

Minneapolis



LRO

Legislative
Research & Oversight

Autonomous Vehicles and Robotaxi Services



DELIVERED TO
BUSINESS, HOUSING, & ZONING COMMITTEE
OCTOBER 20, 2026

LEGISLATIVE RESEARCH & OVERSIGHT

Table of Contents

Background	4
Executive Summary.....	5
Understanding Autonomous Vehicles and Robotaxi Services.....	7
Definitions and Levels of Driving Automation	7
Service Models and Human Operational Support	8
Artificial Intelligence (AI) and Vehicle Technology	9
Companies and Fleet Operations.....	10
Common Concerns and Challenges	12
Municipal-to-State Data Sharing and Incident Reporting	13
Safety and Street Operations	13
Vehicle Travel Congestion and Curb Use.....	15
Public Transit and Minneapolis Transportation Goals.....	16
Labor and Rideshare Drivers	17
Accessibility and Equitable Service	18
Privacy and Public Costs.....	19
Minnesota and Minneapolis Landscape	20
Minnesota Policy Development, ...	20
Minnesota 2025 Annual Report Policy Recommendations.....	20
Minnesota CAV Pilots.....	21
goMARTI Service Design and Governance	22
goMARTI Ridership and Service Performance	22
goMARTI Findings Relevant to Minneapolis	23
Minneapolis Policy and Operational Context.....	24
Federal & State and Regulatory Landscape	25
Federal Vehicle Safety Oversight.....	25
National State Policy Landscape	25
California	27
Arizona	28
Municipal Regulatory & Management Landscape: Active Robotaxi Deployment	29
Austin, Texas.....	29
Nashville, Tennessee	29
San Francisco, California	30
Clark County and Las Vegas, Nevada.....	30

Denver Colorado	31
Phoenix Arizona	31
Municipal Regulatory & Management Landscape: Pending Robotaxi Deployment	32
Washington District of Columbia	32
Chicago Illinois	33
Portland Oregon.....	33
Seattle Washington	34
National and Local Landscape Connection	36
Key Takeaways.....	36
Areas of Consideration.....	36
Appendix A: Waymo Deployment Map	38

Background

The Minneapolis City Council hereby directs the Legislative Department to undertake research and analysis to provide:

1. An overview of autonomous vehicles and robotaxi services, including definition, distinctions, and an overview of the current technology and service landscape.
2. A review of the federal, state, and local regulatory landscape related to autonomous vehicles and robotaxi services.
3. An analysis of available evidence regarding the potential impacts of autonomous vehicles and robotaxi services on transportation systems, labor, public transit, accessibility, and rideshare drivers.

The requested analysis, data, and findings shall be reported to the City Council through the Climate & Infrastructure upon completion. Any supporting materials will be made available through the City's website.

Acknowledgements

Legislative Research and Oversight (LRO) staff conducted interviews and conversations with public agencies and jurisdictions to better understand how autonomous vehicles and robotaxi services are being deployed, regulated, and managed in practice. LRO would like to acknowledge the contributions of officials and city staff from the San Francisco Municipal Transportation Agency, City of Austin, Washington DC Department of Transportation, Denver Department of Transportation, City of Phoenix, Clark County (Las Vegas), Seattle Department of Transportation, Portland Department of Transportation, Chicago Department of Transportation, Nashville Department of Transportation and Multimodal Infrastructure.

Staff also appreciate the City of Minneapolis Public Works Department, Minnesota Department of Transportation, SouthWest Transit, and City of Eden Prairie. These conversations provided additional context regarding the work that has already happened in the region.

LRO would also like to acknowledge representatives from the National Association of City Transportation Officials (NACTO), California Department of Transportation (Caltrans), Arizona Department of Transportation, May Mobility, and Waymo who shared perspectives on the evolving autonomous vehicle landscape. Information obtained through these conversations supplemented the governmental, academic, and technical materials reviewed for this report and helped contextualize how emerging policies and operational practices may relate to Minneapolis.

DISCLAIMER: Research and analysis services provided by Legislative Research and Oversight (LRO) are intended to support policymaking, oversight, and informed decision-making by the City Council. It is not intended to be, nor should it be relied upon as, legal advice or a substitute for consultation with the Office of City Attorney.

Executive Summary

Autonomous vehicles (AVs) and robotaxi services are emerging transportation technologies that combine automated driving systems, vehicle sensors, artificial intelligence, mapping, communications, and fleet operations. Understanding Autonomous Vehicles requires distinguishing between levels of driving automation, the operational design domain in which a system can function, and the service model in which the technology is deployed. A commercial robotaxi, a publicly supported automated shuttle, and a vehicle conducting supervised testing may use similar technology but operate under different conditions, staffing models, regulatory requirements, and public purposes. These distinctions are important because they shape what conclusions can reasonably be drawn from existing research and pilot experience.

Across the literature and municipal interviews reviewed by LRO, common concerns and challenges include safety, street operations, congestion and empty vehicle travel, curb use, public transit interaction, workforce impacts, accessibility, privacy, data availability, emergency response, and public costs. The evidence remains uneven. Some studies identify lower injury-related crash involvement for specific providers and operating periods, while other research emphasizes the limitations of comparing markets, technologies, and reporting systems. Similarly, studies of congestion, labor, and transit effects identify potential risks and benefits but do not establish a single expected outcome for Minneapolis. Outcomes depend heavily on service design, operating scale, local policy, travel behavior, and the regulatory environment.

The federal and state regulatory landscape is fragmented. Federal agencies oversee vehicle safety standards, defects, recalls, and specified crash reporting, while states generally determine whether and how automated vehicles may test or operate on public roads. States differ substantially in permitting, insurance, reporting, enforcement, passenger-service oversight, and the degree of authority preserved for local governments. Minnesota has developed connected and automated vehicle policy recommendations, pilot programs, and research focused on safety, winter operations, infrastructure readiness, workforce development, accessibility, and public engagement, but it does not yet have a comprehensive commercial robotaxi framework.

Municipal regulation and management varies according to state law. Cities such as San Francisco, Austin, Phoenix, Denver, Nashville, Portland, Seattle, Chicago, and Washington, D.C., illustrate different approaches. Even where municipalities do not issue AV operating permits, they remain responsible for curb management, traffic operations, land use, first-responder coordination, special events, complaint tracking, and public communication. Municipal experience also shows the importance of consistent operator contacts and mechanisms for sharing local incident information with state regulators.

Several key takeaways emerge. Automation does not eliminate the need for human support, fleet operations, or public-sector coordination. Safety should be understood as both crash performance and day-to-day interaction with streets, construction, transit, and emergency response. Much of the safety concerns expressed by interviewed professionals are based in the latter rather than the former. Transportation, labor, accessibility, and fiscal effects remain uncertain.

Areas of consideration for Minneapolis include establishing an ongoing interdepartmental coordination process, defining City priorities for state legislation, improving access to operating and incident data, preparing for potential workforce changes, reviewing fleet facilities and curb impacts, and creating a

structured public-engagement process. Public engagement can help identify community concerns, accessibility needs, service gaps, and neighborhood-specific operational issues before and during deployment.

Understanding Autonomous Vehicles and Robotaxi Services

Definitions and Levels of Driving Automation¹

Driving automation describes the tasks a vehicle system performs and the responsibilities that remain with a person. The taxonomy published by the Society of Automotive Engineers (SAE), now SAE International, distinguishes six levels, from Level 0 through Level 5. The distinction between assistance and automated driving rests on responsibility for the driving task, supervision, and response to a system limitation. A product name alone does not establish its level of automation.

Figure 1: SAE Levels of Driving Automation



SAE J3016™ LEVELS OF DRIVING AUTOMATION™

Learn more here: [sae.org/standards/content/j3016_202104](https://www.sae.org/standards/content/j3016_202104)

Copyright © 2021 SAE International. The summary table may be freely copied and distributed AS-IS provided that SAE International is acknowledged as the source of the content.

	SAE LEVEL 0™	SAE LEVEL 1™	SAE LEVEL 2™	SAE LEVEL 3™	SAE LEVEL 4™	SAE LEVEL 5™
What does the human in the driver's seat have to do?	You are driving whenever these driver support features are engaged – even if your feet are off the pedals and you are not steering			You are not driving when these automated driving features are engaged – even if you are seated in “the driver's seat”		
	You must constantly supervise these support features; you must steer, brake or accelerate as needed to maintain safety			When the feature requests, you must drive	These automated driving features will not require you to take over driving	

Copyright © 2021 SAE International.

	These are driver support features			These are automated driving features		
What do these features do?	These features are limited to providing warnings and momentary assistance	These features provide steering OR brake/acceleration support to the driver	These features provide steering AND brake/acceleration support to the driver	These features can drive the vehicle under limited conditions and will not operate unless all required conditions are met	This feature can drive the vehicle under all conditions	
Example Features	• automatic emergency braking • blind spot warning • lane departure warning	• lane centering OR • adaptive cruise control	• lane centering AND • adaptive cruise control at the same time	• traffic jam chauffeur	• local driverless taxi • pedals/steering wheel may or may not be installed	• same as level 4, but feature can drive everywhere in all conditions

While there are some cars that market themselves as “self-driving” this term often does not describe the SAE level and can mislead consumers and the broader public. Below is a table from a study published by Transportation Research Today that identifies all of autonomous vehicle deployment in the United States, with distinction of highly autonomous vehicles (HAV).

¹ [SAE International, J3016 taxonomy](#); [University of Michigan Autonomous Vehicles Factsheet](#).

Figure 2: AV and SAE Level Examples²

Automated driving systems currently deployed in the United States.

