THE CASE FOR RAIL IN LIMPOPO PROVINCE
PASSENGER RAIL PLAN DEVELOPMENT
1. To confirm/advise on the feasibility of rail passenger corridors/services, and/or alternative mode deployment options, for Limpopo, through demand profiling within an integrated supply model framework.

2. Prioritise passenger rail/integrated public transport projects and to develop Business Plans and Business Cases for selected projects.

**MANAGEMENT OF THE STUDY**

- Provincial/PRASA MOU (PRASA to complete study – R2m reimbursement by Province).
- Steering Committee (Technical Committee).
- Limpopo Technical Committee for evaluation of priorities.
OUTPUT REQUIREMENTS

• Advise on the feasibility of passenger rail services.
• Confirmation of the development nodes and major transport corridors.
• Demand modelling.
• Analysis of the current rail network.
• Identification of corridors within which rail could support the passenger demand.
• Identification of corridors that could be developed by using the current infrastructure.
• Identification of rail projects that will require new infrastructure development.
• Identification of rail freight opportunities to enhance rail passenger operations.
• Assessment of the efficiency and cost impact of current road based passenger services.
• Development of a prioritising model.
• Prioritise the different proposals.
PROJECT APPROACH

- Assimilation of Data
- Data Analysis
- Transport Modeling
- Develop Criteria to assess possibilities
  - Existing Rail lines/services
  - Possible new rail lines
- Develop Passenger Rail Transport Possibilities
- Assess the efficiency of the current services
- Analyze Possibilities
- Prioritize Possibilities
- Develop Business Case/s
- Develop Business Plan/s

• Limpopo PLTF.

• Limpopo Growth and Development Strategy.

• Limpopo in Motion.

• IDP’s Limpopo District Municipalities.

• ITP’s Limpopo District Municipalities.

• SDF’s Limpopo District Municipalities.

• SARCC documentation.

• Transnet – Strategic planning.

• NATMAP.
1. **BASE DATA & GROWTH**
   - 2005 Household Survey
   - Population growth
   - Land use
   - Spatial development
   - 2010, 2030 and 2050

2. **REASONS FOR TRIPS**
   - Work
   - Business
   - Migrant
   - Holiday

3. **ZONES**
   - 156 National Zones
   - 20 Passenger Zones in Limpopo Province
4. **INCOME GROUPS**
   - Low: Less than R3000 pm
   - Medium: R3001 – 6000 pm
   - High: More than R6000 pm

5. **MODES OF TRANSPORT**
   - Walk
   - Private Vehicle
   - Taxi
   - Bus
   - Train
   - Air

6. **OD MATRIXES**
   - Trips Produce & Attracted from and to each zone
   - Summaries
A) EXISTING RAIL NETWORK IN LIMPOPO PROVINCE


   Branch lines
   • Mookophong – Zebediela
   • Modimolle – Vaalwater
   • Pienaarsrivier – Marble Hall


   Branch Lines
   • Hoedspruit – Phalaborwa

3. Lephalale – Thabazimbi – Rustenburg – Gauteng

   Branch Lines
   • Northam - Middelwit
1. **Johannesburg – Musina**
   - Special trains to Makado & Musina on Friday at month end and on special occasions.

2. **Musina - Johannesburg**
   - Special trains on Sundays at month end and on special occasions from Makado & Musina.

3. **Johannesburg – Hoedspruit**

4. **Hoedspruit – Johannesburg**

5. **Kaapmuiden – Hoedspruit**

6. **Hoedspruit – Kaapmuiden**
Total daily Passenger trips in 2010: 175 from Musina and 229 to Musina.

Daily work trips in 2010: 91 from Musina and 39 to Musina.

Rail travelling time between Musina and Makhado much longer than road.

