

FINANCING ROAD INFRASTRUCTURE IN GAUTENG

Presentation to the South African Roads Federation Northern Region

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national treasury

Department:
National Treasury
REPUBLIC OF SOUTH AFRICA

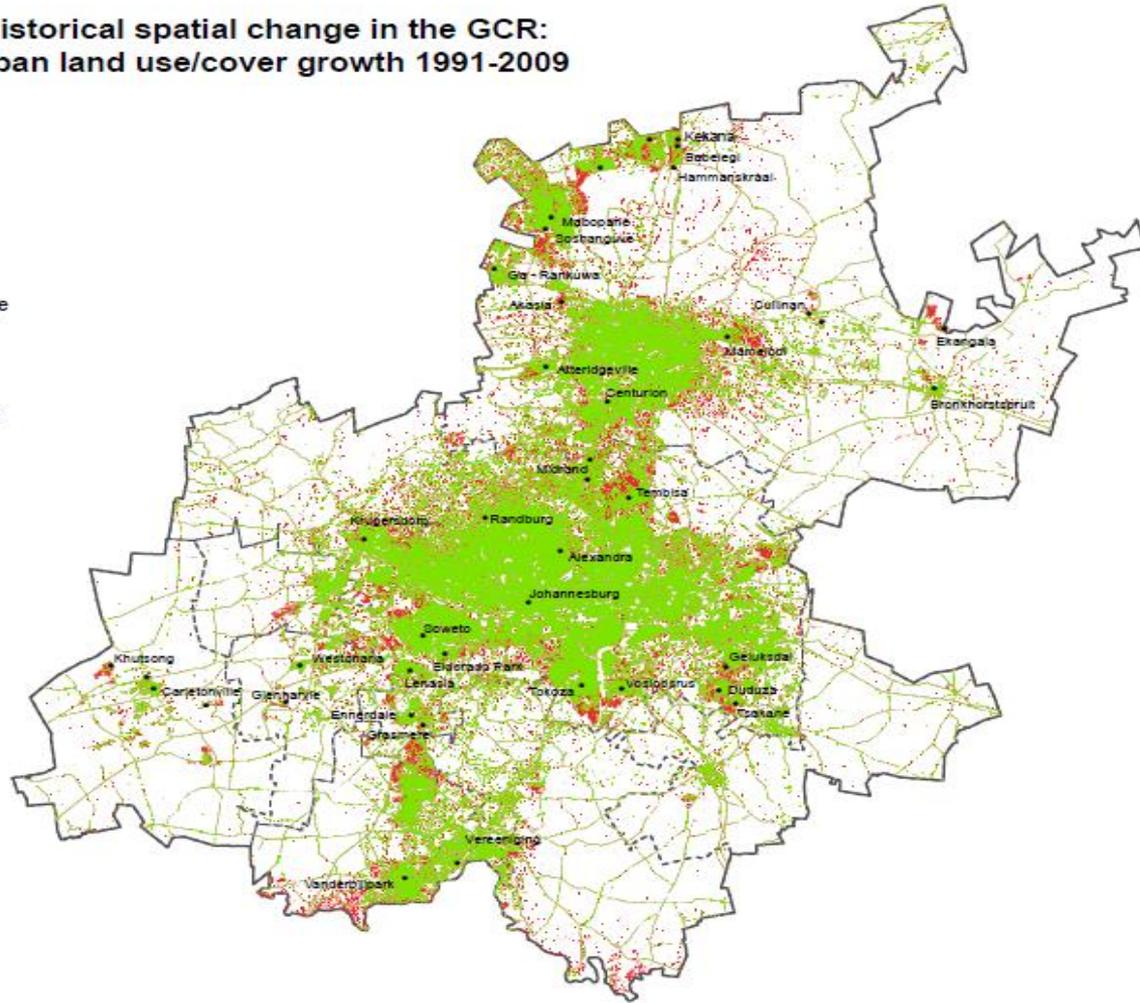
Spatial change in Gauteng

Historical spatial change in the GCR:
