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National Asset Management Strategy Australia

IPWEA
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA

SUBMISSION TO AASB

Definition and Use of Residual Value

1. Background

The Australian Accounting Standards Board is conducting a targeted outreach on the definition of Residual Value. The targeted outreach details are shown in Appendix A.

Residual value is defined in Australian Accounting Standard AAS116, Property, Plant and Equipment as:

> *"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" (AASB 116.6).*

The AASB received a submission requesting that it clarify the definition of residual value in AASB 116 *Property, Plant and Equipment*. The submission:

a) argues that this interpretation of AASB 116 is unduly limiting and does not reflect the intention of AASB 116. The submission asserts that the definition of residual value in paragraph 6 of AASB 116 may unduly limit its recognition to circumstances in which an entity would receive proceeds from the sale of the asset;

b) provides an example of an entity recycling crushed gravel for reuse in the reconstruction of a road to bring it back to a state that is identical to its original wearing surface. It is argued that the residual value of the original road surface, which is at the end of its useful life, is the 'cost savings realised (or expected to be realised) from the reuse of salvaged materials'; and

c) recommends the Board consider including an 'Aus' paragraph in AASB 116 to permit not-for-profit entities to recognise the cost savings in replacing an asset as part of the residual value.

The Board is specifically interested to hear:

- whether constituents feel the requirements of AASB 116, in relation to residual value, are clear?
- how constituents are determining the residual value of recyclable assets?
- whether constituents consider the issue is limited to the not-for-profit sector?
- examples of recyclable assets.

2. Role of IPWEA

The Institute of Public Works Engineering Australasia (IPWEA) is the leading organisation for Public Works Engineering professionals in Australia and New Zealand. IPWEA has over 3,600 members and is recognised as a leading organisation for infrastructure asset and financial management throughout the world.

IPWEA has developed resources to assist and guide organisations that provide services from infrastructure to improve the sustainability of their infrastructure operations by:

- developing and improving asset management policies, strategies and plans to show how services from infrastructure are to be provided
- integrating and aligning the asset management plans with a long-term financial plan, and
- reporting on organisational performance through Annual Reports incorporating Financial Statements.

IPWEA's has developed and provides many resources to assist organisations including:

- NAMS.PLUS Asset Management (www.ipwea.org.namsplus)
- Australian Infrastructure Financial Management Guidelines (www.ipwea.org/AIFMG)
- Practice Notes for:
    - Condition assessment and asset performance guidelines – preamble document
    - PS 1 Footpaths and Cycleways
    - PS 2 Kerb and Channel (Gutter)
    - PS 3 Buildings
    - PS 4 Asset Management for Small, Rural or Remote Communities
    - PS 5 Stormwater Drainage
    - PS 6 Long-Term Financial Planning
    - PS 7 Water Supply and Sewerage
    - PS 8 Levels of Service & Community Engagement
    - PS 9 Road Condition (in final editing)
    - PS 10.1 Parks Management
    - PS 11 Street Lighting
    - PS 12 Useful Life (in development)
    - PS 13 Disaster Recovery Data Management (in development)
    - PS 14 Prioritising Capital Works (in development)

IPWEA provides services on infrastructure management and financial reporting to many organisations and governments in Australia and throughout the world. IPWEA CEO, Chris Champion is an advisor to the US Federal Highways Administration on asset and financial planning for infrastructure.

3. Use of Residual Value for Infrastructure Valuations

Residual value recognition is currently commonly used to reduce the depreciable amount of an infrastructure asset to the estimated cost of the next replacement/renewal (regardless of whether the asset would be disposed of or retained (and renewed)). In some cases, this is without any justification or auditable evidence. This is a technical interpretation of the definition in AASB 116 Property, Plant and Equipment of residual value being the *estimated amount that an entity would currently obtain from disposal of the asset* as an internal saving in future cost.

There are varying opinions as to whether this technical interpretation complies with AASB 116.

A literal interpretation indicates that a cash receipt on sale/disposal of the asset is required to recognise a residual value.

In practice there are very few occasions when an infrastructure asset can be sold at the end of its useful life.

This position appears to be recognised by AASB 11 Clause.53 *"in practice, the residual value of an asset is often insignificant and therefore immaterial in the calculation of the depreciable amount."*

3.1 Defining Residual Value

In 2009, IPWEA's *Australian Infrastructure Financial Management Guidelines* attempted to define and quantify the technical interpretation of residual value as:

> "*A Residual Value could be recognised when the estimated cost to replace/renew an asset is less than the cost to replace/renew the asset.*"[1]

This could be justified by documentation in replacement/renewal strategies and expenditure projections in the asset management plans and funding in the long-term financial plan.

Under this definition, recognition of a 20% residual value for an asset implies that the next replacement/renewal of the asset can be done for 80% of the gross replacement cost of the existing asset.

4. Examples of Recognition of Residual Value

There are several instances where residual value is currently widely (but not uniformly) recognised in infrastructure valuations including:

- Road spray (flush) seal surfacing
- Recycling of sealed road pavements
- Lining of stormwater and sewerage pipelines
- Building roof components

Examples of common residual value accounting treatments for such assets and instances are described below.

4.1 Residual value in sealed road spray (flush) seal surfacing

Sealed roads generally comprise several components within a section:

- Earthworks
- Pavement
- Surfacing
- Other including kerb & channel, footpaths, culverts, guard rails, etc.

The sealed road surfacing may be either a spray (flush) seal or asphalt. The spray seal is generally applied as an initial primer seal (recognised as part of the pavement), followed by a 2 coat (layer of sprayed hot bitumen with 14mm aggregate and second layer of sprayed hot bitumen with 7mm aggregate) to form the road surfacing.

This road surfacing typically has an expected life of 15 – 20 years due to oxidation of the bitumen and subsequent loss of aggregate and should be replaced at that time. The replacement seal is generally a single coat seal (layer of sprayed hot bitumen with 10mm aggregate) placed over the end-of-life 2 coat seal.

Calculation of Residual Value

- Cost[2] of initial 2 coat seal $6.00 / m^2
- Cost of single coat reseal $4.00 / m^2
- Residual Value = $2.00 / m^2 (33%)

The sealed road surfacing asset should be valued at the cost of the initial 2 coat seal for this recognition to be valid.

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[1] IPWEA, 2009, Sec 12.11, p 12.49-52.
[2] Gross Replacement Cost – the cost of replacing the existing asset with a new asset of equivalent service capacity.

4.2 Residual value in road pavement recycling

Road pavements are constructed using several materials such as:

- Natural gravels
- Manufactured stone material mix
- Full depth asphalt

Pavements constructed with natural gravels are most common in Australia. The natural gravel pavement material particles break down over time leading to pavement distortion, increasing roughness and poor rideability of the road for road users. These pavements have a typical life of about 60 years. The service capacity of these pavements can be restored by either replacement/reconstruction or remixing and strengthening of the material by addition of a stabilisation additive, such as lime, cement or bitumen, remixing of the existing pavement material, compaction, trimming and resurfacing.

Calculation of Residual Value for recycling of natural gravel road pavements

- Cost of initial pavement $40.00 / m^2
- Cost of recycling/stabilisation $20.00 / m^2
- Residual Value = $20.00 / m^2 (50%)

In some cases, only the upper part (say 50%) of the pavement depth is recycled to achieve the desired service capacity.

4.3 Residual Value in lining of stormwater and sewerage pipelines

Stormwater and sewerage pipe have a relatively long life. Pipes can reach end of life for a variety of reasons including:

- Physical condition – pipe structure can collapse, joints can be displaced
- Capacity – pipe capacity does not meet current demand

Research by Logan City Council in the 1990's indicated that a typical stormwater pipe had sufficient physical strength to be lined with a structural liner after 125 years life or would need complete replacement after 140 years under the operating conditions of the study.

Lining with a structural liner to restore the structural capacity of the pipe at 125 years can extend the service life of the pipe by about 50 years. There are economic benefits in using liners to extend the service capacity by lining at 125 year in lieu of complete replacement at age 140 years.

Calculation of Residual Value for lining of stormwater and sewerage pipelines

- Cost of 450 mm dia reinforced concrete pipeline $700 / m
- Cost of lining 450 mm dia pipe $300 / m (est)
- Residual value $400 / m (57%)

4.4 Residual Value in building roof resheeting

The roofs of buildings are generally recognised as a separate component of a significant building as the roof is considered to have a different life to the building. Componentisation is usually based on roof and building construction costs from commercial construction handbooks. 15% for the roof is a typical roof component cost of a building.

