

DEPARTMENT OF TRANSPORT

NATIONAL TRANSPORT MASTER PLAN 2050

**Presentation to Road Pavement Forum:
4 May 2010**



NATMAP – Transport for 2050

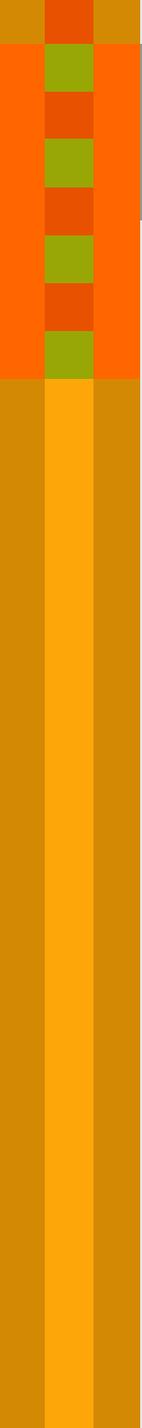
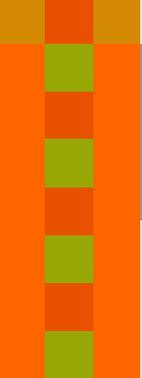


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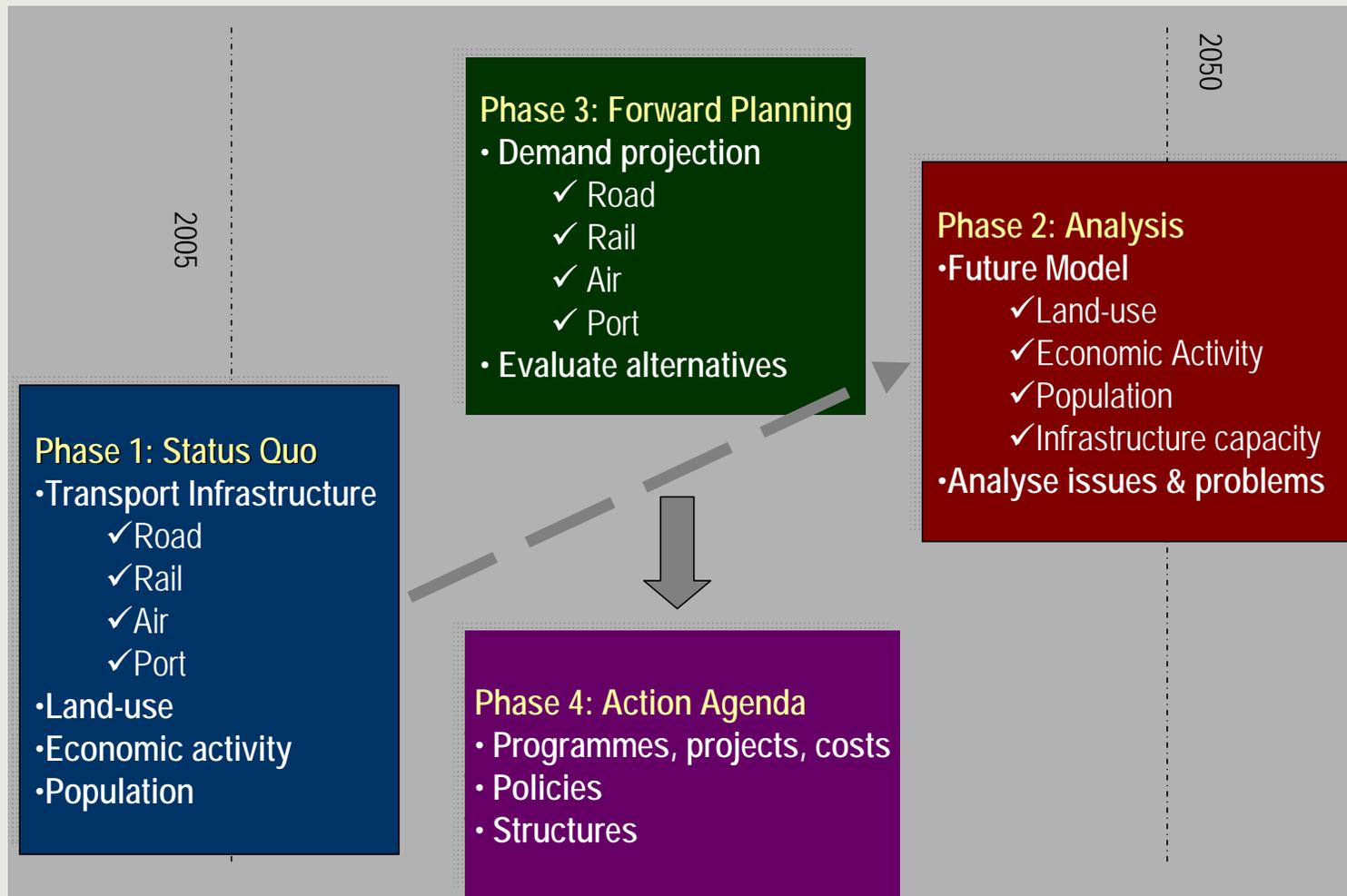


1. What is NATMAP?

NATMAP

- National Transport Master Plan 2050
- Project Goal
 - “...to develop a dynamic, long term, sustainable land use / multi-modal transportation systems framework for the development of networks infrastructure facilities, interchange termini facilities and service delivery”*

Project approach



DELIVERABLES

- [Round Table Ph1](#)
- [Report 1](#)