Urban land use/cover growth 1991-2009

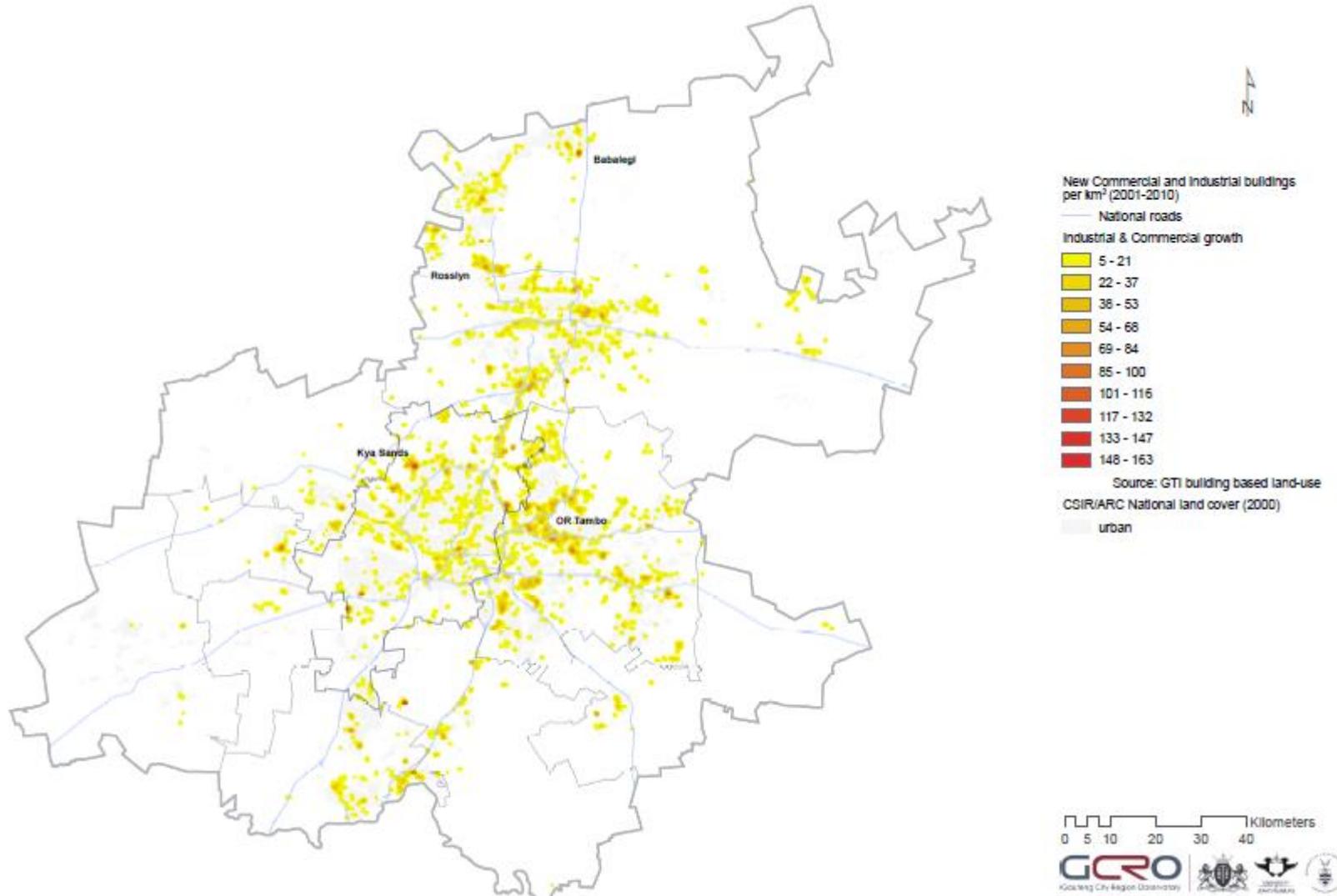
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Legend

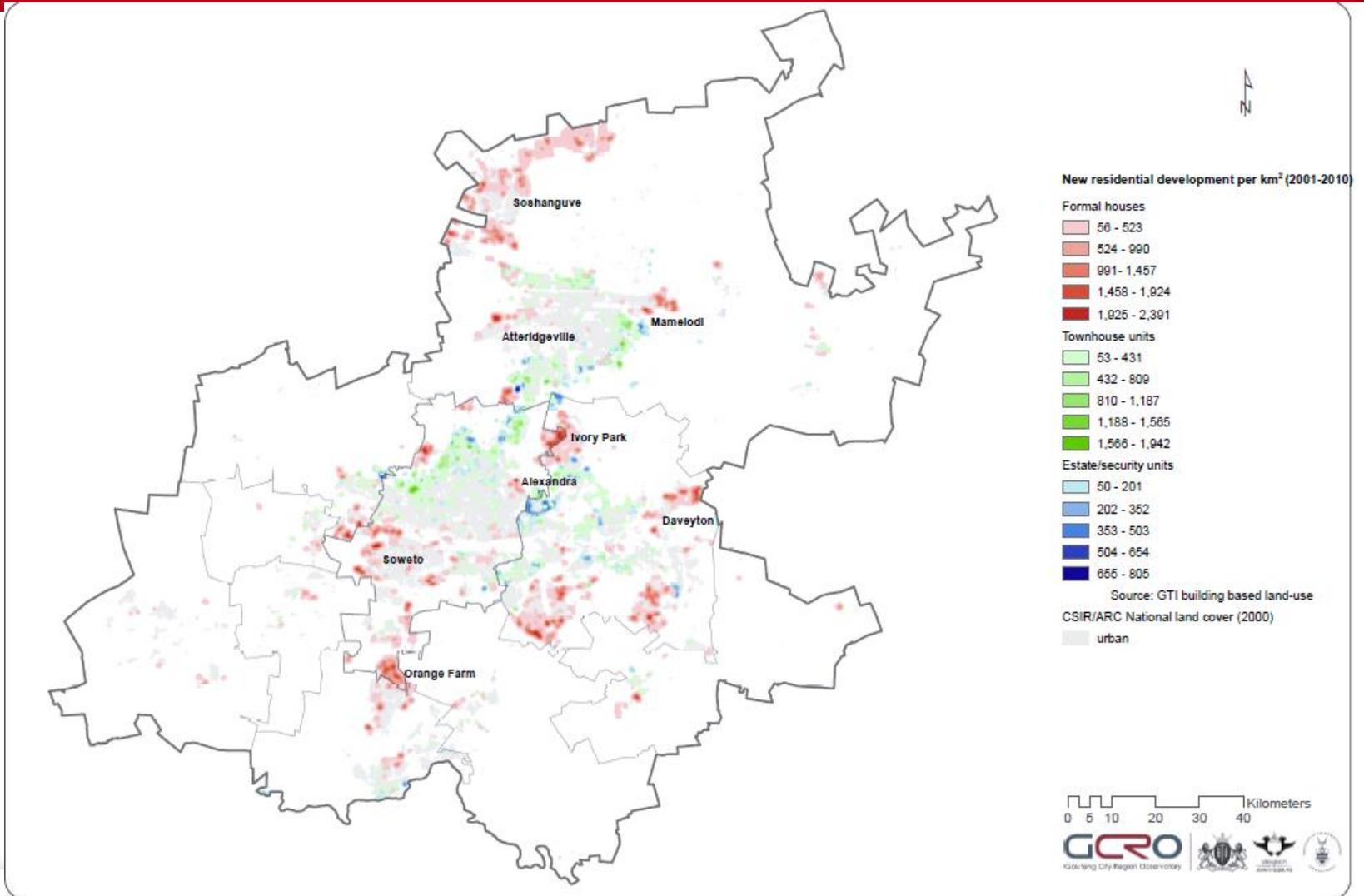
- Towns and cities
 - ▭ Municipalities
 - ▭ Gauteng boundary
 - Land use/cover change
 - 1991 Urban (built-up)
 - 2009 Urban (built-up)
- Data source: B. Mubiwa



