City of
SACRAMENTO
Office of the City Manager

Howard Chan
Interim City Manager

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December 19, 2016

Anthony Foxx, Secretary
U.S. Department of Transportation
Automated Vehicle Proving Grounds Pilot Program
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Foxx:

Thank you for the opportunity to be considered to become a Community of Practice within the Automated Vehicle Proving Grounds Pilot Program.

There is no single silver bullet to fix America's transportation challenges, but Sacramento offers the best of proven public-private capacity that has succeeded time and again in the delivery of ambitious, scalable innovations. Sacramento has acted as a key agent revitalizing Sacramento with key public-private partnerships. The City brings this experience to guide and maximize new investments in automated and autonomous vehicles.

The Sacramento region offers a high visibility location to demonstrate new AV technologies and emerging transportation innovations. The City is at a major junction for regional and national transportation networks. Partnerships in Sacramento can leverage the City's work with experts and other leading agencies. The City of Sacramento was one of just 16 cities from approximately 60 nationwide applicants for Transportation for America and Sidewalk Labs Smart Cities Collaborative. The City's participation in this collaborative provides another avenue for policy innovations, which the City can leverage to support AV deployment in the region.

The City intends to work closely with our partners in transportation including SACOG, Sacramento Regional Transit, the Sacramento Municipal Utility (SMUD), the Sacramento Metropolitan Air Quality Management District, the Institute for Transportation Studies at UC Davis (ITS-Davis), and Vision Services Plan Global as our connection to the technology sector.

I am confident that your office will recognize the benefit that Sacramento will bring as a participant in this pilot program and I look forward to the announcement of the program participants.

Please don't hesitate to contact Fedolia "Sparky" Harris in our Department of Public Works at (916) 808-2996 or at fharris@cityofsacramento.org if you have any questions regarding this application.

Sincerely,

Howard Chan
Interim City Manager

City of SACRAMENTO

December 2016

Sacramento Application for USDOT Automated Vehicle Proving Ground Designation

"Sacramento is ready to be a trailblazer" – Congresswoman Doris Matsui

The designation as a USDOT Proving Ground will further efforts by the City of Sacramento to enhance public safety and expand an innovation foundation that can scale the implementation of connected technologies to the national level. The urban core of the City is a prime location for safe testing and deployment of automated vehicles, offering a robust system of infrastructure that can be enhanced to maximize the efficiency of onboard systems within connected vehicles. Recent capital improvements support expedited expansion of vehicle to infrastructure capabilities. Existing partnerships form a solid basis for data collection and analytics, as well as providing an efficient conduit to share best practices. The socioeconomic conditions within the urban core and outlying communities of Sacramento present a unique opportunity to prove emerging technologies within a diverse environment, including state- and federally-designated disadvantaged communities. As the capital city of California, the enhancements and safety improvements resulting from these connected technologies will foster a high-visibility proving ground, offering proof-of-concept to legislative representatives from throughout the state and helping to raise awareness and drive demand to protect the public.

Attaining USDOT designation as an AV proving ground can equip the City to achieve the following primary goals:

- Enhance public safety
- Diversify the local innovation and entrepreneurial sectors
- Expand communities of practice for interconnected vehicle to infrastructure networks
- Offer ladders of economic opportunity to disadvantaged communities
- Dissemination of data generated from safety testing and operations
- Enable general public to learn AV deployment at a faster rate

The City of Sacramento is the economic, political, and cultural center of the six-county metropolitan Sacramento region located in the heart of the State of California. Sacramento, like most progressive cities throughout the country, has the desire and basic elements to appeal to automated vehicle manufacturers. What sets Sacramento apart is the leadership that the City provides based largely on its visibility as the capital and the early adoption of initiatives from progressive sectors including energy, technology, and transportation.

The City of Sacramento is the capital of the State of California and the largest jurisdiction in the six-county metropolitan region. Sacramento is the 35th largest city nationally and the 6th largest city in California. Sacramento is home, at least part-time, to 120 legislators from every corner of the state. These legislators govern from the State Capitol Building in the heart of Sacramento's urban core. The current Mayor of Sacramento, Darrell Steinberg, served in both houses of the State legislature for 16 years before his successful return to City Council in 2016. Strong ties to the Capitol equip Mayor Steinberg and City staff foster direct coordination and collaboration with State elected and appointed officials, allowing for the dissemination of best practices broadly across the state and beyond.

Former Mayor Kevin Johnson launched the Mayor's Office for Innovation & Entrepreneurship (MOFIE) in June 2016 as the City Council's conduit to the entrepreneurial community in Sacramento, providing leadership and organization for the regional innovation community. Further, MOFIE is the City's autonomous R&D unit, sourcing innovative ideas, technologies, products and talent for internal departments.