OEM	System Name	SAE Level	Type	HAV?	Status
Tesla	Autopilot	Level 2	Passenger	No	Standard on all Tesla vehicles
Tesla	FSD (Supervised)	Level 2	Passenger	No	\$99/mo subscription; 8.3B miles (Feb 2026)
GM	Super Cruise	Level 2	Passenger	No	Cadillac/Chevrolet/GMC; 400 K + mi mapped
Ford	BlueCruise	Level 2	Passenger	No	Mustang Mach-E, F-150 Lightning, Lincoln
Mercedes-Benz	DRIVE PILOT	Level 3 (paused) ¹	Passenger	Yes	Only certified L3 in U.S. (NV, CA); ≤ 40 mph
Waymo	Waymo One	Level 4	Robotaxi	Yes	Phoenix, SF, LA, Austin; paid rides
Aurora	Aurora Driver	Level 4	Freight	Yes	Commercial since May 2025; 250 K + driverless mi
Kodiak	Kodiak Driver	Level 4	Freight	Yes	10 driverless trucks; 3 M + autonomous mi
Gatik	Gatik AV	Level 4	Freight	Yes	Middle-mile; Walmart/Kroger partnerships
Zoox	Zoox AV	Level 4	Robotaxi	Yes	Testing in SF, Las Vegas, Seattle
Cruise (GM)	Cruise AV	Level 4	Robotaxi	Yes	Operations suspended Oct 2023
Nuro	Nuro Delivery	Level 4	Delivery	Yes	Scaled back; first FMVSS exemption (2020)

An operational design domain (ODD) identifies the conditions in which an automated driving system is intended to operate. It may limit geography, road types, speeds, weather, lighting, or time of day. Although the term has become more visible in company descriptions of deployments, it is part of the established technical vocabulary for driving automation. A system capable of driverless travel within one domain does not necessarily operate in other conditions. Minnesota winter weather, snow-obscured markings, construction, and temporary street changes are therefore relevant to the domain specified for a Minneapolis service.

A robotaxi is a for-hire passenger service using automated driving technology. It is a service category rather than a separate automation level. Manually mapping, testing with a safety driver, driverless testing, and passenger service describe different activities. Portland’s published approach expressly distinguishes manual mapping from testing with the automated system engaged.³

Service Models and Human Operational Support

Automated passenger services extend beyond individual robotaxi trips to shared shuttles and publicly supported microtransit. Other applications include freight, delivery, and road-maintenance equipment. Each serves a different transportation purpose and may operate under different conditions.⁴

Human support remains part of driverless service, but remote driving and remote assistance assign different responsibilities. A remote driver performs driving tasks in real time from outside the vehicle, including steering, braking, acceleration, and gear selection. A remote assistant supplies information, advice, or revised goals while the automated system continues to control the vehicle. Assistance can resolve an ambiguous scene or prompt a minimum-risk maneuver without giving the person direct control of steering and braking.⁵

² Hu, Xianbiao (XB). “Highly Automated Vehicle Policy in the United States: Six Questions Exposing the Structural Misalignment Between Perception, Regulation, and Enforcement.” *Transportation Research Today* 1 (2026): 100009. <https://doi.org/10.1016/j.trt.2026.100009>.

³ [Portland Automated Vehicles approach](#); [DDOT, State of U.S. Automated Vehicle Policy, April 2026](#).

⁴ [DDOT, State of U.S. Automated Vehicle Policy, April 2026](#); [MnDOT CAV in Minnesota project summaries](#); [Autonomous Truck Mounted Attenuator Toolkit, 2025](#).

⁵ [California Department of Motor Vehicles \(DMV\), Article 3.7](#)

California separately specifies qualifications and training for these roles. Remote drivers require appropriate licensing and driving experience; remote assistants require training for the requests and interactions they handle. Waymo describes its fleet response personnel as providing contextual guidance, with the Waymo Driver evaluating that information and performing the driving. An operator's statement that it has remote support therefore does not establish that a person can directly drive a stopped vehicle out of an intersection. Communications availability, system capability, and on-site recovery arrangements remain relevant.⁶

Rider support, fleet assistance, and vehicle recovery also serve different functions. Rider support handles passenger questions and interruptions; fleet personnel assist the automated system within the operator's procedures; recovery personnel reach and move vehicles when remote assistance is insufficient. The effectiveness of these arrangements depends on communications, staff availability, and the time required to reach the vehicle. An emergency contact line can connect an operator with first responders, but the contact arrangement alone does not establish that remote personnel can move a disabled vehicle.⁷

Artificial Intelligence (AI) and Vehicle Technology

Automated driving systems combine sensing, localization, prediction, planning, and vehicle control. Cameras capture visual information, light detection and ranging (lidar) measures distance using light, and radio detection and ranging (radar) detects objects using radio signals. Software interprets these inputs, determines the vehicle's position, anticipates the movement of other road users, and controls the vehicle. The complete system's performance depends on how these functions work together within its operating conditions.⁸

Artificial intelligence, including machine learning, supports functions such as recognizing objects and predicting movement. Developers train models on driving data and evaluate their behavior using simulation and vehicle testing. Tesla uses neural networks that process camera images and video to estimate road layout, objects, and depth while Waymo uses a system that combines several sensor types with software for perception, prediction, and driving decisions. The use of AI is shared across these approaches; the sensing architecture, validation methods, and vehicle design differ.⁹

⁶ [California DMV, Article 3.7](#); [Waymo, fleet response description, May 2024](#).

⁷ [California DMV Article 3.8 deployment regulations](#); [NACTO, practical guide for cities, 2026](#).

⁸ [University of Michigan Autonomous Vehicles Factsheet](#); [Waymo, technology description](#).

⁹ [Waymo, technology description](#); [Tesla, AI and Robotics](#).

The following comparison describes documented technology and vehicle design.¹⁰

Company	Sensing and software approach	Vehicle design
Waymo	Combines cameras, lidar, and radar with software for perception, prediction, and planning.	Integrates the Waymo Driver into vehicle platforms, including the Jaguar I-PACE and the Ojai.
Zoox	Combines cameras, lidar, and radar; the developer describes AI and mapping as components of its automated driving system.	Purpose-built passenger robotaxi with facing seats and no conventional driver position; testing also uses modified vehicles.
Tesla	Describes an AI approach emphasizing camera vision and neural networks for perception and planning.	Cybercab is designed without a steering wheel or pedals. Its design is distinct from consumer vehicles using supervised driver assistance.

Table 1 Selected driving technology and vehicle designs

Differences in hardware and vehicle layout affect maintenance, passenger boarding, emergency access, and recovery. They do not, by themselves, determine comparative safety. Consumer driver-assistance features that require continuous supervision also have different human responsibilities from a driverless service, even when related software or a similar brand name is used.

Companies and Fleet Operations

Companies occupy different roles in the automated vehicle market. Some develop and operate passenger fleets, while others supply driving systems, booking platforms, fleet management, or development tools. Waymo integrated automated driving into the Jaguar I-PACE and introduced the Ojai, a purpose-built robotaxi. Zoox developed a purpose-built robotaxi, while Tesla's Cybercab is a vehicle designed for its robotaxi service. Vehicle introduction, testing, and the launch of a local passenger service remain separate developments.¹¹

Nuro announced a licensing business model in September 2024 through which manufacturers and mobility providers could use its Nuro Driver platform. Beep describes planning, deployment, and management of shared autonomous shuttle networks. NVIDIA's DRIVE Hyperion is a development platform combining computing, software, and sensors.¹²

Operating a fleet requires acquiring vehicles, maintaining and cleaning them, charging or fueling them, providing customer support, and recovering vehicles. Removing the onboard driving task does not remove these functions or their costs. Fleet ownership also creates capital commitments that differ from a rideshare platform's reliance on vehicles supplied by individual drivers. These business-model differences

¹⁰ [Waymo, technology description](#); [Tesla, AI and Robotics](#); [Tesla, Cybercab Rider Guide](#); [Amazon, Zoox vehicle and sensor description](#); [Amazon Science, Zoox technology interview, 2021](#).

¹¹ [Waymo Jaguar I PACE announcement March 2018](#); [Waymo Welcoming riders in the Ojai May 2026](#); [Tesla, Cybercab Rider Guide](#); [Amazon, Zoox vehicle and sensor description](#).

¹² [NVIDIA DRIVE Hyperion development platform](#); [Nuro Licensing business model announcement September 2024](#); [Beep Autonomous Mobility Networks](#).

influence expansion, pricing, and the amount of service a company can offer.¹³

¹³ [University of Maryland Why Uber's Business Model Gives It an Edge Against Robotaxis; The Economist. The self driving taxi revolution begins at last. November 24 2025. pp. 3–6.](#)

Common Concerns and Challenges¹⁴

Recurring concerns include street operations, vehicle travel and curb use, public transit, labor, accessibility, data access, privacy, and public costs. Because commercial driverless passenger service is comparatively new and deployment conditions vary by provider and market, the independent evidence base remains uneven. The concerns below identify the principal issues raised across the reviewed research and municipal experience without assuming a particular magnitude or regulatory response.

