



IRF WORLD ROAD MEETING 2017

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Data driven prioritisation of road maintenance activities

Matthew Townshend
Ph.D. Student
University of Cape Town
matthew@nigeltownshend.com

Joint work with: Don Ross
University College Cork
University of Cape Town
Georgia State University

CONTENT

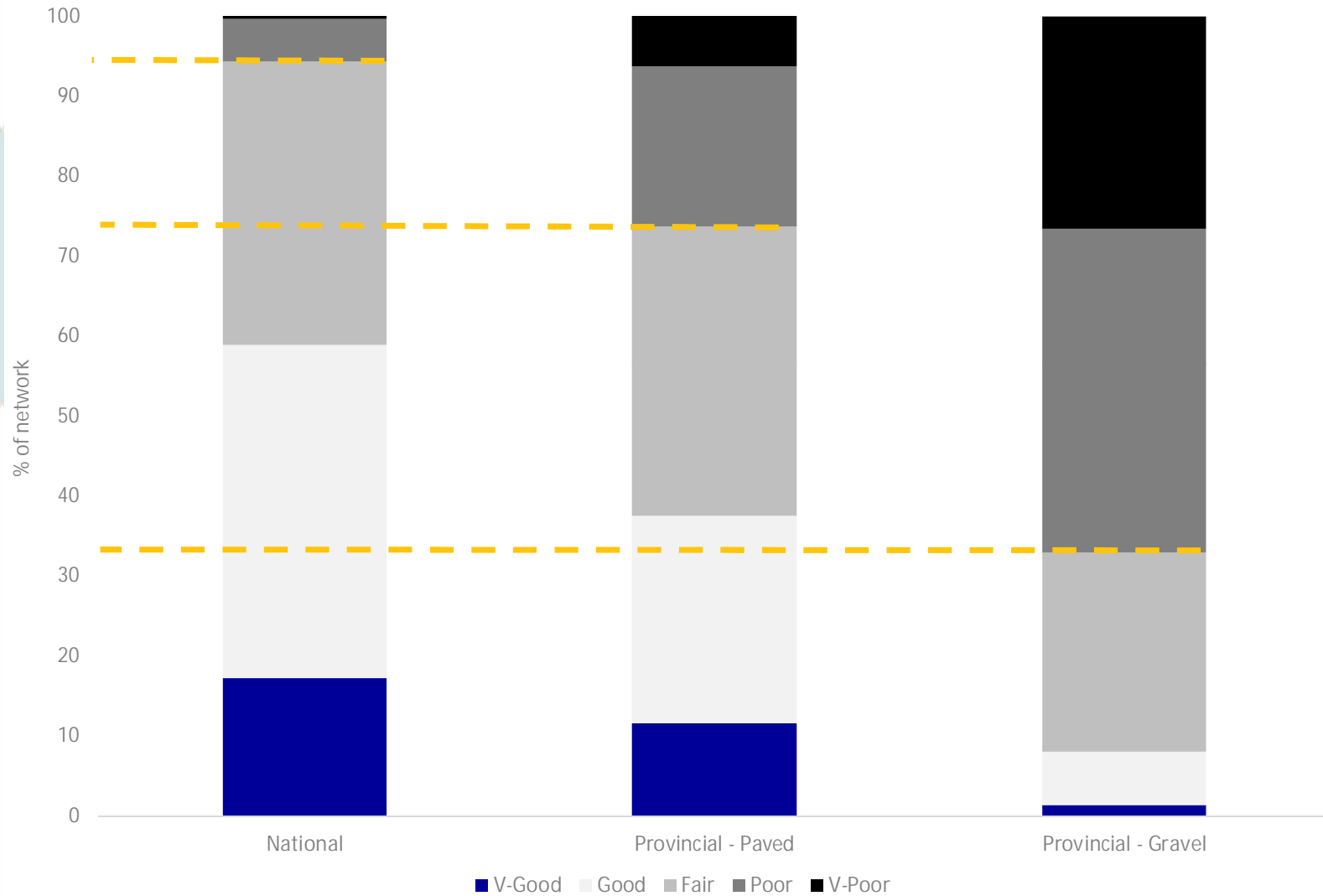
- Problem statement and context
 - Extent of the South African road network
 - Quality challenges within the network
 - Financing constraints within the sector
 - Maintenance shadows
 - Reliance on one-dimensional RAMS
- Economic classification and estimation methodologies
 - Basic Access Roads
 - Strategic Roads
 - Tactical Roads
- Key question

EXTENT OF THE ROAD NETWORK

- South Africa has the 10th largest road network globally
 - 750 000km road network
 - 1.48 million individual roads
- Complex ownership structure
 - 1 national road authority (21 946 km)
 - 9 provincial road authorities (273 078 km)
 - 284 municipal road authorities (323 057 km)
 - 131 919 km of unproclaimed roads

