

Appendix 4

WESTERN AUSTRALIAN LOCAL GOVERNMENT GRANTS COMMISSION

VARIABLES USED IN THE ASSET PRESERVATION MODEL 2022-23

Var.No.	Variable Name		Road Category		Road Type	Units or Value
1	COUNCIL	Local Government				Name of Local Government
2	CUCADF	Improvement factor for country towns	Built up	All roads	All	Adjustment factor
3	CBDDF	Additional factor for City CBD (Not currently in use)				
4	COSTREGN	Asset Preservation Model Road Cost Regions				LGGC Cost Region

LENGTH DATA

5	NBUNFTOT	unformed roads length [km]	Non built up	Local road	Unformed	Length [km]
6	NBSLTK	sealed length [km]	Non built up	Local road	Sealed	Total length [km]
7	NBGRAV	paved length [km]	Non built up	Local road	Paved	Total length [km]
8	NBFMD	formed length [km]	Non built up	Local road	Formed	Length [km]
9	NBUNFLTD	unformed length [km] [that qualifies for minimum standards]	Non built up	Local road	Unformed	Length [km] [that qualifies for minimum standards]
10	NBTKM	All roads length [km]	Non built up	Local road	All roads	Length [km]
11	NBL46LK	Sealed <4.6m length [lane km]	Non built up	Local road	Sealed <4.6m	Length [Lane km]
12	NBG46LK	Non-built up: Sealed >4.6m length [lane km]	Non built up	Local road	Sealed >4.6m	Length [Lane km]
13	NBSLLKM	Non-built up: Sealed >4.6m length [lane km]	Non built up	Local road	All sealed	Total length [Lane km]
14	NBL46PC	% NB roads that are unformed (by group)	Non built up	Local road	Unformed	Percentage NB roads that are unformed (by group)
15	NBG46PC	% NB roads that are formed (by group)	Non built up	Local road	Formed	Percentage NB roads that are formed (by group)
16	NBPAVPC	% NB roads that are paved (by group)	Non built up	Local road	Paved	Percentage NB roads that are paved (by group)
17	NBFMDPC	% NB roads that are sealed <4.6m (by group)	Non built up	Local road	Sealed <4.6m	Percentage NB roads that are sealed <4.6m (by group)
18	NBUNFPC	% NB roads that are sealed >4.6m (by group)	Non built up	Local road	Sealed >4.6m	Percentage NB roads that are sealed >4.6m (by group)
19	AGPAV	Length [km] agricultural shires	Non built up	Local road	Paved	Length [km] pastoral shires
20	PSPAV	Length [km] pastoral shires	Non built up	Local road	Paved	Length [km] agricultural shires
21	NBPAVDF1	Adjustment factor for routine maintenance	Non built up	Local road	Paved	Adjustment factor for routine maintenance
22	NBPAVDF2	Adjustment factor for resheeting	Non built up	Local road	Paved	Adjustment factor for resheeting
23	GCGROUP	Grants Commission grouping for comparative purposes				Grants Commission grouping for comparative purposes
24	DUALUSTK	Dual use paths length [km]	All roads		Dual Use Paths	Total length [km]
25	RESSLTK	Sealed length [km]	Built up	Residential	Sealed	Total length [km]
26	RESPAV	Paved length [km]	Built up	Residential	Paved	Length [km]
27	RESTKM	All Residential roads length [km]	Built up	Residential	All	Total length [km]
28	RESKRBTk	Kerb length [km]	Built up	Residential	Kerb	Length [km]
29	RESDRNTK	Longitudinal drainage length [km]	Built up	Residential	Longitudinal Drainage	Length [km]
30	RESAGGLK	Aggregate sealed length [lane km]	Built up	Residential	Aggregate seal	Length [Lane km]
31	RESASPLK	Asphalt sealed length [lane km]	Built up	Residential	Asphalt seal	Length [Lane km]
32	DISSLTK	Sealed length [km]	Built up	Local Distributor	Sealed	Total length [km]
33	DISPAV	Paved length [km]	Built up	Local Distributor	Paved	Length [km]
34	DISTKM	All Local Distributor roads length [km]	Built up	Local Distributor	All	Total length [km]
35	DISKRBTk	Kerb length [km]	Built up	Local Distributor	Kerb	Length [km]
36	DISDRNTK	Longitudinal drainage length [km]	Built up	Local Distributor	Longitudinal Drainage	Length [km]
37	DISAGGLK	Aggregate sealed length [lane km]	Built up	Local Distributor	Aggregate seal	Length [Lane km]
38	DISASPLK	Asphalt sealed length [lane km]	Built up	Local Distributor	Asphalt seal	Length [Lane km]

