

**GREEN CITY CONCEPT PROPOSAL
SUBMISSION TO ELECTRIFY AMERICA
JANUARY 16, 2017**

CITY OF SACRAMENTO, CALIFORNIA

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Steinberg

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City of
SACRAMENTO
OFFICE *of* MAYOR DARRELL STEINBERG

January 16, 2017

Electrify America

To Whom it May Concern:

I strongly support the City of Sacramento's proposal to be awarded Green City status. I assure you I will provide aggressive leadership within the City, County and region to ensure its success. During my service in the California Legislature, the last 6 as President of the Senate, I authored many groundbreaking pieces of legislation designed to reduce carbon emissions and pollution generally in the transportation sector, including:

- SB375, to this day the nation's most comprehensive regional planning law requiring the 18 Metropolitan Planning Organizations (MPO) throughout California to integrate transportation, land use, housing and air quality planning and meet strict performance targets for carbon emissions set by the California Air Resources Board;
- SB743, which changes four decades of practice under the California Environmental Quality Act of measuring transportation impacts with a Level of Service Standard (LOS) that often results in higher pollution levels, to a performance metric of reducing Vehicle Miles Traveled, thus ensuring consistency between CEQA and the SB375 Sustainable Communities Plans the MPOs are now required to implement; and
- Legislation requiring that the State of California spend a minimum of 60% of the Cap and Trade funds on the transportation sector to reduce carbon emissions.

As you know, transportation is an activity that occurs within a regional system, so changing transportation behaviors requires a regional approach. That is one of the main reasons I hired Mike McKeever as my Chief of Staff. Mr. McKeever spent 15 years at the Sacramento region's MPO, the last 12 as Chief Executive Officer. Under Mike's leadership the organization established a statewide and national reputation for leadership and best practices in the field of sustainable planning. He also worked very closely with me on all three pieces of legislation mentioned above. Mike will lead my staff's efforts on this project and I know he and I will make a great team dedicated to making this project a major success for not only Sacramento City and our region, but also set an outstanding success that can be effectively diffused throughout the balance of the state and beyond.

Sincerely,



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Mayor

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Proposal

MOVING FORWARD TOGETHER

The Zero-Emission Vehicle (ZEV) Investment Commitment for California represents an unprecedented opportunity to deliver transformational changes in California's transportation system. If done right, the investment has potential to catalyze pivotal achievements towards the state's clean energy and transportation goals while delivering real improvements for disadvantaged communities and working neighborhoods. Engagement of capable and ready partners will be critical for success. The City of Sacramento is prepared to serve as a key stakeholder in delivering this catalytic change, working in close coordination with our agency partners to bring results to scale for broad, regional effect. This concept proposal presents our vision for acting as a Green City for the ZEV Investment, with a proven team that is ready to deliver fast and effective results.

Sacramento provides an unparalleled opportunity to demonstrate solutions in California's capital city. While Sacramento's existing policies and leadership provide the groundwork for moving forward, additional investment and public-private partnership are needed to spur broad regional shifts in mobility. Funding constraints challenge sustained progress. The Sacramento region is equipped and ready to move forward with additional investment, offering a team of agency experts that has the passion and capability to transform the region's mobility system.

GREEN CITY VISION

The City of Sacramento Green City Vision Statement:

- Use next generation technologies to increase transportation choices, increase travel reliability, expand light rail service areas, reduce congestion, and lower the regional carbon footprint.
- Provide a ladder of opportunity by increasing transportation choices, access, and mobility in disadvantaged communities.
- Show how new ZEV technologies and strategies are effective, and scalable with smart infrastructure investments for applications elsewhere in the United States.

CONTEXT

By building up existing partnerships and early successes, Sacramento is shifting its transportation systems into gear to support its transformation into California's Creative Economic Capitol and the most livable city in America.

Rated as one of the most diverse cities in America, Sacramento is the capital city of the sixth largest economy in the world with rare opportunity to test programs that are replicable across a range of communities. Sacramento is also a major transportation gateway sitting at the nexus of key national routes, with three of the US DOT's national

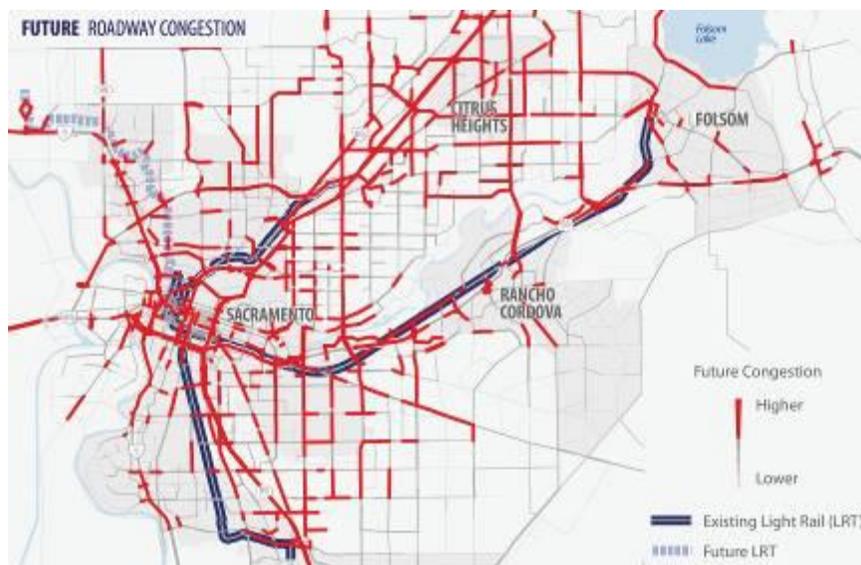


Figure 1. Future Roadway Congestion in the Sacramento Region

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electric vehicle charging corridors intersecting at the confluence of the Capital City Freeway. EV deployment in Sacramento is critical to the success of EV nationwide. Deploying new technologies in Sacramento also allows for the testing and deployment across a range of user groups, from neighborhood-scale community needs, to public transit and heavy-duty freight.

As one of the few regions in California that can still boast of relatively affordable housing and robust employment growth, the Sacramento region has invested heavily in the creation of a light rail system capable of providing an economical and convenient transportation option for residents of the greater metropolitan area. In similar fashion to the other 26 American cities with “true” light rail systems, Sacramento has struggled to increase light rail mode share, in major part, due to the “first mile/last mile” dilemma: while the light rail system provides an excellent regional transportation option, travelers who do not live and/or work close to a light rail station are significantly less likely to use the system. Instead travelers are prone to use private automobiles for their work and recreational transportation needs.

