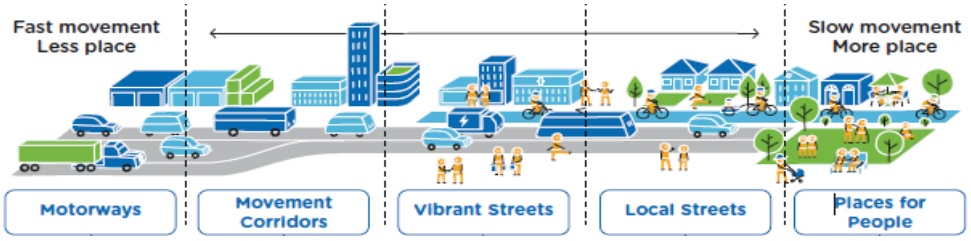
Problem Statement

Achieving balance between 'movement' and 'place' in designing vibrant streets

AP 18-03

Problem Description

Question	Response
Description of the problem and purpose of the proposed research	The Movement and Place Framework, which underpins the Future Transport Strategy 2056, provides an integrated land use and transport planning approach that aims to balance competing needs. Historically, road planning has been reduced to simple measures that do not reflect all road users and their needs. This framework better recognises the complex nature of road environments and provides a way to measure and prioritise the needs of all road customers and plan according to these needs. In particular, the 'Movement and Place Framework' aims to balance the needs of: • Safe and efficient movement of people and goods along key movement corridors. • Enabling vibrant and successful places for local communities and the State's economy. • Safe road environments with high amenity that improves the liveability of our cities. The importance of moving people and goods and the level of activity along a section of road can be mapped and provide guidance on the relevant priorities (Figure 1). This broad categorisation helps to frame the desired outcomes for different types of road environments with a focus on customer needs.  Figure 1: Movement and place framework: Future Transport Strategy 2056. This research is focused on 'vibrant streets'. As Figure 1 shows, vibrant streets have a high demand for vehicle 'movement' while still seeking to have 'place' elements. The ability to balance these competing demands is both difficult and important. There are many factors that determine whether a 'vibrant street' is successful in meeting both these movement and place-making elements. This research is intended to be the first in a series that will 'test' a number of possible variables that influence people's perceptions of amenity in areas where there is a high demand for vehicle movement, but where place-making elements are also seeking to be achieved. It is proposed that a pedestrian's perception of amenity is a key element in achieving this balance. Transport for NSW (TfNSW) is therefore seeking greater insights into the factors that improve this perception, as part of building up a body of knowledge in this area. For current purposes, TfNSW would like to test a working hypothesis that a factor that impacts on perceptions of amenity is the proximity of large vehicles to areas where pedestrian and recreational/leisure activities may be occurring (e.g walking, dining etc).

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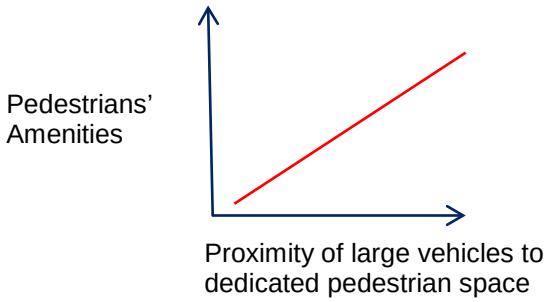
Hypothesis & Variables

Question	Response
For explanatory research, please describe a clear hypothesis with variables for testing **For exploratory research,** please describe how the proposed research will contribute to future explanatory research	The purpose of the proposed research project is to test a hypothesis that one of the factors that inhibits the creation of vibrant streets may be the proximity of large vehicles to the areas where people/pedestrians walk, eat or undertake other recreational activities.  Knowing if there are distances where the impact of large vehicles on amenities may drop off may help inform traffic and street design strategies, such as placing heavy vehicles in inner lanes, rather than outer lanes.

