







06

HEALTH + SAFETY ELEMENT

The Health and Safety Element identifies the policies and actions necessary to sustain the health and safety of Alameda residents and visitors to reduce the risk of death, injuries, property damage, environmental degradation, economic and social dislocation, and excessive and harmful noise from the natural and man-made hazards in the City of Alameda.



THE GOALS OF THE SAFETY + NOISE ELEMENT ARE TO:

<p>GOAL 1</p>  <p>PROTECT</p> <p>Protect the health, safety and general welfare of Alameda residents, workers and visitors.</p>	<p>GOAL 2</p>  <p>LIMIT</p> <p>Limit exposure to natural and man-made hazards.</p>	<p>GOAL 3</p>  <p>MINIMIZE</p> <p>Minimize disruption of essential public services, facilities, and infrastructure as the result of public health emergencies or natural disasters.</p>
<p>GOAL 4</p>  <p>RECOVER</p> <p>Facilitate timely and complete recovery from a natural disaster.</p>	<p>GOAL 5</p>  <p>AWARENESS</p> <p>Increase public understanding and awareness of hazards and hazard mitigation.</p>	<p>GOAL 6</p>  <p>INCLUSION</p> <p>Promote participation in mitigation and resilience actions by Alameda residents, workers, and partner agencies.</p>



SPOTLIGHT

THE HEALTH + SAFETY ELEMENT IS INFORMED BY:

- *The City of Alameda Climate Adaptation and Hazard Mitigation Plan*
- *City of Alameda Emergency Operations Plan*
- *Association of Bay Area Government's Resilience Program*
- *Adapting to Rising Tides, Transportation Vulnerability and Risk Assessment Pilot Project (prepared by Metropolitan Transportation Commission, California Department of Transportation and the San Francisco Bay Conservation and Development Commission)*
- *Adapting to Rising Tides: Alameda County Shoreline Vulnerability Assessment (prepared by the Alameda County Flood Control and Water Conservation District and the San Francisco Bay Conservation and Development Commission)*
- *Adapting to Rising Tides: Oakland/Alameda Resilience Study (prepared by the San Francisco Bay Conservation and Development Commission and the Association of Bay Area Governments)*
- *California Governor's Office of Emergency Services*
- *United States Geological Survey Earthquake Preparedness*
- *The National Oceanic and Atmospheric Administration: Weather-Ready Nation*
- *Alameda Climate Action and Resilience Plan + Social Vulnerability Assessment Appendix*

INTRODUCTION TO HEALTH + SAFETY ELEMENT

Alameda residents are susceptible to a number of global natural hazards, including climate warming and pandemics, which pose immediate and future health and safety risks for Alameda residents.

Alameda is also susceptible to a variety of local natural hazards, including earthquake shaking and liquefaction, tsunamis, flooding due to storm events, and inundation from sea level and groundwater rise.

Man-made hazards include health and safety risks from the Oakland airport's operations, including airplane emissions and noise, automobile and truck emissions and noise, and subsurface and above ground storage and use of hazardous materials.

7.1 EMERGENCY MANAGEMENT

Alameda aspires to be a resilient city that is able to adapt to a changing climate and reduce the loss of life, property damage, and environmental degradation from disasters while accelerating economic recovery from those disasters. Alameda enhances community resilience by improving the buildings and infrastructure we all rely on, responding to disasters quickly and effectively, helping owners rebuild damaged buildings quickly, protecting tenants, and keeping businesses open during recovery.

Disasters are rarely limited to jurisdictional boundaries. The Federal Disaster Mitigation Act of 2000 encourages state, regional and local agencies to work together to mitigate hazards. The City of Alameda maintains an Emergency Management Program to coordinate the City's response to public health and safety emergencies and natural disasters.



OBJECTIVE 1

Minimize risks of loss of life, personal injury, property damage and environmental degradation by developing, monitoring and updating comprehensive and collaborative emergency preparedness and recovery programs.

POLICIES:

HS-1

Emergency Preparedness. Maintain emergency management and disaster preparedness as a top City priority.

Actions:

- a. **Update Emergency Operations Plan.** Maintain and update the recommendations and standards established in the City of Alameda's Emergency Operations Plan as the guide for disaster planning in Alameda.*
- b. **Training.** Maintain training programs to ensure that City personnel are sufficiently prepared to respond to an emergency and staff the Emergency Operations Center.*
- c. **Facilities.** Identify and publicize essential emergency facilities in the City, including shelters, evacuation routes, and emergency operation staging areas, and take the necessary actions to ensure that they will remain operational following a disaster.*
- d. **Exercises.** Conduct periodic emergency response exercises to test the effectiveness of local preparedness response, recovery, and mitigation procedures.*

HS-2

Emergency Operations Center. Continue to maintain and support the Operations Center with current technology and emergency preparedness best practices so the City is well prepared to respond to a major emergency event. (See also Policy ME-9).

HS-3

Emergency Coordination. Coordinate local emergency preparedness efforts with the Federal Emergency Management Agency, California Office of Emergency Services, Coast Guard, United States Maritime Administration Ready Reserve Fleet, the San Francisco Bay Area Water Emergency Transportation Authority, Alameda County, East Bay Municipal Utility District, the Port of Oakland, adjacent jurisdictions, CalWARN, the Alameda Unified School District, the various private schools in Alameda, local hospitals, housing facilities for seniors or individuals with disabilities, and other local and regional police, fire and public health agencies in preparation for natural and man-made disasters, and ensure that the City's disaster response communication technologies are compatible with other agency communication technologies. (See also Policy CC-3).



SPOTLIGHT

EARTHQUAKE HAZARDS

72%

According to the United States Geological Survey (USGS), the chance of an earthquake of M6.7 or greater in the **Bay Area in the next 30 year is estimated to be 72%¹.**

33%

The chance of a M6.7 or greater earthquake on our closest fault, **the Hayward - Rodgers Creek Fault, in the next 30 years is estimated to be 33%.**

10%

Combining all likely scenarios, Alameda has an estimated 10% chance of experiencing “Severe” to “Violent” (MMI XIII to MMI IX) shaking in the next 50 years.

¹Accessed October 9, 2021. www.usgs.gov/faqs/what-probability-earthquake-will-occur-los-angeles-area-san-francisco-bay-area?qt-news_science_products=0#qt-news_science_products

HS-4

Public Communication. Maintain and promote community programs to train volunteers, support vulnerable community members like seniors and individuals with disabilities, coordinate with food banks and other local aid organizations, and assist police, fire, and civil defense personnel during and after a major earthquake, fire, or flood. (See also Policy CC-1).

Actions:

- a. **Volunteers.** *Maintain community based emergency preparedness training programs targeted to neighborhoods and business groups, such as Community Emergency Response Teams and outreach and coordination with Voluntary Organizations Active in Disasters (VOAD) and other community based programs.*
- b. **Education.** *Prepare and/or make available public education and awareness materials in multiple languages on all aspects of emergency preparedness, including the type and extent of hazards in the community, measures to reduce the likelihood of damage and injury, provisions for emergency supplies, steps to take immediately after a disaster, and the location of shelters and medical facilities.*
- c. **Targeted Communication.** *Engage Alamedans using a wide range of tools, languages and strategies to communicate about all types of health threats and planning, with a special emphasis on the most vulnerable people who are least likely to know about or be able to adapt to various threats.*
- d. **Resilience Hubs.** *Promote resilience hubs, community-serving facilities augmented to support residents, coordinate resource distribution and services before, during, or after a natural hazard event, and reduce carbon pollution while enhancing quality of life.*

HS-5

Vision Zero. Ensure that the City prioritizes public safety through the implementation of a Vision Zero policy to reduce annual pedestrian and bicyclist fatalities and serious injuries resulting from collisions with faster moving vehicles and unsafe street design. (See also LU-3, ME-5, ME-7, ME-10 and the Mobility Element Spotlight on Vision Zero).

HS-6

Crime, Policing and Safety. Prioritize resources for prevention instead of enforcement. (See also Policies ME-2, ME-7 and ME-10).

- a. **Lighting.** *Ensure public rights-of-way are well-lit at night, especially at intersections and on bike and pedestrian trails, to improve traffic and crime safety for people walking and rolling.*

- b. Eyes and Feet on the Street.** *Promote walkable places that are oriented to the public right-of-way to prevent crime and to increase security.*
- c. Mental Health.** *Prioritize use of mental health professionals over use of police officers when addressing complaints regarding nuisance or illegal behavior by individuals with potential mental health issues.*

HS-7

Infectious Disease Preparedness. Prepare for outbreaks of more regular infectious diseases like the flu and less common events including pandemics. (See also Policies ME-14, CC-5, CC-6, and CC-13).

