Special Case Roads

Discussion Paper DP15-02

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STATE GRANTS COMMISSION

Tasmanian Government

Contents

Background

The State Grants Commission is an independent statutory body responsible for recommending the distribution of Australian Government and State Government funds to Tasmanian local government authorities. To ensure that the distribution of available funds is as equitable and contemporary as possible, the Commission continually monitors council practices and updates assessment methods and data where appropriate.

To provide some structure to updating the distribution methods of the Australian Government financial assistance grants (FAGs), the Commission operates a triennial review policy whereby major method changes are introduced only every three years, with data updates and minor changes applied every year. However, this policy does not apply to the method used to determine shares of State Government Heavy Vehicle Motor Tax Revenue (HVMTR) funds.

Table 1: Overview of Triennial Review Period (FAGs)

Distribution	Action
2012-13	Method Changes + Data Updates
2013-14	Data Updates
2014-15	Data Updates
2015-16	Method Changes + Data Updates

The Commission is reviewing whether there is a need for additional recognition in its Road Preservation Model (RPM) for roads that face unique circumstances or have special characteristics that fall beyond the normal sphere of the current grant model cost adjustors. If there is a case for this additional recognition, the Commission is also considering what options exist and what manner such recognition may take.

1. Introduction

During recent Hearings and Visits, a number of councils have requested the Commission provide some acknowledgement of roads that they consider to be "special cases" and that are claimed to represent significant cost disadvantages or unique circumstances that are not sufficiently recognised or provided for in the Commission's current approach.

Four examples of roads that have been suggested by some councils as having unusual factors are described in Box 1.

Special case roads could also include roads that are strategically or regionally important, as well as roads that result in additional advantages and/or disadvantages more than those currently recognised by factors in the Commission's modelling methodology.

Specifically, the Commission is seeking information on the following:

- what are the additional costs or burden (type and quantum) councils face due to special case roads that are above and beyond the costs of maintaining a normal road; and
- how are these costs reflected in council's Consolidated Data Collection (CDC) returns.

Questions:

What additional costs do the examples provided exhibit? What unique features or characteristics do they demonstrate that warrant them being considered "special case" roads?

Box 1. Four roads suggested by councils	
Lorinna Road*	Lorinna Road is an unsealed single lane rural road that provides the only access to the small community of Lorinna, of about 50 properties alongside Lake Cethana, in the southwest of Kentish municipality. The road and community are surrounded by the mountainous Cradle Mountain World Heritage Area. The road was previously used for forestry purposes, is approximately 7km long, and is now maintained by council. The road traverses difficult terrain with high cross-slope and washouts and instability are common.
Wielangta Road	Wielangta Road is an unsealed dual lane (8m wide) rural road that links Orford in the Glamorgan Spring Bay municipality with Marion Bay in the Sorell municipality. The road provides access to the small communities of Wielangta and Earlham (approximately 30 properties). The road is approximately 28 km long, with 24 km in Glamorgan Spring Bay municipality and 4 km in Sorell municipality. Approximately 7 km of the road in Glamorgan Spring Bay municipality passes through state forest and this section is maintained by Forestry Tasmania. Because of its operational use, Forestry Tasmania completely re-sheeted the road in 2013. The road carries some tourist traffic between the Tasman Peninsula and Freycinet Peninsula region and is promoted as a tourist link by some private and public organisations. Some tourist infrastructure, such as Sandspit Reserve and Thumbs Lookout supports this.
Burnie Retaining walls*	The Northwest region features a coastal escarpment that runs parallel to the coast from Devonport to Wynyard, effectively dividing coastal cities like Burnie into two: properties on the escarpment and properties below it. As a result, Burnie City Council (BCC) has over the years constructed many retaining walls – mortared rock walls through to engineered reinforced concrete walls – to support its road network. In 2014, BCC managed 600 walls over 14 km long. For example, Brickport Road climbs the coastal escarpment west of the Burnie CBD and is supported by 14 separate retaining walls, each, on average 50 m long. Retaining walls are high value assets, and while maintenance costs can be low, their replacement cost is high. This means that BCC carries a large asset base, with associated high depreciation costs.
Flat land in Latrobe township*	Very flat land can cause significant problems for roads. This is because very flat terrain often has drainage problems, and special engineered drainage may need to be constructed for roads in these areas. As a result, Latrobe Council, having many roads in the very flat township of Latrobe, faces additional costs.

