



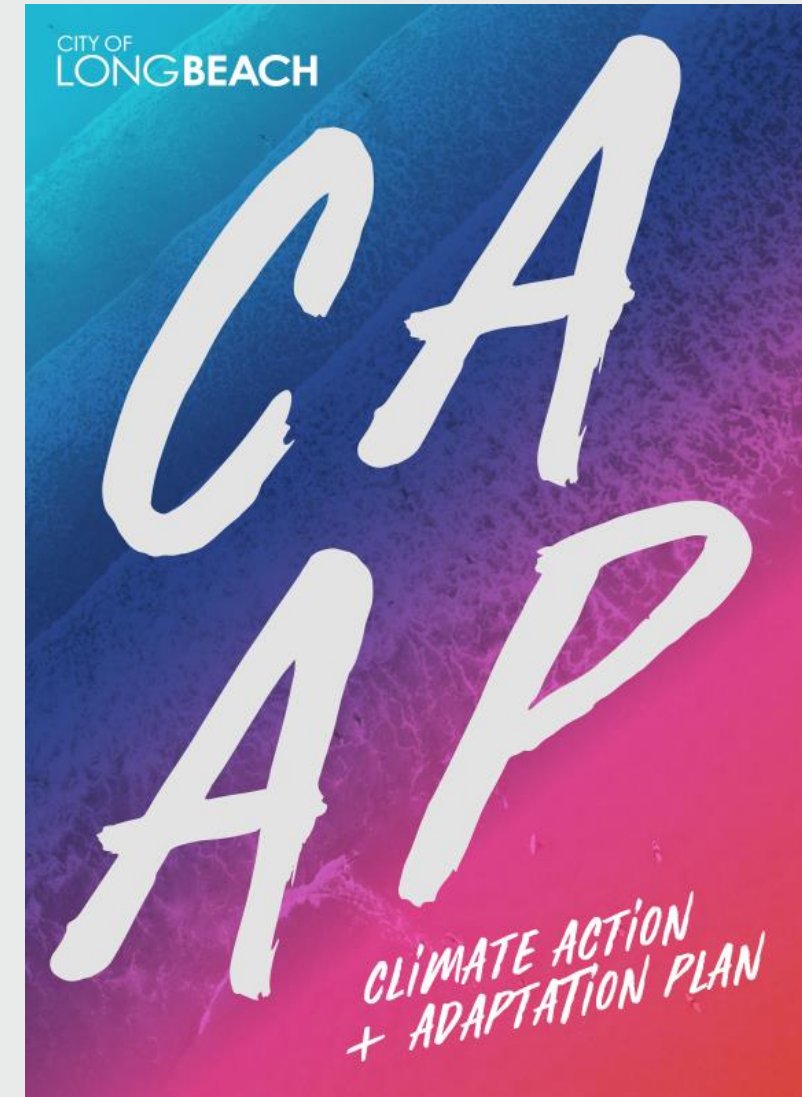
# Climate Action & Adaptation Plan

Update to the Climate Action & Environmental Committee of the City Council

March 15, 2022

# Agenda

1. CAAP Overview
2. CAAP Plan status, next steps and adoption process
3. Early Implementation updates



# What is the Climate Action & Adaptation Plan (CAAP)?

## A plan to:

- Reduce communitywide greenhouse gas emissions (GHG), while preparing for the impacts of climate change
- Improve public health, foster economic opportunity, & advance social equity
- Meet policy commitments & state GHG reduction mandates

## How?

- Establish a framework for creating or updating policies, programs, practices, and incentives to reduce the City's GHG footprint
- Ensure the community and physical assets are better protected from the impacts of climate change
- Informed by technical studies of climate stressors and communitywide vulnerabilities



# Why do we need a CAAP?

City leadership needed for city-scale mitigation, climate adaptation, & equity beyond what could be achieved by State emissions reduction efforts alone



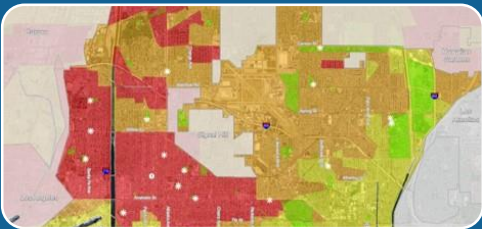
## Mitigation

- Implementation occurs at both city and state level (siting EV charging stations and updating building codes & zoning to incentivize electrified buildings, for example, require local leadership)
- CAAP identifies local GHG reduction measures for implementation



## Adaptation

- State emissions reduction target does not prepare Long Beach for the impacts of climate change that are happening today
- CAAP helps increase resilience for current and future threats (extreme heat, poor air quality, sea level rise, etc.)



## Equity

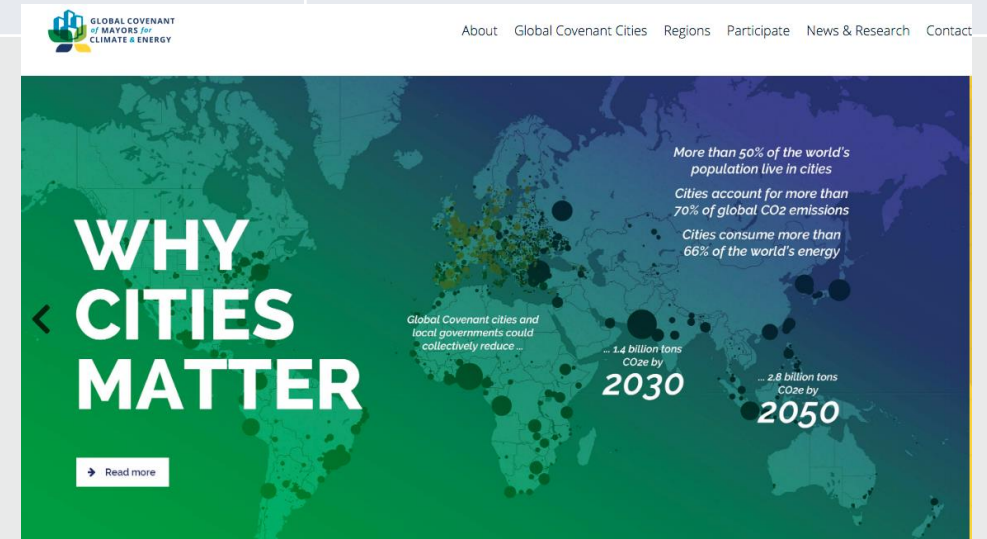
- State emissions reduction targets do not ensure that climate issues are equitably addressed
- CAAP helps address environmental justice & can help steer climate finance opportunities to communities most impacted by climate change

