



Sustainable City Commission

Extreme Heat, Air Quality, and the Climate Action Plan

August 24, 2023

Agenda

- Social Determinants of Health
- Extreme Heat and Air Quality Background
- City Projects, Programs, and Plans
- Climate Action Plan Extreme Heat and Air Quality Actions
- Discussion

Social Determinants of Health

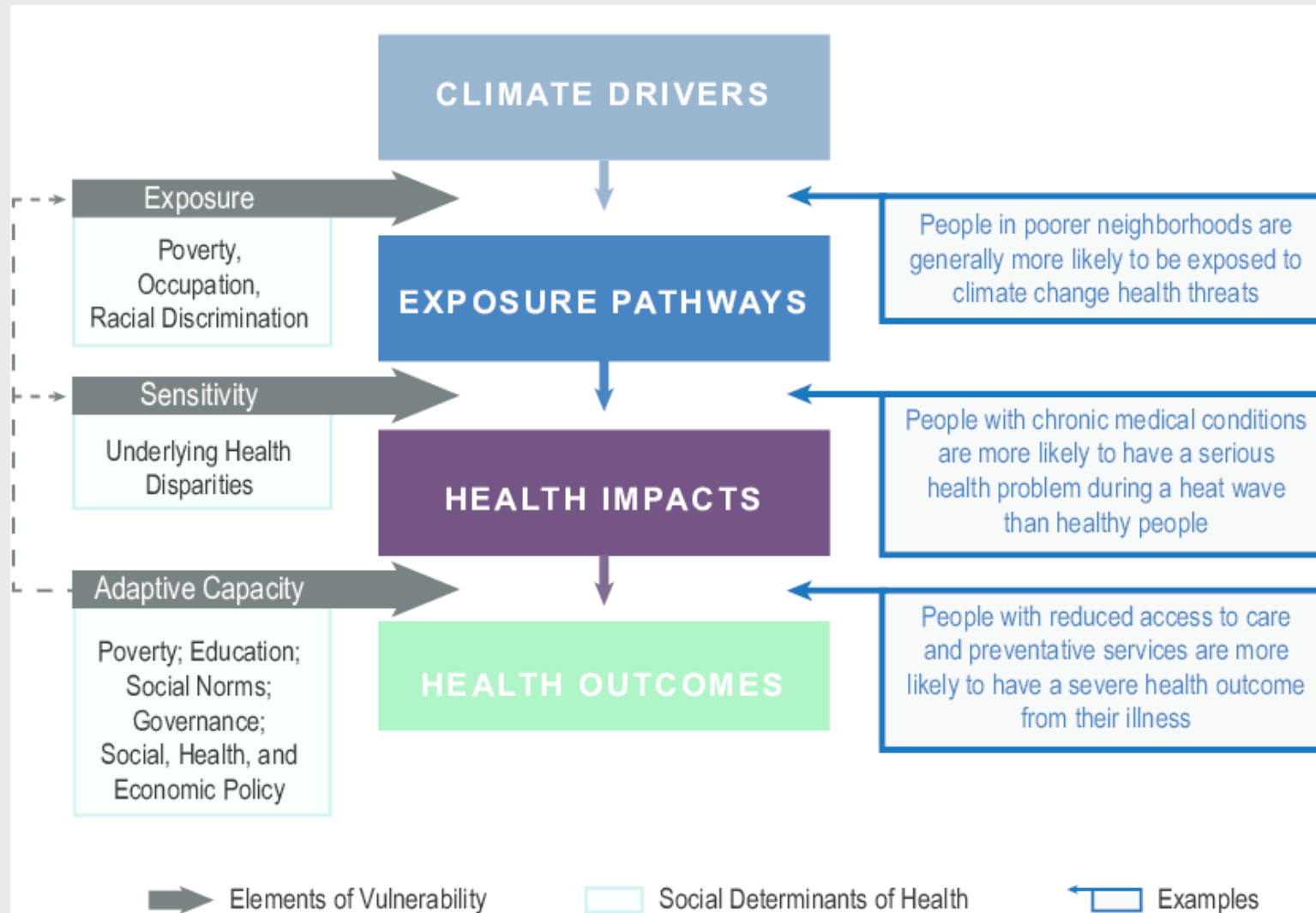
- The complex social and economic circumstances, in which people are born, grow up, live and work
- These circumstances are shaped by a wider set of forces including economics, social policies, and politics



