Recommended Action
It is recommended that the Planning Commission:

1. Review Electric Vehicle Action Plan (EVAP); and
2. Adopt a Resolution recommending that the City Council approve the EVAP.

Executive Summary
Sixty-four percent of Santa Monica’s greenhouse gas emissions are generated from vehicle transportation. In order to reach carbon neutrality by 2050 or sooner, decarbonizing vehicle transportation will be essential. The Electric Vehicle Action Plan (EVAP) was developed to consolidate various efforts throughout the City and develop new initiatives to facilitate electric vehicle adoption through policies, programs, projects and pilots.

The report summarizes the key policies of the EVAP. The report also outlines proposed expenditures for shovel-ready and longer-term projects and ongoing operations.

Background
On November 8, 2011, Council held a study session on electric vehicle (EV) infrastructure. Staff presented the challenges to accommodating EV charging for residents, visitors and employees as well as the pending installations of charging infrastructure. No action was taken during this session.

On July 19, 2017, OSE staff presented the draft EVAP to the Planning Commission.

The EVAP draft was released on September 15 and will be open for public comment through October 15, 2017.

State agencies and electric utilities are providing incentives through rebates and subsidized infrastructure to promote EV ownership and EV charging.

Discussion
Environmental Impact
Electric vehicles (EVs) play an important role in reducing carbon emissions, cleaning the air and reducing noise pollution. According to the American Lung Association’s 2016
Clean Air Future, health and climate costs caused by internal combustion engine vehicles totaled $37 billion across ten states in 2015. The study estimates that combined health and climate benefits from a 100% EV scenario in California could reach $13.5 billion by 2050. These benefits include:

- Fewer asthma attacks, lost work days, premature deaths, heart attacks and emergency room visits as the result of cleaner air
- Climate benefits linked to reduced costs to agriculture and the environment
- Reduced carbon emissions: EVs powered by electricity from the local grid produce 54% less lifetime carbon pollution than gasoline cars (Plug In America, 2016)
- Reduced emissions that generate ozone and particulate matter

In addition, there are significant economic benefits available to EV drivers, utility companies, and the local economy:

- Lower maintenance costs due to fewer parts (e.g. no engine or transmission)
- Estimated fuel savings of more than $3,500 over the lifetime of the vehicle if gas prices fall to $2.50/gallon; savings will be closer to $9,000 if gas prices are $3.50/gallon (Plug In America, 2016)
- Savings from fuel costs and maintenance can be invested back into the local economy
- Increased off-peak energy sales, which can reduce rates for utility customers
- Potential load control such as vehicle-to-grid integration
- Reduced costs for road repair and maintenance

The EVAP is in line with several statewide goals that will continue to drive EV adoption:

- Reduce carbon intensity of vehicle fuels by 10% by 2020
- Increase EV ownership to 1.5M by 2025
- Increase EV sales to 15% of all vehicle sales by 2025
- Reduce greenhouse gas emissions 40% below 1990 levels by 2030

Hierarchy of Mobility
EVs exist within a larger framework of mobility and goal to reduce congestion. Active modes of walking and biking must be prioritized before low-emission transit and single-occupancy vehicles (SOV). SOV fossil-fuel vehicles should be the option of last resort. This consideration is reflected in the Plan with policies that recognize EVs as vehicles that still contribute to congestion.

The diagram below shows the priority of zero emission vehicles (ZEVs) within a larger hierarchy of mobility. Whether ZEV or non-ZEV, single occupancy vehicles come after walking, biking, transit and shared mobility services when it comes to improving mobility options and reducing traffic and congestion.
EV Action Plan
In Santa Monica, EVs and hybrid electric vehicles represent approximately 3% of all vehicles owned in Santa Monica. Within less than 10 years, the percentage of EV drivers is anticipated to increase by more than four-fold. When viewed geographically, there is a greater proportion of EV ownership and private EV charger installation in the single-family residential neighborhoods than the multifamily neighborhoods.

