



# State Grants Commission

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Discussion Paper  
DP 09-03

## **ILRF DISTRIBUTION METHODOLOGY**

January 2009

# STATE GRANTS COMMISSION

## DISCUSSION PAPER 09-03

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### ILRF Distribution Methodology

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In 2008-09, Tasmanian councils were entitled to a total Identified Local Roads Fund (ILRF) grant of \$30 483 401, which is a little over half of the total financial assistance grant entitlement of \$60 830 660.

The ILRF grant is distributed to councils on the basis of two separate assessments. The Roads Preservation Model (RPM) determines council shares of total assessed roads expenditure and 90 per cent of the ILRF grant is distributed on that basis. The remaining 10 per cent is distributed on the basis of each council's share of total bridge deck areas.

This methodology was adopted following a review of the previous roads preservation model, and was first introduced for the 2006-07 distribution on a three year phase-in basis. The phase-in process was completed for the 2008-09 distribution.

The Commission operates a triennial review policy, with methodological change being introduced every three years in order to provide a degree of grant stability to councils. The purpose of this paper is to review aspects of the ILRF distribution methodology to ensure an equitable grant distribution over the next 3 year cycle.

The paper explains data changes and the distribution methodology of the ILRF grant. It seeks to ensure councils are aware of the impacts of data changes and to assist councils in raising issues or concerns regarding any aspect of the methodology.

#### **1 Roads Preservation Model (RPM)**

The Roads Preservation Model (RPM) is an asset preservation model that is used to assess the cost of maintaining a council's road network.

The RPM assesses the total asset preservation requirement for each council based on four road classes - urban sealed, urban unsealed, rural sealed, and rural unsealed. The lengths of roads are reported by councils on an annual basis through the Consolidated Data Collection (CDC).

Performance standards and standardised costs of maintenance are applied to each road type. Unadjusted costs are then adjusted by applying four cost adjusters. A council's percentage share in the total adjusted cost for all road types is used to determine a council's share of 90 per cent of the ILRF grant.

## 1.1 Performance Standards

The performance standards are derived from the estimated life expectancy of various maintenance methods that can be applied to a road network. The performance standards are applied to council road lengths for each road type, as reported by councils in the Consolidated Data Collection (CDC), thereby deriving the road lengths that require annual maintenance by each method in order to preserve local infrastructure.

The performance standards currently applied within the model were agreed by a committee of Tasmanian council engineers in 1999 and updated in 2006. In preparation for this paper, the Commission approached the Tasmanian Branch of the Institute of Public Works Engineering Australia (IPWEA), in order to gauge whether the performance standards are still appropriate for contemporary road maintenance methods.

The IPWEA compiled estimated life data and considered the data at the IPWEA Executive Meeting on 26 November 2008. IPWEA members ultimately agreed to recommend updated life expectancy figures for the maintenance treatments. The updated life expectancy and performance standards are shown in the table below.

		2006 UPDATE		IPWEA 2008 UPDATE	
		Estimated Life (yrs)	Performance Standard	Estimated Life (yrs)	Performance Standard
<b>URBAN SEALED</b>					
Maintenance	Thin asphalt overlay	15	0.0667	22	0.0455
	Reseals	15	0.0667	17	0.0588
	Other maintenance	15	0.0667	15	0.0667
Rehabilitation		30	0.0333	45	0.0222
Reconstruction		60	0.0167	80	0.0125
<b>RURAL SEALED</b>					
Maintenance	Reseals	15	0.0667	18	0.0556
	Other maintenance	15	0.0667	15	0.0667
Rehabilitation		25	0.0400	50	0.0200
Reconstruction		50	0.0200	75	0.0133
<b>URBAN UNSEALED</b>					
Maintenance	Regrading	0.5	2.0000	1	1.0000
	Resheeting	5	0.2000	9	0.1111
	Other maintenance	1	1.0000	1	1.0000
<b>RURAL UNSEALED</b>					
Maintenance	Regrading	0.5	2.0000	1	1.0000
	Resheeting	5	0.2000	8	0.1176
	Other maintenance	1	1.0000	1	1.0000

The Commission has modelled changes in grant outcomes using the updated IPWEA performance standards, and the results can be found in Appendix 1.

## 1.2 Costs of Maintenance

The costs of maintenance are the estimated costs per kilometre of undertaking maintenance, rehabilitation and reconstruction on the four road types. These costs are applied to the road lengths calculated by the application of the performance standards, and when combined return an unadjusted cost of maintenance measure for each road type for each council.

The costs of maintenance are calculated using a methodology with standard road specifications for each road type and each maintenance method, and the costs of each maintenance method are obtained using contract unit rates which are published in recognised industry periodicals. The most important aspect of this methodology is that there is a standardised specification for each maintenance method, and as a result a standard cost to perform each maintenance task.

Mr John Howard of Jeff Roorda & Associates was engaged to update the standard costs and a copy of the report has been circulated to councils for comment. The results from this update are provided in the table below.

The Commission has modelled changes in grant outcomes using the updated costs of maintenance and the outcomes are presented in Appendix 2.

		2006 UPDATE	2008 UPDATE	% Change
		Cost per km	Cost per km	
<b>URBAN SEALED</b>				
Maintenance	Thin asphalt overlay	\$109 200	\$126 630	+16.0%
	Reseal	\$33 600	\$49 421	+47.1%
	Other maintenance	\$2 400	\$3 720	+55.0%
Rehabilitation		\$414 120	\$522 827	+26.3%
Reconstruction		\$677 720	\$696 754	+2.8%
<b>RURAL SEALED</b>				
Maintenance	Reseal	\$24 000	\$35 172	+46.6%
	Other maintenance	\$1 200	\$2 373	+97.8%
Rehabilitation		\$99 060	\$125 658	+26.9%
Reconstruction		\$279 940	\$288 136	+2.9%
<b>UNSEALED (Urban &amp; Rural)</b>				
Maintenance	Regrading	\$480	\$893	+86.0%
	Resheeting	\$21 600	\$22 061	+2.1%
	Other maintenance	\$1 200	\$1 186	-1.2%

### 1.3 Cost Adjustors

The application of performance standards and costs of maintenance to the reported road lengths for each council result in a measure called the Unadjusted Costs of Maintenance. Cost Adjustors (CAs) are applied to these unadjusted costs for each road type, in order to account for 'disabilities' in respect of rainfall, terrain, traffic and remoteness. CAs are calculated and applied to all maintenance, rehabilitation and reconstruction tasks. The CAs used as part of the 2008-09 assessments can be found in Appendix 3.