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Var.No.	Variable Name		Road Category		Road Type	Units or Value
39	DISLKM	All sealed roads length [lane km]	Built up	Local Distributor	Sealed	Total length [Lane km]
40	BUSLLKM	All sealed roads length [lane km]	Built up	All roads	Sealed	Length [Lane km]
41	BUROADS	All roads length [lane km]	Built up	All roads	All	Total length [km]
42	TPAV	T - roads (Not currently in use)	Built up	T - roads		
43	TRODTK	T - roads (Not currently in use)	Built up	T - roads		
44	TKRBTk	T - roads (Not currently in use)	Built up	T - roads		
45	TDRNTK	T - roads (Not currently in use)	Built up	T - roads		
46	TAGLk	T - roads (Not currently in use)	Built up	T - roads		
47	TASPLK	T - roads (Not currently in use)	Built up	T - roads		
48	TRODLK	T - roads (Not currently in use)	Built up	T - roads		
49	CBDRESLk	CBD (Not currently in use)	Built up CBD	Residential		
50	CBDUARLk	CBD (Not currently in use)	Built up CBD	Local Distributor		
51	CBD2KBTk	CBD (Not currently in use)	Built up CBD	Local Distributor		
52	CBD2DNtk	CBD (Not currently in use)	Built up CBD	Local Distributor		
53	CBD1KBTk	CBD (Not currently in use)	Built up CBD	Residential		
54	CBD1DNtk	CBD (Not currently in use)	Built up CBD	Residential		
55	CBRIDGA	Concrete bridges [square metres]	All roads		Concrete bridges	Area [square metres]
56	TBRIDGA	Timber bridges [square metres]	All roads		Timber bridges	Area [square metres]
57	FBRIDGA	Foot bridges [square metres]	All roads		Foot bridges	Area [square metres]
58	C+FBRIDA	Concrete and foot bridges [square metres]	All roads		Concrete and foot bridges	Area [square metres]
59	RIVXA	River crossings [square metres]	Non built up	Local roads	River crossings	Area [square metres]

