Local Government Victoria

Guidelines for Measuring and Reporting the condition of **Road Assets**

May 2006

Department for Victorian Communities

A Victorian Government initiative

Victoria The Place To Be

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These guidelines have been developed with input from the following seven pilot councils: Buloke Shire Council, Colac-Otway Shire Council, Corangamite Shire Council, Horsham Rural City Council, Loddon Shire Council, Moyne Shire Council and Yarriambiack Shire Council. A Steering Committee with representation from the Municipal Association of Victoria, Local Government Professionals, VicRoads, the Australian Road Research Board and the Victorian Auditor-General's Office in its capacity as observer reviewed the guidelines.

Further copies
These guidelines are available for downloading at www.dvc.vic.gov.au under "local councils".

FOREWORD

Last year, Local Government Victoria commissioned a project to identify the factors that contribute to variance in the measurement and reporting of road condition across municipalities. This work arose out of a review of the financial statements of councils conducted by LGV which observed that there was variation in the depreciation amounts reported by councils that otherwise appeared to have similar characteristics such as road lengths, location and terrain.

The need for guidance on measuring and reporting the condition of road assets was also identified in the Auditor-General's Performance Report "Management of Local Roads" June 2002.

As a result, LGV has worked collaboratively with the MAV, LGPro, VicRoads, the Australian Road Research Board and the Auditor-General's Office to produce guidelines to support local councils. The guidelines were developed and tested after documenting the asset management practices of 7 pilot councils in the North and South West of the State. It was found that most of the variation in the reporting of depreciation in the financial statements was due to variations in the methods used by councils for asset recording, valuation and determination of useful life of road assets.

The draft guidelines were also workshopped with councils last year at regional forums in Horsham, Bendigo and Whitehorse. I would like to thank all those who contributed to this project.

These guidelines form part of a suite of best practice guidelines developed or facilitated by the Department for Victorian Communities, local government peak bodies, the Auditor-General and the Valuer-General, to provide support to local governments in their asset management. Other guidelines in this suite include:

- Local Government Asset Investment Guidelines (Department for Victorian Communities, Local Government Victoria)
- Accounting for non-current physical assets under AASB 116 (Department for Victorian Communities, Local Government Victoria)
- Fair Value Asset Valuation Methodologies for Victorian Local Governments (Department of Sustainability and Environment)

These guidelines complement one another and will assist to bring accountants, engineers and valuers to a closer shared understanding of the complex issues surrounding management of and accounting for assets in local government. Copies can be downloaded at www.dvc.vic.gov.au under "local councils".

Prue Digby
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Executive Summary

This report was commissioned by the Department for Victorian Communities (Local Government Victoria) in association with the Municipal Association of Victoria, Local Government Professionals, VicRoads and the Australian Road Research Board to review condition assessment, accounting and depreciation practices adopted by Local Government Authorities (Councils) in Victoria. The Victorian Auditor-General's Office participated in its capacity as an observer.

Analysis of the 2004/2005 financial reports submitted by councils supplemented by site visits to 7 Councils indicated significant variations that could not be explained by geographic factors. The variations in critical factors such as unit asset values and economic lives were significant.

The investigation and analysis for the Councils visited addresses the following issues:

- Accounting and depreciation practices and their linkage with actual engineering practice and recorded engineering data.
- Road asset valuations based on current replacement costs and factors explaining variations between Councils.
- The segregation of road asset components for accounting and depreciation purposes.
- The methods used to assess useful lives of road asset components and links to engineering construction and maintenance practices.
- Methods for determining remaining useful lives of road asset components.

The general conclusion is that most of the variability in financial reporting stems from variations in asset recording and valuation practice. For example, variations in unit rates stem from differing assumptions and treatments of factors such as earthworks, overhead/profit allocation and differing treatment of asset components. Differences in useful life are primarily due to variations in estimates made due to lack of supporting data. This is mainly the result of the majority of road pavements not having been recorded as renewed.

Since the capitalisation and financial reporting of assets was first introduced, councils have been continually improving the accuracy of their asset registers and financial reporting techniques. Most councils interviewed during this study indicated that they are continuing this process of improvement.

Guidelines have been established under this project to assist councils to document their past, current and future policy and practice. Section 11 of this report provides a practice guide to assist councils with the determination of road asset condition and financial reporting.

These guidelines together with the following publications will assist councils with their asset management:

- ✓ Local Government Asset Investment Guidelines (Department for Victorian Communities, Local Government Victoria)
- ✓ Accounting for non-current physical assets under AASB 116 (Department for Victorian Communities, Local Government Victoria)
- ✓ Fair Value Asset Valuation Methodologies for Victorian Local Governments (Department of Sustainability and Environment).

Key recommendations

1. **Depreciation should be calculated, at the time of each revaluation, as:**

$$\text{Depreciation} = \frac{\text{Depreciable Amount (Fair Value – Residual Value)}}{\text{Total Useful Life}}$$

   The more complex non linear deterioration of road condition should be used to determine depreciation where the asset is at a point where significant visible distress is becoming evident.

2. **Total Useful life should be derived from actual local data** where assets have been renewed or show sufficient distress to enable remaining life to be determined. Where this data is not available Councils need to use the best available estimates of remaining life and asset age to determine total useful life. Total useful life is the elapsed life plus the estimated remaining life of the asset.

   Total Useful Life = Age + Remaining Life

3. **Remaining life should be determined from either age or condition, depending on where the asset is in its lifecycle.** Age based assessment of remaining life is recommended in the early part of the asset lifecycle where visible signs of distress are not evident or are difficult to reliably convert to remaining life. The more difficult method of using condition to determine remaining life should only be applied for assets nearing end of life when signs of distress become evident. The regular inspections of roads as part of road management plans can be used to check which assets are nearing the end of life and should be assessed on a condition basis.

4. **Depreciable Amount should be calculated as fair value less residual amount.** Greenfields calculations of fair value without application of a residual amount can result in an overstatement of depreciation where subsequent asset renewal consistently uses a renewal treatment with a lower cost for example where existing materials are recycled. Residual values should be used to ensure the depreciable amount is not overstated.

1. Outline

This project is to identify those factors which contribute to variance in the measurement and reporting of road condition across municipalities, examine the impact of this factor on the annual measurement of consumption of road assets, (i.e. depreciation) and to report these findings in the form of guidelines to assist councils to improve their road condition assessment and reliability of their financial reporting.

2. Background Information

The Auditor General in his Performance Report "Management of Local Roads" June 2002 referred to the need for councils to regularly determine the condition of their road assets relative to their useful life using a standardised system. The Auditor General noted that, *"the sector is unable to determine with any degree of certainty (and nor was audit) the overall condition of road assets or whether they will reach their optimum useful lives. This has serious funding implications in that councils and the Victoria Grants Commission cannot be certain annual allocations are sufficient to maintain assets or provide for their eventual replacement over the long-term."*[1]

The Asset Management Coordinating Group which is convened by Local Government Victoria and has representation from the Municipal Association of Victoria, Local Government Professionals, VicRoads and the Victorian Auditor-General's Office (observer status) considered the issue of condition assessment of road assets and supported the development of a guideline to assist councils in this regard. A Working Group chaired by LGV with representation from the MAV, LGPro, (observer status), VicRoads, the Australian Road Research Board and the Victorian Auditor-General's Office was established to oversee the development of the guidelines.

Each year, Local Government Victoria reviews the financial reports of councils. This work has highlighted variance in the depreciation rates used by some councils, which would otherwise appear to have similar road conditions (road length, location, terrain). Part of the development of the guidelines is to explore and identify the factors which contribute to variance in measurement and reporting of road conditions by examining this issue in three councils in the South West region of Victoria and four councils in the North West region of Victoria. This included examining the policy decisions, which selected councils have made in the course of determining whether or not a road is "fit for purpose".

3. Project Aims

The project aims were to:

(i) Identify and explore those factors which contribute to variance in measurement and reporting of road condition in a selection of councils; 3 councils in the South West region of Victoria and 4 in North West region of Victoria.

The factors that were assessed included:

- ✓ Condition of original asset

[1] Audit Conclusion 1.11, *Management of roads by local government*, Performance Audit Report by the Auditor General Victoria, 4 June 2002

- ✓ Regularity and adequacy of maintenance
- ✓ Wear and tear
- ✓ Environmental factors e.g. soil, topography, climatic conditions
- ✓ Differences in Valuation Methodology
- ✓ Differences in Asset Segmentation
- ✓ Differences in Condition Assessment Methodology
- ✓ Differences in Condition Assessment Frequency
- ✓ Differences in Useful Life Determination
- ✓ Differences in Road Classification

(ii) Assess variances between the selected councils, the application of these factors and the impact on the annual measurement of asset consumption (i.e. depreciation). These findings are outlined in this Report in Sections 6 and 7.

(iii) Formulate guidelines to assist councils with measuring the condition of their road assets and to provide for consistent financial reporting of these assets. The Guidelines are contained in Section 11 of this Report.