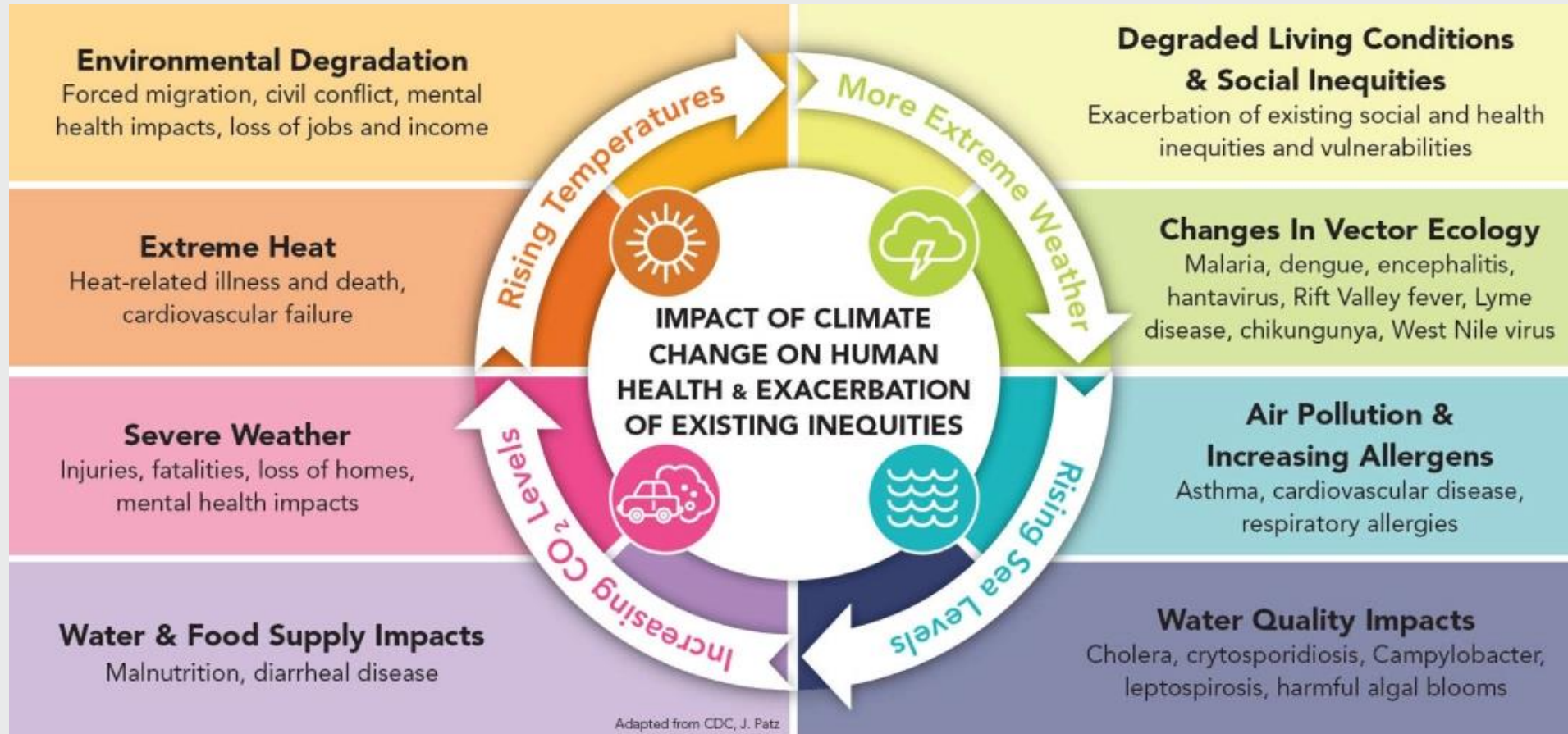
Social Determinants of Health

- Social Support
- Healthcare Services
- Transportation
- Education Quality
- Poverty
- Public Safety
- Violence
- Housing
- Oppression & Discrimination
- Physical Environment
- Food Security
- Child Development
- Culture
- Trauma
- Working Conditions

Social Determinants of Health

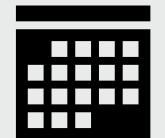


Social Determinants of Health



How is Extreme Heat Impacting Long Beach?

