



## Legislation Text

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File #: 21-0018, Version: 1

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Recommendation to receive a report and confirm the proposed Climate Action and Adaptation Plan, and direct staff to prepare the subsequent Environmental Impact Report. (Citywide)

### ***Overview and Background***

The Climate Action and Adaptation Plan (CAAP) is a mechanism for the City of Long Beach (City) to establish a set of iterative programs and policies for how the City will achieve two main objectives: (1) meet the statewide greenhouse gas (GHG) target of 40 percent below 1990 levels by 2030 and generally minimize its contribution to global GHG emissions (Action); and, (2) adapt to the impacts of climate change while maintaining quality of life, prosperity, and equity for all of its citizens (Adaptation). The City completed technical studies of climate stressors and communitywide vulnerabilities to inform development of the CAAP. The CAAP establishes a framework for creating or updating its policies, programs, practices, and incentives to reduce the City's GHG footprint while enhancing local economic, environmental, and social benefits. The proposed plan and all its technical appendices can be found in Attachments A and B.

The City has been a leader in sustainability through efforts that have included the adoption of the San Pedro Bay Ports Clean Air Action Plan (2006) and the Sustainable City Action Plan (2010) and incorporation of sustainable policies into the City Mobility Element Update (2013) and General Plan Land Use Element Update (2019). In 2015, Mayor Robert Garcia signed the Compact of Mayors (now the Global Covenant of Mayors) signaling the City's commitment to an array of efforts to reduce its carbon footprint and better prepare for the impacts of climate change. As part of that commitment, in December 2016, the City Council initiated development of the City's first CAAP to meet State GHG reduction targets and provide a roadmap for preparing for climate change impacts, including intensifying heat waves, flooding, worsening air quality, and sea level rise.

Table 1 demonstrates forecasted GHG emissions in 2030 and the amount of GHG reduction that will be required to meet the State's 2030 goal. Business-as-usual forecasts, which project emissions in the absence of specific local action as outlined in the CAAP, estimate 2,176,931 Metric Tons of Carbon Dioxide Equivalent (MT CO<sub>2</sub>e) generated in Long Beach in 2030. To meet the statewide target, Long Beach will need to reduce emissions to 1,984,272 MT CO<sub>2</sub>e by 2030, thus necessitating a 192,659 MT CO<sub>2</sub>e reduction to meet the target goal. The CAAP provides a suite of actions to guide the City in reaching this GHG reduction target by 2030. Additionally, the City has set an aspirational goal of carbon neutrality by 2045 consistent with State goals. The City would have to reduce its GHG emissions by more than

1.5 million MT CO<sub>2</sub>e by 2045 to meet this goal.

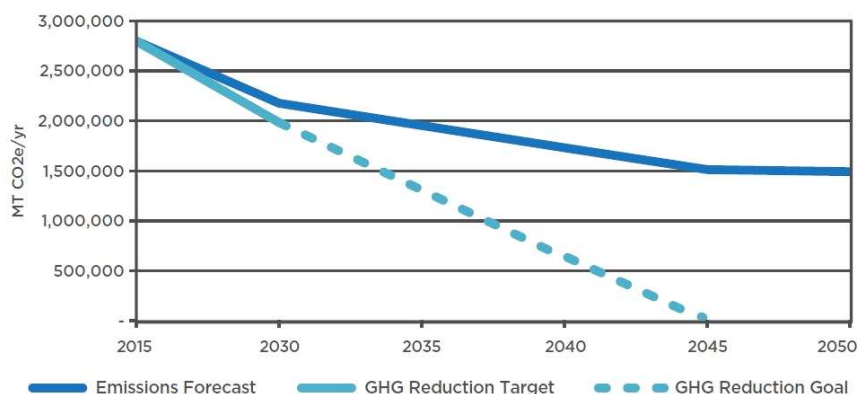
**Table 1. GHG Reduction Targets**

<b>2030 GHG Target</b>	<b>MT CO<sub>2</sub>e/Service Population</b>
Business as Usual Forecast	2,176,931 MT CO <sub>2</sub> e
Target Level	1,984,272 MT CO <sub>2</sub> e
<b>GHG Reductions Needed</b>	<b>192,659 MT CO<sub>2</sub>e</b>
<b>2045 GHG Goal</b>	<b>Net-carbon Neutrality</b>
Business as Usual Forecast	1,513,047 MT CO <sub>2</sub> e
Target Level	0 MT CO <sub>2</sub> e
<b>GHG Reductions Needed</b>	<b>1,513,047 MT CO<sub>2</sub>e</b>