4. Project Methodology

The project adopted the following methodology:

- Meet with the LGV's Working Group to review methodology and work program.
- Consider the existing standardised condition assessment models for road assets used by councils in New South Wales and Western Australia identified by the Victorian Auditor General's report.
- Consider existing standardised condition assessment models for road assets used by councils in Queensland under the LGAQ/MRQ Road Alliance.
- Site visits to the three councils in the South East Region and four councils in North West region to document accounting policy and treatment and asset management practices of each council.
- Identification of factors contributing to variance in measurement and reporting of road condition for three renewal activities, (sealed surfacing renewal, sealed pavement renewal and unsealed pavement renewal) identified in the brief:
- Assess the useful lives of sealed surfacing, sealed pavements and unsealed pavements by estimating the remaining life of a sample of assets with council operations staff and adding this to asset age.
- Assess variances between selected councils in application of factors and their impact on the annual measurement of asset consumption reported as depreciation.

- Review options for a standardised method of road condition assessment and prepare draft recommendations.

- Report findings from site visits, factor variance analysis and recommendations for a standardised road condition method to the Working Group with draft conclusions and recommendations for discussion with South West and North West regional council groups.

- Conduct workshops on findings of site investigations and variance analysis with each of the South West and North West regional council groups and document outcomes of each workshop.

- Prepare draft report and guidelines for road condition assessment for review by Working Group.

- Discuss draft report and guidelines with Working Group.

- Amend draft report and guidelines after review of comments from Working Group

- Prepare final report and guidelines in MS Word format

This is the final report containing the key findings and elements with supporting guidelines.

5. Practices in other States

A review of standardised condition assessment models used in other States was conducted. Results are summarised below.

5.1. Austroads

Austroads conducted a survey[2] of councils throughout Australia to establish types of road condition measures. This survey was followed by an international and local literature search to establish best practice guidelines. 53% of all councils across Australia responded to the survey and their responses are summarised below.

- 71% of councils indicated that they collected some form of road condition data. The percentage was higher for urban councils (92% than for rural councils (55%).

- 97% of those that collected condition data employed visual assessment methods. In contrast 43% collected roughness, although only half used automated means and 33% collected rut depth.

- Very few councils collect structural capacity, skid resistance and surface texture data.

- 65% of councils have a pavement management system (PMS) which by and large defined the road condition measures adopted by those councils. The variety of pavement management systems used with different data requirements makes the comparison of road condition data across Australia very difficult.

Austroads has identified condition parameters for sealed and unsealed roads and these are shown in the following Tables 1 and 2.

[2] Austroads Report IR-28/02

Table 1. Condition Parameters for Sealed Local Roads. (Austroads, 2001)

Issue	Condition Parameter	Measurement or reporting unit	Priority
Safety	Edge defect	Sum of the length of edge break and edge drop off per km	1
Safety	Rutting	% length with rutting > 20mm	1
Serviceability	Roughness	NRM Roughness weighted by area	1
Safety	Skid resistance	% length F60 < 0.12, or SFC50 < 0.35	2
Safety	Surface texture	% length Vp < 34 or texture depth < 0.40mm	2
Structural capacity	Structural capacity	% areas > 5 years remaining life	2
Structural capacity	Crocodile cracking	% area of road surface	2
Serviceability	Ravelling/stripping	% area of road surface	3
Serviceability	Potholes & pothole patches	Number per km	3
Serviceability	Environmental cracking	% area of road surface	4

Table 2. Condition Parameters for Unsealed Local Roads.

(Austroads, 2001)

Issue	Condition Parameter	Measurement or reporting unit	Priority
Structural capacity	Gravel loss	Gravel loss in mm	1
Serviceability	Roughness	Roughness weighted by area	2

One of the key findings in this report (key finding 2) is that whilst most councils use indicators based on those in tables 1 and 2, converting these indicators to remaining life and overall useful life is a significant difficulty and a source of major variation in practice.

Austroads Report AP-R325 2003, Remaining Life of Road Infrastructure Assets concluded that “There are still considerable difficulties with regard to the certainty of estimating the remaining life of road pavements”, and that “many of the mechanistic models upon which estimates of remaining life of pavements are based are far from perfect because of the lack of reliable data available to validate these models.”

5.2. New South Wales Condition Reporting

Under Section 428 (2) (d) of the NSW Local Government Act, Councils are required to report on the condition of their infrastructure assets in their Annual Report. The Annual Report must contain.

“a report on the condition of the public works (including public buildings, public roads and water, sewerage and drainage works) under the control of the council as at the end of that year, together with:

(i) an estimate (at current values) of the amount of money required to bring the works up to a satisfactory standard, and

(ii) an estimate (at current values) of the annual expense of maintaining the works at that standard, and

(iii) the council's program of maintenance for that year in respect of the works.

Councils use a range of pavement management systems similar to councils in Victoria. Most use ROCOND90 comparable indicators with the results being highly variable.

5.3. Western Australia

Western Australia councils use the ROMAN pavement management systems. ROMAN is a statewide approach to road data collection using core indicators based on Austroads indicators and ROCOND90. Some individual Councils use more detailed data collection.

The Western Australia Local Government Association introduced local road asset and expenditure reporting in 1993/94. The WALGA Annual Report on Local Government Roads Assets and Expenditure uses four indicators to benchmark council's performance.

- Road Condition Indicator – ratio of written down value divided by current replacement value.
- Preservation Performance Indicator – ratio of actual expenditure on preservation divided by the Status Quo Cost. The Status Quo cost is the estimated cost of maintaining the roads at their current condition and provides a datum against which actual expenditure performance can be compared.
- Percentage of council's revenue capacity that would be required to make up the difference between road preservation needs and road preservation grants, and
- Percentage of council's revenue capacity spent on roads.[3]

[3] WALGA, Local Government Road Assets and Expenditure Report 2003-04, Attachment 3, p 43

5.4. Queensland

The Local Government Association of Queensland and Queensland Main Roads have developed a Road Alliance as a long-term partnership between LGAQ and Main Road for a new and innovative approach to roads management, to achieve better value through:

- Improved planning
- Increased capability
- Better resource sharing
- Joint purchasing
- More efficient project delivery

The Alliance has produced a Queensland Government Asset Management Kit and a Road Condition Evaluation Model. The rating methods detailed in the Road Condition Evaluation Model are based on ROCOND90 and are designed for decentralised use by field staff personnel. A team of two persons is normally required and should comprise a trained local assessor and an assistant.

6. Reporting of Road Asset Consumption

6.1. Variance in Depreciation

Financial data from council's returns to the Victoria Grants Commission was analysed to determine variance in unit depreciation. Two measures were reviewed, unit depreciation, measured by depreciation expense divided by total local road length and percentage of the local road network that is sealed. Unit depreciation ($/km) was used as a measure of consistency since it contains all the key elements of depreciable amount, useful life and remaining life. Although this data may be affected by road widths, Fig 3 shows that depreciation as a measure of road asset consumption varies significantly between councils. There is some apparent correlation between the proportion of the network that is sealed and the unit depreciation, however this still leaves a high amount of variability in unit depreciation.

Figure 3. Variance in Depreciation Expense for Percentage of Road Network Sealed

Source: Victoria Grants Commission, 2003-04 Council Returns

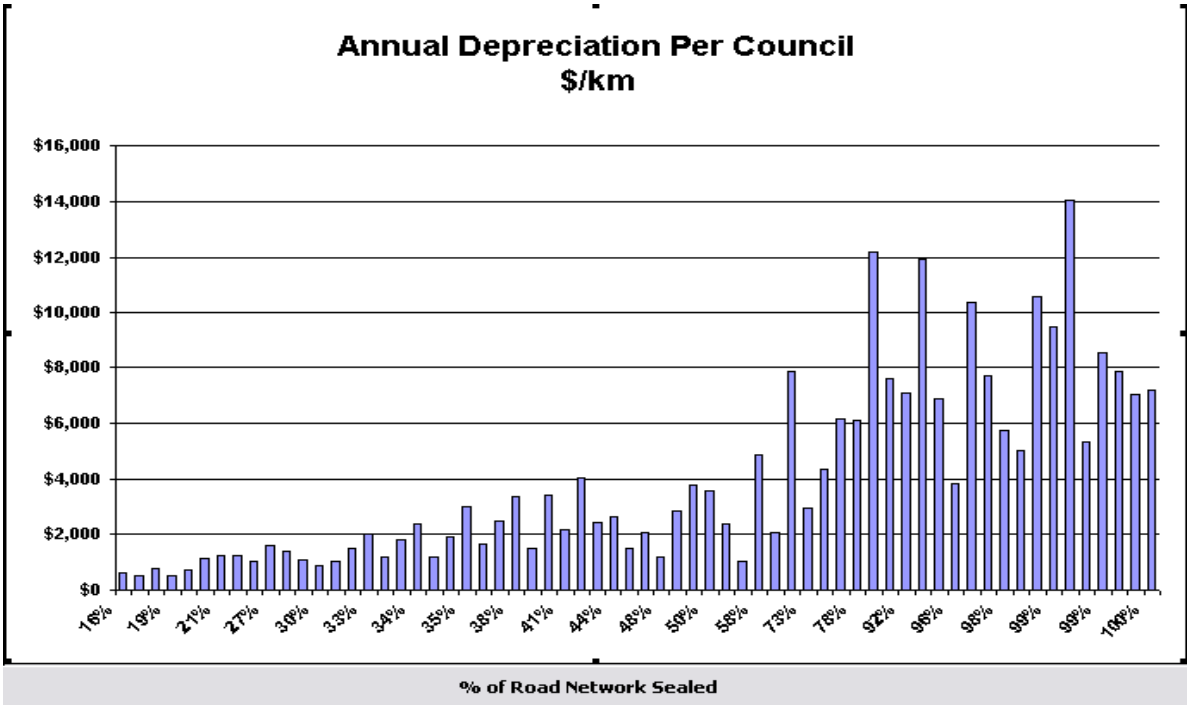


Table 4 shows the frequency distribution of councils across unit depreciation with proportion of road network sealed. The proportion sealed is the percentage of sealed road length of total road length.

