

CITY OF  
**LONG BEACH**

# CAAP

*CLIMATE ACTION  
+ ADAPTATION PLAN*

**City Council Study Session**  
March 19<sup>th</sup>, 2019

# What is the CAAP?

## Long Beach is developing its first ever Climate Action and Adaptation Plan (CAAP)

▶ What is a CAAP? A plan to:

- Reduce greenhouse gas (GHG) emissions
- Prepare the community for the impacts of climate change
- Improve the quality of life
- Enhance economic vitality in Long Beach





# What is Climate Action/Mitigation?

*Climate Action is...*



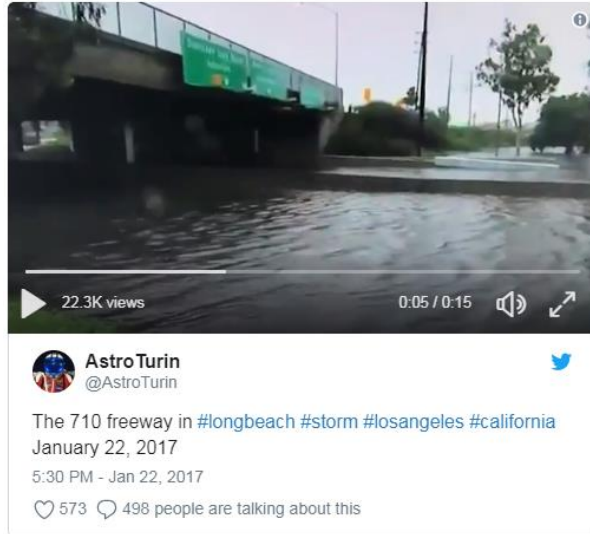
Image Credit: Press Telegram

...about reducing the impact we (people) have on the climate system by reducing future carbon emissions. *(for example, driving less)*



# What is Climate Adaptation?

*Climate Adaptation is...*



...about adjusting our behaviors, systems, infrastructure, to reduce the impact climate change has on us. *(for example, flood proof a house)*

**Why adaptation?** Because according to research compiled by the UCLA Fielding School of Public Health, 97% of scientific literature agrees that climate change is real, and it is already impacting our health and safety in LA County

Source: 10 Things Every Public Health Professional Should Know About Climate Change, 2014; retrievable at: <http://www.laregionalcollaborative.com/climateandhealth/>

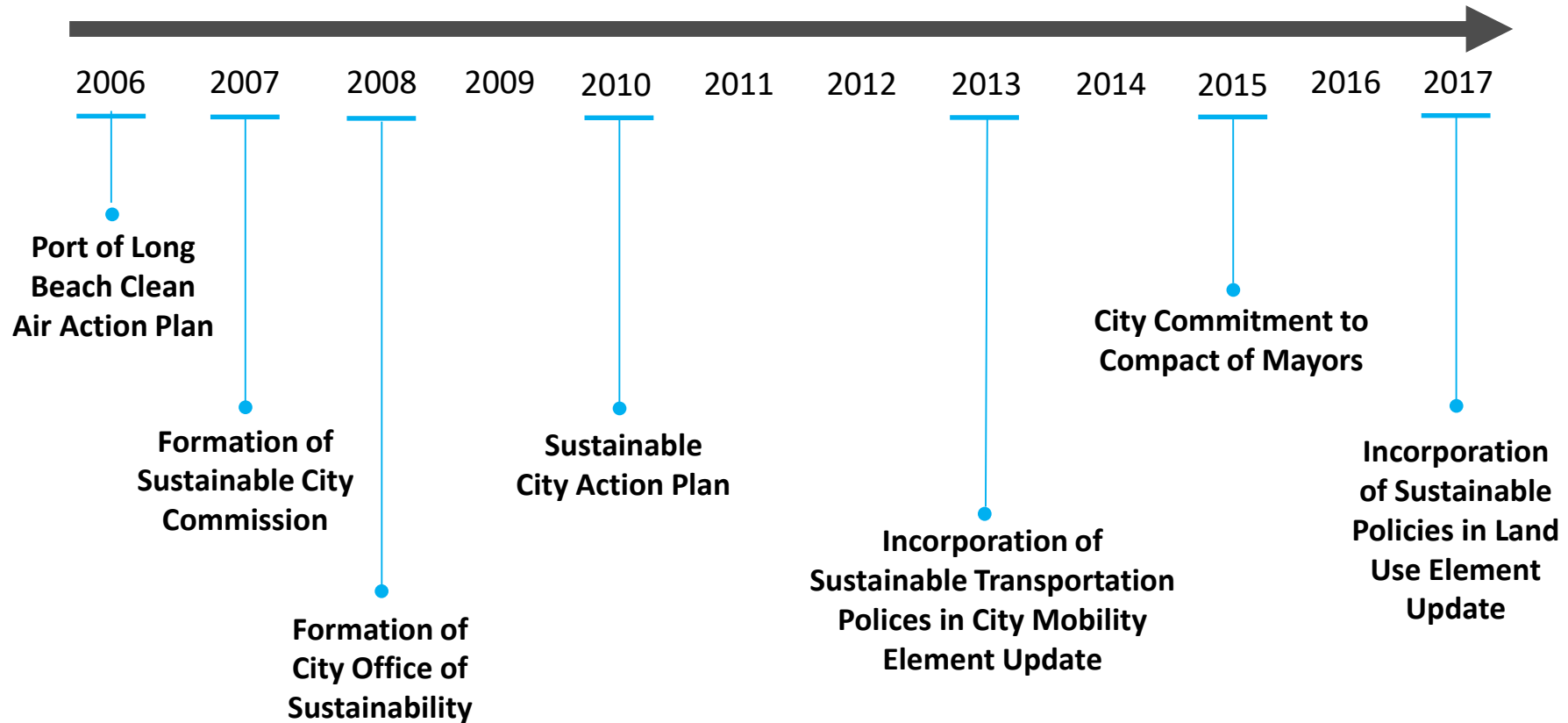
# Why Are We Here Today?