***The Pathway to the GHG Reduction Target***

Figure 1 illustrates the City’s GHG emissions forecast (business-as-usual) compared to the reductions needed to achieve State targets. The forecasted business-as-usual decline in GHG emissions is largely a result of statewide actions influencing the City’s electricity emissions and an estimated decrease in natural gas use in the energy sector. The difference between the emissions forecast and GHG reduction target in 2030 represents the 192,659 MT CO<sub>2</sub>e reduction needed from business-as-usual forecasts to meet the 2030 GHG target goal. The dashed line goes to zero in 2045 representing the carbon neutrality goal.

**Figure 1. City GHG Emissions Targets vs. Forecasts 2015-2050**



The CAAP is necessary to implement the vision and goals of the Mayor and City Council and enable the City to meet the above-stated targets. The CAAP is also a required mitigation measure of the General Plan Land Use Element (LUE) as detailed below.

Development Services, with the participation of many of the City’s departments and bureaus, has conducted an extensive public engagement process and completed a Vulnerability Assessment and other technical studies to inform the CAAP, which resulted in the release of a draft CAAP in June 2019. The City Council heard updates on the CAAP from staff on March

19, 2019 and October 20, 2020. On March 19, 2019, the City Council further established a carbon neutrality goal by 2045. On October 20, 2020, the City Council directed staff to coordinate with City departments to finalize a preliminary list of GHG reduction measures that respective departments will commit to implementing as part of the CAAP, to ensure the City can meet its 2030 GHG reduction target, in compliance with State law, as well as other stated environmental goals.

## **The Proposed Plan**

### ***What is the CAAP?***

The CAAP is a set of enforceable commitments for the City to reach State GHG emissions mandates by 2030 and adapt to the impacts of climate change, while improving quality of life and supporting economic vitality. The CAAP also establishes a framework for creating and/or updating policies, programs, practices, and incentives for Long Beach to reduce the City's GHG footprint, and will help ensure that Long Beach residents, businesses, and physical assets are better protected from the impacts of climate change. The plan includes a baseline communitywide GHG emissions inventory, forecasts of future GHG emissions, and reduction targets. The Plan's mitigation actions identify the steps that will be taken to meet State reduction mandates, while the adaptation actions identify the measures the City will take to adapt to climate change impacts: extreme heat, air pollution, drought, flooding, and sea level rise. Mitigation actions reduce GHG emissions and are comprised of measures that will be taken in the building, transportation, and waste sectors, which are the sources of GHG emissions in Long Beach. Of the range of mitigation actions identified in the plan, a subset of those actions is quantified toward the City's 2030 GHG reduction target. While 2030 is the focus of the CAAP, the plan also identifies longer term actions that will help the City reduce its GHG emissions and adapt to climate change beyond the 2030 plan horizon year. The CAAP was developed with an equity lens, seeking to address disproportionate environmental burden and helping to ensure benefit to communities most impacted by climate change. The City seeks to reduce GHG emissions while promoting a prosperous local economy for all and highlighting actions that promote education, job training, and workforce development in emerging green industries for people most impacted by climate change.

### ***Why is a CAAP Needed?***

In addition to addressing the effects of climate change, which are already impacting Long Beach, the CAAP will help the City comply with various local, regional, State, and federal regulations to reduce GHG emissions. As shown in Table 2, the City is obligated under AB 32 (The Global Warming Solutions Act of 2006), SB 375 (The Sustainable Communities and Climate Protection Act of 2008), and various California Executive Orders to do its part to reduce GHG emissions. Generally, statewide targets aim to reduce emissions to 1990 levels by 2020, 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050. The CAAP is a plan for Long Beach to reach the statewide GHG target of 40 percent below 1990 levels by 2030.

