



4. Emergency Preparedness and Response

This section includes information about the City's Emergency Preparedness and Response programs, agencies, and operations. It also provides information on Oakland's emergency alert systems, an analysis of evacuation routes, and describes current capital improvement needs relevant to emergency preparedness and response. Goals and policies developed by the City will work to address the needs of all Oakland residents during times of emergency, prioritizing support for socially vulnerable groups through emergency response programs and preparedness strategies that account for Oakland's diverse population.



4.1 EMERGENCY PREPAREDNESS AND RESPONSE

EXISTING PROGRAMS, AGENCIES, AND OPERATIONS

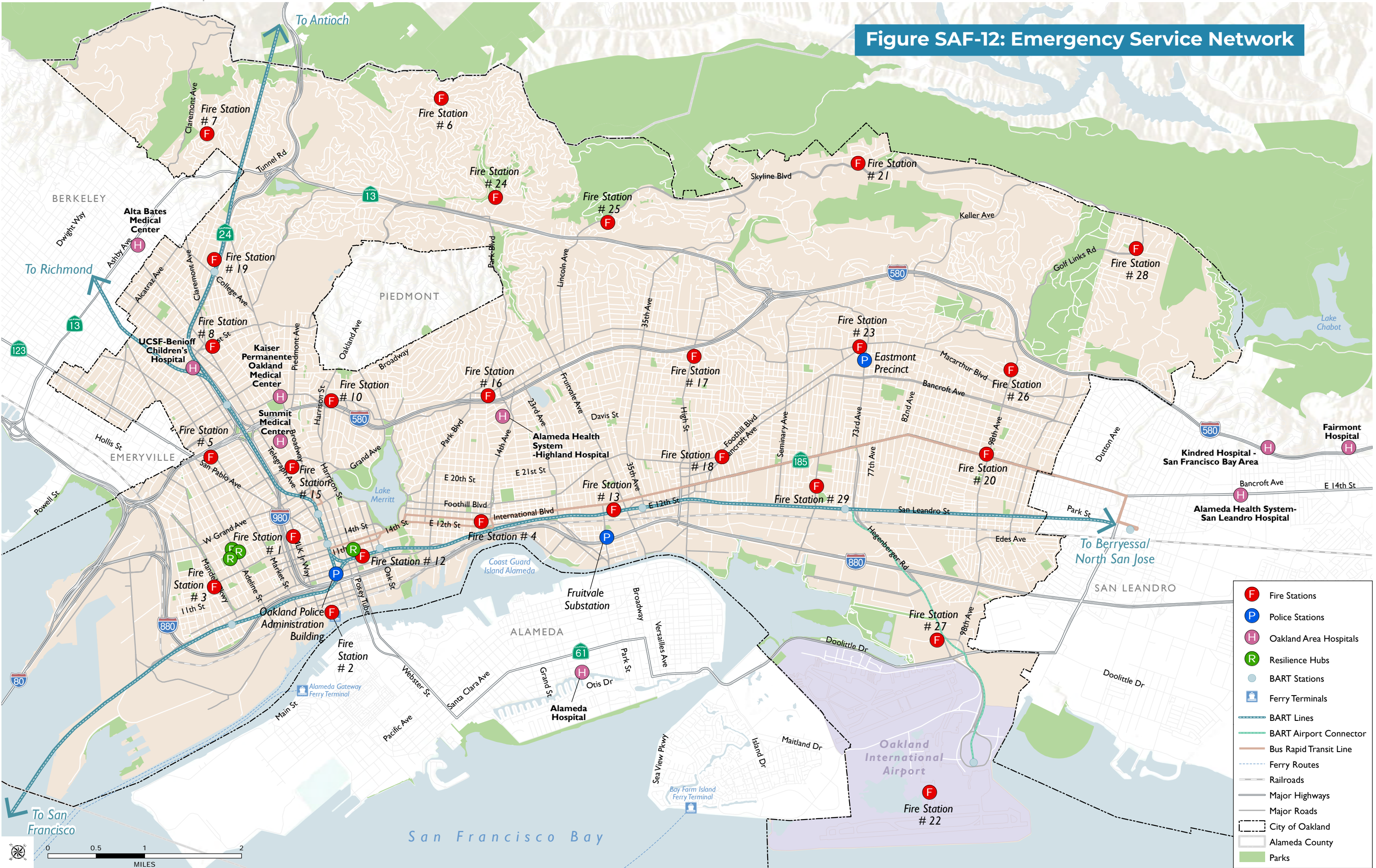
The Oakland Fire Department is the primary emergency response service provider for the city and provides comprehensive strategies and training in fire prevention, fire suppression, emergency medical services, emergency preparedness, 911 services, and community-based fire services. Through Communities of Oakland Respond to Emergencies (CORE), the Oakland Fire Department provides free emergency preparedness and response training for individuals, neighborhood groups, and community-based organizations in Oakland. Similarly, the Fire Department also offers Community Emergency Response Training (CERT) programs, which train volunteers in basic disaster response skills. OFD operates 25 fire stations throughout the City (shown in [Figure SAF-12](#), along with other emergency service infrastructure and existing municipal resilience hubs) and employs approximately 500 sworn full-time fire fighters. The OFD aims to provide emergency service within seven minutes of notification