UNIT COSTS

60	AMRES	Sealed annual maintenance \$ per lane km	Built up	Residential	Sealed	Annual maintenance \$ per lane km
61	AMDRN	Drainage annual maintenance \$ per km	Built up	All roads	Drainage	Annual maintenance \$ per km
62	RSAGRES	Aggregate reseal \$ per lane km per year	Built up	Residential	Aggregate seal	Reseal \$ per lane km per year
63	GNAGRES	Aggregate reconstruction [excl pave] \$ per lane km	Built up	Residential	Aggregate seal	Reconstruction [excl pave] \$ per lane km
64	RESPVREC	Pavement reconstruction \$ per lane km	Built up	Residential	Pavement	Reconstruction \$ per lane km
65	PVTHKDF	Pavement factor (not in use)	Built up	All roads	Pavement	Factor [not used]
66	FRQRES	Residential road frequency of reconstruction	Built up	Residential	Road incl pavement	Frequency of reconstruction (years)
67	KERBCOST	Kerb reconstruction \$ per km	Built up	All roads	Kerb	Reconstruction \$ per km
68	DRNCOST	Drainage reconstruction \$ per km	Built up	All roads	Drainage	Reconstruction \$ per km
69	RSASRES	Asphalt reseal \$ per lane km per year	Built up	Residential	Asphalt seal	Reseal \$ per lane km per year
70	GNASRES	Asphalt reconstruction [excl pave] \$ per lane km	Built up	Residential	Asphalt seal	Reseal \$ per lane km per year
71	AMUAR	Sealed annual maintenance \$ per lane km	Built up	Local Distributor	Sealed	Annual maintenance \$ per lane km
72	RSAGUAR	Aggregate reseal \$ per lane km per year	Built up	Local Distributor	Aggregate seal	Reseal \$ per lane km per year
73	GNAGUAR	Aggregate reconstruction [excl pave] \$ per lane km	Built up	Local Distributor	Aggregate seal	Reconstruction [excl pave] \$ per lane km
74	UARPVREC	Pavement reconstruction \$ per lane km	Built up	Local Distributor	Pavement	Reconstruction \$ per lane km
75	FRQUAR	Residential road frequency of reconstruction	Built up	Local Distributor	Road incl pavement	Frequency of reconstruction (years)
76	RSASUAR	Asphalt reseal \$ per lane km per year	Built up	Local Distributor	Asphalt seal	Reseal \$ per lane km per year
77	GNASUAR	Asphalt reconstruction [excl pave] \$ per lane km	Built up	Local Distributor	Asphalt seal	Reconstruction [excl pave] \$ per lane km
78	AMDUALUS	Dual use paths annual maintenance \$ per km	All roads		Dual Use Paths	Annual maintenance \$ per km
79	SALTDF	Salt Adjustment factor	All roads		Salt	Adjustment factor
80	AML46	Sealed <4.6m Annual maintenance \$ per lane km	Non built up	Local	Sealed <4.6m	Annual maintenance \$ per lane km
81	RESEAL	Sealed reseal \$ per lane km per year	Non built up	Local	Sealed	Reseal \$ per lane km per year

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Var.No.	Variable Name		Road Category		Road Type	Units or Value
82	TERRAIN	Terrain Adjustment factor	Non built up	Local	Terrain	Adjustment factor
83	NBPVREC	Pavement reconstruction \$ per lane km	Non built up	Local	Pavement [sealed roads]	Reconstruction \$ per lane km
84	FRQNBSL	Sealed road frequency of reconstruction	Non built up	Local	Sealed	Frequency of reconstruction (years)
85	AMG46	Sealed >4.6m Annual maintenance \$ per lane km	Non built up	Local	Sealed >4.6m	Annual maintenance \$ per lane km
86	FMG46	Sealed >4.6m Formation and earthworks	Non built up	Local	Sealed >4.6m	Formation and earthworks
87	ORG46	Sealed >4.6m Drainage, surfacing, misc costs	Non built up	Local	Sealed >4.6m	Drainage, surfacing and miscellaneous costs
88	AMGRV	Paved annual maintenance \$ per km	Non built up	Local	Paved	Annual maintenance \$ per km
89	AMFMD	Formed annual maintenance \$ per km	Non built up	Local	Formed	Annual maintenance \$ per km
90	REFORM	Formed reformation \$ per km per year	Non built up	Local	Formed	Reformation \$ per km
91	AMUNF	Unformed annual maintenance \$ per km	Non built up	Local	Unformed	Annual maintenance \$ per km
92	REGRAV	Paved Regravelling \$ per km	Non built up	Local	Paved	Regravelling \$ per km
93	FRQGRV	Paved Frequency of regravelling	Non built up	Local	Paved	Frequency of regravelling (years)
94	IMPDF	Paved Improvement factor	Non built up	Local	Paved	Improvement factor
95	GRIDFACT	Factor for grids [\$ per Km]	Non built up	Local	All	Factor for grids [\$ per Km]
96	ADJFACT	Adjustment factor for arterial roads	Non built up	Local	All	Adjustment factor for arterial roads
97	AMTIMB	Timber bridges annual maintenance \$ per square metre	All	All roads	Timber bridges	Annual maintenance \$ per square metre
98	AMCONC	Foot bridges annual maintenance \$ per square metre	All	All roads	Concrete bridges	Annual maintenance \$ per square metre
99	AMRIVX	River crossings annual maintenance \$ per square metre	Non built up	Local	River crossings	Annual maintenance \$ per square metre
100	BUSLTK	Foot bridges annual maintenance \$ per square metre	Built up	All roads	Sealed roads	Total kilometres
101	RATEASS	Not in use				
102	AMBUTCD	Traffic control devices maintenance \$ per lane km of sealed roads	Built up	All roads	Traffic control devices	Annual maintenance \$ per lane km of sealed roads