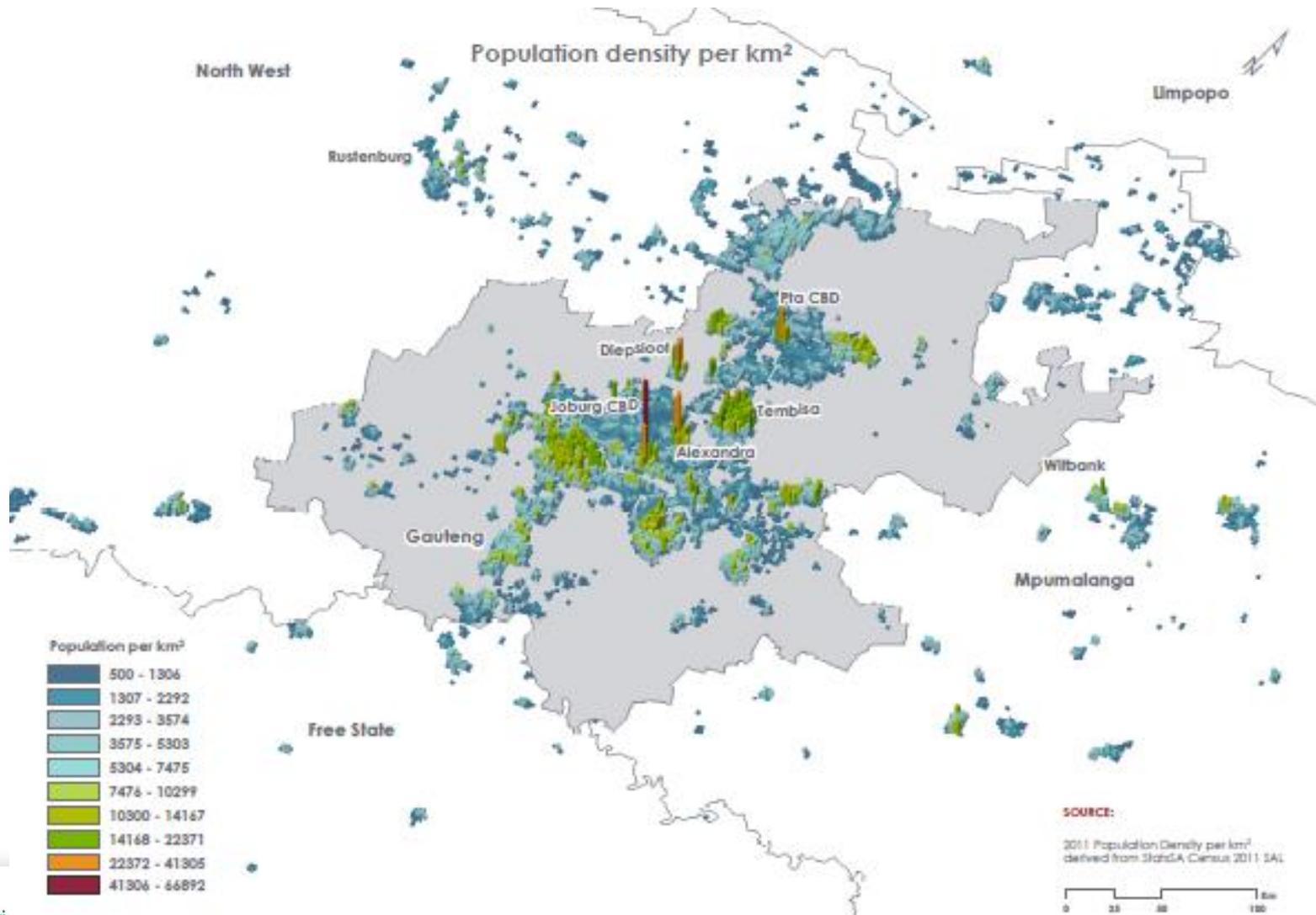
Commercial and industrial growth



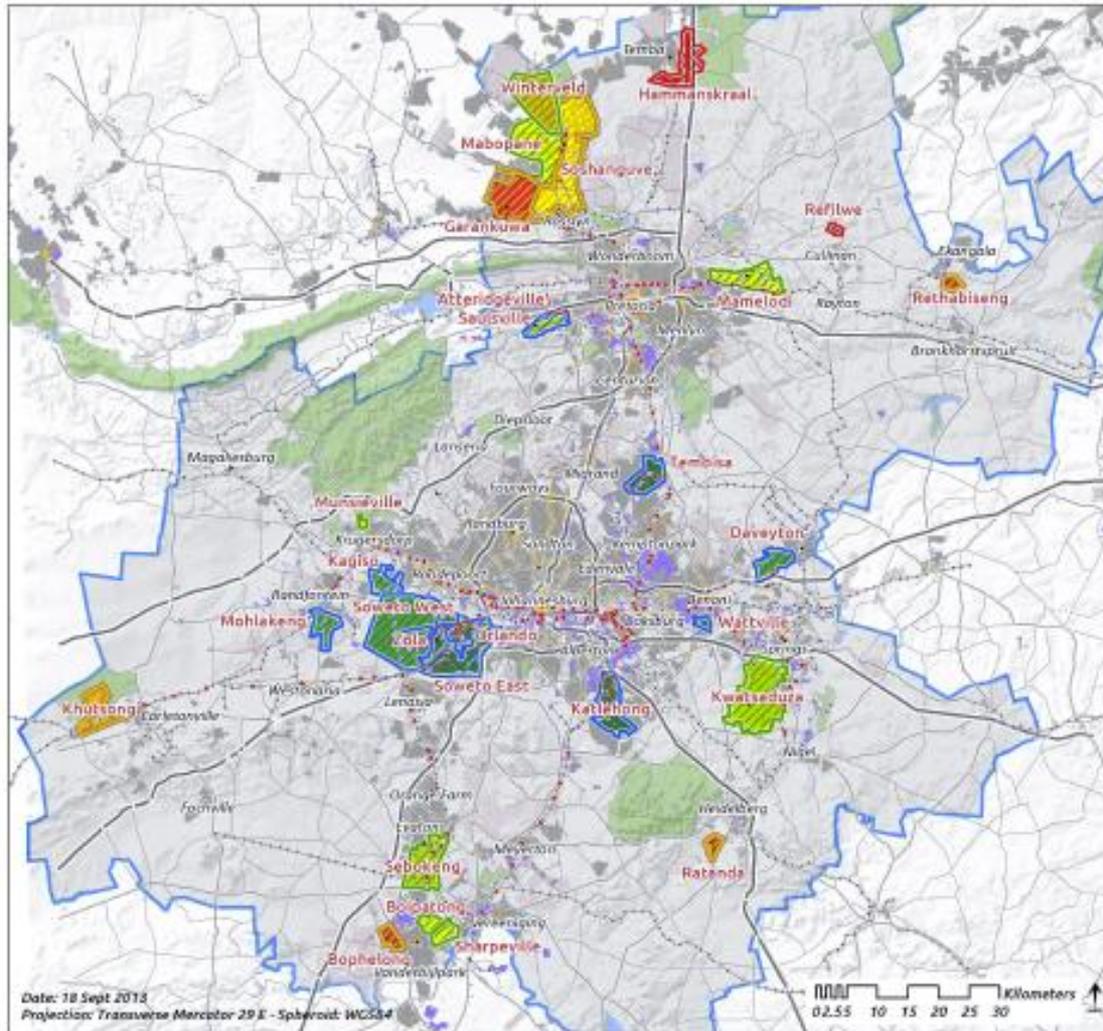
Formal residential growth



Population density



Quality of transport

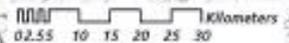


Gauteng Quality of transport

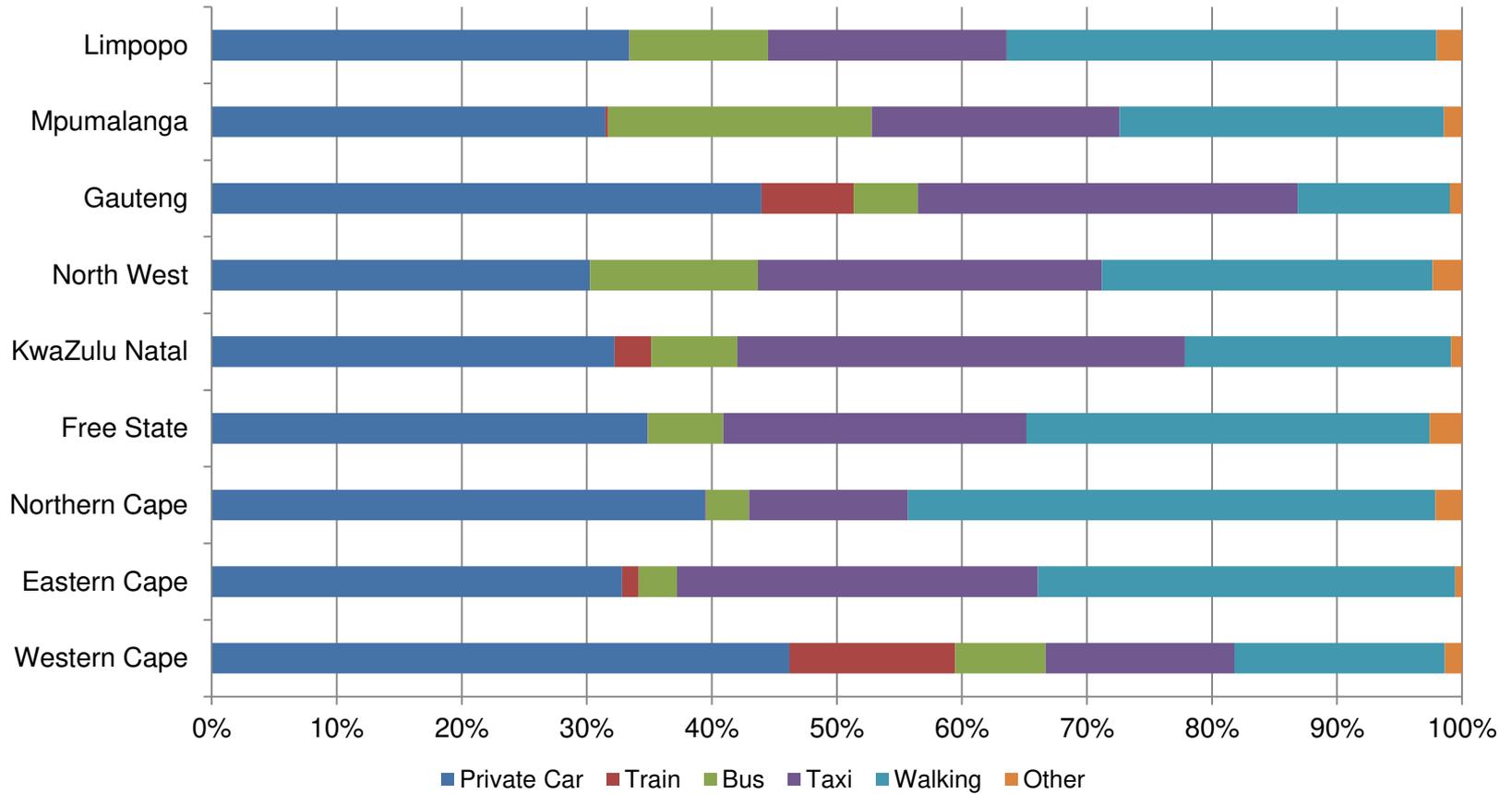
Overall quality of transport index

- Residential areas
- Commercial
- Industrial
- Smallholdings
- Protected Areas/Natural Systems
- Gauteng boundary
- Waterbodies
- Existing Road Network
 - Freeway and Primary
 - Secondary
 - Tertiary
 - Rail network
 - Metrorail stations
- Overall quality of transport index
 - -2.662 - -2.022
 - -2.021 - -1.118
 - -1.117 - -0.622
 - -0.621 - -0.353
 - -0.352 - -0.062
 - -0.061 - 0.336
 - 0.337 - 0.770
- Clusters
 - 1: Inaccessible townships
 - 2: Poor access, poor mobility townships
 - 3: Medium access, mobility advantaged
 - 4: High access, mobility advantaged

