

Asset management



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Asset management is a coordinated and systematic process to realise value from assets. This includes asset planning, acquisition, operation and maintenance, as well as renewal and disposal. Organisations with mature asset management systems take a strategic approach to planning and using assets, and a lifecycle view of asset systems and networks, rather than a narrow focus on discrete maintenance and upgrades.¹



What IWA heard

During consultation on the draft strategy, feedback revealed universal acknowledgement of both the scale and importance of asset management challenges. Many stakeholders noted that all public assets need to be managed well, including local government assets, and that there were similar maturity and funding challenges across many sectors. A new sub-recommendation draws attention to the need for ongoing focus on asset maintenance.

There was strong support for asset information as an underlying enabler, resulting in acknowledgement of the challenges experienced in obtaining adequate asset information to inform good practice. Stakeholders also provided strong support for alignment with international asset management standards and the positive impact that improved asset management maturity would have on other recommendations, including digital technology, infrastructure planning and infrastructure delivery.

There were several calls to go further than incentives and consider policy mandates with enforced compliance. Several respondents noted the connection between asset management and specific themes, such as asset resilience and the inclusion of green assets.

Around two-thirds of the total cost of an asset generally occurs after it is built or acquired.² Effective management of the state's approximate \$159 billion infrastructure asset base is essential to maximise the value and longevity of these public assets.³ Yet, historically, good asset management practice has been a challenge for state and local governments, with funding of new assets often prioritised over maintenance of existing infrastructure and reactive use of available funds, in part due to asset information limitations.

There are fiscal and environmental limits to building new infrastructure in response to increasing demand and the deterioration of existing assets. At the same time, technology is extending asset life and enabling smarter use, which may divert, delay or avoid the need for more costly build options.

The public sector is responsible for managing and maintaining a large and diverse asset base that is growing every year with continued state government investment in transport, utilities, buildings, land and equipment (Figure 28). Asset management has been identified in various public sector reviews as requiring significant improvement, including in the 2017 *Service priority review*. This is not unique to WA. In the 2019 Australian Infrastructure Audit, Infrastructure Australia identified a number of nationwide asset management issues across multiple sectors, including historical underspend on preventative maintenance, short budgetary and funding cycles, a lack of data and incentives, and limited mechanisms to link funding to need and maintenance backlogs.⁴

While the significant backlog in maintenance is widely recognised, it is often difficult to quantify, as asset management practice varies considerably across state agencies and government trading enterprises (GTEs). This is symptomatic of wider issues associated with a lack of overall maturity and capability in asset management across the public sector – in particular, the robustness of data capture and analysis, and prioritisation based on asset performance, risk and need. In the absence of consistent practice and accurate information, it is not easy to determine the current scale or cost of the maintenance backlog problem for the state. In the 2 years to 2019–20, a portion of the reported maintenance task undertaken by state agencies and GTEs was around \$1 billion per year; however, this figure is unverified and is not a reliable indicator of the total size of the maintenance task across the public sector.⁵ Reported expenditure is also highly variable over time, suggesting reactive or breakdown maintenance is a larger component than routine and preventative maintenance.



Benefits of mature asset management include:

