PART D: Challenge Brief Active Transport Data and Technology

Smart City Innovation Challenge / SR3903530198

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Background

The Smart City Innovation Challenges are looking for leading edge technology and data solutions for place-based problems that matter to the people of NSW. Through the challenges, the NSW Government is setting new pathways to work with the emerging technology sector to drive solutions for places and people.

What are we looking for?

We are **seeking innovative data and technology solutions** to help us better understand how people move across NSW, and to support more people to walk and cycle in NSW.

In addressing the challenge statement, consider these questions:
- What emerging and digital technologies can be used or leveraged?
- What information and insights can these technologies provide?

> **Tip:** Challenge Participants must nominate one of the four **challenge streams**, assess solution users and confirm solutions meet requirements before submission.

Challenge Statement

How might we use **data and technology** to **better understand** active transport in NSW and make **evidence-based decisions** to support adoption and mode shift?

Overview of the problem

The NSW Government wants walking and bike riding – collectively known as "active transport" – to be the preferred way to make short trips, and to be a viable, safe, and efficient option for longer trips. Active transport benefits our communities, with cleaner local environments, healthier lifestyles, and travel cost savings.

An integrated transport system supports people to start, link and connect public transport journeys with active transport choices. In NSW, more than 1.5 billion active transport trips are made a year, with 600 million additional trips connected to public transport.

Active transport patterns are unequal across the state: in Sydney's inner city, 69 per cent of all trips are public or active transport journeys, but this falls to 14 per cent of trips in Penrith in Sydney's west. Outside our cities, only 29 per cent of cyclists ride for transport, with only 1 per cent of trips to work made on a bicycle.

The NSW Government's Future Transport Strategy sets the vision for safe, healthy, sustainable, accessible and integrated journeys in NSW. The Active Transport Strategy builds on this, providing a blueprint to enable walking, bike riding and personal mobility. Facilitating walkable and liveable 15-minute neighbourhoods to enable safer streets and precincts is key.

Streams

All solutions must respond to the Challenge Statement and consider **one** of the below streams.

Walkability *How can data and technology support walkable 15-minute neighbourhoods?*	Can data and technology reveal the land use and transport factors influencing where people walk in different neighbourhoods across NSW? Could a tool be developed to map these factors and test changes to enable more walking? This type of tool could support evidence-based conversations between state and local government, stakeholders, and communities about how to get more people walking and enable 15-minute neighbourhoods.
Community attitudes *How can data and technology improve our understanding of attitudes towards active transport projects across NSW?*	Governments need to understand community attitudes towards current initiatives to ensure that they are fit-for-purpose and create minimal disruption. This can be achieved by working collaboratively with the community to co-design infrastructure to ensure that it serves community needs and captures a broader (community wide) set of data on trends, opinions and needs beyond those directly interested and impacted.
End of trip facilities *How can data and technology be used to capture information on bicycle parking and other end-of-trip facilities?*	The availability of bicycle parking and end-of-trip facilities (showers, change facilities and lockers) can influence whether people decide to ride their bicycle for a given trip. Up-to-date, comprehensive information and innovative collaboration platforms mapping the location, type, and functionality of parking and other end-of-trip facilities could deliver real value for businesses and individuals, informing travel choices and supporting Local and State Government planning for future investments.
Travel patterns *How can data and technology improve our understanding of active transport travel patterns across NSW?*	Governments need to understand current travel patterns to support transport planning. This challenge seeks to use data and technology to better understand how people move across NSW, map the impact of interventions, and plan for how we can better understand and support active transport to become a fundamental part of how people live, work and play across the state. An important component of this challenge is to understand travel patterns to and from school, a key focus of the Active Transport Strategy.

Image: Bike riding to and from school.
Credit: State of New South Wales (Transport for NSW).

Benefits of the solution

Enabling collaboration for 15-minute neighbourhoods: The 15-minute neighbourhood concept aims at prioritising place-making, walking, cycling, micromobility and last mile freight to support local communities and healthy lifestyles. Cross-government and community collaboration is needed to achieve effective land zoning, urban design and transport outcomes.

Demonstrating the value of active transport: The evidence base for active transport interventions is limited. We need to quantify and demonstrate these impacts to support better planning, investment and integration into existing networks.

Engaging the community: Crowd-sourcing and community engagement is critical to support active transport uptake and build evidence-based decisions. Government and communities need to co-design initiatives from inception through to implementation, including engaging with active transport user groups and potential users. A solution that seeks community input should consider all potential users.

Focusing on inclusion and accessibility: Active transport adoption varies greatly across NSW and Australia, with gender, socioeconomic status, and location impacting rates of walking and cycling. Evidence on usage patterns and potential solutions to drive uptake should focus on a range of road users to support maximum impact in NSW.

User	Goal	Pain points
NSW Government	I want to increase active transport uptake, understand barriers and gaps, and plan for a better network.	• Insufficient evidence on network gaps and hotspots to plan and fund infrastructure. • Lack of active transport integration into road and rail network. • Better understanding of community sentiment around active transport.
Communities	I want to contribute to how my community is planned and be aware of changes.	• Expressing concerns, feedback and understanding the outcomes. • Having the opportunity to comment on things, like how fast cars go in my street.
Active transport and road users	I want a safe, efficient active transport network, integrated with other modes and viewable for real-time journey mapping and way-finding.	• Disjointed transport links. • Safety concerns due to speed, space, congestion and road practices. • Difficulty visualising and planning routes (forecast and real-time disruptions) due to poor data layers. • Safety concerns for particular user groups (such as women, girls and children).
Businesses	I want to play my part to support active transport for my employees and customers.	• Road congestion can cost businesses time in the day stuck in traffic, trying to find parking, using more fuel and paying for tolls. • Tapping into activation as a result of active transport uptake.
Local councils	I want to understand where infrastructure investment needs to be made to meet the needs of my community.	• Understanding community resistance to bike paths and impacts on congestion. • Lack of easy to use, data based tools, that identify the ways to make specific places more walkable and rideable. • Different resources and capabilities across local government limit ways to enable more active transport.

