



SÃO PAULO'S URBAN TRANSPORT INFRASTRUCTURE

By **Ciro Biderman**

A research team led by **Ciro Biderman** assesses how to improve the current transport system in the São Paulo Metropolitan Region.*

Over 19 million inhabitants and 6.2 million cars occupy the São Paulo Metropolitan Region, Brazil's largest, while the municipality of São Paulo accommodates more than 11 million people and 4.2 million cars. São Paulo boasts the second largest helicopter fleet in the world, and its main modes of transport are private vehicles, public transport and walking. Public transport is feebly subsidised however, with nearly half of the city's households opting to commute by car. To date, traffic management has been limited to 'plate restriction' (rodízio) through which 20 per cent of cars are not allowed to circulate in the extended centre between 7 am and 10 am and 5 pm and 8 pm on weekdays. Local and state authorities are taking actions to remedy the city's infamous traffic congestion and although official proposals are heading in the right direction, a more conceptual change would prioritise public transport, as well as pedestrians and cyclists.

There are currently 313 km of metro and rail lines dedicated to passenger transportation in the Metropolitan Area. This is less than half the networks of either London, Berlin or New York, all in metropolitan regions smaller than São Paulo. Within Latin America, only Mexico City's rail network is on a par with São Paulo with a total of 553 km. To further complicate matters, some of São Paulo's major commuter rail lines accommodate freight as well as passenger transport. Since the late 1990s, the State Secretary of Transport through Dersa (Empresa de Desenvolvimento Rodoviário) has started to implement a plan to segregate freight from passengers through construction of an outer road ring, the Rodoanel, and an outer rail ring, the

Ferroanel, so that passengers will no longer have to share the same rail lines with freight trains.

The Brazilian transport system is highly concentrated by the use of motorised traffic. Even so, in 2002 about 7.4 million journeys on public transport and 8 million car journeys took place in São Paulo, compared to 4.2 million public transit journeys and 4.9 million by car in the other municipalities combined. Then, the number of journeys by car represented 53 per cent of the daily total of motorised journeys in the Metropolitan Region, an increase from 48 per cent in 1997. Recently, though, this trend has begun to reverse: preliminary data from 2007 shows that car journeys are down to 45 per cent. It is thought that the introduction of the bilhete único (single ticket), which allows users of the rail network to pay a standard fare, regardless of distance or number of connections, has reinvigorated the use of public transport. Use is very much concentrated on buses (76 per cent of journeys in 1997 and 72 per cent in 2002). And while the current use of bicycles is negligible, preliminary data from 2007 shows that 33 per cent of families in the Metropolitan Region own at least one bicycle. Increasing the supply of dedicated cycle lanes might increase the use of bicycles considerably.

São Paulo's dedicated bus lanes, Corredores de ônibus, are similar to the TransMilenio in Bogotá, but are much less segregated from general traffic. Furthermore very few stations have passing lanes, and there is no high-level entry or fare pre-payment as in the TransMilenio. Operating at speeds only half that expected of a bus rapid transit (BRT) system, in 2005 the city's Corredores de ônibus occupied just 112 km of the 4,300 km of roads covered by the bus network. The first stage of a new bus

line, the Tiradentes Expressway, was recently opened in the South-East of São Paulo, connecting the city centre with the largest social housing complex in Latin America, Cidade Tiradentes. When fully implemented, the Tiradentes Expressway will be able to transport 50,000 passengers per day. It is the only system in São Paulo comparable to a BRT as it currently runs at speeds over 30 km per hour along permanent, demarcated lanes. The current investments will add around 160 km of corridors.

The general overall public transport plan for the São Paulo Metropolitan Region has been consolidated into an Urban Transport Integrated Plan (PITU) to include projections up to 2025. The PITU 2025 implies very few extensions to the commuter rail network, but a considerable improvement using profits generating from the separation of freight transport. The PITU proposal calls for the partial duplication of lines with new expressways, a single extension outwards as well as the extension of several lines inwards to make them all converge in one area. It also envisages two new lines, one of which will be an express train to the airport. In terms of bus corridors, besides adding more than 300 km to the network, PITU proposes 110 km of 'urban corridors' including passing points to increase their speed to the equivalent of a BRT system. The proposal projects a total of 580 km of new corridors by 2025. To generate these significant change, the system should be highly integrated, a priority of PITU 2025, which calls for 15 key terminals connecting the different modes of transport. Future terminals would start in the metro system and connect directly to buses or rail services at street level.

