Upper Lachlan Shire Council

Asset Revaluation Report

Transport & Stormwater Drainage 2015

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Version History

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1.01	15/06/2015	Version 1 – Draft Revaluation Report	JM	JR	
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1. Executive Summary

Upper Lachlan Shire Council has undertaken a review of the existing Transport and Stormwater Drainage asset registers and provide a revaluation report as 30th June 2015 in accordance with the relevant Australian Accounting Standards.

Revaluation is the act of recognising a reassessment of values of non-current assets at a particular date and must be carried out with sufficient regularity to ensure that the carrying amount does not differ materially from that which would be determined using fair value at the reporting date.

As at the financial register pre-revaluation, Upper Lachlan Shire Council's Transport and Stormwater Drainage assets comprised:

- Roads;
- Bridges;
- Footpaths;
- Bulk Earthworks;
- Stormwater Drainage.

The combined replacement value of these assets in council's registers was in excess of $433M. The value reported in the audited financial statements for Transport and Stormwater Drainage as at 30 June 2014 was $418m which demonstrated that council's registers are materially balanced to the values reported in the financial statements, the variation of approximately 3% is likely due to financial changes to the working register between the time of preparation of the annual report for 2013-14 and the time of the extract being prepared on May 2015.

By virtue of their high capital value, strategic and operational importance these assets are essential components of the social and economic needs of the community and it is important they are managed effectively.

The revaluation process reviewed the currency and accuracy of the asset register and updated unit rates and useful lives using evidence based techniques in accordance with the relevant Australian Accounting Standards. In line with the DLG guidelines, AIFMG (Australian Infrastructure Financial Management Guide) and IIMM (International Infrastructure Management Manual) to determine if the reported figures are a true reflection of Council's financial position.

Whilst the revaluation process decreased the combined value from $418M to $371M there was an overall 3.7% increase in the depreciation expense from $2.55M to $2.65M. This is further summarised in Table 1 – Revaluation Summary. Table 2 shows a subcategory level comparison between the revaluation and the 2013-2014 Note 9a valuations.

Advice from Auditors and Senior Finance Professionals (including authors of the Australian Infrastructure Financial Management Guidelines) over the last 12 months have provided opinion that the application of better componentisation and modern equivalent costs are better than the application of residual values. The primary difficulty is suitable evidence to support residual values where there is no market for the assets (refer to appendix A). Where the asset register and accompanying methodology is reliable and evidence based there is no material change in depreciation when applying improved componentisation and evidence based modern equivalent unit costs.

A summary of the major factors affecting the valuation results are:

- Removal of residual value
- Separation of pavement assets into base and sub-base to reflect rehabilitation and stabilisation of the top layer of pavement for thicker pavement depths.
- Application of a single unit rate for both sealed and unsealed road formation.
- Extension of useful Life for road seals from 20 to 25 years following useful life review.
- Adjustments to Unit Rates and useful lives.
- Removal of capitalised items for regional road MR241as included in previous revaluation.

Table 1: Revaluation Summary

Category	Audited Financial Statements (Note 9a 2013-14 Financial Statements)		Revaluation as at 30th June 2015		Variation between Revaluation CRC & Note 9 CRC (%)	Variation between Revaluation Annual Depreciation & Note 9a (%)	Replacement Cost Variation ($)	Annual Depreciation Variation ($)
	Replacement Cost $	Annual Depreciation $	Replacement Cost $	Annual Depreciation $				
Roads	$141,978	$2,026	$157,097	$2,133	11%	5%	$15,119	$107
Bridges	$47,832	$479	$46,840	$479	-2%	0%	-$992	-$0
Footpaths	$1,692	$21	$1,567	$20	-7%	-5%	-$125	-$1
Bulk Earthworks	$224,823		$163,942	$0	-27%		-$60,881	$0
Stormwater Drainage	$2,441	$24	$2,277	$23	-7%	-4%	-$164	-$1
Totals	**$418,766**	**$2,550**	**$371,722**	**$2,654**	**-11%**	**4%**	**-$47,044**	**$104**

Table 2: Revaluation Summary Detail

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	Current Replacement Cost	Depreciable Amount	Accumulated Depreciation	Written Down Value	Annual Depreciation
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	$249.14	$249.14	$99.07	$150.07	$2.49
		Reticulation Pipes (Pits Included)	$2,027.78	$2,027.78	$967.50	$1,060.29	$20.28
Transport	Bridges & Culverts	Causeway	$3,984.82	$3,984.82	$2,904.19	$1,080.63	$39.85
		Concrete Box Culverts	$9,389.25	$9,389.25	$2,869.08	$6,520.17	$93.89
		Concrete Bridges	$25,501.23	$25,501.23	$10,751.26	$14,749.97	$255.01
		Concrete Pipe Culverts	$1,236.42	$1,236.42	$429.24	$807.18	$12.36
		Steel Pipe Culverts	$378.38	$378.38	$94.24	$284.13	$3.78
		Timber Bridges	$6,349.51	$6,349.51	$4,410.19	$1,939.32	$74.05
	Footpaths & Cycleways	Footpaths & Cycleways	$1,567.42	$1,567.42	$479.87	$1,087.54	$19.59
	Sealed Roads	Base	$30,648.01	$30,648.01	$9,898.92	$20,749.09	$306.48
		Formation	$78,721,714.79	$-	$-	$78,721,714.79	$-
		Kerb & Gutter	$3,832.57	$3,832.57	$1,082.63	$2,749.94	$47.91
		Structures	$17,273.08	$17,273.08	$6,936.18	$10,336.90	$172.73
		Sub-Base	$41,726.60	$-	$-	$41,726.60	$-
		Surface	$21,440.48	$21,440.48	$7,052.41	$14,388.07	$857.62
	Unsealed Roads	Base	$15,694.89	$15,694.89	$6,925.42	$8,769.48	$523.16
		Formation	$85,219,961.10	$-	$-	$85,219,961.10	$-
		Structures	$22,497.17	$22,497.17	$11,719.68	$10,777.49	$224.97
		Sub-Base	$3,983.83	$-	$-	$3,983.83	$-
Totals			$371,722.23	$162,070.14	$66,619.88	$305,102.35	$2,654.18
Note 9a 2013-14 Financial Statement Totals			$418,766.00		$78,285.00	$340,481.00	$2,550.00
Percentage Variation			-11%		-15%	-10%	4%
$ Value Difference			-$47,043.77		-$11,665.12	-$35,378.65	$104.18

2. Aims & Objectives

The primary objective of this revaluation report is to provide asset valuations for Transport and Stormwater assets as at 30th June 2015 in accordance with the relevant Australian Accounting Standards.

This report documents the revaluation process including a review and/or calculation of the following:

- Currency and accuracy of asset register.
- Asset replacement policy.
- Replacement unit rates.
- Residual values where applicable.
- Useful lives.
- Pattern of consumption of future economic benefits.
- Current replacement cost.
- Depreciable amount.
- Accumulated depreciation.
- Depreciated replacement cost.
- Test for indicators for impairment.
- Annual depreciation expense.

The information contained within the report will enable Council to update their asset register and satisfy their financial and asset management statutory obligations and operational requirements.

The following asset categories have been revalued as part of this report.

Table 3: Asset Categories

CATEGORY	SUBCATEGORY 1	SUBCATEGORY 2
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts
		Reticulation Pipes (Pits Included)
Transport	Bridges & Culverts	Causeway
		Concrete Box Culverts
		Concrete Bridges
		Concrete Pipe Culverts
		Steel Pipe Culverts
		Timber Bridges
	Footpaths & Cycleways	Footpaths & Cycleways
	Sealed Roads	Base
		Formation
		Kerb & Gutter
		Structures
		Sub-Base
		Surface
	Unsealed Roads	Base
		Structures
		Sub-Base

3. Background

The NSW Local Government Code of Accounting Practice and Financial Reporting (Guidelines) require that non-current assets be valued at fair value in accordance with AASB 116 Property, Plant and Equipment.

Infrastructure assets are not usually traded in a market and their fair value is determined by the Depreciated Replacement Cost (DRC). This is the cost of replacing the gross future economic benefits (service potential) of the existing asset and deducting the economic benefits that have been consumed.

Fair value is generally considered more relevant for decision making than historical cost. Fair value requires entities to adopt the revaluation model outlined in *AASB 116*.

Asset values also provide valuable information for asset managers in providing services from infrastructure. This includes determining and allocating costs, pricing and funding levels, managing risks by insurance, performance measurement and benchmarking, developing asset management plans and long-term financial plans.

This report describes the procedures used to review the Transport and Stormwater Drainage assets owned by Upper Lachlan Shire Council as at 30th June 2015. It also details the methodology adopted for the valuation, development of unit rates and the assumptions used to determine the fair value of the assets.

The approach to valuation is in accordance and guidance of the relevant Australian Accounting Standards and the NSW Local Government Code of Accounting Practice and Financial Reporting (Guidelines). The Australian Infrastructure Financial Management Guidelines issued by the Institute of Public Works Engineering Australasia has been applied to guide the revaluation process.

4. Description of assets

The extent of the Transport and Stormwater Drainage assets under Council control and valued from existing financial register extracts where directed by Council and included as part of this report are summarised as follows.

Table 4: Description of Assets

Number of Records	Source File	Category	Subcategory 1	Subcategory 2	Sum of Dimension 1	Dimension 1 Description
33	Concrete Bridges revaluation 2015_2_Rec 150226	Transport	Bridges & Culverts	Concrete Bridges	8341.4215	Area(m2)
26	Drainage Structures revaluation 2015_2_Rec 150226	Transport	Bridges & Culverts	Causeway	2430.51	Width(m) Transverse for Bridges and ¢ of Rd for Culver
83	Drainage Structures revaluation 2015_2_Rec 150226	Transport	Bridges & Culverts	Concrete Box Culverts	661.03	Width(m) Transverse for Bridges and ¢ of Rd for Culver
34	Drainage Structures revaluation 2015_2_Rec 150226	Transport	Bridges & Culverts	Concrete Pipe Culverts	339	Width(m) Transverse for Bridges and ¢ of Rd for Culver
8	Drainage Structures revaluation 2015_2_Rec 150226	Transport	Bridges & Culverts	Steel Pipe Culverts	68.6	Width(m) Transverse for Bridges and ¢ of Rd for Culver
181	Footpath_Register revaluation 2015 JRA 150520 V1.2	Transport	Footpaths & Cycleways		27007.936	Area m2
269	Kerb & Gutter revaluation 2015 JRA 150520 V1.2	Transport	Sealed Roads	Kerb & Gutter	38775.5	Length m
1	New	Transport	Bridges & Culverts	Concrete Bridges	126	Area(m2)
21	Stormwater Register revaluation 2015_Rec 150226	Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	260.6	Length_m
285	Stormwater Register revaluation 2015_Rec 150226	Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	4432.03	Length_m
1	Timber Bridges revaluation 2015_2_Rec 150226	Transport	Bridges & Culverts	Concrete Bridges	168	Area(m2)
19	Timber Bridges revaluation 2015_2_Rec 150226	Transport	Bridges & Culverts	Timber Bridges	1212.017	Area(m2)
636	Upper Lachlan Road Register 2015 Revaluation V1.5 150526	Transport	Sealed Roads	Base	5837715.5	Area (m2)
1407	Upper Lachlan Road Register 2015 Revaluation V1.5 150526	Transport	Sealed Roads	Formation	16901203.7	Area (m2)
566	Upper Lachlan Road Register 2015	Transport	Sealed Roads	Sub-Base	5376292	Area (m2)

Number of Records	Source File	Category	Subcategory 1	Subcategory 2	Sum of Dimension 1	Dimension 1 Description
	Revaluation V1.5 150526					
636	Upper Lachlan Road Register 2015 Revaluation V1.5 150526	Transport	Sealed Roads	Surface	4986158.1	Area (m2)
571	Upper Lachlan Road Register 2015 Revaluation V1.5 150526	Transport	Unsealed Roads	Base	5231631.5	Area (m2)
52	Upper Lachlan Road Register 2015 Revaluation V1.5 150526	Transport	Unsealed Roads	Sub-Base	639906	Area (m2)

5. Methodology

AASB 116 requires that each significant part of an item of property, plant and equipment be depreciated separately. Infrastructure assets are broken down into significant components with similar physical and operating characteristics. A separate useful life is applied to each component and they are depreciated independently.

The residual value and the useful life of an asset are to be reviewed at least at the end of each annual reporting period and, if expectations differ from previous estimates, and if impacts on the carrying amount are significant, appropriate adjustments to accounts are made.

In practice, the residual value of long-lived infrastructure assets is difficult to forecast with any confidence and is usually set at zero.

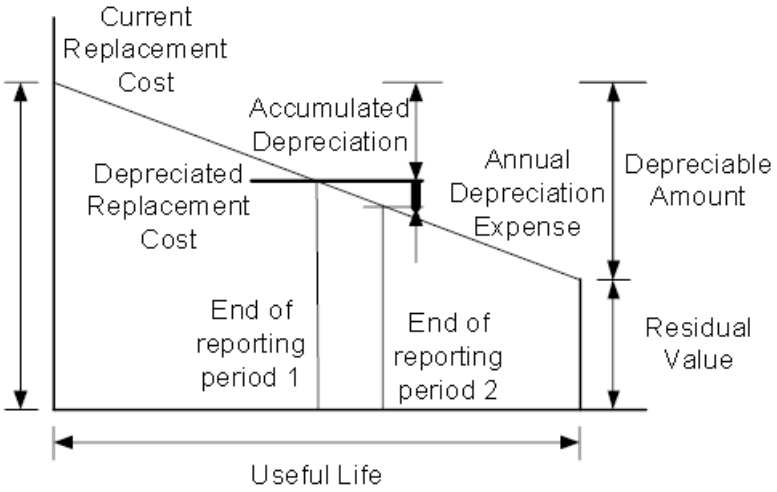

Figure 1 – The measure of depreciation where consumption of asset service potential is constant over time.

AASB 136 requires entities to make an assessment at each reporting date as to whether there is an indication that an asset is impaired. If any indication exists, the entity must estimate the recoverable amount. Where the carrying amount exceeds the recoverable amount, the asset must be written down to its recoverable amount. In assessing whether there is any indication that an asset may be impaired, the standard states the minimum external and internal indications that must be considered. For example:

- A decline in market value of the asset;
- Changes in the technological, market, economic, or legal environment in which the entity operates; and
- Evidence that the asset is obsolete or has been damaged.

The method of revaluation applied at Upper Lachlan is best described by the AIFMG ‘How to guide for Revaluation’ shown is Figure 2.

The approach incorporates a review and/or calculation of the following:

- Currency and accuracy of asset register.
- Asset replacement policy.
- Replacement unit rates.
- Residual values where applicable.

