

Overview of ITS Infrastructure in South Africa

Preparing the way for the Networked Car in a New World Economy



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- o Introduction
- o Transport and ITS scenario
- o Flagship Projects
- o 'Constraints'
- o **'Drivers'**
- o Conclusion

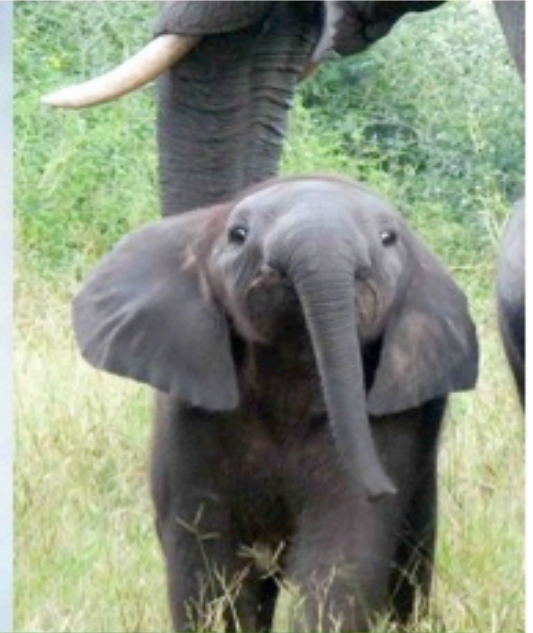
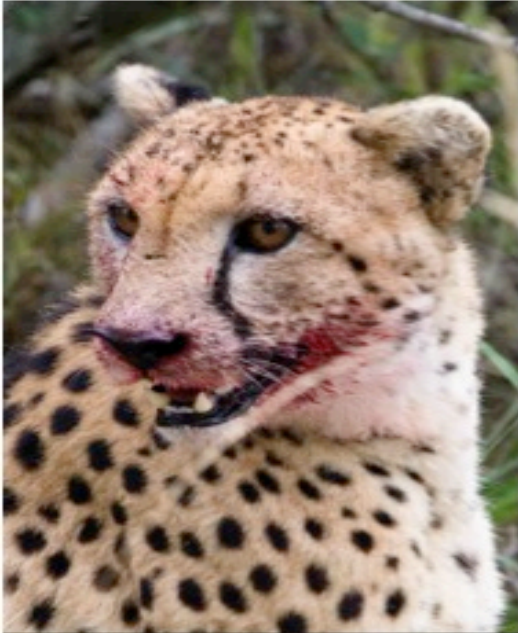
1. Introduction



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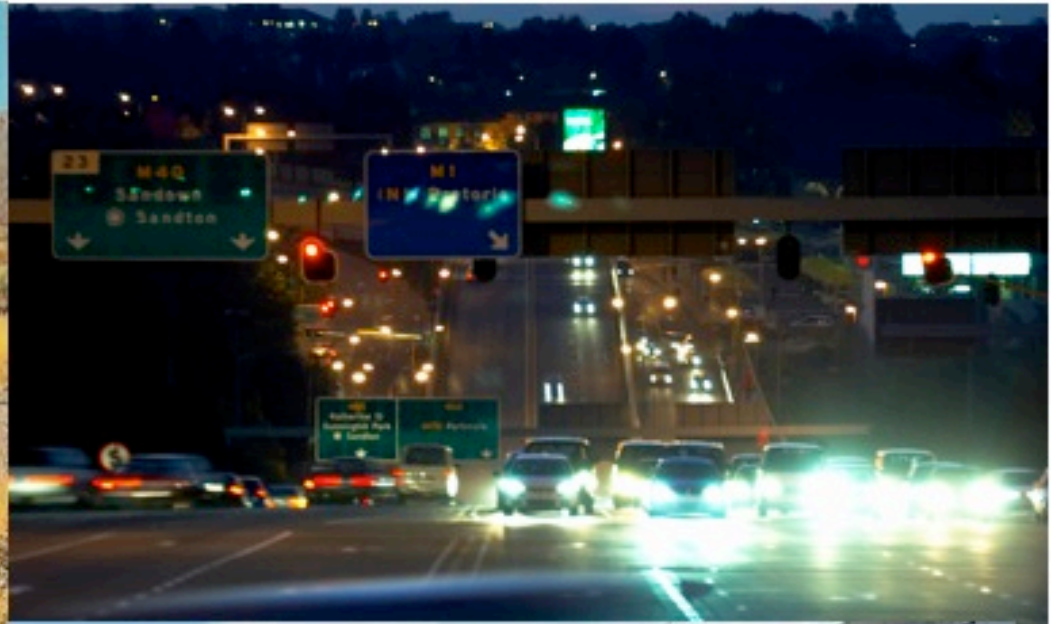