90 percent of the time—this emergency response time can be met in all areas located within 1.5 miles of a fire station.

The Emergency Management Services Division (EMSD) exists within the Oakland Fire Department and is the primary agency responsible for responding to, recovering from, and mitigating any hazard that affects the City of Oakland. In 2021, EMSD updated the Emergency Operations Plan (EOP), a document providing a roadmap for emergency response personnel in performance of their duties before, during, and through initial emergency recovery. The EOP also provides a comprehensive overview of the roles and responsibilities of City departments in the event of an emergency, as well as plans for coordination between city, county, state, and federal agencies.

EMSD also administers the development of the Local Hazard Mitigation Plan, which is updated every five years and was most recently published in 2021. The 2021-2026 LMHP is intended to serve as a guide to increase Oakland community's resilience in the face of natural disasters, such as earthquakes, floods, extreme heat, and fires, and proactively prepare the community for emergency events. The LHMP also provides an assessment of risk from a variety of hazards and proposes strategies for mitigation and adaptation.

Figure SAF-12: Emergency Service Network



- F Fire Stations
- P Police Stations
- H Oakland Area Hospitals
- R Resilience Hubs
- BART Stations
- Ferry Terminals
- BART Lines
- BART Airport Connector
- Bus Rapid Transit Line
- Ferry Routes
- Railroads
- Major Highways
- Major Roads
- City of Oakland
- Alameda County
- Parks

SOURCE: City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2021

Terrorism

The Federal Bureau of Investigation (FBI) defines terrorism as “the unlawful use of force or violence committed by a group or individual against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.” It could also include use of weapons of mass destruction, cyber terrorism (communications and information systems), or agroterrorism (disruption to food supplies). In April 2021, the City of Oakland prepared a Terrorism Annex to the Emergency Operations Plan to facilitate an effective local response to a terrorist attack on the city. As part of the next update of the Integrated Preparedness Plan and LHMP, the City will incorporate policy recommendations from the Terrorism Annex to protect against potential terrorist attacks.

Public Health Crises

Climate scientists and public health experts warn that climate change will increase the risk of infectious disease transmission and potential pandemics.¹ The COVID-19 pandemic has demonstrated the indispensable role of cooperation and coordination across a wide range of sectors, including city departments, public organizations, businesses, nonprofits, and the community, in effectively responding to and planning for future public health emergencies.

In the event of a public health emergency, the coordination and acquisition of medical/health mutual aid resources involves federal, state, and local agencies as well as the private sector (hospitals, medical supply vendors, ambulance companies, etc.). The Oakland Fire Department and Oakland Department of Human Services will work with the Alameda County Department of Public Health to coordinate medical and health responses.

At the State level, the California Governor’s Office of Emergency Services (Cal OES) responds to and aids in the recovery from emergencies within the State of California under the authority of the California Services Act, California Disaster Assistance Act, and the Stafford Act. Cal OES is responsible for managing disaster recovery and aiding local governments, special districts, certain

¹ National Science Foundation. (2022). Study finds that climate change could spark the next pandemic <https://beta.nsf.gov/news/study-finds-climate-change-could-spark-next>

nonprofit organizations, individuals, businesses, and agricultural communities impacted by disasters.

