

**22nd Road Pavement Forum – CSIR
Convention Centre, Pretoria.
8th November 2011**



CITY OF CAPE TOWN | SHIKO SIBERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU



Practical and implementable approaches to improve
Municipal Road Network Management
Ian McDonald – City of Cape Town

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Introduction

Background

Extent of municipal road and street network

Municipal service delivery focus

Various practical approaches

Industry initiatives and partnerships

Success stories

Way ahead

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Introduction

- Sustainability
- Optimisation
- Green roads
- Topics that were all given much exposure at the recent CAPSA'11 held in September 2011
- Need to get basics right

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Background

- Setting the context – Dr Malcolm Mitchell approach
- Comparison between rural roads and municipal streets

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU



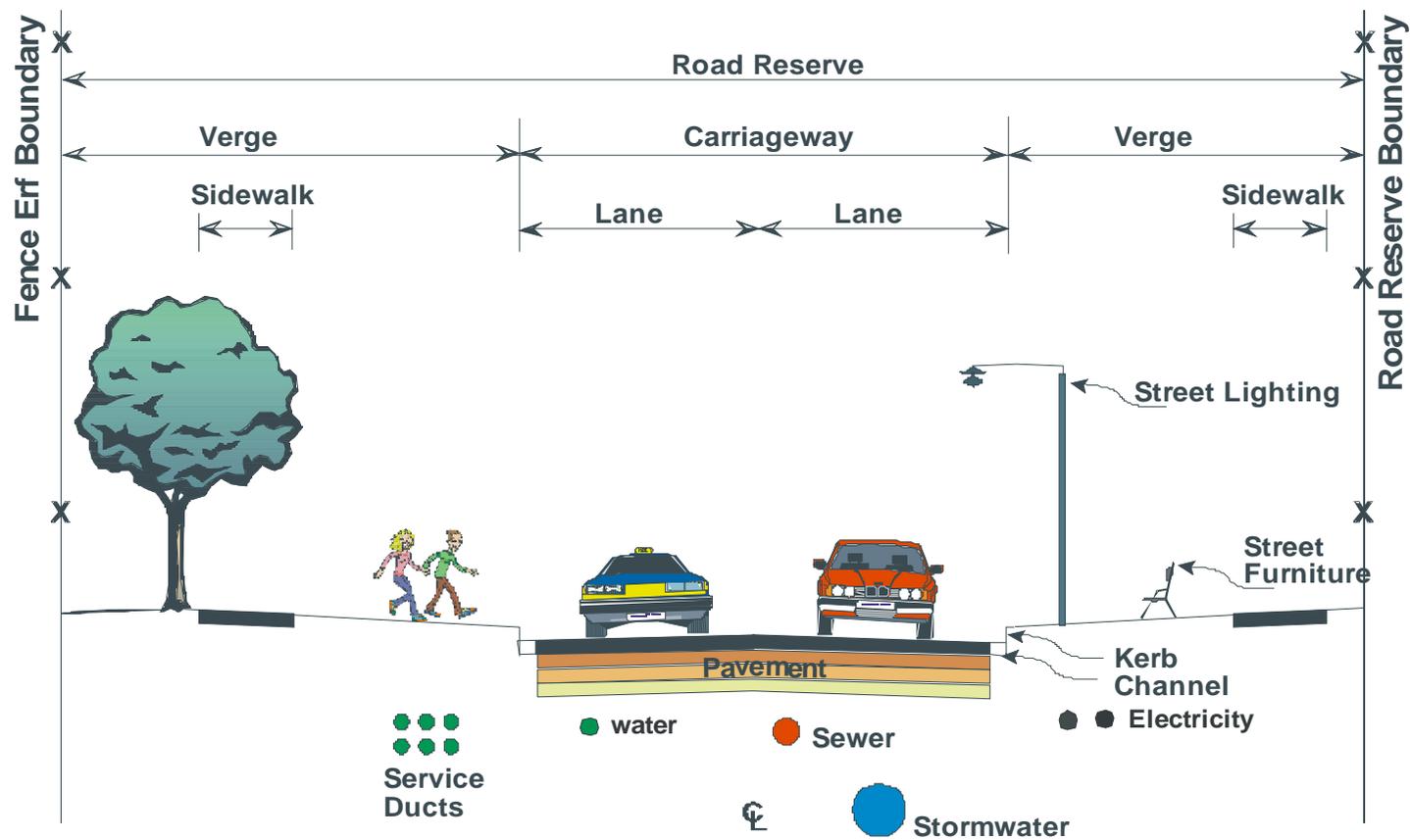
Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Typical Urban Section