- ▶ Now is a critical point in the CAAP process- formulating a draft plan
- ▶ Estimated safety, health, financial, and economic impacts are significant
- ▶ Council feedback and direction requested:
  - ▶ Areas of study that we missed?
  - ▶ Guidance as to our process as we go about refining the measures being considered
  - ▶ Guidance as to how we should think about evaluating tradeoffs regarding funding, financing and staffing to implement CAAP actions, weighed against the costs of inaction
  - ▶ Feedback on the GHG reduction target
  - ▶ Other priorities or areas of interest for the Council



# Building on Historical Achievements

## Timeline of Long Beach Sustainability and Resilience Accomplishments



# Why Develop a CAAP?

- Global Covenant of Mayors
- Meet applicable local, state, and other requirements including:
  - AB 32 / SB 32 (must reduce carbon emissions to 1990 levels by 2020)
  - SB 375 (Sustainable Communities and Climate Protection Act of 2008)
  - AB 691 (State Lands Requires plan to address sea level rise in the Tidelands)
  - SB 1000 (General Plans must inculcate adaptation and address impacts to disadvantaged communities)
  - CEQA
  - General plan mitigation (CAAP is a mitigation measure of Land Use Element)

# CAAP Development Process

- ▶ Working Groups:
  - Scientific Working Group- 13 experts from CSULB, LBCC, UCLA, Aquarium of the Pacific, AQMD
  - Business Working Group
  - Community Working Group
- ▶ Collaboration with every city department (department surveys, sharing CAAP data, soliciting feedback on draft actions, cataloging sustainability initiatives)
- ▶ Outreach with the general community
  - Over 20 events total since June 2018,
  - Selected in collaboration with each council office
  - At least 1 event in every district
  - Equity Analysis helped inform outreach strategies
  - Youth Engagement focus (Youth Leadership Long Beach, high school groups)



# CAAP Outreach Since June 2018

## CAAP Outreach Since June 2018

# of General Tabling Events	18
# of Presentations	12
# Hosted Events	7
# of Sign-ins	888
# of Estimated Attendees	8,593





# City Department Questionnaire Results

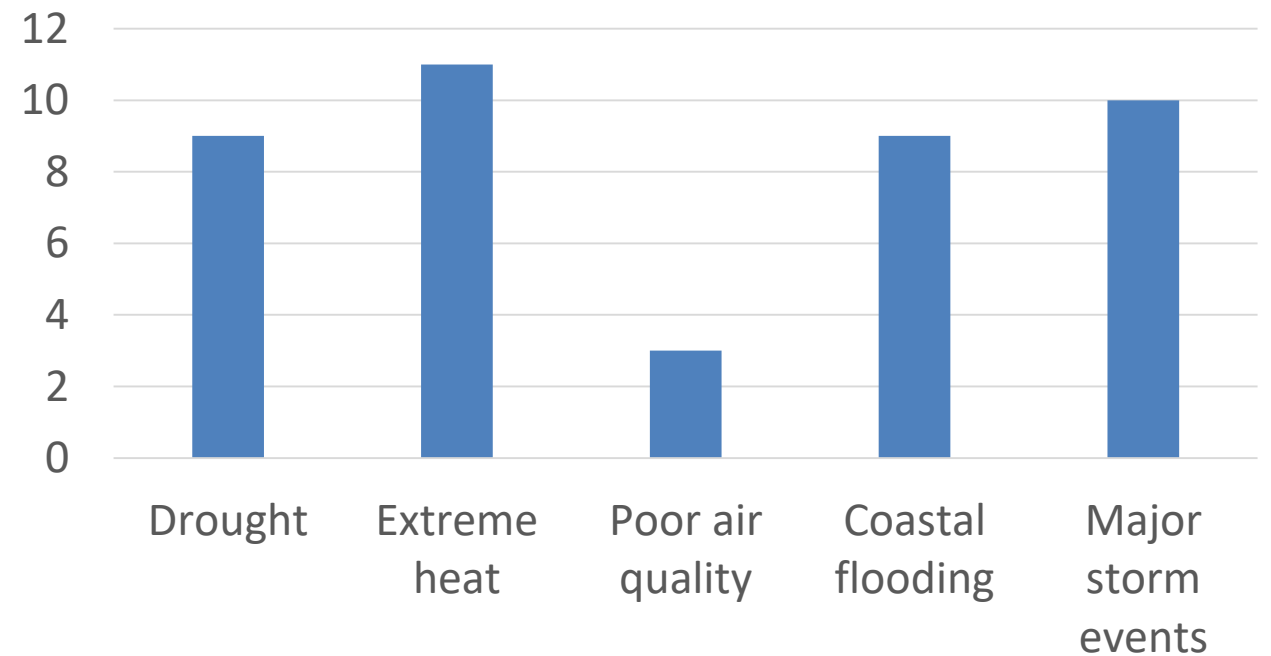
**17** departments surveyed

**100%** experienced climate impact to infrastructure assets or core services

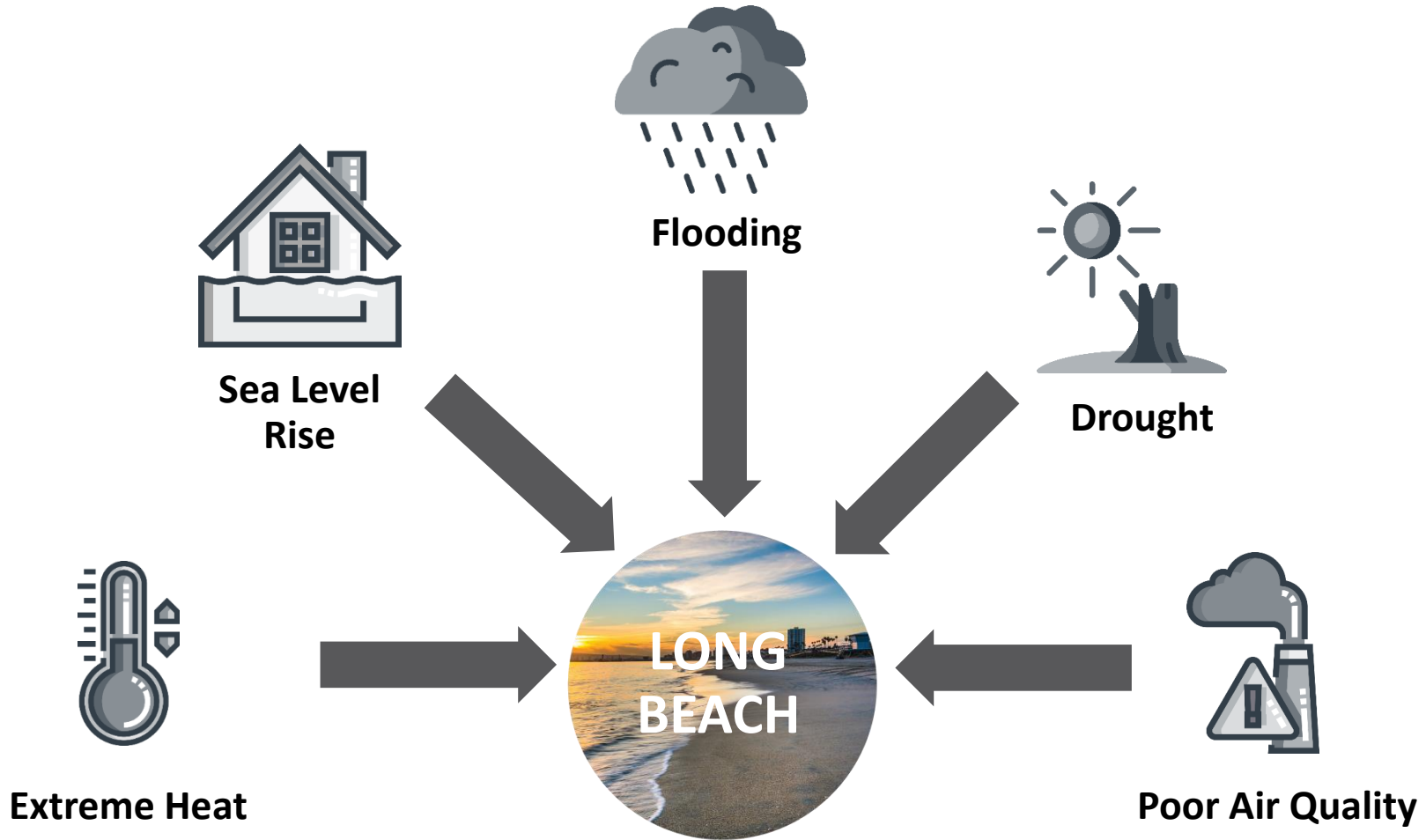
**88%** are engaging in GHG emission reducing actions