Actions:

- a. Response Plans.** *Develop and maintain comprehensive local response plans to infectious diseases, in consultation with Public Health Departments, focused first on protecting the most vulnerable populations from disease, displacement and other consequences of an infectious disease event.*
- b. Preparedness.** *Be prepared to make public and private space, such as public streets, parking lots, parking lanes and sidewalks available to accommodate physical distancing such as through outdoor dining, drop off and pick up zones, slow streets, and parklets.*
- c. Contactless.** *Continue to modernize public facilities and equipment, such as traffic signal “push buttons,” parking meters, and foot handles on doors and gates, to minimize the need for touching shared surfaces to reduce the risk of spreading infection.*
- d. Digital Infrastructure.** *Continue to work with service providers to ensure that all Alameda residents and businesses are adequately served by digital infrastructure needed to work or learn remotely.*
- e. Overcrowding.** *Minimize residential overcrowding by meeting local and regional housing needs.*
- e. Curb Flexibility.** *Explore more flexible uses for curb space to facilitate parklets, outdoor dining and pickup/drop-off zones.*
- f. Air Quality.** *Continue to work to improve indoor and outdoor air quality.*

HS-8

Resilience and Recovery. Develop informed long-range plans to respond to economic and health crises.

Actions:

- a. Data and Information.** *Ensure that data collection is prioritized so that data-informed decisions are driving recovery efforts with regard to equity, prioritization of investments, infrastructure, public health and safety.*
- b. Budget and Prioritization.** *Ensure that revenue projections are well integrated into plans and assessments are made for immediate and long-term priorities regarding what items have a direct impact on recovery, what items are required by the State, and what items should be longer-term investments.*
- c. Economic Recovery.** *Prioritize the needs of the most economically vulnerable members of the community, including small businesses, in economic recovery plans and programs.*
- d. Community Resilience.** *Build capacity for quick and effective recovery from disasters and disruptions both within the communities most impacted and from the City itself.*



SPOTLIGHT

LOCAL HAZARD MITIGATION PLAN

The Local Hazard Mitigation Plan (LHMP) for the City of Alameda was developed in accordance with the Disaster Mitigation Act of 2000 (DMA 2000) and followed FEMA's 2011 Local Hazard Mitigation Plan guidance. The LHMP incorporates a process where hazards are identified and profiled, the people and facilities at risk are analyzed, and mitigation actions are developed to reduce or eliminate hazard risk. The implementation of these mitigation actions, which include both short and long-term strategies, involve planning, policy changes, programs, projects, and other activities. The LHMP is available for review at: www.alamedaca.gov/HazardMitigationPlan.



Photo: flickr @clogozm

7.2 SEISMIC + GEOLOGIC HAZARDS

Earthquakes are the most significant geologic hazard facing the residents and businesses in Alameda. In addition to the initial shaking, Alameda is also subject to liquefaction, lateral spreading, and tsunamis resulting from earthquakes. Figure 7.1 illustrates the proximity of Alameda to the Hayward and San Andreas faults. The likelihood of liquefaction and lateral spreading in Alameda is high in areas with artificial fill and loose sands and silts, such as along the shoreline. Strong shaking causes the ground to behave like a liquid and may sink, spread or erupt in sand boils. This can cause pipes to break, roads and airport runways to buckle, and building foundations to be damaged. In Alameda, the 1989 Loma Prieta earthquake caused damage to buildings, water mains, sewer lines, streets and bulkheads. Liquefaction occurred at Alameda Point and Harbor Bay Business Park. South Shore experienced buckled streets and sidewalks and subsidence that disrupted the sanitary sewer and required construction of a new sanitary sewer pump station. Future earthquakes that are closer or larger magnitude than Loma Prieta may cause more significant damage, especially for Alameda's relatively old housing stock and unique historic commercial buildings which were generally constructed without the benefit of modern building code requirements to resist earthquake shaking.

Figure 7.2 illustrates Alameda's susceptibility to severe liquefaction in the event of ground shaking. Climate change may increase the risk of liquefaction. Rising sea levels will cause rising groundwater levels in Alameda. Liquefiable soils that become saturated with groundwater are at increased risk of liquefaction. As the risks grow, so does the need for Alameda to strengthen its requirements to make buildings safer and more resilient to severe ground shaking and liquefaction.





OBJECTIVE 2

Minimize risks of loss of life, personal injury, property damage and environmental degradation posed by earthquakes and other geologic hazards.

POLICIES:

HS-9

Building and infrastructure Standards. Maintain up-to-date building codes and encourage or require new and existing buildings and infrastructure to be designed or retrofitted for timely restoration of service (functional recovery) following an earthquake, with particular attention on the effects of liquefaction on buildings and infrastructure.

HS-10

Transportation Facilities. Work with Caltrans, the Metropolitan Transportation Commission, the Alameda County Transportation Commission and other regional, state and federal partners to fund earthquake strengthening protection for critical public regional transportation facilities, such as the Posey and Webster Tubes, the Miller Sweeney Bridge and the High Street Bridge. (See also Policies ME-9 and ME-15).

HS-11

Lifeline Standard Estuary Crossing. Work with Caltrans, Alameda County, and other regional agencies to retrofit and improve at least one estuary crossing to meet a lifeline standard to ensure access to the larger region for emergency access, equipment supplies, and disaster response and recovery shortly after a major seismic event. (See also Policy ME-6).

HS-12

City Buildings and Infrastructure. Continue to strengthen and rehabilitate city buildings and infrastructure, including but not limited to waste water systems and pump stations, stormwater systems and pump stations, and electric system and facilities to ensure that the City can respond effectively to a seismic event and to provide resilience and long-term functionality (See also Policies CC-4, CC-5, CC-13, CC-14, CC-16, and CC-22).

- a. **Stormwater System.** *Rehabilitate the existing storm system conveyances and pump stations to increase capacity and resilience during storms, high tides, sea level rise, seismic events, and power outages, thereby decreasing the chance of flooding of nearby streets, utilities, and buildings.*
- b. **Sewer System.** *Protect vulnerable wastewater system and facilities to minimize disruption to the systems following ground shaking and extreme weather events and consider the impact of rising groundwater levels and increasing salinity on buried utility infrastructure.*
- c. **Electric System.** *Protect vulnerable electric systems and facilities. Ensure electrical infrastructure is flood-proofed or elevated and strengthened for earthquakes. Where possible, move assets out of the hazard zone, including elevating utility junction boxes and other electrical infrastructure on scaffolding.*
- d. **Transportation.** *Work with Caltrans and the Alameda County Transportation Commission to identify funding to adapt and strengthen the regional and local roadways in Alameda.*



Protecting public and private property from natural disasters and hazards is a main goal of the General Plan.





SPOTLIGHT

ABANDONED FRUITVALE RAIL BRIDGE: PUBLIC SAFETY HAZARD

Built in 1951, the last train crossed the Fruitvale Rail Bridge 20 years ago, in 2000. Owned by the U.S. Army Corps of Engineers, the bridge poses a seismic safety hazard to the adjacent Miller-Sweeney Bridge. According to a 2011 U.S. Army Corps of Engineers report, the rail bridge “is severely overstressed for current seismic loading requirements and it is likely that the structure would collapse from such an event,” and the capability of the bridge to withstand current earthquake loading “is significantly below current code requirements.” In contrast, the Miller-Sweeney Bridge has been maintained to a “no collapse” structural standard by the County of Alameda and serves as a critical link to the region in the event of a major seismic event, provided that the abandoned rail bridge does not collapse onto it. The City of Alameda is working with the federal government to fund the removal or rehabilitation of this public safety hazard.



HS-13

Private Buildings. Require owners of vulnerable structures, to the extent feasible, to retrofit existing structures to withstand earthquake ground shaking, and require retrofitting when such structures are substantially rehabilitated or remodeled.