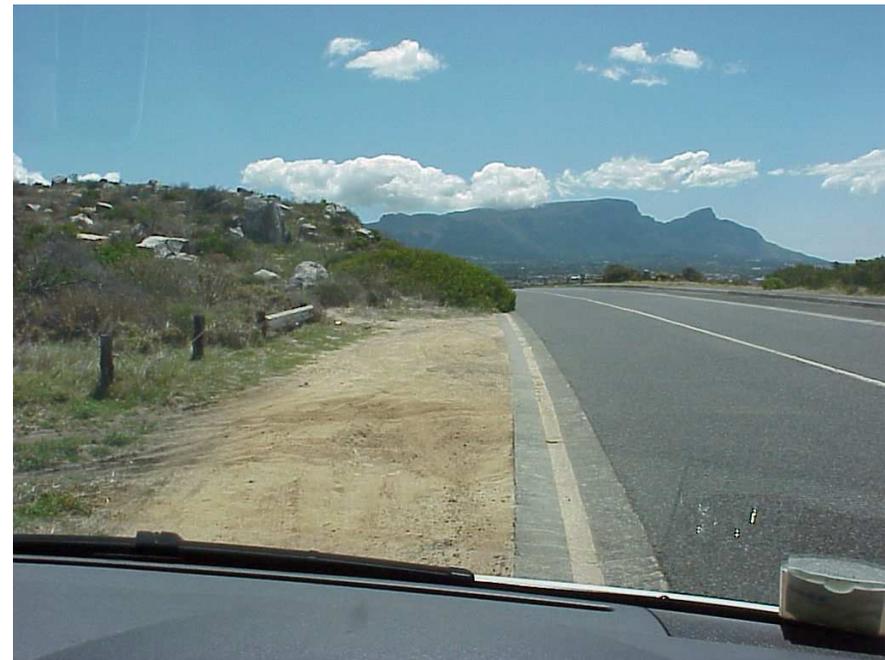


Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU



Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Background

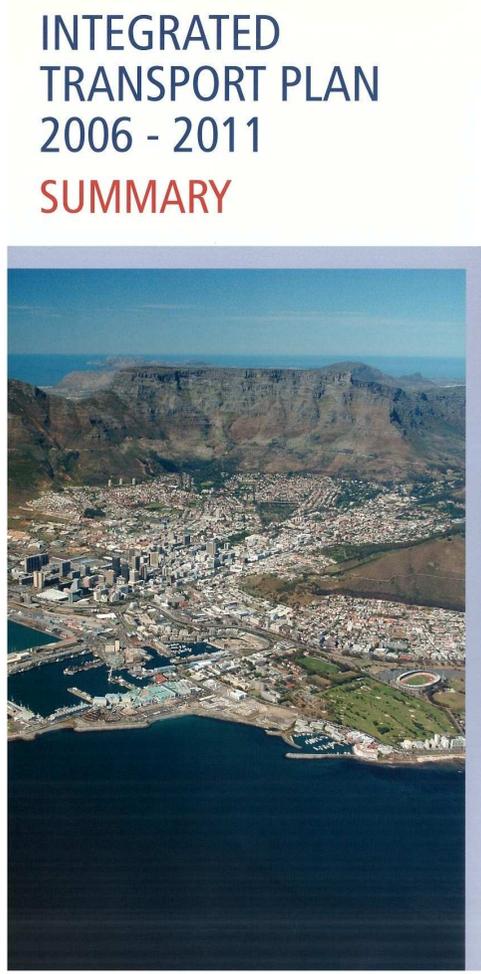
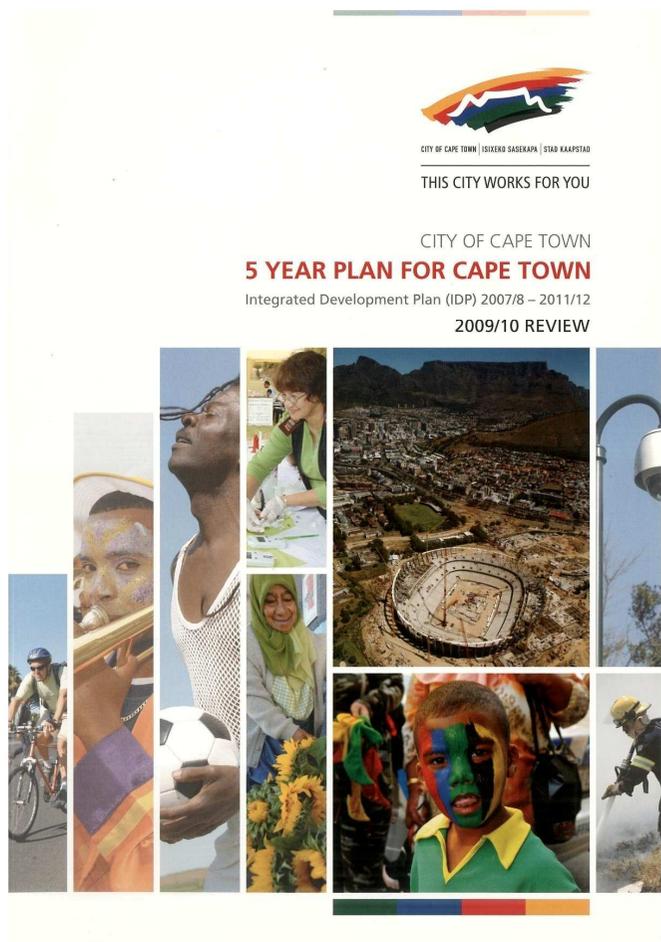
- Setting the context
- Comparison between rural roads and municipal streets
- Municipal focus – Integrated Development Plan - IDP and Integrated Transport Plan - ITP