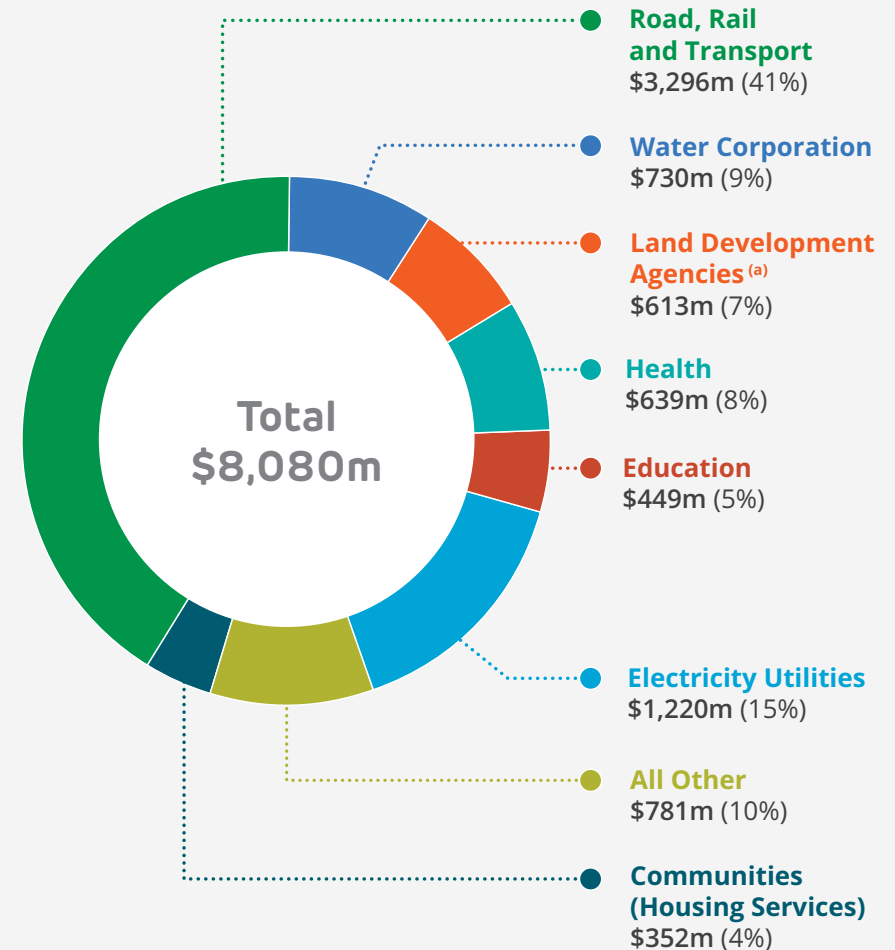
- informed asset investment decisions
- managed risk, improved services and demonstrated compliance
- improved use of existing assets
- delayed or reduced need for capital investment in new assets.

The WA Government’s Asset Investment Program is estimated at **\$8.1 billion** in 2021–22 and a total of **\$32.7 billion** over the 4 years to 2024–25.⁶

Typically, state agencies and GTEs that are responsible for major asset networks have invested more in asset management systems and internal capability than those that have a smaller asset base. Higher standards can generally be found in state agencies that have prioritised investment in asset management practices, such as the Transport Portfolio and GTEs which are subject to more rigorous regulatory requirements. Other state agencies often rely on the Department of Finance and private sector providers to undertake aspects of their asset management functions, in particular, the programming and carrying out of maintenance. Internal management systems used by some state agencies can be limited and many would benefit from initiatives that improve asset management capability, processes and technology.

Failing to address these issues, particularly for those assets in poor condition, exposes government to considerable health and safety risk, impacts on service quality and incurs higher long-term costs. The large number of heritage buildings owned by the WA Government, in both metropolitan and regional areas, brings additional asset management challenges and responsibilities.

