

Unsealed Roads Assessment

Supplementary Paper – DP12-04

March 2012



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BACKGROUND

The State Grants Commission has been working over recent months to review its roads assessment methodology, and has recently incorporated proposed changes identified during its review of the assessment. This work culminated in the release of discussion paper *DP12-03 Revised Roads Assessment* in early March 2012.

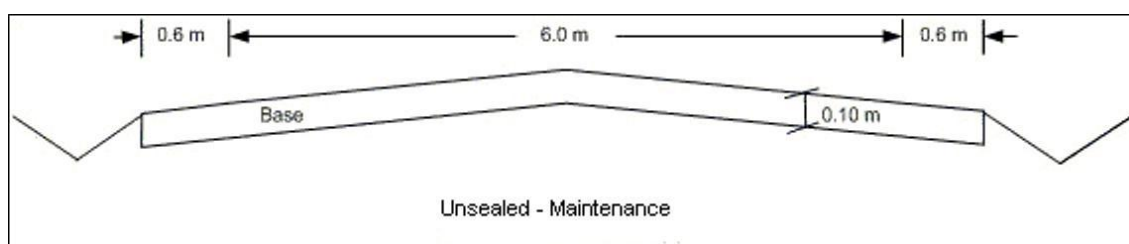
When the Commission approved the release of DP12-03, it acknowledged within the paper that there were issues with the Revised Roads Assessment (RRA), and specifically a calculated over-provision of maintenance costs for unsealed roads that caused a significant shift in preservation costs to councils with high proportions of unsealed roads. Combined with the overall decline in preservation cost for sealed roads due to the implementation of the life cycle assessment, the Commission calculated that there would be significant percentage movements in road grant between councils.

Since the circulation of DP12-03, the Commission has examined the unsealed assessment and has identified two issues that may go some way to correcting the calculated over-provision of preservation costs for unsealed roads within the RRA. This paper seeks to outline these issues for councils and requests further consideration, so these issues can be discussed during the upcoming council consultation program.

ISSUES

Unsealed Road Width

During discussions with Mr John Howard of Jeff Roorda & Assoc, the potential issue of the average width of a Tasmanian unsealed road was noted. The current unsealed road profile used by the Commission has a width of 7.2m, as shown below.



The 7.2m unsealed road width has not been an issue within the previous assessment method as the cost relativities between road types seemed reasonable. However, within the RRA the unsealed cost/km/pa seems unreasonably high, and is thus too heavily weighted towards unsealed roads, which results in skewed grant outcomes as the cost relativities between the road types seem to be out of alignment.

After discussions with Mr Howard, and after consideration at Meeting 360 (29 March 2012), the Commission accepts that the unsealed width of 7.2m may be excessive as the average unsealed road width. Indications have been that the average council-owned unsealed road may be approximately 5.5m wide rather than 7.2m, and this reduction in road width would reduce the cost/km/pa for unsealed roads, and may produce a more reasonable assessment of council road preservation costs.

The only cost item in the unsealed assessment that is impacted by a change in road width is the resheeting cost. The cost of resheeting a 7.2m wide unsealed road is \$29 379, but this would drop to \$22 440 for an unsealed road 5.5m wide. See Appendix 1 for the revised life cycle assessment incorporating the reduction in unsealed road width.

Unsealed Life Cycle

The Commission has also examined the application of the life cycle principles to unsealed roads and made changes to make the assessment more reflective of actual council practice, which it is hoped will ensure greater consistency in the unsealed assessment compared with the sealed assessments.

In particular, the Commission acknowledges that the life of an unsealed road is most likely measured by the period of time between resheeting the surface rather than the expected life of cross-road culverts. Therefore, the Commission has altered the calculation of the unsealed life cycle cost to reflect this and adjusted the number of times that culvert, regrading and other maintenance tasks are applied during the 8 year life span of the road surface.

See Appendix 1 for the revised life cycle assessment.

ANALYSIS

As can be seen in Appendix 1, the cost/km/pa for urban and rural sealed roads remain unchanged from those circulated within DP12-03 Revised Roads Assessment, but the cost/km/pa for unsealed roads has decreased. In DP12-03 unsealed roads were awarded \$6 073/km/pa which was recognised as being too high in comparison with sealed roads.

