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Harness the power  
of data and digital  
technology

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09



## IN THIS SECTION

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9.1	Competitive high-speed connectivity is fundamental to economic and social outcomes	134
9.2	Embedding digital technology throughout the infrastructure lifecycle	136
9.3	Smart infrastructure, places and cities	138
9.4	Consistent and coordinated data standards and practices	140
9.5	Making digital solutions the norm	141
9.6	Building cyber resilience	142
9.7	Recommendations	143

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## Strategic directions

- ▶ Ensure secure high-speed digital connectivity in key precincts
  - ▶ Prioritise the application and use of data and digital technology across all aspects of service delivery throughout the infrastructure asset lifecycle
  - ▶ Modernise legacy infrastructure and government systems, while retaining agility to avoid asset redundancy
- 

The benefits of combining digital technology with physical infrastructure are increasingly clear. The right digital applications can increase the productivity, efficiency, flexibility and safety of physical infrastructure assets and networks.

Digital technology can enhance infrastructure and service delivery:

- ▶ as **an enabler** that allows new and efficient ways to plan, coordinate, prioritise and design infrastructure at early stages of the asset lifecycle. Examples include the NSW Spatial Digital Twin (SDT), Digital Engineering (DE) frameworks and Building Information Models (BIM). When combined with other technology solutions – such as digital licensing and tracking and approvals systems (such as ePlanning) – there is potential to generate even greater efficiencies, insights, and transparency

- ▶ by **supporting** the efficient operation and management of assets using digital tools and platforms, and data insights gained from a digitally connected network. For example, smart cities with the appropriate sensors and devices in place can operate real-time traffic management systems, while artificial intelligence (AI) software can improve the efficient operation of utilities
- ▶ as **infrastructure in its own right**, with both physical and software platforms creating links between networks and establishing pathways to connect people and communities with services. This includes telecommunications and connectivity infrastructure, data centres and service centres, and digital platforms that provide citizen experiences and virtual services.

Digital technology solutions can be alternatives to physical infrastructure in delivering desired outcomes – potentially reducing, delaying or avoiding the need for, and costs of, fixed physical infrastructure.

The depth and speed of digital transformation across infrastructure sectors will be influenced by citizen needs and expectations, technology availability, data governance, efficiency dividends and cyber security capability. The progress of regional or international competitors in creating digital economies is likely to shape demand for information and communications technology (ICT) infrastructure networks, digital service domains and ‘smart city’ assets.

The Australian Government, through its *Digital Economy Strategy 2030*, is setting a direction for modernising and building resilience into the national economy as industry, business and service delivery continue to transform with digital technology. Monitoring sector trends at a national and global scale will be critical to benchmarking progress and new opportunities.

In the same way that government investment in economic infrastructure underpins efficient markets and creates public benefit, coordination and investment in public digital infrastructure is also necessary to enable business-led growth and improved social outcomes. While the private sector will continuously seek market opportunities and provide innovative services, government has a role in unlocking the full benefits of digital connectivity and technology deployment. This includes facilitating digital technology take-up and use by businesses and enabling private sector investment where possible.

It is essential that the NSW Government takes a targeted and strategic approach to building the necessary digital connectivity, while embracing technology-enabled ways of constructing, delivering, operating and maintaining infrastructure. There are three ways NSW could improve its digital competitiveness in this regard:

- ▶ ensuring high standards of digital connectivity are built into new government precincts and infrastructure projects

- ▶ completing the digitisation of infrastructure planning, delivery and operations
- ▶ preferring digital service models over building new physical infrastructure.

