RE-VALUATION OF TRANSPORT AND STORMWATER ASSETS 30TH JUNE 2014

Version-7

11th February 2015

Document Control

Rev No	Date	Revision Details	Author	Verifier	Approver
V1	03rd July 2014	Version 1	JE		
V2	10th July 2014	Version 2	JE	DF,GB,LT, AQ	
V3	14th July 2014	Version-3	JE	GB,AQ	
V4	15th July 2014	Version-4	JE	LT	DF
V5	10th Oct 2014	Version-5	JE	LT,AUDIT	
V6	17th Oct 2014	Version-6	JE	DF,LT, SW ,AQ	
V7	11th Feb 2015	Version-7	JE		

Table of Contents

1. Executive Summary……..4

2. Valuation Methodologies. ……8

3. Asset Revaluation……8

3.1 Overview of the valuation process……8

3.2 End of life ……9

3.3 Determination of useful life ……9

3.4 End of life (residual)value ……9

3.5 Calculation of Depreciated replacement cost……10

3.6 Condition Assessment……11

3.7 Issues arising…… …… 17

4. Calculation of unit rates……18

5. Valuation of Transport and stormwater assets……24

1. Executive Summary

This report has ben prepared in response to Council's requirement to have accurate valuations of its infrastructure assets for its 2013/14 statutory accounts. The assets have been valued at fair value in accordance with accounting standards AASB116 and AASB13.

The report shows that Bogan Shire Council has infrastructure assets which have a replacement cost of 176.6 million and are depreciating at $1.6 million per year. There book value after depreciation is $165.8 million.

The value of the assets has been calculated by establishing the Current Replacement Cost (CRC) and subtracting Accumulated Depreciation. Where possible, the replacement cost has been calculated using the actual cost of recently constructed infrastructure assets.

The condition of all assets has been established through physical inspection by Council's Asset Engineer. The remaining useful life, and therefore the depeciated value, has been established from this inspection. Based on local experience and the low population density in Bogan Shire, the upper limits of useful life were used for this valuation.

The report establishes the remaining useful life of the assets by grading their condition. Most were deemed to be in good to very good condition.

The sub-structures of the roads have been valued but considered non-depreciable and shown as residual values. It has also been assumed that 50% of the replacement cost of all road pavements are not depreciable.

Jayantha Ediriweera

Water and Asset Manager

Bogan Shire Council

Table 1 : Summary of Transport and Stormwater Asset Values - June 2014

Asset Category	Subcategory 1	Subcategory 2	Location	Replacement Cost	Residual Value	Depreciable Amount	Accumulated Depreciation	Depreciated Replacement Cost	Annual Depreciation
Stormwater	Embankment	Embankment	Stormwater	$6,027,000	$6,027,000	$0	$0	$6,027,000	$0
Stormwater	Gate	Gate	Stormwater	$53,511	$0	$53,511	$24,080	$29,431	$2,140
Stormwater	Open Drain	Open Drain	Stormwater	$896,000	$896,000	$0	$0	$896,000	$0
Stormwater	Sign	Sign	Stormwater	$10,695	$0	$10,695	$4,813	$5,882	$535
Stormwater	Pump station	Pump station	Stormwater	$249,654	$0	$249,654	$112,344	$137,310	$2,497
Transport	Bridges	Bridges	Rural	$11,784,390	$0	$11,784,390	$1,767,659	$10,016,732	$94,275
Transport	Culvert	Culvert	Rural	$14,323,600	$0	$14,323,600	$2,074,400	$12,249,200	$114,589
Transport	Culvert	Culvert	Town	$2,033,661	$0	$2,033,661	$420,719	$1,612,942	$16,269
Transport	Culvert	Culvert	Village	$90,300	$0	$90,300	$29,505	$60,795	$722
Transport	Footpath	Footpath	Town	$3,359,931	$0	$3,359,931	$1,238,833	$2,121,098	$41,999
Transport	Footpath	Footpath	Village	$21,780	$0	$21,780	$18,513	$3,267	$272
Transport	Kerbs & Gutter	Kerbs & Gutter	Town	$2,742,565	$0	$2,742,565	$1,232,131	$1,510,434	$34,282
Transport	Kerbs & Gutter	Kerbs & Gutter	Village	$74,480	$0	$74,480	$30,891	$43,589	$931
Transport	Road Structures	Bus shelter	Town and Village	$24,000	$0	$24,000	$1,200	$22,800	$800
Transport	Road Structures	Traffic island	Town	$334,776	$0	$334,776	$50,216	$284,560	$3,348
Transport	Sign	Road sign	Rural	$243,450	$0	$243,450	$134,210	$109,240	$13,455
Transport	Sign	Road sign	Town	$107,250	$0	$107,250	$49,823	$57,428	$10,725
Transport	Sign	Road sign	Village	$29,000	$0	$29,000	$8,075	$20,925	$2,808
Transport	Roads	Road Formation	Regional Roads	$10,216,202	$10,216,202	$0	$0	$10,216,202	$0
Transport	Roads	Road Formation	Rural Roads	$58,916,908	$58,916,908	$0	$0	$58,916,908	$0
Transport	Street	Road Formation	Town Streets	$2,057,154	$2,057,154	$0	$0	$2,057,154	$0
Transport	Street	Road Formation	Village Streets	$600,504	$600,504	$0	$0	$600,504	$0
Transport	Roads	Road Pavement (118 km)	Regional Roads	$10,582,200	$5,291,100	$5,291,100	$24,158	$10,558,041	$52,911
Transport	Roads	Road Pavement (195 km)	Rural Roads	$15,408,241	$7,704,120	$7,704,120	$13,385	$15,394,856	$77,041
Transport	Street	Road Pavement	Town Streets	$4,619,960	$2,309,980	$2,309,980	$232,333	$4,387,626	$23,100
Transport	Street	Road Pavement	Village Streets	$768,705	$384,352	$384,352	$41,055	$727,648	$3,842
Transport	Road- Surface	Seal (117km)	Regional	$3,920,193	$0	$3,920,193	$450,971	$3,469,221	$156,807
Transport	Road- Surface	Unseal(116 km)	Regional	$1,736,550	$0	$1,736,550	$228,982	$1,507,567	$57,885
Transport	Road- Surface	Seal (195 km)	Rural	$6,786,144	$0	$6,786,144	$409,566	$6,376,578	$267,477
Transport	Road- Surface	Unseal (990 km)	Rural	$15,019,543	$0	$15,019,543	$1,706,628	$13,312,915	$500,651
Transport	Road- Surface	Seal (Bitumen - 34 km)	Town Streets	$1,130,497	$0	$1,130,497	$114,991	$1,015,506	$45,219
Transport	Road- Surface	Seal (Asphalt - 14 km)	Town Streets	$1,933,010	$0	$1,933,010	$184,945	$1,748,065	$55,228
Transport	Road- Surface	Unseal (8 km)	Town Streets	$150,976	$0	$150,976	$22,646	$128,330	$5,032
Transport	Road- Surface	Seal (7 km)	Village Streets	$176,723	$0	$176,723	$20,786	$155,908	$7,583
Transport	Road- Surface	Unseal (8km)	Village Streets	$128,751	$0	$128,751	$29,368	$99,381	$4,291
Total				**$176,558,303**	**$94,403,320**	**$82,154,981**	**$10,677,226**	**$165,881,041**	**$1,596,715**

