

The State of SmartNSW

Key insights

July 2022

dpie.nsw.gov.au/smartplaces



Two years after launching the NSW Smart Places Strategy, the NSW Government embarked on a listening roadshow to understand current uptake patterns for smart technology solutions, explore barriers to adoption and map out acceleration opportunities. The roadshow generated deep insights, summarised in this report, and were used to develop a forward roadmap for NSW Government action.

The process began with a desktop assessment of global trends and factors influencing technology and digital uptake which included a series of workshops, and an appraisal of the current and desired future state.

The NSW Smart Places team then tested this by engaging over 350 stakeholders through workshops, interviews and roundtable discussions over four months. They met with researchers, academics, place leaders, technology industries, the connectivity industry, consultants, local councils and other government agencies. They are referred to as stakeholders in this document – see [Attachment A](#) for a full list.

The feedback indicated that there was a strong desire for the NSW Government to be an active partner in solving problems for customers using new technologies and data solutions. Our stakeholders saw the State's role as critical in achieving scale, consistency that transcends local boundaries, efficiencies, and realising the value of data at local, regional and state levels.

Stakeholders wanted fast action, to build on the momentum of the first two years of delivery and capitalise on the digital revolution underway.

Big, bold steps are needed in the coming years to move from an era of seed to scale; where the benefits of smart technology and data solutions move from **novel to mainstream.**

Table of Contents

Acknowledgement of Country	3
Acknowledgement of contributions	3
Disclaimer	3
Listening to our stakeholders	4
About smart places	5
Key insights	6
Insight 1: We are at a critical juncture	6
Insight 2: The State should play a more active role	8
Insight 3: We need to continue to lift capability.....	11
Insight 4: Connectivity is critical –and we’re not there yet	13
Insight 5: The regions need focus	15
Insight 6: Reform is still required	17
Insight 7: We need to share to scale.....	18
Insight 8: Horizon planning is critical.....	21
Insight 9: Investment focus should change	22
Insight 10: Continue place-based exemplars to show them the way	23
Insight 11: Big opportunities still exist for technology and data solutions	25
References	26
Attachment A: Organisations involved in the Listening Roadshow	27



Acknowledgement of Country

The NSW Government acknowledges that we work on Aboriginal land. We acknowledge the Traditional Custodians of the land, and we show our respect for Elders past, present and emerging. In delivering Smart Places, we will be thoughtful and collaborative, and show our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically and where their strong connections to country are celebrated and embraced.

Acknowledgement of contributions

We'd like to thank and acknowledge everyone who participated in the listening roadshow for their generosity of time and sharing their views with us. A full list of the 150 organisations that took part is provided in [Attachment A](#).

Disclaimer

This is a report summarising stakeholder and industry views on smart places and relevant connected technologies and data. It has been prepared by Cities and Active Transport, Transport for NSW, to inform the development of the SmartNSW Roadmap. The report does not represent NSW Government policy.

Coordinated effort across government and the private sector is required to build on local strengths and capture future opportunities. Insights from this engagement will identify directions to accelerate the implementation of smart places.



Listening to our stakeholders

Between February and May 2022, the Smart Places team met with key stakeholders to develop a deeper understanding of the current market and uses of connected technologies and data.

The listening roadshow explored factors impacting our ability to achieve the 2020 NSW Smart Places Strategy vision:

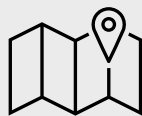
To deliver outcomes for citizens and businesses by applying a consistent, seamless, placed-based approach to Smart Places implementation in NSW.

The listening roadshow involved around 350 people, including:

- 16 interviews involving 24 smart cities and connectivity experts
- 5 small group discussions with infrastructure experts
- A roundtable with representatives from the research and academia sector
- 2 Smart Places Advisory Council meetings
- A Country Mayors' meeting
- A meeting and 4 workshops with NSW Government officers
- A workshop with place leaders, including place designers, precinct managers and technology industry representatives
- A roundtable with regional stakeholders, including selected councils and business representatives
- 2 roundtables with business leaders at the Aerotropolis Summit
- 3 local council roundtables
- 1 discussion with connectivity industry representatives.

Engagement was based around three key areas of questioning.

**CURRENT
STATE**



Where are we
now?

**IDEAL
FUTURE
STATE**



What are the
opportunities?

**MAKING
THE
CHANGE**



What action is
needed and
who needs to
be involved?

About smart places

Smart places help deliver great places and outcomes for people using technology and data solutions.