Sources: Personal Communication between the Commission and Council engineers.

Notes: * The Commission already includes an allowance for roads in areas of steep and very flat terrain in its terrain cost adjustor. Section 2.3 provides details.

2. Current Approach

2.1. National principle for the distribution of road grants

The Commission makes recommendations for the distribution of road grant funding based on the national principle governing the distribution of road grants (Section 12 payments under the *Local Government (Financial Assistance) Act 1995* (Commonwealth)). The national principle is shown below:

Identified Road Component

The identified road component of the financial assistance grants should be allocated to local governing bodies, as far as practicable, based on the relative need of each local governing body for road expenditure to preserve its road assets. In assessing road needs, relevant considerations include length, type and usage of roads in each local governing area.

To accord with this principle, the relative road expenditure needs of each council are determined using the Roads Preservation Model (RPM), described in the following sections.

2.2. Standard road preservation costs

The RPM assesses councils' relative road expenditure by applying standard costs for three different road profiles – urban sealed, rural sealed and unsealed – to each councils reported road length. The standard cost is the total cost to preserve the road over its lifetime, including rehabilitation, resurfacing and other maintenance, and ranges from $4,860 per km per annum for unsealed roads to $17,434 per km per annum for urban sealed roads. Further details of the standard road preservation costs are provided in Appendix 1. The Commission calculates the bridge preservation component in a similar fashion.

Councils report eligible road lengths for each of the three road profiles through the CDC process. Eligible roads are council owned roads that form part of the public road network, while fire trails and road easement/reserves for future roads are not eligible roads. The

Commission applies the standard road preservation costs to council's reported road lengths, in order to calculate a council's annual unadjusted road expenditure.

2.3. Application of cost adjustors

The Commission applies four cost adjustors (CAs) to annual unadjusted road expenditure to reflect the cost differentials faced by different councils. The four CAs make adjustments for climate, terrain, traffic and remoteness and are described in Table 1, with the associated data source that is used by the Commission.

Table 1. Road Preservation Model Cost Adjustors, factors and source data

Cost Adjustor	Factor	Description	Data source
Rainfall	0.95 – 1.05	Uses 3 rainfall bands for each road profile. Roads within areas of heavy rainfall face disadvantages in construction and maintenance activities	GIS data, Department of Primary Industries, Parks, Water and the Environment
Terrain	1.00 – 1.15	Uses 3 terrain bands for each road profile. Roads in steep and very flat areas are disadvantaged (flat areas have surface drainage issues)	GIS data, Department of Primary Industries, Parks, Water and the Environment
Traffic	0.91 – 1.25	Uses tonnes/km per annum of heavy vehicles. Roads with higher than average heavy traffic are disadvantaged through increased damage	Tasmanian Freight Survey, Department of State Growth
Remoteness	1.00 – 1.20	Relative cost disadvantage associated with distance (eg material cartage).	Established distances from councils to Burnie, Devonport, Launceston or Hobart.

The individual CAs recognise differences due to rainfall, terrain, traffic and remoteness respectively, with the extremes of between -9 per cent and +15 per cent.

Full details of individual CAs for each road class for each council are shown in Appendix 2. The impacts of the CAs on the unadjusted costs are detailed in Appendix 3.

The respective RPM CAs are multiplied to arrive at a composite CA which reflects the combined effect of all factors that affect the total respective reported road type lengths for each municipality. The application of the four CAs (including the allowances as discussed in

section 2.4) to the unadjusted road expenditure produces a figure that theoretically represents the annual expenditure required to preserve a council's road assets. For the 2014-15 road grant distribution, the composite CA ranged between extremes for each road profile are reflected in Table 2.

Table 2. Combined Cost Adjustor factors for each standard road profile

Road Type	Min	Max
Urban Sealed	0.92	1.22
Rural Sealed	0.96	1.45
Unsealed	0.97	1.37

The implication of the RPM is that the CA ranges represent the additional cost burden imposed by these factors. While a specific road in a municipality may cost more to maintain than recognised through the cost adjustors, compensating savings on other roads are such that the overall result reflect councils' annual road preservation costs.