**Table 2. State GHG Legislation and City Status**

Target Year	State Target	Corresponding Legislation	City Status
2020	1990 GHG levels by 2020	AB 32, Global Warming Solutions Act (2006)	California met this target statewide
2030	40% below 1990 levels by 2030	SB 32, Global Warming Solutions Act (2006)	The CAAP is a plan for Long Beach to meet this target by 2030
2045	Carbon neutrality by 2045	Executive Order B-55-18 of 2018	Aspirational for Long Beach
2050	80% below 1990 levels by 2050	Executive Order S-3-05 of 2005	CAAP’s plan horizon is 2030

The CAAP is also a mitigation measure of the recently adopted General Plan Land Use Element (LUE) Environmental Impact Report (EIR), which commits the City to adopting a CAAP with specified GHG reduction targets. GHG emissions are associated with growth anticipated by the LUE from activities such as additional vehicle trips and electricity usage associated with future development. As a mitigation measure to address GHG emissions associated with the LUE, the City has committed to adoption of a CAAP within three years of LUE adoption, and subsequent monitoring of GHG emissions. Under the California Environmental Quality Act (CEQA), adoption of a “qualified” CAAP will also allow future development projects that comply with the LUE to streamline their GHG review for CEQA purposes. By allowing projects to take advantage of environmental streamlining, the City will also be facilitating housing production and economic development to address the City’s housing shortage and homelessness crisis and lagging wages. For the CAAP to meet these obligations, it must detail a GHG reduction strategy that is reasonable, enforceable, and meets the State’s numerical targets.

California has a history of demonstrated leadership in addressing climate change and is on track to meeting 2030 GHG reduction targets statewide. However, local climate action plans are needed to implement mitigation measures at the local level through local actions, help communities adapt to climate change, and advance equity. Examples of actions that occur at the local level are updating building and zoning codes and siting electric vehicle infrastructure. Local climate action plans help cities be more resilient against current and future climate threats and help ensure that efforts address environmental justice such as enhancing climate funding opportunities to communities most impacted by climate change.

***Climate Change Impacts***

The CAAP identifies five climate impacts anticipated to affect Long Beach: extreme heat, poor air quality, drought, flooding, and sea level rise, and the plan seeks to mitigate against those impacts and generally improve the resiliency of the City in the face of worsening impacts. A Climate Stressors Review and Climate Change Vulnerability Assessment were

conducted as part of development of the CAAP, which go into detail about each of these climate impacts.

Following is a quick overview of each of the climate stressors and their anticipated impacts in the City:

- **Extreme Heat.** Extreme heat is the climate impact that is anticipated to affect the greatest number of people in Long Beach, with approximately 275,000 residents living within extreme heat vulnerability zones. Heat waves will occur more frequently, be more intense, and be longer lasting. Extreme heat is associated with increased risk of heat-, cardiovascular-, and respiratory-related mortality, increased hospital admission and emergency room visits. Vulnerable populations include children, the elderly, people with respiratory diseases, and those who spend a lot of time outdoors. A social vulnerability analysis was conducted as part of the Vulnerability Assessment, which considered factors including race, income, education, age, and asthma. The distribution of socially vulnerable populations correlates with areas impacted by extreme heat in Central, West, and North Long Beach.
- **Air Quality.** Higher temperatures are anticipated to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. Specifically, studies have shown that ozone concentrations increase when maximum daytime temperatures increase. The Greater Los Angeles and Long Beach Area already have among the worst air quality in the country. There are several local sources that impact air quality in the City, including the 710 and 405 freeways, neighboring refineries, the Port of Long Beach, and major industrial sources.
- **Drought.** An overall drying trend in the region will affect the City, resulting in longer and more frequent droughts. There is anticipated reduced snowpack and increased intensity of runoff events in watersheds that supply water to Long Beach. Higher temperatures will lead to higher water demand.
- **Flooding: Riverine and Sea Level Rise.** There are three sources of flooding in Long Beach: riverine flooding, urban flooding, and sea level rise and associated coastal storms. With precipitation events projected to increase in intensity as a result of climate change, riverine and urban flooding, which occurs around the Los Angeles and San Gabriel rivers and other parts of the stormwater collection system, may increase. Low lying areas including Belmont Shore, Naples, and the Peninsula are also already experiencing coastal flooding. Sea level rise models developed as part of CAAP development anticipate 11 inches of sea level rise in 2030, 24 inches in 2050, and 37-66 inches in the mid-range and high-range scenarios in 2100. Sea level rise projections will be revised periodically based on available data; however, the projections based on information available at the time of the study help the City focus attention to where public infrastructure and other development may be affected. As sea levels rise, the City is expected to be more frequently impacted by higher storm tides, more extensive

