



ASSET MANAGEMENT

General Status Overview

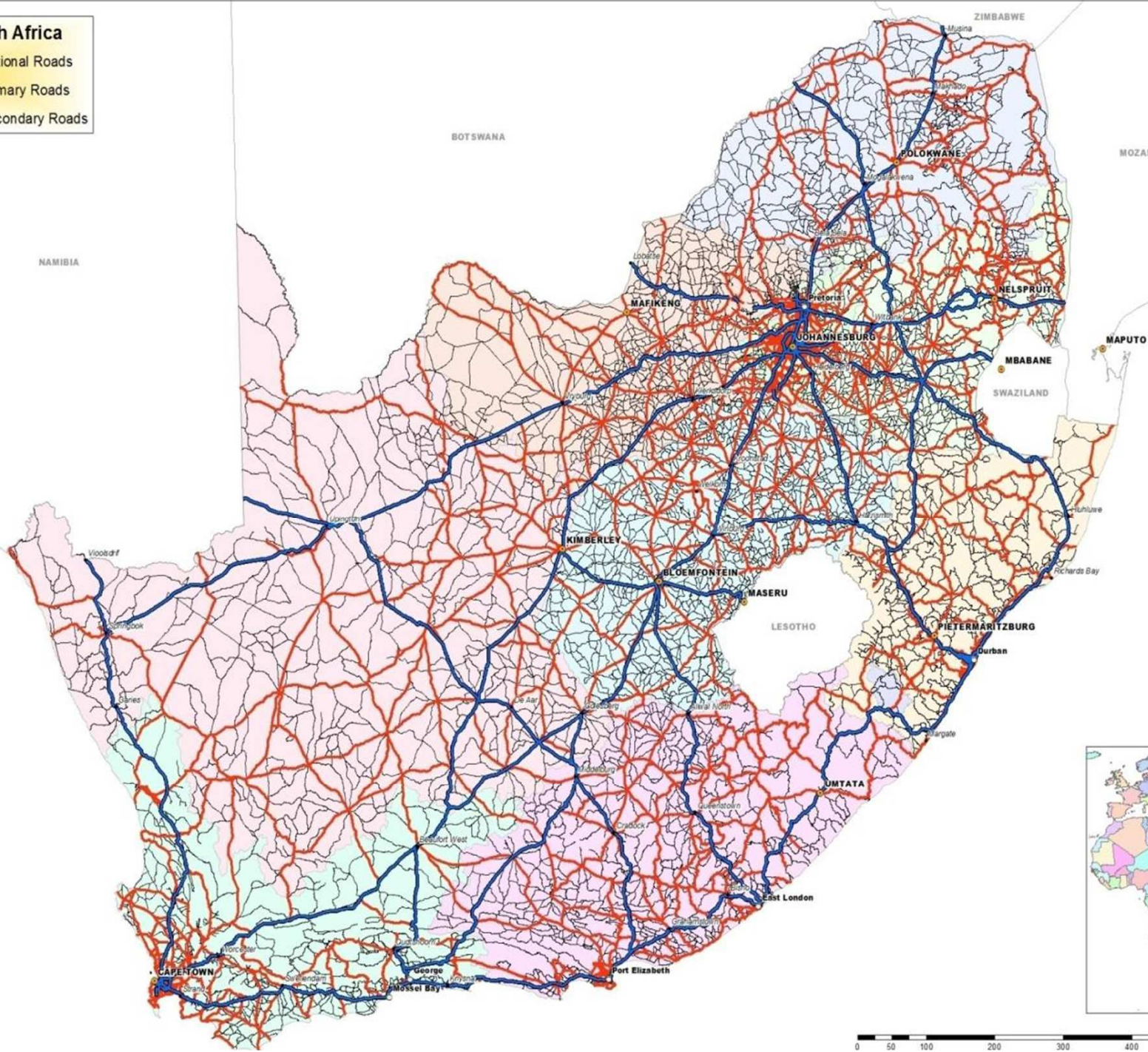
25th RPF Meeting

8 May 2013

L Kannemeyer

Roads in South Africa

-  National Roads
-  Primary Roads
-  Secondary Roads



South African Road Network

Authority	Paved	Gravel	Total
SANRAL	19,704	0	19,704
Provinces - 9	44,942	136,640	181,282
Metros - 8	51,682	14,461	66,143
Municipalities	37,691	302,158	339,849
Total	153,719	453,259	606,978
Un-Proclaimed (Estimate)		140,000	140,000
Estimated Total	153,719	593,259	746,978

Un-Proclaimed Roads = Public roads not formally gazetted by any Authority



**South Africa has the 10th
Longest Total and 18th
Longest Paved Road
Network in the World**

**Roads Represents one of
the largest public
infrastructure
investments in most
countries**

**RSA Road Replacement
Cost
>R2 Trillion**

Rank	Country		Road length (km)
	<i>World</i>		68,937,575
1		United States	6,506,204
2		China	4,008,200
3		India	3,320,410
4		Brazil	1,751,868
5		Japan	1,203,777
6		Canada	1,042,300
7		France	1,027,183
8		Russia	982,000
9		Australia	812,972
10		South Africa	746,978
11		Spain	681,298
12		Germany	644,480
13		Italy	487,700
14		Turkey	352,046
15		Sweden	425,300
...	
34		Dem Rep of Congo	153,497
46		Zimbabwe	97,267
55		Zambia	91,440
61		Tanzania	78,891
70		Madagascar	65,663
79		Angola	51,429
87		Namibia	42,237
96		Mozambique	30,400
102		Botswana	25,798
121		Malawi	15,451
146		Lesotho	7,091
157		Swaziland	3,594
168		Mauritius	2,028
181		Seychelles	458
SADC Total			1,412,222