This means integrating technologies into the built environment to capture and convey data and insights. The embedded technology helps to capture information on the asset or local environment. The data is analysed to help people and governments make better, evidence-based decisions about how to improve the productivity, liveability and resilience of cities, towns and communities. This is displayed in Figure 1.

In 2020, the NSW Government became the first, and still only, State Government to release a Smart Places Strategy. The NSW Smart Places Strategy articulates vision to deliver outcomes for citizens and businesses by applying a consistent, seamless, placed-based approach to Smart Places implementation in NSW.

Since then, work has been underway to realise great outcomes for NSW citizens and communities using connected technologies and data solutions. This report helps us track our progress and will help shape the next steps.



Figure 1 Smart Places value chain – from data generation to analysis and sharing, and informing decisions

Key insights

Insight 1: We are at a critical juncture

It is a **transformational moment**, a point of economic transition and technology acceleration

We have the **policies and foundations in place**

Pilots and point solutions have been delivered, it is **now critical to scale**

There are major changes underway, as economies transition to focus on growing resilience and being more sustainable. Major global and local events are driving a need for innovative approaches.

- The COVID-19 pandemic has contributed to the increased appetite for digital solutions and accelerated digital connectivity
- The rate of change is accelerating, driving the 4th Industrial Revolution
- Urbanisation is accelerating globally, and in Australia, over 86% of people live in cities (Statista 2020)
- There is a chance to 'build back better' following recent natural disasters. This represents a burning platform for investment in street-level digital connectivity and connected infrastructure, to prevent costly retrofitting.

The ground is seen as fertile, and many stakeholders believe the 'digital revolution' is underway. To keep pace, State Government needs to play an active role.

As well as delivering critical funds and new partnerships through the Smart Places Acceleration Program, the State Government is recognised for its critical role in developing and establishing the foundations needed for successful delivery of connected technologies and data solutions. This includes establishing policies, guidelines, and standards.

Many pilot projects and initiatives are underway or have been delivered in NSW, predominantly led by State Government and councils. These have been well supported by State investment in the \$45 million Smart Places Acceleration Program, and preceding Commonwealth Government investments, through its \$50 million Smart Cities and Suburbs Program.

Pilots, seed projects and initiatives are showing us real impacts for customers, and are on track to deliver:

- greener, more resilient parks and public spaces for communities to enjoy using artificial intelligence (AI)
- better local air quality information to help improve the lives of people with asthma and chronic lung conditions, and help governments and organisations target investments to improve air quality
- safer roads with a smoother ride for road users, using technologies and AI to move towards predictive maintenance
- a seamless parking experience, where drivers can find a park easily using real-time information and top up their parking meter remotely

- new systems to improve how we measure our carbon footprint and the impact of activities to improve carbon efficiency as we strive towards Net Zero
- programs to improve digital inclusion and equity in Sydney's Western Parkland City and boost skills to use technologies in regional NSW.

This is building an evidence base for future investments and providing opportunities for scale. However, more is needed to shift from seed to scale, and from smart technology solutions being novel to mainstream.

The prospect of achieving solutions at scale has not yet been successfully achieved. Success would include widespread deployment of successful technologies, or multiple technologies delivered in places and precincts.

Stakeholders highlighted the risk that smart technology adoption will stagnate, with pilots languishing without scale; or worse still, being repeated unnecessarily.

It is imperative for governments to step up now – to participate and lead, so that benefits of technology and data solutions are realised for all businesses and communities, in an equitable and fair way.



... the digital revolution is overwhelming government and governing – this can be compared to what happened in the industrial revolution previously.



Avoid thinking this is a BAU [Business As Usual] moment. This is a transformational moment ... There is high interest in regional decentralisation and economic development ... and a big opportunity to curate the economic transition.



There are no other agendas. 4th industrial revolution is all tech. Don't marginalise it as something 'over there'. It is everything.



Tech and data investments are still not being recognised as fundamental to changing the levers of efficiency. We still seem to be tinkering at the edges.



All of the smart tech stuff is inevitable, better to be prepared, govern for the long term.

Insight 2: The State should play a more active role

The **State should help with data** – aggregation, insights generation, and communication

There is a **hunger for technical resources and partnerships** to grow capability and drive adoption

There is a strong desire for the Government to **explore direct capital investment** to address market failures

Stakeholders applauded the action taken by the NSW Government in recent years to invest in solutions and partnership development through the Smart Places Acceleration Program; and provide the right policies, guidance and standard approaches to support uptake.

The role of government is seen as instrumental in helping the transition to digital and to harness the customer benefits of the digital revolution.