The California Department of Public Health contains the Emergency Preparedness Office, which maintains and manages the Medical and Health Coordination Center, distributes funds to local health departments for disaster planning, and operates the California Health Alert Network. The Department also manages the Climate Change & Health Equity Program, whose goal is to systematically integrate work from climate change planning and public health planning with policies and principles that promote equity. To plan for an effective, coordinated response, the City is also preparing a Pandemic Annex of the Emergency Operations Plan, which provides an overview of considerations for City response to a global pandemic affecting the Bay Area. One of the key assumptions of any pandemic planning model is that vulnerable populations, including people of color, will tend to experience worse health outcomes because of historic and current impacts of systemic racism. As part of the next update of the Integrated Preparedness Plan and LHMP, the City will incorporate the best available data on racial disparities and policy recommendations from the Pandemic Annex to keep Oaklanders safe and healthy.

COMMUNITY RESILIENCE AND RESPONSE

The 2045 General Plan Update is an opportunity to enhance community resilience for all Oakland communities with policies in support of ECAP innovations. For example, the ECAP includes Action A-1, Fund the Creation and Operation of Resilience Hubs, as key to successful climate adaptation. Other tools to strengthen community resilience and safety include emergency power sources to rely on in the event of power outages, accessible emergency alerts and information systems, and improved evacuation strategies and routes that reach all Oakland communities. The General Plan Update will incorporate these ECAP recommendations into its goals and policies to ensure their implementation.

Resilience Hubs

Resilience hubs are defined as “community-serving facilities that support residents year-round and support resource distribution and onsite services before, during, or after a natural hazard event.” General Plan policies will further support resilience hubs to protect frontline communities during climate crises, earthquakes

Building Resilience: Oakland’s 2030 Equitable Climate Action Plan (ECAP)

The ECAP illustrates Oakland’s approach to equity in building climate resiliency. It identifies ambitious actions to combat climate change while also ensuring that frontline communities – those that have been harmed by environmental injustice and who are likely to be hurt first and worst by the impacts of climate change – will benefit first and foremost from climate action. The accompanying Racial Equity Impact Assessment and Implementation Guide supports equitable implementation of the ECAP by providing in-depth guidance for City staff in each 2030 ECAP implementing department in order to maximize equitable outcomes, including robust frontline community participation.



or other shocks, and chronic stressors. Resilience hubs address the unique cultural and situational needs of the communities in which they are located. They also provide critical disaster preparedness, response, and recovery functionalities. Minimum characteristics include all-electric buildings with microgrids (onsite renewable and backup electricity with islanding capability), refrigeration, gathering and shelter capacity, emergency communications, and cooling and air filtration.

Resilience-building policies will also support companion approaches, such as expanding green infrastructure to mitigate flood hazards and urban heat islands, protecting key facilities to ensure community energy resilience, and adaptively reusing structures to create indoor spaces resilient to climate change impacts.

Communities and community-based organizations have been a mainstay of local resilience and adaptive capacity in Oakland. The General Plan offers an opportunity for the City to identify and partner with these communities, organizations, and networks by funding and otherwise supporting community-based resilience hubs to enhance the adaptive capacity and resilience of vulnerable groups and reach a broader and more diverse network of Oakland residents.

Essential Public Facilities

Public facilities operated by the City such as libraries, senior centers, cultural centers, parks, and recreational centers may function as essential service facilities and play an important role in emergency response as resilience hubs, respite centers, and local assistance centers. These essential public facilities also play an important role as neighborhood hubs where Oakland residents can go to build and strengthen community networks.