After taking office on December 13, 2016, Mayor Darrell Steinberg tasked MOFIE with leading recruitment of AV and related technology manafacturers to choose Sacramento as a testbed for their technologies. Mayor Steinberg also gave direction to MOFIE to develop, in collaboration with the City Manager, a Demonstration Partnerships Policy that would establish a framework for engaging in and evaluating demonstration partnerships with the aim of developing, testing, and demonstrating innovative solutions in the city. Similarly, MOFIE is leading state-level policy coordination with the California Department of Motor Vehicles (DMV), Governor's Office of Business and Economic Development (GO-Biz) , and State Senator Dr. Richard Pan, to ensure that pertinent sections of the California Vehicle Code are addressed and authorize the safe testing of autonomous vehicles.

Mayor Steinberg has augmented his reach with the assignment of Mike McKeever as his incoming Chief of Staff. Prior to joining the Mayor's staff, Mr. McKeever was the Executive Director of the Sacramento Area Council of Governments (SACOG) for 12 years and is credited with his leadership role in developing the nationally recognized Blueprint Plan for smart growth that has been embraced both locally and throughout the country.

Leadership within City goes beyond the electeds and staff. Strategic partnerships in which the City of Sacramento currently participates serve to foster and share best practices as well.

Mandatory Criteria

Designated Safety Officer

The City of Sacramento is proposing that the City Traffic Engineer, Ryan Moore, act is the Designated Safety Officer responsible for the City's Safety Management Plan with the commitment to participate in the Community of Practice quarterly meetings. The powers and duties of the City Traffic Engineer are codified in the Sacramento City Code (§ 10.08.040). This section states, "The city traffic engineer shall: determine the installation and proper timing and maintenance of traffic-control devices and signals; conduct engineering analyses of traffic accidents and devise remedial measures; conduct engineering investigation of traffic conditions and co-operate with other city officials in the development of ways and means to improve traffic conditions; and carry out the additional powers and duties imposed by this title and other ordinances of the city." These powers and duties align perfectly with the responsibilities required of the Designated Safety Officer as described in the solicitation for proposals.

In addition to his duties as the City Engineer, Ryan is also the Division Manager within the City Public Works Department overseeing the sections responsible:

- Traffic Signals
- Traffic Operations Center
- Vision Zero

Commitment to Sharing Approaches and Data

The City, in partnership with SACOG, will use the Regional ITS Partnership as a platform to share information on the Sacramento AV Proving Ground with the agencies within the SACOG region. ITS Partnerhip meetings could be used for: information sharing on all aspects of the Sacramento AV Proving Ground (project description, data and data sources, technical information on AV's, key project learnings and results, etc.); discussions on potential expansion of the Sacramento AV Proving Ground to other cities and jurisdictions; discussions on specific projects to expand or build on initial implementation of the Sacramento AV Proving Ground. For key project documents, data, and results will be published and disseminated via the City's website and open data portal, and linked to other agency websites and data portals (e.g. SACOG).

Commitment to Safety

Vision Zero

Traffic safety is a primary goal for the City of Sacramento. In 2016, Sacramento was added to the Vision Zero Network and is in the process of developing a Vision Zero Action Plan aimed at eliminating traffic deaths and severe injuries in the city. With stakeholder meetings currently underway, the plan is scheduled for completion in 2017. The plan will identify 1) the factors contributing to traffic deaths and severe injuries, and 2) proven safety countermeasures to those factors integrating education, traffic engineering, enforcement, and evaluation.

One of the guiding principles of Vision Zero cities is that human error is inevitable. While debatable whether human error will ever be completely removed from our transportation system, advancements in automated and connected vehicle technologies have proven to be valuable in overcoming these errors. The efficient coordination of

locally- controlled traffic signal interfaces for communications, vehicle-based safety applications, and third-party security management forms the basis for a connected vehicle environment that can significantly improve safety in Sacramento and beyond. Acknowledging that traffic deaths are preventable and that our disadvantaged communities are disproportionately affected by injury crashes is a priority challenge and key focus of the initiative.

Research, Application and Data Sharing

Key areas of direct benefit which will be assessed in the Sacramento AV Proving Ground implementation are: safety (e.g. accident avoidance or severity reduction); congestion relief (e.g. reduction in incident and accident delay, "smoothing" of traffic flow, etc.); and vehicle emissions reductions, including greenhouse gases (e.g. increase in percentage of "environmentally optimal" speeds on roadways; reduced stopped delays and idling times). The implementation of pilot testing for the Sacramento AV Proving Ground will focus on generating performance metrics for these and other benefits. The same partnerships (e.g. SACOG and the Regional ITS Partnership) and other means (agency websites and data portals) will be used to publish and disseminate information on the potential benefits of AV deployment within the Sacramento region. The goal of this information sharing will be to connect accelerated deployment of AV's with many tangible benefits of interest to many public agencies and other organizations. For example, the Sacramento Metropolitan Air Quality Management District would place a high value on the potential of AV's to reduce vehicle tailpipe emissions, especially for criteria pollutants. SACOG, in its role in implementation of the State's greenhouse gas reduction policies (e.g. SB 375), would place a high value on reduction of vehicle greenhouse gas emissions.