#### 1.3.1 Rainfall Cost Adjustor

The Rainfall CA is calculated from rainfall data provided by the Geographic Information System (GIS) maintained by the Department of Primary Industries and Water (DPIW). This CA is deemed necessary as heavy rainfall can impact the frequency of road maintenance, especially for unsealed roads, and heavy rain can also impact the number of fair weather days available to councils to maintain their road networks.

The GIS provides rainfall and road length data within 100 millimetre rainfall bands for each road type for all councils. These results are then grouped within thresholds recommended by the IPWEA, and cost factors are applied. The current cost factors were endorsed by councils during the 2006 hearings and visits.

<b>Rainfall Bands</b>	<b>Cost Factors (Sealed)</b>	<b>Cost Factors (Unsealed)</b>
Less than 600 mm	0.95	1.05
600 – 1000 mm	1.00	1.00
Greater than 1000 mm	1.05	1.05

The cost factors above indicate that high rainfall constitutes a disadvantage for the maintenance and repair of all roads. Low rainfall is considered an advantage for sealed roads, both urban and rural. However, low rainfall is regarded as a disadvantage for unsealed roads, as there may be the added expense of preparing a dust management operation when maintaining unsealed roads.

Updated GIS data has been obtained from DPIW to ensure that more current rainfall patterns are included as part of the ILRF distribution for 2009-10.

#### 1.3.2 Terrain Cost Adjustor

The Terrain CA provides a measure of the relative cost advantage or disadvantage associated with the slope on which council road networks are constructed.

As is the case with the Rainfall CA, the data is provided by the GIS maintained by DPIW. The GIS provides a measure of road lengths within slope bands which were endorsed by the IPWEA. The Commission determined cost factors that should apply to the terrain bands, and these were also endorsed by councils during the 2006 hearings and visits.

<b>Terrain Bands</b>	<b>Cost Factor Urban Sealed</b>	<b>Cost Factor Rural Sealed</b>	<b>Cost Factor All Unsealed</b>
Less than 0.5 degrees	1.00	1.10	1.10
0.5 – 9.0 degrees	1.00	1.00	1.00
Greater than 9.0 degrees	1.10	1.10	1.15

The cost factors reflect terrain disadvantage for roads with a gradient greater than 9 degrees. Cost disadvantages are also recognised for all unsealed and rural sealed roads with a gradient of less than 0.5 degrees.

As both the Rainfall and Terrain CAs are determined using the same data source, an analysis has been completed showing the impacts on the 2008-09 grant distribution of applying the updated GIS data for both CAs. Appendix 4 shows the impacts on the 2008-09 distribution when replacing the 2005-06 GIS data with the updated 2008-09 GIS data. Column P in Appendix 4 shows grant changes not exceeding +0.4 per cent (Flinders) and -0.6 per cent (Tasman).

### 1.3.3 Traffic Cost Adjustor

The Traffic CA provides a measure of the relative cost disadvantage associated with heavy vehicle traffic on council road networks. The data, on which this CA is based, is taken from the Freight Demander Survey (FDS) undertaken by the Department of Infrastructure, Energy and Resources (DIER). The results from the most recent survey conducted in 2006-07 can be found in Appendix 6.

The FDS is a survey of the largest 120 freight demanders in Tasmania and provides a measure of tonne-kilometres for each road type for all councils. Tonne-kilometres are a product of the tonnage of goods moved and the distance over which they are carried. The survey was last conducted for the 2006-07 financial year, which, as the most up-to-date data available, was used for the ILRF assessments for 2008-09. This same data will also be applied for the 2009-10 ILRF distribution.

The Traffic CA is calculated by dividing the tonne-kilometre result for each road type by the length of road of each type. This enables the calculation of an index figure for each council. Appendix 6 details the data used within the RPM to calculate this index data for each road type. The relative position of the index results are then used to determine the cost adjustors. These relative positions are ranged between cost adjustor limits that were determined by the broad judgement of the Commission, which are detailed in the table below.

	<b>Urban Roads</b>		<b>Rural Roads</b>	
	<b>Sealed</b>	<b>Unsealed</b>	<b>Sealed</b>	<b>Unsealed</b>
Upper Limit (maximum cost adjustment)	1.11	1.16	1.25	1.25
Lower Limit (minimum cost adjustment)	0.93	0.91	0.96	0.91

When the Commission was determining the upper and lower limits on the Traffic CA, it relied heavily on cost adjustor limits as determined by Mr P Mulholland from the Australian Road Research Board whose research resulted in the original Mulholland Model upon which the current RPM is based.

#### 1.3.4 Remoteness Cost Adjustor

The remoteness CA is applied to all road types and provides a measure of relative cost disadvantage associated with distance from suppliers of road making materials. This CA is included within the methodology because cartage costs, in particular, are a significant cost component of all road works.

The CA is calculated from distances recorded between a central point in each council's road network and one of the four main regional centres of Burnie, Devonport, Hobart and Launceston, whichever is closest.

The kilometre distances are used to determine relativities between councils. These relativities are then ranged by broad Commission judgement to confer a 20 per cent maximum and 0 per cent minimum adjustment to account for disabilities in relation to remoteness.

<b>Council</b>	<b>Central Point</b>	<b>Regional Centre</b>	<b>Distance (km)</b>
Break O'Day	St Helens	Launceston	163
Brighton	Bridgewater	Hobart	22
Burnie	Burnie	Burnie	0
Central Coast	Ulverstone	Devonport	22
Central Highlands	Hamilton	Hobart	73
Circular Head	Smithton	Burnie	85
Clarence	Rosny Park	Hobart	8
Derwent Valley	New Norfolk	Hobart	38
Devonport	Devonport	Devonport	0
Dorset	Branxholm *	Launceston	85
Flinders #	Whitemark	Launceston	271
George Town	George Town	Launceston	51
Glamorgan Spring Bay	Swansea *	Hobart	137
Glenorchy	Glenorchy	Hobart	12
Hobart	Hobart	Hobart	0
Huon Valley	Geeveston *	Hobart	60
Kentish	Sheffield	Devonport	29
King Island #	Currie	Burnie	333
Kingborough	Margate *	Hobart	20
Latrobe	Latrobe	Devonport	10
Launceston	Launceston	Launceston	0
Meander Valley	Deloraine *	Launceston	50
Northern Midlands	Epping Forest *	Launceston	55
Sorell	Dodges Ferry *	Hobart	39
Southern Midlands	Oatlands	Hobart	85
Tasman	Nubeena	Hobart	100
Waratah Wynyard	Wynyard	Burnie	19
West Coast	Zeehan	Burnie	139
West Tamar	Exeter *	Launceston	23

Note: councils marked # include an additional 50 per cent weighting to the non-land component of the measured distance. Locations marked \* are different from the administrative centres used for the dispersion cost adjustor in the BGM. These locations have been selected where administrative centres are not close to geographic centres of councils' road networks.

