

Infrastructure delivery



Effective infrastructure delivery needs the **combined strengths of public and private sector workforces**. The private sector performs at its best when the state government acts as an informed client.



What IWA heard

During consultation on the draft strategy, there was broad support for the range of recommendations, recognising that these can deliver longer-term benefits beyond the current period of very high construction activity.

Stakeholders highlighted that some of the assurance, governance, procurement and funding recommendations are more relevant to projects of larger scale and risk. The success of infrastructure delivery being substantially reliant on earlier planning and business case preparation phases was reinforced by stakeholder feedback and this has been expanded upon in the Strategy.

Content has been amended to reflect where there is already some level of reform and activity occurring, and the underlying intent of some recommendations has also been clarified.

The planning, delivery and operation of government infrastructure is a complex, high-stakes activity impacted by a number of external factors and involving both government and the private sector. Ensuring government is well positioned to deliver projects and programs of all sizes – in terms of its capacity, capabilities, systems and governance – is essential to provide certainty and confidence to the market and the community, and to achieve the best return on investment. There are a range of existing policies and frameworks in place to guide constructive outcomes, in terms of review, market capacity, procurement and funding. These support good practice in business planning, enabling project teams to drive positive results.

The Strategy explores key opportunities to build on existing systems to drive further improvements. These targeted measures are complemented by Infrastructure Australia's 2021 Australian Infrastructure Plan, which further addresses these topics, along with recommendations that may benefit from coordinated consideration across the WA Government.¹

Infrastructure delivery is impacted by multiple factors. Large projects and programs are necessarily conceived and approved before the full extent of detailed design and construction requirements are known. Unexpected events can occur, needs can evolve during delivery and market conditions can change. Projects can also be delayed and experience cost overruns. Even with sophisticated risk management processes, projects are exposed to unknown risks. Independent project assurance is important to provide a broader perspective to government and assist project delivery teams to identify and address material risks.

WA is currently experiencing a significant increase in infrastructure development activity. This is being driven by the WA Recovery Plan and supported by successful bids for federal infrastructure funding. The level of private sector investment is also high, driven by the resources sector and construction of new housing. This level of activity has benefits but is also putting pressure on private and public infrastructure delivery capacity.²

The capability and capacity of the private sector plays a key role in the successful delivery of infrastructure projects and programs. This is particularly noticeable when there is heightened activity, such as the current levels of infrastructure investment across Australia, combined with restricted movement due to the COVID-19 pandemic.

The WA Government's large Asset Investment Program is contributing to current pressures in certain trades and professions. At a national level, Infrastructure Australia recently reported that there is a potential shortage in 34 of 50



Government must **coordinate and manage its infrastructure pipeline** to create market certainty and enable industry to build capability and capacity.

infrastructure occupations, and that industry has low confidence in delivering programs based on current and immediate future growth forecasts.³ Skills shortages are being experienced in key areas such as traditional trades, experienced technicians, supervisors and maintenance crews, particularly in regional areas.⁴ Two responses to this challenge are already underway and should continue:

- support for apprenticeships and traineeships to encourage and provide pathways for people to enter the industry
- procurement policies that support the inclusion of a wider cross-section of the community that may not otherwise be attracted to the sector.

Recommendation 85c in the Education and training chapter complements these initiatives by calling for the expanded use of group training organisations to further encourage apprenticeships and traineeships on public infrastructure projects.

The supply of many materials used in infrastructure delivery has also come under pressure.⁵ Infrastructure Australia's 2021 *Infrastructure market capacity* report highlighted equivalent challenges will continue to be faced at a national level for at least the next 3 years.⁶ While WA has previously experienced 'boom and bust' cycles in the mining and resources sector, one important difference is the current restriction on migration of skilled international labour due to required COVID-19 border controls, which are in place for health and safety reasons.

Public sector infrastructure skills vary considerably across the many state agencies and government trading enterprises (GTEs) that have direct infrastructure responsibilities. While most state agencies and GTEs rely on private sector capacity for delivery, complementary public sector skills are critical in planning, procurement, project management and contract management. A number of independent and internal reviews have identified challenges in these areas.⁷ The Strategy builds on government's existing infrastructure skills development programs and the work that is underway at the Department of Finance, including through the formation of the Infrastructure Delivery Unit and Major Projects Directorate. There is an opportunity to accelerate and raise the profile of the critical role of skills development, especially for state agencies with the greatest need.