To make the next step change, stakeholders suggested that the NSW Government:

- Provide the architecture and standards for data capture
- Take a more directive approach to application of existing policies
- Explore investment in the ‘middleware’ for data aggregation, or establish a data exchange/marketplace
- Find ways to support data analytics and insights generation, to meet skills gaps
- Explore direct capital investment in multi-function poles and more digital connectivity infrastructure
- Support precinct and place teams with resources to assist design, development and delivery of physical connectivity and digital infrastructure.

Stakeholders wanted to see the NSW Government pursue these opportunities to:

- Realise efficiencies
- Access new sources of localised, place-based data to drive decision making at the state level
- Overcome risks and barriers (primarily related to skills and financial capacity)
- Prevent interoperability fail –or investment in –a plethora of individual systems that do not speak to each other
- Address market failures.

Stakeholders suggested different commercial and financing models to ensure the investments made in a more interventionist approach were sustainable. These ideas included:

- Providing digital platforms and aggregation/analytics services ‘as a service’

- Leasing space on State-owned multi-function poles to mobile network operators and other parties to cover operating costs
- Adding value to raw open data derived from investments in sensors to provide insights to the private sector for a fee
- Recycling assets after the initial investments are realising a return.

Participants in the listening roadshow identified that if the State Government were to provide a standardised approach, or common platforms, there would remain a need for some flexibility. This would enable innovation, adaptation to local circumstances or proprietary competition.

Early work is underway to explore the business case for some of these investments.



...it is all about accessing the data to make better decision making.



Middleware is expensive, and expertise is needed to keep it up to date. Local councils can't afford it and don't have the necessary skills.



There is a risk of interoperability fail. The NSW Government needs to take a more interventionist approach otherwise it won't be able to harvest the data.



Someone has to instrumentalise the smart city and the regulated market is not doing it. Instrumentalise the economic transition to support SMEs (Small to Medium sized Enterprises) to participate again.



Leaving it [delivery of connectivity infrastructure] to the private sector, means there is a hurdle of return, resulting in clunky retrofitting. It would have happened by now if people were willing to do it ... It would make sense for the State to lead this.



If the State invested in physical connectivity infrastructure at the street level –like a large-scale pole network, there would be a market creation opportunity around the data aggregation.



I want to see a common model, architecture framework for sites, so the specs are the same ... this means data from water sensors is collected in the same formats ... You still need to provide enough flexibility for innovation and proprietary approaches.



Regulation is one end of the spectrum, but we can be more nimble and agile than that.



Councils think they are unique. But at the end of the day, we're all dealing with the same issues ... when taking a joint approach, we have successfully applied the 80:20 rule. If 80% of the approaches were common, we could leave 20% for adaptation to the local conditions.



It is one thing to have the right things [policies] in place, it is another to get the uptake. You need to be hands-on and get into the details of how to do things to drive adoption.



The consequence of not taking that path will result in a contest between private ownership and public benefit.



There has been an epic market failure in the provision of infrastructure and there is a need for a more enhanced role of government in this transitional period.



Is there a way for the State Government to own the infrastructure and outlay capital and then councils can rent as a service? It gives you economies of scale but means they don't have to install and procure etc. In doing that, you also don't have everyone doing their own thing.



Government needs to have more skin in the game to know what agendas, what races we should be running in. We need to create the appetite for the investment and unsolicited proposals.

Insight 3: We need to continue to lift capability

We need cultural change to use and value data

We need to **combine local expertise with technical expertise**

Data literacy and cyber security capability remain key concerns

A strong and prevailing theme of the listening roadshow was the need to continue investing in capability to achieve the smart places vision.

The public sector is finding it hard to compete for limited skilled resources, particularly in data management, analysis and insights, and cyber security. This severely limits and impedes the ability of government to innovate and adopt new approaches.

Without a skilled workforce, it is also difficult for government to effectively engage the market for appropriate solutions. There is a power imbalance and exposure to risks including solutions being driven by the vendor market and investment in proprietary systems that are not interoperable.

Training and capability programs need to be fit for purpose to meet the needs of the many people involved in bringing smart places to life. This includes:

- People who need broad skills across the spectrum of smart places
- People who need deep skills, like data analysts, cyber security experts and coders
- People who need upskilling, like design, construction, operations, and maintenance teams to deliver and support physical infrastructure; procurement teams; and leaders to understand how to use data to inform decision making
- People who will be the workforce of tomorrow.