"This Waze collaboration symbolizes Sacramento's commitment to be an open and smart city" - Maria MacGunigal, CIO for the City of Sacramento

Existing Data Sharing Partnerships

The City and State of California recently signed a long-term fiber sharing agreement that allows the State to use City fiber assets in exchange for services. The agreement allows the City to connect six State buildings to the State network using the City's fiber and conduit assets. In exchange, the State will provide high speed internet and security services to the City through 2026.

The City of Sacramento also recently began an innovative data sharing partnership with Waze® to help improve traffic management in Sacramento. The Waze® app is used by more than 116,000 monthly active users in Sacramento who drive nearly 22.7 million miles with the app each month, avoiding traffic and reporting nearly 150,000 alerts per month to inform other drivers of conditions ahead. Through the Waze® Connected Citizens Program, the City will publish data from several City departments that Waze can integrate including road closures, construction, and special events allowing drivers to find alternative routes thereby easing congestion. Additionally, the City will be able to leverage Waze® anonymized data to optimize city operations thereby making the city even more responsive to the needs of its residents.

"We're in the midst of the most transformational shift in urban transportation since the start of the interstate era more than 50 years ago" – James Corless, Transportation for America Director

Smart Cities Collaborative

In 2016, the City of Sacramento was selected by Transportation for America (T4A) and Sidewalk Labs to join 16 other cities for a new T4A Smart Cities Collaborative to explore how technology can improve urban mobility. Collaborative participants are convening to tackle the challenges related to implementing smart city policies and projects with the intent to share best practices and technical assistance, and piloting new programs.

Regional ITS Partnership

The City of Sacramento is an active member of the Sacramento Region ITS Partnership, an advisory committee made up of local and state transportation personnel. The Partnership meets on a regular basis and identifies issues and opportunities in deploying ITS in the region. While ITS is defined by applications of technology in transportation systems, partnerships, teamwork and planning are critical elements of all successful ITS projects, especially those that involve multiple agencies and modes.

A pivotal goal of the Regional ITS Partnership is to continue to enhance the capabilities of the Sacramento Transportation Area Network (STARNET) system, by integrating regional transportation information. This data is valuable to a diverse array of stakeholders, including public and private service providers, in addition to users of roadways and public/private transportation systems such as transit and ports into a real-time environment. STARNET is intended to provide computer-assisted decision/management support to transportation management centers and traffic engineering/public safety departments operated by participating agencies.

Operators in STARNET organizations use the Regional Transportation Management Display as a two-way portal, both to view data and video describing current conditions, in addition to entering information about current incidents and planned events. Computers operated by STARNET organizations use real-time information to make decisions, alert operators, and take automatic actions in support of more efficient transportation system operation and emergency response. Computers operated by non-STARNET organizations may use real-time data for various purposes such as enhanced travel information distribution services, transportation research, and transportation system performance monitoring. Planners at SACOG use historical data gathered in the Transportation Planning Database to measure the transportation system's past performance and to predict its future performance. The public will use real-time travel information (data and video) to gain knowledge of current travel conditions, to make decisions about the time, mode, and route of travel, and to estimate and inform others of their likely time of arrival.

Local University Partners

Sacramento has the benefit of ongoing partnerships with local campuses from the three levels of the California state educational system. The University of California, Davis houses the Institute of Transportation Studies (ITS-Davis). The California State University, Sacramento (Sac State) offers degree programs in Computer Science, Electronic Engineering, and Computer Engineering. The four campuses of the Los Rios Community College District provide workforce education in the areas of Computer Information Systems, Automotive Technologies, and Electronics Technology.

The Institute of Transportation Studies at UC Davis is the leading university center in the world on sustainable transportation. It is home to more than 60 affiliated faculty and

researchers, 120 graduate students, and an annual budget of $12 million. The Institute partners with government, industry and non-governmental organizations to inform policy making and business decisions, and advance public discourse on key transportation, energy and environmental issues. The Institute is unique in hosting a graduate program in transportation, matching interdisciplinary research with interdisciplinary education.

ITS-Davis is internationally recognized for its multidisciplinary approach to transportation studies, with sustainability as a key underlying theme. To address today's challenges, ITS-Davis has built strong research programs in three areas:

- Travel behavior and transport systems modeling
- Environmental vehicle technologies and fuels
- Climate change, air quality, and other environmental impacts

These research programs are carried out by mission-specific centers within the Institute including the Plug-In Hybrid & Electric Vehicle Research Center, Sustainable Transportation Energy Pathways, China Center for Energy and Transportation, and the Urban Land Use and Transportation (ULTRANS) Center. Guidance and participation from ITS-Davis will allow for the efficient development and dissemination of best practices as a trusted source for cutting-edge research.

