Rea Vaya project points

Johannesburg in the right direction

THE CITY OF Johannesburg has adopted a spatial development framework which focuses strongly on the need to create a compact city and limit urban sprawl in order to utilise urban infrastructure and land more efficiently and effectively. The primary measure to support this policy is the Rea Vaya Bus Rapid Transit (BRT) system.

The principal project objective is to upgrade the quality and performance level of the public transport system. BRT refers to a high-quality, bus-based transit system that delivers fast, comfortable and cost-effective urban mobility through the provision of segregated right-of-way infrastructure, rapid and frequent operations, and excellence in marketing and customer service.

MAIN CHARACTERISTICS OF BRT

- Segregated busways or bus-only roadways
- Location of the busways in the median lane rather than in the kerb lane
- Existence of an integrated network of routes and corridors
- Separate stations that are convenient, comfortable, secure, and weather-protected
- Stations that provide level boarding between the station platform and the bus floor
- Special stations and terminals to facilitate physical integration between trunk routes, feeder services and other public transport systems
- Pre-boarding fare collection and fare verification
- Fare and physical integration between routes, corridors and feeder services
- Restriction of entry to the system to contracted operators under a reformed business and administrative structure
- Distinctive marketing identity for the system
- Use of low-emission-vehicle technologies
- System management through a centralised control centre, utilising Intelligent Transport System (ITS) applications such as automatic vehicle location
- Special physical provisions to ease access for people with special needs, such as children, the elderly and the disabled
- Clear route maps, signage and/or real-time information displays that are visibly placed within stations and/or vehicles

REA VAYA MEANS 'WE ARE GOING!'

Rea Vaya is the name that has been chosen for the Johannesburg BRT system. It is a major contribution towards Johannesburg's transformation into a world-class African city. This BRT system is one of the first of its kind in Africa (there is also a BRT system in Dar es Salaam).

Due to the legacy of spatial planning during apartheid, as a result of which the poor were forced to live furthest from their places of work, a large percentage of city residents, who do not have access to cars are still experiencing long travel times, with difficult transfers – mostly forced via the inner city.

The reason behind the city's choice of BRT is that it combines the best features of rail with the flexibility and cost advantages of road-based public transport. It is also much quicker to implement than rail systems when faced with time constraints. BRT has been successfully implemented in many developing countries with transport problems similar to those of South Africa, such as Colombia, Mexico, Equador, Peru, Chile, China, Indonesia and India.

HOW WILL THE REA VAYA SYSTEM WORK?

Rea Vaya offers three inter-connected levels of service. The largest buses (those with a capacity of up to 90 passengers) will be articulated and will be referred to as the 'trunk' buses. These buses will travel only on the designated median lane trunk routes.

'Complementary' buses, which will be

able to pick up passengers at Rea Vaya stations on the trunk routes and will also be able to operate on the kerbside, will have a capacity of 60 passengers.

Finally, the 'feeder' buses (with a capacity of 32 passengers) will bring people from the outer areas which do not have direct access to the trunk or complementary routes. This will extend Rea Vaya's network to areas far beyond the main trunk routes. When complete, Rea Vaya will cover more than 300 km of trunk routes across the city.

One of the most important aspects of this new system is that it will be fully integrated with other transport networks. Rea Vaya will not be competing with other transport systems such as the SARCC commuter rail system or the Gautrain. This is an urban transport network that will feed into and complement existing networks to ensure the most effective movement of people across the city.

The operator business plan has been modelled on successful BRT systems in Latin American countries where they have situations almost identical to those of South Africa, with large numbers of minibus taxis and buses vying for passengers, and where incumbent taxi operators and bus operators have become the new BRT operators. Rea Vaya operators will be compensated on the basis of vehicle kilometres run, rather than the number of passengers carried, and intensive consultation has been taking place with industry representatives – particularly in the minibus taxi industry. From the operational plan it is estimated that the direct operating costs will be covered by the fare income.

The estimated capital cost of Phases 1A & 1B amounts to approximately R2 billion, and the city has received a substantial proportion of this capital funding from the national Public Transport Infrastructure and Systems Fund (PTIS).

BENEFITS OF AND CHALLENGES FOR THE REA VAYA

Some of the **short-term benefits** are: efficient, reliable and frequent public transport services; affordable fares; a safe and secure public transport system; accessible public transport for people with disabilities and mothers with children; a decrease in traffic congestion, energy consumption and vehicle emissions; an enhanced urban environment; and recapitalisation of the public transport fleet.

The **medium-term benefits** are: containing urban sprawl (spread of settlements) and promoting densification; promoting social inclusion instead of isolation; and job creation.

