

## Post Exhibition - Smart City Strategic Framework

**File No:** X017671

### Summary

The City of Sydney is experiencing rapid change. Our population is growing, the needs of our community and environment are intensifying and technological advancements are disrupting our urban realm. Against this backdrop, we have developed a smart city strategic framework to harness the opportunities brought about by digital disruption, plan for uncertainty and sustain our global reputation as a leading place to live, work, learn and visit. The framework serves to both inform the development of Sustainable Sydney 2050 and stand alone as the City's adopted framework to guide the ongoing implementation of smart city initiatives.

This framework was developed in consultation with the community, the smart city ecosystem and City staff. A draft of the framework was exhibited to the public from 21 January to 17 February 2020. The framework was downloaded 231 times and 30 submissions were received predominantly from key stakeholders in the smart city ecosystem which were overwhelmingly supportive of the framework's outcomes and approach.

In summary, feedback and commentary was received across the following issues: innovation, data (particularly in relation to privacy, ethics and security), digital rights and trust, collaboration and co-creation, economic development, evaluation and review, and standards. Specific items of feedback have been incorporated into the final framework, with the following additions and references now included in the document:

- The City's commitment to the declaration of Cities Coalition for Digital Rights;
- The NSW Government Privacy Framework which includes conducting privacy impact assessments and statements in relation to smart city projects;
- Public interest as a key factor in the development of new technologies with respect to ethical innovation;
- Specific mention of the framework's guiding principle of secure and ethical by design into the City's planning process for new projects and when partnering with others;
- The inclusion of "data" alongside "technology" throughout the document to clarify the equally important role both components play in building a smart city;
- Data is collected purposefully rather than randomly;
- A carbon positive outcome and smart water management as illustrations of how technology and data can help future-proof the environment; and
- The importance of managing the impact of smart infrastructure such as 5G on the public domain

A small number of minor editorial changes have also been made to the framework document.

Full details of the feedback received and the City's responses to each are included in the Consultation Report at Attachment A.

This framework will help galvanise collaboration across all actors in the City's smart city ecosystem and articulate the City's role in driving the smart transformation of Greater Sydney.

The framework puts people at the centre. Rather than prescribing technological solutions, it promotes an outcomes-focussed approach in which technology is woven into the fabric of everyday life to respond to real needs and flexibly adapt as technology and community expectations change. For this reason, it has not been prepared as a project specific action plan.

This smart city strategic framework provides us with clarity on our vision for a smart Sydney, the outcomes we seek in harnessing technology and data, and what infrastructure and enabling environment is needed to make them a reality.

The City has identified the following five strategic outcomes:

1. supporting connected, empowered communities;
2. fuelling global economic competitiveness and attracting and retaining global talent;
3. future proofing our environment and bolstering resilience;
4. cultivating vibrant, liveable places; and
5. providing customer-centre, efficient service delivery.

The framework aligns with ISO 37106:2018, the internationally recognised standard for creating a smart city framework. Consequently, the City has embedded interoperability as an integral part of our smart city transformation, positioning us to be able to share data, platforms and solutions with other cities, the private sector, academia and our communities.

In order for the framework to not become out of date very quickly, it has not been developed as an action plan in and of itself. The framework points to opportunities to illustrate the kind of projects that could be considered for each of the strategic outcomes. City staff have developed an accompanying Implementation Roadmap which is an internal document to guide the rollout of smart city initiatives. This roadmap has also been developed to align with the standard.

## **Recommendation**

It is resolved that:

- (A) Council adopt the Smart City Strategic Framework, as amended following public consultation and shown at Attachment B to the subject report; and
- (B) authority be delegated to the Chief Executive Officer to undertake minor editorial amendments to prepare the Smart City Strategic Framework document for publication.

## **Attachments**

**Attachment A.** Engagement Report - Smart City Strategic Framework.

**Attachment B.** Smart City Strategic Framework

## Background

1. The City has a vision for Sydney to be a dynamic, responsive city, harnessing technology and data to enable collaborative innovation and create a thriving, inclusive and resilient future for all.
2. The draft smart city strategic framework is structured around five strategic outcomes. While each outcome focuses on a specific domain, the success of the city's smart transformation is dependent on a holistic approach, whereby the five outcomes seamlessly integrate and support each other.

