Overview of Traffic Related COTO Manuals

IMESA Southern Cape/Karoo Branch

Dr Christo van As
Dr John Sampson

IMESA Presentation

- Christo van As
  - Short overview of various COTO documents
- John Sampson
  - TRH26 RCAM – Road Classification and Access Management

COTO Manuals and Guidelines

- Compiled under auspices of:
  - COTO Committee of Transport Officials
    - Roads Coordinating Body
- Published by:
  - SANRAL South African National Roads Agency

Traffic Related Manuals

- TMH 3 Specifications for the Provision of Traffic and Weigh-in-Motion Monitoring Services
- TMH 8 Traffic and Axle Load Monitoring Methodologies and Procedures
- TMH 14 South African Standard Traffic Data Collection Format
- TMH 15 South African Engineering Service Contribution Manual for Municipal Road Infrastructure
- TMH 16 South African Traffic Impact and Site Traffic Assessment Manual
- TMH 17 South African Trip Data Manual
- TMH 20 Socio-Economic Analysis of Road Projects
- TRH 26 South African Road Classification and Access Management Manual
- TRH 27 South African Manual for Permitting Services in Road Reserves
- SARTSM Setting of Speed Limits
- SARTSM Traffic Signal Design

The Authors

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ViaEd: Short Courses

ViaEd

Short Courses

- ViaEd has been established with the purpose of facilitating education and training of professionals working in the field of Transportation Engineering
- Courses currently available:
  - Course R01: Road Classification and Access Management
  - Course E01: Socio-Economic Analysis of Road Projects
  - Course M01: Traffic Impact and Site Traffic Assessments
  - Course M02: Municipal Development Charges for Roads
  - Course T01: Traffic Monitoring Methodologies and Procedures
  - Course T02: Traffic Monitoring Systems and Services
- **More information**
  - **ViaEd.Co.Za**

COTO Process

COTO Manuals

- TMH – Technical Methods for Highways
  - The Technical Methods for Highways consists of a series of publications in which methods are prescribed for use on various aspects related to highway engineering.
- TRH – Technical Recommendations for Highways
  - The Technical Recommendations for Highways consists of a series of publications that describe recommended practice for various aspects related to highway engineering.

COTO Manual Development

- Working Draft (WD)
  - Manual development
  - Authors only – Not intended for distribution
- Committee Draft (CD)
  - Committee comments
  - No approval or legal standing
- Draft Standard (DS)
  - COTO Approved for 2 years
  - Legal standing
- Final Standard (FS)
  - COTO Final approval
  - Legal standing

Committee Draft Versions
Unofficial – Not Approved

- **bit.ly/2QuXpxa**

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SARTSM Volume 3
Traffic Signal Design

ViaEd

SOUTH AFRICAN
ROAD TRAFFIC SIGNS MANUAL

3rd Edition

VOLUME 3
TRAFFIC SIGNAL DESIGN

ViaEd

Traffic Signals
Regulatory Requirements

- Act and Regulations
  - Road Traffic Act (Act 93 of 1996)
  - Road Traffic Regulations
- 287 Manner of display of road signs and signals
  - 287.(1) a road sign or a road signal shall … be displayed substantially in conformity with the Southern African Development Community Road Traffic Signs Manual

Engineering Declaration

- 287A.11(a) A responsible registered professional engineer or registered professional technologist (engineering) of the road authority concerned shall approve every traffic signal installation at a signalised junction or pedestrian or pedal cyclist crossing, and sign a declaration containing …
- (b) The declaration shall be kept by the road authority in control of the traffic signal concerned.

Minimum Number of Signal Faces

- 287A.(1)(b) At a signalised junction, signalised slipway or a signalised pedestrian or pedal cyclist crossing, the following traffic signal faces shall be provided
  - At least two signals on the FAR side
  - At least one signal on the NEAR side (except ped crossings)
- Left/right-turn signals
  - At least one signal on the FAR side
  - A second signal on either the FAR or NEAR sides

Road Signs at Traffic Signals

- 287A.(3) No road sign except –
  - a street name sign;
  - a direction route marker sign;
  - information signs IN14 and IN15 and pedestrian and pedal cyclist signs relating to the function of the traffic signal
  - a one-way roadway sign;
  - a no-entry sign;
  - a left-turn prohibited, right-turn prohibited or a U-turn prohibited sign;
  - a proceed straight through only, proceed left only, or proceed right only sign;
  - a pedestrian prohibited sign P218; or
  - a traffic signal arrow sign ST1 to ST5
- Shall be used in conjunction with a traffic signal…