## **2 Bridge Deck Areas**

Council shares in total bridge deck area (BDA) are used to distribute 10 per cent of the ILRF grant. Considerable work has been completed over the last few years to compile a comprehensive list of bridges and culverts maintained by each council. These lists are circulated to councils on an annual basis for confirmation and updating of the details held. This annual update process will be progressed in early 2009.

The total BDA includes bridges and culverts, which must conform to the Commission's definitions if they are to be included within the calculation. Appendix 7 shows the BDAs used as part of the 2008-09 assessments.

## 2.1 Eligible Bridges

A bridge is eligible to be included within the BDA calculation as long as it is 3 metres or greater in length. The BDA for an eligible bridge is calculated by multiplying the bridge's length by its width. There is no maximum length or width restriction for bridges.

## 2.2 Eligible Culverts

A culvert is eligible to be included as part of the BDA calculation, as long as it has 3 metres or more of a horizontal-opening facing the water, which the Commission calls the **maximum clear waterway**. For culverts the BDA is calculated by the maximum clear waterway multiplied by the length of culvert section.

The Commission takes into account only the first 6 metres of the length of culvert, as 6 metres is considered to be adequate to account for the width of a normal two lane road under which the culvert is placed.

## 3 90/10 Roads and Bridges Split

The Identified Local Roads Fund (ILRF) component of the Financial Assistance Grants is currently distributed on the basis of a 90/10 split between roads and bridges. This means that 90 per cent of the ILRF grant is determined by the RPM, and the remaining 10 per cent is distributed based on BDA.

This 90/10 split was determined with regard to the proportional expenditure of all Tasmanian councils on both road and bridge infrastructure. At the time this proportion was set, it was expressly noted that it was intended to be subject to periodic review. Therefore, as this is the first opportunity to review the 90/10 split since the introduction of the revised methodology in 2006-07, the Commission has requested the appropriate data from councils in order to inform current expenditure patterns on both road and bridge infrastructure.

Once all data has been received, it will be aggregated at a state level to confirm whether the current 90/10 split is appropriate. The outcome of this analysis will be advised to councils as soon as all appropriate data has been received.

## 4 Conclusion

The Commission welcomes council comments on all issues identified within this paper, or on any other issue that the council wishes to raise in connection with the ILRF distribution methodology.

State Grants Commission

23 January 2009

## APPENDIX 1: Modelling Grant Outcomes incorporating Updated Performance Standards

	Actual 2008-09 Distribution (Using 2006 Performance Standards)			Modelled 2008-09 Distribution (Using 2008 Performance Standards)			Change in Grant Outcomes Difference when using 2008 Performance Standards					
	Base Grant	ILRF Grant	Total Grant	Base Grant	ILRF Grant	Total Grant	Base Grant		ILRF Grant		Total Grant	
	\$	\$	\$	\$	\$	\$	\$	%	\$	%	\$	%
Break O'Day	1 137 898	1 211 585	2 349 483	1 140 687	1 207 794	2 348 482	2 789	0.2%	- 3 791	-0.3%	- 1 002	0.0%
Brighton	1 153 435	414 996	1 568 431	1 159 103	420 065	1 579 168	5 668	0.5%	5 069	1.2%	10 737	0.7%
Burnie	911 578	997 837	1 909 414	918 066	1 008 541	1 926 607	6 489	0.7%	10 704	1.1%	17 193	0.9%
Central Coast	1 963 714	1 605 915	3 569 629	1 962 250	1 585 425	3 547 675	- 1 464	-0.1%	- 20 490	-1.3%	- 21 954	-0.6%
Central Highlands	617 152	1 019 128	1 636 280	615 237	1 008 120	1 623 357	- 1 915	-0.3%	- 11 008	-1.1%	- 12 923	-0.8%
Circular Head	1 192 888	1 360 544	2 553 432	1 182 319	1 322 490	2 504 809	- 10 569	-0.9%	- 38 054	-2.8%	- 48 623	-1.9%
Clarence	986 984	1 252 816	2 239 800	986 984	1 284 924	2 271 908	0	0.0%	32 108	2.6%	32 108	1.4%
Derwent Valley	957 693	589 533	1 547 226	959 574	586 044	1 545 618	1 882	0.2%	- 3 489	-0.6%	- 1 608	-0.1%
Devonport	562 122	886 307	1 448 429	573 262	913 636	1 486 898	11 140	2.0%	27 329	3.1%	38 469	2.7%
Dorset	1 266 737	1 449 012	2 715 749	1 261 673	1 424 016	2 685 689	- 5 064	-0.4%	- 24 996	-1.7%	- 30 061	-1.1%
Flinders	485 967	518 586	1 004 554	484 126	508 881	993 007	- 1 841	-0.4%	- 9 705	-1.9%	- 11 546	-1.1%
George Town	921 849	645 332	1 567 181	925 764	646 813	1 572 577	3 915	0.4%	1 481	0.2%	5 396	0.3%
Glamorgan-Spring Bay	393 506	782 046	1 175 552	393 506	792 632	1 186 138	0	0.0%	10 586	1.4%	10 586	0.9%
Glenorchy	816 595	1 198 193	2 014 788	816 595	1 245 148	2 061 744	0	0.0%	46 956	3.9%	46 956	2.3%
Hobart	917 539	1 503 807	2 421 346	917 539	1 567 661	2 485 200	0	0.0%	63 853	4.2%	63 853	2.6%
Huon Valley	1 782 377	1 121 959	2 904 336	1 782 737	1 106 753	2 889 491	360	0.0%	- 15 206	-1.4%	- 14 846	-0.5%
Kentish	1 157 848	884 988	2 042 836	1 153 559	862 895	2 016 454	- 4 289	-0.4%	- 22 093	-2.5%	- 26 383	-1.3%
King Island	449 361	600 047	1 049 407	448 802	594 171	1 042 974	- 558	-0.1%	- 5 875	-1.0%	- 6 433	-0.6%
Kingborough	681 723	1 035 906	1 717 629	681 723	1 043 828	1 725 551	0	0.0%	7 922	0.8%	7 922	0.5%
Latrobe	649 287	626 329	1 275 616	649 111	620 742	1 269 852	- 176	0.0%	- 5 587	-0.9%	- 5 763	-0.5%
Launceston	1 198 245	2 364 211	3 562 456	1 198 245	2 424 559	3 622 804	0	0.0%	60 348	2.6%	60 348	1.7%
Meander Valley	1 669 132	1 772 959	3 442 092	1 659 307	1 733 868	3 393 175	- 9 825	-0.6%	- 39 091	-2.2%	- 48 917	-1.4%
Northern Midlands	1 431 103	1 912 523	3 343 626	1 420 317	1 872 213	3 292 531	- 10 785	-0.8%	- 40 310	-2.1%	- 51 095	-1.5%
Sorell	857 819	756 907	1 614 726	861 274	759 017	1 620 291	3 455	0.4%	2 110	0.3%	5 565	0.3%
Southern Midlands	1 376 035	1 179 230	2 555 265	1 375 311	1 163 867	2 539 177	- 724	-0.1%	- 15 363	-1.3%	- 16 088	-0.6%
Tasman	345 225	311 658	656 883	344 002	305 310	649 312	- 1 223	-0.4%	- 6 348	-2.0%	- 7 571	-1.2%
Waratah-Wynyard	1 613 074	1 057 402	2 670 475	1 615 147	1 048 225	2 663 373	2 074	0.1%	- 9 177	-0.9%	- 7 103	-0.3%
West Coast	1 102 123	486 344	1 588 467	1 110 441	496 820	1 607 260	8 318	0.8%	10 476	2.2%	18 793	1.2%
West Tamar	1 748 250	937 302	2 685 552	1 750 596	928 944	2 679 540	2 347	0.1%	- 8 358	-0.9%	- 6 012	-0.2%
<b>State Total</b>	<b>30 347 259</b>	<b>30 483 401</b>	<b>60 830 660</b>	<b>30 347 259</b>	<b>30 483 401</b>	<b>60 830 660</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>