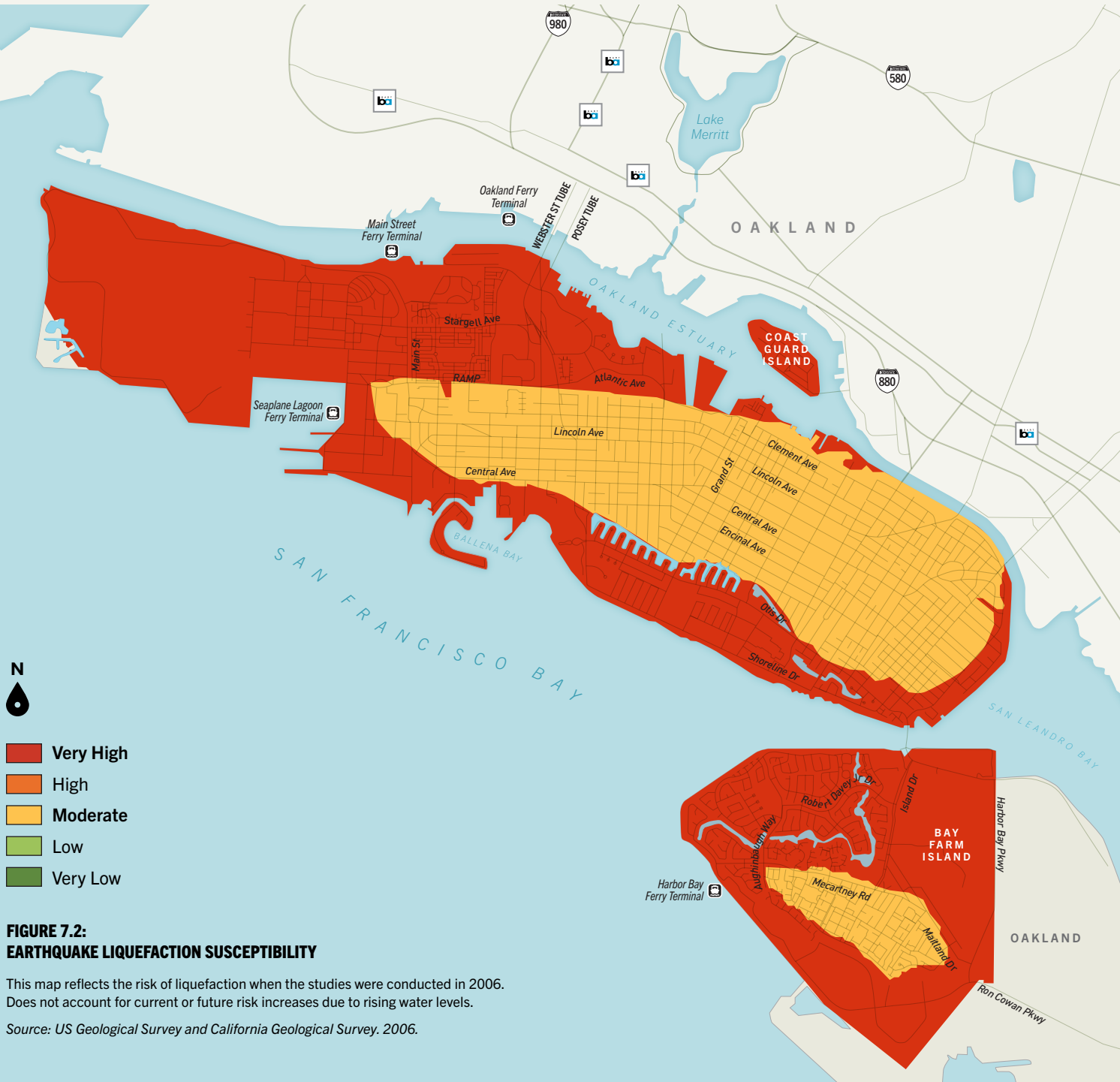
Actions:

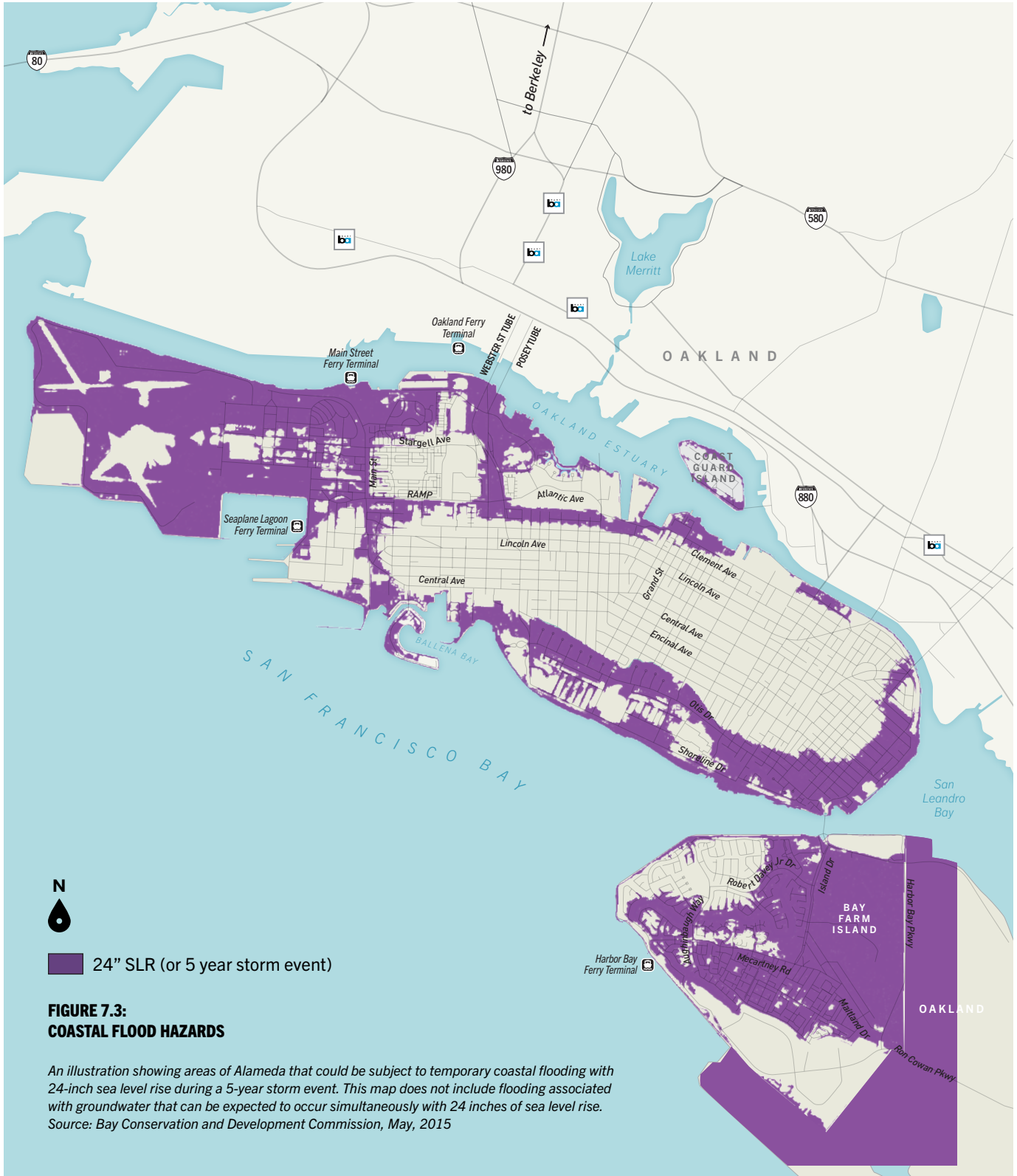
- a. **Soft Story Program.** Continue to implement and expand the City’s Soft Story Program, including mandatory requirements for substantially improving the seismic performance of multi-family wood frame residential buildings with open ground floor parking or commercial spaces known as soft stories.
- b. **Wood Framed Building Program.** Continue to implement and expand the City’s Wood Framed Building Program, including requirements for substantially improving the seismic performance of one- and two-story wood frame residential buildings with vulnerable “cripple walls”.
- c. **Non-ductile Concrete Buildings.** Identify, evaluate and retrofit non-ductile concrete residential and nonresidential buildings that are vulnerable to collapse in earthquakes.
- d. **Chimneys.** Encourage owners to remove or rebuild masonry or stone chimneys vulnerable to collapse in earthquakes.
- e. **Incentives.** Develop incentives and assistance to help property owners make their homes and businesses more earthquake-safe. Pursue a variety of funding sources, such as grants, low-interest loans, tax credits and zoning waivers and density bonuses, to assist residents and businesses with seismic upgrades. Provide exemptions from City zoning requirements, such as off-street parking and/or common open space to facilitate the retrofitting of vulnerable privately-owned buildings.
- f. **Shoreline Property Management.** Require owners of shoreline properties, to the extent feasible, to inspect, maintain, and repair the perimeter slopes to withstand earthquake ground shaking, consolidation of underlying bay mud, and wave erosion.
- g. **Cool/Green Buildings.** Incentivize and consider requiring the installation of cool roofs, green roofs, and/or other energy-efficient cool building methods to mitigate heat impacts and reduce runoff.