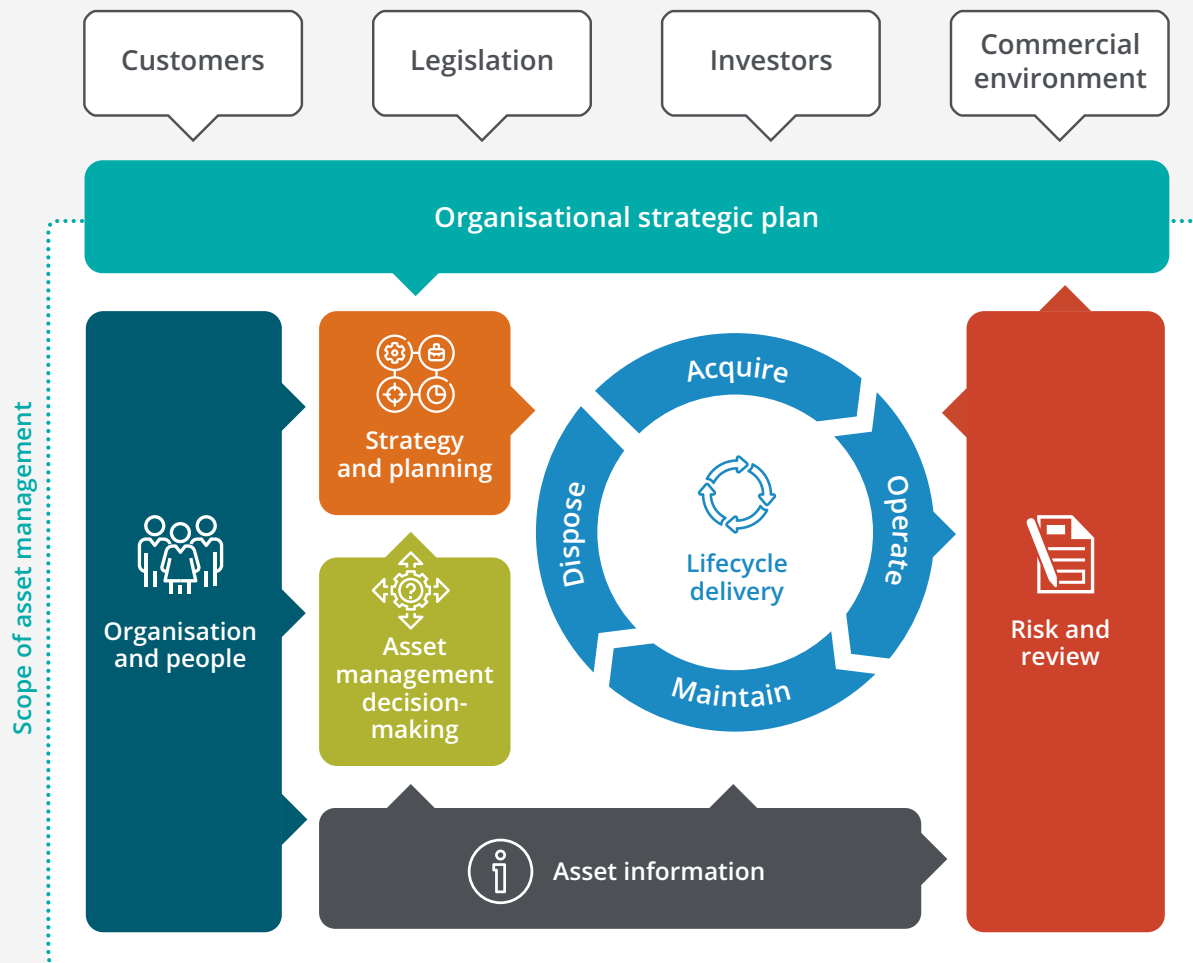
Figure 28: Asset Investment Program 2021–22⁷



(a) Includes DevelopmentWA, the Western Australian Planning Commission and the Department of Planning, Lands and Heritage.

Note: Segments may not add due to rounding.

Figure 29: Conceptual asset management model⁸



Given the value of state and local government-owned infrastructure and its importance in enabling public services, it is essential that all state agencies, GTEs and local governments have sound asset management systems spanning the asset lifecycle, as shown in Figure 29.⁹

Asset management maturity

Central leadership and support are needed to guide consistent asset management practice across state agencies and GTEs. The Department of Treasury's Strategic Asset Management Framework (SAMF) defines asset management principles for state agencies and GTEs and is in line with the international standard for asset management (ISO 55000:2014).

The Department of Finance has recently developed a Building Asset Management Framework, which is a central tool that operationalises the SAMF, with the intention of improving the maturity and consistency of application of these approaches across the public sector for building assets. The framework is still in its infancy and is being jointly piloted by the departments of Finance and Education. This work, and the central role of the Department of Finance, means it is ideally placed to lead and support asset management practice across the public sector into the future.

Well-functioning asset management systems help agencies achieve service delivery objectives through optimal asset capacity and function. This is the basis for identifying and managing risks, lifecycle costs and investment decisions.

Although strong management systems are needed in all agencies, different strategies will apply to individual assets based on risk, and not all assets will require the same level of expenditure.

