



ROAD CLASSIFICATION AND ACCESS MANAGEMENT: *WHAT AUTHORITIES NEED TO KNOW*

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Preserving Africa's Road Network

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South African Road Classification and Access Management Manual

- Official Requirement for National, Provincial and Municipal Authorities to implement
- Builds on and expands Road Infrastructure Strategic Framework for South Africa 2006 (RISFSA) – also a requirement
- Enhances and replaces draft National Guidelines for Road Access Management in South Africa 2005 (RAM)



South African Road Classification and Access Management Manual

- Compiled under auspices of Roads Coordinating Body (RCB) of the Committee of Transport Officials (COTO)
- Funded and supported by SANRAL and DOT
- Comments have been received from national, provincial and metropolitan authorities
- Draft Final being prepared which will be circulated and workshopped



South African Road Classification and Access Management Manual

RCAM must now be implemented in two separate but interrelated steps:

Step 1 is to classify roads according to their function.

Only once the function of the road is determined does

Step 2, the process of access management, begin



Step 1: Functional Classification

It is not possible for a road to efficiently perform more than one function at a time.

It must therefore function *either*

as a mobility road, *or*

as an activity / access street.

Mobility roads give priority to vehicle movements.

They are the long distance, high speed, high capacity, numbered, commercial, economic, strategic through routes and arterials.



Functional Classification (cont)

Activity / access streets give priority to access, pedestrians, cyclists, turning movements, buses and taxis, parking and loading. They are the short distance, low speed, limited capacity, unnumbered, discontinuous, residential and community local and collector streets.

The functions of mobility roads and activity / access streets are completely different and cannot be mixed.



Functional Classification (cont)

Every access and intersection generates low speed turning movements and pedestrian activity. No matter how well designed, they disrupt and slow the mobility function.

Every through vehicle wants to get to their destination with a minimum of delay and inconvenience. No matter how patient, the long distance driver endangers slower traffic.

Mixing these functions is both dangerous and results in congestion.