Plug-in Electric Vehicle (PEV) Registration

For many EV owners and would-be owners, the need for charging is immediate.
Dedicated EV drivers who cannot charge at home resort to using public infrastructure at all hours, planning their schedules around charging. Others have resorted to using extension cords that often run from building windows or garages across the public right of way.

In order to facilitate EV ownership and charging locally, a strategic plan was developed. The EVAP provides a comprehensive strategy to achieve local, regional and state greenhouse gas reduction goals by expanding public EV infrastructure and supporting private EV charging.

The EVAP was developed by City staff and consultants with input and feedback from local community stakeholders, researchers, EV charging companies, Southern California Edison, State agencies and other local governments. City staff have had considerably input and feedback from the self-organized Drive Clean Santa Monica group, which consists of residents who have been early EV adopters. The UCLA Luskin Center for Innovation provided data analysis to help identify service gaps and advise on EV incentives. Additionally, staff engaged local stakeholders at the City’s annual AltCar Expo.

The EVAP focuses heavily on addressing the barriers to charging infrastructure in the public and private realm, and calls for programs to promote EVs and charging.

The EVAP includes:
- A background on EVs and EV Charging in California and Santa Monica
- A review of existing policies, plans and programs to support charging infrastructure on a state and regional level
- Recommended policy priorities to address current problems with EV Charging and EV utilization
- An implementation plan for all policy priorities that will require collaboration between various City departments and divisions, Southern California Edison, the City’s selected EVSE service provider, and community stakeholders
- Appendices with resources including maps on current and proposed EV charging infrastructure and detailed material on multi-family unit dwelling (MUD) installation case studies and best practices

The EVAP acknowledges the challenges faced by the majority of residents who live in aging multifamily buildings, as well as the increasing financial support from the utilities, State and other sources. The EVAP emphasizes the need to support private charging while also expanding public charging infrastructure.

The EVAP identifies four priorities that must be addressed in order to significantly scale the adoption of EVs in Santa Monica and surrounding areas. The EVAP provides research, case studies and recommended actions for each priority. Below is a summary of the priorities and actions:

1. **Public Infrastructure**: Modernize and expand public EV infrastructure to improve
user experience and sustain operations.

a. Retrofit or replace legacy chargers with “smart” chargers; add new smart chargers to the network.
b. Consider a time-of-use (TOU) fee structure that covers operations and maintenance costs and supports community EV programs.
c. Earn credit revenue by participating in the state Low Carbon Fuel Standard program.
d. Add charging stations for City fleet facilities.
e. Explore innovative EV charging technologies to integrate into Santa Monica’s EV charging network.
f. Explore fast charging options (480V) where appropriate and feasible.
g. Develop guidelines and standards to support charging for e-bicycles and neighborhood electric vehicles.

2. Private Charging: Increase EV Charging for Multi-Unit Dwellings (MUDs) and workplaces.

a. Develop a pilot rebate program for multifamily charging to help property owners and residents install charging stations; include additional funding for low-income residents.
b. Identify qualified vendors to handle MUD and workplace charging in Santa Monica.
c. Streamline the permitting process and allow online permits for small-scale installations.
d. Designate off-street and on-street locations for public charging infrastructure.
e. Implement a pilot program to provide EV charging through streetlights.
f. Partner with priority opportunity sites to install EV charging.

3. Public Policy: Update parking and charging policies and practices for efficient charging access and station use.

a. Modify City Ordinance to allow on-street EV charging.
b. Update zoning ordinance requirements to increase the parking spaces available for EV charging.
c. Review and update parking policies and signage for public EV charging locations.
d. Explore a program to adjust nighttime parking rates or provide resident charging permits for overnight charging at public facilities.
e. Explore carshare and rideshare services to increase access to EVs.
f. Expand the fleet-sharing system for all city departments and divisions located at the Civic Center.