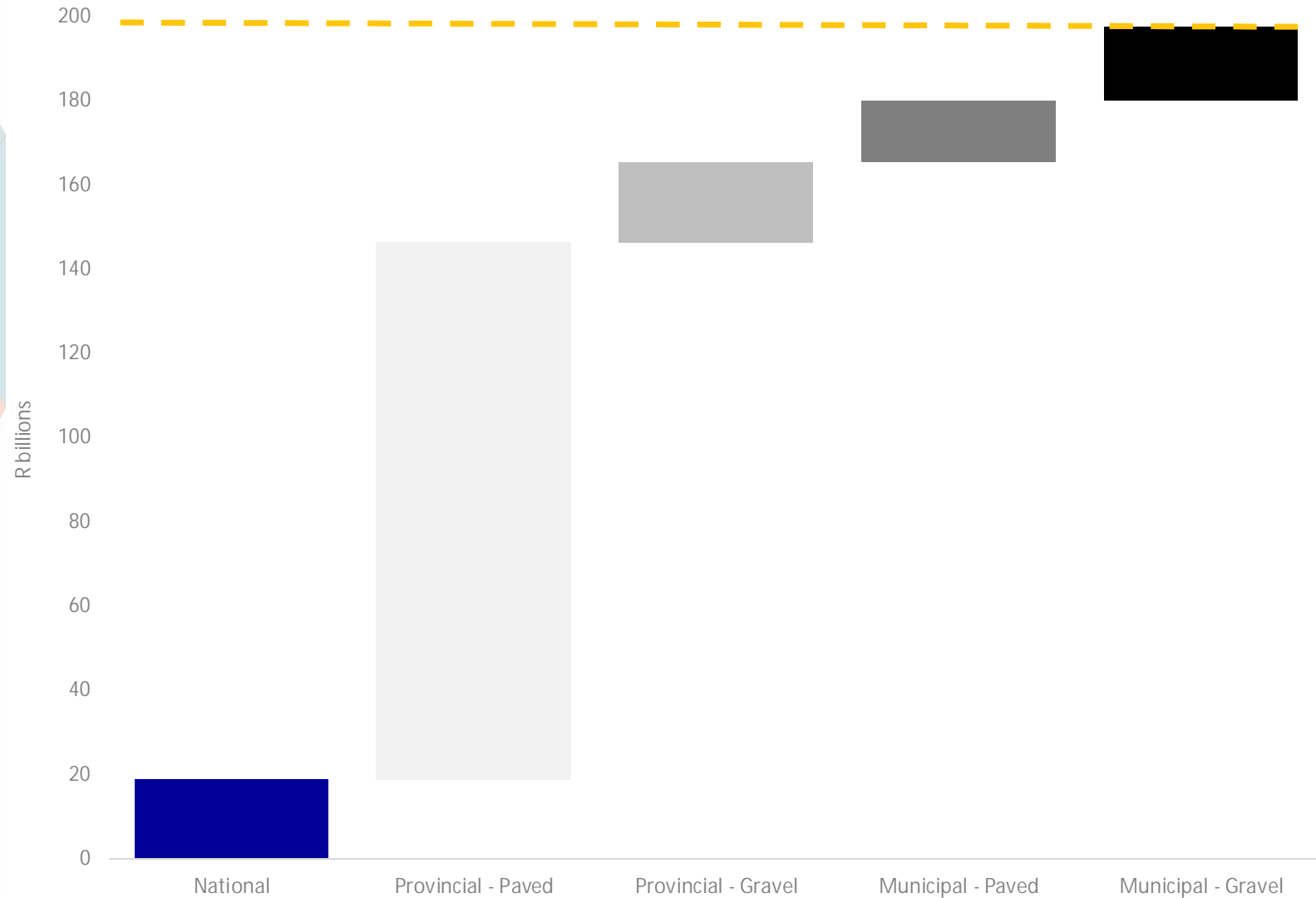
QUALITY CHALLENGES

Visual Condition Index (2016)



