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May 16, 2019

The Honorable Nury Martinez, Chair
Energy, Climate Change, and Environmental Justice Committee
Los Angeles City Council

c/o Leyla Campos
Office of the City Clerk
Room 395, City Hall
Los Angeles, CA 90012

COUNCIL FILE NO. 18-0600-S68: THE BUREAU OF ENGINEERING'S EFFORT IN CLIMATE CHANGE MITIGATION AND ADAPTATION WITH A FOCUS ON PROTECTING MARGINALIZED AND AT-RISK COMMUNITIES.

RECOMMENDATION

Receive and file this report.

COUNCIL DIRECTION

Council File Number: 18-0600-S68 - Instruct the Bureau of Engineering to report to the Energy, Climate Change, and Environmental Justice Committee on the Department's climate change mitigation and adaptation efforts with a focus on protecting marginalized and at-risk communities. The report should include the scope of activities, the Department's time spent on these efforts, and funding expended to mitigate future hazards and disasters.

DISCUSSION

The Bureau of Engineering's (BOE) Vision is to lead the transformation of Los Angeles into the world's most livable and resilient city. Our Mission is to serve all Angelenos by delivering innovative, sustainable, high-quality services and projects. Our organization's values are equity, creativity, quality, transparency and responsiveness. In all our projects, the Bureau strives to balance economy, ecology and social equity - the three key components that make up sustainability.

Addressing social equity is one of the core values of BOE. As the City's lead agency for the delivery of public buildings, infrastructure and open space projects, BOE addresses social equity in two ways. First, we address social equity through the delivery of projects



that directly promote social equity, such as responding to the need for homeless housing and by prioritizing infrastructure projects in underserved communities. The Bureau partners with other City and non-City agencies, such as the Housing Authority, Metro, and the Department of Recreation and Parks, to deliver these types of projects. Second, we address social equity by responding to the needs of the public with the same level of professionalism and commitment for all our projects, regardless of the location.

HISTORY

BOE has been a lead agency within the City of Los Angeles in implementing sustainable design practices. In 1995, the Bureau participated in the City's first Task Force on Sustainable Design; in 2000 the Sustainable Design Implementation Program was formed in the BOE; in 2002 BOE led the effort to gain adoption by City Council of the LEED (Leadership in Energy and Environmental Design) rating system for new construction of City projects over 7,500 square feet; in 2007 BOE led the development, and later adoption by the City Council, of the LA River Revitalization Master Plan; in 2010 BOE implemented standardized "Greenstreet" plans for public use; and in 2015 BOE adopted a policy to implement Envision infrastructure rating system on selective infrastructure projects. Currently, BOE is designing pilot Net-Zero energy building projects.

BOE'S CURRENT SUSTAINABLE PRACTICES

BOE promotes sustainability in the design and construction of all public buildings, parks, streets, sewers, stormdrains, pollution abatement projects, bridges, wastewater treatment plants and private development work in the public right-of-way. Below are descriptions of various efforts BOE is currently leading.

1. Homeless Facilities Program(HFP)

The Homeless Facilities Program (HFP) in BOE has been tasked to manage the design and the delivery of projects that are part of the Mayor's Homeless Initiative. This includes 'A Bridge Home' projects and Proposition HHH projects that render other services to the homeless. HFP is the primary BOE group collaborating directly with Council, the CAO and the Mayor's office in the preparation of feasibility studies, the design, and the oversight during construction. The Bridge Home facilities provide temporary safe housing and services for individuals experiencing homelessness, on the path to permanent supportive housing. The challenge for BOE has been to provide accommodations for homeless individuals as quickly as possible, with tight budgets, while balancing design quality, efficiency, and the creation of an environment that is welcoming for the users. The Proposition HHH projects are permanent facilities that offer services for the homeless, such as storage of personal belongings for up to 90 days, shower facilities, access to a laundry area, and case management services.

2. Municipal Facilities LEED Projects

Since the 2001 mandate for City funded facilities requiring LEED Certified projects, and the 2008 mandate raising the level to LEED Silver for projects over 7,500 square feet, BOE has delivered 1,769,147 square feet of building area worth approximately \$1.1 B using LEED. To date, 59 Projects have received LEED certification and 8 additional

projects are in the pipeline. Of the 59 certified projects, 4 projects achieved LEED Platinum, 13 achieved LEED Gold, 16 achieved LEED Silver, and 26 achieved LEED Certified. Our LEED program is unique in the variety of building types included, such as gymnasiums, police stations, fire stations, animal care facilities, libraries and more.

