



Request for Information (RFI): Research Gaps and Project Ideas

Center of Excellence on New Mobility and Automated Vehicles (Mobility COE)

About the COE

Established through a cooperative agreement between the Federal Highway Administration (FHWA) and UCLA, the Center of Excellence on New Mobility and Automated Vehicles (Mobility COE) conducts and disseminates research on the impacts of new mobility and highly automated vehicles on land use, real estate, urban design, transportation system safety, resilience, efficiency, access to mobility and job participation, and cost-effective allocation of public resources.

Purpose of the RFI

Based on the research conducted and findings from our initial round of Year 1-2 [projects](#), the Mobility COE is looking to identify research to fund in Years 3-4 of its 5-year program. Selected projects will be performed either by researchers from the six COE [core members](#) or external contracted institutions.

The intent of this RFI is to engage with a diverse range of public and private sector stakeholders to identify potential research gaps, research ideas and needs, and solicit **project ideas and interest in collaboration** that can be considered for the next round of COE-funded projects. This RFI plays a critical role in the COE's efforts to identify existing gaps and update our strategic roadmap.

Participants are encouraged to focus their research ideas and needs on one or more of the following priority research topics:

- Public Agency AV Deployment Readiness and Implementation
- Safety, Operations, and System Resilience
- Data, V2X, Metrics, and Interoperability
- Mobility, Access, Economic, and Workforce Impacts

- Stakeholder Engagement and Technology Transfer

Refer to the **Appendix** for more details on each priority topic. If your research needs go beyond the scope of these priority research topics, **please propose a corresponding one.**

When developing and submitting **research ideas or needs**, please consider the **potential impact of** new mobility and automated vehicles on the COE's [main research thrusts](#):

- Land use, real estate, and urban design
- Transportation system optimization
- Access to mobility and job participation
- Municipal budgets and cost-effective allocation of public resources

Who May Submit

Submissions are welcomed from diverse groups, including **public agencies, private industry** developing or assessing new mobility and automated vehicle technology, **non-profit organizations**, or **academic institutions** which have close agency/industry partners for research and deployment. Public agency and industry submitters do not need to perform the research themselves. **Public agencies with urgent or emergent knowledge needs are encouraged to submit research questions that experts on the COE team may be able to help answer.** Academic institutions should have close agency or industry partnerships and indicate the willingness to perform research.

By submitting a research need, participants agree that the Mobility COE may add them to its stakeholder list and may contact them for clarification or further development of the research needs statement.

Selection and Development Process

In consultation with FHWA and the [COE Steering Committee](#), [COE Leadership](#) will assess submitted research ideas or research needs statements based on alignment with **priority topics, urgency, availability of data or partnerships, and potential impact.**

Should your research idea be chosen, COE leadership will proactively engage with you to refine the research statement and pair agency and industry partners with COE researchers to propose a comprehensive plan. In instances where it is beneficial, the COE may combine several research needs to launch collaborative projects that leverage strengths from multiple parties. The COE is committed to adopting a highly collaborative and interactive approach and will engage closely with stakeholders and researchers to clearly define and initiate each project.

Depending on the nature of the research needs, submissions may result in the development of a research synthesis, translational research, a risk assessment, or a full research project. Scope and timelines are jointly determined by the COE leadership, FHWA, researchers, and submitters. Most projects are expected to run six months to one year; in exceptional cases, larger efforts may extend to 1.5-2 years. Please keep this range in mind when describing the scope of your research idea.

All submitters will receive confirmation that their submission was received. Submitters will be notified of the outcome by January 2027, whether their research idea is selected.

Submission Instructions

Participants can submit their **research ideas** through the [\[designated form\]](#).

Participants will receive a copy of their submission and will be able to edit it until the submission deadline. Participants may also submit multiple research ideas on different topics. Note that if your research needs go beyond the scope of the identified priority research topics (Appendix), you may propose a new one.