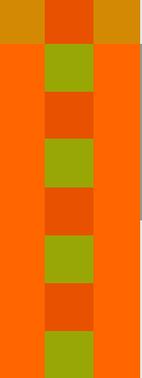
- [Round Table Ph3](#)
- [Report 3](#)

- [Round Table Ph4](#)
- [Report 4](#)

- [Round Table Ph2](#)
- [Report 2](#)

Project deliverables

- Provincial reports – 4 phases, 9 provinces
- Consolidated/National reports
- Working group reports
 - Economic Scenario Projections for the National Transport Master Plan for South Africa 2005-2050
 - Energy Study (implications of global oil depletion)
 - Environmental Report
 - Passenger Rail Technology Study
 - Rail Gauge Study Report
- Integrated transport model for SA
- Central Transport Databank



2. Transport status quo

Road infrastructure

- Road infrastructure condition
 - SANRAL network generally good to fair
 - Provincial paved roads generally fair to poor
 - Huge maintenance backlog in some areas, e.g. coal haulage area in Mpumalanga
- Traffic usage
 - Growth of traffic outstripped extension of paved network
 - Significant volumes of heavy traffic on roads
- Heavy vehicle overloading
- Road safety issues, exacerbated by poor road condition, absence of clear road marking etc.

Rail infrastructure

- Rail infrastructure condition
 - Heavy haul lines well maintained, good condition
 - Rest of network in fair condition; some lines however not maintained
- Rail network generally underutilised
- Rolling stock is old
- Rail gauge – SA use narrow gauge (outdated)
- Institutional setup
 - PRASA providing passenger services
 - Transnet providing infrastructure and freight services

Other infrastructure

- ACSA airports
 - Generally good condition and service
 - Some airports are (or will be in near future) approaching saturation, e.g. ORTIA & Cape Town
- Ports & pipelines
 - Port throughput is approaching capacity in some cases
 - Poor road access to some ports (e.g. roads to Durban and Cape Town are severely congested)
 - Pipeline network at capacity; freight diverted to road.

Some major challenges

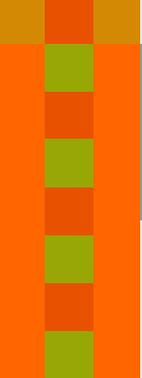
- Infrastructure
 - Lack of expenditure on road maintenance
 - Overloading on roads
 - Condition of rail infrastructure (non-heavy haul lines)
 - Rail infrastructure management systems ineffectual (isolated systems, old or incomplete data)
 - Need to cater for growth in demand
 - Road – high traffic growth
 - Rail – underutilisation
 - Ports – high growth in containers (Durban),

Some major challenges

- Freight Transport
 - Monopoly control of rail transport (distorts charges)
 - Rail transport systems inefficient
 - Unsatisfied demand for rail taken up by road (less efficient)
 - Uncompetitive environment in rail freight
 - Road freight operator permit system requires total overhaul (to introduce standards, registration, controls etc)
 - Training and capacity building in all transport industries is in a crisis

Some major challenges

- Passenger transport
 - Passenger transport mainly by private car
 - Standard and quality of public transport leading to more car use
 - Modes operating outside their “optimum space” (e.g. buses operating where trains should operate)
 - Unsustainable subsidy pressures
 - Passenger modes operate in silos
 - Regulations not adequately enforced



3. Future scenarios

Demography and Economy

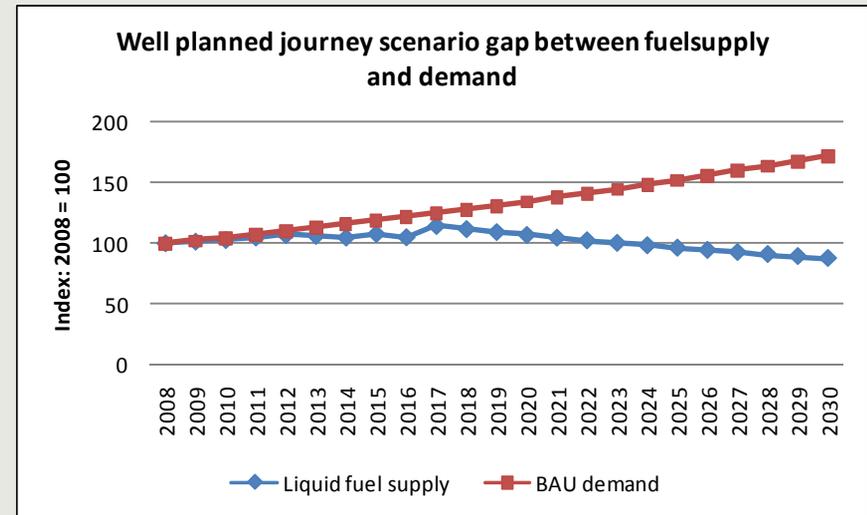
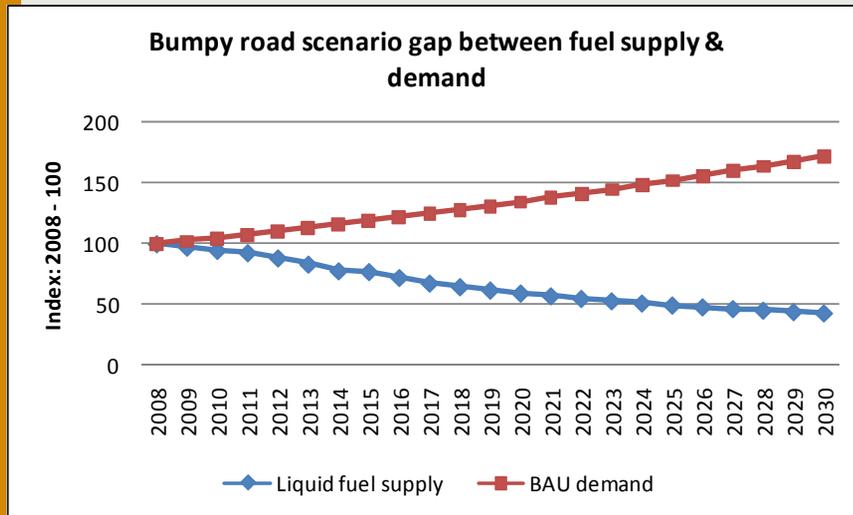
- 3 scenarios investigated
 - Demographic scenarios
 - High (centralised population, low HIV/Aids, higher international in-migration)
 - Medium (migration levels similar to current trends, HIV/Aids assumptions of greatest likelihood)
 - Low (decentralised population, high HIV/Aids)
 - Economic scenarios
 - Also High (positive), Medium and Low (negative) variants