Currently, the Alameda County Office of Emergency Services publishes information on cooling centers, clean air facilities, and warming centers open to the public in Alameda County on its website. Generally, public respite facilities are identified as need arises, such as in the event of a heat wave, and at present, these facilities are not located according to a geographic assessment of vulnerability. Community inclement weather respite facilities in public buildings are located throughout the city, such as libraries and recreation centers. **Table SAF-5** lists public air-conditioned

Table SAF-5: Public Air-Conditioned Facilities

FACILITY NAME	ADDRESS
81st Ave Branch Library	1021 81st Avenue Oakland, California 94621
Asian Branch Library	659 14th Street Oakland, California 94612
Brookfield Branch Library	9255 Edes Avenue Oakland, California 94603
César E. Chávez Branch Library	3301 East 12th Street, Suite 271 Oakland, California 94601
Dimond Branch Library	3565 Fruitvale Avenue Oakland, California 94602
Eastmont Branch Library	7200 Bancroft Ave., Suite 211 Oakland, California 94605
Piedmont Ave. Library	80 Echo Avenue Oakland, California 94611
Rockridge Branch Library	5366 College Avenue Oakland, California 94618



facilities, which residents are encouraged to visit during extreme heat events. A data driven approach is recommended during the placement of future respite facilities to equitably distribute supportive resources to Oakland communities.

Emergency Power

Due to increased wildfire risk, Pacific Gas and Electric (PG&E), Oakland's public utility electricity transmission and distribution as well as gas provider, has instituted Public Safety Power Shutoffs (PSPS) and Enhanced Power Safety Shutoffs (EPSS) when forecasts indicate the potential for extreme weather and wildfire risk. Although PG&E endeavors to provide multiple days' notice and warning to those who may be affected, these events are still disruptive to many residents, especially in rural areas of the unincorporated county. Power outages may be especially hazardous to residents who use prescribed medications and treatments that rely on electricity and refrigeration and may exacerbate food insecurity due to lack of refrigeration.²

In 2016, Alameda County and 11 of its cities, including Oakland, entered into a Joint Powers Agreement to launch East Bay Community Energy (EBCE), an independent public agency. EBCE secures electrical energy supply for residents and businesses and leads energy-related climate programs, including transportation electrification. As the nonprofit public power provider, EBCE delivers electricity with high renewable energy content, at a reduced cost to customers, through PG&E's transmission and distribution system.³

To mitigate the effects of power outages, East Bay Community Energy (EBCE) is exploring the feasibility of solar and/or battery backup systems at critical municipal facilities in Alameda County. The goal of this project is to enable EBCE and its local government partners to better support the community during a grid outage. The project is intended to equip critical facilities, resilience hubs, respite centers and other facilities that support vulnerable populations such as low-income, medically dependent, and elderly populations with onsite renewable energy and storage capacity. Additional energy saving measures, such as the

2 LA County Climate Vulnerability Assessment. Oct. 2021. <https://ceo.lacounty.gov/wp-content/uploads/2021/10/LA-County-Climate-Vulnerability-Assessment-1.pdf>

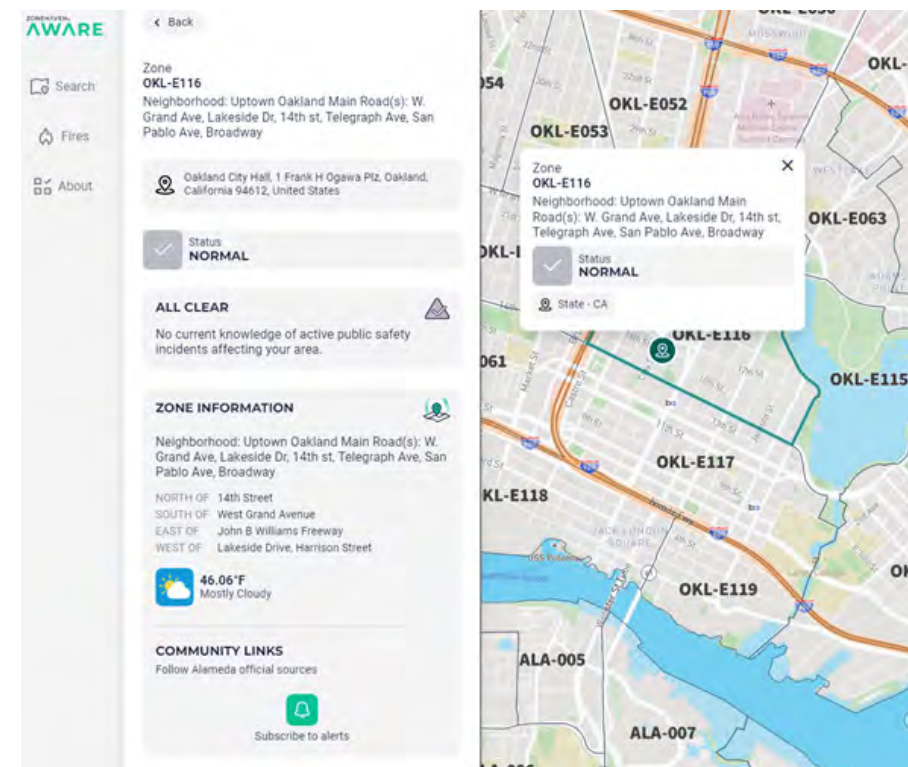
3 Zero Emission Vehicle Action Plan." City of Oakland, <https://www.oaklandca.gov/projects/zero-emission-vehicle-action-plan>. Accessed 9 Sept. 2022.

