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CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

BUREAU OF ENGINEERING

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December 5, 2024

The Honorable City Council
c/o Holly L. Wolcott
City Clerk
Room 360, City Hall

COUNCIL FILE NOS. 21-1039 & 21-0683: Relative to developing a Building Decarbonization Work Plan for the City's existing building stock and identifying City facilities for near-term installation of distributed energy generation systems.

COUNCIL FILE NOS. 21-1039-S2: Relative to ensuring all future City-owned sites, facilities, or park-sites are built to be net-zero projects that maximize solar energy generation and battery energy storage on site.

COUNCIL FILE NOS. 22-0530: Relative to conducting an analysis on the electrical load impact and upgrades needed for all City (municipal) facilities, in order to prepare all City buildings and facilities for full electrification and decarbonization.

SUMMARY

This report seeks approval for the Decarbonization Workplan and the Year 1 Decarbonization Workbook projects, including the allocation of available funding to identified projects. Additionally, this report provides an update on the Pilot Decarbonization and Distributed Energy Generation Systems - Phase I Projects and the status of the Council File No. 21-1039-S2 and Council File No. 22-0530 directives.

RECOMMENDATION

That the City Council, subject to the approval of the Mayor,

1. RECEIVE AND FILE the "Los Angeles Existing Municipal Building Decarbonization Workplan" report (Attachment No. 1) and its framework for decarbonization through electrification and the promulgation of solar and battery-distributed energy systems (DER) into the City's existing municipal buildings.

2. APPROVE the Decarbonization Workplan's Year 1 Workbook projects (Attachment No. 2), recommended project delivery methods, and reallocation of $22,609,938 within the BOE Special Services Fund No. 682, Department No. 50, Account No. 50YVKV, 50YVKW, 50YVKX, 50YVKY, 50YVKZ, and 50VVHE previously allocated for the fiscal year 2023-24 Phase II Pilot Building Decarbonization Project.

3. DIRECT all City departments, working in consultation with BOE, participate in the transition of gas-powered assets to electric assets and equipment that has reached the end of its useful life as outlined in this workplan, contingent on funding for differential costs, and participate in the proactive development of equipment replacement processes that account for emergency failures. Any deviation from meeting the City's electrification goals is subject to approval from the City Engineer.

4. AUTHORIZE the City Engineer or designee to make technical corrections to the recommendations to effectuate the intent of the City Council.

5. AUTHORIZE the City Engineer or designee, with concurrence from the Municipal Facilities Committee (MFC), to evaluate and make adjustments as needed to the project list in the case of an unforeseen condition requiring a change of facilities.

BACKGROUND

The City of Los Angeles' Existing Municipal Building Decarbonization Workplan Project, referred to as the Decarbonization Workplan here onward, was initiated by the BOE as requested by City Council per Council Files 21-1039 and 21-0683, which essentially asks the BOE to develop a strategy to decarbonize all of the City's existing municipal building stock and identify City facilities for near-term installation of distributed energy generation systems to achieve carbon neutrality without offsets by 2035.

A Task Order Solicitation No. 65 was issued to Tetra Tech/Glumac on April 23, 2023, by BOE. The scope of work fell under four main tasks, which required the consultant team to analyze and evaluate the most cost-effective and impactful approach to the decarbonization of existing buildings, develop a prioritization methodology, and create project lists consisting of a year-by-year workplan to decarbonize the City's entire existing building stock of nearly 980 facilities, including program delivery recommendations and a complete program cost analysis. In addition, the Decarbonization Workplan has identified recommended Year 1 Workbook projects, created an overall maintenance strategy, conducted a jobs impact analysis, and developed a greenhouse gas (GHG) emissions tracking tool for building decarbonization projects.

The Decarbonization Workplan focused on four categories of decarbonization measures to eliminate GHG emissions at the City's existing municipal buildings as follows: (1) *Major Renovations and Building Retrofits* to electrify natural gas equipment and invest in energy efficiency upgrades during major renovations and building replacements; (2) *Building Electrification* to replace natural gas equipment with all-electrified technologies; (3)

Energy Efficiency measures of building upgrades including LED lighting retrofits, high-efficiency equipment, and retro-commissioning; and (4) *Distributed Energy Resources* which involves energy projects including on-site solar photovoltaics (PV), battery energy storage systems (BESS) and microgrid controls. Refer to Attachment No. 1, page 46 for further details.

The **City of Los Angeles' Existing Municipal Building Decarbonization Workplan (Attachment No. 1)** has been prepared based on the above criteria and with input and coordination from all City departments, particularly the General Services Department (GSD) and the Department of Recreation and Parks (RAP). This workplan excludes the proprietary departments of the Los Angeles Department of Water and Power (LADWP), Los Angeles World Airports (LAWA), and Port of Los Angeles (POLA) as part of its building inventory.

