor arterial with a primary mobility function.

As can be seen on Figure 1, Witkoppen Road is the main east – west arterial in the vicinity of Cedar Road. As a result of this, all the traffic generated from the developments along Cedar Road is forced to travel the length of Cedar Road onto Witkoppen Road. The result is that Cedar Road operates at very low levels of service during the peak hours.

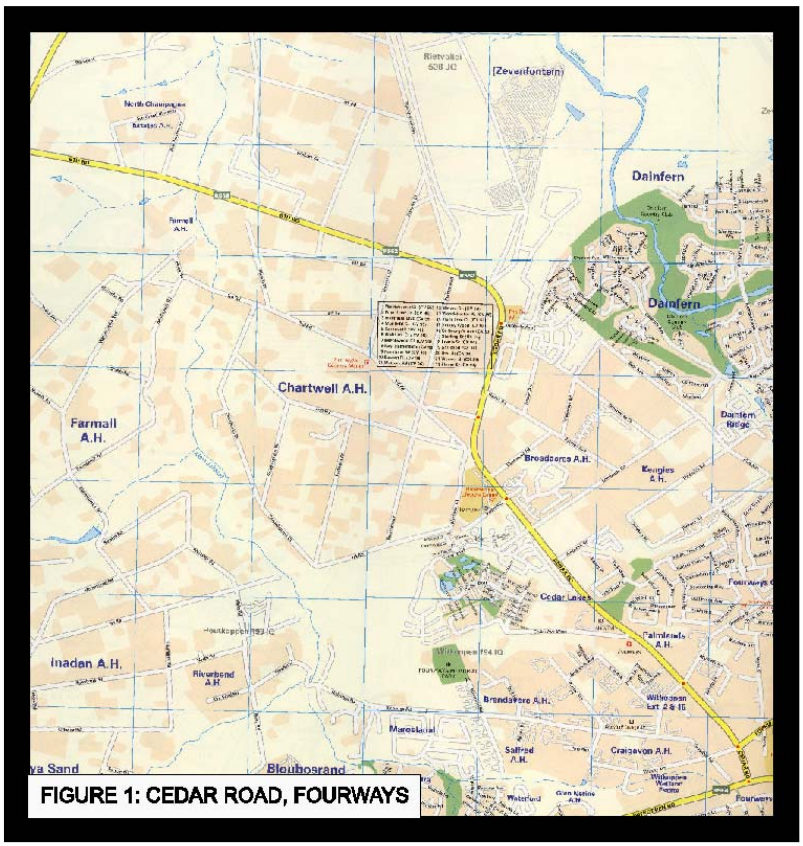

FIGURE 1

Figure 1. Locality map of Cedar Road in Fourways

Over the last several months, the traffic congestion in the Fourways area, and in particular on Cedar Road, has been the subject of heated debate between residents, authorities, traffic consultants and developers operating in the area. That the traffic conditions on

Cedar Road are atrocious and unacceptable is not the issue being debated. All parties involved agree that the congestion on Cedar Road is unbearable. There is, however, no agreement on where the blame lies and the possible solutions to the problem.

Residents/ Motorists

A general feeling amongst residents who have participated in the public debate on congestion in the Fourways area is that the authorities and developers are to blame. There is a general consensus that there is too much development being allowed in the area, without a concurrent expansion of the road network. Most feel that further development in the area should altogether be stopped until a lasting solution to the current 'traffic chaos' is implemented. Some residents have even taken it upon themselves to formulate a 'precinct plan' in response to what they feel is lack of adequate action by the relevant authorities. The press regularly covers this debate.

There are, also, some residents who feel that the traffic consultants appointed to do traffic studies for proposed developments should be held responsible for 'bogus' traffic studies which only serve the interests of developers.

Traffic and Transportation Consultants

Traffic consultants involved in projects along Cedar Road and elsewhere in the Fourways area agree to the fact that the existing road network is over-capacity and is inadequate to accommodate future growth and development expected in the Fourways area. The solution proposed by these professionals is that a regional approach to addressing the infrastructure shortfalls, rather than attempting to find a localised solution at Cedar Road is the way to solve these congestion issues. Through this regional approach, the importance of construction of key elements of the planned strategic provincial road network (PWV network and K-routes) is identified.

As a matter of priority, the following are proposed to deal with the traffic problems in Fourways:

- Construction of the K56 as an east-west link to the north of Fourways, initially between Cedar Road and William Nicol Drive, and then extending further east to Kyalami Road
- Upgrading William Nicol to the north of Fourways to Diepsloot, allowing for dedicated public transport infrastructure
- Completing the K60 link between Main Road and Sunninghill
- Building the PWV9 with interchanges onto the K60, k56 and N1 freeway (Abelson, 2007)

Figure 2 shows the future road network, according to provincial planning, in the immediate vicinity of Cedar Road.