ISO 55000 Asset Management

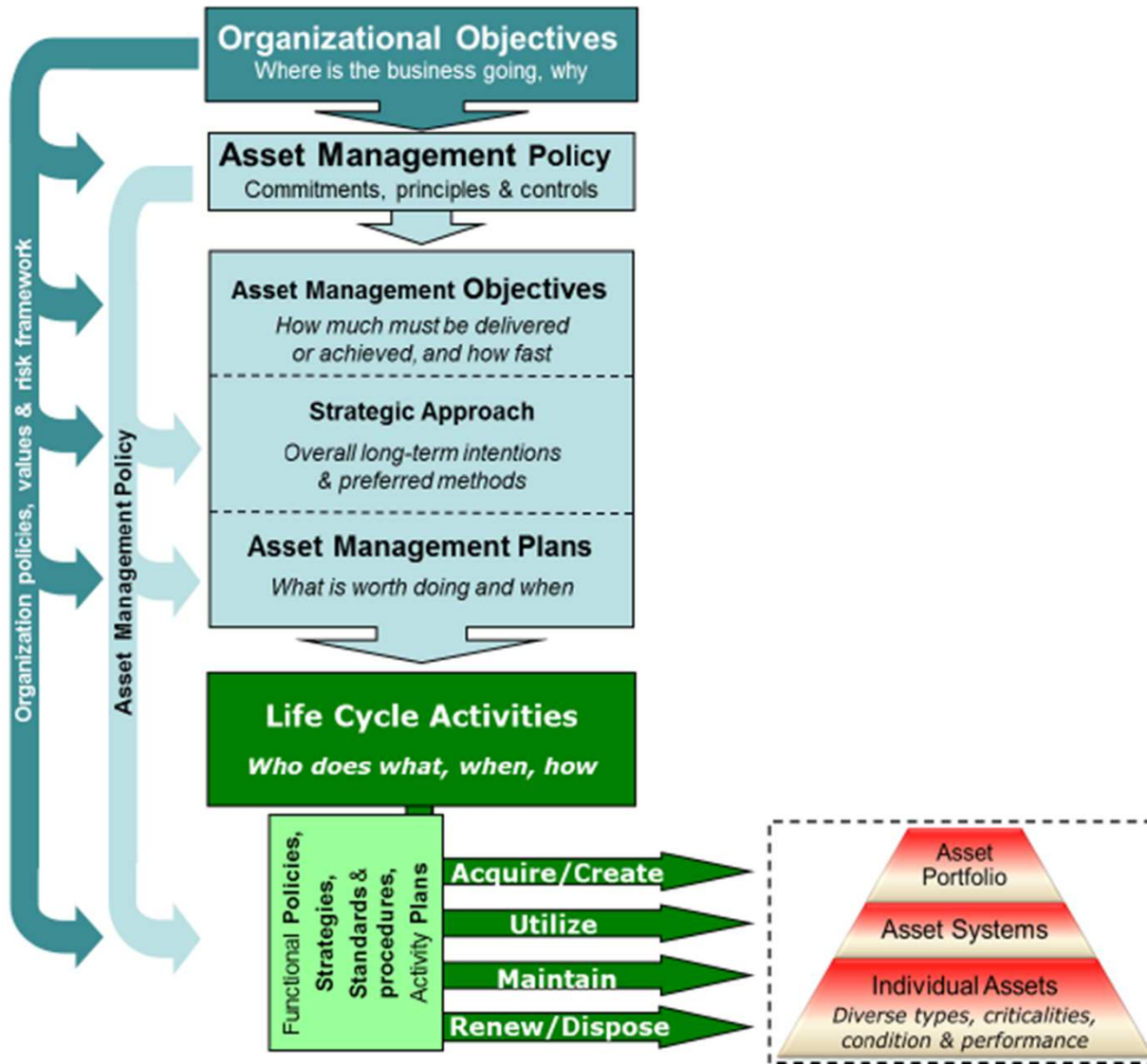


Figure 7 Top-down alignment of direction and what needs to be done and why.

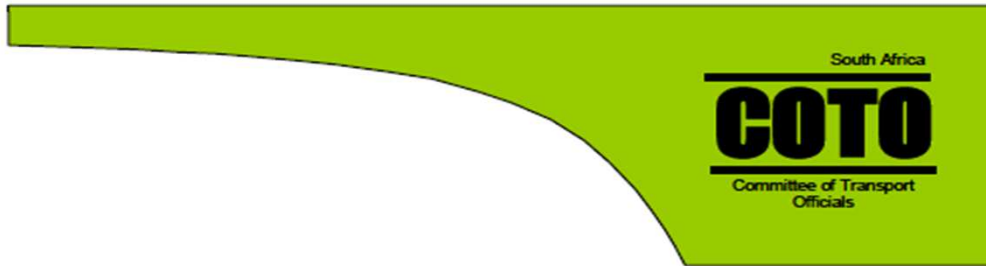


Provincial Maintenance Grant

Provincial Roads Maintenance Grant	
Transferring department	<ul style="list-style-type: none"> • Transport (Vote 37)
Strategic goal	<ul style="list-style-type: none"> • To ensure efficient investment in provincial roads
Grant purpose	<ul style="list-style-type: none"> • To supplement provincial roads investments and support preventative, routine and emergency maintenance on provincial road networks • Ensure provinces implement and maintain road asset management systems • Promote the use of labour-intensive methods in road maintenance • Repair roads and bridges damaged by floods
Outcome statements	<ul style="list-style-type: none"> • Increased lifespan of provincial roads and decreased vehicle operating costs on provincial road networks • Improved rates of employment and skills development in the delivery of infrastructure
	<ul style="list-style-type: none"> • For Road Infrastructure Strategic Framework for South Africa (RISFSA) Class R1, R2 and R3 data collection requirements are: <ul style="list-style-type: none"> – visual condition data not older than 2 years for pavements and 5 years for bridges – instrumental pavement data for roughness, rut depth and macro texture not older than 2 years – instrumental pavement data for structural strength not older than 5 years – traffic data not older than 3 years • For RISFSA Class R4 and R5 data requirements are: <ul style="list-style-type: none"> – visual condition data not older than 3 years for pavements and 5 years for bridges – instrumental pavement data for roughness, rut depth and macro texture not older than 4 years on paved roads – traffic data not older than 5 years • Up to a maximum of R1000 per km per year for paved roads and R500 per km per year for gravel roads of the grant may be allocated towards the collection of data required by this grant. Provinces that lack the capacity to collect data must approach the DoT for assistance • The above condition data must be utilised according to applicable national Committee of Transport Officials (COTO) standards (Technical Recommendations for Highways/ Technical Methods for Highways (TRH/TMH)) to identify and prioritise the maintenance requirements within the relevant budget limit, to improve condition of the roads and extend the lifespan of road infrastructure
MTEF allocations	<ul style="list-style-type: none"> • 2012/13: R7 981.8m, 2013/14: R8 696m, 2014/15: R9 127m, 2015/16: R9 774m



Other COTO Related Manuals

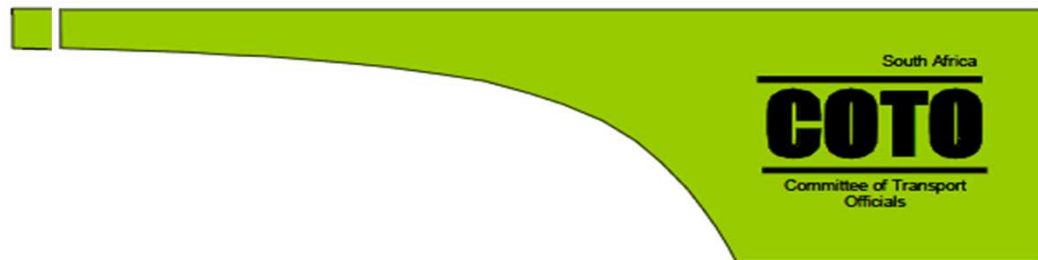


TMH 15

South African Engineering Service Contribution Manual for Municipal Road Infrastructure