2. Valuation Methodology

The valuation has been completed in accordance with "Fair Valuation" principles specified in AASB116 and AASB 13.

AASB116 requires the assets to be valued at fair value and AASB13 provides guidance on how to measure fair value. It says that in measuring fair value an entity must use valuation techniques which are appropriate and for which sufficient available information exists, maximising the use of revelant observable inputs and minimising the use of unobservable inputs.

Accordingly the valuation technique used has been actual current construction costs as determined in Section 4 of this report. Where these have not been available appropriate estimates have been used.

This approach has included an assessment of the overall useful life of each type of asset and the subsequent determination of the remaining useful life of each asset . The valuations are as at 30 June 2014.

3. Asset Revaluation

The Asset Revaluation includes:

- Unit rates for all asset categories;
- Updated Useful Lives for Assets based on their Condition Assessment
- The Remaining Useful Lives of each asset.
- New financial calculations which are applied in line with the updated unit rates.

Where possible the new set of Unit Rate Codes should take into account a number of factors such as:

- Usage;
- Environmental Factors;
- Regional Factors;
- Local Factors.

Unit rate calculations were carried out based on local actual costs in Bogan Shire. Fundamentally, these rates include materials, plant and labour.

3.1 Overview of the valuation process

Assets have been valued using the depreciated replacement cost approach. This approach values the asset at its replacement cost and depreciate it over its expected useful life. At the end of its useful life, a residual value remains. This value is either the return gained from disposing of the asset, the reduction in cost of replacing the asset or the value of continuing to use the asset at a lower service level.

3.2 End of life

The end of life for an asset is considered to be when the asset can no longer perform the service required of it in an economic manner. End of life can occur for a number of reasons:

1. The reduced integrity of the structure leads to compromised service. For example, road surface deterioration will be increased due to pavement instability.
2. The asset condition has reached a state which is economically optimal for refurbishment. For example,some culvert structures could be refurbished economically to provide the expected service only up to a certain age
3. Community expectations are unable to be met by the asset in service. As the expectations of the community change, some gravel roads may need to be replaced by sealed roads as they do not meet service expectations.
4. Growth in demand may lead to an asset becoming inadequate to meet the expected service level.

3.3 Determination of residual life

The Local Government Asset Accounting Manual requires the assessment of residual life based on the condition of the asset.

3.4 End of life (residual) value

Residual value is a factor in determining the depreciable amount of an asset. The depreciable amount of the asset is its current replacement cost less any residual value.

Depending how the assets are managed, there are two cases where a residual value may be recognised;

1. Where assets are to remain in service and are not intended to be replaced.
2. Where an asset is renewed or replaced in full and the cost of restoring the service potential of the asset is less its current replacement cost.

In practice, the residual value of many assets is often insignificant and therefore immaterial in the calculation of depreciable amount.

In the case of road works, it is most likely that earth works will have an indefinite life/residual value and will not be depreciated. For this valuation process the life of earth works has been adopted as 1000 years. Road seals (bitument or formed gravel) generally have no residual value. Stormwater embankment is also treated as earth works and no depreciation is considered.

However, road pavement or sub grades have a residual value in terms of the in-situ material being re used in re-constructing or rehabilitating the pavement. This value is assumed as 50% of the current replacement cost for all road pavements in Bogan Shire Council.

3.5 Calculation of Deprecated Replacement Cost (Written Down Current Cost)

The Depreciated Replacement Cost (DRC) has been calculated according to the following formula;

DRC = Current Replacement Cost (CRC) – Accummulated Depreciation

Accummulated Depreciation = (Depreciable Amount/Useful life) * (Useful life-Updated Remainning Life)

Depreciable Amount = CRC – Residual Value

Revalued CRC = Dimension * New Unit Rate

Revalued Depreciable Amount = New CRC – Residual

Annual Depreciation = New Depreciable Amount / Updated Remaining Life

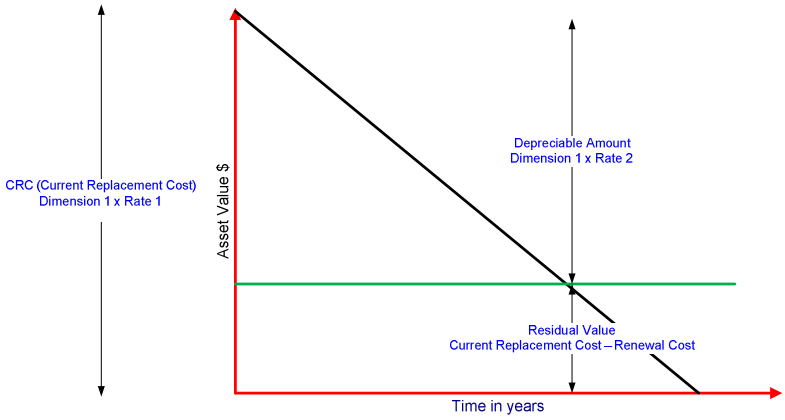
Updated Remaining Life = Updated Useful life – Age

Updated Useful life = Useful life * % of Asset consumption based on its condition assesment + Age

Please note that checks were carried out to ensure Accummulated depreciation does not exceed the depreciable amount.