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

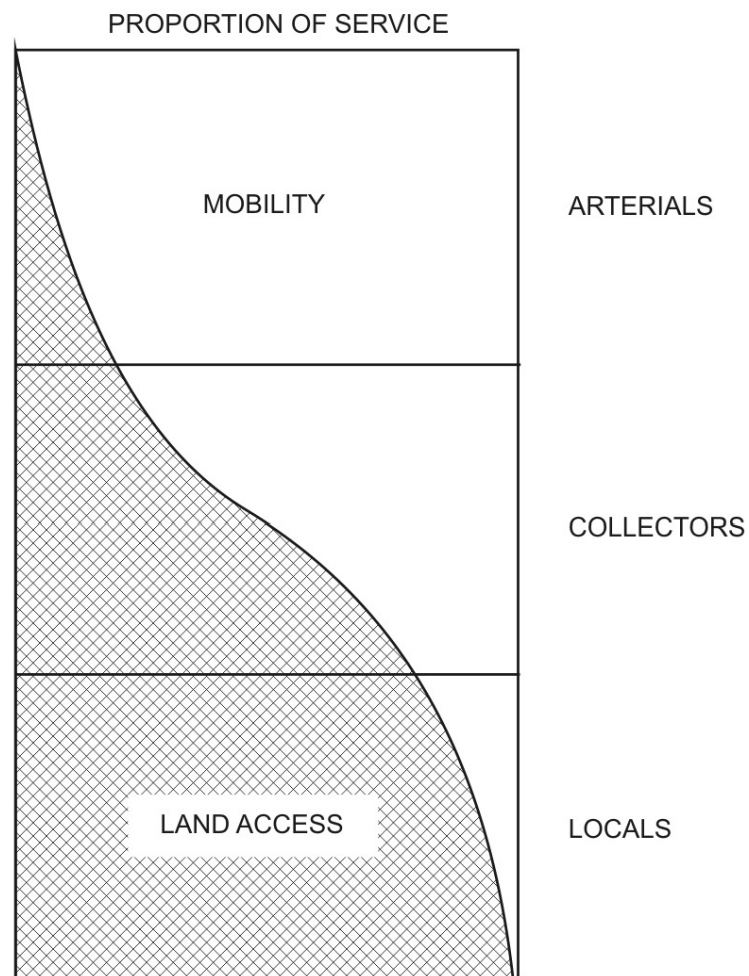
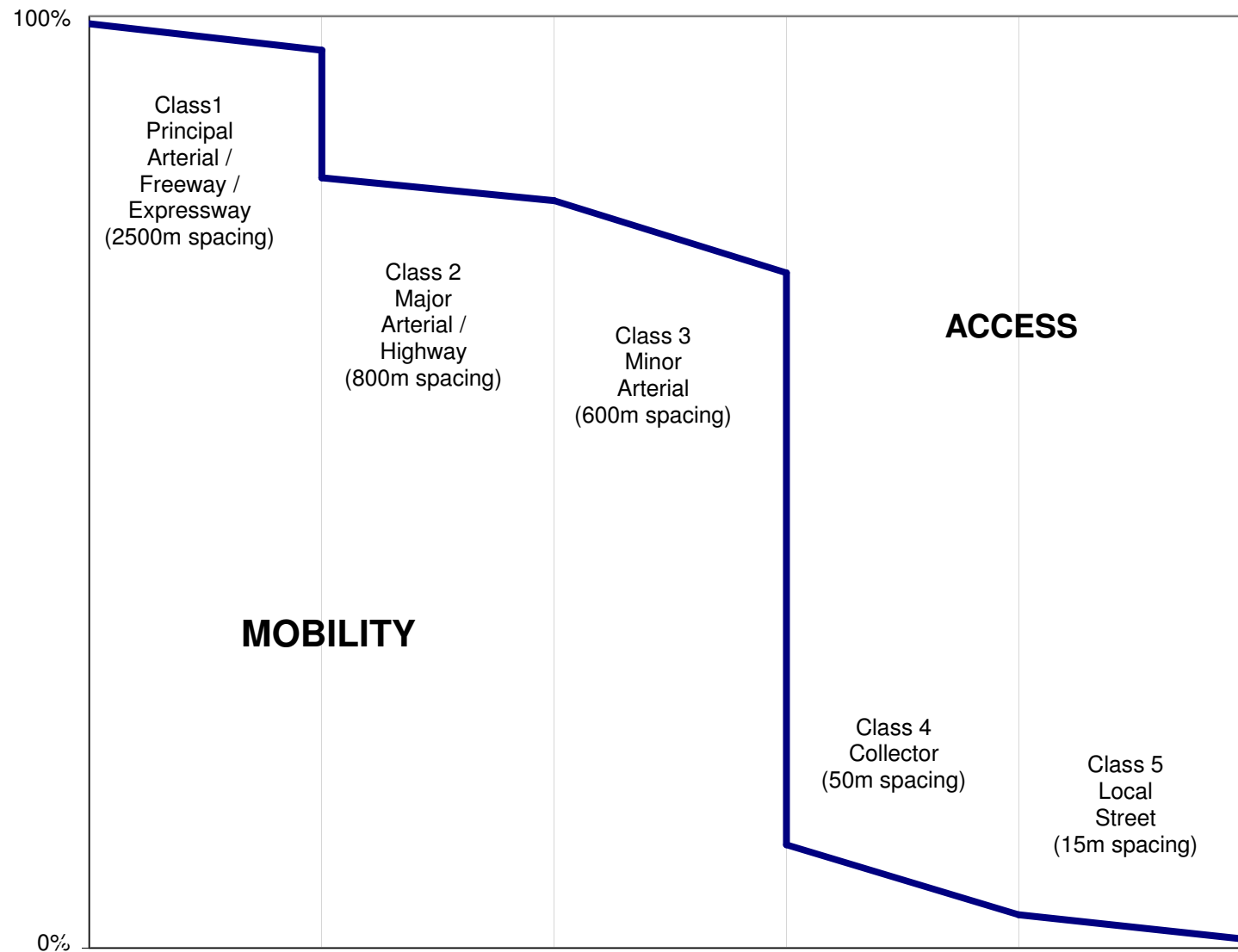


Figure 1: Highway Functional Classification (AASHTO 1964)





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	7 - 10 km	3%	> 10 km	40 000 - 140 000	33%
			2	Major arterial	predominant	1,5 - 5,0km	3%	5 - 20 km	20 000 - 60 000	17%
			3	Minor arterial	major	0,8 - 1,5km	5%	1 - 10 km	10 000 - 40 000	24%
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, commercial	discourage		7%	< 2 km if continuous, < 4 km if destination	2 000 - 25 000	6%
			4b	Collector, residential	discourage		20%	0,5 - 3 km max	<10 000	13%
			5a	Local street, commercial	prevent		12%	< 1 km	<5 000	2%
			5b	Local street, residential	prevent		50%	< 0,5; 1 km max	<1 000	5%
			6a	Walkway, pedestrian priority	ban			< 1 km		
			6b	Walkway, pedestrian only	ban			< 1 km		



Step 2: Access Management

Access Management on mobility roads is totally different from access management on activity streets.