By reducing the unsealed road width to 5.5m and adjusting the life cycle assessment the Commission calculates that unsealed roads should be awarded \$4 860/km/pa. Table 1 below, shows the comparison of costs/km/pa for each road type between the actual 2011-12 assessment and the revised costs/km/pa that are proposed to be used for 2012-13.

Table 1: Comparison of Revised Unadjusted Costs Per Kilometre Per Annum for Road Types

Road Types	2011-12 Roads Assessment	Revised Roads Assessment (RRA)	\$ Change	% Change
Urban Sealed	\$24 452	\$17 434	-\$7 018	-28.7%
Rural Sealed	\$8 467	\$7 414	-\$1 053	-12.4%
Unsealed	\$4 828#	\$4 860	+\$32	+0.7%

The unadjusted cost/km/pa for unsealed in 2011-12 is a weighted average of both urban and rural unsealed costs.

As a result of these amendments, the relative cost movement between 2011-12 and the proposed RRA is substantially reduced for unsealed roads. The percentage movement for unsealed as detailed in DP12-03 noted a +25.8 per cent shift in unsealed, but this increase has been largely cancelled out by the subsequent adjustment in the life cycle assessment and road width detailed in this paper.

Appendix 2 shows the expected grant movements when compared with 2011-12 grant outcomes when using the revised \$4 860/km/pa for the unsealed roads assessment.

FURTHER WORK REQUIRED

During the upcoming hearings and visits period, the Commission wishes to clarify with councils that its approaches taken within DP12-03 and the subsequent adjustments contained in this paper are reasonable.

Therefore, councils are requested to analyse their unsealed road networks, and if possible provide the Commission with an average width for council-owned unsealed roads within each local government area. Furthermore, if during the analysis of your unsealed road network you identify any issue that is not reflected in the assessment of unsealed roads please bring this to the Commission's attention during the council consultation program.

- Is the adjustment of the average unsealed road width from 7.2m to 5.5m reasonable?
- Does the life cycle assessment of unsealed roads reflect actual council practice?
- What other elements of the unsealed road assessment depart from actual council practice and contribute to the calculated over-provision for the cost of preserving unsealed roads?

CONSULTATION

The Commission invites comments and input from councils on the issues raised within this supplementary discussion paper. However, council input need not be confined to the issues identified within this paper. Councils should feel free to provide comments on other pertinent issues regarding the Commission assessment methodologies.

Comments should be forwarded to the Commission Secretary, Mr Rod Malcomson as follows:

- By post: Secretary
State Grants Commission
GPO Box 147
HOBART TAS 7001
- By phone: (03) 6233 8988
- By email: rodney.malcomson@treasury.tas.gov.au

Further details regarding the annual assessments can be found in the 2011-12 Annual Report that is available on the Commission website. Go to the Department of Treasury and Finance webpage (www.treasury.tas.gov.au) and click the Commission 'Quick Link', then follow the link to publications. All discussions papers circulated over the last 2 years are available as electronic documents.

2012 Hearings and Visits

The Commission aims to provide councils with the opportunity to discuss the review and all the associated papers during the 2012 Hearings and Visits program that will begin in early April 2012.

APPENDICES

APPENDIX 1

Calculation of Cost/km/pa for all Road Types using Revised Roads Assessment (RRA)

URBAN SEALED								
	Life Span	Cost/km	Times Applied	Resurf Weight	Lifetime Cost	Annual Cost	Rehab Weight	
	yrs	\$		%	\$	\$	%	\$
	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e=bcd</i>	<i>f=e/max a</i>	<i>g</i>	<i>h=∑ fg</i>
Heavy Patch & Asphalt Overlay	44	461 475	1		461 475	10 488		
1 Coat Spray Seal	15	48 720	2	51%	49 694	1 129		
30mm Asphalt Layer	26	189 000	1	37%	69 930	1 589		
Slurry Seal	13	74 760	3	12%	26 914	612		
Other Maintenance	4	4 576	10		45 760	1 040		
					653 773	14 858	58%	8 618
Removal & Replacement	71	1 159 700	1		1 159 700	16 334		
1 Coat Spray Seal	15	48 720	4	51%	99 389	1 400		
30mm Asphalt Layer	26	189 000	2	37%	139 860	1 970		
Slurry Seal	13	74 760	5	12%	44 856	632		
Other Maintenance	4	4 576	17		77 792	1 096		
					1 521 597	21 431	38%	8 144
Structural Asphalt Layer	44	547 800	1		547 800	12 450		
1 Coat Spray Seal	15	48 720	2	51%	49 694	1 129		
30mm Asphalt Layer	26	189 000	1	37%	69 930	1 589		
Slurry Seal	13	74 760	3	12%	26 914	612		
Other Maintenance	4	4 576	10		45 760	1 040		
					740 098	16 820	4%	673