Calculations performed the update current replacement cost, residual value, and depreciable amount. The following simple graph shows the Straight Line depreciation of an asset and its related costs;

Fig 3.2 Graph showing the concept of asset depreciation



CRC – The Cost to construct a New Asset e.g. new pipe, new road

Depreciable amount – The cost of renewing an asset to increase its useful life e.g. Reline a pipe, reconstruct pavement, 1 coat reseal of road

3.6 Condition Assessment

A field survey was conducted involving physical inspection of roads, culverts, bridges and footpaths. GPS records were captured and utilised on a Map Info database.

The following assumptions and grading criteria were used to record the asset condition and assess the updated remaining life based on its depreciation.

Assumptions

Condition based remaining life assessment

Curved depreciation

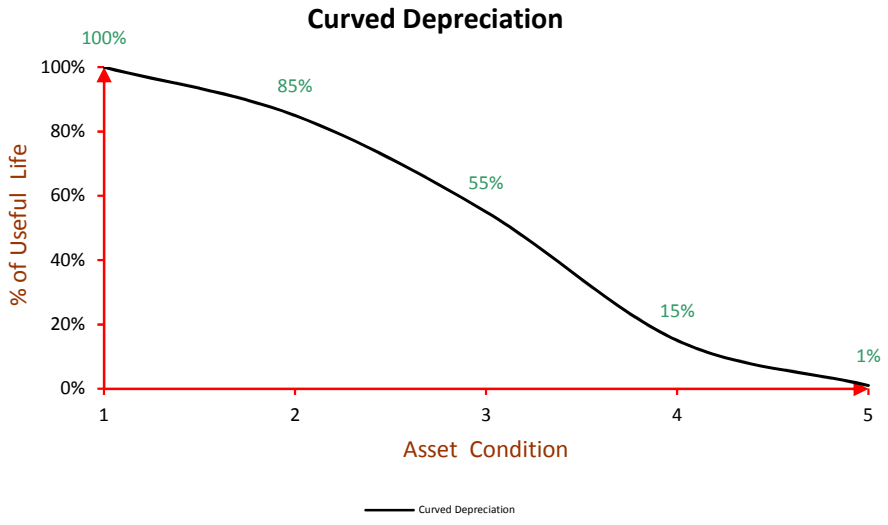
Updated remaining life = Updated useful life - Age

(June 2014)

Grading Criteria

Reference: Planning and Reporting Manual

Level	Condition	Description
1	Excellent	Normal maintenance
2	Good	Some surface/Pavement structure deterioration – Patching only needed for repair
3	Average	Serious surface/Pavement structure deterioration - Require resurfacing or recycling of pavement structure
4	Poor	Deterioration materially affecting entire surface /Pavement structure - requires renovation within 1 year
5	Very poor	Deterioration of sufficient extent to render the surface /Pavement structure unserviceable



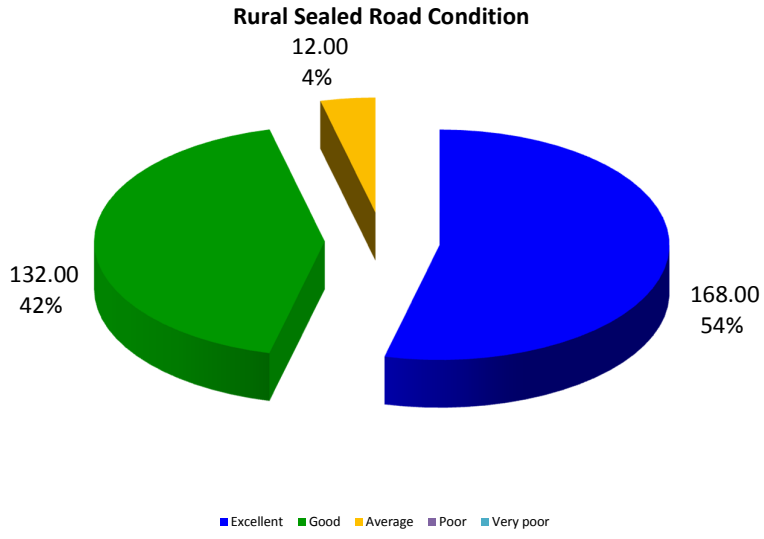
Rural Sealed Roads

Excellent Condition

Excellent Condition

Good Condition

Average Condition



Recommended roads for resealing				
Road Surface- Seal	Canonba Road	17.08 km to 18.90 km	1.8	$ 35,938
Road Surface- Seal	Tottenham Road	Buddebadah bridge to Buddebadah gate	2.3	$ 40,190
Road Surface- Seal	Tottenham Road	turnoff	4.0	$ 70,727
Road Surface- Seal	Tottenham Road	Merilba turnoff to newest section of seal	2.6	$ 56,413
		Estimated Cost for Resealing	**10.8**	**$ 203,267**
Recommended roads for pavement rehabilitation				
Road Pavement Structure	Old Warren Road	7.0 km to 7.5 km	0.5	$ 45,000
Road Pavement Structure	Cockies Road	Intersection of Tottenham rd to the bridge	1.2	$ 107,370
		Estimated Cost for Pavement rehabilitation	**1.7**	**$ 152,370**