# Why do we need a CAAP?

| 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 to 2030                                |

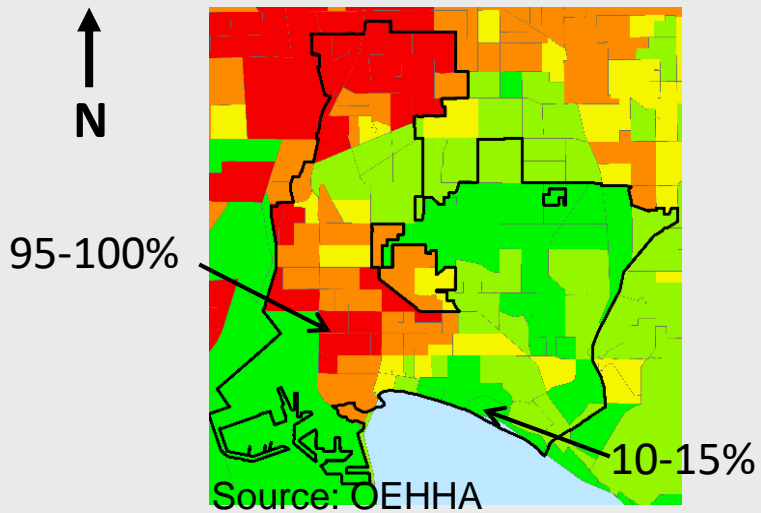
## Other Relevant Legislation

- SB 375 (Sustainable Communities)
- AB 691 (Sea Level Rise)
- SB 1000 (Environmental Justice in Local Land Use Planning)
- SB 379 (Climate Adaptation in Safety Elements)
- SB 100 (Carbon-free Electricity by 2045)

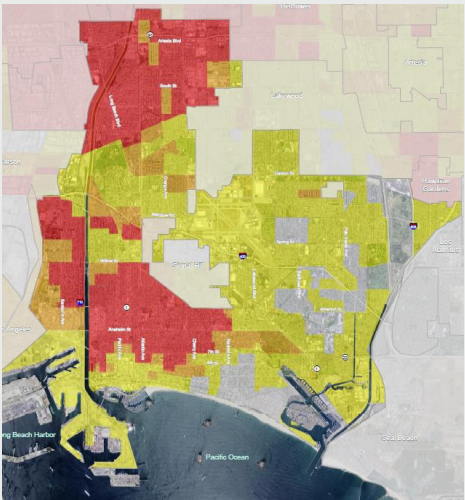


# Environmental Justice Context & Equity Analysis

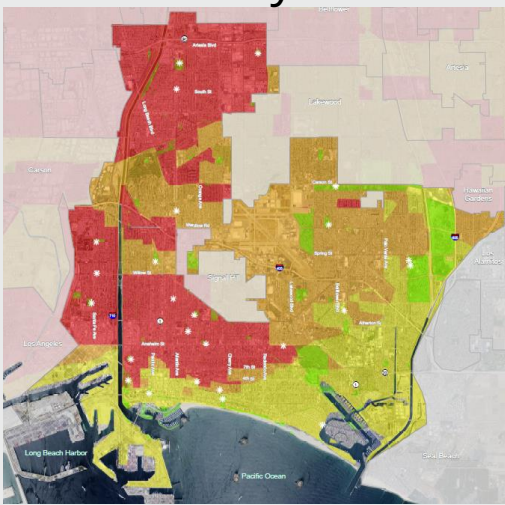
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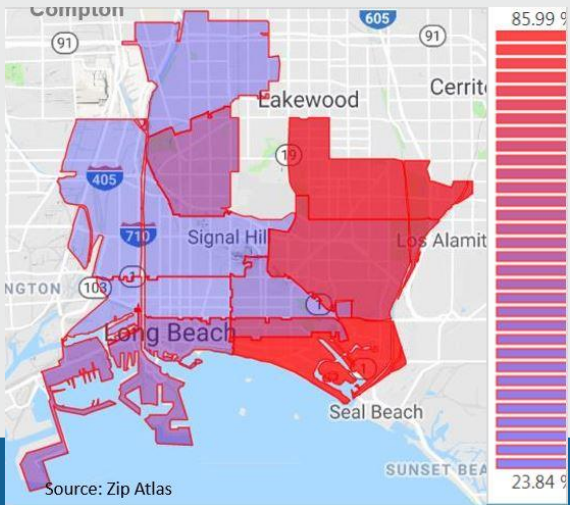
Extreme Heat Vulnerability