(a) Strategic Outcome 1: A city supporting connected, empowered communities.

The primary objective of this outcome is to equip communities with the skills and tools required to participate and flourish in the digital future, ensuring that no one is left behind. There are three priority areas that will guide the City's approach:

- (i) a digital-ready community for a digitally-inclusive future;
- (ii) community co-creation in the design and delivery of the city; and
- (iii) open data informing better community decision-making to improve quality of life.

(b) Strategic Outcome 2: A city fuelling global economic competitiveness and attraction and retaining global talent.

The primary objective of this outcome is to embrace digital disruption to foster an innovation ecosystem and sustain Sydney's position as a global magnet for talent. There are three priority areas that will guide the City's approach:

- (i) a thriving innovation ecosystem cultivating a culture of experimentation;
- (ii) a knowledge economy and workforce equipped with the skills and supporting structures to leverage new technologies, accelerating productivity and scalability; and
- (iii) a world-class destination with a superior visitor experience and vibrant night-time economy.

(c) Strategic Outcome 3: A city future-proofing its environment and bolstering resilience.

The primary objective of this outcome is to accelerate the journey towards a sustainable city, able to adapt and thrive in the face of expected and unexpected challenges. There are three priority areas that will guide the City's approach:

- (i) data-driven monitoring, prediction and management of city conditions and impacts of shocks and stresses;
- (ii) new technologies propelling a greener city and a carbon-neutral future, powered by the circular economy and affordable renewable energy; and
- (iii) informed and prepared communities actively participating to strengthen the local area's sustainability and resilience.

- (d) Strategic Outcome 4: A city cultivating vibrant, liveable places.

The primary objective of this outcome is to integrate the digital and physical landscapes to create diverse, safe, inclusive and creative places for people. There are three priority areas that will guide the City's approach:

- (i) an integrated mobility network supporting active transport;
- (ii) visibility across the urban realm to optimise planning, building and maintenance of infrastructure, assets and systems; and
- (iii) seamless integration of the physical and digital to strengthen the community's connection to place and to each other, celebrating the unique identity, culture and history of the local area.

- (e) Strategic Outcome 5: A city providing customer centric, efficient services.

The primary objective of this outcome is to operate as a connected organisation to optimise the customer experience and maximise efficiencies. There are three priority areas that will guide the City's approach:

- (i) integrated understanding of community needs and preferences across the City of Sydney to inform joined-up design and delivery of services;
- (ii) multi-channel interactions between the City of Sydney and its communities to deliver responsive, inclusive, personalised services and experiences; and
- (iii) a smart city operating model to capture maximal efficiencies

3. Achieving these outcomes will rely on a complete and integrated suite of smart infrastructure components, not all of which will be delivered, owned or operated by the City. This suite comprises:

- (a) user interfaces and delivery channels;
- (b) data integration and analytics platforms;
- (c) communications and connectivity networks;
- (d) sensors and devices; and
- (e) the physical landscape and infrastructure.

4. As the smart infrastructure is complex and involves many actors, there is a particular enabling environment that is critical to successful delivery. The components of this environment are:

- (a) leadership and governance;
- (b) funding and financing;
- (c) organisational culture;
- (d) monitoring and measurement;

- (e) partnerships;
- (f) standards and interoperability; and
- (g) ethical innovation.

## Key Implications

### Strategic Alignment - Sustainable Sydney 2030 Vision

5. Sustainable Sydney 2030 is a vision for the sustainable development of the City to 2030 and beyond. It includes 10 strategic directions to guide the future of the City, as well as 10 targets against which to measure progress. This framework is aligned with all strategic directions of Sustainable Sydney 2030 as it provides guidance to the organisation in the utilisation of technology and data in the delivery of the Sustainable Sydney 2030 strategic directions and objectives.
6. In addition to Sustainable Sydney, the draft smart city strategic framework has particular strategic alignment with the City's adopted digital strategy, Tech Startups Action Plan and the Resilient Sydney strategy.

