

# Road Dust Management: State of the Practice

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1<sup>st</sup> Road Dust Management Conference  
13-14 November, 2008



# Summary

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- Introduction
- Unsealed road networks
- Consequences of dust
- Dust control
- Dust control research
- The way forward
- Conclusions



# Introduction

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- Unsealed roads
  - Function
  - Problems
  - Sustainability
  - Management
- Improvement options
  - Upgrading
  - Dust control
  - Surface stabilization



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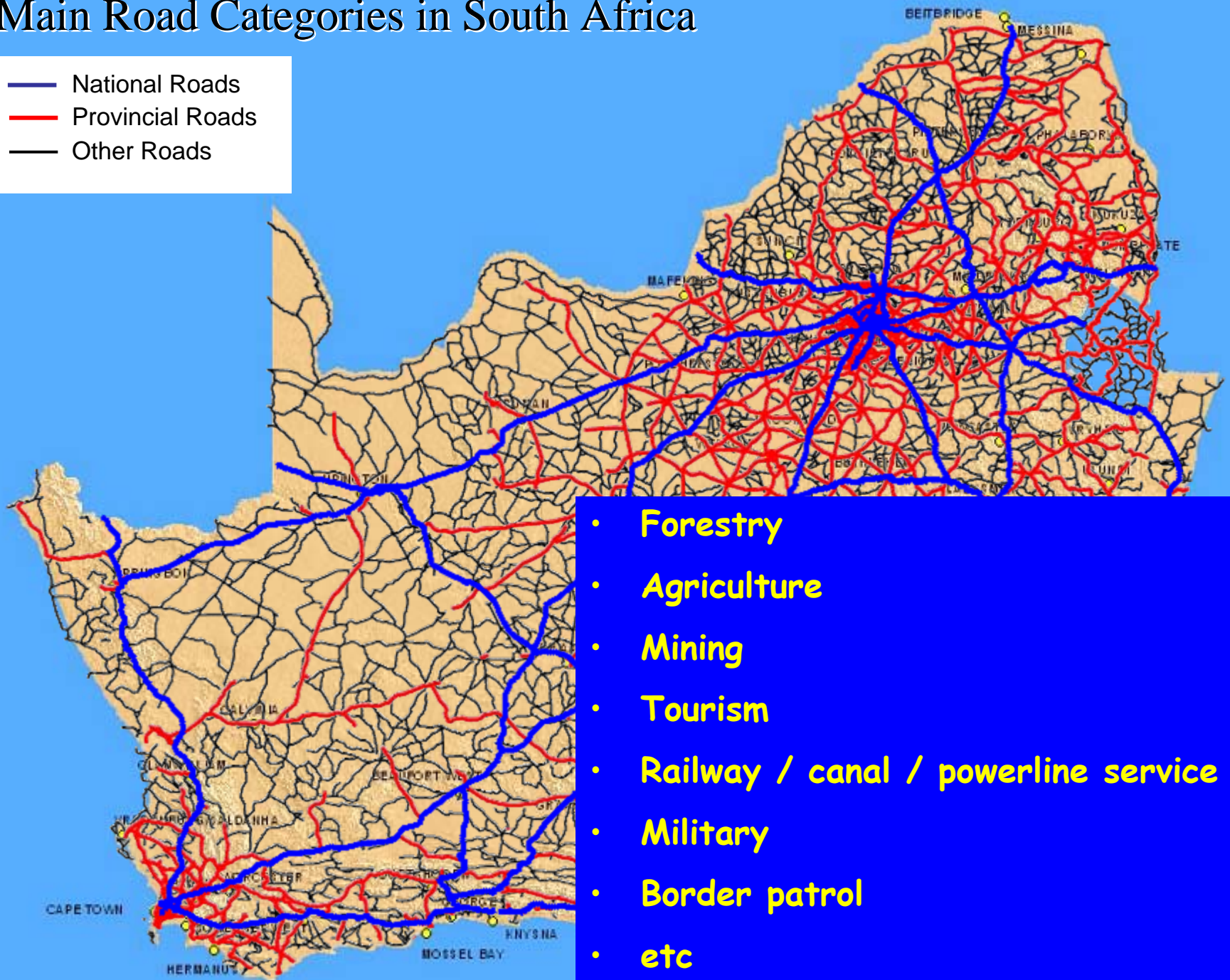






# Main Road Categories in South Africa

- National Roads
- Provincial Roads
- Other Roads



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# Consequences of dust

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- Safety hazard
- Health hazard
- Air and water pollution
- Vehicle operating costs
- Reduced agricultural yields
- Loss of fines
  - Increased rate of gravel loss
  - Increased maintenance frequency





# Consequences of dust

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- Dust generation in South Africa
  - 3.1 mt/yr
  - 1 mt/yr lost
- Erosion
  - 34.6 mt/yr



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# Dust control additives

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- Before 1900
- 1907
  - Chlorides
- 1913
  - Lignosulfonate
- 1913 - 1970's
- After 1970



# Dust control additives

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- Dust palliatives

- Water/wetting agents
- Hygroscopic salts
- Natural polymers
- Synthetic polymers
- Synthetic oils
- Petroleum resins
- Tars and bitumens
- Other

- Surface Stabilizers

- Synthetic polymers
- Synthetic oils
- Sulfonated oils
- Enzymes & biological
- Tars and bitumens
- Other



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# Dust control research

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- Process
- Documentation
  - Reports, guidelines, etc
- Publications
  - Papers
- Specifications
- Certification



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# Looking backward

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- Specification owner
- Industry disorganization
- Research methods
- Documentation





# The way forward

- An "owner" for unsealed road specs
- Additive industry body
- Category specifications
- Research protocol
  - Performance based
- Environmental assessment protocol
- Guidelines and specifications
  - Performance based / cost-benefit
- Education and training



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# Conclusions

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- 1907 through 2008
- November 13 & 14, 2008
  - Consolidate the past
  - Plan a way forward
- After November 15, 2008
  - Do it better / differently
  - Yes we can!