DISCUSSION

I. CF 21-1039 & CF 21-0683: Final City of Los Angeles' Existing Municipal Building Decarbonization Workplan (Attachment No. 1):

The City of Los Angeles has established robust climate action goals and is committed to achieving carbon-neutral municipal operations by 2045, with a goal of 2035 for municipally owned buildings. The City owns and operates roughly 980 buildings, totaling over 22 million square feet, which account for 34% of the City's municipal GHG emissions. Reliable and resilient municipal buildings support public services and critical emergency operations. Decarbonizing municipal buildings will improve infrastructure and yield multiple benefits, including addressing the urgent need for climate action, improving the resilience of vulnerable communities, and leading the way for the private sector.

Further necessitating municipal decarbonization efforts, the South Coast Air Quality Management District (SCAQMD) amended rule 1146.2, which now mandates zero emissions boilers for capacities 2000 MBH (thousands of BTU per hour) and under for new equipment and existing units. Once a natural gas unit has exceeded its equipment life and the compliance date has passed, it must be replaced with a zero-emissions alternative. Compliance will roll out between 2026 and 2033, depending on the unit type and size. The Decarbonization Workplan aligns the City with the SCAQMD's new mandates.

KEY FINDINGS

The Decarbonization Workplan outlined in this report provides a pathway for the City to achieve carbon-neutral operations by 2035. Through this project, several key findings were identified:

1. Los Angeles has a pathway for carbon-neutral municipal buildings by 2035 if the effort is funded. The path includes prioritizing capital investments in building electrification projects, targeting the largest natural gas demands at 25 sites that account for 50% of building natural gas usage, and aligning project delivery

to science-based GHG emissions reduction goals with interim natural gas reduction goals by 2030 and 2035.

2. Los Angeles ideally should target to electrify 80 buildings each year starting in FY 24-25. Every year, the City delays implementation, the annual number of projects required increases by 10%. Therefore, achieving 2035 carbon neutrality requires scaling and accelerating implementation efforts. This will require additional staff, resources, funding, and new project delivery methods, as well as significant coordination and collaboration between multiple City departments. A dedicated BOE Building Decarbonization Team is recommended to manage the program.

3. Aligning decarbonization projects with infrastructure replacement needs avoids early equipment retirement, supports deferred maintenance projects, and prioritizes fiscal responsibility. The Workplan should also leverage external funding, grants, rebates, and new financing mechanisms, such as a building decarbonization and resilience bond and/or implementation of design/build portfolio projects using the federal government's Energy Savings Performance Contracts (ESPC). Refer to Attachment No. 1, page 61 for further details.

4. The Decarbonization Workplan provides the opportunity to improve the resilience of community cooling centers and emergency service operations, and to create new local jobs in the green economy. The scope and scale of the Decarbonization Workplan supports Los Angeles' greater sustainability, climate action, and resiliency goals, further leading the way by example for the private sector to follow while spurring investment in building decarbonization.

Prioritization Methodology
The project prioritization framework includes four critical criteria: GHG emissions reduction, infrastructure needs, cost-effectiveness, and equitable investment. Prioritizing cost-effective, impactful projects that address existing infrastructure needs at buildings in disadvantaged communities will enable the City to effectively address climate change in an equitable manner. Refer to Attachment 1, page 49.

Project Delivery Methods
The decarbonization workplan provides a comprehensive implementation strategy comprised of multiple project delivery methods for implementing decarbonization measures. This provides flexibility to accommodate the unique needs of individual building projects and provides the opportunity to leverage external financing mechanisms as appropriate. All project delivery methods will prioritize replacing HVAC systems that have reached the end of their useful life. These end-of-life project delivery methods include: (1) Capital Improvement Projects; (2) Equipment Replacement Projects - RAP/GSD; (3) Portfolio Design-Build; and (4) Portfolio Solar Projects. Refer to Attachment No. 1, page 58.

The Report outlines a process for a year-by-year facility selection in coordination with GSD and RAP. BOE will seek the approval of the MFC as the oversight

committee for the year-by-year facility list, delivery, and funding method. Refer to attachment no 1, page 122. Additional Attachment No. 5 includes a Slide-Deck of the Decarbonization Workplan and Year 1 Workbook presentation.

II. Year 1 Workbook

The recommended Year 1 workbook projects (Attachment No. 2) prioritize sites with high potential for GHG emissions reduction, and projects that will establish a framework for the City to scale implementation efforts in subsequent years. These projects were identified as priority sites by the various user departments due to their urgent repair needs. The BOE Equity Index and the citywide equity index developed by the CAO were the initial data sources used to understand and ensure the distribution of equitable investment.

