

The Six CAV Priority Areas

June 2022



Priority 1: Test and deploy CAVs on the road network

Testing and deploying CAVs on the road network through trials and pilot projects will help engage customers, build a local ecosystem, support infrastructure and lead to an improved understanding of the technical requirements, capabilities and performance of different CAV technologies, including C-ITS. This can be done through CAV buses and rideshare vehicles in regional and urban areas, as well as supporting the rollout of ADAS systems, particularly in regional areas to improve safety.



Priority 2: Shape CAV Policy and customer outcomes

The customer value that CAVs can deliver is a key element in shaping how CAVs will operate in NSW. Through this priority area we will shape the customer value proposition for CAVs in NSW as well as the policy and regulatory frameworks required for successful deployment of CAVs within the NSW transport system. Initiatives within this priority area include the customer value proposition, policies to deliver customer outcomes, modelling and stimulating CAVs on the NSW network, understanding and supporting community needs, and integrating CAV data streams. These initiatives will align with and support the national regulatory framework for AVs.



Priority 3: Get the road network ready for CAVs

This priority area aims to have a network of 'CAV Ready' roads. It is expected for roads to be deemed 'CAV Ready' they will have been extensively tested and assessed for Level 3 or 4 autonomous driving, this may include C-ITS enabled infrastructure and available 5G connectivity. The development of a 'CAV Readiness Framework' would be an initial step to delivering this initiative.



Priority 4: Develop physical and digital CAV testing capabilities

The development of a CAV proving ground at Cudal, in conjunction with a virtual CAV testbed, could allow for the comprehensive development and testing of CAV technologies in NSW. These initiatives could be supported by a NSW CAV challenge to spur the industry and academia to focus on the development of CAV software and hardware platforms and to attract expertise and knowledge sharing.



Priority 5: Support freight and services automation

Supporting automation in freight, including long-distance, point-to-hub and first/last mile, stands out as a key area in which TfNSW can provide its support to early adopters. This would enable increased productivity and maximised economic benefits from CAVs. Automation can also be explored in the delivery of government services.



Priority 6: Increase local CAV knowledge and skills

Developing knowledge and skills relating to CAVs across various groups is critical to building a strong CAV ecosystem in NSW. For industry and technical professions, it could include training and upskilling courses, for Government it could include CAV research to ensure that NSW remains at the cutting edge and retains its status as a thought leader.

Delivering on these six priorities will ensure that TfNSW is working towards NSW becoming CAV Ready and being a world-leading adopter of CAVs.

CAV Readiness program timings

Priority	Now		Next		2027+
	Foundational	CAV accelerator	Early pipeline	Future	
Priority 1: Test and deploy CAVs on the road network	Community engagement and participation	On-Road CAV public bus trials CAV rideshare pilot	Regional – Advanced Driver Assistance trial Cooperative intelligent transport systems		
Priority 2: Shape CAV policy and customer outcomes	Shape the Customer Value Proposition for CAVs in NSW Policy enablement to bring the CVP to life Simulating and Modelling CAVs		CAV data streams and exchange		
Priority 3: Get the road network ready for CAVs	CAV concept of operations and network integration HD mapping and digital twins Digital signage and assets database	“CAV Ready” road network	Future mobility road and street design guidelines	Asset management and predictive road safety	
Priority 4: Develop physical and digital CAV testing capabilities		Future Mobility Testing and Research Centre NSW CAV challenge Virtual CAV test bed			
Priority 5: Support freight and services automation increasing			Automated heavy vehicle and freight trials	Freight and Servicing – automated first and last mile	
Priority 6: Local CAV knowledge and skills	CAV Research and thought leadership		CAV education, skills development and jobs		

CAV readiness initiatives

The six priority areas are supported by 22 CAV readiness initiatives which have been prepared to guide industry and research partners on key activities which TfNSW will seek to partner on and enable. Summary level details on the initiatives are shown on subsequent pages.

CAV Customer Value Proposition

Customers must be at the centre of any technology vision and solution development. This initiative will understand how CAVs can unlock key outcomes for customers and enable world class customer experience as part of an integrated transport network. NSW has many diverse use cases and mobility requirements across our cities, regions and remote areas. A focus of this work will help shape the design of technology solutions so that they consider the customer value proposition and how new services will benefit the end user through effective customer experience and service design. [Learn more](#)

Community engagement and participation

Community Engagement and Participation involves ensuring that the public is aware of new technologies such as Advanced Driver Assistance Systems (ADAS) and is prepared and ready for the transition to CAVs. This initiative will drive customer engagement and education outcomes so that our communities can understand and support the integration of CAVs within the NSW road network. [Learn more](#)

“CAV Ready” road network

The aim of this initiative is to have a network of ‘CAV Ready’ main roads and precincts. It is expected that for roads to be deemed ‘CAV Ready’ they will have been extensively tested and approved for Level 3 or 4 autonomous driving, this may include C-ITS enabled infrastructure and available 5G connectivity. [Learn more](#)

Future mobility road and street design guidelines

The guidelines developed as part of this initiative would demonstrate how to take advantage of new technologies to meet the needs of all road users and illustrate what best practice street design looks and feels like. It would incorporate a Movement and Place approach to ensure technology has a positive impact on the vibrancy and amenity of streetscapes. [Learn more](#)