Demography and Economy

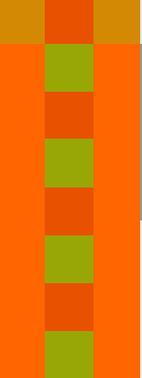
- Major findings
 - Population will grow from 47 million (2005) to about 60 million people by 2050
 - Significant migration to Gauteng and Western Cape, from other provinces
 - EAP's to increase from 19 million (2005) to 26 million (2050)
 - Unemployment to decrease from 38% (2005) to 8.5% (2050)
 - GDP expected to grow between 5% and 6% per year

Energy

*World oil scarcity inevitable
In 20 years oil based fuel will have reduced to about 50% of present availability*



- Changes will be rapid
- Transport costs will increase
 - People will move from rural to urban areas
 - Severe impacts on poor
- Bio-fuel production will reduce food production

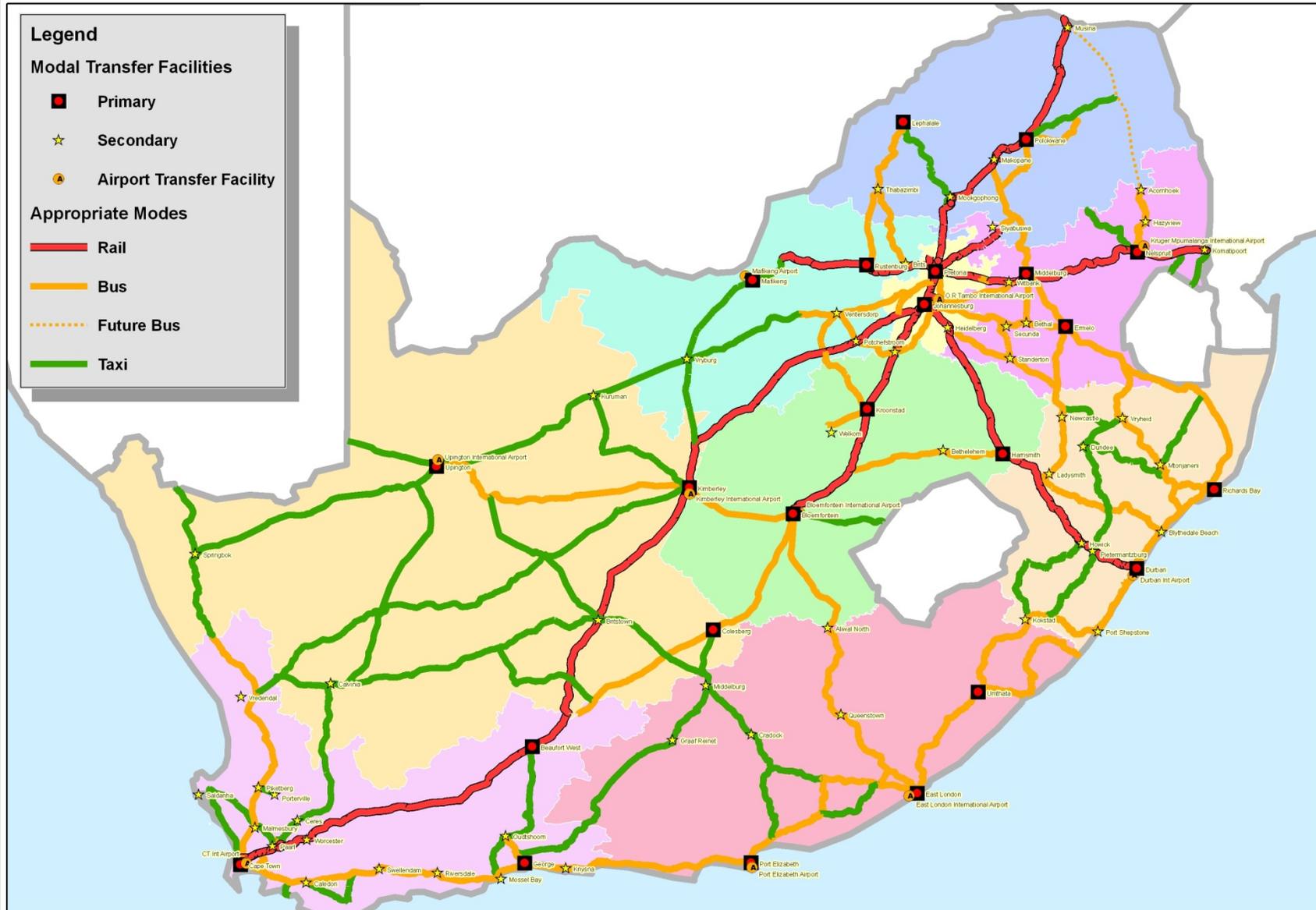


4. Transport strategies

Passenger transport: SPTN

- Develop integrated, high quality public transport
 - Linking all cities and towns of national significance
 - Using optimal modal mix
 - Accessed via high-quality modal transfer facilities
 - Extension of Integrated Rapid Public Transport Network of 12 cities
 - It is only a framework for further refinement

