

# En-route to sustainable transport

*This July, the 28th Southern African Transport Conference in Pretoria was the place where experts, specialists, interest groups and transport users met to discuss the state of sustainable transport, road safety and transport engineering in the country, and consider the way forward.*

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## Climate change impacts on transport planning

**A**lthough transportation is a significant contributor to climate change through vehicle emissions and other related activities, the reverse is also true. Climate change also has a major impact on transportation!

It's a perspective not often brought to our attention but one that Randall Iwasaki, of the California Department of Transportation, highlighted at the 28th Southern African Transport Conference in July 2009.

'Historical climate patterns may no longer be a reliable planning guide for transport and infrastructure officials,' he noted.

In addition, current infrastructure, positioning and materials are not made to withstand rising sea levels, heat waves and other very hot days, increases in Arctic temperatures and increases in intense precipitation and hurricane intensity.

'Climate changes will require significant changes in how transportation professionals plan, design, operate, and maintain the infrastructure,' he explained. 'And today's investment decisions will

affect how well the infrastructure adapts to climate change far into the future.'

The California Department of Transportation has taken the approach of both mitigation and adaptation, said Iwasaki.

This, he explained, involves minimising the change in climate to reduce the hazard to human life and property, while adjusting our behaviour to take advantage of opportunities or cope with the consequences of this change.

Of particular interest is California's focus on environmentally friendly approaches to 'pavement' – what in South Africa we refer to as 'road surface'. This includes new kinds of asphalt and recycled and reclaimed asphalt. Some include small amounts of interground limestone (replacing cement), which makes better concrete that lasts longer and has a lower carbon dioxide footprint. Warm Mix Asphalt can be placed on the road at drastically reduced temperatures of between 50-100 degrees Fahrenheit, resulting in reduced fuel consumption and decreased greenhouse gases.

## IRF calls for greater focus on transport and climate change

**A**t the Copenhagen climate change convention (COP 15) in December, the IRF (International Roads Federation) will join other transport stakeholders and advocacy groups to ask for transport to be given greater consideration.

At present, transport falls under "energy" in terms of the Kyoto Protocol, the subject of discussions at the Copenhagen convention, but IRF is calling for the transport sector should be regarded as a case on its own.

At COP 15, an agreement is to be reached on the continuation of the Kyoto Protocol, which is coming to an end in 2012. Discussions on the continuation of the Kyoto Protocol started in December 2007 with the adoption of the Bali Action Plan; this provided a roadmap for discussions and negotiations leading up to COP 15.

'A core theme in the discussions on the position of transport in a post-2012 climate agreement is the need to deal with transport as a sector in its own right, and not as a sub-sector of the energy sector as it is currently the case,' says Susanna Zammataro, Deputy Director-General, International Road Federation, Geneva, Switzerland.

'This is important, in order to avoid too much emphasis on technological solutions which might underplay the importance of limiting emissions through behavioural change and other measures, such as better land use planning.'

Transport must be fully part of the instruments

agreed upon at COP 15, she adds, as this is necessary to ensure that the transport sector can access mitigation funding.

Transport is responsible for 13% of all world greenhouse gas (GHG) emissions; says Zammataro, and 23% of global CO<sub>2</sub> emissions come from fossil fuel combustion. There is an expected increase of 57% by 2030 – and transport in developing countries will represent around 80% of this increase. In all this, road transport currently accounts for 74% of total transport CO<sub>2</sub> emissions.

IRF promotes roads that are safe, sustainable, economically viable and ecologically friendly. Through its working groups on road safety, environment and road finance, the IRF is a worldwide provider of the latest developments and findings in the planning, construction and operation of roads.

It is in particularly within the working group "environment" that IRF has started to look into and to compile a "Best Industry Practice" publication showcasing the road sector's commitment to the environment and adaptation to climate change.

'Yes, effective transportation systems are essential for prosperity and have significant impacts on economic growth and social development,' says Zammataro, 'but the environmental performance of the transport sector is unsatisfactory. There is an urgent need to intensify efforts to improve it, especially when it comes to climate change.'

## Slow bus speeds, high fares fuel private car use

**S**low speeds, long travel times and high fares are the main reasons why commuters travelling by car do not opt for a bus instead, according to Klaas van Zyl, principal specialist at SSI.

Speaking at the Conference, van Zyl said that 'one of the main transport policy strategies that government can address to make transport sustainable is to influence private transport users to move from private to public transport.'

'As users are most sensitive to bus in-vehicle travel time, car travel time and bus fares, policies impacting on bus fares and bus travel times would have the most success,' he explained.

'In South Africa the main debate and focus of planners has been on improving public transport mainly to retain public transport captive users (people who do not own cars),' he noted. But 'little attention has been given to influencing higher-income private transport users to make use of public transport,' he added.