On-road CAV public bus trial

The initiative involves the development of a large automated bus trial, with the capability of being fully automated for certain sections of the route. The trial(s) will explore the barriers that are currently prohibiting the rollout of large autonomous buses in NSW. [Learn more](#)

Regional - Advanced Driver Assistance System (ADAS) trials

This initiative builds on the previous work undertaken by TfNSW and is a specific trial of ADAS technology in a regional context. It aims to understand the current performance of ADAS in regional areas and whether infrastructure interventions could help improve reliability. [Learn more](#)

Automated heavy freight vehicle trials

The initiative will explore how the freight industry can benefit from the adoption of autonomous technology across the supply chain and include trials of automated heavy vehicles. The freight task is expected to grow substantially in NSW over the next 15 years and this, coupled with increasing costs of transportation (e.g., fuel, wages) is driving up the cost of doing business. The automation of on-road freight has the potential to address these challenges facing NSW and therefore needs to be investigated. This initiative will study and trial systems that could speed up the rollout of autonomous systems in the freight industry. [Learn more](#)

CAV rideshare pilot

This initiative involves developing a CAV rideshare pilot which will help pave the way for a larger rollout of automated on-demand shared vehicles in NSW. The initiative will help NSW explore issues and fill in gaps that are currently barriers to the rollout of autonomous rideshare systems. [Learn more](#)

CAV concept of operations

A CAV Concept of Operations (ConOps) would outline the broader ecosystem in which CAVs operate and interact with other intelligent transport systems. The ConOps would assist TfNSW’s planning for road infrastructure changes to support the rollout of CAV technology. [Learn more](#)

Freight and servicing – automated first and last mile

The aim of this initiative is to support industry in the automation of first and last mile freight tasks and servicing requirements, such as trials of last mile delivery or waste collection services. [Learn more](#)

CAV data streams and exchange

This initiative aims to better understand the data stream and exchange between CAVs and the NSW transport system. In the initial stages, it will consider how TfNSW could both enable relevant data streams to CAVs, and benefit from the data being produced by CAVs out on the transport network. [Learn more](#)

Cooperative Intelligent Transport Systems (C-ITS)

C-ITS allows vehicles to communicate wirelessly with other vehicles (V2V), infrastructure (V2I) and other devices (V2X). This initiative will examine how C-ITS could be used to improve the operation of CAVs and increase network efficiency. The initiative will build on the previous C-ITS pilots and extensive work being undertaken to expand the SCATS capability to deploy different technology and C-ITS systems. [Learn more](#)

High-definition mapping and digital twin(s)

High-Definition Mapping allows for CAVs to better identify their location and leads to better reliability and advanced features. This initiative will explore the development of a HD map of NSW to promote a higher uptake of autonomous technology and lower the barriers for OEMs entering the market. [Learn more](#)

Virtual CAV test bed

The aim of this initiative is to create a virtual test bed for testing and training autonomous vehicle driving technology. This initiative will help build the local CAV ecosystem and streamline the rollout of CAVs in NSW by providing data to train CAVs for NSW transport conditions. [Learn more](#)

Simulating and modelling CAVs

The focus of this initiative is on understanding the integration of CAVs into the transport system at different stages of their deployment through transport simulation and modelling. This capability could be used to understand the impacts of different CAV rollout scenarios. [Learn more](#)

Digital signage and assets database

This initiative will explore the development of a freely available state-wide database of road signs which would allow CAVs to understand road rules and safety issues without the need to solely rely on vision-based systems. [Learn more](#)

Asset management and predictive road safety

CAVs have the opportunity to improve Asset Management processes through providing continual road scans, leading to early identification of issues and helping catalogue sites with high numbers of road safety incidents or ‘near misses’. The aim of this initiative is to

explore how NSW asset management processes could be improved and help TfNSW to be more predictive in making road safety interventions using automation. [Learn more](#)

Future Mobility Testing and Research Centre

This initiative seeks to improve the existing Future Mobility testing facilities at Cudal into a world class proving ground for CAVs. This facility will promote the growth and development of the NSW CAV ecosystem. A world class Future Mobility Testing and Research Centre at Cudal could be used to undertake robust testing of both products and vehicles; and support ongoing research and evaluations of CAV technologies. [Learn more](#)

CAV research and thought leadership

This initiative would help establish the local CAV ecosystem through encouraging and building local thought leadership in the field. Active thought leadership would help signal to industry globally that NSW is capable and ready to deploy CAV technologies. [Learn more](#)

CAV education, skills development and jobs

This initiative aims to partner with industry and academia to identify education and skills gaps, as well as key industry challenges, and make meaningful steps to address them. [Learn more](#)

NSW Innovation Challenge

A NSW innovation challenge that creates a locally designed, built or operated CAV service, helping support the development of a local CAV ecosystem. The NSW Innovation Challenge is about giving industry the flexibility to innovate and help build a local CAV ecosystem in NSW and Australia. This initiative would use the lessons learnt from previous innovation challenges, including the CAV trials, to formulate an innovation challenge to create a locally designed, built or operated CAV service. [Learn more](#)



▲ BusBot trials in Coffs Harbour