Calculation of Roof Component Value

- Cost of Building $400,000
- Cost of roof component (15%) $60,000

After some time, the roof sheeting requires replacement. The roof sheeting is replaced with the roof structure remaining in service.

Calculation of Residual Value for resheeting of building roof

• Cost of building roof component	$60,000	
• Cost of replacing roof sheeting	$24,000	
• Residual value	$36,000	(60%)

5. Review of use of Residual Value

5.1 Audit Reporting

In his report to Parliament on Local Government Authorities for 2011-12, the Tasmanian Auditor-General commented on use of residual values by councils in Tasmania noting:

"a number of councils, as part of revaluations, introduce the concept of residual values for long-lived infrastructure assets, particularly roads. This has resulted in a reduction in annual depreciation charges and improvements in road consumption ratios.

We have accepted the implementation of a residual value because its introduction was based on expert advice from councils' engineers and ***where impacts on some asset components were not material.***

However, during 2011-12 we noted a number of instances ***where the proposed residual value was significant and materially affected the asset valuation and depreciation expense****. In a number of cases, following discussion with councils, the proposed residual values were not implemented.*

At 30 June 2012, at least 11 of the 29 Tasmanian councils used some form of residual value for road infrastructure assets."[3] (emphasis added)

In summarising the discussion, it was concluded:

"*From discussions with council management and engineers, it became apparent that there are differing views regarding the definition, use and validity of residual values in the valuation of infrastructure assets, such as roads, for financial reporting purposes.*

We consider the use of residual values, as it relates to infrastructure assets, ignores the impact of technical or commercial obsolescence over the asset's life. ***The residual balance should be depreciated on some basis, even if over an extended useful life****, to ensure the calculation of depreciation complies with the requirements of Australian Accounting Standard AASB 116 Property, Plant and Equipment.*

Some councils disagree with our view because they consider certain components of road infrastructure assets do not depreciate and the requirements of AASB 116 result in depreciation expenses being over-stated.

We have considered the situation and intend to appoint an independent expert to review depreciation methods, including use of residual values, by Tasmanian councils. It is our intention to undertake the review in early 2013 and discuss our findings with councils before the end of the 2013 financial year."[4] (emphasis added)

[3] TAO, 2012, p 26.
[4] TAO, 2012, p 29.

5.2 Depreciation practices including residual value review.

The Tasmanian Audit Office investigated:

"The two main concerns that arose regarding the use of residual values, in the context of infrastructure assets, particularly roads, were:

1. *It ignores the fact that at some point in time, the asset may no longer be required and its function may be decommissioned due to obsolescence.*
2. *Compliance with Australian Accounting Standards in particular AASB 116 Property, Plant and Equipment (AASB 116)."*[5]

The A-G's report concluded:

"We concluded that asset management practices of councils complied with Australian Accounting Standards but that some alterations to existing practices in councils are required. Broadly, the changes to current practice involve:

- *a reduced reliance on residual values to affect the depreciable amount of infrastructure assets*
- *a greater reliance on cost based fair value assessments to establish current replacement costs*
- *a greater use of componentisation to reflect assets with different estimated useful lives."*[6]

Note: The principal author of this submission, John Howard, was one of the authors of the Expert's Report cited in the Auditor-General's Report *Infrastructure Financial Accounting in Local Government.*

6. Applying the Tasmanian Auditor General's Recommendations

IPWEA has recognised the Tasmanian Auditor-General's Reports in its review of the *Australian Infrastructure Financial Management Guidelines* and has recommended use of appropriate componentisation and valuations based on a modern equivalent asset for infrastructure assets in the updated 2nd Edition of the Guidelines.

Examples of this approach are shown below.

6.1 Sealed road spray (flush) seal surfacing

The asset management activities planned for the sealed spray seal surfacing are:

- initial 2 coat seal at construction of road
- single coat reseal at 15 years
- single coat reseal at 30 years
- single coat reseal at 45 years
- reconstruction/replacement of road pavement at 60 years with 2 coat sealed surface

Road asset components identified under the asset management planning activities are

- road pavement – 60 year expected useful life
- sealed surface long life component – same useful life as road pavement
- sealed surface short life component – 15 year expected useful life

The components are recognised at cost being:

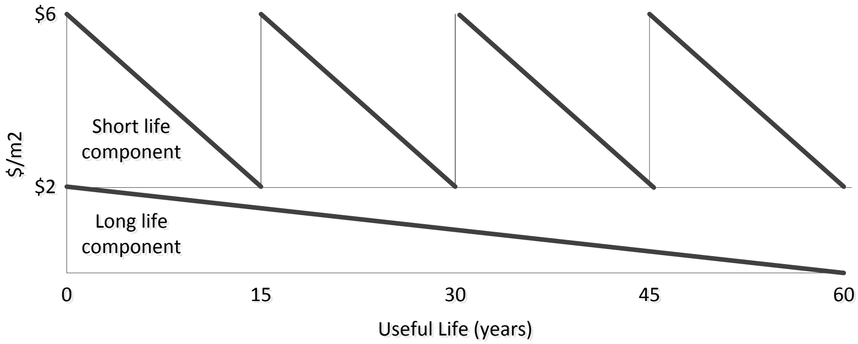
- road pavement – cost of acquisition/construction – depreciated over expected 60 year life
- sealed surface long life component – cost of 2 coat seal less estimated cost of single coat reseal - depreciated over expected 60 year life (could be added to pavement component)

[5] TAO, 2013, p 8.
[6] TAO, 2013, p 7.

- sealed surface short life component – estimated cost of single coat reseal - depreciated over expected 15 year life

Figure 1 shows the recognition and depreciation of the long and short life components of the two coat sealed surfacing using the example data from Section 4.1. There is no residual value as the resurfaced sealed surfacings have no salvageable value.

Figure 1: Depreciation of Short and Long Life Components of Two Coat Seal



The components are revalued using the modern equivalent asset as:

- road pavement – gross replacement cost of new asset providing the same service capacity as the existing asset
- sealed surface long life component – estimated cost of 2 coat seal less estimated cost of single coat reseal
- sealed surface short life component – estimated cost of single coat reseal

6.2 Road pavement recycling

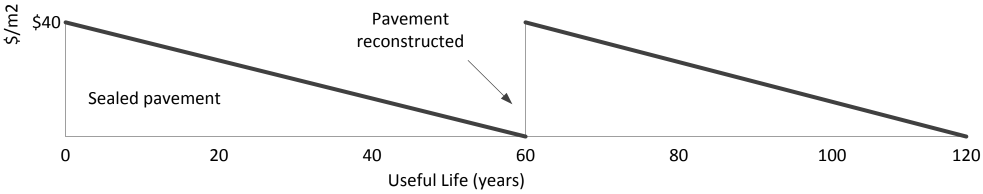
An entity has identified two management options for the replacement/renewal of its sealed road pavements being reconstruction when service levels become unacceptable or recycling of all or part of the pavement material with addition of stabilisation additive, to renew the service capacity of the pavement.

An entity has identified two management options for the replacement/renewal of its sealed road pavements being:

Option A reconstruction when service levels become unacceptable or
Option B recycling of all or part of the pavement material with addition of stabilisation additive, to renew the service capacity of the pavement.

Figure 2 shows the depreciation treatment for replacement/reconstruction of the full pavement depth. There is no residual value as the pavement material has no salvageable value.

Figure 2: Depreciation of Sealed Pavement to be reconstructed – Option A



Option B adopts recycling of all or part of the pavement materials depending on the pavement depth. Roads are constructed to varying depths (e.g. 250 mm for light trafficked roads – 500 mm for heavy trafficked roads) to accommodate expected traffic loadings. Examples are shown below for recycling of the full depth of a light trafficked road and recycling of the base (upper layer) of a 450 mm heavy trafficked pavement.

Case 1 Full depth of pavement is recycled (250 mm pavement depth)

The asset management activities planned for this sealed road pavement are

- initial construction of 250 mm natural gravel sealed road pavement
- recycling and stabilising of full depth pavement at 60 years

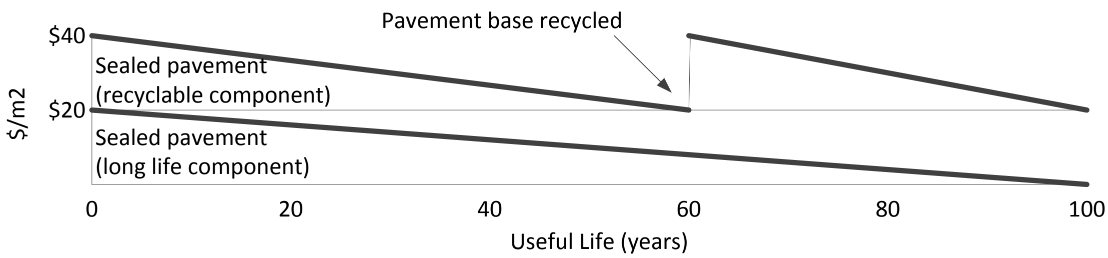
The pavement recycling and stabilising is expected to provide an expected life of 40 years for the recycled pavement. Performance of the pavement will be monitored and a decision made on appropriate replacement/renewal treatment for the pavement (such as reconstruction or further recycling) in due course.