## 9.1 Competitive high-speed connectivity is fundamental to economic and social outcomes

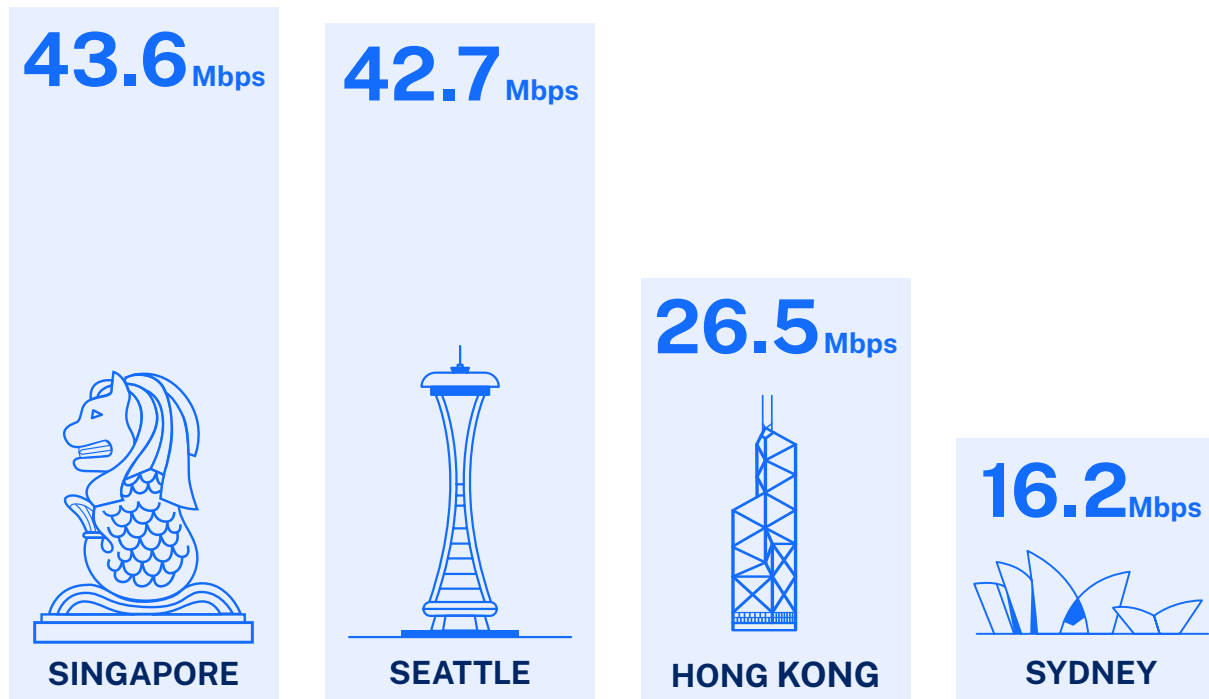
Household and business demand for fast and large volumes of data transfers continues to increase rapidly. The availability of high-speed public and emergency broadband is also critical for timely responses to crises and building community resilience.<sup>320</sup>

To remain globally competitive, NSW's broadband, mobile and internet of things (IoT) connectivity needs to keep pace with the performance of other jurisdictions. NSW and Sydney consistently rank lower than international comparators on average speed and penetration of broadband connectivity (see Figure 9.1). Sydney averages speeds of 16.2 Mbps (below the 2018 SIS targets of 25 Mbps), which compares unfavourably with Hong Kong (26.5 Mbps), Seattle (42.7 Mbps) and Singapore (43.6 Mbps).<sup>321</sup> Only 17% of National Broadband Network (NBN) connections are at 100Mbps or above, whereas in New Zealand 17% of fibre broadband customers are already on plans of 1Gbps or above.<sup>322</sup>

While over 99% of the national population has access to NBN services, this does not equate to broadband use. The ABS reported in 2017 that over 2.5 million Australians were not online due to affordability issues, their location or lack of digital literacy. Geographic coverage challenges remain for rural and remote areas and continue to disproportionately affect Aboriginal communities.<sup>323</sup> Two-thirds of Australia's land mass does not have mobile reception. This includes transport corridors often used by freight vehicles and farmlands outside regional towns.<sup>324</sup> Where there is option for NBN satellite coverage, the current speeds and reliability preclude some of the highest productivity uses, such as video conferencing.

Appropriate regional and outer metropolitan coverage and high-speed connectivity is vitally important in generating economic opportunities outside major cities. Communities without access to essential and increasingly digitised government and private sector services risk lost opportunities and restricted options for work, education, healthcare and social connection.<sup>325</sup>

Figure 9.1 – Average speed of broadband connectivity for Sydney’s international comparators



Source: Infrastructure NSW, based on the Committee for Sydney and the Business of Cities data (2020)

### Whole-of-government approach to connectivity

One challenge is that telecommunications is the responsibility of the Australian Government. In NSW, telecommunications has been managed in a limited way by the NSW Government to address its needs. Through various initiatives and the establishment of the departments for Customer Service (DCS) and Regional NSW, the State has increased its involvement in and coordination of telecommunications since 2018. Further benefits will flow from a concerted program that is coordinated and driven by a lead portfolio, as envisaged by the NSW Telco Authority (NSWTA) within DCS.