2.4. Current allowances for special cases

The RPM already provides some recognition of, and provision for, roads facing special circumstances. The current methods of recognition of such matters include an urbanisation allowance and recognition for increased costs experienced by island councils.

The urbanisation allowance applied within the RPM recognises the additional costs councils face as a result of the added complexity of undertaking road works in heavily urbanised environments with surrounding commercial activity and high volumes of traffic. The Commission also recognises that King Island and Flinders Island Councils as well as Kingborough Council in relation to Bruny Island, face additional costs due to their remoteness and island status. The RPM applies a factor of +50% to the distances in the Remoteness CA for King Island and Flinders Island. The RPM also uses slightly different road preservation costs for roads on Bruny Island.

Questions:

Are the current cost adjustors and/or allowances for special case roads justified?

Do the current cost adjustors provide sufficient relative recognition for the differences in costs or is more recognition required?

3. Special Case Roads

The Commission is of the view that before a special case road can be recognised or accommodated in the RPM, the concept of "special case" should be capable of definition.

Ideally, any definition should be objective and robust and be generally accepted as presenting circumstances that demand a special response. The Commission proposes the definition be:

> A road which, by virtue of its location or use, poses maintenance challenges which give rise to above standard costs/km per annum not adequately recognised by existing cost adjustors.

It is also acknowledged that what features or circumstances makes it a "special case" may be difficult to accurately define. If a satisfactory definition of "a special case" cannot be agreed, the special case may need to be determined on a case by case basis. Ultimately the Commission expects to exercise judgement on this issue.

If the Commission is convinced there is a need for, and decides to incorporate some provision for special case roads in the RPM, there are several options available to it to provide such recognition. The Commission could modify its current RPM methodology through the introduction or modification of the following approaches:

- applying a multiplier or loading to the road length, similar to the current urbanisation allowance approach;
- revising the existing cost adjustor ranges, to reflect greater cost variations than are currently allowed;
- making specific recognition through the annual per kilometre cost for the identified special case roads;
- developing a new cost adjustor for special case roads; or
- assigning a separate reserve or dollar component of funding specifically for special case roads.

The Commission does not have a preference for any particular approach, nor necessarily accept that an additional allowance is required, at this stage. The Commission seeks, in addition

to information on the cost of such special cases as requested in Section I of this paper, feedback from councils on the various options.

It is worth noting that the Commission previously used a 'special needs component' in its road model calculations. This involved the Commission allocating 5% of the local road grant pool to councils with an above average proportion of rural unsealed roads, with the aim of 'betterment'. This practice was discontinued from the 2006-07 distributions, when the Commission changed its methodology after a significant review and period of consultation.

Questions:

What do you think of the proposed definition of Special Case Road?

What do you think should be the criteria and data used to define a Special Case Road?

What do you think of the options identified to account for Special Case Roads?

Is there another approach not identified that warrants consideration?

Assuming the need for "special case roads" is supported, which option for recognising special conditions do you prefer and why?

Submissions and timeframes

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

Submissions should be forwarded to the Commission Secretary, Ms Pam Marriott as follows:

- By post: Secretary
  State Grants Commission
  GPO Box 147
  HOBART TAS 7001
- By email: pam.marriott@treasury.tas.gov.au

Further details regarding the annual assessments can be found in the 2014-15 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 State Grants Commission 'Quick Link', then click Publications.

Submissions close on Wednesday 18 February 2015.

Any queries should be directed to the Secretary on 6166 4274.

2015 Hearings and Visits

The Commission will provide councils with an opportunity to discuss this paper and any other concerns during the 2015 Hearings and Visits program that will begin in February 2015.

Appendices

Appendix 1 – Standard road preservation costs per road profile per km per annum (2012)

Further information can be found in the report available on the State Grants Commission website: 'Review of Road Maintenance Costs' by Jeff Roorda and Associates, 2012.