Date: 10 Sept 2013
Projection: Transverse Mercator 29 E - Spheroid: WGS84



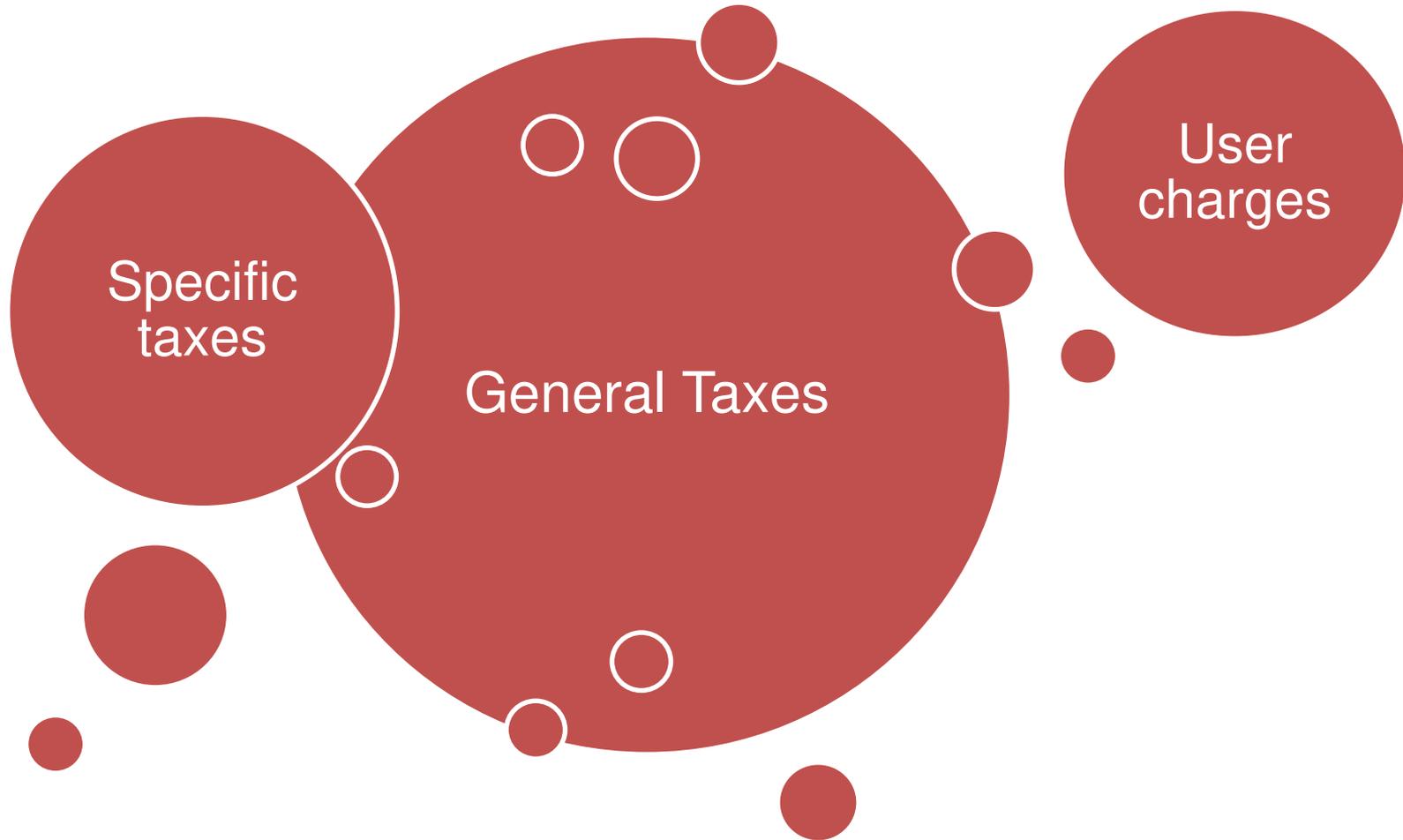
Transport mode to work



Pricing urban road expansion

- Congestion a function of excess demand
- Congestion has social costs
- If costs are not internalised, creates an incentive where the benefit of additional trips to user is lower than the additional costs to society
 - Distorts the choice of mode in favour of private cars
 - Encourages excessive use of infrastructure
 - Illogical to use conventional investment criteria to determine how much capacity must be provided
 - Inadequate provisions for maintenance
- Land and property prices influenced by road pricing
 - More compact urban form
 - More mixed land use

Public sector revenue sources



Considerations for selecting form of taxation for roads

Adequacy

- Compared to needs
- Stability of revenue over time
- Response to inflation
- Potential for needed increases

Equity

- Fairness with respect to the ability to pay and benefits received
- Distribution of wealth, vertical equity to ensure that those with a greater ability to pay for services do so
- Equity in relation to geographic area

Efficiency

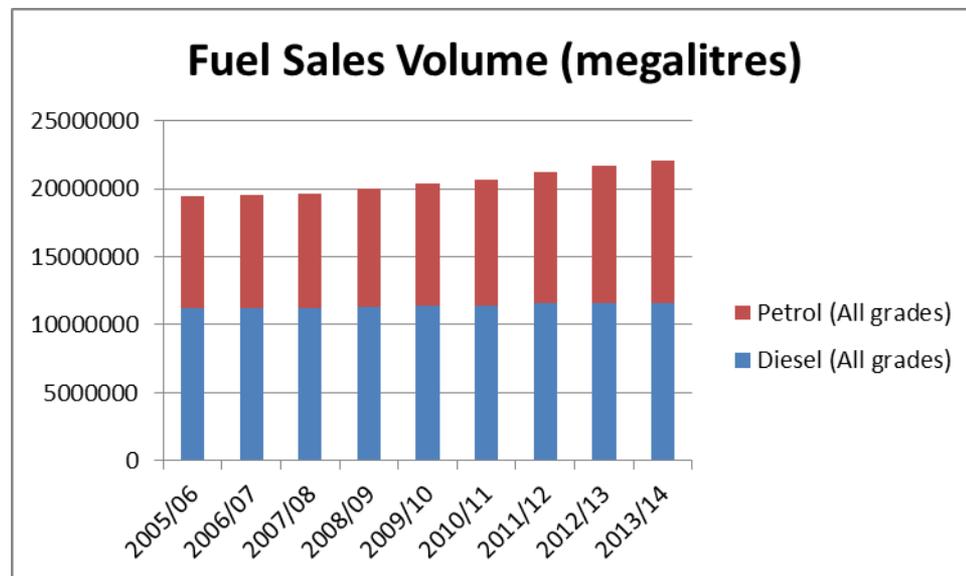
- In relation to paying costs imposed on others
- Better decisions on travel and investment
- Creating disincentives for unnecessary travel
- Enabling economic growth