Current Shosholoza Meyl services cater for long distance passengers to and from Musina.
1. MUSINA – GAUTENG CORRIDOR
PASSENGER TRIPS TO AND FROM MAKADO

1. To Polokwane & South
   • Total Daily trips: 992 from Makado and 138 to Makado.
   • Daily work trips: 766 from Makado and 24 to Makado.
   • Travelling time by rail 2:40 & to and from station.
   • Travelling time by road 1:10.
   • Shosholoza Meyl provides service for non work trips.

2. To Tzaneen
   • Total Daily trips: 65 from Makado and 8 to Makado.
   • Daily work trips: 56 from Makado and 5 to Makado.
1. MUSINA – GAUTENG CORRIDOR
PASSENGER TRIPS TO AND FROM POLOKWANE

1. To Mokopane

- Total Daily trips: 27 652 from Polokwane to Mokopane and 22 255 from Mokopane to Polokwane.
- Daily work trips: 17 960 from Polokwane to Mokopane and 15 717 from Mokopane to Polokwane.
- Travelling time by rail 1:00 & to and from station.
- Travelling time by road 0:40.
- Shosholoza Meyl provides service for non work trips
2. To Bela Bela

- Total Daily trips: 35,073 from Polokwane & other stations to Bela Bela and 30,316 from Bela Bela and other stations to Polokwane.
- Daily work trips: 23,337 from Polokwane & other stations to Bela Bela and 21,307 from Bela Bela and other stations to Polokwane.
- Travelling time by rail 3:10 & to and from station.
- Travelling time by road 1:30.
- Shosholoza Meyl provides service for non work trips.
3. To Pretoria

- Total Daily trips: 52,507 from Polokwane & other stations to Pretoria and 35,999 from Pretoria and other stations to Polokwane.

- Daily work trips: 32,852 from Polokwane & other stations to Pretoria and 21,617 from Pretoria and other stations to Polokwane.

- Daily work trips: 7,576 from Bela Bela to Pretoria and 282 from Pretoria and to Bela Bela.

- Travelling time by rail 4:40 & to and from station.

- Travelling time by road 2:30.


- Travelling time Bela Bela – Pretoria by road: 1:00.

- Shosholoza Meyl provides service for non work trips.
2. POLOKWANE – KAAPMUIDEN CORRIDOR
PASSENGER TRIPS TO AND FROM TZANEEN

• Total Daily trips: 10 858 from Polokwane to Tzaneen and 23 296 from Tzaneen to Polokwane.
• Daily work trips: 7 013 from Polokwane to Tzaneen and 18 210 from Tzaneen to Polokwane.
• Travelling time by rail 3:50 & to and from station (Around the mountains).
• Travelling time by road 1:20.
• No passenger rail service at present.
2. POLOKWANE – KAAPMUIDEN CORRIDOR

PASSENGER TRIPS TO AND FROM PHALABORWA

- Total Daily trips: 3 111 from Polokwane & Tzaneen to Phalaborwa and 4 706 from Phalaborwa to Tzaneen & Polokwane.

- Total Daily trips: 1 826 from Phalaborwa to Kaapmuiden and 2 965 from Kaapmuiden to Phalaborwa.

- Daily work trips: 2 109 from Tzaneen to Phalaborwa and 3 251 from Phalaborwa to Tzaneen.

- Daily work trips: 1 337 from Phalaborwa to Kaapmuiden and 2 403 from Kaapmuiden to Phalaborwa.

- Shosholoza Meyl provides Weekdays shuttle service between Kaapmuiden and Phalaborwa.

- Shosholoza Meyl provides Weekend service between Gauteng and Hoedspruit.
3. LEPHALALA – GAUTENG CORRIDOR

PASSENGER TRIPS TO AND FROM THABAZIMBI

• Total Daily trips: 3,441 from Lephalale to the South and 1,348 from the South to Lephalale.

• Total Daily trips: 10,302 from Thabazimbi to the South and 1,809 from the South to Thabazimbi.