- Useful lives.
- Pattern of consumption of future economic benefits.
- Current Replacement Cost = Asset Dimension x Unit Rate.
- Depreciable Amount = Current Replacement Cost – Residual Value.
- Accumulated Depreciation = (Age/Useful Life) x Depreciable Amount.
- Depreciated Replacement Cost = Current Replacement Cost – Accumulated Dep.
- Test for indicators for impairment.
- Annual Depreciation expense = Depreciable Amount / Useful Life.

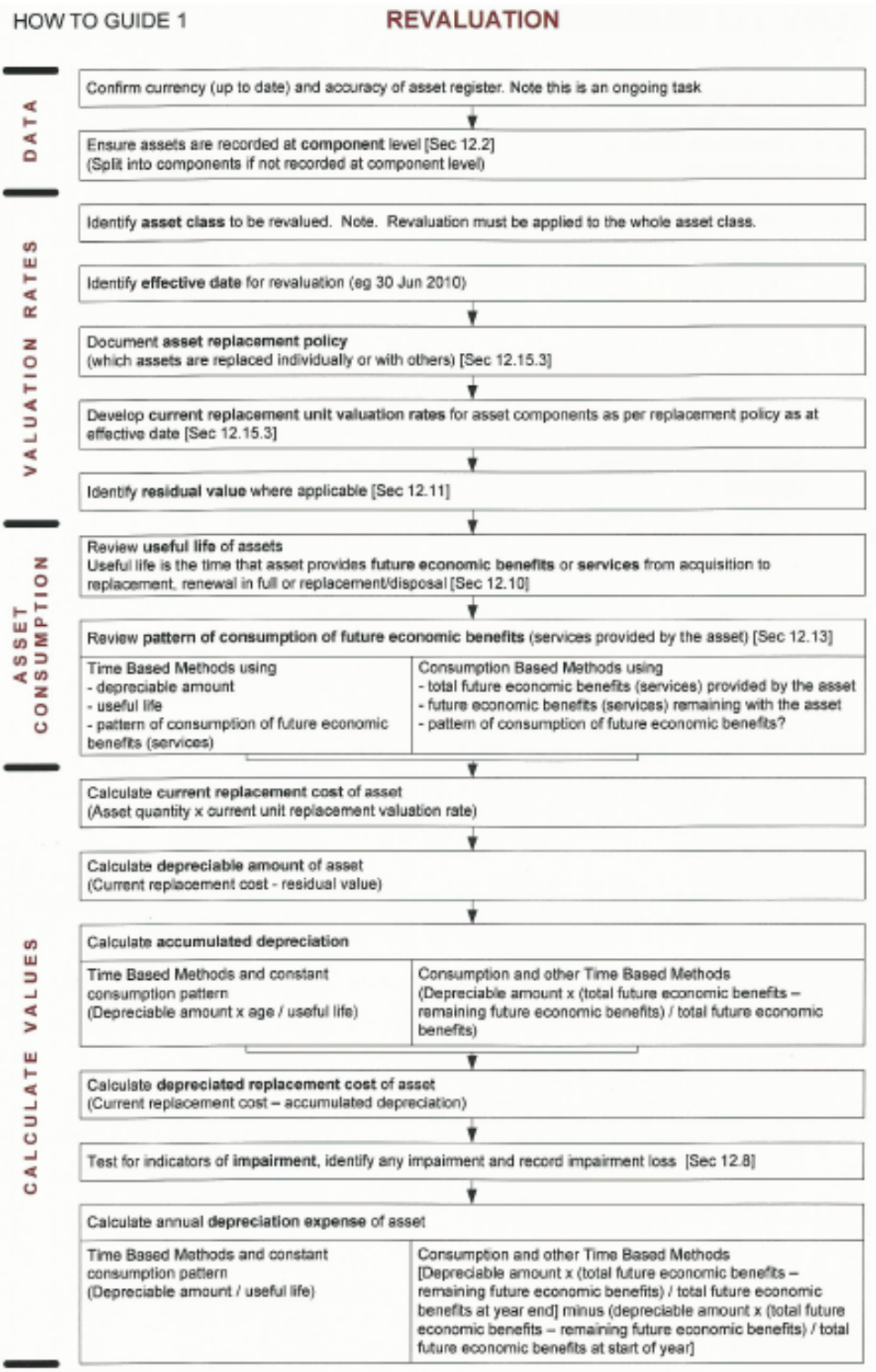

Figure 2 – The revaluation process. (AIFMG Edition 1.0 2009)

5.1. Source Data for Revaluation

5.1.1. Confirm Currency of Source Data

As part of the revaluation preparation it was necessary to ensure the register used was clean and complete so to allow financial calculations to be performed consistently across the register. In order to complete this, a number of processes were required:

- Create and allocate a unit rate code for each asset type
- Ensure source rate consistent across each asset type
- Ensuring consistent useful lives across each asset group
- Ensure no missing dimensions for all assets to be revalued
- Remaining life and remaining life year complete for all assets to be revalued

As a starting point it was necessary to determine that the Financial/Technical Register extract used was materially correct as at the Audited Financial Statements presented by Council as at 30th June 2014. A check of the Council's register against the reported Financial Statement values determines that the register is materially correct. The 3% variation in replacement cost is likely due to adjustments to the financial register between the time of the last valuation date and the extract being taken for the revaluation as at May 2015.

Table 5: Currency Check of SOURCE Registers

Financial Reporting Category	Current Replacement Cost		Depreciated Replacement Cost	
	Source Register Value	**Note 9a**	**Source Register Value**	**Note 9a**
Roads		$141,978		$85,706
Bulk Earthworks		$224,823		$224,823
Roads (Including Earthworks)	$366,664		$323,470	
Bridges	$62,822	$47,832	$36,253	$27,410
Footpaths	$1,541	$1,692	$1,119	$1,171
Stormwater Drainage	$2,441	$2,441	$1,371	$1,371
Total	$433,468	$418,766	$362,213	$340,481
	Variation	3**%**	**Variation**	6**%**

5.1.2. Ensure Assets Recorded at Component Level

In accordance with AIFMG Section 12.2 assets with a similar nature and use in an entity's operations are required to be grouped and disclosed as a separate class of assets within the entity's financial statements for both financial reporting and asset management purposes. An analysis of the records provided shows that this largely enacted within Council's technical and financial registers. Future improvements include the review of road segment lengths to better record road condition and capital renewal works.

5.2. Valuation Rates

5.2.1. Asset Class/s to be Revalued

In order to maintain compliance with AASB116 the entire financial reporting categories are revalued for the year ending 30th June 2015 the categories for revaluation are included in table 6.

Table 6: Summary for Revaluation

Number of Records	Category	Subcategory 1	Subcategory 2	Source File
33	Transport	Bridges & Culverts	Concrete Bridges	Concrete Bridges Revaluation 2015_2_Rec 150226
26	Transport	Bridges & Culverts	Causeway	Drainage Structures revaluation 2015_2_Rec 150226
83	Transport	Bridges & Culverts	Concrete Box Culverts	Drainage Structures revaluation 2015_2_Rec 150226
34	Transport	Bridges & Culverts	Concrete Pipe Culverts	Drainage Structures revaluation 2015_2_Rec 150226
8	Transport	Bridges & Culverts	Steel Pipe Culverts	Drainage Structures revaluation 2015_2_Rec 150226
181	Transport	Footpaths & Cycleways		Footpath_Register revaluation 2015 JRA 150520 V1.2
269	Transport	Sealed Roads	Kerb & Gutter	Kerb & Gutter revaluation 2015 JRA 150520 V1.2
1	Transport	Bridges & Culverts	Concrete Bridges	New
21	Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Stormwater Register revaluation 2015_Rec 150226
285	Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Stormwater Register revaluation 2015_Rec 150226
1	Transport	Bridges & Culverts	Concrete Bridges	Timber Bridges revaluation 2015_2_Rec 150226
19	Transport	Bridges & Culverts	Timber Bridges	Timber Bridges revaluation 2015_2_Rec 150226
636	Transport	Sealed Roads	Base	Upper Lachlan Road Register 2015 Revaluation V1.5 150526
1407	Transport	Sealed Roads	Formation	Upper Lachlan Road Register 2015 Revaluation V1.5 150526
566	Transport	Sealed Roads	Sub-Base	Upper Lachlan Road Register 2015 Revaluation V1.5 150526
636	Transport	Sealed Roads	Surface	Upper Lachlan Road Register 2015 Revaluation V1.5 150526
571	Transport	Unsealed Roads	Base	Upper Lachlan Road

Number of Records	Category	Subcategory 1	Subcategory 2	Source File
				Register 2015 Revaluation V1.5 150526
52	Transport	Unsealed Roads	Sub-Base	Upper Lachlan Road Register 2015 Revaluation V1.5 150526

5.2.2. Effective Date for Revaluation

This report describes the procedures used to review the assets owned by Upper Lachlan Shire Council as at 30th June 2015.

5.2.3. Asset Replacement Policy

The replacement policy considers whether the asset will be replaced or not replaced. If the asset is replaced, the decision on the preferred treatment is applied to reflect the service level that will be required into the future and, what the modern equivalent asset to provide that service would be.

In the case of roads and stormwater drainage assets, factors that are likely to affect the replacement decision are:

- Infrastructure components approaching the end of their useful life due to design standards, construction and material quality, maintenance practices, operating environment and external stresses;
- New materials and changes in construction/rehabilitation technology;
- Planned obsolescence due to legislative and environmental changes;
- Operational costs and practices; and
- Changes in demand that result in a need for a different service capacity.

Since advances in process and construction technology usually result in lower costs, other things being equal, it can normally be assumed that replacement cost using a modern equivalent asset (where there is one) can be less than the corresponding reproduction cost.

Engineering investigation of alternatives can be expected to confirm whether or not this is so for a particular asset when an asset becomes due for renewal or augmentation.

It has been assumed that all assets being valued will be replaced or reproduced on deprival using the Optimised Replacement Cost method (IPWEA 2011, p.3.77) unless otherwise stated.

This approach estimates the most appropriate modern equivalent asset offering the same level of service, as appropriate to the particular asset. Replacement decisions using modern equivalent replacement alternatives have been applied to road and stormwater infrastructure as shown in Table 7.

Table 7: Modern equivalent asset replacement treatments

Asset Category	Existing assets	Modern equivalent asset
Roads	Spray Seals	Spray seals recognised as a single coat with primer seal cost added to pavement base.
	Road Pavements	Pavement base includes primer seal cost.

5.2.4. Current Replacement Unit Valuation Rates

Unit rates have been obtained from Rawlinson's Construction Handbook Edition 32 2014 where applicable rates are available. Where the asset group did not have a comparable rate available in Rawlinsons the average pre-revaluation rate from the source register has been applied with Rawlinsons escalation figure to 30 June 2014. Road pavement has been separated into base and sub-base in line with modern equivalent renewal methodology to account for partial renewal of pavement. The costs and lives for this componentisation has been developed in consultation with Council staff and shown in Appendix E.

5.2.4.1.Rawlinsons Escalation

Where no comparable Rawlinsons rate is available the existing valuation unit rate from the register extract has been applied. Reference Database Amended 13/1/2014 as per the source data and a Building Price Index (BPI) escalation has been applied from Rawlinsons to bring the rate to current as at 31 December 2014 as shown in table 8. All asset types where an existing escalated rate has been used have been detailed in the Unit Rates table.

Table 8: Rawlinsons CPI Escalation Calculation

Price Indices - Sydney (Rawlinsons Ed 32 2014) - Cross checked with Rawlinsons 2015 on 6/3/15 to check escalation accuracy)		
Escalated to 30 June 2014 using Rawlinsons Ed 33, 9.30%31-Mar-14	9.30%	Quarterly Update Oct 2014 (cross-checked in Rawlinsons 2015 p18)

This has been applied to assets from the following categories:

- Timber Bridges
- Culverts (Limited)
- Causeways

5.2.4.2.Road Base and Sub-Base

To reflect the cost and cycle duration variation between pavement stabilisation and reconstruction sealed road pavement has been split into base and sub-base (long and short life component). This separation is based on recommendations put forth in the report *Review of Infrastructure Financial Accounting in Local Government* prepared for the Tasmanian Audit Office prepared by JRA in September 2013. The resulting lives and rates are shown in Appendix E.

5.2.5. Residual Values

In accordance with the Australian Accounting Standards, the residual value of an asset is the estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

It is unlikely that any material value will be recoverable from council's infrastructure assets when they reach the end of their useful lives. Consequently, no allowance has been made for a residual value to be applied to these assets with emphasis being on the modern equivalent replacement or next treatment of the asset in line with the methodology detailed in the Report *Review of Infrastructure Financial Accounting in Local Government* (section 6 – The Valuation and Use of Residual Values) prepared by Jeff Roorda & Associates for the Tasmanian Audit Office.

5.3. Asset Consumption

5.3.1. Useful Life & Asset Performance

A primary function of the revaluation is the review of useful lives for asset categories. As part of the revaluation process Council firstly reviewed and defined its current and projected levels of service. The re-assessed Useful Life is the current interpretation of the actual life expected from these assets based on the current capital commitment by the Council and the ongoing maintenance regime and intervention levels. This ensured that useful lives were reflective of the period time that the asset would be in service. This review and resulting recommendations are contained in Appendix B.

5.3.2. Useful Lives

The 'Useful Life' of the asset is an estimate or expected duration between placing the asset into service and removing it from service on the basis of obsolescence or when it ceases to provide the 'minimum benefits' that it was intended to provide. In short it is the period between which the future economic benefits embodied in that asset are expected to be consumed by the users.

We have interpreted the standards to mean that the Useful Life is not a static figure but can vary over time.

Factors which may vary the estimated useful life i.e. depreciation rate are:

1. Maintenance practices – the quantity and quality of both routine and periodic maintenance can affect the Useful Life.
2. Original quality of construction.
3. Type of asset – sewer pipes transfer acidic matter that can affect the life of the pipe as opposed to water pipes that cart clean water.
4. Environment – e.g. reactive soils may lead to early deterioration.
5. Technical obsolescence.
6. Knowledge of the asset network, history and current performance.

The AASB requires that the initial estimate of useful life should be based on evidence that is specifically drawn from the assessment of:

1. Physical use.
2. Wear and tear.
3. Technical and physical obsolescence.
4. Legal and other restrictions on the use of the asset.