During the procurement phase, private sector skills and capacity become key drivers of value for money, particularly for high-value, high-risk projects. The timing of major infrastructure programs is critical to avoid over-heated markets, excessive bid premiums and low response rates. Challenging economic conditions have recently led to a reduction in the depth of the private sector infrastructure market. The number of construction-related businesses in the state which have an annual turnover of more than \$5 million fell by 15% between 2016 and 2018.⁸

Public sector procurement also occurs in the wider construction market where it competes for resources against much larger value private sector investment, which can be more susceptible to market fluctuations. A very high level of business investment was a defining feature of the last resources boom that peaked almost a decade ago. This has also meant that the public sector share of total investment in WA has been less than in the other major states (Figure 26 and Figure 27).⁹

Various statewide procurement systems and policies are in place to drive value for money procurement outcomes, while state agencies and GTEs also use customised processes based on unique project requirements. In procuring works, the public sector seeks to balance trade-offs in delivering projects on time and on budget against the need to meet diverse social policy and market sustainability outcomes.



Figure 26: Capital investment in Western Australia, 1999–2000 to 2019–20¹⁰

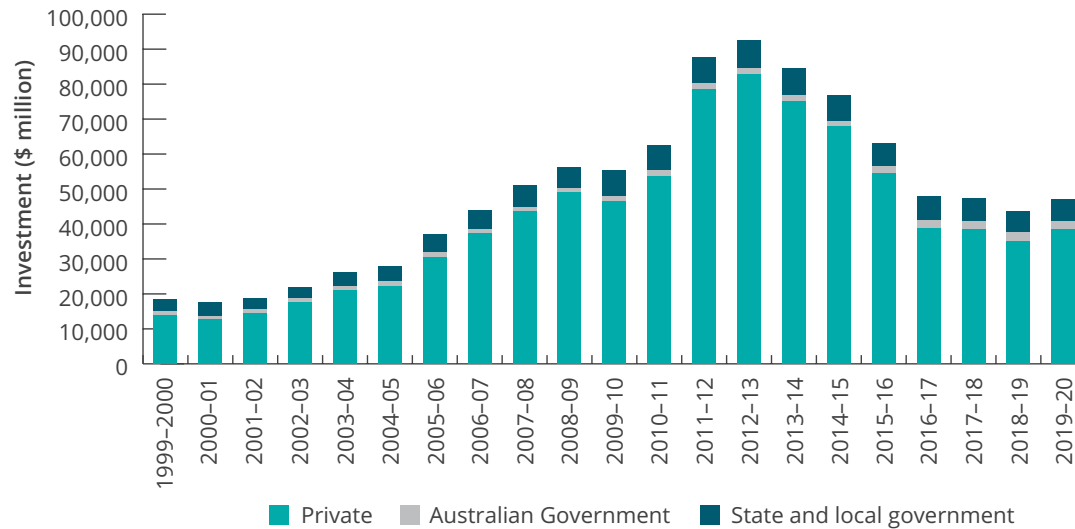
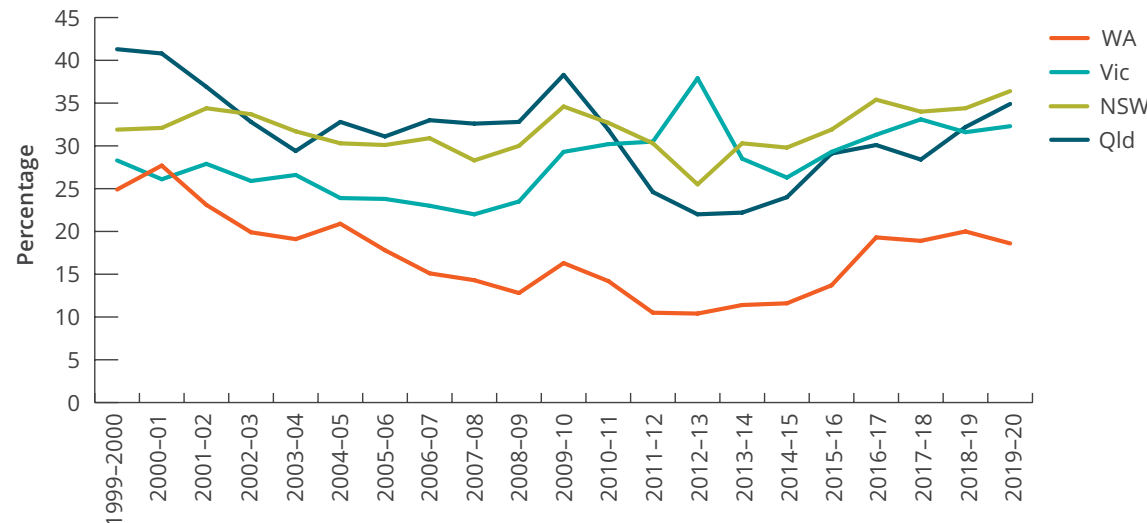