Authorities

As per provincial and municipal policy, priority has been placed on public transport provision. The City of Johannesburg is in the process of implementing Bus Rapid Transport, according to CoJ executives. (Sunday Times, 22 April 2007)

Local Authority officials have not explicitly addressed the congestion problem in Fourways, though they have been invited to do so on more than one occasion. One solution purported to have been proposed by city planning officials is a bus service running from Lenasia to Alexandra and from Sunninghill to Soweto. (Fourways Review, Week ending 27 April 2007)

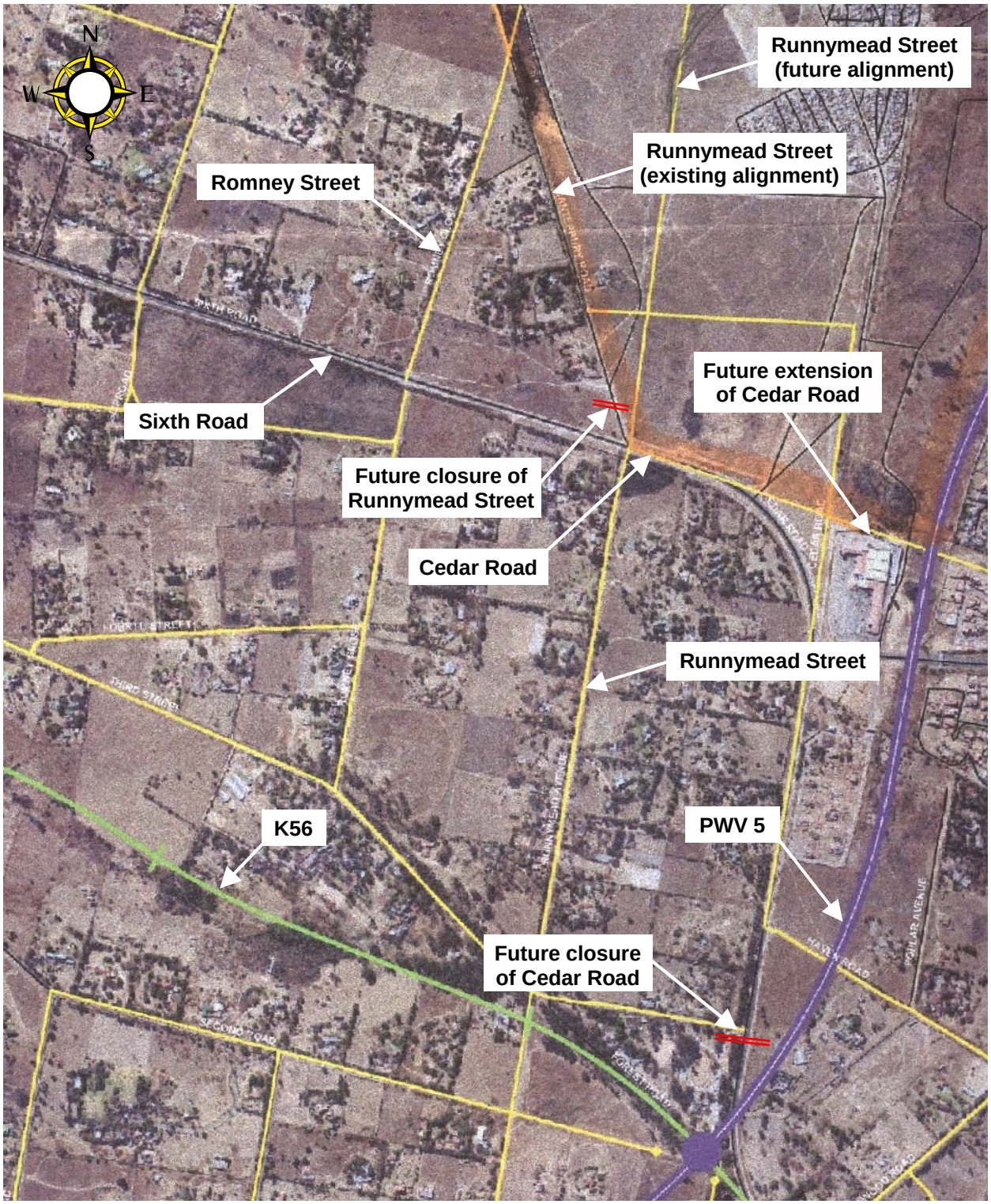

Figure 2. Locality map showing planned future improvements near Cedar Road

There have been media reports to the effect that SANRAL, in conjunction with the Gauteng Roads Department, is investigating funding possibilities for building sections of the planned PWV and K-route network. According to these reports, the PWV9 and PWV5 are being investigated. (Engineering News)