Table 9: Sub-category useful lives

Subcategory 1	Subcategory 2	30/6/15 Revaluation Useful Life	Pre-Revaluation Useful Life	Comments
Bridges & Culverts	Concrete Box Culverts	100	100	No Change
Bridges & Culverts	Concrete Bridges	100	100	No Change
Bridges & Culverts	Causeway	100	100	No Change
Bridges & Culverts	Concrete Pipe Culverts	100	100	No Change
Bridges & Culverts	Steel Pipe Culverts	100	100	No Change
Footpaths & Cycleways		80	80	No Change
Sealed Roads	Kerb & Gutter	80	80	No Change
Pipes & Culverts	Concrete Box Culverts	100	100	No Change
Pipes & Culverts	Reticulation Pipes (Pits Included)	100	100	No Change
Bridges & Culverts	Timber Bridges	80	40-80	Footbridges extended to 80 yrs
Bridges & Culverts	Timber Bridges	100	100	Based on new composite bridge
Sealed Roads	Base	100	100	No Change
Sealed Roads	Formation			Non Depreciable
Sealed Roads	Sub-Base			Non Depreciable
Sealed Roads	Surface	25	20	Extended following useful life review
Unsealed Roads	Base	30	30	No Change
Unsealed Roads	Sub-Base			Non Depreciable
Sealed Roads	Structures	100	100	No Change
Unsealed Roads	Structures	100	100	No Change
Bridges & Culverts	Concrete Box Culverts	100	100	No Change

5.3.3. Remaining Useful Life

For all assets to be revalued it was necessary to have a remaining life. This was completed using a number of methods as shown in table 10 and detailed in the case examples below.

Table 10: Remaining Life Calculation Methods

Method No;	Method	Description
1	Condition	Uses % of useful life remaining for each condition grading
2	Age	Uses year of construction + useful life - 2014

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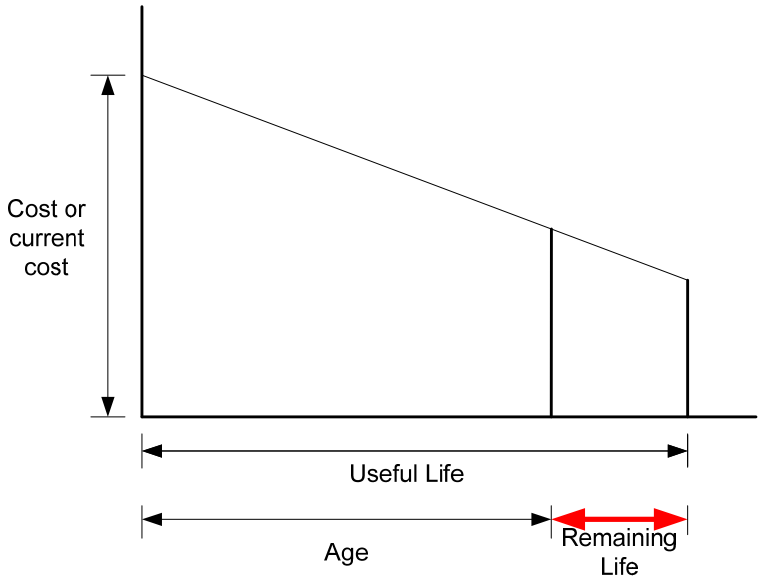

Case 1 – Condition Based Remaining Life - Used where condition data available.

Used for all asset classes except Bridges and Culverts where current condition data was available.

Table 11: Condition Based Remaining Life (Scale 1 -5)

Condition	% of Useful Life Remaining	Remaining Life Calculation
1	95	Useful Life x (95/100)
2	75	Useful Life x (75/100)
3	50	Useful Life x (50/100)
4	25	Useful Life x (25/100)
5	5	Useful Life x (5/100)

Table 12: Condition Based Remaining Life (Scale G-F-P)

Condition	% of Useful Life Remaining	Remaining Life Calculation
Good	75	Useful Life x (75/100)
Fair	50	Useful Life x (50/100)
Poor	25	Useful Life x (25/100)

Case 2 – Age Based - Used where no current condition data available.

Used for Bridges & Culverts. This method was used where no condition data was available but the source data had a year of construction.

Table 13: Aged Based Remaining Life Calculation

Year of Construction from supplied data	Updated Useful Life	Remaining Life = (YOC + Useful Life)-2014
2000	50	= (2000 + 50) - 2014 = 36 years

5.4. Unit Rates

Unit rates have been updated to evidence based rates using a number of sources including:

- Updated based on evidence from recent work.
- Calculated using first principles based on Rawlinsons and NSW Water & Sewer Reference Rates.
- Where deemed reasonable current unit rates have been indexed using Rawlinsons building price index.

A full list of updated unit rates is contained in Appendix D.

5.5. Calculate Values

- Current Replacement Cost

  = Unit Cost x Asset Dimension
- Depreciable Amount / Renewal Cost

  = Current Replacement Cost – Residual Value.
- Accumulated Depreciation

  = (Age/Useful Life) x Depreciable Amount.
- Depreciated Replacement Cost

  = Current Replacement Cost – Accumulated Depreciation
- Test for indicators for impairment.
- Annual Depreciation expense

  = Depreciable Amount / Useful Life.

5.6. Impairment

A revaluation requires a test for impairment, Council has advised that no impairment applies.

5.7. Depreciation

Depreciation is the measure of ‘using up’ or consumption of the asset, in providing that asset to the community and is measured on an annual basis. Therefore, it is part of the cost of providing the future economic benefits that is expensed along with other annual changes such as maintenance, insurance, etc., through a charging system to the Annual Financial Statement.

Depreciation is not a measure of the expenditure required to maintain or renew assets in any given year. Depreciation is not cash and does not create cash more importantly it is used to reflect the appropriate carrying value to provide a statement of financial position.

It is therefore acknowledged that:

- Assets are identified and recorded at the component level, each having an expected useful life.
- The amount to be depreciated is limited to the Depreciable Amount;
- The Depreciable amount is the Gross Value less the Residual Value;

- The “Intervention Point” represents a particular point in time where the asset is considered to not be providing an acceptable level of service and therefore will need to be renewed;
- Depreciation is to be expensed over the “Useful Life” of the asset; and
- The “Useful Life” or “economic life” of the asset is the time to intervene.

Depreciation is determined using the change in depreciated replacement cost over a predictable time period, based on the asset’s consumption profile.

The depreciation method used is to reflect the pattern in which the asset’s future economic benefits are expected to be consumed by the entity.

Future economic benefits to an entity can arise from any of the following:

- Cash flows from future use;
- Cash flows from disposal;
- Future service potential to the entity;
- Cost savings; and
- Other benefits resulting from use of the asset by the entity.

For infrastructure assets, future economic benefits arise from the entity’s ability to provide services to its customers/community in the future (i.e. the asset’s service potential).

There are at least four measures of asset consumption, each of which can be related to a method of depreciation such as:

- Straight line;
- Declining balance;
- Output/service basis; and
- Units of production.

Figure 3 shows these patterns of consumption.

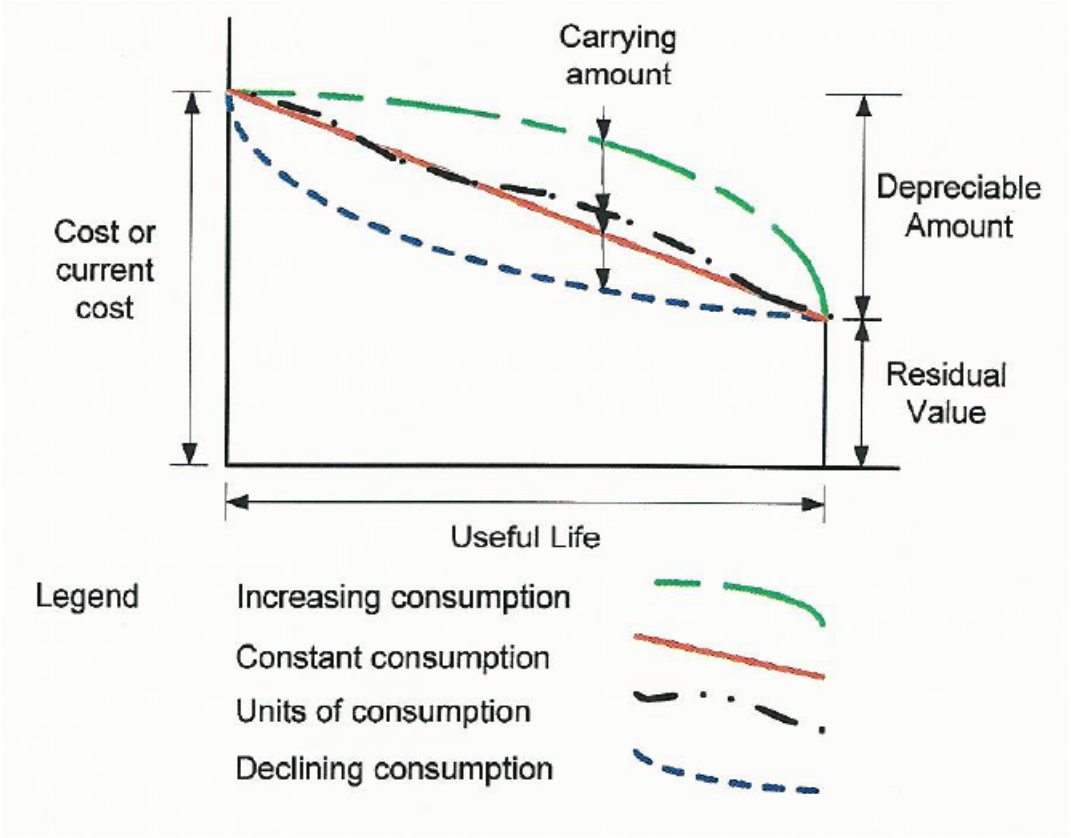

Figure 3 – Depreciation method to reflect pattern of consumption of future economic benefits.

The method chosen is the Straight-Line Method of depreciation as this is the one that best reflects the future expected pattern of consumption (i.e. consumption is constant over the useful life of the asset).

6. Valuation Results

6.1. Summary

Variations

Table 14: Summary of movements

Category	Audited Financial Statements (Note 9a 2013-14 Financial Statements)		Revaluation as at 30th June 2015		Variation between Revaluation CRC & Note 9 CRC (%)	Variation between Revaluation Annual Depreciation & Note 9a (%)	Replacement Cost Variation ($)	Annual Depreciation Variation ($)
	Replacement Cost $	Annual Depreciation $	Replacement Cost $	Annual Depreciation $				
Roads	$141,978	$2,026	$157,097	$2,133	11%	5%	$15,119	$107
Bridges	$47,832	$479	$46,840	$479	-2%	0%	-$992	-$0
Footpaths	$1,692	$21	$1,567	$20	-7%	-5%	-$125	-$1
Bulk Earthworks	$224,823		$163,942	$0	-27%		-$60,881	$0
Stormwater Drainage	$2,441	$24	$2,277	$23	-7%	-4%	-$164	-$1
Totals	**$418,766**	**$2,550**	**$371,722**	**$2,654**	**-11%**	**4%**	**-$47,044**	**$104**

Table 15: Detailed Financial Summary

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	Current Replacement Cost	Depreciable Amount	Accumulated Depreciation	Written Down Value	Annual Depreciation
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	$249.14	$249.14	$99.07	$150.07	$2.49
		Reticulation Pipes (Pits Included)	$2,027.78	$2,027.78	$967.50	$1,060.29	$20.28
Transport	Bridges & Culverts	Causeway	$3,984.82	$3,984.82	$2,904.19	$1,080.63	$39.85
		Concrete Box Culverts	$9,389.25	$9,389.25	$2,869.08	$6,520.17	$93.89
		Concrete Bridges	$25,501.23	$25,501.23	$10,751.26	$14,749.97	$255.01
		Concrete Pipe Culverts	$1,236.42	$1,236.42	$429.24	$807.18	$12.36
		Steel Pipe Culverts	$378.38	$378.38	$94.24	$284.13	$3.78
		Timber Bridges	$6,349.51	$6,349.51	$4,410.19	$1,939.32	$74.05
	Footpaths & Cycleways	Footpaths & Cycleways	$1,567.42	$1,567.42	$479.87	$1,087.54	$19.59
	Sealed Roads	Base	$30,648.01	$30,648.01	$9,898.92	$20,749.09	$306.48
		Formation	$78,721,714.79	$-	$-	$78,721,714.79	$-
		Kerb & Gutter	$3,832.57	$3,832.57	$1,082.63	$2,749.94	$47.91
		Structures	$17,273.08	$17,273.08	$6,936.18	$10,336.90	$172.73
		Sub-Base	$41,726.60	$-	$-	$41,726.60	$-
		Surface	$21,440.48	$21,440.48	$7,052.41	$14,388.07	$857.62
	Unsealed Roads	Base	$15,694.89	$15,694.89	$6,925.42	$8,769.48	$523.16
		Formation	$85,219,961.10	$-	$-	$85,219,961.10	$-
		Structures	$22,497.17	$22,497.17	$11,719.68	$10,777.49	$224.97
		Sub-Base	$3,983.83	$-	$-	$3,983.83	$-
Totals			$371,722.23	$162,070.14	$66,619.88	$305,102.35	$2,654.18
Note 9a 2013-14 Financial Statement Totals			$418,766.00		$78,285.00	$340,481.00	$2,550.00
Percentage Variation			-11%		-15%	-10%	4%
$ Value Difference			-$47,043.77		-$11,665.12	-$35,378.65	$104.18

7. References

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8. Appendices

8.1. Appendix A – Notes of Fair Value

AASB 13 Fair Value - 'Where an active and liquid market exists for assets similar in type and condition, the fair value of an asset is its price in that market. This approach is suitable for assets such as freehold land, buildings and plant and equipment.' "Fair value" is defined in paragraph 9.1 as "the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction".

5.1.9 In the circumstances described in paragraph 5.1.8, the asset's fair value is measured at its market buying price. (The best indicator of an asset's market buying price is the replacement cost of the asset's remaining future economic benefits, which is not necessarily the cost of replicating the asset, that is, its reproduction cost). However, where assets belong to a cash-generating operation, and the sum of the market buying prices of the assets forming that cash-generating operation exceeds the fair value of that operation, the fair values of the assets would be determined after deducting that excess. The excess is:

(a) first applied against the carrying amount of any purchased goodwill forming part of the cash-generating operation; and

(b) for any remainder, eliminated by reducing proportionately the market buying prices of each of the other assets forming part of the cash-generating operation. In performing this process, no asset's fair value is measured at an amount less than its market selling price.

AASB 13 specifies a 'Fair Value Hierarchy' that is to be applied. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 1 inputs should be used to determine valuations wherever they exist. Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for the asset or liability (see e.g. GC56). In many instances it will be relatively clear cut as to whether market evidence exists or not. For example for most local governments their largest category of assets is infrastructure. Almost invariably markets in local government infrastructure don't exist. This infrastructure also often does not generate a commercial income.3 It is relatively easy to conclude this and these assets are therefore often appropriately valued based on replacement cost. (LGASA Local Government Financial Sustainability Paper – John Comrie June 2014)

AASB 116 Property Plant & Equipment - The residual value of an asset is the estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

The residual value is the amount obtained from the disposal of an asset, after deducting the cost of disposal. If there is no market for the asset then there cannot be an amount obtained from its disposal. The application of a residual value in the absence of a market is not a correct application of residual values in line with the accounting standards.