Simplicity

- Administrative ease
- Compliance and enforcement costs, including evasion of cost potential
- Impact on investment

Revenue adequacy

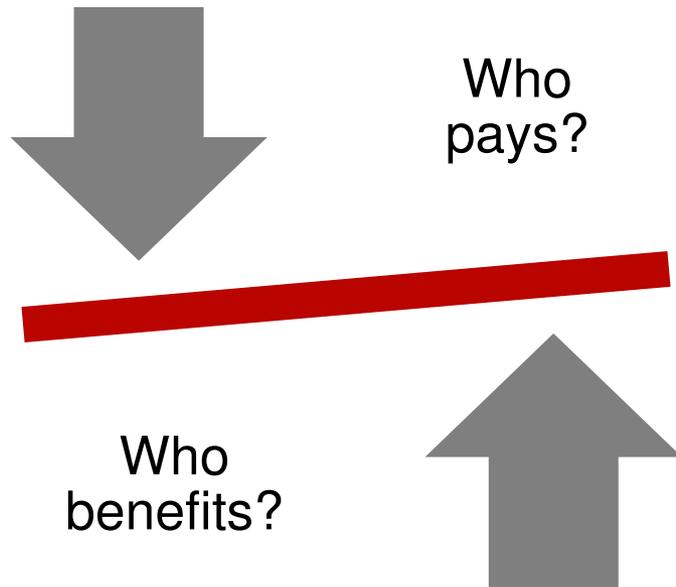
- Fuel levy revenue estimates for 2014/15 revised downwards from R47.5 billion to R46 billion
- Budget estimates at main budget
 - Transport and logistics: R81.6 billion
 - Transport budget vote: R48.7 billion
 - Consolidated budget for road infrastructure and maintenance: R44 billion
- Fuel efficiency
 - Technology advances means growth in fuel sales less than GDP growth
 - Fuel tax revenue not buoyant



Source: Department of Energy, 2014

- To sustain revenue, fuel levy will need to increase by construction price adjustments (often higher than GDP growth and CPI)

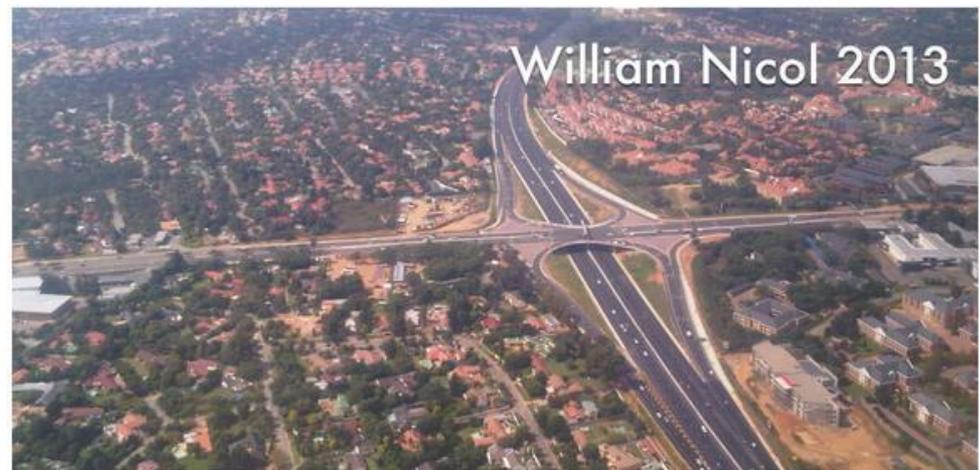
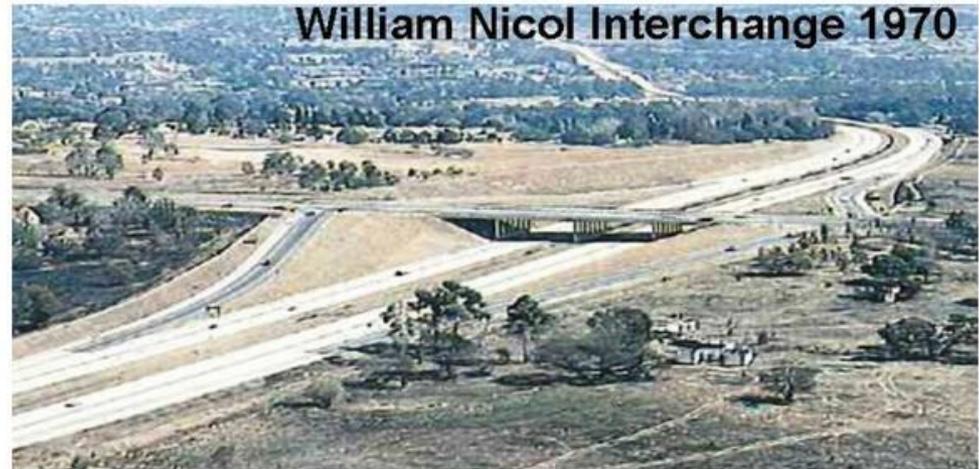
Equity considerations