4. Community Outreach: Develop EV outreach programs and resources for residents and businesses.

a. Create a webpage with available resources, programs, and technologies.
b. Develop an outreach program for EV charging stations similar to the Solar Santa Monica Program called EV Santa Monica.
c. Develop outreach targeted to low-income residents.
d. Encourage access to EV carsharing services for low-income individuals.

e. Create an EV Program Coordinator position to manage all responsibilities related to EVSE coordination and implementation.

f. Conduct regional coordination related to EV charging and funding opportunities.

Below is an overview of several key recommendations that warrant further discussion.

**Replace Existing EV Charging Stations with Smart Charging Stations**

The City currently has 75 charging ports available at 64 charging stations (53 single-ports and 11 dual-ports). The majority of charging stations are located in City-owned parking structures and surface lots, however two charging stations are located on-street at Montana Ave. The dual-port chargers at the Civic Center Structure were provided by UCLA through a research project. A complete list of publically available EV charging stations and their locations is provided below in Table 1.

All stations see a high amount of usage and staff regularly receive requests to add more charging stations. Currently, City staff are responsible for all maintenance, operation, repair and replacement of existing chargers.

The City’s existing stations are of various makes, models and vintages inhibiting the City’s ability to develop a robust network, maximize functionality and provide a uniform experience for users. The EVAP includes a recommendation to retrofit and upgrade the City’s existing 64 charging stations with smart charging technology and establish a uniform model of technology and service across the city.

<table>
<thead>
<tr>
<th>Location</th>
<th>Street Address</th>
<th>Multi-port Stations</th>
<th>Single-port Stations</th>
<th>Total Available Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civic Solar Port</td>
<td>1685 Main St</td>
<td>-</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Civic Parking Structure</td>
<td>333 Civic Center Dr</td>
<td>7</td>
<td>-</td>
<td>14</td>
</tr>
<tr>
<td>Santa Monica Pier</td>
<td>200 Santa Monica Pier</td>
<td>-</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Santa Monica Place Parking Structure 7</td>
<td>395 S Santa Monica Place</td>
<td>-</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>11th &amp; Montana (curbside)</td>
<td>1101 Montana Blvd</td>
<td>-</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Virginia Avenue Park</td>
<td>2200 Virginia Ave (Pico Blvd side)</td>
<td>-</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Virginia Avenue Park</td>
<td>2200 Virginia Ave (Virginia Ave side)</td>
<td>-</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Santa Monica Airport</td>
<td>3223 Donald Douglas Loop South</td>
<td>-</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Parking Structure 6</td>
<td>1431 2nd St</td>
<td>4</td>
<td>22</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>11</strong></td>
<td><strong>53</strong></td>
<td><strong>75</strong></td>
</tr>
</tbody>
</table>
Newer charging stations would provide increased functionality and operational sustainability. These functions include:

- Remote monitoring and reporting
- Managed charging
- User communication
- Cost recovery
- Energy tracking
- Malfunction/Repair notification
- Low Carbon Fuel Standard participation (discussed later)

By retrofitting the existing stations, the City would be able to offer a uniform system and enable a single EV service provider that can manage the infrastructure, customer service, equipment maintenance and revenues.

The smart charging stations would enable the City to track costs associated with usage and develop an appropriate fee to recover expenses. Additionally, the City would be able to better manage efficient use of chargers by communicating with users when their allotted time or charging needs are completed. Smart charging stations also have the capability to assess additional fees for overstaying, an effective way to incentivize turnover. Additionally, as charging infrastructure grows, the City will need to be able to remotely monitor the status of each charger to track repair and maintenance issues.

**Expanding Public EV Charging Infrastructure**

Providing public infrastructure for EV charging is a complicated and expensive process. The electrical and site infrastructure are typically inadequate to support additional electrical demand from EV charging. The EVAP has a 5-year infrastructure program that would effectively quadruple the number of EV charging ports available, as summarized below in Table 2