The **long-term benefits** of the project are: economic development in and around the areas of operation; reduction in pollution; and a world-class public transport system that the city can be proud of.

1 Bob Stanway, Project Manager Rea Vaya BRT, City of Johannesburg
2 Almost complete, dedicated BRT lanes on the Pat Mbatha Highway awaiting BRT stations
3 A dedicated one-way BRT lane under construction at the intersection of Wolmarans and Edith Cavell Streets in Hillbrow

There are however some **challenges** facing the implementation of a project of this nature, namely:

- Developing a robust business and financial model
- Obtaining buy-in from existing operators and financiers
- Training owners and operators in the skills needed for successful Rea Vaya operations
- Educating users and potential users
- Ensuring that the Rea Vaya system meets expectations, e.g. security, affordability and travel time savings
- Planning and implementing under time pressure

WHERE WILL THE REA VAYA BE IMPLEMENTED?

The City of Johannesburg is currently busy implementing Phase 1A of Phase 1 of the Rea Vaya BRT system. The full Phase 1, scheduled to be implemented by 2013, will be made up of 122 km and 150 stations.

PROJECT STATUS OF THE REA VAYA

The Johannesburg Development Agency (JDA) is involved in the physical implementation of the bus lanes and stations on 14 different contracts which are in various stages of preliminary design, detailed design and implementation.

An innovative design has been developed for the stations and these stations will be constructed off-site in a modular form. It is intended to have a prototype station placed next to Joubert Park in the inner city by the end of October 2008.

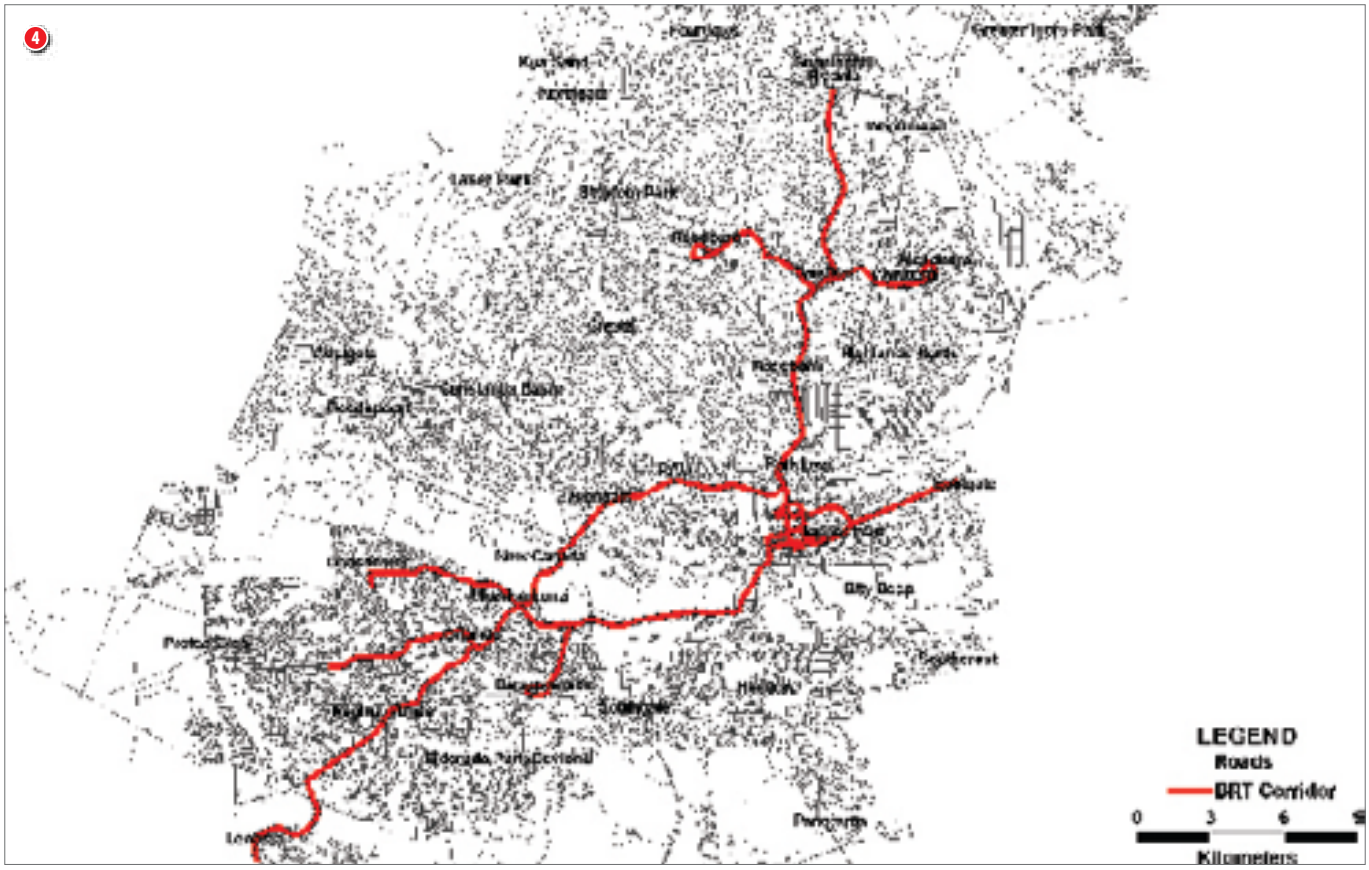
The Johannesburg Roads Agency (JRA) is involved in the implementation of the electronic components of the project – for example the fare system, the passenger information system and the global positioning system – and with the Rea Vaya Control Centre to be constructed in Martindale. This state-of-the-art Control Centre will feature composite ITS to ensure the smooth running of the BRT system, including facilitating and managing the day-to-day operations, scheduling and movement of the buses.