SPOTLIGHT

WHAT IS LIQUEFACTION?

Liquefaction is a phenomenon where loose saturated sandy and silty soils lose strength and behave like a liquid during the intense shaking of an earthquake. The highest hazard areas are concentrated in regions of man-made landfill, especially fill that was placed many decades ago in areas that were once submerged bay floor.





7.3 FLOODING + GROUNDWATER + SEA LEVEL RISE

As a low-lying community in the San Francisco Bay Area, Alameda is uniquely sensitive to flooding caused by high tides, storm events, and climate change induced sea level rise. The city of Alameda normally experiences tides that range from -0.2 Mean Lower Low Water (MLLW) to +6.4' Mean Higher High Water (MHHW), based on the NAVD88 datum. (The NAVD88 datum or zero elevation is approximately the same as the elevations used in local tide tables.) The highest tide of the year, or “King Tide,” normally occurs during the winter months of November to February, and is usually about 7.4'. Every year, there is a 1% chance the King Tide will exceed 9.4'. The ten highest King Tides recorded by NOAA in Alameda for the last 75 years measured 8.6' to 9.5' elevation.

Winter months are also when Alameda is likely to experience storms. During an extreme storm event, the sea level can temporarily rise several feet above the level predicted by tide tables. During the El Niño event of 1997- 98, up to two feet of standing water occurred on Main Street, due to higher sea levels during high tide and heavy rainwater runoff. In 1981, storms eroded Crown Beach to the edge of Shoreline Drive. In 2006, storm waves damaged the Harbor Bay Ferry Terminal, and washed away portions of the adjoining Bay Trail.

Storm hazards will occur more frequently and more extensively in the future due to climate change, which contributes to both sea level rise and more intense storms. Much of the Alameda shoreline and adjacent properties and infrastructure are particularly vulnerable to inundation as the result of climate induced storms and sea level rise. As the sea level rises, the groundwater levels will also rise so that even smaller high tides and storms result in flooding along shorelines, lagoon systems, and in low lying inland areas throughout Alameda. Rising groundwater levels may undermine foundation strength, damage sewer and other underground utilities, expand earthquake liquefaction hazard zones, and facilitate the emergence of underground hazardous materials.



OBJECTIVE 3

Minimize risks of loss of life, personal injury, property damage and environmental degradation posed by drought, sea level and groundwater rise, flooding and stormwater runoff.

POLICIES:

HS-14

Flood Insurance. Continue the City’s participation in the National Flood Insurance Program and the Community Rating System as a Class 8 community. Identify ways to increase Alameda’s Community Rating to reduce flood insurance costs.

HS-15

Flood Hazard Maps. Prioritize the review and publishing for public discussion the latest and most up to date flood hazard and sea level rise forecasts from all trusted sources. (See also Policy CC-19).

Action:

- a. **Process.** Create a regular process by which information is updated and released, identifying staff time and budget to ensure that this information is timely, accurate and accessible for all public and private decision-makers.

HS-16

Regional Partnerships. Actively participate in regional discussions on drought, groundwater and sea level rise mitigation, infrastructure improvements, and adaptation strategies. (See also Policies LU-14, CC-3 and ME-24).

Action:

a. Funding and Partnerships. *Develop partnerships with local, regional, and state agencies to expedite adaptation projects and ensure a healthy watershed that protects and restores water quality, habitat and community vitality along San Leandro Bay and the Oakland-Alameda Estuary.*

HS-17

Public Infrastructure Priorities. Identify public transportation, open space, and stormwater and wastewater facilities, shoreline assets, and other public assets vulnerable to sea level and groundwater rise and flooding hazards, and prioritize projects for adaptation funding. (See also Policy CC-22).

Action:

a. Shoreline Facilities Program. *Implement a program for Resilient Shoreline Facilities, including performing appropriate seismic, storm, flooding and other safety analyses based on current and future use for all City-owned shoreline facilities, including dikes, shore protection (rip rap), lagoon sea walls, stormwater outfalls, marinas and protective marshlands.*

HS-18

Adaptation Strategies. In the Adaptation Pathways Master Plan (see Policy CC-21), develop sea level and groundwater rise adaptive strategies for different areas of the City for public discussion and evaluation, including but not limited to: avoidance/planned retreat, enhanced levees, setback levees to accommodate habitat transition zones, buffer zones, beaches, expanded tidal prisms for enhanced natural scouring of channel sediments, raising and flood-proofing structures, and/or provisions for additional flood water pumping stations, and inland detention basins to reduce peak discharges. (See also Policies LU-14 and CC-24).

Action:

a. Funding for Priority Flooding Mitigations. *Design and approve “shovel-ready” adaptation projects at areas of location-based priority flooding identified in the Local Hazard Mitigation Plan.*

HS-19

Public Infrastructure. Protect and upgrade public infrastructure, including but not limited to streets, wastewater systems and pump stations, stormwater systems and pump stations and electric systems and facilities to ensure capacity and resilience during storm events, high tides, and groundwater and sea level rise, to decrease the chance of flooding of nearby streets, utilities, and private property.

HS-20

Tsunami Preparedness. Prepare Alameda for tsunamis and prepare for a timely evacuation with a focus of access and functional needs populations.

Actions:

- a. Awareness.** *Develop a public information campaign to educate the public about tsunami risks and evacuation procedures, with special emphasis on access and functional needs populations and maritime communities.*
- b. Evacuation Emergency Annex.** *Include and maintain an Evacuation Emergency Annex in the Emergency Operations Plan that includes a strategy for tsunami evacuation.*
- c. Signs.** *Place tsunami inundation zone and evacuation route signs.*
- d. Vertical Evacuation.** *Assess vertical evacuation options.*
- e. Drills.** *Conduct tsunami evacuation training and drills with schools.*
- f. Partner.** *Partner with Caltrans, Alameda County, AC Transit, the City of Oakland and Port of Oakland to plan for tsunami evacuation.*
- g. Tsunami Ready.** *Become recognized as a Tsunami Ready community by the National Weather Service.*

HS-21

Resilient Rights-of-Way and Open Spaces. Design street rights-of-way, parks, other public spaces, street trees and landscaping to be resilient to temporary flooding. (See also Policies LU-2, LU-3, ME-9 and ME-10 and ME-23).

HS-22

Design for Flooding. Implement programs and amend regulations to require and incentivize flood-proofing retrofits to existing buildings in flood-prone areas, and require all new development to design for sea level and associated groundwater rise based on the most current regional projections. (See also Policies LU-30 and CC-20).

Actions:

- a. **Waterfront Setbacks.** Require new development to provide adequate setbacks along waterfront areas for the future expansion of seawalls and levees to adapt to sea level rise.
- b. **Data.** Update maps and publish open data that display these risks clearly as soon as new data or guidelines are created, such as a digital elevation model, sea level and groundwater risks, or the latest risk tolerance guidance provided by the State of California.
- c. **Building Codes.** Amend local codes to require flood-proofing techniques in defined flood hazard zones and adjacent areas to protect them from future sea level rise. Consider incorporating sea level rise into the flood management section of the Building Code to encourage, incentivize or require compliance with base floor elevation and flood-proofing requirements to mid-century sea levels.
- d. **Risk Prioritization.** Inventory and prioritize highest at-risk buildings, including those serving vulnerable populations, for resiliency upgrades.
- e. **Assistance.** Adopt fee waiver or small grant programs to help low-income households and other vulnerable residents pay for flood retrofits.

HS-23

Easements. Require the creation and maintenance of easements along drainage ways necessary for adequate drainage of normal or increased surface runoff due to storms.

HS-24

Groundwater Management. Require and enforce stringent groundwater management programs to prevent subsidence. (See also Policy CC-23).

HS-25

Green Infrastructure. Require the use of “green infrastructure”, landscaping, pervious surfaces, green roofs, and on-site stormwater retention facilities to reduce surface runoff and storm drain flooding during storm events. (See also Policy CC-33).