## APPENDIX 2: Modelling Grant Outcomes incorporating Updated Costs of Maintenance

	Actual 2008-09 Distribution (using 2006 Costs Data)			Modelled 2008-09 Distribution (using 2008 Costs Data)			Change in Grant Outcomes Difference when using updated 2008 Data					
	Base Grant	ILRF Grant	Total Grant	Base Grant	ILRF Grant	Total Grant	Base Grant		ILRF Grant		Total Grant	
	\$	\$	\$	\$	\$	\$	\$	%	\$	%	\$	%
Break O'Day	1 137 898	1 211 585	2 349 483	1 137 081	1 208 033	2 345 114	- 817	-0.1%	- 3 552	-0.3%	- 4 369	-0.2%
Brighton	1 153 435	414 996	1 568 431	1 154 799	417 230	1 572 029	1 364	0.1%	2 234	0.5%	3 598	0.2%
Burnie	911 578	997 837	1 909 414	914 243	1 003 876	1 918 119	2 665	0.3%	6 040	0.6%	8 705	0.5%
Central Coast	1 963 714	1 605 915	3 569 629	1 968 551	1 616 051	3 584 602	4 836	0.2%	10 137	0.6%	14 973	0.4%
Central Highlands	617 152	1 019 128	1 636 280	611 596	1 004 088	1 615 684	- 5 555	-0.9%	- 15 040	-1.5%	- 20 595	-1.3%
Circular Head	1 192 888	1 360 544	2 553 432	1 191 929	1 356 603	2 548 531	- 959	-0.1%	- 3 941	-0.3%	- 4 900	-0.2%
Clarence	986 984	1 252 816	2 239 800	986 984	1 260 321	2 247 305	0	0.0%	7 505	0.6%	7 505	0.3%
Derwent Valley	957 693	589 533	1 547 226	956 763	586 045	1 542 808	- 929	-0.1%	- 3 488	-0.6%	- 4 418	-0.3%
Devonport	562 122	886 307	1 448 429	564 507	892 265	1 456 772	2 384	0.4%	5 958	0.7%	8 343	0.6%
Dorset	1 266 737	1 449 012	2 715 749	1 264 476	1 441 607	2 706 082	- 2 261	-0.2%	- 7 406	-0.5%	- 9 667	-0.4%
Flinders	485 967	518 586	1 004 554	483 869	512 544	996 412	- 2 099	-0.4%	- 6 043	-1.2%	- 8 141	-0.8%
George Town	921 849	645 332	1 567 181	923 073	647 327	1 570 401	1 224	0.1%	1 996	0.3%	3 220	0.2%
Glamorgan-Spring Bay	393 506	782 046	1 175 552	393 506	781 014	1 174 521	0	0.0%	- 1 032	-0.1%	- 1 032	-0.1%
Glenorchy	816 595	1 198 193	2 014 788	816 595	1 205 482	2 022 077	0	0.0%	7 290	0.6%	7 290	0.4%
Hobart	917 539	1 503 807	2 421 346	917 539	1 512 333	2 429 872	0	0.0%	8 526	0.6%	8 526	0.4%
Huon Valley	1 782 377	1 121 959	2 904 336	1 778 932	1 110 983	2 889 915	- 3 445	-0.2%	- 10 977	-1.0%	- 14 421	-0.5%
Kentish	1 157 848	884 988	2 042 836	1 159 246	887 072	2 046 317	1 397	0.1%	2 083	0.2%	3 481	0.2%
King Island	449 361	600 047	1 049 407	445 891	590 570	1 036 461	- 3 470	-0.8%	- 9 477	-1.6%	- 12 947	-1.2%
Kingborough	681 723	1 035 906	1 717 629	681 723	1 036 031	1 717 754	0	0.0%	124	0.0%	124	0.0%
Latrobe	649 287	626 329	1 275 616	650 989	629 997	1 280 986	1 702	0.3%	3 669	0.6%	5 371	0.4%
Launceston	1 198 245	2 364 211	3 562 456	1 198 245	2 371 487	3 569 732	0	0.0%	7 276	0.3%	7 276	0.2%
Meander Valley	1 669 132	1 772 959	3 442 092	1 673 083	1 781 192	3 454 274	3 950	0.2%	8 233	0.5%	12 183	0.4%
Northern Midlands	1 431 103	1 912 523	3 343 626	1 432 809	1 915 175	3 347 984	1 706	0.1%	2 652	0.1%	4 358	0.1%
Sorell	857 819	756 907	1 614 726	857 023	753 971	1 610 994	- 796	-0.1%	- 2 936	-0.4%	- 3 732	-0.2%
Southern Midlands	1 376 035	1 179 230	2 555 265	1 372 470	1 168 295	2 540 765	- 3 565	-0.3%	- 10 935	-0.9%	- 14 500	-0.6%
Tasman	345 225	311 658	656 883	344 570	309 548	654 118	- 655	-0.2%	- 2 109	-0.7%	- 2 765	-0.4%
Waratah-Wynyard	1 613 074	1 057 402	2 670 475	1 613 997	1 057 829	2 671 826	923	0.1%	427	0.0%	1 351	0.1%
West Coast	1 102 123	486 344	1 588 467	1 102 677	486 324	1 589 001	554	0.1%	- 20	0.0%	534	0.0%
West Tamar	1 748 250	937 302	2 685 552	1 750 096	940 107	2 690 203	1 846	0.1%	2 805	0.3%	4 651	0.2%
		0	0		0	0						
<b>State Total</b>	<b>30 347 259</b>	<b>30 483 401</b>	<b>60 830 660</b>	<b>30 347 259</b>	<b>30 483 401</b>	<b>60 830 660</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>