Road asset components identified under the asset management planning activities are

- road pavement long life component – cost of acquisition/construction less estimated cost of planned recycling and stabilisation – depreciated over expected 100 (60 + 40) year life
- road pavement recyclable component – estimated cost of planned recycling and stabilisation – depreciated over expected 60 year life until recycling is required

The applicable depreciation treatment for full pavement recycling is shown in Figure 3.

Figure 3: Depreciation of Sealed Pavement to be Recycled – Option B



The components are revalued using the modern equivalent asset as:

- road pavement long life component – estimated cost of pavement replacement less estimated cost of planned recycling and stabilisation
- road pavement recyclable component – estimated cost of planned recycling and stabilisation

Case 2 Part depth of pavement is recycled (250 mm of 450 mm pavement depth)

The asset management activities planned for this sealed road pavement are

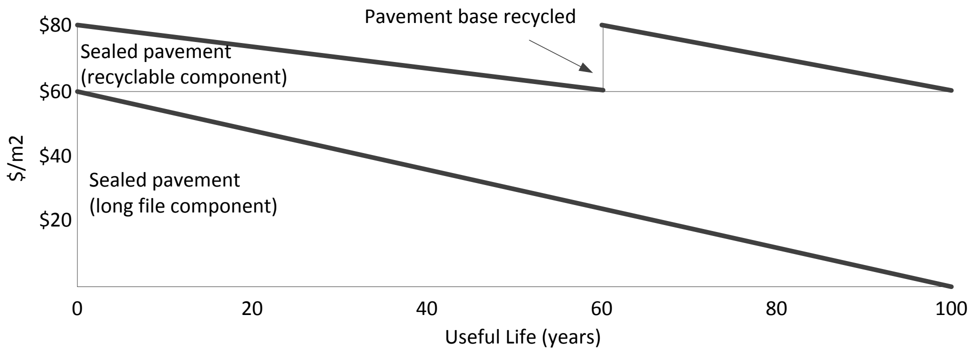
- initial construction of 450 mm natural gravel sealed road pavement
- recycling and stabilising of upper 250 mm of pavement at 60 years

Road asset components identified under the asset management planning activities are

- road pavement subbase (long life component) – cost of acquisition/construction less estimated cost of planned recycling and stabilisation pf pavement base – depreciated over expected 100 (60 + 40) year life
- road pavement base (recyclable component) – estimated cost of planned recycling and stabilisation – depreciated over expected 60 year life until recycling is required

The applicable depreciation treatment for part pavement recycling is shown in Figure 4. There is no residual value as the pavement material has no salvageable value.

Figure 4: Depreciation of Sealed Pavement with Base to be Recycled



The components are revalued using the modern equivalent asset as:

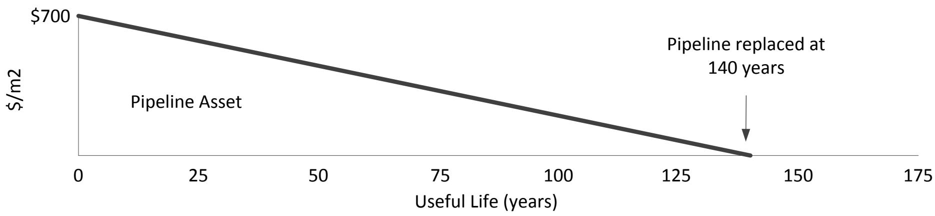
- road pavement long life component – estimated cost of pavement replacement less estimated cost of planned recycling and stabilisation
- road pavement recyclable component – estimated cost of planned recycling and stabilisation

6.3 Lining of stormwater and drainage pipelines

The entity has identified two management options for the stormwater/sewerage pipeline being:
Option A replacement due to structural failure at about 140 years or
Option B insertion of a structural liner at the appropriate time prior to failure at 125 years, to extend the service life of the pipeline.

Figure 5 shows the depreciation treatment for replacement of the pipeline management option. There is no residual value as the pipeline material has no salvageable value.

Figure 5: Depreciation of Pipeline to be replaced at 140 Years - Option A



An example is shown below for lining of the pipeline.

The asset management activities planned for this stormwater/sewerage pipeline are

- initial construction of pipeline
- installation of a structural liner at 125 years

The pipeline lining is expected to provide an expected life of 50 years for the lined the pipeline. Performance of the pipeline will be monitored and a decision made on appropriate replacement/renewal treatment for the pipeline such as replacement or further lining.

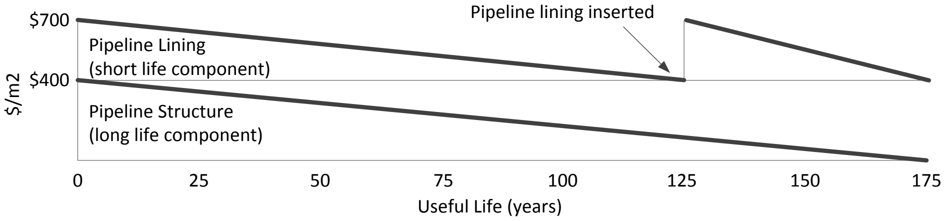
Pipeline asset components identified under the asset management planning activities are

- pipeline structure long life component– cost of acquisition/construction less estimated cost of future lining– depreciated over expected 175 (125 + 50) year life
- pipeline lining short life component– estimated cost of future lining – depreciated over expected 125 year useful life

The pipeline lining component is the part of the pipeline that is subject to corrosion and other forms of degradation from contact with the environment and materials conveyed in the pipeline.

Figure 6 shows the depreciation treatment for the pipeline lining management option. There is no residual value as the pipeline material has no salvageable value.

Figure 6: Depreciation of Pipeline to be lined at 125 Years - Option B



The components are revalued using the modern equivalent asset as:

- pipeline structure long life component– estimated cost of replacement less estimated cost of lining
- pipeline lining short life component - estimated cost of lining

The renewal strategies for pipeline should be regularly reviewed as technology developments in pipeline replacement such as pipe bursting may require a change to the depreciation treatment.

6.4 Resheeting building roof

The asset management activities planned for the building roof are

- initial construction of roof with building
- replacement of roof sheeting at 50 years
- demolition of building at 100 years

Building roof components identified under the asset management planning activities are

- roof structure – cost of acquisition/construction $36,000 (9% of $400,000) – incorporated into building structure and depreciated over expected 100 year useful life
- roof sheeting – cost of acquisition/construction $24,000 (6% of $400,000)– depreciated over expected 50 year useful life

Figure 6: of Building Roof Resheeted with retention of Roof Structure

Appropriate componentisation of building roofs into the roof structure and roof sheeting is illustrated in Figure 7.

The components are revalued using the modern equivalent asset as:

- roof structure long life component – estimated cost of replacement
- roof sheeting short life component – estimated cost of resheeting

For buildings recognition, the componentisation is generally based on the *construction cost* of the building apportioned to components as shown below.

Calculation of Roof Component Value

- Cost of Building $400,000
- Cost of roof component (15%) $60,000

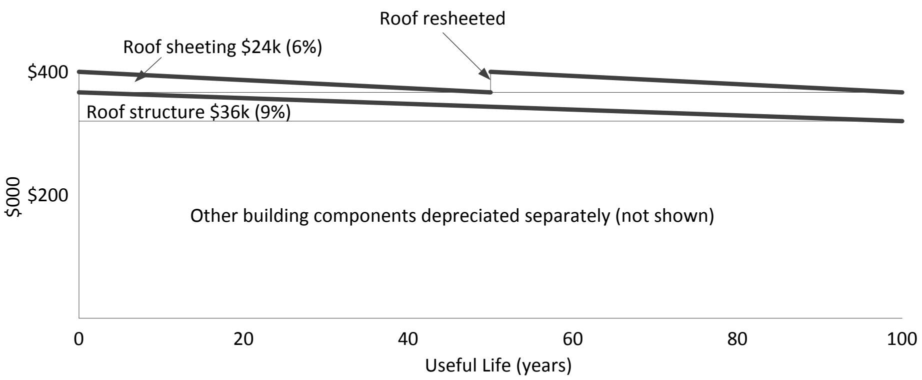
The building componentisation approach outlined above is based on the *renewal cost* for the building apportioned to components as outlined below.