3. ENVISION Rated Infrastructure Projects

On November 4, 2016, City Council adopted a policy that directed, "BOE to utilize Envision as a rating system for measuring sustainability and receive certification for Bureau of Engineering projects where feasible." ENVISION certified projects address sustainability and resiliency. BOE currently has 12 projects that are pursuing ENVISION certification. Of those, five (5) projects have completed ENVISION certification.

4. The Los Angeles River Revitalization Master Plan

In May of 2007, the City Council passed the Los Angeles River Revitalization Master Plan (LARRMP), the culmination of a public process to create a vision for habitat rehabilitation, open space projects, and community connection which would restore the Los Angeles River's place in the lives of Angelenos and in the region's natural systems. The Master Plan does the following: Identifies more than 240 potential projects; focuses on 5 Opportunity Areas; recommends design typologies; outlines strategies and tools to guide and advance its implementation, including a multi-pronged management structure comprised of governmental, entrepreneurial, and philanthropic entities that will ensure River revitalization remains a City priority for many years to come.

The LARRMP was designed to simultaneously address a variety of high-priority problems, including: a lack of open space resources, such as parks, trails, and recreational amenities; a decline in environmental quality due to a scarcity of native habitat and species and a degradation of local and coastal water quality; and a general blighting influence along the River that has resulted from neglect.

The Bureau led the LARRMP effort, and with BOE staff now dedicated to delivering River projects in cooperation with Council and LARiverWorks, BOE is continuing to lead its implementation. This includes the design for the LA River Bikeway in the San Fernando Valley, the pre-design for the 42-acre Taylor Yard G2 Park, the design of the 12 acre 6th Street Viaduct PARC, the construction of the North Atwater Pedestrian/Equestrian Bridge, the Taylor Yard Pedestrian/Bicycle Bridge, the Red Car Pedestrian Bridge at the Glendale Hyperion Bridge, the Albion Riverside Park, and more.

5. Landscape Sustainability Practices

BOE is responsible for the design and implementation of the landscapes for many of the municipal buildings and parks in the City. The Landscape Architecture staff in BOE is leading a program of turf reduction for all the branch libraries in the City, for fire stations, and for other municipal buildings. So far, three fire stations and five library landscapes have been re-designed and constructed, with five more libraries on the drawing boards.

The Landscape Architecture staff also renovate existing facilities and design new park facilities for the Department of Recreation and Parks. All new park projects conform to

the requirements of the State's Green Building Ordinance and the Model Water Efficient Landscape Ordinance (MWELo) using the following design elements: limiting turf areas to minimize water usage; using climate adapted plant species; using efficient "smart irrigation systems"; incorporating recycled water irrigation systems; designing on-site stormwater capture features for biological water treatment and infiltration; and by protecting and enhancing the urban forest within the parks system. By emphasizing good soil management and a "*right plant for the right place*" approach, irrigation is minimized, use of fertilizers and pesticides is greatly reduced, and landscapes thrive under optimal conditions. Water loss through evaporation is reduced and weeds are managed through the generous application of recycled greenwaste mulches in all non-turf planting areas, as a standard practice. The landscape designs lessen the carbon footprint by using locally grown plant material and locally available building materials, soils, and amendments whenever possible.

6. The Wastewater Program Sustainability Practices

BOE's Wastewater staff is responsible for the implementation of the wastewater capital improvement program. BOE provides project management, design, and construction management of the capital improvement projects for the City's four wastewater treatment plants. We work closely with the Bureau of Sanitation to identify and deliver projects that are necessary to comply with permit conditions and improve treatment efficiency. BOE is responsible for the design and construction of new sewers, replacement sewers and for designs to rehabilitate existing sewers. The projects prevent sewage spills that endanger public health, safety and property, and that can enter surface waters and the ocean.