Figure 27: Public investment as a percentage of total (selected jurisdictions), 1999–2000 to 2019–20¹¹



Large and more complex procurements can face additional challenges. Outcomes are impacted by governance arrangements and the allocation and subsequent management of risk between public sector client and private sector provider. Many different procurement models have been used in WA (and nationally) with varying levels of success. Project alliance models are currently used to deliver some large projects, particularly in the transport sector. There is value in considering new partnering models to encourage long-term relationships, genuine risk-sharing mechanisms and strategic partnerships that bring greater alignment of objectives and collaboration between clients and contractors. For smaller projects, enhancing cross-agency collaboration and coordination, particularly in regional markets, will help to deliver sustained work pipelines and training opportunities.

While infrastructure investment is currently a major priority through the WA Recovery Plan, this may not always be the case and public funding is likely to remain constrained. Policy refinements therefore need to be regularly reviewed to enable alternative funding sources and process efficiencies.

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The **WA Recovery Plan** has renewed the state’s focus on **leveraging infrastructure delivery**, cross-agency coordination, participation from marginalised groups and skills development **to maximise return on investment**.¹²

Recommendations

Project assurance and governance

Residual project risks that cannot be avoided or mitigated can be managed through project management and assurance. As part of an overall governance framework, project assurance is an independent process that assesses health and viability throughout the life of a project or program. It is designed to provide government and project owners with a clear sense of whether a project will accomplish its objectives and if there are significant risks. Independence is critical to provide a perspective from outside a state agency or project team. To be of value, assurance feedback needs to be embraced by the project team and any recommended improvement actions undertaken.

WA's current assurance practices are less developed than those of many other jurisdictions. Recent reviews of the Gateway process, administered by the Department of Finance, have identified areas for improvement to address issues such as objective, independence and funding of Gateway reviews. Additionally, it was found that the process is not tiered according to the underlying levels of project risk. Some state agencies view the process as not adding value or recognising internal project management processes. Recent reforms that require the Department of Finance to prepare monthly update reports on the delivery status for the entire Asset Investment Program could become a vehicle for providing Cabinet with additional visibility of project risks, as part of an overarching assurance framework that also incorporates updates to the gateway process.

Other jurisdictions, including New South Wales and South Australia, have introduced independent project assurance practices.¹³ These involve independent assessments of a project's health based on a risk assessment made throughout the delivery lifecycle, with aggregated reporting direct to Cabinet. The process is risk-adjusted so that more complex and higher-value projects undergo more rigorous scrutiny. These examples provide a model that should be seriously considered for adoption in WA.

Across some state agencies and GTEs, there is strong existing project delivery capability, supported by forums for information sharing and centralised expertise. The Works Agency Council has been established to enable key infrastructure agencies to discuss common infrastructure delivery opportunities and challenges. The Works Agency Council is complemented by the Infrastructure Delivery Steering Committee, which is focused on strategic oversight of the Asset Investment Program. The Department of Finance has a central role to assist and coordinate in these areas and has established the Infrastructure Delivery Unit and Major Projects Directorate to provide oversight and support to state agencies in delivery. These groups and reforms support improvements in project governance, and they should continue to be implemented, including learnings from project post-completion reviews. Industry also has a role in supporting the improvement of project governance and there are opportunities for WA to consider wider engagement mechanisms, such as those like the Construction Industry Leadership Forum operating in New South Wales and Victoria.¹⁴ Infrastructure Australia's 2021 Australian Infrastructure Plan includes a recommendation to 'expand and promote new and existing industry and jurisdictional reforms and best practices by establishing a government and industry collaborative leadership group'.¹⁵

Project delivery excellence can also be achieved by strengthening public sector skills and expertise in key areas of planning, business case development, procurement, project management and contract management. These skills are needed to plan and manage project delivery and to embrace project assurance functions. Shortfalls in these skills were identified in the *Service priority review* and *Special inquiry into government programs and projects*, as well as sector-specific reviews, for example in health infrastructure delivery.¹⁶ IWA's new Major Infrastructure Proposal Assessment function, which commenced in January 2022, will strengthen business case development capacity



across the public sector through its constructive approach to reviewing and providing feedback on early-stage proposals and business cases.