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Strategic Criteria & Alignment

Question	Response
Alignment with strategic theme	This problem statement is aligned with the 'Successful Places' research theme. This theme reflects that transport plays a crucial role in shaping and activating places and precincts. Research will provide an evidence base to help balance transport requirements with high quality urban design. In turn, this will support community health, safety and wellbeing, and will enhance local assets and character.
External driver of change analysis **Outline how the research will better position TfNSW to respond proactively to macro drivers of change**	We use PESTLE analysis to identify and describe the external drivers of change that this research would help TfNSW be in a better position to respond to. **Political** The delivery of many transport projects is a key function of the NSW government. 'Delivering Infrastructure' is one of the Premier's Priorities in NSW. These projects reflect the political and public value expectations of TfNSW's decision of making NSW a better place to live, visit and do business, and are central to supporting the public value proposition for the NSW Government. **Economic** As populations increase, there is an increased demand on all government infrastructures. Getting the balance right between movement and place elements in vibrant street design could lead to greater economic activity in local communities. **Social** Having a greater understanding of what makes people feel safe in their communities provides transport planners with an opportunity to deliver infrastructure with multiple social benefits (e.g. more engagement with active transport, better health outcomes and better wellbeing outcomes). **Technological** New technologies and innovations are constantly emerging which lead to improvements in the experiences NSW residents have as they interact with the transport network and associated infrastructure. Improving the way we use technology and innovations in infrastructure design will lead to greater benefits for the citizens of NSW in general.
Forward looking	As outlined in Future Transport Strategy 2056, TfNSW's future challenge is to better understand the complex nature of road environments, and how to achieve vibrant streets.
Potential research impact	The potential of identifying consistent 'optimum ratio' between place and movement elements may have application in multiple environments and jurisdictions. The research may therefore have a substantial impact on current approaches.

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Technical Criteria

Question	Response
Innovation **Outline how the proposed research will result in new knowledge**	The research may result in significant new knowledge on how to balance competing needs while creating vibrant streets.
Basis in completed research and/or observed practice	Jurisdictions around the world are investigating how to achieve more vibrant streets. There is a growing body of literature available on this (both locally and globally). However, specific research exploring the proximity of large vehicles to the areas where people/pedestrians walk appears to be a less identified area of current research. Some loosely related research includes: • Chatterjee, A., Varma, A., Fischer, A., Swenson, J. (2008) *Curbside Delivery of Freight by Trucks in Downtowns Of Small-and Medium-Sized Urban Areas*. Institute of Transportation Engineers. ITE Journal, Washington Vol. 78, Issue 1, 37-42. • Ehrenfeucht, R, (2017) *Do Food Trucks and Pedestrians Conflict on Urban Streets?* Journal of Urban Design, Vol.22, Issue 2.
Feasible data requirements	• Locational data regarding place and movement elements listed above. • Survey data from pedestrians.

Level of Collaboration & Resource Requirements

Question	Response
Level of collaboration **Please select the level of collaboration required to complete the proposed research**	**1. 'Quick-Fire' Research** ☐ Intense bursts of research activity (e.g. under 8 weeks). Intended to make use of 'hackathon'-type environments, where students/researchers work collaboratively and intensely on particular problems involving data interrogation and visualisation.
	2. Undergraduate Final-Year Research ☒ Suitable for final-year undergraduate students (e.g. capstone, Honours) as part of the research requirements for their undergraduate degree (i.e. 1 to 2 semesters).
	3. Higher Degree Research ☒ Project may form whole or part of a postgraduate research degree (i.e. Masters, PhD), and contribute to new knowledge (i.e. 1 to 3 years).
	4. Major Collaborations and Funded Research ☐ Project may form the basis for a significant collaboration agreement between TfNSW and the relevant research institution, including major competitive grant funding (e.g. Australian Research Council funding with TfNSW as an industry partner).
Comments	One-year research project suitable for final year or Honours thesis. This project could form all or part of a PhD or Master of Research.
Supporting TfNSW resources	TfNSW will facilitate access to subject matter experts and project support (up to 4 hours per week). TfNSW will also endeavour to help attain required data.

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