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Total Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA: 2017-2018 Retrofit existing stations</td>
<td>75</td>
</tr>
<tr>
<td>IB: 2017 Installations</td>
<td>34</td>
</tr>
<tr>
<td>II: 2018 Offstreet (Libraries, Parks, Lots)</td>
<td>41</td>
</tr>
<tr>
<td>IIIA: 2018-2022 Curbside Stations</td>
<td>69</td>
</tr>
<tr>
<td>IIIB: 2018-2022 Streetlight Stations</td>
<td>25</td>
</tr>
<tr>
<td>IIIC: 2018-2022 Public/Private Partnerships</td>
<td>25</td>
</tr>
<tr>
<td>Project Phase</td>
<td>Total Ports</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>IIID: 2018-2022 DC Fast Chargers</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL Public Chargers</td>
<td>271</td>
</tr>
<tr>
<td>Civic Center Fleet Charging</td>
<td>31</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>302</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Phase</th>
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<td>25</td>
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<tr>
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<td>2</td>
</tr>
<tr>
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<td><strong>271</strong></td>
</tr>
<tr>
<td>Civic Center Fleet Charging</td>
<td>31</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>302</strong></td>
</tr>
</tbody>
</table>

Thirty-four new charging ports are pending at various parking lots and structures across Santa Monica at various stages of development (Phase 1B). These chargers should be operational before the end of 2017 (Locations are shown below in Table 3).

The pending installations are capable of communications, remote monitoring/control and cost recovery; these systems could be activated and managed by the City or a third party provider.
Table 3: Phase IB Pending Installations of New Charging Stations

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Dual-port Stations</th>
<th>Total Available Ports</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2501 Nielson Way Parking Lot</td>
<td>2501 Nielson Way</td>
<td>1</td>
<td>2</td>
<td>Operational</td>
</tr>
<tr>
<td>2901 Neilson Way Parking Lot</td>
<td>2901 Neilson Way</td>
<td>2</td>
<td>4</td>
<td>Installed, pending City action</td>
</tr>
<tr>
<td>Parking Lot 7</td>
<td>1217 Euclid St</td>
<td>2</td>
<td>4</td>
<td>In design</td>
</tr>
<tr>
<td>Parking Lot 8</td>
<td>1146 16th St</td>
<td>1</td>
<td>2</td>
<td>In design</td>
</tr>
<tr>
<td>Parking Structure 9</td>
<td>1136 4th St</td>
<td>2</td>
<td>4</td>
<td>In design</td>
</tr>
<tr>
<td>Parking Structure 10</td>
<td>1125 3rd St</td>
<td>2</td>
<td>4</td>
<td>In design</td>
</tr>
<tr>
<td>Main Library</td>
<td>601 Santa Monica Blvd</td>
<td>6</td>
<td>12</td>
<td>In design</td>
</tr>
<tr>
<td>5th Street Lot</td>
<td>5th &amp; Santa Monica</td>
<td>1</td>
<td>2</td>
<td>Operational</td>
</tr>
<tr>
<td>Annenberg Beach House</td>
<td>415 Pacific Coast Hwy</td>
<td>1</td>
<td>2</td>
<td>In design</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>18</strong></td>
<td><strong>36</strong></td>
<td></td>
</tr>
</tbody>
</table>

The City is also participating in Southern California Edison’s (SCE) Charge Ready pilot program to add 16 fleet charging stations (31 ports) at the Civic Center Parking structure. The new chargers to be procured under the Charge Ready program must comply with SCE’s requirements for networked communication systems. This implication will be discussed in a later section of this report. The City will also receive a rebate from SCE for 25% of the base cost of the chargers.

Phase II focuses on siting EV charging near existing electrical service and parking capacity in off-street locations. This includes City parks and libraries. If the City utilizes smart charging stations, staff would be able to control operating hours of the chargers to be consistent with the site’s operating hours.

On-street, or curbside, locations could help bring EV charging to underserved neighborhoods that are not close to public parking lots. Curbside charging offers an opportunity for the City to more evenly distribute charging infrastructure in residential neighborhoods (Phase III A & B).

Staff reviewed parking inventory and identified on-street parking with perpendicular or diagonal spaces. These spaces could offer greater efficiencies through the use of dual-port charging stations, which can serve two adjacent parking spaces.