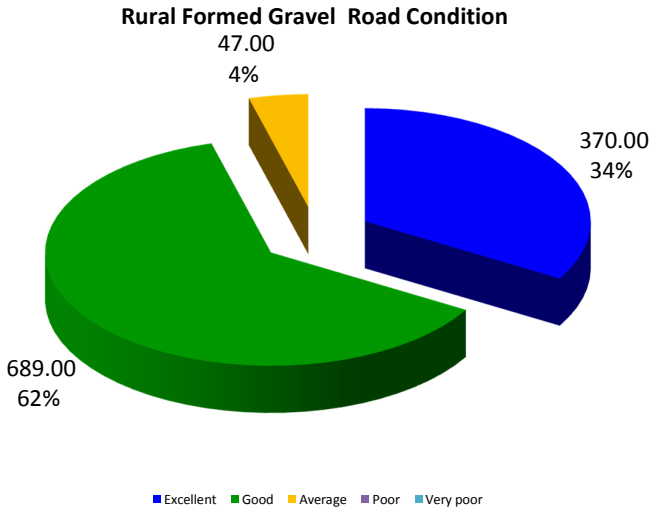
Rural Formed Gravel Roads

Excellent Condition

Excellent Condition

Good Condition

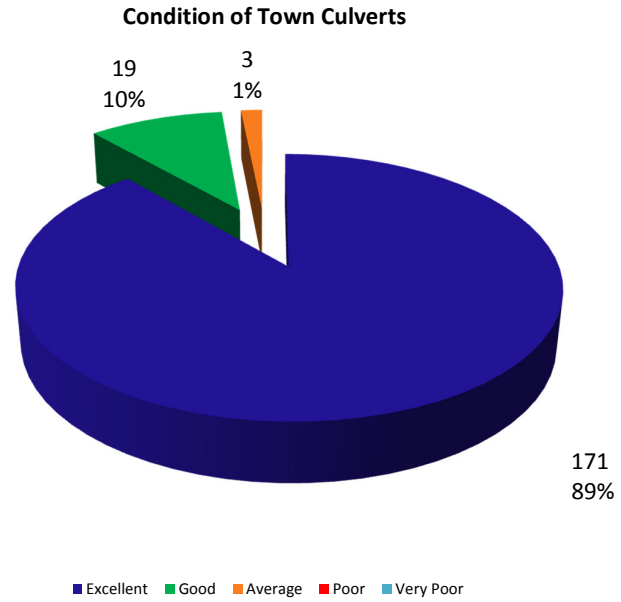
Average Condition



The following road segments have the highest priority for re-sheeting.

Recommended roads for resheating			Km	$
Road Surface- Un Seal	Booramugga Road	9.0 km to9.3 km	0.3	$ 4,500
Road Surface- Un Seal	Canonba Road	31.2 km to 32.9 km	1.7	$ 25,595
Road Surface- Un Seal	Cobar Condo Road	3.5km to Parkvale gateway	5.4	$ 81,300
Road Surface- Un Seal	Coffils Lane	resheeting	3.8	$ 57,600
Road Surface- Un Seal	Doneys Road	4.7 km to 5.4 km	0.7	$ 10,500
Road Surface- Un Seal	Gongolgon Road	32 km to 34.38 km	2.4	$ 35,700
Road Surface- Un Seal	Hermidale Nymagee Road	46 km to 48 km	2.0	$ 30,000
Road Surface- Un Seal	Hermidale Nymagee Road	48 km to 52.6 km	4.6	$ 69,000
Road Surface- Un Seal	Kidstons Road	1. km to the intersection with Backhouses rd.	0.3	$ 4,500
Road Surface- Un Seal	Mulla Road	30.0km to Watullo gateway	0.7	$ 10,950
Road Surface- Un Seal	Okeh Road	10.5 km to 11.6 km (grid)	1.1	$ 15,750
Road Surface- Un Seal	Pangee Road	32.76 km to 36.31km	3.6	$ 53,250
Road Surface- Un Seal	Pangee Road	44.49 km to 46.49 km	2.0	$ 30,000
Road Surface- Un Seal	Paynes Road	Grid to fence line	1.6	$ 23,700
Road Surface- Un Seal	Piesley Road	18.5 km to 23 km	4.5	$ 67,500
Road Surface- Un Seal	Piesley Road (Cokies to Pangee)	15.7 km to 18 km	2.3	$ 34,500
Road Surface- Un Seal	Plummers Road	Willow Glenn gate to sealed section	3.6	$ 54,600
Road Surface- Un Seal	Tubbavilla Road	Intersection MR424 to 4.0 km	4.0	$ 60,000
Road Surface- Un Seal	Whiterock road	21.8 km to grid (24 km)	2.4	$ 36,000
		Estimated Cost for Resheating	**47.0**	**$ 704,945**

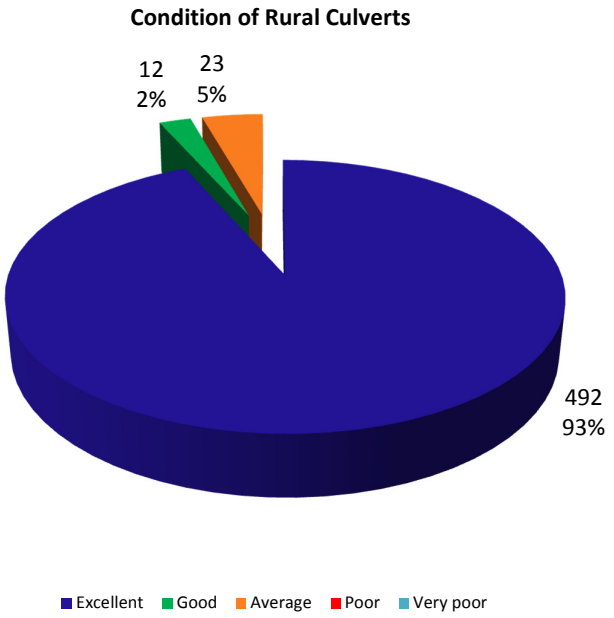
Town Culverts



The following critical culverts are recommended to replace as they are in average condition. However, 89% of town culverts are in excellent condition and 10% of them are in good condition.