Version 1.00
September 2012

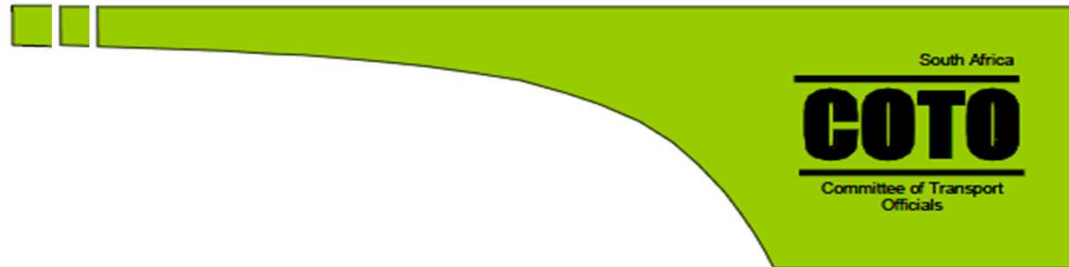




**TMH 16
Volume 1**

**South African Traffic Impact and
Site Traffic Assessment Manual**

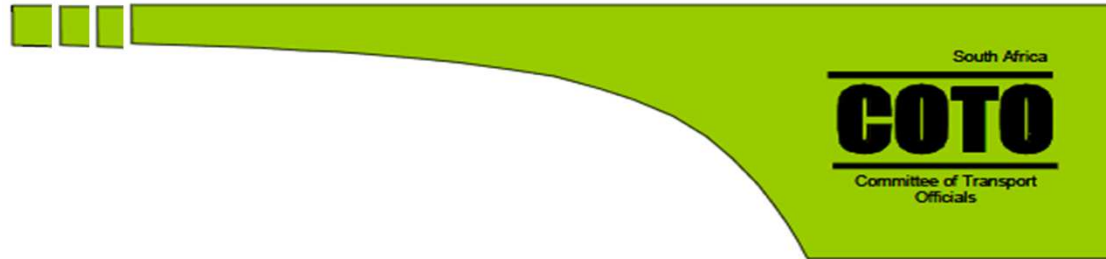
Version 1.0
August 2012



**TMH 16
Volume 2**

**South African Traffic
Impact and Site Traffic
Assessment Standards and
Requirements Manual**

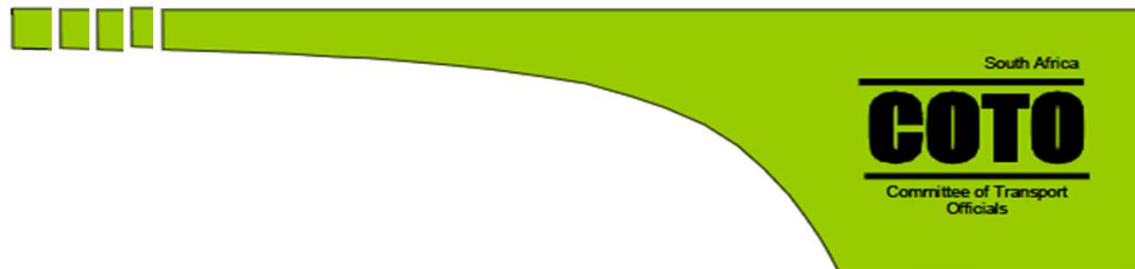
Version 1.0
August 2012



**TMH 17
Volume 1**

**South African
Trip Data Manual**

Version 1.0
September 2012



TRH 26

**South African
Road Classification and
Access Management Manual**

Version 1.0
August 2012



Functional Road Classification - AASHTO



RELATIONSHIP OF FUNCTIONALLY CLASSIFIED SYSTEMS IN SERVING TRAFFIC MOBILITY AND LAND ACCESS

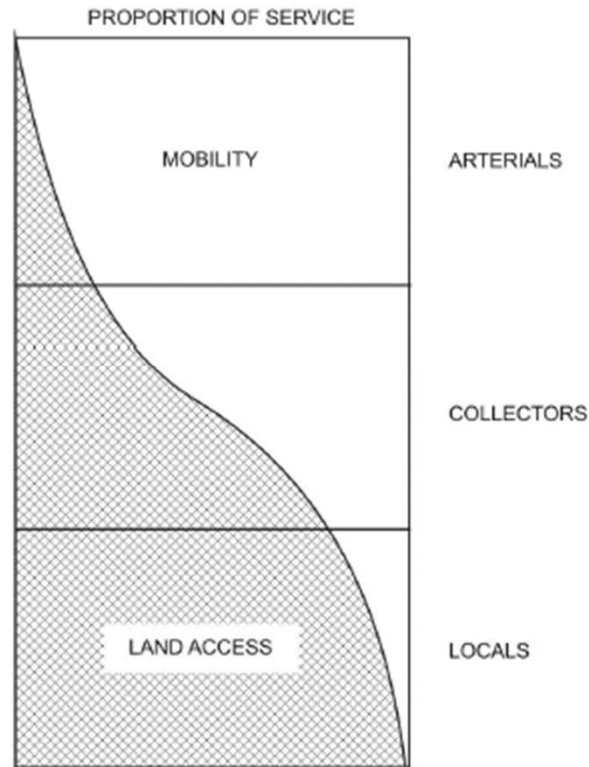
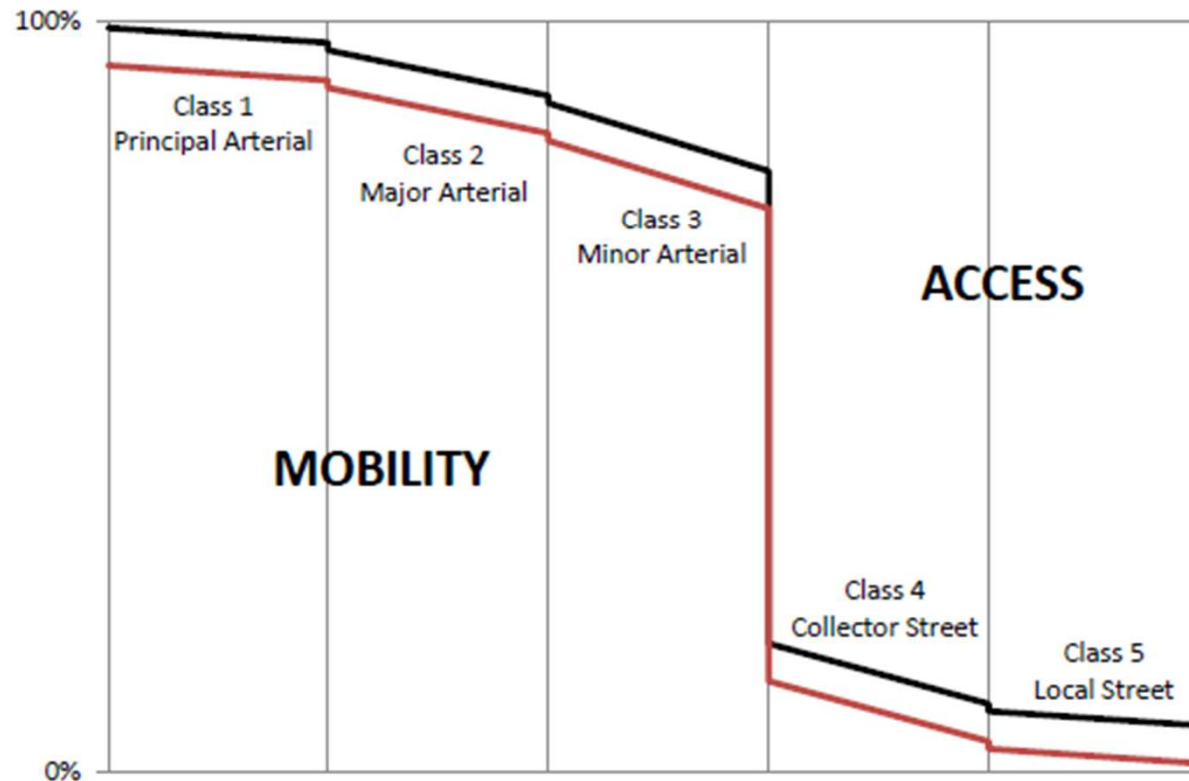


Figure 3.2: Highway Functional Classification [AASHO 1964]

Functional Road Classification - RSA

Rural Classes		Urban Classes	
R1	Rural principal arterial	U1	Urban principal arterial
R2	Rural major arterial	U2	Urban major arterial
R3	Rural minor arterial	U3	Urban minor arterial
R4	Rural collector road	U4	Urban collector street
R5	Rural local road	U5	Urban local street
R6	Rural walkway	U6	Urban Walkway



Functional Road Classification - Rural

Table 2: Functional Road Classification (rural)

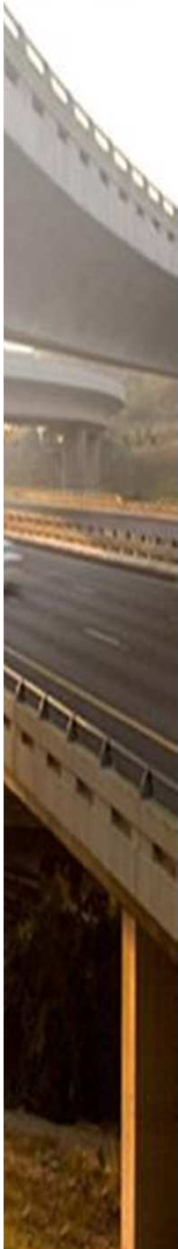
Function			Description		Mobility				
Basic Function	alternate functional descriptions	determining function	Class number (R_)	Class name	Origin / destination	Through traffic component	Reach of connectivity	% of built km	AADT (average annual daily traffic)
Mobility	vehicle priority, vehicle only, long distance, through, high order, high speed, numbered, commercial, economic, strategic; route, arterial road or highway.	movement is dominant, through traffic is dominant, the majority of traffic does not originate or terminate in the immediate vicinity, the function of the road is to carry high volumes of traffic between urban districts	1	Principal arterial*	Metro areas, large cities, large border posts, join national routes	exclusively	> 50 km	2 - 4%	>5 000 (>25 000 freeway)
			2	Major arterial*	Cities and large towns, transport nodes (harbours and international airports), smaller border posts, join major routes	exclusively	>25 km		>2 000
			3	Minor arterial*	Towns, villages and rural settlements, tourist destinations, transport nodes (railway sidings, seaports, landing strips), small border posts, other routes	predominant	> 10 km	4 - 8%	>200
Access / Activity	access, mixed pedestrian and vehicle traffic, short distance, low order, lower speed, community / farm, road or street.	access, turning and crossing movements are allowed, the majority of traffic has an origin or destination in the district, the function of the road is to provide a safe environment for vehicles and pedestrians using access points	4	Collector road	Connect farming districts, rural settlements, tourist areas, national and private parks and mines to mobility routes	minimal	< 10 km	20 - 25%	<1 000
			5	Local road	Farm or property access, connection to other routes	nil (discontinuous)	< 5 km	65 - 75%	<500
			6	Walkway (path or track)	Settlements, farms, transport nodes, water points	n/a			