Streetlights may also provide an opportunity to help to limit additional congestion of equipment in the parkways and sidewalks. When converted to energy efficient LEDs,
streetlight circuits have excess electrical capacity that can potentially be utilized for EV charging directly from the streetlight pole. Staff have identified potential locations for streetlight charging and will continue to work with SCE to determine their feasibility.

Public/private partnerships at priority destination sites with long dwell times (e.g. retail centers, schools, movie theatres) could provide additional charging opportunities throughout the city.

DC fast chargers (DCFCs) offer a convenient option by providing a full charge in less than 30 minutes, compared to four to six hours for level 2 chargers.

These projects would yield a total 271 public charging ports throughout the city.

**Proposed 5-yr Infrastructure Map**

*Charging as a Service Model*

As previously mentioned, the City owns all of the existing public chargers and is therefore responsible for their maintenance and upkeep. The existing chargers lack networked communication systems that could enable citywide portfolio management of each charger, including tracking usage, outages, reporting and communications to users.

Over the years, EV service providers have developed service models that include customer service, maintenance and repair, transaction and network services and carbon credit management (discussed later). These services enhance the experiences
of the user and site host, while reducing the risks and burden of owning and operating the equipment outright.

Staff recommend implementing a service model so that the EV service provider bears the greater portion of the risk and responsibility of operations, maintenance and repair.

Revenue Operation
Santa Monica’s free charging network provided the much needed support for the early-adopter community. Now almost 20 years later, the growth in EV ownership and the demand for EV charging requires the City to re-evaluate its services and the sustainability and expansion of EV infrastructure.

Cost recovery, or charging a fee for EV charging services, is recommended as a policy within the EVAP. Cost recovery is a best management practice that provides several valuable functions, which are currently not available to the City with the existing infrastructure. Cost recovery enables the City to:

- Recoup a portion of capital costs
- Offset operational costs from electricity, network/transaction services, maintenance, repair, etc.
- Enforce occupant turnover by charging higher fees beyond the allowable time limit

Staff recommend replacing the City’s existing chargers with new smart chargers that will enable staff to collect and analyze data that can be used to inform an appropriate fee schedule.

If Council approves the recommendation by staff to select an EV service provider, staff will work with the vendor and community stakeholders to develop an appropriate fee schedule so that EV charging is still an incentive that benefits residents, daytime workers and visitors. Overall, the fee schedule should:

- Provide incentives for EV drivers and would-be EV drivers
- Remain lower than the cost of gas
- Fairly recognize the different charging needs of different vehicles
- Discourage ‘accessory charging’ or unnecessary charging, especially if home charging is available to the EV driver
- Encourage station turnover when charging or parking limits have been reached
- Recognize the impacts of charging on the utility grid, when energy demand and costs are high

Establishing a fee schedule will be a strategic and continuous process. Once new stations are installed, charging should remain free while staff analyze station usage and engage community stakeholders. This may be up to a year-long evaluation. Penalty fees for overstaying in EV charging spaces should be implemented immediately to enforce turnover. Once staff have garnered community input and evaluated usage, staff will return to Council for adoption. Staff will prepare annual reports to review station usage and revenues and make recommendations as needed to adjust fees.
Another potential source of revenue is the Low Carbon Fuel Standard (LCFS) credit, which is administered by the California Air Resources Board (CARB). The LCFS provides a credit trading system similar to cap-and-trade for vehicle fuels. Low carbon fuels like hydrogen, renewable diesel or natural gas and electricity generate a monetary value for the ‘fuel provider.’

In the case of EV charging, the fuel provider could be the site host, EV service provider or utility. Staff estimates this could generate approximately $6,400-$14,000 in annual revenue. This revenue could be utilized to maintain lower fees for use of the public chargers.

Another potential source of revenue is advertising. Most new EV charging equipment features display screens, which can feature ads or City-sponsored messages. Any decisions on the potential for advertising on EV charging equipment would need to be made by City Council.

Any or all of the potential revenue sources described above could be utilized to fund new infrastructure and to keep operational costs low for users of Santa Monica’s EV charging system.