Health infrastructure is identified as a particular area of focus for major project improvement due to its complexity and the delivery challenges experienced with most recent major health projects, such as Fiona Stanley Hospital and Perth Children's Hospital, and in light of the upcoming program of major asset investment in the health sector.

Project governance can be strengthened by ensuring that those appointed to chair major project steering committees have sufficient experience and time available to meaningfully devote to the task. While the relevant director-general will have sufficient senior leadership expertise to undertake this role and is often an obvious candidate, this may not always be possible given the extent of that person's other responsibilities.

State agencies have greater incentive to identify internal infrastructure-related skills and areas where capability could be strengthened if there were more and improved pathways available to them. The WA Government should continue to develop support for smaller state agencies, those less-experienced in infrastructure procurement and delivery, and state agencies that have cyclical or periodic investment programs. Expert team members from the Department of Finance should be placed in-house to provide direct support to smaller and less-experienced state agencies, and for high-value or high-risk projects and programs.

Greater consistency in the delivery of major projects should be adopted by agencies, with support from reforms already underway at the Department of Finance, to improve efficiency, harmonisation and to enable centralised capture and analysis of performance data. A feedback process should be implemented to ensure continuous improvement.

Case study

Bunbury Outer Ring Road

The Bunbury Outer Ring Road (BORR) project involves building a 27 km free-flowing highway bypass around Bunbury, linking Forrest Highway to Bussell Highway.¹⁷ The total project budget is \$852 million and construction is expected to be completed by early 2024.

Although still in the early stages of delivery, this major infrastructure project demonstrates the application of several principles discussed in the Strategy:

- **Procurement model:** Main Roads WA has adopted a collaborative project contracting strategy for the BORR project, using an alliance form of contract, with principles including:
 - a ‘no-blame’ culture focused on achieving project outcomes
 - a peer relationship where all participants have an equal say in decisions
 - equitable sharing of risks and rewards
 - a culture that promotes and drives collaboration, innovation and outstanding performance
 - open-book transactions.

The alliance model is not unique to the BORR project – its use has increased in the last 5 years, particularly for the delivery of major road and rail projects, including METRONET.

- **Industry sustainability:** The BORR project procurement favoured applicants that demonstrated a commitment to building local industry capacity and capability, particularly in the construction industry. Targets include \$300 million for work contracted to local businesses. These objectives were incentivised in the tender evaluation process through the inclusion of an industry sustainability criteria. All respondents included Tier 2 and Tier 3 contractors in their delivery consortium.
- **Aboriginal participation:** The BORR project is also encouraging Aboriginal employment and business opportunities through a range of measures including an Aboriginal employment forum, a 20% weighting on Aboriginal participation (including evaluation of the cultural knowledge and experience of their Aboriginal Participation Coordinator) and specific targets for Aboriginal employment and business expenditure.
- **Recycled materials:** The BORR project is maximising reuse of local waste products during construction.

For further information, refer to www.mainroads.wa.gov.au.





Recommendation 37

Strengthen infrastructure project assurance processes, governance and public sector skills for the delivery of major projects by:

- a. developing an enhanced and rigorous risk-based project assurance process to provide independent verification and review at key stages of project planning, delivery and operation, reporting to Cabinet and the respective project teams with clear action plans
- b. ensuring that the appointed chairs of major project steering committees have sufficient time to devote to preparing for, attending and leading steering committee meetings and deliberations
- c. further enhancing the capacity of the Department of Finance to provide expert teams within less-experienced state agencies to advise and upskill staff and build capacity
- d. developing and rolling out project management standards for adoption by state agencies and government trading enterprises.

Procurement

The WA Government should continue to develop procurement models that encourage proactive risk management and a culture of collaboration across state agencies and GTEs.

Longer-term partnerships between project delivery state agencies, GTEs and industry provide incentives for contractors to build assets that perform well and are cost-effective to operate and maintain, for example, design-build-maintain delivery models. These models support the principle that risk should be allocated to the party best able to manage it. WA can also learn from models being implemented in New South Wales, Victoria and on Australian Government-led projects. International models, such as Project 13, may also have merit and should be considered for adaptation to recognise the characteristics of the WA market.¹⁸ Procurement strategies should, however, always be commensurate with project scale, complexity and risk. The packaging of large projects in procurement, including offering smaller packages, can ensure a stable flow of market opportunities. This approach can harness the capacity of contractors of various sizes, while also recognising comparative capability and risk.