* In rural areas, the term distributor may be preferred to arterial

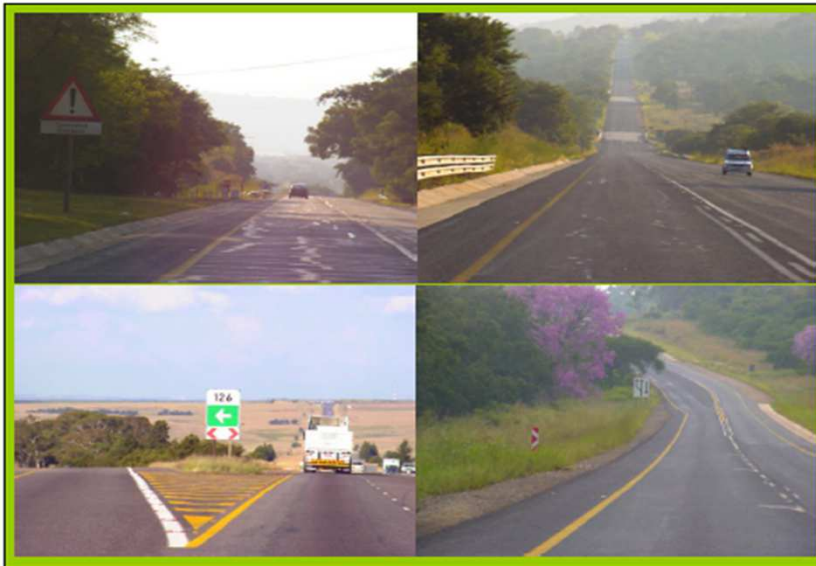
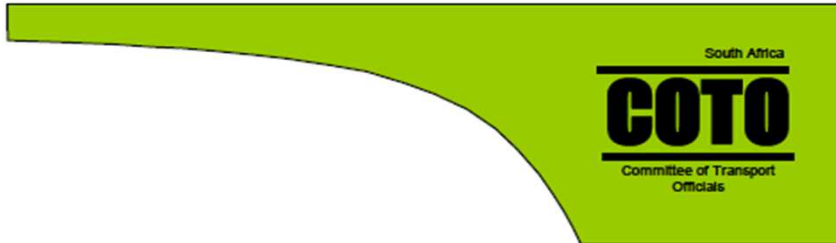
Functional Road Classification - Urban

Table 3: Functional Road Classification (urban)

Function			Description		Mobility				Traffic	
Basic Function	alternate functional descriptions	determining function	Class number (U_)	Class name	Through traffic component	Distance between parallel roads (km)	% of built km	Reach of Connectivity	expected range of ADT (average daily traffic)	% of travel veh-km
Mobility	vehicle priority, vehicle only, long distance, through, high order, high speed, numbered, commercial, economic, strategic; route, arterial road or highway.	movement is dominant, through traffic is dominant, the majority of traffic does not originate or terminate in the immediate vicinity, the function of the road is to carry high volumes of traffic between urban districts	1	Principal arterial (freeway)	exclusively	5 - 10 km	5 - 10% (6%)	> 10 km	40 000 - 140 000	33%
			2	Major arterial	predominant	1.5 - 5.0 km		> 5 km	20 000 - 60 000	17%
			3	Minor arterial	major	0.8 - 2.0 km	5 - 15% (8%)	1 - 10 km	10 000 - 40 000	25%
Access / Activity	access, mixed pedestrian and vehicle traffic, short distance, low order, low speed, community, street.	access, turning and crossing movements are allowed, the majority of traffic has an origin or destination in the immediate area, the function of the road is to provide a safe environment for vehicles and pedestrians using access points	4a	Collector street, commercial	discourage		2 - 5% (3%)	< 2 km, max. 3 km	2 000 - 25 000	5%
			4b	Collector street, residential	discourage		5 - 12% (10%)	0.5 - 2 km max	<10 000	10%
			5a	Local street, commercial	prevent		10-20% (15%)	< 1 km	<5 000	3%
			5b	Local street, residential	prevent		50 - 70% (80%)	< 0.5; 1 km max	<1 000	7%
			6a	Walkway, pedestrian priority	ban			< 1 km		
			6b	Walkway, pedestrian only	ban			< 1 km		