The submission form asks you to:

- Provide your contact information, including name, email, and affiliation type.
- Provide a title for your research idea in 12 words or fewer.
- Submit a short description (up to 200 words) of your research idea. Include the problem statement, existing knowledge gaps, and why it matters now, and the expected impact: who would use the findings, and what decision, policy, program, or investment they would inform. You may include the priority topic your research idea most closely relates to.
- Submit an **optional** long description (up to 500 words) if you wish to include specific objectives, desired or planned research methodologies, or expected benefits/outcomes from addressing this research need.
- Indicate whether you can provide data, testbeds, or site access that would help COE researchers investigate your research question, e.g., crash or incident records, operations or curb data, AV pilot or permitting data, survey access, or a test corridor, and note any restrictions on their use.
- Select one or multiple research thrusts this need corresponds to:
 - Land use, real estate, and urban design
 - Transportation system optimization
 - Access to mobility and job participation
 - Municipal budgets and cost-effective allocation of public resources

Critical Dates

- RFI Release: October 14, 2026
- Submission Deadline: November 18, 2026
- Engagement and Idea Selection: Following the submission deadline through January 2027

- Detailed Research Plan Joint Development: December 2026 to February 2027, as ideas are selected.
- Commencement of Selected Projects: Up to March 2027

Contact Us

Please submit your questions to mobilitycoe@ucla.edu.

Appendix: Priority Research Topics

The Mobility COE has identified the following priority research topics based on Y1-Y2 research activities and stakeholder engagement. For our next round of activities, we are looking for research needs statements that fall within the selected list, but also welcome submissions from topics beyond this priority list. Items below are examples; submissions may refine, extend, or propose alternatives to them.

1. AV Deployment Readiness and Public-Agency Implementation

- Parking, Curb, and AV Interaction – Study how AVs will affect parking and curb dynamics, including the potential for dynamic or adaptive management of passenger pickup and drop-off, loading, staging, charging, and other competing curb uses.
- City Operations, Land Use, and Municipal Finance:
 - Analyze how AV deployment affects traffic operations, land use, zoning, municipal budgets, and sustainable approaches for recovering public infrastructure and operating costs.
 - Examine how personal AVs and shared or fleet-owned AVs could affect traffic demand and land use differently, including requirements for depots, maintenance, staging, and charging facilities.
 - Assess how well existing zoning codes accommodate current AV deployments, identify leading practices, and determine where zoning or development guidance may need to change for future deployments.
 - Examine city-level fee mechanisms (permitting, parking, trip fees) as AV cost-recovery levers.
- Public-Private Partnerships for AV Services – Track current pilots for demand-responsive AV shuttles, AV first- and last-mile connectors, and similar services operating under public-agency authority and public procurement frameworks to extend P3 analysis as AV, vehicle charging or fueling infrastructure, and mobility-as-a-service cases accumulate and identify the mechanisms linking governance conditions to outcomes.
- Rural Deployment Challenges – Study public perception, healthcare access, workforce mobility, roadway and communications readiness, emergency-response considerations, and the cost-effectiveness and scalability of rural AV services.

2. Safety, Operations, and System Resilience

- Freeway Operations – Assess AV interactions with mixed traffic at freeway merges, interchanges, and historic incident locations, with emphasis on safety, travel-time reliability, and the efficient use of existing roadway capacity.
- Work-Zone Scenarios and Worker Safety – Evaluate AV interactions with roadway workers, temporary traffic control, lane shifts, reduced visibility, and changing roadway conditions. Examine how real-time work-zone information, standardized messaging, and infrastructure-based warnings could reduce crash risk, secondary crashes, and delay.

- Safety Countermeasures and Probabilistic Risk Assessment – Develop scenario-based and probabilistic methods for evaluating infrastructure, communication-based, and operational safety countermeasures. Use these methods to complement observed-crash evidence and existing Crash Modification Factors in the CMF Clearinghouse, and identify priorities for future field evaluation.
- Cybersecurity Needs in Transportation Networks:
 - Identify the needs and gaps in cybersecurity for the transportation sector, considering the particularities of its infrastructure elements.
 - Develop a cybersecurity risk analysis framework for the transportation sector building on the NIST cybersecurity framework.
 - Develop methods for cybersecurity risk analysis and quantification for the transportation sector, including methods for identifying threats and vulnerabilities, assessing their probability and consequences.
- Emergency Preparedness, Incident Response, and Fleet Resilience:
 - Examine AV stoppages, adverse weather behavior, incident detection, emergency scene management (including remote assistance functions), communications with public-safety agencies, interoperable data exchange, continuity of service, stakeholder coordination, and governance needs.
 - Synthesize training curricula for emergency responders on interacting with AVs during incidents, and examine how AV system/vehicle design could better support first responder operations, informed by direct responder feedback.
 - Examine AV interactions with special events, motorcades, and unusual scenarios (e.g., wildlife encounters), and document cross-jurisdictional lessons learned.
- Freight Applications – Explore AV integration along freight corridors, including bottlenecks, truck-parking and terminal interfaces, port and intermodal connections, incident response, supply-chain visibility, corridor resilience, and real-time messaging benefits.