Calculation of Roof Component Value

- Cost of Building $400,000
- Cost to replace roof sheeting $24,000 (6%)
- Cost of roof structure $36,000 (9%) – incorporated into building structure

Figure 7 shows the depreciation treatment for the building roof components. There is no residual value as the roofing material has no salvageable value and disposal will involve recovery and disposal costs.

Figure 7: Depreciation of Building Roof Components



7. Summary

IPWEA's response to the questions posed in the AASB targeted outreach on the definition of residual value is shown below.

7.1 Requirements of AASB 116

We consider that the definition of residual value in AASB 116 Property, Plant and Equipment is appropriate for infrastructure assets. The definition allows a residual value to be recognised when the entity is able to obtain income from the sale or disposal of the infrastructure asset.

The definition can be easily justified and substantiated by financial income records.

7.2 Determination of Residual Value

Residual value is currently often being interpreted by practitioners to allow a future cost saving from replacement/renewal of an asset to be recognised as a residual value. Section 4 details examples of how residual value is determined using this interpretation.

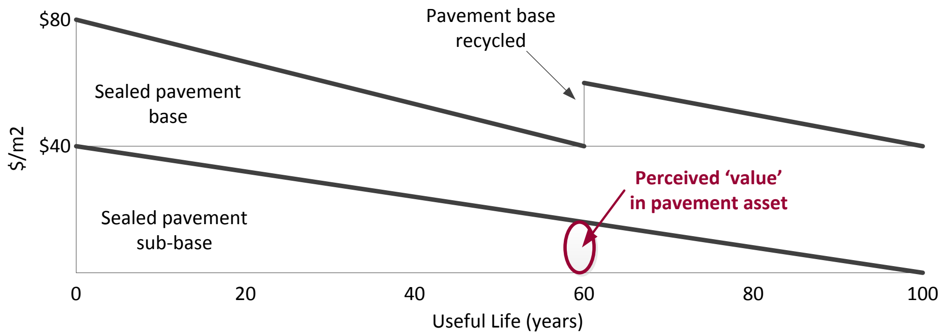
There are varying opinions as to whether this interpretation is in accordance with AASB 116.

Issues arising with this interpretation include:

- justification and substantiation of the residual value when it is used to recognise a future 'cost saving'
- compliance with AASB 116
- an assumption that the part of the asset recognised as residual value has an indefinite life and will not be replaced/renewed

It could be argued that the part of the asset remaining when part is replaced/renewed has some value as illustrated in Figure 8.

Figure 8: Perceived remaining Value in Renewal of Part of Asset



Any perceived value in a part of an asset remaining when other parts are replaced/renewed can be recognised by appropriate componentisation and valuation as modern equivalent assets as illustrated in this submission.

7.3 Limitation to the not-for-profit sector

Residual value for infrastructure is not limited to the non-for-profit sector.

7.4 Examples of Recyclable Assets

Section 4 of this submission documented four examples showing the technical interpretation of residual value for infrastructure. Of the four examples, only one, recycling of sealed road pavement assets could be considered as a recyclable asset.

The other 3 examples are not examples of recyclable assets but examples of inadequate componentisation to recognise the different expected useful lives of parts of the assets as shown below:

- Sealed road two coat spray seals – appropriate treatment is to recognise short-life (single coat reseal) and short-life (2 coat less reseal) components
- Lining of stormwater and sewerage pipelines – appropriate treatment is to recognise short -life (pipeline lining) and long -life (pipeline structure) components
- Building roofs - appropriate treatment is to recognise short -life (roof sheeting) and long -life (roof structure) components

The fact that there is a value to the organisation from the recycling of sealed road pavement assets is also better accounted for by greater componentisation rather than recognising a residual value.

Infrastructure assets do not typically last forever. IPWEA cannot identify examples where recognising residual value for assets that would not generate revenue when disposed of at the end of their useful life is warranted.

The fact that value to the organisation may exist when assets are renewed can best be accommodated by adequate componentisation treatment.

8. Recommendation

AASB retain the definition of residual value in AASB 116 Property, Plant and Equipment and encourage greater use of appropriate componentisation and revaluation as modern equivalent assets. The componentisation should be based on renewal strategies and estimated costs rather than construction costs. This will allow:

- Compliance with AASB 116
- Increased justification and substantiation based on renewal/replacement strategies and expenditure projections in asset management plans and funding in long-term financial plans
- Improved financial reporting from more accurate asset register data
- Reduced risk of obsolescence effects where assets recognised as unlimited life assets are subject to replacement/disposal.

References

AASB, Australian Accounting Standard 116, *Property, Plant and Equipment*, Australian Accounting Standards Board, Melbourne.

IPWEA, 2015, *Australian Infrastructure Financial Management Guidelines, 2nd Edition* (in preparation), Institute of Public Works Engineering Australasia Sydney.

TAO, 2012, *Report of the Auditor-General No 4 of 2012-13, Auditor-General's Report on the Financial Statements of State entities, Volume 4 Part 1, Local Government Authorities, 2011-12*, Tasmanian Audit Office, Hobart.

TAO, 2013, *Report of the Auditor-General No. 5 of 2013-14, Infrastructure Financial Accounting in Local Government*, Tasmanian Audit Office, Hobart.

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NAMS Australia is an initiative of the IPWEA National Asset Management Strategy [NAMS] Committee. NAMS.AU seeks to provide national leadership and advocacy in the sustainable management of public works infrastructure, community assets and services.

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APPENDIX A

AASB Targeted outreach on definition of Residual Value

The issue

The AASB received a submission requesting the AASB clarify the definition of residual value in AASB 116 *Property, Plant and Equipment*. The submission:

d) argues that this interpretation of AASB 116 is unduly limiting and does not reflect the intention of AASB 116. The submission asserts that the definition of residual value in paragraph 6 of AASB 116 may unduly limit its recognition to circumstances in which an entity would receive proceeds from the sale of the asset;

e) provides an example of an entity recycling crushed gravel for reuse in the reconstruction of a road to bring it back to a state that is identical to its original wearing surface. It is argued that the residual value of the original road surface, which is at the end of its useful life, is the 'cost savings realised (or expected to be realised) from the reuse of salvaged materials'; and

f) recommends the Board consider including an 'Aus' paragraph in AASB 116 to permit not-for-profit entities to recognise the cost savings in replacing an asset as part of the residual value.

Minutes from the Board's discussion at the September 2014 AASB meeting

The Board noted the submitter's concerns in relation to the definition and application of the term 'residual value', which might be read as limiting the recognition of residual values to those cases when an entity will receive consideration from the sale of an item of property, plant and equipment (PPE) at the end of its useful life.

The Board noted the various principles in AASB 116 for accounting for items of PPE, specifically the application of those principles for an asset that is subject to being recycled into a new asset of the entity. The Board considered the issue detailed in the submission is not limited to the NFP sector and could apply to a range of recyclable assets.

The Board directed staff to conduct targeted outreach on the issue, in both the for-profit and NFP sectors, to assess the prevalent accounting treatment for recyclable assets and whether diversity in practice exists.

Process

As directed by the Board, AASB staff are currently performing targeted outreach on the issue and are specifically interested to hear:

- whether constituents feel the requirements of AASB 116, in relation to residual value, are clear?
- how constituents are determining the residual value of recyclable assets?
- whether constituents consider the issue is limited to the not-for-profit sector?
- examples of recyclable assets.

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA

SUBMISSION TO AASB

Definition and Use of Residual Value

Further comments on particular examples prepared at the request of AASB subsequent to IPWEA submission of 16 Jan

IPWEA acknowledges that there can be instances where it is cost effective and appropriate for entities to re-use components of existing assets to reduce asset renewal/replacement costs. Where this is so, it is appropriate to recognise that such components had value at the point in time that renewal was undertaken.

It considers however that the recording of a residual value is not the appropriate way to do so. It seems incongruous to us to recognise a residual value for an asset (or asset component) that has a finite life (even if of somewhat uncertain duration) and will not be disposed of to another party for a positive net amount at the end of its life. It is also unnecessary.