COTO RAMS Committee – New/Updated Manuals

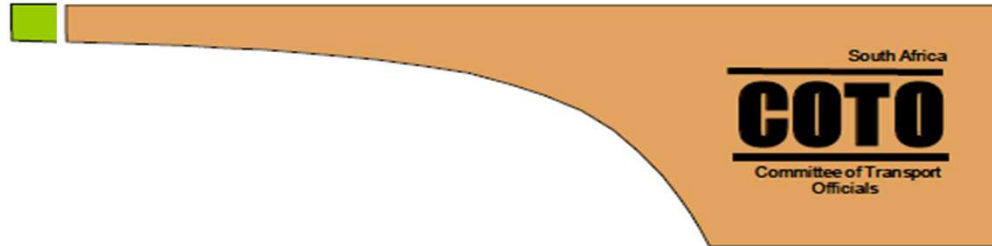


Guidelines for Network Level Measurement of Road Roughness

Version 1.1

July 2007

COTO RAMS Committee – New/Updated Manuals



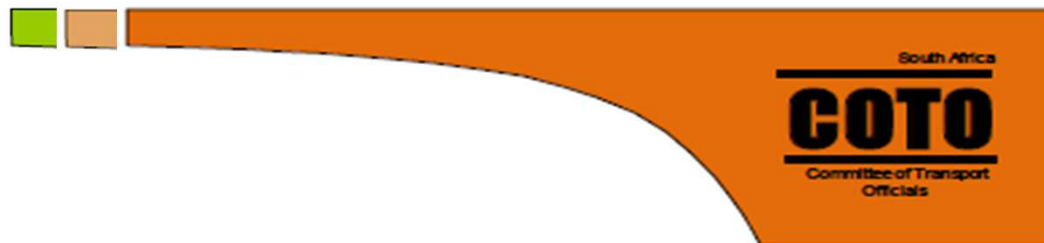
GI

Guidelines for Network Level Measurement of Rutting

First Draft Version 0.0

October 2010

COTO RAMS Committee – New/Updated Manuals

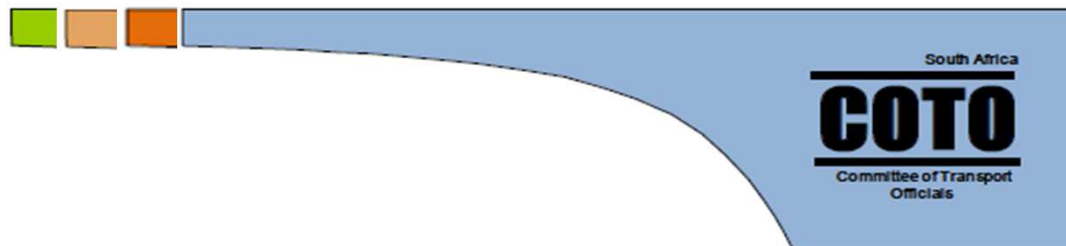


GI Guidelines for Network Level Measurement of Skid Resistance and Texture

First Draft Version 0.0

December 2008

COTO RAMS Committee – New/Updated Manuals

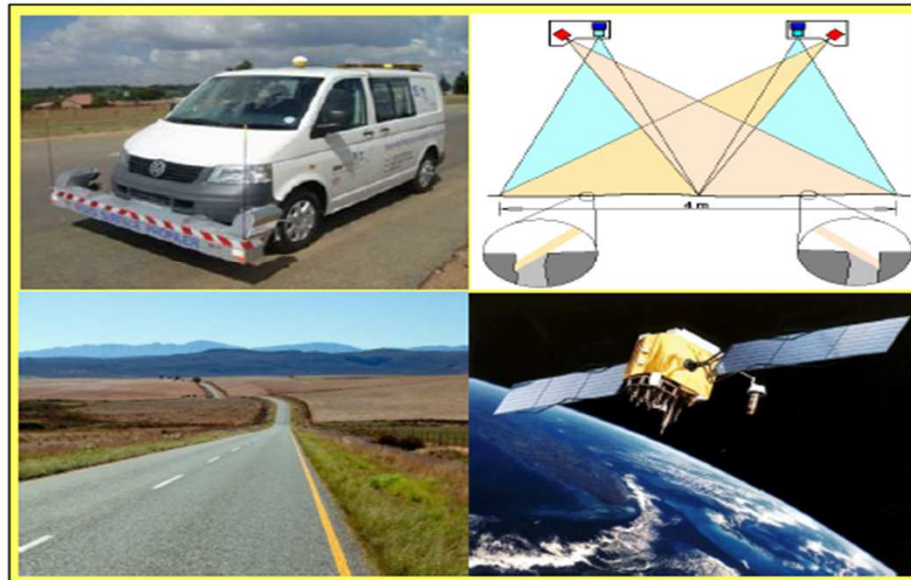
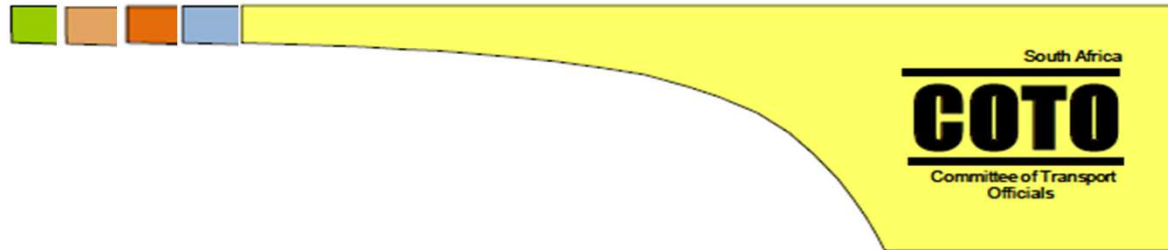


GI G Guidelines for Network Level Measurement of Pavement Deflection

First Draft Version 0.0

December 2009

COTO RAMS Committee – New/Updated Manuals



GI

G

Guidelines for Network Level Imaging and GPS Technologies

Preliminary Draft

November 2010

COTO RAMS Committee – New/Updated Manuals



The cover features a green header with the COTO logo (South Africa, Committee of Transport Officials) and a green footer with the text 'Committee of Transport Officials'. The central text reads 'TMH 14 South African Standard Automatic Traffic Data Collection Format Version 3.00 October 2011'. On the left side, there are four vertical strips: a green one labeled 'GI', and three others (orange, blue, and light blue) labeled 'G'. Above these strips are five small colored squares (green, orange, red, blue, yellow).



South Africa
COTO
Committee of Transport Officials

TMH 3

**Specifications for the Provision
of Traffic and WIM
Monitoring Service**

Version 1.0
April 2013

Committee of Transport Officials

GI G



COTO RAMS Committee – New/Updated Manuals



South Africa
COTO
Committee of Transport Officials

Draft TMH 9

S

STANDARD VISUAL
ASSESSMENT MANUAL
PART A: GENERAL

2013

GI G

Committee of Transport Officials



COTO RAMS Committee – New/Updated Manuals



South Africa
COTO
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S

I

Draft TMH 22

ROAD ASSET
MANAGEMENT MANUAL

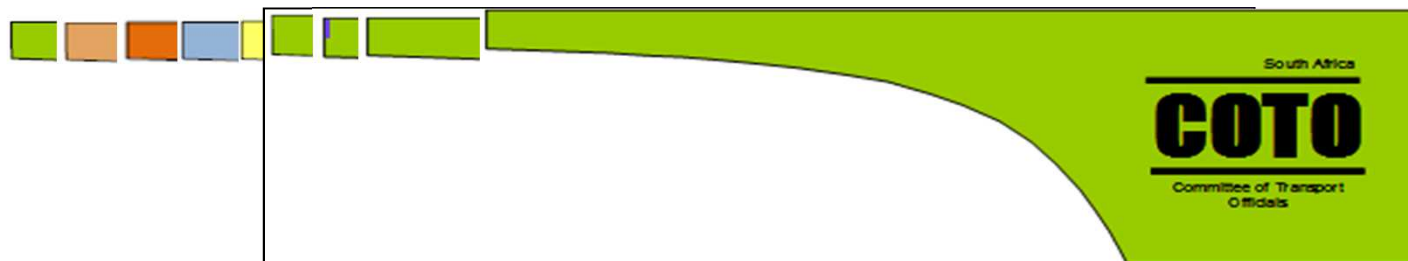
March 2013

Committee of Transport Officials

GI

G

COTO RAMS Committee – New/Updated Manuals



Current To Do List:

1. TMH 8: Traffic counting procedures for rural roads
2. TMH 18: COTO Data Exchange Formats (New)
6. COTO Standard Tender Specifications (New)
7. Accreditation of Service Providers