### APPENDIX 3: Roads Preservation Model (RPM) Cost Adjustors 2006-07\*

Council	Rainfall CA				Terrain CA				Traffic CA				Remoteness CA
	Urban Sealed	Urban Unsealed	Rural Sealed	Rural Unsealed	Urban Sealed	Urban Unsealed	Rural Sealed	Rural Unsealed	Urban Sealed	Urban Unsealed	Rural Sealed	Rural Unsealed	All Road Types
Break O'Day	1.00	1.00	1.01	1.02	1.00	1.06	1.05	1.05	0.93	0.91	1.16	1.09	1.10
Brighton	0.95	1.05	0.96	1.03	1.00	1.02	1.03	1.04	0.94	0.91	0.96	0.91	1.01
Burnie	1.05	1.04	1.05	1.05	1.00	1.08	1.04	1.04	0.97	0.91	1.06	1.17	1.00
Central Coast	1.03	1.02	1.05	1.05	1.00	1.07	1.04	1.04	1.11	0.95	1.00	0.95	1.01
Central Highlands	0.95	1.05	0.98	1.02	1.00	1.08	1.04	1.04	0.93	0.91	1.05	1.07	1.04
Circular Head	1.04	1.05	1.05	1.05	1.00	1.10	1.06	1.06	0.93	0.91	1.25	0.96	1.05
Clarence	0.95	1.04	0.96	1.04	1.00	1.06	1.05	1.05	0.96	0.95	0.96	0.91	1.00
Derwent Valley	0.99	1.01	1.00	1.02	1.00	1.05	1.04	1.04	0.97	0.93	1.09	1.06	1.02
Devonport	1.00	1.00	1.03	1.04	1.00	1.08	1.04	1.05	1.06	0.91	0.96	0.91	1.00
Dorset	1.03	1.02	1.03	1.02	1.00	1.05	1.05	1.04	0.93	0.91	1.24	1.17	1.05
Flinders	1.00	1.00	1.00	1.00	1.00	1.06	1.07	1.06	0.93	0.91	0.98	0.92	1.16
George Town	1.00	1.00	1.00	1.00	1.00	1.06	1.05	1.05	1.03	1.16	1.01	0.93	1.03
Glamorgan Spring Bay	1.00	1.00	0.99	1.01	1.00	1.07	1.06	1.05	0.93	0.91	1.01	1.11	1.08
Glenorchy	0.99	1.01	1.02	1.03	1.00	1.04	1.03	1.04	0.98	1.14	0.96	0.91	1.01
Hobart	1.00	1.01	1.05	1.02	1.01	1.03	1.02	1.04	1.03	0.97	0.96	0.91	1.00
Huon Valley	1.01	1.01	1.01	1.02	1.00	1.05	1.04	1.04	0.93	0.91	0.99	0.99	1.04
Kentish	1.04	1.05	1.05	1.05	1.00	1.05	1.04	1.04	0.93	0.91	1.07	0.98	1.02
King Island	1.00	1.00	1.03	1.03	1.00	1.08	1.06	1.07	0.93	0.91	1.03	0.95	1.20
Kingborough	1.00	1.00	1.02	1.02	1.00	1.05	1.03	1.04	0.96	0.91	0.97	0.92	1.01
Latrobe	1.00	1.00	1.00	1.00	1.00	1.06	1.05	1.05	1.03	0.92	0.98	0.97	1.01
Launceston	1.00	1.01	1.02	1.03	1.00	1.05	1.04	1.04	1.05	0.91	1.15	1.25	1.00
Meander Valley	1.01	1.01	1.02	1.03	1.00	1.05	1.05	1.04	0.95	0.91	1.03	0.93	1.03
Northern Midlands	0.98	1.04	0.98	1.02	1.00	1.06	1.06	1.04	0.95	0.91	1.04	1.05	1.03
Sorell	0.97	1.02	0.97	1.01	1.00	1.05	1.04	1.04	0.95	1.01	0.97	1.06	1.02
Southern Midlands	0.96	1.03	0.97	1.02	1.00	1.04	1.04	1.04	0.93	0.91	0.98	0.96	1.05
Tasman	1.00	1.00	1.00	1.00	1.00	1.04	1.05	1.05	0.93	0.91	1.01	0.97	1.06
Waratah-Wynyard	1.05	1.05	1.05	1.05	1.00	1.07	1.04	1.04	1.06	1.01	1.00	0.96	1.01
West Coast	1.05	1.05	1.05	1.05	1.00	1.06	1.04	1.06	0.93	0.91	1.07	0.94	1.08
West Tamar	1.00	1.00	1.01	1.01	1.00	1.05	1.05	1.04	0.97	0.93	1.01	0.97	1.01

\* The Roads Preservation Model uses the latest years data only (ie for the 2008-09 distribution, data for 2006-07 was used).