1.1 Country of great beauty



1.2 Country of great contrasts

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1.3 Country of great contradictions

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- Rapid urbanization, urban sprawl, insufficient public transport, congestion and near gridlock
- Gap between rich and poor
- High tech and no tech (but 40 million cell phones)
- **Vehicle fleet 12+ years of age**
- Minibus taxis carry 65% of commuters
- Rampant unemployment (24% officially)

2. Transport and ITS Scenario

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- o South Africa is spending in excess of €80 bn (ZAR846 bn) on infrastructure projects
- o FIFA Soccer World Cup created new sense of urgency



2.1 FIFA Soccer World Cup

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2.2 Transport Challenges

- Reduce congestion nearing gridlock in cases
- Improve traffic management
- Improve traffic law enforcement
- Develop integrated public transport system
- Achieve better modal balance
- Improve road safety
- Reduce environmental impact
- Find funding amidst competing priorities

2.3 Strategic ITS priorities

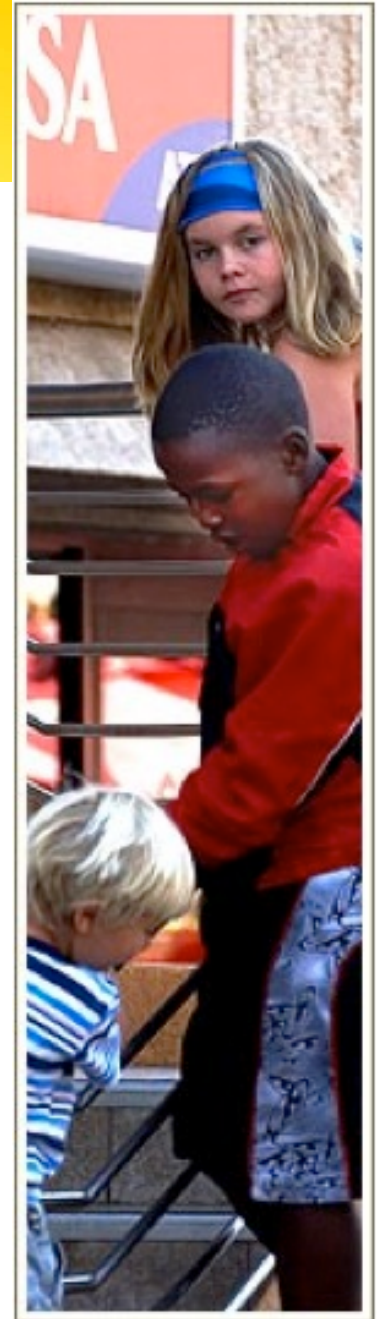
- **Manage Congestion**
 - Active Traffic Management
 - Multi-lane free-flow tolling
 - Travel Demand Management
- **Develop new Public Transport Systems**
 - Modal Integration
 - Safety, efficiency, convenience, affordability
 - Passenger Information
 - Integrated Ticketing
- **Traveller & commuter information system**
 - Pre-trip and trip planning
 - Ticketing and schedules
 - Intermodal transfers



