CITY OF OAKLAND



# AGENDA REPORT

**TO:** Sabrina B. Landreth
City Administrator

**FROM:** Darin Ranelletti
PB&D
Brooke A. Levin
OPW

**SUBJECT:** CALGreen Adoption and Electric Vehicle Readiness Code: Supplemental Report

**DATE:** January 17, 2017

City Administrator Approval

Date: 1/19/17

## RECOMMENDATION

**Staff Recommends That The City Council Adopt (1) A Resolution Of Findings Supporting Local Amendments To Sections 4.106.4 And 5.106.5.3 Of The 2016 Edition Of The California Green Building Standards Code To Comply With Changes To State Law And Adopting California Environmental Quality Act Exemption Findings; And (2) An Ordinance Adopting Local Amendments To Sections 4.106.4 And 5.106.5.3 Of The 2016 Edition Of The California Green Building Standards Code And Amending Oakland Municipal Code Chapter 15.04 To Include New Requirements For Plug-In Electric Vehicle Infrastructure To Comply With Changes To State Law And Adopting CEQA Exemption Findings.**

## REASON FOR SUPPLEMENTAL

This Supplemental Report provides additional information regarding projected absolute and comparative costs for compliance with the proposed Ordinance, based on new information and additional stakeholder feedback.

## ANALYSIS

Staff conducted new cost analyses based on specific questions from the Oakland Builders Alliance, as well as stakeholder feedback from electric vehicle service equipment (EVSE) infrastructure installers and developers regarding installation methods in new construction. The results expand on and revise the July 2016 cost effectiveness analysis included in the original Agenda Report. The revised model also draws on an interim analysis (November 2016) that Energy Solutions, the City's consultant, conducted for the City and County of San Francisco. That analysis addresses common EVSE infrastructure elements, such as electrical distribution panels, conduit, and wires – components that are more cost-effective to install during new construction than in future retrofits. The revised model uses assumptions recommended by developer stakeholders since the July 2016 report, including more direct conduit runs, flexible conduit, and simpler methods of fastening conduit to structural building elements, all of which are made possible when installation is conducted during new building construction.

Item: _____
Community and Economic Development Committee
January 24, 2017

The results, presented here and summarized in Table 1, address a hypothetical common building with 60 parking spaces. Per the City's new parking regulations,[1] this building is assumed to be a 120-unit development. Table 1 demonstrates costs per project as stand-alone multifamily and mixed use (nonresidential) developments.

**Table 1: Cost of Compliance: 60-Parking Space, 120-Unit Building**

| | CALGreen: Multi-Family Mandatory | CALGreen: Nonresidential Mandatory | Proposed Ordinance: Multifamily | Proposed Ordinance: Nonresidential |
|---|---|---|---|---|
| Estimated Total Cost of Compliance | $1,300 | $3,100 | $8,580 | $8,300 |
| Incremental Total Cost of Compliance with Proposed Ordinance Relative to CALGreen | - | - | $7,280 | $5,200 |
| Estimated Cost of Compliance per Parking Space | $22 | $52 | $142 | $138 |
| Estimated Cost of Compliance per Unit | $11 | $26 | $71 | $69 |

*Actual site-specific costs will vary based on factors such as parking area layout, conduit lengths and configuration, and availability of spare panel capacity*

Table 1 presents estimated costs for compliance with the California Green Building Standards Code (CALGreen – divided into mandatory (minimum) and voluntary/Tier 2 requirements for nonresidential buildings) and with the proposed ordinance. CALGreen's new requirements went into effect on January 1, 2017. For the evaluated multifamily scenario, the total compliance cost is $8,580. This includes an estimated cost for the six spaces equipped with full circuits of $800 per space, totaling $4,800. The cost of creating electric panel capacity for an additional 10% of spaces (six spaces), plus installing inaccessible conduit for all remaining spaces, averages $70 per space across the 54 PEV-ready (non-full circuit) spaces, for a total of $3,780. Thus, the total cost of $8,580 for 60 spaces results in a per-space cost of $142.[2]

According to estimates from the City's Planning and Building Department, the cost to construct a single parking space in a structured parking garage is $40,000-$80,000. In many areas of the city, the new parking regulations have reduced the amount of required off-street parking, thereby substantially lowering parking construction costs. The costs of compliance with the proposed ordinance are comparatively low, and would likely be offset by the savings from providing fewer parking spaces as allowed under the City's new parking regulations.