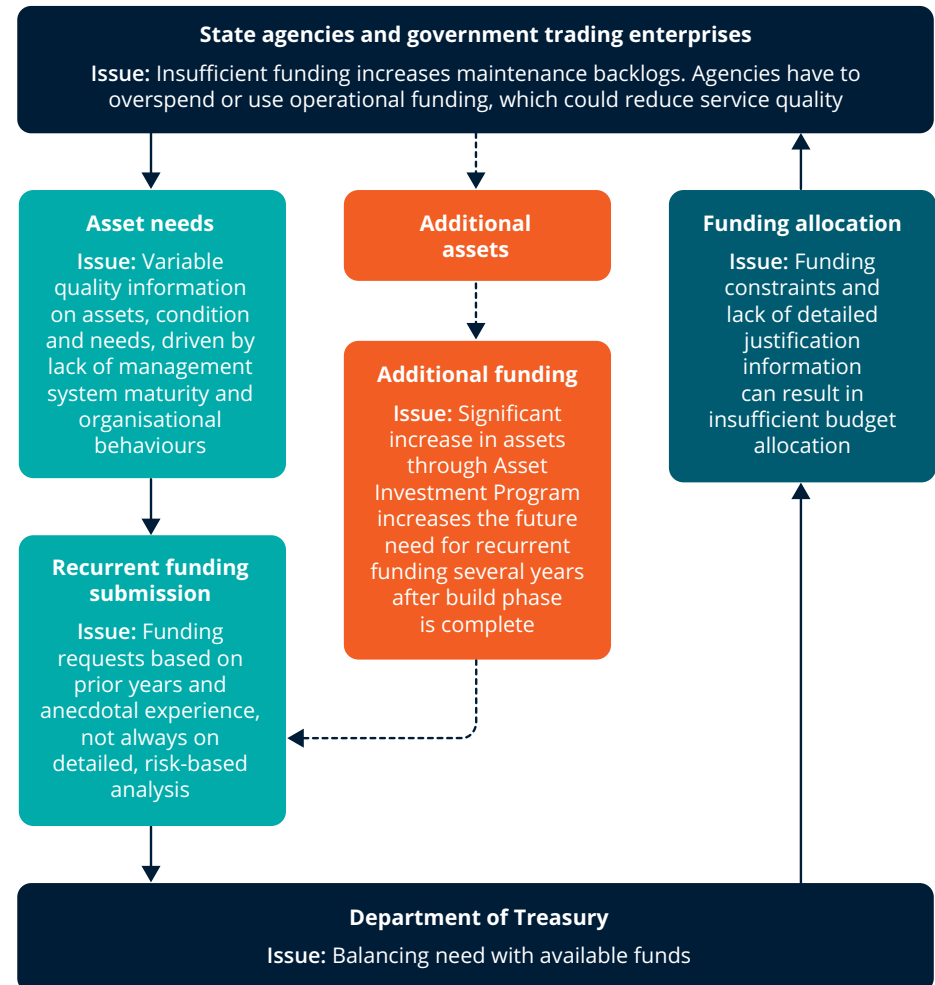
State agency and GTE-level asset management systems should include:

- an asset management policy
- an asset management strategy and objectives
- asset management plans
- essential elements of ISO 55000:2014 applicable to the asset base
- core processes such as demand analysis, strategic planning and asset information management.

In line with best practice, asset management strategies and plans should prioritise interventions such as maintenance, upgrades and replacement, according to asset criticality and level of associated risk. Resilience considerations should also be incorporated into risk assessment and management frameworks.

It is often these areas that state agencies and GTEs have the greatest challenge in articulating and securing funding needs. Although the cost of maintenance and repairs are typically captured in the business case for a new asset, funding is rarely set aside for this purpose. This results in state agencies and GTEs having to continually justify funding requests, despite the need being clearly established at the point of investment. Once a new asset is subsumed into an overall infrastructure system it can be more difficult to make the case for maintenance funding. As WA continues to invest in new assets, this challenge will increase and must be addressed. Figure 30 highlights some of the challenges surrounding the public sector’s ability to adequately fund ongoing asset maintenance. Robust asset information is vital at each step of the budgeting process across funding bids, allocation and internal distribution. It will be necessary to measure the extent of improvement in maintenance regimes and associated funding in coming years and determine whether additional initiatives are required, such as ring-fencing of maintenance budgets.

Figure 30: Maintenance funding challenges, highlighting the need for rigorous information and analysis



Case study

Yarra Park Water Recycling Facility

Central Melbourne's Yarra Park Water Recycling Facility is the largest underground water recycling facility in Victoria, capable of producing 180 ML of Class A recycled water annually. The facility treats and reuses sewage from the local sewer network and irrigates the grounds surrounding the Melbourne Cricket Ground, including the heritage-listed Yarra Park and Punt Road Oval.

The publicly owned facility, operated by Downer, achieved Australia's first ISO 55001 certification for its asset management system in 2015.¹⁰ The system involves coordinated and systematic asset management processes, practices and decision rules, to align asset use with functional objectives and stakeholder expectations.