*Local Grants for Private EV Charging*
In order to reach the State’s target of 1.5 million EVs on the road by 2025, the California Energy Commission and the California Air Resources Board are launching massive funding programs to lower the costs of purchasing and operating EVs. Southern
California Edison also plans to implement a rebate program for EV charging beginning in 2019. Another source of statewide funding for EV infrastructure will come through the Volkswagen settlement with the federal government over its defrauding of emissions tests.

While there are many sources of funding in the pipeline, there will still be challenges of immediacy, access and resources for many small property owners and lower-income individuals to be able to take advantage of these resources.

The EVAP recommends developing a local incentive or rebate program to support small multifamily dwellings, non-profits and businesses. Approximately 70% of Santa Monica residents live in MUDs, and thus are restricted from owning EVs due to lack of charging options in and near their buildings.

The rebate could be designed to operate within existing operating budget and fund a limited number of chargers per fiscal year. A portion of the funds could be limited to low-income individuals or properties where low-income individuals live.

Enable the Planning Director to Designate EV Charging Spaces on City Streets
The Municipal Code 3.12.835 currently gives the Planning Director authority to designate off-street parking spaces for electric vehicle charging. The EVAP recommends amending the code to include on-street parking. On-street charging will be essential for reaching residents of multi-unit dwellings.

Increase Minimum Spaces Dedicated To EV Charging in Zoning Ordinance, Municipal Code, and Developer Agreement Requirements
Currently the Zoning Code requires one EV-ready space to be constructed for every 25-49 parking spaces and two EV-ready spaces for every 50-99 parking spaces. The State aims to increase electric vehicle sales to 15% by 2025.

Using this as a reference and planning for continued future growth, the EVAP recommends increasing the requirement of EV-ready spaces to 20% of all new commercial parking facilities. For residential facilities, the plan recommends a requirement of one EV-ready space per dedicated set of residential unit parking. This will allow tenants who have dedicated tandem parking to have access to at least one EV-ready space.

Evaluate Parking Policies
Once additional public charging infrastructure and incentives are implemented, it may be beneficial to explore alternative benefits to the metered parking privileges for EV drivers. While EVs provide environmental and community benefits by reducing pollution and noise, it is important to recognize that EVs still contribute to congestion and traffic just like any other vehicle. Santa Monica remains one of four cities in California that still offers free parking for EVs, and one of only two cities that allows both BEVs and PHEVs to park for free. According to the DMV, Santa Monica is only one of four cities in California that still provides this benefit and one of two cities that does so for green
decal holders (i.e. hybrid vehicles).

Staff estimate that the City currently forgoes approximately $558,000 in annual revenue from providing free metered parking. As EV ownership continues to increase, this loss in revenue is anticipated to grow to approximately $1.8M by 2021.¹ This policy change could provide a sustainable source of revenue to support additional EV infrastructure, programs and resources.

Create an EV Program Coordinator Position and EV Outreach Program

EV charging is a relatively simple process, however the task of constructing and providing EV charging as infrastructure is very complex and expensive. Most sites and buildings were never designed to support EV charging from a design and electrical standpoint. SCE has also not prepared its utility grid to embrace the significant increase in solar energy, energy storage and EV charging that is anticipated in the near future. EV charging projects can take several months to years to complete if they require upgrades and installation of utility lines, poles, transformers, conduit, building-level transformers, electrical panels, and new parking facilities (grading, striping, bollards, and signs).

Operating an EV charging system is similar to running a moderate sized business operation or utility. Currently, there are many departments and divisions that are involved with planning, permitting, operating and maintaining EV charging infrastructure in Santa Monica, however none are solely responsible for overseeing the EV charging system. This provides challenges for resources, funding and coordination. The EVAP recommends establishing a full-time staff person to oversee implementation of the plan. Similar to the Breeze Bike Share program, the City’s growing network of EV chargers will need diligent planning, operations and management in order to operate successfully.

