TMH 26 South African Road Classification and Access Management Manual

IMESA Southern Cape/Karoo Branch

Dr John Sampson

South Africa

COTO

Committee of Transport Officials

TRH 26

South African Road Classification and Access Management Manual

Committee Draft 2.0
May 2018

Committee of Transport Officials

RCAM Purpose

- Functional Classification of Roads
  - Specify the purpose for which roads are used

  Followed by

- Access Management
  - Aimed to ensure roads function as intended

    - Separate steps
    - Earlier RAM documents did not make this clear

Functional Classification

- Roads must be classified according to the function or purpose they must serve
- Roads must provide accessibility to all motorized and non-motorized transport
- By accessibility we mean mobility (the ability to get from A to B) and access (the ability to enter or leave your destination)
- Roads therefore have to provide for both
  - To provide mobility
  - To provide access

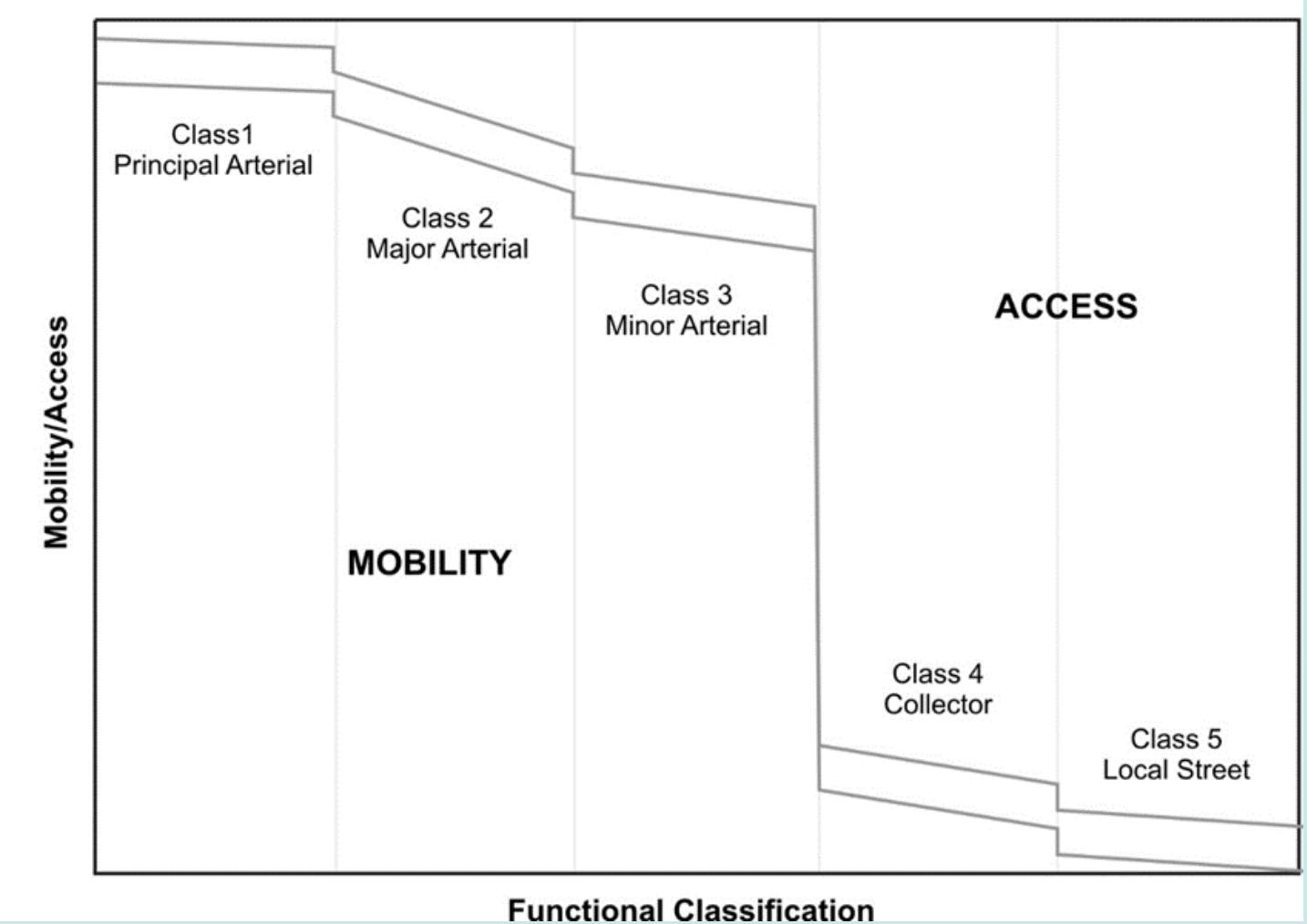
Functional Classification contd.