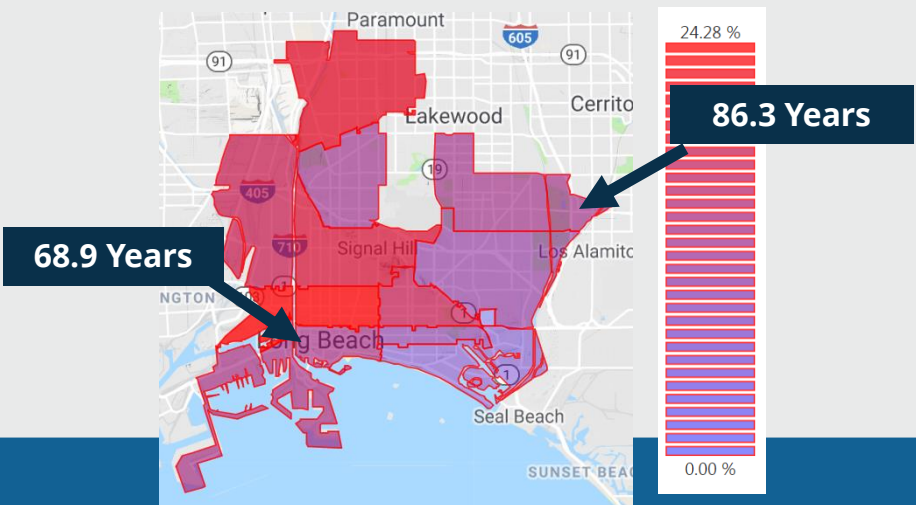
Social Vulnerability to Climate Change



Percentage of White Residents



Percentage of Children under Age 10

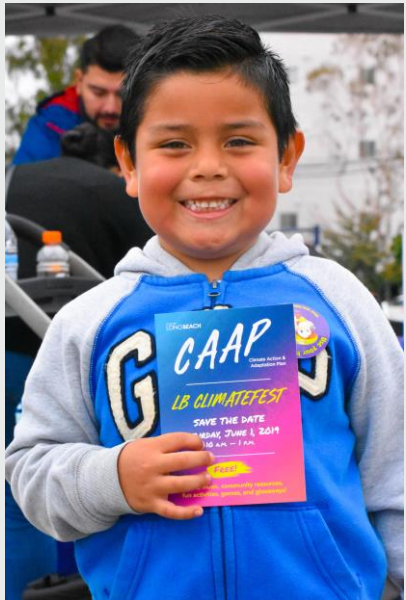
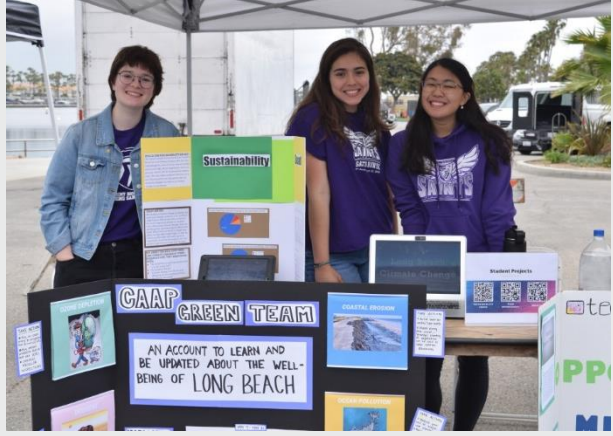


**Life Expectancy at Birth**  
East Side: 86.3 years  
- West Side: 68.9 years  
Difference **17.4 years**



# CAAP Community Outreach (2018 – 2019)

|                          |        |
|--------------------------|--------|
| # of Estimated Attendees | 10,260 |
| # of Sign-ins            | 1,395  |
| Events                   | 67     |

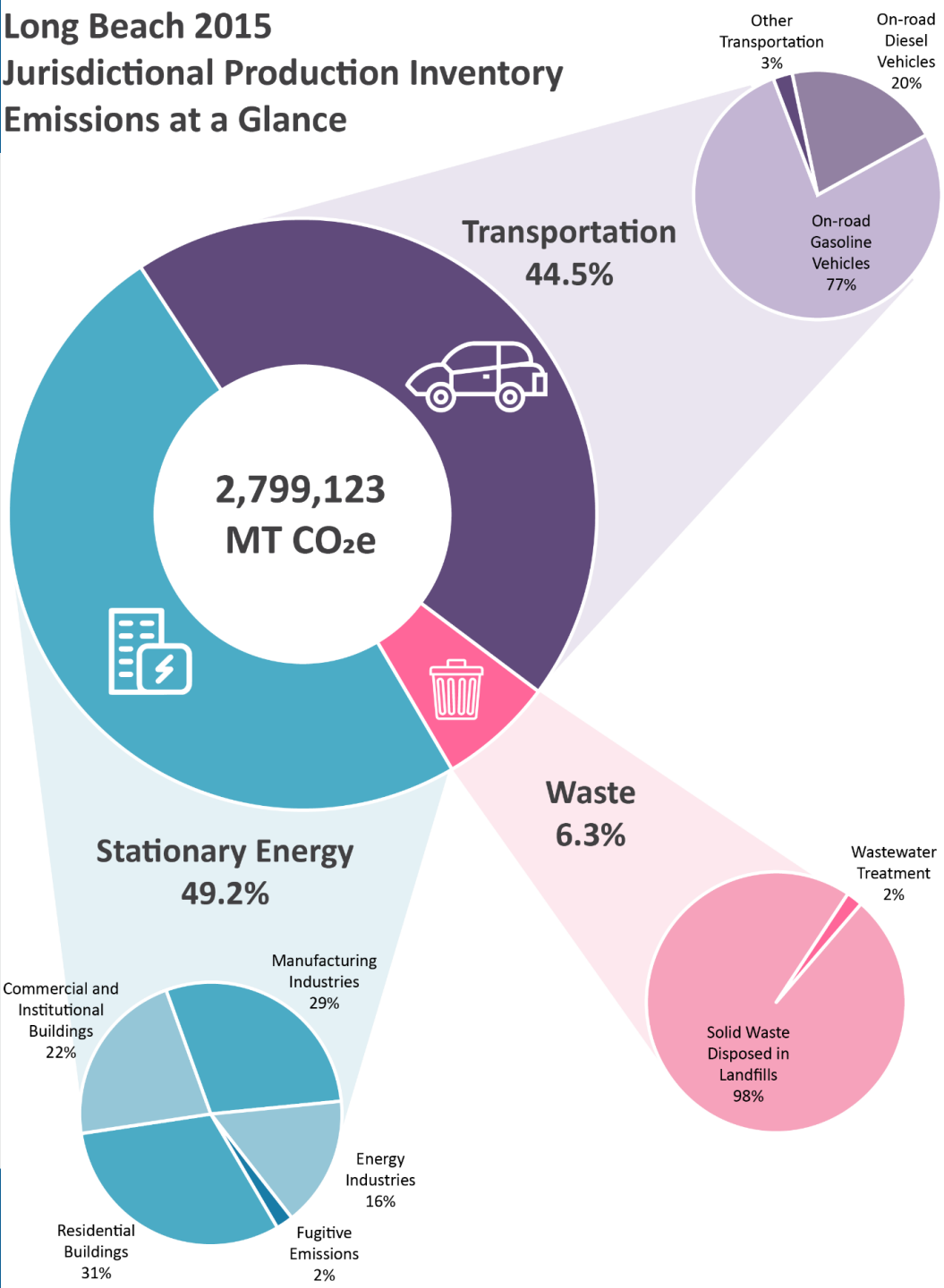


# GHG Inventory

| Sector            | MT CO2e   | % of Total |
|-------------------|-----------|------------|
| Stationary Energy | 1,377,291 | 49.20%     |
| Transportation    | 1,244,981 | 44.48%     |
| Waste             | 176,850   | 6.32%      |
| Total             | 2,799,123 | 100.00%    |
| Per Capita        | 6.0       | --         |