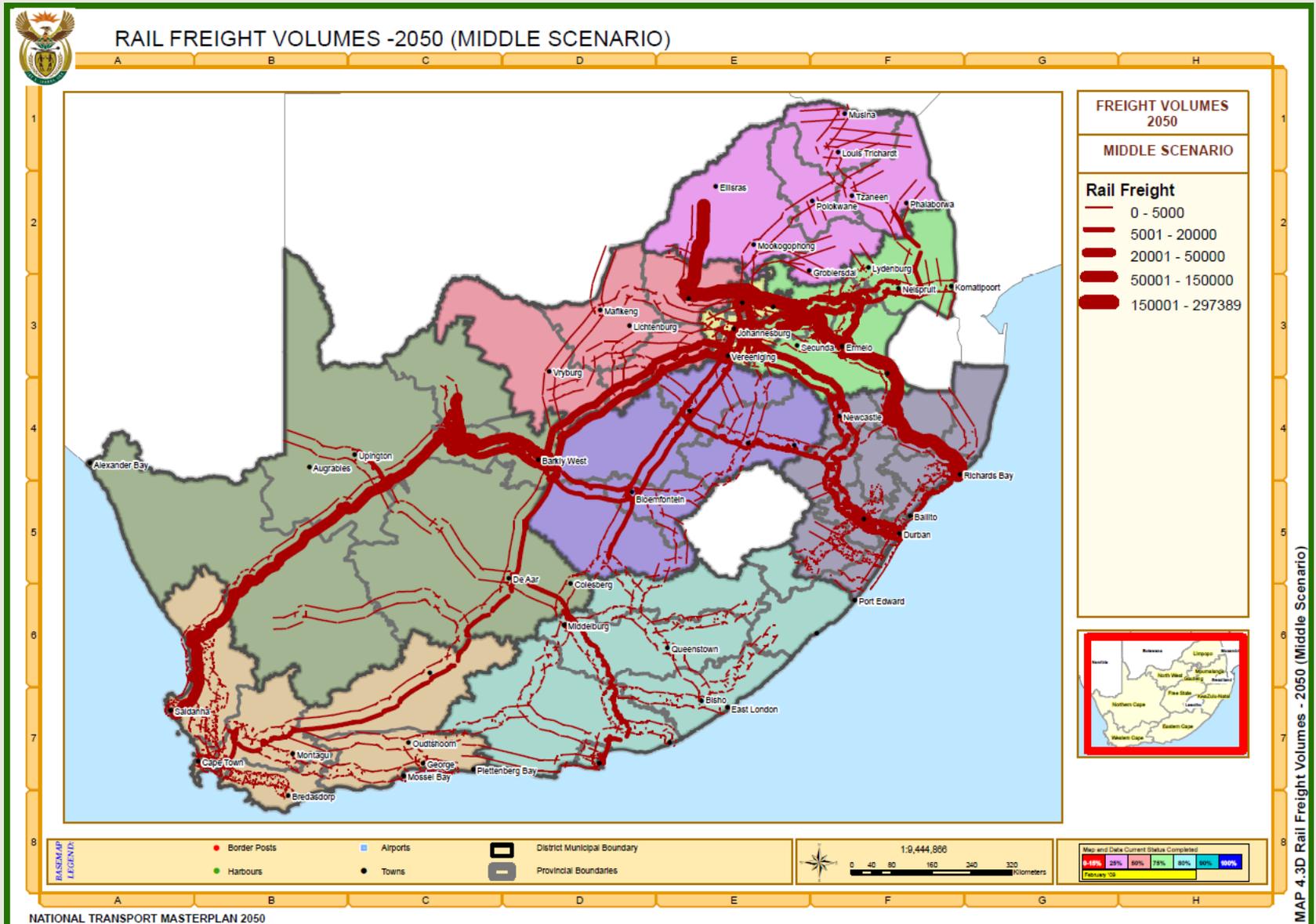
Passenger transport: appropriate mode



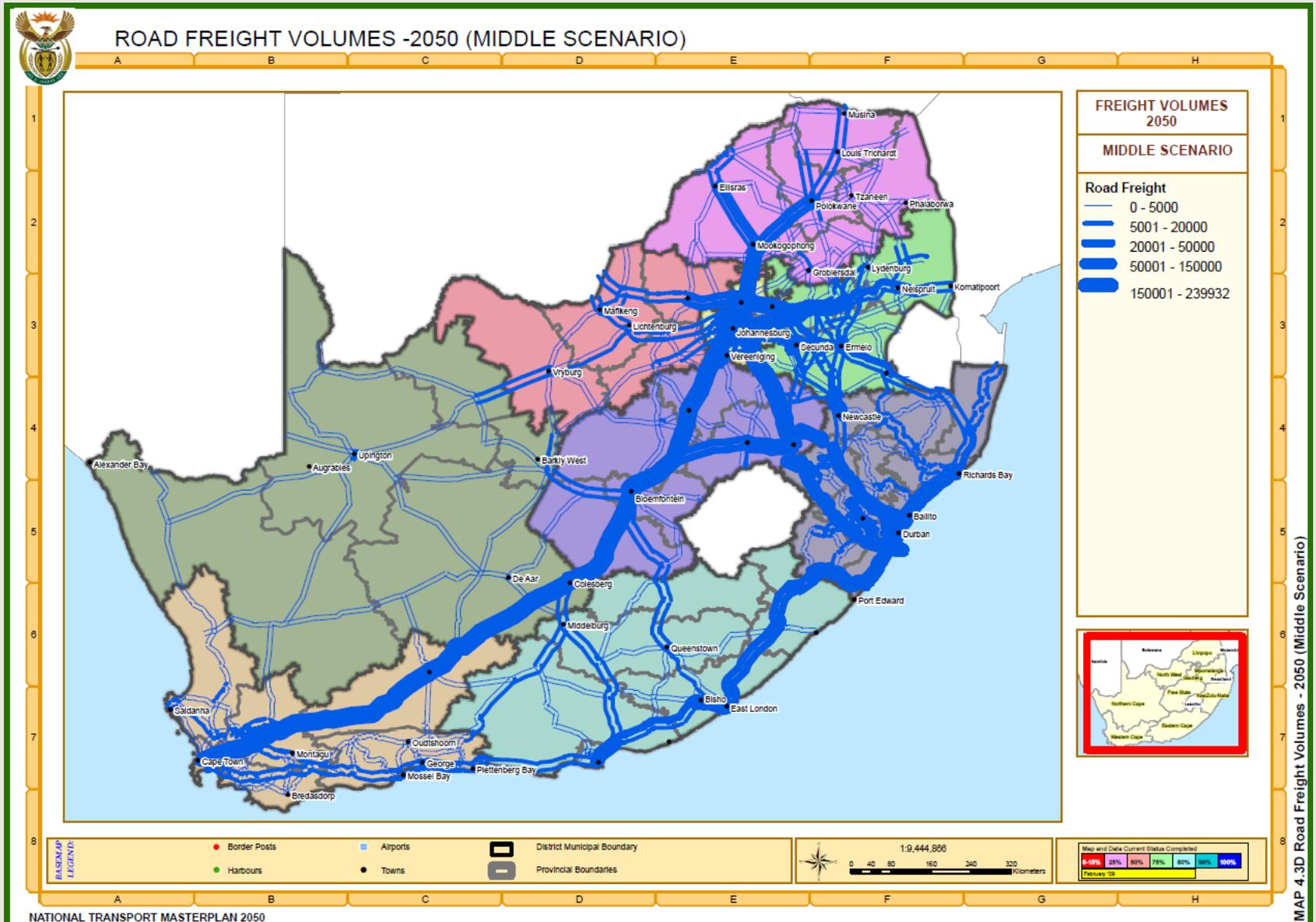
Freight transport: selected strategies

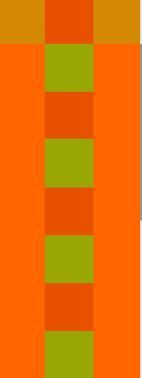
- Road freight
 - Operator registration
 - RTQS implementation
 - Loads (weighbridge network and enforcement strategy)
 - Vehicles (COR – roadside inspection)
 - Drivers (training and driver hours regulation) etc
- Rail and port freight
 - Institutional Reorganisation
 - Open market, industry involvement
 - Develop customised rolling stock
 - Skills training (technical, operational and managerial)
 - Develop intermodal interfaces and facilities

Freight transport: rail demand



Freight transport: road demand





5. Infrastructure recommendations

Road: selected recommendations

- Road maintenance
 - Focus on strategic network (“roads of national importance”)
 - Elimination of backlog – about R50 billion
 - Periodic and routine maintenance – about R12 billion/year
- Capacity upgrades
 - Add lanes when roads reach LOS E (reported per province)
- New constructions / major upgrades when feasible
 - R34 Upgrade Richards Bay to Melmoth
- Promote public transport investment
 - Develop public transport services on SPTN
 - Regional passenger rail network (take pax off road)



Kwazulu Natal Province: ROAD AND RAIL NETWORK (2050)



ROAD AND RAIL NETWORK

2050

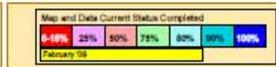
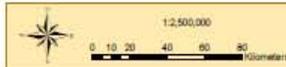
Number of Additional Lanes required per Direction

- 0
- 1
- 2
- >2



BASEMAP LEGEND

- +— Railway Network
- Towns
- Airports
- ▭ District Municipal Boundary
- ▭ Provincial Boundaries



Rail: Selected Recommendations

- Vertical separation of infrastructure & operations
 - Rail Infrastructure Agency
 - Operations
 - Provide access for TFR, PRASA & private operators
- Phase in standard gauge for high speed rail
 - Durban Johannesburg
 - Johannesburg Polokwane
 - Johannesburg Cape Town
- Monitor & plan for new developments
 - Green house gases, fuel, electricity, ore exports

Airports: Selected Recommendations

- Capacity upgrades at airports

- All airports evaluated for demand and capacity
- Specified future developments (airside, landside) required to cater for demand