BOE has a long history of valuing the resource potentials presented by wastewater. BOE implemented the City's first water reclamation plant in the 1970's and greatly expanded them in the 1980's and 1990's. The water reclamation potential was expanded further in the 2000's by implementation of the City's first microfiltration and reverse osmosis treatment facility. Today, reclaimed water is produced at all four of the City's wastewater treatment plants.

BOE has also recognized the resource potential in the City's biosolids. All biosolids are anaerobically fermented to produce an energy-rich, renewable biogas and biosolids which are used as fertilizer in Kern County. This biogas is carbon neutral and offsets the carbon emissions from fossil fuel sources which would otherwise be generated. BOE has implemented projects to provide the best available control technology (BACT) for biogas cleanup, compression, and final use of the gas in boilers and other energy conversion processes. This digester gas - a green fuel - from the Hyperion Water Reclamation Plant (HWRP) is sent to an onsite cogeneration facility where it is combusted to produce steam to heat the digesters and drive turbines to produce electricity. HWRP is "off the grid" and is powered 100% by renewable sources. The Bureau also implemented the first, large-scale pasteurization of its biosolids to meet EPA "exceptional quality" (EQ) standards. These facilities allow the EQ biosolids to be reused to recover their nutrient and soil conditioning benefits.

Projects at the Donald C. Tillman and Los Angeles Glendale Water Reclamation Plants have provided biological nutrient removal which meets new stringent nitrogen limits in both plants' permits and has greatly enhanced the quality of the water in the Los Angeles River. The water is also suitable for other reuse such as irrigation and possible ground water recharge.

At the Terminal Island Water Reclamation Plant, a 12 million gallon per day Advanced Water Treatment Facility provides highly treated water that is injected into barrier wells by the Los Angeles County Public Works Department to prevent sea water intrusion into the fresh water aquifers.

Based largely on its resource recovery initiatives, BOE twice won the prestigious Superior Achievement Award from the American Academy of Environmental Engineers - the first in year 2000 for the Hyperion Full Secondary Program and the second in 2004 for the biosolids pasteurization program.

Another area of sustainable design involves the materials for construction for sewers and treatment plant processes. Extending the service life of facilities is one important aspect of sustainable design. The Bureau has been a leader in the implementation of corrosion resistant materials for construction.

7. Electric Vehicle Infrastructure Support

The Mayor's Sustainable City pLAn mandates improvements to air quality and a reduction of greenhouse gas (GHG) emissions from municipal transportation and fleets. The Citywide Electric Vehicle (EV) Charging Station Infrastructure program, which includes several City departments, facilitates the transition to zero-emission transportation through fleet conversion to electric vehicles (EVs). Based on the status of the most recent outcomes, there are more than 2,000 publicly available EV chargers, with more than 250 EV chargers (including direct current (DC) fast chargers) installed in City facilities, and 50% of the City's light duty vehicles being purchased are EVs.

BOE provides technical engineering support for various EV infrastructure projects being implemented by the Los Angeles Department of Transportation (LADOT), the Los Angeles Police Department (LAPD), and the Department of General Services (GSD). These projects are found within municipal facilities and on curbside right-of-way locations. In all cases, BOE is tasked with ensuring that the City's EV infrastructure vendors' design and installation meet rigorous safety requirements.

Other City Departments and Bureaus, such as the Los Angeles Department of Water and Power (LADWP), the Los Angeles World Airports (LAWA), the Port of Los Angeles (POLA), the Department of Recreation and Parks (RAP), the Los Angeles Fire Department (LAFD), the Bureau of Street Lighting (BSL), and the Bureau of Sanitation (BOS) are concurrently implementing the installation of EV charging stations in their respective facilities, where BOE support activities are not required at this time.

BOE'S LEADERSHIP FOR A SUSTAINABLE FUTURE

On April 29, 2019, Mayor Eric Garcetti released the 2019 Sustainability Plan, also known as L.A.'s Green New Deal. The Sustainability pLAN, which was first released in 2015 took a comprehensive look at all City functions and set targets to reduce greenhouse gas emissions. At its core, the pLAN was founded on the principals of sustainability. This pLAN set the course for a cleaner environment and a stronger economy, with a commitment to equity as its foundation. The 2019 pLAN (L.A.'s Green New Deal) targets: Net-Zero Carbon for all new construction by 2030 and for all buildings by 2050; recycling of 100% of wastewater by 2035; electrifying 100% of transportation by 2030; diverting 100% of waste from landfills by 2050; planting 90,000 trees by 2021; 100% renewable Energy by 2045; sourcing 90% of all water locally by 2035; and creating 400,000 green jobs by 2050.