8.2. Appendix B – Detailed Condition Based Useful Life Review

1. Objective

To assess the condition and useful life of road asset using a representative sample of road assets

2. Scope

This report covers the assessment of the condition and useful life of Council's road asset of pavement and sealed surfacing for Regional roads, Local roads and urban streets. Sealed and unsealed if applicable.

3. Background

Council's Road asset stock comprises.

- Roads 1985 km
- Bridges / Culverts 214 structures
- Footpaths 15.8 km (26,783m^2)
- Kerb & Gutter 38.8 km
- Stormwater / drainage 4.6 km

Council's hierarchy for the road network is as follows:

Hierarchy	Urban Sealed (AADT)	Rural Sealed (AADT)	Unsealed (AADT)
1		0-25	0-10
2	0-50	26-50	11-25
3	51-200	51-150	26-100
4	201-400	151-300	101-175
5	401-750	301-500	176-250

Council's financial statements report the road asset class as at 30 June 2014

Current replacement cost $141,978,000
Accumulated depreciation $56,272,000
Depreciated Replacement Cost $85,706,000

The depreciation expense for the period ending 30 June 2014 is $2,026,000

The asset class was recognised in council's accounts / revalue at 30 June 2010.

Council's accounting policy required revaluation of infrastructure assets to be made with sufficient regularity to ensure that the carrying amount does not differ materially from those which would be determined using fair value at the reporting date.

This condition and useful assessment is undertaken to provide data on the condition and remaining life of the asset class for revaluation in accordance with Council's accounting policy.

4. Current Useful Life's

Council currently uses the following useful life estimates

Sealed road pavement – 100 years
Sealed surfaces – 20 years

The useful life estimate was sourced from internal sources when the asset class was recognised.

5. Methodology

A sample of assets was selected to represent the asset stock. The sample was selected to represent asset condition and useful life Road class in Maintenance zone (location) and road hierarchy 1-5. Details are show below.

Road Class	Range
Regional Sealed roads	Segments in each road **total 5**
Local Sealed roads	Segments in each hierarchy 1-4 and each maintenance zone **total 21**
Local Unsealed roads	Segments in each hierarchy 1-4 and each maintenance zone **total 25**
Urban Sealed roads	Segment in each hierarchy 1-4 Crookwell, Gunning, Taragla, Collector or Dalton, Binda **total 28**

A random sample of road was selected for inspection by the Asset & Risk Coordinator to best use of assessment team's time. Council has a limited number of roads in each class.

The condition assessment for road assets was assessed by a panel of two (2) Council staff experienced in the Maintenance, construction and renewal of pavement and sealed surfacing in Upper Lachlan Shire Council district for over 30 years. Members of the assessment panel were:

Ted Alchin Overseer Maintenance Gunning, 30 year experience Gunning
Ricky Smith Overseer Maintenance Crookwell, 35 year experience Crookwell
Chris Francis Overseer Construction Crookwell, 36 year experience Gunning

6. The assessment sample for pavement sealed roads

Road Name	Location	Hierarchy	Origin	Chainage	Length	Built date
Urban Sealed						
Betts St	Binda	1	Queen St	0.0	0.075	1960
Jarvis St	Binda	1	Queen St	0.0	0.015	1960
Duncan St	Binda	2	Queen St	0.0	0.052	1960
Herbert St	Binda	2	Queen St	0.0	0.071	1985
Wattle St	Binda	2	?	0.0	0.035	2010
Biala St	Gunning	1	Adams St	0.555	0.229	1985
Grovenor St	Gunning	1	Nth end	0.545	0.292	2010
Bond St	Gunning	2	Grovener St	0.232	0.178	1985
Copeland St	Gunning	2	Warrataw St	0.230	0.075	1985
Nelanglo St	Gunning	2	Groverner St	0.205	0.145	1985
Plew's Lane	Gunning	2	Nelanglo St	0.0	0.120	1935
Church St	Taralga	1	Corroberey Ck	0.25	0.22	1960
Cooper St	Taralga	1	Martyn St	0.23	0.32	1985
Burge St	Taralga	2	Orchard St	0.0	0.055	1935
Chisholm St	Taralga	2	Cooper St	0.4	0.25	1985
Martyn St	Taralga	2	Hillas St	0.6	0.2	1935
Quigg Lane	Taralga	2	Macarthur St	0.0	0.22	1960
Throsby St	Taralga	3	Hillas St	0.00	0.2	1960
Bunnaby St	Taralga	4	Martyn St	0.45	0.25	1935
East St	Crookwell	1	MR54	0.0	0.415	1960
McIntosh Rd	Crookwell	1	Prell St	0.595	0.12	1985
Brooklands St	Crookwell	2	MR52N	0.093	0.068	2010
Carrington Lane	Crookwell	2	Tait St	0.0	0.037	1985

Marsden St	Crookwell	2	Robertson st	0.0	0.08	1985
Memory Ave	Crookwell	2	MR248E	0.0	0.05	1985
Denham St	Crookwell	3	Wade St	0.0	0.13	1960
Jamieson St	Crookwell	3	Carr St	0.0	0.057	1960
Saxby St	Dalton	1	Chapel St	0.117	0.035	1985
Young St	Dalton	1	Chapel St	0.0	0.15	1985
Chapel St	Dalton	2	Brown St	0.225	0.045	1985
Brown St	Dalton	2	Jobson St	0.0	0.15	1985
Local Sealed						
Old Binda rd	1	1	MR54	0.0	0.035	2010
Rylstone Rd	4	1	MR54	0.0	0.06	1960
Stone Quarry Road	4	1	Yalbraith	0.0	0.410	2010
Strathaird Lane	3	1	MR256	0.0	2.88	2010
Bigga Rd	1	2	MR54	4.810	4.050	1960
Coolalie Rd	2	2	Jerrawa Rd	0.00	0.95	1985
Fullerton Rd	4	2	Peelwood rd	2.6	2.750	1985
Hawthorne's Tree rd	1	2	MR248W	0.0	4.0	2010
Parson's Lane	3	2	MR256	0.0	2.55	2010
Roslyn rd	3	2	MR54	0.0	8.325	1985
Sheldrick's Lane	2	2	Hume Hwy	0.85	0.85	1985
Bannaby Rd	3	3	Barretts rd	4.235	0.265	2010
Blakney Ck Nth rd	2	3	MR241	4.4	12.8	1985
Boobalaga rd	1	3	MR248W	0.9	1.61	1985
Golspie rd	4	3	MR256	37.68	0.16	1935
Peelwood rd	4	3	MR248E	7.05	3.88	2010
Rugby Rd	2	3	Brown St Dalton	0.0	7.9	1985
Third Crk rd	3	3	MR54	0.0	0.9	1985
Range Rd	2	4	MR52N	5.2	2.082	1985
Range Rd	3	4	MR52N	16.574	1.522	1985
Wheeo rd	1	4	MR52N	6.38	0.75	1985
Regional Sealed						
MR248E		5	MR256	0.0	5.822	1960
MR248W		5	MR54	0.0	38.483	2010
MR256		5	Union st Goulburn	18.3	54.702	1935
MR52N		5	MR54	5.9	5.9	1910
MR52S		5	Shire Boundary	0.0	0.8	1985
MR241		5	Rail bridge Gunning	3.6	6.8	1985

7. The assessment sample for sealed surfaces

Road Name	Location	Hierarchy	Origin	Chainage	Length	Built date
Urban Sealed						
Betts St	Binda	1	Queen St	0.0	0.075	2000
Jarvis St	Binda	1	Queen St	0.0	0.015	2005
Duncan St	Binda	2	Queen St	0.0	0.052	1995
Herbert St	Binda	2	Queen St	0.0	0.071	2005
Wattle St	Binda	2	MR54 Junction Pt rd	0.0	0.035	2010
Biala St	Gunning	1	Adams St	0.555	0.229	2010

Grovenor St	Gunning	1	Nth end	0.545	0.292	2010
Bond St	Gunning	2	Grovener St	0.232	0.178	2005
Copeland St	Gunning	2	Warrataw St	0.230	0.075	2005
Nelanglo St	Gunning	2	Groverner st	0.205	0.145	2005
Plew's Lane	Gunning	2	Nelanglo st	0.0	0.120	2000
Church St	Taralga	1	Corroberey Ck	0.25	0.22	1995
Cooper St	Taralga	1	Martyn St	0.23	0.32	2005
Burge St	Taralga	2	Orchard St	0.0	0.055	1995
Chisholm St	Taralga	2	Cooper St	0.4	0.25	2005
Martyn St	Taralga	2	Hillas St	0.6	0.2	2000
Quigg Lane	Taralga	2	Macarthur St	0.0	0.22	2005
Throsby St	Taralga	3	Hillas St	0.00	0.2	2000
Bunnaby St	Taralga	4	Martyn St	0.45	0.25	1995
East St	Crookwell	1	MR54	0.0	0.415	2000
McIntosh Rd	Crookwell	1	Prell St	0.595	0.12	2005
Brooklands St	Crookwell	2	MR52N	0.093	0.068	2005
Carrington Lane	Crookwell	2	Tait St	0.0	0.037	2005
Marsden St	Crookwell	2	Robertson st	0.0	0.08	2000
Memory Ave	Crookwell	2	MR248E	0.0	0.05	2000
Denham St	Crookwell	3	Wade St	0.0	0.13	2000
Jamieson St	Crookwell	3	Carr St	0.0	0.057	2000
Saxby St	Dalton	1	Chapel St	0.117	0.035	2005
Young St	Dalton	1	Chapel St	0.0	0.15	2005
Chapel St	Dalton	2	Brown St	0.225	0.045	2005
Brown St	Dalton	2	Jobson St	0.0	0.15	2000
Local Sealed						
Old Binda rd	1	1	MR54	0.0	0.035	2010
Rylstone Rd	4	1	MR54	0.0	0.06	2010
Stone Quarry Road	4	1	Yalbraith	0.0	0.410	2010
Strathaird Lane	3	1	MR256	0.0	2.88	2010
Bigga Rd	1	2	MR54	4.810	4.050	2005
Coolalie Rd	2	2	Jerrawa Rd	0.00	0.95	2005
Fullerton Rd	4	2	Peelwood rd	2.6	2.750	2013
Hawthorne's Tree rd	1	2	MR248W	0.0	4.0	2010
Parson's Lane	3	2	MR256	0.0	2.55	2010
Roslyn rd	3	2	MR54	0.0	8.325	2000
Sheldrick's Lane	2	2	Hume Hwy	0.85	0.85	2005
Bannaby Rd	3	3	Barretts rd	4.235	0.265	2010
Blakney Ck Nth rd	2	3	MR241	4.4	12.8	2005
Boobalaga rd	1	3	MR248W	0.9	1.61	2005
Golspie rd	4	3	MR256	37.68	0.16	2005
Peelwood rd	4	3	MR248E	7.05	3.88	2010
Rugby Rd	2	3	?	0.0	7.9	2005
Third Crk rd	3	3	MR54	0.0	0.9	2000
Range Rd	2	4	MR52N	5.2	2.082	2005
Range Rd	3	4	MR52N	16.574	1.522	2005
Wheeo rd	1	4	MR52N	6.38	0.75	2010
Regional Sealed						
MR248E		5	MR256	0.0	5.822	2000
MR248W		5	MR54	0.0	38.483	2005

MR256		5	Union st Goulburn	18.3	54.702	1995
MR52N		5	MR54	5.9	5.9	2000
MR52S		5	Shire Boundary	0.0	0.8	2000
MR241		5	Rail bridge Gunning	3.6	6.8	2000

8. The assessment sample for pavement unsealed roads

Road Name	Location	Hierarchy	Origin	Chainage	Length	Built date
Local Unsealed						
Anderson Rd	1	1	MR52N	0.00	0.315	1960
Red Hill	1	1	Boobalaga rd	0.0	0.34	1985
Julong Rd	1	2	Woodville rd	1.4	2.82	1935
Sylvia Rd	1	2	MR54	0.24	0.76	1985
Lost River rd	1	3	MR248W	8.84	1.745	1960
Woodville rd	1	3	Queen St	0.0	15.884	1960
Wheeo rd	1	4	MR52	17.790	0.590	1960
Clarke rd	4	1	Slater Rd	0.0	0.576	1960
Willcox Rd	4	1	Cummins rd	0.0	0.065	1960
Cummins Rd	4	2	Golspie rd	0.0	1.8	1935
Sapling creek rd	4	2	Peelwood rd	0.0	1	1960
Redground Heights rd	4	3	Peelwood rd	0.405	0.495	1960
Tryl Tryl rd	4	3	MR248E	0.0	1.5	1985
Chain of Ponds rd	2	1	Hume Hwy	0.0	3.4	1910
Ian Bush rd	2	1	Dalton /Jerrawa rd	0.0	0.98	1960
Flacknell Crk rd	2	2	MR241	0.0	1.4	1985
Hillgrove Rd	2	2	Old Hume Hwy	0.5	4.4	1985
Collector rd	2	3	Hume Hwy off ramp	3.6	1.6	1985
Sapphire Rd 2	2	3	Wheeo rd	16.22	6.63	1960
Wheeo rd	1	4	MR52	0.0	0.43	1960
Carrawongy rd	3	1	Woodhouselee rd	0.0	2.05	1960
Church rd	3	1	Pejar rd	0.0	1	1985
McAlister rd	3	2	Woodhouselee rd	0.0	4.568	1960
Rhyanna rd	3	2	Middle Arm rd	4.63	3.87	1985
Carrabungla rd	3	3	Middle Arm rd	0.16	0.91	1935
Mount Rae rd	3	3	Carrabungla rd	0.0	4.5	1960
Regional Unsealed						
MR241	2	5	Railway bridge Gunning	14.3	12.8	1985

9. Condition assessment

The panel assessed the condition of the road asset and by consensus estimated the remaining life for each of the pavement and sealed surfacing in the sample. The estimated remaining life is the remaining period to time that the asset is able to provide the required future economic benefits (service potential) to the council and the community *before it is replaced/renewed or disposed of.*

The age of each pavement and seal was added to the estimated remaining life to determine an estimate of useful life for each. The results are summarised below.