- Number of extreme heat days:
 - 4 days per year in 1980-2000
 - 9 days per year from 2008-2017
 - 11-16 predicted per year by mid-century
 - 11-37 predicted per year by end-of-century
- Average annual temperatures in the Los Angeles region predicted to increase:
 - 3-4°F by mid-century
 - 3-8°F by end-of century



How is Air Quality Impacting Long Beach?

- Major health issue in Long Beach, especially for communities near freeways, industry, and the Port of Long Beach
- 14 percent of residents suffer from asthma which is 2.5 percent higher than Los Angeles and 6 percent higher than the entire U.S.
- Warming could increase the number of days violating air quality standards in the region by as much as 25-80 percent by end-of-century



City Projects, Programs, and Plans

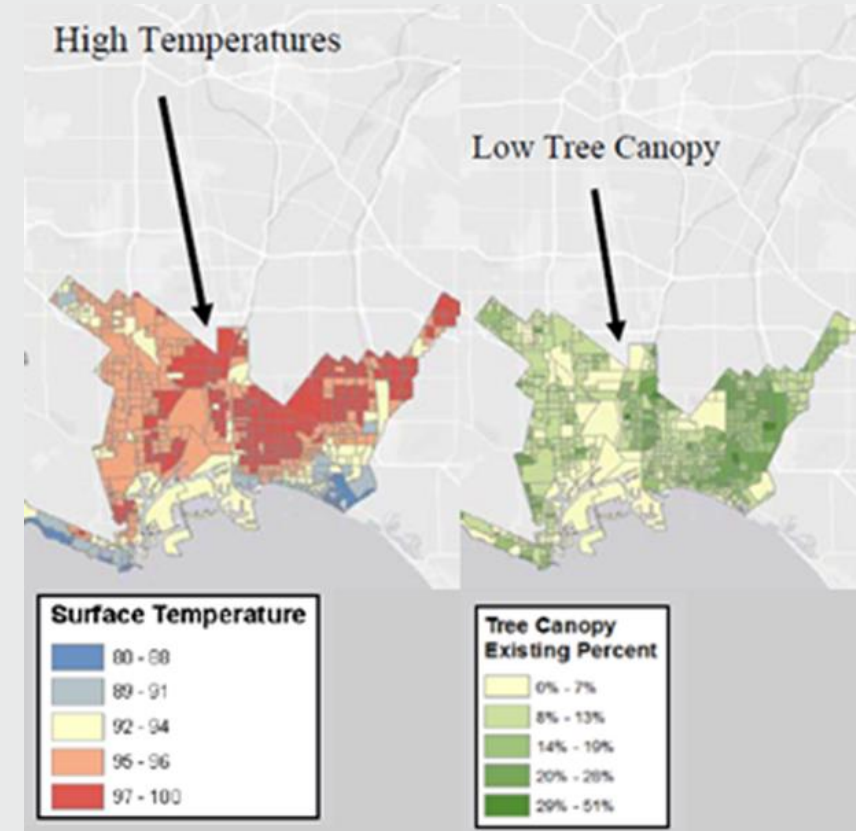
How the City is addressing Extreme Heat and Air Quality

- Nature-Based Solutions
- Built Environment
- Programs
- Plans

Nature-Based Solutions

Urban Greening

- Tree Canopy Expansion
 - Reduce the impact of future extreme heat events on residents in areas that are currently threatened by the urban heat island effect
 - Improve air quality as trees absorb CO2 and particulate matter
 - Relationship between high surface temps and minimal tree canopy in Long Beach (Loyola Marymount University study)



Nature-Based Solutions

Tree Planting Program

- City Tree Planting Program planted 1500+ trees since 2014
- With expanded staff and resources, we plan to significantly increase the rate of planting in the coming year
- Additional planting prioritized in communities most vulnerable to higher temperatures



Nature-Based Solutions

Street Trees

- July 2023: Updated Tree Maintenance Policy (PW)
- Roughly 90,000 trees and 45,000 vacant tree sites on City streets and sidewalks
- 2021: Commitment to replant trees on 1:1 basis
- Replanting street trees helps maintain shade and improve air quality
- Focus on drought tolerance, carbon sequestration, less-invasive species



Open Space and Recreation Element Update

- Purpose: Develop policies and implementation strategies to guide long-term, open space planning
 - Preserving parks and developing updated policies to be consistent with recent City plans and adapt to extreme heat and air quality
 - Develop strategies and policies to support open space
 - Equitable access so all residents in the City have a park no more than a 10-minute walk
 - Maintenance and acquisition
 - Data/inventory updates
 - Natural resource stewardship