Table 4. Frequency Distribution of Councils, Unit Deprecation and Proportion of Network Sealed. Source: Victoria Grants Commission, 2003-04 Council Returns

Depreciation Range $ / km total length	Number of Councils	Proportion Sealed
$500-$1000	6	<30% sealed
$1,000-$2,000	18	<50% sealed
$2,000-$3,000	12	<50% sealed
$3,000-$4,000	6	<50% sealed
$4,000-$5,000	4	<50% sealed
$5,000-$6,000	2	>50% sealed
$6,000-$7,000	4	>50% sealed
$7,000-$8,000	6	>50% sealed
$8,000-$9,000	2	>50% sealed
$10,000-$11,000	2	>50% sealed
$11,000-$12,000	2	>50% sealed
$12,000-$13,000	1	>50% sealed
$13,000-$14,000	2	>50% sealed
$17,000	1	>50% sealed
$28,000	1	>50% sealed

Fig 3 and Table 4 show that there is no consistent correlation between unit depreciation and other factors such as percentage of road length sealed.

7. Site Visits to Councils

A detailed questionnaire was developed for discussions with the seven pilot councils on-site. The questionnaire was designed to gather data on:

- what are the common factors contributing to variance in measurement and reporting of road condition, and
- how have the factors contributed to variability in external reporting.

7.1. Factors contributing to variance in measurement and reporting of road condition

The seven councils were surveyed to identify those factors which may contribute to the variance in the measurement and reporting of road condition.

Eight common factors were identified in discussions with the seven pilot councils. The common factors with questions that were asked of each council in relation to these factors are shown below.

- Components - Are assets split into separate components, if so how,? Is condition materially different or aggregated and average condition applied.
- Useful Life - Asset Useful Life per component - how derived, how validated? (Is condition used to validate useful life for existing assets).
- Remaining Life Calculation - Asset Remaining life per component - how derived, how validated? (How is condition used to determine remaining life?).
- Asset Cost Calculation - How is Asset Cost Determined (Unit Rates / Valuations / Other).
- Condition Assessment Methods - What Condition Assessment Techniques are Used (Single Index, Multivariable, PMS Algorithms).
- External References - Are external sources / references used to guide condition assessment?
- Condition Assessment Frequency - How often is condition assessment carried out?
- Road Hierarchy Impacts - How road networks are categorised (road hierarchy)?

The results for each of the 7 councils that were visited as part of this Project are detailed in the appendices. The questions relating to each condition factor and a sample response from one of the pilot councils to illustrate the findings are shown in Table 5.

Table 5. Questionnaire and Response for one of the Pilot Councils

Components	Asset components - are assets segmented into components, how? (are assets split into separate components is condition materially different or aggregated and average condition applied)	Sealed & unsealed roads broken into pavement, surface, kerb and ancillaries (signs, etc) based on AAS requirements. 800 metres or where there is a change in asset age, width or type as well as components within that segment. Generally condition is aggregated and average condition applied. Do not rehabilitate segment as many rehabs are smaller lengths. Reseal program drives the rehab program. Rehab work is capitalised. Gravel re-sheeting is not capitalised - treated as maintenance. For gravel roads, the gravel surface is separated from the combined underlying pavement/earthworks/formation shaping. The gravel surface is given a value as is the combined underlying pavement/earthworks/formation shaping and both are depreciated.
Useful Life	Asset Useful Life per component - how derived, how validated? (Is condition used to validate useful life for existing assets)	Based on historical data and derived from experience knowing asset age and current condition rating. The experience and age has been used in developing a shire specific performance model for each hierarchy - collector, rural access and township. The model is used to determine network predominant useful life and has been used in past valuations.
Remaining Life Calculation	Asset Remaining life per component - how derived, how validated? (How is condition used to determine remaining life?)	Documented valuation manual that has defined the useful life calculations based on condition and age. Validation is made by comparing with historical records for renewals and is currently being refined. The surface component is fine but pavement component is still in pilot mode.
Asset Cost Calculation	How is Asset Cost Determined (Unit Rates / Valuations / Other).	Renewal costs based on historical contract costs averaged at sub-network level and a component added for kerb repair in urban areas. Industry standards are compared. Unit cost to assess condition for all 1,650 kms of sealed roads is approximately $75,000.
Condition Assessment Methods	What Condition Assessment Techniques are Used (Single Index, Multivariable, PMS Algorithms)	A range is used. Council has developed its condition measurement model. Condition is measured for extent on a 1-5 scale, severity s measured using an alpha code (E for extreme severity such as wide crack or deep depression).
External References	Are external sources / references used to guide condition assessment?	Inframax system - database & GIS. NAASRA & Austroads guidelines are used. Tender for actual condition assessments then Council consultant interprets and updates models.
Condition Assessment Frequency	How often is condition assessment carried out?	Condition and reval 3 years as part of reval.
Road Hierarchy Impacts	How road networks are categorised (road hierarchy)?	Functional - Link, Collector, Local Access for rural and in urban CBD roads & Access Roads.

7.2. Factors contributing to variance in external reporting

Data to identify factors contributing to variance in external reporting was obtained from and discussed with the pilot councils. The questionnaire gathered data on the following factors.

- Condition of original asset
- Regularity and adequacy of maintenance
- Wear and tear
- Environmental factors eg soil, tyre, climatic conditions
- Differences in Valuation Methodology
- Differences in Asset Segmentation
- Differences in Condition Assessment Methodology
- Differences in Condition Assessment Frequency
- Differences in Useful Life Determination

7.3. Council responses

Responses from councils for the questionnaire from site visits and discussions are summarised in Tables 6,7 and 8

Table 6 Summary of Condition Factors for 7 Pilot Councils

Council	Method	Revaluation Frequency yrs	Overall Condition Assessment Frequency	Condition Assessment Technique	Detailed Indicators compatible with ROCOND 90
Loddon	CRC/EL	3	3	PMS manual – Moloneys. External Assistance	Yes
Buloke	WDV/RL	3	3	PMS manual – Moloneys In House Assessment	Yes
Yarriambiack	CRC/EL	3	3	Visual Assessment - In House Assessment	Yes
Horsham	CRC/EL	3	3	PMS manual – Moloneys - In House and External	Yes
Corangamite	CRC/EL	3	3	ROCOND 90 - In House and External	Yes
Colac	CRC/EL	3	3	SMEC manual - In House and External	Yes
Moyne	WDV/RL	3	3	Alphanumeric Index developed in house - In House and External	Yes

Table 7 Summary of Valuation Factors for 7 Pilot Councils

Council	Useful life Confidence Level	Remaining Life confidence Level	At Cost or Fair Value	Depreciation / km	% Sealed
Loddon	0.7	> 70%	Fair Value	$724.72	C5, 19%
Buloke	0.7	> 70%	Fair Value	$490.78	C4, 19%
Yarriambiack	0.7	> 70%	Fair Value	$620.06	C1, 16%
Horsham	0.7	> 70%	Fair Value	$1,809.22	C18, 34%
Corangamite	Seal > 90%, Pavement 70%, Gravel 60%	Seal > 90%, Pavement 70%, Gravel 60%			
Colac	Seal 80%, Pavement 60%,	Seal 80-90%, Pavement 60%	Fair Value	$3,000.60	C22, 35%
Moyne	Seal > 90%, Pavement 60%	Seal >90%, Pavement 60%	Fair Value	$2,058.50	C33, 48%

Table 8 Summary of Valuation Factors for 7 Pilot Councils

Council	Road Hierarchy	Components	Remaining Life Seal	Statistical basis for Useful life	Age available for Seal/Gravel	Age available for Pavement
Loddon	Functional road hierarchy. Traffic counts done for strategic and collector roads.	Rural Segments 1-3 km. Urban per block	Age and Condition	Partial	Yes	Partial
Buloke	Construction based road hierarchy – intention to change soon to functional hierarchy	Rural Segments 1-3 km. Urban per block	Age and Condition	Partial	Yes	Partial
Yarriambiack	Functional road hierarchy. Traffic counts done for strategic and collector roads. Trying to get traffic counts for all higher traffic roads.	Rural Segments 1-3 km. Urban per block	Age and Condition	Partial	Yes	Partial
Horsham	Functional road hierarchy – Link, collector, local, access	Rural Segments 1-3 km. Urban per block	Age and Condition	Partial	Yes	Partial
Corangamite	Functional road hierarchy – Link, collector, local, access	Rural Segments 1-3 km. Urban per block	Age and Condition	Yes	Yes	Partial
Colac	Functional road hierarchy – Link, collector, local, access	Rural Segments 1-3 km. Urban per block	Age and Condition	Partial	Yes	Yes
Moyne	Functional road hierarchy – Link, collector, local access for rural and urban CBD roads & access roads.	Rural Segments 1-3 km. Urban per block	Age and Condition	Partial	Yes	Partial

8. Analysis of Results

Data from pilot councils together with aggregate data from the Victoria Grants Commission was analysed to answer the following questions and issues.

