

A nighttime cityscape featuring a prominent building with a blue-lit top and a large, ornate building with red lighting. Overlaid on the scene are several glowing red and blue lines that represent digital data or connections, creating a futuristic, digital twin aesthetic.

Smart**Cities**Council  
**DIGITAL TWIN HUB**  
Australia | New Zealand

# DIGITAL TWINS, FOR ALL

The Australia | New Zealand  
Digital Twin Blueprint

ISSUE\_October 2021

[digitaltwinhub.global](https://digitaltwinhub.global)

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# 1.0 ABOUT THIS DOCUMENT

## 1.1 GOVERNANCE

The Smart Cities Council (SCC) is the custodian of this document and since March 2020 has stewarded an open and collaborative process of shaping its direction and co-creating the content with stakeholders. The document was hosted in an open online environment with the link to edit the document made freely available on request.

This document is a Blueprint, providing an overview of the opportunities to build a Digital Twin marketplace across the Australia New Zealand region. It is not a strategy. It is hoped that this document may inform the development of any relevant strategy related activities by governments of all levels within the region. The SCC also acknowledges that many professional and representative bodies are advancing Digital Twin efforts, and hopes this document may support their efforts as well.

Any questions about this process should be directed to: [engagement@digitaltwinhub.org](mailto:engagement@digitaltwinhub.org)

## 1.2 STAKEHOLDER ENGAGEMENT

In developing this document the SCC continually sought input from stakeholders, but there is more engagement to do. We hope to continue engaging government agencies, professional associations and other non government organisations as the Blueprint gets finalised and then released at [Digital Twin Week](#) 2021.

The SCC has used major platforms, like Digital Twin Week 2020, monthly Digital Twin Meet's, multiple roundtables and workshops to promote awareness of the Blueprint development process. Any stakeholders wishing to engage further in the Blueprint development process should contact the SCC at the email address above.

## 1.3 AUDIENCE

This Blueprint has been created to influence action and investment in Digital Twins within the built and natural environment in both Australia and New Zealand. We use the catchphrase 'digital twins, for all' as the SCC strongly believed this is a data activation opportunity for every government, every agency, every sector and every discipline.

A key goal is to build a Digital Twin 'marketplace' - with good demand for and supply of Digital Twin capability. Therefore we have identified policy makers, practitioners and researchers as our key audience.

This document is a Blueprint only, and many tasks are yet to be completed by the SCC and others to turn it into a strategy. In the interim it is anticipated this document will be used in the following ways:

- Policy makers will use it to shape their policy making, program design and support initiatives
- Practitioners and advisors will use it to align their advice and support to clients
- Vendors will use it to align their products and services, and their evolving innovations in data activation
- Academics will use it identify education and research opportunities
- Asset owners and operators will use it to seek opportunities to improve performance and inform investments.

## 2.0 THE FUNDAMENTALS - WHY, WHAT AND HOW?

### 2.1 WHY DIGITAL TWIN?

To respond to a more dynamic and uncertain world and to take advantage of tomorrow's economic opportunities, we need to rethink the way our built and natural environment is planned, built and managed, and how services are delivered.

This will only be possible if we embrace new open technologies - like Digital Twins - that allows more integrated, productive and sustainable physical and natural asset stewardship with the help of data insights. With a culture of data leadership and valuing data as an asset, a Digital Twin journey can help share, decide and communicate the performance of places, landscapes, assets and systems.

This positions us to accelerate the achievement of the [United Nations Sustainable Development Goals](#) (SDGs), a commitment made by both the Australian and New Zealand Governments. Each SDG identifies targets and indicators, therefore providing a framework for data collection and activation for Digital Twin leaders.

Examples of Digital Twin outcomes and benefits include (aligned with the SDGs):

**SDG 8: Decent Work and Economic Growth and SDG 9: Industry, Innovation and Infrastructure**

- Lower the operating costs of assets and services
- Build competitive advantage and export potential
- Accelerate productivity dividends
- Unlock value across industries and across supply chains
- Bring different industries, functions and concepts together.

**SDG 16: Peace, Justice and Strong Institutions**

- Enhance transparency, accountability, and trust
- Reduce risk in project and program delivery
- Foster innovation within and across ecosystems.

**SDG 11: Sustainable Cities and Communities**

- Facilitate more modern methods of digital engagement and experience with the community
- Enhance community service delivery
- Facilitate easier transactions between government and the community
- Provide access to more and better feedback from the community.