3. Flagship Projects

- Gautrain Rapid Rail Link
- Gauteng Freeway Improvement Project (GFIP)
- ETC/Open Road Tolling deployment
- BRT systems for major cities
- Freeway Management
- Automated Fare Collection system
- Airports upgrade
- Metrorail Restructuring (commuter)
- Transnet Revival (freight)
- The 'Joule' electric vehicle

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3.1 Gautrain Rapid Rail – A catalyst

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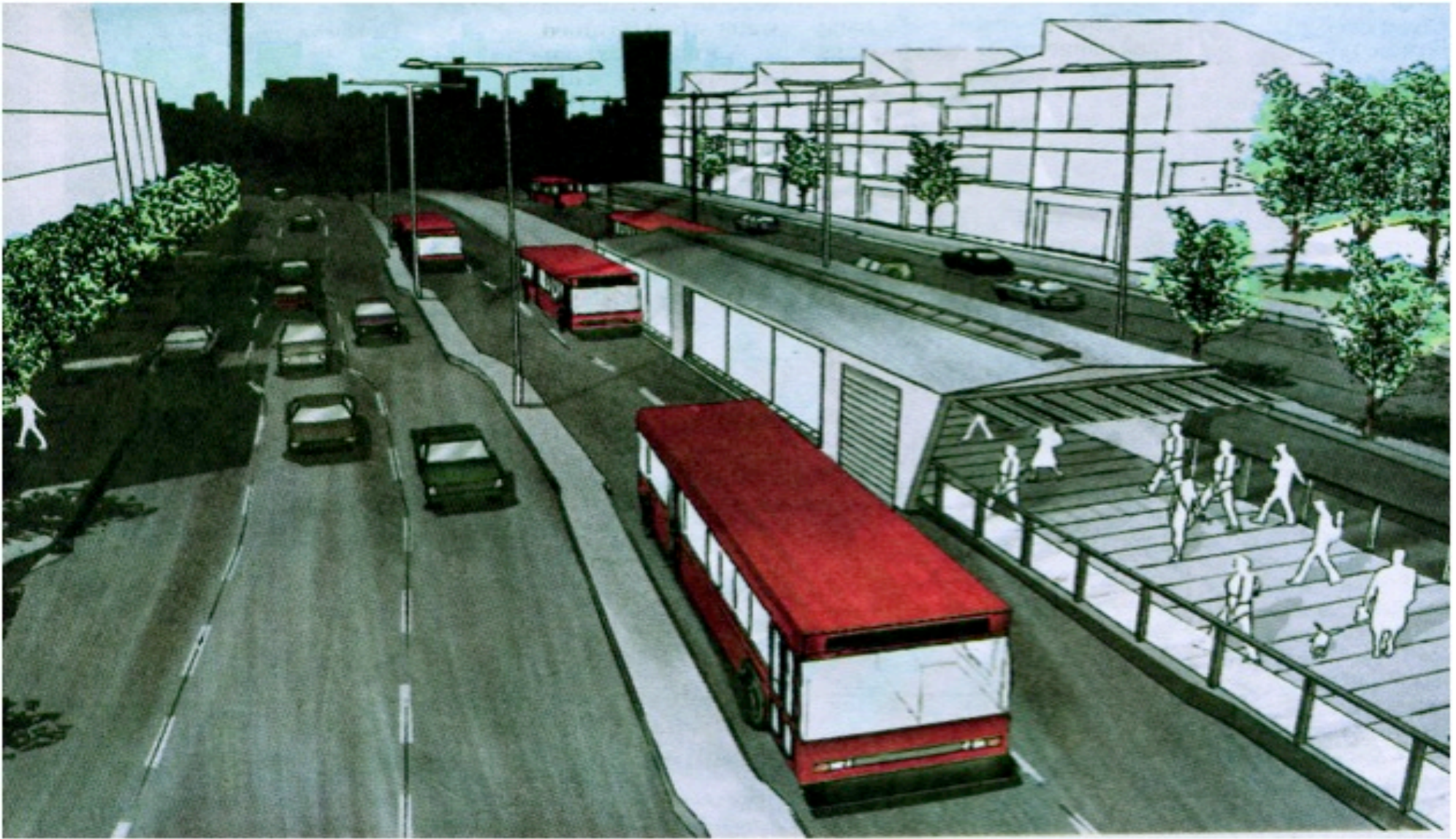