If an entity recognises (where material) that assets are often made up of components with differing useful lives and depreciates these components accordingly its financial statements will reliably reflect the cost of asset consumption for any period and the remaining value of its assets at the end of any period. This is highlighted in the examples below.

Resheeting of Unsealed Road

Unsealed roads are constructed with natural gravel materials to provide a smooth wearing surface capable of carrying vehicular traffic under all weather conditions. The initial construction is generally about 150 mm depth. The natural gravel materials are eroded over time by traffic usage and weather condition (wind) resulting on exposure of the natural formation and reduction in service levels (eg potholes)

The wearing surface is resheeted (renewed) by placing additional gravel material on the road to replace the eroded materials. In many cases renewal of the wearing surface requires a lesser depth of material (say 100 mm) due to some material remaining on the road at the time of renewal.

Unsealed Road prior to Resheeting

Resheeted Unsealed Road

Asset Management activities planned for the unsealed road are:

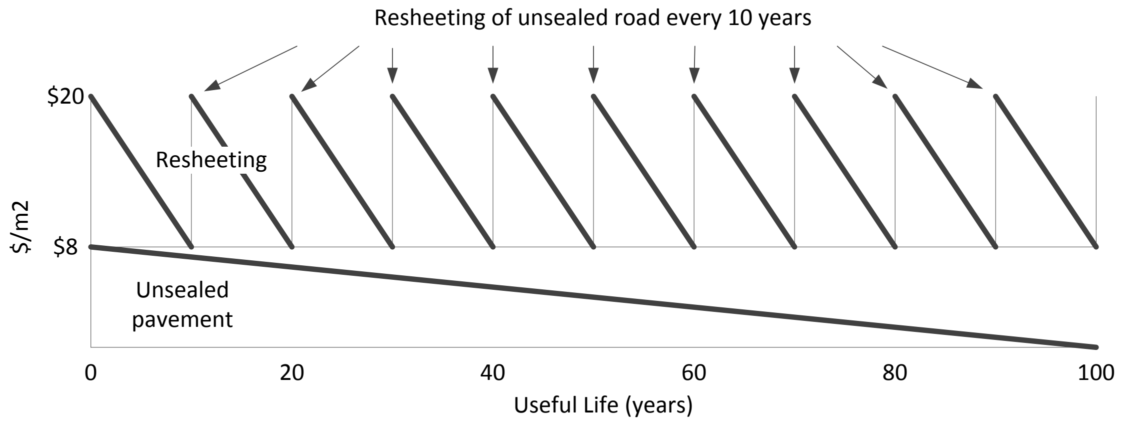
- Initial formation and construction of sheeted pavement and wearing surface (150 mm of natural gravel)
- Resheeting at regular intervals (say 10 years) to restore the service levels (say 100 mm of natural gravel)

Unsealed road components identified under the asset management planning activities are

- Unsealed pavement long life component – cost of construction less estimated cost of resheeting ($\$20/m^2$ - $\$12/m^2$ = $\$8/m^2$)[1] – depreciated over expected 100 year life (allows for obsolescence, eg change in service needs and preferences, but useful life kept under constant review)
- Resheeting short life component – estimated cost of resheeting ($\$12/m^2$) – depreciated over expected 10 year life.

The applicable treatment for unsealed roads and resheeting of unsealed roads is shown in Figure 1.

Figure 1: Depreciation of Unsealed Roads with Resheeting of Wearing Surface



The components are valued using the modern equivalent assets as:

- Unsealed pavement long life component – estimated cost of pavement replacement less estimated cost of planned resheeting
- Resheeting short life component - estimated cost of planned resheeting

Other examples

A. Mixing of road seal and pavement to form renewed pavement and sealed.

Asset Management activities planned for the sealed road are:

- Initial formation and construction of sealed pavement and wearing surface
- Mixing of sealed surface and pavement base, compaction and sealing at regular intervals (say 50 years) to restore the service levels

Road components identified under the asset management planning activities are

- Sealed pavement long life component – cost of construction less estimated cost of mixing and compaction – depreciated over expected 100 year life (allows for obsolescence)
- Mixed pavement base short life component – estimated cost of mixing and compaction – depreciated over expected 50 year life
- Sealed surface – see 2 coat seal example – depreciated over expected life.

[1] Cost estimates are examples for this submission.

B. Replacement of Timber Bridge with concrete span

Asset management activities planned for the timber bridge are

- Initial construction of timber bridge
- Removal of timber deck and replacement with concrete deck after say 40 years
- Replacement of bridge with concrete bridge when timber components reach end of life after say 60 years

Bridge components identified under the asset management planning activities are

- Timber bridge structure long life component – cost of construction less estimated cost of replacing deck – depreciated over expected 60 year life
- Bridge deck short life component – estimated cost of deck replacement - depreciated over 40 year expected life (timber deck) or 20 year remaining expected life for bridge structure (concrete deck)

C. Reuse of soft fall surface materials

We would class this as an operating cost as it is probably below the capital recognition threshold

D. Gas Pipe Lining

Asset management activities planned for the gas pipe are

- Initial construction of 150 mm cast iron gas pipe
- Installation of 100 mm flexible pile inside cats iron pipe and transfer of service connections to new pipe at 60 years when internal lining of cast iron pipe becomes corroded

Pipe components identified under the asset management planning activities are

- 150 mm cast iron gas pipe structure long life component – cost of construction less estimated cost of insertion of 100 mm pipe and transfer of connections – depreciated over expected 100 year life (allows for obsolescence)
- 150 mm cast iron gas pipe lining short life component – insertion of 100 mm pipe and transfer of connections at 60 years - depreciated over 60 year useful life (until lining is inserted) or 40 year useful life (after lining is inserted)

Prepared by

John Howard	John Comrie FCPA	
IPWEA NAMS.AU Project Manager	Co-author AIFMG	22 January 2015.

NAMS Australia is an initiative of the IPWEA National Asset Management Strategy [NAMS] Committee. NAMS.AU seeks to provide national leadership and advocacy in the sustainable management of public works infrastructure, community assets and services.

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Australian Audit Standards Board Residual Value Outreach

January 2015

CENTRAL NSW COUNCILS

Centroc's Mission is to be recognised as the lead organisation advocating on agreed regional positions and priorities for Central NSW whilst providing a forum for facilitating regional co-operation and sharing of knowledge, expertise and resources; effectively nurturing sustainable investment and infrastructure development.

www.centroc.com.au

CENTRAL NSW COUNCILS

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Chairman: Cr Bill West, Mayor, Cowra Shire Council

19 January 2015

Reference bw:vp 011419
Enquiries: Ms J Bennett: 0428 690 935

Mr Mitchell Bryce
Australian Accounting Standards Board
Level 7 600 Bourke Street
Melbourne VIC 3000

Re: AASB Residual Value Outreach

Central NSW Councils (Centroc) represents over 243,000 people covering an area of more than 72,500sq kms comprising the Local Government Areas of Bathurst, Blayney, Boorowa, Cabonne, Cowra, Forbes, Lachlan, Lithgow, Mid-Western, Oberon, Orange, Parkes, Upper Lachlan, Weddin, Young and Central Tablelands Water.

Centroc's vision is to be recognised as vital to the sustainable future of NSW and Australia.

Its mission is to be recognised as the lead organisation advocating on agreed regional positions and priorities for Central NSW whilst providing a forum for facilitating regional cooperation and sharing of knowledge, expertise and resources.

Centroc has two core objectives:

1. Regional Sustainability - Encourage and nurture suitable investment and infrastructure development throughout the region and support members in their action to seek from Governments financial assistance, legislative and/or policy changes and additional resources required by the Region.
2. Regional Cooperation and Resource Sharing – Contribute to measurable improvement in the operational efficiency and effectiveness of Member Councils through facilitation of the sharing of knowledge, expertise and resources and, where appropriate, the aggregation of demand and buying power.

Fit for the Future

Centroc has been selected as one of five regional pilot Joint Organisations to assist the NSW Government strengthen and reform local government.

The Centroc Board is made up of the 32 Mayors and General Managers of its member Councils who determine priority for the region. These priorities are then progressed via sponsoring Councils.