- **Data, privacy, and public costs:** Cities need timely information about trips, incidents, stoppages, complaints, and recovery to understand street and service effects. Reporting authority, confidentiality, data quality, privacy protections, and the staff and first-responder resources required to collect and act on that information vary by jurisdiction.
- **Accessibility and equitable service:** An accessible vehicle does not by itself create an accessible trip. Booking options, vehicle design, boarding and securement assistance, usable pickup and drop-off locations, service coverage, wait times, and fares all affect whether riders can use the service.
- **Labor and rideshare drivers:** Automation can reduce demand for traditional transportation network companies' drivers and rideshare services while creating fleet, maintenance, technical-support, and recovery work. Current evidence does not establish the scale or timing of driver displacement or whether replacement jobs would be comparable in compensation, location, or skill requirements.
- **Public transit interaction:** Automated passenger services may provide first- and last-mile connections to transit or may substitute for transit, walking, bicycling, or human-operated rideshare. Existing evidence does not establish strong evidence of the net effect on transit ridership.
- **Vehicle travel, congestion, and curb use:** Robotaxis can generate passenger-carrying trips as well as deadheading, which is empty repositioning that can include pick up and depot travel. Net effects depend on the trips replaced, fleet-management practices, fares, waiting locations, and how curb space is allocated.
- **Safety and street operations:** Crashes, unplanned stops, blocked travel lanes, work-zone conflicts, emergency access, and vehicle recovery can affect passengers, pedestrians, cyclists, transit, and first responders. Collision reporting is more standardized than reporting of non-collision street disruptions.

Observed outcomes also vary with provider, software, vehicle platform, fares, operating domain, and study period.

¹⁴ [Hunter College and Open Plans, revised August 2026](#); [goMARTI MnDOT Final Report, March 2025](#); [Gridwise Analytics, AV Impact Report 2026](#); [Riggs and Cornet, 2026 transit-credit study](#); [NACTO, practical guide for cities, 2026](#); [Urbanism Next and SDOT, inclusive planning report, 2025](#); [Freemark and colleagues, AV land-use toolbox](#); [Wang and colleagues, local policy implications, 2026](#).

Municipal-to-State Data Sharing and Incident Reporting

Where states control AV authorization, cities can still serve as an operational evidence source by collecting street-level complaints and incident information and communicating those observations to state regulators. The usefulness of that relationship depends on whether the state has a receiving and enforcement process, what information operators must report, and whether municipal records can be compared with state and operator data.

California & San Francisco illustrates a state-centered model with an established municipal reporting role. San Francisco Municipal Transportation Agency (SFMTA) accepts AV feedback through 311 and its AV policy team, which combines complaints with city operational incident and emergency-dispatch information. It take this information and, via participation in state coordination, regularly submits comments and incident evidence to the California DMV and California Public Utility Commission, which hold testing/deployment and passenger-service authority. California also requires operator reporting of stop-page events and trip-level collision and non-collision incidents, creating state records that can be considered alongside municipal observations, although confidentiality, incomplete descriptions, and different reporting definitions can limit direct matching.¹⁵

Austin uses a related but newer model under Texas law. The City compiles AV incidents from Austin 3-1-1 and City departments, maintains a public incident dashboard, coordinates directly with operators, and describes continued collaboration with the Texas Department of Motor Vehicles (TxDMV). Under Senate Bill 2807, TxDMV authorizes Level 4 and Level 5 commercial operations and can investigate, restrict, suspend, or revoke authorizations. Austin has also submits formal comments to TxDMV and the Texas Department of Public Safety.

The San Francisco and Austin examples show that municipal information can enter a state oversight system through regulator comments, interagency working groups, complaint channels, incident logs, and direct agency coordination even when the city does not issue the AV permit. For Minneapolis, a comparable approach would require clarity on which City records are collected, who validates and transmits them, which Minnesota agency receives them, and what follow-up occurs after a safety or operational concern is reported.

Safety and Street Operations¹⁶

Autonomous vehicle safety includes crash involvement and the way vehicles interact with the street network. Crashes can injure passengers and other road users, while stopped vehicles or conflicts with construction and emergency response can create operational burdens without a collision. Municipal experience therefore addresses both collision severity and non-collision events affecting buses, pedestrians, cyclists, and responders. It is widely circulated that robotaxis are safer than human drivers by industry; however, these data often compare robotaxis with every driver on the road, including those who are new to driving, under the influence or impaired, and those drivers who are driving distracted. A more ac-

¹⁵ [CPUC Enhanced reporting requirements November 2024](#)

¹⁶ [Hunter College and Open Plans, revised August 2026](#)

curate comparison for robotaxis would be drivers who are financially compensated for the labor of driving.

The Sam Schwartz Transportation Research Program at Hunter College and Open Plans examined how for-hire autonomous vehicles could affect New York City by comparing California robotaxi operations with New York City professional for-hire vehicle data. The revised August 2026 report evaluates safety, vehicle miles traveled, and parking. It uses Waymo's publicly available operations and safety information because it provides the most extensive public robotaxi dataset, while noting that differences between California and New York limit direct transfer of results.¹⁷

Waymo's San Francisco Bay Area operations had 0.701 vehicles involved in injury-causing crashes per million miles, compared with 1.871 for combined New York City for-hire vehicles in the periods studied. The Waymo rate was approximately 62 percent lower.

LRO was unable to confirm fatal crashes caused by an at-fault commercial driverless robotaxi (SAE Level 3 & 4) while reviewing research for this report; the robotaxis involvement in the fatal crashes were either the fault of human error in the car or in another vehicle. It should be noted that crash fatality statistics are focused on human-fatalities.

Reports of AVs involved in fatal crashes Washington D.C. Department of Transportation (DDOT)'s April 2026 review identified two fatal crashes involving automated driving systems in federal reports for July 2021 through December 2025 and reported that news accounts did not attribute fault to the AVs. Fatal crashes involving Level 2 driver assistance belong to a different category: in the 2018 Mountain View Tesla crash, the National Transportation Safety Board (NTSB) identified both Autopilot system limitations and driver distraction in the probable cause.¹⁸

The broader claim that Level 4 development has no fatality history is incorrect. In March 2018, an Uber developmental automated vehicle struck and killed a pedestrian in Tempe, Arizona, during testing with an onboard safety operator. NTSB described the system as intended to operate at Level 4. It identified the distracted operator's failure to monitor as the probable cause and Uber's inadequate safety practices as contributing factors; the automated system did not correctly classify the pedestrian and relied on human intervention rather than emergency braking. This was a supervised developmental test, distinct from today's commercial driverless robotaxi service. It nevertheless prevents an unqualified claim that Level 4 systems have never been involved in, or contributed to, a fatal event.¹⁹

National Highway Traffic Safety Administration (NHTSA)'s Standing General Order requires identified entities to report qualifying crashes involving automated driving systems and certain Level 2 driver-assistance systems. Reports inform federal oversight, but involvement does not establish fault. Differences in mileage, geography, and reporting information also limit comparisons based on raw company

¹⁷ [DDOT, State of U.S. Automated Vehicle Policy, April 2026](#)

¹⁸ [NHTSA Standing General Order on Crash Reporting; CPUC Enhanced reporting requirements November 2024.](#)

¹⁹ [CPUC, quarterly reporting](#)

totals. California’s additional reporting of stoppages and non-collision incidents addresses some events omitted by collision counts.²⁰

Municipal professionals interviewed for this report mentioned stopped vehicles, intersection obstruction, construction conflicts, and emergency access as recurring operational concerns. There is a dearth of national data reporting these types of incidents. Reporting systems have limited standardization across states and gaps within individual state and municipal systems. San Francisco combines complaints, transit incident reports, and emergency dispatch information to identify disruptions, but incomplete descriptions and inconsistent follow-up constrain interpretation. A recorded complaint and a verified violation also represent different types of evidence.

California provides public records covering a complete recent year, although the programs use different periods and measures. CPUC has posted Waymo deployment reports for all four calendar quarters of 2025, as well as passenger-service pilot reports. Its public 2026 postings cover the first and second quarters; a complete 2026 calendar year is not yet available as of this report date. The reports include trip and mileage information and, under updated requirements, stoppages and collision and non-collision incidents. Certain fields are redacted under confidentiality claims, and some pilot records have been corrected.²¹

California Department of Motor Vehicles (DMV) separately publishes annual testing mileage and disengagement information. The completed December 1, 2024–November 30, 2025 reporting period recorded more than 9 million public-road test miles. This annual testing period differs from CPUC’s calendar year and excludes operations conducted under deployment permits. A disengagement records a return from automated operation to human control; it is not a crash count. DMV cautions that these reports describe testing activity and are not designed to rank companies. California’s testing, passenger-service, and collision records supply complementary evidence rather than interchangeable safety measures.²²

Vehicle Travel Congestion and Curb Use²³

Robotaxi travel includes passenger trips and movement without passengers, often called empty travel or deadheading. Deadheading was a consistent concern among transportation planners interviewed by LRO. Vehicles may travel to pickups, reposition between trips, return to depots, or reach charging and maintenance facilities. Total travel depends on both that operating cycle and the trips the service replaces. A passenger trip that replaces another car trip has different implications from one that replaces transit, walking, or cycling.

The aforementioned Hunter College study reports 14.8 percent more empty miles per passenger-carrying mile for Waymo’s California operations than for New York City’s high-volume for-hire vehicles in the periods compared. This is a comparison of empty mileage relative to passenger-carrying mileage; it is not a measured 14.8 percent increase in citywide congestion. The study also examines parking between

²⁰ [California DMV, annual testing data, February 2026](#)

²¹ [California DMV, annual testing data, February 2026](#)

²² [SFMTA, Autonomous Vehicles in San Francisco](#).

²³ [Hunter College and Open Plans, revised August 2026](#); [NACTO, practical guide for cities, 2026](#).

trips, because the availability of waiting space can influence whether vehicles remain stationary or circulate.