Nature-Based Solutions

Implementing the Parks Strategic Plan

- Fulfilling adopted park master plans
 - Action 3-1-F: Complete the implementation of the 13 adopted Park Vision Plans
 - DeForest Park and Wetlands (34 acres) includes new trails and Environmental Education Center
 - Wrigley Greenbelt (9.8 acres)
 - New open space at 51st Street Park (1 acre) and Drake Chavez Greenbelt (6 acres) and wetlands expansion at Willow Springs Park (3 acres)
- Parks include approximately 32,000 trees
 - Action 6-3-A: Increase reforestation efforts to mitigate the urban heat island, improve stormwater management, and improve air quality, especially in West, Central and North Long Beach
 - Action 6-1-D: Prioritize native, drought-tolerant plants and trees and water capturing techniques in landscaping designs

Built Environment

Capital Improvement Program

- Adding shade structures at parks and beach concessions
- Backup generator projects including pump stations and other facilities
- Street Design Guide with guidance from the CAP and Vision Zero Plan



Development Standards for New Development

- Zoning Requirements: Title 21
 - Existing private open space, landscaping, and permeable surface requirements
- Recent Zoning Update Efforts: Title 22 & Uptown Planning Land Use and Neighborhood Strategy (Zone-In)
 - Prioritizing transit-oriented and walkable development
 - Allowing uses and businesses that support clean industry and broad economic base
 - Ex: Neo-Industrial Zones have greater landscaping requirements
 - Uses that have experienced higher urban heat effect

LB CAP Development Checklist

- Discretionary projects requiring California Environmental Quality Act Analysis must comply with checklist:
 - Zero-Carbon Electricity
 - Trip Reduction Features to Reduce Vehicle Miles Traveled
 - Incorporate Pedestrian Infrastructure, Bicycle Infrastructure
 - Incorporate cool roofs, cool walls, reflective streets, cool surfaces, and shade canopies
 - Tree planting
 - Solar

Building and Safety – Implementing Efficiency

- Building and Safety reviews for overall building efficiency requirements of the Building and Safety Code
- Regulatory Process:
 1. Permit Application – Plan review of construction and compliance documents
 2. Permit Issuance
 3. Installation and Inspection
 - a) Contractor must complete Certificates of Installation, Home Energy Rating System (HERS)
 - b) Building Inspector verification
 - c) Issuance of Certificate of Occupancy



Built Environment

Cool Roofs and Walls

- Cool Roofs and Walls - made of materials that help reflect the sun's energy, such as light-colored paints, roof tiles, coatings and shingles.
- Additional efficiency requirements:
 - Radiant Barriers
 - Insulation
 - Window Glazing