For more advice on Centroc programming and priorities, please go to our website
http://www.centroc.com.au

The region welcomes this opportunity to provide advice to a review of residual value. From our perspective, the Australian Accounting Standard 116 (the Standard) as it is generally interpreted in NSW, is not an accurate reflection of the way infrastructure is managed. Indeed it is having a significant and deleterious impact on Council operations where as a result of operating deficits on the basis the Standard, Councils can lose the confidence of their communities. See for example the link below:

http://www.theherald.com.au/story/2543012/cash-crisis-bleeds-public-purse-daily-poll/

We understand that the AASB is seeking advice as follows:

> ***The issue***
> *The AASB received a submission requesting the AASB clarify the definition of residual value in AASB 116 Property, Plant and Equipment. The submission:*
>
> 1. *argues that this interpretation of AASB 116 is unduly limiting and does not reflect the intention of AASB 116. The submission asserts that the definition of residual value in paragraph 6 of AASB 116 may unduly limit its recognition to circumstances in which an entity would receive proceeds from the sale of the asset;*
> 2. *provides an example of an entity recycling crushed gravel for reuse in the reconstruction of a road to bring it back to a state that is identical to its original wearing surface. It is argued that the residual value of the original road surface, which is at the end of its useful life, is the 'cost savings realised (or expected to be realised) from the reuse of salvaged materials'; and*
> 3. *recommends the Board consider including an 'Aus' paragraph in AASB 116 to permit not-for-profit entities to recognise the cost savings in replacing an asset as part of the residual value.*
>
> ***Minutes from the Board's discussion at the September 2014 AASB meeting***
> *The Board noted the submitter's concerns in relation to the definition and application of the term 'residual value', which might be read as limiting the recognition of residual values to those cases when an entity will receive consideration from the sale of an item of property, plant and equipment (PPE) at the end of its useful life.*
>
> *The Board noted the various principles in AASB 116 for accounting for items of PPE, specifically the application of those principles for an asset that is subject to being recycled into a new asset of the entity. The Board considered the issue detailed in the submission is not limited to the NFP sector and could apply to a range of recyclable assets.*
>
> *The Board directed staff to conduct targeted outreach on the issue, in both the for-profit and NFP sectors, to assess the prevalent accounting treatment for recyclable assets and whether diversity in practice exists.*
>
> ***Process***
> *As directed by the Board, AASB staff are currently performing targeted outreach on the issue and are specifically interested to hear:*
>
> - *whether constituents feel the requirements of AASB 116, in relation to residual value, are clear?*
> - *how constituents are determining the residual value of recyclable assets?*
> - *whether constituents consider the issue is limited to the not-for-profit sector?*
> - *examples of recyclable assets.*

Please find following a series of case studies which we believe clearly address these issues. Councils in Central NSW are keen to see a review of the Standard that accurately reflects the true way that assets are managed.

Finally, we would like to commend to the Board the efforts of your staff in this outreach. Their attention to detail, engagement and reception have been welcomed by this region.

Our membership is keen to be both appraised of the Board's position and work with the Board on this matter going forward.

Thank you for your attention and please contact me on 0428 690 935 regarding this matter.

Yours sincerely,

Jennifer Bennett

Ms Jenny Bennett
Executive Officer
Central NSW Councils

enc Case Study Material from Centroc Councils with attachments

Bathurst Regional Council

Russell Street, Bathurst
Pipe ID: SR4690
MH2652 - MH2658
96.68m

Replacement (brownfield site)		
Current Replacement value (at 30/6/2014)		$34,708.12
per metre rate*		$359.00
Based on excavating pipe to depth (xm), removal and replacement, including construction difficulty (brownfield site)		
Comparison to greenfield site		
Rate without construction difficulty (greenfield site)*		$320.00
Replacement value		$30,937.60
Reduction in cost for replacement (vs brownfield rate)		$3,770.52
%age reduction	10.86	
Relining of existing pipe		
Per lineal metre, 150mm retic pipe	$ 78.71	$ 7,609.68
Junction Cut (each), 10 junctions	$ 190.00	$ 1,900.00
Cost of re-lining		$ 9,509.68
Per metre rate		$ 98.36
Reduction in cost for replacement (vs brownfield rate)		$25,198.44
%age reduction	72.60	
Suggested residual value percentage of existing main	27.40	
* Rates taken from NSW Office of Water Reference Rates manual, 2014 update		

Brownfield site (Urban)						
Commonwealth St, Morrisset to Durham						
Pavement replacement rate	$ 33.43	sq m	based on internal standard replacement rates			
Stabilised site (Urban)						
Keppel St, Mitre to Esrom	$ 21.82	sq m	based on job costs			
Saving	$ 11.61					
%age saving	34.73					

Forbes Shire Council

Project: 2.060km of Wongajong Road Reconstruction in the year of 2012-13

Identified by the Transport Asset Management Plan condition assessment, Council had undertaken reconstruction of an average 6m wide, 2.06km long with a surface area of 12,360 sqm at Wongajong Road. The existing average width was 3.8m. The section started 3.9km from the intersection of Main Road 56. The project was started in April, 2013 and finished in June, 2013. The project was executed with the assistance of Road to Recovery fund.

The project included shoulder widening, stabilising top 150mm of the existing recycled pavement materials with lime. The depth beyond 150mm remained as it was. The risk of the effect of "Soft Spots" was there. For that reason the final sealing had been deferred for a couple of years for monitoring the effect of "Soft Spots" and rectifying accordingly. For the interim period a "Primer Seal" had been applied for traffic movement. The sealing work will be undertaken in 2016-17.

The initial estimation of the project was $280,000 that ended up with a final cost of $264,777.35.

This is an upgraded job. The breakdown of the cost components is:

Cost Description	Component Cost
Materials Purchased	$ 96,150.52
Contractors	$ 69,060.50
Plant Hire - Internal Usage	$ 50,109.50
Inventory Issued From Store	$ 448.81
Salaries	$ 5,969.91
Wages	$ 36,305.19
Overtime	$ 6,732.92
Total Cost for 2.06km	**$ 264,777.35**
Total Cost per km as at 2013 (excluding $ 21,347 of gravel cost)	**$ 118,170.07**
Total proportional cost for original road (66% of total cost)	**$ 77,992**

Table 1 : Cost for Reconstruction of the Wongajong Rd

For a new construction of the same road section is in the table below:

Cost Description	Quantity (sqm)	Rate	Amount
150mm Basecourse of Crushed rock/blue metal including grading, rolling and compaction	7,828	$ 19.66	$ 153,898
Prime coat of emulsion and crushed rock/blue metal chips	7,828	$ 4.80	$ 37,574
Total cost for 2.06km			**$ 191,473**
Total cost per km as at 2013			**$ 92,948**

Table 2 : Cost for New Construction of similar job

Findings and conclusion

Some assumptions have been considered in finding the residual value.

- In the reconstruction scenario, there are some new materials being used e.g. crushed metal and adhesive for stabilisation;
- Two common treatments being considered in both scenario e.g. Basecourse and Primer seal;

- It is assumed that the other costs remain same;
- The net reconstructed width is 6m and the original width was 3.8m. All costs except the new gravel cost has taken into account;
- Since it is an upgrading job, and since the recovered gravel collected from the original road, the proportional cost for the original road has been considered and that is 66% of the total cost;
- Excluding the new gravel cost of $21,347 in Reconstruction and keeping stabiliser in, the cost comes to $ 118,170. Considering 66% of this amount had been utilised in reconstruction of the original road, the cost comes to $ 77,992. And the new construction cost for similar job is $ 92,948 per km;
- It is assumed that the difference between these two costs is the cost of reused materials and that is $ 14,956;
- All costs have been considered as current as of 2013.

Considering the above assumptions and comparing the figures of a new construction and a reconstruction of similar job, it can be concluded that the residual value would be 16% in this scenario.

Reference:

1. Rawlinsons Australian Construction Handbook,2010

Parkes Shire Council

The Parkes Swimming pool was constructed 80 years ago. It is a 50 metre pool cast insitue, with concrete structure.

The WDV at 30/6/2013 was $124,700 and the replacement value was conservatively estimated at $5,000,000. This generated a backlog of $4,875,300. The pool leaked significantly and was non-compliant on a number of operational and structural grounds and fast becoming unserviceable.

A number of options were considered to replace or refurbish the pool. During 2014 a new pool liner system was installed which in essence raised the pool to a new condition. The cost to do the refurbishment was $2,429,417 (versus $5,000,000 to renew).

As a consequence we believe the residual value is evident.

Weddin Shire Council

Project: Heavy Patching on Henry Lawson Way (MR239) in the year of 2014-15

Heavy Patching on Henry Lawson Way (MR 239) was undertaken due to seal and pavement deterioration, reaching the end of its serviceable life. The project was started in October 2014, and finished in November 2014.