Additionally, there is and will continue to be a strong public demand for information, education and technical assistance. There are many programs, funding and technologies currently available with many more pending. This confusing landscape requires a local liaison and channel to serve as a clearinghouse of information and resources.

By establishing a single point of contact, staff can be more effective in developing and managing projects, conducting outreach to the community and implementing city policies. The EV Program Coordinator could be funded from the revenues generated from public charging services.

Funding the Plan

SCE has a strong interest in expanding EV charging as it creates new revenue streams. In addition to its Charge Ready program, SCE recently submitted a large Transportation Electrification program proposal to the California Public Utilities Commission. SCE’s proposal includes DC fast chargers for urban clusters, residential rebate programs, and

¹ Predicted EV purchase growth rate, UCLA Luskin Center for Innovation; California EV Market Share, IHS Markit; Annual Meter Revenue, City of Santa Monica, 2017
building infrastructure for electric buses. SCE has identified Santa Monica as a target community where there is strong interest and capacity to deploy EV infrastructure.

Another source of future funding will be made available from the VW settlement with the federal government over its diesel emissions fraud. As a result, $800 million over 10 years will be invested in California covering 4 areas: (1) Installing charging infrastructure (approximately $120 million), (2) Building a Green City to showcase the benefits of ZEVs and promote increased ZEV usage (approximately $44 million), (3) Public Education initiatives (approximately $20 million), and (4) Access initiatives like ride-and-drive events.

With a smart charging system, the City would be able to create new revenue streams through the implementation of user fees and fines, LCFS credits, as well as advertising opportunities. Additional revenue could also become available if free metered parking for EVs were discontinued. The revenues generated could be redirected to implement new EV projects and programs and help keep user fees affordable.

Staff will continue to apply for State and regional agency funding that supports infrastructure and programs.

Recent Feedback on the Draft Electric Vehicle Action Plan
Staff presented the EVAP to the Task Force on the Environment, Santa Monica EV Policy Coalition (now called Drive Clean Santa Monica), and held a public workshop in the months of May, June, July, and September.

Generally, feedback was supportive for the infrastructure and programs, while many advocates lament the imbalance of supply and demand and have expressed concern over costs and fees. Due to the many obstacles of installing charging units in the many old multi-family buildings (mostly due to insufficient electrical infrastructure), residents have emphasized the need for public charging in residential neighborhoods.

The Task Force on the Environment has suggested using technologies like solar and energy storage to offset electrical demand for EV charging and exploring DC fast charging. The Task Force has also commented that the overall plan should emphasize the goal to increase EVs and charging, while balancing a discussion of addressing technical barriers.

Representatives from Drive Clean Santa Monica expressed concern over the cost of infrastructure being paid for by EV drivers and disincentivizing the ‘right action’ by making EV charging too expensive. Representatives have encouraged the EVAP to explore low-cost options and alternative sources of funding and avoid ‘penalizing’ EV drivers with high fees.

Financial Impacts
Currently, the City has one EV project funded through the Capital Improvement Program (CIP). Staff will utilize these funds to construct the sites through SCE’s Charge
Ready program at the Civic Center Parking Structure. Through this program, the City will receive in-kind infrastructure and rebates from SCE’s Charge Ready program.

EVAP implementation priorities include infrastructure and program investments. Recommended infrastructure investments include smart EV charging infrastructure, new public infrastructure for multifamily neighborhoods, and standardized signage.

Staff estimate that the EV Action Plan will cost approximately $2 million in infrastructure costs over 5 years. Once the infrastructure is fully deployed, staff estimate operating costs at $361,075 per year, as detailed below in Tables 6 and 7.

Staff would seek to supplement and leverage City funds as grants and other funding sources become available.