[1] Approved by Council on October 6, 2016, Oakland's new minimum residential parking requirements are .5 spaces per unit for housing within ½ mile of a major transit stop. In the Downtown area, buildings may have zero parking spaces per unit.
[2] These costs break down to $69-71 per unit in a 120-unit building.

Transformer and Distribution System Costs: The model results do not include the cost of transformer upgrades. California's Investor Owned Utilities (IOUs) reported in 2016 that "Of the 202,569 vehicles estimated to be currently on the road, only 387, or 0.19%, have required a service line or distribution system upgrade solely to support the PEV load at their residential charging location."[3] Transformers are included in the IOUs' definition of "distribution system."

In the rare instances where a distribution system upgrade is needed, adding a stand-alone, low voltage (120 kVA - 500 amps, 240 volts) transformer with capacity to support a dozen charging circuits would cost approximately $10,000, including labor. In the above scenario, this would result in an additional $83 per unit, or $167 per parking space. The incremental cost of upsizing a transformer in new construction to provide this amount of capacity would be substantially less.

To ensure that special circumstances would not generate an undue cost burden on a particular development, the proposed ordinance contains a compliance cost cap of $400 per parking space that a developer would need to pay for utility infrastructure upgrades.

Exclusion of EV Charging Station Requirement: The proposed ordinance does not include a requirement to install charging stations. By contrast, the cities of Fremont, Lancaster, and Palo Alto now require both PEV electrical infrastructure and the installation of charging stations in a certain percent of parking spaces in new multifamily and nonresidential buildings. Oakland City staff concluded that the infrastructure requirements in the proposed ordinance were the most cost-effective way to ensure that PEV charging could be installed when needed for all new developments, while allowing property owners and managers the flexibility to select and install the most appropriate charging stations as soon as demand is present.

Stakeholders Consulted: In developing the revised cost analyses, the project team received input from many Bay Area stakeholders and experts, including:

- Webcore Builders
- Oakland Builders Alliance
- Jobs and Housing Coalition
- Pacific Gas & Electric Company
- Chargepoint
- EVgo
- International Brotherhood of Electrical Workers
- ABM
- ASWB Engineering
- SPUR
- Staff in the Cities of San Francisco, Fremont, and Oakland

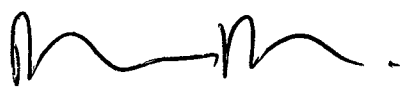
[3] "Load Resources Report Compliance Filing of Southern California Edison Company (U 338-E), on Behalf of Itself, Pacific gas and Electric Company (U 39E), and San Diego Gas and Electric Company" December 30, 2016, Executive Summary.

**ACTION REQUESTED OF THE CITY COUNCIL**

Staff recommends that the City Council accept this report regarding (1) a resolution of findings supporting local amendments to sections 4.106.4 and 5.106.5.3 of the 2016 edition of the California Green Building Standards Code to comply with changes to state law and adopting California Environmental Quality Act exemption findings; and (2) an ordinance adopting local amendments to sections 4.106.4 and 5.106.5.3 of the 2016 edition of the California Green Building Standards Code and amending Oakland municipal code chapter 15.04 to include new requirements for plug-in electric vehicle infrastructure to comply with changes to state law and adopting CEQA exemption findings.

For questions regarding this report, please contact Shayna Hirshfield-Gold, Energy Policy Analyst, at (510) 238-6954.

Respectfully submitted,



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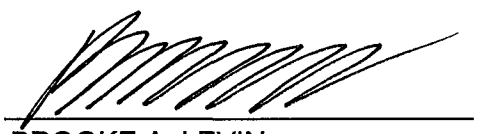
Interim Director,
Planning and Building Department



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