The project identified 3 Patches, totalling a distance of 426m, with a seal width of 8m, identical to the existing width. Stabilising the top 200mm of the existing pavement materials with lime was completed. The depth beyond 200mm remained as it was, table drains were cleared of debris. An emulsion seal was placed over the patches, with line marking and final seal still to be completed. Final cost of Patches was $73,681. The breakdown of the cost is show below:

Table 1: Henry Lawson Way Reconstruction Costs

Cost Description	Component Cost
Materials Purchased	$10,115
Contractors	$14,519
Plant Hire - Internal Usage	$29,426
Inventory Issued From Store	$ 990
Wages	$18,631
Total Cost for 0.426km	**$ 73,681**
Total Cost per km as at 2013 (excluding $ 21,347 of gravel cost)	**$ 172,690**

For a new construction of the same road section is in the table below:

Table 2: New Construction of same section

Cost Description	Quantity (m^2)	Rate	Amount
200mm Basecourse of Crushed rock including grading, rolling and compaction	3,408	$ 21.85	$74,465
Prime coat of emulsion and blue metal chips	3,408	$ 4.50	$15,336
Total cost for 0.426km			**$ 89,801**
Total cost per km as at 2014			**$ 210,800**

Findings and conclusion

Some assumptions have been considered in finding the residual value.

- In the Reconstruction scenario, there are some new materials being used e.g. crushed metal and adhesive for stabilisation;
- Two common treatments being considered in both scenario e.g. Basecourse and Primer seal;
- It is assumed that the other costs remain same;
- The reconstructed width is 8m. All costs except the new gravel cost has taken into account;
- It is assumed that the difference between these two costs is the cost of reused materials and that is $ 37,840 per km;
- All costs have been considered as current as of 2014.

Considering the above assumptions and comparing the figures of a new construction and a reconstruction of similar job, it can be concluded that the residual value would be 22% in this scenario.

Young Shire Council Scenario

Assume existing 6m wide sealed pavement; rural local distributor road

The existing asset is valued as:
Seal value: area x unit rate for two coat seal; approx $8/m2

Pavement value: area x unit rate for import natural gravel 150mm pavement depth and stabilise; approx $28 /m2

Residuals are justified through reference to Australian Infrastructure Management Guidelines (IPWEA Version 1.1 2010) section 12.11 **(Attachment 1):**

Renewal of bitumen seal is through 'optimal' renewal method: reseal at 15 year interval, and renewal is single coat at $4/m2 not double coat therefore residual value is $4/m2.

If this methodology is unacceptable the seal would be valued at $4/m2 with no residual; otherwise the annual depreciation expense would immediately introduce a 50% backlog each and every year; despite Council meeting its service level target.

Renewal of the pavement is through 'optimal' renewal method being tyne existing seal, import 50mm of natural gravel to correct surface deformities and shape, stabilise to 200mm, compact and trim.

Unit rate of optimal renewal method is $13.72/ m2 therefore residual value is $14.28/m2

Unit rates can be justified by Council's records of project costs.

The 'optimal' renewal methods deliver agreed level of service at lower life cycle cost.

Attachment 1 - section AIFM guidelines version 1.1 2010 - Section 12

Lachlan Shire Council

The Word doc, Asset Report Roads Infrastructure **(Attachment 2)**, sets out a summary of our Fair value process for the road assets. Our auditor, John O'Malley signed off on it after some discussion. The next valuation will see some revision in process as we acknowledge that the residual values for instance need to be better supported by evidence and possibly reviewed as we go back over it. We need to try and separate out from the cost data on old projects what saving could be attributed to re-use of existing materials.

We did take the view that there is no one size fits all and the residual values shown in the tables 4, 5 and 6 vary between types of roads and components, depending on whether some of the road segment component (seal, pavement or formation) would be re-used and incorporated into the renewed road.

Next time we hope to split out the culverts and some other components, but for now a road construction includes drainage costs.

We applied the process to each road segment instead of globally to all of a road or all roads. Again, no one size fits all.

The process also included the **attached spreadsheets** which may or may not be useful:

1. Life estimates relating age and condition **(Attachment 3)**, summarised in the **Asset Report Roads Infrastructure** document.

2. Fair Value Roads 29.09.13 **(Attachment 4)** – the asset register spreadsheet calculating valuations and using the residual assumptions as the difference between renewal and new replacement values.
3. Estimated costs for road valuations 250613 **(Attachment 5)**which shows several examples of as constructed costings for several road projects up to that time to develop unit rates, which led to using a range of rates to fits various terrains and classes of roads. This relates more to the Forbes example, but does not break down as far into the elements to separate out the residual value of materials reincorporated.

Our approach was a bit different to many councils in trying to minimise the bias from broad assumptions.

Compared to Forbes' example, we have higher unit rates (longer hauls of water and crushed gravel add to cost for example), varying between about $135,000 to $150,000 for renewals, maybe more with stabilisation occasionally and $150,000 to $305,000 per km for new road construction depending on terrain. At least most are the same 10m wide formations so that is consistent. The difference between renewal and new is not the residual value. It has several contributing factors, so we would need to do some research to isolate the contribution of materials and formation shape to residual values.

Attachment 2 - Asset Report Roads Infrastructure
Attachment 3 - Life estimates relating age and condition
Attachment 4 - Fair Value Roads 29.09.13
Attachment 5 - Estimated costs for road valuations 250613

AASB Residual Value Outreach - Orange City Council

Insitu Pavement Rehabilitation

For many years now, Orange City Council has undertaken Road Pavement renewals utilising Council's owned and operated road reclaimer, binder spreader and associated road plant in the form of "Insitu-Stabilisation" or "Pavement Rehabilitation", and it remains the primary method of renewing Council road pavements to date. Pavement rehabilitation is therefore considered as a Capital Renewal activity.

Pavement Renewal Candidate Identification

Renewal candidates are primarily identified by referring to the road segment pavement condition. A road segment is a section of road, or Road Asset, identified in Councils Road Asset Register. A segment consists of the road pavement, surface, kerbs left and right and roadside footpaths. Road components are inspected and condition rated over a 2 year cycle, that is to say that each road segment is inspected every 2 years with separate condition ratings for the pavement, surface, kerb & gutter and roadside footpaths.

Insitu Pavement Stabilisation – The Process

The rehabilitation process involves laying the required volume of binder over the existing sealed road pavement to a depth typically of 150mm, applying water and mixing the road pavement with the binder using the reclaimer. A 14/7mm double-double bitumen seal is then applied over the compacted base layer. This road renewal technique results in the pavement and seal restoring its maximum condition rating and, apart from the binder applied, the pavement is thus renewed via re-cycling the existing road pavement materials.

Road Pavement Residual Value

The cost of the pavement re-cycling is capitalised and is considered as the "Depreciable Amount" of the pavement. The current Fair Value cost to construct the original road pavement (not including the earthworks) is the Replacement Cost of the pavement. The difference between the Replacement Cost of the pavement and the Rehabilitation Cost is treated as the Residual amount and is not depreciated as it represents the original cost to purchase, place and compact the pavement. The cost of the seal is treated separately and attains a capital cost of its own.

Below in Table 1 is a data extract of Council's Transport Asset Capital Works Register for 2013/14 relating to the Road Pavement Rehabilitation Programme.