Sacramento is the 6th most polluted city by ozone in the United States, and in the top 20% for exposure to diesel particulate matter. High regional traffic density and roadway congestion elevate the importance of new solutions to transportation (Figures 1 and 2). Existing regional light rail and transit programs offer a strong foundation for closing the first-mile/last-mile gap, but new strategies are needed.

Almost 50% of all households in the City of Sacramento have low incomes, earning 80 percent or less of area median income. Nearly 16% of City households have extremely low-incomes, earning less than 30% of area median income. The challenges faced by households with extremely low incomes are disproportionately felt among seniors (26%) and large families (30%). In 2015, a large portion of the City of Sacramento was designated as a federal Promise Zone (Figure 2). For the population in the Promise Zone, the poverty and unemployment rates are 35% and 18%, respectively. With the elimination of redevelopment agencies in



Figure 2. Traffic Density in Sacramento

CalEnviroScreen 3.0

Dark blue: Statewide traffic percentile > 90 to 100

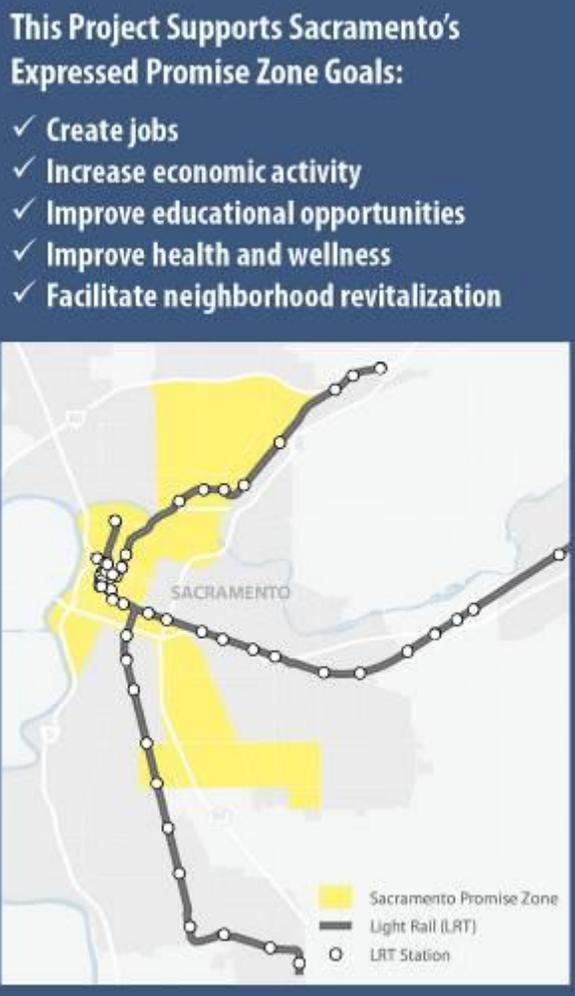


Figure 3. Sacramento Promise Zone

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California in 2012, there are few tools to help municipal government provide ladders of opportunity to their disadvantaged neighborhoods. The City of Sacramento wishes to augment the public transportation system so that it becomes a viable tool to reach out beyond the immediate vicinity of existing light rail stations to provide convenient service to jobs, education, and medical care for the communities that need it the most.

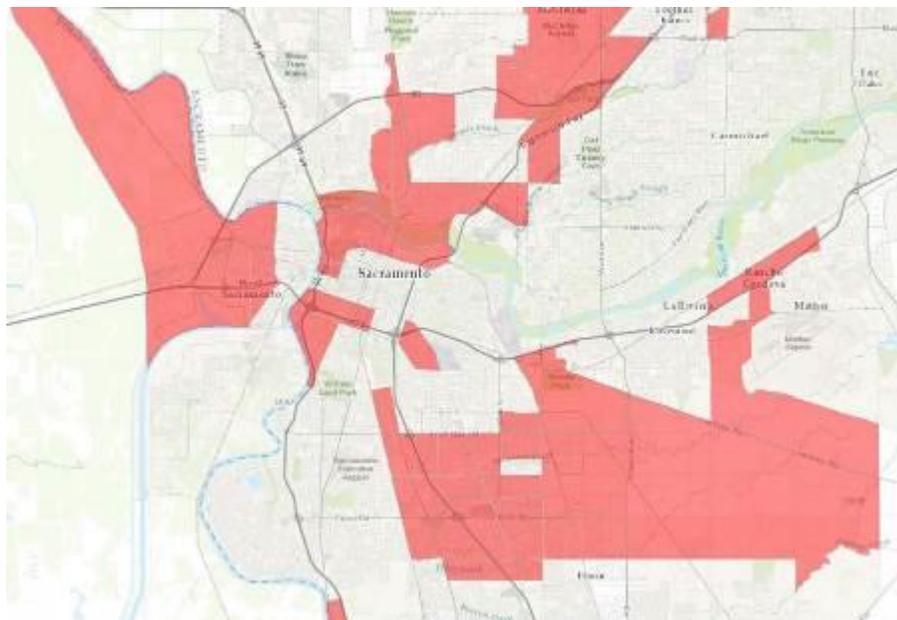


Figure 4. Disadvantaged Communities in Sacramento

Disadvantaged communities designated by CalEPA for purposes of SB 535
Red: Areas that represent the 25% highest scoring census tracts in CalEnviroScreen 2.0

Promise Zone communities are federally-designated areas challenged by poverty, unemployment, and other factors such as high mortality rates and violent crime. Promise Zones have also been evaluated through a competitive selection process, with selected communities offering capable partnerships between the federal government and local leaders. These partnerships are mobilized and equipped for public-private initiatives. Sacramento is one of four Promise Zone communities in California. The Promise Zone designation demonstrates not only socioeconomic vulnerability, but also the strength of existing partner commitments.

QUALIFICATIONS AND RECENT EFFORTS

The Sacramento region has a proven history of strong, interagency leadership that can deliver. This proven leadership can allow for rapid scalability and high-visibility wins. Interagency partnerships are key for the region's successful project delivery. Agencies in the Sacramento region has collectively demonstrated the ability to both innovate and spread successful innovations throughout the state. Such an approach ensures that funding benefits from existing political and social capital. By targeting Sacramento, the ZEV Investment can leverage Sacramento's proven capacity to disseminate new approaches and successes to other regions.

APPROACH

Sacramento is ready to move forward to the next generation of innovation in green and intelligent transportation systems. Building on strong public-private partnerships and an emerging culture of innovation, Sacramento is fully equipped to shift the creative economy forward with a robust, multi-modal transportation system.