A national Digital Twin Strategy for Australia and New Zealand should be developed by the respective national governments, which among other things calculates the economic, environmental and social value of Digital Twin investment. The Strategy should articulate the policy and programs needed to stimulate action and investment in Digital Twin capability.

## 2.2 WHAT IS A DIGITAL TWIN?

The common shorthand definition for the Digital Twin is ‘a digital replica of a physical thing’.

However, many stakeholders struggle to understand what this really means. The SCC therefore, in this Blueprint, approaches the definition of a Digital Twin in a more practical and inclusive way, focussed around the question "how can a Digital Twin help me?"

**“The Digital Twin is a data-driven capability that accelerates outcome-focused decision making delivering better, quicker and cheaper infrastructure and services.”**

Further, the Digital Twin can assist in doing this in a more engaging and transparent way given its capabilities.

We acknowledge that Digital Twin technology, capability and its potential uses will evolve, and improve. As such, we view the following definitional attributes of the Digital Twin as a ‘Version 1.0’.

A Digital Twin combines a series of capabilities and activities that mature overtime, to enable an organisation to use data insights to make decisions that help an asset, process, service or environment to be as effective, rationalised or as useful as possible.

These capabilities are:

1. **Connect** - there is a digital connection between the digital replica and the physical world so that as things change in the physical world, they also change in the digital replica. A digital connection typically uses a telecommunications network(s) (such as the internet) to facilitate the transmission of data between the physical and digital environment
2. **Integrate** - the digital replica can ingest and/or reference data sets, aggregate them, link them and ready them for analysis and visualisation
3. **Analyse** - the process of inspecting, cleansing, verifying, interpreting, transforming and modelling data for the purposes of creating new information and insights
4. **Simulate** - the ability to model a system to gain insight into the potential real effects/outcomes of alternative conditions and courses of action
5. **Visualise** - the ability to represent multiple sources of data in multiple dimensions (width, height, depth, time etc) that is easily accessible



**Ensure that Digital Twin capability is acknowledged as a critical definitional attribute in the development of Digital Twin standards, policy and technical guidance.**

## 2.3 HOW TO PROGRESS DIGITAL TWIN CAPABILITY

Over the past few years many Digital Twins for infrastructure delivery and city-making in Australia and New Zealand have evolved.

We have seen government agencies, developers, asset owners and operators and local authorities invest in building Digital Twin capability. The starting place for their efforts have been very different, based on their specific goals and drivers.

At [Digital Twin Week 2020](#) it was said many times that "you don't just buy a Digital Twin". But rather, you embark on a journey to build the core capabilities of a Digital Twin in a way that responds to your goals.

As represented in a number of Digital Twin maturity models, such as the [ANZLIC Principles for Spatially Enabled Digital Twins](#), there is a necessary journey of building capability and enhancing information management practices, data governance and engagement and collaboration approaches to allow the technology and data platform elements of the Digital Twin to support decision making effectively.

So, in learning from early Digital Twin advancements across the built and natural environment in Australia and New Zealand, achieving success can be helped by embracing the following five fundamentals, presented here as 'plain English' questions:

1. Start with leadership – what are the problems you are looking to solve, and what value do you want to create?
2. Consider the people – who needs to be involved, who does it impact and what capability is needed to solve the problem?
3. Have a process in place – what standards and guidance materials are in place to procure and manage information and data?
4. Identify the information you need – what data do you need to generate insights for your decision making?
5. Enable your capability with technology – what enabling technologies do you need to build your Digital Twin capability?

These critical questions (and steps) in a Digital Twin journey for an organisation or project are further contextualised in Section 7 on Digital Twin Standardisation.

As 'strategic' standards for Digital Twins in the built environment emerge through the work of the British Standards Institution, the International Standards Organisation, the International Electrotechnical Commission and others, our collective Digital Twin journey will become further defined and refined and help with building industry-wide clarity, capability and consistency.

For the Australia and New Zealand region, the journey towards a thriving Digital Twin marketplace is discussed in the following section.



## 3.0 THE DIGITAL TWIN JOURNEY FOR THE REGION

Digital Twin leadership from all sectors will continually mature across the region and deliver better outcomes over time. Knowing where we are at on this journey as a regional marketplace is important.

Where we are currently at, and what we need to aim for in terms of a future state is a critical task.