inland flooding, and increased coastal erosion. Flooding threatens safety, can have subsequent health impacts, and can result in damage to or loss of critical infrastructure.

### **Greenhouse Gas Emissions Inventory**

Development Services staff prepared three types of GHG emissions inventories: production, consumption, and lifecycle oil and gas. The production-based inventory is the inventory that is used for the purposes of establishing a communitywide baseline of GHG emissions and is the inventory from which GHG reduction targets are established. The latter two inventories were prepared for informational purposes. Additional information about each of the inventories is detailed below.

The production-based inventory, which is the standard of the Global Protocol for Community Scale GHG Emissions Inventories, is used for the purposes of forecasting and determining the City’s reduction strategy. A production inventory takes into account emissions occurring from local activities and is designed to focus on opportunities for local action that are within the City’s control. The consumption inventory takes into account lifecycle emissions from consumption activities within the City. The consumption inventory was completed for informational purposes; however, there is a growing consensus about the importance of consumption inventories in helping communities more fully understand their contributions to global emissions through their consumption behaviors. The third type of inventory conducted was of the lifecycle emissions of oil and gas production and activities. Emissions associated with the lifecycle of oil and gas production occur both within and outside of the City and thus not all emissions associated with these activities are within the control of the City. This inventory was completed in response to public and City Council requests and provides a picture of emissions from oil and gas extraction activities both within and outside of Long Beach.

As shown in Table 3, the City’s 2015 production GHG inventory estimated a total of 2.79 million MT CO<sub>2</sub>e of jurisdictional emissions. The City’s 2015 consumption inventory estimated a total of 7.08 million MT CO<sub>2</sub>e and the City’s 2015 oil and gas emissions inventory estimated a total of 8.30 MT CO<sub>2</sub>e. It should be noted that the consumption and oil and gas emissions inventories are both lifecycle inventories so are not directly comparable to the production inventory but provide insight into emissions-generating activities within Long Beach.

**Table 3. Long Beach Inventories**

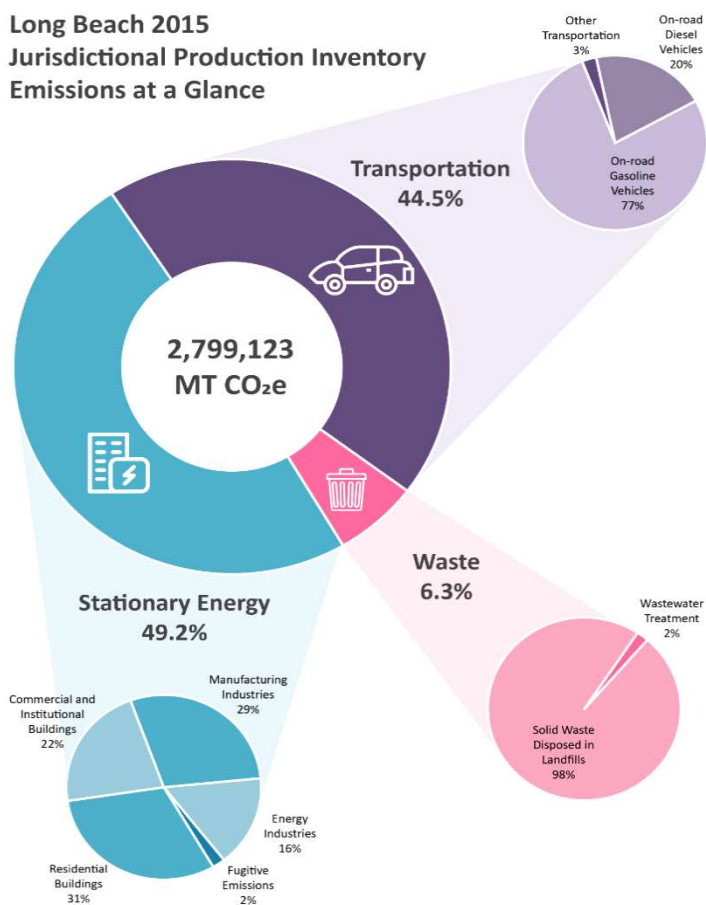
<b>Inventory Type</b>	<b>MT CO<sub>2</sub>e</b>
Production Inventory	2,799,123
Consumption Inventory (Lifecycle)	7,077,346 (1)
Oil and Gas Emissions Inventory (Lifecycle)	8,300,000 (1)