Table 1: 2013/14 Road Rehabilitation Programme

Project Name Description/Location	From - To	Average Depth mm	Area m2	Volume m3	Unit Quantified With	Rehab Rate $/sqm	Capital Value (Rehab Cost)	Pavement Class	Unit Rate	Replacement Cost	Depreciable Amount	Residual (Non Depreciable) Amount	Economic Life	Annual Depreciation Expense
BYNG STREET REHAB - SALE TO HILL	SALE TO HILL	150	1,640	246.00	m2	$7.05	$11,566.96	P200	$50.76	$83,246.40	$11,566.96	$71,679.44	75	$154.23
BYNG STREET REHAB - HILL TO CLINTON	HILL TO JOHNSTONE	150	1,200	179.99	m2	$3.73	$4,481.36	P200	$50.76	$60,907.56	$4,481.36	$56,426.20	75	$59.75
DALTON ST REHAB - MCLACHLAN TO WILLIAM	MCLACHLAN TO WILLIAM	150	728	109.21	m2	$14.14	$10,298.36	P200	$50.76	$36,956.53	$10,298.36	$26,658.17	75	$137.31
PEISLEY ST REHAB - OPHIR ST TO CASEY ST	OPHIR ST TO CASEY ST	150	2,355	353.22	m2	$6.54	$15,394.25	P200	$50.76	$119,529.65	$15,394.25	$104,135.40	75	$205.26
PEISLEY ST REHAB - CASEY ST TO DALTON ST	CASEY ST TO DALTON ST	150	1,844	276.66	m2	$6.22	$11,477.61	P200	$50.76	$93,621.74	$11,477.61	$82,144.13	75	$153.03
WOODWARD ST REHAB - WENTWORTH TO MOULDER	MOULDER ST TO OLEANDER	150	2,240	336.00	m2	$21.47	$48,096.57	P200	$50.76	$113,702.40	$48,096.57	$65,605.83	75	$641.29
WOODWARD ST REHAB - WENTWORTH TO MOULDER	OLEANDER TO WENTWORTH	150	1,157	173.55	m2	$16.85	$19,500.98	P200	$50.76	$58,729.32	$19,500.98	$39,228.34	75	$260.01
WOODWARD ST REHAB - WENTWORTH TO MOULDER	OLEANDER TO WENTWORTH	150	801	120.15	m2	$11.78	$9,435.70	P200	$50.76	$40,658.76	$9,435.70	$31,223.06	75	$125.81
PEISLEY ST REHAB - GARDINER TO FOREST	GARDINER TO FOREST	150	2,940	441.00	m2	$9.02	$26,518.80	P200	$50.76	$149,234.40	$26,518.80	$122,715.60	75	$353.58
PEISLEY ST REHAB - GARDINER TO FOREST	GARDINER TO FOREST	150	2,688	403.20	m2	$9.10	$24,460.80	P200	$50.76	$136,442.88	$24,460.80	$111,982.08	75	$326.14
FOREST RD REHAB - BENNETT TO SELWOOD	BENNETT TO SELWOOD	150	5,880	882.00	m2	$16.79	$98,726.85	P200	$50.76	$298,468.80	$98,726.85	$199,741.95	75	$1,316.36
CHURCHILL AVE REHAB - MCLACHLAIN TO ENDSLEIGH	MCLACHLAIN TO EDWARD	150	1,250	187.50	m2	$7.56	$9,453.13	P200	$50.76	$63,450.00	$9,453.13	$53,996.87	75	$126.04
CHURCHILL AVE REHAB - MCLACHLAIN TO ENDSLEIGH	EDWARD TO ENDSLEIGH	150	1,500	225.00	m2	$7.56	$11,344.00	P200	$50.76	$76,140.00	$11,344.00	$64,796.00	75	$151.25
DALTON ST - REHAB - MADISON + 62m TO WOLSLEY	MADISON + 62m TO (WINTER)	150	1,307	196.08	m2	$7.53	$9,838.84	P200	$50.76	$66,353.47	$9,838.84	$56,514.64	75	$131.18
DALTON ST - REHAB - MADISON + 62m TO WOLSLEY	(WINTER) TO MATHOURA	150	416	62.36	m2	$7.53	$3,128.77	P200	$50.76	$21,102.96	$3,128.77	$17,974.19	75	$41.72
DALTON ST - REHAB - MADISON + 62m TO WOLSLEY	MATHOURA TO MT LINDSAY DR	150	724	108.64	m2	$7.53	$5,452.74	P200	$50.76	$36,763.95	$5,452.74	$31,311.21	75	$72.70

Project Name Description/Location	From - To	Average Depth mm	Area m2	Volume m3	Unit Quantified With	Rehab Rate $/sqm	Capital Value (Rehab Cost)	Pavement Class	Unit Rate	Replacement Cost	Depreciable Amount	Residual (Non Depreciable) Amount	Economic Life	Annual Depreciation Expense
DALTON ST - REHAB - MADISON + 62m TO WOLSLEY	MOUNT LINDSAY TO WOLSLEY	150	437	65.48	m2	$7.53	$3,286.04	P200	$50.76	$22,156.74	$3,286.04	$18,870.70	75	$43.81
DALTON ST REHAB - PARK TO SPRING	PARK TO HALE	150	1,390	208.51	m2	$13.05	$18,137.15	P200	$50.76	$70,558.43	$18,137.15	$52,421.28	75	$241.83
DALTON ST REHAB - PARK TO SPRING	HALE TO SPRING	150	959	143.91	m2	$13.19	$12,652.85	P200	$50.76	$48,699.14	$12,652.85	$36,046.30	75	$168.70
DALTON ST REHAB - SAMPSON TO ALBERT	SAMPSON TO ALBERT	150	1,610	241.50	m2	$9.77	$15,727.44	P200	$50.76	$81,723.60	$15,727.44	$65,996.16	75	$209.70
LITTLE BRUNSWICK ST REHAB - GONA TO EDWARD + 60m	GONA TO EDWARD + 60m	150	1,943	291.38	m2	$8.76	$17,013.26	P200	$50.76	$98,601.30	$17,013.26	$81,588.04	75	$226.84
ICELY ROAD REHAB - WINTER ST TO WINTER + 440m	WINTER + 301m TO WINTER + 411m	150	3,115	467.30	m2	$7.45	$23,207.01	P200	$50.76	$158,135.17	$23,207.01	$134,928.15	75	$309.43
ICELY ROAD REHAB - WINTER ST TO WINTER + 440m	WINTER TO WINTER + 301m	150	1,375	206.25	m2	$7.45	$10,237.57	P200	$50.76	$69,795.00	$10,237.57	$59,557.43	75	$136.50
ICELY ROAD REHAB - WINTER ST TO WINTER + 440m	WINTER + 301m TO WINTER + 411m	150	3,115	467.30	m2	$7.25	$22,581.23	P200	$50.76	$158,135.17	$22,581.23	$135,553.94	75	$301.08
DALTON ST REHAB - PEISLEY TO THOMAS - RHS	PEISLEY ST + 32m TO THOMAS ST + 64m	150	1,264	189.63	m2	$8.01	$10,122.99	P200	$50.76	$64,170.79	$10,122.99	$54,047.81	75	$134.97
ANSON ST REHAB - MELLVILLE ST TO ALBION ST	MELLVILLE ST TO ALBION ST	150	1,309	196.40	m2	$13.83	$18,109.17	P200	$50.76	$66,462.61	$18,109.17	$48,353.44	75	$241.46
ANSON ST REHAB - OPHIR TO MARGARET ST	MARGARET TO ORANA	150	1,835	275.28	m2	$6.78	$12,435.65	P200	$50.76	$93,154.75	$12,435.65	$80,719.10	75	$165.81
ANSON ST REHAB - OPHIR TO MARGARET ST	ORANA TO OPHIR	150	1,190	178.50	m2	$6.78	$8,066.62	P200	$50.76	$60,404.40	$8,066.62	$52,337.78	75	$107.55
ANSON ST REHAB - OPHIR TO MARGARET ST	MARGARET TO ORANA	150	1,835	275.28	m2	$9.67	$17,740.63	P200	$50.76	$93,154.75	$17,740.63	$75,414.13	75	$236.54
BURRENDONG WAY REHAB - DALTON TO CASSEY (N)	DALTON TO CASSEY (S)	150	5,466	819.84	m2	$6.20	$33,870.54	P200	$50.76	$277,433.86	$33,870.54	$243,563.31	75	$451.61
BURRENDONG WAY REHAB - DALTON TO CASSEY (N)	CASSEY (S) TO Cassey (N)	150	1,501	225.09	m2	$6.20	$9,299.28	P200	$50.76	$76,170.46	$9,299.28	$66,871.18	75	$123.99
BURRENDONG WAY REHAB - DALTON TO CASSEY (N)	DALTON TO CASSEY (S)	150	5,466	819.84	m2	$6.59	$35,992.00	P200	$50.76	$277,433.86	$35,992.00	$241,441.86	75	$479.89
			62,480			**$9.41**	**$587,655.14**			**$3,171,498.84**	**$587,655.14**	**$2,583,843.70**		**$7,835.40**

Summary

As can be seen in Table 1 above, the average cost of Council's 2013/14 rehabilitation program was $9.41/m2, totalling $587,655.14. The Replacement Cost of these pavements was $3,171,498.84. The residual Amount of the pavement is the difference between the Replacement Cost and the Rehabilitation cost which amounts to $2,583,843.70. Instead of depreciating $3.171M, $2.584M is held in Residual and $588K is depreciated over the life of the pavement.

Conclusion

Utilising Insitu Stabilisation enables Council to re-cycle existing pavement materials when undertaking Capital Works in the form of Road Pavement Renewal. This has proven to be a "Low Cost" renewal activity providing the community with an "As New" Road Pavement at less than 20% of the cost of removing and replacing the pavement. In doing so, the pavement materials are simply re-used incurring only the cost of plant, labour and binder to deliver the pavement back to its original condition.