Van Zyl reported on a recent case study in Johannesburg's inner-city where commuters were quizzed on their choice of bus or car (as drivers, passengers or lift-club members). It was specifically targeted at short-distance commuters, and only those who had a choice between the two modes.

People were asked about the time it took to walk from home to bus; the time it took to wait for the bus; the time they spent in the vehicle; the travel costs (bus fare or car fuel costs); and the parking cost per day.

It found that the main reasons commuters choose the bus over the car is because it is cheaper and safer (from accidents) and car-use is considered less convenient (the people with whom they

share lifts do not work the same hours).

The reasons commuters chose to travel by car instead was because this mode was perceived to be faster, more convenient, and they don't have to wait for it; they found buses too slow and time-consuming, and the time schedule did not suit their needs.

An interesting finding was that people with previous experience of bus travel were less likely to use a bus again, suggesting that negative bus experiences play a vital role in mode choice.



# Women use fewer fossil fuels

**W**hen women travel within urban areas they make more trips than men do, and although their total travel distances are similar, they consume significantly less energy. This is because women are more likely to walk or use public transport (minibuses or buses) while men are more likely to use private vehicles and motorcycles.

These are the findings of a study conducted by Semira Mohammed and Christo Venter of CSIR's Built Environment and presented at the Conference. The study used data from the Nelson Mandela Metropolitan Area Travel Survey and other transport data from the municipal area.

Mohammed said that the study aimed to assist planners and policy-makers plan around transport energy use. 'Planning that specifically aims to reduce energy consumption in the total transport system is needed in South Africa,' said Mohammed.

'Currently, most transport authorities simply emphasise that reducing travel time for motorists and promoting public transport might be beneficial from an energy point of view.'

The transport sector in South Africa is second

only to commerce and industry in terms of net energy consumption, notes Mohammed, yet South Africa's national transport policy doesn't address energy concerns head-on.

'The development of energy-aware transport strategies requires a better understanding of the energy implications of different land-use and socio-economic factors,' she says.

With this in mind, Mohammed and Venter investigated the socio-economic and land-use variables that influence energy consumption in personal transport, looking at how these variables affected personal transport. Average energy consumption for all trips by private car is around three to five times that of trips by motorcycle, minibus taxi or bus, Mohammed says. This is because of lower occupancy, higher distance travelled and higher energy intensity of motorcars.

However the findings of the study are not necessarily good news, noted one of the delegates. The fact that women are more likely to use public and non-motorised transport might point to their continued lower socio-economic status and social marginalisation.

# Roads safer than last year, but still too dangerous

**D**espite decreases in the number of deaths on our roads, South Africa remains one of the most dangerous places in which walk, cycle, drive or get a lift.

According to South Africa's latest Road Traffic Report, between 1 April 2008 and 31 March 2009, the number of fatal crashes in South Africa decreased by 1 103, from 11 674 to 10 661 crashes over the same period the previous year. The number of road fatalities decreased by 6.84%, from 14 713 fatalities to 13 707 over the same period the previous year.

However, according to World Health Organisation's Global Status Report on Road Safety, released in mid-June, South Africa has an unacceptably high number of road deaths, with one of the ten highest road traffic fatality rates in the world. Almost half of those victims are poor, vulnerable road users. In South Africa, pedestrians account for 39% of road deaths, drivers of 4-wheelers 25%, passengers of 4-wheelers 32%, cyclists 2% and motorbikers 2%.

A fatality is defined as someone killed during or immediately after an accident, or death within six days after an accident happened as a direct result of such accident.

Not all public health and research institutions agree with this definition, though, arguing that a definition such as that in the United States – 90 days after an accident happened as a direct result of such accident – is more accurate. Hence different institutions may report greater numbers of deaths.

Between April 2008 and March 2009, driver fatalities decreased by 9%, but passenger fatalities increases by 2.31%; pedestrian fatalities decreased by 9.23%.

Minibus taxis involved in fatal crashes increased by 41.45% – while all other types of vehicles recorded decreases. However, in terms of numbers, 6 311 motorcars and 2 790 'bakkies' were involved in fatal crashes, compared to 373 minibus taxis. Fatalities increased by 67% for minibus taxis (524 people killed), while those for motorcars decreased by 10.66% (6 244 people killed).

Most fatal crashes happen on Saturdays and Sundays.

It's worth noting, though, that while our local presses report our decreased number of road deaths with joy – "only" close to 14 000 people killed last year – a country such as Sweden's long-term goal is that there should be no fatalities or serious injuries in road traffic at all. Sweden is already among those countries with the lowest number of traffic fatalities in relation to its population. This is not enough, however. Swedish road safety work – Vision Zero – is based on a refusal to accept any human deaths or lifelong suffering as a result of road traffic. 