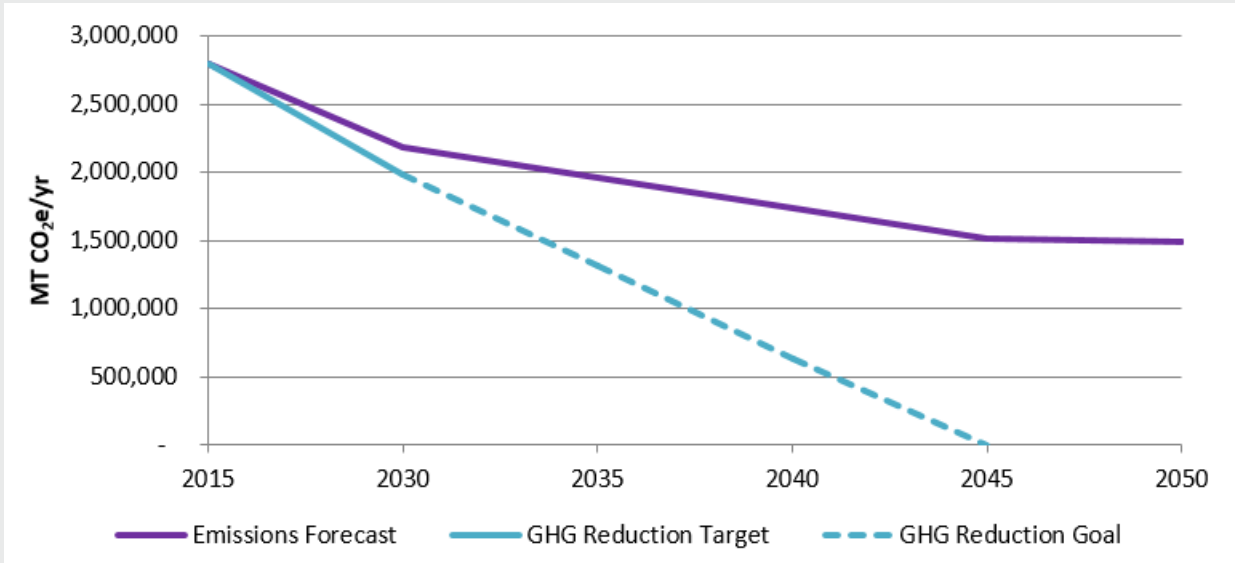
- Port waterborne activity not considered for GHG target-setting purposes because the City does not have direct authority to dictate emissions reductions for the Port.
- Airplane emissions from Long Beach Airport not considered for GHG target-setting purposes because the City has limited control as these emissions are federally regulated.

## Long Beach 2015 Jurisdictional Production Inventory Emissions at a Glance





# Long Beach GHG Emissions Reduction Pathway



**State:**  
**192,659**  
MT CO<sub>2</sub>e  
equivalencies



**41,623**  
Passenger  
vehicles  
driven for one  
year



**32,618**  
homes'  
electricity use  
for one year

Performance towards the City's GHG reduction target will be monitored regularly and strategies adjusted as needed.

| GHG Reduction Targets      |  |
|----------------------------|--|
| 2030 GHG Target            | 3.04 MT CO <sub>2</sub> e/Service Population |
| Business as Usual Forecast | 2,176,931 MT CO <sub>2</sub> e               |
| Target Level               | 1,984,272 MT CO <sub>2</sub> e               |
| GHG Reductions Needed      | 192,659 MT CO <sub>2</sub> e                 |
| GHG Reductions Anticipated | 363,250 MT CO <sub>2</sub> e                 |

| 2030 GHG Reduction Target by Service Population |  |
|---|--|
| Business as Usual Target                        | 3.34 MT CO <sub>2</sub> e                        |
| Emissions Target Level (State)                  | 3.04 MT CO <sub>2</sub> e                        |
| Reduction Needed (State)                        | 0.3 MT CO <sub>2</sub> e (9% reduction/person)   |
| Long Beach GHG Pathway                          | 2.78 MT CO <sub>2</sub> e                        |
| Reduction Needed (Long Beach GHG Pathway)       | 0.56 MT CO <sub>2</sub> e (17% reduction/person) |

# Quantified Emissions Reduction Measures

2030 GHG Reduction Needed: 192,659 MT CO<sub>2</sub>e

| Action                          | 2030 MT CO <sub>2</sub> e/year* |
|---------------------------------|---------------------------------|
| <b>Buildings</b>                | <b>247,700</b>                  |
| SCE Carbon-Free Electricity     | 188,960                         |
| Local Solar                     | 3,880                           |
| Municipal Renewable Electricity | 13,120                          |
| Reduced Oil Production          | 41,740                          |

| Action                        | 2030 MT CO <sub>2</sub> e/year* |
|-------------------------------|---------------------------------|
| <b>Transportation</b>         | <b>30,480</b>                   |
| Port Clean Trucks Program     | 25,250                          |
| Enhanced VMT Reduction        | 5,230                           |
| <b>Waste</b>                  | <b>85,070</b>                   |
| Commercial Recycling          | 45,340                          |
| Commercial Organics Diversion | 39,730                          |
| <b>Total</b>                  | <b>363,250</b>                  |

\*Estimates were developed based on standard GHG inventory protocols and methods.

# CAAP Overview: What Will the CAAP Do?

The implementation of the CAAP will help Long Beach realize:

- 1 Low carbon, climate resilient buildings and neighborhoods**
- 2 Safe and adaptable infrastructure**
- 3 Protected and enhanced natural systems**
- 4 A healthy, resilient and ready population**
- 5 Residents and businesses with minimized carbon footprints**



