

Objectives of this agenda item

1. Select climate change scenarios to use in various analyses
2. Identify hazards associated with climate change
3. Identify assets associated with each hazard

Objective #1: Select Scenarios to use in various analyses

In order to evaluate and understand the effects of climate change on Carmel, the committee should establish baseline assumptions for one or more scenarios, where each scenario might include estimates for local climate impacts as well as local/global sea level rise.

Time Horizons: Generally, cities chose 2030/2060/2100 scenarios.

Climate Change Outlook: In order to understand predicted weather (rainfall, temperatures, etc.), the California Climate Change Assessment speaks mostly in terms of RCP4.5 and RCP8.5. The committee could standardize on one of these pathways for the selected scenarios, or make an alternative decision:

- RCP 4.5: a mitigation scenario where global CO2 emissions peak by 2040; or
- RCP 8.5: business-as-usual scenario where CO2 emissions continue to rise throughout the 21st century

Sea Level Rise: In order to evaluate coastal effects of climate change, the committee could choose to make assumptions about the expected sea level rise associated with the selected scenarios:

- Santa Cruz chose 2030: 4 inches, 2060: 28 inches, 2100: 63 inches
- Pacific Grove chose 2100: 55 inches
- Monterey chose 2030: <1 foot, 2060: ~2 feet, 2100: ~5 feet

Objective #2: Identify hazards associated with climate change

Hazards:

- Climate Change
- Sea Level Rise
- Wildfire Risk

Objective #3: Identify Assets at risk from each hazard

Hazard: Climate Change, including: Temperature and Precipitation changes, Fog pattern alterations, Extreme Storm Events, Extreme Drought Events

- Drainage and localized flooding
- Natural Environment (vegetation and animal life)
 - Mission Trail
 - North Dunes
 - Urbanized Forest
- Water Supply – Drought tolerant?
- Energy supply – availability and reliability
 - Increased reliance on electricity with electric cars?
 - Storm impacts on generation and distribution
 - Temperature impacts on generation and distribution
 - Wildfire impacts on distribution
- Transportation
 - Resiliency of regional transportation infrastructure and effects on local economy
 - Stability of city roads
- Wastewater
- Elderly population
- Second homes

Hazard: Sea Level Rise

- Beach “drowning”
- Cliff retreat
- Sandy slope retreat (8th Avenue, Ocean Avenue, and the areas in between)
- Seawall and revetment Impacts
- (Currently) Buried Infrastructure
 - Gas, electric, sewer
- Physical Plant
 - Scenic Road
 - Restrooms
 - Stairs, seawalls, storm drains
- Private property

Hazard: Wildfire Risk

- Originations within town
- Originations from within Pescadero Canyon
- Originations from within Mission Trail Park
- Originations from external areas (Pebble Beach, etc.) travelling into residential Carmel