Moonagee_culvert	$ 10,300
Bogan St_culverts	$ 14,500
Terangion_culvert	$ 47,400

Rural Culverts



Rural culverts need more maintenance to bring them back to good condition. However, 93% culverts are in excellent condition.

Bridges

There are 14 major bridges, all concrete, within the Bogan shire. They are all in excellent condition

Footpaths

Footpaths are generally in good condition and there are no any critical condition footpaths to replace immediately. However, some grinding work is needed to minimise a couple of trip hazards.

3.7 Issues arising items

Surface textures of formed gravel roads (particularly, Pangee, and Peisley) have wheel rutting, corrugation and boggy surfaces. However, this condition could be improved by conducting proper maintenance grading program since their age is just below 5 years and surface material is available on the road. Therefore, these types of road surfaces (as shown in following figures) could be assessed as in "Good" condition.

Pangee Road

Peisley Road

It is recommended to enhance maintenance-grading program to upgrade the formed gravel surface condition

4. Calculation of New Unit Rates

Local rates, and council practices were adopted to calculate new unit rates. Sample calculations are given below.

Sample calculations for resealing work

Local Roads **Activity**	**Unit**	**Qty**	**New Qty**	**Rate**	**Amount**
Resealing - 7 mm (conventional binder					
7 mm Aggregate (Precoated)	m3	242.90	242.90	128.23	$31,147.07
Supply and Spray Binder - Class 240 Bitumen (including Adhesion Agent where required and Preparation of Surface)	Litre	82341.58	49404.95	1.48	$73,119.32
Supply, Incorporate and Spray Cutter Oil in Binder	Litre	1630	978	2.30	$2,249.40
Supply and Spray Polymer Modified Bitumen (including Adhesion Agent where required and Preparation of Surface)	Litre	11394.65	6836.789	1.69	$11,554.17
Supply, Incorporate and Spray Cutter Oil in Binder	Litre	226	135.6	2.30	$311.88
Waterborne Paint - Longitudinal Lines				0.00	$0.00
Establishment	Item	1	0.6	1000.00	$600.00
Establish traffic control (Total cost of Traffic Control)	Item	1	0.5	10747.80	$5,373.90
Total Area	**Sq.m**	**46080**			$124,355.74
Rate ($ / Sq.m)	**$2.70**	**2.70**			

Activity	**Unit**	**Qty**	**New Qty**	**Rate**	**Amount**
Resealing - 10 mm (other binder)					
10 mm Aggregate (Precoated)	m3	145.4	145.4	146.23	$21,261.84
Supply and Spray Binder - Class 240 Bitumen (including Adhesion Agent where required and Preparation of Surface)	Litre	82341.58	24702.47	1.48	$36,559.66

Supply, Incorporate and Spray Cutter Oil in Binder	Litre	1630	489	2.30	$1,124.70
Supply and Spray Polymer Modified Bitumen (including Adhesion Agent where required and Preparation of Surface)	Litre	11394.65	3418.394	1.69	$5,777.09
Supply, Incorporate and Spray Cutter Oil in Binder	Litre	226	67.8	2.30	$155.94
Waterborne Paint - Longitudinal Lines				0.00	$0.00
Establishment	Item	1	0.3	1000.00	$300.00
Establish traffic control (Total cost of Traffic Control)	Item	1	0.5	10747.80	$5,373.90
Total Area	**Sq.m**	**22824**			$70,553.13
Rate ($ / Sq.m)	**$3.09**	**3.00**			

Activity	**Unit**	**Qty**	**New Qty**	**Rate**	**Amount**
Resealing - 14 mm (other binder)					
14 mm Aggregate (Precoated)	m3	50.6	5.06	155.85	$788.60
Supply and Spray Binder - Class 240 Bitumen (including Adhesion Agent where required and Preparation of Surface)	Litre	82341.58	8234.158	1.48	$12,186.55
Supply, Incorporate and Spray Cutter Oil in Binder	Litre	1630	163	2.30	$374.90
Supply and Spray Polymer Modified Bitumen (including Adhesion Agent where required and Preparation of Surface)	Litre	11394.65	1139.465	1.69	$1,925.70
Supply, Incorporate and Spray Cutter Oil in Binder	Litre	226	22.6	2.30	$51.98
Waterborne Paint - Longitudinal Lines				0.00	$0.00
Establishment	Item	1	0.1	1000.00	$100.00
Establish traffic control (Total cost of Traffic Control)	Item	1	0.1	10747.80	$1,074.78
Total Area	**Sq.m**	**5005**	**10%**		$16,502.51
Rate ($ / Sq.m)	**$3.30**	**3.30**			

Sample calculations for resheeting work

Road name	Year	Activity	width (m)	length (km)	Area (sq.m)	Cost Civica	$/Sq.m
Gibson	2013/2014	Resheating	5.00	1.30	6,500	$46,259	$3.43
Gibson	2013/2014	Resheating	5.00	1.40	7,000		
Mulla	2013/2014	Resheating	5.00	2.00	10,000	$72,837	$2.65
Mulla	2013/2014	Resheating	5.00	3.50	17,500		
Buddabadha	2013/2014	Resheating	5.00	2.30	11,500	$58,380	$3.43
Buddabadha	2013/2014	Resheating	5.00	1.10	5,500		
Benah	2013/2014	Resheating	5.00	1.50	7,500	$41,120	$5.48
Currans Road	2013/2014	Resheating	5.00	5.80	29,000	$54,525	$1.88
Merryanbone Road	2013/2014	Resheating	5.00	16.20	81,000	$219,657	$2.71
Murrawombie Road	2013/2014	Resheating	5.00	3.00	15,000	$38,553	$2.57

Normal Average *$3.16/ Sqm*
Weighted Average *$2.79/ Sqm*
Estimated Rate to use **$3.00/ Sqm**