- What impact would the proposed condition assessment framework have on the current Asset Register, Condition Assessment Processes and External Reporting Results for each Council?

- What impact would the proposed condition assessment framework have on the demand on Council resources for each Council?

- Examine the policy decisions which selected councils have made in the course of determining whether or not a road is “fit for purpose”.

8.1. Factors contributing to variance in condition assessment

Factors contributing to variance in condition assessment are summarised in Table 9 on the following page.

Table 9.Summary of Valuation Factors for 7 Pilot Councils

Factors Contributing to Variance in Measurement and Reporting of Road Condition	Results of Site Visits	Impact on reporting
Condition of original asset	All Councils used visual assessment. Some had roughness data. All had difficulty converting condition data to remaining life if asset not near end of life. Age usually used for reseal remaining life.	First Order - High
Regularity and adequacy of maintenance	No councils had statistical data on the link between maintenance levels and useful life. The analysis on the frequency of reseals / gravel re-sheeting was based on experience and very consistent across councils.	Second Order - Low
Wear and tear	Traffic loading had a significant impact on useful life however very little data existed on establishing a link between traffic loading and useful life. In most cases the traffic loading on the majority of the local road networks was very low.	Second Order - Low
Environmental factors e.g. soil, topography, climatic conditions	Environmental factors had an impact on useful life but no one had data on the relationships between maintenance history, climate, and topography for Pavements. All Councils were able to apply their experience to determination of likely seal useful life.	Second Order – Low
Differences in Valuation Methodology	Engineering and financial techniques were all sound and passed audit. Major differences existed in definitions of current replacement cost (mix of greenfield and brownfield approaches), confusion about the valuation and depreciation of earthworks and formation, 2 approaches to the calculation of depreciation, ie Depr Amt / EL vs WDV / RL	First Order - Very High
Differences in Asset Segmentation	Asset segmentation fairly uniform and had little or no impact on reporting results	Second Order - Very Low
Differences in Condition Assessment Methodology	Condition assessment methodology primarily visual. Indicators consistent with ROCOND 90, although algorithms to convert to an index varied. All councils had difficulty converting condition indicators to remaining life except when asset approaching end of life. The problem was not due to condition methodology; rather it was a poor understanding of overall useful life.	Second Order - Moderate
Differences in Condition Assessment Frequency	Varied from 1 - 5 years. Most Councils re assessed condition as part of a 3 year revaluation cycle.	Second Order - Moderate
Differences in Useful Life Determination	All councils used a condition index as a factor to apply to useful life. The largest single contributor to variations is the variability and lack of verifiable data to support useful life.	First Order - Very High
Differences in Road Classification	Most councils reviewing road classification as part of developing road management plans. Functional classification most common and is recommended.	Second Order -Low

Legend

First Order Impact – Variations in practice contribute to a major extent to the financial reporting of assets

Second Order Impact – Variations in practice have minor impact on the financial reporting of assets

Extent of Variation (Low, Moderate, High, Very High). This shows the degree of variation between councils for both first and second order impacts.

8.2. Factors relating to variance in external reporting

There were two types of contributing factors displayed by the 7 pilot councils to this variance.

First order variations arose from:

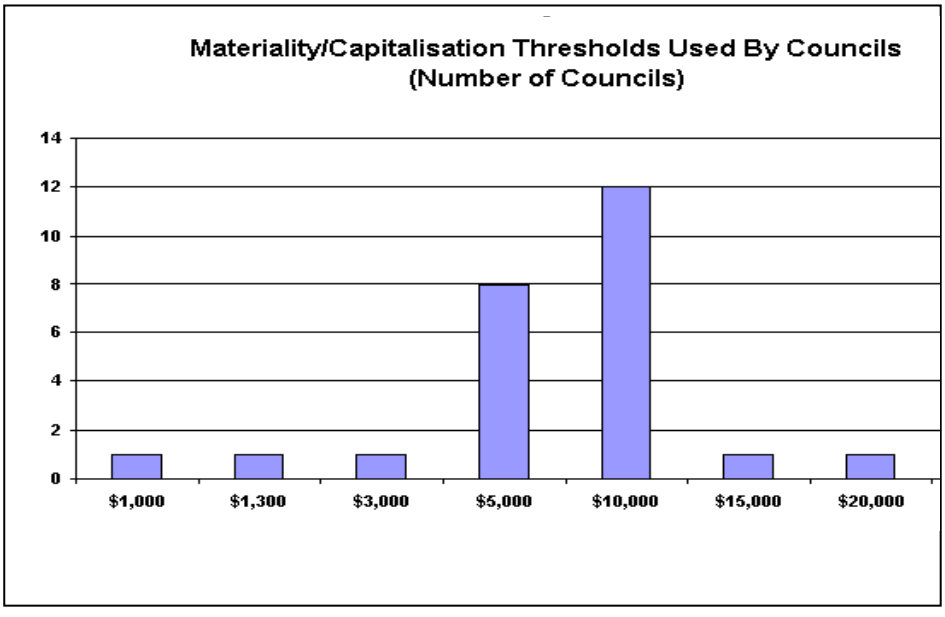
- Variation in Unit Cost Calculation Methodology
- Variation in Application of Residual Values
- Variation in treatment of road formation and earthworks (ranging from depreciation over 50 – 100 years to non depreciable)
- Variation in adopted total Useful life Values (in many cases unsubstantiated)
- Variation in Depreciation Calculation Methodology (gross or net depreciation)
- Variations in treatment of capital and maintenance transactions. See figure 10.

Second order variations arose from:

- Differences in condition assessment methodology
- Climatic and geographical factors.

Variation in the treatment of capital and maintenance expenditure can result in significant variation between councils. Extreme examples are where some councils do not capitalise or depreciate gravel re-sheeting.

Figure 10 Variance in Capitalisation Thresholds (source – 2003/04 financial reports)



8.3. Summary

The factors contributing to variance in condition assessment and financial reports were assessed at two levels, primary factors and secondary factors and summarised below.

Primary Factors

- Variation on calculation of depreciable amount
- Variation in calculation of depreciation
- Variation in determination of useful life and remaining life

Secondary Factors

- Condition assessment methodology
- Local Factors
- Frequency of condition assessment

9. Outcomes of Discussion with Council in Regional Workshops

The findings of the site visits and data surveys of the 7 pilot councils, data analysis and recommendations was discussed with regional groups of councils from both an accounting and an asset management perspective at three regional workshops.

The regional workshops were held at the following locations.

26 October – Horsham
Horsham Rural City Council, Horsham

27 October – Bendigo
Bendigo Town Hall Reception Room, Bendigo

3 November – Whitehorse
Whitehorse City Council, Whitehorse Centre Waratah Room, Nunawading

The workshops presented the key findings and recommendations to ensure that the findings and recommendations could be applied and to seek comments to the proposed guidelines. No adverse comments were received.

10. Key Findings

1. Condition assessment is a tool to assist asset managers in managing road assets. Condition assessment assists in reporting changes in road service levels, identifying candidate assets for renewal treatment, selecting the optimum renewal treatment and as an input into modelling of future condition and service levels and funding scenarios.

2. Condition assessment is often used to assess the useful life of road assets. Whilst common condition indicators have been in existence for some years, converting these indicators to verifiable remaining life and overall useful life remains a significant difficulty and a source of major variation in practice. Austroads Report AP-R325 2003, *Remaining life of Road Infrastructure Assets* concluded that "There are still considerable difficulties with regard to the certainty of estimating the remaining life of road pavements", and that "many of the mechanistic models upon which estimates of remaining life of pavements are based are far from perfect because of the lack of reliable data available to validate these models".

3. Condition assessment however can be a reliable tool for determining the remaining life of road assets, where the assets are nearing the end of their life.

4. All of the Councils visited indicated that they do not have the resource capability to undertake a full condition audit of all roads annually. All councils indicated that they could carry out a visual assessment of road condition every 3 – 5 years in order to determine which roads were in need to remedial treatment. Annual inspections to determine defects and manage risk in accordance with Road Asset Management Plans were seen to be standard and acceptable practice.