**SPOTLIGHT****GLOBAL WARMING + SEA LEVEL RISE**

Following sea level rise adaptation guidance from the State of California and recommendations from Alameda’s Climate Action and Resiliency Plan, the City of Alameda, until the state updates its guidance or the city updates its Climate Action and Resiliency Plan, will plan for a potential:

1.9ft

INCREASE IN SEA LEVEL BY

2050

ON THE ALAMEDA CO COASTLINE

3ft

INCREASE IN SEA LEVEL BY

2060-70

AND A

6.9ft

INCREASE IN SEA LEVEL BY

2100**Sources:**

State of California Sea Level Rise Guidance (2018)

Alameda Climate Action and Resiliency Plan (2019)

7.4 FIRE HAZARDS + EMERGENCY RESPONSE

Major fires resulting from the rupture of local gas or electric lines during an earthquake could be severely compounded by water main failures and substandard fire protection systems in older buildings.



OBJECTIVE 4

Minimize risks of loss of life, personal injury, property damage and environmental degradation posed by fire hazards.

POLICIES:

HS-26

Fire Prevention Capabilities. Maintain the City's fire prevention, disaster preparedness, and fire-fighting and emergency medical service capabilities.

HS-27

Response Time. Maintain a response time of 5 minutes, 20 seconds, 90 percent of the time, for the first fire unit to be on-scene of a fire.

HS-28

Collaboration. Work collaboratively with other jurisdictions and agencies to reduce fire hazards in Alameda, such as post-earthquake fire hazards, with an emphasis on mutual aid agreements.

Actions:

- a. **Shutoff Protocol.** Establish a local protocol to shut off natural gas supply through shutoff valves on gas meters in the highest risk neighborhoods.
- b. **EBMUD.** Develop emergency water storage facilities to provide drinking water to EBMUD customers as well as fight fires in the event an earthquake disrupts the water supply to Alameda.
- c. **Portable Fire Fighting System.** Acquire the capability to use Bay water to fight fires using a system compatible with the ones in nearby cities like San Francisco and Berkeley.

HS-29

Building Codes for New Development. Require new development to comply with the City's current Electrification, Fire, Seismic, and Sprinkler Codes.

HS-30

Prevention in Existing Properties. Encourage existing properties to minimize the risks of fire and include adequate provisions for emergency access and appropriate firefighting equipment.

Action:

- a. **Electrification.** Encourage existing properties to convert natural gas fueled space heating, water heating, clothes drying and cooking appliances to electric to minimize the risk of fires and improve indoor air quality.

HS-31

Underground Utilities. Require new development to underground utilities to minimize disruption by fire or other natural disasters. (See also Policy CC-5).

7.5 HAZARDOUS MATERIALS + WASTE

The careful management of hazardous materials and the reduction in generation and safe disposal of hazardous waste is critical to public health and safety. Hazardous materials are stored and transported throughout Alameda. Hazardous materials used in industrial and commercial areas and in households include: flammable and combustible liquids, solvents, paint, plating or photographic solutions, acids, and pesticides. Waste oil, gases, and other hazardous liquids associated with vehicle and heavy machinery maintenance are also present.



OBJECTIVE 5

Minimize risks of loss of life, personal injury, serious illness, property damage and environmental degradation posed by the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.

POLICIES:

HS-32

Transportation of Hazardous Materials. Continue to identify and assess the risks associated with various hazardous materials transported in Alameda.

HS-33

Awareness. Increase public awareness of hazardous material use and storage in the City, the relative degree of potential health hazards, and the appropriate channels for reporting odor problems and other nuisances.

Action:

a. Education on Safe Disposal. Promote public education about the safe disposal of household hazardous waste, such as motor oil and batteries, including the locations of designated household hazardous waste disposal sites.

HS-34

Hazardous Waste Reduction. Work with County, regional, state and federal agencies to implement programs for hazardous waste reduction, hazardous material facility siting, hazardous waste handling and disposal, public education and regulatory compliance.

Action:

a. Landfill Methane. Continue to remove and monitor methane gas produced as a waste product of materials decomposing in the former landfill on Doolittle Drive.

HS-35

Contaminated Sites Cleanup. Work with county, regional, state, and federal agencies and private property owners to ensure that the necessary steps are taken to clean up residual hazardous wastes on any contaminated sites.

Action:

a. New Construction. Require that all new construction, including construction on former industrial sites, has been cleared for residential, commercial or industrial uses from the appropriate federal, state and local agencies and acts, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Program, the Resource Conservation and Recovery Act (RCRA), the California Department of Toxic Substances Control (DTSC), the Regional Water Quality Control Board (RWQCB) and the Alameda County Department of Environmental Health (ACDEH), which is the Certified Unified Program Agency (CUPA) responsible for implementing state environmental regulations related to hazardous waste and hazardous materials.

b. Groundwater Rise. Review remediation timelines for contaminated sites based on a groundwater model with projected sea level rise impacts. Work with applicable agencies to adjust remediation, as applicable.

HS-36

Resource Recovery Initiatives. Continue to support the various resource recovery initiatives and other measures specified in the Alameda County Countywide Integrated Waste Management Plan. (See also CC-17).

HS-37

Hazardous Material Incident Plan. Ensure that the City's Emergency Preparedness programs include provisions for hazardous materials incidents, as well as measures to quickly alert the community and ensure the safety of residents and employees following an incident. (See also CC-27).

Action:

- a. **Training and Capability.** *Improve the training and capability of the Fire Department to handle accidental releases of hazardous materials. Provide ongoing training for hazardous materials enforcement and response personnel. Apply the Emergency Operations Plan, if necessary, in response to a hazardous materials release disaster.*

HS-38

Separation of Uses. Require adequate and safe separation between areas and uses with hazardous materials and sensitive uses such as schools, residences and public community facilities.

HS-39

Hazardous Material Containment. Require that all facilities that handle and/or store hazardous materials are designed to minimize the possibility of environmental contamination and adverse off-site impacts and that they are in compliance with state and federal standards and requirements designed to protect public health and the environment.

HS-40

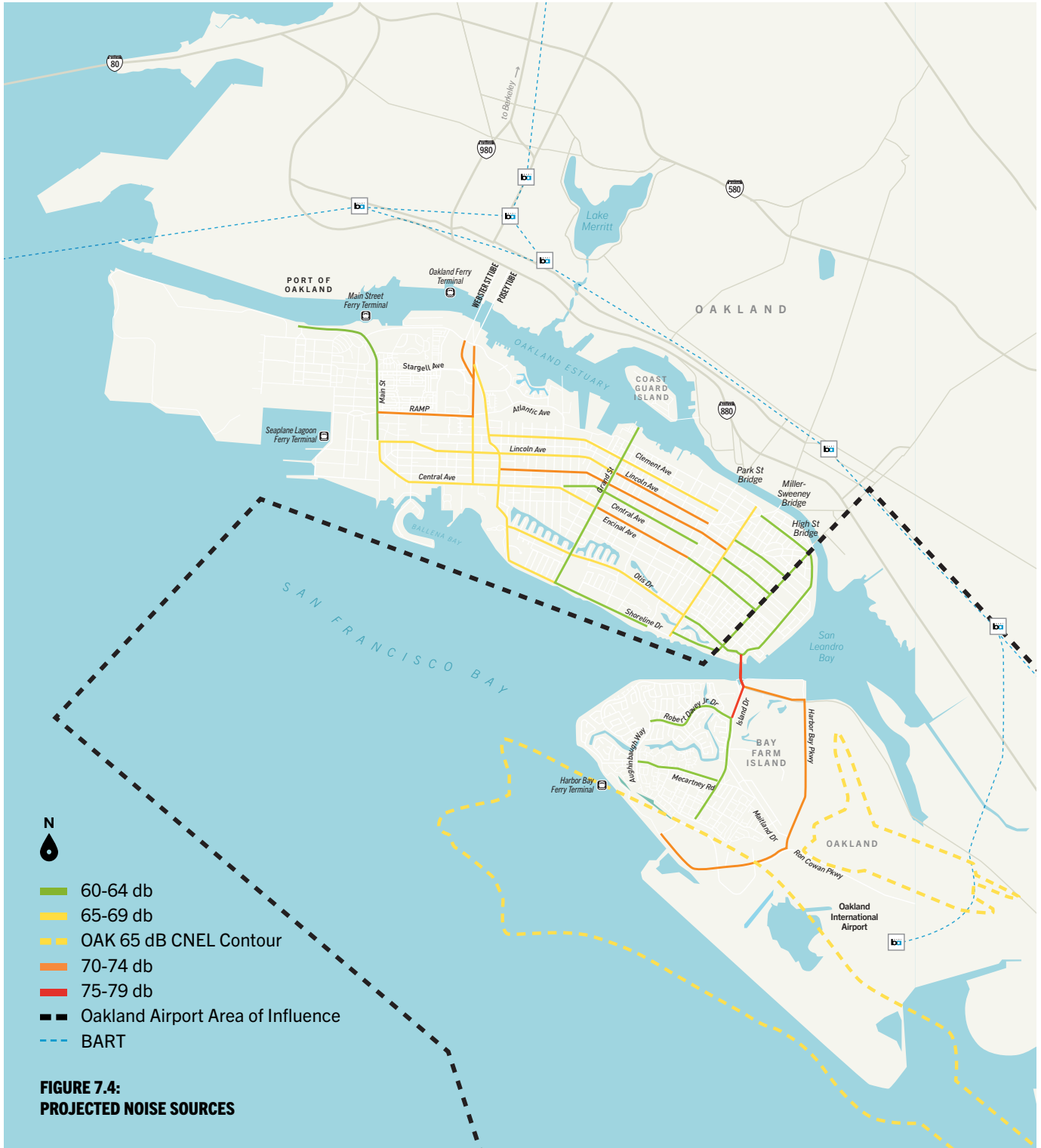
Radon Gas. Encourage residential, commercial and industrial property owners to test their properties for elevated levels of radon gas (more than 4 picocuries per liter).

