Accessible Autonomous Vehicle In City of Angeles

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Access Services – Los Angeles

Access Services, a CA state legislated public entity, is the Los Angeles County Consolidated Transportation Services Agency ("CTSA") and administers the Los Angeles County Coordinated Paratransit Plan ("Plan") on behalf of the County's 46 public fixed route operators (i.e., bus and rail). Based on the Americans with Disabilities Act of 1990, Access is offering next day services on demand curb-to-curb shared ride services to our riders.

Reference Statistics:

- **868 agency owned vehicles + 2000+ contracting vehicles**
- **Service area over 1,950 square miles.**
- **3.7 million trips per year (approximately 14,000 trip on weekday)**
- **163,000+ qualified ADA riders**
- **Annual budget of $268 million USD**
- **2nd largest independent public paratransit agency**
- **Top 30 public transit agency in US**
- **Funding sources**
  - **Proposition C State Sales Tax**
  - **Measure M State Sales Tax**
  - **Federal 5310 grants**
  - **Fare box revenue**

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AAV Pilot Overview

Access AAV project focus on seniors and ADA Riders with practicality and accessibility in mind. Three focus areas:

1. Purpose-Built Accessible Autonomous Vehicle
2. Human Machine Interfaces (HMI)
3. Operational Safety

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Purpose-Built AAV

- FTA Transit Bus Automation Strategic Partnership
- Partnered with Lilee Systems in San Jose & Sunset Vans in Corona, California
- AAV was built in October 2021
- Vehicle is FMVSS, ADA, Buy America Compliance and Altoona tested
- Vehicle roadshows/demonstrations:
    - October 2021: CalAct Fall Conference
    - November 2021: APTA EXPO
    - January 2022: CES
    - February 2022: Los Angeles Regional Demo
    - March 2023: Rancho Las Amigos National Rehabilitation Center

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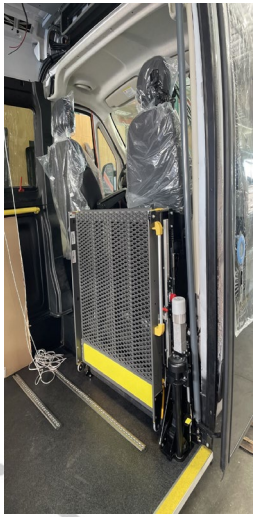
Vehicle In Progress Photos



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Vehicle Photos

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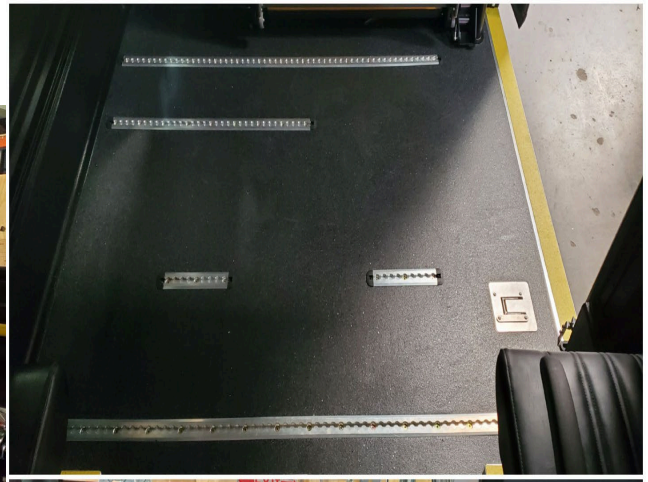
Vehicle Photos



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AAV - HMI

- Partnered with Lilee Systems in San Jose, CA, IT Curves in Gaithersburg, MD
- In-vehicle Hardware: BLE Beacon, WiFi, GPS, HD Cameras, Display & Voice Communication
- Rider Software: Account Based Smart Mobile App based on WMR launched in 2016

  Major Functions:

  - Mobile Ticket/eWallet
  - Trip Planner
  - Mobile Reservation
  - Wayside guidance
  - Driver Communication