- Geography
 - Should all tax payers or road users pay for infrastructure improvements in Gauteng?
- Income
 - Higher income road users drive new vehicles with fuel efficient technology
 - Lower income road users drive older vehicles, use more fuel per kilometre travelled than new vehicles
- Freight
 - Heavy vehicles damage roads more the light vehicles

Efficiency considerations

- Economic value of transport
 - Households and firms ability to access opportunity/ markets/activity
- Urban form is shaped by investments in transport infrastructure
 - New road or a public transport corridor influences:
 - Locations, intensities, types of developments
 - Value of land
- Highways have strong influences on urban form



Efficiency considerations

- Road usage has externalities
 - Decision by road user to drive does not consider the impact on other road users i.e. congestion
 - Decision by road user to drive does not consider the impact on the environment
 - Decision by road user to drive does not consider the likelihood of an accident
- To change behaviour, it is important for road users to internalise these externalities
- Investments in highways encourages private transport when road usage not priced properly
 - Encourages urban sprawl
 - Costs to municipalities and households for basic services

Efficiency considerations – cost of urban sprawl

- Recurrent costs of low density urban development are estimated at R6.4 billion more than those with compact urban form
- Operating cost difference between the 2 growth scenarios are 7%.
- Difference between 2 scenarios are approximately 1.4% of GDP



Source: FFC, 2011

Efficiency considerations – cost of urban sprawl



Source: FFC, 2011

- Urban sprawl impacts the poor
 - Expenditure on transport, services and housing is 14% more in the sprawl scenario and 10% less in the compact city scenario
- Middle income households spend 8% less in the urban sprawl scenario and 13% less in the compact scenario on transport
- High income households spend more on transport in both scenarios, but spend more on housing than transport.
- Low income households spend more on transport than housing and therefore most severely affected by urban sprawl

Simplicity

- Costs of administration low for national fuel levy
 - SARS collects at source e.g. the refinery
 - Few sources to collect from makes tax evasion unlikely
- Transaction costs for tolls relatively high
 - Each transaction is recorded and billed

Fuel levy or user charge

	Fuel levy	User charge
Adequate	x	✓
Equitable	x	✓
Efficient	x	✓
Simple	✓	x

Other options for financing

- Provincial fuel levy
 - Difficult to implement due to the complexity of the tax administration
 - Requires SARS to collect the levy at destination, increasing the costs of administration and increasing the likelihood of evasion
- General taxation
 - Constitutional requirements that nationally raised revenue is shared equitably between provinces, and between national, provincial and local government
 - Ring-fencing funds
 - Discourages efficiency and value for money
 - Weakens accountability
 - Limits Parliament's ability to amend the budget
 - Raises not government constitutional bill of rights issue such as water, sanitation, health, education and housing

Other options for financing

- Provincial license fees
 - Provincial competency whilst road is a national road
 - A 10 per cent increase the vehicle license fees in Gauteng will raise 11 per cent of annual requirement for GFIP phase 1
 - Implies that only vehicles licensed in Gauteng uses the roads and vehicles licensed in other provinces, which do not pay for the roads benefit from the improved road network in Gauteng
 - Collection of vehicle licensing fees problems faced by municipalities increases the likelihood of tax evasion
- Shadow tolls
 - Not a revenue source, but a payment approach to road upgrades
 - Government pays a concessionaire, from general revenue
 - Amount paid is based on the number of vehicles travelling and/or the distance travelled.
 - High transaction costs
 - Road users do not internalise externalities

Other options for financing

- Prescribed assets
 - Fund managers invest a particular percentage of their assets under management to a prescribed investment class
 - Institutional investors already investing in SANRAL bonds
 - Aids in direct infrastructure financing during the construction phase but does not fund the infrastructure over the useful life of the asset
 - Safeguards investments of pension fund beneficiaries in secure instruments
 - Limits liquidity as investors keep to their holdings to comply with the prescribed rules
 - Restricts the autonomy of institutional investors and therefore limits the scope for return on investment
 - Creates a captive environment for investors which hinder relations with the investor base and therefore reduces transparency and efficiency of markets

Funding requirements

- SANRAL requirements:
 - GFIP Phase 1 (R20 billion & future maintenance costs)
 - GFIP Phases 2&3 (R43 billion & future maintenance costs)
 - Other SANRAL large infrastructure projects that are feasible as toll projects (R75 billion)
- Required additional funding (additional to existing allocations) to:
 - Sustain the road condition for roads in South Africa
 - Address the maintenance backlog over 10 years (R197 billion)
- Gauteng Province specific needs as indicated in ITMP 25:
 - Operational/maintenance costs (R10,2 billion/year)
 - Expansion costs (R37,5 billion over 10 years - excluding future GFIP phases)
 - Road based public transport (R25,5 billion over 15 years)

The case for road user charges

- Efficient road pricing levels the playing field for public transport
- Allows for road users to internalise the externalities such as congestion and pollution
- Ensures that only those who benefit from the improved roads pay for it
- Ensures that those who cause the most damage on the road pays for it
- Allows for the exemption of some users such as public transport operators and the disabled