Action:

- a. **Promote public education** *about the safe disposal of household hazardous waste, such as motor oil and batteries, including the locations of designated household hazardous waste disposal sites.*

7.6 NOISE + AIRPORT ENVIRONS

Located within a major urban metropolitan area, the major noise sources in Alameda are: aircraft noise, automobile and truck noise, and noise associated with certain commercial and industrial land uses, such as the Port of Oakland seaport and Coast Guard Island. Research shows excessive roadway, aircraft and/or wind turbine noise negatively impacts the memory, learning acquisition, test scores and physical well-being of children. Every effort should be made to minimize these risks in the placement of children with exposure to these noise sources. Aircraft operations at the Oakland International Airport and San Francisco International Airports are the most significant sources of noise impacts in Alameda neighborhoods. Some Alameda residents currently experience single event noise in excess of 80 dBA on a nightly basis.



The major sources of noise affecting Alameda are from the Oakland International Airport, BART lines, the railroad, the Port of Oakland, and local streets with faster moving vehicles.

Source: City of Alameda



OBJECTIVE 6

Protect Alameda residents from the harmful effects of exposure to excessive noise from aircraft, buses, boats, trucks and automobiles, and adjacent land uses.

POLICIES:

HS-41

Support Policies to Reduce Transportation Noise. Support state and federal legislation to reduce transportation noise from cars, trucks, and aircraft.

HS-42

Aircraft Noise Reductions. Through the City's federal lobbying agenda, support and advocate for operational practices, changes to aircraft, new technologies, and physical improvements that would reduce the number of properties in Alameda that are impacted by aircraft noise.

HS-43

Oakland International Airport Expansion and Settlement Agreement. Oppose any expansion of operations at Oakland International Airport that would negate or reduce the effectiveness of the noise abatement procedures established by the existing Settlement Agreements.

Action:

- a. **Monitoring and Assurance.** *Obtain assurance that the future noise exposure for Alameda is known and that aircraft operations will be controlled to ensure that the projected noise levels are not exceeded. Validation of the 65 dB CNEL contour is to be carried out by means of a permanent full-time noise monitoring system by the Port of Oakland to ensure compliance with the California Airport Noise standards and the Airport Land Use Commission Plan.*

HS-44

Single Event Noise Exposure. Work with Oakland International Airport to reduce the incidence of single event noise exposure above those currently experienced.

HS-45

Reduce Neighborhood Noise Impacts. Promote the reduction of existing and future potential harmful aircraft noise impacts in Alameda neighborhoods. (See also Policy LU-1 and ME-2).

Actions:

- a. **Community Participation.** *Actively promote participation in forums and discussions regarding operations and expansion plans for Oakland International Airport, including various working groups composed of individuals representing the City of Alameda, the City of San Leandro, the Port of Oakland, the Federal Aviation Administration (FAA), and the air transport industry to monitor the airport's noise control program and to make recommendations for the benefit of City of Alameda residents. These groups include the South Field & North Field Research Groups, Oakland Airport-Community Noise Management Forum and Oakland International Airport Aviation Stakeholder Advisory Committee.*
- b. **Representation.** *Seek local representation on all task forces, commissions and advisory boards established to guide airport policies and programs.*

- c. **Adherence.** Seek adherence by airport operators to operational, development and management policies that will minimize noise nuisance and safety concerns for Alameda.
- d. **North Field.** Work with Oakland International Airport and the FAA to limit night use of North Field to Stage 3 and Stage 4 aircraft, and pursue mitigation of aircraft noise impacts to the fullest extent possible.
- e. **Mitigation.** Ensure that any changes to aircraft operations that would potentially result in increased noise levels in Alameda incorporate comprehensive noise mitigation measures, even when the impacts will be of limited duration. To the greatest extent feasible, any changes in airport activity should avoid impacts to noise sensitive uses such as residential areas and schools.
- f. **Noise Abatement.** To the extent permitted by the 1976 Settlement Agreement, the 2001 Settlement Agreement, the 2002 Settlement Agreement, the 2003 Addendum to the Settlement Agreement and the Written Compliance Plan, advocate for noise abatement and mitigation programs that are based not only on the airport's noise contour maps, but that consider other factors such as the frequency of overflights, single-event noise levels, the altitude of aircraft, the hours of operation, low frequency noise, and sensitive receptors. Monitor implementation and compliance with the Settlement Agreements of 1976, 2001 and 2002 and the Written Compliance Plan.

HS-46

Airport Expansion. Advocate for the following operational measures to be incorporated into any plans for the expansion of the Oakland International Airport:

Actions:

- a. **Stage 3 and Stage 4 (least noisy) aircraft.** Continue to only allow Stage 3 and 4 aircraft on all runways directly overflying Alameda residential areas.
- b. **Flight path alterations for noise abatement.** Continue to enforce flight path alterations for noise abatement for all runways, with remote monitoring sites maintained in locations mutually acceptable to the Port and the City.
- c. **Touch-and-Go Operations.** Continue to prohibit touch and go operations by jet aircraft.
- d. **Noisy Engine Ground Run-Ups.** Continue to prohibit Ground Run-Ups outside of the Ground Run-Up Enclosure.
- e. **Intersection Departures.** Continue to prohibit intersection departures on Runway 28.

**SPOTLIGHT****MEASURING NOISE**

The volume or intensity of sound is measured in units called decibels (dB), generally on a scale from zero to 140.

The higher the number in decibels, the louder the noise. The louder the noise, the greater the risk of hearing loss. Hearing loss can occur with regular exposure to noise levels of 110 decibels or more for periods longer than one minute.

COMMON NOISES AND THEIR DECIBEL LEVELS:**AIRCRAFT AT TAKE-OFF: 180 DB****FIREWORKS: 140 DB****AMPLIFIED MUSIC: 110 DB****NOISY OFFICE: 90 DB****CITY TRAFFIC: 80 DB****NORMAL CONVERSATION: 60 DB****LEAVES RUSTLING: 10 DB**



SPOTLIGHT

AIRPORT LAND USE COMMISSION

State law requires the establishment of airport land use commissions (ALUCs) at the county level. The main role of the ALUCs is to develop airport land-use plans (ALUPs) to advise cities and counties on the orderly expansion of public airports over a 20-year horizon and on minimizing land-use conflicts with surrounding areas over the issues of noise and building heights. Cities and counties must generally refer general plans, zoning ordinances and land-use development proposals near airports and heliports to the ALUC for determination of consistency with the ALUP. In Alameda County, the county's Community Development Agency acts as the ALUC, monitoring Oakland International Airport, Hayward Executive Airport and Livermore Municipal Airport; it last adopted an ALUP for the county in 1986.

HS-47

Noise Monitoring. Support the Port of Oakland in continuing to maintain a permanent full-time noise monitoring system that will (a) measure noise continuously, (b) separate OAK noise events from other noise source events, particularly overflights from other airports, (c) measure and augment Community Noise Equivalent Level values, (d) provide information on excessively noisy aircraft operations, (e) monitor effectiveness of noise abatement programs, and (f) meet the performance specifications of the California Noise Standards.