(1) Shown for informational purposes only, the production inventory will

be used for regulatory and progress-tracking purposes.

As shown in Figure 2, in the production inventory, emissions come from three main sectors: stationary energy at 49 percent, transportation at 44 percent, and waste at 6 percent.

**Figure 2. Long Beach 2015 Production Inventory**



The three sectors that are the source of emissions in the City are described briefly below:

- **Stationary Energy.** Stationary energy is made up of emissions from building electricity and natural gas use in residential, commercial, institutional, and industrial buildings, as well as emissions from energy industries operating within Long Beach. Emissions from the buildings where people live and work, known as stationary energy or building emissions, accounts for 49 percent of Long Beach GHG emissions. Reductions in GHG emissions from the building sector can be made through three types of strategies: constructing new buildings to stricter standards, energy efficiency improvements in existing buildings, and switching to a cleaner source of energy. New

buildings constructed today are built under strict standards for energy usage and could be held to even higher standards. However, most stationary energy use is due to the GHGs associated with the continued use of older buildings. These emissions can be reduced through a combination of energy efficiency improvements or by switching to cleaner sources of electricity. Since 72 percent of Long Beach's housing stock was built before the year 1970, and 98 percent was built before the year 2000, this is a major issue in Long Beach.

- **Transportation.** Transportation is made up of emissions associated with passenger vehicles, buses, trucks, rail transit, freight rail, off-road vehicles, and aviation operations within the city limits. Port waterborne activity have been quantified but have been excluded from the jurisdictional inventory because emissions occurring from vessel operations at the Port are in part regulated at the State level by the California Air Resources Board (CARB), and the City does not have direct authority to dictate emissions reduction policies for private shipping companies that operate from the Port. Even without maritime emissions, transportation still accounts for 45 percent of all GHG emissions in Long Beach. While transportation emissions are one of largest GHG contributors, they are also the area where the City has the least control due to pre-emption from State and Federal transportation and air quality regulations. Most emissions coming from the transportation sector are from gasoline vehicles.

- **Waste.** Waste is made up of emissions from waste disposal as well as emissions from wastewater treatment. Solid waste disposal creates emissions when organic waste such as food scraps, yard trimmings, and paper and wood products are buried in landfills and decomposition occurs that emits methane, which is responsible for approximately 6 percent of the City's GHG inventory. The City and its franchise waste haulers are responsible for collecting solid waste from homes and businesses in Long Beach. The portion of waste that the City collects is currently processed at the Southeast Resource Recovery Facility (SERRF), where it is sorted to remove recyclables and then incinerated to generate electricity. Through this process, SERRF provides energy recovery that can offset additional use of non-renewable energy sources for electricity generation.

### ***GHG Reduction Target***

Business-as-usual forecasts estimate 2,176,931 MT CO<sub>2</sub>e will be generated in the City in 2030 (Table 1). As seen in Table 1, to meet the statewide target, Long Beach will need to reduce emissions to 1,984,272 MT CO<sub>2</sub>e by 2030. Thus, a 192,659 MT CO<sub>2</sub>e reduction is needed to meet the 2030 target goal. This is estimated to be equivalent to emissions from 41,623 passenger vehicles for one year or electricity use in 32,618 homes for one year. As seen in Table 4, on a service population basis, which counts individuals who live or work in Long Beach, the 2030 GHG reduction target is from business-as-usual estimates of 3.34 MT CO<sub>2</sub>e to 3.04 MT CO<sub>2</sub>e. In other words, each person who lives or works in Long Beach would need to reduce their GHG emissions by about 9 percent in 2030 to reach target levels.