Table 6: Estimated Capital Costs

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Proposed Chargers</th>
<th>Estimated Average Unit Cost (incl. design &amp; labor)</th>
<th>Total Conceptual Cost (Rounded)</th>
<th>Potential Funding Sources (in addition to existing budget)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase IA: 2017-2018 Retrofit existing stations</td>
<td>75</td>
<td>$2,500</td>
<td>$310,000</td>
<td>CIP, Revolving Loan</td>
</tr>
<tr>
<td>Phase IB: 2017 Installations</td>
<td>34</td>
<td>$10,200</td>
<td>$346,800</td>
<td>Funded</td>
</tr>
<tr>
<td>Phase II: 2018 Off-street (Libraries, Parks, Lots)</td>
<td>41</td>
<td>$6,000</td>
<td>$246,000</td>
<td>CIP, Revolving Loan, SCE, Grants, New Revenue</td>
</tr>
<tr>
<td>Phase IIIA: 2018-2022 Curbside Stations</td>
<td>69</td>
<td>$6,000</td>
<td>$414,000</td>
<td>CIP, Revolving Loan, SCE, Grants, New Revenue</td>
</tr>
<tr>
<td>Phase IIIB: 2018-2022 Streetlight Stations</td>
<td>25</td>
<td>$15,000</td>
<td>$375,000</td>
<td>CIP, Revolving Loan, SCE, Grants, New Revenue</td>
</tr>
<tr>
<td>Phase IIIC: 2018-2022 Public/Private Partnerships</td>
<td>25</td>
<td>$3,000</td>
<td>$75,000</td>
<td>CIP, Revolving Loan, SCE, Grants, New Revenue</td>
</tr>
<tr>
<td>Phase IIID: 2018-2022 Public DC Fast Charging Stations</td>
<td>2</td>
<td>$50,000</td>
<td>$100,000</td>
<td>CIP, Revolving Loan, SCE, Grants, New Revenue</td>
</tr>
<tr>
<td>TOTAL Public Chargers</td>
<td>271</td>
<td></td>
<td>$1,866,800</td>
<td></td>
</tr>
</tbody>
</table>
### Civic Center Fleet Charging

<table>
<thead>
<tr>
<th></th>
<th>31</th>
<th>$3,550</th>
<th>$122,400</th>
<th>SCE Charge Ready</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Chargers</strong></td>
<td>302</td>
<td><strong>Total Cost</strong></td>
<td><strong>$1,989,200</strong></td>
<td></td>
</tr>
<tr>
<td><strong>SCE Charge Ready Funds</strong></td>
<td></td>
<td>-$12,485</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total 5-Yr Cost</strong></td>
<td></td>
<td></td>
<td><strong>$1,976,715</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Table 7: Estimated Operating Costs**

(By end of 5-yr implementation)

<table>
<thead>
<tr>
<th>Program</th>
<th>Annual Cost</th>
<th>Funding Sources (Potential)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Rebate Program ($2500/charger)</td>
<td>$50,000</td>
<td>Existing program budget</td>
</tr>
<tr>
<td>EV Program Coordinator</td>
<td>$105,000</td>
<td>General Fund, EV program revenue</td>
</tr>
<tr>
<td>Smart Charger Networking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• $250/yr – public station</td>
<td>$75,880</td>
<td>General Fund, EV program revenue, Low Carbon Fuel Standard</td>
</tr>
<tr>
<td>• $205/yr – fleet station</td>
<td>$6,335</td>
<td></td>
</tr>
<tr>
<td>Charger Maintenance*</td>
<td>$123,850</td>
<td>General Fund, EV program revenue, Low Carbon Fuel Standard</td>
</tr>
<tr>
<td><strong>TOTAL Annual Operating Cost</strong></td>
<td><strong>$361,075</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Charging maintenance & repair is provided as a service. Staff may opt to discontinue this service if no significant maintenance or repair issues arise within the first year of operation.

Staff cannot anticipate revenue from cost recovery, advertisements or the Low Carbon Fuel Standard as of yet. Staff will recommend that Council approve the Plan in concept and several initial projects and then return to Council with a fee for charging schedule and advertising plan at a later date.

**Prepared By:** Garrett Wong, Sr. Sustainability Analyst

**Attachments:**

A. Draft EV Action Plan
B. Draft Resolution
Attachment A

To view the public draft of the plan, please visit:
www.smgov.net/electricvehicles