Sample calculation for Pavement Construction

Mulla Rd Construction	
Wages	10,752.47
Plant	16,196.50
Accounts Payable	46,444.54
Stores	545.06
Aggregate	7,000.00
Crushed Rock	17,000.00
Total	97,938.57
Rate $/ Sq.m	**15.07**

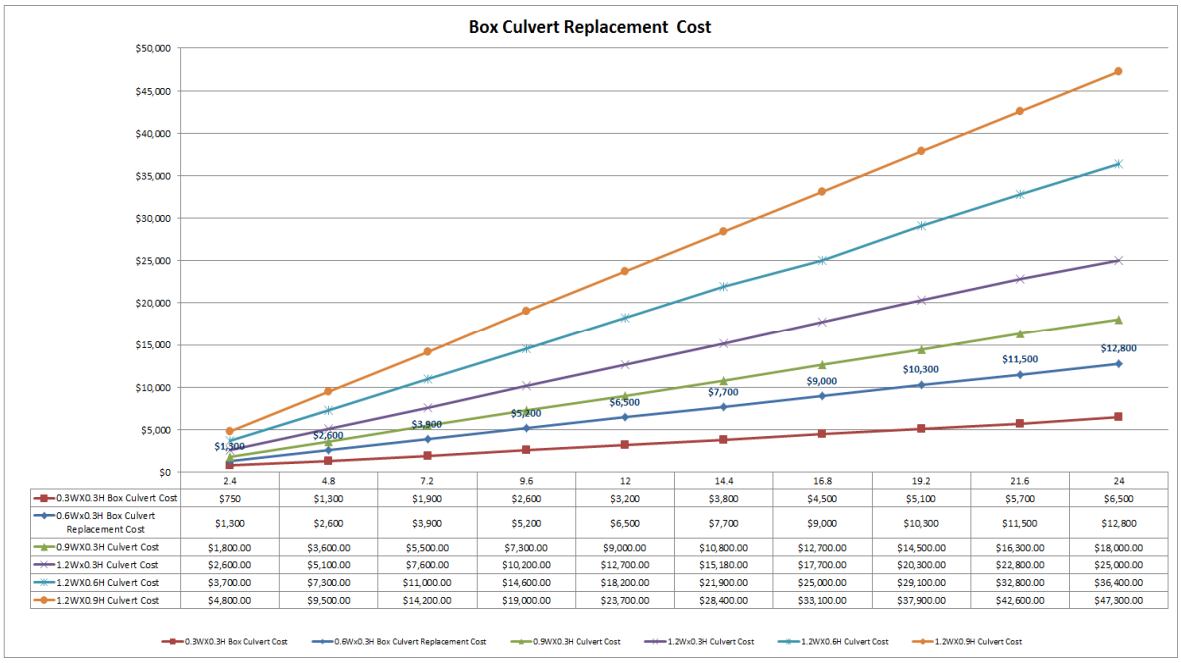
Pangee Road construction	
Wages	15,369.06
Plant	22,310.80
Accounts Payable	53,276.17
Stores	647.65
Aggregate	7,000.00
	98,603.68
	6,000.00
Total Area(6.5 x1000)	6,500.00
Total cost of construction	10,4603.68
Rate $/ Sq.m	**16.09**

Hermidale Nymagee Construction	
Total construction cost	326,000.00
	6,000.00
Total Area(9 x2200)	19,800.00
Total cost of construction	332,000.00
Rate $/ Sq.m	**16.77**

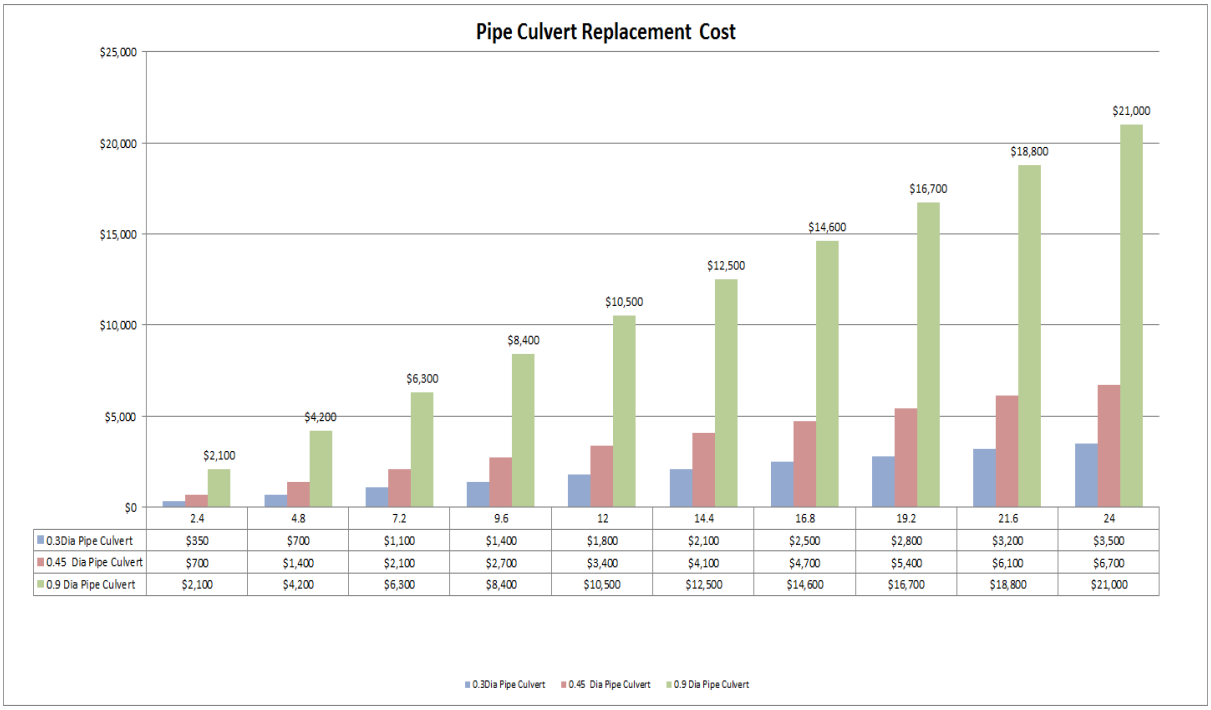
Average cost of Pavement Contraction	**$16.00**