MISCELLANEOUS

103	DUALUSACT	Dual use paths actual and minimum standard	All roads		Dual use paths	Actual and minimum standard
104	PASTPROP	Number of pastoral properties			Pastoral properties	Number (not in use)
105	LANSLA	Lanes sealed area [square metres]	Built up	Lanes	Sealed	Area [square metres]
106	LANUNSA	Lanes unsealed area [square metres]	Built up	Lanes	Unsealed	Area [square metres]
107	LANSLCST	Lanes sealed annual maintenance \$ per square metre	Built up	Lanes	Sealed	Annual maintenance \$ per square metre
108	LANUNSCST	Lanes unsealed annual maintenance \$ per square metre	Built up	Lanes	Unsealed	Annual maintenance \$ per square metre
109	LANLGHT	Lanes lighting annual allowance	Built up	Lanes	street lighting	Annual maintenance \$
110	AEROTOWN	Not in use				
111	AEROPAST	Not in use				
112	AEROTOT	Not in use				
113		Not in use				
114	FTPNCST	Footpaths annual maintenance \$ per km	Built up	All roads	Footpaths	Base annual maintenance \$ per km
115	KRBPC	% of all BU roads kerbed	Built up	All roads	Kerb	Percentage BU roads that are kerbed
116	DRNPC	% of all BU roads with Longitudinal drains	Built up	All roads	Longitudinal Drainage	Percentage BU roads that have longitudinal drainage
117	INFLATION	Cost adjustment factor	All	All roads		Cost adjustment for inflation since last unit cost review

ASSET PRESERVATION VALUES

118	SLL46ACT	Sealed <4.6m Actual AP needs	Non built up	All roads	Sealed <4.6m	Calculated Asset Preservation Values \$
119	SLG46ACT	Sealed >4.6m Actual AP needs	Non built up	All roads	Sealed >4.6m	Calculated Asset Preservation Values \$
120	GRVACT	Paved Actual AP needs	Non built up	All roads	Paved	Calculated Asset Preservation Values \$
121	FMDACT	Formed Actual AP needs	Non built up	All roads	Formed	Calculated Asset Preservation Values \$