5. All councils visited indicated that they would be able to provide some estimate of the year of construction of road seals and pavement with a higher level of accuracy than they could estimate the remaining life for a road based on condition in the first 50% of its life.

6. The proposed methodology developed with the 7 councils and contained in the guidelines will identify remaining life for those assets based on detailed knowledge of asset condition. The actual useful life of these assets can then be calculated from age plus remaining life where the date of construction is known.

7. Councils will need to be able to identify all of those assets nearing the end of their life and make engineering judgments on the remaining life for these assets supported by a condition assessment.

8. Regular inspection of all assets in accordance with finding 7 will enable the calculation of the actual in situ useful life for those assets that exhibit signs of deterioration, check the calculated useful life with available evidence and use this to determine the useful life of all other assets based on age and remaining life.

9. All assets will have a useful life estimate based on best available condition data.

10. Council will carry out an annual review of all assets to update and verify the remaining life of all assets and verify the useful life.

11. Councils will need to provide verifiable unit rates (costs to replace and renew the road in a greenfield situation measured in terms of cost per unit of measure, eg $/m2) for asset replacement costs and asset renewal costs to enable verification of depreciable amounts for reporting in the financial reports?

12. Councils will need to provide dimensions (physical attribute data relating to the asset e.g. length, width, etc.) for each asset corresponding to the unit rates.

13. Financial reports with reasonable accuracy could be produced using this method because:

    i. Councils have or are able to estimate verifiable age data of road assets,

    ii. Councils have reliable condition data for assets that are approaching the end of their life,

    iii. Condition data can be used with a reasonable accuracy to predict remaining life,

    iv. Useful life can then be estimated by summing age and remaining life,

    v. Age and remaining life data enable councils to verify the actual useful life for those assets approaching end of life. This verification data can be used to check and substantiate the remaining life estimates of all assets.

11. Guidelines for Measuring and Reporting the Condition of Road Assets

11.1. Valuation

"Asset valuation is an essential management tool. It assists in the determination and allocation of costs and provides performance/rate of return reporting, resource allocation, shareholder equity and accountability."[4]

The recommended methodology for the valuation of road assets is to use fair value. AASB 116 defines fair value as "the amount for which an asset could be exchanged between knowable, willing partners in an arms length transaction".[5] For most road assets, fair value cannot be determined from market-based evidence, as there is no market evidence of the asset's market selling price. In this case, the asset's fair value is determined as the market buying price. The best indicator of such asset's market-buying price is either depreciated replacement cost (DRC) or an income approach. Depreciated replacement cost is defined in AASB 116 as "the current replacement cost 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".[6]

Further details of asset valuation methodologies are given in Department of Sustainability and Environment's "Fair Value Asset Valuation Methodologies for Victorian Local Governments".[7]

The recommended methodology for road assets is therefore to use current replacement cost based on the unit cost of each of the components. The depreciable amount is then determined by subtracting any residual amount for the component parts.

Examples of road asset components include

- Sealed Road Pavements
- Sealed Road Surface
- Gravel Road pavement / surface
- Kerb
- Foot paths

[4] IIMM Section 3.10
[5] AASB, 2005, Paragraph 6
[6] AASB, 2005, Australian Guidance Paragraph G5
[7] 2005

- Bridges
- Road Furniture, signs, line marking

Typical road assets are illustrated in Figures 11 and 12.

Figure 11. Typical Sealed Road Cross Section Showing Components

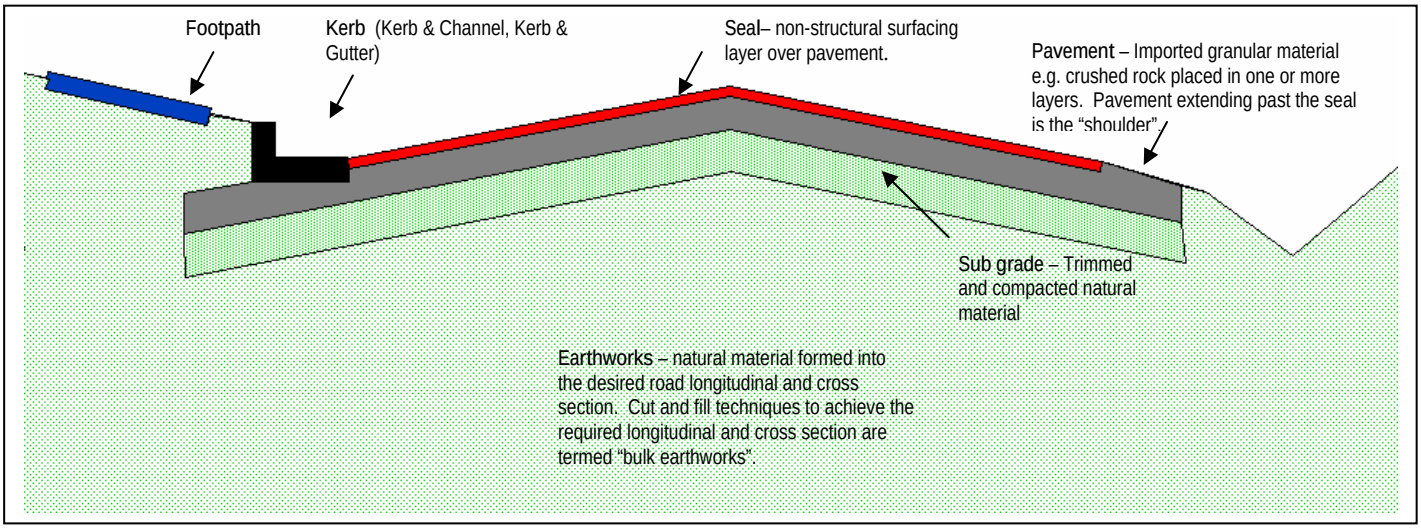
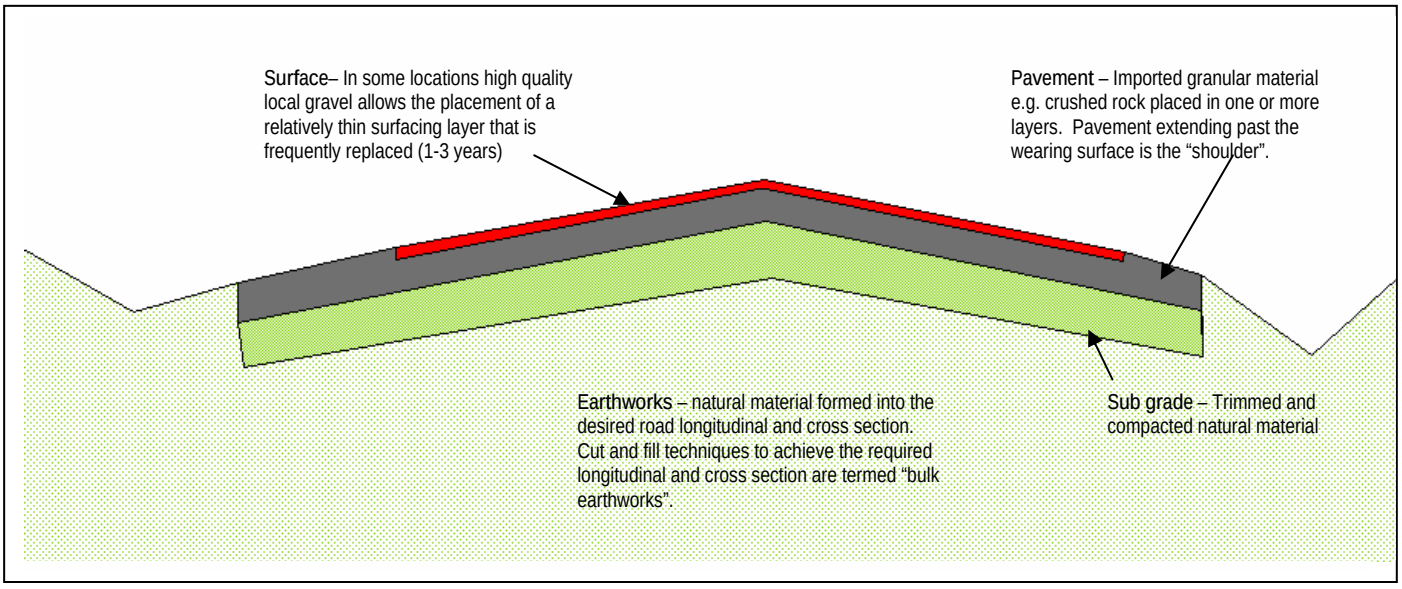


Figure 12 Typical Gravel Road Cross Section Showing Components



In the two previous diagrams, the typical components of the road segment are shown. Each component has a different useful life, value and rate of consumption of service potential (depreciation) and therefore should be recorded as separate assets in the asset register. This will be discussed in more detail in the following section.

Unit Cost

The recommended methodology for the calculation of unit cost is to apply a unit cost calculation on each of the components and sub components using the current rates of construction. For example for a Sealed Road each component / sub component of a road should be costed with supporting calculations and source data.