The SCC has commenced a process of mapping this journey, and wishes to continue to advance this work throughout 2021 in partnership with other stakeholders.

This mapping is identifying milestones for:

- Policy
- Standards
- Practice and capability
- Investment
- Research and development
- Benefit realisation.

And for each of the above, an assessment of the following will be necessary to provide a roadmap for progress:

- Now - we are currently here
- New - in the short-medium term we need to do this
- Next - our longer term needs may require this.

We are particularly interested in working with leading industry bodies and government entities to help build-out this important task.



It is recommended that an articulation of a Digital Twin 'future state' be developed to guide market place maturity.



# 4.0 STAKEHOLDER ECOSYSTEM

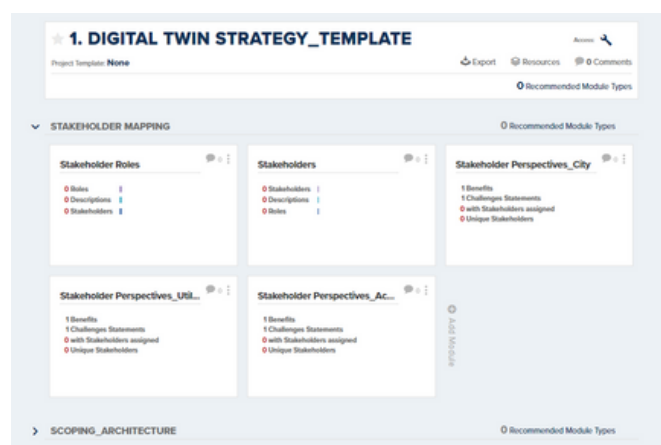
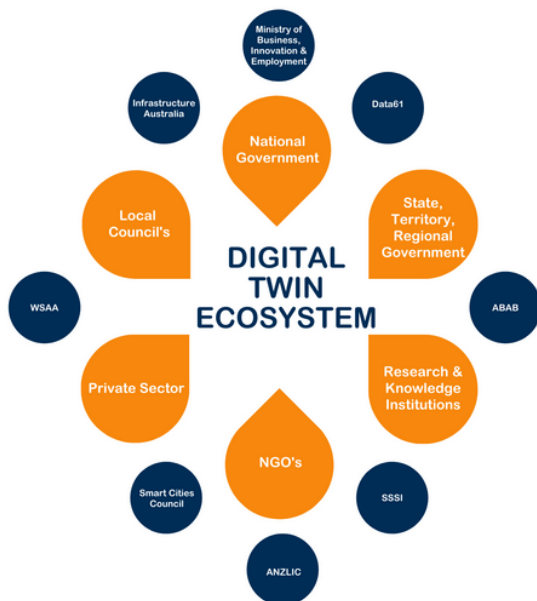
To build a thriving marketplace for Digital Twins requires an ecosystem of stakeholders who can ensure there is strong demand, effective supply, trust and deep collaboration that can enhance benefit realisation.

We have identified a range of Digital Twin stakeholder categories across the region, including for example:

- National government
- Universities and knowledge institutions
- State/territory/regional government agencies
- Non government organisations
- Local Council's
- Vendors, technologists and startups
- Consultants and advisers
- Investors
- Utilities and other asset owners and operators
- Citizens, businesses and visitors.

Some of these stakeholders are represented on the ecosystem image below left. In addition to category identification, through the [Digital Twin Challenge](#), an extensive stakeholder map is being created for the Digital Twin marketplace (image at below right).

This process will be open and available for all stakeholders to access, inviting formal registration of individual and organisational stakeholders and their Digital Twin interests and capability.



## 5.0 LEADERSHIP AND GOVERNANCE

Leadership and governance in building a Digital Twin marketplace is essential. Without it, our efforts could do more harm than good.

Without leadership, many important activities (eg. standards development) may be delayed and result in practices that undermine our overall goal of building clarity, consistency and opportunity. And without open and transparent governance, some efforts may detrimentally conflict with others.

Based on the early stakeholder category mapping in the previous section, this Blueprint suggests some key leadership roles and responsibilities for each category.

### 5.1 NATIONAL GOVERNMENT

Demonstrate leadership by:

- Developing a National Digital Twin and Data Strategy for the built and natural environment, developed by a federal/national agency
- Providing a clear directive around the application of Digital Twin capability in government funded projects
- Exploring business case reform opportunities to value data, and include in project business cases.