Together with its partners, Sacramento can demonstrate real solutions in the political heart of California.

Three key themes distinguish Sacramento's Green City approach, as described on the following pages.

THEME 1: GATEWAY OF CIVIC INNOVATION & COLLABORATION

Existing efforts provide a platform for turn-key collaboration and project delivery.

The City's Smart City grant effort provides an actionable framework and ready partners. Sacramento is one of three cities in California selected to participate in the 16-member Smart Cities Collaborative, led by Transportation for America and Sidewalk Labs. Sacramento is a unique blend of small city agility and bigger city sophistication that allows for rapid scalability, high visibility, and representative solutions.

RELATED EFFORTS:

- Up to \$1 million in annual local funding for competitive grants through the Rapid Acceleration, Innovation, and Leadership in Sacramento (RAILS) program, to support scalable private-sector innovation.
- Public-private partnership is resulting in more than 240 acres of mixed-use development at the Railyards in Downtown, the nation's largest brownfield redevelopment west of the Mississippi.
- City renovation of the Sacramento Valley Station into a LEED Platinum, transit-oriented, mixed-use station, serving as the 7th busiest Amtrak station in the nation. The station is a designated Transit Priority Area in the 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy, serving regional light rail, transit, and Amtrak routes, in addition to future high speed rail. Situated at the confluence of key national routes on the US Department of Transportation's national electric vehicle charging corridor, the Sacramento Valley Station is a central location to support electrification and clean, multi-modal trip chaining. With one DC fast charger already operational and two electric car share chargers under construction, the site is an exemplary location for quick wins in electrification.
- In 2015, the City worked with Car2Go to develop a proposal for California Air Resources Board (ARB) funding to bring electric car share to Sacramento's disadvantaged communities with the help of Sacramento Housing and Redevelopment Agency and the Sacramento Municipal Utility District (SMUD). Although unfunded, the proposal provides a strategy for car sharing that lays the groundwork for similar programs to benefit Sacramento's diverse neighborhoods.

THEME 2: LAB OF DIVERSITY & INTEGRATION

Unique opportunity to bring great ideas to scale in an economically and socially diverse market at the heart of Northern California's megaregion.

Neighborhoods in Sacramento consist of an array of suburban and urban land use types of mixed incomes and ethnicities. This high degree of integrated diversity provides a rare test lab to develop and deploy new technologies that work across demographic groups and communities.

HUBS OF OPPORTUNITY:

- Efforts in Sacramento to address the "first mile/last mile" gap in transit can provide strategies for the challenges of urban and suburban communities across America.
- Disadvantaged communities in Sacramento rank in the worst 10% of all disadvantaged tracts in the state.
- Efforts in Sacramento to address the first mile/last mile gap in transit can serve as a lab for solutions. Strategies that work in Sacramento's diverse environments hold relevance to the challenges of urban and suburban communities across America. Sacramento's initiatives can yield the types of broad-reaching solutions that are necessary for attainment of ambitious state and national climate change goals.
- Sacramento's disadvantaged neighborhoods need new solutions for affordable transportation that connects them to the creative economy.

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- One of just four federally-designated communities in California and the only one not located in Southern California, the Sacramento Promise Zone encompasses approximately 27,890 residents in some of the hardest-hit neighborhoods in the city, with a poverty rate of 35% and an unemployment rate at 18%.
- Tackling homelessness is one of three key priorities of Mayor Steinberg, with a focus on expanding services, case management, and permanent housing. Clean ZEV vehicles can support expanded access to services and shuttle, providing an enabling tool to connect individuals to City and County services.
- Urban jobs initiatives include efforts to develop a new **TechHire** program, involving creation of a collaborative network of stakeholders and development of a pipeline of diverse, non-traditional talent.

THEME 3: EXPERTISE & PROJECT LEVERAGE

Creative solutions for a mobility shift require a capable team with vision, experience, and proven real-world results.

Within the Sacramento region, several efforts exemplify the type of foundational leadership that uniquely qualifies the City for a Green City effort coupled with broader regional, transformational change. Early government leadership in the region has also fostered market readiness. This market readiness is a key ingredient for ZEV investment success. Collectively, the region is working with partners to support an estimated 2,600 EVs countywide and to encourage growing EV demand.

CITY AND PARTNER QUALIFICATION FOR SUCCESS

1. The **City of Sacramento** was hailed in 2015 as the #1 Green Fleet in North America, with 50% alternative fuels and ongoing investments in electrification. The fleet includes more than 30 EVs and 2 hydrogen fuel cell vehicles. Recently, the City procured an all-electric side loader refuse truck for downtown alley pickup, one of the first such vehicles in the US. The City has constructed more than 40 EV chargers at public facilities. The City has also succeeded in attaining competitive funding for ambitious projects, securing more than \$400 million in federal, state, and local awards for the multi-modal Downtown Railyards project. Sacramento has a long-standing commitment to sustainability, marked by adoption of a Sustainability Master Plan in 2007, followed with a 2011 Sustainability Implementation Plan, the 2012 Climate Action Plan, and the 2016 Climate Action Plan for Internal Operations. From 2005 to 2013, the City exceeded its adopted target with attainment of a 24 percent reduction in municipal greenhouse gas (GHG) emissions. In 2016, Sacramento became the fourth city in California to endorse the Under2 MOU, a coalition of governments pledging to roll back GHG emissions to carbon-neutral levels by 2050. Other recent accomplishments include adoption of an innovative parking modernization program with SacPark, which allows for dynamic tier-based parking pricing. The City launched an early car share pilot with Zipcar, allocating more than two dozen dedicated parking spots to a program that now has over 900 local members. City-sponsored commuter programs have also played a role for the estimated 100,000 individuals that commute into Sacramento each day for work. GetHereSac! is a new online platform launched by the City, encouraging residents to consider alternative modes of transportation. The City and the Sacramento Kings achieved a significant milestone in October 2016 with the opening of the Golden 1 Center, the greenest arena in the world and the first to achieve certification as a LEED Platinum facility. Constructed as a net zero energy facility, no parking was constructed on site for the new arena. Instead, the City serves as the



Figure 5. City Green Fleet

One of two hydrogen fuel cell vehicles in the City fleet

exclusive parking provider, utilizing an advanced parking system with the newest technologies that provides a seamless door-to-door experience for patrons.

