

Pathways Asset Management Plan 2020





Document Control

Document ID: Pathways Asset Management Plan – 2020

Rev No	Date	Revision Details	Author	Reviewer	Approver
1.0	08/05/2020	First version for adoption	HA, CF	DB	



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1 Executive Summary

1.1 Current Services and Costs

The City of Kalamunda provides a 389 kilometre long network of pathways for pedestrians and cyclists (referred to as pathways in this plan) predominantly constructed using cement concrete. In addition, to provide connectivity, the City provides 39 pedestrian bridges of various lengths, ranging from wooden jetties / boardwalks to small stream crossings in parks and reserves.

As of 30th June 2020, the gross replacement cost of pathway assets is calculated to be \$47.3 million and depreciated replacement cost (fair value) is \$28.3 million. Condition surveys conducted in 2019 indicate that 95% of pathways are at or better than fair condition while the remaining are in poor or very poor condition and require renewal. The average age of the pathway network is 22 years and 56% of the pathway network has a width less than the City of Kalamunda standard 1.8 metres.

The gross replacement cost of the pedestrian bridges assets is \$3.5 million, and the depreciated replacement cost (fair value) is \$2.4 million. 97% are at or better than average condition with one bridge in poor condition.

The community satisfaction levels that were recorded in the previous version of this Asset Management Plan have been maintained or slightly improved due to the overall condition ratings improving. With all new and renewed pathways now being constructed to the new 1.8 metre width standard, the levels of service to all users including people with disabilities and impaired access is improving across the network.

The average annual funding allocation in the City's 15 Year Capital Works Program is as follows:

- Pathways
 - New works (excluding Grant Funding and Contributions): \$370,900
 - o Renewals: \$406,600
 - Maintenance (minor slab renewals): \$412,300
- Pedestrian bridges
 - o New works: nil identified in the current 15 Year Capital Works Program
 - o Renewals: \$70,000
 - Maintenance: \$10,000

Financial modelling for this plan shows that spending at the current renewal funding levels will maintain the current service levels.



The City's New Path Policy and Selection Criteria was endorsed by Council in November 2018 and identified some 368 new paths at an estimated cost of \$12.5 million. Based on the current annual average new path funding of \$370,900, the implementation timeline equates to 34 years. This is a list of paths connecting to key destinations and does not reflect the wider need for paths in regional areas and parks. This Operational Policy is due for review again in 2021 at which time the level of funding for new pathways can be revised.

1.2 Recommendations

It is recommended that the Pathway and Pedestrian Bridge Renewal Funding be maintained at current levels, with financial predictions to be reviewed as analysis is undertaken on future asset performance over the term of this plan.

Further, this Pathways Asset Management Plan (PAMP) recommends the following key actions for the improvement of the City's pathway and pedestrian bridge asset management:

- Undertake accessibility assessment of pathway kerb ramps and crossing points,
- Complete pathway maintenance planning, and
- Adjust accounting practices to record maintenance and operational costs for pedestrian bridges.



2 Introduction

2.1 Background

This Asset Management Plan does not detail information that has not changed since the previous version, such as applicable legislation, standards, Council policies, etc.

Pathways (including pedestrian bridges) are an important part of the City's asset portfolio, comprising 8% of the total gross replacement value (see Figure 1 below).



Figure 1. City of Kalamunda asset portfolio

The City of Kalamunda's (the City's) Asset Management Policy provides a framework for undertaking long term strategic asset management of the City's asset portfolio, providing corporate leadership and reflecting a sustainable approach to service delivery to meet the current and future needs of the community.

The City is responsible for managing, operating, and maintaining major infrastructure asset classes such as roads, pathways, drainage, parks infrastructure, parks, reserves, car parks, and buildings.

Asset Management Plans (AMPs) are developed for each asset class for the following purposes:

- Implementing objectives in the City's Asset Management Policy,
- Ensuring that the City's transport networks continue to provide the correct level of service to the community,

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- Providing guidance on the long-term funding needs for the renewal of the City's assets and in turn how these affect the 15 Year Capital Works Program,
- Supporting external funding applications,
- Documenting existing and planned works programs and practices, and
- Supporting community engagement on defining levels of service and costs to meet the City's strategic objectives.