In 2045, business-as-usual forecasts estimate 1.51 million MT CO<sub>2</sub>e. To reach the aspirational goal of net carbon neutrality, these GHG emissions will need to be reduced to zero.

**Table 4. GHG Reduction Target by Service Population**

2015 Emissions	4.5 MT CO <sub>2</sub> e
2030 Business-as-Usual (BAU) Target	3.34 MT CO <sub>2</sub> e
2030 Emissions Target Level	3.04 MT CO <sub>2</sub> e
<b>2030 Reductions Needed (BAU vs. Target)</b>	<b>0.3 MT CO<sub>2</sub>e</b>

The CAAP has many actions that reduce GHG emissions; however, only a subset of those actions are quantified toward reaching the State-mandated 2030 GHG target. Actions across building energy, transportation, waste, and other sectors are quantified toward the GHG reduction target, which are summarized below and detailed in Attachment C.

- **Building Energy Sector GHG Reductions.** Within the building energy sector, actions quantified toward the GHG reduction target include:
  - o Greater use of renewable residential and commercial electricity achieved in part through Southern California Edison’s commitment to an 80 percent carbon free energy supply by 2030 (which exceeds the State’s Renewable Portfolio Standard (RPS) of 60 percent);
  - o Developing an increased amount of citywide solar potential; and,
  - o The City purchasing 100 percent carbon-free electricity for all municipal accounts.
- **Transportation Sector GHG Reductions.** Within the transportation sector, actions quantified toward the GHG reduction target include Port actions associated with its Clean Trucks Program and a 1 percent reduction in vehicle miles traveled (VMT) for passenger and light duty vehicles.
- **Waste Sector GHG Reductions.** Within the waste sector, actions quantified toward the GHG reduction target include increased commercial recycling and commercial organics diversion.
- **GHG Reductions from Oil Extraction.** Within the building energy sector, actions quantified toward the GHG reduction target include emissions reductions associated with a 20 percent reduction from 2018 oil production levels by 2030 due to depletion.

Adopting a set of actions that are estimated to provide reductions beyond the minimum of 192,659 MT CO<sub>2</sub>e will provide flexibility and help the City ensure successful compliance with reduction targets. See Attachment B (CAAP Appendix A) for the detailed pathway to achieving the GHG target.

## ***CAAP Monitoring***

The City will inventory its GHG emissions on a bi-annual basis, report those emissions to the public, and monitor its progress toward meeting the 2030 GHG reduction target. If in the future the City is not making sufficient progress to meet its reduction target, the City must continue to consider and adopt more aggressive GHG reduction actions to ensure compliance. Therefore, the process of monitoring GHG emissions in relation to reduction targets will be iterative even once the plan is adopted.

## ***City Leadership***

The City is committed to demonstrating leadership in CAAP implementation by integrating climate action throughout department operations. Several of the CAAP adaptation and mitigation actions include components defining City leadership roles. An example is the City's commitment to transition municipal buildings and facilities to 100 percent renewable electricity and reducing natural gas consumption by 5 percent by 2030. Another is the City's commitment to perform energy and water audits in existing facilities and complete subsequent efficiency upgrades and incorporating CAAP goals into its budgeting and capital improvement programming. City leadership will further include efforts such as transitioning the City vehicle fleet to low and zero emissions vehicles, integrating sea level rise considerations into plans and policies, pursuing funding for urban greening, and engaging and providing education to City employees and the general public on climate action. The City will seek opportunities to create jobs and train residents in emerging green technologies including partnerships with local workforce and economic development entities and educational institutions.