Sample calculation for culverts

Box Culvert Replacement Cost	Actual Cost-2013-14			
Concrete				
Dimensions (2.4L x 0.3W x 0.3H) x 8 Nos				
	Unit	**Qty**	**Unit rate $**	**Cost $**
Labour				
Road base, wacker packing, lifting of bases, sealing of gaps, traffic control	Hours	51	40	2,040.00
				2,040.00
Plant				
Backhoe for digging out	Hours	8	50	400.00
Truck	Hours	3	50	150.00
				550.00
Materials				
Purchase of 18m box culvert	Item	1	6515	6,515.00
Road base	Item	1	60	60.00
Bitumen	Item	1	150	150.00
				6,725.00
Total				**9,315.00**
Overhead 10%				931.50
Total replacement cost of 18m x 0.6 m x 0.3m box culvert				**10,300.00**
Pipe Culvert replacement cost 12 m (300 Dia x2400 L) x 8 Nos				
	Unit	**Qty**	**Unit rate $**	**Cost**
Labour				
Road base, wacker packing, lifting of bases, sealing of gaps, traffic control	Hours	51	40	
				510.00
Plant				
Backhoe for digging out	Hours	8	50	
Truck	Hours	3	50	
				137.50
Materials				
Purchase of 18m box culvert	Item	1	6515	875.00
Road base	Item	1	60	15.00
Bitumen	Item	1	150	37.50
				927.50
Total				**1575.00**
Overhead 10%				**157.50**
Total replacement cost 300 Dia pipe culvert				**1,800.00**



	2.4	4.8	7.2	9.6	12	14.4	16.8	19.2	21.6	24
0.3WX0.3H Box Culvert Cost	$750	$1,300	$1,900	$2,600	$3,200	$3,800	$4,500	$5,100	$5,700	$6,500
0.6Wx0.3H Box Culvert Replacement Cost	$1,300	$2,600	$3,900	$5,200	$6,500	$7,700	$9,000	$10,300	$11,500	$12,800
0.9WX0.3H Culvert Cost	$1,800.00	$3,600.00	$5,500.00	$7,300.00	$9,000.00	$10,800.00	$12,700.00	$14,500.00	$16,300.00	$18,000.00
1.2Wx0.3H Culvert Cost	$2,600.00	$5,100.00	$7,600.00	$10,200.00	$12,700.00	$15,180.00	$17,700.00	$20,300.00	$22,800.00	$25,000.00
1.2WX0.6H Culvert Cost	$3,700.00	$7,300.00	$11,000.00	$14,600.00	$18,200.00	$21,900.00	$25,000.00	$29,100.00	$32,800.00	$36,400.00
1.2WX0.9H Culvert Cost	$4,800.00	$9,500.00	$14,200.00	$19,000.00	$23,700.00	$28,400.00	$33,100.00	$37,900.00	$42,600.00	$47,300.00



	2.4	4.8	7.2	9.6	12	14.4	16.8	19.2	21.6	24
0.3Dia Pipe Culvert	$350	$700	$1,100	$1,400	$1,800	$2,100	$2,500	$2,800	$3,200	$3,500
0.45 Dia Pipe Culvert	$700	$1,400	$2,100	$2,700	$3,400	$4,100	$4,700	$5,400	$6,100	$6,700
0.9 Dia Pipe Culvert	$2,100	$4,200	$6,300	$8,400	$10,500	$12,500	$14,600	$16,700	$18,800	$21,000

Sample calculation for footpaths

Foot Path Replacement Cost Concrete	Actual Cost-2013-14			
Dimensions	1.2 m x 15 m(100mm thick)			
	Unit	**Qty**	**Unit rate $**	**Cost $**
Labour				
Removal of old foot path man hours	Hours	18	40	720.00
Shuttering	Hours	12	40	480.00
Dowell Mesh	Hours	3	40	120.00
Concreting and finishing	Hours	9	40	360.00
Removal of shuttering and back filling	Hours	9	40	360.00
Materials				
Mesh (number of sheets)	Sheet	1.5	80	120.00
Sundries	Item			20.00
Concrete 100mm thk (15x1.2) + 10%	Cu.m	2.0	260	520.00
Sub Total for 15mx1.2m (100mm thk)	Sq.m	18		2,700.00
Overhead 10%				270.00
Total				2,970.00
Proposed unit replacement Cost	Sq.m	1		165.00

Foot Path Replacement Cost Paver	Actual Cost-2013-14			
Dimensions	1.2 m x 20 m (50mm thick)			
	Unit	**Qty**	**Unit rate $**	**Cost $**
Labour				
Removal of old pavers and cleaning	Hours	15	40	600.00
Filing, levelling and Cleanout roots	Hours	6	40	240.00
Relaying of pavers and filling sands	Hours	15	40	600.00
Plant				
Truck	Hours	12	35	420.00
Materials				
Pavers	Sq.m	24	27	648.00
Sub Total for 20 mx1.2m (50mm thk)	Sq.m	24		2,508.00
Overhead 10%				250.80
Total				2,758.80
Proposed unit replacement Cost	Sq.m	1		114.95
Estimated value	Sq.m			115

Unit rates of bridges were revised based on cost index method.

5. Valuation of Transport and stormwater assets

The spread sheet provides the detail of the valuation at asset level. It also contains commentary on asset condition and/or assumptions used in this valuation.

Considering the regional practices and the knowledge of experienced local engineers, useful lives have been assumed and unit rates were estimated as in table-2 shown below.