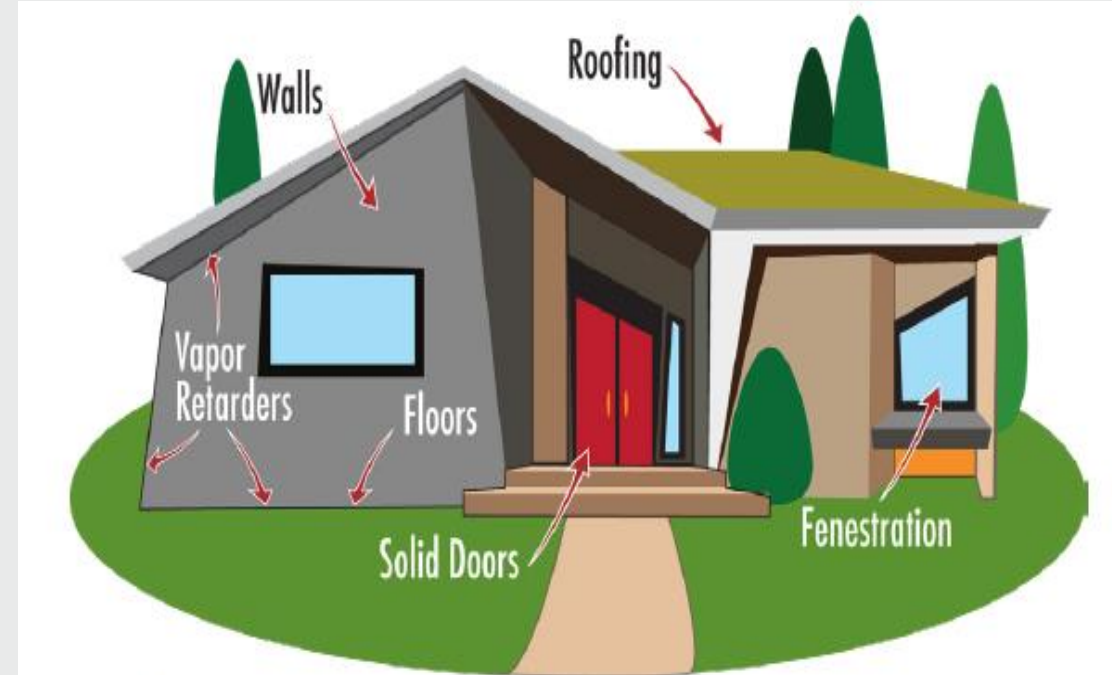


Figure 1. Envelope Features in Single-family Buildings

Source: Ace Resources

Streamlining Solar Energy System Permitting

- Initiatives of Development Services, Building & Safety
 - Provide online permitting services to reduce permit wait times
 - Continued efforts to increase online platform user friendliness and processing times
 - Permitting fees lower than State mandates
- Review projects to meet CA Solar Mandates

Public Health Programs – Air Quality

- The Asthma Life Skills Academy for Adults (ALSAA)
 - Program provides asthma and air quality education, case management services, and resources for adults and seniors in Long Beach
 - Goals are to improve the health and well-being of adults with asthma and to assist communities in West Long Beach to reduce and/or eliminate indoor and outdoor air pollutants that may contribute to asthma, allergies, and other respiratory illnesses
- Healthy Active Long Beach
 - Program provides nutrition education and increases access to healthy foods, physical activity opportunities, and safe active transportation
 - Activities include policy, system, and environmental changes to improve nutrition security, which includes promoting and funding and managing school gardens and programming



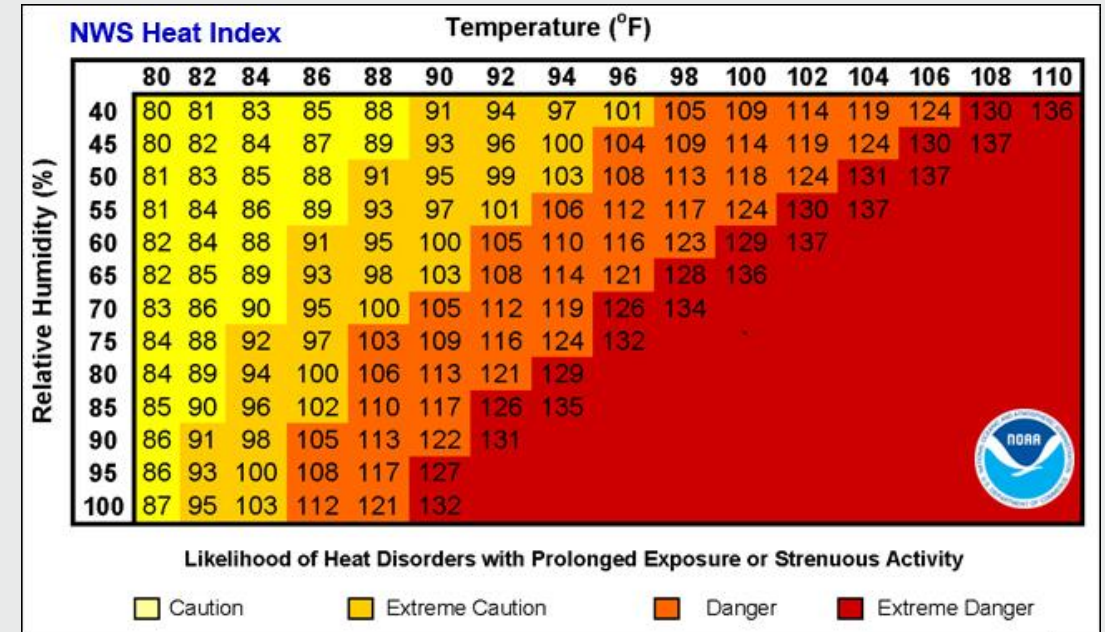
Public Health Programs – Air Quality

- Walk and Roll Long Beach
 - Program promotes street safety for all pedestrians and bicyclists in the city
 - Provides free education and resources that work to end preventable pedestrian and bicycle-related injuries
 - All people who live, learn, work and play in Long Beach can share streets safely to help reduce injuries and collisions.
- Tobacco Education and Prevention Program
 - Program builds a healthier community by reducing the use of tobacco and exposure to secondhand smoke in the City of Long Beach
 - Provides referrals for people that want to quit smoking, works with apartment owners to create smoke-free living options and creates culturally appropriate tobacco control materials for the Long Beach Community



