

ACT RESPONSE TO ARTERIAL ROADS ISSUES RAISED BY THE COMMONWEALTH GRANTS COMMISSION

Commission staff sought comments from the States on the proposed methods identified in Discussion paper CGC 2006/09 *Proposed Approach to Obtaining Consistent and Reliable Estimates of the Length of State Arterial Roads*.

The ACT's response to the specific questions raised are as follows.

Is the definition of 'urban area' appropriate? If not, what might be a better definition?

The proposal to define an urban area as being areas of 40,000 or more people appears reasonable given that this is the definition used by the ABS in the 2001 Census.

However, the alternative, and perhaps more appropriate measure, is to use areas of 50,000 or more people given that this would be consistent with the definition used in the urban transit assessment.

Will Filter 3 produce a reasonable representation of the rural roads for which States are in general responsible? If not, what might be a more appropriate filter?

The ACT considers that filter 3 represents a compromise between filters 1 and 2, and therefore this approach may reasonably capture rural roads that States are generally responsible for. It is not clear whether or not, however, it would reasonably capture rural arterial roads.

A number of States, consistent with, and/or in conjunction with the NAASRA guidelines, use traffic flow thresholds to determine which rural roads are State arterial in nature, and this fact appears to be ignored under the current approaches. As such, road length may be overestimated for those States that have a higher proportion of roads with relatively low traffic (particularly those in rural and remote areas that do not meet the rural arterial roads traffic level criteria). For this reason, filter 1 is preferred.

The decision to recognise and permit connections between urban areas and population centres across State borders is commended, as this will be important for the ACT. Roadways such as the Kings Highway, Sutton Road, Mount Franklin Road/Brindabella Road, pass through part of the ACT, and link to 'population centres' or 'important centres' in NSW.

RoadsACT notes that the filter methods proposed may not identify a number of rural roads in the ACT. Depending on the how the approach is adopted, it appears that some of the rural arterial roads that form an indirect link from one urban district (ie Belconnen to Tuggeranong) around a natural landform or barrier such as a river corridor or mountain range (ie Uriarra Road, Paddys River Road, Tidbinbilla Road etc) will not be counted.

Is a mapping approach a reasonable way of determining urban arterial road lengths? Do States have suggestions on criteria that might be applied to identify urban arterial roads?

A number of States, consistent with, and/or in conjunction with the NAASRA guidelines, use traffic flow thresholds to determine which roads are State arterial in nature. In this context, the proposed mapping approach may include roads that are only lightly trafficked, and as such, do not meet the criteria of being classified as an arterial road.

This may result in an over or under estimation of the length of arterial roads for certain States which may have material effects on the roads assessment.

Guidelines such as the Austroads “*Guide to Traffic Engineering Practice, Part 2: Roadway Capacity*” may be of assistance in defining what an arterial road is by way of traffic volumes. Irrespective of this, a mapping approach could be used to make comparisons with the data provided by State jurisdictions for NAASRA defined urban arterials.

In this context, a mapping system that provides details on road use would be pertinent to ensuring that State arterial road length is comparable.

In the ACT, arterials include roads servicing the individual residential suburb areas which are the major roads classified as NAASRA Class 6 and in some cases Class 7 roads. These are important transport routes that provide for the major traffic streams in terms of both volume and speed.

Some street directory indexes identify roads as:

- Highway or main traffic route;
- Primary roads;
- Secondary road; and
- Trafficable road.

However, there are situations where the roads that the street directory nominates as secondary roads could be arterial roads.

Are there specific roads for which States are generally responsible but which are unlikely to be identified under the preferred approaches? If so, what roads are they and how might the specifications be changed to capture those roads?

The following roads under the mapping database approach are examples that may not be considered as urban territorial roads, as they pass through what might be seen as non urban areas, even though they link one urban area to another;

- Canberra Avenue (from Hume Circle to NSW border);
- Coppins Crossing road;
- Cotter Road (from Adelaide Avenue to Uriarra Road);
- Kuringa Drive;
- Majura Road;
- Monaro Highway (from Johnson Drive to Morshead Drive);

- Owen Dixon Drive;
- Pialligo Avenue;
- Sulwood Drive (Erindale Dr to Drakeford Drive);
- Tuggeranong Parkway; and
- William Hovel Drive.