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIXEKO SASEKAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU



Produced by the City of Cape Town in terms of section 26 of the National Land Transport Transition (Act 22 of 2000)



Revision 1.1

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Background

- Setting the context
- Comparison between rural roads and municipal streets
- Municipal focus – Integrated Development Plan - IDP and Integrated Transport Plan - ITP
- Hierarchy of infrastructure and service delivery – primary reason for existence of municipalities – provision of basic services.
 - Sanitation – more about this later
 - Water supply
 - Stormwater
 - Roads
 - Electricity
 - Communication

Other municipal services provision is dependent upon the optimal functionality of these services.

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Extent of network

- Total South African road and street network 606 978 km
- National road network 16 170 km
- Provincial road network 184 816 km
- **Metropolitan municipalities 66 143 km**
- **District and local municipalities 339 849 km**

(data collated by SANRAL 2010)

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Various Practical Approaches

Capacity building

- metros have made a concerted effort recently to award bursaries in civil engineering - Cape Town 53 over 5 years
- Bursars provided with vacation work and in service training
- Structured mentoring system instituted by Ethekwini Municipality with workshops and regular one-on-one sessions

Management of road reserve

- Implementation of “Services in road reserve policy” - City of Tshwane with Cape Town finalising its draft policy
- **No dig** policy in Cape Town – penalty deposit incentive to limit trenching of road crossing – use trenchless technology
- Mobile inspectorate – technical assistants employed
- Negotiated agreements with telecom service providers

Practical and implementable approaches to improve Municipal Road Network Management

