

Date: October 2, 2023

To: Thomas B. Modica, City Manager



From: Kevin Riper, Director of Financial Management



For: Mayor and Members of the City Council

**Subject: Update on CARB Regulations Providing for a Zero-Emissions Truck Fleet**

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In April 2023, the California Air Resources Board (CARB) adopted the Advanced Clean Fleets (ACF) Regulation, which directly impacts the City's medium- and heavy-duty fleet of 400+ vehicles. The regulation is an extension of the Advanced Clean Trucks (ACT) rule, first brought to the City Council's attention in a similar May 2021 memorandum. The newly adopted ACF rule requires 50 percent of the City's qualifying vehicle purchases to be zero-emission vehicles (ZEV) beginning in 2024, raising to 100 percent ZEV purchases by 2027. While City planning for ZEVs and infrastructure is ongoing, and the commercial market for ZEV alternatives is growing, compliance with the new regulation will be tremendously expensive, transformative, and potentially disruptive. The purpose of this memorandum is to provide the City Council with an update on the new regulation, discuss its impact on the City, and next steps.

### **City's Green and ZEV Fleet Success To-Date**

Thanks to the consistent support of the Mayor and the City Council, the City is a recognized green fleet leader, with an emphasis on leveraged use of grant and outside funding to the fullest extent possible. The City of Long Beach's (City) Fleet Services was ranked #2 Green Fleet in the U.S. by the National Association of Fleet Administrators (NAFA) in 2022 as well as recognized as a Leading Green Fleet by *Heavy Duty Trucking* magazine.

The City has a long history of prioritizing sustainability and being early adopters of new technology. Over 57 percent of the current fleet is alternatively fueled, with 98 percent of new purchases being alternatively fueled when such options are available. The focus on ZEVs has seen 92 electric vehicles join the City fleet, with many more on the way. Emerging vehicle technologies are carefully evaluated, with plans to deploy a wider range of electrified vehicles in Fiscal Year 2024 (FY 24). In fact, the City Council authorized purchase of two electric vehicle (EV) refuse trucks in 2023, enabling an important trial in exploring EV refuse trucks as viable candidates for wider deployment. Similar plans are underway in evaluating everything from EV service trucks to street sweepers. The City Vehicle EV Charger project has grown to over 100 dedicated electric vehicle charging ports and 4 mobile solar chargers. Coordination between Fleet Services and the Public Works Department has resulted in over 350 additional planned level II (240 volt) & level III (480 volt) charging ports at 12 city-owned properties through 2025.

### **Regulatory Update**

ACT, and the newly adopted ACF, are part of a holistic approach by the State to accelerate a large-scale transition to zero-emission medium- and heavy-duty vehicles with the goal of achieving both CARB's health protective ambient air quality standards and the climate goals

established by the Governor's Executive Order N-79-20. The ACF regulation applies to vehicles over 8,500 pounds in most large fleets throughout the state, including those owned by State, local and federal government agencies. There are few exceptions to the rule, such as back-up vehicles with less than 1,000 miles annually and emergency vehicles (such as fire apparatus, ambulances, and police vehicles). The regulations also include requirements that manufacturers sell an increasing percentage of their total sales volumes as ZEVs, and that qualifying vendors the City uses also comply with the regulation.

## **Challenges**

The challenges presented with this new regulation are both daunting and diverse. The City has over 400 medium- and heavy-duty vehicles that will be impacted by these rules. The Utilities and Harbor Departments will also be heavily impacted. There are significant recordkeeping and reporting requirements for the City, which will likely result in future requests from, at a minimum, the Financial Management Department for additional staffing support in the Fleet Services Bureau. City maintenance facilities must be updated to accommodate safety requirements of working on ZEVs and the high voltage associated with the new technology. Staff will have to be trained and skilled in working on these entirely new vehicles. New procedures will need to be developed to accommodate EV accident damage, which can present unprecedented dangers if not properly planned for.

Additionally, the ZEV truck market is not ready to support the huge impending demand. While the more common heavy-duty vehicles are being electrified now (e.g., box vans, tractor trailers, and buses), the less-common municipal vehicles are simply not yet available. Municipal fleets such as the City's are composed of a number of different, purpose-driven vehicle types, which, being less common, are less attractive to the manufacturers and further out in the future in their production plans. This will slow the transition somewhat, and concurrently lead to higher risk if fleet operators award purchase contracts to new manufacturers who may not be around to support the vehicles as they age.