10. Condition, estimated remaining life and useful life

Pavement

Road Name	Location	Hierarchy	Year built-Age (yrs)	Est Curr. Condition	Est rem. life	Est useful life
Urban Sealed						
Betts St	Binda	1	1960 - 55	3	Nil	Indefinite
Jarvis St	Binda	1	1960 - 55	2	Nil	Indefinite
Duncan St	Binda	2	1960 - 55	3	Nil	Indefinite
Herbert St	Binda	2	1985 - 30	3	Nil	Indefinite
Wattle St	Binda	2	2010 - 5	2	Nil	Indefinite
Biala St	Gunning	1	1985 - 30	2	70	100
Grovenor St	Gunning	1	2010 - 5	2	90	95
Bond St	Gunning	2	1985 - 30	4	70	100
Copeland St	Gunning	2	1985 - 30	2	70	100
Nelanglo St	Gunning	2	1985 - 30	3	70	100
Plew's Lane	Gunning	2	1935 - 80	3	Nil	Indefinite
Church St	Taralga	1	1960 - 55	3	45	100
Cooper St	Taralga	1	1985 - 30	3	45	75
Burge St	Taralga	2	1935 - 80	3	Nil	Indefinite
Chisholm St	Taralga	2	1985 - 30	3	45	75
Martyn St	Taralga	2	1935 - 80	4	20	100
Quigg Lane	Taralga	2	1960 - 55	3	45	100
Throsby St	Taralga	3	1960 - 55	3	Nil	Indefinite
Bunnaby St	Taralga	4	1935 - 80	5	5	
East St	Crookwell	1	1960 - 55	4	45	100
McIntosh Rd	Crookwell	1	1985 - 30			
Brookland's St	Crookwell	2	2010 - 5	3	45	50
Carrington Lane	Crookwell	2	1985 - 30	3	30	60
Marsden St	Crookwell	2	1985 - 30	4	40	70
Memory Ave	Crookwell	2	1985 - 30			
Denham St	Crookwell	3	1960 - 55	2	45	100
Jamieson St	Crookwell	3	1960 - 55			
Saxby St Lane	Dalton	1	1985 - 30	2	80	110
Young St	Dalton	1	1985 - 30	2	70	100
Chapel St	Dalton	2	1985 - 30	4	20	50
Brown St	Dalton	2	1985 - 30	4	70	100
Local Sealed						
Old Binda rd	1	1	2010 - 5	2	Nil	Indefinite
Rylstone Rd	4	1	2000 -15	1	70	85
Stone Quarry Road	4	1	1935 - 80	3	Nil	Indefinite
Strathaird Lane	3	1	1960 - 55	3	45	100
Bigga Rd	1	2	1960 - 55	3	45	100
Coolalie Rd	2	2	1985 - 30	3	70	100
Fullerton Rd	4	2	1960 - 55	2	45	100
Hawthorne's Tree rd	1	2	1960 - 55	3	45	100
Parson's Lane	3	2	1960 - 55	3	45	100
Roslyn rd	3	2	1960 - 55	4	45	100
Sheldrick's Lane	2	2	1985 - 30	2	Nil	Indefinite
Bannaby Rd	3	3	2010 - 5	2	95	100
Blakney Ck Nth rd	2	3	1985 - 30	2	70	100
Boobalaga rd	1	3	1960 - 55	3	45	100
Golspie rd	4	3	1935 - 80	5	10	90
Peelwood rd	4	3	2010 - 5	4	10	15

Rugby Rd	2	3	1985 - 30	4	70	100
Third Crk rd	3	3	1960 - 55	4	45	100
Range Rd	2	4	1985 - 30	5	2	32
Range Rd	3	4	1985 - 30	3	30	60
Wheeo rd	1	4	1985 - 30	4	20	50
Regional Sealed						
MR248E		5	1985 - 30	3	10	40
MR248W		5	2010 - 5	3	45	50
MR256		5	1935 - 80			
MR52N		5	1910 - 105	4	7	112
MR52S		5	1985 - 30	3	70	100
MR241		5	1985 - 30	2	70	100

Sealed Surfacings

Road Name	Location	Hierarchy	Year Built - Age (yrs)	Est Curr. Condition	Est rem life	Est useful life
Urban Sealed						
Betts St	Binda	1	2000 - 15	3	10	25
Jarvis St	Binda	1	2005 – 10	2	40	50
Duncan St	Binda	2	1995 - 20	3	40	60
Herbert St	Binda	2	2005 – 10	3	10	20
Wattle St	Binda	2	2010 - 5	2	40	45
Biala St	Gunning	1	2010 - 5	2	10	15
Grovenor St	Gunning	1	2010 - 5	2	20	25
Bond St	Gunning	2	2005 - 10	1	20	30
Copeland St	Gunning	2	2005 - 10	2	5	15
Nelanglo St	Gunning	2	2005 - 10	2	20	30
Plew's Lane	Gunning	2	2000 - 15	4	Nil	Indefinite
Church St	Taralga	1	1995 - 20	3	10	30
Cooper St	Taralga	1	2005 - 10	2	20	30
Burge St	Taralga	2 to 1	1995 - 20	3	Nil	Indefinite
Chisholm St	Taralga	2	2005 - 10	2	20	30
Martyn St	Taralga	2	2000 - 15	4	20	35
Quigg Lane	Taralga	2	2005 - 10	3	15	25
Throsby St	Taralga	3	2000 - 15	3	Nil	Indefinite
Bunnaby St	Taralga	4	1995 - 20	5	5	25
East St	Crookwell	1	2000 - 15	4	10	25
McIntosh Rd	Crookwell	1	2005 - 10			
Brooklands St	Crookwell	2	2005 - 10	2	20	30
Carrington Lane	Crookwell	2	2005 - 10	2	25	35
Marsden St	Crookwell	2	2000 - 15	5	5	20
Memory Ave	Crookwell	2	2000 - 15			
Denham St	Crookwell	3	2014	1	30	30
Jamieson St	Crookwell	3	2000 - 15			
Saxby St to Lane	Dalton	1	2005 - 10	2	15	25
Young St	Dalton	1	2005 - 10	2	15	25
Chapel St	Dalton	2	2015	1	20	20
Brown St	Dalton	2	2015	1	20	20
Local Sealed						
Old Binda rd	1	1	2010 - 5	2	Nil	Indefinite
Rylstone Rd	4	1	2010 - 5	2	40	45
Stone Quarry Road	4	1	1980 – 35	3	Nil	Indefinite
Strathaird Lane	3	1	2000 – 15	3	15	30

Bigga Rd	1	2	2005 - 10	3	15	25
Coolalie Rd	2	2	2005 - 10	4	15	25
Fullerton Rd	4	2	2013 - 2	2	25	27
Hawthorne's Tree rd	1	2	2010 - 5	3	20	25
Parson's Lane	3	2	2005 - 10	3	15	25
Roslyn rd	3	2	2000 - 15	4	5	20
Sheldrick's Lane	2	2	2005 - 10	3	Nil	Indefinite
Bannaby Rd	3	3	2010 - 5	2	20	25
Blakney Ck Nth rd	2	3	2005 - 10	2	20	30
Boobalaga rd	1	3	2005 - 10	3	25	35
Golspie rd	4	3	2005 - 10	5	Nil	Indefinite
Peelwood rd	4	3	2010 - 5	4	10	15
Rugby Rd	2	3	2005 - 10	3	15	25
Third Crk rd	3	3	2000 - 15	3	15	30
Range Rd	2	4	2005 - 10	5	2	12
Range Rd	3	4	2005 - 10	3	10	20
Wheeo rd	1	4	2010 - 10	4	10	20
Regional Sealed						
MR248E		5	2005 - 10	3	10	20
MR248W		5	2005 - 10	3	15	25
MR256		5	1995 - 20			
MR52N		5	2000 - 15	4	7	22
MR52S		5	2000 - 15	2	15	30
MR241		5	2000 - 15	2	10	25

Unsealed Pavement

Road Name	Location	Hierarchy	Year Built - Age (yrs)	Est Curr. Condition	Est rem. Life	Est useful life	Gravel
Local Unsealed							
Anderson Rd	1	1	1960 - 55	3	Nil	Indefinite	
Red Hill	1	1	1985 - 30	3	Nil	Indefinite	
Julong Rd	1	2	1935 - 80	3	20	100	10yrs
Sylvia Vale Rd	1	2	1985 - 30	3	50	80	15yrs
Lost River rd	1	3	1960 - 55	2	50	105	5yrs
Woodville rd	1	3	1960 - 55	2	50	105	5yrs
Wheeo rd	1	4	2010 - 5	1	50	55	Dust seal
Clarke rd	4	1	1960 - 55	4	Nil	Indefinite	
Willcox Rd	4	1	1960 - 55	2	45	100	Nil
Cummins Rd	4	2	1935 - 80	3	50	130	15yrs
Sapling creek rd	4	2	1960 - 55	3	45	100	25yrs
Redground Heights rd	4	3	1960 - 55	3	45	100	10yrs
Tryl Tryl rd	4	3	1985 - 30	4	50	80	1yr
Chain of Ponds rd	2	1	1910 - 105	4	Nil	Indefinite	Nil
Ian Bush rd	2	1	1960 - 55	3	100	Indefinite	Nil
Flacknell Crk rd	2	2	1985 - 30	2	70	100	15yrs
Hillgrove Rd	2	2	1985 - 30	3	70	100	15yrs
Collector rd	2	3	1985 - 30	3	70	100	5yrs
Sapphire Rd 2	2	3	1960 - 55	3	50	105	15yrs
Wheeo rd	2	4	1960 - 55				
Carrawongy rd	3	1	1960 - 55	2	Nil	Indefinite	Nil

Church rd	3	1	1985 - 30		Nil	Indefinite	Nil
McAlister rd	3	2	1960 - 55	3	45	100	10yrs
Rhyanna rd	3	2	1960 - 55	2	45	100	15yrs
Carrabungla rd	3	3	1935 - 80	4	20	100	1yr
Mount Rae rd	3	3	1960 - 55	3	45	100	10yrs
Regional Unsealed							
MR241	2	5	1985 - 30	4	70	100	1yrs 4km

11. Summary

Sealed Road Pavement

Road Name	Sample size	Average Est Useful Life (yrs)	Existing Useful Life (yrs)	Recommendation
Regional Sealed hierarchy 5	5	80	100	No Change
Urban Sealed hierarchy 1	9	97	100	No Change
Urban Sealed hierarchy 2	16	82	100	No Change
Urban Sealed hierarchy 3	3	100	100	No Change
Urban Sealed hierarchy 4	1	85	100	No Change
Local Road Sealed hierarchy 1	4	92	100	No Change
Local Road Sealed hierarchy 2	7	100	100	No Change
Local Road Sealed hierarchy 3	7	86	100	No Change
Local Road Sealed hierarchy 4	3	47	100	No Change

Sealed Road Surfacing

Road Name	Sample size	Average Est Useful Life (yrs)	Existing Useful Life (yrs)	Recommendation
Regional Sealed hierarchy 5	5	24.4	20	Ext to 25yrs based on Avg
Urban Sealed hierarchy 1	9	27.7	20	Ext to 25yrs based on Avg
Urban Sealed hierarchy 2	16	29.6	20	Ext to 25yrs based on Avg
Urban Sealed hierarchy 3	3	30	20	Ext to 25yrs based on Avg
Urban Sealed hierarchy 4	1	25	20	Ext to 25yrs based on Avg
Local Road Sealed hierarchy 1	4	37.5	20	Ext to 25yrs based on Avg
Local Road Sealed hierarchy 2	7	24.5	20	Ext to 25yrs based on Avg
Local Road Sealed hierarchy 3	7	26.6	20	Ext to 25yrs based on Avg
Local Road Sealed hierarchy 4	3	17.3	20	Ext to 25yrs based on Avg

Unsealed Road Pavement

Road Name	Sample size	Average Est Useful Life (yrs)	Existing Useful Life (yrs)	Recommendation
Regional unsealed hierarchy 5	1	100	100	No Change
Local Road unsealed hierarchy 1	8	Indefinite	100	No Change
Local Road unsealed hierarchy 2	8	101	100	No Change
Local Road unsealed hierarchy 3	8	99	100	No Change
Local Road unsealed hierarchy 4	1	55	100	No Change

12. Conclusions

The conclusion of the condition assessment and estimation of remaining life and useful life are;

13. The assessment panel concluded that the sample of sealed road pavements and sealed surfacing, although small in number was generally representative of the condition of the district road network
14. It is recommended that the following useful lives be adopted by Council for sealed road pavements and sealed surfaces as at 30 June 2015

A. Sealed road pavement
    a. Regional sealed roads 100 years
    b. Urban sealed roads 100 years
    c. Local sealed roads 100 years
B. Sealed road surfacing
    a. Regional sealed roads 25 years
    b. Urban sealed roads 25 years
    c. Local sealed roads 25 years
C. Unsealed road pavement
    a. Regional sealed roads 30 years
    b. Urban sealed roads 30 years
    c. Local sealed roads 30 years

8.3. Appendix C – Unit Rates Table

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_Unknown_Concrete Bridges	$2,953	Insufficient data for first principles rate, existing 2010 valuation rate (30 June) escalated to 30 June 2014 using Rawlinsons Ed 33, 9.30%	$2,701.83
Transport	Bridges & Culverts	Concrete Bridges	Bridges_Concrete_Deck Area	$2,953	Insufficient data for first principles rate, existing 2010 valuation rate (30 June) escalated to 30 June 2014 using Rawlinsons Ed 33, 9.30%	$2,701.83
Transport	Bridges & Culverts	Causeway	Stormwater_Causeway_Concrete	$1,640	Insufficient data for first principles rate, existing 2010 valuation rate (30 June) escalated to 30 June 2014 using Rawlinsons Ed 33, 9.30%	$1,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/1400x1700mm Dia	$3,023	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/1500x1200mm Dia	$2,532	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/1800x1800mm Dia	$4,023	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/1800x900mm Dia	$2,576	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/2400x1550mm Dia	$3,803	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/2400x2400mm Dia	$5,355	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/2600x1500mm Dia	$4,204	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/3600x2400mm Dia	$7,870	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/3600x2600mm Dia	$8,526	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,499.10
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/4300x750mm Dia	$2,938	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/6000x2400mm Dia	$13,117	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/7400x2100mm Dia	$14,155	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/7400x2400mm Dia	$16,177	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/9600x1800mm Dia	$15,740	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_1/9800x2000mm Dia	$17,853	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/1580x1210mm Dia	$4,451	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/1800x900mm Dia	$4,343	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/1820x900mm Dia	$4,391	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/1830x1770mm Dia	$6,642	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/2100x2100mm Dia	$8,127	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/2150x1500mm Dia	$6,093	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/2150x900mm Dia	$4,773	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/2400x1800mm Dia	$8,247	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$2,833.33
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/2400x2400mm Dia	$9,285	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/3000x2100mm Dia	$11,265	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/3000x900mm Dia	$5,052	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/3050x1500mm Dia	$7,861	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/3100x1550mm Dia	$8,800	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/3100x1900mm Dia	$10,615	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/3750x2400mm Dia	$13,965	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_2/900x500mm Dia	$1,489	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/1500x1250mm Dia	$6,405	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/1800x900mm Dia	$6,110	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/2100x2100mm Dia	$11,457	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/2100x900mm Dia	$6,635	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/2400x900mm Dia	$7,302	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/2500x2500mm Dia	$14,339	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/2750x1500mm Dia	$10,405	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3000x1900mm Dia	$14,574	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3000x2100mm Dia	$15,714	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3000x2400mm Dia	$17,144	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3000x2700mm Dia	$19,287	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3000x3000mm Dia	$21,430	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3000x900mm Dia	$7,284	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3300x3600mm Dia	$26,046	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3500x2400mm Dia	$18,416	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3500x3300mm Dia	$25,323	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3600x2400mm Dia	$18,943	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_3/3750x3400mm Dia	$27,954	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/1800x1800mm Dia	$12,055	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/2180x1550mm Dia	$11,930	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/2200x2100mm Dia	$15,492	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/2400x1800mm Dia	$14,999	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/2400x900mm Dia	$9,482	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/2450x1800mm Dia	$15,311	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/2750x1800mm Dia	$16,322	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/2800x2400mm Dia	$20,301	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/3000x2400mm Dia	$22,010	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/3050x1500mm Dia	$14,760	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/3100x3000mm Dia	$28,430	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_4/920x1200mm Dia	$6,466	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_5/2400x1200mm Dia	$13,444	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_6/2750x1000mm Dia	$17,420	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_6/3050x1500mm Dia	$21,659	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_7/2100x1200mm Dia	$16,644	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Box Culverts	Culverts_RCBC_Unknown	$3,826	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$3,500.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_1/1400mm Dia	$2,015	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,800.00