Most recently, UCD was selected by the US DOT to lead the National Center for Sustainable Transportation in collaboration with CSU Long Beach, Georgia Tech, UC Riverside, the University of Southern California, and the University of Vermont to advance the state-of-the-art in transportation research and technology, and develop the next generation of transportation professionals.

Any jurisdiction would be hard-pressed to rival the research, analysis, and training capabilities that can be provided by these local institutions to the City of Sacramento.

SMUD

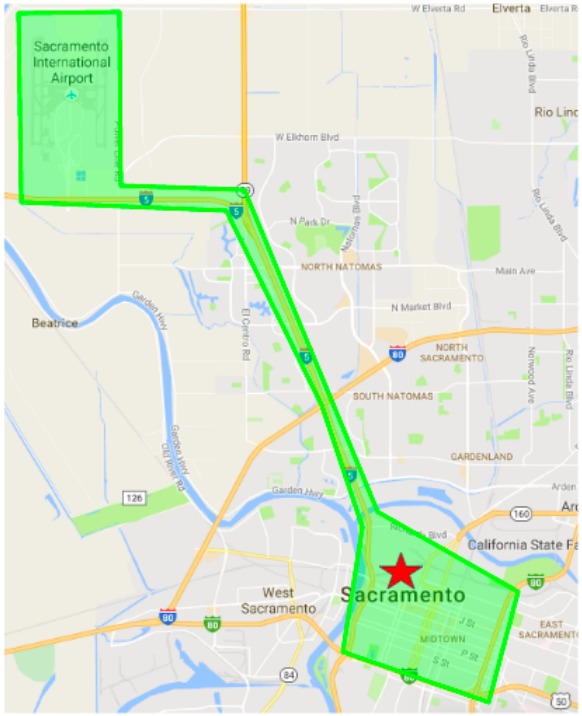
Since beginning its electric vehicle program in 1989, the Sacramento Municipal Utility District (SMUD) has developed expertise as one of the most experienced electric transportation groups in the nation. SMUD offers a strong history of working with multiple automakers, federal, state, and local governments to pilot electric vehicles and help them to succeed. Within the region, SMUD has installed most of the charging network backbone from 1999 to 2002, constructing 140 of our existing Level 2 chargers. SMUD has secured more than $30 million in competitive grants for electric vehicles and electric vehicle infrastructure with the City and other partners. Recently recognized with a 2016 Alliance to Save Energy Star for Transportation Efficiency award, SMUD offers a commitment of approximately $3.1 million annually for customer-facing light duty electric vehicle programs through 2020. New automated vehicle initiatives in the Sacramento region can draw on the expertise of SMUD's electric vehicle and utility operations team, with high potential to leverage SMUD's electrification investments to support the testing of automated electric vehicles throughout the region.

The region is on the cusp of a new era for collaborative development of the electric vehicle network, which could be aligned to support a vibrant automated vehicle space. SMUD is currently transitioning the DC fast charge model to a customer incentive model, offering financial incentives to offset construction costs. SMUD is also actively engaging with auto manufacturers, OEM's, and research institutions as it tests and deploys new

technologies in the electrification space. As a Board Member on the California Electric Transportation Coalition, in addition to membership across numerous industry associations, SMUD is a leader in advancing the next era of clean transportation investment.

Autonomous Transportation Open Standards (ATOS) Lab

The City of Sacramento is a partner in an effort led by Vision Service Plan Global (VSP) known as the ATOS Lab. Participating partners will consist of a diverse array of private companies and government agencies. The core mission of the ATOS Lab is to open Sacramento as a real-world test zone to develop Autonomous Transportation Open Standards (ATOS). The ATOS Lab plans to pool the collective strengths of Autonomous Vehicles (AV) development with research and government involvement in California's state capital. Sacramento provides the ideal setting for the creation of industry best practices for the large-scale deployment of AVs.



The ATOS Lab will offer members the chance to maximize R&D dollars by collaborating within a demonstration city and open lab to build a set of protocols for the sharing of data amongst different AV. By encourage an open communications protocol, the ATOS Lab will accelerate the time to market of Autonomous Vehicles (AV), with the goal of catalyzing up to Level 5 Autonomy around the world. The ATOS Lab seeks to address existing obstacles to AV implementation by:

- Bringing industry leaders together to test and develop ATOS, including establishment of standard communication protocols for the networked sharing of information between vehicles, city infrastructure, and citizens in a real-world setting;
- Working with California policymakers to create appropriate AV regulation, built around ATOS, that works for everyone, and create a model for the rest of the country, and the world to follow; and
- Collaborating with university partners to shape innovative and responsible public policy, develop and test appropriate performance measures for AVs, as well analyze the numerous ripple effects caused by the introduction of AVs to the world at scale.

