Automated Los Angeles

Automated Vehicle Innovation Strategy for Los Angeles (Beta)

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Autonomous vehicle technology will reshape the transportation infrastructure of Los Angeles

94%  7.5M  1#
Percent of crashes caused by human error  Number of motor vehicles in Los Angeles  Los Angeles’s rank among cities with the worst traffic congestion

Source: NHTSA, California DMV, Inrix
Time to engage is now

After a slow start, sale of AVs will take off

Source: IHS Automotive
How is Los Angeles preparing?
Strategic Approach

Structuring for adaptability and co-creation

Rapidly evolving AV technology means that the near-term goals for the City should be engagement, adaptability, and co-creation.

Prioritizing:
- Connectivity
- Data-sharing
- Shared vehicles
- Electrification

Leveraging:
- ATSAC infrastructure & fleet
- LADOT staff knowledge
- Preferred access to LA market
- Regulatory/political support

Applying:
- Community-driven design
- Lean startup approach
Tactical action steps to engage and co-create

- Innovation financing
- Community engagement
- Labor preparation
- Competition and rapid iteration
- Incremental scaling
- Vision, goals, and metrics
- Capacity building
- Partnership development
- Streamlining procurement
- Policy and regulation
- Risk mitigation
- Proving grounds
Management Structure

**STAKEHOLDERS**
- INDUSTRY
- RESEARCHERS
- OTHER GOVERNMENTS
- OTHER

**MANAGEMENT**
- COALITION FOR TRANSPORTATION TECHNOLOGY
  - LEAD
    - LADOT CALTRANS D7
  - SUPPORT
    - LA METRO LA COUNTY PUBLIC WORKS SCAG

**TESTING SITES**
- UCLA CAMPUS
- USC EXPOSITION PARK
- WARNER CENTER
- PROMISE ZONE
- I-210 / I-110 CORRIDOR

**PARTNERS**
- LA ITA LA POLICE LA FIRE
- RESEARCH INSTITUTIONS
- LACI
- LAEDC / ATC
- TRAINING INSTITUTIONS
- BLOOMBERG ASPEN INITIATIVE
Estimated timeline

01 Laying the Institutional Foundation
   Goals & Metrics | Capacity Building | Partnership Development | Regulation | Innovation Financing | Risk Mitigation

02 Community Campaign/Customer Engagement
   Human-Centered Design | Community-Driven Design

03 ITS/CV Piloting
   Security and Privacy | ITS Development | CV Piloting and Deployment

04 Shared CAV Piloting
   CAV/ITS Integration Piloting

05 On-going Evaluation
   Extract Lessons and Assess Opportunities for Scaling

Formal pivot consideration points

1H Year 1  2H Year 1  1H Year 2  2H Year 2  1H Year 2  2H Year 3  1H Year 3
Tactical action steps to engage and co-create
Request for Qualifications: Connected and Automated Vehicle Technology Services

City of Los Angeles
Department of Transportation
October 2017
RFQ Applicants (Selected)

Mobility
- Ford
- BMW
- UBER
- GM
- local motors

Connectivity
- BRIDJ
- verizon
- Siemens
- at&t
- transdev

Data
- CivicConnect
- STREETLIGHTDATA
- CITILABS
- SYNCROMATICS

Electrification
- NREL
- SwRI
- Applus
- IDIADA
- Center for Sustainable Energy

General Services
- AECOM
- KPMG
- AECOM
- RAND Corporation
- WSP

Community-based Organizations
- WLCAC
- KYCC
- VLF Community Action Committee
- YOUTH POLICY INSTITUTE
- Pacoima Beautiful
- SAFE
Near-term projects: Focusing on pressure points

**Policy and regulation**
- Ensure that the regulations encourage piloting of shared CAV technologies and data sharing
  - Advocate for regulations that support connected, data-enabled, shared, and electric AV future
  - Advocate for regulation that supports CAV prototyping and testing
  - Consider cordonning DTLA for connected, data-enabled, shared, and electric vehicles

**Invest in CAV infrastructure and grant priority**
- Invest in infrastructure that would make AVs also CVs and shared
  - Develop and provide to connected and data-sharing vehicles access to dedicated lanes
  - Traffic signal priority to connected and data-sharing vehicles
  - Grant parking priority and access to connected and data-sharing vehicles

**Road use pricing using CV**
- Employ pricing capabilities to incentivize shared mobility and manage demand
  - Invest in data technologies that would enable data-sharing
  - Invest in technologies that would enable frictionless transactions
  - Develop both carrots and sticks approach that would be politically viable

**Implement transit benefits for shared CAVs**
- Extend transit benefits, a type of existing economic incentive to drive ridership
  - Shared CAVs as part of public fleet
  - Subsidized transit / vanpool fares
Los Angeles as a transportation innovation platform

City Government
The City must help set the table for engagement:
- Articulate vision and need
- Define rules of engagement (i.e., scope, pricing, service level)
- Enable commercialization pathway
- Provide regulatory, political, safety support

Startups and Industry
The startup, industry, and research communities can develop solutions in response to the City’s challenge:
- Industry brings deep technical know-how
- Startups bring latest innovation and entrepreneurial energy
- Universities provide research and evaluation expertise

Innovation Finance
Financing can enable and attract the best technologies to Los Angeles for testing and piloting. Sources for innovation financing include:
- Seed capital from city, state, and federal governments
- Industry and risk capital
- Philanthropies
Key Gating Item: Cyber Security
# Cyber Security: Near-Term Tasks

## Review general cybersecurity requirements
- Review cybersecurity structures, management, control, and incident response
- Study other deployed and large-scale urban traffic signal control systems and well as critical transportation control systems found in air traffic control, railway control, etc.
- The review should also include large-scaled critical utility control systems found in electrical, water, oil and gas or any other pertinent industrial control systems of critical importance.

## Coordinate with key stakeholders
- Meet with a broad range of staff members and partner organizations to better understand their perspectives, priorities, and concerns with regard to current process challenges and need for improvement
- Uncover questions that each wants to answer to identify or generate the necessary resources and tools
- Establish relationships with the many different LADOT divisions, with a particular focus on those closest to the actual IT systems infrastructure, network architecture and department communications to identify goals and concerns

## Best-practice analysis and develop action plan
- Synthesize best practices and learnings to create two or three business models for the ATSAC Cyber Security Improvement Plan assuming budget constraints and timelines that prioritize most critical recommendations
- Develop written recommendations and action plans with different possible strategies and implementation timelines for consideration
- Address human and financial resource needs, as well as recommendations toward the procurement of products and equipment, and enlistment of specific skills, knowledge, and experience necessary to implement the plans

## Implement recommendations, create long-term plan, and train staff
- Identify and implement the most likely “early wins” that can be accomplished within the year to begin implementing the chosen plan
- Create a sustainable multi-year approach for implementing a process improvement roadmap that includes carefully sequenced phases designed to build momentum and ensure smooth transitions for all key stakeholders
- Help analyze funding and/or financing alternatives, convene internal and external parties, participate in key meetings, and conduct other activities as needed to help support the actualization of ATSAC Cyber Security Improvement Plan
- Empower staff to make more informed decisions and enable them to align their efforts from division to division into a department-wide approach to cybersecurity