**53%** are engaging in adaptive capacity actions

Number of City Departments Affected by Exposure to Climate & Environmental Hazards



# Climate Hazards Likely to Impact Long Beach





# Community and Infrastructure Assets Likely to be Impacted

- Public Health
- Housing & Neighborhoods
- City buildings
- Transportation infrastructure
- Water Supply
- Wastewater/Stormwater
- Coastal Resources
- Parks and Open Space
- Energy infrastructure

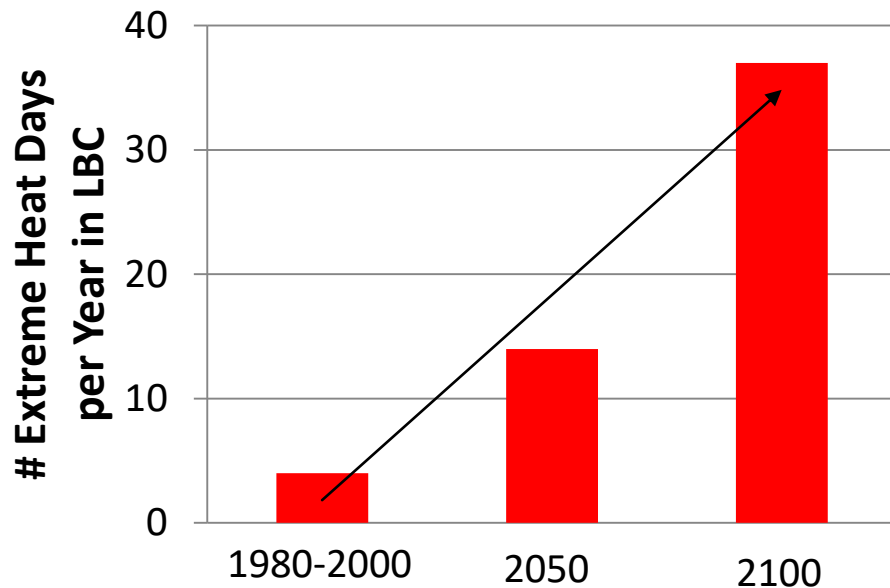


# Climate Science Review: Extreme Heat



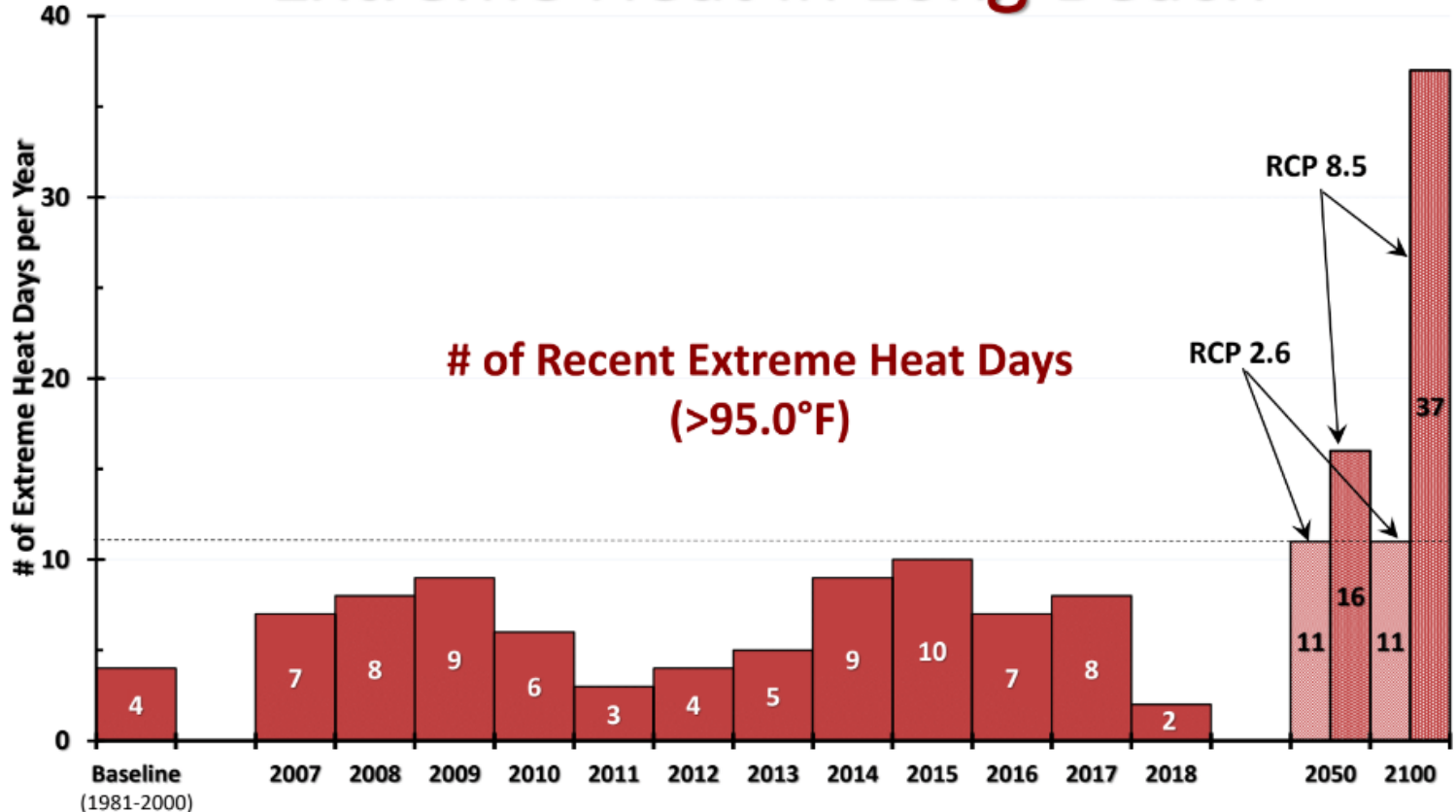
## MORE FREQUENT AND INTENSE HEAT WAVES

Low income areas and communities of color are more likely to live in areas most vulnerable to urban heat island effect (e.g. North, Central, West Long Beach).