Curb demands arise when vehicles pick up passengers, drop them off, or wait between trips. These activities share space with transit stops, accessible loading, deliveries, bicycle facilities, and pedestrian visibility needs. The Urban Institute-led land-use toolbox identifies curb allocation and fleet-facility locations as factors affecting travel patterns. Its scenarios describe possible land-use changes as adoption grows, rather than established reductions in parking demand or private vehicle ownership.²⁴

Fleet size limits, which could address curb demand and travel congestion, is a policy measure discussed by cities in connection with managing deployment, but a vehicle count alone provides limited information about street effects. A permitted vehicle may be parked, carrying passengers, traveling to a pickup, or undergoing maintenance. Occupied and empty mileage, waiting locations and duration, and conflicts with other street users describe operating demands more directly. The effect of a fleet cap depends on how vehicles are used and where they travel.

Public Transit and Minneapolis Transportation Goals

Automated passenger service can provide connections to transit or mobility where existing options are limited. It can also substitute transit trips. Fares, service boundaries, operating hours, and pickup locations influence the relationship. Publicly contracted shuttles and commercial individual trips have different purposes and service obligations, limiting direct comparisons between them.

Minneapolis adopted its Transportation Action Plan in December 2020. The plan includes a goal that three of every five trips be made by walking, rolling, bicycling, or transit by 2030 and calls for more attractive and affordable transit. These objectives provide the local policy context for new passenger services. Electric vehicles can reduce tailpipe emissions, but vehicle travel, street-space demands, and substitution for other modes remain relevant to the City's transportation goals. Electric vehicles are common in robotaxi fleets but is not an inherent feature of driving automation.

Riggs and Cornet's 2026 study examined Waymo's Bay Area pilot offering a \$3 credit for trips near designated transit stations. The survey had 74 complete responses, including 16 from credit recipients. Among recipients, 69 percent reported connecting to transit after the AV trip and 31 percent did not. Half reported that they otherwise would have used privately paid rideshare. Eligibility depended on proximity to a station and did not require proof of a transit boarding.²⁵

The authors interpret those results descriptively because participation was voluntary and the recipient group was small. The findings show that a station-linked ride and a completed transit connection are different measures. They do not establish a causal increase in transit ridership or a citywide reduction in vehicle travel. San Francisco Municipal Transportation Agency (SFMTA) described the credit pilot as a company initiative rather than an agency program.

²⁴ [Freemark and colleagues, AV land-use toolbox.](#)

²⁵ [Riggs and Cornet, 2026 transit-credit study](#)

Municipal interviews reflect mixed views about transit substitution. Some jurisdictions expressed concern that robotaxi trips could replace transit; others viewed the services as serving partly different markets because of fares and trip preferences. San Francisco’s experience demonstrates that robotaxi expansion can coexist with rising transit use: Muni reported approximately 538,000 average weekday boardings in May 2026, reaching 81 percent of its 2019 total ridership, while weekend ridership reached 100.5 percent of its 2019 level. Those figures describe recovery during a period of robotaxi activity.

Labor and Rideshare Drivers²⁶

Automating passenger driving can change demand for driving work as service expands. The timing and extent depend on operating costs, fares, customer demand, service restrictions, and relationships with existing ride platforms. The reviewed evidence documents market trends and possible changes in job responsibilities but does not establish the number of Minneapolis drivers who would lose work or the net employment effect.

Transportation network companies (TNCs) generally rely on drivers to supply vehicles and pay for their acquisition, fuel, and maintenance. This makes the platform relatively light in vehicle assets and allows driver supply to respond to demand through compensation. A vertically integrated robotaxi business must finance or arrange vehicles, automated driving equipment, maintenance, cleaning, charging, depots, and recovery. Driving-system performance also creates responsibilities for the technology developer and operator. These commitments raise fleet capital and operating requirements even when onboard driving labor is removed. Fleet ownership and operating responsibilities may be divided among partners.

University of Maryland researchers modeled competition between these structures. Their findings indicate that a platform’s ability to adjust driver compensation and supply can provide an advantage over a fleet with costly, less flexible capacity. Robotaxi operators need a substantial cost advantage to overcome that constraint in the modeled conditions. Lower fares can attract additional demand, increase waiting and congestion, and reduce profits for both providers in some scenarios. The results explain why removing the driver does not automatically make robotaxi expansion profitable or eliminate human-operated competition. They are model findings, not an observed forecast of Minneapolis jobs or fares.

Gridwise’s 2026 report provides a recent multi-market view of human-operated rideshare work during robotaxi expansion. It compares five metropolitan markets—Atlanta, Austin, Los Angeles, Phoenix, and San Francisco—with a national benchmark, producing six comparison groups rather than six cities. The proprietary dataset covers the first quarter of 2024 through the fourth quarter of 2025 and measures human-operated rides, not robotaxi trips. In the fourth quarter of 2025 compared with the same quarter of 2024, trips per hour declined 5.3 percent in AV-active markets and 2.6 percent nationwide. Driver utilization declined 2.5 percent and 2.1 percent, respectively. These measures indicate pressure on drivers’ activity in the observed markets.

Earnings patterns varied by location. Gridwise reports a 1.8 percent national increase in gross hourly pay, compared with declines of 3.7 percent in Los Angeles, 0.4 percent in Phoenix, and 1.7 percent in San

²⁶ [University of Maryland Why Uber’s Business Model Gives It an Edge Against Robotaxis](#); [Gridwise Analytics, AV Impact Report 2026](#); [Urbanism Next and SDOT, inclusive planning report, 2025](#)

San Francisco over the same year-over-year period. Gross pay does not measure income after vehicle expenses, and the results do not identify which changes were caused by AVs. Platform policies, rider demand, driver supply, and other market changes also affect these outcomes.

It remains too early to determine from these data whether robotaxis will replace rideshare drivers. Gridwise expressly does not attribute the observed changes causally to AV deployment. Its findings warrant attention because they track work in markets where the services coexist, but they do not measure jobs eliminated by automation, distinguish permanent displacement from changes in hours, or forecast the balance between human-operated and automated rides at larger fleet scales.

The 2025 and 2026 Gridwise reports cover different market panels and periods. Their results cannot be combined as a single causal estimate of displacement. Similarly, an account of growth in San Francisco taxi and limousine industry employment and pay during 2024 does not isolate independent rideshare drivers, their hours, or changes caused by automation. Employment counts, gross earnings, and net income after expenses measure different aspects of work.

Driverless fleets retain maintenance, cleaning, charging, customer support, technical assistance, and recovery work. Municipal interview summaries did not establish staffing ratios, compensation, benefits, or job locations, principally because operators had not provided those data. The presence of these functions does not demonstrate that fleet support jobs are financially equivalent to previous TNC driving work.

Across all municipalities highlighted in the local landscape analysis, it was unclear from City officials how many TNC drivers were residents in the city which caused two challenges. First, there is a dearth of foundational data needed to determine what is the impact of robotaxis on the TNC driver labor force and, additionally, a gap in how much displacement is at stake. Second, because TNC drivers often work in a regional network or across a metropolitan area, there is a risk that a city funded initiative for workforce training would be targeted at folks who are not residents of the city. This was a sentiment expressed from DDOT's staff, where a significant amount of drivers are based in Virginia and Maryland rather than Washington D.C. This issue is applicable to Minneapolis given the relatively small geography and population when compared to the rest of the Minneapolis-Saint Paul Metro Service Area. LRO staff reached out to the MN Department of Revenue, the MN Department of Employment and Economic Development, City of Minneapolis City Planning and Economic Development, and SEIU Local 26, and no entity could provide clear data regarding the number of TNC drivers that reside in Minneapolis.

Accessibility and Equitable Service²⁷

Accessible service depends on the full journey: booking, locating a vehicle, boarding, traveling, communicating during an interruption, and reaching a usable destination. Needs differ for people with visual, hearing, cognitive, and mobility disabilities. Features that support one group of riders may leave barriers for another, particularly for people who remain seated in a non-folding wheelchair.

Waymo's Accessibility Network describes relationships with disability organizations, while its Ojai announcement identifies braille, screen-reader compatibility, a low step, a flat floor, and a support handle.

²⁷ [Waymo Web Privacy Policy](#); [Urbanism Next and SDOT, inclusive planning report, 2025](#),

These are company-described features and engagement practices; however, they do not establish that the vehicle accommodates every wheelchair or provides the assistance some riders need to board and secure themselves. A September 2026 account of concerns raised by a power-wheelchair user illustrates this distinction, without establishing a legal violation or a uniform experience among disabled riders.

Privacy and Public Costs²⁸

Automated fleets generate information about accounts, locations, routes, and vehicle surroundings. Waymo's privacy policy describes collection of payment, journey, and audiovisual information, including video inside vehicles and audio during active support calls. It describes disclosures to service providers and for legal processes, as well as advertising-related sharing of certain information under applicable privacy-law definitions. Those provisions do not establish that all camera footage is sold or that law enforcement has unrestricted access.

Operating information and identifiable passenger records serve different purposes. Aggregated trip and incident data can support transportation evaluation, while precise locations and timestamps may reveal individual journeys. Collection purpose, retention, publication, and access restrictions affect privacy in either an operator's records or data received by government.

Municipal costs can include first responder training, incident response, complaint handling, interdepartmental coordination, and review of fleet facilities. Interviewed cities also raised the cost of responding to stranded robotaxis and removing vehicles when operator assistance is insufficient, including first responders' time. National Association of City Transportation Officials (NACTO) reports that cities often use existing staff and general funds for preparation and response. Facility plans and utility information determine site-specific needs, while records of staff time and response activity help identify public operating costs.