BOE has been a key partner in the implementation of the 2015 pLAN, and will continue to be a key partner for the L.A. Green New Deal. Currently, the Bureau is piloting various sustainability practices that will prepare the city to meet the targets set by the Green New Deal.

1. Net-Zero Energy Facilities

Bureau of Engineering is currently piloting Net-Zero Energy certification through the International Living Future Institute on five facilities. A Net-Zero Energy facility is an ultra-low energy building that generates all its electrical power needs with renewable sources and does not use any fossil fuel. These projects are Rancho Cienega Sports Complex Gym, Studio City Recreation Center, North Hollywood Sewer Maintenance Facility, Boyle Heights Gymnasium, and Hollywood Recreation Center. To meet the Net-Zero Carbon targets set by the Green New Deal, the Bureau plans to broaden its implementation of Net-Zero energy certification to other project types, which could include Police Stations, Fire Stations and Community Centers.

2. Solar Heating in Swimming Pools

BOE will pilot solar pool heating systems on City owned pool facilities. This will significantly cut down the cost of heating the pools using natural gas, and will help in the process of electrifying City facilities.

3. Passive House (PH) Rating System

Passive House (PHIUS) is a building rating standard that focuses on energy and water efficiency in a building. It produces ultra-low energy buildings that require little energy for space heating or cooling.

BOE, in cooperation with the Department of Recreation and Parks (RAP), will pilot one project to be certified using the PHIUS system. The Bureau is currently working with RAP to identify the project.

4. Los Angeles Biodiversity Index

In collaboration with the Bureau of Sanitation and their efforts to: protect and enhance biodiversity; increase park and open space access; enhance ecosystem functioning and services; restore, create, and strengthen linkages between habitats; and engage and

outreach to the community (C.F. 15-0499), the BOE has identified the Taylor Yard G2 Park (G2) as a pilot site for studying and compiling metrics at a project level for the Los Angeles Biodiversity Index. A metrics-based approach to integrating urban habitat considerations into the design of G2 has been incorporated into the planning efforts for the project.

5. The Los Angeles Street Civic Building Project

BOE's leadership in implementing sustainable and resilient projects continues with the Los Angeles Street Civic Building Project (LASCB). BOE is managing the LASCB which is anticipated to lead in piloting and implementing a variety of green building practices. The Project's scope consists of a new civic facility that will include office spaces for City departments, a conference center, public displays showcasing the historical significance of the former Parker Center, a childcare center, and street-level commercial tenant space. The City anticipates a total building area of approximately 753,730 gross square feet, and will include outdoor open spaces and pedestrian connections between City Hall and the Little Tokyo neighborhood.

When approved by the City Council, the LASCB was to achieve a minimum LEED Gold certification, and to meet the City of Los Angeles Building Code requirements for sustainability, energy performance, and resilience.

The performance criteria to be issued as a part of the Request for Proposals for this public/private partnership (P3) is anticipated to go beyond this. The energy performance of the building has been enhanced from an Energy Use Intensity (EUI) equal to 40 to an EUI equal to 30. The criteria will specify a LEED Platinum certification, and will challenge the proposers to deliver a Net-Zero energy project through the purchase of off-site renewable energy, include design provisions for Net-Zero carbon by 2030 by minimizing the use of gas fuel and allowing for the capability of converting the building to all-electric in the future. Enhanced resilience requirements are also specified. Instead of code-minimum earthquake design and emergency power provisions, the LASCB will feature seismic design beyond code minimum, a structure that can withstand blasts and prevent progressive collapse, and 24 hours of total building electric power during an emergency.

Beyond these criteria, the prospective bidders will have the opportunity to include enhanced sustainability and resilience innovations in their proposals. These include Net-Zero carbon and all-electric power when the building opens, a building enclosure that can withstand blasts, a U.S. Resiliency Council Gold Rating, and 72 hours of total building electric power in an emergency. The proposed innovations will be factored into the process of selecting the Project company.