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3.2 BRT systems

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3.3 Gauteng Freeway Improvement Project

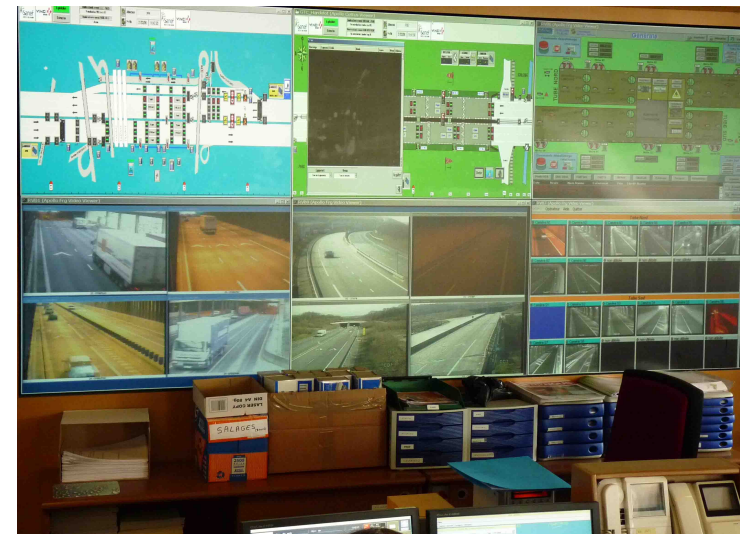


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Legend

- Gautrain
- Ⓣ Existing physical toll plazas
- Existing BOT toll roads
- Initial Phase GFIS Projects
- Existing SANRAL funded toll roads
- Future GFIS projects (existing freeways)
- Planned future GFIS projects (new freeways)

3.4 ETC and Open Road Tolling



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3.5 The 'Joule'

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Stand 2258 Optimal Energy

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- Contradictions are BAD NEWS for the Networked Car
 - Gap between rich and poor
 - Budget priorities
 - Infrastructure backlog
 - High-tech and no-tech communities
 - Vehicle fleet on average 12+ years of age



4.1 Gross National Income per capita (2007) ¹⁸

US\$

Country	GNI	Vehicles 100 000 pop
South Africa	5 720	159
Hong Kong	31 560	72
France	38 810	600
Belgium	41 110	539
US	46 040	663
Switzerland	60 820	569

Source: IRF World Road Statistics 2009

4.2 Low tech needs

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Wells Avenue Saxonworld



Kernick Avenue Melrose North



Riviera Road Killarney



Glenhove Avenue Rosebank



4.3 Infrastructure Backlog

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- Rail neglect has shifted freight to road
- Aggravating roads maintenance backlog



5. 'Drivers' towards the Networked Car



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5.1 Infrastructure developments