²⁸ [NACTO, practical guide for cities, 2026](#)

Minnesota and Minneapolis Landscape²⁹

Minnesota Policy Development^{30,31}

In 2018, Minnesota established a Connected and Automated Vehicle Advisory Council under Executive Order 18-04. Executive Order 19-18 established a second council in 2019. MnDOT publishes advisory materials, policy resources, and connected and automated vehicle (CAV) research. Council recommendations and demonstration projects contribute to policy development; they are distinct from statutory requirements governing commercial operation. It should be noted that Minneapolis is involved with the Governor's Advisory Council.

MnDOT's Community Driven CAV project begins with community transportation challenges and examines whether connected or automated technology can help address them. Its work produced demonstration concepts and a community planning framework. This approach connects technology selection to an identified transportation need rather than treating deployment itself as the service objective.

House File (HF) 4112's introduced 2026 text proposed definitions, driverless authorization, operating requirements, financial responsibility, and first responder interaction planning. The proposal did not become law in the 2026 session. The City's March 2026 legislative update also documents consideration of several AV bills and the City's support for local authority and collaboration, alongside opposition to preemption provisions.

The national comparisons demonstrate that authority over vehicle technology, passenger service, traffic enforcement, curb use, and land use can be assigned differently. The distinction matters when considering which City functions are affected by AV operations and which questions involve state agencies or the Legislature.

Minnesota 2025 Annual Report Policy Recommendations³²

The 2025 annual report published by the Minnesota Department of Transportation in February 2026 includes the Governor's Council on Connected and Automated Vehicles (CAV) policy recommendations updated in December 2025. These are recommendations for legislation and administration, not enacted operating requirements. The Council's recorded support varies by topic; the report also preserves member concerns, including disagreement about human operators, accessibility, and insurance.

Authorization and safety: The Council recommends allowing fully automated operation under specified conditions and a state permitting process. Vehicles would comply with applicable federal standards or an exemption, reach a minimum-risk condition after a system failure, and comply with applicable traffic and

²⁹ [MnDOT Connected and Automated Vehicle Advisory Council](#); [MnDOT Executive Orders on Connected and Automated Vehicles](#); [MnDOT CAV policy resources](#); [MnDOT CAV in Minnesota project summaries](#); [Minnesota HF 4112 introduced text 2026](#)

³⁰ [Minnesota Legislature, House File 4112 status](#).

³¹ [MnDOT, 2025 annual report](#),

³² [MnDOT, 2025 annual report](#),

vehicle requirements. The recommendations rely on operator self-certification and federal safety oversight.

Permits and data: Before operation without a human driver, a company would apply to the Commissioner of Transportation and provide vehicle numbers and types, accessibility features, the operating domain and geographic area, testing and performance history, and an accepted first responder plan. The Department of Public Safety would register vehicles. The Council recommends mechanisms to suspend or revoke a company-level permit for unsafe or noncompliant operations and to require correction before operation continues.

Emergency response and financial responsibility: A first responder plan would cover safe interaction, a fleet contact available during operations, vehicle removal and towing, and identification of automated mode. The Council recommends initial liability language and proof of insurance or self-insurance satisfactory to the responsible state commissioners. Its insurance reasoning identifies \$5 million as a starting coverage amount, while noting member concerns about that level and a need to revisit details.

Drivers and workforce: When automated driving is engaged, the system would perform the legally required driving functions; the recommendations also address intervention requests and licensed teleoperation. The Council recommends a legislatively mandated workforce-impact study with recommendations for state-led reskilling and upskilling. This directly addresses the uncertainty about displaced driving work and the different skills required for fleet and technical jobs.

Accessibility and privacy: The Council recommends against adding new accessibility requirements in AV legislation, while retaining existing requirements for the vehicle category and supporting accessibility through programs. Member comments include interest in incentives for accessible commercial passenger service. It also recommends relying on broader privacy and security law and modernizing the Minnesota Government Data Practices Act rather than adding an AV-specific privacy chapter.

State and local governance: The Council recommends prohibiting local bans and local taxes, fees, performance standards, or other requirements specific to fully automated vehicles or automated driving systems. It also recommends preserving local authority to regulate these vehicles in the same way as other vehicles, including curb management and parking.

For Minneapolis, the central policy choice is how a statewide authorization framework would preserve municipal passenger-service, data, street, and responder functions. The Council's permitting and workforce proposals offer statewide oversight tools, while its accessibility and preemption proposals raise questions about where additional service standards could be established.

Minnesota CAV Pilots³³

MnDOT's completed-project summaries describe several passenger demonstrations. Rochester's Med City Mover used two highly automated electric vehicles on a fixed downtown route from August 2021 through August 2022, carrying more than 3,000 passengers. White Bear Lake's Bear Tracks operated

³³ [goMARTI MnDOT Final Report, March 2025](#), pp. 16–19.

from August 2022 through July 2023 on a 1.5-mile route. Its project description identifies an onboard safety operator and speeds of approximately 10 to 12 miles per hour.

SouthWest Transit announced a three-year May Mobility (an autonomous vehicle company based in Michigan) partnership in July 2024 for automated microtransit in Eden Prairie. The planned service used five wheelchair-accessible vehicles with ramps and securement systems, predetermined stops, and the existing Prime booking application. The announcement describes service design and intended connections to residential, employment, and shopping destinations; it does not provide a completed evaluation of costs or mobility outcomes.

These projects differ in vehicle speed, route design, staffing, service area, and transportation purpose. Their results describe particular CAV applications. The initial goMARTI evaluation provides a more detailed Minnesota account of rider use, winter limitations, and the human support associated with accessible service.

goMARTI Service Design and Governance³⁴

Minnesota's Autonomous Rural Transportation Initiative, known as goMARTI, operated its initial pilot in Grand Rapids from October 2022 through December 2024. An intended 18-month project was extended to 27 months. Its March 2025 final report describes goals of learning about rural winter operations, engaging residents, improving accessible mobility, and examining economic development opportunities. The report also describes federal Advanced Transportation Technology and Innovation (ATTAIN) funding for a subsequent phase; the initial evaluation concerns the earlier pilot.

Five Toyota Sienna hybrid minivans equipped for automated driving provided rides without a fare. Vehicle selection considered rural range and wheelchair access. The rear-entry accessible configuration accommodated one wheelchair rider and two additional passengers, while the standard configuration could carry up to five passengers. Community input shaped the service area, hours, and destinations.

MnDOT provided oversight, The PLUM Catalyst managed the project as prime contractor, May Mobility supplied vehicles, technology, and operations, and Via supplied routing and booking software. Funding and in-kind contributions included support from Grand Rapids, Itasca County, the Department of Iron Range Resources and Rehabilitation, the Blandin Foundation, and Mobility Mania. The initial funding strategy sought at least half of support from local resources to retain local participation in decisions.

Grand Rapids reviewed proposed stops and provided signage and snow and ice management. The project changed some intersection-based stop names to familiar landmarks and moved some stops closer to destination entrances in response to access needs. These adjustments show how municipal maintenance and stop design influenced the usefulness of the service alongside driving technology.

goMARTI Ridership and Service Performance³⁵

The project report records 18,698 passenger rides and separately identifies 891 unique people who booked and completed a ride. These figures describe repeated use of the service rather than 18,698 dis-

³⁴ [goMARTI MnDOT Final Report, March 2025](#)

³⁵ [goMARTI MnDOT Final Report, March 2025](#)

tinct residents. Reported passenger counts rose from 5,685 in 2023 to 11,566 in 2024, while annual vehicle mileage was approximately 102,000 in each year. The project team attributes increased use with relatively stable mileage to more shared rides and added stops supporting shorter trips.

Onboard autonomous vehicle operators performed several functions. They could drive manually, assist passengers, gather feedback, and help with wheelchair loading, unloading, and securement. Training covered ramp use and securement procedures. The pilot also examined space for ramp deployment, surfaces, crossings, and the path from a stop to the destination. A cleared snowbank or a relocated stop could determine whether the accessible vehicle supported a usable trip.

The pilot maintained service through a combination of automated and manual operation. The project report describes improvements in navigating snowbanks and reductions in hard stops associated with snow, along with prioritization of frequently plowed roads and winter operator training. For the equipment evaluated, lidar limitations below 0 degrees Fahrenheit led to manually operated rides with affected sensors disabled. At approximately minus 22 degrees Fahrenheit, camera limitations and passenger and operator safety concerns led to cancellation.

The deployment management plan also permitted suspension when roads were unsafe and manual driving during weather or technical reviews. A completed winter trip therefore did not necessarily represent a trip completed autonomously. The evaluation documents winter learning with onboard support and specific operating limits; it does not establish uninterrupted driverless capability in all Minnesota weather.

goMARTI Findings Relevant to Minneapolis³⁶

The goMARTI report matters because it supplies evaluated Minnesota operating experience, including winter limitations and the service arrangements that supported rural mobility. It connects repeated rider use with locally selected destinations, telephone access, stop adjustments, and onboard assistance. The service's usefulness depended on these arrangements alongside automation. For Minneapolis, this evidence identifies practical responsibilities that may also arise in a different vehicle or service model: usable loading areas, snow clearance, support during interruptions, and an alternative when automated operation is unavailable.

Several lessons follow from the pilot's documented operations.

- Winter service continuity and driverless capability are different outcomes. Onboard operators drove manually under some weather and technical conditions, and extreme cold could suspend service. The pilot supports planning for operating limits and fallback service.
- Accessibility required people and public-space maintenance as well as accessible vehicles. Wheelchair assistance, securement, stop relocation, and snow clearance made trips usable. Telephone booking widened access but required a staffed call center. Removing onboard driving work would not automatically remove these service needs.