- Mobility roads must accommodate higher speeds, minimal delays, vehicle priority, long distance, through traffic (no origin or destination in road section)
- Access or activity streets must accommodate access, mixed pedestrian and vehicular traffic, turning into and out of driveways, stopping and crossing traffic, slow speeds, roadside activities, local traffic (local origins and destinations)
- Hopefully it will be abundantly clear that these two functions MUST NOT BE MIXED.
- That therefore is the purpose of Road Classification

TRH 26 Functional Road Classes
(urban and rural)

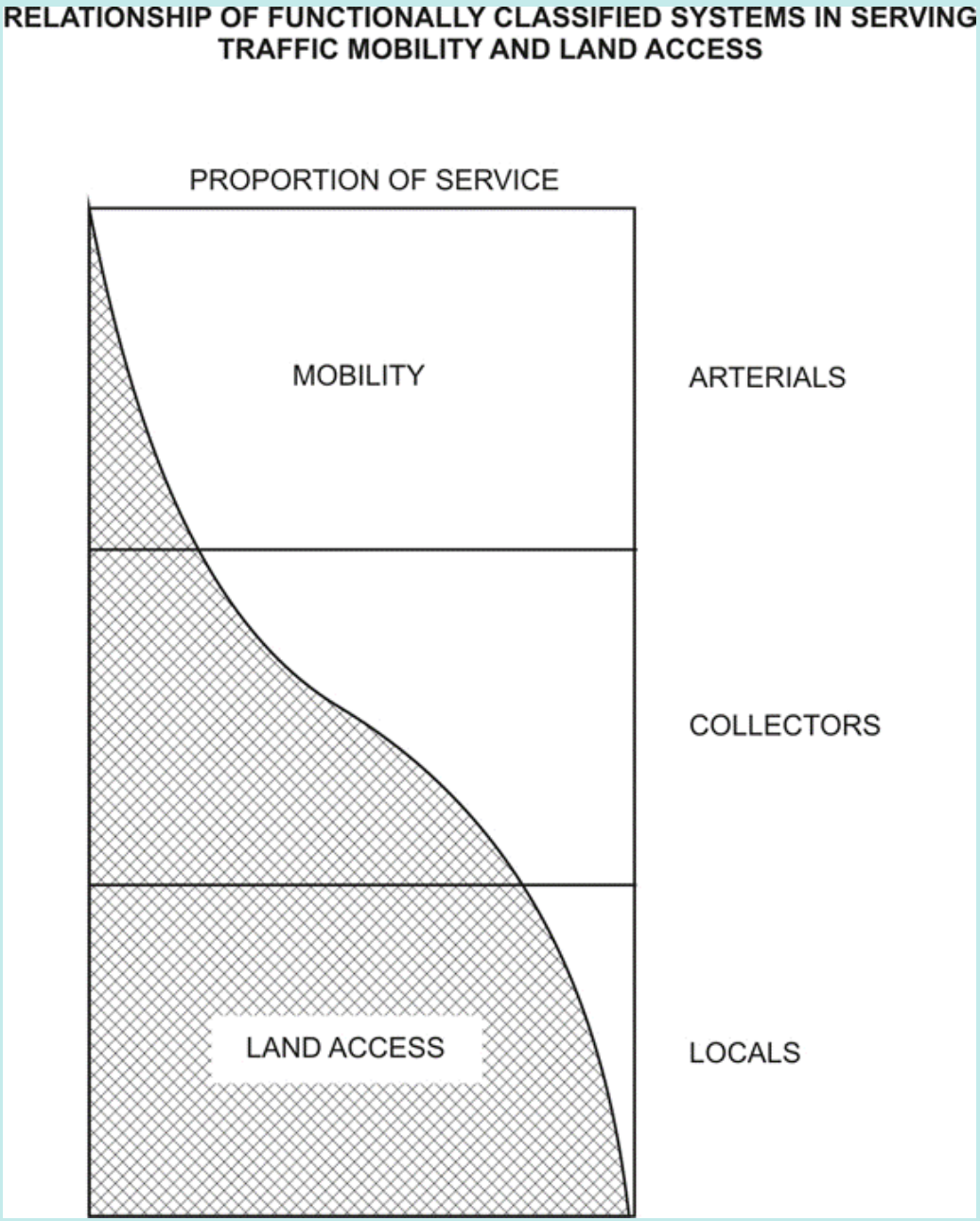
Number	Function	Description
Class 1	Mobility	Principal arterial
Class 2		Major arterial
Class 3		Minor arterial
Class 4	Access / activity	Collector street
Class 5		Local street
Class 6		Walkway