Table 13 Example of Supporting Documentation for Asset Financial Reporting

Item	Unit	Cost per Unit[8]	Useful life	Depreciation Policy
Sealed Surface	M2	$xx		Separate Asset
Pavement – Base Layer 150 mm	M2	$xx		Sub Component of Pavement
Pavement – Sub Base Layer 150 mm	M2 or M3	$xx		Sub Component of Pavement
Trim and Compact Sub Grade	M2 or M3	$xx		Sub Component of Pavement
Kerb	m	$xx		Separate Asset
Subsurface Drain	m	$xx		Sub Component of Pavement
Footpath 1200 mm wide	m	$xx		Separate Asset
Signs and Markings	m	$xx		Expense – asset management plan shows expenditure needed.

11.2. Depreciation

Depreciation is the systematic allocation of the depreciable amount (service potential) of an asset over its useful life. It is a measure of the use or consumption of assets in providing services for a year. As such, it is part of the cost of providing those services which is expensed along with other annual changes such as maintenance, insurance, etc., through a charge to the Statement of Financial Performance (income statement), to calculate the cost of providing the service for the year to the community. 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.

Assuming that straight line depreciation is used, the calculation for depreciation is:

$$\frac{\text{Depreciable amount (Fair Value - Residual Value)}}{\text{Total Useful life}}$$

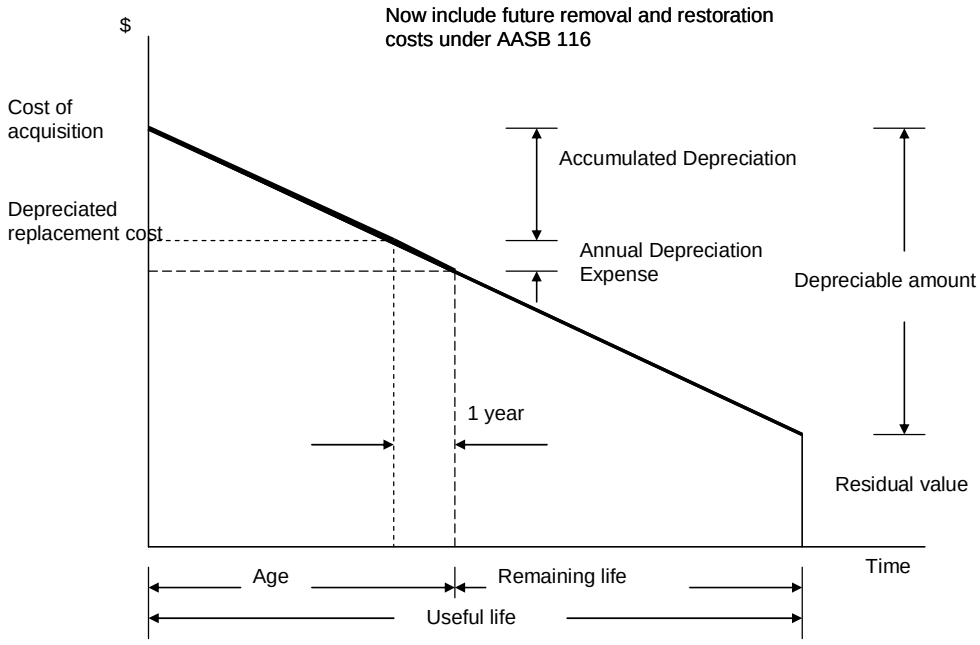
This method applies at the time of revaluation. Note that prior years' depreciation is not to be adjusted except during the revaluation process when accumulated depreciation may be varied.

The average depreciation over the life of the asset is the current replacement value per asset divided by the total useful life. The current depreciation is the written down current

[8] Sample data only

replacement cost divided by the remaining life. If the rate of service consumption does not change throughout the life of the asset the above two calculations give the same result as shown in Figure 14 below. Figure 14 shows the average long term systematic allocation of the consumption of asset service potential (depreciation). It does not represent the actual non linear deterioration of asset condition.

Figure 14 – Depreciation where consumption of asset service potential is constant over time



The consumption of service potential of roads may not always be constant throughout the life of the asset. Take for example a concrete kerb with an estimated useful life of 50 years. When the kerb was valued in 2001, the remaining life was calculated at 10 years.

The kerb is now known to be 50 years old and in theory has 5 years of remaining life, but is still in good condition and is estimated to have at least another 10 years of remaining life. This highlights the need to annually review remaining and useful lives and regularly review asset fair values.

Gross errors likely to materially affect financial reports are caused by:

- Over or underestimating useful life
- Limits of using condition based analysis to predict future remaining life where there is not statistical basis to determine the relationship between condition and remaining life.
- Over or understating the asset current replacement cost.

11.3. Useful Life

The two primary variables in the calculation of total useful life are:

1. The age of the asset (service potential consumed to date)

2. The remaining life of the asset (how much service potential remains)

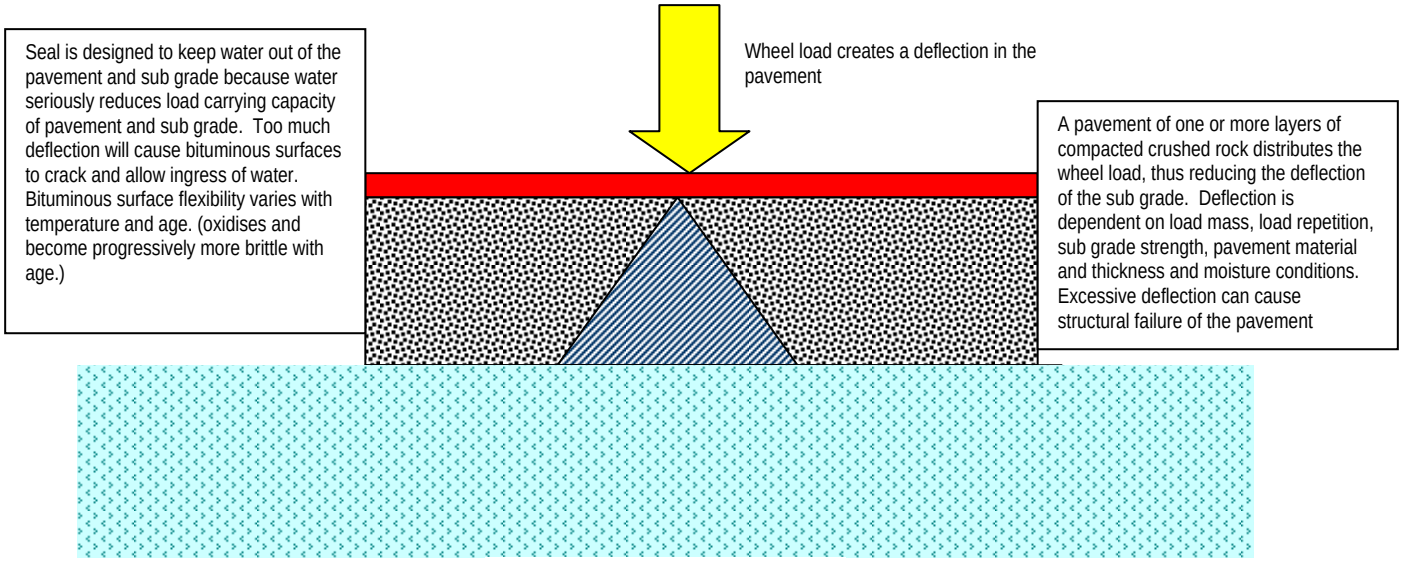
The calculation for total useful life of an individual asset is

Total Useful Life = Asset age + Remaining Life

Total useful life is elapsed life plus estimated remaining life of an asset. The lack of detailed knowledge about road useful life is the key factor creating the greatest variation and potential error in the condition assessment. The issue to address is not that there is variability, rather the lack of supporting statistical data and analysis to demonstrate the actual useful life.

The variability of road useful life is inherent in the structure of a flexible pavement as shown below. Useful life is determined by the number of load repetitions, equivalent standard axles (ESA's) and structural and environmental conditions. The design life makes a predictive assessment of these variables in anticipated conditions whereas the useful life reflects the actual conditions and council's intentions with regard to actual length of time in service.

Figure 15 Useful life variation inherent in the design of lightly trafficked flexible pavements.



Pavement design is based on assessing these variables and adjusting the thickness and, if possible, quality of the pavement material to minimise the deflection. Traffic loads are based on both volume and weight, converting to equivalent standard axles (ESAs). Pavements therefore have an useful life defined by design, environmental, operating and maintenance conditions. A typical design life specified for lightly trafficed roads in council subdivision specifications is 20 years.

Variability in determination of useful life has a number of consequences for financial reporting for example:

1. Under certain conditions for lightly trafficked roads, useful life can be very long. There are reported cases exceeding 100 years. This is possible if the surface is regularly replaced, and pavement and subgrade materials are of sufficient strength to resist deflection. The best documented cases are in a number of inner city roads constructed in the late 1800s and early 1900s using the technique developed by MacAdam of hand placing a layer of hard, high quality stone (necessary to withstand

very high point loads of steel rimmed wagons). Conversely there is a growing number of road pavements constructed in expanding urban areas in the 70s and 80s that are providing very low levels of service after 20 – 30 years.