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AAV - HMI

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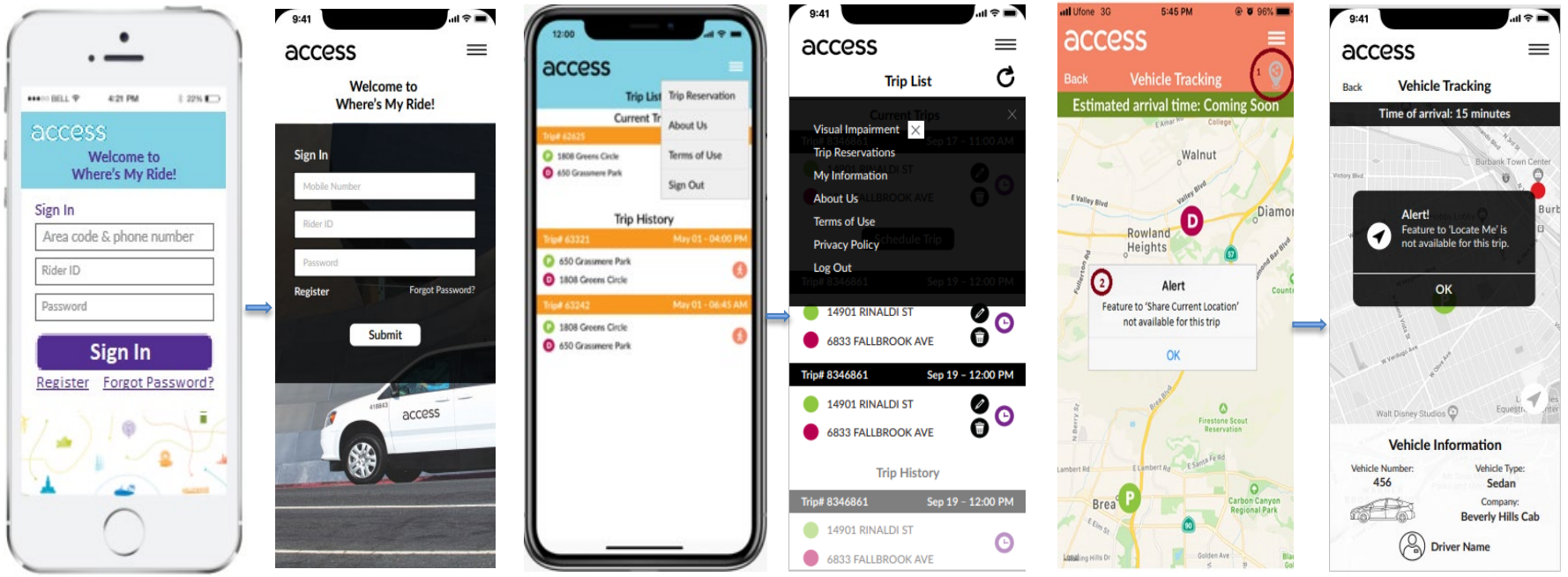
AAV - HMI

WMR focuses on assistive technologies and is compliant with WCAG & Section 508 requirements



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Operational Safety

- Partnered with Lilee Systems in San Jose, CA
- Vehicle Safety
  - SAE Level 4 autonomy
  - Cyber Defense: Centralize vehicle connectivity, include telematics, with VLAN & subnet
  - SafeRide - Real Time Vehicle Status Monitoring System
    - ODB II codes
    - On Board visualization
    - Low latency 4G/5G multi-carrier connectivity
    - Vehicle intervention capability
- 7/24/365 Operational Control Center
  - Same concept as rail operational control center
  - Vehicle remote control capability
  - Remote voice communication

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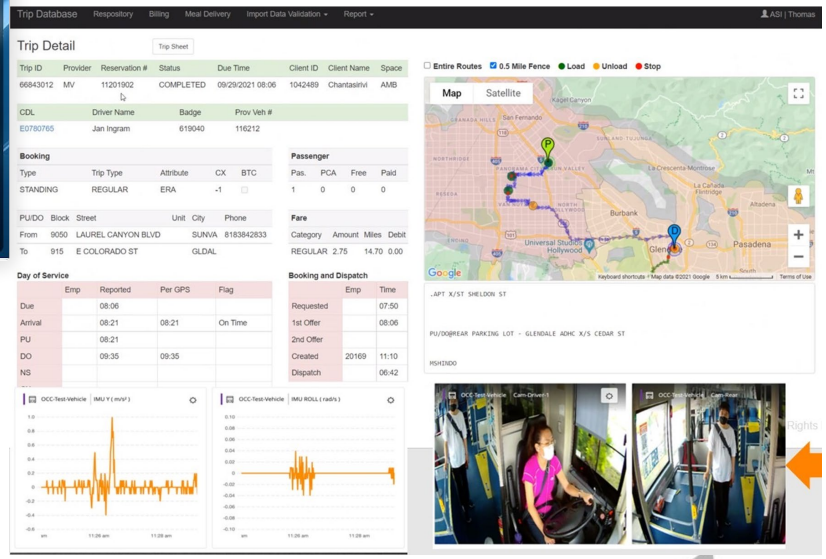
Operational Safety



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Next Steps

- Funding Sources
- Infrastructure Readiness
- Labor Acceptance
- Rider Confidence
- Cost Per Vehicle
- Cyber Security
- Liability
- Politics

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Next Steps

- In-Vehicle Unified Communication Systems
- Electric AAV
- Automated Wheelchair Securement
- Automated Ramp Deployment
- Advanced HMI

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