NSWTA’s whole-of-government Connectivity Strategy identifies opportunities for better coordination, prioritisation and implementation of connectivity initiatives across NSW Government agencies. The strategy aims to complete an assessment of statewide mobile and fixed connectivity experience (including coverage, speed and quality) and set appropriate statewide connectivity targets to inform investment priorities and address critical gaps.

The Connectivity Strategy could also explore ways for private sector involvement in expanding statewide connectivity by leveraging state-owned infrastructure. Through its procurement of connectivity for cross-agency ‘hubs’ (for example schools, hospitals and justice facilities) the NSW Government could facilitate private sector investment in surrounding community ‘spokes’.

## Box 9.1

### Shared infrastructure to enable connectivity

Shared infrastructure is one way to support wider and more inclusive digital connectivity by reducing deployment costs. It can also improve the visual amenity of digital connectivity infrastructure. Shared infrastructure can be owned or leased by a government, government agency or the private sector.

Shared infrastructure is defined by the Telecommunications Act 1997 but has not been streamlined to account for different processes and needs emerging across state and local government. It grants mobile carriers specific powers and immunities to deploy telecommunications infrastructure quickly in a nationally consistent way but leaves local government and/or place owners largely unable to influence the deployment, unless there are heritage implications or other special circumstances. This has implications for how smart places and precincts are implemented.

The Western Sydney 5G Strategy outlines the need for Shared Infrastructure in Principle and outlines actions for all three levels of government in the Western Sydney City Deal to work with the telecommunications industry, with the objective of using shared sites for 5G infrastructure in the Western Parkland City.<sup>326</sup>

The NSWTA should also engage with linear infrastructure owners, such as Transport for NSW, to identify opportunities to coordinate whole-of-government connectivity along major corridors. By engaging early and coordinating planning and design, such an approach could deliver digital connectivity more efficiently.

The NSW Government is exploring how further coordination with commercial providers can help to facilitate faster, cheaper and better digital connectivity coverage through shared infrastructure (see Box 9.1). Shared infrastructure arrangements should be adopted as far as practicable, along with alternative ways to achieve digital connectivity.

The emergence of the Low Earth Orbit Satellite (LEOSat) sector is one such example. The Australian Government's 2021 Regional Telecommunications Review highlights the potential role of LEOSat, among other emerging technologies, in supporting regional high-speed broadband connectivity.<sup>327</sup> Identifying opportunities and developing the required policy environment to support multiple co-existing technologies across priority regions and under-served communities should form part of the NSW Government's long-term connectivity strategy.

The Western Sydney City Deal illustrates the benefits of cooperation between the NSW and Australian governments to meet connectivity objectives. Co-investment opportunities should also be pursued with the NBN and private sector providers where this aligns with the NSW Government's strategy.

## 9.2 Embedding digital technology throughout the infrastructure lifecycle

Application and use of digital technology throughout all stages of the infrastructure lifecycle can deliver significant benefits. Productivity benefits can be achieved by seamless transitions between project lifecycle stages, and digital technology can help to integrate tasks that are often disjointed across the planning and infrastructure value chain (see Figure 9.2).