This Asset Management Plan sets out the context for proactive management of pathway and pedestrian bridge assets by evaluating the current status and whole of life requirements and determining the level of funding required to provide satisfactory service into the future to meet the needs of the community.

The aims of the City for the pathways and pedestrian bridge network is to achieve the following essential objectives:

- Safe,
- Accessible,
- Connected, and
- Affordable.

This document is to be read in conjunction with following City documents:

- Asset Management Policy (Policy No. C-ASS01),
- Asset Management Strategy to 2021,
- Strategic Community Plan to 2027 "Kalamunda Advancing",
- Long Term Financial Plan to 2023 "Kalamunda Accountable",
- Corporate Business Plan to 2023 "Kalamunda Achieving",
- 2018 Community Scorecard,
- Disability Access and Inclusion Plan to 2022, and
- Bicycle Plan 2017.

2.2 Alignment to Strategic Planning

The Pathways Asset Management Plan has been prepared to be aligned with following objectives and strategies of the City's Strategic Community Plan to 2027:

- OBJECTIVE 3.2 To connect to quality amenities,
- Strategy 3.2.1 Optimal management of all assets.



3 Current Status of Assets

3.1 Material Profile

The City of Kalamunda is responsible for approximately 389km of pathways and 39 pedestrian bridges within its jurisdiction. The total area of pathway network recorded within the asset register in the City's corporate asset management system Assetic myData is 629,500m².

For management purposes, the pathway network is divided into 2,596 segments. Each of these segments is considered as one asset and has a unique identification number (Asset ID) within Assetic myData.

The percentages of the different construction materials of the pathway and pedestrian bridge network are shown in Table 1 below and Table 2 below.

Material	Area (1,000 m²)	Length (km)	Length (% of pathway network)
Cement Concrete	581	365	94.0
Gravel	21	11.2	2.9
Asphalt	21	9.4	2.4
Brick	5.6	2.6	0.7
Cement Slabs	0.3	0.2	0.1
Limestone (special)	0.3	0.2	0.04
TOTAL	630	389	100

Table 1. Pathway construction material profile

Table 2. Pedestrian Bridge construction material profile

Material	No. of	Deck area (m²)
Timber	9	253
Steel	27	651
Reinforced Concrete	3	58

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Material	No. of	Deck area (m²)
TOTAL	39	962

3.2 Age Profile

3.2.1 Pathways Age Profile

The average age of the pathway network is 22 years with an average useful life of 50 years being used for the predictive modelling. The age distribution of the network shown in Figure 2 below. Of the 51.5 kilometres pathways over 40 years old, there is only 3.7 kilometres ages between 50 and 55 years. This reinforces the validity of the average useful being 50 years.



Figure 2. Pathway age profile by length

3.2.2 Pedestrian Bridges Age Profile

The average age of pedestrian bridges is 15 years (bridge age being the average age of the bridge superstructure and substructure components). The average useful life of for the bridge structural component is 60 years for predictive modelling, and is reflective of the condition distribution (from very good to fair) shown in Figure 5 below. The age distribution of the network shown in Figure 3 below.

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Figure 3. Pedestrian Bridge age profile by length



3.3 Condition Profile

The condition profile for pathways and pedestrian bridges is based on condition rating surveys carried out by the City. The condition of each asset is rated on a 1 to 5 scale, with 1 being very good and 5 being very poor. Details of the matrix used for condition rating of pathways are shown in Appendix A below.

3.3.1 Pathways Condition Profile

The pathway condition profile is shown diagrammatically in Figure 4 below, with the current average condition of the pathway network determined as 2.40. This is a slight improvement from the average of 2.54 in the previous Asset Management Plan of 2017, which indicates that maintenance and renewal activities in the interim have been successful.



Figure 4. Pathways condition profile by length



3.3.2 Pedestrian Bridges Condition Profile

The pedestrian bridge condition profile is shown diagrammatically in Figure 5 below, with the current average condition of pedestrian bridges determined as 2.15. Pedestrian Bridges were not included in the previous Pathways Asset Management Plan.



Figure 5. Pedestrian Bridge condition profile by Length



The current renewal treatment for Condition 4 pathways is partial reconstruction (minor renewal), while Condition 5 pathways are treated by full reconstruction (major renewal). Currently funds for minor and major renewals are allocated within maintenance and capital renewal budgets respectively. They have been combined for the modelling described in Section 5 below.