- Approximately **275,000 LB residents** in the high extreme heat vulnerability zone
- Increased risk of heat-related illnesses and death, vector borne diseases, tropical pathogens and parasites
- Particularly vulnerable populations include: children, older adults, people with respiratory diseases, those who work outdoors
- Missed work and school
- Damage to roads, highways, and rail from extreme heat
- Example: Power outages associated with extreme heat

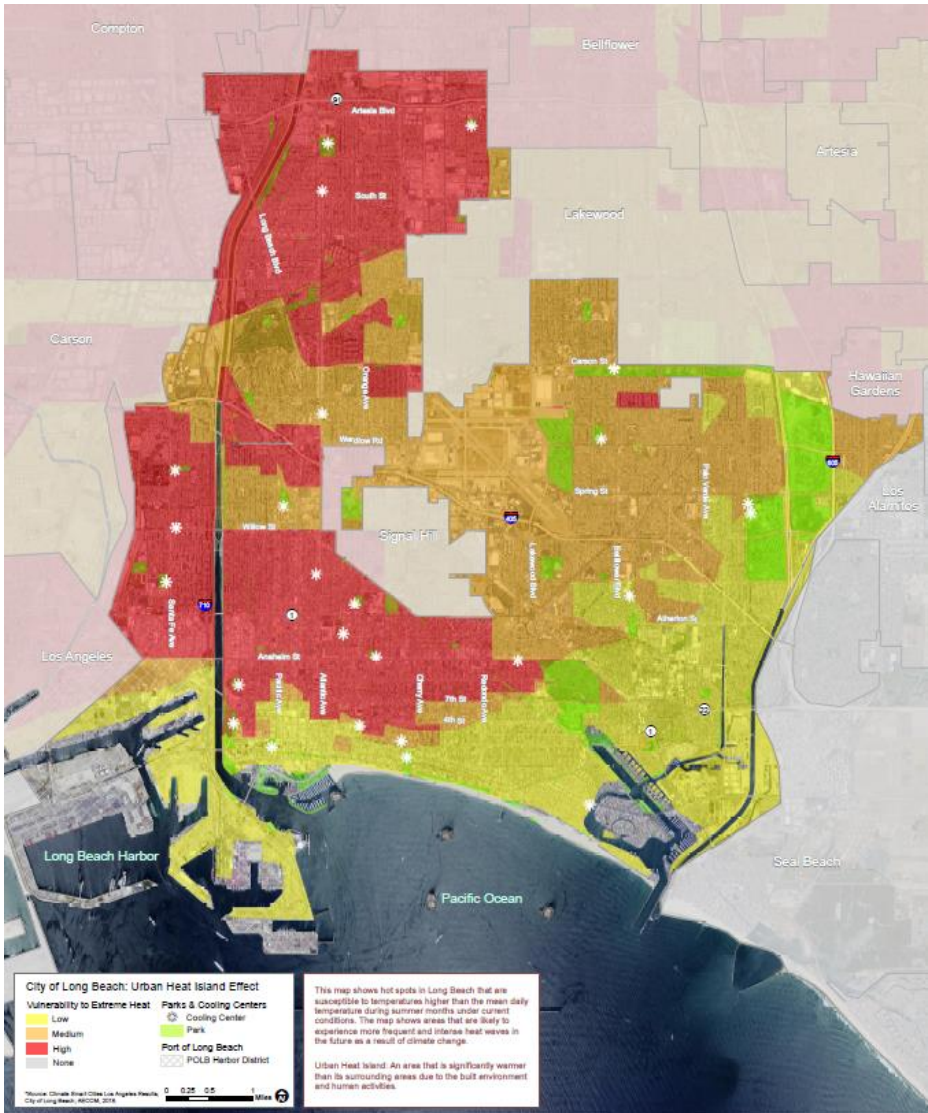
## Extreme Heat in Long Beach



Baseline & Projected Extreme Heat Days based on Sun et al.'s 2015 study  
Long Beach temperatures are from [www.usClimateData.com](http://www.usClimateData.com), and are current as of August 3, 2018



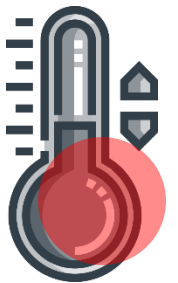
# Vulnerability Assessment: Extreme Heat