SARTSM Proposal
Setting of Speed Limits

ViaEd

SOUTHERN
AFRICAN
DEVELOPMENT
COMMUNITY

SETTING OF SPEED LIMITS

SECTIONS

March 2018

SADC RTSM - VOL 2

CHAPTER 20

ViaEd

SARTSM Setting of Speed Limits

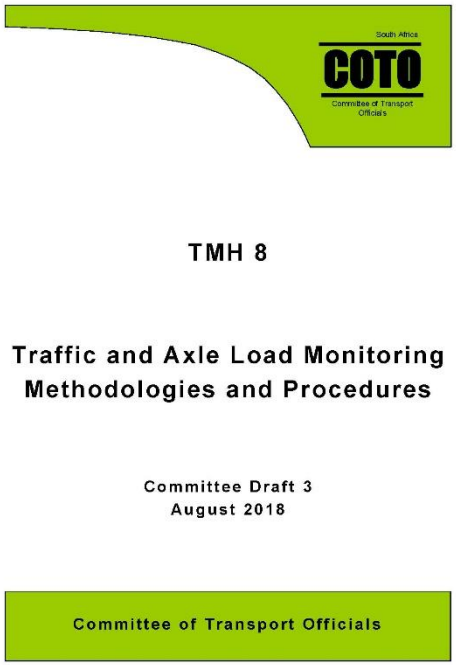
- Proposals currently being considered by COTO
- Proposed changes/additions
  - SARTSM Vol 1 Use of R201 speed limit signs
  - SARTSM Vol 2 New chapter on setting of speed limits

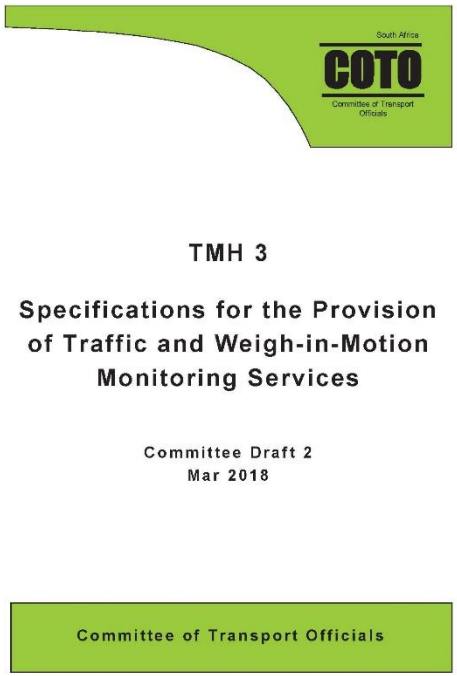
Proposed Procedure
Setting of Speed Limits

- All posted speed limits must be determined by means of procedure (otherwise not legally enforceable)
- Must be determined by an engineer/technologist.
  - Speed limit declarations must be issued and signed
- Method based on:
  - 85th Percentile speed where appropriate
  - Table of speed limits elsewhere

Traffic Counts

Manuals: Traffic Counts





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TMH 8 Traffic and Axle Load Monitoring Methodologies and Procedures

- Describes the Traffic Monitoring Programmes that must be implemented by road authorities in South Africa
- Also serve to provide information to engineers on the methods and procedures that are used for establishing various traffic characteristics such as the AADT
- Provides for three levels of traffic monitoring:
  - System level for determining expansion factors
  - Network level for general planning purposes
  - Project level required for design projects

TMH 3 Specifications for the Provision of Traffic and Weigh-in-Motion Monitoring Services

- Specifications for appointing service providers
- Types of services
  - Automatic traffic monitoring
    - Traffic monitoring (all authorities)
    - Toll monitoring (SANRAL)
    - HS WIM monitoring (all authorities)
  - Manual traffic monitoring
- Basic approach
  - Service providers and equipment must be certified by
    - An independent certification organisation
      - Prescribed by the employer
  - Certification requirements provided in TMH3

TMH 14 South African Standard Traffic Data Collection Format

- Specifies the format in which data must be collected and distributed
- SANRAL: In the process of developing
  - SATIS – South Africa Traffic Information System
  - Will be made available to all road authorities
  - Will be used for purposes such as:
    - A database for traffic data
    - Verification of collected data
    - Determining various traffic characteristics (eg the AADT)
    - Planning of traffic monitoring programmes