Infrastructure projects deliver a broad range of impacts in addition to direct project benefits and jobs. Delivery also provides an opportunity to send strong signals to the market about local industry sustainability, capability building and local business participation.





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Project 13 is an industry-led initiative to develop a new project delivery model.¹⁹ It started in the UK to improve the way high-performing infrastructure is delivered and managed. Project 13 seeks to establish an approach based on ‘enterprises’ rather than traditional transactional arrangements.²⁰ An enterprise brings together infrastructure owners, contractors and technical support, working in more collaborative and integrated long-term teams. Enterprise participants are incentivised to deliver better long-term value.

A lack of capacity and competition exists in the local contracting market for major projects, which could lead to an increase and concentration of risk. Broader objectives can be difficult to achieve once contracts are awarded, so there is significantly greater leverage during tender evaluation and negotiation.

The Western Australian Industry Participation Strategy supports these wider objectives, and WA jobs, by ensuring that local WA businesses and workers get a larger share of what the WA Government spends on goods, services and works each year.²¹ The Aboriginal Procurement Policy complements the Western Australian Industry Participation Strategy in working towards a more sustainable and inclusive sector by encouraging greater participation of Aboriginal-owned businesses in state government contracts.²² The Aboriginal cultural heritage, wellbeing and enterprise chapter of this Strategy recommends further improvements to the policy that are aligned with, and support, the broader procurement recommendations.

For procurement on major projects, there is merit in considering a policy that encourages earlier engagement and innovation to support the tender process. This would be particularly relevant for projects involving detailed design, with high tender development costs, where industry participation is less competitive and opportunity costs are high. The principal advantage of this approach is to bring more innovation in design initiatives and to seek out best-value proposals.



This policy would involve the WA Government meeting all, or a major part of, the costs of unsuccessful tenderers. Such an arrangement would be under specific circumstances, where it presents value for money, including the handover of associated intellectual property. Although this practice does occur in some instances, it is only on an ad hoc basis. Equivalent formal policies exist in other jurisdictions. Similar reform of the Market-led Proposals Policy would also be beneficial to deliver a more efficient process with improved public and private sector participation.

Small and standardised projects can be procured using program models to reduce time and cost, instead of procurement on an individual basis. A program approach would allow eligible project types and values to be awarded to panel contractors. This could bring state agencies and GTEs together to determine project synergies, align supply and demand, avoid competing for limited resources, reduce premiums associated with heated market conditions and improve the visibility of project pipelines.

Where appropriate, offsite and modular construction techniques should be further adopted, particularly where there is repetition, such as in schools, prefabricated housing, police and fire stations. Many project components can be built in factory conditions rather than on site. This can reduce the area of land required for construction, which in turn lessens the impact of construction on the community and environment. These techniques can increase quality, reduce capital costs and increase time and cost efficiencies.

Technology has an important role to play in enabling offsite and modular construction techniques, as well as broader uses in the digital planning, engineering and construction of new assets, and at subsequent stages of the infrastructure lifecycle.

At present, many state agencies and GTEs are delivering projects at the same time and are therefore competing for the same skilled labour rather than providing a stable flow of contract value, employment and training opportunity. Enhancing cross-agency information sharing and collaboration, at an earlier stage of project planning, can further support efficient delivery of a steady, staged pipeline of work.

Recommendation 38

Achieve greater value for money from infrastructure investment by making incremental improvements to procurement policies and practices, including:

- a. further developing and implementing procurement models for major projects to encourage a culture of collaboration, achieve better risk allocation and address industry sustainability
- b. implementing contract packaging strategies that support market participation, including smaller packages, where appropriate, to provide opportunities for mid-tier and lower-tier contractors
- c. encouraging greater market response for major projects by developing a policy under which the WA Government would contribute to all or part of the bid costs of unsuccessful tenderers, under specific conditions including the transfer of intellectual property from bidder to government
- d. further reviewing and refining the Market-led Proposals Policy to ensure it is meeting its intended purpose and that proposals are considered promptly while balancing risk
- e. considering and implementing program procurement approaches, including panels of contractors, where appropriate, such as for the delivery of similar small-to-medium projects across one or more state agencies or government trading enterprises
- f. considering the use of offsite and modular construction techniques where benefits can be achieved
- g. establishing a cross-agency infrastructure procurement coordination mechanism for projects in the planning phase, or during business case development, to identify staging opportunities.