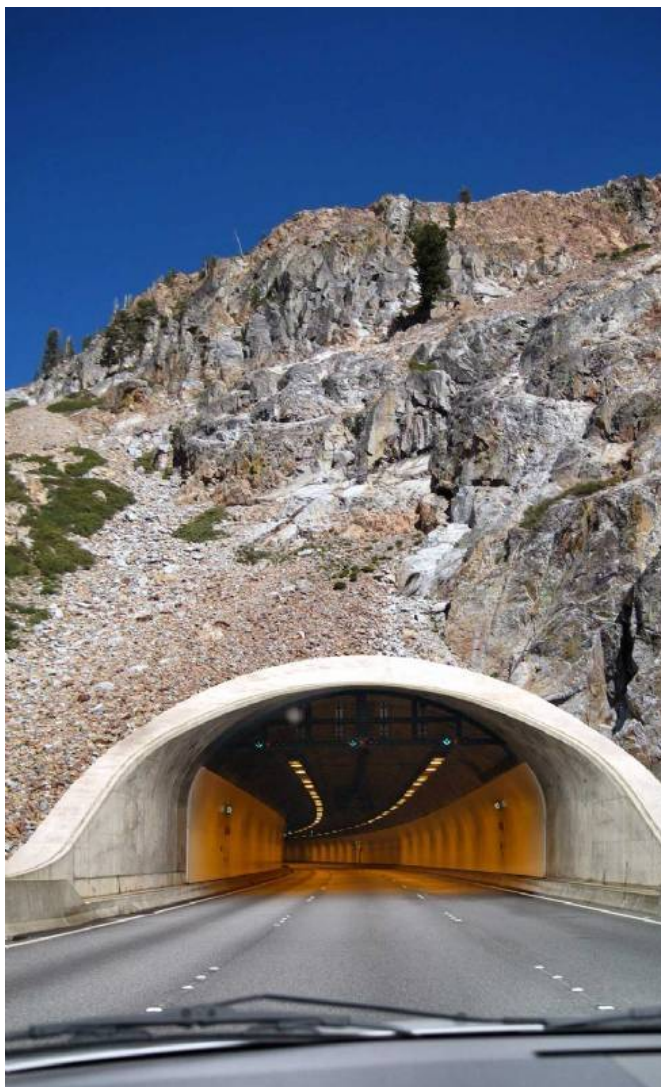


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5.2 Electronic Toll Collection

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5.3 ICT industry (RFID, GPS, GSM, VMS)