3.4 Width Profile

The current width profile of the pathway network is shown in Figure 6 below.



Figure 6. Pathway width profile



Currently 99.9% of the City's pathway network satisfies the minimum width requirement of 1.2 metres recommended by the applicable Australian Standards and Austroads Design Guidelines. However, the current minimum width recommended for two wheelchairs to pass comfortably is 1.8 metres.

Paths less than 1.8 metres wide will only be widened where required to meet specific requests or as part of the renewal program based on the path condition.

3.5 Kerb Ramps and Road Crossings

Currently the 15 Year Capital Works Program has an allocation of \$20,000 per year for the next three years to undertake work on non-compliant kerb ramps and crossing points. The City's intention is to determine progressively, on a prioritised basis, the compliance of the kerb ramps and crossing points to the required standards, and then to develop a plan to address any compliance issues. At the date of writing of this Asset Management Plan, an electronic collection project has been configured on a mobile tablet to progress this during 2020/21 and 2021/22.

3.6 New Path Policy and Selection Criteria

The City's New Path Policy and Selection Criteria was endorsed by Council in November 2018 and identified some 368 new paths at estimated cost of \$12.5 million. The Policy and Selection Criteria determines the priority of proposed or requested pathways.



Factors determining the priority of pathway include:

- Traffic volumes, vehicle speeds, road geometry, sight distance and verge walkability in relation to pedestrian safety,
- Pedestrian generators such as schools, but stops, shopping centres, hospitals, age care facilities, and recreational facilities,
- Mobility and disability access, and
- Providing essential connectivity to the existing network.

Depending on the scoring, pathways are ranked as High, Medium, or Low Priority. The priority determines the programming in the 15 Year Capital Works Program subject to approved funding allocations.

Currently the 15 Year Capital Works Program has an average annual allocation of \$370,900 per year to extend and upgrade the pathways network. Based on the aspirational network expansion estimated cost of \$12.5 million, the implementation timeline equates to 34 years.

Should the City wish to expediate the implementation timeline and improve the level of service for pathways, an improvement plan with increased funding levels would need to be considered. This New Path Operational Policy is due for review in 2021 at which time the level of funding for new pathways can be revised.

Figure 7 below shows the proposed new pathways in orange. (The bold black areas are the cadastral boundaries.)

Figure 7 demonstrates several important points:

- The central urban areas of Gooseberry Hill, Kalamunda Town Centre, Lesmurdie, and Walliston have a high concentration of planned pathways, and are served by an existing footpath network that requires extension.
- The western urban areas of High Wycombe, Forrestfield, and Wattle Grove also have a lower concentration of planned pathways, and are served by an existing footpath network which is largely adequate.
- Pickering Brook and other eastern rural areas (not entirely shown in Figure 7) have sparse populations, and hence there are far fewer planned pathways.



Figure 7. Geographical arrangement of pathways: high concentration area and keymap



3.7 Bicycle Plan 2017

The City's Bicycle Plan 2017 was endorsed by Council in June 2018 with a funding level of up to \$500,000 per year in municipal funds for consideration in the Long Term Financial Plan and respective capital budgets. The Bike Plan is due for review in 2022.

The City has identified the following projects for expanding the bicycle path network over the next 5 years, as shown in Table 3 below.

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Table 3. Bicycle Plan projects

ltem	Project Description	Project Estimated Cost \$	Funding \$	Funding Source	Proposed Year
1	Palmer Crescent and Butcher Road, HW, Safe Active Streets	\$350,000	\$175,000	WA Bike Network	2020/21
2	Berkshire and Dundas Road, FF, Shared Path Berkshire Road to New Train Station	\$635,000	\$317,500	WA Bike Network	2020/21 - 2021/22
3	Hale Road to Dawson Avenue, FF, Cycle Route with Shared Paths	\$735,000	\$367,500	WA Bike Network	2020/21 - 2021/22
4	Canning Road, CM, Pomeroy to southern boundary, safety improvements for cycling.	\$460,000	\$295,000	To be confirmed	2020/21 - 2022/23
5	Mundaring Weir Road, HG, Kalamunda to northern boundary	\$460,000	\$225,000	To be confirmed	2022/23 - 2023/24
6	Milner Road Cycling Improvements	\$1,240,000	\$620,000	Development Contribution	2023/24 - 2024/25
7	Gala Way Safe Active Street	\$50,000	\$0	Nil	2025/26

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4 Levels of Service

The latest community survey by Catalyse Pty Ltd. in 2018 indicated that 63% of the community had a positive response about pathways. Participants requested more and higher quality pathways to improve access as one of the top two priorities for the City to address.