³⁶ [goMARTI MnDOT Final Report, March 2025](#)

- Community input changed the operating service. Familiar stop names, destinations, hours, and closer access to entrances responded to local needs. These changes demonstrate a link between engagement and service design beyond public education about the technology.
- Ridership growth does not establish the contribution or cost-effectiveness of automation. Passenger rides, unique users, and vehicle miles measure different outcomes. The no-fare, publicly supported service had no matched comparison demonstrating that automation delivered better mobility per dollar than another service design.

Minneapolis Policy and Operational Context

Minneapolis' AV work predates current commercial robotaxi discussions. The City collaborated with MnDOT on a 2018 Super Bowl-related pilot and a 2019 Midtown Greenway pilot. Its December 2020 Transportation Action Plan subsequently identified shared automated vehicle pilots, such as shuttles, as a learning opportunity. Waymo announced Minneapolis groundwork in November 2025, including initial driving to prepare for future service. That announcement described preparation rather than the launch of paid driverless rides.

Minneapolis Public Works described interdepartmental discussions following Waymo's announcement, concerns about access to operating data, and interest in communicating temporary street conflicts. The reviewed interview material documents preparation and information needs but does not identify an established permanent task group or coordination structure dedicated to developing an AV response and policy framework. This is a limitation of the documented account rather than a determination that no coordination occurs.³⁷

The City's Transportation Action Plan provides a policy reference for examining future service alongside walking, rolling, bicycling, and transit. The plan does not supply a dedicated commercial robotaxi operating framework, but it does provide example of the possible role of automations, specifically autonomous shuttles. The municipal examples below address how jurisdictions have responded to later commercial activity and the differences in legal authority that shape those responses.³⁸

Federal & State and Regulatory Landscape

Federal Vehicle Safety Oversight³⁹

NHTSA administers federal motor vehicle safety standards, oversees safety defects and recalls, and requires specified crash reporting. Manufacturers generally certify that their vehicles meet applicable federal safety standards. This self-certification framework applies to conventional vehicles as well as automated vehicles. It establishes a manufacturer's compliance responsibility rather than independent government validation of every possible driving scenario. Authorization to provide passenger service involves additional state or other applicable requirements.

The United States Department of Transportation's (USDOT) April 2025 AV framework announced changes involving reporting and exemptions. NHTSA's domestic exemption policy permits U.S.-built noncompliant vehicles to seek research or demonstration exemptions under 49 U.S.C. section 30114. That route differs from Part 555 exemptions that can address commercialization. NHTSA announced a demonstration exemption for Zoox in August 2025. A vehicle exemption and authorization to charge passengers serve different regulatory functions.

The introduced SELF DRIVE Act of 2026, H.R. 7390, proposes changes involving automated vehicle standards, testing and evaluation, and connected vehicle security. The introduced text is evidence of a federal legislative proposal rather than an enacted passenger-service framework. NACTO's response calls for a national framework addressing cities and first responders; it represents a municipal association position rather than a binding requirement.

National State Policy Landscape⁴⁰

State law provides a varied national framework for AV testing and deployment. DDOT's April 2026 report compares authorization, insurance, operator definitions, reporting, and enforcement while distinguishing testing from deployment. Its coverage is a historical baseline: the authors primarily reviewed literature through March 2025, with selective later updates; its statutory table is labeled circa June 2023 and its deployment map October 2025. State agencies control vehicle authorization in several major robotaxi markets, but the scope of local preemption differs. California's separate state vehicle and passenger permits, Arizona's express statutory restrictions, and Portland's proposed municipal for-hire framework illustrate why the relevant function and legal provision matter.

A 2026 study adds a review covering all 50 states and the District of Columbia, informed by focus groups with 35 participants from 29 organizations and work on Pennsylvania's Act 130. The author's published summary identifies 34 states with some highly automated vehicle (HAV) framework, of which 11 have

³⁹ [US DOT Automated Vehicle Framework April 2025](#); [NHTSA Domestic research and demonstration exemption policy April 2025](#); [NHTSA Demonstration exemption for Zoox August 2025](#); [Congress H.R. 7390 bill overview and actions](#); [GovInfo H.R. 7390 introduced text February 2026](#); [NACTO Letter on a National AV Framework](#).

⁴⁰ [Hu, U.S. highly automated vehicle policy, 2026](#),

detailed AV-specific rules. A state can authorize limited testing, establish an advisory process, or recognize an automated driving provider without approving every passenger service.⁴¹

The study attributes fragmentation to divided federal and state authority, market incentives that blur assistance and automation, and the lag between legislation and implementation. Its interstate freight example crosses six states with differing permit and insurance provisions and no automatic reciprocity. Hu recommends differentiated treatment by automation level, interstate coordination, economic disclosure, and standardized enforcement protocols. These are the author’s proposals rather than adopted national rules.

The selected examples below illustrate distinct state approaches across the jurisdictions reviewed in this report. They compare the governing function and local implications; they are not an exhaustive list of all state requirements or a legal determination of Minneapolis authority.

Jurisdiction	State or jurisdictional approach	Municipal implication
California	DMV testing and deployment permits; separate CPUC passenger authorization.	Cities contribute operating evidence; they do not issue the underlying AV permits.
Arizona	Driverless documentation and emergency interaction plans; restrictions on AV-specific local requirements.	Operator communication continues within limits on local licensing, fees, and regulation.
Texas	Commercial driverless state authorization under SB 2807, effective September 2025.	Cities document street issues; state authorization and enforcement govern commercial operation.
Nevada	DMV vehicle requirements plus transportation-authority passenger-service oversight.	Conditional Clark County service approvals include operator ceilings; airport access is separately authorized.
Colorado	Law-compliant Level 4 and 5 operation; review for systems unable to meet existing law.	Different automated driving standards are restricted; coordination remains relevant.
Illinois	2018 state testing initiative; HB 4663 appears here as a later legislative proposal.	Chicago preparation does not itself establish driverless passenger authority.
Oregon and Portland	Portland’s 2018 testing rule; 2026 for-hire changes reviewed as proposals.	Local rulemaking is distinct from the state-centered models above.
Washington and Seattle	Reviewed municipal activity centers on testing, inclusive planning, and emergency data coordination.	These initiatives do not constitute commercial passenger-service authorization.
District of Columbia	Existing AV statute in Title 50, Chapter 23A.	District statutory authority and newer policy proposals require separate consideration.

⁴¹ [Texas Senate Bill \(SB\) 2807 enrolled text 2025](#); [Texas Legislature SB 2807 legislative history](#).

Table 2 Selected state and jurisdictional frameworks

Across these approaches, technology authorization, passenger licensing, ordinary traffic enforcement, curb management, and land use remain distinct functions. A provision-specific comparison explains local powers more precisely than labeling an entire state permissive or restrictive. Enacting an AV law also does not establish that agencies have implemented its reporting, enforcement, and responder procedures.

Arizona Revised Statutes section 28-9706 restricts local taxes, fees, for-hire requirements, and other requirements directed at automated systems, vehicles, and operators, subject to the statute's terms and exceptions. Colorado DOT describes a framework that prevents state and local jurisdictions from setting automated driving standards different from those applied to human drivers.

California⁴²

California's oversight developed over more than a decade. State legislation in 2012 directed the DMV to establish AV requirements; regulations for testing with a driver took effect in 2014. Driverless testing and deployment regulations were approved in February 2018, with applications accepted beginning in April. CPUC authorized deployment of passenger programs in 2020. This sequence explains the separate testing, deployment, and passenger-service layers now in use.⁴³

California separates automated driving oversight from passenger-service oversight. DMV permits address testing and deployment of the driving technology, while CPUC programs address passenger transportation. CPUC distinguishes pilot service from deployment and service with an onboard driver from driverless service. An appropriate DMV permit is a prerequisite for CPUC passenger authorization.

The DMV deployment regulations address remote support and reporting of collisions, immobilization events, system failures, and mileage. Emergency-response provisions for specified Level 4 and Level 5 vehicles include a staffed contact line, communication with responders, and arrangements to immobilize or move vehicles. The text identifies July 1, 2026 for specified emergency-response requirements and separate timing provisions for reports.

CPUC's November 2024 reporting changes added stoppage events and trip-level collision and non-collision incident information. Collision reports submitted to NHTSA also must be filed with CPUC under the requirements described. This structure extends reporting beyond injury crashes and connects passenger authorization with continued operational information. Access and publication rules still govern the information available to cities and the public.

California illustrates a framework covering several stages: technology testing, deployment, passenger protection, ongoing reporting, and enforcement. Local observations can inform state oversight even

⁴² [CPUC Enhanced reporting requirements November 2024](#); [CPUC AV Program Applications General Guidance August 2024](#); [California DMV Article 3.8 deployment regulations](#); [CPUC Autonomous Vehicle Programs](#); [CPUC Autonomous Vehicle Program Permits Issued](#); [CPUC AV Program Applications General Guidance August 2024](#).

⁴³ [CPUC Autonomous Vehicle Programs](#); [SFMTA, Autonomous Vehicles in San Francisco](#).

though municipalities do not issue the underlying AV permits. San Francisco's experience below describes how those observations are assembled and communicated.

Arizona⁴⁴

Arizona's AV framework began with Executive Order 2015-09 and expanded through Executive Order 2018-04 before subsequent legislation. The early framework accommodated developmental testing, including Uber's Tempe operation. Arizona DOT now describes driverless documentation requirements that include a law-enforcement interaction plan and a written statement addressing specified compliance requirements. The agency identifies cease-and-desist authority when required materials are not provided.

Arizona's restrictions on AV-specific local requirements provide the context for municipal involvement. Agency and municipal interview summaries emphasize communication among operators, state agencies, and cities, while describing limited access to operating information. These observations identify a distinction between maintaining an operational relationship and receiving information under a legal reporting duty.