• No passenger rail service from Gauteng to Rustenburg.
B) OPTIONS FOR NEW RAIL CORRIDOR IN LIMPOPO PROVINCE

1. Makhado – Thohoyandou
2. Makhado – Lephalale
3. Polokwane – Mankweng – Moria
4. Polokwane – Seshego Extension
5. Polokwane – Tzaneen (New Direct Line)
6. Polokwane – Pretoria (New High Speed Line)
7. Polokwane – Lephalale
9. Polokwane - Burgersfort
10. Burgersfort – Lydenburg
11. Burgersfort – Roos Senekal
12. Northam – Polokwane
13. Matlabas – Mabatlane – Modimolle
14. Moloto Corridor – Jane Furse - Burgersfort
15. Lephalale - Mahalapye
Filter 1 - Strategic Merit Test (SMT):

- Meeting the transport system objectives, policies and strategies barriers to the possibility (e.g. risk, dependence on other possibilities or projects)
- Realistic achievability, cost

Filter 2 - Rapid Appraisal

- rapid benefit-cost analysis
- an indicative assessment of the main benefits and costs, without a high level of accuracy.

Prioritisation
1. Makhado - Thohoyandou
   - Length of rail line: 75 km (Hilly, alongside mountains)
   - Possible Traction: Diesel
   - Indicative cost of rail line: R1 196m
   - Passenger trips in corridor: 1 636 from Makhado; 849 to Makhado
   - Filter 1: Don’t Proceed for passenger service

2. Makhado – Lephalale
   - Length of rail line: 240 km (Flat open country)
   - Possible Traction: Diesel
   - Indicative cost of rail line: R3 220m
   - Passenger trips in corridor: 66 from Makhado; 63 to Makhado
   - Filter 1: Don’t Proceed for passenger service
3A. Polokwane - Mankweng
- Length of rail line: 26 km (City and residential areas)
- Possible Traction: 25 kV AC
- Indicative cost of double rail line: R3 726m
- Passenger trips in corridor: +/-60 000 to Polokwane
- Filter 1: Proceed to Filter 2

3B. Mankweng - Moria
- Length of rail line: 12 km (Residential areas & hilly)
- Possible Traction: 25 kV AC
- Indicative cost of rail line: R233m
- Passenger trips in corridor: +/-10 000 to Polokwane
- Filter 1: Don’t Proceed. Phase to follow phase 3A
• Length of rail line: 15 km
  (Industrial & Residential areas. Route can follow mainline to Makado & industrial sidings pass airport).
• Possible Traction: 25 kV AC.
• Indicative cost of double rail line: R790m.
• Passenger trips in corridor: +/-50 000 to Polokwane.
• Filter 1: Proceed to Filter 2.
5. POLOKWANE – TZANEEN
(NEW DIRECT LINE)

- Length of Rail Line: 100 Km (Mountainous).
- Possible Traction: 25 kV AC.
- Indicative cost of single rail line: R6 225 m.
- Passenger trips in corridor: 33 481 to Polokwane and 17 346 from Polokwane.
- Filter 1: Don’t Proceed.
6. POLOKWANE – PRETORIA
(NEW HIGH SPEED LINE)

- Length of rail line: 290 km (Industrial, Residential, farm land).
- Possible Traction: 25 kV AC.
- Indicative cost of single standard gauge rail line: R8 660m.
- Cost of one high speed train set: R120m.
- Passenger Main Line trips in corridor: 19 106 to Pretoria & 14 040 from Pretoria.
- Passenger Work trips in corridor: 36 133 to south & 21 617 to north.
- Filter 1: Proceed for passenger service.
• Length of rail line: 210 km.
  (Mainly farm land.)

• Possible Traction: Diesel.

• Indicative cost of single rail line: R4 130m.

• Passenger trips in corridor: 157 from Polokwane and surrounding zones & 1 916 to Polokwane and surrounding zones.

• Filter 1: Do not proceed for passenger service.
8A. Polokwane - Zebediela

- Length of rail line: 55 km (Can follow main line for 19km, farm land & residential areas, mountain range).
- Possible Traction: 25 kV AC.
- Indicative cost of single rail line: R1 220m.
- Passenger trips in corridor: 16 632 to Polokwane & 5 611 from Polokwane.
- Filter 1: Proceed for passenger service.