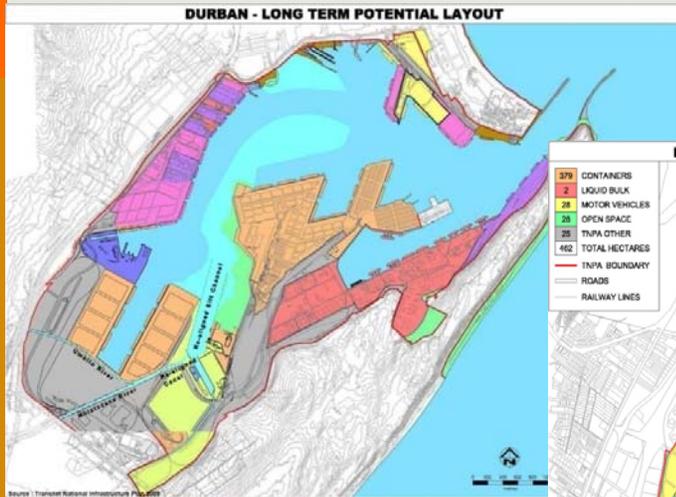
- New airport requirements

- Gauteng, at least one other major airport before 2050
- Cape Town, estimated from 2040
- Durban, estimated from 2050

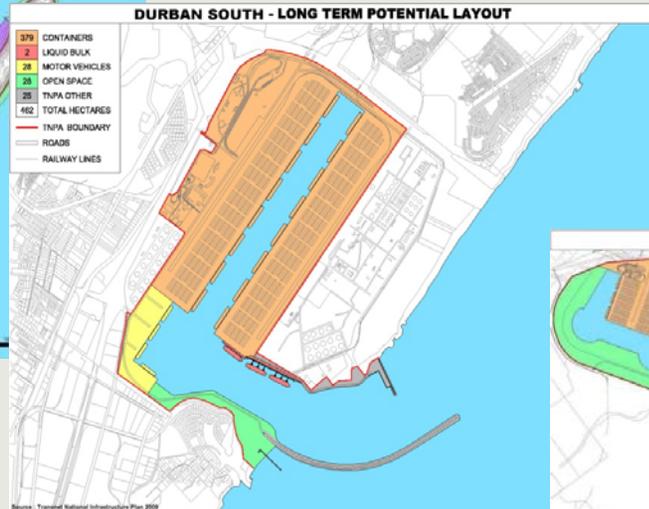


Ports: Selected projects

- Study to choose location of container terminals

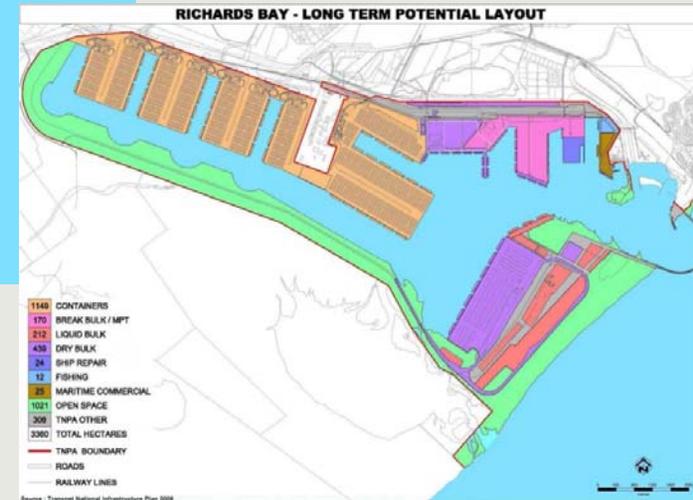


Durban
Bay of Natal



Durban
South

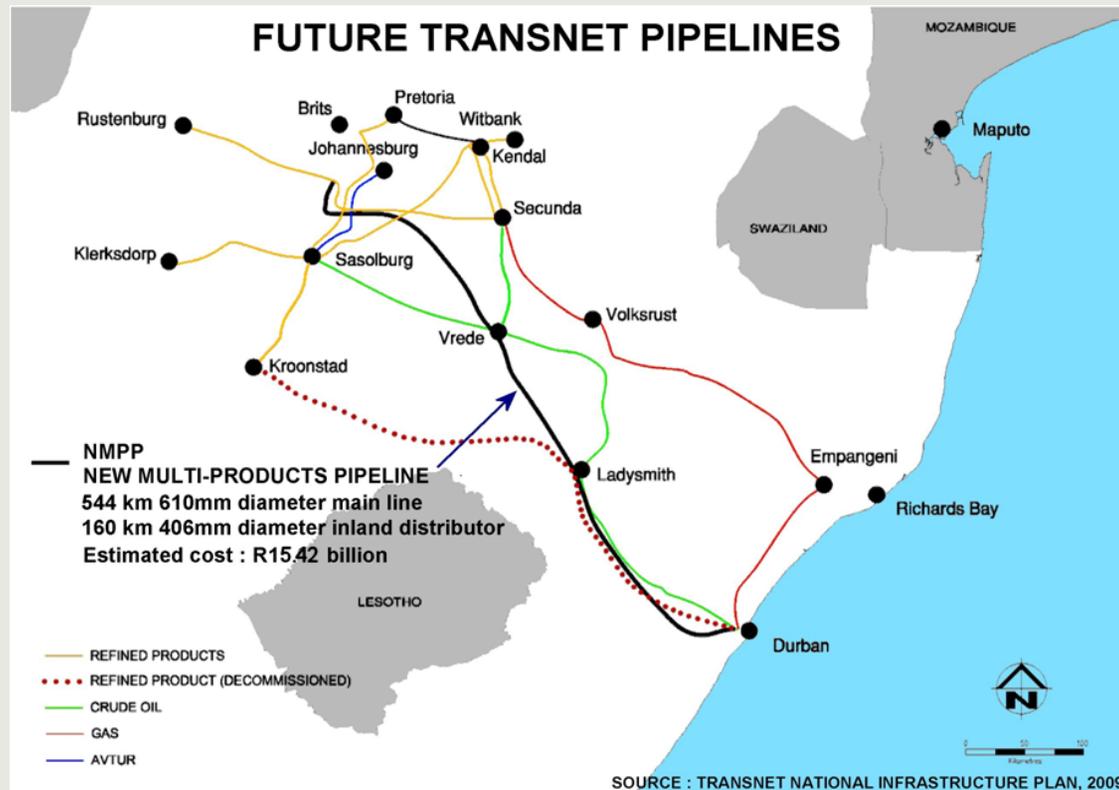
Richards Bay

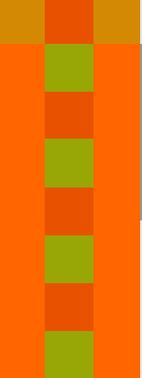


- Integrated planning - Ports, ITP's, IDP's, & PLTF
- Inland container port

Pipelines

- Major current developments
 - NMPP (to be completed December 2012)
 - Kendal Matola pipeline (expected completion within next year)





6. Key institutional actions

Selected Institutional changes

- Multimodal Policy Forum in DOT