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Var.No.	Variable Name		Road Category		Road Type	Units or Value
122	UNFACT	Unformed Actual AP needs	Non built up	All roads	Unformed	Calculated Asset Preservation Values \$
123	CTLGRD	Cattle grids Actual AP needs	Non built up	All roads	Cattle grids	Calculated Asset Preservation Values \$
124	NBACT	All roads Total actual AP needs	Non built up	All roads	All roads	Total Calculated Asset Preservation Values \$
125	SLL46STD	Sealed <4.6m Min Std AP needs	Non built up	All roads	Sealed <4.6m	Minimum Standard Asset Preservation Values \$
126	SLG46STD	Sealed >4.6m Min Std AP needs	Non built up	All roads	Sealed >4.6m	Minimum Standard Asset Preservation Values \$
127	GRVSTD	Paved Min Std AP needs	Non built up	All roads	Paved	Minimum Standard Asset Preservation Values \$
128	FMDSTD	Formed Min Std AP needs	Non built up	All roads	Formed	Minimum Standard Asset Preservation Values \$
129	UNFSTD	Unformed Min Std AP needs	Non built up	All roads	Unformed	Minimum Standard Asset Preservation Values \$
130	CTLGRID	Cattle grids Min Std AP needs	Non built up	All roads	Cattle grids	Minimum Standard Asset Preservation Values \$
131	NBSTD	All roads Min Std AP needs	Non built up	All roads	All roads	Total Minimum Standard Asset Preservation Values \$
132	RESACTSD	Residential Actual AP needs	Built up	Residential		Calculated Asset Preservation Values \$
133	DISACTSD	Local distributor Actual AP needs	Built up	Local Distributor		Calculated Asset Preservation Values \$
134	RESMINS	Residential Min Std AP needs	Built up	Residential		Minimum Standard Asset Preservation Values \$
135	DISMINS	Local distributor Min Std AP needs	Built up	Local Distributor		Minimum Standard Asset Preservation Values \$
136	TRODMSTD	T Roads Min Std AP needs	Built up	Country Towns		(Not currently in use)
137	CBD1STD	CBD Residential Min Std AP needs	Built up	CBD Residential		(Not currently in use)
138	CBD2STD	CBD Local distributor Min Std AP needs	Built up	CBD Local Distributor		(Not currently in use)
139	BRIDGSTD	Bridges Actual and min Std AP needs	Built up	All roads		Calculated / Minimum Standard Asset Preservation Values \$
140	NBTCDDSTD	Traffic Control Devices Actual and min Std AP needs [Annual maintenance]	Non built up	All roads		Calculated / Minimum Standard Asset Preservation Values \$
141	BUTCDDSTD	Traffic Control Devices Actual and min Std AP needs [Annual maintenance]	Built up	All roads		Calculated / Minimum Standard Asset Preservation Values \$
142	RIVX	River crossings Actual and min Std AP needs	Non built up	All roads		Calculated / Minimum Standard Asset Preservation Values \$
143	NBACT	Actual AP needs	Non built up	All roads		Total Calculated Asset Preservation Values \$
144	NBSTD	Min Std AP needs	Non built up	All roads		Total Minimum Standard Asset Preservation Values \$
145	RESACT	Actual AP needs	Built up	Residential		Calculated Asset Preservation Values \$
146	RESSTD	Min Std AP needs	Built up	Residential		Minimum Standard Asset Preservation Values \$
147	DISACT	Actual AP needs	Built up	Local Distributor		Calculated Asset Preservation Values \$
148	DISSTD	Min Std AP needs	Built up	Local Distributor		Minimum Standard Asset Preservation Values \$
149	NBMSTD	Asset Preservation Needs	Non built up	All roads		Minimum Standard Asset Preservation Values \$
150	RESMSTD	Asset Preservation Needs	Built up	Residential		Minimum Standard Asset Preservation Values \$
151	DISMSTD	Asset Preservation Needs	Built up	Local Distributor		Minimum Standard Asset Preservation Values \$
152	APVALUE	Total Asset Preservation Needs	All	All roads		Total Calculated Asset Preservation Values \$
153	STLSTD99	Street lighting AP needs	All	All roads	street lighting	Calculated Asset Preservation Values \$
154		Not in use				(Not currently in use)
155	FOOTPATH	Footpaths AP needs	All	All roads	footpaths	Calculated Asset Preservation Values \$
156	LANSTD	Lanes AP needs	All	All roads	lanes	Calculated Asset Preservation Values \$
157	TRANSSTD	Total Transport Needs (Transport standard for GP Balanced Budget)	All	All roads	plus plus	Transport standard for GP Balanced Budget
158	TRODAP	Min Std AP needs	Built up	T - roads	All	(Not currently in use)

MINIMUM STANDARD LENGTHS

159	NBPAVNT	Paved Length adjusted for traffic volume	Non built up	Local road	Paved	Adjusted Total length [km]
160	NBSL46NT	Sealed <4.6m Length adjusted for traffic volume	Non built up	Local road	Sealed <4.6m	Adjusted Total length [km]
161	NBSG46NT	Sealed >4.6m Length adjusted for traffic volume	Non built up	Local road	Sealed >4.6m	Adjusted Total length [km]