2. Each segment of road pavement has a different useful life. The extent of variation is subject to the variation of operating factors. It is therefore necessary to divide a road network into (relatively) homogeneous segments (typically intersection to intersection in urban areas and as necessary in rural areas.

3. The useful life of a road pavement can change during its life if operating and environmental factors change, eg changed traffic loading or inadequate reseals allowing ingress of water.

4. The sensitivity of depreciation charges to useful life (and remaining life) make some understanding of the pavement network being managed critical to presenting a true representation of councils financial position.

11.4. Remaining Life

The diagram on the following page contains all of the recommended elements in the practice developed with the 7 Victorian Councils.

- Total Useful life = (Date of Renewal – Date of Construction or Last Renewal). Validation of Useful life Essential for Any Depreciation Method. Total Useful life is the actual life achieved at renewal or total failure. It is not the design life or theoretical optimum renewal life. Useful life is determined by Council, taking into account other priorities, risk, cost and service level implications.

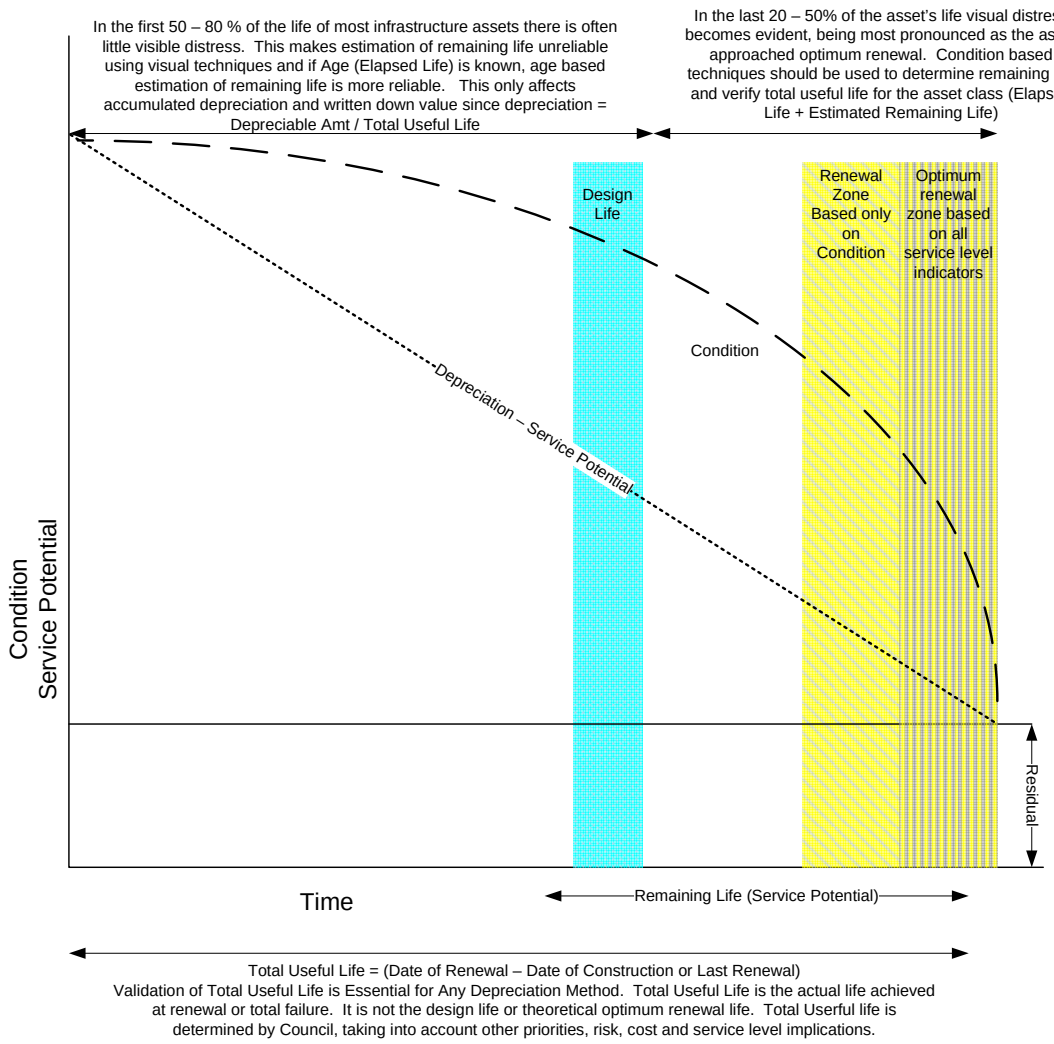
- Asset Residual = Greenfield Replacement Cost – Actual Treatment Cost. The reduced cost of treatment reflects the re use of in situ materials that have a residual value. This also may include earthworks / formation that will be re used as part of the asset renewal.

- In the first 50 – 80 % of the life of most road assets there is often little visible distress. This makes estimation of remaining life unreliable using visual techniques and if Age is known, age based estimation of remaining life is more reliable. This only affects accumulated depreciation and written down value since depreciation = Depreciable Amt / Total Useful life

- In the last 20 – 50% of the asset's life visual distress becomes evident, being most pronounced as the asset approaches optimum renewal. Condition based techniques should be used to determine remaining life and verify total useful life for the asset category (Age + Remaining Life). It is recommended that the condition assessment techniques set out in Rocond 90 be used together with service level indicators as listed in tables 1 and 2

- Using this methodology, current replacement cost and depreciated replacement cost report the condition of the asset in financial reports.

Figure 16. Guidelines for Assessing Road Remaining Life and Depreciation.



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"Accounting for non-current physical assets under AASB 116 '*Property, plant and equipment*' in the Victorian Local Government context." - Department for Victorian Communities (Local Government Victoria) 2006

Austroads, "Heavy vehicle Loading of Low Trafficked Roads Part 1 – Strategic Framework for Reviewing Expenditure, Austroads Project No. BS.A.N503, Sydney.

"Guidance Note Fair Value Asset Valuation Methodologies for Victorian Local Governments – Department of Sustainability and Environment (Valuer-General Victoria) 2005.

WALGA, "Report on Local Government Roads Assets and Expenditure 2003-04, Western Australia Local Government Association, Perth, www.walga.asn.au/policy/transport

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References

AASB Australian Accounting Standards Board
API Australian Property Institute
ICAA Institute of Chartered Accountants in Australia
IVSC International Valuation Standards Committee www.ivsc.org
IFAC International Federartion of Accountants consultation paper on Heritage assets Feb 2006
JRA Jeff Roorda and Associates

TERM	DEFINITION	REF	EXAMPLES	ADDITIONAL EXPLANATIONS
Adequate profitability	When an asset has been valued by reference to depreciated replacement cost, adequate profitability is the test that the entity should apply to ensure that it is able to support the depreciated replacement cost conclusion	IVSC API		
Annual service cost (ASC)	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 operating, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.	JRA		
Asset class	Grouping of assets of a similar nature and use in an entity's operations.	AASB 116.37		
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.	JRA		
Asset management	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.	JRA		
Assets	Future economic benefits controlled by the entity as a result of past transactions or other past events.	AAS 27.12	Property, plant and equipment including infrastructure and other assets (such as furniture and fittings) with benefits expected to last more than 12 month.	

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TERM	DEFINITION	REF	EXAMPLES	ADDITIONAL EXPLANATIONS
Average annual asset consumption (AAAC)	The amount of a local government's asset base consumed during a year. This may be calculated by dividing the Current Replacement Cost (CRC) by the Useful Life and totalled for each and every asset OR by dividing the Fair Value (Written Down Current Replacement Cost) by the Remaining Life and totalled for each and every asset in an asset category or class.	JRA		
Capital expansion expenditure	Expenditure that extends an existing asset, at the same standard as is currently enjoyed by residents, to a new group of users. It is discretional expenditure, which increases future operating, and maintenance costs, because it increases council's asset base, but may be associated with additional revenue from the new user group.	JRA	Extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.	Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.
Capital expenditure	Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade.	JRA		Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.
Capital funding	Funding to pay for capital expenditure.	JRA		
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.	JRA		Care is required for these proposals where not all costs are covered by the grant. Operating costs associated with these proposals in future years also need to be considered together with any new revenue generated and foreseeable renewal requirements. Failure to consider these will result in council not being able to sustain service levels in the future, as the assets will not have been renewed and the additional operating costs will have eaten into council's operating funds.
Capital investment expenditure	See capital expenditure definition			

