



AUTOMATED TRANSIT VEHICLE READINESS GUIDELINES





Next Generation, Purpose-Built, Transit AV Cohort

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START HERE

Inform &
Communicate

Communicate often and throughout the project
for the greatest success.

This is one of the most critical ongoing activity:

- **Identify key stakeholders which should include and not be limited to:**
 - Community Leaders
 - General Public
 - Local City, County and Community Planners
 - Safety Responders
- **Engage in open, honest, and regular communications with key stakeholders**
- **Bring awareness of any transit AV project as early on as possible to all identified stakeholders**
- **Engage with community leaders early on – their input counts and informs the project plan (Step #1)**
- **Be open, honest, and communicate often to help build acceptance, confidence, and trust for the new technology**
- **Listen and be open to adjusting based off feedback while making improvements as quickly as possible**

Communications continue throughout the project and beyond deployment





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STEP #1

Develop Strategic Plan

Develop AV project plan to align with your AV near, mid, and far term goals.

Near: 1-3 years | **Mid:** 5-7 years | **Far:** 7+ years

- **Align the plan with your agency's strategic short-term plans.**
- **Make it clear that the plan supports the future vision by referencing the 'Far' AV plan in your long-range regional transportation plan (RTP)**
- **Document the benefits transit AVs bring to your operational service**
- **Leverage the current state of technology readiness for Automated Driving Assist Systems (ADAS)**
- **Determine if your vehicle deployment project will be connected as well as automated**
- **Identify specific costs for your project to connect with corresponding funding opportunities , meeting Total Cost of Ownership (TCO) necessary for success**
- **Identify partners that can help with technology or provide in-kind support**
- **Develop a detailed project scope, plan, requirements, and impact to the agency**
- **Narrow down and select your project location based on resources**
 - Transit services and specific routes (e.g., closed circuit, on-demand, dedicated routes, etc.)



STEP #2

Get Equipped

Complete a feasibility study and build your toolbox.

- **Identify opportunities for AV deployment in your operations**
 - Is this project a demonstration or full-revenue service deployment?
 - What transit services and specific routes (e.g., closed circuit, on-demand, dedicated routes, etc.) will be supported?
 - What are the benefits of transit AVs in my operations?
- **Connect with other transit providers deploying AVs**
 - The Federal Transit Administration (FTA), American Public Transportation Association (APTA) and CALSTART can help make connections
 - Engage with others on best practices and lessons learned
 - Collaborate openly on needs, challenges, and experience
- **Get educated on the current state of AV deployment**
 - Stay informed on transit AV activity through FTA, APTA, CALSTART and others
- **Research and obtain lessons learned and best practices from others**





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STEP #3

Find Opportunities

Capture the organization's operational needs, goals and how this deployment would benefit the agency or technology.

- **Perform a SWOT (Strength / Weakness / Opportunity / Threat) analysis**
- **Assess your current fleet**
 - Where do AVs play the greatest role?
 - How can I improve my operations and access to transit?
 - What are the benefits AVs can bring to my operations?
- **Identify opportunities that provide greater equity and access to transit services**
 - Consider movement of people, goods, and services to support community
- **Identify key operational domain (e.g., vehicle size, intended use, intersections, lights, stop signs, turning)**



STEP #4

Identify & Secure Funding

Prepare a budget and plan for how your project will be funded.

- **Based on your plan, identify funding that meets your needs and timing**
- **Various agencies offer funding for AV deployments:**
 - U.S. Department of Transportation (USDOT)
 - State transportation departments and energy offices
 - Federal Transit Administration (FTA)
 - U.S. Department of Energy (US DOE)
- **Secure project funding that covers project plan and enough to mitigate the risk of covering for unplanned events**





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STEP #5

Acquire Vehicles

Work to ensure you acquire a vehicle solution that meets your operational needs

- Identify partners that would help accelerate vehicle deployments and for any grant application
- Follow an RFI/RFP process – look for multi-agency / multi-year opportunities
- Ensure that the vehicles you acquire meet your overall operational needs
 - Service model / Supply chain
 - Innovation requirements
 - Arrive on-site fully assembled
 - Include Guarantees and Warranties
 - On-call 24/7 support
 - Meet governing laws
 - Crashworthiness / Safety
 - Accessibility
- Vehicle, passenger management, and other acquisitions should include dependable OEM support
- Receive or develop operational guidance, standard operating procedures, and maintenance manuals
- Consider whether to outsource vehicle operations to leverage operator expertise and to support risk management



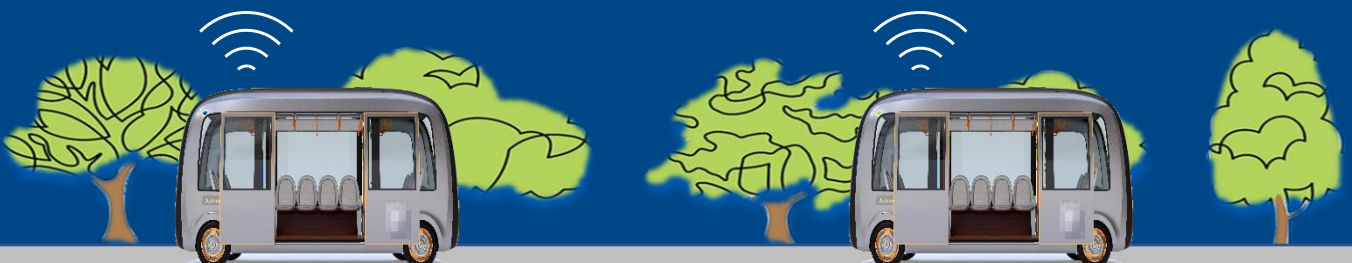
STEP #6

Deploy Vehicles

CONGRATULATIONS!!!

You are now ready to deploy your vehicles.

- Deployment of any new technology might be rolled out in phases to build on early successes and learnings
- Identify and monitor key performance indicators to help ensure success
- Be willing to make process or equipment adjustments
- Report and share lessons learned and best practices





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This document has been designed to provide high-level guidance to transit providers that are seeking an opportunity to deploy automated transit vehicles into their fleet either as an early pilot or into revenue service. This was created with the support and guidance provided by CALSTART's Next Generation Purpose-Built, Transit AV cohort members (www.catuf.org).

For More Information, please email Maureen Marshall (mmarshall@calstart.org)