### Spatial digital twin and digital engineering tools can enhance infrastructure planning and delivery outcomes

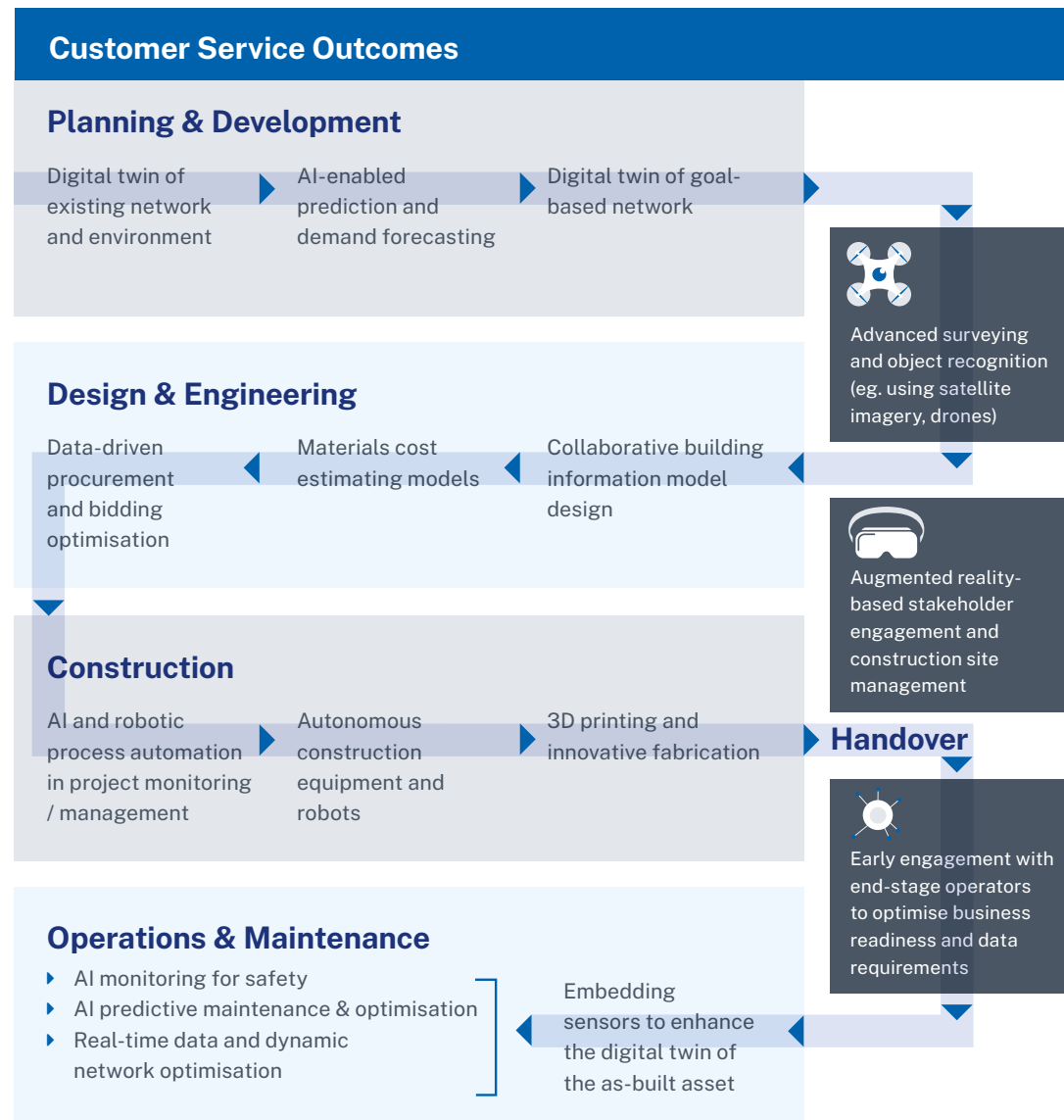
'Digital first' approaches to the planning, delivery and operations of infrastructure require the adoption of new platforms and processes such as digital twins and digital engineering (DE).

As the NSW Spatial Digital Twin and Live.NSW platform mature and reach sufficient adoption, they will enable better informed decision making and also improve infrastructure coordination and

prioritisation (see Box 9.2). Digital platforms can also be used to enhance government engagement with citizens, a particularly important aspect of prudent infrastructure planning and delivery. Insufficient public engagement at the planning and design phases of the infrastructure lifecycle often leads to project delays down the track when communities resist investment proposals.

At a project-level, DE approaches, including BIM, drive better business, project and asset management outcomes by reducing delay and cost risks in the design and delivery of projects.<sup>328, 329</sup> However, a lack of consistency in DE, data standards and the requirements enforced by government procurement rules has meant widespread use of and benefits from BIM in public projects have been limited. A *Digital Built NSW Program* is under development to support a phased uplift in capabilities across the NSW Government, noting that agencies have differing levels of maturity and experience. The return on investment of DE approaches is frequently positive upon completion of delivery but these benefits accumulate significantly, as digitised assets start their operating lives with greatly enhanced data collection and monitoring abilities.

**Figure 9.2 – Potential digital technology applications for infrastructure**



Source: Infrastructure NSW (2022)

## Box 9.2

### NSW Spatial Digital Twin

The 2018 SIS recommended the preparation of a business case to upgrade NSW's Foundational Spatial Data Framework from a two-dimensional map to a four-dimensional model (3D + time).