The test zone defined by the ATOS Lab encompasses Sacramento Midtown, Downtown, and the Interstate 5 corridor from Sacramento International Airport to the urban core, which contains over 100 miles of roads for the testing, development, and deployment of AV technology up to an including Level 5. The ATOS Lab ecosystem will be open to all AV manufacturers and technology developers, big or small with the intent to have

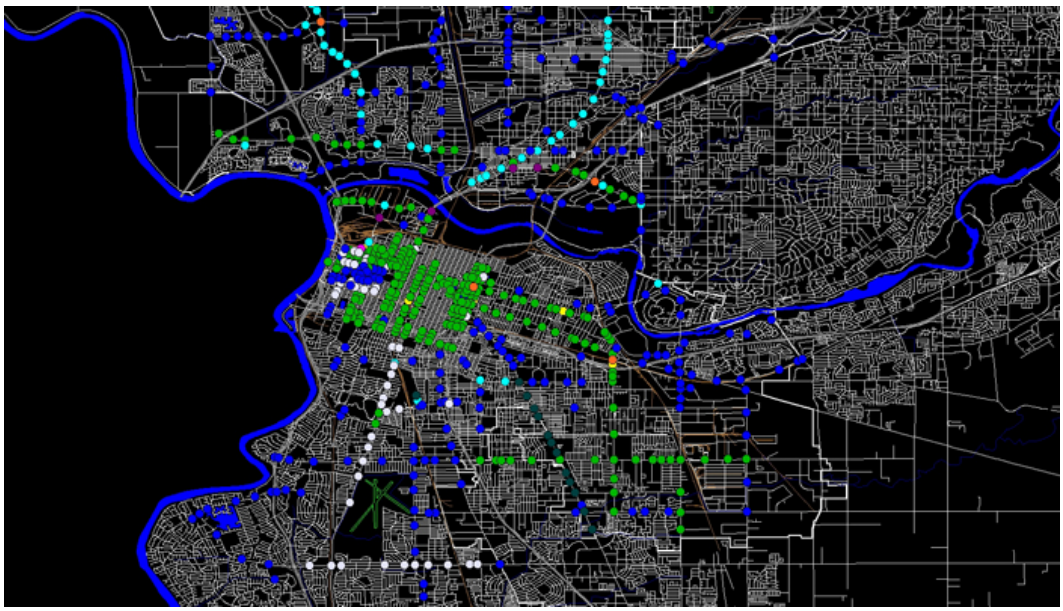
competitors testing their wares alongside one another to collaboratively develop best practices for the safe deployment of AV's.

The ATOS Lab seeks to accomplish more than networked communications protocols that will catalyze AV deployment. The initiative will also focuses on the social implications and human interactions with AV opportunities. A key focus of the TOS Lab is to create a real-world citizen interaction where the social contract of citizen and autonomous transportation can be built, measured, and replicated. This collaborative effort seeks to establish a platform to ask and answer how to best scale AV practices for the benefit of the public.

Readiness

Existing Advance Traffic Controller Fiber Optic Infrastructure

The City of Sacramento operates a state-of-the-art Traffic Operations Center (TOC) that utilizes a computer-based traffic signal control system and an advance fiber optic network to monitor traffic conditions and system performance. Of the 800 signalized intersections in the City, 420 are currently connected to the City's TOC. The system is designed to gather real-time traffic information to better manage traffic incidents and provide travel information to the public. The system can actively set signal timing and also allows traffic operation staff to change timing manually based on real time information. Existing sensors can detect the passage of vehicles, vehicle speed, and the level of congestion on local streets and the system is poised to integrate external data sources such as Waze® and HERE® data. To supplement this information, closed-circuit television (CCTV) surveillance equipment has been deployed at over 30 locations in the urban core with 13 more pending installation.



Nearly 250 of the signals in the urban core have been upgraded to Advanced Traffic Controllers (ATC), along with nearly 130 upgraded signal cabinets. The upgraded ATC controllers allow for the collection of high resolution controller data that, when combine with other traffic data sources, will provide detailed reports on system effectiveness that will help traffic operators better understand and maintain the traffic network.

This system is supported by an extensive backbone of fiber optic cable that the City is constantly expanding. The City has spent approximately $5,000,000 on existing improvements to date. The City was also recently awarded $900,000 in regional grant funds that the City will match with $800,000 of local funds to replacing obsolete signal controllers and upgrade outdated serial communications systems with modern internet protocol (IP) fiber optic cable based systems to improve communications capabilities. This project will install new fiber cables in existing conduits, install fiber switches, replace several cabinets, and install additional CCTV's. These upgrades will enable the City to support advanced signal operations such as the collection of high resolution controller data and the provision of real-time traffic controller data, transit signal priority and adaptive signal coordination. The state of the art communication system is poised to integrate connect vehicle infrastructure and provide V2V or V2X communication for both autonomous and occupied vehicles. Additionally, the fiber optic communication system will accommodate more advance devices and features for testing and implementation.