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TERM	DEFINITION	REF	EXAMPLES	ADDITIONAL EXPLANATIONS
Capital new expenditure	Expenditure which creates a new asset providing a new service to the community that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operating and maintenance expenditure.	JRA		This term may also be used to refer to a combination of new, upgrade and expansion expenditure where these are not disclosed separately.
Capital renewal expenditure	Expenditure on an existing asset, which returns the service potential or the life 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 has no impact on revenue, but may reduce future operating and maintenance expenditure if completed at the optimum time. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.	JRA	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.	Sealed road resurfacing. The sealed surface provides a waterproof seal over the road pavement and prolongs the life of the pavement to its design/expected life. The sealed surfaces breakdown over time due to oxidisation of the bituminous material and cause cracking of the sealed surfacing. Water penetrates into the pavement through the cracks in the seal and reduces pavement life. Resurfacing on a regular cycle (say every 10-15 years) ensures that the waterproof seal is maintained and the pavement expected life is realised. Building renewal. The components of buildings require regular replacement to sustain the level of service. Components include air conditioning plants, kitchen fittings, floor coverings, roof coverings, etc. Renewal at regular intervals ensures that buildings continue to provide the levels of service required by users.
Capital upgrade expenditure	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 discretional and often does not result in additional revenue unless direct user charges apply. It will increase operating and maintenance expenditure in the future because of the increase in the council's asset base. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.		Widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility. .	Upgrade of an existing road. If a council proposes to upgrade an existing 5 metres wide road to a width of 8 metres, the cost estimate can be apportioned between renewal (of the existing 5 metres width) and upgrade (widening from 5 metres to 8 metres. Assuming a cost estimate of $100,000 for the full proposal, 5/8ths is renewal ($62,500) and 3/8ths is upgrade ($37,500)

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TERM	DEFINITION	REF	EXAMPLES	ADDITIONAL EXPLANATIONS
Carrying amount	The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon	AASB 116.6		
Class of assets	See asset class definition	AASB 116.37		
Commercial investments	Investments for the provision of goods and services to sustain or improve services to the community but are expected to generate a return equivalent to or better than a private sector return for an investment in a similar industry.	JRA	Commercial property and land subdivisions	
Component	An individual part of an asset which contributes to the composition of the whole and can be separated from or attached to an asset or a system.	GB		
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, plus any costs necessary to place the asset into service. This includes one-off design and project management costs.	AASB 116.6		
Council investment expenditure	The spending of money on goods and services. Expenditure includes recurrent and capital.			
Current replacement cost (CRC)	The cost the entity would incur to acquire the asset on the reporting date.	AASB 102 Aus 6.1		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 .

Glossary

TERM	DEFINITION	REF	EXAMPLES	ADDITIONAL EXPLANATIONS
Current replacement cost "As New" (CRC)	The current cost of replacing the original service potential of an existing asset, with a similar modern equivalent asset, i.e. the total cost of replacing an existing asset with an as NEW or similar asset expressed in current dollar values.			
Depreciable amount / service potential	The cost of an asset, or other amount substituted for its cost, less its residual value.	AASB 116.6		
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	AASB 136 Aus 6.2		Value in Use Formerly and also known as written down value (WDV) or written down current replacement cost (WDCRC). Current cost of replacement or reproduction cost less deductions for physical deterioration and all relevant forms of obsolescence.
Depreciation / amortisation	The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.	AASB 116.6		Depreciation is not a measure of required expenditure on assets in any given year.
Economic life	See useful life definition.			
Expenditure	The spending of money on goods and services. Expenditure includes recurrent and capital.			
Fair value	The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arms length transaction.	AASB 116.6		Normally determined by reference to market or comparable prices. Where assets do not have a market price, this is the replacement cost of the asset's remaining economic benefits which is the current replacement cost of the asset less accumulated depreciation to date (depreciated replacement cost (DRC)).
Financial reporting	The presentation of financial performance (in text and data formats) of a business over a particular time period for internal and external observers and stakeholders.			
Funds generated by council operations	Funds generated by council operations are the operating result, which is the 'bottom line' per the statement of financial performance (income statement), plus depreciation less capital revenue (grants and developers contributions).	JRA		Generally speaking, funds generated by council operations should be used to fund the continuation of those operations by renewing assets.

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TERM	DEFINITION	REF	EXAMPLES	ADDITIONAL EXPLANATIONS
Heritage asset	An assets 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.	IFAC		
Impairment Loss	The amount by which the carrying amount of an asset exceeds its recoverable amount.	AASB 116.6		
Infrastructure assets	Physical assets of the entity or of another entity that contribute to meeting the public's need for access to major economic and social facilities and services.	ICAA	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 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.	AASB 140.5		
Level of service	The defined service quality for a particular Primary Service against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental, acceptability and cost).	JRA	Roads and child care services Number of accidents on local roads	

Glossary

TERM	DEFINITION	REF	EXAMPLES	ADDITIONAL EXPLANATIONS
Loans / borrowings	Loans result in funds being received which are then repaid over a period of time with interest (an additional cost). Their primary benefit is in 'spreading the burden' of capital expenditure over time. Although loans enable works to be completed sooner, they are only ultimately cost effective where the capital works funded (generally renewals) result in operating and maintenance cost savings, which are greater than the cost of the loan (interest and charges).	JRA		Loans therefore provide Council with flexibility, but do not ultimately provide additional funds or make additional expenditure possible in the longer term.
Borrowings	See loans definition			
Maintenance and renewal gap	Difference between estimated budgets and projected expenditures for maintenance and renewal of assets, totalled over a defined time (eg 5, 10 and 15 years).			
Maintenance and renewal sustainability index	Ratio of estimated budget to projected expenditure for maintenance and renewal of assets over a defined time (eg 5, 10 and 15 years).			
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.	JRA		
Materiality	An item is material is its omission or misstatement could influence the economic decisions of users taken on the basis of the financial report. Materiality depends on the size and nature of the omission or misstatement judged in the surrounding circumstances	AASB 1031		The size or nature or a combination of both could be determining factors.
Modern equivalent asset.	A structure similar to an existing structure and having the equivalent productive capacity, which could be built using modern materials, techniques and design. Replacement cost is the basis used to estimate the cost of constructing a modern equivalent asset.	IVSC / API		

Glossary

TERM	DEFINITION	REF	EXAMPLES	ADDITIONAL EXPLANATIONS
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 Council. (Examples include parks and playgrounds, footpaths, roads and bridges, libraries, etc.).	JRA		
Operating expenditure	Recurrent expenditure, which is continuously required excluding maintenance and depreciation	JRA	Power, fuel, staff, plant equipment, on-costs and overheads.	
Pavement management system	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.			
Project	An investment proposal after approval by Council and included in the capital works programs.	JRA		
Proposal	An investment initiative under consideration prior to approval.	JRA		
Rate of annual asset consumption	A measure of average annual consumption of assets (AAAC) expressed as a percentage of the current replacement cost (AAAC/CRC).			
Rate of annual asset renewal	A measure of the rate at which assets are being renewed per annum expressed as a percentage of current replacement cost (capital renewal expenditure/CRC).			
Rate of annual asset upgrade	A measure of the rate at which assets are being upgraded and expanded per annum expressed as a percentage of current replacement cost (capital upgrade expenditure/CRC).			
Recoverable amount	The higher of an asset's fair value less costs to sell and its value in use.	AASB 116.6		
Recurrent expenditure	Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operating and maintenance expenditure.	JRA		
Recurrent funding	Funding to pay for recurrent expenditure.	JRA		

Glossary

TERM	DEFINITION	REF	EXAMPLES	ADDITIONAL EXPLANATIONS
Rehabilitation	See capital renewal expenditure definition above.	JRA		
Remaining Life	The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining life is economic life.			
Renewal	See capital renewal expenditure definition above.	JRA		
Residual value	The net amount which an entity expects to obtain for an asset at the end of its useful life after deducting the expected costs of disposal.	AASB 116.6		The estimate amount that would be obtained 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. For infrastructure assets, it is the current replacement cost less the estimated cost of renewing the future economic benefits or service potential of the asset.
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. (Examples include public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.).	JRA		
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.	JRA		
Section or segment	A self-contained part or piece of an infrastructure asset.		A length of road	
Service potential	The capacity to provide goods and services in accordance with the entity's objectives, whether those objectives are the generation of net cash inflows or the provision of goods and services of a particular volume and quantity to the beneficiaries thereof.	From the IVSC / API		In the public sector, the concept of service potential takes the place of the test of adequate profitability applied to the private sector.

Glossary

TERM	DEFINITION	REF	EXAMPLES	ADDITIONAL EXPLANATIONS
Service potential remaining	A measure of the remaining life of assets expressed as a percentage of economic life. 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 (DRC/CRC).			
Specialised properties	Property that is rarely, if ever, sold in the market except by way of a sale of the business or entity of which it is part, due to uniqueness arising from its specialised nature and design, its configuration, size, location, or otherwise.	IVSC / API		
Sub-component	Smaller individual parts that make up a component part.	GB	Concrete kerb is made up of the sub components reinforced steel mesh or rods, cement, aggregate, sand and water.	
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.	AASB 116.6		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 council. It is the same as the economic life.
Value in Use	The present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life.	AASB 5.A		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 new cash flows, where if deprived of the asset its future economic benefits would be replaced.