The NSW Spatial Digital Twin is a 3D model of the State's physical environment, capable of recording past conditions and visualising future scenarios. Its initial proof of concept showcased how such a platform can integrate DE information, live data feeds and 3D aerial imagery with the State's digital records on land use. Transport, utilities, planning, natural resource management, environmental management and emergency management data are being progressively added, along with the functionality to support data sharing and collaboration, as well as integration with public engagement tools such as Live.NSW.

While originally conceived to support infrastructure planning and delivery, this platform has benefits for all levels of government, for industry and for the community.

Other jurisdictions, such as the UK, have achieved greater adoption rates of DE by mandating its use in public infrastructure delivery, and have documented productivity dividends from its wider use.<sup>330</sup> Taking lessons from other jurisdictions, a coordinated and phased approach to DE requires clear and interoperable standards and guidelines, engagement with industry and commensurate procurement requirements.

A roadmap for the NSW Government is needed to achieve widespread adoption and use of DE tools. In turn, this will ensure that the State can seize productivity-enhancing opportunities to automate and streamline the future planning, delivery and operation of assets.

## 9.3 Smart infrastructure, places and cities

Technology-enabled infrastructure and technology upgrades are among the highest pay-off investments available to the State. They should be a significant element in future investment programs as NSW pivots to multi-year programs designed to improve the capacity, reliability and resilience of existing assets and networks.

The NSW 2020 *Smart Places Strategy* highlights how technology can collect and leverage spatially enabled data to support higher quality evidence-based decisions (see Figure 9.3).

**Figure 9.3 – Smart Places – where physical and digital environments converge**

Smart Places are where the physical and digital environments converge. They integrate technologies in the built environment to capture and convey data insights. The embedded technology captures information on the asset or local environment.

The data is then analysed to help people and government make better, evidence-based decisions about how to improve the productivity, liveability and resilience of cities, towns and communities.



**1. Embedding sensors** and communications technology in infrastructure



**2. Capturing**, safely storing and making government-acquired data available



**3. Communicating information** and insights

NSW Government, *Smart Places Strategy*



The *Smart Places Strategy* provides foundations for enhanced infrastructure performance. It promotes the use of sensors and devices embedded in the built environment to collect and share data across multiple systems; for example, smart CCTV, smart lighting, predictive analytics and emergency systems.

Greater deployment of these technologies can also drive efficiency, operational and customer improvements in the State's transport networks (see Box 9.3). Sydney's Coordinated Adaptive Traffic System (SCATS), smart traffic signalling and real-time route planning to reduce traffic congestion all require a seamless and efficient digital ecosystem created in Smart Places. Real-time intelligent sensors to monitor vehicle movements and automated tracking are other potential opportunities. One such example is the multimodal Digital Smart Kerbs trial being piloted in Liverpool, which aims to make the best use of limited kerb space.

Detailed 'as-built' digital models of infrastructure can also enable more targeted and prioritised responses by asset managers. Drone imagery, sensors and real-time or near-real-time data can be combined with these models to document historical needs and identify preventative, and even automated, maintenance opportunities. These technologies have tangible customer benefits through enhanced service availability and reliability, as well as helping to build the resilience of assets and services to unplanned events.

### Box 9.3

#### Driving customer and operational improvements through transport digital technology

Transport for NSW has made technology central to its mission to enhance customer services and lift productivity. This includes investing in operational and safety improvements with significant benefit to cost ratios, such as:

- ▶ **Digital Rail Systems:** New Automatic Train Protection (ATP) technology and digital signalling systems installed along Transport for NSW's rail network provide enhanced information and safety compared to legacy systems. These systems will also enable intelligent management of network congestion and freight integration, and reduce service disruptions.
- ▶ **Smart Motorways:** Smart traffic management systems such as automated ramp signalling and lane management can smooth traffic, ease congestion and improve road safety. These investments also enable better utilisation of existing infrastructure assets. Combined with sensors, real-time and other advanced data analysis, smart motorways can dynamically adjust to changing conditions across all transport modes or shift priorities to certain vehicles like freight or emergency services. A review of the M4 Smart Motorway since its opening reported a 40% reduction in accidents while reducing travel times by 20%.