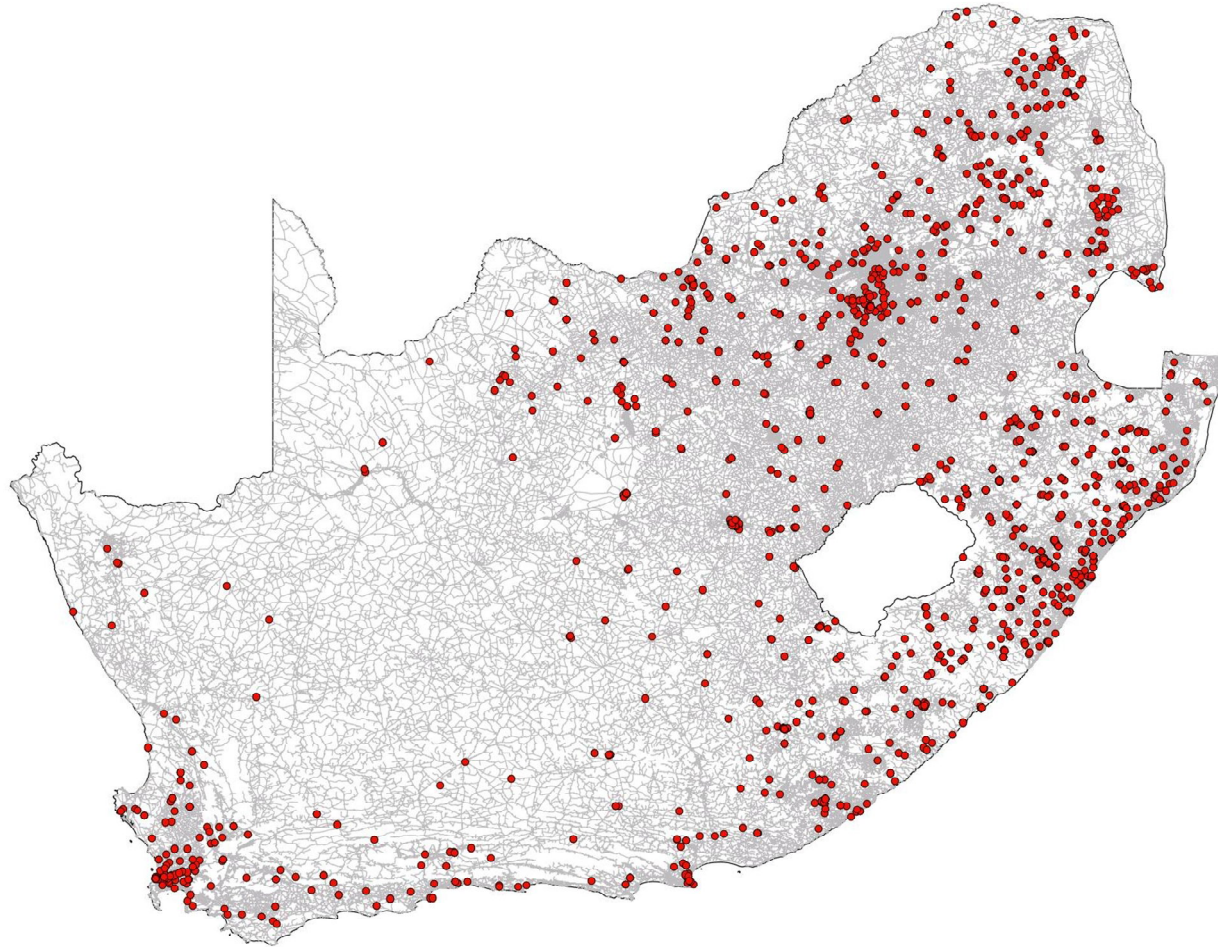
FINANCING CONSTRAINTS

Road maintenance funding shortfall (2016)



MAINTENANCE SHADOWS

7 781 provincial road projects, 2015/16 – 2017/18



RELIANCE ON RAMS

- Grants conditional on RAMS
- Data used in RAMS for prioritisation:
 - Visual condition
 - Roughness
 - Rut depth
 - Macro texture
 - Deflections
 - Traffic volumes
 - Traffic types
 - Functional classification
- This information is insufficient to ensure that maintained roads:
 1. protect citizens' basic access rights
 2. maximise economic growth

BASIC ACCESS ROAD NETWORK

Estimation procedure:

Total road network
+
Population data
+
Primary & secondary schools
+
Healthcare facilities
-
Roads within prescribed walking distances to service centres
-
Peri-urban roads
-
Strategic Roads
-
Other high volume mobility roads
-
Roads in mesozones with more than 20 formal sector jobs
-
Roads in areas with high GVA
-
Commercial farming roads

STRATEGIC ROAD NETWORK

Estimation procedure:

National roads

+

High order mobility roads

+

Roads along major trade routes

+

Roads in areas with high GVA

+

Roads in mesozones with more than 1000 formal
sector jobs

+

Coal haulage routes

+

All urban roads

PRIORITISING TACTICAL ROADS

- The aim is to prioritise the maintenance of growth maximizing roads
- To do so, we draw on the following information:
 - Job numbers
 - GVA
 - National Development Plan / Vision 2030
 - Municipal Integrated Development Plans
 - Municipal Spatial Development Frameworks
 - Land use
 - The export intensity of the associated sectors
 - The labour intensity of the associated sectors

KEY QUESTION

In the world of big data and more readily available information, which data/information do you have available in your country to help perform these prioritization exercises (i.e. identifying the specific access function of a road, and the amount/type of economic activity facilitated by a road)?

If this information is available, has it already, or could it in future, be incorporated within your Road Asset Management Systems?