3. Data, V2X, Metrics, and Interoperability

- Operational Metrics and Standards – Engage SAE International and other standards-development organizations and industry consortiums (e.g., AVSC) to identify shared operational metrics and implementation practices that public agencies can use to measure AV fleet, service, and transportation-system performance. Potential measures include reliability, delay, incident clearance, infrastructure interaction, data quality, and service availability.
- City Data Frameworks:
 - Create neutral, research-based guidance for how cities collect, manage, protect, share, and apply AV-related data for transportation planning and operations.

- Investigate how AV sensor data could support ancillary infrastructure monitoring (e.g., pothole and roadway defect detection) beyond core transportation use cases.
- Data for Autonomous Transportation Awareness: Use Cases, Standards, and Barriers – Identify priority data exchanges among roadway agencies, transportation management centers, public-safety agencies, infrastructure operators, and AV service providers.
 - Investigate sustainable operating and business models for real-time transportation information brokers.
 - Convene industry, standards organizations, and public-sector stakeholders to validate priority use cases and institutional responsibilities.
 - Support further development and implementation of interoperable data standards, implementation profiles, data-quality practices, and cybersecurity protections.
- AI-Enabled Travel Demand and Deployment-Condition Modeling – Extend activity-based travel demand models to capture complex social dynamics (coordinated activities, crowd formation, social-network influence on travel), integrate real-time traffic, transit, signal-timing, work-zone/incident, weather, curb, and connected-vehicle data streams for dynamic short-term forecasting and explicit modeling of deployment conditions.
- V2X-Enabled Safety Case Study – Develop focused case studies to analyze how V2X-enabled warning and automation functions could improve safety. Evaluate selected use cases and document their measurable safety benefits, operational requirements, and deployment lessons.
- Digital Infrastructure – Develop a prototype framework for a centralized information-sharing platform to communicate road closures, geofenced areas, operational restrictions, and other deployment-related information.

4. Mobility, Access, Economic, and Workforce Impacts

- Multimodality and AV–Transit Relationships:
 - Study consumer and trip behavior, estimate mode shifts, evaluate the benefits and implementation requirements of shared AV services, including TNC-operated and other fleet-based models, and quantify the effects of scaled AV deployment on traffic networks and transit connections.
 - Study consumer behavior to inform mobility hub siting and planning, including landlord-facing parking and congestion considerations.
- Autonomous Goods Delivery and Delivery Robots – Examine regulatory and operational considerations specific to autonomous goods delivery, including delivery robots.
- Personal-Vehicle versus Fleet-Service Models – Compare the implications of personal AV ownership and shared or fleet-based services for trip-making, vehicle miles traveled, congestion, roadway capacity, transit use, and supporting facilities.

- Workforce Requirements and Public-Agency Capacity – Examine how AV deployment changes job functions, career pathways, training needs, worker safety, and labor-management considerations from both private-sector and public-agency perspectives.
- Public Understanding and Operational Expectations – Examine expectations and perceptions of AV safety and performance among passengers, the general public, public officials, first responders, and roadway operators.
 - Develop approaches for communicating demonstrated capabilities, operating limitations, and public-agency responsibilities.
 - Examine non-safety-critical AV behaviors, road user interactions, and identify low-cost transparency measures (e.g., public dashboards) that can support public understanding and safety.

5. Stakeholder Engagement and Technology Transfer

- Engagement and Communication:
 - Identify strategies to host workshops, podcasts, webinars, and practitioner roundtables to maintain ongoing feedback from public agencies, industry, standards organizations, first responders, freight stakeholders, and rural communities.
 - Develop implementation briefs, case studies, reusable data and procurement templates, safety monitoring protocols, and updates to the AV Readiness and Deployment Guide so that research results can be adopted by public agencies.
- Interagency Collaboration and AV Working Group Structures – Develop a framework for collaboration among state licensing, transportation, and enforcement agencies, and propose AV working group structures spanning police, fire, EMS, airport, school, transit, and university stakeholders.