installation of heat-pumps rather than stand-alone AC units, help conserve energy and reduce strain on the electricity grid in addition to reducing greenhouse gas emissions.

ALERTS AND EVACUATION

Evacuation procedures are most effective when residents are aware of the emergencies that are most likely to affect them and have ample time and support to prepare their own emergency plans. The City of Oakland, in conjunction with Alameda County, has a variety of systems and procedures in place to protect residents and visitors to plan for, avoid, and respond to a hazard event. Emergency alert and assistance systems include city-wide emergency sirens, fire and law enforcement vehicle loudspeakers, emergency response phone numbers such as 9-1-1, agency websites, and digital tools.

In 2021, the City of Oakland launched an evacuation software system called Zonehaven, to provide residents with real-time maps and information online to guide evacuation in the event of an emergency. AC alert, the Mass Notification System used by City and County agencies throughout Alameda County, rapidly disseminates emergency alerts to people who live, work in, or



visit Alameda County. AC Alert can send alerts by voice, text, and email, as well as messaging Nixle subscribers, posting to social media pages, and sending FEMA Wireless Alerts (WEA).

Equitable Response, Notifications, and Preparation

Local hazard mitigation and emergency response policies should be tailored to the needs of the communities they serve. Some populations are at greater risk from hazard events because of decreased resources or because they have a disability.⁴ Linguistically isolated households (residents who do not speak or read English as a first language or at all) may not hear or understand important information when there is an emergency like a fire, earthquake, or extreme heat waves. Persons with disabilities may require communications in alternative, accessible formats to ensure effective communication- particularly individuals who are deaf or hard-of-hearing, blind or low-vision, or those with intellectual disabilities. Additionally, lack of familiarity with local government and planning processes may present barriers to community engagement and accessing key government-provided resources.⁵

Some of the most direct means of access to emergency operations and response information are available to residents through online resources. However, 94,000 residents in Oakland currently do not have access to the internet and may be at a disadvantage during emergency events. According to the 2018 Equity Indicators Report, Black individuals were the most likely to not have high speed internet access at home (40.8 percent), followed by Hispanic/Latinx individuals (33.5 percent). White individuals were least likely to lack high speed internet access at home (14.6 percent).⁶

Participation in emergency response training programs such as CORE and CERT is another important way for communities to build resilience and adaptive capacity. However, low-income

- 4 2021 Local Hazard Mitigation Plan [LHMP]." *City of Oakland*, <https://www.oaklandca.gov/topics/2021-local-hazard-mitigation-plan>. Accessed 9 Sept. 2022.
- 5 Thomas, K., Hardy RD., Lazrus H., Mendez M., Orlove B., Rivera-Collazo, I., Roberts JT., Rockman M., Warner BP., Winthrop R., Explaining differential vulnerability to climate change: A social science review (December 2018). Oct 29 2019: <https://onlinelibrary.wiley.com/doi/full/10.1002/wcc.565>.
- 6 2018 Oakland Equity Indicators Report." *City of Oakland*, <https://www.oaklandca.gov/documents/equity-indicators-community-briefing-documents>. Accessed 9 Sept. 2022.

residents with limited free time, linguistically isolated residents, and residents who may lack familiarity with government processes may be unable to participate in emergency preparedness training programs. A more detailed discussion of barriers to participation is provided in the Environmental Justice Element.