### Organisational Impact

7. It is important to note that we are not starting from scratch - the City has already implemented or is in the process of implementing many smart city initiatives such as the open data portal, green concrete trial with University of NSW, smart fleet telematics, smart building management, the resilience data portal, smart pedestrian counting sensors, smart lighting, digital citizenship classes, commencement of the development of a digital twin of the city, public wi-fi and smart stormwater management. This framework provides a strategic context for those initiatives. The framework is cross-cutting in nature and will be embedded in the work and projects of the City of Sydney. It is not a new strategic pillar, nor an action plan in and of itself. Smart city activity arising from this strategy will be incorporated into project plans.
8. Smart city leadership within the organisation is key to effecting successful project implementation. The commitment to the smart city agenda and the commitment to flexibility in allocation of resources needs to be embedded at an executive and Council level.
9. The framework proposes a distributed governance model that ensures the broad sharing of accountabilities both across the whole of the City of Sydney, as well as the local area. Clear roles and responsibilities of all ecosystem actors need to be established at two levels:
  - (a) the strategic governance level which focuses on agenda-setting and outcomes definition; and
  - (b) the delivery governance level which focuses on implementation that involves the intended beneficiaries via user testing to ensure outcomes are actually realised.

## Risks

10. Projects involving new technologies or new ways of working using technology can be expensive to implement and not always work as expected. In addition, skill shortages and/or not engaging the right skills in the delivery of projects presents a risk to the successful delivery of the outcomes of this framework. These risks can be mitigated by adopting a “test, learn, fail fast and iterate” approach to developing new concepts and methods. This allows the City to experiment and innovate with minimal financial and organisational risk.

## Social / Cultural / Community

11. This framework has a strong theme of inclusion. The future success of the city depends on our residential and business communities being digitally active. We need to develop programs that encourage skilled, digitally literate, resilient communities capable of accessing and enjoying the benefits of digital technology.
12. Supporting communities to successfully transition to a smart future requires orienting educational programs to equip citizens with the skills to leverage digital infrastructure and unlock opportunities. The traditional model of education, in which learning is front-loaded in early life, is not fit to help citizens keep pace with technological advancement. By providing opportunities for lifelong learning and upskilling, the City has a significant opportunity to bridge the digital divide and design a future urban realm that enables the participation and flourishing of all.
13. By leveraging digital technologies and platforms alongside other innovative engagement approaches, the City can enlist citizens as partners in building the city of the future. With an embedded practice of genuine community engagement, the City is championing a co-creation approach to smart transformation. The City recognises the significant value that can be realised by using digital civic engagement tools to tap into the knowledge, experience and innovation of its communities to co-create meaningful solutions that address real needs.
14. By opening up the data streams the City collects, the human experience of the city can be greatly enhanced. Open data empowers communities to make more effective decisions, improve their own quality of life and chart a better future. In this way, cities are creating a 'digital urban commons', whereby communities have the tools and space to innovate and thrive. This requires a strong commitment to and focus on privacy, ethical use of data and cyber-security.
15. New technologies hold the potential for the city to preserve, strengthen and celebrate its rich cultural diversity. This is fundamental to the concept of 'digital place-making' whereby digital platforms provide opportunities for supporting the community to develop meaningful connections to place and to each other.
16. By leveraging new technologies, we can provide greater opportunities for local artistic and cultural expression, and activate a network of vibrant public places. While technology is often perceived to be a homogenising force, we have the opportunity to use it for the opposite effect and tell our city's unique story.
17. Seamlessly embedding smart technology into the physical landscape is important to prevent it from adding further clutter to the public domain, which would undermine its amenity and appeal as a place for communities to meet and explore.

### Environmental

18. New technologies have the capability to provide real-time data on a diversity of urban health indicators, including carbon emissions, water and air quality, infrastructure functionality, crime incident locations and social cohesion. While risk maps are not new, the vast increase in the availability and quality of data presents the opportunity for us to understand environmental conditions with a far greater degree of granularity.
19. Technological advancements can support us to accelerate the transition to affordable, renewable energy and a carbon-neutral future. Data and digital technology can help to manage flows of materials and assets across the city, fostering an urban system that is regenerative and restorative.
20. Smart approaches to precinct and building construction, mobility/transport options (hydrogen and electric vehicles) and community involvement in clean energy initiatives (microgrids), are just some of the potential directions that need to be considered for a carbon-neutral future.