⁴⁴ [NTSB, Tempe investigation, HAR-19/03](#); [Arizona DOT Autonomous vehicle testing and operation](#); [Arizona DOT Testing and Operating Without a Driver](#), [Arizona Revised Statutes section 28-9706](#);

Municipal Regulatory & Management Landscape: Active Robotaxi Deployment

Austin, Texas⁴⁵

Austin's current oversight rests on a sequence of Texas laws: Senate Bill (SB) 2205 in 2017 established a statewide AV framework, House Bill (HB) 3026 in 2021 addressed vehicle equipment requirements, and SB 2807 in 2025 added commercial driverless authorization. Austin is preempted from local AV regulations. Local coordination developed within that state framework rather than through an independent City approval of the driving technology.

Austin touted its relationship with companies as a key tool in managing autonomous vehicles and mitigating their negative externalities. Municipal interview summaries identify 311 reports, first responder observations, and interdepartmental communication as sources of local operating information. Since Waymo announced its expansion in Austin, the city has coordinated with key stakeholders across departments, which includes public safety and traffic safety personnel, to track issues and aggregate them to a single point of contact. This helps the city to communicate with AV companies and mitigates any variance in messages from AV companies to city agencies. Such records can document street problems even when operating authorization is controlled by the state.

Texas SB 2807 was signed on June 20, 2025 and became effective September 1, 2025. This law established state authorization for commercial driverless operation, emergency-interaction planning, and an enforcement process for unsafe operations. Importantly it provided a state agency for Austin to send resident complaints. It also directs certain traffic citations to the owner or authorization holder. Austin's administrative practices and the state's authorization framework serve complementary functions—Austin's work in coordinating and organizing the city allowed it to take advantage of state developments.

Nashville, Tennessee⁴⁶

Waymo and Lyft announced plans for Nashville in September 2025, with public rides starting in 2026. The announcement assigned fleet management, maintenance, and depot functions to Lyft's Flexdrive subsidiary and automated driving to Waymo. It illustrates the move from preparation toward passenger service and a partnership that divides the fleet responsibilities otherwise grouped under a robotaxi company.

Nashville established a working group involving transportation, emergency response, legal, and planning functions to have recurring discussions with operators. The city created an AV complaint category in its 311 to start tracking resident concerns. Reported concerns involve work zones, intersections, stopped vehicles, and school areas. These are descriptions of municipal coordination and observed issues rather than a quantified incident trend.

Tennessee enacted SB 2253 as Public Chapter 726, signed and effective April 13, 2026. The law establishes a process for traffic violations involving autonomous vehicles, including mailing a notice or citation

⁴⁵ [City of Austin Autonomous Vehicles.](#)

⁴⁶ [Tennessee Legislature SB 2253 history and summary 2026.](#)

to the registered owner. The Nashville example connects an interdepartmental process with the practical task of identifying a vehicle and routing enforcement information.

San Francisco, California

San Francisco does not issue permits for AV testing or operation on city streets. California DMV authorizes testing and deployment, while CPUC authorizes passenger service. Since 2018, SFMTA has engaged operators and state and federal regulators, guided by Transit First, Vision Zero, climate goals, and emerging mobility principles.

SFMTA has an internal transportation working group, a reestablished citywide group convened by Emergency Management with SFMTA support, and participation in a state operational working group. The groups provided channels for operational information and discussion of regulatory developments.

SFMTA reported combining 311 complaints, Muni operational incident reports, and emergency dispatch information in a Power BI dashboard. Complaints sometimes lacked precise locations or descriptions; reporting required staff time; and dispatch narratives did not consistently record the response or resolution. Traffic obstruction was a recurring complaint category. These records identified reported problems while leaving gaps in completeness and access to operator information.

Special-event work included coordination with Waymo before Fleet Week and discussion of areas to avoid following earlier disruptions. SFMTA described this as cooperation with the operator rather than local AV permitting. Its curb responsibilities also involved passenger loading, transit stops, bicycle facilities, and pedestrian visibility.

Clark County (Las Vegas), Nevada⁴⁷

Nevada enacted an AV framework in 2011 through Assembly Bill 511, directing the DMV to adopt operating regulations. Its current statutory framework distinguishes automated vehicle requirements from passenger-service oversight. That history precedes the recent Clark County commercial approvals and helps explain why a vehicle's eligibility and its authority to carry paying passengers involve different agencies.

Nevada distinguishes vehicle requirements administered by DMV from passenger-service oversight. On August 21, 2026, the Nevada Transportation Authority announced conditional approvals for Tesla Robotaxi, Waymo, and Aviari to provide paid driverless transportation in Clark County. The approvals were subject to operating-domain limits and conditions that had to be satisfied before service. Airport operations also required authorization from the Clark County Department of Aviation.

The orders specified first-year ceilings of up to 5,000 Tesla vehicles and up to 1,000 vehicles each for Waymo and Aviari following permit issuance. These were authorized maximums rather than active fleet counts. County officials reported that actual fleet numbers were not readily available from operators. Conditions addressed inspections, insurance, rates, accessibility, reporting, and 24-hour emergency contacts.

⁴⁷ [Nevada DMV Autonomous Vehicles](#); [Nevada Transportation Authority Conditional approvals August 21 2026](#).

County officials described establishing coordinating groups after operators communicated inconsistently with different departments. A single coordination channel improved consistency and supported planning for major events and emergency response.

Denver, Colorado⁴⁸

Colorado's 2017 SB 17-213 established the framework for automated driving systems. The Denver region also gained experience with a public transit application before current robotaxi preparation: Regional Transportation District (RTD) launched an automated shuttle demonstration in January 2019 connecting the 61st and Peña station area. The pilot concerned a limited first- and last-mile service rather than a general commercial robotaxi fleet.

Colorado DOT explains that Level 4 and Level 5 systems can operate with or without a human driver when they comply with applicable state and federal law. Systems that cannot comply require approval through a process involving Colorado Department of Transportation (CDOT) and the Colorado State Patrol, coordinated through an Autonomous Mobility Task Force. This framework differs from a municipal permit applying to every AV operation.

Denver transportation officials reported only a little more than a week of Waymo operations at the time of the interview, leaving the effects on public life unresolved. They raised concerns about data transparency, special events, empty vehicle travel, and the limits on City action under state law. Denver's subsequent operating experience could inform Minneapolis preparation, particularly where cold-weather conditions and temporary street changes overlap.

Phoenix, Arizona⁴⁹

Phoenix's commercial experience developed after Arizona's initial testing period. Waymo launched its early rider program in April 2017 and Waymo One in December 2018. That progression gives municipal coordination a longer operating context than cities beginning mapping. Phoenix officials described coordination across City departments involving curbs, special events, emergency response, and travel information. Arizona's restrictions on AV-specific local requirements limited the regulatory tools available to the City.

⁴⁸ [Colorado DOT Autonomous Vehicles; RTD, Quality of Life and Sustainability Report 2020.](#)

⁴⁹ [Waymo, Phoenix service history; Arizona Revised Statutes section 28-9706](#)

Municipal Regulatory & Management Landscape: Pending Robotaxi Deployment

Washington D.C.⁵⁰

The District of Columbia's statutory history begins with the Autonomous Vehicle Act of 2012, effective in 2013, followed by a testing-program amendment in 2020 and interim testing requirements in 2024. DDOT's April 2026 research report surveys national regulation and experience. That research report is distinct from the introduced deployment bill and the agency's subsequent recommendations; it does not itself enact a five-stage commercial program.

Bill 26-0684, introduced May 1, 2026, proposes a commercial program administered by DDOT. Its principal operating and financial provisions are summarized below as proposals.

Proposed measure	Introduced provision
Testing before initial permit	At least 180 days and 250,000 test miles within the District.
Initial fleet limit	Up to 200 vehicles before approval of a comprehensive network plan; on-demand networks could begin January 1, 2028, with later fleet numbers set by rule.
Fees and insurance	Initial application \$1 million; initial three-year permit \$5 million; renewal permit \$1 million, plus a subsequent application fee of \$500,000; at least \$5 million vehicle liability coverage.
Transportation and workforce	15 cents per commercial vehicle mile; net fund revenue split equally between transit and workforce support.
Service and operations	Plans for parking, reducing empty travel, balancing availability and waits across wards, accessible booking, first responder interaction, and continuity during outages.

Table 3 Selected provisions of the introduced District deployment bill. These provisions are not presented as enacted law.

The proposal illustrates three choices relevant to Minnesota and Minneapolis: conditions for progressing into commercial service, allocation of agency responsibilities, and reporting linked to transportation and workforce objectives. A Minnesota process could evaluate operation in snow and severe cold, responder interactions, and corrective actions before expanding an operating domain. That is a possible adaptation of the agency's staged approach, not an established Minnesota requirement or a claim that a fixed mileage threshold proves winter readiness.

⁵⁰ [DDOT, State of U.S. Automated Vehicle Policy, April 2026](#); [District of Columbia Autonomous Vehicles law](#), [District of Columbia Council, Bill 26-0684 introduced text](#).

The District's parking, fleet rebalancing, and service-availability provisions also connect authorization to the effects of vehicles on neighborhoods and streets. Comparable Minneapolis information could identify unequal waits, unused circulating vehicles, and conflicts at loading areas. A mileage fee and workforce fund would require applicable state authority, a defined tax base, and administrative capacity. The District combines city and state functions, whereas Minnesota and Minneapolis divide those responsibilities, an important distinction which allows Washington, D.C. to have more control.