Transport for NSW has also released the second edition of its *Future Transport Technology Roadmap 2021-2024*, which highlights opportunities to deliver statewide, regional, metropolitan and freight outcomes. This includes further use of Digital Twins to support the construction and operation of transport infrastructure, readying the State's infrastructure for connected, automated and electric vehicles, and delivering sensors and data to improve the efficient movement of freight across the State.

While implementing Smart Places is a challenge in precincts due to the range of stakeholders, regulation, coordination and policy considerations, the *Smart Places Strategy* should remain a high priority for the NSW Government. This means adhering to related policies and guidelines.

For example, the NSW *Smart Infrastructure Policy*<sup>331</sup> and *Internet of Things (IoT) Policy*<sup>332</sup> set minimum requirements for smart technology to be embedded in all new and upgraded infrastructure from 2020 onwards. They also provide guidance on standards and obligations for NSW Government agencies and local governments when planning for new infrastructure.

These and related policies aim to ensure interoperability between devices and data produced by IoT-enabled infrastructure projects. It is essential that these policies are applied consistently across agencies and embedded in infrastructure investor assurance processes. The importance of interoperability of systems and data is discussed further in Section 9.4.

Piloting and then expanding technology initiatives will be important to drive Smart Places outcomes, starting with opportunities in greenfield environments, newly emerging precincts and major infrastructure where there are fewer physical constraints and greater capacity for government to coordinate and curate technology requirements and installation, with participation from the private sector.

The Smart Western City Program outlines Smart Place solutions that will be needed to make the Western Parkland City a connected and digitally enabled city. The Western Parkland City and other suitable precincts can be used as ‘test beds’ for trialling Smart Places initiatives to establish appropriate smart foundations and commercial models that can be adopted at larger scales. Pilots can also drive innovation and facilitate knowledge transfer through industry partnerships, as discussed in Chapter 10.

## 9.4 Consistent and coordinated data standards and practices

The full potential of digital tools and platforms cannot be realised without shared, consistent and quality data. The diligent application of standards, classifications and data management practices across all aspects of the infrastructure lifecycle is critical.

Design and procurement policies to support interoperability need to ensure that different ‘hardware,’ such as multiple types of sensors and devices, can together provide insights in one ‘software’. Interoperability also applies to broader systems that may not integrate readily with others because they are in different sectors or government agencies.

For example, the NSW Government would benefit from the further digital integration of planning system legislation and instruments, such as ePlanning, with software used for infrastructure planning and design.

Interoperability of data is also an enabler of more cost-effective and customer-focused service delivery. Better structured data can enable collaboration between agencies or be made open and accessible to attract and build business and academic partnerships that yield new insights and value.<sup>333</sup>

Without coordination and consistency, the benefits of digitisation can be diminished due to interoperability issues. For this reason, agencies engaged in infrastructure planning are increasingly looking to embed digital ways of working. For example:

- ▶ Transport for NSW has a Transport DE Framework and is developing a Digital Twin program
- ▶ Health Infrastructure has a BIM framework and is piloting Augmented Reality / Virtual Reality technology to support stakeholder engagement
- ▶ Schools Infrastructure uses EagleEye as a platform for spatial service and infrastructure planning.

Across the NSW Government, key digital initiatives should be progressed, in conjunction with DCS, to ensure relevant data and technology-related policies and requirements are met. This includes the *NSW Infrastructure Data Management Framework* (IDMF), released in 2020.

Equally, it is important that NSW work toward nationally consistent standards in partnership with the Australian Government. For example, the National Freight Data Hub has been developed to make data available to industry, government and others to improve the efficiency, safety, productivity and resilience of the freight sector.<sup>334</sup>

Jurisdictions leading the way in infrastructure digitisation are characterised by clarity around who develops and facilitates implementation of relevant policies and standards for any new,

planned or retrofitted build. Work to progress this should proceed in NSW, in collaboration with the Australian Government and other jurisdictions to ensure consistency.<sup>335</sup>

## 9.5 Making digital solutions the norm

Across sectors, COVID-19 has shown that many service needs can be met and managed better through digital tools and platforms. Opportunities for digital applications are emerging across all infrastructure sectors and government services. Enhanced digital service delivery has positive benefits for the capacity and performance of the State's physical infrastructure and can provide alternatives to building new physical infrastructure.