TRH 26 Classification System



ViaEd

AASHO 1964 Classification System misleading and unsafe



ViaEd

Access Management

- Having classified roads by their function (mobility or access / activity) we must then MANAGE them according to their function
- As engineers, you should already have a picture in your mind of how to do that
- Mobility Roads
  - Freeways and arterials (long, wide and straight)
  - Access spacing restrictions
  - High speed limit
  - Route numbers
  - Traffic signals (or roundabouts, no stop streets)
  - No access to private property
  - No parking
  - No traffic calming
  - Separate vehicles and non-motorized transport

Access Management contd.

- Access / Activity Streets
  - Collector and local streets, walkways (short, curved, narrow)
  - No route numbers
  - “Unlimited” access to properties
  - Parking, loading and public transport stops
  - Low speeds (40 km/hr, 50 max)
  - Traffic calming if necessary
  - Mini-roundabouts, pedestrian crossings

  - ❑ Not practical?
  - Here’s the challenge – what alternative do you propose?

Spacing Requirements
Full Intersections/Accesses

Class	Rural	Urban signals(*)	Urban roundabouts/priority(*)
Class 1	8.0 km	n/a	n/a
Class 2	5.0 km	800 m ± 15%	800 m ± 15%
Class 3	1.6 km	600 m ± 20%	600 m ± 20%
Class 4 to 6		Safety only	

Marginal / Partial Intersections and Accesses

- Marginal is left-in, left-out
- Partial is left-in, left-out, right-in
- Use: Class 2- 3 urban roads
  - With medians
    - Limited pedestrians
    - Easy/safe egress routes are available
- Control types
  - Priority
  - Traffic signals
- May be provided opposite to another
  - Partial or Marginal

RCAM
Importance & Benefits

ViaEd

Benefits – Road Capacity & Flow

- Travel times
  - Significant reductions in travel time (75% and more)
- Capacity
  - Median provision – 50% increase
- Level of service
  - RAM can improve LOS E to LOS B
  - On the same arterial road

Benefits – Road Safety

- Access management
  - 25 – 50% Reduction in accident rates
- Accesses
  - Each access per km contribute 5% increase

Benefits – Scare Resources

- Roads are expensive
  - RCAM can significantly decrease costs
- Significant improvement in efficiency
  - Four-lane access management
  - Six-lane uncontrolled

Benefits – Public Transport

- Public Transport Efficiency
  - Require higher speeds
  - Reduced congestion
  - E.g. BRT
- RCAM therefore beneficial

Benefits – Development (Land Use)

- RCAM increase transportation efficiency
  - Allow greater level of development (densification)

Benefits – Social & Environmental

- Residential neighbourhoods
  - Improve quality of living
  - Traffic intrusion issues
  - Reduced road space

Benefits – Economic

- Increased access to economic opportunities
  - Increased market area through travel time reductions
- Increased productivity
  - Reduced cost
- Increased land values
- Improved economic viability (developments)

End of Presentation