### 5.2 STATE/TERRITORY/REGIONAL GOVERNMENT

Demonstrate leadership by:

- Directing funding towards programs that build Digital Twin capability and jobs
- Using project delivery models that can accelerate Digital Twin application and value creation, such as public private partnerships and risk/reward models
- Using procurement processes to apply Digital Twin capability to projects, while building state-wide data asset management, sharing and exchange opportunities
- Ensuring agencies responsible for major asset development and management and service delivery are providing leadership and guidance on Digital Twins.

### 5.3 LOCAL COUNCILS

Demonstrate leadership by:

- Developing a Digital Twin Strategy that identifies priority opportunities for investment and action in Digital Twin capability for government-owned assets, planning and design processes and the delivery of community services
- Raising awareness on the benefits of Digital Twin to businesses and the community
- Extending any existing open data/information management/GIS practices to include Digital Twin capability development and application.

## 5.4 THE PRIVATE SECTOR

Demonstrate leadership by:

- Building Digital Twin capability within their organisations
- Be willing to collaborate and come to the table and invest 'with' government
- Aligning Digital Twin products and services to business and stakeholder needs in the first instance, but overtime shaped in line with current guidance and practice where appropriate
- Building products and services that are interoperable and based on open standards and loose-fit architecture
- Participating in and contributing to open data, data sharing and data exchange opportunities facilitated by government and other third party coordinating bodies
- Help expedite the benefit realisation process, development of use cases and strengthening the overall 'Digital Twin Dividend'.

## 5.5 PROFESSIONAL ASSOCIATIONS, INDUSTRY BODIES AND OTHER NON-GOVERNMENT ORGANISATIONS

Demonstrate leadership by:

- Creating Digital Twin capability development tools and resources and work with members and constituents to upskill
- Facilitating Digital Twin dialogue and discourse, with a focus on knowledge sharing and peer-to-peer learning
- Supporting the development of standards and other best practice benchmarks
- Delivering advocacy programs that are meaningful and aligned with Digital Twin capability development and investment acceleration.

## 5.6 ACADEMIA

Demonstrate leadership by:

- Leading the necessary research to build the Digital Twin business case and quantitative value proposition
- Creating and deliver training and capacity building content that reaches the most diverse student interests across data, technology, the built environment and city and landscape shaping professions.



**It is recommended that an Australia New Zealand Digital Twin Leadership Alliance with representation from key industry bodies and government representing the built and natural environments be facilitated to guide the further development of the Blueprint and ensure ongoing cross-nation knowledge exchange.**

## 6.0 USE CASES

It is critical that a series of use cases are developed to demonstrate our aspiration towards 'Digital twins for all'. This will help in Strategy development, business case formation and general stakeholder discourse on Digital Twins.

This Blueprint has not developed use cases, but has identified some essential 'user profiles' that need to be represented in use case development, including:

1. A social worker - who tackles homelessness and social impacts
2. A digital engineer - who designs buildings, road infrastructure and other built assets
3. An asset owner - a custodian, steward of an asset - who pays to keep an asset functioning
4. An operator - who delivers an outcome/service for people.
5. A landscape architect - who shapes our public spaces and places to be liveable, sustainable and productive
6. A transport/mobility planner - who is responsible for providing access and equity to citizens
7. An elected official - who decides and votes on where public funds are allocated/invested
8. A climate scientist - who develops strategies to reduce greenhouse gas emissions
9. A policy maker - who recommends rules on what can/cannot happen
10. A lawyer - undertaking due diligence or investigations into a variety of cases including civil, criminal and other matters
11. An emergency services planner - who plans for and mitigates the effects of emergency situations
12. A citizen - who is engaged with decisions impacting their neighbourhood, city and region
13. A tourist - who wants to use digital tools to optimise their tourism experience
14. A Small business owner - who wants to use digital tools to provide efficient and sustainable services.

The [Digital Twin Challenge](#) will support the development of some of these use cases, but not all of them. It is important a region-wide effort is extended to create and share these resources. In developing these use cases, the relationships between the various stakeholders should have a line of sight to the ecosystem mapping task.



It is recommended that a catalogue of detailed use cases be developed for the region for the built and natural environment, which aligns with the emerging ISO/IEC NP 30172 - Digital Twin Use Cases standard.