In addition to this formal feedback from the community, recent condition surveys indicate that the pathways network has improved slightly over the three years since the previous Asset Management Plan. This implies that community satisfaction is likely to be at least the same or possibly improved.

Should the City wish to improve the satisfaction rating significantly, an improvement plan with increased funding levels would need to be considered.



5 Financial Summary

This section contains the financial performance and projections resulting from the information presented in previous sections of the Pathways Asset Management Plan. The financial projections will be reviewed as analysis is undertaken on future asset performance over the term of the plan.

5.1 Fair Value

In 2018 the City appointed an external consultant to undertake a comprehensive fair value valuation of its infrastructure assets for the 2017/18 financial year. For both the pathways and the pedestrian bridges, the gross replacement costs presented in this plan include all additions, renewals, and disposals since the 2018 valuation.

The current fair value of the pathways and pedestrian bridge assets as are shown in Table 4 below.

Valuation result	Pathways Amount	Pedestrian Bridges Amount	Total Amount
Gross replacement cost	\$47,337,000	\$3,478,000	\$50,815,000
Depreciated replacement cost (fair value or written down value)	\$28,277,000	\$2,384,000	\$30,660,000
Annual depreciation	\$961,000	\$69,000	\$1,030,000

Table 4. Asset valuation results as at 30 June 2020

Please refer to Section 5.4 below for comments regarding the effects of the above values on the Key Performance Indicators (i.e. Asset Consumption Ratio and Asset Sustainability Ratio).

5.2 Current Funding Levels

5.2.1 Pathways Renewal Funding

The City's current 15 Year Total funding allocations for pathway renewals are shown graphically in Figure 8 below.



Figure 8. Pathways current total renewal funding 2020/21 to 2034/35



The values from 2025/26 onwards are based on a target funding level for renewals, rather than specific projects.

The total renewal budget is composed of allocations in the 15 Year Capital Works programs for major renewals combined with a proportion of the maintenance budget which has the effect of minor renewals.

5.2.2 Pathways Maintenance Funding

The City's current average annual funding allocation for pathways maintenance over the next 15 years for minor slab renewals is \$412,300. This includes provisions for a growth in the network.

5.2.3 Pedestrian Bridges Renewal Funding

The City's current 15 Year Capital Works funding allocation for pedestrian bridges is \$70,000 per year. This level of annual expenditure is based on the average annual expenditure over the past 5 years.

5.2.4 Pedestrian Bridges Maintenance Funding

The City does not at present have separate General Ledger line items or Cost Centre codes for Operations and Maintenance for pedestrian bridges. Precise information on maintenance costs is not available at present. An estimate is that \$10,000 per annum is



expended on maintenance. A recommendation in Section 6 below is for accounting practices to be adjusted to track the expenditure.

5.3 Renewal Funding Gap Analysis

The renewal funding gap is a measure of shortfall (or excess) in current funding levels compared to funding required to provide desired levels of service. Currently the levels of service desired by the community for renewals are being met, with expansion to the network being addressed through the New Path Policy.

For both the pathways and the pedestrian bridges, the levels of funding allocated are sufficient to cover projected renewals over the 15 year modelling horizon.

Over the 15 years, the total combined allocated renewal funding for pathways and pedestrian bridges in the Capital Works Program is \$11,284,000, and the total required modelled renewal funding is \$10,567,000. The total allocated funding is in surplus by \$716,000 (or by an average of \$48,000 per year).

The effect of this renewal funding on the condition of the assets after 15 years is as follows:

- Pedestrian Bridges: final estimated condition of 2.44 for existing stock. This estimated condition rating shows a decrease in condition from the current condition of 2.15 over the 15 year modelling period. A decrease in condition rating is not envisaged as the City intends to improve the planning of maintenance of the short life components i.e.: decking and handrailing.
- Pathways: final estimated condition of 2.99 for existing stock. This estimated condition rating shows a decrease in condition from the current condition rating of 2.4 over the 15 year modelling period. An actual decrease in condition rating is not envisaged as the addition of new pathways through new construction by the City and by developers (added to the asset register as Condition 1 "Very Good) will improve the average condition of the network to maintain the current condition.