BOE'S LEADERSHIP FOR A RESILIENT FUTURE

BOE is engaged as a partner on 19 of the 96 actions outlined in the Mayor's Resilient Los Angeles Plan. Of these, Climate Adaptation shocks and stresses are addressed by 13 actions, and of these, four address Economic Security Stresses. These four are:

1. Action 46 – Integrate Additional Resilience Measures in the Implementation of Los Angeles River Waterway Revitalization Efforts (Long Term),

2. Action 63 – Prioritize Key Neighborhoods for Stormwater Capture, Urban Greening, and Other Community Benefits (Short Term),
3. Action 65 – Proactively Address Flood Risk Through Policy, Communication, and Infrastructure Planning (Medium Term)
4. Action 79 – Revitalize, Enhance, and Protect the Los Angeles River Watershed’s Ecosystem and Biodiversity (Long Term).

Action 46

BOE is currently in the conceptual/pre-design phase for a cornerstone project in the LA River revitalization effort, the Taylor Yard G2 Parcel (TYG2). Resiliency is the main driver of concept development, including the restoration of native riverine habitat, water quality improvement elements, and compatible recreation and amenities needed in this community as determined by an extensive community engagement program. BOE has secured local and State funding, and continues to pursue other partnerships. BOE has completed the Albion Riverside Park (open space, water quality), and is in construction on the Taylor Yard Pedestrian Bridge (connectivity, alternative transportation), the North Atwater Bridge (connectivity, alternative transportation), and the Red Car Pedestrian Bridge (connectivity, alternative transportation), and in design on the LARiverWay Bike Path (connectivity, alternative transportation) projects. BOE has three full time positions dedicated to the pre-design of TYG2 and delivery of the Taylor Yard Pedestrian Bridge.

Action 63

BOE will support the City's priority areas. Prioritization does depend on area and geography, since economically feasible stormwater capture cannot be done at all locations in the City. The Department of Water and Power (DWP) has already prioritized infrastructure based on geography. We are working with the DWP, Department of Recreation and Parks, and the Bureau of Sanitation (BOS) to design nine stormwater capture concepts in the northeast valley under the terms of a Memorandum of Agreement between DWP and BOE for \$19 M. These projects are on park sites and will have multiple community benefits.

Action 65

BOE implements flood control projects to mitigate flooding hazards. BOE also prepares an annual Floodplain Management Plan (FMP) Implementation Progress Report as a requirement of the National Flood Insurance Program (NFIP) that is distributed to Floodplain Management Steering Committee members and stakeholders. BOE is currently: (1) evaluating the City’s current Community Rating System (CRS) program and identifying possible opportunities and strategies to improve its current CRS rating; and, (2) preparing an update for the City's FMP according to the latest 2017 CRS Manual. The 2020 FMP update will have at least five steering committee meetings from July to December 2019. A draft plan will be created in March 2020, with Council adoption anticipated in September 2020.

Action 79

We have remediated contamination at projects around the LA River, such as Albion Riverside Park and other Prop O Projects. The TYG2 project, in addition to cleaning up brownfield contamination, is being used as a pilot project in developing and utilizing the Citywide Biodiversity Index for a project urban ecology assessment. BOE is

implementing Enhanced Watershed Management Program (EWMP) projects. Three Low Flow Diversion projects on the LA River and two such projects on the Arroyo Seco are in pre-design. Additional projects are included in the FY19/20 proposed budget which will utilize Measure W funding.

PROJECT FUNDING

For BOE, sustainable and resilient design practices have become well integrated in the delivery of building and infrastructure projects. For BOE projects, costs related to sustainability and resiliency are included in the total project budget as a standard practice. For a building project pursuing LEED or a civil engineering project pursuing ENVISION, sustainability and resiliency efforts average between 1250 and 2000 hours over the life of the project (the time over the life of the project represents approximately 5% to 7% of the total staff/consultant time spent on the project). This includes discussions on sustainable and resilient project scope elements, rating system documentation and submissions, and construction and post-construction monitoring.

Respectfully submitted,



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Gary Lee Moore, PE, ENV SP
City Engineer

GLM/DW:ab

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