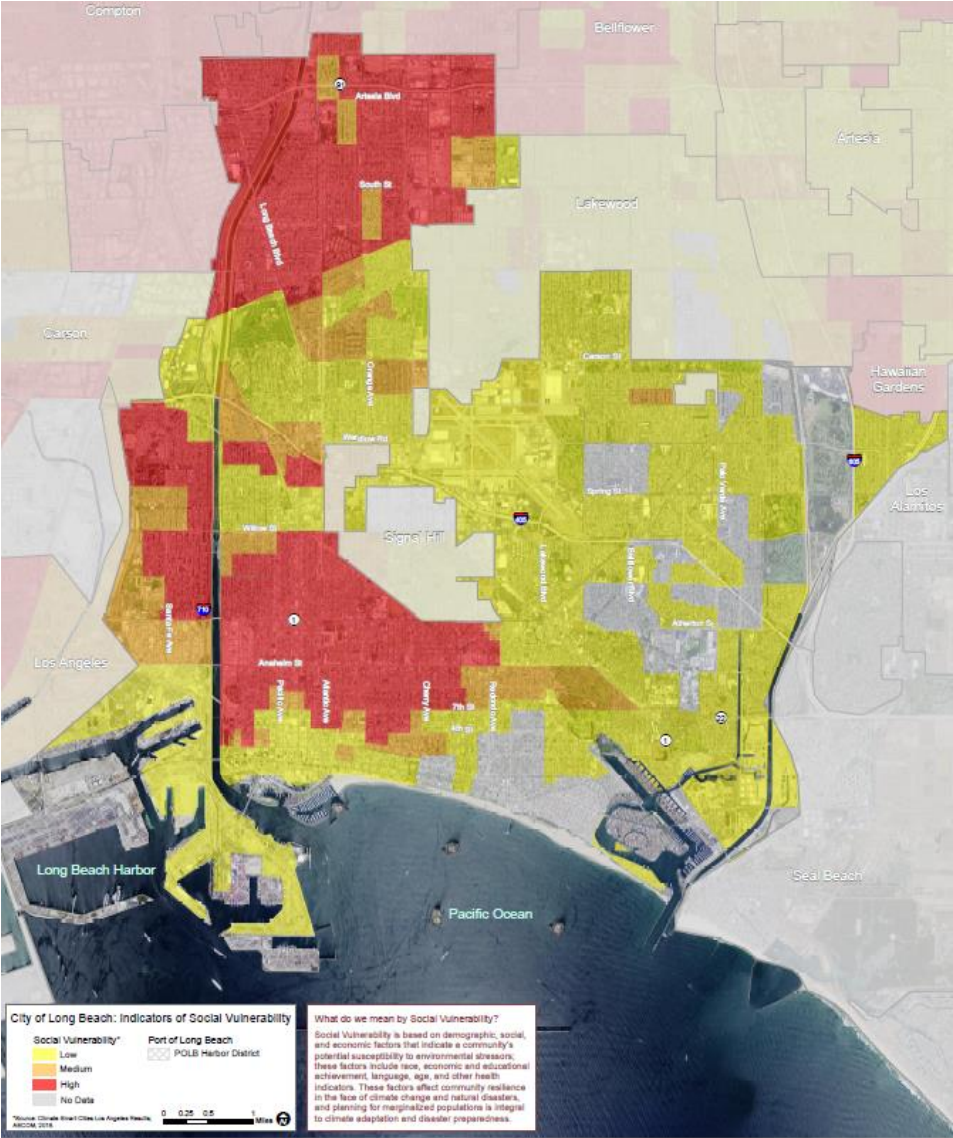
# So What Do We Do About it?

## DRAFT Extreme Heat Adaptation Actions

- ▶ Construct bus shelter amenities, e.g., shade structures
- ▶ Increase presence of cool roofs, reflective streets, parking lots and playgrounds
- ▶ Increase public water supply access
- ▶ Expand cooling centers
- ▶ Develop emergency response plan for power outages related to extreme heat
- ▶ Continue implementing the Urban Forest Management Plan



# Social Vulnerability to Climate Change





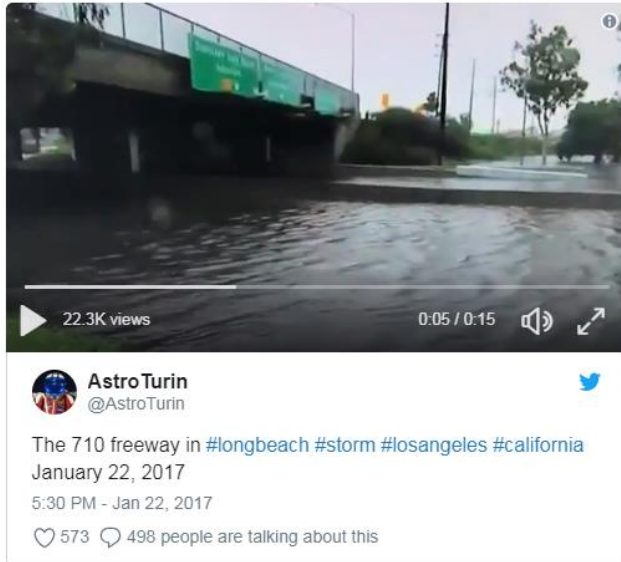
# Flooding Impacts on Long Beach



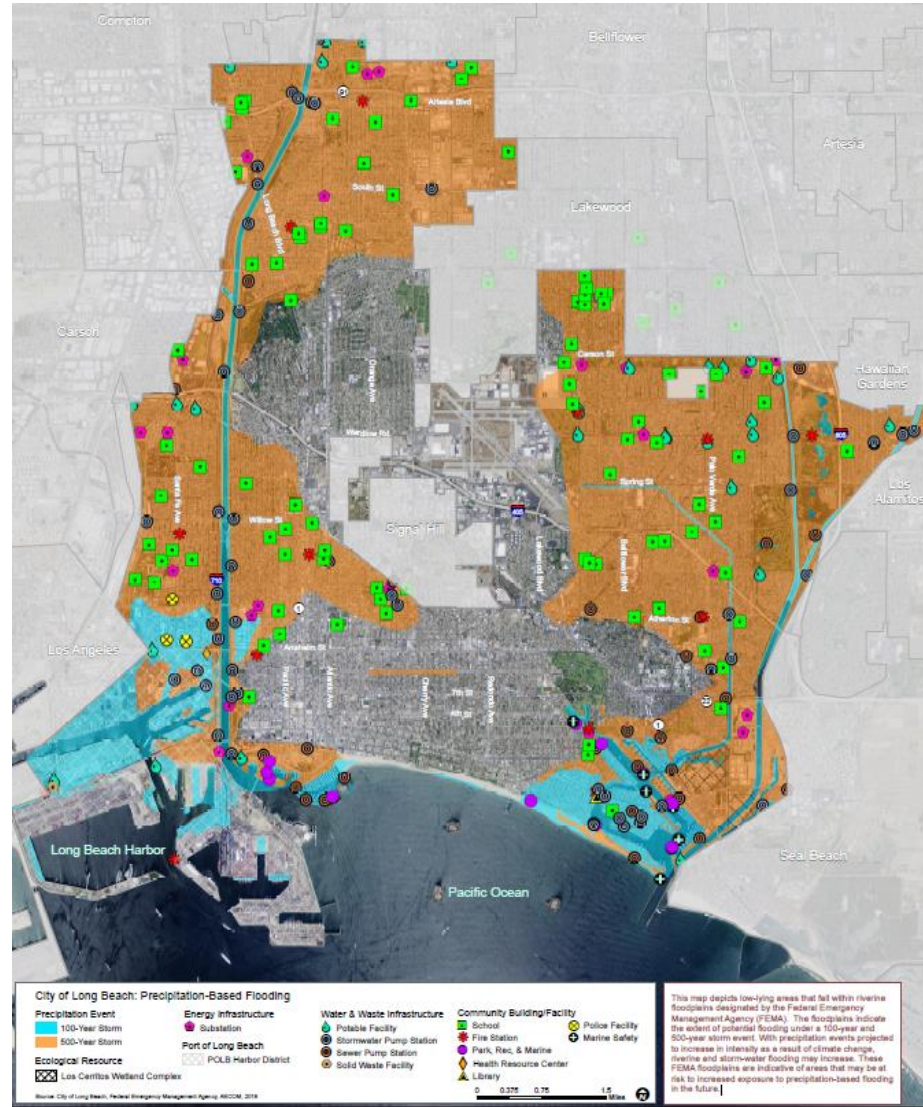
## 3 SOURCES OF FLOODING IN LB:

- Riverine flooding
- Urban flooding
- Sea level rise & coastal storms

- Flooding events may contribute to injury, death, displacement, mental health burden
- According to analysis by the Aquarium, over 22,000 residents are at risk of exposure to flooding from sea level rise and coastal storms by 2050
- Damage to wastewater infrastructure and sewage backup/overflow in flooding event
- Sewage overflow could result in water and food-borne illness
- Disruptions to the transportation system could impact neighborhood connectivity including access to jobs, goods, services and healthcare

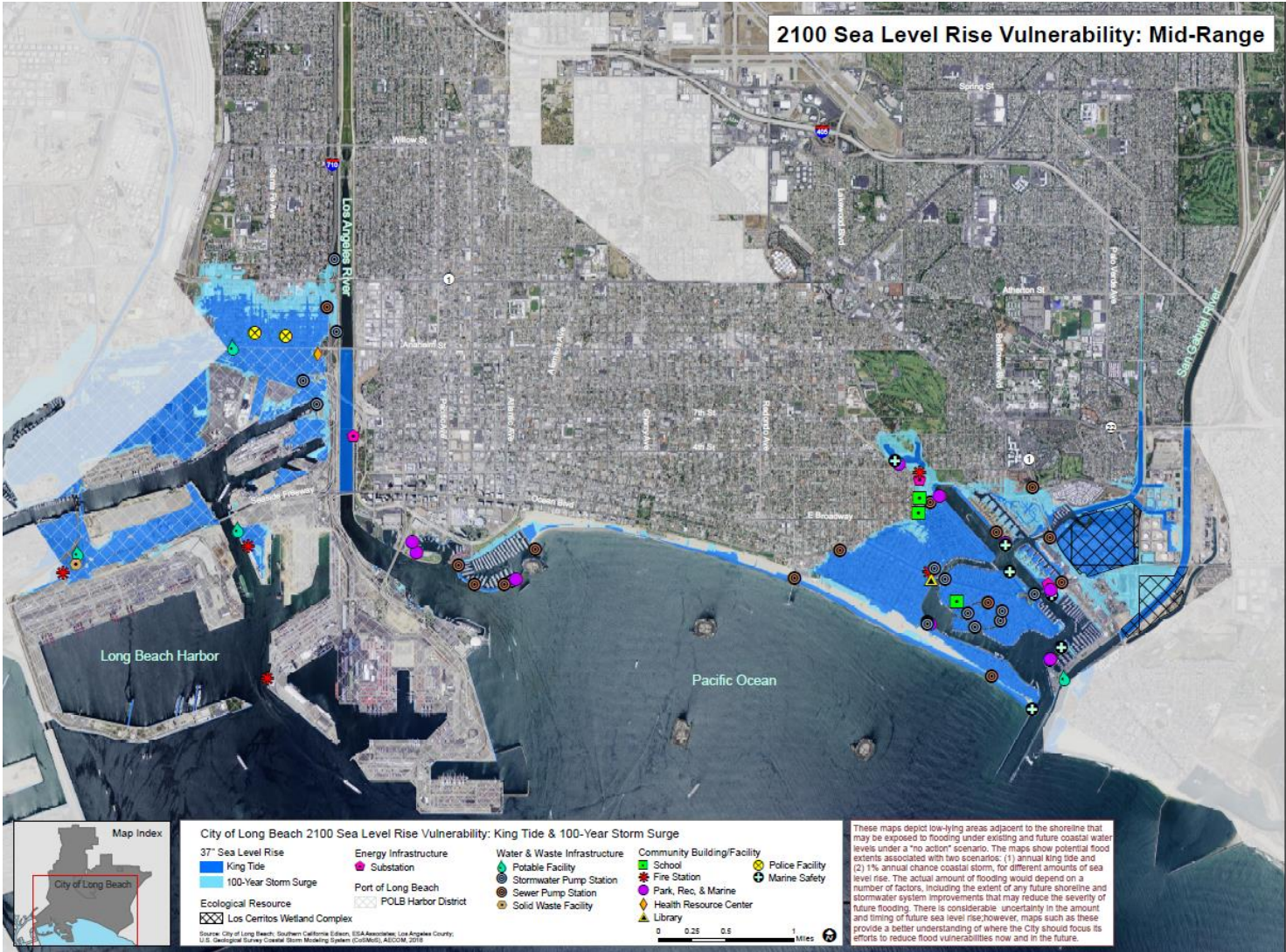


# Vulnerability Assessment: Riverine Flooding





# Vulnerability Assessment: Sea Level Rise 2100 (mid-range)





# City Buildings and Facilities at Risk of Sea Level Rise and Coastal Storm

	2030		2050		2100		2100	
	(11" SLR)		(24" SLR)		(37" SLR)		(66" SLR)	
	Annual King Tide	Additional Exposure Due to Storm Surge	Annual King Tide**	Additional Exposure Due to Storm Surge	Annual King Tide**	Additional Exposure Due to Storm Surge	Annual King Tide	Additional Exposure Due to Storm Surge
Fire Station	2	1	3	1	4	1	4	3
Health Resource Center	0	0	0	1	1	0	1	0
Library	0	1	1	0	1	0	1	0
Marine Safety	3	2	5	0	5	3	6	2
Park, Rec, and Marine	3	2	4	1	5	3	7	2
Police Facility	0	0	0	2	2	0	3	0
Schools	0	1	1	2	3	0	3	5
Solid Waste Facility	1	0	1	0	1	0	1	0
Other	0	0	0	0	0	1	0	1
<b>Total</b>	<b>10</b>	<b>7</b>	<b>15</b>	<b>7</b>	<b>22</b>	<b>8</b>	<b>26</b>	<b>13</b>

\*\*Note: The exposed assets for the King Tide + 24" SLR scenario are similar to the daily high tide (MHHW) + 37" SLR scenario. The exposed assets for the King Tide + 37" SLR scenario are similar to the daily high tide (MHHW) + 66" SLR scenario.