Current funding levels have been determined as adequate by the average condition of the pathway network slightly improving since the previous Asset Management Plan in 2017.

5.4 Key Performance Indicators

The Key Performance Indicators (KPI) specified by the Local Government Operational Guidelines are summarised in Table 5 below.



Table 5. DLGC Key Performance Indicators and Sustainability Measures

Indicator	Purpose	Calculation Method	Value	Target Value
Asset Consumption Ratio (ACR)	Measures the extent to which depreciable assets have been consumed by comparing their written down value (fair value) to their replacement cost.	Fair value / Replacement cost	60.3%	Between 50% and 75%
Indicates whether a localAssetgovernment is replacing orSustainabilityrenewing existing non-financialRatio (ASR)assets at the same rate that its overall asset stock is wearing out.		Current 15 Year Capital Works Program funding / Annual Depreciation	73.0%	Between 90% and 100%
Asset Renewal Funding Ratio (ARFR) Measures the ability of a local government to fund its projected asset renewals (or replacements) in the future and can continue to provide existing levels of services in future.		Net Present Value of first 10 Years of Capital Works Program funding / Net Present Value of Funding required to maintain current service levels	100%*	Between 95% and 105%

*The calculated value is 188.7% because current planned funding in the first ten years is more than adequate for modelled required funding. After responsive adjustments to work programs, funding in years 1 to 10 will be apportioned to match requirements and to augment requirements in years 11 to 15.

The above KPI's except for the Asset Sustainability Ratio fall within the acceptable ranges. The ASR is currently lower than the guidelines suggest because the ASR does not cope with long life assets for an asset class with uneven age distribution, a common problem with the ratio for many local governments.

5.5 Conclusions and Recommendations

It is recommended that the Pathway and Pedestrian Bridge Renewal Funding be maintained at current levels, with financial predictions to be reviewed as analysis is undertaken on future asset performance over the term of the plan.



6 Improvements, Monitoring, and Review

6.1 Performance Monitoring

The effectiveness of this Pathways Asset Management Plan can be measured in the following ways:

- The degree to which the required cash flows identified in the Pathways Asset Management Plan are incorporated into the City's 15 Year Capital Works Program and Corporate Business Plan.
- The degree to which the City's 1-5 year detailed works programs, budgets, business plans and organisational structures take into account the asset performance trends provided by this Pathways Asset Management Plan.

6.2 Improvement Plan

The Asset Management Improvement Plan generated from this PAMP is shown in Table 6 below.

Task No.	Task	Responsibility	Timeline
1	Review Pathway Asset Management Plan	Asset Planning	2023/24
2	Undertake accessibility assessment of pathway kerb ramps and crossing points	Asset Planning	2020/21 - 2021/22
3	Complete pathway maintenance planning (carry- over action from 2017 Pathways Asset Management Plan)	Asset Maintenance	2020/21
4	Adjust accounting practices to record maintenance and operational costs for pedestrian bridges.	Asset Maintenance / Finance Services	2020/21
5	Review the New Paths Plan	Asset Planning	2021
6	Review the Bicycle Plan	Asset Planning	2022

Table 6. Asset management improvement plan for Pathways and Pedestrian Bridges assets

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6.3 Review Procedures

This AMP will be reviewed during annual budget preparation and amended to recognise any changes in service levels and/or resources available to provide those services as a result of the budget decision process.



Appendix A Condition Rating Matrix

The condition of the Pathways have been rated as shown in Table 7 below. Example photos for each Condition Rating are also provided.

Table 7. Condition Rating Matrix

Condition Rating Score	Condition	Description
1	Very Good	The asset is in near perfect condition. Only routine maintenance is required.
2	Good	The asset has deteriorated slightly but only routine maintenance is required to maintain the rating.



Condition Rating Score	Condition	Description
3	Fair	The asset is in satisfactory condition but showing signs of wear and tear. Moderate levels of periodic maintenance are required to maintain the asset in this condition.
4	Poor	The asset is in below average condition with significant signs of wear and tear. High levels of periodic maintenance are required to maintain the rating of this asset. Regular safety inspections are required as part of a risk management strategy. Partial replacement (minor renewal) is required to improve the rating of this asset.
5	Very Poor	The asset has deteriorated slightly but only routine maintenance is required to maintain the rating.