## 7.0 STANDARDS

It is essential that Australia and New Zealand develop a Digital Twin Standards Roadmap via their respective standards development organisations (Standards Australia and Standards New Zealand).

In lieu of a Roadmap at the time of publishing this Blueprint, the multiple stakeholders involved in the co-creation of this document had identified potential Digital Twin Standards that could play a role in building a thriving marketplace. These include:

### Strategic Standards:

- Digital Twin Overview - Definition, principles, capabilities, business case elements, applications, asset lifecycle scope
- Digital Twin Business Case - Components and applications, coverage of the full asset lifecycle scope
- Digital Twin Strategy - Akin to ISO/AS 37106:2020 - Sustainable cities and communities — Guidance on establishing smart city operating models for sustainable communities.

### Process Standards:

- Data Architecture and Activation - Based on core capabilities and reference architecture
- Data Management and Assurance - Data sources and structure and quality
- Data Exchange - Using Digital Twin for data collaboration and value creation,
- Decision making with Digital Twins - Guidance for decision making
- Digital Twin Governance - Arrangements/accountability, ownership, procurement, systems issues and similar concepts.

### Technical Standards:

- Digital Twin Interoperability
- Privacy and Security for Digital Twins

These potential standards have been cross-referenced with the current work underway by the International Standards Organisation and the British Standards Institution. It is noted that ISO/IEC WD 30173 (Digital Twin Concepts and Terminology), ISO/IEC WD 30172 (Digital Twin Use Cases) and work by the British Standards Institute on FLEX and Agile standards for Digital Twins was underway at the time of publishing this Blueprint.

On Friday 22 October 2021, as part of [Digital Twin Week](#), the Digital Twin Hub Task Force will facilitate a government and industry workshop to create a brief for a national Digital Twin Standards Roadmap for Australia and New Zealand that builds on the work developed as part of this Blueprint.



**It is recommended that Standards Australia and Standards New Zealand develop respective national Digital Twin Standards Roadmaps for their nations.**

## 8.0 SKILLS DEVELOPMENT

To take advantage of and realise the benefits of Digital Twins it is necessary that greater technology and data literacy is built among built and natural environment policy makers and practitioners alike.

There is a need to develop a Digital Twin Skills Framework, to help government and industry navigate the key attributes and issues relevant to Digital Twin capability. Ensuring that the maximum number of stakeholders can access opportunities for furthering their knowledge and skills for Digital Twins is important to sustained success.

In developing this Blueprint, stakeholders contributing to the process identified some of the following as examples of the skills needed to help build the marketplace:

- Digital and information modelling - metadata, integration, attribution
- Common definition of terms - to start, we need a common language - basis for interoperability across disciplines
- A social narrative as well as how this technical innovation contributes to social innovation
- Partnerships for Digital Twin success
- Lessons learned - ethical dimension (privacy, security, safety).
- Requirements for encouraging trust to support participation in Digital Twin as a data platform
- Community engagement and how the Digital Twin can support consultation processes
- Change management (how to support change in ways of working)
- Customisation for different groups. Research on different groups user requirements - easy to use for non-technical people (currently very technical). User experience.
- Collaboration between public, private, academic. Not just state level but also national level, from all vertical industries. Digitisation challenge is coming horizontally - how do we combine these
- Data accuracy and quality - our models are only as good as the data we build them with
- Trustworthiness/readiness of data to be shared with the public.
- Literacy for decision-makers
- Creating awareness with all stakeholders - what it is, the purpose, and how to manage consequences (intended and unintended).

One of the 13 Digital Twin Challenge projects relates to Digital Twin education. The team advancing this project will identify some of the above skills development needs, and will engage with other relevant stakeholders.



**The National Digital Twin Strategy should engage deeply with Academia and professional learning providers (such as industry bodies and professional associations) to create a framework for Digital Twin skills development.**

## 9.0 RESEARCH PRIORITIES

Ensuring the industry has a strong pipeline of research projects is critical to building Digital Twin capability and continually improving the supporting technology and data enablers behind the five core Digital Twin capabilities.

Australia and New Zealand has the opportunity to be world leading in Digital Twin capability and deliver the best possible impact for citizens, boost productivity and accelerate achievement of the SDGs.

We need to ensure the research community can interface seamlessly with government and the private sector to advance targeted research topics that are agreed and funded. Given the time sensitivity, targeted research that can directly influence policy making and innovation deployment is a high priority.