2. **Sacramento County** is also an active leader in electrification, coordinating regional efforts and serving as a key project partner. In 2015, Sacramento County assembled a multi-agency working group to position Sacramento to be plug-in electric vehicle (PEV) ready. The working group is comprised of the County (Fleets, Airports & Sustainability), the City of Sacramento (Fleets & Sustainability), SMUD, Sacramento Metropolitan Air Quality Management District (SMAQMD), the Sacramento Area Council of Governments (SACOG), Valley Vision, Clean Cities Coalition, and the Sacramento Electric Vehicle Owners Association. In late 2016, Sacramento County adopted EV Permit Streamlining Procedures for expediting EV charging installations. Sacramento County modified its zoning code to allow EV charging by right in all land uses and provides parking incentives where EV charging is installed. The County of Sacramento was also recently awarded the Government Green Fleet Award. Sacramento County's Fleet Services climbed from the position of 25th in 2015 to 7th place in 2016. The upward momentum is attributed to the continued adoption of renewable fuels; sustainable fleet policies and planning; using the right sized vehicle for the job; knowing the emerging green fleet technologies; sharing the importance of green fleet management with employees and leaders. The County has plans underway to pilot a battery electric refuse truck in 2017. Additionally, as part of the Fleet Replacement Program, the County is purchasing EVs and hybrids. The County has updated its parking facilities that include EV chargers with ADA accessibility. In addition, the County provides EV chargers in public parking garages, and supported SMUD with installation of two public fast chargers at the Sacramento International Airport in a collaborative project with SMUD.
3. Since beginning its EV program in 1989, the **Sacramento Municipal Utility District (SMUD)** has secured more than \$30 million in competitive grants for EVs and EV infrastructure with the City and other partners. Recently recognized as the 2016 Alliance to Save Energy Star for Transportation Efficiency, SMUD offers a commitment of approximately \$3.1 million annually for customer-facing light duty EV programs through 2020. SMUD recently expanded its PEV customer incentives through its SMUD Residential Drive Electric Program. Effective 2017, SMUD is offering a \$599 rebate to customers who purchase or lease a PEV. This rebate covers the average cost of charging a PEV in the SMUD territory for two years. Incentives for workplace and multi-family charging are also expanding, with plans for 200 incentives at nearly \$1,500 each. SMUD is further working to provide incentives for DC fast charging, support community bus partner electrification, and conduct advanced research on fleet and workplace charging needs, in addition to medium- and heavy-duty fuel switching research.
4. The **Sacramento Metropolitan Air Quality Management District (SMAQMD)** offers programs and funding to leverage for electrification. With a \$1.4 million ARB grant, the SMAQMD is implementing an electric car share program to construct charging stations in disadvantaged communities throughout the region, including locations two stations on City property. The SMAQMD is also implementing the ARB-funded Enhanced Fleet Modernization Program, and will be expending an anticipated \$3.3 million to foster alternative fuels including plug-in hybrid and battery EVs.
5. In December 2013, the **Sacramento Area Council of Governments (SACOG)** adopted the region's first plug-in EV readiness and infrastructure plan, *TakeCharge*, followed by ongoing investment in regional electrification planning. SACOG staff are leading completion of the regional *TakeCharge II: Infrastructure Roadmap* to provide a regional plan for the physical infrastructure that local governments will need to install to support widespread adoption of PEVs. SACOG's collaborative approach to deploying PEV infrastructure complements SACOG's regional planning efforts. Key examples include the 2035 Metropolitan Transportation Plan/ Sustainable Communities Strategy (MTP/SCS). SACOG's Regional Climate Adaptation Regional Plan is SACOG's regional analysis that identifies climate impacts on the region's transportation infrastructure, including analysis of areas with greatest anticipated impact, and potential solutions through planning, construction, and maintenance. SACOG offers a long history of innovative partnerships and collaboration, using one of the nation's most robust transportation modeling and measuring tools in the country, SACSIM. Such tools offer an advanced opportunity for analyzing the relationship between

electrification and land use decisions. SACOG has also served as a leader securing grants for EV infrastructure, funding construction of three DC fast chargers to date. Working together with Sacramento County and other partners, SACOG also continues to expand community-wide EV education and streamlining. Work is underway to update guidance for plug-in EV readiness, pursuant to AB 1236 (Electric Vehicle Charging Stations).

6. In January 2016, SMUD, the City of Sacramento, SACOG, SMAQMD, Clean Cities and the County entered into an Agreement for the purpose of funding and completing **TakeCharge II: Infrastructure Roadmap**, a plan for regional electrification. The purpose of the plan is to develop an efficient charging network that meets the current and future demands for electric vehicle adoption by suggesting charging in locations that minimize the need to drive, and strategies to monitor the placement of charging opportunities over time. The regional PEV readiness and infrastructure effort was a collaboration between key regional stakeholders, including cities and counties, utilities, public, and nonprofit agencies. The readiness element provides key recommendations on how to plan, permit, and install required charging infrastructure. The infrastructure plan itself used regional modeling outputs, driver preference surveys, and existing charging behavior data to identify key locations to meet existing and future charging demand, along with current and forecasted demand for the region. Information from this Plan will be used to advance installation of public charging stations in key locations throughout Sacramento, and to seek grant and other funding to provide incentives for installation of these facilities. As part of this Plan, the Sacramento Clean Cities Coalition has worked with EV dealerships in doing ride and drive events, charging station ribbon-cuttings, and provided press and other media releases announcing the availability of new EV charging.
7. **Regional Transit (RT)** operates a bus fleet running on 100% compressed natural gas, with initial trials beginning as early as 1993. RT has plans underway to pilot the region's first battery-powered electric buses, and continues to implement new efforts to spur transit ridership. The agency is exploring new modes to increase ridership. In a new innovative and economical program called Station Link, RT is providing a door-to-station service for people heading downtown. RT riders can get up to \$5 off rides with three ride share companies, Uber, Lyft, and Yellow Cab. RT's approach is to embrace and collaborate with new ride share services, with innovative initiatives to improve LRT access and expand ridership.

KEY PROJECT COMPONENTS

The City is proposing a multi-phase approach to Green City implementation. Primary tasks and general schedule is outlined below. A detailed scope of work would be prepared and vetted with project partners to develop a scalable, regional program that functions across jurisdictional boundaries.

Project Initiation and Shovel-Ready Construction

Project Scoping and Kick-Off

Following notice of funding, the City would mobilize its key agency partners to develop a work program that clearly identifies schedule, milestones, and roles and responsibilities. At the project outset, the City will engage other key agencies in the region to define roles and the geographic scope of all aspects of the work program. For a successful program, initiatives within the City will be complemented by strategic investments at locations throughout the region. Using the analysis from the TakeCharge effort, the City will work with key partners to determine the appropriate scope and distribution of investments. This approach ensures adequate concentration to spur widespread ZEV adoption, but allows for coverage of the entire regional system.