Emergency Evacuation

Evacuation occurs only when a serious threat to public safety exists. The Oakland Fire and Police departments are responsible for the authorization, direction, routing, and relocation of people from their homes, schools, and places of business. During emergency evacuations, these departments will coordinate transportation support for evacuated populations as well as populations with disabilities and others with access or functional needs. The City is committed to providing specialized supports to these populations during emergency evacuations and mass shelter scenarios and should ensure compliance with all City plans that take these needs into account.^{7,8} Public transit agencies will also play a role in emergency evacuation strategies. According to the Emergency Operations Plan, the Oakland Department of Transportation (OakDOT) will be responsible for traffic restrictions, civilian transportation support, transportation safety, and coordination with the transportation industry (federal, state, and local, including private and public).

The I-580, I-880, and I-980 are the primary regional routes in Oakland. In a disaster, they would be assessed first for damage and debris, as they are the main arteries moving resources throughout the region. Secondary routes, mainly state roads and larger roadways, enable flow of resources to the City. Primary and secondary local routes, as well as the overall local street network, are identified in **Figure SAF-13a**. Recent investigations utilizing modeling software have shown that current road and intersection capacity is not adequate for the existing population in the event of a mass evacuation.⁹ Additionally, city infrastructure surveys have shown

- 7 <https://oaklandca.s3.us-west-1.amazonaws.com/w/DOWD007854.pdf>
- 8 file:///Users/emilyseelenfreund/Documents/EOP-v4-Council-DRAFT_20211112.pdf, 3.11. Compliance with the Americans with Disabilities Act Addressing the Needs of Individuals and others with Access and Functional Needs
- 9 2045 General Plan Update: Oakland Map Atlas, 2022 https://cao-94612.s3.amazonaws.com/documents/Map-Atlas_Revised.pdf

Figure SAF-13a: Emergency Assessment, Primary and Secondary Routes



Priority Routes	BART Stations
Regional Route	Ferry Terminals
Local Route - Primary	BART Lines
Local Route - Secondary	BART Airport Connector
Oakland Street Network	Bus Rapid Transit Line
Parks	Ferry Routes
	Railroads
	Major Highways
	Major Roads
	City of Oakland
	Port of Oakland
	Alameda County

SOURCE: City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2021

that many streets in the VHFHSZ in the Oakland Hills are not built to current Municipal Code Standards and have narrow streets with dead ends that only allow for one route of escape. Because many streets in the hills are in steep areas without off-street parking, many residents park on the street making the streets even narrower and less accessible for emergency responders. Considering these factors, conditions related to emergency response and evacuation are currently inadequate to serve the population living in the VHFHSZ. Illustrated in **Figure SAF-13b**, almost all the residential parcels with limited access for evacuation are in the Oakland Hills. Similarly, most of the residential parcels located in high hazard areas are also located in the hills, where fire risk is greatest in Oakland. There are also a small number of residential parcels located along the estuary shoreline in the Coliseum area and near flood zones adjacent to creek channels where residents may have limited evacuation access.

Additional traffic volumes could be expected with the construction of more housing anywhere in fire-threatened areas of the city. To assess constraints on roadway capacity, several scenarios, including three wildfire scenarios, modeled the expected weekday afternoon peak-hour roadway congestion. While much congestion occurs as part of regular commuting, the model determined that fire-related evacuation traffic would have an impact on area roadways. **Table SAF-6** summarizes the main roadways that would be congested or over-capacity under each scenario. Impacted roadways are shown in red in **Figures SAF-13c** through **13f**. While specific actions to keep evacuation routes clear during an emergency are largely dependent upon the circumstances of the event, there are a number of general actions that the City may take. The City must also balance identification of emergency access route improvements to ensure they do not negatively affect traffic, bicyclist, and pedestrian safety under regular operating conditions. Infrastructure-related strategies can aid in efficient and expeditious flow of evacuation traffic, which is the most critical and challenging element in a successful evacuation and are described in the callout box to the right.