BOE anticipates that during the project implementation phase, certain facilities may need to be replaced due to unforeseen conditions. BOE will communicate to the MFC when such adjustments are warranted.

III. Status of Pilot Decarbonization and Distributed Energy Generation Systems - Phase I Projects (CF 21-1039 & CF 21-0683):

On May 27, 2022, the City Council approved the allocation of $28,589,000 of UB Renewable funds from Fiscal Year 2021-2022 to fund building decarbonization work for nine (9) pilot City facilities directed by the action of Council File No. 21-1039. Subsequently, on December 9, 2022, the City Council allocated an additional $2,407,965 to address recent construction cost escalation. The scope of work for these projects is a combination of full building electrification, solar photovoltaic (PV) installations, battery energy storage installations, lighting upgrades, building envelope upgrades, new roofing, and ADA compliance where applicable. BOE commenced preliminary work in July 2022, with the design start dates staggered to meet in-house staff availability in 2023. The Phase I Pilot Projects Status (Attachment No. 3) shows the current status of the nine Phase I Pilot projects.

IV. Revised Phase II Proposed Pilot Decarbonization and Distributed Energy Generation Systems Projects (CF 21-1039 & CF 21-0683):

In October 2023, the City Council allocated and transferred $22,609,938 to BOE to fund five (5) Phase II Decarbonization Pilot Projects. Based on what BOE has learned from Phase I pilot projects and the development of the Decarbonization Workplan report, BOE recommends that the Phase II Pilot projects be combined with the Year 1 Workplan projects for better project delivery. Refer to Attachment No. 2 for Year 1 Workplan projects.

V. Summary of all Decarb-Related Funds allocated to BOE (CF 21-1039, CF 21-1039-S1 & CF 22-0530:

The City Council allocated various building decarbonization-related funding to the BOE in addition to the Workplan development and the Phase I pilot projects. The Summary of All Decarbonization-Related Funds Allocated to BOE (Attachment No. 4) itemizes all of the funding allocated via BOE's efforts and distribution.

VI. 21-1039-S2: Analyze existing and future City-owned sites to be net-zero projects that maximize solar and energy storage on-site:
Council File 21 -1039-S2 directs the BOE and LADWP, "…to report to Council on the necessary steps to implement the elements found within the 2022 California Building Energy Efficiency Standards update, and then make further recommendations to ensure that all future city-owned sites, facilities or park-sites are built to be net-zero projects that maximize solar energy generation and storage on-site." The motion also directs that "the Bureau of Engineering further incorporates the components in the above instructions related to maximization of ground-mount and roof-top solar within CF: 21-1039 (Decarbonization Workplan) for all future related projects".

The BOE has engaged the services of Tetra Tech/Glumac for the LA's Existing Building Decarbonization Workplan (21-1039). This Council file (21-1039-S2) and 21-1039 have overlapping work areas. Using the same contract and task order, BOE issued a Notice to Proceed (NTP) on October 3, 2024, to analyze the impact of new energy standards and the ability to maximize onsite solar and storage resources for existing and future city facilities. The consultant is now working with GSD and LADWP and has completed 10% of this new work.

VII. Council File 22-0530: Grid Impact Study Status:
Council File 22-0530 directs that, "…the Bureau of Engineering, with the assistance of the Department of Water and Power, General Services Department and City Administrative Office, conduct an analysis on the electrical load and upgrades needed for all city and city-proprietary departments, in order to prepare all city buildings and facilities for full electrification and decarbonization, and report back with partnership opportunities with all City agencies related to commercial electrification."

This Council file (22-0530) and 21-1039 also have overlapping work areas. Using the same contract and task order for the LA's Existing Building Decarbonization Workplan (21-1039), BOE issued a Notice to Proceed (NTP) to Tetra Tech/Glumac on October 3, 2024, to conduct an analysis on the electrical load and upgrades needed for the municipal buildings, excluding proprietary departments. The consultant is working with GSD and LADWP and has completed 10% of this work.

FISCAL IMPACT

The recommendations in this report have no direct fiscal impact. The report recommends reallocating funding previously dedicated to decarbonization to specified projects. Consideration of future funding for decarbonization projects will occur during the annual budget process.

Respectfully submitted,

D. Weintraub

Deborah Weintraub, AIA, LEED AP, Hon ASLA
Chief Deputy City Engineer

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cc: Randall Winston, Office of the Mayor
Nancy Sutley, Office of the Mayor
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Jimmy Kim, Department of Recreation and Parks
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Attachments:

1. City of Los Angeles Existing Municipal Building Decarbonization Workplan Report
2. Decarbonization Workplan's - Year 1 Workbook
3. Phase I Pilot Projects Status
4. Summary of All Decarbonization-Related Funds Allocated to BOE
5. Slide Deck- Decarbonization Workplan and Year 1 Workbook