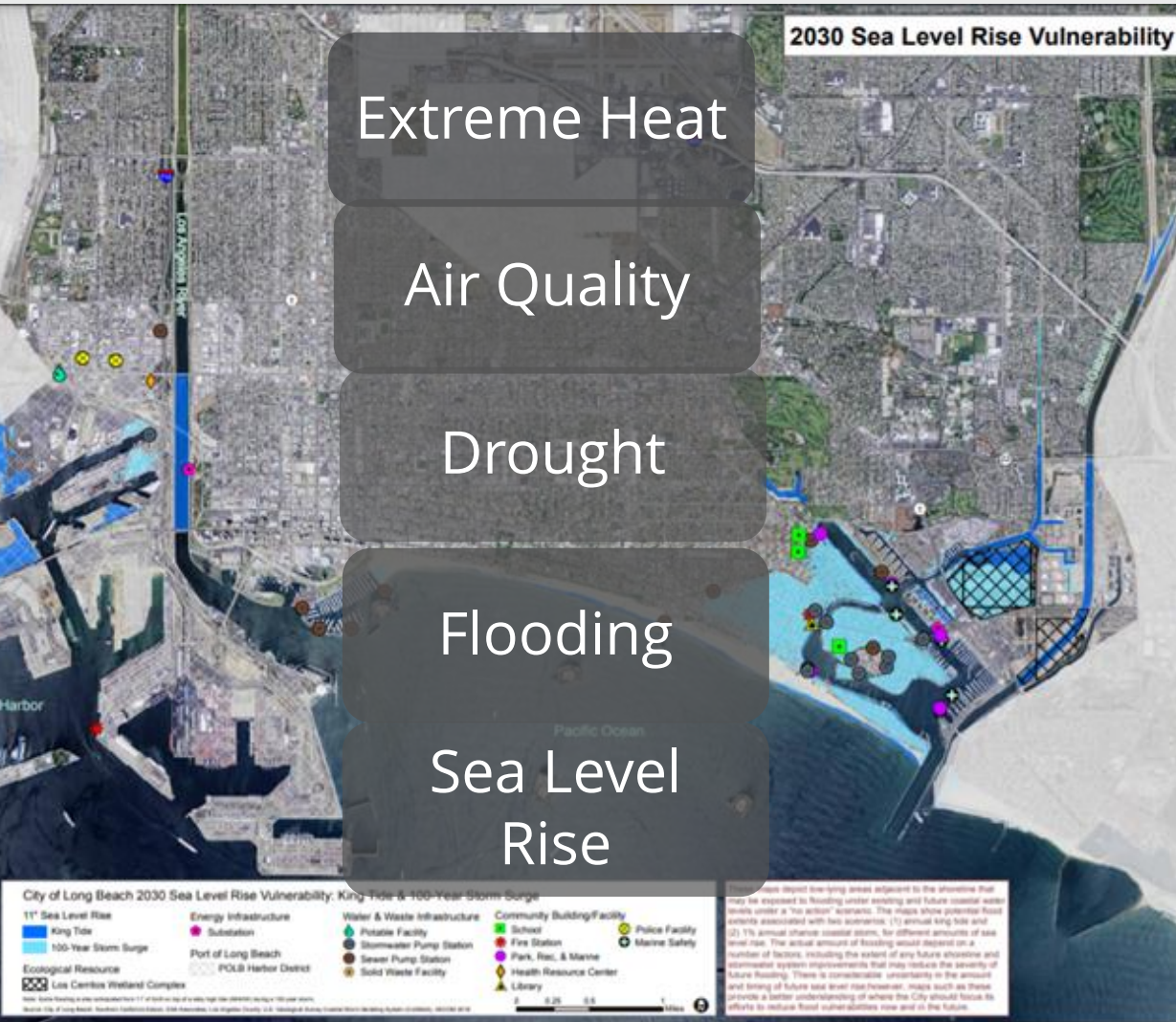
# Mitigations towards Low Carbon Buildings & Neighborhoods

| THEME   | SECTOR/<br>STRESSOR  | ACTION   | ACTION<br>NUMBER |
|---|----------------------|--|------------------|
| Low carbon,<br>climate<br>resilient<br>buildings and<br>neighborhoods | Building +<br>Energy | ● Increase use of solar power including by promoting community solar and microgrids  | ● BE-2<br>BE-3   |
|   | Building +<br>Energy | ● Develop a residential and commercial energy assessment and benchmarking program and provide energy efficiency financing, rebates, and incentives for building owners | ● BE-4<br>BE-5   |
|   | Building +<br>Energy | ● Perform municipal energy and water audits  | ● BE-6           |
|   | Building +<br>Energy | ● Update building codes to incentivize electric new residential and commercial buildings   | ● BE-7           |
|   | Air Quality          | ● Incentivize installation of photocatalytic tiles   | ● AQ-1           |
|   | Drought              | ● Continue development and implementation of water use efficiency programs and implement additional water conservation programs  | ● DRT-1          |
|   | Extreme Heat         | ● Increase presence of cool roofs and cool walls   | ● EH-1           |
|   | Extreme Heat         | ● Enhance and expand urban forest cover and vegetation   | ● EH-3           |

# Minimizing the Carbon Footprint of Residents and Businesses

| THEME  | SECTOR/<br>STRESSOR | ACTION  | ACTION<br>NUMBER     |
|--|---------------------|---|----------------------|
| Residents and businesses with minimized carbon footprint | Transportation      | Expand and improve pedestrian and bikeway infrastructure citywide   | T-2<br>T-3           |
|  | Transportation      | Implement the San Pedro Bay Ports Clean Trucks Program  | T-4                  |
|  | Transportation      | Increase access to additional electric vehicle charging stations  | T-5                  |
|  | Transportation      | Increase employment and residential development along primary transit corridors and increase frequency of public transit and access to multimodal transportation      | T-1<br>T-6           |
|  | Transportation      | Increase density and mixing of land uses and update the Transportation Demand Management Ordinance to require strategies that encourage multimodal transportation use | T-7<br>T-8<br>T-9    |
|  | Building + Energy   | Provide access to renewably generated electricity   | BE-1                 |
|  | Building + Energy   | Implement short-term measures to reduce emissions related to oil and gas extraction   | BE-8                 |
|  | Waste               | Increase recycling in multifamily and commercial development, in compliance with state law  | W-1                  |
|  | Waste               | Develop an organic waste collection program and identify organics processing options such as composting, mulching or anaerobic digestion                              | W-2<br>W-3<br>W-4    |
|  | Air Quality         | Support sustainability planning efforts at the Long Beach Airport and San Pedro Bay Ports and support LBUSD school bus electrification                                | AQ-3<br>AQ-5<br>AQ-6 |
|  | Air Quality         | Electrify local, small GHG emitters such as lawn and garden equipment, outdoor power equipment, and others  | AQ-4                 |