URBAN SEALED	Life Span	Cost/km	Times Applied	Resurf Weight	Lifetime Cost	Annual Cost	Rehab Weight	
	yrs	$		%	$	$	%	$
	a	*b*	*c*	*d*	*e=bcd*	*f=e/max a*	*g*	*h=∑fg*
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	$		%	$	$	%	$
	a	*b*	*c*	*d*	*e=bcd*	*f=e/max a*	*g*	*h=∑fg*
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	$		%	$	$	%	$
	a	*b*	*c*	*d*	*e=bcd*	*f=e/max a*	*g*	*h=∑fg*
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**

Source: State Grants Commission

Appendix 2. Roads Preservation Model Cost Adjustors 2014-15

	URBAN SEALED ROADS			*RURAL SEALED ROADS*		
Council	*Rainfall*	*Terrain*	*Traffic*	*Rainfall*	*Terrain*	*Traffic*
Break O'Day	1.00	1.00	0.93	1.01	1.04	1.05
Brighton	0.95	1.00	0.95	0.96	1.02	0.96
Burnie	1.05	1.00	0.98	1.05	1.02	1.00
Central Coast	1.03	1.00	0.99	1.05	1.02	1.06
Central Highlands	0.95	1.00	0.94	0.98	1.03	1.04
Circular Head	1.04	1.00	1.11	1.05	1.05	1.25
Clarence	0.95	1.00	0.96	0.96	1.03	0.98
Derwent Valley	0.99	1.00	0.97	1.00	1.09	1.11
Devonport	1.00	1.00	1.06	1.03	1.02	1.09
Dorset	1.03	1.00	0.96	1.03	1.04	1.06
Flinders	1.00	1.00	0.93	1.00	1.06	1.01
George Town	1.00	1.00	1.10	1.00	1.04	1.01
Glamorgan Spring Bay	1.00	1.00	0.93	0.99	1.04	0.96
Glenorchy	0.99	1.00	0.98	1.02	1.02	0.96
Hobart	1.00	1.01	1.02	1.05	1.01	0.96
Huon Valley	1.01	1.00	0.96	1.01	1.02	1.00
Kentish	1.04	1.00	0.98	1.05	1.02	1.05
King Island	1.00	1.00	0.94	1.03	1.06	1.02
Kingborough	1.00	1.00	0.95	1.02	1.02	0.97
Latrobe	1.00	1.00	0.94	1.00	1.04	0.99
Launceston	1.00	1.00	1.06	1.02	1.03	1.03
Meander Valley	1.01	1.00	0.96	1.02	1.04	1.00
Northern Midlands	0.98	1.00	0.94	0.98	1.06	1.01
Sorell	0.97	1.00	0.94	0.97	1.03	0.97
Southern Midlands	0.96	1.00	0.93	0.98	1.03	0.97
Tasman	1.00	1.00	0.93	1.00	1.03	1.05
Waratah-Wynyard	1.05	1.00	1.01	1.05	1.03	1.03
West Coast	1.05	1.00	0.94	1.05	1.03	0.96
West Tamar	1.00	1.00	0.95	1.00	1.03	1.03

Appendix 2 Roads Preservation Model Cost Adjustors 2014-15 (Continued)

	UNSEALED ROADS			ALL ROADS
Council	*Rainfall*	*Terrain*	*Traffic*	*Remoteness*
Break O'Day	1.02	1.03	0.98	1.10
Brighton	1.03	1.02	0.91	1.01
Burnie	1.05	1.03	0.92	1.00
Central Coast	1.05	1.02	0.92	1.01
Central Highlands	1.02	1.03	1.02	1.04
Circular Head	1.05	1.05	0.95	1.05
Clarence	1.04	1.03	0.91	1.00
Derwent Valley	1.01	1.10	1.11	1.02
Devonport	1.04	1.04	0.91	1.00
Dorset	1.02	1.03	1.23	1.05
Flinders	1.00	1.06	0.94	1.16
George Town	1.00	1.03	0.98	1.03
Glamorgan Spring Bay	1.01	1.04	0.92	1.08
Glenorchy	1.03	1.02	1.02	1.01
Hobart	1.02	1.02	0.95	1.00
Huon Valley	1.02	1.02	1.01	1.04
Kentish	1.05	1.03	0.97	1.02
King Island	1.03	1.06	1.00	1.20
Kingborough	1.02	1.02	0.92	1.01
Latrobe	1.00	1.03	0.98	1.01
Launceston	1.03	1.02	1.25	1.00
Meander Valley	1.03	1.03	0.92	1.03
Northern Midlands	1.02	1.04	0.94	1.03
Sorell	1.01	1.02	1.01	1.02
Southern Midlands	1.02	1.03	0.92	1.05
Tasman	1.00	1.03	0.97	1.06
Waratah-Wynyard	1.05	1.03	0.94	1.01
West Coast	1.05	1.04	0.92	1.08
West Tamar	1.01	1.03	0.95	1.01