A framework for bringing academia together to collaborate with industry must also be established so that the investment needed to support this work is secured.

Possible thematic areas identified for collaborative research and partnership between government, industry and academia include:

- Data standards and interoperability in digital twin
- Automating the workflow of data integration and visualisation
- System architectures to address flexible and trustworthy digital twins ecosystem
- Application of Digital Twin in the life cycle of urban planning, design, and management process
- The role of artificial intelligence in Digital Twin success
- Digital Twin ethics and governance
- New contractual and procurement frameworks
- Digital modelling of existing assets and systems
- Cyber Security and Privacy implications of digital twins
- Capability mapping, technology functionality, data leadership and policy impact.

On Monday 18 October 2021, as part of [Digital Twin Week](#), a Research Roundtable will be facilitated to scope a Digital Twin Research Brief for Australia and New Zealand.



**It is recommended that a Digital Twin Research Action Plan for Australia and New Zealand be created collaboratively between government, private sector and academia.**



## 10.0 CATALYSING ACTION

In building a project pipeline for Digital Twin action and investment in the region there are multiple factors that must be present. From demand side awareness and interest, to supply side capability. There are also many structural, contractual and financial issues that need to evolve.

It is anticipated that many data-centric projects common to our current work practices can make up components of a Digital Twin, however many get confused or diverted to a “pet” project which could often be a sub-project for a Digital Twin.

This indicates that many stakeholders are possibly underway with elements of a Digital Twin journey, without even knowing it. Individual projects contribute to the little evolutionary changes needed to build opportunity, and typically have a much more viable budget allocation than seeking large revolutionary/transformational shifts in data activation that could be achieved by integration under the banner of Digital Twin.

All of the previous sections in this Blueprint play a role in helping build a ‘more than the sum of the parts’ environment to enable Digital Twins as accelerators of greater prosperity and productivity through data activation.

But it is important we continue to build practical on-ramps for immediate action, and ensure (in-lieu of agreed standards) there is foundational guidance to stimulate action.

As identified in Section 2.3, below are the 'five fundamentals' to get started with Digital Twin action and capability development, presented as key strategic questions:

1. Start with leadership – what are the problems you are looking to solve, and what value do you want to create?
2. Consider the people – who needs to be involved, who does it impact and what capability is needed to solve the problem?
3. Have a process in place – what standards and guidance materials are in place to procure and manage information and data?
4. Identify the information you need – what data do you need to generate insights for your decision making?
5. Enable your capability with technology – what enabling technologies do you need to build your Digital Twin capability?

Recruiting the strongest possible leadership to ‘underwrite’ this process and build ‘Digital Twin ready organisations’ is key.

The overarching “scope” of the Digital Twin and the leadership to coordinate the many parts that realise the scope (or Vision) is important. Because the Digital Twin is built on data, coordination across disparate projects and data sets is critical for success.

As is often said - “we are ready, just disconnected”. Ownership and accountability, particularly around data therefore is critical in building an environment for integration. The next section outlines key actions and accountabilities to achieve this.



# 11.0 ACTION PLAN

Throughout this Blueprint a series of actions have been identified, somewhat in isolation, knowing that it is common for tasks to build a marketplace to be the responsibility of many.

In this section of the Blueprint we identify strategic actions and investments to help advance the Australia New Zealand Digital Twin marketplace, and to move beyond aspiration to reality.

These are categorised by stakeholder, to help build ownership and accountability.

## 11.1 Action Area 1 - National Leadership

National leadership from Infrastructure Australia and the New Zealand Infrastructure Commission are key to the regions success in helping catalyse Digital Twin action. These are considered the two key catalyst policy makers for the region, from a policy perspective.

The three priority tasks for these organisations are:

1. Prepare a National Digital Twin Strategy and Investment Roadmap for Australia and New Zealand incorporating the actions identified throughout this Blueprint (in partnership with key industry bodies)
2. Update current business case processes and investment frameworks to classify data as an infrastructure asset and therefore valued as such in nationally funded projects
3. Allocate resources to create a Digital Twin Standards Roadmap in consultation with industry and academia.

## 11.2 Action Area 2 - State/Territory/Regional Government

State, territory and regional government agencies must build a Digital Twin framework with supporting Digital Twin policy that articulates how Digital Twin capability can increase the value of public investment in infrastructure and service delivery.