# Adaptations Towards A Healthy, Resilient and Ready Population



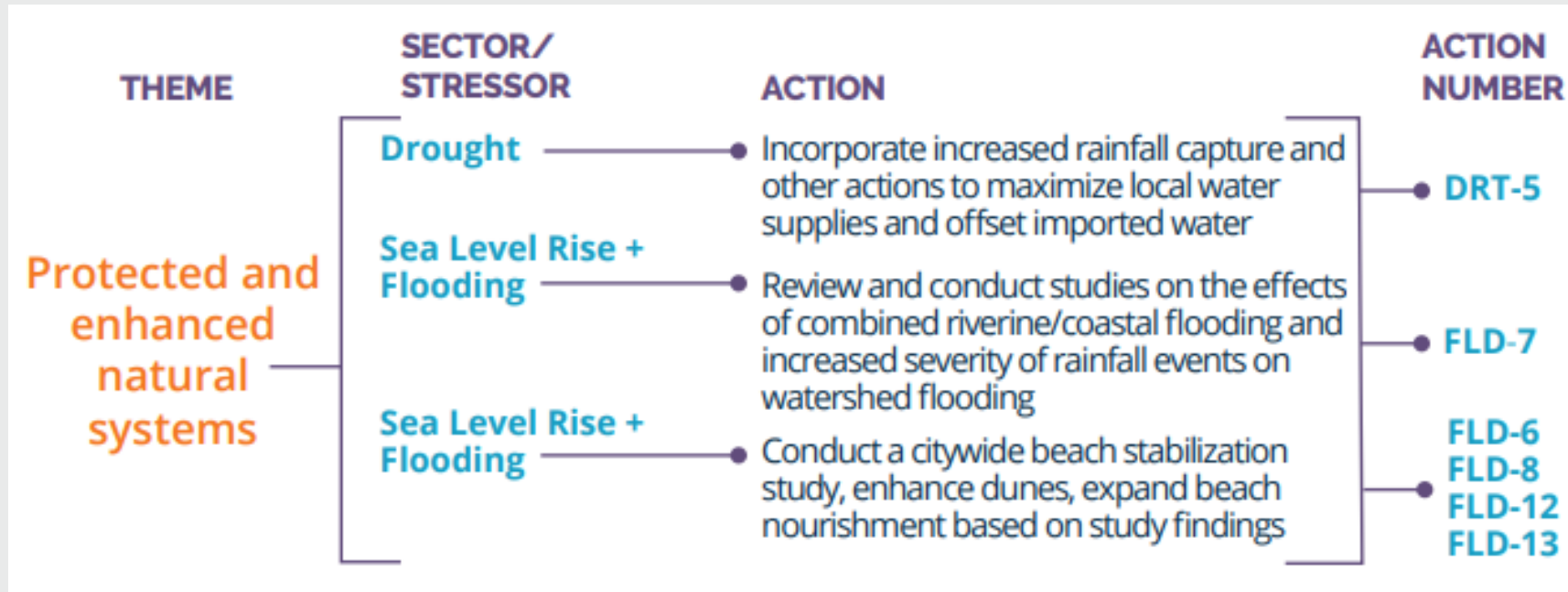
| THEME  | SECTOR/<br>STRESSOR       | ACTION   | ACTION<br>NUMBER |
|--|---------------------------|--|------------------|
| A healthy,<br>resilient<br>and ready<br>population | Extreme Heat              | Install additional water fountains and undertake other actions to increase public access to water                      | EH-4             |
|  | Extreme Heat              | Identify future vulnerability potential for power outages related to extreme heat and develop plans to prevent outages | EH-5             |
|  | Extreme Heat              | Enhance and expand accessibility to cooling centers  | EH-6             |
|  | Extreme Heat              | Improve beach and coastal transit access during extreme heat events  | EH-6             |
|  | Air Quality               | Encourage urban agriculture practices that reduce air quality pollution  | AQ-2             |
|  | Air Quality               | Increase monitoring and regulation of the oil extraction and refining process  | AQ-7             |
|  | Drought                   | Enhance outreach and education related to water conservation   | DRT-2            |
|  | Drought                   | Expand use of recycling water and grey water for non-potable use   | DRT-4            |
|  | Sea Level Rise + Flooding | Update the floodplain ordinance  | FLD-1            |
|  | Sea Level Rise + Flooding | Establish a flood impacts monitoring program   | FLD-3            |
|  | Sea Level Rise + Flooding | Investigate feasibility of managed retreat in the longer term  | FLD-19           |



# Safe and Adaptable Infrastructure

| THEME                                   | SECTOR/<br>STRESSOR          | ACTION   | ACTION<br>NUMBER                 |
|---|------------------------------|--|----------------------------------|
| Safe and<br>adaptable<br>infrastructure | Extreme Heat                 | ● Increase presence of reflective streets, surfaces, shade canopies, and bus shelter amenities   | ● EH-2<br>● EH-7                 |
|   | Drought                      | ● Expand usage of green infrastructure and green streets   | ● DRT-3                          |
|   | Sea Level Rise +<br>Flooding | ● Address sea level rise in citywide plans, policies, and regulations and incorporate adaptation strategies into City lease negotiations | ● FLD-2<br>● FLD-4               |
|   | Sea Level Rise +<br>Flooding | ● Update the City's existing Stormwater Management Plan  | ● FLD-5                          |
|   | Sea Level Rise +<br>Flooding | ● Relocate/elevate critical infrastructure, including elevating riverine levees and flood proofing vulnerable sewer pump stations        | ● FLD-9<br>● FLD-10<br>● FLD-11  |
|   | Sea Level Rise +<br>Flooding | ● Elevate streets/pathways and retreat/realign beach parking lots  | ● FLD-14<br>● FLD-15<br>● FLD-17 |
|   | Sea Level Rise +<br>Flooding | ● Retrofit/extend sea walls and storm surge barriers as appropriate  | ● FLD-16<br>● FLD-18<br>● FLD-20 |
|   |                              |  |                                  |

# Adaptations that Protect and Enhance Natural Systems



# CAAP Status

- City Council confirmed the CAAP on January 5, 2021
  - Confirmed GHG reduction pathway for 2030
- Staff is preparing a Subsequent Environmental Impact Report (EIR) as required by the California Environmental Quality Act (CEQA)
- EIR being released for public review this month
- Early implementation actions underway