Cost/km/pa \$ 17 434

RURAL SEALED								
	Life Span	Cost/km	Times Applied	Resurf Weight	Lifetime Cost	Annual Cost	Rehab Weight	
	yrs	\$		%	\$	\$	%	\$
	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e=bcd</i>	<i>f=e/max a</i>	<i>g</i>	<i>h=∑ fg</i>
Scarify & Overlay	54	260 100	1		260 100	4 817		
1 Coat Spray Seal	15	34 800	3	100%	104 400	1 933		
Other Maintenance	5	2 399	10		23 990	444		
					388 490	7 194	79%	5 683
Removal & Replacement	70	406 500	1		406 500	5 807		
1 Coat Spray Seal	15	34 800	4	100%	139 200	1 989		
Other Maintenance	5	2 399	13		31 187	446		
					576 887	8 241	21%	1 731

Cost/km/pa \$ 7 414

UNSEALED								
	Life Span	Cost/km	Times Applied	Resurf Weight	Lifetime Cost	Annual Cost	Rehab Weight	
	yrs	\$		%	\$	\$	%	\$
	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e=bcd</i>	<i>f=e/max a</i>	<i>g</i>	<i>h=∑ fg</i>
Resheeting	8	22 440	1		22 440	2 805		
Regrading	1	1 010	7		7 070	884		
Other Maintenance	2	1 750	3		5 250	656		
R&R Culverts	72	37 100	0.11		4 122	515		
					38 882	4 860	100%	4 860

Cost/km/pa \$ 4 860

APPENDIX 2

Proposed Grant Outcomes Comparison between 2011-12 Assessment and the RRA

Council	Actual 2011-12	Proposed RRA	Change	
	Outcomes \$	\$	\$	%
Break O'Day	1 322 525	1 394 823	+ 72 298	+5.5%
Brighton	500 139	476 018	- 24 121	-4.8%
Burnie	1 177 547	1 092 121	- 85 426	-7.3%
Central Coast	1 826 945	1 791 489	- 35 456	-1.9%
Central Highlands	1 099 445	1 229 699	+ 130 254	+11.8%
Circular Head	1 491 826	1 627 093	+ 135 266	+9.1%
Clarence	1 585 203	1 421 554	- 163 649	-10.3%
Derwent Valley	631 875	710 828	+ 78 953	+12.5%
Devonport	1 236 791	1 090 861	- 145 930	-11.8%
Dorset	1 502 793	1 603 492	+ 100 698	+6.7%
Flinders	588 041	661 714	+ 73 672	+12.5%
George Town	732 872	730 223	- 2 649	-0.4%
Glamorgan Spring Bay	869 727	864 800	- 4 927	-0.6%
Glenorchy	1 470 447	1 277 962	- 192 485	-13.1%
Hobart	1 930 590	1 661 247	- 269 343	-14.0%
Huon Valley	1 232 586	1 328 018	+ 95 431	+7.7%
Kentish	980 875	1 040 819	+ 59 944	+6.1%
King Island	670 551	761 177	+ 90 626	+13.5%
Kingborough	1 225 040	1 196 027	- 29 013	-2.4%
Latrobe	705 246	700 617	- 4 629	-0.7%
Launceston	2 817 067	2 606 527	- 210 540	-7.5%
Meander Valley	1 950 193	2 011 007	+ 60 815	+3.1%
Northern Midlands	2 097 613	2 177 390	+ 79 777	+3.8%
Sorell	881 242	910 702	+ 29 459	+3.3%
Southern Midlands	1 228 915	1 377 372	+ 148 458	+12.1%
Tasman	434 423	471 167	+ 36 744	+8.5%
Waratah Wynyard	1 190 228	1 203 026	+ 12 798	+1.1%
West Coast	614 402	594 989	- 19 413	-3.2%
West Tamar	1 056 883	1 039 269	- 17 614	-1.7%
TOTAL	35 052 032	35 052 032	+ 0	+0.0%



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