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_1/1500mm Dia	$2,145	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,900.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_1/1800mm Dia	$3,087	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$2,000.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_1/900mm Dia	$920	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$975.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_2/1200mm Dia	$2,643	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,600.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_2/1400mm Dia	$3,357	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,800.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_2/1500mm Dia	$3,593	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,900.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_2/1800mm Dia	$4,973	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$2,000.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_2/750mm Dia	$1,225	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$700.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_2/900mm Dia	$1,565	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$975.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_3/1050mm Dia	$3,058	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,300.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_3/1110mm Dia	$3,398	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,300.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_3/1200mm Dia	$3,673	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,600.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_3/1500mm Dia	$5,041	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,900.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_3/530mm Dia	$935	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$367.50

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_3/750mm Dia	$1,717	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$700.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_3/900mm Dia	$2,211	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$975.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_4/1200mm Dia	$4,704	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,600.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_4/1500mm Dia	$6,489	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,900.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_4/1800mm Dia	$8,746	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$2,000.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_4/900mm Dia	$2,856	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$975.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_5/1800mm Dia	$10,633	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$2,000.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_5/900mm Dia	$3,501	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$975.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_6/1200mm Dia	$6,766	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,600.00
Transport	Bridges & Culverts	Concrete Pipe Culverts	Culverts_RCP_Unknown	$1,749	Insufficient data for first principles rate, existing 2010 valuation rate (30 June) escalated to 30 June 2014 using Rawlinsons Ed 33, 9.30%	
Transport	Bridges & Culverts	Steel Pipe Culverts	Culverts_RSP_1/1500mm Dia	$2,145	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,500.00
Transport	Bridges & Culverts	Steel Pipe Culverts	Culverts_RSP_1/5800mm Dia	$9,880	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,500.00
Transport	Bridges & Culverts	Steel Pipe Culverts	Culverts_RSP_2/1800mm Dia	$4,973	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,500.00
Transport	Bridges & Culverts	Steel Pipe Culverts	Culverts_RSP_2/5100mm Dia	$14,054	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,500.00

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Transport	Bridges & Culverts	Steel Pipe Culverts	Culverts_RSP_4/1500mm Dia	$6,489	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,500.00
Transport	Footpaths & Cycleways		Footpaths & Cycleways_Asphalt	$35	Rawlinsons 2014 AC Footpath Bituminous Concrete 25mm thick on and including 100mm thick cement treated crushed rock basecourse p 170	$57.37
Transport	Footpaths & Cycleways		Footpaths & Cycleways_Bitumen	$25	Rawlinsons 2014 Sprayed Bitumen Footpath Sprayed Bitumen surfacing on and including 100mm thick cemenbt treated rock basecourse p 170	$55.25
Transport	Footpaths & Cycleways		Footpaths & Cycleways_Concrete	$55	Rawlinsons 2014 Concrete Footpath In Situ Concrete paving with broomed finish (100mm thick with SL72 fabric reinforcement) p 170	$60.20
Transport	Footpaths & Cycleways		Footpaths & Cycleways_Pavers	$74	Rawlinsons 2014 Brick Paving 230x110/150x75mm thick Including Compacted Sand Bed for brick paving 75mm Thickp 170	$55.25
Transport	Sealed Roads	Kerb & Gutter	Kerb & Gutter_Concrete_Kerb Only	$98	ULSC Internal Works	$136.93
Transport	Sealed Roads	Kerb & Gutter	Kerb & Gutter_Concrete_Layback	$98	ULSC Internal Works	$120.39
Transport	Sealed Roads	Kerb & Gutter	Kerb & Gutter_Concrete_Rollback	$98	ULSC Internal Works	$121.33
Transport	Sealed Roads	Kerb & Gutter	Kerb & Gutter_Concrete_Upright_90	$98	ULSC Internal Works	$121.44
Transport	Sealed Roads	Kerb & Gutter	Kerb & Gutter_Stone_Upright_90	$98	ULSC Internal Works	$147.12
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/1200x600mm Dia	$1,258	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$975.00
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/1250x1200mm Dia	$2,467	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,600.00
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/1500x500mm Dia	$1,253	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,300.00
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/1500x720mm Dia	$1,805	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,300.00
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/150x300mm Dia	$400	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$136.75
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/2000x500mm Dia	$1,590	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$1,300.00
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/300x250mm Dia	$457	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$136.75
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/300x350mm Dia	$322	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$136.75

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/375x450mm Dia	$517	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$246.13
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/400x1100mm Dia	$997	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$700.00
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/450x300mm Dia	$414	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$289.50
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/500x500mm Dia	$722	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$367.50
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/600x260mm Dia	$523	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$289.50
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/600x280mm Dia	$563	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$289.50
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/600x300mm Dia	$554	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$315.50
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/750x300mm Dia	$550	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$452.50
Stormwater Drainage	Pipes & Culverts	Concrete Box Culverts	Culverts_RCBC_1/900x300mm Dia	$899	Rawlinsons 2015 Foundation, pipe & concrete headwall casting cost. Single unit rate $/m developed by JRA for specified culvert size based on interpolation by waterway area cost/m for culvert cost with 2 headwalls	$367.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Flood Protection_Causeway 1000mm Dia	$821	Insufficient data for first principles rate, existing 2010 valuation rate (30 June) escalated to 30 June 2014 using Rawlinsons Ed 33, 9.30%	$751.38
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Flood Protection_Causeway 450mm Dia	$316	Insufficient data for first principles rate, existing 2010 valuation rate (30 June) escalated to 30 June 2014 using Rawlinsons Ed 33, 9.30%	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Flood Protection_Causeway 800mm Dia	$765	Insufficient data for first principles rate, existing 2010 valuation rate (30 June) escalated to 30 June 2014 using Rawlinsons Ed 33, 9.30%	$700.00
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 1050mm Dia Including Site Factor 1.76	$2,302	NSW Reference Rates June 2014 RCP interpolation from 1200mm p36 x Site Factor 1.15 (Average of factors for distance, dia, pits, site, length)	$1,300.00
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 1200mm Dia Including Site Factor 1.77	$2,301	NSW Reference Rates June 2014 RCP 1200mm p36 x Site Factor 1.77 (Average of factors for distance, dia, pits, site, length)	$1,600.00
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 1200mm Dia Including Site Factor 1.9	$2,470	NSW Reference Rates June 2014 RCP 1200mm p36 x Site Factor 1.9 (Average of factors for distance, dia, pits, site, length)	$1,600.00
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 150mm Dia Including Site Factor 1.27	$102	NSW Reference Rates June 2014 RCP interpolation from 300mm p36 x Site Factor 1.27 (Average of factors for distance, dia, pits, site, length)	$84.38
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 200mm Dia Including Site Factor 1.19	$127	NSW Reference Rates June 2014 RCP Interpolation from 300mm p36 x Site Factor 1.19 (Average of factors for distance, dia, pits, site, length)	$92.75

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 225mm Dia Including Site Factor 1.27	$135	NSW Reference Rates June 2014 RCP interpolation from 300mm p36 x Site Factor 1.27 (Average of factors for distance, dia, pits, site, length)	$92.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 225mm Dia Including Site Factor 1.3	$139	NSW Reference Rates June 2014 RCP interpolation from 300mm p36 x Site Factor 1.3 (Average of factors for distance, dia, pits, site, length)	$92.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 250mm Dia Including Site Factor 1.25	$167	NSW Reference Rates June 2014 RCP Interpolation from 300mm p36 x Site Factor 1.25 (Average of factors for distance, dia, pits, site, length)	$92.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 250mm Dia Including Site Factor 1.27	$169	NSW Reference Rates June 2014 RCP Interpolation from 300mm p36 x Site Factor 1.27 (Average of factors for distance, dia, pits, site, length)	$92.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.09	$174	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.09 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.14	$182	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.14 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.18	$189	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.18 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.19	$190	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.19 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.2	$192	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.2 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.22	$195	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.22 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.25	$200	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.25 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.29	$206	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.29 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.31	$210	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.31 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.33	$213	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.33 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.34	$214	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.34 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.35	$216	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.35 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.37	$219	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.37 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 300mm Dia Including Site Factor 1.39	$222	NSW Reference Rates June 2014 RCP 300mm p36 x Site Factor 1.39 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 350mm Dia Including Site Factor 1.31	$187	NSW Reference Rates June 2014 RCP Interpolation from 300mm p36 x Site Factor 1.31 (Average of factors for distance, dia, pits, site, length)	$136.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.11	$244	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.11 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.13	$249	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.13 (Average of factors for distance, dia, pits, site, length)	$202.75

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.15	$253	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.15 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.16	$255	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.16 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.17	$257	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.17 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.18	$260	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.18 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.19	$262	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.19 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.2	$264	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.2 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.21	$266	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.21 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.22	$268	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.22 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.23	$271	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.23 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.24	$273	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.24 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.25	$275	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.25 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.27	$279	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.27 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.28	$282	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.28 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.29	$284	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.29 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.31	$288	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.31 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.32	$290	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.32 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.33	$293	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.33 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.35	$297	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.35 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.36	$299	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.36 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.37	$301	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.37 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 1.39	$306	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 1.39 (Average of factors for distance, dia, pits, site, length)	$202.75

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 375mm Dia Including Site Factor 5.39	$1,186	NSW Reference Rates June 2014 RCP 375mm p36 x Site Factor 5.39 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 400mm Dia Including Site Factor 1.25	$333	NSW Reference Rates June 2014 RCP Interpolation from 450mm p36 x Site Factor 1.25 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 400mm Dia Including Site Factor 1.31	$349	NSW Reference Rates June 2014 RCP Interpolation from 450mm p36 x Site Factor 1.31 (Average of factors for distance, dia, pits, site, length)	$202.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.15	$345	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.15 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.16	$348	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.16 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.18	$354	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.18 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.19	$357	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.19 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.2	$360	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.2 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.23	$369	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.23 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.24	$372	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.24 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.25	$375	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.25 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.26	$378	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.26 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.28	$384	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.28 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.29	$387	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.29 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.3	$390	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.3 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.35	$405	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.35 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.37	$411	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.37 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.39	$417	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.39 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.4	$420	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.4 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.41	$423	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.41 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.43	$429	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.43 (Average of factors for distance, dia, pits, site, length)	$289.50

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 450mm Dia Including Site Factor 1.45	$435	NSW Reference Rates June 2014 RCP 450mm p36 x Site Factor 1.45 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 500mm Dia Including Site Factor 1.39	$343	NSW Reference Rates June 2014 RCP Interpolation from 525mm p36 x Site Factor 1.39 (Average of factors for distance, dia, pits, site, length)	$289.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 500mm Dia Including Site Factor 1.44	$343	NSW Reference Rates June 2014 RCP Interpolation from 525mm p36 x Site Factor 1.44 (Average of factors for distance, dia, pits, site, length)	$367.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 525mm Dia Including Site Factor 1.39	$497	NSW Reference Rates June 2014 RCP 525mm p36 x Site Factor 1.38 (Average of factors for distance, dia, pits, site, length)	$367.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 525mm Dia Including Site Factor 1.4	$457	NSW Reference Rates June 2014 RCP 525mm p36 x Site Factor 1.27 (Average of factors for distance, dia, pits, site, length)	$367.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 525mm Dia Including Site Factor 1.45	$464	NSW Reference Rates June 2014 RCP 525mm p36 x Site Factor 1.29 (Average of factors for distance, dia, pits, site, length)	$367.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 525mm Dia Including Site Factor 1.46	$482	NSW Reference Rates June 2014 RCP 525mm p36 x Site Factor 1.34 (Average of factors for distance, dia, pits, site, length)	$367.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600×600mm Dia Including Site Factor 1.38	$552	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.38 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.27	$508	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.27 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.29	$516	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.29 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.34	$536	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.34 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.35	$540	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.35 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.36	$544	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.36 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.39	$556	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.39 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.43	$572	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.43 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.45	$580	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.45 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.47	$588	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.47 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.49	$596	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.49 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.5	$600	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.5 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 600mm Dia Including Site Factor 1.53	$612	NSW Reference Rates June 2014 RCP 600mm p36 x Site Factor 1.53 (Average of factors for distance, dia, pits, site, length)	$452.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 60mm Dia Including Site Factor 1.49	$32	NSW Reference Rates June 2014 RCP Interpolation from 300mm p36 x Site Factor 1.49 (Average of factors for distance, dia, pits, site, length)	$452.50