Chicago, Illinois⁵¹

Illinois launched the Autonomous Illinois initiative through Executive Order 2018-13 in October 2018, with Illinois Department of Transportation (IDOT) coordinating state agencies, testing interests, and research partners. The order's testing conditions included a licensed person able to monitor and take control. This history concerns supervised testing and state coordination; it does not establish authorization for unrestricted driverless passenger service in Chicago.

Chicago officials described research, discussions with transit partners, first responder preparation, and concerns about preemption, equitable coverage, and data access. The interview record does not identify an adopted City robotaxi permitting program. It describes municipal preparation while state policy was under discussion.

Illinois HB 4663 was identified in the research materials as a proposed Autonomous Vehicle Pilot Project Act. As a proposal, it illustrates debate about operating conditions and the division of authority. The municipal findings concern Chicago's preparation and stated information needs; no proposed provision is presented here as a current City operating requirement.

Portland, Oregon⁵²

Portland's AV policy work followed a 2017 mayoral directive and City Council Resolution 37296. The City adopted testing rule TRN-14.34 in 2018 and distinguishes manually driven mapping from automated testing. The Portland Bureau of Transportation reported that the earlier rule did not authorize for-hire AV service. Its 2026 work proposes adding commercial AVs to the existing private for-hire framework.

The February 2026 draft update to TRN-14.34 proposes testing and for-hire permits, operating-domain information, safety and recovery plans, trip data, privacy conditions, insurance, and accessibility provisions. Its fee schedule specifies a \$271 application fee, a \$542 annual entity permit, and a \$195 annual fee per vehicle. It also proposes an 11-cent accessible transportation charge per ride and a \$2 surcharge for trips beginning or ending in Portland. These are amounts in the draft, not a confirmed final schedule.

The July 28 City Council presentation developed seven policy concepts after public review. It is a later proposal stage, rather than a statement that all February draft terms were adopted. The most specific operational concepts are summarized below.

⁵¹ [Illinois, Executive Order 2018-13; Illinois General Assembly, HB 4663 proposal](#);

⁵² [Portland Bureau of Transportation, July 2026 policy concepts](#), public review process and LRO interpretation.

July policy concept	Proposed approach
Fleet caps	Create authority to set caps. Use testing to select the initial fleet number and operations and safety analysis for annual adjustments. No numerical cap is specified.
Local testing	Require 50,000 miles on Portland streets under a testing permit before an application for a for-hire permit.
Suspension and correction	Suspend a permit after two traffic violations or failure to operate safely; restore it when the company demonstrates correction.
Curb and bicycle access	Clarify loading and unloading in the private for-hire code to address bicycle-lane conflicts.
Data and fees	Explore limits on data use, sale, and sharing; apply for-hire fees and consider workforce transition and other impact fees.

Table 4 Portland’s July 2026 policy concepts. The proposed 50,000 local miles represent the later presentation’s approach and should not be combined with the February draft’s different eligibility criteria.

The City collected more than 220 comments and held a hearing, an industry listening session, and discussions with transportation advisory committees. Submitted comments raised safety, accountability, labor, congestion, and transit issues; they were not a representative public poll. Portland’s proposal would approve permits but would require AV companies to provide evidence of performance and continual improvement of the technology. For Minneapolis, the useful comparison is the relationship between a measurable concern and a regulatory response. The availability of equivalent local permit, cap, or fee authority would depend on Minnesota law.

Seattle, Washington⁵³

Zoox began Seattle testing in fall 2021 and Waymo began Bellevue testing in fall 2022. A joint strategic plan followed in February 2023. Seattle’s inclusive planning cohort convened in 2024 and published its operational report in April 2025.

Seattle’s Digital Conflict Area Awareness Management Program (dCAAMP) communicates emergency conflict areas using 911 Computer-Aided Dispatch (CAD) event locations, types, and response-vehicle information. Connected fleets, automated vehicles, and mapping services could use the information to avoid or reroute around a scene. Partners include the Seattle Department of Transportation, Blue Systems, and the University of Washington’s Sustainable Transportation Lab, with state funding from the 2023–2025 transportation budget.

The initiative uses the Mobility Data Specification (MDS), maintained by the Open Mobility Foundation (OMF), through an application programming interface (API). Machine-readable notices can change as re-

⁵³ [SDOT, digital conflict program](#); [OMF, emergency prototype, August 2026](#); [Seattle and Bellevue, AV Strategic Plan, February 2023](#); [Urbanism Next and SDOT, inclusive planning report, 2025](#).

sponders arrive, an incident expands, or streets reopen. They could convey closures, pickup restrictions, or temporary conditions without relying solely on operator telephone contact.

An August 2026 OMF account describes a prototype in Seattle's test environment involving transportation and fire personnel and Blue Systems. It demonstrates geofence updates and an all-clear notice, without measured obstruction reductions or confirmed compliance by every operator.

For Minneapolis, a similar program could connect emergency communications, transportation operations, and fleet contacts. Implementation would require agreement on released information, accuracy, update frequency, operator response, and procedures when the feed fails. An affected area can be communicated without distributing sensitive dispatch or personal information. Notices would support responder directions and street controls, with their value dependent on operator participation and vehicles acknowledging and following them.

Seattle's inclusive cohort incorporated disability, income, housing, racial equity, and transportation experience. Priorities include accountability, workforce, affordability, access, safety, and environmental effects. Recommendations address feedback, multilingual service, pricing transparency, and facility locations. They are stakeholder-informed priorities, not representative polling or proof of adoption.

National and Local Landscape Policy Connections

Key Takeaways

Services and technology have different roles. Automation level identifies driving responsibility, while the operating domain defines where and under what conditions a system can function. Mapping, supervised tests, commercial robotaxis, and publicly supported shuttles supply different evidence. The staff direction's questions about technology and service therefore cannot be answered by treating all AV activity as equivalent.

Authority and local workload are separate questions. Federal safety oversight, state vehicle authorization, passenger licensing, and ordinary street and land-use functions differ. Minnesota's 2025 recommendations would centralize AV-specific regulation while retaining ordinary curb and parking authority. Municipal examples show that emergency response, complaints, special events, and fleet facilities still require coordination when cities do not issue an AV permit.

Safety includes both collisions and street operations. The reviewed record supports a narrowly stated absence of a confirmed at-fault commercial driverless fatality, alongside provider-specific evidence of lower injury-related involvement. It does not support a universal claim of no fatalities across Level 4 development. Obstructions, responder conflicts, and recovery time also matter to municipal performance and are incompletely captured in national data.

More passenger trips do not establish transportation benefits. California's 2025 service growth occurred alongside approximately 30 million reported miles without passengers. Those miles identify a transportation demand but not the amount of net added congestion. Transit growth can coexist with robotaxi activity; however, the impact of this technology on transit in Minneapolis would have to be further studied by traffic experts.

Whether or not autonomous vehicles will replace rideshare drivers remains unclear. Gridwise is useful because it follows human-operated rideshare activity in five AV-active metropolitan markets and a national benchmark. It records pressure on activity and mixed gross earnings without attributing the changes causally to automation. Different fleet and platform costs, and the unknown location, pay, and skills of new fleet jobs, prevent a conclusion that robotaxis will replace drivers or compensate them through equivalent new work.

Areas of Consideration

Establish a continuing municipal coordination process: Council could designate a lead and connect Public Works, licensing, planning, emergency communications, police, fire, legal staff, and intergovernmental relations. Defined operator contacts, training, event and construction notices, and escalation for stranded vehicles could turn separate departmental contacts into a consistent response. Seattle's pilot offers a possible additional tool for communicating changing emergency areas, subject to a tested data flow and operator participation.

Define the City's position on state legislation: Council could identify which state permit, first responder, enforcement, data-sharing, and workforce provisions it supports, and what local functions should remain

available. The Minnesota recommendations, D.C. testimony, and Portland concepts present different choices about staged authorization and municipal service oversight. Winter conditions, incident correction, and demonstrated response capability could inform an advocated state process. Permit, fleet-cap, and AV-specific fee options would require a determination of Minnesota authority.

Connect operating information to decisions: Council could seek recurring information on operating phase, active fleet size, occupied and empty miles, trip coverage, wait times, accessible requests and denied requests, obstructions, recovery time, and public staff time. State reporting, public contracts, voluntary agreements, and City incident records offer different routes. A geographic and time-defined reporting baseline would support evaluation of transit, curb, and labor effects. Aggregation, access controls, and a defined retention purpose would address privacy and administrative burdens.

Prepare for workforce changes without presuming displacement: Council could support the recommended Minnesota workforce study and seek data on driver hours, net earnings, and fleet jobs' compensation, location, and skill requirements. Engagement with rideshare and taxi drivers, labor, training providers, and operators could inform transition options. D.C.'s proposed workforce fund and Portland's explored transition fee illustrate financing concepts; an amount or funding source would require authority and a substantiated local objective.

Plan for public engagement before and during deployment: Council could establish an engagement approach that includes transit riders, people with disabilities, rideshare and taxi drivers, neighborhoods, businesses, first responders, and residents who may face language or digital-access barriers. Minnesota's CAV research identifies communications and engagement as a readiness function, while goMARTI shows that community input can change service areas, stops, hours, and destinations; Portland and Seattle provide additional examples of public hearings, listening sessions, advisory committees, and targeted stakeholder cohorts. Engagement could be tied to specific City decisions and recurring operating data, with clear explanation of which issues Minneapolis can address directly and which require state action, rather than functioning only as public education about the technology.

Review fleet facilities and the purpose of limits or fees: Council could apply existing land-use, access, building, utility, curb, and parking processes to depot proposals and record the City resources used for operations and response.

Appendix A: Waymo Deployment Map