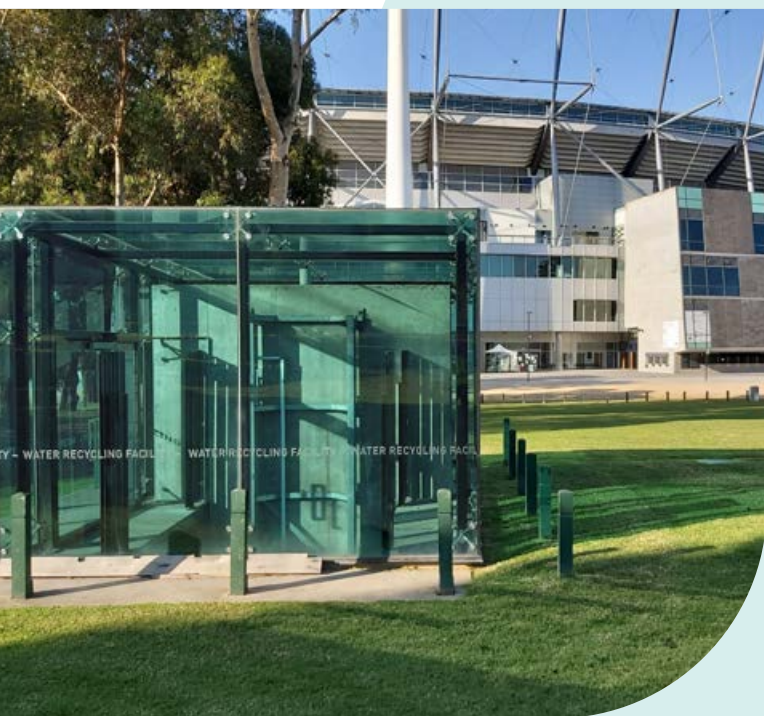
An asset-wide, integrated approach is taken that addresses planning, operation, maintenance, support logistics, renewal and disposal (including the business processes used to support these activities).

Several benefits demonstrate the impact of this systematic approach to asset management, which has the potential to be replicated in other asset systems and organisations. These include:

- an operational cost saving of 47% through improved monitoring and management
- a reliability improvement of 41% over 36 months
- a 40% reduction in reactive maintenance and repairs
- a 22% reduction in power consumption over the last 4 years
- improved risk management and reliability and increased focus on continuous improvement activities, enabling even more benefits to be realised.¹¹

The water recycling facility has also been recognised for its contribution to sustainability and circular economy principles with an excellent rating for sustainable operations from the Infrastructure Sustainability Council of Australia.¹² A proposed expansion could provide recycled water for gardening, flushing toilets and car washing for up to 5,000 Melbourne households.¹³

For further information, refer to www.mcg.org.au.





Management of the state's road network gives an indication of the scale of investment required for maintenance and estimated backlogs. For example, Main Roads WA's 2021–22 budget for **maintaining the road network is \$385 million**, but there was an **estimated maintenance backlog of \$545 million in 2020–21**.¹⁴

The Department of Biodiversity, Conservation and Attractions receives a **total annual maintenance budget of around \$6.1 million**, or just 0.3% of the estimated total replacement value, for its **34,000 km statewide road and bridge network**.¹⁵

Local governments are responsible for almost 127,000 km of roads or 87.2% of the state's public road network.¹⁶ In 2019–20, local governments spent **\$607.1 million on road preservation**, leaving an estimated shortfall of \$193.7 million of the **\$800.8 million required to maintain roads** in their current condition.¹⁷

Incentivising better practice

The importance and benefits of good asset management practice are widely recognised. However, in the public sector, a lack of incentives is a major inhibitor of good practice. Currently, there is very little systemic incentive offered to state agencies to improve their asset management maturity, relinquish assets or plan to maintain older assets with recurrent funding needs. In some cases, it is easier to attract capital funding for a new asset than for preventative maintenance funding that could extend the life of an existing asset. Funding available to build capacity, or for innovation in asset management, is also limited. The WA Government's 2017 *Service priority review* recommended incentives to manage assets and finances to maximise their value to the state, but this has not occurred in the 4 years since this recommendation was made.¹⁸

Asset information

Asset information enables asset management maturity. A wide range of information should be captured to support asset decision-making, including, but not limited to, asset location, type, materials, age, condition and lifecycle cost. A lack of reliable and accurate information currently makes it difficult for many state agencies to understand asset needs and develop fit for purpose, risk-based asset management plans. This makes it challenging for state agencies with lower levels of asset maturity to prioritise and plan maintenance pipelines.