The selection of buses and engine propulsion systems is under way, with some 1 190 buses being required in total for Phase 1. These will consist of 427 articulated buses (19,5 m), 350 complementary buses (13,9 m) and 13 feeder buses (8,5 m).

A wide range of environmentally friendly propulsion options have been investigated, ranging from Euro 3 diesel and Euro 4 diesel to hybrid and ethanol-fuelled, and approval has been obtained for Phase 1A to be Euro 4 diesel using low-sulphur diesel. It is estimated that if only 15% of car users who live within 500 m of a Rea Vaya trunk route switch to Rea Vaya, some 370 000 tons of CO^2 will have been saved by 2010.

PLANNING FOR SERVICE DURING THE CONFEDERATIONS CUP

The Rea Vaya BRT system will be available to provide bus transport services for the Confederations Cup in June 2009. At present the project is concentrating on areas that will ensure that the BRT can provide services around and between the key soccer stadia in the city, namely



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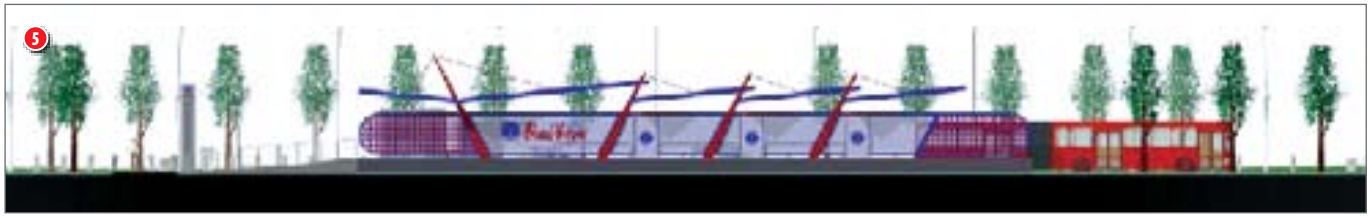

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Orlando Stadium and the Ellis Park Stadium. In addition, urgent attention is being given to satisfying the overwhelming need for enhanced public transport for commuters travelling from Soweto and surrounding areas into the inner city.

For the Confederations Cup, 143 buses, consisting of a mix of articulated (trunk) and complementary buses, will be in operation, travelling along a 25,5 km route network, and utilising 20 stations, with all buses and stations being fully accessible to people with disabilities. It is envisaged that the trunk buses will run one every three minutes during peak periods with a minimum frequency of three buses per hour during off-peak hours. The electronic ticketing system will provide a cashless prepaid fare collection system, minimising boarding delays and reducing Rea Vaya BRT travel time. It is estimated that during the Confederations Cup, the Rea Vaya BRT will be able to transport 69 300 passengers per day.

4 Map Rea Vaya Phase 1
5 The innovative design that has been developed for the stations
6 Transmilenio in Bogota, Colombia
7 The Joubert Park busway next to Joubert Park in Hillbrow

TOWARDS A WORLD-CLASS AFRICAN CITY

The Rea Vaya BRT project is of major importance to the development of Johannesburg as a world-class African city. It will have a profound effect on the movement of people within the city and on its growth patterns. It is also an important first step in implementing the national initiative to introduce Integrated Rapid Public Transport Networks (IRPTNs). This exciting initiative will change the face of Johannesburg and go a long way towards helping to integrate and transform the city.

INFO

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