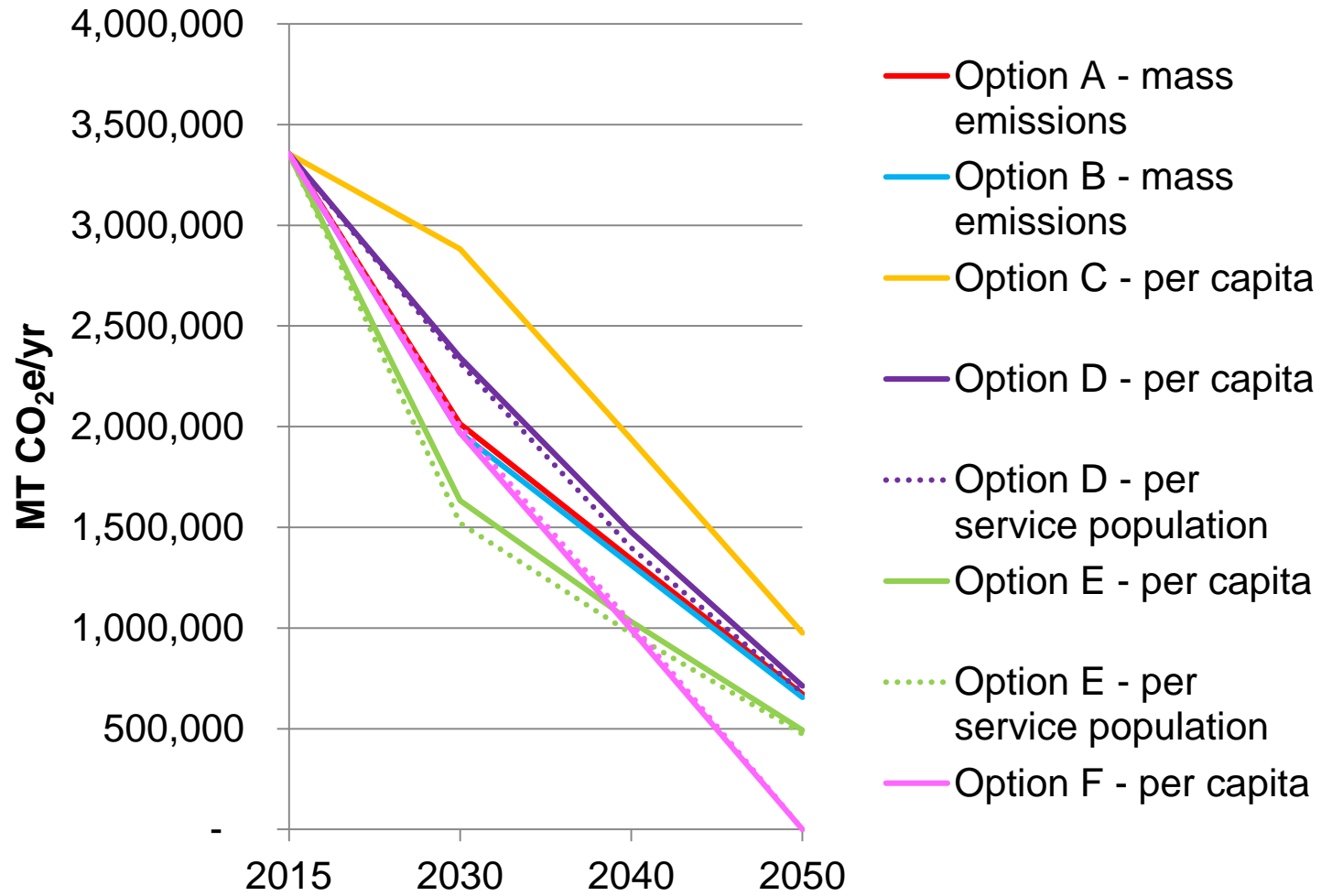
# So What Do We Do About it?

## DRAFT Sea Level Rise & Flooding Adaptation Strategies

- ▶ Update City emergency response plan
- ▶ Update floodplain management ordinance
- ▶ Prioritize low impact storm-water management practices
- ▶ Relocate/elevate critical infrastructure (roads, water and energy infrastructure)
- ▶ Elevate homes/businesses
- ▶ Active and/or passive dune restoration
- ▶ Groundwater monitoring program



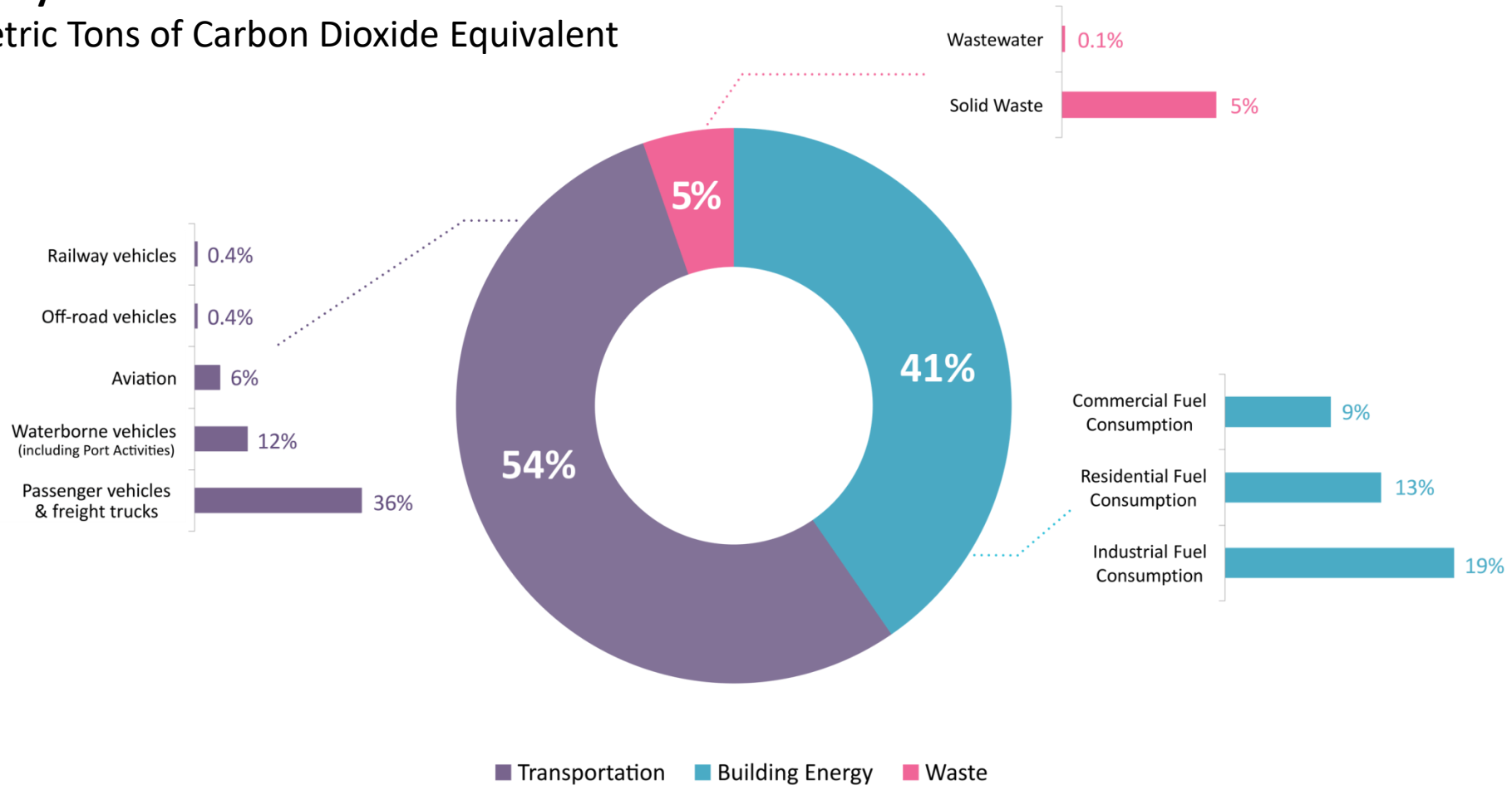
# GHG Emissions Reduction Target Considerations (Mass Emissions)