The work plan would identify the role of key partners in meeting ZEV Investment Plan milestones and schedules. Agency partners to be initially convened include, but are not limited to, SACOG, the County of Sacramento, SMAQMD, RT, and SMUD. The City will coordinate an advisory committee with other key stakeholders, including the UC Davis Institute of Transportation Studies, nonprofits such as Valley Vision, state agencies, community groups, and other advisory members, such as members of the AB 32 Environmental Justice Advisory Committee.

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At this stage, the City would also work closely with the Electrify America team to develop an outreach and engagement plan. Together with its partners, the City will leverage existing community-based groups and networks to identify key stakeholders. The City is currently developing a public Demonstration Partnerships Policy, which could be a key tool to formalize agreements with groups for deployment of citywide EV infrastructure and new ride sharing services. Staff will leverage expertise from the Mayor's Office of Innovation and Entrepreneurship (MOFIE) to identify opportunities with local startups and City-funded business development efforts. Utilizing these existing platforms will allow for creative engagement of the City's disadvantaged communities. The City's TechHire program also provides a resource to leverage, for coupling a ready pipeline of local workers to the new opportunities of ZEV investment.



Figure 6. Autonomous and Electric Transit Vehicle
From the City's Smart City Vision Statement Proposal

Following a notice of funding, the City will use its existing partner networks to bring in supportive expertise to scope an effective ZEV car share program. As a member of the Smart Cities Collaborative run by Transportation for America, the City has opportunity to use resources from leading experts in the field of shared mobility. The Shared Use Mobility Center and Sidewalk Labs are just two key partners supporting through the collaborative. By working with other cities through the collaborative, the City can also draw from the early lessons learned from cities exploring new fields of mobility. This approach provides greater efficiency for effective project design, with iterative feedback loops and a flexible monitoring program that tracks towards clear performance objectives.

Similarly, the City is also a member of the Urban Sustainability Directors Network (USDN), a consortium of North American cities devoted to sustainability. The USDN has an extensive history of mobilizing and leveraging large philanthropic donations to City sustainability projects, while helping to connect cities to leading expertise of research institutions and foundation partners. The City will use its USDN partners to identify other key stakeholders and potential resources for the effort. The USDN uses funds to bring members together for peer learning exchanges. This provides another potential for Electrify America to explore for spreading the results of its investment, by using existing City memberships to share project successes and deploy tools to other cities across the nation.

The City will support Electrify America with identification of office space for the duration of the project term. The City is completing renovations to the historic Sacramento Valley Station in February 2016 and offering spaces for leasing. Renovations are establishing the station as a LEED-certified, transit-oriented development. Located within a disadvantaged community, the City completed more than \$40 million in renovations to create the station as a new, multi-modal hub. The City is currently negotiating with potential lessees. On Tuesday January 10, the Sacramento City Council approved \$2.4 million to fund tenant improvements to the facility. Leases will be offered at competitive market rates. The station is a flagship accomplishment in the City's efforts to bring new jobs and companies around innovation, entrepreneurship, and new technology.

Shovel-Ready Construction

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Targeting a six-month or faster construction schedule, City staff have identified shovel-ready sites that can accommodate quick, turn-key installations for approximately 15 Level 2 chargers on City property, with vast potential to be followed by much broader and larger distribution across the community. With 2 EV car share stations currently under construction at the Sacramento Valley Station, the City Architectural and Engineering Services Section already has contractors under agreement for EV charging, with ability to quickly expand the existing scope of work with simple change orders that can be approved at the department director level. City staff includes a veteran team of architects and engineers with expertise in EV charging, building on the City's early leadership with installation of EV charging at City parking garages and buildings. Sites ready for quick construction of EV includes the Sacramento Valley Station, the Sacramento Marina, and Fairytale Town. The City owns all three properties in-fee. Each site is supplied by adequate electrical service for more charging. At each of these sites, the City has also completed recent improvements for Americans with Disability Act (ADA) standards. Both the Sacramento Valley Station and Sacramento Marina are designated as disadvantaged communities by CalEnviro Screen 3.0.

Key agency partners have also identified six-month project opportunities at other buildings with anticipated potential for a minimum of 30 chargers in a six-month timeframe. Following award, the City and its partners will confirm a regional project list for the first six-months.

Beyond the six-month shovel-ready project schedule, the City has conducted a review of additional sites that could accommodate EV charging throughout the community. The City owns more than 400 facilities and is one of the largest landowners in Sacramento. Staff has previously completed analyses of electrical service at key facilities and capacity to expand charging. This work is available to inform and guide additional installations. With more than 40 community centers, libraries, and pools owned by the City, the City has high opportunity for installation of publicly-accessible chargers that can remain under City control for the duration of the ZEV investment. Staff have identified 12 City-owned community centers located in disadvantaged communities with CalEnviro Screen 3.0 rankings of the 61 – 65% percentile range or higher.

Implementation

Building on early regional efforts, agency partners will work collaboratively with Electrify America to develop a scope of work that mutually works for the City, key partners, and Electrify America's requirements for the ZEV Investment. The City previously submitted two unsuccessful grant applications, which the City offers now as a foundation for Green City actions: the City's EV car share grant application submitted to the ARB (see Attachment 1), and the City's Smart City Challenge Vision Statement submitted to the USDOT.¹ By leveraging these proposals with the region's **TakeCharge II: Infrastructure Roadmap**, the region provides an actionable foundation for investment.

Although the City of Sacramento is the focus of this proposal for designation as the Green City, the City is committed to work with its partners to develop a truly regional and interconnected ZEV mobility system with the ZEV investment. Success can only be achieved with an integrated, multi-modal system that crosses jurisdictional boundaries. While the City will be the focus for high-level demonstration efforts, the work program will be balanced with distributed investment to other key mobility hubs outside of City limits, to allow for ZEV interconnections across the region.

Sacramento proposes the following key components for the Green City project.