The mapping specifications need to be able to identify roads that ring urban developments and connect to urban arterials.

Is the proposed approach to converting road lengths to lane lengths reasonable? If not, what might be a more appropriate approach?

The ACT agrees with the view that lane-length is the most appropriate measure of road length for the Commission's road assessment.

It is noted that an accurate calculation of road length is dependent upon lane numbers being correctly identified. In this context, it would be preferable to determine each State's road length using actual lane numbers. For rural road length, this is not an important issue as all States are close to the 2 lane average. As such, the adoption of a policy neutral approach of applying the national average lane numbers to the road length for rural roads is supported.

For urban roads, however, there are appreciable differences, a number of which appear to be driven by non-policy influences, such as Victoria's and the ACT's relatively high urban lane numbers and Tasmania's relatively low lane numbers, due to very different levels of urbanisation.

Many road authorities adopt a staged policy approach to the number of lanes on urban arterial roads. That is, where the initial traffic volumes are expected to be moderate, staged construction of the number of lanes is warranted as an interim measure for economic reasons. Additional lanes are generally only added when traffic volumes grow they meet strict cost / benefit analysis criteria.

This approach is important to note as it indicates that urban lane numbers are driven by road use, and are subject to economic and cost impact criteria. As such, most urban lane lengths are not policy influenced, and are only built once traffic volumes are high enough to meet the cost / benefit analysis criteria.

An examination of the extent of policy influence (if any) regarding urban lane numbers is thus required. If policy influences are small or do not exist, it will be important to capture the relative urbanisation impacts on lane numbers.

The view that 'further consideration of this matter is necessary' is therefore supported.

What are the implications of possible mismatches between road length data produced by the proposed approaches and road use data? How might those implications be resolved?

The suggested approach to calculating road length may result in large variations in road length for various States as seen in the following table.

TOTAL RURAL ARTERIAL ROAD LENGTHS

	NSW Lane Kms	Vic Lane Kms	Qld Lane Kms	WA Lane Kms	SA Lane Kms	Tas Lane Kms	ACT Lane Kms	NT Lane Kms	Aust Lane Kms
Current CGC assessment	59787	37240	34767	38267	17346	4822	556	6717	199502
MapInfo	46348	29341	43874	37955	17741	8586	106	12483	196434
Change	-22.5%	-21.2%	26.2%	-0.8%	2.3%	78.1%	-80.9%	85.8%	-1.5%

Source: Queensland Discussion Paper *Rural Arterial Roads*, pages 4 (CGC data) and 17 (MapInfo data).
Notes: It is noted that the MapInfo approach may not necessarily count road length on the same basis as the CGC data (lane-kilometres).

Given that road use is dependent upon road length (*Average Vehicle Kilometres Travelled = Annual Average Daily Traffic * road length*), significant changes to road length will impact on the road use calculations.

Additionally, changes in the composition of road length (sealed versus unsealed), will impact on other disabilities, such as urbanisation - whereby sealed roads are weighted to reflect their greater road maintenance costs relative to unsealed roads. For example, the following table shows the significant change in sealed rural road lengths arising from one of Queensland's suggested mapping approaches.

SEALED RURAL ARTERIAL ROAD LENGTHS

	NSW Kms	Vic Kms	Qld Kms	WA Kms	SA Kms	Tas Kms	ACT Kms	NT Kms	Aust Kms
Current CGC assessment	47518	36338	21935	30091	16939	4673	365	3056	160915
MapInfo	38522.5	27419.4	42865.7	32746.1	14416.7	8473.5	93.4	9601.9	174139.2
Change	-18.9%	-24.5%	95.4%	8.8%	-14.9%	81.3%	-74.4%	214.2%	8.2%

Source: Queensland Discussion Paper *Rural Arterial Roads*, page 17. Assumes that road type 300, 301, 302, 303, 304 are all sealed roads.