Since the 2018 SIS, several NSW Government agencies have developed long-term infrastructure strategies identifying technology that will further enable digital services; for example, the *NSW Schools Digital Strategy* and *NSW Health Infrastructure Strategy*. More broadly, DCS's Beyond Digital strategy sets out the NSW Government's overarching aims to support the digital economy and enhance the use of data and digital technology in service delivery.

The benefits of data and digital technology are maximised when considered at the planning stage of government services and infrastructure. For the NSW Government, the digitisation of infrastructure and services requires several key considerations:

- ▶ **setting targets and aligning digital policies for infrastructure** – set explicit targets for digital service delivery, publish a clear statement on how these targets will be delivered and align with the Smart Infrastructure Policy and Infrastructure Data Management Framework
- ▶ **exploring digital (no build) options** – require all Strategic Business Cases (SBC) to include 'if-not-why-not' options to utilise digital technologies as an alternative to new physical infrastructure, either through digital service provision or through augmentation of existing physical assets
- ▶ **establishing a digital pipeline** – commit to a long-term digitisation pipeline, with a funding allocation to match, with an initial focus on:
  - enhancements to existing systems that can apply to multiple agencies
  - COVID-19 proven virtual models that can be further enhanced to deliver better services, such as virtual care and learning supports
  - data and system upgrades that support service delivery model reforms, such as new digital justice system pathways and consolidated community services hubs

- ▶ **procurement and market delivery** – run market-based processes to deliver investments that have sufficient scale, proof of concept and long-term funding sources
- ▶ **public sector capability** – define and require capability requirements for digital service delivery in all infrastructure agencies.

The NSW Government will need to strategically invest in and progressively upgrade its legacy information systems and cyber security. Back-office hardware and platforms support better cross-government data sharing, analytics and decision making.

The NSW Digital Restart Fund (DRF) is already providing investment in this area across government. However, the current allocated funding is unlikely to meet the backlog of upgrade requirements identified.

**Figure 9.4 – Prevalence of cybersecurity threats for Australians**



Source: Infrastructure NSW, based on Parliament of NSW (2021)

## 9.6 Building cyber resilience

As infrastructure services become increasingly embedded with digital technology, a corresponding increase in cyber security awareness and investment will be required.

Currently, cybercrime is frequent and prevalent in Australia, as shown in Figure 9.4. Future threats are expected to become more automated, intelligent, disruptive and destructive, according to expert submissions to the NSW Cyber Security Inquiry, especially when targeting critical infrastructure systems.<sup>336</sup>

Increasing geopolitical tensions and competition are likely to multiply cyber risks. However, the future scale of cyber espionage operations used for intellectual property theft and infrastructure disruption operations against government services is unclear, creating challenges for cyber security procurement and infrastructure investment.

In 2019, the NSW Government adopted the NSW Cyber Security Policy, which applies to all NSW Government agencies.<sup>337</sup> The policy establishes a risk management and cyber maturity framework to help agencies protect their most operationally sensitive and valuable systems and strengthen cyber security controls. This includes agencies complying with 25 mandatory requirements for cyber security.

Building effective cyber resilience requires a system-wide approach that combines strong governance, transparent reporting mechanisms, a commitment to capacity building and incident response. Equally important is engaging with the broader cyber security community across all levels of government, academia and industry.<sup>338</sup>

Cyber risks should be addressed comprehensively as part of an ‘all hazards’ risk management approach (discussed in Chapter 5) to capture the growing interdependencies between online systems and other critical infrastructure. Cyber security spending as a proportion of total asset investment should also be monitored and benchmarked against best practice. Improving cyber security maturity reporting and meeting maturity level targets should be prioritised in line with the recent Audit Office of NSW report on *Compliance with the Cyber Security Policy*.<sup>339</sup>

High risk and critical infrastructure systems require ongoing attention to security but the potential entry points for malicious actors within smaller, adjacent government infrastructure agencies must also be considered. Incident reporting requirements must be streamlined and harmonised at the State level, noting that the Australian Government’s notification rules have been strengthened for critical infrastructure entities under the *Security Legislation Amendment (Critical Infrastructure) Bill 2021*.