Funding

Project cost management

The way that infrastructure is funded can lead to significant benefits in project management, risk management and ultimately in project outcomes. There are a number of opportunities to improve the way project funding arrangements are administered.

Regular updates to the management of the WA Government's infrastructure program can ensure efficient use of funding. Opportunities include setting realistic project schedules and cashflows, and centralised management of project contingencies. These actions can support active portfolio management to smooth investment and help mitigate the risk of resource constraints impacting the delivery of the WA Government's Asset Investment Program.

This opportunity aligns with key productivity reforms identified by Infrastructure Australia in the 2021 Australian Infrastructure Plan.

Accurately forecasting how long it will take to deliver a project can sometimes be challenging. The rollover of underspent project cash-flow allocations from one financial year to the next is a significant issue for overall State Budget management. Basing project delivery time frames and spending profiles on robust cash-flow analysis at a program level, accounting for both public and private sector market capacity, can help to overcome optimism bias in project scheduling.

Stakeholder certainty and stability in the longer-term pipeline will also be assisted by the annual release from 2023 of the state infrastructure program. This will provide a 10-year outlook of the WA Government's committed and potential future major public infrastructure investments.

Reforms to aggregate the current system of project-level based contingency management can improve transparency and provide flexibility in how excess contingency is used. Project contingencies, which can vary considerably in size, should be used in a more transparent and flexible way. An example that merits consideration is the way in which contingency is retained and applied across a portfolio of approved WA Government projects by the Australian Government under the *National Partnership Agreement on Land Transport Infrastructure Projects*.²³





Recommendation 39

Ensure more efficient use of infrastructure funds by improving project cost management, including:

- a. establishing clear standards for setting project delivery time frames and cashflows at a program level that account for public and private sector capability and capacity
- b. replacing the current, individual project-based contingency management with a whole of government (or whole of state agency or government trading enterprise) based contingency management approach.

Private sector funding and financing

Given limited public funds, the WA Government should consistently review alternative infrastructure funding options to ensure it can continue to respond to growing community needs. Alternative funding sources, and potentially innovative financing mechanisms, should be identified to help bridge the gap between the number of worthy projects and the amount of funding available. Much of WA's public infrastructure is fully funded, or heavily subsidised by general revenue, rather than direct user-pay revenues. However, some project proposals may have associated revenue opportunities or specific sources of potential funding that could be explored to

supplement traditional tax-based sources. The need to explore alternative funding sources is compelling, with many of the projects and programs recommended in the Strategy having the potential for funding from sources other than government. The consideration of funding and financing options is already a requirement of state agencies and GTEs preparing business cases. This will also be considered by IWA as one aspect of its function to assess major infrastructure proposals.

Asset recycling involves redirecting revenue from the sale of an asset into construction of new assets or infrastructure. There are ongoing opportunities for private sector funding of public infrastructure, as superannuation funds and other investment vehicles look for long-term, stable assets that fit their portfolio strategies. For the right type of project and risk profile, private funding can benefit private sector investors, the wider community (in the case of superannuation investment) and expand public service delivery capacity. The Strategy is not recommending wholesale divestment of GTEs or asset classes, but rather the targeted recycling of underused assets, including specific buildings and land that are surplus to core service delivery outcomes. Other jurisdictions have successfully reinvested the proceeds from asset divestments into further projects.

The WA Government is regularly approached with proposals to support private sector economic development. Greater consistency and transparency in how state agencies and

GTEs assess the relative value of these proposals can ensure that maximum benefits are derived from limited public funds. Principles to guide such assessments could include consideration of the financial returns to government, broader longer-term macro-economic impact, employment creation and the risk profile of the proposal.

As set out in Recommendation 15 of the Climate change and sustainability chapter, developing a sustainability bond framework can help to ensure the WA Government's future borrowings are better aligned with the increasing focus of global financial markets on improving environmental, social and governance outcomes.

Recommendation 40

Increase the total available pool of public infrastructure finance and funding by reviewing the potential to use private sector finance and funding sources, including:

- a. investigating asset recycling through divesting suitable assets, such as underused buildings and land, with proceeds used to fund new infrastructure
- b. developing whole of government principles to inform the prioritisation of state funding contributions where these facilitate strategic private sector investment.