## APPENDIX 4: Modelling Grant Outcomes incorporating Updated 2008-09 GIS Data

	Actual 2008-09 Distribution (using 2005-06 GIS Data)			Modelled 2008-09 Distribution (using 2008-09 GIS Data)			Change in Grant Outcomes Difference from using 2005-06 and 2008-09 GIS Data					
	Base Grant	ILRF Grant	Total Grant	Base Grant	ILRF Grant	Total Grant	Base Grant		ILRF Grant		Total Grant	
	\$	\$	\$	\$	\$	\$	\$	%	\$	%	\$	%
Break O'Day	1 137 898	1 211 585	2 349 483	1 137 650	1 210 034	2 347 684	- 248	0.0%	- 1 551	-0.1%	- 1 799	-0.1%
Brighton	1 153 435	414 996	1 568 431	1 154 089	415 882	1 569 972	654	0.1%	886	0.2%	1 541	0.1%
Burnie	911 578	997 837	1 909 414	912 150	998 810	1 910 960	572	0.1%	974	0.1%	1 546	0.1%
Central Coast	1 963 714	1 605 915	3 569 629	1 962 919	1 602 470	3 565 389	- 796	0.0%	- 3 444	-0.2%	- 4 240	-0.1%
Central Highlands	617 152	1 019 128	1 636 280	615 989	1 015 636	1 631 625	- 1 163	-0.2%	- 3 492	-0.3%	- 4 655	-0.3%
Circular Head	1 192 888	1 360 544	2 553 432	1 191 841	1 356 933	2 548 774	- 1 046	-0.1%	- 3 611	-0.3%	- 4 658	-0.2%
Clarence	986 984	1 252 816	2 239 800	986 984	1 256 330	2 243 314	0	0.0%	3 514	0.3%	3 514	0.2%
Derwent Valley	957 693	589 533	1 547 226	957 513	588 376	1 545 889	- 180	0.0%	- 1 157	-0.2%	- 1 337	-0.1%
Devonport	562 122	886 307	1 448 429	563 444	889 600	1 453 044	1 322	0.2%	3 293	0.4%	4 615	0.3%
Dorset	1 266 737	1 449 012	2 715 749	1 266 106	1 446 383	2 712 489	- 631	0.0%	- 2 630	-0.2%	- 3 260	-0.1%
Flinders	485 967	518 586	1 004 554	487 146	521 182	1 008 328	1 178	0.2%	2 596	0.5%	3 774	0.4%
George Town	921 849	645 332	1 567 181	922 479	646 229	1 568 708	630	0.1%	898	0.1%	1 527	0.1%
Glamorgan-Spring Bay	393 506	782 046	1 175 552	393 506	781 787	1 175 293	0	0.0%	- 259	0.0%	- 259	0.0%
Glenorchy	816 595	1 198 193	2 014 788	816 595	1 202 616	2 019 211	0	0.0%	4 423	0.4%	4 423	0.2%
Hobart	917 539	1 503 807	2 421 346	917 539	1 509 653	2 427 193	0	0.0%	5 846	0.4%	5 846	0.2%
Huon Valley	1 782 377	1 121 959	2 904 336	1 780 034	1 114 606	2 894 640	- 2 343	-0.1%	- 7 353	-0.7%	- 9 696	-0.3%
Kentish	1 157 848	884 988	2 042 836	1 157 301	882 650	2 039 951	- 548	0.0%	- 2 338	-0.3%	- 2 886	-0.1%
King Island	449 361	600 047	1 049 407	448 966	598 663	1 047 629	- 394	-0.1%	- 1 384	-0.2%	- 1 778	-0.2%
Kingborough	681 723	1 035 906	1 717 629	681 723	1 036 039	1 717 762	0	0.0%	133	0.0%	133	0.0%
Latrobe	649 287	626 329	1 275 616	649 231	625 753	1 274 984	- 56	0.0%	- 575	-0.1%	- 632	0.0%
Launceston	1 198 245	2 364 211	3 562 456	1 198 245	2 369 177	3 567 422	0	0.0%	4 966	0.2%	4 966	0.1%
Meander Valley	1 669 132	1 772 959	3 442 092	1 671 775	1 778 546	3 450 320	2 642	0.2%	5 586	0.3%	8 229	0.2%
Northern Midlands	1 431 103	1 912 523	3 343 626	1 434 256	1 919 521	3 353 777	3 153	0.2%	6 998	0.4%	10 151	0.3%
Sorell	857 819	756 907	1 614 726	857 466	755 440	1 612 907	- 353	0.0%	- 1 466	-0.2%	- 1 819	-0.1%
Southern Midlands	1 376 035	1 179 230	2 555 265	1 375 814	1 177 528	2 553 342	- 221	0.0%	- 1 702	-0.1%	- 1 923	-0.1%
Tasman	345 225	311 658	656 883	344 061	308 407	652 468	- 1 164	-0.3%	- 3 251	-1.0%	- 4 415	-0.7%
Waratah-Wynyard	1 613 074	1 057 402	2 670 475	1 612 181	1 053 902	2 666 083	- 893	-0.1%	- 3 500	-0.3%	- 4 393	-0.2%
West Coast	1 102 123	486 344	1 588 467	1 102 366	486 065	1 588 431	243	0.0%	- 279	-0.1%	- 36	0.0%
West Tamar	1 748 250	937 302	2 685 552	1 747 891	935 180	2 683 072	- 358	0.0%	- 2 122	-0.2%	- 2 480	-0.1%
		0	0		0	0						
<b>State Total</b>	<b>30 347 259</b>	<b>30 483 401</b>	<b>60 830 660</b>	<b>30 347 259</b>	<b>30 483 401</b>	<b>60 830 660</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>

## APPENDIX 5: Modelled Grant Outcomes incorporating All Data Updates

(This includes updated GIS, Performance Standard & Costs of Maintenance Data)

