Council moves forward with fleet electrification and vehicle charging infrastructure plan

By SARA HALL

City Council unanimously accepted the fleet electrification and electric **vehicle charging infrastructure master plan** during a meeting this week.

Councilmembers voted 5-0 on Tuesday (June 27) to support moving forward with the plan and for several recommended actions.

The report is great and very detailed, said Mayor Bob Whalen, echoing several of his fellow councilmembers' comments commending the staff work on the document. The plan will need to be able to adapt as things progress, he added.

"This is going to continue to evolve and morph depending on technology and a whole lot of factors, so our implementation plan is going to have to be flexible," Whalen noted.

The recommended action included directing staff to procure consultant services to develop a multi-stage implementation plan to transition the city's fleet to electric vehicles, including associated infrastructure and facility improvements, as well as a funding and procurement strategy, with the goal of converting the majority of the city's fleet to electric vehicles by 2035.

Council also directed staff to prepare a phased funding and implementation plan to install additional electric vehicle charging stations in public parking lots.

Whalen added to the motion for approval to request that staff seek a proposal from ICF for the implementation plan and, if it's under $75,000 and found to be sufficient, it can be awarded by the city manager. The amount will be appropriated from the parking fund to pay for it. If it's more expensive it will return to council for consideration.

It's worth exploring if ICF can submit a proposal, Whalen noted, since they already know the city's system.

If the proposal makes sense and works for the city, agreed Councilmember Alex Rounaghi, if it didn't staff will look elsewhere.

Director of Transit and Community Services Michael Litschi explained the top objectives of the plan: To transition the city fleet to electric vehicles when operationally feasible, develop a sustainable EV charging infrastructure plan for the city fleet vehicles, evaluate the cost of vehicle transition and infrastructure deployment, identify potential funding sources and procurement strategies, provide additional public EV charging infrastructure and identify potential barriers to EV transition.

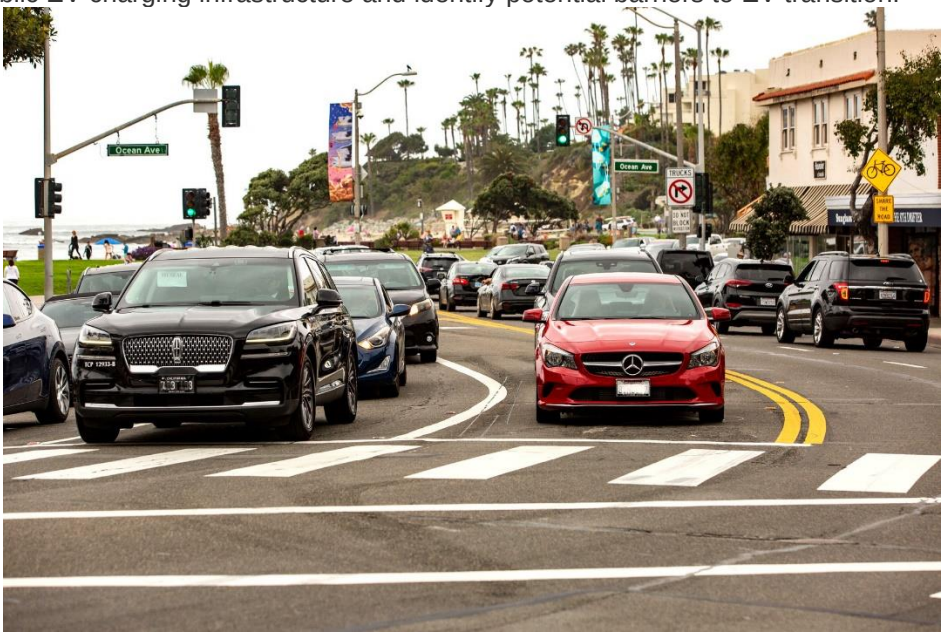

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Photo by Mary Hurlbut

The city is working on a vehicle fleet electrification plan

The city has taken a lot of steps toward increasing the sustainability of its operations, Litschi noted, and the fleet electrification is one piece of Laguna Beach's path to net zero transportation emissions.

At the June 29, 2021, council meeting, councilmembers directed the city manager to assess the city's current vehicle fleet and infrastructure and determine the cost and feasibility of replacing certain vehicles with electric vehicles. Councilmember George Weiss submitted the item for discussion about studying the possible replacement of all owned or leased vehicles in the city's municipal fleet with electric vehicles.

According to the staff report for the 2021 agenda item, electric vehicles reduce emissions by up to 100 percent compared to gas and diesel-powered cars, they also require less maintenance, improve air quality, contribute fewer ocean contaminants from vehicle oil and radiator leakage, and provide quieter streets and neighborhoods. Electricity is also less expensive as energy prices are more stable over time.

In June 2021, council directed staff to study the cost and feasibility of transitioning the city's municipal fleet to electric vehicles. Staff developed a scope of work for the project and issued a request for proposals which **council awarded to ICF** in April 2022. The service provider agreement for the electric vehicle fleet and charging station assessment with ICF Incorporated, LLC, was for the amount of $74,888.

There are a number of policy mandates at the regional and state level that require the shift of fleet vehicles to zero emission technologies, explained Sam Pournazeri, the project manager with ICF. The state has set some ambitious goals to transition away from fossil fuel vehicles, Pournazeri noted. The plan to electrify Laguna Beach's fleet will help reach those goals, including regulations that will affect the city when implemented, Like the California Air Resources Board requirement that 50% of the total number of new vehicle purchases must be zero emission beginning in 2024 for municipal fleets (increases to 100% in 2027).