### Economic

21. Rapid globalisation, coupled with the speed of technological change, is forcing cities to shift away from traditional economic models and embrace the 'innovation economy'. This shift has spurred the agglomeration of knowledge-intensive industries, organisations and talent in cities across the globe, giving rise to 'innovation districts'. Against this backdrop, smart city transformation has the potential to increase GDP per capita by 21 per cent, but this value can only be reaped if cities foster a strong innovation ecosystem.
22. The City of Sydney local government area is an engine of economic growth and competitiveness, representing over 30 per cent of the Greater Sydney economy and over 22 per cent of the GDP for NSW. The city is home to some of Australia's leading academic institutions, global technology and knowledge-based companies, over 27 per cent of the country's tech startups and a highly diverse community. This ecosystem represents a fertile landscape for the establishment of innovation districts. The concentration of diverse knowledge, skills and experience within an innovation district such as the Camperdown-Ultimo Innovation Precinct is a powerful force for the co-creation of new solutions and the commercialisation of ideas. This creates a virtuous cycle of economic growth as our city strengthens its global reputation and competitiveness, supports the global expansion of local companies and intensifies its magnetic pull on global talent

### Budget Implications

23. Any projects arising from the implementation of this strategy will be incorporated into existing and upcoming project plans, grant applications and budgets.

### Relevant Legislation

24. The Local Government Act 1993 and Privacy and Personal Information Protection Act 1998 are relevant to this draft smart city strategic framework in relation to governance, procurement and data management.



## Public Consultation

25. Consultation with the community in the development of the draft framework was conducted via the Sydney 2050 online survey which incorporated the use of technology and data into the questions relating to the future of Sydney. Members of the smart city ecosystem were invited to participate in a stakeholder workshop designed to capture their priorities for this smart city framework, as well as the role they see for themselves in collaborating on its implementation.
26. Once endorsed for public exhibition, the draft framework was exhibited on the City's Sydney Your Say webpages on the City's website and promoted via social media and newsletter.
27. Building on the engagement conducted during the development of the framework, the draft framework was distributed directly to the following groups inviting comment:
  - (a) University of Sydney, University of Technology Sydney and University of New South Wales
  - (b) Smart city industry peak bodies and alliances
  - (c) Smart city technology and telecommunications companies
  - (d) Smart city expert consultancies
  - (e) Smart city representatives from other local government agencies and the NSW government
28. Respondents were invited to provide their input via an online survey and/or a written submission. 30 submissions were received including from eight residents, 14 city workers, six business owners (some respondents are both resident, worker and/or business owner) and the following 15 organisations:
  - (a) Information and privacy Commission NW
  - (b) Matirar Pty Ltd
  - (c) Future Cities
  - (d) Office of the Australian Information Commissioner
  - (e) Mooroolbark International
  - (f) CGI Technology and Solutions Australia Pty Ltd
  - (g) Smart Cities Council
  - (h) Onewifi
  - (i) Potts Point and Kings Cross Heritage and Residents' Society
  - (j) Reekoh
  - (k) NSW Department of Customer Service
  - (l) Meshed Pty Ltd

- (m) Astrolabe Group
  - (n) Contino
  - (o) Sydney Business Chamber
29. Feedback and commentary was received across the following issues: innovation, data (particularly in relation to privacy, ethics and security), digital rights and trust, collaboration and co-creation, economic development, evaluation and review, and standards. Specific items of feedback have been incorporated into the final framework, with the following additions and references now included in the document:
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  - Data is collected purposefully rather than randomly;
  - A carbon positive outcome and smart water management as illustrations of how technology and data can help future-proof the environment; and
  - The importance of managing the impact of smart infrastructure such as 5G on the public domain
30. A small number of minor editorial changes have also been made to the framework document.
31. Results of the survey and a summary of the subjects raised in the submissions and details of the City's response are available in the Consultation Report at Attachment A.

**KIM WOODBURY**

Chief Operating Officer

Kate Deacon, Executive Manager - Strategy and Communications