	Actual 2008-09 Distribution			Modelled 2008-09 Distribution (Using Updated Data)			Change in Grant Outcomes					
	Base Grant	ILRF Grant	Total Grant	Base Grant	ILRF Grant	Total Grant	Base Grant		ILRF Grant		Total Grant	
	\$	\$	\$	\$	\$	\$	\$	%	\$	%	\$	%
Break O'Day	1 137 898	1 211 585	2 349 483	1 138 993	1 199 500	2 338 492	1 095	0.1%	- 12 086	-1.0%	- 10 991	-0.5%
Brighton	1 153 435	414 996	1 568 431	1 162 545	425 391	1 587 936	9 110	0.8%	10 395	2.5%	19 505	1.2%
Burnie	911 578	997 837	1 909 414	923 979	1 021 446	1 945 426	12 401	1.4%	23 610	2.4%	36 011	1.9%
Central Coast	1 963 714	1 605 915	3 569 629	1 970 891	1 601 338	3 572 229	7 176	0.4%	- 4 576	-0.3%	2 600	0.1%
Central Highlands	617 152	1 019 128	1 636 280	603 137	975 085	1 578 221	- 14 015	-2.3%	- 44 043	-4.3%	- 58 058	-3.5%
Circular Head	1 192 888	1 360 544	2 553 432	1 179 105	1 310 307	2 489 412	- 13 783	-1.2%	- 50 237	-3.7%	- 64 019	-2.5%
Clarence	986 984	1 252 816	2 239 800	986 984	1 303 680	2 290 664	0	0.0%	50 864	4.1%	50 864	2.3%
Derwent Valley	957 693	589 533	1 547 226	957 630	578 070	1 535 700	- 62	0.0%	- 11 463	-1.9%	- 11 525	-0.7%
Devonport	562 122	886 307	1 448 429	579 485	929 046	1 508 531	17 363	3.1%	42 739	4.8%	60 101	4.1%
Dorset	1 266 737	1 449 012	2 715 749	1 256 486	1 406 431	2 662 916	- 10 251	-0.8%	- 42 581	-2.9%	- 52 833	-1.9%
Flinders	485 967	518 586	1 004 554	481 070	499 284	980 354	- 4 897	-1.0%	- 19 302	-3.7%	- 24 199	-2.4%
George Town	921 849	645 332	1 567 181	928 874	651 626	1 580 500	7 025	0.8%	6 294	1.0%	13 319	0.8%
Glamorgan-Spring Bay	393 506	782 046	1 175 552	393 506	790 814	1 184 320	0	0.0%	8 768	1.1%	8 768	0.7%
Glenorchy	816 595	1 198 193	2 014 788	816 595	1 264 564	2 081 159	0	0.0%	66 371	5.5%	66 371	3.3%
Hobart	917 539	1 503 807	2 421 346	917 539	1 591 241	2 508 780	0	0.0%	87 433	5.8%	87 433	3.6%
Huon Valley	1 782 377	1 121 959	2 904 336	1 773 736	1 077 963	2 851 699	- 8 641	-0.5%	- 43 996	-3.9%	- 52 637	-1.8%
Kentish	1 157 848	884 988	2 042 836	1 155 666	864 219	2 019 885	- 2 182	-0.2%	- 20 769	-2.3%	- 22 952	-1.1%
King Island	449 361	600 047	1 049 407	441 602	574 217	1 015 818	- 7 759	-1.7%	- 25 830	-4.3%	- 33 589	-3.2%
Kingborough	681 723	1 035 906	1 717 629	681 723	1 044 333	1 726 056	0	0.0%	8 427	0.8%	8 427	0.5%
Latrobe	649 287	626 329	1 275 616	652 380	627 198	1 279 578	3 093	0.5%	869	0.1%	3 962	0.3%
Launceston	1 198 245	2 364 211	3 562 456	1 198 245	2 444 813	3 643 058	0	0.0%	80 602	3.4%	80 602	2.3%
Meander Valley	1 669 132	1 772 959	3 442 092	1 669 322	1 754 302	3 423 624	189	0.0%	- 18 657	-1.1%	- 18 468	-0.5%
Northern Midlands	1 431 103	1 912 523	3 343 626	1 426 402	1 883 091	3 309 493	- 4 701	-0.3%	- 29 432	-1.5%	- 34 133	-1.0%
Sorell	857 819	756 907	1 614 726	859 620	752 354	1 611 974	1 801	0.2%	- 4 553	-0.6%	- 2 752	-0.2%
Southern Midlands	1 376 035	1 179 230	2 555 265	1 368 084	1 140 548	2 508 632	- 7 951	-0.6%	- 38 682	-3.3%	- 46 633	-1.8%
Tasman	345 225	311 658	656 883	341 570	297 947	639 516	- 3 655	-1.1%	- 13 711	-4.4%	- 17 366	-2.6%
Waratah-Wynyard	1 613 074	1 057 402	2 670 475	1 616 137	1 045 475	2 661 612	3 064	0.2%	- 11 927	-1.1%	- 8 863	-0.3%
West Coast	1 102 123	486 344	1 588 467	1 112 027	496 920	1 608 947	9 904	0.9%	10 577	2.2%	20 481	1.3%
West Tamar	1 748 250	937 302	2 685 552	1 753 927	932 198	2 686 125	5 678	0.3%	- 5 104	-0.5%	574	0.0%
<b>State Total</b>	<b>30 347 259</b>	<b>30 483 401</b>	<b>60 830 660</b>	<b>30 347 259</b>	<b>30 483 401</b>	<b>60 830 660</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>