Existing Electric Vehicle Infrastructure

The City seeks to capitalize on automated vehicles as a platform for the creative economy and green mobility. With extensive leadership in piloting the use of alternative fuels, the City can act as guiding partner for the deployment of innovative automated vehicle programs. Hailed as 2015's #1 Green Fleet in North America, the City fleet uses 50% alternative fuel vehicles, including 2 hydrogen-fuel cell vehicles and more than 30 electric vehicles. Citywide, 350 Level 2 chargers and 3 DC fast chargers (DCFC) are operational at workplaces or public locations, supporting an estimated 2,600 electric vehicles countywide. Together with new partners, the City seeks to expand carbon-free and alternative transportation that provides efficiencies for users and benefits for the planet.

Existing Test Facilities

The Sacramento Regional Driver Training SRDTF (SRDTF) is ideally located for emerging opportunities with automated vehicles. The SRDTF is located at the Mather Field Business Complex, a former military base that now specializes in cargo and general aviation. Located conveniently along US Route 50 and just 13 miles from central Sacramento, the SRDTF is easily accessible by car and plane. Run as a joint operation

between the City and County of Sacramento, the facility was established to reduce employee vehicle accidents.

The SRDTF provides an ideal testing ground for controlled testing of automated vehicles. Constructed during World War I for pilot training, the Mather Air Force Base offers multi-terrain facilities equipped to pilot new technologies in a wide array of simulated scenarios.

The Emergency Vehicle Operations Course (EVOC) for civilian and public safety personnel is run from the SRDTF. Staff are trained instructed certified by the California State Fire Marshall and Peace Officer Standards and Training (POST) Commission. Collectively, SRDTF instructors have over 150 years of combined experience in emergency vehicle operations. The SRDTF's goal is to promote safe driving habits and practices through intensive training, using a combination of the most up-to-date classroom presentations and hands-on techniques. Training courses are designed to reduce accident and injury rates and increase total driving safety.

The central location of the SRDTF allows it to serve driver training needs of Northern California public safety agencies. This positioning provides a potential lab for innovation, allowing for automated vehicle development to draw on the seasoned expertise of emergency vehicle operators. These experts can support and guide automated vehicle deployment, helping to vet new technologies for the diverse needs of special user groups. Engaging the expertise of veteran public safety staff and fleet operators can provide a new opportunity to expand the role and functionality of automated vehicles. Staff at the site can serve a critical role in testing new research and development efforts, guiding the process to help serve the needs of key vehicle user groups with unique needs. Turn-key courses and improvements are available for automated vehicle use. These offerings have been tested and refined to during years of vehicular training at the SRDTF. Course components can be readily adapted to the needs of automated vehicles. Current offerings and courses include:

- Three multi-media classrooms
- The Latest in driving simulators
- Water-flooded skid pan
- Accident avoidance course
- Vehicle placement course
- Threshold braking course
- Commercial vehicle placement course
- Code 3 response/pursuit course
- Pursuit immobilization technique course
- 4x4 course

Automated vehicle deployment is a timely opportunity for the SRDTF. A key priority for SRDTF operators is to expand the customer base beyond public safety personnel, for establishment of a more sustainable business portfolio. A November 2016 report by the City of Sacramento Auditor found that the SRDTF could be better used by nonemergency personnel. The City's Police and Fire Departments are currently the primary users of the facility, but the facility is underutilized. A key recommendation of the Auditor is to expand the types of trainings beyond the current users. Collaborating with new and emerging automated vehicle and component manufactures provides a dynamic

opportunity, allowing the SRDTF to adapt and meet the needs of changing vehicle technologies.

Connection with Disadvantaged Communities

Neighborhoods in Sacramento consist of an array of suburban and urban land use types of mixed incomes and ethnicities. In fact, Sacramento was rated the most diverse City in a national study conducted for Time magazine. This high degree of diversity provides a rare test lab to develop and deploy new technologies that work across demographic groups and communities. Testing and deployment of connected technologies for automated vehicles in the urban core of Sacramento allows the collection and sharing of data from this diverse socioeconomic landscape. This approach enables the City to guide new technologies and programs to support livability for all residents, expanding accessibility and equity throughout Sacramento's many unique communities.

The City's efforts to catalyze the nascent automated vehicle industry offers a new solution to address prevailing mobility challenges of the region. Expanding new types of affordable and reliable transportation is key to connecting disadvantaged communities to jobs and services. Ten census tracts in the Sacramento region rank in the top 10% of the most disadvantaged tracts in the state based on measurements of environmental hazard and social vulnerability in CalEnviroScreen 2.0. Sacramento is also one of four California Promise Zone communities designated by the federal government; a designation that reflects the extreme poverty and socioeconomic vulnerability of many Sacramento neighborhoods.