ROAD ASSET MANAGEMENT MANUAL

March 2013



GI

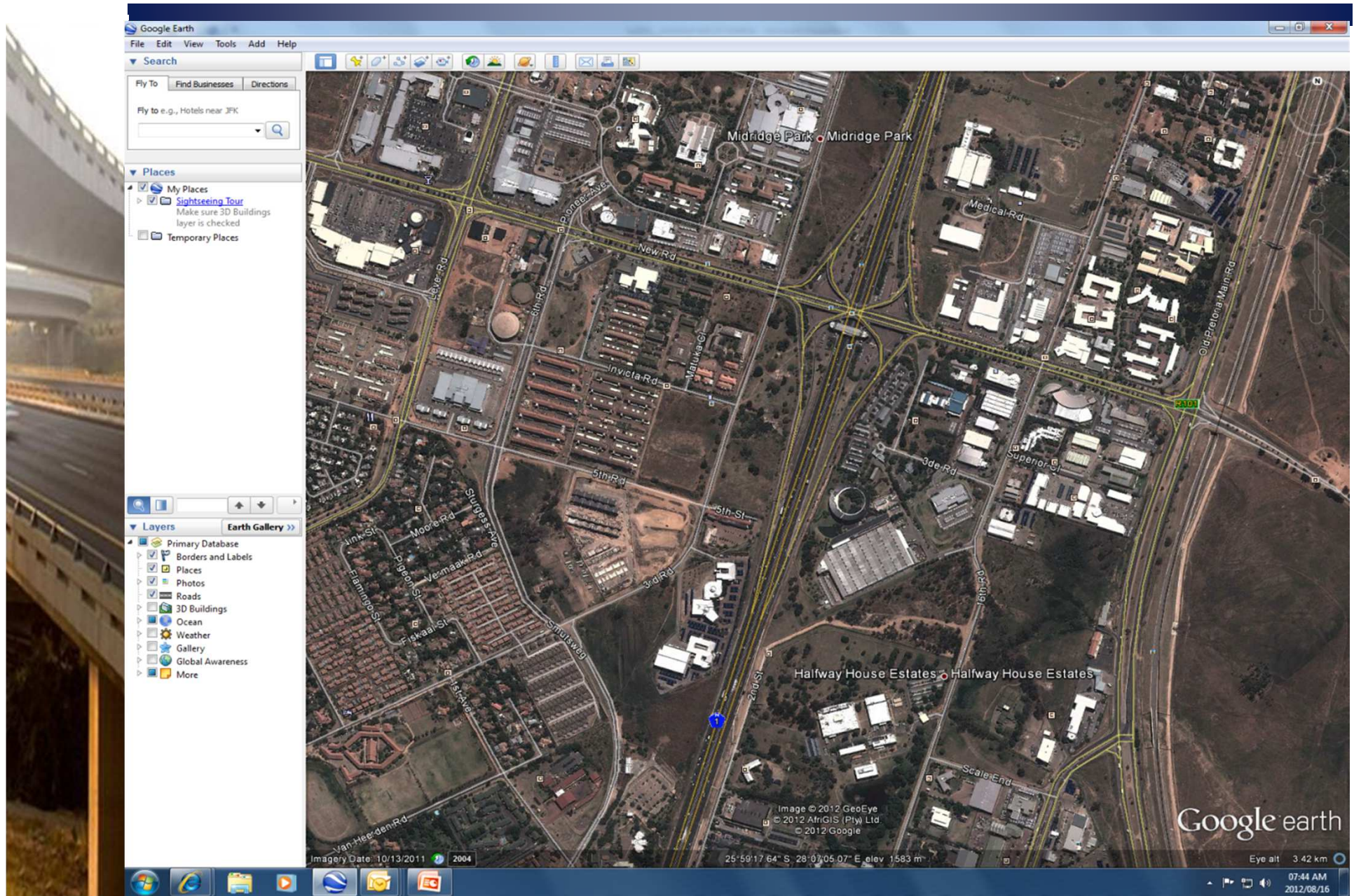
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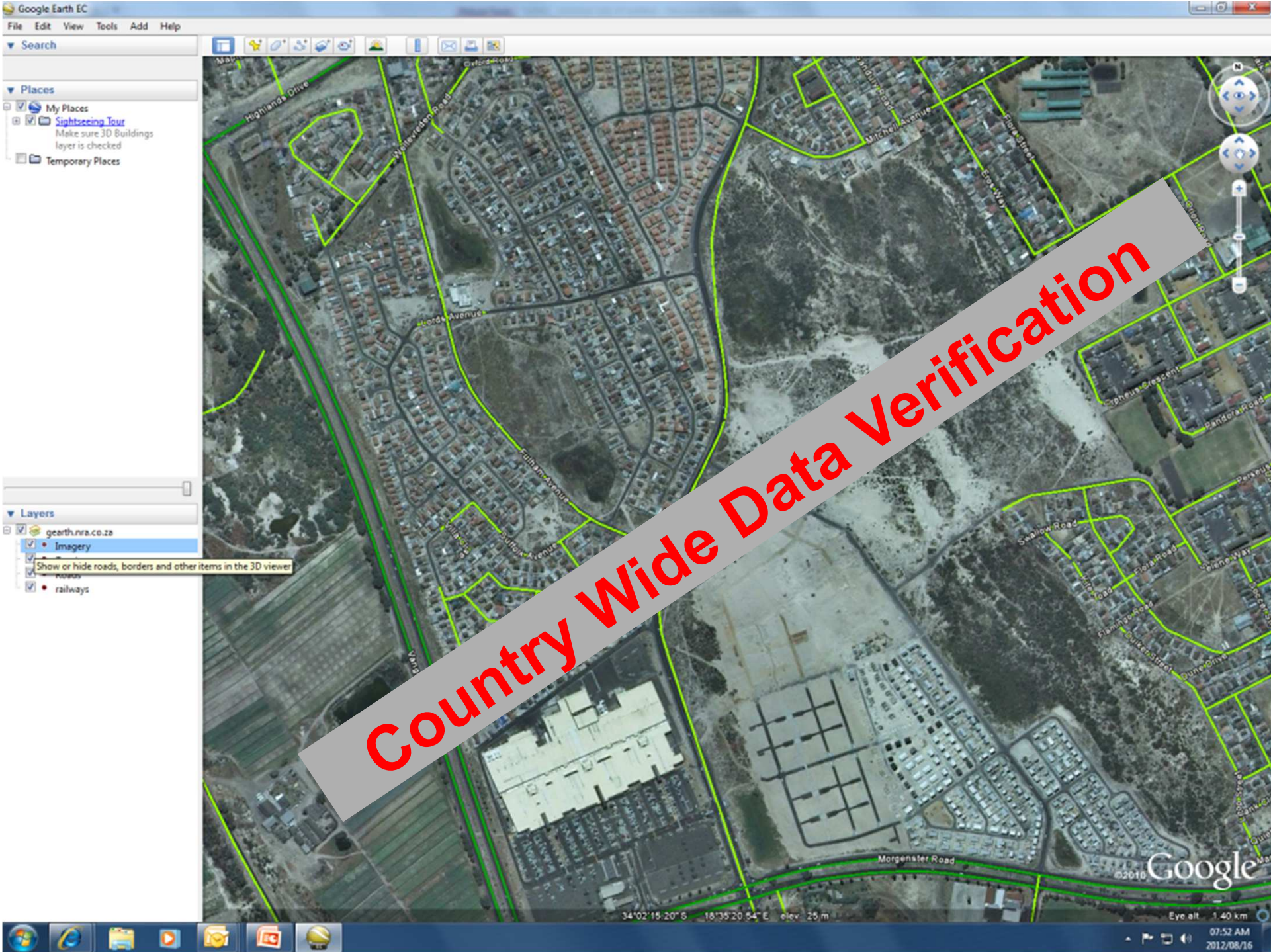


Committee of Transport Officials



Asset Information Sharing ?