Any mismatches will need to be worked through and Commission staff will need to be sure that the revised road lengths, road use and urbanisation impacts are realistic, and that they better reflect the disabilities of the States relative to they current assessment approach.

Is the proposed approach to identifying very heavily trafficked urban arterial roads feasible? If not, what alternative approaches might be examined?

If the mapping software has information on traffic levels for various roads, it is sensible that it be matched with information provided by the State roads authorities on roads with AADT

levels > 40,000. However, the ACT is not aware of mapping software that is sophisticated enough to be able to determine roadways that have >40,000 AADT counts.

If the mapping software does not house information on traffic levels for various roads, Commission staff will be reliant upon information on heavily trafficked roads provided by the State roads authorities.

The ACT supports the current definition of very high traffic levels being defined as AADT >40,000 (See other comments below on heavily trafficked roads and the need to update the data for the 2007 Update).

Methods used to measure AVKT of arterial roads

The ACT measures AVKT using the following formula: $AVKT = AADT \times road\ length$.

It is noted that AVKT (and AADT) data are calculated differently between jurisdictions. This partly results from the fact that in some States data collections are constrained by resources. The Australian Roads Research Board (ARRB) consultant, in the 2004 Review, stated that “...the accuracy of each Authority’s road data was dependent on how well the relevant authority was resourced [only needs-basis monitoring was conducted in most States]”. It was noted that NSW has 400 continuous permanent stations around the State and mobile stations covering all regions to collect AADT as well as sophisticated modelling to convert this to AVKT, while the NT calculates AVKT simply by multiplying road length by AADT.

Urban arterial roads that have AADT of 40 000 or more in 2001

The following table provides a listing of urban arterial roads that have AADT of 40,000 or more in 2001. The comparable figure for 2006 has also been provided.

ROAD LENGTH WITH OVER 40,000 AADT

	2005-06 Lane Kilometres	2000-01 Lane Kilometres
Adelaide Avenue	14.359	14.359
Commonwealth Avenue	13.710	13.710
Northbourne Avenue	35.030	35.030
Tuggeranong Parkway	41.378	41.378
Belconnen Way	37.665	37.665
Hindmarsh Drive	79.700	-
Monaro Highway	106.030	-
William Hovell Dr	23.530	-
Total	351.392	142.132

Please note that depending upon how AADT is measured, Parkes Way (6.315 lane-kilometres) and Yarra Glen (11.385 lane-kilometres) could be construed as having AADT >40,000. However, adopting a conservative stance, these have not been included in the ACT’s data returns to date.

Table 3 in the Discussion Paper highlights the proportion of urban arterial roads with AADT > 40,000. In the ACT's case, 10.1% of urban arterials had AADT greater than 40,000. The following table demonstrates the significant change that has occurred for the ACT since 2001, with the proportion increasing to at least 24.6% by 2006.

PROPORTION OF URBAN ROAD LENGTH WITH AADT OVER 40,000 AADT

Road Type	2005-06 lane- kilometres	Proportion	2000-01 lane- kilometres	Proportion
Urban arterial, AADT less than or equal to 40,000	1,076.849	75.4%	1,270	89.9%
Urban arterial, AADT greater than 40,000	351.392	24.6%	143	10.1%
Total Urban Arterial	1428.241	100.0%	1413	100.0%

Other Comments – 2007 Update

As previously highlighted above, significant change in heavily trafficked roads has occurred for the ACT as a result of urbanisation, population growth and road vehicle registration growth. In 2001, 10.1% of urban arterials had AADT greater than 40,000 while by 2006 this had grown to at least 24.6%.

If the Commission adopts a 'simple variation to the frozen disabilities' in the 2007 Update (adjusting road length by population growth), the ACT requests that highly trafficked roads also be adjusted and updated given population change has also affected these road lengths.