Table 2 : Useful lives, Residual values and Unit rates for Asset Revaluation - June 2014

Asset Category	Subcategory 1	Location	Subcategory 2	Useful Life	Unit	Rate	Residual Value
Stormwater	Embankment	Stormwater	Embankment	1000	Lm	$490.00	100%
Stormwater	Gate	Stormwater	Gate	25	Nos	$1,726.00	0%
Stormwater	Open Drain	Stormwater	Open Drain	1000	Lm	$100.00	100%
Stormwater	Sign	Stormwater	Sign	20	Nos	$345.00	0%
Stormwater	Pump station	Stormwater	Pump station	100	Nos	$83,218.00	0%
Transport	Bridges	Rural	Bridges	125	Sqm	$3,000.00	0%
Transport	Culvert	Box	Box - Culvert	125	Refer the graphs		0%
Transport	Culvert	Pipe	Pipe - Culvert	125	Refer the graphs		0%
Transport	Footpath	Concrete	Footpath-Concrete	80	Lm	$165.00	0%
Transport	Footpath	Bitumen seal	Footpath-Bitumen seal	80	Lm	$165.00	0%
Transport	Footpath	Pavers	Footpath-Pavers	80	Lm	$115.00	0%
Transport	Kerbs & Gutter	Town	Kerbs & Gutter	80	Lm	$70.00	0%
Transport	Kerbs & Gutter	Village	Kerbs & Gutter	80	Lm	$70.00	0%
Transport	Structures	Village	Bus shelter	20	Nos	$8,000	0%
Transport	Structures	Town	Traffic island	80	Cum	$2,375.00	0%
Transport	Sign	Rural	Road sign	10	Nos	$250.00	0%
Transport	Sign	Town	Road sign	10	Nos	$250.00	0%
Transport	Sign	Village	Road sign	10	Nos	$250.00	0%
Transport	Roads	Rural Roads	Road Formation	1000	Sqm	$4.00	100%
Transport	Roads	Town Streets	Road Formation	1000	Sqm	$4.00	100%
Transport	Roads	Village Streets	Road Formation	1000	Sqm	$4.00	100%
Transport	Roads	Rural Roads	Road Pavement	100	Sqm	$10.00	50%
Transport	Roads	Town Streets	Road Pavement	100	Sqm	$10.00	50%
Transport	Roads	Village Streets	Road Pavement	100	Sqm	$10.00	50%
Transport	Roads	Rural Roads	Road Surface - Sealed (7 mm)	25	Sqm	$3.50	0%
			Road Surface - Sealed (10 mm)	25	Sqm	$4.00	0%
			Road Surface - Sealed (14 mm)	25	Sqm	$5.00	0%
			Road Surface - Sealed (20mm)	25	Sqm	$6.00	0%
			Road Surface - Formed Gravel	30	Sqm	$4.50	0%
Transport	Roads	Town Streets	Road Surface - Sealed (Asphalt)	35	Sqm	$21.00	0%
			Road Surface - Sealed (7 mm)	25	Sqm	$3.50	0%
			Road Surface - Sealed (10 mm)	25	Sqm	$4.00	0%
			Road Surface - Sealed (14 mm)	25	Sqm	$5.00	0%
			Road Surface - Sealed (20mm)	25	Sqm	$6.00	0%
			Road Surface - Formed Gravel	30	Sqm	$4.50	0%
Transport	Roads	Village Streets	Road Surface - Sealed (7 mm)	25	Sqm	$3.50	0%
			Road Surface - Sealed (10 mm)	25	Sqm	$4.00	0%
			Road Surface - Sealed (14 mm)	25	Sqm	$5.00	0%
			Road Surface - Sealed (20mm)	25	Sqm	$6.00	0%
			Road Surface - Formed Gravel	30	Sqm	$4.50	0%

Revaluation of Infrastructure Assets by systems.

Table 3: Asset Covered by Transport and Stormwater Asset Register 2013-14							
Asset Category	**Quantity**	**Replacement Cost**	**Residual Value**	**Depreciable Amount**	**Accumulated Depreciation**	**Depreciated Replacement Cost**	**Annual Depreciation**
Regional Roads	234 km	$26,455,145	$15,507,302	$10,947,843	$704,111	$25,751,031	$267,603
Rural Roads	1185 km	$96,130,836	$66,621,028	$29,509,807	$2,129,579	$94,001,257	$845,169
Town Streets	56 km	$9,891,597	$4,367,134	$5,524,463	$554,915	$9,336,681	$128,579
Village Streets	15 km	$1,674,683	$984,856	$689,826	$91,209	$1,583,441	$15,716
Bridges	14 Nos	$11,784,390	$0	$11,784,390	$1,767,659	$10,016,732	$94,275
Culverts	734 Nos	$16,447,561	$0	$16,447,561	$2,524,624	$13,922,937	$131,580
Footpaths	12 Km	$3,381,711	$0	$3,381,711	$1,257,346	$2,124,365	$42,271
Kerbs &Gutter	40 km	$2,817,045	$0	$2,817,045	$1,263,022	$1,554,023	$35,213
Signs Roads	1519 Nos	$379,700	$0	$379,700	$192,108	$187,593	$26,988
Road Structures	141 Cum	$334,776	$0	$334,776	$50,216	$284,560	$3,348
Bus shelters	3 Nos	$24,000	$0	$24,000	$1,200	$22,800	$800
Levee Bank	12.3 Km	$6,027,000	$6,027,000	$0	$0	$6,027,000	$0
Gates	31 Nos	$53,511	$0	$53,511	$24,080	$29,431	$2,140
Pump Station	3 Nos	$249,654	$0	$249,654	$112,344	$137,310	$2,497
Open Drains	9 Km	$896,000	$896,000	$0	$0	$896,000	$0
Sign Stormwater	31 Nos	$10,695	$0	$10,695	$4,813	$5,882	$535
Total		**$176,558,303**	**$94,403,320**	**$82,154,981**	**$10,677,226**	**$165,881,041**	**$1,596,715**