HS-48

Airport Land Use Compatibility Plan. Regulate land uses within the Oakland International Airport Influence Area, designated airport safety zones, height referral areas, and noise compatibility zones to minimize the possibility of future noise conflicts and accident hazards.

Actions:

- a. **Land Use Safety and Compatibility.** *The City shall adopt by reference the Oakland International Airport Land Use Compatibility Plan (ALUCP) and shall review all development proposals east of High Street and all development proposals on Bay Farm Island (those areas within the Airport Influence Area designated in the ALUCP) for consistency with the height, safety, and noise policies identified in ALUCP Sections 3.3.2 Noise, 3.3.2 Safety and 3.3.3 Airspace Protection. The City shall further ensure compliance with all applicable Federal Aviation Administration rules and regulations, including federal aviation regulations Part 77 et seq., and State law, with respect to criteria related to land use safety and airspace protection.*
- b. **ALUC Referrals.** *For development in the Airport Influence Area, ensure that all actions listed in Section 2.6.2 of the ALUCP be referred to the Airport Land Use Commission for review prior to approval of the first discretionary action on the proposed project, or find, by a two-thirds vote of the City Council, that the proposed action is consistent with the purposes of Article 3.5 of Chapter 4 of the State Aeronautics Act, Public Utilities Code Section 21670 et seq.*
- c. **Non-conforming Land Uses.** *Limit the expansion and reconstruction of non-conforming land uses as described in Section 2.7.5.7 of the ALUCP.*

COMMUNITY NOISE EXPOSURE

LAND USE CATEGORY	Ldn or Cnel, dB					
	55	60	65	70	75	80
Residential - Low Density Single family, Duplex, Mobile Homes	Yellow	Yellow	Light Gray	Light Gray	Light Gray	Dark Gray
Residential Multi-Family	Yellow	Yellow	Light Gray	Light Gray	Light Gray	Dark Gray
Transient Lodging Motels, Hotels	Yellow	Yellow	Light Gray	Light Gray	Light Gray	Dark Gray
Schools, Libraries, Churches, Hospitals, Nursing Homes	Yellow	Yellow	Light Gray	Light Gray	Light Gray	Dark Gray
Auditoriums, Concert Halls, Amphitheaters	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	Dark Gray
Sports Arena, Outdoor Spectator Sports	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	Dark Gray
Playgrounds, Neighborhood Parks	Yellow	Yellow	Yellow	Light Gray	Light Gray	Dark Gray
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Yellow	Yellow	Yellow	Yellow	Light Gray	Dark Gray
Office Buildings: Business Commercial and Professional	Yellow	Yellow	Yellow	Light Gray	Light Gray	Dark Gray
Industrial, Manufacturing, Utilities, Agriculture	Yellow	Yellow	Yellow	Yellow	Light Gray	Dark Gray

INTERPRETATION:



Normally Acceptable

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



Conditionally Acceptable

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.



Normally Unacceptable

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



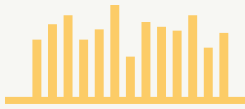
Clearly Unacceptable

New construction or development should generally not be undertaken.

**FIGURE 7.5:
CALIFORNIA LAND USE COMPATIBILITY GUIDELINES**



SPOTLIGHT



COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)

Average noise exposure over a 24-hour period often is presented as a community noise equivalent level (CNEL). CNEL values are calculated from hourly equivalent noise level values, with a 5 dBA annoyance penalty added to the evening (7:00 p.m. to 10:00 p.m.) equivalent noise level values and a 10 dBA penalty added to the nighttime (10:00 p.m. to 7:00 a.m.) equivalent noise level values.

The settlement agreement as described in Policy HS-43 set Alameda's CNEL at 65dB for aircraft operations (See Figure 7.4 for Oakland Airport 65dB contour). Validation of the 65 dB CNEL contour is to be carried out by means of a permanent full-time noise monitoring system to ensure compliance with the California Airport Noise standard and the ALUC plan.

HS-49

Aircraft Crash Readiness. Maintain a high degree of readiness to respond to aircraft crashes through participation in preparedness drills and mutual aid activities with the City and Port of Oakland to ensure quick and effective response to emergencies.

HS-50

Vehicles. Enforce compliance with noise emissions standards for all types of automotive vehicles established by the California Vehicle Code and by federal regulations.

HS-51

Ships. With the cooperation of the U.S. Coast Guard, the City of Oakland, and the Port of Oakland, enforce California noise emission standards for engine-driven maritime vessels.

HS-52

Transit. Encourage BART and AC Transit to develop and apply noise-reduction technologies that reduce noise impacts associated with BART trains and buses.

HS-53

Streets. Where feasible and appropriate, develop and implement noise reduction measures when undertaking improvements, extensions or design changes to Alameda streets. (See also Policies LU-2, ME-10 and ME-14).

HS-54

Truck Routes. Maintain day and nighttime truck routes that minimize the number of residents exposed to truck noise. (See also Policy ME-11).

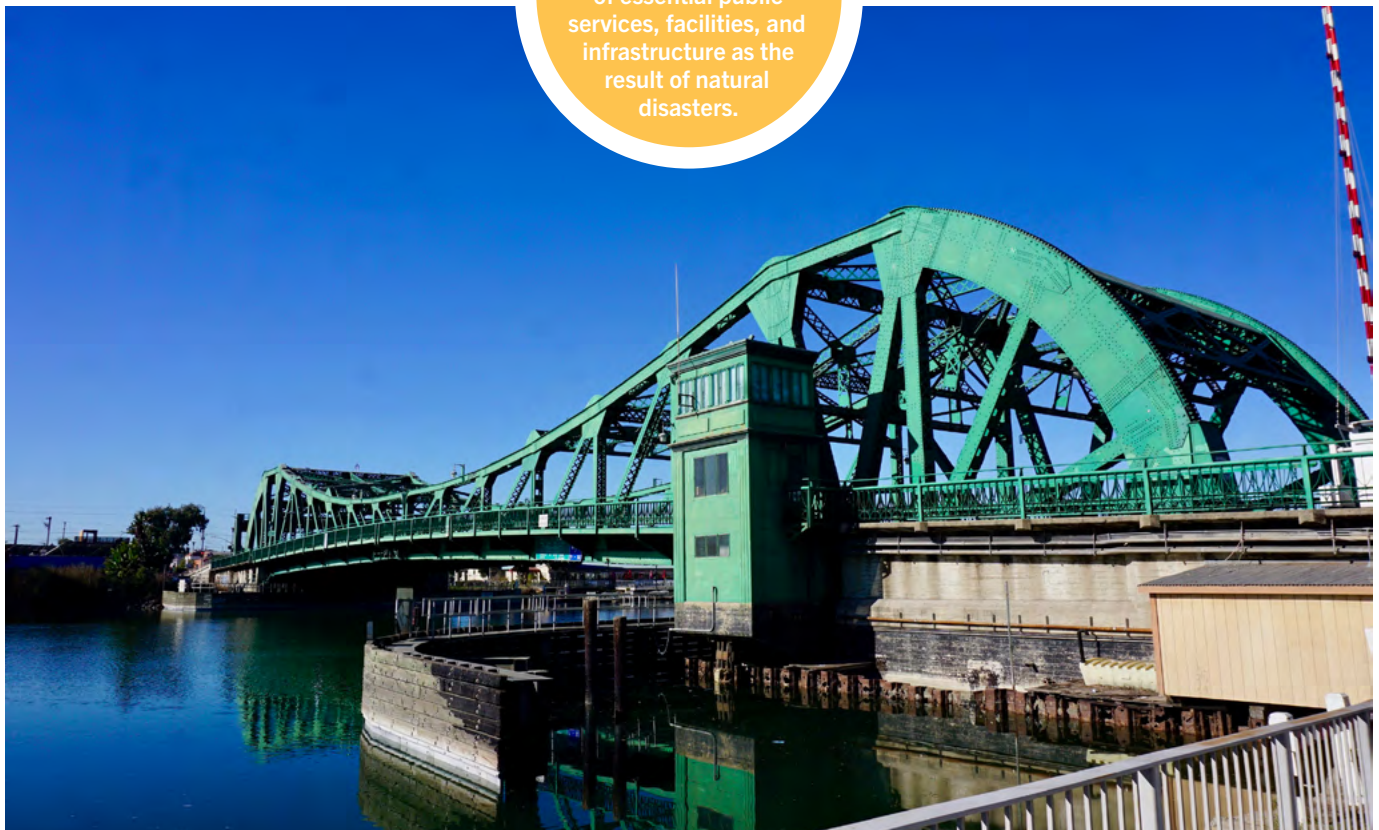
HS-55

Bay Farm Island Settlement Agreement. Require new or replacement residential development within 500 feet north of the 65 dB CNEL Settlement Agreement line on Bay Farm Island, to include noise insulation that meets the standards established in the Airport Land Use Commission Plan for assumed exterior 65 dB CNEL.



photo: Maurice Ramirez

A main goal of the Health + Safety Element is to minimize disruption of essential public services, facilities, and infrastructure as the result of natural disasters.