On mobility roads access management requires limiting access to a spacing of 600 m or more, physically separating pedestrian and vehicle flows, maximizing capacity and speeds through signal co-ordination, improving safety by reducing conflicts to a minimum.



Access Management (cont)

On activity / access streets, access management is the opposite. Access is permitted and even encouraged, traffic speeds are reduced by designing short blocks, discontinuities, narrow lanes, regular roundabouts and mini-circles, traffic calming, allowing parking, loading, bus and taxi stops, landscaping sidewalks and islands, and providing for regular pedestrian crossings.



Function	Description		REQUIREMENTS					TYPICAL FEATURES (use appropriate context sensitive standards for design)								
Basic Function	Class number (U)	Class name	Design typology	Route no.	Intersection spacing	Access to property	Parking	Travel speed km/h	Inter-section control	Typical cross section	Roadway / lane width	Road reserve width	Public transport stops and ped. xing.	Pedestrian footways (constructed)	Cycle lanes	Traffic Calming
Mobility	1	Principal arterial	freeway	yes (M/R/N)	2.4 km (1.6km - 3.6km)	not allowed	no	80-120	interchange	4/8 lane freeway	3.3 - 3.7m lanes	60m 60 - 120 m	no	no	no	no
	2	Major arterial	highway	yes (M/R)	800m (± 15%)	not allowed***	no	80	co-ordinated traffic signal, quarter link interchange	4/6 lane divided, kerbed	3.3 - 3.6m lanes	40m 38 - 62 m	yes at intersections	yes	yes – widen by 1.2m	no
	3	Minor arterial	main road	yes (M)	600m (± 20%)	generally not allowed***	no	70	co-ordinated traffic signal, roundabout	4 lane divided or undivided, kerbed	3.3 - 3.5m lanes	30m 25 - 40 m	yes at intersections	yes	yes – widen by 1.2m	no
Access / Activity	4a	Collector, commercial	commercial major collector	no (A for temp. routing)	> 200m	yes (larger properties)	yes if conditions allow	50	traffic signal, roundabout or priority	4 lane, median at ped. xing., boulevard, CBD one-way		25m 20 - 40 m	yes at intersections or mid block	yes	yes, widen lane or on verge	median for peds, curved roadway
	4b	Collector, residential	residential minor collector	no	> 100m	yes	if appropriate	40-50	roundabout, mini-circle or priority	2 lane 10.5 m undivided	6 - 9m roadway < 3.3 m lanes	20m 16 - 30 m	yes anywhere	yes	yes, in road or on verge	raised xing, median, narrow lanes
	5a	Local street, commercial	commercial access street	no		yes	yes plus loading	30-40	priority	2 lane incl. parking, 10 - 12m		22m 15 – 25 m	if applicable, anywhere	normally yes	use roadway	raised ped. crossing
	5b	Local street, residential	local residential street	no		yes	yes on verge	30-40	mini-circle, priority or none	2 lane mountable kerbs	3.0 - 5.5m roadway (two way)	14m 10 - 16 m	if applicable, anywhere	not normally, pedestrians can use roadway	use roadway	yes, but should not be necessary
	6a	Walkway, non-motorized priority	pedestrian priority	no	500 m maximum	yes	yes if parking lot or woonerf	10-15	none, pedestrians have right of way	surfaced			if applicable, anywhere	yes or use roadway	rare	yes
	6b	Walkway, non-motorized only	pedestrian only	no	500 m maximum	yes	no vehicles	peds. 80 m / minute	none, pedestrian signal	Block paving		6 m		yes	yes	



Retrofitting

- Where access has not been managed, or where the functional classification of a road has changed, retrofitting techniques as described in the Manual must be applied.
- These techniques are relatively inexpensive and provide great benefits on both mobility and activity roads.



Benefits of RCAM

- Improved Level of Service (less congestion, efficient public transport)
- Improved vehicle and pedestrian safety (on both mobility roads and activity streets)
- Efficient use of scarce resources (narrower roads, no “parking lots”)
- Equality for all users and developers
- Planning certainty
- Integrated land use and transport
- Social benefits
- Environmental quality
- Economic growth



Conclusion

- If you are not convinced, there's no hope for your city, town or country
- Road Classification and Access Management is not a theoretical future possibility, it is a practical application which should be implemented starting today
- Without RCAM, your citizens are doomed to continue with unsafe roads and streets, congestion and frustration
- Now you know how to preserve Africa's roads