1. **Electric vehicles and infrastructure.** Near-term shovel-ready wins in the first six months lay the groundwork for Green City momentum. The City's car share application to the ARB outlines a proposal to connect disadvantaged communities to opportunities throughout the community by deploying EV at RT stations throughout the community. The City will work from this foundation to create a robust car share and ride-hailing system designed around affordable, accessible ZEV service. Working with the SMAQMD, the City will identify opportunities to maximize program outcomes with existing funding from the ARB, from both the SMAQMD's Enhanced Fleet Modernization Program award and the existing car share grant. The City will work with partners to identify critical locations throughout the region. This collaborative effort will connect people to activities and employment, bridging the first mile/last mile gap and expanding access. Working

¹ Available online: <https://www.transportation.gov/smartcity/visionstatements/Sacramento-CA>.

with partners such as RT, SMUD, the SMAQMD, and the County, the region offers land under agency control that provides fertile opportunity for development of neighborhood EV hubs and charging infrastructure. Highly-visible, public demonstrations will also be a key strategy to implement and foster transformational adoption of ZEVs. The City will work with partners to vet and identify locations for a new demonstration “electric boulevard.” Such a site has high opportunity to integrate creative public art and amenities with concentrated, educational, and accessible EV charging. The City has several potential areas, such as the Downtown Railyards. Once constructed, this new district will provide critical housing in downtown near the Sacramento Valley Station, a future soccer stadium, jobs in Downtown, and the new Golden 1 Center. The City is also currently renovating the Sacramento Community Center and Theater Complex at the heart of Downtown, with potential for demonstration and concentrated deployment. A full list of priority sites for the demonstration project will be vetted and evaluated with project partners upon commencement of the project.

During the design of ZEV infrastructure, the City will use its existing network of smart controllers to explore options for smart vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) integration. 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 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.

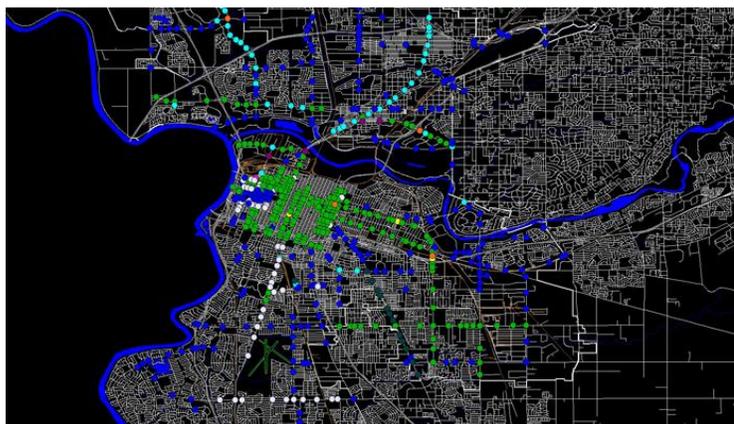


Figure 7. Sacramento’s Traffic Signal Control System

The City’s smart controller system is supported by an extensive backbone of fiber optic cable that the City is continuing to expand. 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 V2I communication for both autonomous and

occupied vehicles. Additionally, the fiber optic communication system will accommodate more advance devices and features for testing and implementation.

SMUD's advanced research provides opportunity to leverage in support of Green City deployment. Potential research initiatives to inform the effort include SMUD's research into DC fast charging and the integration of renewable energy and energy storage with DC fast charging. Other program ideas to explore with SMUD include autonomous vehicle and charging research, an EV educational facility on carbon-free transportation and climate change, smart charging demonstration with pricing signals in City garages, and promotion programs for solar-powered EV charging for any EV going to a Kings Game at the Golden 1 Center.

The City will also leverage its early leadership in renewable energy to support carbon-free ZEV infrastructure with the ZEV investment. The City has installed 4.9 megawatts (MW) of solar photovoltaics at City facilities, representing 15% of total community-wide solar in the city. Partnering publicly-visible ZEV infrastructure with renewable energy will serve a public educational purpose, demonstrating a clear commitment to clean energy and emissions reductions. Through the ZEV investment, the City will work with partners to explore options for solar-powered charging.

The City is currently negotiating with SMUD to expand solar for City facilities through SMUD's community solar program, SolarShares. Just recently expanded to accommodate large municipal accounts, the SolarShares program provides clean renewable energy credits from off-site solar energy facilities developed and managed by SMUD. The City has opportunity to enter into an agreement to receive credit for up to approximately 13 megawatts of solar power, offsetting nearly 50% of the City's largest electrical accounts. SMUD and the City will explore options to use the SolarShares program as a clean power source to enable low-carbon or net zero carbon ZEV installations.

- 2. ZEV Education, Shuttle, and Car Share Programs.** Building up from existing neighborhood associations and community groups, the City will work to develop a scalable outreach program. This effort can employ both low-tech, door-to-door outreach and events, along with a more sophisticated software platform and suite of tools. The City will use its partnership in the Autonomous Transportation Open Standards (ATOS) Lab, an effort led by Vision Service Plan Global (VSP), to identify public-private partnership opportunities. This ATOS effort consists of a diverse array of private companies and government agencies seeking to open Sacramento as a real-world test zone to develop Autonomous Transportation Open Standards. This partnership allows Electrify America to maximize its investment and test autonomous electric vehicles (AEVs) throughout the region, in controlled scenarios with the support of a range of private and public partners. The City will further work to support development of a scrap and replace or other targeted conversion program for low-income residents and disadvantaged communities.

Public education efforts can build from existing successes. SMUD previously developed its Solar- Powered DC Fast Charger at a former hydrogen refueling station in cooperation with the US DOE, Ford, Daimler/Chrysler, and BP. The station was designed to provide an education component and drew international attention and tours. This facility provides an available starting point for developing an effective education effort with local, regional, and international visibility. Past development of the station provides ready expertise and lessons-learned, which can help bring Green City educational efforts to scale.



Figure 8. SMUD's Solar-Powered DC Fast Charger

Another priority for Green City programs will be design of a system of dynamic ZEV shuttle routes that can support homeless individuals, expanding access and connecting some of Sacramento's most vulnerable to shelter and services. The City and the County of Sacramento are working actively to build regional capacity and improve existing programs. Through the Green City program, the City will work with partners to design a program. Sacramento has the benefit of ongoing partnerships with local campuses from the three levels of the California state educational system. These partnerships provide vast expertise to support and inform development of projects and initiatives. Development and monitoring of pilot projects is of key interest. The University of California (UC), 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.

How does it really work?

-  The user enters the desired origin and the desired destination of the trip they would like to take. The user then purchases the trip on-line.
-  First mile service is dispatched through either an AETV or a TNC.
-  User is transported to nearest LRT station. If first mile service is provided by an AETV, it follows a route on which it can stay connected to Smart Controllers. Depending on the route and time of day, the vehicle may benefit from transit system priority.
-  The user is delivered to the light rail station for the light rail leg of the journey.
-  The user arrives at the destination light rail station and boards either the AETV or the TNC vehicle for last mile service to the ultimate destination.
-  The user arrives at the final destination.