Since the 1950s, transport policies in the São Paulo Metropolitan Region, as in most other Brazilian metropolitan areas, have neglected public transport, pedestrians and cyclists. The result is a chaotic and inefficient system with long commuting times, especially for the poor. The obvious way forward is to improve the supply of public transport. However, just improving the supply is not enough. A fundamental shift towards more equitable and sustainable transport modes is needed. Cars, buses, pedestrian, cyclists, motorcyclists and street sellers all compete for limited space on city streets, avenues and sidewalks. The government has the power to

regulate the use of these spaces and to decide how they are distributed through a range of instruments. Increasing the space allocated to public transport, bicycles and pedestrians is an important first step to redistribute resources as these will specifically improve the lives of the poor. Since the poor have less access to private space for non-motorised uses, they use more public space for those purposes. This modal shift would also benefit the environment by reducing travel distances considerably.

There is no doubt that the PITU proposals represent an advance in standards for public transport in the greater metropolitan area of São Paulo. Apart from increasing the length of its rail-based network, they also envisage integration of a bus rapid transit system in the region. Even so, the proposals may still be seen as rather timid given the magnitude of the city's transport challenges. To this end, the study developed by our research group has identified a number of strategies and initiatives that could enhance the impact and efficiency of the plan. Detailed analysis and proposals will be published in a separate report, but the main recommendations include expanding the proposed network of BRT lines by 190 km, upgrading all public transport corridors to BRT standard and adding 60 stations to the system. In addition to spatial strategies such as the future of the Minhocão, the study proposes new funding schemes that rely less on general state taxes and more on tax revenues from petrol, which have remained stagnant despite the massive increase in car ownership in recent years. The overall objective of this new cocktail of proposals is not simply to increase the supply of BRT lines but to bring about a paradigm shift in transport policy in São Paulo to prioritise the balance between public transport and the private car.

One of the key focus areas of the study is the Elevado Costa e Silva, a major elevated motorway known as the Minhocão (big worm) built in 1971 by the national dictatorship government. Apart from its significant political associations, the overpass cuts East-West through downtown São Paulo and is considered to be partially responsible for the deterioration of the city's historic core. Despite this, the Minhocão is the main vehicular link between the centre and the city's western region. The Sé municipality that surrounds it is a socially diversified area characterised by a highly mixed land-use

pattern, located close to São Paulo's main public transport hub with access to metro, bus, and rail.

The Minhocão covers an area of 3.4 km, about 5.5 metres above ground and its width varies between 15.5 and 23 meters, with some adjacent buildings within a very close distance of 5 metres. No bus lines run on the Minhocão while 80,000 vehicles pass on it each day. Its construction accelerated land and building depreciation in the downtown area, especially along the urban blocks which border it. In 1976, degradation was so severe that the city decided to close the Minhocão at night because of high accident rates and noise pollution. Today the structure is closed to vehicles on Sundays when it is used by city dwellers as a linear urban park. In 2003 a public transport corridor system was introduced at the lower level to integrate the network to the metro through the Marechal Deodoro and Santa Cecilia stations even though no physical connections were implemented.

The study has identified the Minhocão as a major strategic component of the city's public realm. It proposes that the Minhocão be converted and that the resulting open space be turned into a permanent urban park for pedestrians and cyclists. Currently there are four lanes for cars on the top level and two lanes for buses and four lanes for cars at the lower level. The system could be easily modified in such a way that the entire upper level and two lower level lanes are given over to pedestrian and cycle routes. Overall four lanes that are currently used by cars could be used by public transport, cyclists and pedestrians. This strategy would transform an urban problem into an urban asset, increasing land values and potentially leading to a significant upgrading

of the wider area, even though the economic impact would need to be carefully regulated.

This proposal for the Minhocão must be seen as an exemplar of what could be achieved across the city if a new approach to public transport and the public realm were introduced in São Paulo, bringing with it considerable social, economic and financial benefits to the surrounding areas. On balance, the study proposes a new way of thinking about transport policies which prioritise modes of transport that have never been prioritised before. Its implementation does not require a substantive increase in expenditure but a diverse investment approach that shifts the balance away from individual to collective modes of travel.

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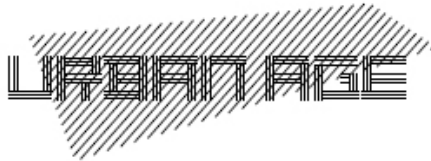
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