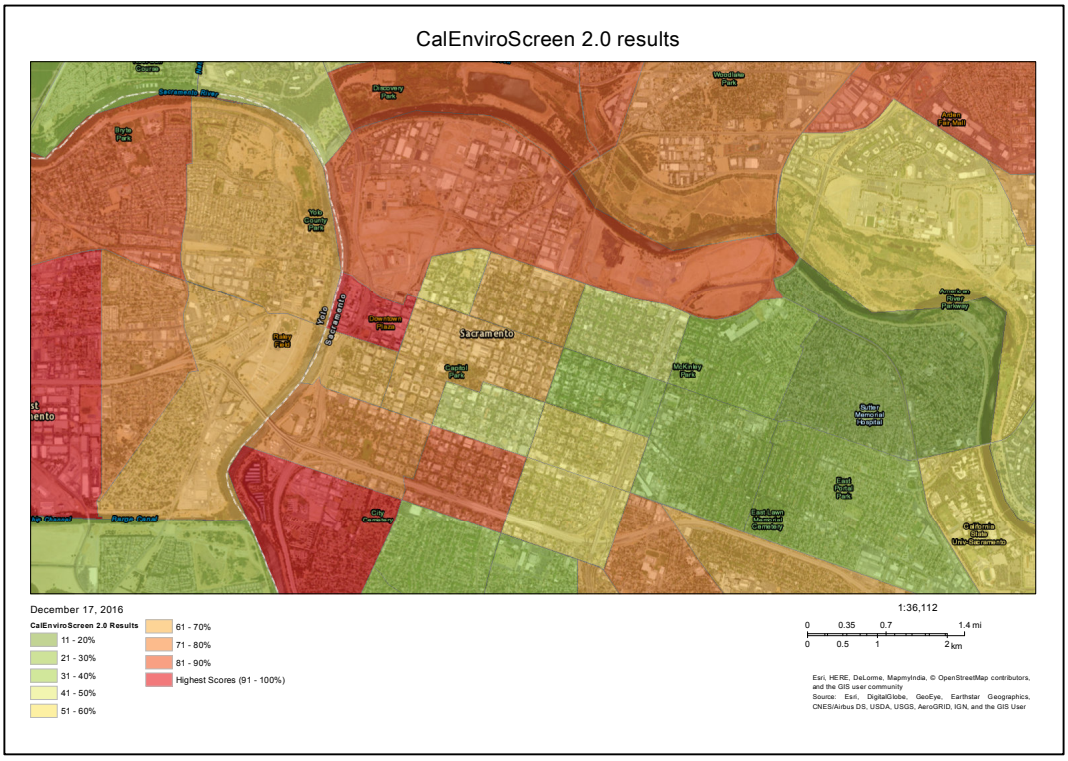
The elimination of redevelopment agencies in California in 2012, left the State with few tools to help municipal governments to provide ladders of opportunity to their disadvantaged neighborhoods. The City of Sacramento wishes to augment the existing public transportation system to reach beyond the immediate vicinity of existing light rail and fixed route bus service to provide convenient service to jobs, education, and medical care for transit dependent communities. The advancement of automated vehicle technology will help us to achieve that goal by addressing the first mile/last mile dilemma and potentially providing automated shared mobility options in disadvantaged communities.

Public Housing

The urban core of Sacramento contains three federal public housing communities at the end of their useful lives; Twin Rivers with 218 units, Marina Vista with 391and Alder Grove with 360 units. All were built in 1940's and are in need of redevelopment. In 2012, the U.S. Department of Housing and Urban Development (HUD) awarded Sacramento a Choice Neighborhoods Initiative (CNI) planning grant to prepare a transform plan for Twin Rivers. In September 2015, SHRA received a very competitive $30m CNI Implementation Grant for Twin Rivers. HUD also award a CNI planning grant to Sacramento in 2013 for both Marina Vista and Alder Grove. The final Neighborhood Transformation Plan (NTP) for Marina Vista and Alder Grove, The Upper Land Park-Broadway NTP, was completed and submitted in 2015.