Appendix B Glossary

All the definitions below apply in the context of Local Government Infrastructure Assets.

Asset Management	Applying management practices to Infrastructure Assets to provide the required Levels of Service in the most cost-effective manner.	
Asset Management Plan	A documented plan for managing one or more classes of Infrastructure Assets over their Useful Lives to provide the required Levels of Service in the most cost-effective manner.	
Condition	An assessment of the progress of an Infrastructure Asset from new to end of life. The Condition determines the Level of Service provided by the asset and also the Maintenance actions required. The Condition also provides an estimate of the Remaining Useful Life .	
Condition Rating	A number, typically from 1 (new) to 5 (end of Useful Life), as a measure of the assessed Condition .	
Depreciable Amount	The proportion of an asset's Gross Replacement Cost which loses value over time due to Depreciation . The proportion which does not lose value is the Non-depreciating Value .	
Depreciation	The loss of financial value of an Infrastructure Asset as it progresses from new to end of Useful Life .	
	Accumulated Depreciation is the total depreciation of the asset to the date of assessment.	
	Annual Depreciation is the loss of financial value in one financial year.	
Fair Value	The best estimate of the financial value of Infrastructure Assets in their condition at a point in time. It includes loss of value due to depreciation, and depends on an appraisal of active markets, or in the absence of active markets, the cost of constructing the asset.	
	See also Written Down Value, which is an alternative name for Fair Value.	
Gross Replacement Cost	The cost of building a new Infrastructure Asset in the place of the current one, including the disposal cost of the current one.	
Infrastructure Asset	A physically constructed asset with a life of longer than 12 months, which has a financial value, and which provides services to the community.	
Level of Service	The quality of experience that the Infrastructure Asset provides to the community.	
	Community Levels of Service describe the quality from the perspective of the users, in terms of subjective measures, such as of how safe, how clean, how new, etc.	



	Technical Levels of Service describe the quality from the perspective of the providing organisation in terms of objective measures, such as how frequently, what metrics, what response time, etc. The organisation chooses the objective Technical Levels of Service to provide the users' required Community Levels of Service .
Maintenance	Corrective actions on the Infrastructure Asset which improve its Condition to allow it to achieve its intended Useful Life and to provide its required Level of Service . An example is repair of defects. See also Operations , which are necessary actions to provide the required Level of Service but do not affect the Condition .
New Works	The creation of an Infrastructure Asset which did not exist before. This increases the Gross Replacement Cost of the organisation's assets. See also Renewal , which replaces an existing asset and does not increase the Gross Replacement Cost of the organisation's assets.
Non-depreciating Value	The portion of the Gross Replacement Cost of an Infrastructure Asset which does not lose value over time. An example is land, which does not wear out over time and cannot be replaced.
Operations	Expense or actions on the Infrastructure Asset which are necessary to provide the required Level of Service , but which do not affect its Condition . An example is electricity supply to provide lighting. See also Maintenance , which covers actions necessary to provide the required Level of Service and that do affect Condition .
Renewal	The replacement of an existing Infrastructure Asset with an asset providing the same Level of Service or capacity. This does not increase the Gross Replacement Cost of the organisation's assets. See also New Works , which creates a new asset and does increase the Gross Replacement Cost of the organisation's assets.
Upgrade	Modifications or replacement of an existing Infrastructure Asset which increase the Level of Service or capacity. This increases the Gross Replacement Cost of the organisation's assets.
Useful Life	The total length of time during which an Infrastructure Asset is expected to be usable and to provide the required Level of Service . The Remaining Useful Life is the length of time until an Infrastructure Asset is expected to require Renewal .
Sustainability Ratios	Metrics required by the WA State Government to indicate whether a Local Governments Asset Management practices and budgeting are sustainable in the long term.

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Valuation	The regular determination by qualified inspectors and assessors of the Gross Replacement Cost of a collection of Infrastructure Assets , as well as their Accumulated Depreciation , in order to report on their current Fair Value .	
Written Down Value	An alternative name for Fair Value , which is Gross Replacement Cost less Accumulated Depreciation .	