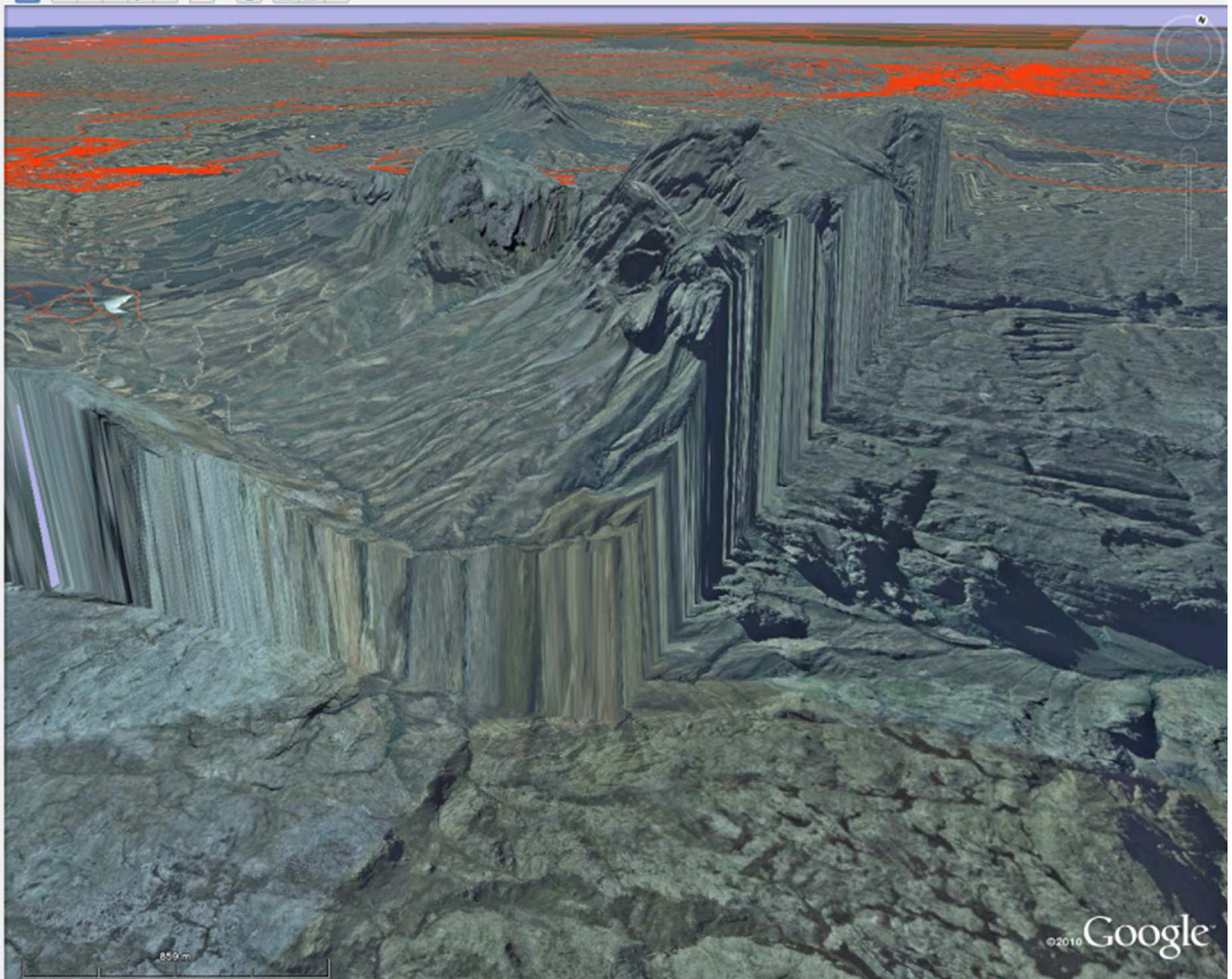


Places

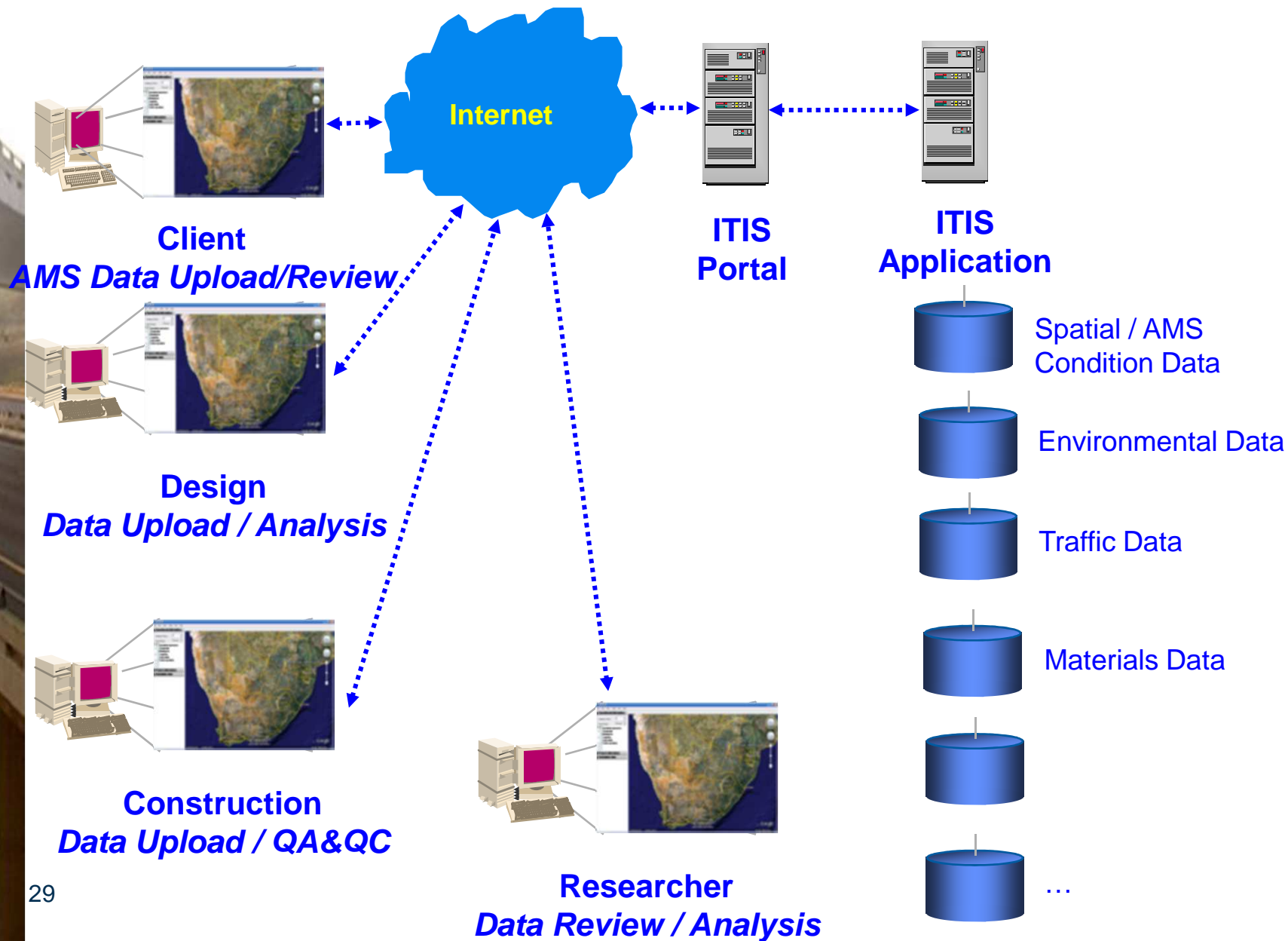
- My Places
 - Sightseeing Tour
 - Make sure 3D Buildings layer is checked
- Temporary Places

Layers

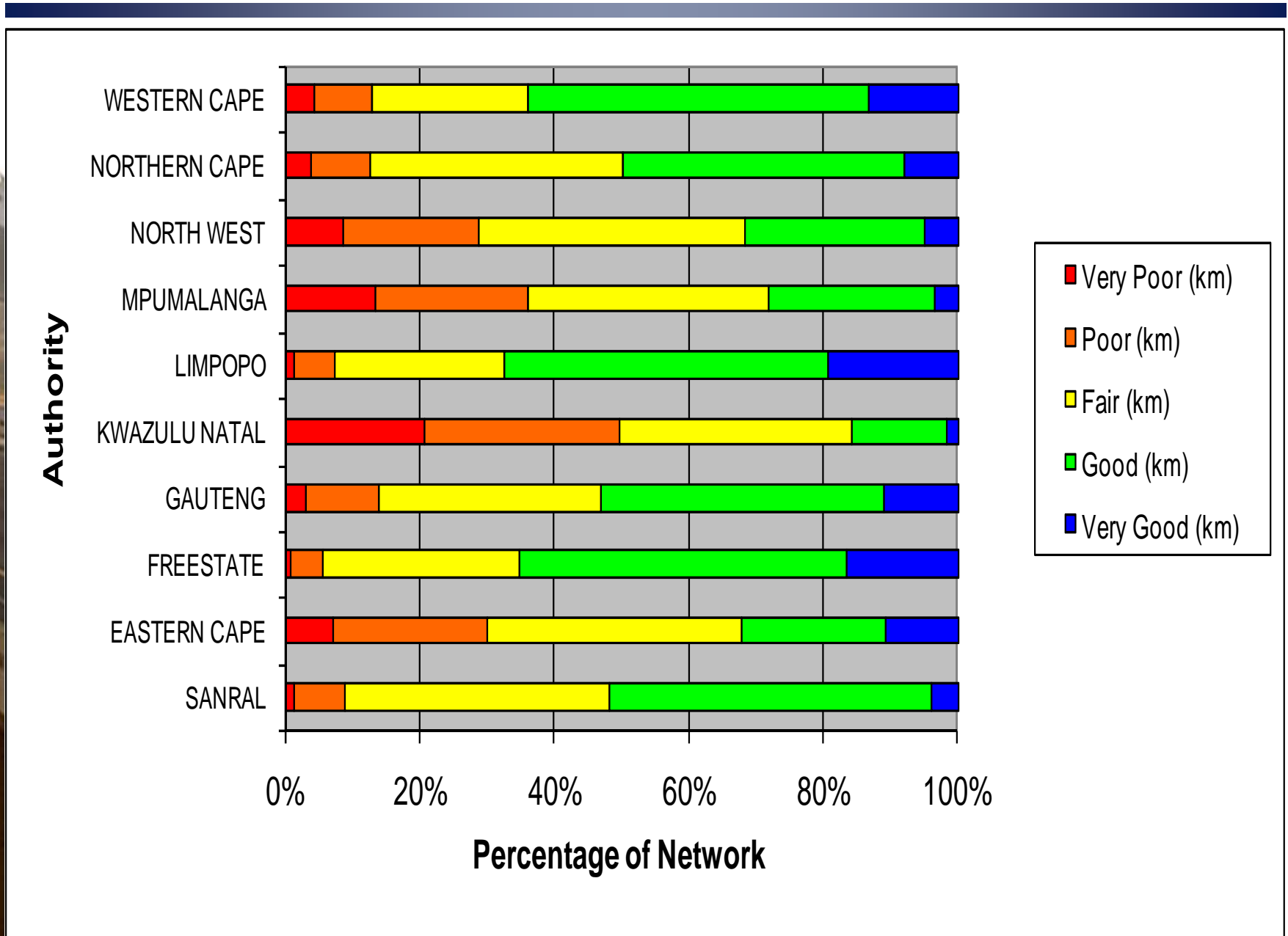
- gearth.nra.co.za
 - Imagery
 - Terrain
 - MPS_ROADS