# California Environmental Quality Act (CEQA)

1. To disclose information about potentially significant environmental effects of a project
2. To identify ways to avoid or mitigate significant environmental impacts
3. To enhance public participation in the planning process
4. To encourage stakeholder collaboration in the review of projects

# CAAP Implementation

## Governance

- Set up a governance structure that integrates climate action into operations and internal culture, public engagement, and financial decision-making processes
- Dedicate staff to advance CAAP policies and programs

## City Leadership

- Commit to demonstrating leadership in mitigation actions
- Ensure CAAP implementation benefits those most impacted by climate change such as through job creation
- Collaborate with public agencies and community organizations

## Funding & Investment

- Integrate mitigation and adaptation considerations in the allocation of existing funds, specifically through the annual budget process and Capital Improvement Program
- Pursue new funding sources and identify other financing mechanisms

# CAAP Implementation Monitoring & Reporting (Chapter 8)

- Once adopted, CAAP is designed to be a living document/plan
- Multi-pronged approach for implementation monitoring and reporting:
  - ✓ GHG inventories:
    - a. Production-based community-wide GHG inventories every 2 years
      - Tracks total GHG emissions from all sources within the community
      - Using ICLEI protocol as recommended by CARB and used across the world
      - Informs whether we are on track and if plan updates are necessary
    - b. On the alternating years, a municipal GHG inventory
  - ✓ Performance metrics for individual CAAP actions to inform
  - ✓ Reporting tool: CAAP dashboard
  - ✓ Plan Updates as necessary



# Early CAAP Implementation: Vehicle Miles Traveled (VMT) Adoption

## CAAP Action T9- Implement SB 743

- New state law established Vehicle Miles Traveled (VMT) as the method for determining transportation impacts, for environmental purposes
- Aligns with updated General Plan and draft Climate Action & Adaptation Plan
- City adopted VMT methodology in June 2020

## The Move to VMT Analysis...

- Encourages more sustainable, compact development patterns
- Aims to reduce GHG emissions and improve air quality
- Prioritizes multimodal mitigation measures over vehicular roadway improvements



# Early CAAP Implementation: SB 1383 & Organics Processing

## CAAP Actions W2 and W3 implemented through SB 1383

- Reducing short-lived climate pollutants through organic waste diversion and surplus food recovery
- City adopted compliance updates in December 2021
- Helps implement W-2 and W-3 of the CAAP
  - CAAP Waste Action 2 (W2): Develop an organic waste collection program for City-serviced accounts
  - CAAP Waste Action 3 (W3): Partner with private waste haulers to expand organic waste collection community-wide

# Early CAAP Implementation: New Housing Near Transit

## Transit-focused housing (CAAP Actions T6 and T8)

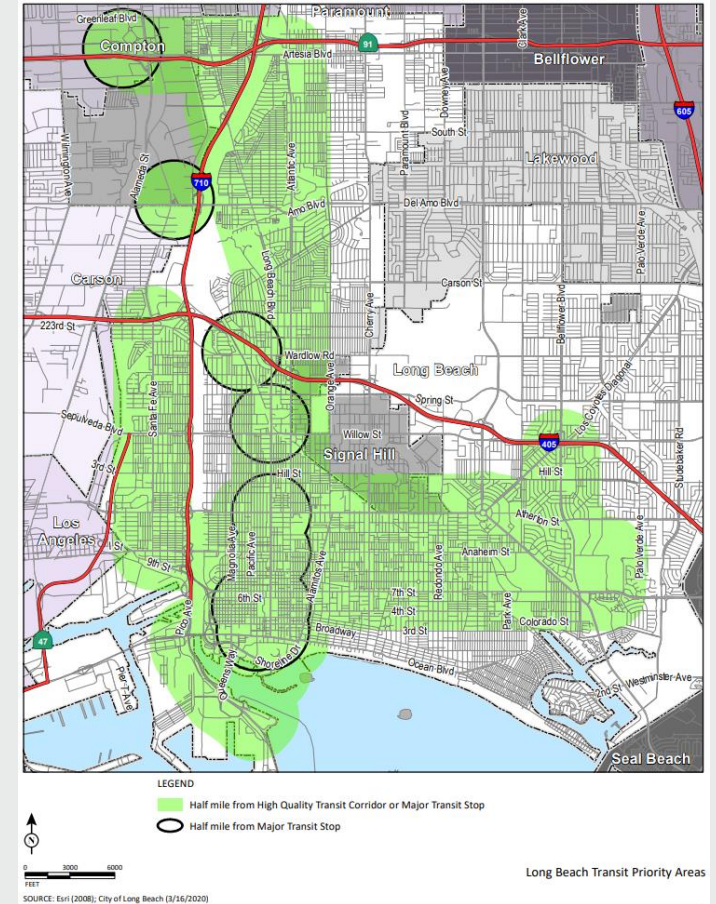
- Reduce Greenhouse Gas (GHG) by reducing Vehicle Miles Traveled (VMT)
- Most likely in mixed use corridors and Downtown/ Midtown areas, near highest quality transit

## UPLAN & ACZIP

- UPLAN and ACZIP rezoning in North and Central Long Beach to design zoning regulations that provide better access to quality jobs and housing near transit

## Inclusionary Housing Requirement & Enhanced Density Bonus

- Two critical strategies adopted in 2021 to ensure affordable housing is included as part of market-rate developments to the maximum extent feasible