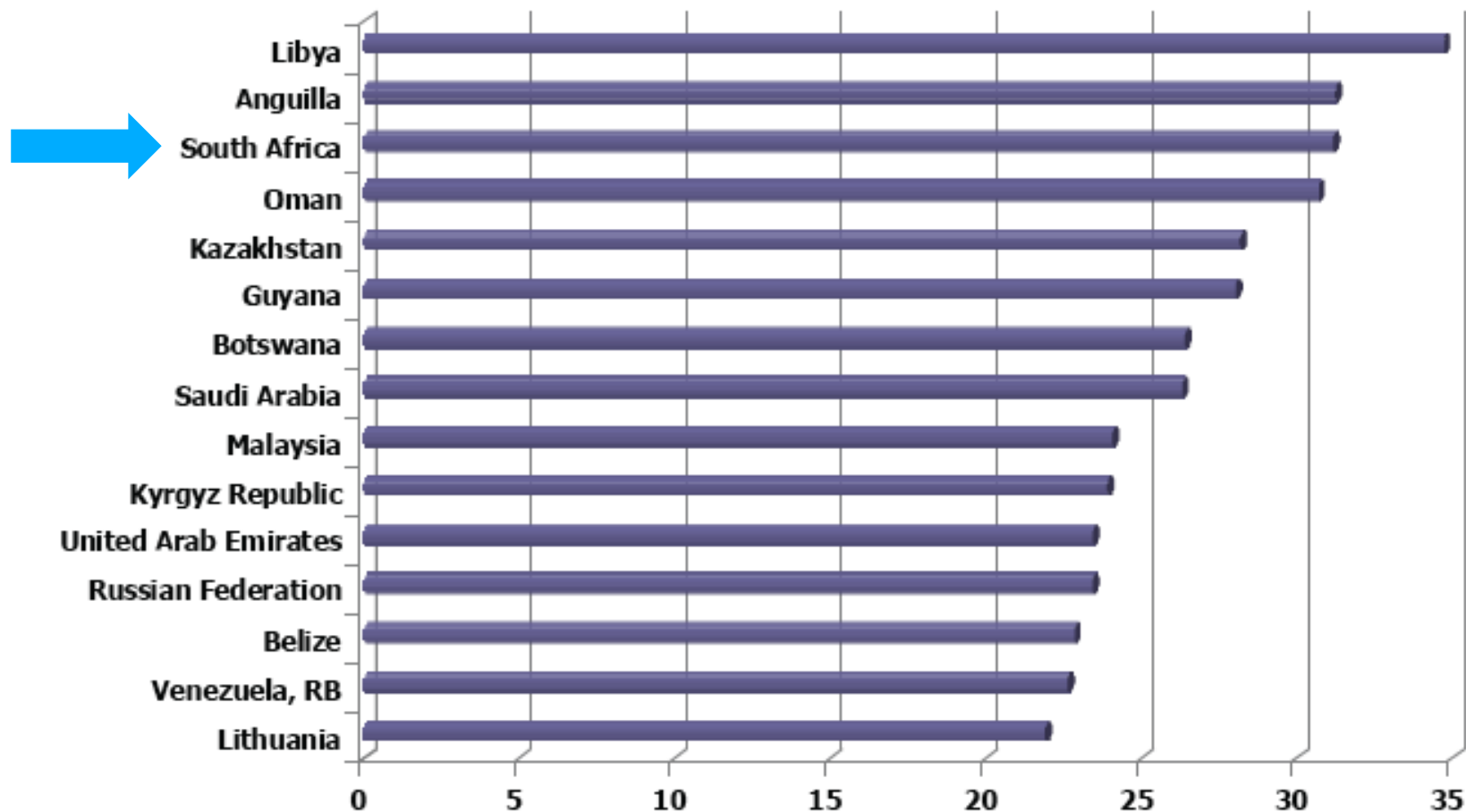


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5.4 Road fatalities / 100,000 people

Persons killed in road accidents / 100'000 people – 15 highest rates



Source: IRF World Road Statistics 2009

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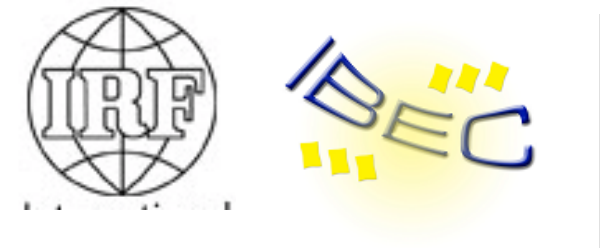
5.5 Road Safety



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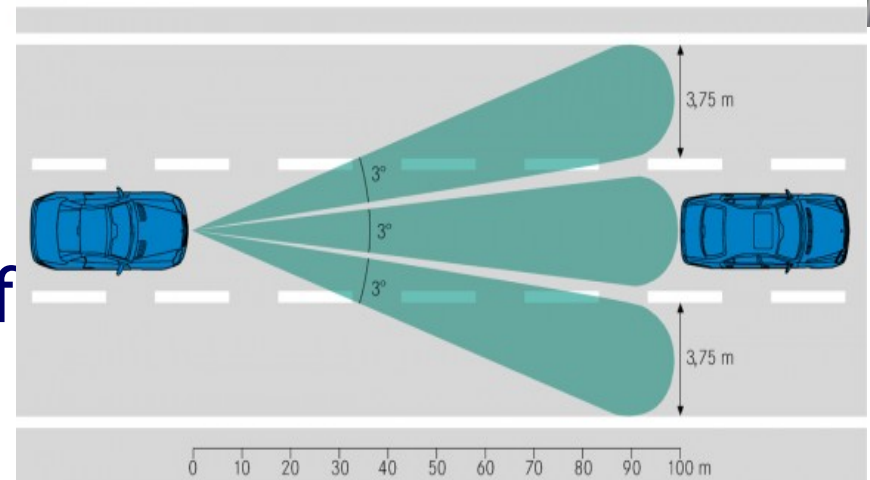
- Developing standards
 - ITS South Africa assisted with creation of SC71H with its Work Groups
 - Participate in TC204
 - NAAMSA Technical Committee (National Ass of Automotive of SA)
- Relationships with ISO, PIARC, UITP, IRF, IBEC, ITS World Forum



- ITS deployment escalating
 - SANRAL currently inviting companies to pre-qualify for DBOM of multi-functional and multi-region ITS system
 - Visit www.itssa.org to download RFP
 - ITS is becoming 'mainstream'