## 9.7 Recommendations

No	Recommendations	Implementation timeframe	Lead agency
<b>37</b>	<b>Accelerate investment in digital connectivity in State sponsored precincts</b>		
	<p>a. Adopt a targeted and sequenced State digital connectivity enablement investment program commencing with high-priority precincts:</p> <ul style="list-style-type: none"> <li>– complete the shared infrastructure model trials in Western Sydney to support greater and faster roll-out of 5G connectivity</li> <li>– deliver globally competitive digital connectivity plan for the Sydney Innovation and Technology precinct (Tech Central)</li> <li>– deliver enhanced connectivity in regional SAPs and along major transport corridors.</li> </ul>	Immediate Priority	Customer Service
	b. Explore planning and regulatory options that enable greater shared infrastructure arrangements within precincts and major transport projects and corridors.	Immediate Priority	Customer Service & Transport
	c. Ensure project business cases consider investment requirements to support delivery of the Whole-of-Government Connectivity Strategy.	Extended Program	Multiple
	d. Facilitate private participation and competition through new delivery and commercial models in State-led connectivity initiatives.	Extended Program	Customer Service
<b>38</b>	<b>Adopt the use of digital technology in infrastructure planning, delivery and operation</b>		
	a. Develop a roadmap for widespread use of digital planning and engineering tools such as spatial digital twins and Building Information Modelling (BIM) throughout the infrastructure lifecycle, aligned with the Live.NSW Program and Digital Built NSW Program.	Immediate Priority	Customer Service & Transport
	b. Drive efficiencies through the integration of land use planning-related systems, platforms and instruments into the Spatial Digital Twin and Live.NSW Programs.	Immediate Priority	Customer Service
	c. Build capability across government asset managers to accelerate adoption of digital engineering tools.	Immediate Priority	Customer Service & Infrastructure NSW

No	Recommendations	Implementation timeframe	Lead agency
<b>39</b>	<b>Prioritise and invest in technology upgrades to improve efficiency of passenger and freight transport networks as a core part of rebalancing and diversifying the infrastructure program</b>		
	a. Partner with the Australian Government’s National Freight Data Hub to standardise freight data, and investigate the merits of the Freight Community System in enhancing freight supply chain productivity and efficiency.	Immediate Priority	Transport
	b. Accelerate Smart Motorways and other Intelligent Transport Systems (ITS) applications on motorways and major roads in metropolitan and regional centres.	Immediate Priority	Transport
	c. Ensure interoperability of existing and new data repositories and platforms to enable a coordinated approach that supports evidence-based and customer-centred government service planning and delivery.	Extended Program	Customer Service & Transport
<b>40</b>	<b>Prioritise digital service delivery over building new physical infrastructure where the goals of the initiative can be feasibly achieved in that manner</b>		
	a. Review and update the Business Case Guidelines, ICT and Infrastructure Investor Assurance Frameworks such that infrastructure business cases are required to include ‘if-not-why-not’ options to use digital technologies where feasible as an alternative to new physical infrastructure capacity, either through digital service provision or through augmentation of existing physical assets.	Immediate Priority	Treasury & Infrastructure NSW
	b. Ensure appropriate digital infrastructure and systems (including digital identity) are reused and leveraged to support delivery of critical government services.	Extended Program	Customer Service
<b>41</b>	<b>Deliver an investment program to digitise government services and infrastructure</b>		
	a. Pursue immediate opportunities for digitisation of critical frontline systems including Virtual Care, Clinical Systems, Telehealth, Remote Learning and Digital Courts.	Immediate Priority	Multiple
	b. Establish a prioritised investment program and a long-term, sustainable funding model for digital and ICT investment that could include smart infrastructure, digital platforms and cyber security.	Immediate Priority	Customer Service
<b>42</b>	<b>Uplift cyber security capabilities and practices in infrastructure planning, delivery and operation</b>		
	a. Continue to invest in cyber security capabilities and practices to effectively mitigate the risks associated with increasing digitisation of infrastructure and service delivery.	Extended Program	Multiple
	b. Agencies should ensure ‘Secure by Design’ principles are adhered to in technology-enabled investments and monitored through updated ICT and Infrastructure Assurance Frameworks.	Immediate Priority	Customer Service & Infrastructure NSW
	c. Agencies should target appropriate maturity and funding levels to increase cyber security capability, informed by reporting on and analysis of compliance with the NSW Cyber Security Policy.	Immediate Priority	Multiple / Customer Service