Public Health Programs – Extreme Heat Monitoring

- Public Health Emergency Management (PHEM)
 - City has an Extreme Heat Event Plan
 - As part of the plan, the weather is continually monitored for extreme heat events (EHE)
 - EHEs are dependent on many factors:
 - Time of year
 - Temperature
 - Humidity
 - Cloud cover
 - Heat index is used to track EHEs since it accounts for temperature and humidity



Public Health Programs – Extreme Heat Response

- **Potential Response Actions**
 - Issue press release listing:
 - Available cooling centers
 - Education on signs of heat illness
 - Duration of EHE
 - Social media posts to keep public informed
 - Coordinate with Fire, PD, and Parks to see if additional cooling centers are needed
 - Alert local hospitals and monitor for increased heat-related illness paramedic calls
 - Activate the Emergency Operations Center (EOC) and coordinate with LA County EOC



Clean Air Action Plan

GOALS

- Zero emission cargo handling equipment by 2030
- Zero emission trucks by 2035
- Reduce GHGs 40% below 1990 levels by 2030
- Reduce GHGs 80% below 1990 levels by 2050

KEY STRATEGIES

- Clean Trucks Program
- Vessel Incentive Programs
- Technology Advancement Program
- Grants - **\$331 million secured since 2017**



Zero Emissions, Energy Resilient Operations (ZEERO) Policy

The Board of Harbor Commissioners adopted the ZEERO Policy in January 2023, which includes six key elements...

Zero Emissions	Energy Initiative	Low Carbon Ships	State & Federal Renewable Energy Goals	Decarbonization Goals	Equity
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- Zero Emissions Infrastructure and Power Systems Capital Improvement Program
- Energy assets to ensure continuity and resiliency of critical port operations
- Accelerate deployment of lowest carbon alternatives for ocean going vessels
- Support state and federal efforts to develop and supply renewable energy
- Carbon-neutral Harbor Department administrative operations by 2040
- Equitable economic opportunities and public health benefits

Community Grants Program

- \$65 million to reduce Port-related impacts through community-based mitigation projects
- Targets community health, facility improvement, and community infrastructure projects
- \$15.4 million allocated to parks, stormwater projects, tree plantings, energy efficiency improvements, electric transportation, solar generation & water heating in Long Beach since 2009