- EVI and vehicle law enforcement
- Traveler information
 - Route guidance
 - Navigation
 - Parking space
- Improving road safety
 - Pedestrian safety (48% of road fatalities are pedestrians)



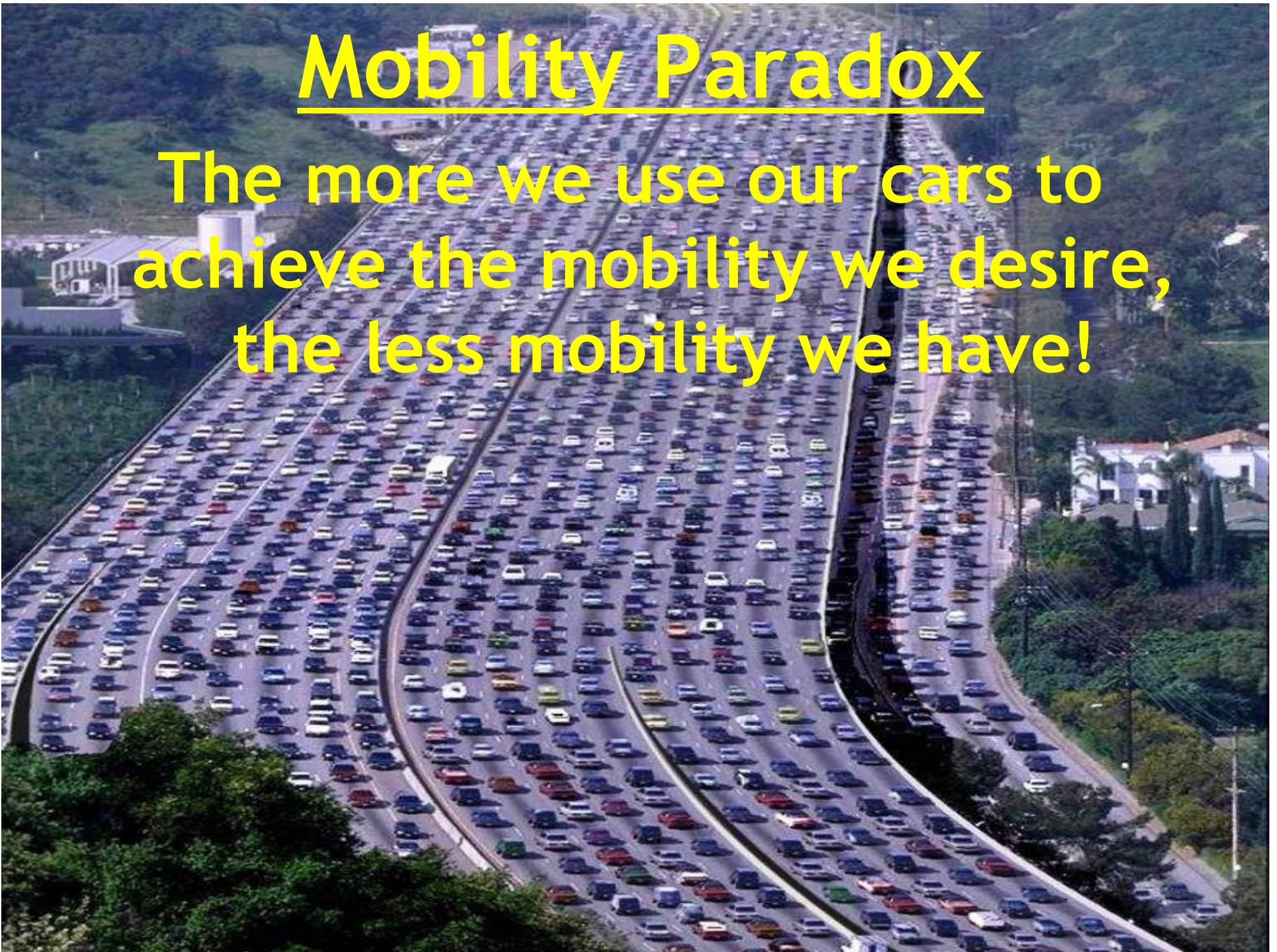
6. Conclusion

- Challenging socio-economic environment
- Competing priorities vie for scarce resources
- Several 'drivers' towards FNC, but has to show relevance to overcome constraints
- User-needs vs technology-driven
- 'Mobility Paradox' and sustainable cities