- Expand DOT strategic policy responsibilities (for Rail, Aviation & Marine divisions)
- Transport Economic Regulator (with modal divisions)
- Road Weight Distance Charging Entity
- Rail Infrastructure Agency
- Allow for more competition between operators (Transnet, PRASA and National Ports Authority)
- Improve effectiveness of entities (i.e Provincial Roads Departments/Agencies)
- Re-organise DOT for Regulated Competition

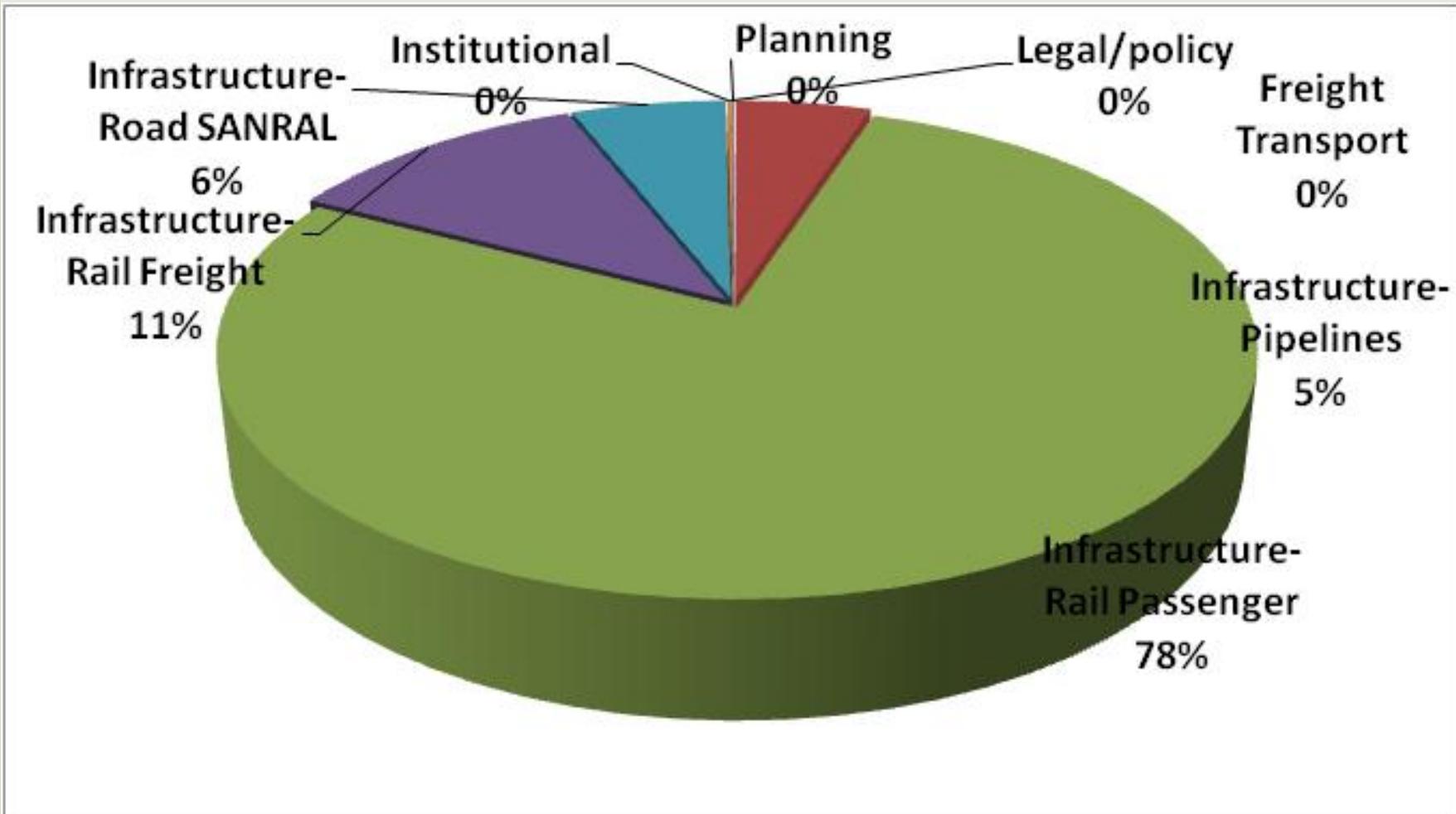
NATMAP 2050 funding mix

- Develop new revenue collection system
- Right of access
 - Formula – basic/commercial-private/freight-passenger and outcome
- User charge
 - Weight distance charge, using intelligent transport systems
 - Allows for alternative energy sources
 - Formula – basic/commercial-private/freight-passenger and outcome