# Communitywide GHG Emissions by Sector

**Total Communitywide Emissions:**  
3.3 Million Metric Tons of Carbon Dioxide Equivalent



# Mitigation Actions Example: Transportation

## FOCUS AREAS

Transit Service Enhancements

Active Mobility

Electric Vehicle Deployment

Transportation Demand Management

Land Use and Transportation Planning

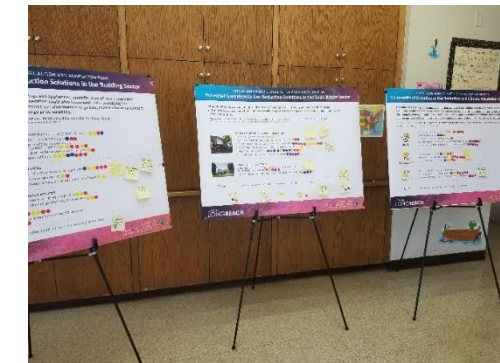
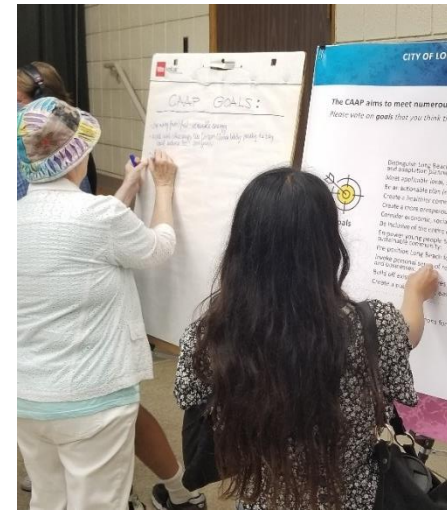
## ACTIONS:

- Increase express bus routes and dedicated bus lanes
- Improve transit stop/station environments
- Increase employment and residential development along transit corridors
- Explore the feasibility of providing free or reduced priced transit passes
- Increase bicycle and scooter infrastructure
- Expand the City’s bike share program
- Expand pedestrian infrastructure citywide
- Develop an EV infrastructure master plan
- Implement EV car-share program in low-income communities
- Promote participation in SCAQMD Old Vehicle Scrapping program
- Update the City’s transportation demand management (TDM) ordinance
- Increase density and mixing of land uses



# Next Steps

- Reviewing and getting feedback on draft adaptation and mitigation actions from all City Departments and from the public
- Draft plan anticipated April 2019
- Open House #3 June 1, 2019
- CEQA July-Dec 2019
- Anticipated Adoption Hearing- January 2020





# Learn More, Get Involved, Share Ideas!

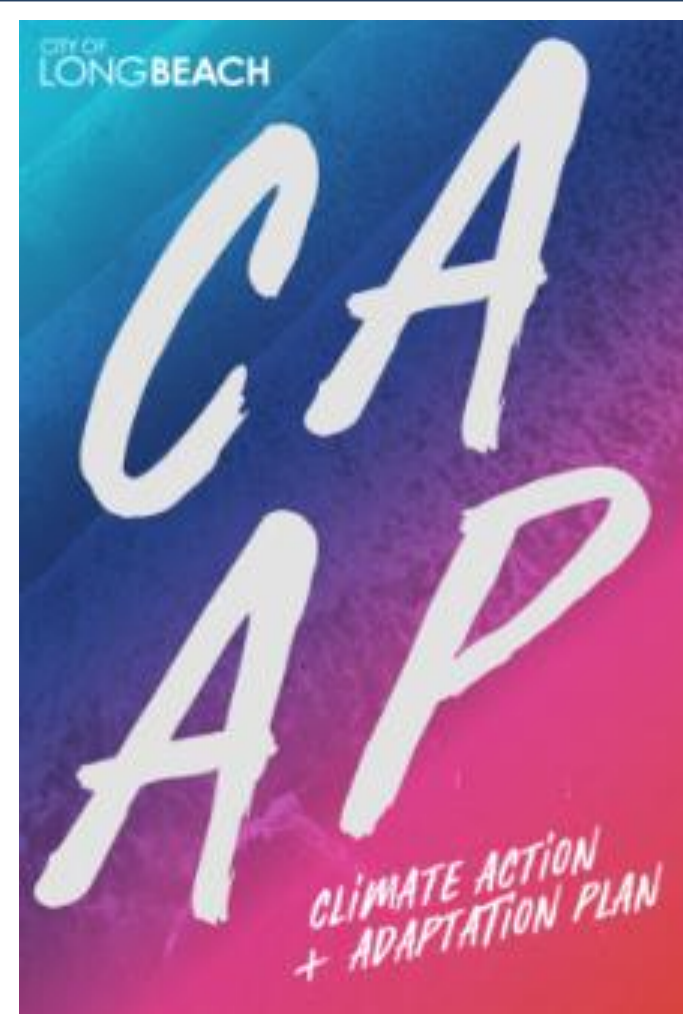


- ▶ Take the CAAP resident survey or business survey: [www.lbds.info/climateactionlb](http://www.lbds.info/climateactionlb)
- ▶ Visit the CAAP website for more info on the project: [www.lbds.info/climateactionlb](http://www.lbds.info/climateactionlb)
- ▶ #CAAPLB
- ▶ Sign-up for alerts on any of these projects via LinkLB (see website)
- ▶ Join us Saturday, March 30<sup>th</sup> 10am-1pm at Silverado Park for a special discussion on extreme heat and how it can impact older adults, children and other vulnerable populations

## YOU'RE INVITED!

**CAAP Open House #3**  
**Saturday, June 1, 2019**  
**10am – 1pm**  
***Marine Stadium***

View a summary of the draft CAAP plan, participate in interactive activities that will help prepare you for climate change (presented in partnership with local high school groups)



SMALL  
CHANGE

BIG  
IMPACT