## APPENDIX 6: Traffic Cost Adjustor Index Calculation

	Urban Sealed			Urban Unsealed			Rural Sealed			Rural Unsealed		
	(T-K) <sup>1</sup>	Road Length <sup>2</sup> Km	Index <sup>3</sup>	(T-K) <sup>1</sup>	Road Length <sup>2</sup> Km	Index <sup>3</sup>	(T-K) <sup>1</sup>	Road Length <sup>2</sup> Km	Index <sup>3</sup>	(T-K) <sup>1</sup>	Road Length <sup>2</sup> km	Index <sup>3</sup>
Break O'Day	0	89	0	0	27	0	7 616 606	123	61 939	3 362 201	307	10 960
Brighton	304 513	67	4 545	105 628	0	0	0	67	0	396	33	0
Burnie	1 843 144	144	12 757	1 212	0	0	4 611 023	149	0	784 641	50	0
Central Coast	7 627 230	128	59 588	5 745	1	5 745	5 274 185	414	12 740	279 978	133	2 105
Central Highlands	0	16	0	0	2	0	2 321 759	79	29 389	6 318 585	655	9 647
Circular Head	0	26	0	0	0	0	22 994 051	255	0	1 397 153	492	0
Clarence	2 514 670	253	9 959	20 320	4	5 080	0	134	0	0	60	0
Derwent Valley	426 236	32	13 320	13 653	4	3 413	2 672 677	65	41 118	2 002 150	229	8 743
Devonport	7 072 577	166	42 590	768	0	0	0	72	0	0	14	0
Dorset	0	46	0	0	9	0	17 291 731	199	86 893	7 574 131	485	15 617
Flinders	0	6	0	0	3	0	479 775	67	7 161	228 972	309	741
George Town	2 309 876	68	33 969	107 304	3	35 768	1 570 559	104	15 102	90 030	98	919
Glamorgan-Spring Bay	0	100	0	0	17	0	922 231	58	15 901	1 978 556	168	11 777
Glenorchy	3 982 314	261	15 253	65 750	2	32 875	0	38	0	0	16	0
Hobart	10 121 828	309	32 789	53 008	6	8 835	4 438	0	0	0	0	0
Huon Valley	0	24	0	0	10	0	1 392 239	134	10 390	2 743 419	599	4 580
Kentish	30 480	41	750	0	7	0	7 730 640	225	34 349	691 460	177	3 905
King Island	0	11	0	0	6	0	745 564	36	20 710	1 031 119	383	2 692
Kingborough	1 165 536	124	9 399	38 760	0	0	281 609	134	0	210 238	270	0
Latrobe	2 114 533	61	34 664	1 197	1	1 197	1 170 730	160	7 317	218 739	61	3 586
Launceston	14 914 574	381	39 156	1 420 588	0	0	8 067 705	139	0	4 790 520	235	0
Meander Valley	650 872	110	5 917	0	6	0	9 985 780	482	20 717	259 837	247	1 052
Northern Midlands	657 222	101	6 507	0	14	0	11 944 511	465	25 687	3 455 992	399	8 662
Sorell	563 372	73	7 693	523 104	38	13 608	203 245	70	2 897	1 927 000	210	9 191
Southern Midlands	388	30	13	0	13	0	912 201	147	6 205	1 841 787	613	3 005
Tasman	0	6	0	0	2	0	822 964	54	15 240	499 144	145	3 442
Waratah-Wynyard	2 978 553	71	42 011	44 326	3	14 775	2 439 610	196	12 447	720 900	258	2 800
West Coast	0	67	0	0	17	0	525 318	15	35 021	142 675	76	1 877
West Tamar	1 106 755	84	13 176	17 165	5	3 433	3 080 697	204	15 101	561 025	165	3 400
<b>Total</b>	<b>60 384 672</b>	<b>2894</b>		<b>2 418 526</b>	<b>200</b>		<b>115 061 847</b>	<b>4285</b>		<b>43 110 650</b>	<b>6886</b>	

<sup>1</sup>Tonne-Kilometres (T-K) are a product of the tonnage and the distance over which it is carried on local roads, taken from the Freight Demander Survey 2006-07.

<sup>2</sup>Road lengths assessed within the Roads Preservation Model. All road lengths are taken from the CDC without adjustment, apart from urban sealed which is inflated to account for CBD road lengths.

<sup>3</sup>Index is obtained by dividing each T-K result by the corresponding road length.

## APPENDIX 7: Bridge Deck Areas (BDA) 2008-09

	Eligible Bridges		Culverts		TOTAL	
	BDA (m <sup>2</sup> )	% Share	BDA (m <sup>2</sup> )	% Share	BDA (m <sup>2</sup> )	% Share
Break O'Day	6 710	5.78%	661	8.23%	7 371	5.94%
Brighton	1 073	0.92%	130	1.62%	1 204	0.97%
Burnie	1 551	1.34%	657	8.18%	2 208	1.78%
Central Coast	5 271	4.54%	192	2.39%	5 463	4.40%
Central Highlands	3 556	3.06%	570	7.09%	4 126	3.33%
Circular Head	5 834	5.03%	155	1.92%	5 988	4.83%
Clarence	592	0.51%	241	3.00%	834	0.67%
Derwent Valley	3 812	3.28%	118	1.46%	3 929	3.17%
Devonport	938	0.81%	46	0.57%	984	0.79%
Dorset	8 546	7.36%	307	3.82%	8 853	7.13%
Flinders	1 213	1.05%	168	2.09%	1 381	1.11%
George Town	2 823	2.43%	68	0.85%	2 891	2.33%
Glamorgan-Spring Bay	1 914	1.65%	19	0.24%	1 933	1.56%
Glenorchy	1 863	1.61%	564	7.02%	2 427	1.96%
Hobart	6 931	5.97%	0	0.00%	6 931	5.59%
Huon Valley	7 157	6.17%	566	7.04%	7 723	6.22%
Kentish	4 455	3.84%	124	1.54%	4 579	3.69%
King Island	981	0.85%	0	0.00%	981	0.79%
Kingborough	2 424	2.09%	485	6.03%	2 909	2.34%
Latrobe	1 364	1.18%	253	3.15%	1 617	1.30%
Launceston	5 366	4.62%	567	7.05%	5 933	4.78%
Meander Valley	8 362	7.21%	281	3.50%	8 644	6.97%
Northern Midlands	8 860	7.64%	845	10.51%	9 705	7.82%
Sorell	3 847	3.32%	215	2.67%	4 062	3.27%
Southern Midlands	7 873	6.78%	482	6.00%	8 356	6.73%
Tasman	1 806	1.56%	40	0.49%	1 845	1.49%
Waratah-Wynyard	5 118	4.41%	63	0.79%	5 181	4.18%
West Coast	2 449	2.11%	180	2.24%	2 629	2.12%
West Tamar	3 353	2.89%	40	0.49%	3 392	2.73%
<b>TOTAL</b>	<b>116 042</b>	<b>100.00%</b>	<b>8 036</b>	<b>100.00%</b>	<b>124 079</b>	<b>100.00%</b>