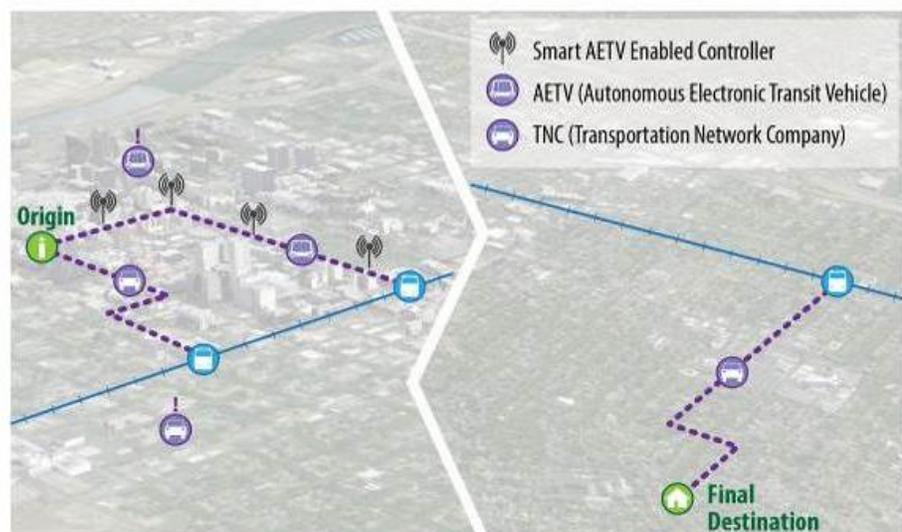


Figure 9: Role of Smart Controllers for an Interconnected, Autonomous Electric Transit System in Sacramento
From the City's Smart City Vision Statement Proposal

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.

The UC Davis College of Engineering also boasts numerous strengths in the automotive space. For example, the university operates four research centers directly related to zero emission vehicles: The Advanced Highway Maintenance & Construction Technology Research Center, the Air Quality Research Center, the Fuel Cell, Hydrogen, and the Hybrid Vehicle (FCH2V) GATE Center of Excellence, and The Hyundai Center of Excellence in Vehicle Dynamic Systems & Control. The university is well positioned to expand and support a dynamic and technologically-advanced ZEV program.

- 3. Clean Tech Innovation and Workforce Development.** The City proposes leveraging local expertise and programs to support program evaluation and deployment. Connecting the investment to existing workforce training allows Electrify America to test truly transformational models. The program can employ local youth or apprentices, using the City's TechHire program. Another idea the City would like to explore with Volkswagen, the ARB, and the Environmental Protection Agency is leveraging efforts of the Greater Sacramento Economic Council (GSAEC). GSAEC is a membership organization of 30 Chief Executive Officers of the Sacramento Region's largest private corporations and local governments. GSAEC and UC Davis have mobilized to support the ZEV Investment, proposing to raise as much as an additional \$50 million in private investment to match ZEV investments in the Sacramento region. With this funding, GSAEC and UC Davis would establish an industry consortium model centered around ZEV research and training facilities at a site within Sacramento's disadvantaged communities. The City's Economic Development Department has conducted a preliminary analysis of potential sites. One focus of facilities would be on workforce training for Promise Zone residents, creating ladders of opportunity for employment in Sacramento's high-poverty neighborhoods. Development of the facilities will also serve to advance ZEV implementation with expertise and administrative capacity. The private funding would cover research activities that are excluded from funding in the Consent Decree and leverage Electrify America's outcomes while amplifying economic outcomes for the region. The consortium would operate as an industry-driven institute to increase domestic competitiveness. A primary focus will be working towards marketable solutions to reduce carbon emissions in the automotive industry.

Pairing ZEV investment with local workforce development could significantly reduce emissions while strengthening the economic strength of the Central Valley. Work in California would benefit not only Sacramento, but also the Northern California *Megaregion*, and the State of California in both the short and long term. Creation of an industry consortium in Sacramento's disadvantaged communities would not only link UC Davis to the City of Sacramento, but also connect the greater region in ways that could build a more sustainable future for California's Central Valley. California is already recognized as a hub for innovation, however, the low-cost, coal burning states such as Arizona and Nevada have succeeded in attracting clean tech auto development away from the state. Green City initiatives in Sacramento would not only aim to reduce emissions and increase access to zero emission vehicles, but also to increase state competitiveness in the face of national and global competition around new clean technologies.

CONCLUSION

The Sacramento region looks forward to the opportunity for consideration to support the ZEV investment. We offer strong public-private partnerships, electrification expertise, and an emerging culture of innovation. Together, we are equipped to move forward to the next generation of innovation in green and intelligent transportation systems.

The City and its partners are ready and committed to support with delivery of transformational programs that catalyze a new era in transportation.

Additional Resources

City of Sacramento Smart City Challenge Vision Statement (February 2016):

<https://www.transportation.gov/smartcity/visionstatements/Sacramento-CA>

GetHere Sac!: <http://www.getheresac.com/>.

Rapid Acceleration, Innovation, and Leadership in Sacramento: <https://sacmoie.github.io/RAILS/>.

SacPark: <https://reserve.sacpark.org/>

SacPark Tier-Based Pricing: <http://www.cityofsacramento.org/Public-Works/Parking-Services>.

Sacramento Valley Station, including leasing information: <http://www.cityofsacramento.org/public-works/sacramento-valley-station>

TakeCharge II: Infrastructure Roadmap (December 2016 Draft): http://www.sacog.org/sites/main/files/file-attachments/master_takecharge_ii_12-21-16.pdf

Letters of Support

Letters of support from key agency partners are provided on the following pages, including letters from SMUD, SMAQMD, RT, SACOG, and the County of Sacramento.



January 13, 2017
GM 17-005

Electrify America

SMUD SUPPORT FOR THE CITY OF SACRAMENTO'S GREEN CITY PROJECT

Dear Electrify America Team:

SMUD would like to offer its support for the City of Sacramento's Green City Project proposal through Electrify America.

SMUD is the nation's sixth-largest community-owned electric service providing reliable, low cost power for 70 years, is a recognized industry leader and award winner for its innovative electric transportation and energy efficiency programs, its renewable power technologies, and its sustainable solutions for a healthier environment.

SMUD has an extensive history of working with the City of Sacramento to deliver successful project outcomes. We are fully committed to working as one of the City's partners through the Green City Project to deliver transformational outcomes for the entire Sacramento region. Working together, we bring the expertise and capability to deliver a transformational program that can be scaled across the region, state, and nation.