Solution requirements

Solutions must be applied to communities in NSW and be capable of scaling to a wide geography. During the feasibility and proof-of-concept stages, participants will be asked to consider if their proposal can be applied or adapted to different locations across NSW. Solutions will be prioritised that are applicable to multiple sites, address the goals and pain points of potential users and align with broader NSW Government objectives.

Solutions must address data and technology risks and opportunities including interoperability with existing platforms, data privacy risks and usability.

The NSW Government is seeking solutions built on the following **core principles**:
- Leverages emergent technologies such as Artificial Intelligence and Machine Learning
- Utilises smart, connected technologies such as IoT devices and smart cameras
- Transparent decision-making that engages communities and visualises information
- A focus on the customer experience.

Relevant Strategies and Government Priorities

Participants should review the documents below and assess their solution for suitability before submitting a response:

- Smart Places Acceleration Program Guidelines

- Digital Restart Fund Guidelines

- NSW Government Open Data Policy

- NSW Government Internet of Things (IoT) Policy Guidance

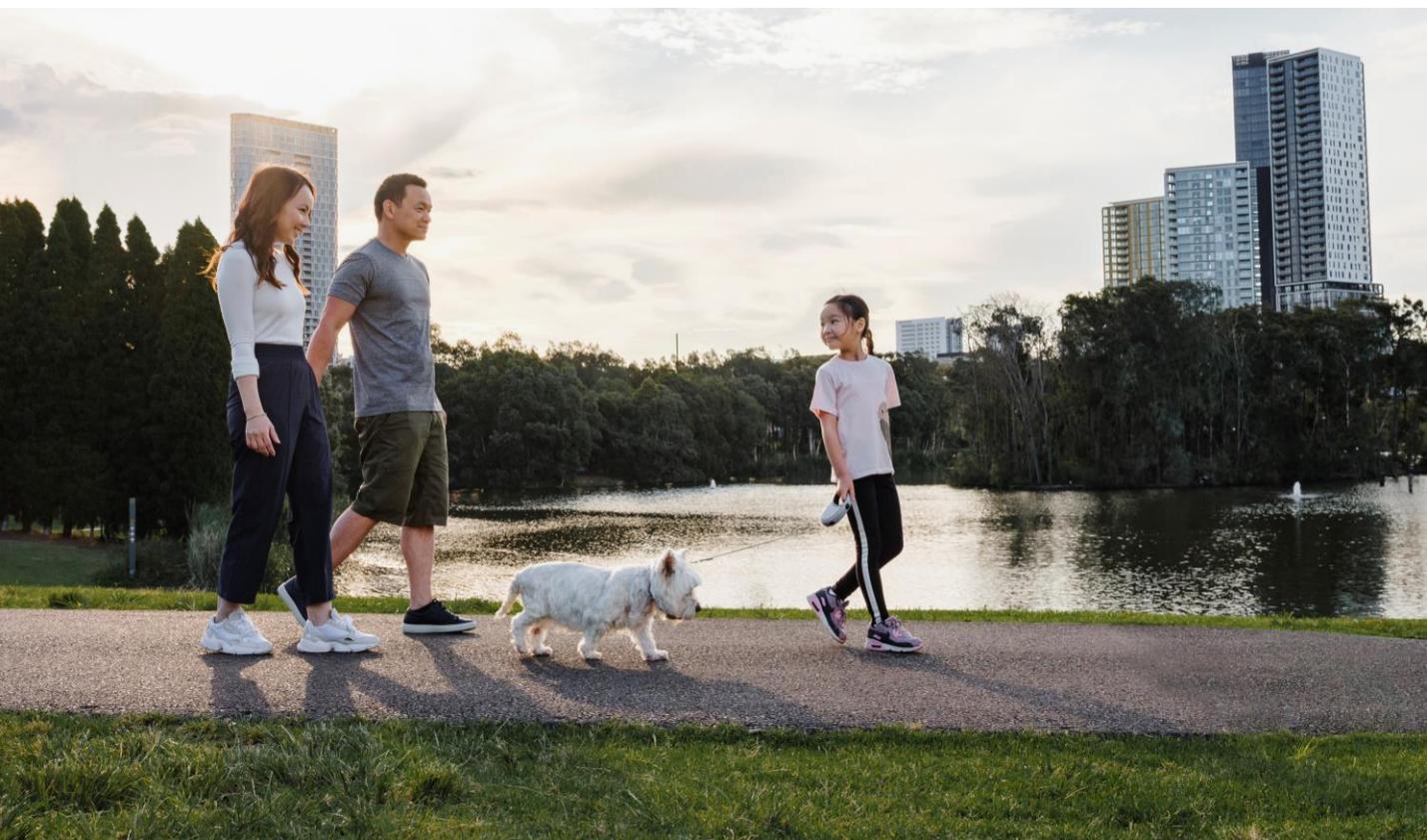- NSW Government Smart Infrastructure Policy

Image: Family walking with a dog.
Credit: State of New South Wales (Sydney Olympic Park Authority).