COTO TMH 20
Cost/Benefit Analysis

ViaEd

South Africa

COTO

Committee of Transport Officials

TMH 20

Socio-Economic Analysis of Road Projects

Committee Draft CD3
August 2018

Committee of Transport Officials

TMH 20 Cost/Benefit Analysis

- TMH 20 Socio-Economic Analysis of Road Projects
- Will in future require all road authorities to undertake C/B analysis for larger projects
  - Including prioritisation of road projects
- Manuals specifies
  - Methods to be used
  - Cost items to be taken into account e.g.
    - Environment and pollution
    - Traffic accidents
  - Prices for cost items

COTO Manuals
Land Development

ViaEd

COTO Manuals applicable to Land Development (Developers)

- TMH 15 South African Engineering Service Contribution Manual for Municipal Road Infrastructure
- TMH 16 South African Traffic Impact and Site Traffic Assessment Manual
- TMH 17 South African Trip Data Manual

- TRH 26 South African Road Classification and Access Management Manual

TMH 15 South African Engineering Service Contribution Manual for Municipal Road Infrastructure

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Committee of Transport Officials

TMH 15

South African Engineering Service Contribution Manual for Municipal Road Infrastructure

Committee Draft 2.0
August 2018

Committee of Transport Officials

Engineering Service Contributions Roads vs Other Services

- Manual developed for municipal roads
- Principles are also applicable to other services, e.g.
  - Water
  - Sewerage
  - Electricity
  - Etc.

Engineering Service Contributions Legal Framework

- Constitution of the Republic of South Africa
- Local Government: Municipal Structures Act
- Local Government: Municipal Systems Act
- Local Government Municipal Finance Management
- Municipal Fiscal Powers and Functions Act
- Spatial Planning and Land Use Management Act (SPLUMA)
- Various acts regulating national and provincial roads

Engineering Service Contributions vs Development Charges

- Engineering Service Contributions
  - Older term – Familiar to engineers
- Development charge
  - Introduced by SPLUMA
- TMH 15: Same meaning

Adoption of the TMH 15 manual by a Municipality

- TMH 15 adopted by a municipality by establishing:
  - By-laws ito SPLUMA
  - Tariff policy (and by-laws)
- SPLUMA Bylaws
  - Prescribes use of TMH 15
  - Prescribes submission of TIA's and STA's ito TMH 16
- Tariff Policy
  - ESC tariff rates

Engineering Service Classification

- Internal Services - located within boundaries
  - Developer responsibility
  - Excluding bulk Class 1 to 3 roads
- External Services – located outside boundaries
  - Municipality responsibility

ESC Formulae - Roads

- Bulk supply network (Class 1-3 roads)
  - Capacity-based formula
  - Any location (internal or external)
- Non-bulk (distribution) network (Class 4 & 5 roads)
  - Length-based formula
  - Proportional share
    - Internal - 100%
    - Boundary – 50% (or 100%)
    - External – 0%

TMH 16 South African Traffic Impact and Site Traffic Assessment Manual

ViaEd

South Africa
COTO
Committee of Transport Officials

TMH 16
Volume 1

South African Traffic Impact and Site Traffic Assessment Manual

Committee Draft 2.0
May 2018

Committee of Transport Officials

South Africa
COTO
Committee of Transport Officials

TMH 16
Volume 2

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

Committee Draft 2.0
June 2018

Committee of Transport Officials

TMH16 Traffic Impact Assessments

- Prescribes methods and contents of TIAs
- Two types of assessments
  - Traffic Impact Assessments (TIAs)
    - Roads external to development
  - Site Traffic Assessments (STAs)
    - Roads internal to development

TIA Important Requirements

- Master planning must be in place
  - TIAs cannot be submitted without master planning
  - Developer may offer to fund master planning
    - Subtract cost from ESC
- Professional requirements
  - Pr Eng/Pr Tech

TMH 17 South African Trip Data Manual

ViaEd

South Africa

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TMH 17

South African Trip Data Manual

Committee Draft 2.0
May 2018

Committee of Transport Officials

TMH 17 Trip Data Manual

- Trip data for
  - TMH 15 Engineering Service Contributions
  - TMH 16 Traffic Impact Assessments
- Various trip data items
  - Trip generation rates
  - Trip lengths
  - Etc.

End of Presentation

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