**Accepting Concept Papers Now
for Parks Projects
\$7 million Available**

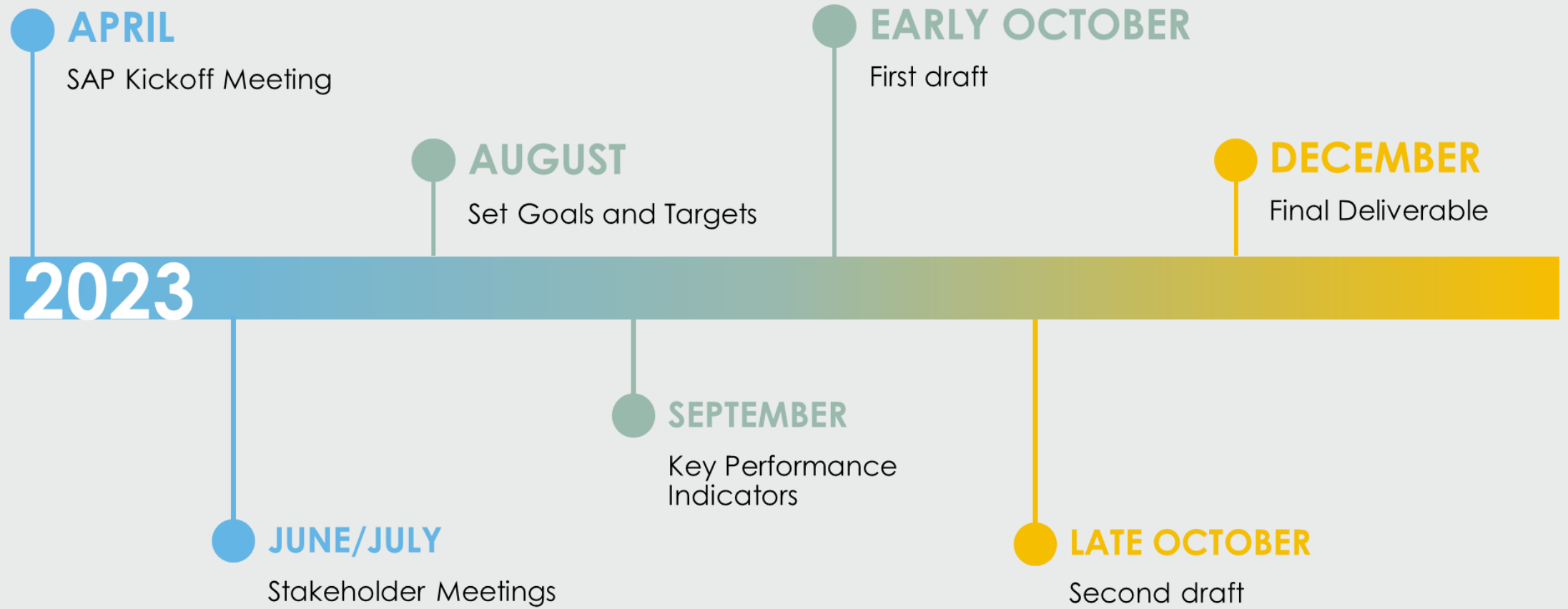
Airport Sustainability Plan

Sustainability Action Plan Focus Areas

- **AIR QUALITY AND EMISSIONS CONTROL**
- ENERGY REDUCTION AND EFFICIENCY
- WATER QUALITY
- WATER CONSERVATION
- SOLID WASTE AND RECYCLING
- **NOISE MANAGEMENT**
- COMMUNITY

Airport Sustainability Plan

SAP Project Schedule



Long Beach Airport – Air Quality and Emissions Control

- LGB has made progress towards reducing its carbon footprint by reducing Scope 1 and 2 GHG emissions on a per passenger basis over 25% below 2016 levels
- LGB is complying with mandates in the Air Quality Improvement Plan (AQIP) and the Memorandum of Understanding (MOU) with the South Coast Air Quality Management District (SCAQMD)
- LGB has achieved Level 2 airport carbon accreditation and is implementing a Carbon Management Plan
- Pursuing Federal grants to acquire electric vehicles and charging infrastructure

Where do we go from here?

- CAP Action Items
- Upcoming Department CAP Projects and Programs
- Tracking Progress
- Next Steps
- What Can You Do

Extreme Heat – CAP Goals and Objectives

Goal:

- Long Beach building, neighborhoods, & infrastructure are climate resilient, reduce the urban heat island effect, and ensure public health and safety from extreme heat events

Objectives:

- New & existing buildings, streets, and public spaces, reduce extreme heat through cool surfaces & green infrastructure
- All residents have access services & programs to withstand extreme heat
- Public Transit is a comfortable & viable options during extreme heat events

Extreme Heat – CAP Action Items

- EH-1. Increase Presence of Cool Roofs and Cool Walls
- EH-2. Increase the Presence of Reflective Streets, Cool Surfaces, and Shade Canopies
- EH-3. Enhance and Expand Urban Forest Cover and Vegetation
- EH-4. Install Additional Water Fountains and Take Other Actions to Increase Public Access to Water
- EH-5. Identify Future Vulnerability Potential for Power Outages Related to Extreme Heat and Develop Plans to Prevent Such Outages
- EH-6. Enhance and Expand Accessibility of Cooling Centers
- EH-7. Provide Bus Shelter Amenities
- EH-8. Improve Beach and Coastal Transit Access During Extreme Heat Events

Extreme Heat – Action Items Co-Benefits

- Reduced:
 - Energy use & increased cost savings
 - GHG emissions
 - Dependence on single-use plastic water
 - Plastic trash
- Increased:
 - Thermal comfort
 - Life span for asphalt surfaces
 - Energy capacity
 - Transit ridership
- Improved:
 - Air quality
 - Grid stability

Air Quality – CAP Goals and Objectives

Goal:

- All Long Beach communities have clean air and improved public health

Objectives:

- Buildings & facilities reduce air pollution as a component of a broader energy reduction strategy
- Emissions are reduced by shifting to cleaner equipment & vehicles
- Air quality impacts from local oil & gas operations minimized