The three priority tasks are:

1. Build off what exists, ensuring that existing efforts across the region are used as a basis for accelerating further action and investment
2. Advance use cases across multiple sectors and tackling diverse urban and regional challenges, and document them for sharing
3. Update existing project investment/business case processes to require a minimum level of Digital Twin capability.

### **11.3 Action Area 3 - Local Councils**

Local councils must build their Digital Twin capability and readiness, ensuring that the opportunity for data activation is an opportunity for all departments, services and infrastructure assets.

The three priority tasks are:

1. Advance use cases that best address the key priorities of local government, such as asset management, city planning and economic development, and document these for sharing and enabling scale of application
2. Build a 'GIS to Digital Twin' roadmap for local government, that can build off the existing capability within Council's and help them 'do more with data' through additional Digital Twin capability
3. Establish a pan-nation 'Digital Twin for Council's' leadership group to work with local government representative bodies to consolidate and accelerate opportunities.

### **11.4 Action Area 4 - The Private Sector**

The supply-side ecosystem of advisors, vendors and innovators are key to delivering solutions that advance the Digital Twin journey.

The three priority tasks are:

1. Ensure a concerted effort to communicate Digital Twin value through case studies, general promotion activities and supporting the business case for action and investment
2. Contribute to innovation development, embracing the application of standards
3. Be leaders in data stewardship, ensuring their own assets are subject to Digital Twin opportunities and that they collaborate with all sectors.

### **11.5 Action Area 5 - Industry Bodies and Non Government Organisations**

Industry bodies, professional associations and other non-government organisations play a significant role in helping promote best practice and policy making.

The three priority tasks are:

1. Lead capability development activities within the marketplace, including education, training and knowledge resource creation (eg. technical guidelines)
2. Promote best practice by documenting and widely publishing successful case studies
3. Help influence policy, lead advocacy efforts and support the supply side ecosystem in being collaborative.

## **11.6 Academia, Research and Knowledge Organisations**

**Our knowledge and research community are essential to our policy making activities, solution shaping and capacity building.**

**The three priority tasks are:**

- **Activate the necessary longitudinal research to help build the Digital Twin business case for the region**
- **Work with government and the private sector to shape the education and training required to build Digital Twin capability in the region**
- **Curate cross-sector research partnerships and facilitate co-investment in ongoing Digital Twin research and use case testing.**

## 12.0 WHAT'S NEXT FOR THIS BLUEPRINT?

First and foremost, we need feedback.

This Blueprint is draft only and it is important that stakeholders express their views on the proposed recommendations that are contained within it. This will help improve on what we have created, and allow a more comprehensive final Blueprint to be published.

Feedback can be shared with the Smart Cities Council prior to Friday 27 August 5:00pm AEST.



In the meantime the Smart Cities Council, its members and the wider Digital Twin stakeholder ecosystem is encouraged to use this document to 'advocate, educate and accelerate' for greater Digital Twin capability.

The Smart Cities Council will use this document as a basis for dialogue, influencing policy making and enabling investment in Digital Twin action.

This document will remain publicly available on the [Australia New Zealand Digital Twin Hub](#), and overseen by the Smart Cities Council Digital Twin Task Force.

If your organisation would like to arrange a briefing on the Draft Blueprint, please send a request to [engagement@digitaltwinhub.org](mailto:engagement@digitaltwinhub.org)

## 13.0 ACKNOWLEDGEMENTS

The Smart Cities Council would like to thank it's Digital Twin Task Force for the critical role it has played in shaping this Blueprint. The Task Force is:

- Will Hackney | Aurecon
- Kate Williams | FrontierSI
- Kat Salm | FrontierSI
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- Nathan Quadros | Veris

In addition to the Task Force, more than 300 people across Australia and New Zealand and around the world were involved in our workshops, review meetings and requested a link to review and comment on the [background document](#) underpinning this Blueprint.

Those who participated in the 12 sessions at [Digital Twin Week 2020](#) provided much inspiration for this document, as well as the original Digital Twin Symposium's in New Zealand (August 2019) and Australia (November 2019).

The Smart Cities Council has also been continually inspired by the public sector leadership in Digital Twin advancement by Wellington City Council, the NSW Department of Customer Service, the VIC Department of Environment, Land, Water and Planning and ANZLIC - the Spatial Information Council of Australia and New Zealand.

Thank you to all.

The Smart Cities Council team.

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Australia New Zealand

We are building a Digital  
Twin marketplace

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