8B. Zebediela – Jane Furse

- Length of rail line: 95 km (Residential areas & hilly).
- Possible Traction: 25 kV AC.
- Indicative cost of single rail line: R2 140m.
- Passenger trips in corridor: 2 321 to Polokwane & 176 from Polokwane.
- Filter 1: Do not proceed. Phase to follow phase 8A & Moloto Corridor.
9. POLOKWANE - BURGERSFORT

- Length of rail line: 140 km (Farm land, Residential, mountainous).
- Possible Traction: Diesel.
- Indicative cost of single rail line: R3 360m.
- Passenger trips in corridor: 495 from Polokwane and surrounding zones & 925 to Polokwane and surrounding zones.
- Filter 1: Do not proceed for passenger service.
10 & 11. BURGERFORT EXTENSIONS

10. Burgersfort - Lydenburg
- Length of rail line: 68 km (Mountainous, 18 km tunnel).
- Possible Traction: Diesel.
- Indicative cost of single rail line: R4 700m.
- Passenger trips in corridor: very little.
- Filter 1: Do not proceed for passenger service.

11. Burgersfort – Roos Senekal
- Length of rail line: 75 km (Mountainous).
- Possible Traction: Diesel.
- Indicative cost of rail line: R3 270m.
- Passenger trips in corridor: +/-7 600 from Burgersfort & 1081 to Burgersfort.
- Filter 1: Do not Proceed for passenger service.
12. Northam - Polokwane
- Length of rail line: 130 km (New line from Northam to Bela Bela to join main line. Total distance to Polokwane 325km).
- Possible Traction: Diesel.
- Indicative cost of single rail line: R2 800m.
- Passenger trips in corridor: 2 363 to East & 1 658 to West.
- Filter 1: Do not proceed for passenger service.

13. Matlabas – Mabatlane – Modimolle
(Proposal by Transnet as alternative route for export coal)
- Length of new rail line: 80 km.
- Length of line to be rebuilt: 74 km.
- Possible Traction: 25 kV AC.
- Indicative cost of rail line: R2 600m.
- Passenger trips in corridor: 2 263 to East and 1 229 to West.
- Filter 1: Do not Proceed for passenger service.
14. MOLOTO CORRIDOR - JANE FURSE - BURGERSFORT

Phase 1 of Moloto Corridor

- Standard gauge line from Pretoria to Moloto & Siyabuswa
- Double Decker Coaches with push-pull Locomotives
- 160 km/hour
- R6 626m for infrastructure & R1 927m for train sets (2007 money)
- Future extensions

1. Moloto – Groblersdal
   - Length of double Line: 85 km
   - Infrastructure cost: R3 800m

2. Groblersdal – Jane Furse
   - Length of single Line: 85 km
   - Infrastructure cost: R2 900m

3. Jane Furse – Burgersfort
   - Length of single line: 50 km
   - Infrastructure cost: R2 100m
MOLOTO CORRIDOR IN REGIONAL CONTEXT
An Option identified by Transnet to link to Botswana Coal Fields with Transnet Export Lines as well as a possible connection to the future Kalahari Corridor to Walvis Bay
• Provincial assessment workshop – Prioritisation
  • All development, transport and planning departments of Province required to evaluate all options.
  • Prioritise and categorise options.
  • Determine approach to categories of options.
  • Apply rail/transport technology framework on options not viable for heavy rail.
Conclusion

- There is a need for the Province to prioritize the rail networks given its economic growth points, social needs and development

- Budget should also be put aside to be able to mobilize funding on a rand to rand basis

- EXCO needs to be mobilized in order to secure buy-in and funding

- PRASA should include the Provincial Rail Plan into its 10 Year National Plan

- The Plan should also be canvassed with the National Cabinet and the National Department of Transport

- Critical Stakeholders in the province should be mobilized to support the plans