There is a need to continue to build general awareness of the benefits of connected technologies. There is also a need for investment to provide the right operating environment for people to make changes and support data-driven cultures. The capability gaps identified include data management, governance and analytics, cyber security, digital engineering, and procurement.

Stakeholders identified opportunities for:

- Clear skills pathways linked to career prospects
- Curriculum and in-school programs to provide the workforce of tomorrow
- Formal training linked to public sector capabilities
- Applied learning, or 'learning by doing'
- Case studies and exemplars to lift aspirations (see [related Insight 5](#))
- Mentorships, secondments and establishing networks of champions
- Embedded technical resources to partner over short periods with a prescribed scope

Some stakeholders noted the need to combine local expertise, with functional expertise to achieve the best place-specific outcomes.

Others highlighted capacity limitations in some organisations, particularly smaller local councils. They encouraged State Government to consider aspects of smart city delivery that could be provided centrally as a service to encourage uptake and reduce risks (see [related Insight 2](#)).

Building capability wasn't seen as a government problem alone, and there are opportunities for industry and the education sector to play roles in meeting tomorrow's workforce needs.



Capability is needed around using information to drive decision making, engagement, reporting and accountability. This needs to be addressed first.



Innovation bootcamps have been successful for us. A 6-week sprint, where every team learns design thinking steps and takes this back to their community.



Capability is not about all the people having all the skills ... but we need people who can make use of big data.



It is hard not to come back to the lack of capacity issue. Niggling away all the time in the background.



We need digitisation to be supported through University courses.



We need the narrative to be Skills of the future, Jobs of the future. Economies of the future. With a sectoral focus.

Insight 4: Connectivity is critical –and we’re not there yet

Connectivity that is reliable and fit for purpose is most important

There are **big opportunities to improve** street-level connectivity and ensure amenity outcomes

Connectivity is critical for the delivery of smart places and provides the spine for transmitting and receiving data and insights.

A divide remains between the connectivity experienced between the regions and Greater Sydney. Within the 6 Cities, there is variability that needs to be addressed.

In regional areas, there are ongoing concerns about investment inequality deepening the digital divide, reliability issues, poor quality connectivity and mobile blackspots. These connectivity constraints are impacting businesses, economic opportunities, safety, business attraction and educational outcomes (see [related Insight 6](#)).

It is not all bad news. The discussions with stakeholders were nuanced. It was recognised that not every place needs 5G millimetre wave technology. Connectivity needs to be fit for purpose and we need to find ways to forecast the demand, and match the need with supply: high bandwidth, high-frequency connectivity versus low bandwidth, low-frequency connectivity.

Regional stakeholders were keen to see a parallel process of improving connectivity and delivering new technology and data solutions. Examples were provided of businesses in regions that are finding opportunities for digital and technology solutions using the connectivity available to them.

Some stakeholders questioned the readiness of businesses to harness the power and opportunity presented by 5G. Without the demand in place, it is possible that private sector mobile operators will be reluctant to invest, impacting our global competitiveness.

As well as discussing macro-level connectivity, some participants raised concerns that street-level and localised connectivity opportunities are yet to be realised.

There is limited council investment and ownership of street-level digital connectivity infrastructure. Those participating are using the infrastructure for connected CCTV (Closed Circuit Television), electric vehicle charging, public Wi-Fi, screens and sensors. The data generated is informing investment and service provision decisions.

Local government stakeholders who engaged in local digital infrastructure delivery raised concerns about:

- The proliferation of small cells likely to occur to support 5G and 6G in future, the use of Carrier’s Powers and Immunities provisions in the *Telecommunications Act 1997*, and the impact that this could have on urban amenity



Image 1: Person with smartphone in the Royal Botanic Gardens

- The reluctance of the utilities sector for use of their pole assets for smart technologies.

They also provided examples of poor coordination in the delivery of telecommunications infrastructure, resulting in costly retrofitting and disruption to communities. This is partly because mobile and digital connectivity is not classed as ‘critical infrastructure’.

Consultation on the Commonwealth legislation related to the telecommunications powers and immunities framework is underway and this may include exploration of powers and immunities related to multi-function poles.

Councils want partners in local connectivity solutions, with shared investment resulting in collective value realisation. Industry stakeholders also highlighted recent public comments made by the mobile communications sector about the costs of infrastructure rollout and diminishing returns. There was a general interest in opportunities to co-invest with State Government in infrastructure deployment.