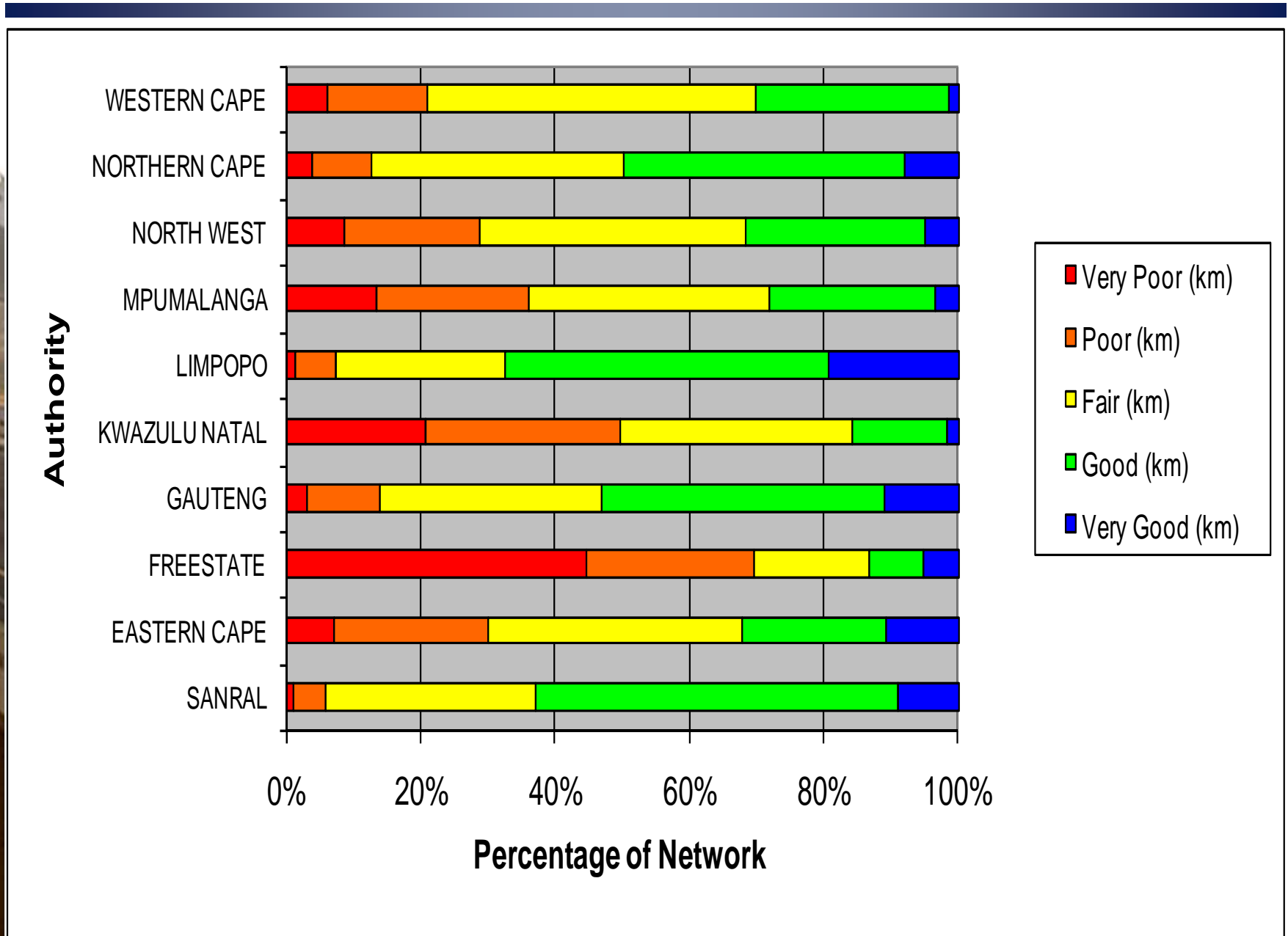
AMS – Information Flow

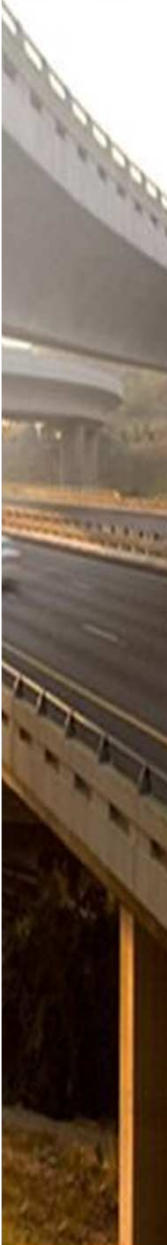


Paved Network Condition Summary 2009



Paved Network Condition Summary 2013





National Treasury Direct Allocations (Excludes Equitable Share Allocations)				
Description	Medium Term Expenditure Framework			
	2012/13	2013/14	2014/15	2015/16
Income	R 45 900	R 49 470	R 49 770	R 50 070
Fuel Levy (Estimates)	R 40 500	R 43 770	R 43 770	R 43 770
Vehicle Licence Fees (Estimates)	R 5 400	R 5 700	R 6 000	R 6 300
Direct Allocations	R 38 487	R 42 246	R 44 542	R 46 848
National - SANRAL Non Toll	R 9 728	R 10 340	R 10 961	R 11 465
Provincial - Road Maintenance Grant	R 7 982	R 8 696	R 9 126	R 9 774
Provincial - Public Transport Operations Grant	R 4 317	R 4 553	R 4 783	R 5 003
EPWP Integrated Grant for Provinces		R 356	R 371	R 382
Local - General fuel levy sharing with metros	R 9 040	R 9 613	R 10 190	R 10 659
Local - Municipal Infrastructure Grant (17.25%)	R 2 395	R 2 476	R 2 533	R 2 665
Local - Public transport infrastructure grant	R 4 988	R 4 669	R 5 126	R 5 279
Local - Public Transport Network Operations Grant		R 881	R 745	R 862
Local - Rural roads asset management systems grant	R 37	R 52	R 75	R 98
Local - EPWP Integrated Grant for Municipalities		R 610	R 632	R 661
Surplus/Shortfall	R 7 413	R 7 224	R 5 228	R 3 222