CalEnviroScreen

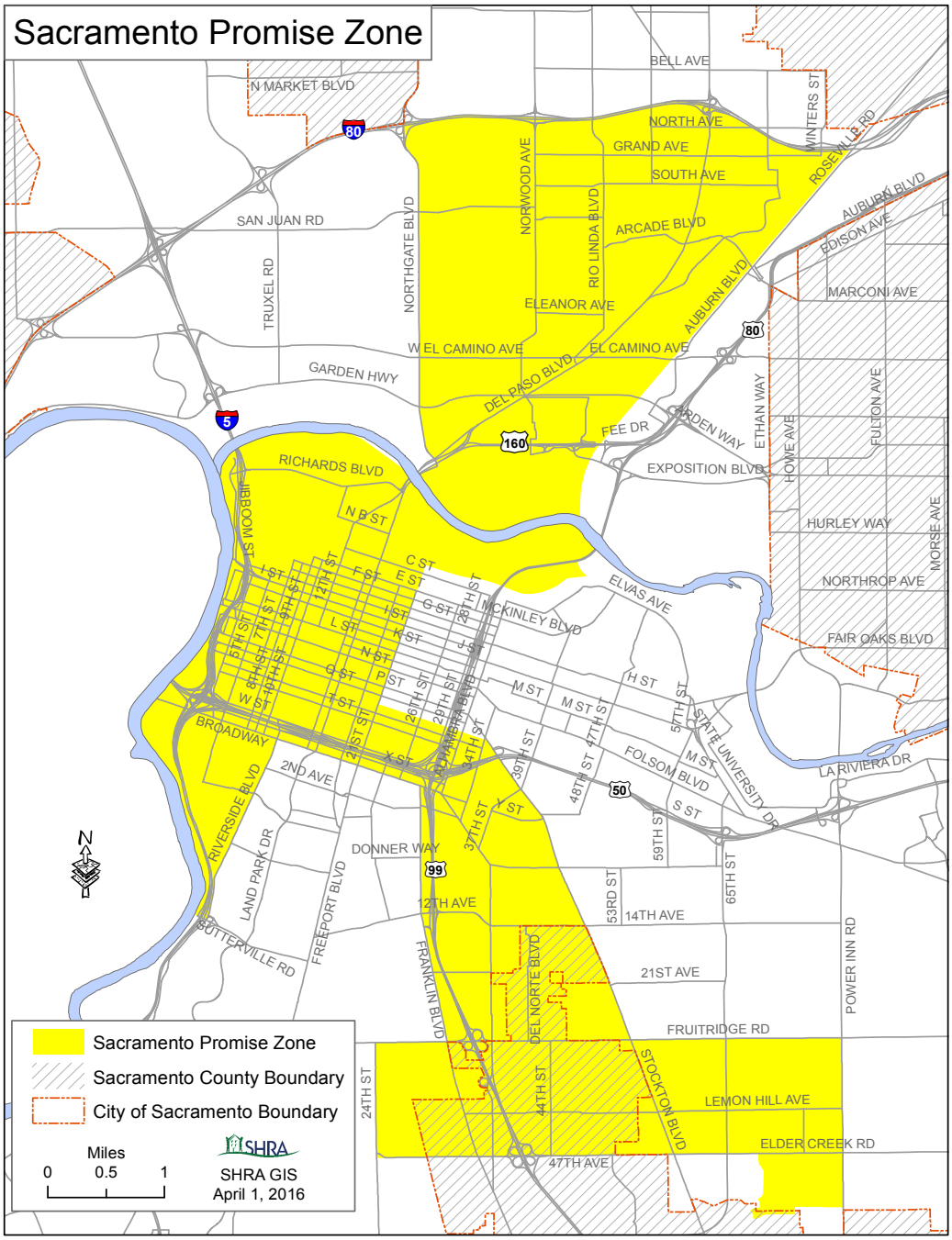
The California Office of Environmental Health Hazard Assessment (OEHHA) developed CalEnviroScreen as part of California Environmental Protection Agency's (CalEPA) environmental justice program. CalEnviroScreen is being used to identify communities that face multiple burdens of pollution and socioeconomic disadvantage. This information helps CalEPA to prioritize its work in the state's most burdened communities. The urban core of Sacramento has pockets of the highest CalEnviroScreen scores for the State.



Promise Zone

In 2015, the US Department of Housing and Urban Development designated a portion of the City and County Sacramento as an urban Promise Zone, including areas in the City's urban core. The President established this initiative to designate several high-poverty urban, rural and tribal communities as Promise Zones, where the federal government would partner with and invest in communities to accomplish the following goals: Create jobs, leverage private investment, increase economic activity, expand educational opportunities, and reduce violent crime. The Sacramento Promise Zone is home to 127,893 residents, of whom 34.93% live in poverty. In the Sacramento Promise Zone, 63% of children are reading below grade level and the unemployment rate is 19%. The life expectancy of the residents of the Sacramento Promise Zone is 72 years versus 79 outside the zone.

"The City of Sacramento and our partners are committed to pursuing opportunities that will support the goals of the Promise Zone. As the Capitol City of California, our goal is to be a model city for the region and state."
– Kevin Johnson, Former Mayor of Sacramento



Summary

Inclusion of the City of Sacramento in the network of proving grounds focused on the advancement of automated vehicle technology is crucial to the accomplishment of the USDOT policy to foster the safe deployment of advanced automated vehicle technologies to achieve national goals while understanding the long-term societal and ethical impacts that these technological advancements may impose. We look forward to playing our part in this disruptive transportation revolution.