Stakeholders identified opportunities for the State to:

- Provide technical standards and guidelines on street-level connectivity to ensure common approaches
- Explore new models for the deployment of fibre, conduit, connected street furniture and multi-function poles. A strategic approach could help achieve better amenity and community outcomes and address any potential market failures and inequities (see [related Insight 2](#)). This infrastructure could be viewed as a strategic asset, with funding and financing models to match
- Find ways to provide information on current and future demand, to inform connectivity investment decisions
- Establish procurement panels for smart technologies, available to both local and State Government agencies.



The Deloitte report showed that 70% of businesses said 5G has value, but only a third have a 5G or digital strategy ... Business readiness is rather low in terms of realising the benefits. It [5G] won't get off the ground at that rate and needs greater awareness and greater investment.



Engagement with regions needs to be honest about limited connectivity ... we need to address the elephant in the room. It is 3G at best in a lot of places. This is a real barrier encompassing smart places for better service delivery.



The real benefits of investment in this technology [Multi-Function Poles and sensors] will not come from isolated programs. How do we integrate it across all of Sydney and all of NSW so we have a ... Smart State?

Insight 5: The regions need focus

There is **low uptake of connected technologies and data solutions** outside of the ‘six cities’

Connectivity, capability and capacity constraints are **more acutely felt**

There are **big opportunities for sandboxing** in the regions

Regional stakeholders want to see **relatable exemplar projects**

The Australian Digital and Inclusion Index 2021 shows a deep divide between regional and metropolitan local government areas.

We spent time with stakeholders exploring the drivers of low adoption and areas where our involvement could make the most impact.

Participants in the listening roadshow relayed concerns that the Smart Places agenda was at risk of being too Sydney-centric. The needs of regional and coastal areas are varied, the funding and resourcing issues are different and the people in these areas want to have a distinct voice.

Participants noted that connected technologies exist and have existed, in some cases, for some time and there is a general desire and willingness to harness technologies and data.

However, a low level of awareness and understanding of the opportunities and use-cases is impacting appetite, ambition and investment. Regional councils and businesses noted that they weren't easily able to access learnings from metropolitan councils delivering solutions.

Regional stakeholders want case studies and exemplar projects to showcase what is possible. They noted that not all solutions that work for a city may work for a town. They desire relatable regional projects and initiatives to drive the ambition for connected technologies and turn conceptual benefits into reality.

Limitations related to capacity, connectivity and skills gaps were also identified (see [related Insight 7](#)).



Image 2 Aerial view of the Parkes Special Activation Precinct

Previous investments by State Government in Innovation Networks were noted to deliver mixed levels of success. While the investment is seen as a positive step, some of the networks had not

been sustained and there is a need to find models that are self-sufficient over time within the region of investment.

Most of the proposed initiatives to boost regional participation in smart cities initiatives were the same as those proposed across the board. However, there was consensus that dedicated energy and resourcing should be provided given the capacity constraints experienced outside metropolitan areas.

Given the size of regional councils and populations, stakeholders recognised the need to ‘team up’ to derive market power and maximum value from investments in data. This included:

- Procurement of solutions and data through Joint Organisations (or formal and informal alliances)
- Sharing of data between councils and between layers of government, making as much data as possible open source
- Providing a seamless customer experience, with one app or one interface for community members and visitors to get data and information.

Regions were also seen to present unique opportunities, including:

- Leveraging learnings from the agriculture sector, given the uptake and adoption of connected technologies and data has been so strong
- Using regional centres as sandboxes, given they are largely serviced by a single council.

One participant noted that it shouldn’t be the aim of regions to try and keep up with metropolitan areas; they need to be ambitious and aim to ‘leapfrog’ their city counterparts.

Innovation is critical to growing new economies and providing economic outcomes in the regions, reducing the reliance on mass migration.

To achieve this, dedicated focus on regional participation in smart places activities will be needed.



You can’t be what you can’t see; and can’t imagine what you don’t understand.

Insight 6: Reform is still required

Procurement needs to enable innovation and we need new models of partnership

Place-based deployment and cross-government/ cross tier cooperation requires **different funding and financing approaches**

Procurement policy and existing funding and financing models were raised during the listening roadshow as ongoing challenges to achieving smart places outcomes.

Key aspects of smart cities delivery that attribute to procurement and/or funding and financing complexity include:

- The need for partnerships – between and across levels of government, with the research and academic sector, and between the private and public sectors
 - This can often result in challenges related to the ownership of Intellectual Property, particularly when parties have all contributed to the solution design
 - Teaming up to procure solutions is not simple. There is a balance between prescribing an approach and allowing for flexibility to enable innovation and adaptation.
- Taking a place-based approach
 - Cross Government solutions require new funding models
 - Enabling infrastructure (physical and digital) still needs to be delivered, and still needs to be paid for
 - Traditional infrastructure delivery models (build, own, operate) are not fit for purpose for connectivity infrastructure at the street level. New approaches are needed.
- The innovation method of taking pilot to scale doesn't align neatly with the existing procurement rules.