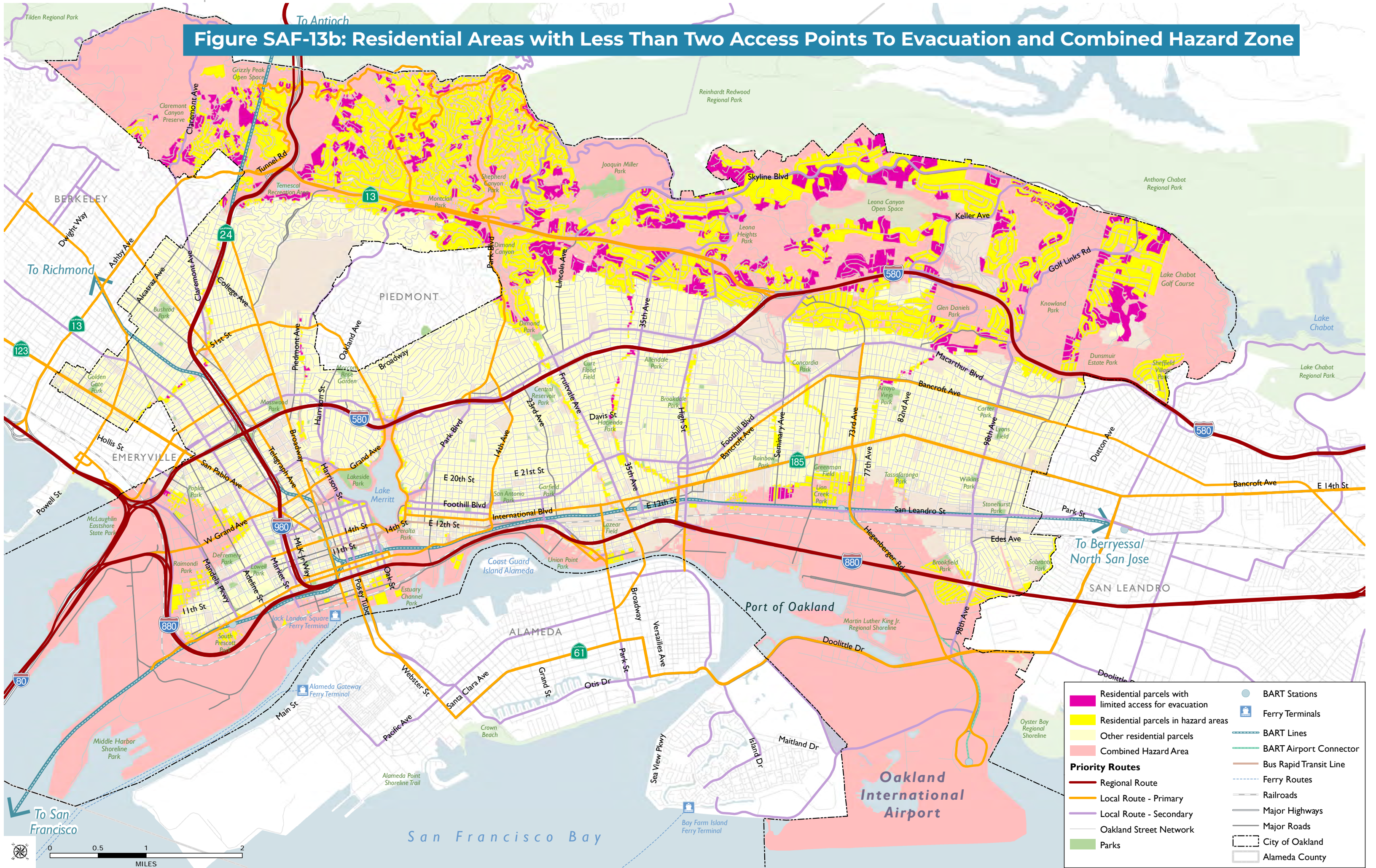
ROADWAY MANAGEMENT

Strategy	Description and Outcome
Limited/Unlimited contra flow on highways	Reverse one or more lanes of highway to accommodate an increased flow of traffic in one direction, or redirect all lanes of a designated evacuation route to accommodate rapid evacuation.
Limited/unlimited contra flow on unlimited access arterials	Temporarily close inbound travel lanes on selected unlimited access arterials (such as parkways and boulevards) to allow outbound traffic to utilize these lanes during evacuation.
Phased releases as major parking centers	Implement a coordinated release of evacuation traffic from parking facilities that would reduce congestion on evacuation routes, especially in the downtown area. A phased release protocol would be developed for each parking facility, depending on size, location, and other relevant factors.
Closure of inbound lanes	Close inbound lanes on highways utilized for evacuation routes to prevent drivers on these routes from entering the City while evacuation is underway.
Restrict left-turn movements	Minimize left-turn movements along evacuation routes/roads leading to evacuation routes.
Signage	Use variable message board equipment and targeted installation of permanent dynamic message signs on evacuation routes to improve communication and reduce public confusion.
Stage tow trucks	Stage tow trucks at key bottleneck locations along evacuation routes to help detect and clear minor crashes and maintain traffic flow.
Adjust signal timing	Increase the green time and/or progression band for through movements leading out of an evacuation zone.
Signal operation during power outage	Install signal battery backups in case signal operations need to be maintained during a power outage. Consider using channeling devices, static signs, and coning strategies to manage intersection flow during power outage if the signals lack power.
Additional access routes	Identify and communicate with communities that have at least two access points. Prioritize adding additional access to communities which are currently served by only one or two access points.