SMUD has supported electricity as an alternative transportation fuel since 1990 when it created its Electric Transportation Program, dedicated to improving air quality in the Sacramento region and displacing petroleum usage. Improving air quality supports one of SMUD's key strategic directives on Environmental Stewardship (SD-7). In pursuit of improved environmental quality, SMUD has developed a policy that supports the deployment of electric vehicles and charging infrastructure in our service territory by any and all parties. Under this policy, SMUD will support the City of Sacramento's efforts toward the Electrify Green City Project.

We respectfully thank you for your consideration of Sacramento.

Sincerely,

A handwritten signature in blue ink, appearing to read "Arlen Orchard", is written over a large, light blue oval shape.

Arlen Orchard
Chief Executive Officer & General Manager

Arlen Orchard, Chief Executive Officer & General Manager

Cc: SMUD Board of Directors
Mayor Darrell Steinberg
City Manager Howard Chan
Sacramento City Council

January 16, 2017

Electrify America

To Whom It May Concern:

I am writing to express our strong support for the City of Sacramento's pursuit of the Green City project through Electrify America. We endorse the City as a committed project partner, capable and ready to support the City with Green City implementation.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) has an extensive history of working with the City of Sacramento to deliver successful project outcomes. Through our combined efforts, and in concert with our Sacramento Clean Cities Coalition partner, we have assisted the City in making dramatic reductions in their criteria and greenhouse gas emissions from their heavy-duty fleet of service and refuse trucks, with their introduction of electric vehicles and charging stations, partnered with them on charging systems for Car Share vehicles, and partnered on a project using very large and sophisticated EVSE to electrify locomotive standby power.

SMAQMD has also partnered with the City in longer-term EV and EVSE planning projects, both with the Plug-in Electric Vehicle (PEV) Collaborative, and the "Take Charge Sacramento" project. We also actively partner with local non-profit organizations including SacEV, and the previously mentioned Sacramento Clean Cities Coalition where the City's Fleet Manager and the SMAQMD's Division Manager are both sitting board members.

SMAQMD is fully committed to work as the City's partner through the Green City program to deliver transformational outcomes for the entire Sacramento region. Working together, and with our broad community partnerships, we bring the expertise and capability to deliver a transformational program that can be scaled across the region, state, and nation.

We respectfully thank you for your consideration of Sacramento.

Sincerely,



Larry Greene
Executive Director/Air Pollution Control Officer
Sacramento Metropolitan Air Quality Management District



Regional Transit

**Sacramento Regional
Transit District**
A Public Transit Agency
and Equal Opportunity Employer

Administrative Offices
1400 29th Street
Sacramento, CA 95816
916-321-2800

Mailing Address
P.O. Box 2110
Sacramento, CA 95812-2110

Human Resources
2810 O Street
Sacramento, CA 95816
916-556-0298

**Customer Service &
Sales Center**
1225 R Street
Sacramento, CA 95811

**Route, Schedule & Fare
Information**
916-321-BUSS (2877)
TDD 916-483-HEAR (4327)
sacrt.com

Public Transit Since 1973

January 13, 2017

Electrify America

To Whom It May Concern:

On behalf of the Sacramento Regional Transit District (RT), I am pleased to offer this letter of support for the City of Sacramento's (City) pursuit of Electrify America's Green City initiative. As a committed regional partner, RT strongly endorses the City and is ready to assist in its successful implementation.

RT has an extensive history of working with the City to deliver collaborative project outcomes. RT pledges to proactively work with the City through the Green City program to deliver transformational outcomes for the entire Sacramento region. We are confident that our cross-sector regional partnerships bring the expertise and capability to successfully deliver an innovative program that can be scaled across the region, state, and nation.

Thank you for your consideration.

Respectfully,

A handwritten signature in blue ink, appearing to read "Henry Li".

Henry Li
General Manager/CEO



January 13, 2017

Electrify America

To Whom It May Concern:

I am writing to express strong support for the City of Sacramento's pursuit of the Green City project through Electrify America. We endorse the City as a committed project partner, capable and ready to support the City with Green City implementation. Our agency has an extensive history of working with the City to deliver successful project outcomes. We have worked with the City on multiple projects, focused on different modes of transportation, including readiness elements for electric vehicle charging infrastructure planning, permitting, and installation, and a regional electric vehicle infrastructure plan. The Sacramento Area Council of Governments is fully committed to work as the City's partner through the Green City program to deliver transformational outcomes for the entire Sacramento region. Working together, we bring the expertise and capability to deliver a transformational program that can be scaled across the region, state, and nation.

We respectfully thank you for your consideration of Sacramento.

Sincerely,

Kirk E. Trost
Interim Chief Executive Officer

Auburn
Citrus Heights
Colfax
Davis
El Dorado County
Elk Grove
Folsom
Galt
Isleton
Lincoln
Live Oak
Loomis
Marysville
Placer County
Placerville
Rancho Cordova
Rocklin
Roseville
Sacramento
Sacramento County
Sutter County
West Sacramento
Wheatland
Winters
Woodland
Yolo County
Yuba City
Yuba County

County Executive

Navdeep S. Gill



County of Sacramento

Board of Supervisors

Phillip R. Serna, District 1

Patrick Kennedy, District 2

Susan Peters, District 3

Sue Frost, District 4

Don Nottoli, District 5

January 16, 2017

Electrify America

To Whom It May Concern:

I am writing to express our strong support for the City of Sacramento's pursuit of the Green City project through Electrify America. Sacramento County supports working through the Green City program to deliver transformational outcomes for the entire Sacramento region. The County has been working with the City of Sacramento and other partners to support a Plug-In Electric Vehicle Infrastructure and Implementation Plan to deliver successful project outcomes. Working together, we bring the expertise and capability to deliver a transformational program that can be scaled across the region, state, and nation.

We respectfully thank you for your consideration of Sacramento's application.

Sincerely,

A handwritten signature in cursive script that reads "Navdeep S. Gill".

Navdeep S. Gill

Attachment 1

Past Grant Proposals: Sacramento Application for USDOT Automated Vehicle Proving Ground Designation and Sacramento EV Car Share Pilot Application

Submitted under separate cover

Attachment 2

Mobility Shift Brochure*

Submitted under separate cover

**Note: Formatted for tri-fold layout and production, with front panel shown on the far right of page 1 of the PDF, interior panels shown on page 2, and the second and rear panels shown on the far left and center panels of page 1, respectively*