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Var.No.	Variable Name		Road Category		Road Type	Units or Value
162	NBUNFLM	Unformed Min Std length [km]	Non built up	Local road	Unformed	Minimum Standard length [km]
163	NBFMDLM	Formed Min Std length [km]	Non built up	Local road	Formed	Minimum Standard length [km]
164	NBPAVLM	Paved Min Std length [km]	Non built up	Local road	Paved	Minimum Standard length [km]
165	NBSL46LM	Sealed <4.6m Min Std length [Lane km]	Non built up	Local road	Sealed <4.6m	Minimum Standard length [km]
166	NBSG46LM	Sealed >4.6m Min Std length [Lane km]	Non built up	Local road	Sealed >4.6m	Minimum Standard length [km]
167	RESAGGLM	Aggregate seal Min Std length [Lane km]	Built up	Residential	Aggregate seal	Minimum Standard length [km]
168	RESASPLM	Asphalt seal Min Std length [Lane km]	Built up	Residential	Asphalt seal	Minimum Standard length [km]
169	RESDRNLM	Longitudinal drains Min Std length [km]	Built up	Residential	Longitudinal Drainage	Minimum Standard length [km]
170	DISAGGLM	Aggregate seal Min Std length [Lane km]	Built up	Local Distributor	Aggregate seal	Minimum Standard length [km]
171	DISASPLM	Asphalt seal Min Std length [Lane km]	Built up	Local Distributor	Asphalt seal	Minimum Standard length [km]
172	DISDRNLM	Longitudinal drains Min Std length [km]	Built up	Local Distributor	Longitudinal Drainage	Minimum Standard length [km]

**TOTAL COSTS**

173	NBUNFCS	Unformed Total unit cost per km	Non built up	Local road	Unformed	Total unit cost per km
174	NBFMDCS	Formed Total unit cost per km	Non built up	Local road	Formed	Total unit cost per km
175	NBPAVCS	Paved total unit cost per km	Non built up	Local road	Paved	Total unit cost per km
176	NBSL46CS	Sealed <4.6m Total unit cost per km	Non built up	Local road	Sealed <4.6m	Total unit cost per km
177	NBSG46CS	Sealed >4.6m Total unit cost per km	Non built up	Local road	Sealed >4.6m	Total unit cost per km
178	RESPAVCS	Paved total unit cost per km	Built up	Residential	Paved	Total unit cost per km
179	RESAGGCS	Aggregate seal total unit cost per lane km	Built up	Residential	Aggregate seal	Total unit cost per km
180	RESASPCS	Asphalt seal total unit cost per lane km	Built up	Residential	Asphalt seal	Total unit cost per km
181	RESKRBCS	Kerb total unit cost per km	Built up	Residential	kerb	Total unit cost per km
182	RESDRNCS	Longitudinal drains total unit cost per km	Built up	Residential	Longitudinal Drainage	Total unit cost per km
183	DISAGGCS	Aggregate seal total unit cost per lane km	Built up	Local Distributor	Aggregate seal	Total unit cost per km
184	DISASPCS	Asphalt seal total unit cost per lane km	Built up	Local Distributor	Asphalt seal	Total unit cost per km
185	DISKRBCS	Kerb total unit cost per km	Built up	Local Distributor	kerb	Total unit cost per km
186	DISDRNCS	Longitudinal drains total unit cost per km	Built up	Local Distributor	Longitudinal Drainage	Total unit cost per km
187	AMTBCS	Timber bridges routine maintenance cost per sq m.	All	All roads	Timber bridges	Total unit cost per km
188	AMCBCS	Concrete bridges routine maintenance cost per sq m.	All	All roads	Concrete bridges	Total unit cost per km
189	RVXCS	River crossings routine maintenance cost per sq m.	All	All roads	River crossings	Total unit cost per sq.m
190	RESKRBLM	Kerb minimum standard length [km]	Built up	Residential	kerb	Minimum Standard length [km]
191	DISKRBLM	Kerb minimum standard length [km]	Built up	Local Distributor	kerb	Minimum Standard length [km]
192	DUALUSCST	Dual use paths routine maintenance cost per sq metre	All roads		Dual use paths	Total unit cost per sq.m
193	FBTRNEEDS	Factored back transport needs	All	All roads	plus plus	Factored back transport standard for GP Balanced Budget
194	AEROTOT	Aerodromes Asset Preservation Needs	All		Aerodromes	Calculated Asset Preservation Values \$
195	PRESGRTS	Average preservation grants	All	All roads		Included in transport standard calculation for GP Balanced Budget
196	TRNS STD	Transport standard	All	All roads	plus plus	Final transport standard for GP Balanced Budget

Denotes variable is not part of the asset preservation model for road grant determination, but part of the Transport calculation in the Balanced Budget for general purpose grant determinations.