Government needs to shift how we partner with, fund and deliver opportunities. We need to ... show how it works in other places. For example, there are very successful neutral host models overseas.



The private sector has so much influence. We need to re-invent procurement models and acknowledge and harness the marketplace dynamics.



... councils want to work closely with the State to facilitate innovative procurement. There are lots of rules around local government procurement.

Insight 7: We need to share to scale

We need **clear pathways** for adoption of successful solutions in new places

The state can **support opportunities for place leaders** to learn from each other

There is an **opportunity to pool resources**: improving buying power/ skills base/ data availability

Many participants discussed the valued role of the State Government in linking people and creating partnerships that transcend local boundaries.

More needs to be done to provide visibility of successful pilots, trials and pathways for uptake of successful solutions in other places. There was a desire for State Government to provide a point of access to this information, so that place leaders, precinct managers, councils and State Government agencies can benefit. Examples included:

- Better understanding of what 'good' use of technology solutions look like
- Reduce perceived risks of smart technologies
- Build understanding of and support for adoption internally
- Limit duplication of 'test and trial' processes and reduce total investment in piloting of known solutions
- Scale successful applications more easily
- Understand the evidence base, building a case for investment internally
- Have accurate cost estimates available
- Understand and avoid pitfalls experienced by others.

Data sharing is seen as particularly crucial to reduce duplication, create efficiencies and realise value. Stakeholders encouraged the NSW Government to:

- Identify key strategic data assets that have value to state outcomes
- Engage with councils and third parties to identify the shared value of the data
- Provide structures and guidance to ensure common and appropriate data management, housing and storage approaches are applied
- Explore investment in common middleware to assist in aggregation of data
- Consider setting KPIs (Key Performance Indicators) for data sharing in integrated planning and reporting frameworks
- Embed smart cities outcomes in community strategic plans and regional plans, mirroring the approach taken recently with asset management

Listening roadshow participants were excited to see opportunities for this information sharing and partnership making facilitated by the State.

Taking these steps would also enable data to be better combined and analysed at different scales.

In addition, to reduce re-investment in new data generation where data already exists, local councils expressed a desire for the state to identify and provide common access to State-owned data spatially.

Culture change is required to increase uptake of connected technologies and data solutions. To motivate councils to provide and share data, participants identified the potential for data mandates.

This was seen as necessary in organisations where collecting and using data is perceived as a 'nice to have', optional activity, not the core responsibility of local government. To overcome this, work is needed to demonstrate the value of the data to council operations and service delivery.

Additional ideas for sharing included:

- Encouraging and enabling joint-procurement activities
- Establishing procurement panels for infrastructure, installation and digital infrastructure (platforms)
- Establishing networking, sharing of ideas and learnings from projects
- Facilitating mobility of staff between councils and 'sister city' relationships.



Image 3 environmental sensor at Melrose Park



There is merit in a quarterly engagement forum ... solutions are out there for people and most are happy to share their information.



Partnerships are a big thing – we have valued the role you have played in matchmaking between councils and proponents for the Acceleration Program ... There is an opportunity for innovations from the private sector to be linked to problem owners too ...



Smaller councils may not know what is out there and we need to help regional councils link to city-based businesses and innovators.



Councils are quite often copying each other. If it is working on one project, others will follow. They just need to know what has worked well, so it can be scaled across other areas. ... You need to be disseminating the best of the best.



It is important to keep bringing together people on the common problems. The Communities of Practice at the National level achieved this a bit.

Insight 8: Horizon planning is critical

Big changes are needed, and we have long-term ambitions

Culture and skills changes are critical, and these take time

It is important we **make investments and take steps now** – these are the down payments on future success

All workshops and interviews highlighted the need to play the long game. There are big and substantial interventions needed to help harness technologies and data solutions for good outcomes (see [related Insight 2](#)), and it is an immense economic opportunity and transition.

It was noted that technologies are already capable of most things, but it is the people who need to make changes. The culture and skills-related changes are slower, but our stakeholders encouraged us not to delay investments in foundational and enabling activities such as skills and data infrastructure, as these are critical to achieving the smart places vision.



Local Government, even with best tools, can't step up right now. But we need to invest to allow for this shift in 5 to 10 years.