City staff worked with ICF over the last year to gather the data necessary to develop the plan, which provides a high-level scope and budget for transitioning the city's fleet to electric vehicles, including an analysis of infrastructure needs, environmental benefits and potential funding sources (including grant opportunities). The plant also evaluates opportunities to provide additional public EV charging stations throughout the city.

As of June 2022, the city's fleet consisted of approximately 181 vehicles, with 164 being on-road and 17 being non-road. To provide a comprehensive view of the city's existing fleet, ICF used the company's fleet assessment model to evaluate the type of operations, daily mileage, fuel consumption and retirement year of each vehicle. Ultimately, as a result of the study, ICF recommended that EV replacements are the most suitable option for each vehicle, taking into account unique operational requirements, while also considering factors such as performance, availability and cost-effectiveness. ICF's assessment shows that out of the 164 on-road vehicles in the city's fleet, 147 could potentially be transitioned to battery-electric and plug-in hybrid EVs, including the city's fleet of 25 trolleys.

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Transitioning the city's non-transit fleet to EVs will require a capital investment of up to $4.6 million for vehicle procurement and approximately $650,000 for charging infrastructure. The ICF analysis also showed that the total cost of ownership for the city's EV fleet would be approximately $1.1 million lower than if the fleet were to continue operating with internal combustion engine vehicles.

Although the recommendation to convert all of the city's trolleys to zero-emission battery-electric vehicles by 2031 is anticipated to result in a total cost of operations that is approximately $1.6 million higher than if the city were to continue operating the existing vehicles. This process requires a "significantly higher upfront cost" of the vehicles as well the need for more backup vehicles to support peak summer demand due to the limited range of the EV trolleys and longer charging time. The estimated range of an EV trolley is 125 miles and up to eight trolleys exceeded that in 2022. According to the ICF study, the trolley fleet would need to expand from 25 to 33 vehicles to maintain existing service levels. The base price for new EV trolleys is approximately $450,000 each, and related charging infrastructure is estimated to cost at least $1 million.

The city could reduce more than 12,000 metric tons of GHG emissions and eliminate more than 30,000 pounds of nitrogen oxide emissions over the useful life of the replacement EV fleet. This would be equivalent to removing more than 2,500 passenger vehicles from the road for a year.

Additional infrastructure will be needed to support the increasing use of EVs, particularly those who have long commutes, need access to workplace charging, or do not have home chargers (like those living in multi-unit dwellings or rental properties). Using the California Energy Commission's Electric Vehicle

Charging Infrastructure Assessment, ICF estimated that a total of 430 public and shared private EV chargers will be needed in the city by 2030. The city will not be responsible for deploying all public charging infrastructure, so ICF identified specific city-owned parking lots as potential locations for charging stations Also, Rivian recently approached the city to propose installing EV charging stations in city-managed public parking lots.

According to the executive summary written in the plan, the city is committed to reducing greenhouse gas emissions and mitigating the impacts of climate change. One critical step in achieving these goals is working to transition the city's fleet to electric vehicles, while also providing additional public EV charging stations, the document reads.

Answering a council question about adding more chargers to public lots, Pournazeri noted that the city currently manages nine out of the 32 public EVSE ports. By 2030, the city will need an estimated total of 430 charging stations (both public and shared private), comprising 404 lower-level 2 EV supply equipment and 26 higher-power DC fast chargers. The study identified 11 priority parking lot locations for the potential charging stations. The level 2 chargers could be $5,000 to $7,000 for the equipment, he explained, while the DC chargers could range between $74,000 to $206,000 (depending on the wattage).

Rounaghi suggested directing staff to look at adding chargers to more of the city public parking lots, which could eventually be used overnight for city vehicles. He asked if there were any "low-hanging fruit" they could do over the next year and pay for the work out of the parking fund.

"Just to get the ball rolling," he said.

They could spend the next couple of years analyzing the issue and consulting experts, Rounaghi noted, but he wants to take immediate action.

"At the end of the day, I just want to get something happening," he said. "I'm looking forward to not studying the issue more, but taking some action."

There are also a lot of potential partnerships that could be formed as other agencies work toward electrification, like the water district and the school district, noted City Manager Shohreh Dupuis.

Only a few people spoke during public comment, but all were supportive of the plan.

Resident Judie Mancuso suggested that multiple vehicles share a charger. The team analyzed multiple EV infrastructure scenarios, including both one dedicated charging port per EVE and multiple vehicles sharing one port. Sharing is the way to go, she said, noting that EVs get a lot more miles per charge now compared to older models. She only charges her own electric vehicle once every four to six weeks.

"To think about a one-on-one charger is pretty obsolete these days, when that used to be the case when the cars only got 45 to 60 miles of electric and then switched to gas. But all electric, you're not charging them all the time," Mancuso said. "And the future is that the cars will be back-ups for power that they can generate the power and then give back to (for example) your house in the evening, so that is coming."

Mancuso, who is the current vice-chair of the Environmental Sustainability Committee (reviewed the plan and provided feedback in May), noted that Southern California **Edison gave a presentation about building electrification** to the committee in March. Regarding the grid and potential outages, officials told the ESC that it's better when everyone is on electric because they can distribute the power more evenly, Mancuso explained.

"The more people who electrify, the more consistent the grid can be," she said.

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