Air Quality – CAP Action Items

- AQ-1. Incentivize Installation of Photocatalytic Tiles
- AQ-2. Encourage Urban Agriculture Practices that Reduce Air Quality
- AQ-3. Support the Development of the Long Beach Airport Sustainability Plan
- AQ-4. Electrify Small Local Emitters, Such as Lawn and Garden Equipment, Outdoor Power Equipment, and Others
- AQ-5. Work With LBUSD to Support School Bus Electrification
- AQ-6. Implement the San Pedro Bay Ports Clean Air Action Plan
- AQ-7. Increase Monitoring and Regulation of Oil Extraction and Refining Process

Air Quality – Action Items Co-Benefits

- Reduced:
 - Air pollution
 - GHG emissions
 - Urban heat island effect
 - Waste
 - Noise from small emitters
- Increased:
 - Local food security
 - Public Health benefits
 - Potential for energy savings
 - Energy efficiency
 - Data to inform state and regional partners on health benefits
- Improved:
 - Local food system
 - Public Health

Extreme Heat & Air Quality – Equity

Extreme Heat

- Prioritize neighborhoods most impacted by EH through:
 - Enhanced urban cover forest
 - Shade & cool pavement
 - Public Water access
 - Power outage plan
 - Cooling Centers
 - Bus stop amenities
 - Beach & coastal transit

Air Quality

- Prioritize neighborhoods most impacted by AQ through:
 - Photocatalytic tiles
 - Urban agriculture
 - Work w/ regulators to assist & incentivize for commercial landscapers & resident
 - Phase out diesel buses
 - Discussion & feedback from members
 - Find areas for air monitors

How are you proposing to implement the CAP?

- Increase urban forest cover citywide by an additional 20,000 trees
- Continue to obtain Zero Emissions Vehicles for City Fleet
- Encourage transit-oriented and energy efficient development, while planning for equitable and high-quality open space and recreation
- Parks Strategic Plan actions call for parks and open space to be a driver of addressing climate change

What is the progress anticipated in the upcoming year?

- Continue Open Space and Recreation Element Update that is underway
- Begin the Urban Forest Master Plan update
- Implement LB CAP Development Checklist
- Completion/Implementation of the Airport's Sustainability Action Plan
- Increase the urban forest cover through tree planting on street and park projects
- Consult other cities which have implemented cool pavements
- Partner with Conservation Corps of Long Beach as well as neighborhood and community groups to increase the number of trees planted
- Develop and implement plan to provide ongoing watering and maintenance for trees

What is the progress anticipated in the upcoming year?

- Continue to operate the popular Mulch Delivery and Pick-up programs, which provide benefits to residents while keeping valuable organic material in Long Beach, thereby reducing emissions associated with transportation of waste material
- Continue to promote urban agriculture and community gardens
- Develop plans for a Direct-Install Rain Garden program aimed at capturing and beneficially using stormwater
- Improve and maintain computerized tree inventory system to keep track of tree trimming, removals, plantings, or emergency work at any tree site
- Expand partnering with workforce development programs, Conservation Corps of Long Beach, neighborhood groups, and non-profits on tree stewardship
- Develop Street Design Guide with guidance from the CAP and Vision Zero Plan

What metrics are you tracking to know you'll be successful?

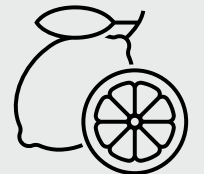
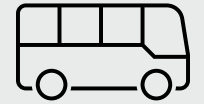
- Number of hospitalizations for heat-related sickness during extreme heat
- Building code amendments and incentives for cool roofs and solar
- Number of solar permits
- Number of trees planted and percent tree canopy coverage
- Number of lane miles of cool pavement
- Number of publicly accessible cooling centers
- Percent of bus stops with shade structures
- Percent of ships utilizing shore power at POLB
- Percent of electric vehicles at LGB

Next Steps

- Continue Climate Action Plan working group meetings
- Expand existing programs
- Establish new programs identified in CAP
- Evaluate progress and retool programs as needed

Extreme Heat and Air Quality – What Can You Do?

- Take public transit, bicycle, and walk instead of driving when possible.
- Use blackout curtains to keep your home cool and be aware of local air-conditioned locations such as cooling centers.
- Shop locally at farmers markets, local businesses, and thrift stores to reduce transportation emissions and support the local economy.
- Create an emergency plan with your household. Get to know your neighbors so that all can be better connected in case of an emergency.





Thank you

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