Developing requisite skills in coming period – that will be tough ...



It may take a decade but step out the discernible investment as down payments; as steps towards the outcome.

Insight 9: Investment focus should change

We need **dedicated investment** in capability uplift

The State should **explore direct capital investment** in digital connectivity enabling infrastructure

Existing investments should be extended and reprofiled

– with dedicated funds for innovation, acceleration and scale deployment

Roadshow participants noted there was a need to provide different tiers of funding for different approaches and segments of the market. The structure of investment and funding are crucial to successfully scale and mainstream the use of technology and data solutions.

The focus of investments to date have been on piloting technology solutions and building an evidence base. This has resulted in a proliferation of devices and point solutions. Stakeholders highlighted the need to shift focus to better support innovation and leading-edge ideas and taking successful solutions to scale.

The newly announced Smart City Innovation Challenges will help shift the dial, bringing focus to new market ideas. There was also strong support for the Smart Places Acceleration Program in delivering partnerships and place-based solutions.

Stakeholders identified the need for digital connectivity and connected technologies to be factored into infrastructure investments, place-making and enabling infrastructure, delivering on the promise of the Smart Infrastructure Policy.

Due consideration also needs to be given to investments to enable uptake and scaling of known solutions, including addressing skills and capability needs and providing the right connectivity layer, enabling platforms and infrastructure.



The future doesn't just have to be new technology and new projects – but new adoption.

Insight 10: Continue place-based exemplars to show them the way

We should pursue scale: multiple interventions in one place as well as and geographic reach for successful initiatives

Place-based interventions should **respond to the needs of people**

We need to **showcase best practice** with lighthouse, place-based programs

Listening roadshow participants encouraged the State to pursue opportunities for scale by supporting pathways for existing solutions to be applied to a wide area across multiple locations; and application of many solutions to a single location, based on the needs of its people.

The NSW Government's approach to date – focusing on the needs of people and places first – was strongly supported through the engagement. Stakeholders want solutions to be local, addressing the needs of people in communities. They want data with purpose. This included participants raising the need to use technologies to enhance connection to country and finding ways to incorporate and represent the perspectives of First Australians.

Examples included the need for localised environmental data, relevant to the climate risks of that area; and the need to provide data insights in tourism precincts to help drive economic outcomes.

By investing in place-based programs, the NSW Government will demonstrate the benefits and build momentum for private sector participation and aspiration in related communities. State precinct investment also allows best practice applications of guidelines, policies and standards to be demonstrated.



Image 4 Aerial view of an artist's impression of Bradfield, in the Western Parkland City



We still need an exemplar project, to show the rest of the state HOW to implement technologies at scale ... it is a chance to adjust and reflect as we go to get it right before state-wide rollout.



You need to pick the right place and use it as a lighthouse ... Government is conservative, a lighthouse precinct helps de-risk the thinking ... this would need additional investment ...



Your agenda has a more important role to play, it will make things less hobbyist. We still need prototypes to show what you mean. But be big in the intention and impact it can have.



Most people couldn't care less what you are doing with the data or the technology, they just want their trip on the bus to be easier and more comfortable, how it makes a difference to their lived experience.



The real problem we are trying to solve is that we still have tech for tech's sake. A lens of co-creation and deeply understanding the problems is needed.



The idea of standards bubbles around, but I haven't yet seen the best practice use of standards ... Actually operationalising them is quite hard.

Insight 11: Big opportunities still exist for technology and data solutions

We've only just started to scratch the surface: there are **more problems to solve**

As advancements are made, we need to **capture emerging investment opportunities**

Participants in the roadshow named areas for further investment in new technology and data solutions. These included:

- Building resilience – economic, environmental and community
- Addressing climate change impacts by providing better data through connected technologies on places and assets
- Building back better following natural disasters, with connectivity and technology solutions embedded into standard rebuilding practices
- Circular economy, with waste, water, and energy solutions to be considered collectively and data gaps addressed to generate new opportunities to reduce waste and increase circularity
- Enhanced service delivery with data insights provided to delivery agencies, greater data sharing across government verticals, better opportunities for community feedback and simple services and gateways (like further growth of Service NSW app)
- Digitising the infrastructure lifecycle and applying technologies to improve efficiencies, safety, and engagement with communities
- Addressing cost of living pressures.