Funding requirement: national projects

Total Funding Requirement (Capital) of National Projects - All Modes

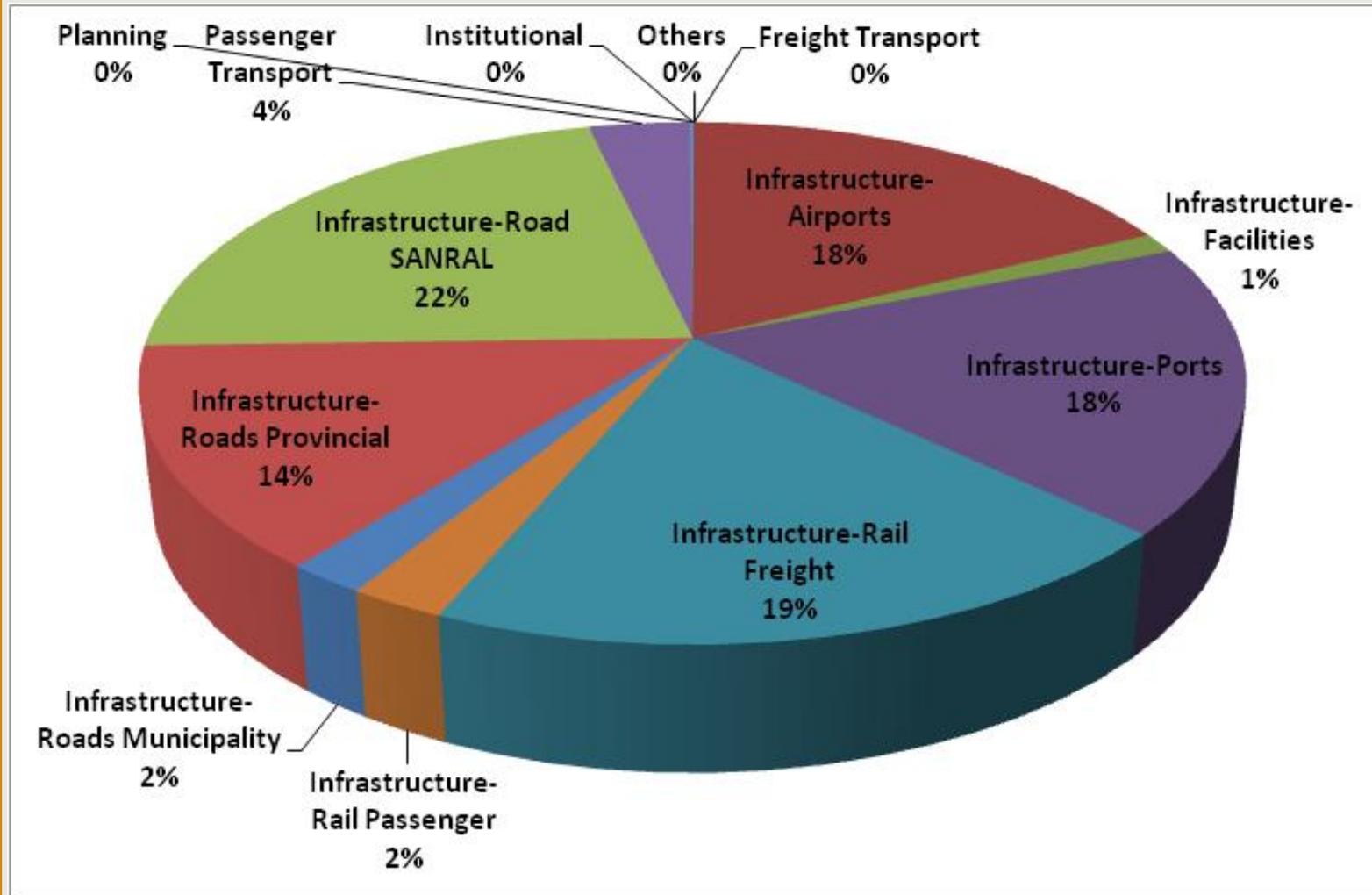
(R million): 261,869

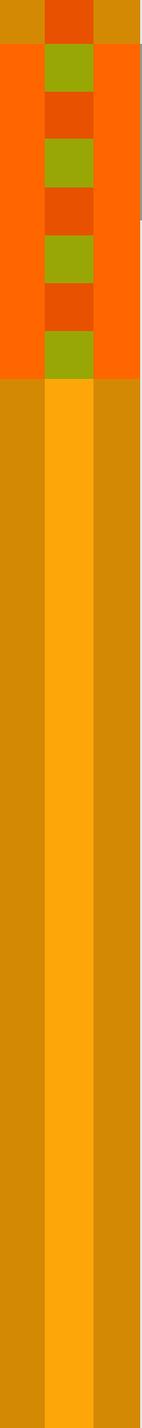


Funding requirements: prov projects

Total Funding Requirement of All Provincial Projects – Modes

(R million): 515,756





7. Critical projects

Selected critical projects

- KwaZulu Natal
 - Dedicated heavy haul route Durban Harbour/s to N2
 - (Extend to Balgowan later)
 - Upgrade N2 from Isipingo to Mount Edgecombe
 - De Beer's Pass
 - Cato Ridge to Athlone additional lanes and I/C upgrades
 - New heavy haul route Richards Bay to Melmoth
 - Upgrade and Expand Richards Bay Port
 - Upgrade and Expand Durban Port
 - Improve coal line between Richards Bay - Piet Retief
 - Feasibility study and implementation: Johannesburg - Durban High Speed Rail Line