Operationally, there are also significant challenges in moving from internal combustion engine (ICE) vehicles to electric. The challenges are most pronounced in large, heavy-duty trucks such as refuse, and also with street sweepers. The long routes and heavy loads on these vehicles mean that payload capacity and range are crucial. While these two vehicle types are beginning to become available on the market, they are not necessarily yet available in the payload or range, or operational type that operating and maintenance staff are used to (in the ICE versions). In order to avoid severe mission impact in these vital services, it is necessary to be cautious, with extensive testing of both the vehicles and new operational processes that are required with the EV versions.

Finally, many of the City's operational work centers need to be individually evaluated for the potential of installing high-voltage, level III chargers into what is often aging infrastructure, which lack existing electrical service to support the required charging. Assessments for electricity needs of charging EV fleets similar in size and composition to the City's calculate more than 60 megawatts of additional power needed daily to achieve compliance – equivalent to the consumption of 2,000 new households.

## **Fiscal Impact**

While we obviously embrace the State's aggressive approach to reach zero emissions, the Financial Management Department and the Fleet Services Bureau remain cautious because of the significant expenditure of financial resources that will be required, with the level of grant or other financial support not at all clear yet. The total fiscal impact of this regulation is difficult to estimate given the current lack of ZEV alternatives in the market and the wide array of charging infrastructure variables still to be calculated. Without dedicated grant funding, these regulations may significantly impact funding available for other City priorities.

City staff are actively pursuing grant funding opportunities to subsidize the increased cost of ZEVs and charging infrastructure, including AB 32 funding, grant funds from AB 2766 (clean air vehicle registration fee), MSRC (South Coast AQMD clean transportation funding source), CaleVIP (State charger/infrastructure funding source), Volkswagen Mitigation Trust (ZEV funding derived from the Volkswagen emissions testing settlement), and others totaling \$5.7 million. Additionally, Fleet Services proposed upwards of \$11 million in increased capital collections to City departments in the FY 24 Fleet MOU, allowing for the replacement of traditionally fossil-fueled vehicles with ZEV equivalents, in accordance with ACF requirements. The adopted FY 24 budget also includes approximately \$1.6 million in allowances for light-duty ZEV replacements.

Fleet Services is actively working with partners in the Public Works Department (PW) and Southern California Edison (SCE) on site assessments and ZEV charger installation plans. The quantity and location of chargers needed, the power consumption requirements of the proposed ZEVs, and existing power supplies of the City facilities where chargers are to be installed, all weigh heavily into cost estimates yet to be fully determined. A recent study of a fleet with a similar composition to the City estimated the total infrastructure costs at \$28.7 million. The City is actively leveraging public utility subsidies such as SCE's Charge Ready program, AB 32 funding and other outside sources to assist in achieving our charging goals. To date, SCE has provided critical planning, implementation and financial support for 47 completed chargers, with an estimated value of \$1.4 million and has 154 chargers in the approval process at 4 City locations with an estimated value of \$4.6 million. Still, it is likely that outside funding will not be sufficient to meet our need to rapidly build out and expand charging infrastructure for the City's medium and heavy-duty fleet.

The cost of ACF non-compliance is still being finalized but initial estimates vary from \$1,000 for each day/instance, up to \$250,000 and up to 1 year imprisonment.

## **Solutions-Based Compliance Approach**

Initial estimates place zero-emission trucks' upfront cost between 25-40 percent higher than their ICE equivalent. Considering the cost of the required ZEV charging infrastructure, the impact on the cost of operating the City's fleet is unprecedented. Therefore, it is very likely that additional financial support will be asked of the City Council. Fleet Services will continue to monitor, plan and update the City Council along the road towards compliance.

## Infrastructure Progress and Investment

A multi-phase charging infrastructure plan through 2035, along with a multi-year vehicle replacement plan, have been drafted by City staff. These will guide our ultimate transition to a ZEV Citywide fleet while maintaining 100 percent compliance with the new ACF regulation. In close coordination with Public Works and SCE, Fleet Services is currently developing several large charging infrastructure projects including the Public Service Yard, Energy Resources, Animal Care Services and El Dorado Park Maintenance Yard, totaling 154 additional charging ports. This infrastructure will allow for the deployment of medium and heavy EV's at critical locations. Fleet Services continues to work aggressively with Public Works, other internal customers, City vendors, and other partners to accomplish this goal while meeting the City's operational needs using the best available technology through pilot programs, demonstrations and industry networking and research.

If you have any questions, please contact Dan Berlenbach, Fleet Services Bureau Manager, at (562) 570-5401 or [dan.berlenbach@longbeach.gov](mailto:dan.berlenbach@longbeach.gov).

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