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 700mm Dia Including Site Factor 1.34	$663	NSW Reference Rates June 2014 RCP Interpolation from 750mm p36 x Site Factor 1.34 (Average of factors for distance, dia, pits, site, length)	$595.00
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 700mm Dia Including Site Factor 1.35	$668	NSW Reference Rates June 2014 RCP Interpolation from 750mm p36 x Site Factor 1.35 (Average of factors for distance, dia, pits, site, length)	$595.00
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 750mm Dia Including Site Factor 1.45	$769	NSW Reference Rates June 2014 RCP 750mm p36 x Site Factor 1.45 (Average of factors for distance, dia, pits, site, length)	$367.50
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 750mm Dia Including Site Factor 1.57	$832	NSW Reference Rates June 2014 RCP 750mm p36 x Site Factor 1.57 (Average of factors for distance, dia, pits, site, length)	$700.00
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 900mm Dia Including Site Factor 1.61	$1,288	NSW Reference Rates June 2014 RCP 900mm p36 x Site Factor 1.61 (Average of factors for distance, dia, pits, site, length)	$975.00
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Concrete 900mm Dia Including Site Factor 1.66	$1,328	NSW Reference Rates June 2014 RCP 900mm p36 x Site Factor 1.66 (Average of factors for distance, dia, pits, site, length)	$975.00
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_Earthenware 225mm Dia Including Site Factor 1.12	$119	NSW Reference Rates June 2014 RCP interpolation from 300mm p36 x Site Factor 1.12 (Average of factors for distance, dia, pits, site, length)	$92.75
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_uPVC 150mm Dia Including Site Factor 1.22	$102	NSW Reference Rates June 2014 uPVC 150mm p36 x Site Factor 1.22 (Average of factors for distance, dia, pits, site, length)	$84.38
Stormwater Drainage	Pipes & Culverts	Reticulation Pipes (Pits Included)	Reticulation Pipes (Pits Included)_uPVC 575mm Dia Including Site Factor 1.35	$399	NSW Reference Rates June 2014 uPVC Interpolation from 525mm p36 x Site Factor 1.35 (Average of factors for distance, dia, pits, site, length)	$367.50
Transport	Bridges & Culverts	Timber Bridges	Bridges_Timber_Deck Area	$4,856	Insufficient data for first principles rate, existing 2010 valuation rate (30 June) escalated to 30 June 2014 using Rawlinsons Ed 33, 9.30%	$4,442.40
Transport	Bridges & Culverts	Timber Bridges	Culverts_RCBC_6/2100x750mm Dia	$4,442	Insufficient data for first principles rate, existing 2010 valuation rate (30 June) escalated to 30 June 2014 using Rawlinsons Ed 33, 9.30%	$4,442.40
Transport	Sealed Roads	Base	Sealed Roads_Base_50mm Depth	$5	ULSC Internal Works	$2.00
Transport	Sealed Roads	Formation	SLR_Formation_Difficulty 1	$9.70	Rawlinsons 2015 Formation Class 3 in light soil Inclusive of Bulk Excavation, Compaction to 90%, Clear Vegetation.	$9.70 - $29.10
Transport	Sealed Roads	Sub-Base	Sealed Roads_Sub-Base_100mm Depth	$6	ULSC Internal Works	$4.00
Transport	Sealed Roads	Sub-Base	Sealed Roads_Sub-Base_200mm Depth	$12	ULSC Internal Works	$8.00
Transport	Sealed Roads	Surface	Sealed Roads_Surface_1 Coat Spray Seal	$4	ULSC Internal Works	$3.50
Transport	Unsealed Roads	Base	Unsealed Roads_Base_50mm Depth	$3	ULSC Internal Works	$2.00
Transport	Unsealed Roads	Sub-Base	Unsealed Roads_Sub Base_100mm Depth	$6	ULSC Internal Works	$4.00
Transport	Unsealed Roads	Sub-Base	Unsealed Roads_Sub Base_200mm Depth	$12	ULSC Internal Works	$8.00
Transport	Sealed Roads	Structures	Structures_1 per km	$4,800	Grade - 1-2% - # 1	$4,800
Transport	Sealed Roads	Structures	Structures_10 per km	$11,100	Grade - 10-11% - # 10	$11,100
Transport	Sealed Roads	Structures	Structures_11 per km	$11,800	Grade - 11-12% - # 11	$11,800
Transport	Sealed Roads	Structures	Structures_12 per km	$12,500	Grade - 12-13% - # 12	$12,500
Transport	Sealed Roads	Structures	Structures_13 per km	$13,200	Grade - 13-14% - # 13	$13,200
Transport	Sealed Roads	Structures	Structures_14 per km	$13,900	Grade - 14-15% - # 14	$13,900
Transport	Sealed Roads	Structures	Structures_15 per km	$14,600	Grade - 15-16% - # 15	$14,600

CATEGORY	SUBCATEGORY1	SUBCATEGORY2	UNIT_RATE_COST_CODE	Unit cost	Description	Pre-Revaluation Rate
Transport	Sealed Roads	Structures	Structures_16 per km	$15,300	Grade - 16-17% - # 16	$15,300
Transport	Sealed Roads	Structures	Structures_17 per km	$16,000	Grade - 17-18% - # 17	$16,000
Transport	Sealed Roads	Structures	Structures_18 per km	$16,700	Grade - 18-19% - # 18	$16,700
Transport	Sealed Roads	Structures	Structures_2 per km	$5,500	Grade - 2-3% - # 2	$5,500
Transport	Sealed Roads	Structures	Structures_20 per km	$18,100	Grade - 20-21% - # 20	$18,100
Transport	Sealed Roads	Structures	Structures_21 per km	$18,800	Grade - 21-22% - # 21	$18,800
Transport	Sealed Roads	Structures	Structures_25 per km	$21,600	Grade - 25-26% - # 25	$21,600
Transport	Sealed Roads	Structures	Structures_3 per km	$6,200	Grade - 3-4% - # 3	$6,200
Transport	Sealed Roads	Structures	Structures_4 per km	$6,900	Grade - 4-5% - # 4	$6,900
Transport	Sealed Roads	Structures	Structures_5 per km	$7,600	Grade - 5-6% - # 5	$7,600
Transport	Sealed Roads	Structures	Structures_6 per km	$8,300	Grade - 6-7% - # 6	$8,300
Transport	Sealed Roads	Structures	Structures_7 per km	$9,000	Grade - 7-8% - # 7	$9,000
Transport	Sealed Roads	Structures	Structures_8 per km	$9,700	Grade - 8-9% - # 8	$9,700
Transport	Sealed Roads	Structures	Structures_9 per km	$10,400	Grade - 9-10% - # 9	$10,400
Transport	Unsealed Roads	Structures	Structures_0 per km	$0	Grade - 0 - # 0	$0
Transport	Unsealed Roads	Structures	Structures_1 per km	$4,800	Grade - 1-2% - # 1	$4,800
Transport	Unsealed Roads	Structures	Structures_10 per km	$11,100	Grade - 10-11% - # 10	$11,100
Transport	Unsealed Roads	Structures	Structures_11 per km	$11,800	Grade - 11-12% - # 11	$11,800
Transport	Unsealed Roads	Structures	Structures_12 per km	$12,500	Grade - 12-13% - # 12	$12,500
Transport	Unsealed Roads	Structures	Structures_13 per km	$13,200	Grade - 13-14% - # 13	$13,200
Transport	Unsealed Roads	Structures	Structures_14 per km	$13,900	Grade - 14-15% - # 14	$13,900
Transport	Unsealed Roads	Structures	Structures_15 per km	$14,600	Grade - 15-16% - # 15	$14,600
Transport	Unsealed Roads	Structures	Structures_16 per km	$15,300	Grade - 16-17% - # 16	$15,300
Transport	Unsealed Roads	Structures	Structures_17 per km	$16,000	Grade - 17-18% - # 17	$16,000
Transport	Unsealed Roads	Structures	Structures_18 per km	$16,700	Grade - 18-19% - # 18	$16,700
Transport	Unsealed Roads	Structures	Structures_2 per km	$5,500	Grade - 2-3% - # 2	$5,500
Transport	Unsealed Roads	Structures	Structures_20 per km	$18,100	Grade - 20-21% - # 20	$18,100
Transport	Unsealed Roads	Structures	Structures_25 per km	$21,600	Grade - 25-26% - # 25	$21,600
Transport	Unsealed Roads	Structures	Structures_3 per km	$6,200	Grade - 3-4% - # 3	$6,200
Transport	Unsealed Roads	Structures	Structures_4 per km	$6,900	Grade - 4-5% - # 4	$6,900
Transport	Unsealed Roads	Structures	Structures_5 per km	$7,600	Grade - 5-6% - # 5	$7,600
Transport	Unsealed Roads	Structures	Structures_6 per km	$8,300	Grade - 6-7% - # 6	$8,300
Transport	Unsealed Roads	Structures	Structures_7 per km	$9,000	Grade - 7-8% - # 7	$9,000
Transport	Unsealed Roads	Structures	Structures_8 per km	$9,700	Grade - 8-9% - # 8	$9,700
Transport	Unsealed Roads	Structures	Structures_9 per km	$10,400	Grade - 9-10% - # 9	$10,400

8.4. Appendix D – Road Pavement Base & Sub Base Profiles

Rural Roads

JRA | Datashare

Lifecycle Profiler - Current Treatment

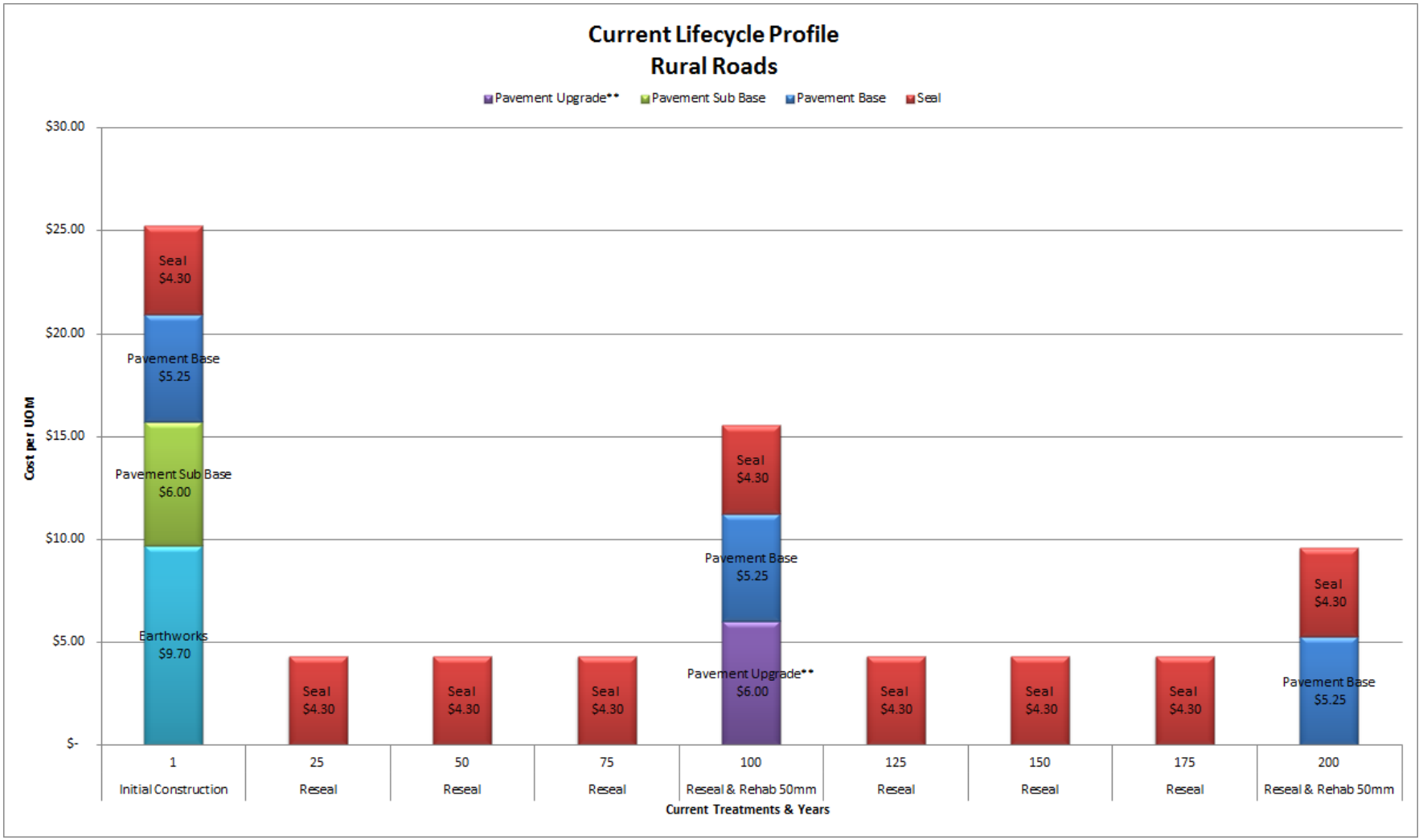
JRA Datashare SubCategory	Transport
JRA Datashare Category	Rural Roads
Asset Class/Sub Class	High & Low Traffic Rural Roads 150mm

Asset Component ID	Component Name	Component Description	JRA Datashare Unit Rate Code
C1 (shortest Life)	Seal		
C2	Pavement Base	Includes Primer seal $2.25	
C3	Pavement Sub Base		
C4	Pavement Upgrade**	150mm Overlay @ $6.00	
C5 (longest Life)	Earthworks		

** Costs needs to be identified in adopted AMP (Results in a increase in Asset Value and Depreciation)

Treatment & Renewal Profile

Current Treatments	Description	JRA Datashar	When (Years)	Treatment Costs per Component (Capital Only)					Total Cost	Assumptions
				Seal	Pavement Base	Pavement Sub Base	Pavement Upgrade**	Earthworks		
Initial Work	Initial Construction		1	$ 4.30	$ 5.25	$ 6.00		$ 9.70	$ 25.25	Cost of primer seal coat added to base. Initial Seal is 65% of 14/7 mm DD
Treatment 1	Reseal		25	$ 4.30					$ 4.30	Reseal
Treatment 2	Reseal		50	$ 4.30					$ 4.30	Reseal
Treatment 3	Reseal		75	$ 4.30					$ 4.30	Reseal
Treatment 4	Reseal & Rehab 50mm		100	$ 4.30	$ 5.25		$ 6.00		$ 15.55	Reseal & Rehab, Bust & work existing 50mm then overlay 150mm
Treatment 5	Reseal		125	$ 4.30					$ 4.30	Reseal
Treatment 6	Reseal		150	$ 4.30					$ 4.30	Reseal
Treatment 7	Reseal		175	$ 4.30					$ 4.30	Reseal
Treatment 8	Reseal & Rehab 50mm		200	$ 4.30	$ 5.25				$ 9.55	Reseal & Rehab 50mm
	Total Capital Costs	$ 76.15								
	Lifecycle Years	200								
	Current Capital Lifecycle Cost	$ 0.38								


Current Lifecycle Profile
Rural Roads
Pavement Upgrade**
Pavement Sub Base
Pavement Base
Seal
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$-
Cost per UOM
Seal $4.30
Pavement Base $5.25
Pavement Sub Base $6.00
Earthworks $9.70
Seal $4.30
Seal $4.30
Seal $4.30
Seal $4.30
Pavement Base $5.25
Pavement Upgrade** $6.00
Seal $4.30
Seal $4.30
Seal $4.30
Seal $4.30
Pavement Base $5.25
1 Initial Construction
25 Reseal
50 Reseal
75 Reseal
100 Reseal & Rehab 50mm
125 Reseal
150 Reseal
175 Reseal
200 Reseal & Rehab 50mm
Current Treatments & Years