More sophisticated spatial asset information, including data capture, analysis and use, will enable fit for purpose asset management, such as risk-based decision-making, preventative maintenance and lifecycle asset optimisation. Information on asset use, lifecycle cost, performance and benefits should be systematically captured and used to inform planning and justification for future assets, as part of the annual strategic asset plan and business case development processes. This will enable a high-level view of funding requirements across the public sector.

Improvements to the way that asset information is captured, stored, shared and used are recommended in the Digital connectivity and technology chapter.

Recommendations

Asset management maturity

The Department of Finance should provide increased support and assistance to help state agencies determine and improve their current asset management maturity (through assessments led by the Department of Finance and applied to all types of infrastructure assets) and identify any capability gaps.

This would involve the Department of Finance providing:

- central leadership and guidance on what constitutes core and good asset management practice, which agencies should adopt and tailor to their asset portfolio and service needs
- direction on asset management principles and data standards to be adopted consistently across public sector assets.

These principles will align with, and further operationalise, the SAMF and International Standards.

The Building Asset Management Framework should continue to be developed and tested, followed by adaptation to cover the full range of state-owned assets beyond buildings, and progressive rollout across the public sector.

Once the framework has been established as the effective standard, agencies and GTEs should demonstrate alignment. The Department of Finance should be adequately resourced to provide leadership, assistance and advice to state agencies and GTEs where it is needed.



Recommendation 41

Achieve better use of infrastructure assets by improving asset management practices across the public sector, including:

- a. formalising and funding the Department of Finance's role as functional lead for asset management to support and assist state agencies and government trading enterprises in developing asset management maturity
- b. progressively expanding the Building Asset Management Framework pilot initiative to operationalise the Strategic Asset Management Framework and apply to all government asset types
- c. requiring all state agencies and government trading enterprises to develop fit for purpose asset management practices, in line with the Department of Finance guidance
- d. undertaking a review within 5 years to assess progress on maintenance outcomes and determine whether additional measures are required to strengthen the ability of state agencies and government trading enterprises to fund ongoing asset maintenance.

Incentive funding

As some state agencies and GTEs require more assistance than others, a budget allocation for seed funding to improve basic asset management capabilities should be introduced as a priority. This funding will allow state agencies and GTEs with the lowest levels of asset management maturity to improve to a level that makes them more competitive in future incentive programs.

As overall public sector asset maturity improves, the creation of a new, central incentive mechanism should be available to reward maturity in asset management practice and fund submissions that demonstrate strong alignment with service delivery outcomes and optimise the use of existing assets. Potential incentive mechanisms could include more flexibility around the retention and reinvestment of cost savings in relation to asset management and/or the creation of an asset lifecycle investment fund. Possible financing sources for such a fund could include a portion of any annual Asset Investment Program underspend, the contribution of unused contingencies and/or savings generated through improved maturity in asset management practice, including management of the WA Government's office accommodation portfolio. Access to funding through this mechanism would be based on state agencies and GTEs reaching a certain level of maturity in asset management practice, and would give them the opportunity to bid on an annual basis to:

- further increase asset management maturity
- supplement available funding to address high-risk asset deficiencies
- fund innovation trials aimed at reducing lifecycle costs
- increase funding for preventative maintenance
- increase use of existing assets.

The intent of the fund is to incentivise asset management maturity, information management, good practice and higher quality assets. One intended outcome is to incentivise behavioural change and foster a culture that considers the lifecycle of infrastructure assets.

Recommendation 42

Incentivise improvements in asset management across the public sector by:

- a. introducing a new budget allocation for state agencies and government trading enterprises to implement fit for purpose asset management planning, capability building and systems
- b. establishing an asset lifecycle investment fund, or similar incentive mechanism, to reward good asset management practice and support funding submissions that demonstrate strong alignment with service delivery outcomes and optimised asset use.

Asset information

State agencies and GTEs should improve the capture, storage and use of reliable asset information to improve decision-making and reduce risk across the asset lifecycle. This should include, as part of their asset management system:

- developing an asset information strategy to define the strategic approach to collecting, managing, reporting and overall governance of asset information
- developing asset information standards to specify a consistent structure and format for collecting and storing asset information and for reporting, which should be informed by and aligned with the Department of Finance's central guidance
- optimising and developing appropriate technologies and systems to capture, store, access and use asset information.

See Recommendation 4 in the Digital connectivity and technology chapter for recommendations on further developing WA Government data management and asset information policies, processes and standards to enable data and information sharing and analysis, and establishing a whole of government digital platform that enables the sharing of location-based asset information.