## **The Process**

### ***Interdepartmental Coordination***

The development of the CAAP involved extensive interdepartmental coordination and participation. Development Services staff have hosted all-Department meetings to share information and receive input on the CAAP. In a CAAP survey of 17 departments, 100 percent reported that they experienced climate impact to infrastructure assets or core services, 88 percent reported that they are engaging in GHG emission-reducing actions, and 53 percent are engaging in adaptive capacity actions. Of the climate stressors the City is experiencing, the greatest number of departments reported being impacted by extreme heat followed by major storm events. Departments provided comments on the draft plan in 2019 and staff incorporated feedback as appropriate.

Development Services staff have also conducted interdepartmental coordination to identify GHG reduction measures to be implemented by respective departments. This process included discussions with the Port, Energy Resources, Airport, Public Works, and

Environmental Services Bureau to identify CAAP mitigation actions to quantify toward the City's GHG reduction target. The results of these discussions have been incorporated into the CAAP GHG reduction pathway in CAAP Appendix A (Attachment B) or have otherwise been included qualitatively in the plan.

### ***Inclusive Public Process***

Staff have reached over 10,000 members of the public through over 60 outreach and engagement events in the process of developing the CAAP. Over the last three years, Development Services staff have convened scientific, business, and community working groups; partnered with institutions and schools; and, conducted extensive community outreach to receive input on CAAP development and to develop a plan of action. Through the CAAP public outreach process, staff sought to disseminate information and solicit feedback from the community at large, while also targeting outreach efforts on communities most impacted by climate change. Development Services staff hosted three open house events and attended numerous events occurring in communities throughout Long Beach to share information about the CAAP. Community events were held in each of the Council Districts. Select events were held in Spanish and Khmer. The plan calls for continued engagement with Long Beach population as well as specifically with communities most affected by climate change through CAAP implementation.

### **Governance**

Development Services staff were tasked with leading the planning process for developing the CAAP since the plan is a mitigation measure of the General Plan LUE. However, effective implementation of the CAAP will require substantial cross-departmental collaboration to carry out the broad reach and scope of the plan including coordinating public infrastructure projects, aligning budgeting with CAAP goals, pursuing funding opportunities, developing new policies and programs, and conducting ongoing public education and engagement. CAAP implementation will be overseen by the City Manager's Office through a task force that will include climate designees from each department and coordinated by Development Services. Development Services will additionally take the lead on planning-related implementation actions such as Zoning Code updates and CAAP compliance for future development projects as well as overall CAAP monitoring and updates as necessary.

### **Public Notice and Environmental Compliance**

Although a public notice for this item is not required, a public meeting notice was published in the Long Beach Press-Telegram on December 17, 2020, notice posting was provided at City Hall, and electronically distributed through the City's LinkLB e-mail blast system and to individual stakeholders who have requested notification on this item.

After City Council's confirmation of the proposed CAAP, staff will prepare the subsequent Environmental Impact Report (EIR) and bring the plan back to City Council for certification of the EIR and final CAAP adoption in Fall 2021.

This matter was reviewed by Assistant City Attorney Michael Mais on December 14, 2020 and by Budget Analysis Officer Julissa José-Murray on December 9, 2020.

City Council action is requested on January 5, 2021. Timely action is required to meet the City's obligations under the General Plan Land Use Element Mitigation Monitoring and Reporting Program (LUE MMRP).

This recommendation does not have a fiscal impact; however, implementation of its recommendations will have a fiscal impact in the future. The CAAP calls for City actions to focus on identifying opportunities to better align with the annual City budget, Capital Improvement Program, and other expenditures with CAAP actions. Funding for future resources related to the plan have not yet been identified and further detailed cost estimates will be determined as resources are identified. As these actions and objectives are pursued their financial implications will be disclosed and brought back to the City Council for approval. This recommendation has no staffing impact beyond the normal budgeted scope of duties and is consistent with existing City Council priorities. There is no local job impact associated with this recommendation. While the CAAP does seek to help improve the local economy, the exact fiscal impact of these actions is dependent on future macro-economic conditions that will occur over two decades, and therefore, cannot be estimated at this time.

Approve recommendation.

[Enter Body Here]

OSCAR W. ORCI  
DIRECTOR OF DEVELOPMENT SERVICES

APPROVED:

THOMAS B. MODICA  
CITY MANAGER