3. CONGESTION: POTENTIAL SOLUTIONS

In a presentation made to the SAICE Transportation Engineering Division on 'Transport's Role in Growth, Development and Poverty Alleviation', the direct benefits of constructing key elements of the planned strategic road network to road users and to the country's economy are highlighted. The monetary value of time saved per road user is estimated at R60 per hour, and the direct saving to users of constructing the planned PWV9 freeway between Johannesburg and Pretoria is estimated as R500 million/ annum. The need to invest in new infrastructure in developing countries is emphasised. (Kruger and Sampson, 2004)

Dr R F Botha, in his 'Memorandum on the priority of road infrastructure' states the following:

"It can be proven through input/output table analysis (of the national accounts) that increased expenditure on road building activity generates multiplier effects in the economy that eventually warrant the fiscal resources necessary for such expansion. Research commissioned by the PWV Consortium indicates that the total impact on GDP of every rand spent on road building involves a multiplier effect of almost 1,27 times. The research also determined that approximately 24 000 jobs are created in the economy for every R1 billion spent on road projects. A third important macroeconomic effect relates to government revenues. The combined taxation effect of road building activity results in a combined fiscal backflow effect of R298 million to the Exchequer for every R1 billion spent on such activity." (Botha, 2005)

There are, however, numerous proponents of travel demand management who would disagree with the above views expressed in support of the expansion of transportation infrastructure to alleviate congestion. Erick Ferguson, in his book 'Travel Demand Management and Public Policy', places Travel Demand Management (TDM) into the heart of transportation planning and transportation policy formulation, promoting TDM measures as the preferred alternatives to infrastructure expansion.

A telephone survey conducted among people who worked in Midrand in 2001, when the Midrand TDM pilot project was being implemented, indicated overwhelming support for the basic principles of TDM (Venter and Schnakenberg, 2001) It was however noted that as the Midrand project was a pilot project, none of the potentially controversial measures such as congestion charging were introduced.

4. CONCLUSIONS

There is no 'quick-fix' to the congestion problem that is being experienced on Cedar Road in Fourways. From a land use planning perspective, the densification happening along Cedar Road is desirable for the purposes of service provision and public transport planning, as public transport is only viable in high-density areas. The densification is thus in line with current national, provincial and local authority transport policies which are committed to prioritising public transport and discouraging private transport.

The residents of Fourways and commuters along Cedar Road, however, do not share the views of the authorities. There is no attractive public transport alternative in place, and in their opinion, the stress they face daily as they crawl through the congested streets can only be relieved by providing alternative roads and curbing the densification that is happening.

Undoubtedly there are merits to travel demand management, successes of which have been seen in the USA, Britain and Australia, to name a few. But perhaps the demerit lies in comparing South Africa, a transitional economy with its limited infrastructure, with first-world economies, which have far more expansive road networks. Perhaps, as proposed by Sampson and by Botha Gauteng's, and indeed South Africa's, road network must be expanded, before demand management measures will be of any positive consequence. It may be that current transportation policies are too focused on demand management and the notion of sustainability, without giving adequate consideration to the infrastructure needs of the South African economy.

5. REFERENCES

[1] Abelson, B. 2007. Cedar Road, Fourways: A Regional Perspective. (Comments in response to public debate regarding Cedar Road congestion). Johannesburg. (Unpublished)

[2] Botha, R F, 2005. *Memorandum on the priority of Road Infrastructure*. (Unpublished)

[3] City of Johannesburg Spatial Development Plan

[4] Ferguson E, 2000.*Travel Demand Management and Public Policy*. Aldershot, Hants, England, Ashgate.

[5] Fourways Review week ending April 27, Volume 5, Number 15

[6] Johannesburg Integrated Transport Plan

[7] Jordaan E, 2007. *Chartwell Holding 98 & Chartwell Extensions 1 and 6 Mixed Land Use Development:* Traffic Impact Study. TTT Africa. February 2007.

[8] National Land Transport Transition Act

[9] Sampson, J D and Kruger, B, 2004, Transport's Role in Growth, Development and Poverty Alleviation (Research Paper delivered at the SAICE Transportation Quadrennial)

[10] Venter, C J and Schnakenberg, E, 2001. Travel Demand Management in Midrand: An Initial Assessment of the Experiment. Proceedings of the 20th South African Transport Conference. July 16 – 20, Pretoria, South Africa.

[11] White Paper on National Transport Policy

[12] http://www.sundaytimes.co.za/article.aspx?ID=440587

[13] http://www.engineeringnews.co.za/components/print.asp?id=95416

[14] http://en.wikipedia.org/wiki/Sustainable_transport

[15] http://www.dot.gov.za/library/legislation/nlttaguide/overview.html