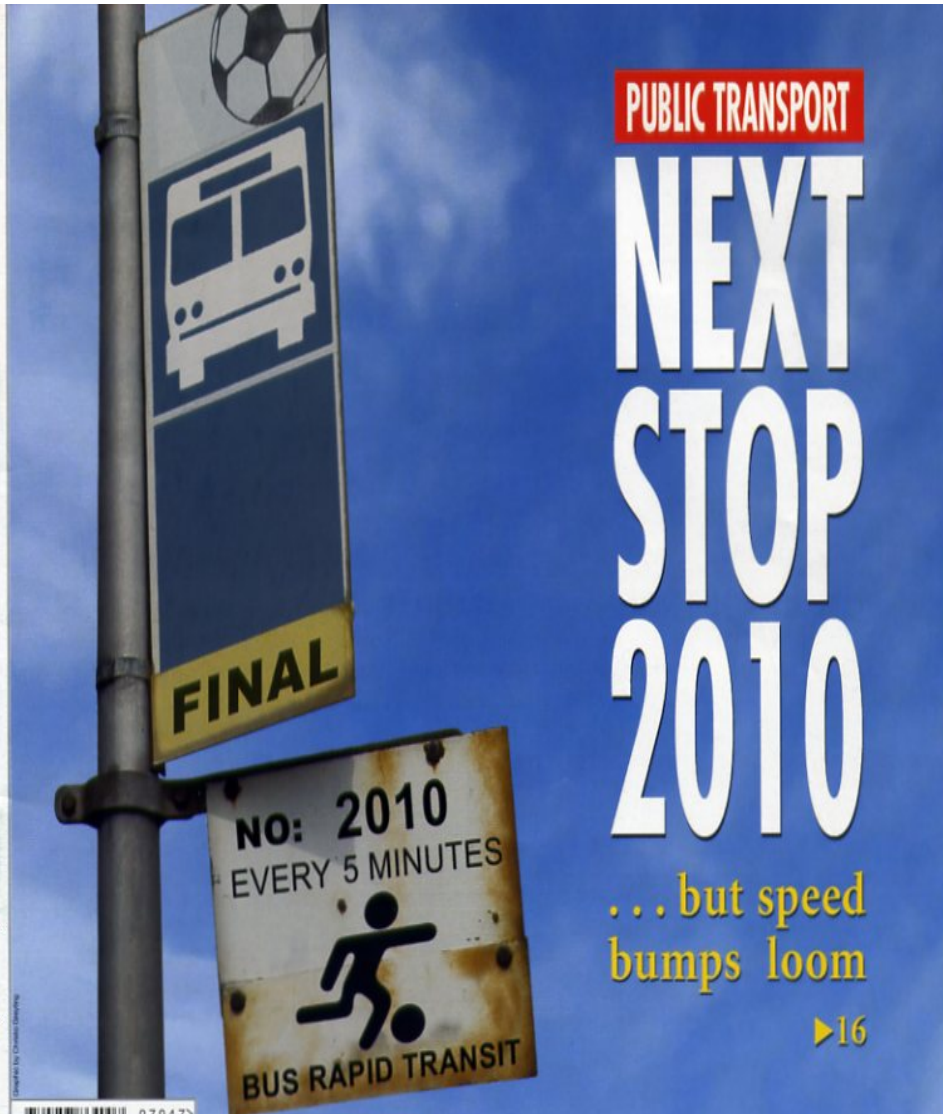


Mobility Paradox

The more we use our cars to achieve the mobility we desire, the less mobility we have!



You're all Welcome!



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Thank You!



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