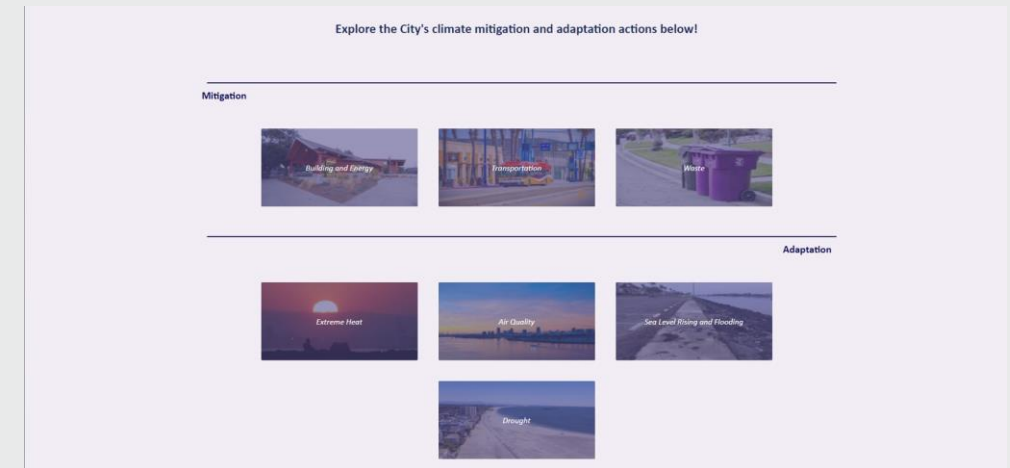


Long Beach Transit Priority Areas



# Early CAAP Implementation: CAAP Dashboard

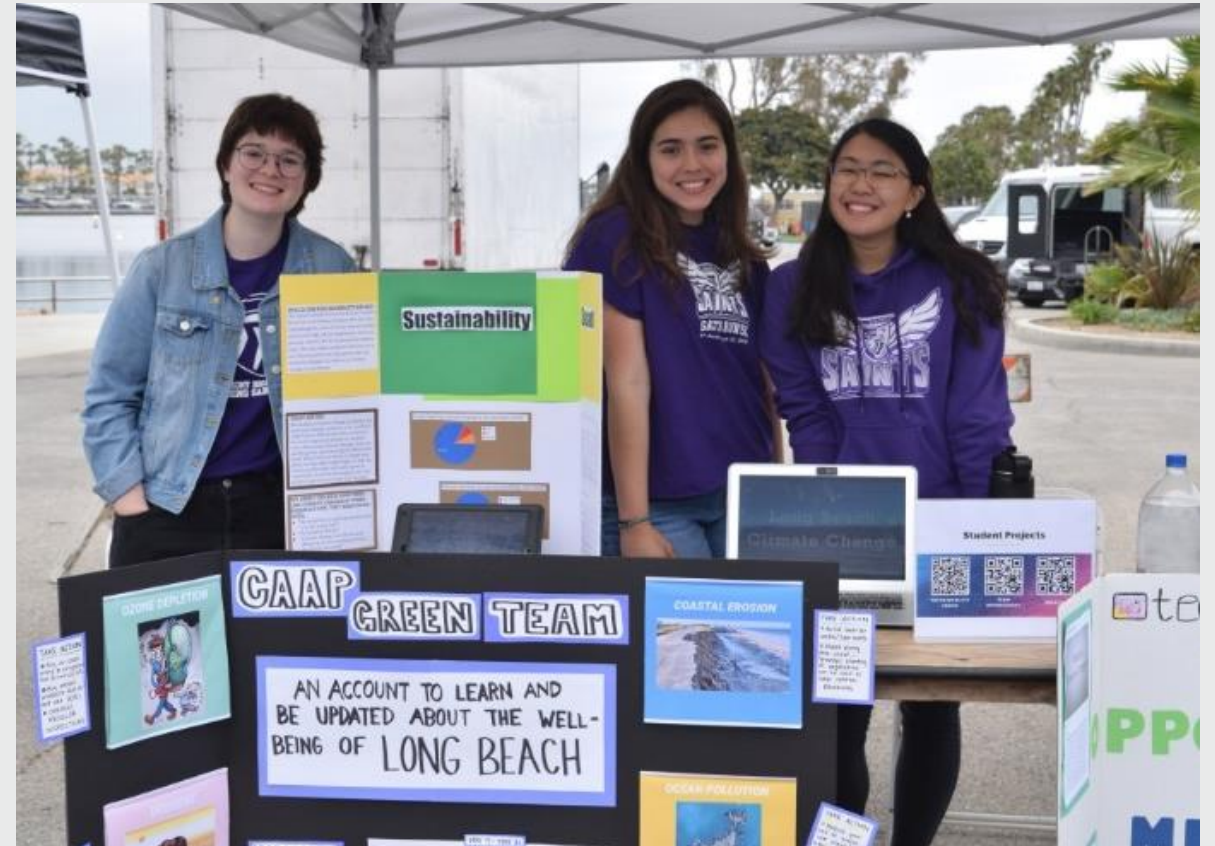
- CAAP Dashboard being developed to provide easy public access to plan implementation updates, GHG monitoring data, ways to get involved and more
- Expected to be launched around final adoption of CAAP (Spring 2022)





# Early CAAP Implementation: Climate Ambassador Program

- Engage youth in climate action and environmental education
- Funding received through AB 32 and PGWIN
- Application closed March 4<sup>th</sup>
- Will be used to inform Youth Climate Corps programs



# Early CAAP Implementation: Youth Climate Corps

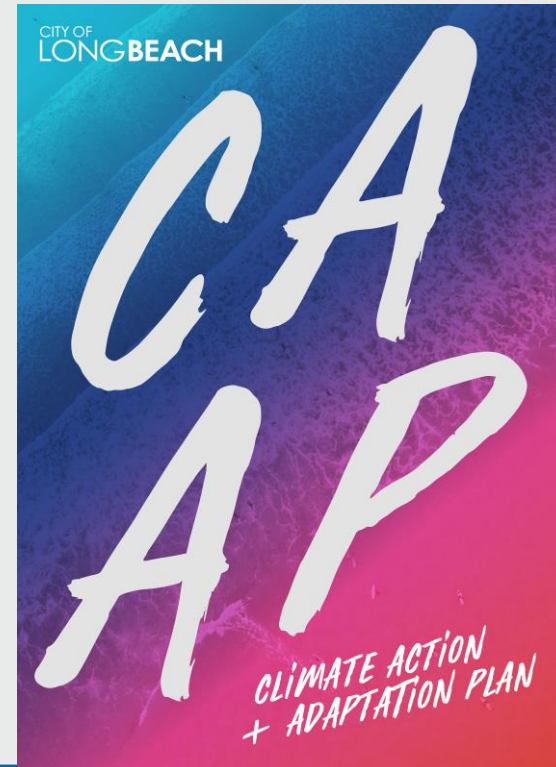
- \$5 million from State of California
- Approved by City Council Nov. 9 2021
- Support youth in Long Beach to engage in green workforce development
- Programs slated to start July 2022



# Next Steps

- Complete Subsequent Environmental Impact Report and release it for public review
- Final Plan and Environmental Document Adoption by City Council (anticipated adoption June 2022)
- Learn more and stay involved! Visit our website for updates, to review the CAAP and much more:

<https://www.longbeach.gov/lbds/planning/caap/>







Thank you

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