HS-56

Interior Noise. Support interior noise reduction strategies in all buildings, especially new or replacement residential construction, hotels, motels, and schools to ensure acceptable interior noise levels consistent with Figure 7.5.

HS-57

Disclosure. Ensure that purchasers of property within or adjacent to the following areas are aware of existing and future potential noise conditions and the limitations of the City's ability to abate existing or future noise conditions: the Oakland International Airport Influence Areas, as defined by the Alameda County Airport Land Use Commission (ALUC), commercial districts, truck routes, major arterials, Alameda Unified School District facilities, City recreation facilities, and business parks. Require the full disclosure of the existing and potential future noise levels within deeds and lease agreements as a condition of project approval, whenever possible.

HS-58

Business Operations. To the extent feasible, through the development entitlement process, require local businesses to reduce noise impacts on the community by avoiding or replacing excessively noisy equipment and machinery, applying noise-reduction technology, and following operating procedures that limit the potential for conflicts.

HS-59

Require Noise Reduction Strategies in All Construction Projects. Require a vibration impact assessment for proposed projects in which heavy-duty construction equipment would be used (e.g. pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. If applicable, the City shall require all feasible mitigation measures to be implemented to ensure that no damage to structures will occur and disturbance to sensitive receptors will be minimized.

HS-60

Significant CEQA Impacts. In making a determination of impact under the California Environmental Quality Act (CEQA), consider the following impacts to be "significant" if the proposed project causes: an increase in the day-night average sound level (Ldn) of 4 or more dBA if the resulting noise level would exceed that described as normally acceptable for the affected land use, as indicated by State guidelines, or any increase in Ldn of 6 dBA or more.

HS-61

Community Noise Ordinance. Continue to Enforce the Community Noise Ordinance by promptly responding to local noise complaints.

7.7 AIR QUALITY

Located within a major urban metropolitan area, the most consistent pollution sources in Alameda are generated from car and truck traffic. Wildfire smoke has quickly become a regular seasonal issue during the warmer months and is made significantly worse by existing local sources of air pollution. Less significant sources of air pollution include wood smoke and construction related emissions. Every effort should be made to minimize these risks, especially to the most vulnerable populations such as children and seniors.



OBJECTIVE 7

Protect Alamedans from the harmful effects of air pollutants.

POLICIES:

HS-62

Wildfire Smoke. Prepare for future wildfire smoke events. (See also Policy CC-25).

Actions:

- a. **Shelters.** Work with local organizations and institutions to provide for public, clean air, temporary shelters, such as the Alameda Free Library, at locations throughout the City. (See also Policies CC-2 and CC-25).
- b. **Vulnerable Communities.** Strengthen protocols and procedures for identifying and notifying the most vulnerable residents to wildfire smoke of shelter locations and other potential support.
- c. **Indoor Air Quality.** Facilitate and expedite efforts by local property owners and businesses to improve indoor air quality and filtration systems. (See also Policy CC-13).
- d. **Outdoor Air Quality.** Continue to work with regional and local organizations and businesses to reduce local sources of air pollutants. (See also Policy CC-26).

HS-63

Diesel Emissions. Continue to work with the Bay Area Air Quality Management District (BAAQMD) to reduce diesel related air quality impacts throughout the region and in Alameda. (See also Policy CC-3).

Actions:

- a. **Government Vehicles.** Ensure a completed transition away from diesel fuels for all government operations and vehicles.
- b. **Ban Diesel Vehicles by 2033.** Set a date prior to 2033 to ban diesel vehicles from entering Alameda altogether, only allowing exceptions where no reasonable substitute exists.

HS-64

Wood Smoke. Adopt ordinances and regulations to reduce wood smoke in Alameda.

Actions:

- a. **Wood Burning Fireplaces and Heaters.** Prohibit wood burning fireplaces and heaters in all new development and remodels.
- b. **Incentives.** Provide incentives to replace wood burning fireplaces and wood burning heating devices in existing buildings.
- c. **Collaboration and Education.** Continue to work with BAAQMD to reduce wood smoke and to raise awareness of the health effects of wood smoke.

HS-65

Construction Air Pollution. Protect public health by requiring best management practices at construction sites and carefully evaluating the potential health risks of projects that generate substantial toxic air contaminants or projects that propose to place a sensitive user in proximity to an existing source of contaminants.

Actions:

- a. **Construction Dust.** Reduce dust and harmful air pollutants resulting from construction activities by requiring compliance with best management practices (BMPs) as recommended by the Bay Area Air Quality Management District (BAAQMD).
- b. **Health Risk Assessment.** Require preparation of a Health Risk Assessment in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the BAAQMD. Adopt recommended health risk mitigations for projects that generate substantial toxic air contaminant (TAC) emissions within 1,000 feet of sensitive receptors or for sensitive receptor uses proposed to be located within 1,000 feet of an existing major source of toxic air contaminants.

HS-66

Air Quality Alerts. Continue to partner with BAAQMD to enhance awareness of air quality index alerts and related outreach and education to protect the health of residents.

HS-67

Aircraft Air Pollution. Work with federal, state, local agencies and the Port of Oakland to advocate for improvements in aviation technology and standards to reduce aviation air quality impacts. HS-68

HS-68

Toxic Air Contaminants. Minimize and avoid exposure to toxic air contaminants.

Actions:

- a. **New Sources.** *As a condition of approval, future discretionary projects that generate substantial toxic air contaminant (TAC) emissions (that are not regulated by the Bay Area Air Quality Management District (BAAQMD), such as construction activities lasting greater than two months or facilities that include more than 100 truck trips per day, 40 trucks with transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week) that are located within 1,000 feet of sensitive receptors shall submit a Health Risk Assessment (HRA) prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the BAAQMD prior to discretionary project approval. If the HRA shows that the incremental cancer risk, PM_{2.5} concentrations, or the appropriate non-cancer hazard index exceeds BAAQMD's project-level thresholds, then the applicant shall be required to identify and demonstrate that mitigation measures are capable of reducing potential PM_{2.5} concentrations, cancer risks, and non-cancer risks to below BAAQMD's project-level significance thresholds.*
- b. **New Sensitive Receptors.** *As a condition of approval, proposed new sensitive receptor uses proposed within 1,000 feet of existing major sources of toxic air contaminants (TACs) (e.g., permitted stationary sources, highways, freeways and roadways with over 10,000 annual average daily traffic (AADT)) shall submit a Health Risk Assessment (HRA) to the City prior to future discretionary project approval. If the HRA shows that the incremental cancer risk, PM_{2.5} concentrations, or the appropriate non-cancer hazard index exceeds BAAQMD's cumulative-level thresholds, then the applicant shall be required to identify and demonstrate that mitigation measures (e.g., electrostatic filtering systems) are capable of reducing potential cancer and noncancer risks to below BAAQMD's significance thresholds.*

HS-69

Construction Period Air Quality Impacts. Minimize air quality impacts as the result of construction activities.

Action:

- a. **Construction Mitigations.** *As a condition of approval, future discretionary projects shall implement the following measures or equivalent, expanded, or modified measures based on project- and site-specific conditions: all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered at least two times per day; all haul trucks transporting soil, sand, or other loose material off-site shall be covered; all visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited; all vehicle speeds on unpaved roads shall be limited to 15 mph; all roadways, driveways, and sidewalks to be paved shall be completed as soon as possible; idling times shall be minimized either by shutting equipment off when not in use or reducing maximum idling time to 5 minutes; clear signage shall be provided for construction workers at all access points; all construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation; a publicly visible sign shall be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours; and the Air District's phone number shall also be visible to ensure compliance with applicable regulations.*