**The Roads Preservation Model uses the latest years data only (ie. 2012-13). The cost adjustors are applied to the unadjusted cost of maintenance for each road type.*

Appendix 3 Road Preservation Model Grant Cost Adjustor Impacts 2014-15

Council	*Urban Sealed*	*Rural Sealed*	*Unsealed*	*Total Exp Effect*	*Total Exp Effect on Unadj. Total Cost*	*Rank - Impact on Unadj. Total Cost*
Break O'Day	+ 53 593	+ 183 663	+ 200 539	+ 437 795	**+10.4%**	*8*
Brighton	- 103 009	- 25 393	- 3 084	- 131 486	**-6.9%**	*28*
Burnie	+ 240 206	+ 92 534	- 126	+ 332 613	**+8.8%**	*13*
Central Coast	+ 75 756	+ 451 173	+ 4 264	+ 531 193	**+8.9%**	*12*
Central Highlands	- 30 357	+ 54 208	+ 320 146	+ 343 997	**+8.5%**	*14*
Circular Head	+ 136 389	+ 762 770	+ 234 560	+1 133 719	**+23.4%**	*3*
Clarence	- 324 115	- 25 353	- 2 167	- 351 635	**-5.9%**	*27*
Derwent Valley	- 7 934	+ 109 553	+ 270 850	+ 372 470	**+17.1%**	*5*
Devonport	+ 422 362	+ 78 817	- 1 016	+ 500 163	**+12.9%**	*7*
Dorset	+ 29 305	+ 261 813	+ 814 120	+1 105 238	**+23.6%**	*2*
Flinders	+ 11 619	+ 110 926	+ 223 667	+ 346 213	**+17.8%**	*4*
George Town	+ 163 198	+ 65 985	+ 21 993	+ 251 175	**+10.2%**	*9*
Glamorgan Spring Bay	+ 15 914	+ 50 512	+ 38 540	+ 104 966	**+3.6%**	*20*
Glenorchy	+ 85 665	- 325	+ 7 538	+ 92 877	**+1.9%**	*21*
Hobart	+ 475 687	+ 0	- 264	+ 475 422	**+9.0%**	*11*
Huon Valley	+ 5 549	+ 71 277	+ 224 623	+ 301 448	**+6.9%**	*16*
Kentish	+ 33 584	+ 240 845	+ 63 808	+ 338 237	**+10.0%**	*10*
King Island	+ 27 688	+ 120 638	+ 510 674	+ 659 001	**+28.2%**	*1*
Kingborough	- 90 303	+ 24 480	- 35 991	- 101 815	**-2.2%**	*26*
Latrobe	- 55 663	+ 44 565	+ 7 172	- 3 925	**-0.2%**	*24*
Launceston	+ 723 705	+ 91 094	+ 335 299	+1 150 098	**+13.7%**	*6*
Meander Valley	- 419	+ 354 495	+ 17 825	+ 371 901	**+5.5%**	*17*
Northern Midlands	- 78 478	+ 294 129	+ 51 401	+ 267 052	**+3.7%**	*19*
Sorell	- 109 185	- 5 879	+ 68 868	- 46 196	**-1.5%**	*25*
Southern Midlands	- 29 674	+ 31 510	+ 56 473	+ 58 309	**+1.2%**	*22*
Tasman	- 2 132	+ 30 358	+ 34 562	+ 62 788	**+4.0%**	*18*
Waratah-Wynyard	+ 96 666	+ 192 526	+ 37 400	+ 326 592	**+8.1%**	*15*
West Coast	- 272 291	+ 22 154	+ 45 111	- 205 025	**-10.4%**	*29*
West Tamar	- 79 465	+ 99 510	+ 1 797	+ 21 841	**+0.6%**	*23*
NET REDISTRIBUTION	+1 413 859	+3 782 586	+3 548 581	+8 745 026		