References

Statista 2020, Australia: Urbanisation from 1960 to 2020, accessed online

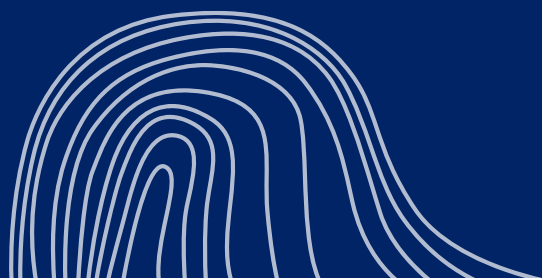
<https://www.statista.com/statistics/260498/degree-of-urbanization-in-australia/#:~:text=In%202020%2C%2086.24%20percent%20of%20Australia's%20population%20lived%20in%20cities>

Attachment A: Organisations involved in the Listening Roadshow

123tix
ACS
Adventure Digital
Albury City Council
Appticon
Armidale Regional Council
Australian Mobile Telecommunications Association
Australian Smart Communities Association
Bathurst Regional Council
Bayside Council
Beca
Bellingen Shire Council
Blacktown City Council
Blayney Shire Council
Brisbane City Council
Camden City Council
Campbelltown City Council
Charles Sturt University
Circular Australia
City Futures Research Centre, UNSW (University of New South Wales)
City of Canada Bay
City of Canterbury Bankstown
City of Cumberland
City of Parramatta
City of Parramatta
City of Ryde
City of Sydney
Collective Impact Arts
Committee for Sydney
Communications Alliance
Connectivity Innovation Network
Construct NSW
Cowra Shire Council
CSIRO (Commonwealth Scientific and Industrial Research Organisation)
Cumberland City Council
Department of Communities and Justice
Department of Customer Service
Department of Education
Department of Infrastructure, Transport, Regional Development and Communications
Department of Planning and Environment
Department of Planning and Environment
Department of Premier and Cabinet
Department of Primary Industries
Department of Regional NSW
Destination NSW
Dubbo Regional Council
Fairfield City Council
Fire & Rescue NSW
Forsight
Frost Collective
Georges River Council
Gilgandra Shire Council
Gravel Road Consulting
Greater Cities Commission
Greater Sydney Parklands
Grex Group
Grimshaw Architects
Hadron Group
Hay Shire Council
Health Infrastructure
Healthshare NSW
Hornsby Shire Council
Hoyne
Hunter and Central Coast Development Corporation
Hunter Joint Organisation
ID Planning
Illawarra Shoalhaven Joint Organisation
Infrastructure NSW
Inner West Council
Inspiring Australia NSW
Institute of Sustainable Futures, UTS (University of Technology Sydney)
Internet of Things Alliance Australia
Investment NSW
Jesuit Social Services
JOC Consulting
KPMG
Lake Macquarie City Council
Landcom
Liverpool City Council
Local Government NSW
Macquarie Group Ltd
Maitland City Council
MCB Business Partners
Mid Coast Council
Mid-West Foods
Murray River Council
Muswellbrook Shire Council
Narromine Shire Council
NBN Co
Neil Temperley
Newcastle City Council
North Sydney Council
Northern Beaches Council
NSW Health
NSW National Parks and Wildlife Service

NSW Office of the Chief Scientist and Engineer
NSW Police
NSW Rural Fire Service
NSW Smart Sensing Network (NSSN)
NSW Telco Authority
NSW Treasury
Office of Local Government
Orange City Council
PairTree Intelligence
Penrith City Council
PL Advisory
Place Leaders Asia Pacific
Placemaking NSW
Public Purpose Pty Ltd
Publicani
PWC
Queanbeyan-Palerang Regional Council
Randwick City Council
Regional Growth NSW Development Corporation
Resilience NSW
RMIT University
Schools Infrastructure
Smart Cities Council Australia and New Zealand
SmartBot Parking
State Emergency Service
Stockland

Suburban Land Agency - ACT Government
Suez
Sutherland Shire Council
Sydney Coastal Councils Group
Sydney Metro
Sydney Water
TAFE NSW
NSW Telco Authority
The Hills Shire Council
The Infrastructure Collaborative
Tidswell Engineering Pty Ltd
Transport for NSW
University of Newcastle
University of Sydney
Upstairs Start-up Hub
Urbanism.Live
UTS
Vertebrae
Waverley Council
Western Parkland City Authority
Western Parkland Councils
Western Sydney Planning Partnership
Western Sydney University
Willoughby City Council
Wingecarribee Shire Council
Wollondilly Shire Council
Wollongong City Council
Woollahra Municipal Council
Yirigaa



© Transport for New South Wales

Users are welcome to copy, reproduce and distribute the information contained in this report for non-commercial purposes only, provided acknowledgement is given to Transport for NSW as the source.