Urban Roads

JRA Datashare

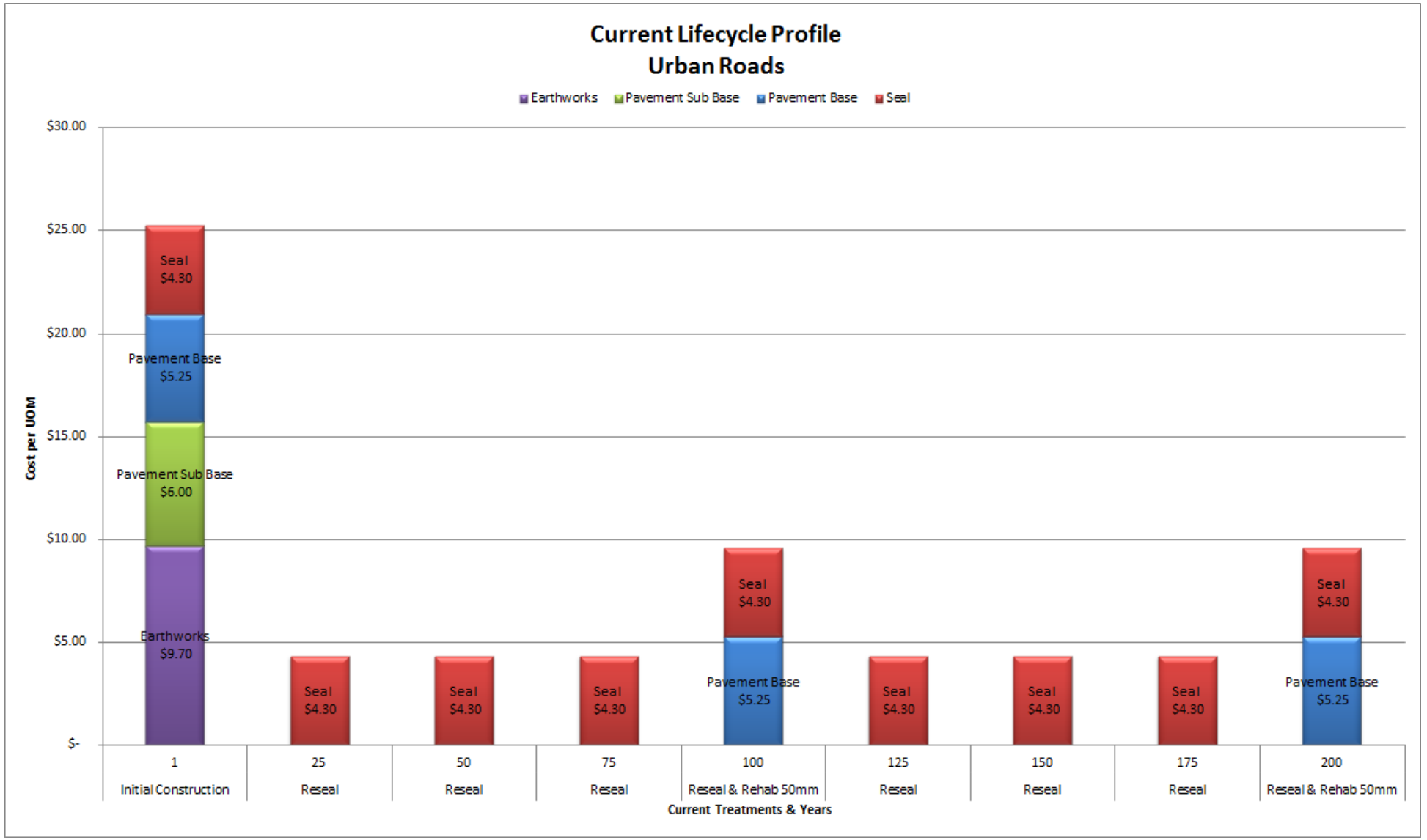
Lifecycle Profiler - Current Treatment

JRA Datashare SubCategory	Transport
JRA Datashare Category	Urban Roads
Asset Class/Sub Class	High & Low Traffic Urban Roads 150mm

Asset Component ID	Component Name	Component Description	JRA Datashare Unit Rate Code
C1 (shortest Life)	Seal		
C2	Pavement Base	Includes Primer seal $2.25	
C3	Pavement Sub Base		
C4	Earthworks		
C5 (longest Life)			

Treatment & Renewal Profile

Current Treatments	Description	JRA Datashar	When (Years)	Treatment Costs per Component (Capital Only)					Total Cost	Assumptions
				Seal	Pavement Base	Pavement Sub Base	Earthworks	0		
Initial Work	Initial Construction		1	$ 4.30	$ 5.25	$ 6.00	$ 9.70		$ 25.25	Cost of primer seal coat added to base. Initial Seal is 14mm
Treatment 1	Reseal		25	$ 4.30					$ 4.30	Reseal
Treatment 2	Reseal		50	$ 4.30					$ 4.30	Reseal
Treatment 3	Reseal		75	$ 4.30					$ 4.30	Reseal
Treatment 4	Reseal & Rehab 50mm		100	$ 4.30	$ 5.25				$ 9.55	Reseal & Rehab 50mm depth blend with new materal
Treatment 5	Reseal		125	$ 4.30					$ 4.30	Reseal
Treatment 6	Reseal		150	$ 4.30					$ 4.30	Reseal
Treatment 7	Reseal		175	$ 4.30					$ 4.30	Reseal
Treatment 8	Reseal & Rehab 50mm		200	$ 4.30	$ 5.25				$ 9.55	Reseal & Rehab 50mm depth blend with new materal
	Total Capital Costs	$ 70.15								
	Lifecycle Years	200								
	Current Capital Lifecycle Cost	$ 0.35								


Current Lifecycle Profile
Urban Roads
Earthworks
Pavement Sub Base
Pavement Base
Seal
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$-
Cost per UOM
Seal $4.30
Pavement Base $5.25
Pavement Sub Base $6.00
Earthworks $9.70
Seal $4.30
Seal $4.30
Seal $4.30
Seal $4.30
Pavement Base $5.25
Seal $4.30
Seal $4.30
Seal $4.30
Seal $4.30
Pavement Base $5.25
1 Initial Construction
25 Reseal
50 Reseal
75 Reseal
100 Reseal & Rehab 50mm
125 Reseal
150 Reseal
175 Reseal
200 Reseal & Rehab 50mm
Current Treatments & Years

9. Glossary

Annual service cost (ASC)

1) Reporting actual cost

The annual (accrual) cost of providing a service including operations, maintenance, depreciation, finance/opportunity and disposal costs less revenue.

2) For investment analysis and budgeting

An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operations, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

Asset
A resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity. Infrastructure assets are a sub-class of property, plant and equipment which are non-current assets with a life greater than 12 months and enable services to be provided.

Asset category
Sub-group of assets within a class hierarchy for financial reporting and management purposes.

Asset class
A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure.

Asset condition assessment
The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Asset hierarchy
A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function or asset type or a combination of the two.

Asset management (AM)
The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.

Asset renewal funding ratio
The ratio of the net present value of asset renewal funding accommodated over a 10 year period in a long term financial plan relative to the net present value of projected capital renewal expenditures identified in an asset management plan for the same period [AIFMG Financial Sustainability Indicator No 8].

Average annual asset consumption (AAAC)*
The amount of an organisation's asset base consumed during a reporting period (generally a year). This may be calculated by dividing the depreciable amount by the useful life (or total future economic benefits/service potential) and totalled for each and every asset OR by dividing the carrying amount (depreciated replacement cost) by the remaining useful life (or remaining future economic benefits/service potential) and totalled for each and every asset in an asset category or class.

Borrowings
A borrowing or loan is a contractual obligation of the borrowing entity to deliver cash or another financial asset to the lending entity over a specified period of time or at a specified point in time, to cover both the initial capital provided and the cost of the interest incurred for providing this capital. A borrowing or loan provides the means for the borrowing entity to finance outlays (typically physical assets) when it has insufficient funds of its own to do so, and for the lending entity to make a financial return, normally in the form of interest revenue, on the funding provided**.**

Capital expenditure
Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital expenditure - expansion
Expenditure that extends the capacity of an existing asset to provide benefits, at the same standard as is currently enjoyed by existing beneficiaries, to a new group of users. It is discretionary expenditure, which increases future operations and maintenance costs, because it increases the organisation's asset base, but may be associated with additional revenue from the new user group, eg. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

Capital expenditure - new
Expenditure which creates a new asset providing a new service/output that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operations and maintenance expenditure.

Capital expenditure - renewal
Expenditure on an existing asset or on replacing an existing asset, which returns the service capability of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it generally has no impact on revenue, but may reduce future operations and maintenance expenditure if completed at the optimum time, eg. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval.

Capital expenditure - upgrade
Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operations and maintenance expenditure in the future because of the increase in the organisation's asset base, eg. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility.

Capital funding
Funding to pay for capital expenditure.

Capital grants
Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure
See capital expenditure definition.

Capitalisation threshold
The value of expenditure on non-current assets above which the expenditure is recognised as capital expenditure and below which the expenditure is charged as an expense in the year of acquisition.

Carrying amount
The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

Class of assets
See asset class definition

Component
Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

Core asset management
Asset management which relies primarily on the use of an asset register, maintenance management systems, job resource management, inventory control, condition assessment, simple risk assessment and defined levels of service, in order to establish alternative treatment options and long-term cashflow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than detailed risk analysis and optimised decision- making).

Cost of an asset
The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, including any costs necessary to place the asset into service. This includes one-off design and project management costs.

Critical assets
Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than noncritical assets.

Current replacement cost (CRC)
The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Deferred maintenance
The shortfall in rehabilitation work undertaken relative to that required to maintain the service potential of an asset.

Depreciable amount
The cost of an asset, or other amount substituted for its cost, less its residual value.

Depreciated replacement cost (DRC)
The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

Depreciation / amortisation
The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life
See useful life definition.

Expenditure
The spending of money on goods and services. Expenditure includes recurrent and capital outlays.

Expenses
Decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or increases in liabilities that result in decreases in equity, other than those relating to distributions to equity participants.

Fair value
The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arms length transaction.

Financing gap
A financing gap exists whenever an entity has insufficient capacity to finance asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be determined assuming no additional operating revenue, productivity improvements, or net financial liabilities above levels currently planned or projected. A current financing gap means service levels have already or are currently falling. A projected financing gap if not addressed will result in a future diminution of existing service levels**.**

Heritage asset
An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

Impairment Loss
The amount by which the carrying amount of an asset exceeds its recoverable amount.

Infrastructure assets
Physical assets that contribute to meeting the needs of organisations or the need for access to major economic and social facilities and services, eg. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no separate market value.

Investment property

Property held to earn rentals or for capital appreciation or both, rather than for:

(a) use in the production or supply of goods or services or for administrative purposes; or

(b) sale in the ordinary course of business.

Key performance indicator
A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.

Level of service
The defined service quality for a particular service/activity against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental impact, acceptability and cost.

Life Cycle Cost *

1. Total LCC **The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.**
2. Average LCC **The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises average operations, maintenance expenditure plus asset consumption expense, represented by depreciation expense projected over 10 years. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.**

Life Cycle Expenditure
The Life Cycle Expenditure (LCE) is the average operations, maintenance and capital renewal expenditure accommodated in the long term financial plan over 10 years. Life Cycle Expenditure may be compared to average Life Cycle Cost to give an initial indicator of affordability of projected service levels when considered with asset age profiles.

Loans / borrowings
See borrowings.

Maintenance

All actions necessary for retaining an asset as near as practicable to an appropriate service condition, including regular ongoing day-to-day work necessary to keep assets operating, eg road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life.

- **Planned maintenance**

  Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

- **Reactive maintenance**

  Unplanned repair work that is carried out in response to service requests and management/ supervisory directions.

- **Specific maintenance**

  Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.

- **Unplanned maintenance**

  Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

Maintenance expenditure *
Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

Materiality
The notion of materiality guides the margin of error acceptable, the degree of precision required and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

Modern equivalent asset
Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques

Net present value (NPV)
The value to the organisation of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows after deducting the value of the discounted total cash outflows arising from eg the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

Non-revenue generating investments
Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the organisation, eg. parks and playgrounds, footpaths, roads and bridges, libraries, etc.

Operations
Regular activities to provide services such as public health, safety and amenity, eg street sweeping, grass mowing and street lighting.

Operating expenditure
Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, eg power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.

Operating expense
The gross outflow of economic benefits, being cash and non cash items, during the period arising in the course of ordinary activities of an entity when those outflows result in decreases in equity, other than decreases relating to distributions to equity participants.

Operating expenses
Recurrent expenses continuously required to provide a service, including power, fuel, staff, plant equipment, maintenance, depreciation, on-costs and overheads.

Operations, maintenance and renewal financing ratio
Ratio of estimated budget to projected expenditure for operations, maintenance and renewal of assets over a defined time (eg 5, 10 and 15 years).

Operations, maintenance and renewal gap
Difference between budgeted expenditures in a long term financial plan (or estimated future budgets in absence of a long term financial plan) and projected expenditures for operations, maintenance and renewal of assets to achieve/maintain specified service levels, totalled over a defined time (e.g. 5, 10 and 15 years).

Pavement management system (PMS)
A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

PMS Score
A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption *
The ratio of annual asset consumption relative to the depreciable amount of the assets. It measures the amount of the consumable parts of assets that are consumed in a period (depreciation) expressed as a percentage of the depreciable amount.

Rate of annual asset renewal *
The ratio of asset renewal and replacement expenditure relative to depreciable amount for a period. It measures whether assets are being replaced at the rate they are wearing out with capital renewal expenditure expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade/new *
A measure of the rate at which assets are being upgraded and expanded per annum with capital upgrade/new expenditure expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

Recoverable amount
The higher of an asset's fair value, less costs to sell and its value in use.

Recurrent expenditure
Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operations and maintenance expenditure.

Recurrent funding
Funding to pay for recurrent expenditure.

Rehabilitation
See capital renewal expenditure definition above.

Remaining useful life
The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining useful life is useful life.

Renewal
See capital renewal expenditure definition above.

Residual value
The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

Revenue generating investments
Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, eg public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

Risk management
The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

Section or segment
A self-contained part or piece of an infrastructure asset.

Service potential
The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset. A measure of service potential is used in the not-for-profit sector/public sector to value assets, particularly those not producing a cash flow.

Service potential remaining
A measure of the future economic benefits remaining in assets. It may be expressed in dollar values (Fair Value) or as a percentage of total anticipated future economic benefits. It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing services (Depreciated Replacement Cost/Depreciable Amount).

Specific Maintenance
Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Strategic Longer-Term Plan
A plan covering the term of office of councillors (4 years minimum) reflecting the needs of the community for the foreseeable future. It brings together the detailed requirements in the Council's longer-term plans such as the asset management plan and the long-term financial plan. The plan is prepared in consultation with the community and details where the Council is at that point in time, where it wants to go, how it is going to get there, mechanisms for monitoring the achievement of the outcomes and how the plan will be resourced.

Sub-component
Smaller individual parts that make up a component part.

Useful life

Either:

(a) the period over which an asset is expected to be available for use by an entity, or

(b) the number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the organisation.

Value in Use
The present value of future cash flows expected to be derived from an asset or cash generating unit. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits.

Source: IPWEA, 2009, AIFMG Glossary

Additional and modified glossary items shown *