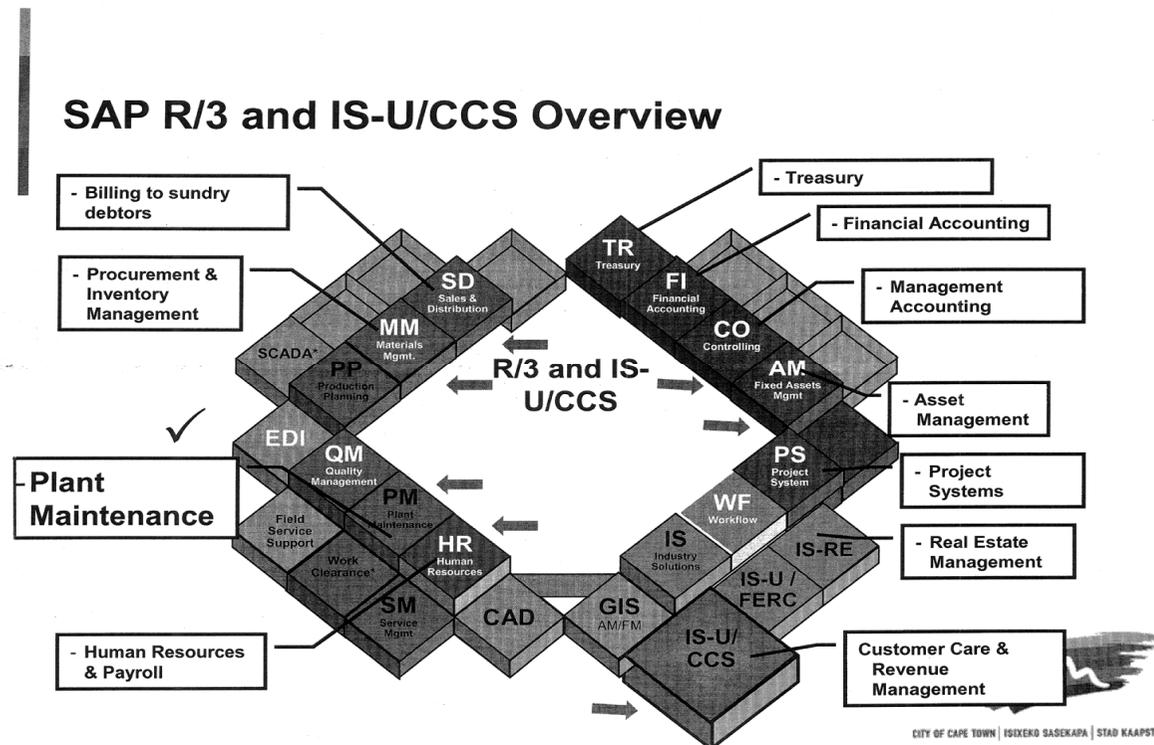


CITY OF CAPE TOWN | SHIKO SASEKAPA | STAD KAAPSTAD

Various Practical Approaches – continued.

THIS CITY WORKS FOR YOU

- Public complaint reporting system - linked to ERP system and spatially referenced. Data used to assist in assessing maintenance needs, deterioration analysis and maintenance crew response times



CITY OF CAPE TOWN | SHIKO SASEKAPA | STAD KAAPSTAD

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU



Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Various Practical Approaches – continued.

- Procurement using period tenders
 - Appointment of professional service providers
 - Reconstruction, resurfacing and resealing
 - Road marking
 - Trench reinstatement
 - Minor roadworks and ancillary works
 - Provision and maintenance of road traffic signage
 - Supply and maintenance of road safety barriers
 - Laboratory and in-situ testing of construction materials.

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Various Practical Approaches – continued.

- Road maintenance strategy based on these types of criteria
 - Adjacent land use
 - Road classification and traffic volumes
 - Public transport route
 - Freight route
 - Tourism or scenic drive route
 - Traffic accommodation - Possibility for traffic rerouting or stop/go situations
 - Resealing vs resurfacing of local streets

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Various Practical Approaches – continued.

Other preventative actions

- Removal of grey water from road surface
- Regular maintenance of side drains and subsoil drains
- Regular cleaning of stormwater gullies/catchpits
- Tree type and tree root management and parks watering regime

Management and re-use of reclaimed road construction material

- Existing roads and streets are linear quarries
- Deconstruct in defined material layers to minimise contamination
- Consider use of construction and demolition waste in appropriate locations

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIREKO SIBERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU



Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU



Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU



Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Various Practical Approaches – continued.

- Abnormal vehicle management and permitting
- Overload control using weigh-in-motion, ITS and weighbridges
- Improved outputs from management systems
- Councillor awareness and capacitation
- Alternative materials and processes such as Warm Mix Asphalt and Half Warm Mix Asphalt – wonderful initiative through Ethekwini Municipality
- Good working relationship with and understanding by Chief Financial Officers. This is to ensure a well maintained network obtained by being provided with adequate operating budget in line with the requirements of Section 63 of the Municipal Finance Management Act – 56 /2003. This helps in obtaining unqualified audits from National Treasury.

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Industry initiatives, partnerships and success stories

Road pavement forum

Warm mix asphalt interest group

Capsa"11

Centres of excellence

Practical and implementable approaches to improve Municipal Road Network Management



CITY OF CAPE TOWN | SHIKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Way forward

- Keep centres of excellence
- Develop and keep technical staff at all levels
- Ongoing public awareness
- Lobby for equitable share of funding for infrastructure management and maintenance
- Build on international best practice
- Include life cycle costing as part of process
- Bring financial planning element into decision making process
- Stay in the engineering industry



CITY OF CAPE TOWN | SHAKO SABERAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

**Special thanks to
Ethekwini Municipality and
City of Tshwane for their
support and input into this
presentation**

Thank you