Bus system	Develop transportation solutions such as the use of a bus system for evacuating individuals with special needs (such as those with mobility limitations).
Traffic control points	Establish traffic control points (i.e., locations along designated evacuation routes with emergency management personnel) to maintain a greater degree of evacuation management. These locations could enhance the efficiency of an evacuation, reduce public confusion, and allow increased operational flexibility during an evacuation.

Table SAF-6: Summary of Roadway Congestion and Over-Capacity Conditions under Wildfire Scenarios in Evacuation Zones (2030)

Normal Commute Peak-Hour Congestion	Northern Hills Wildfire Evacuation Scenario: Peak-Hour Congestion/Evening Congestion	Central Hills Wildfire Evacuation Scenario: Peak-hour Congestion	South Oakland Hills Wildfire Evacuation Scenario Peak-Hour Congestion
<ul style="list-style-type: none"> • Southbound I-880 (towards San Jose) • Southbound I-580 (towards Dublin and San Ramon) • Southbound I-80 (from Berkeley towards Oakland) • Fruitvale Avenue, between International Boulevard and MacArthur Boulevard • Northbound SR 24 between Telegraph Avenue to Broadway • Parts of SR 13 between Lincoln Ave and SR 24 • Tunnel Road • West Grand Avenue, between Market Street and Frontage Road • High Street, between Foothill Boulevard and MacArthur Boulevard 	<p><u>Peak PM Congestion</u></p> <ul style="list-style-type: none"> • Lincoln Avenue, from Alida Street to Lincoln Way • Claremont Avenue, from Tanglewood Road to Grizzly Peak Boulevard • Grizzly Peak Boulevard, from Scotts Peak Trailhead 0.4 mi. S of SR-24 • Centennial Drive, from Lower Fire Trailhead to 1300 feet E of Stadium Rim Way • Mountain Boulevard, from La Salla Road to Broadway Terrace • SR-24, from Grizzly Peak Boulevard to SR-13 intersection • Moraga Avenue, from Thornhill Drive to La Salla Avenue • Skyline Boulevard, from Burton Avenue to Joaquin Miller Road • Broadway Terrace, from Mountain Boulevard to Pinewood Road • SR-13, from Thornhill Drive to SR-24/Grizzly Peak Boulevard • Snake Road, from Shepherd Canyon Road to Colton Boulevard • Snake Road/Shepherd Canyon Road, from Mountain Boulevard to 1,000 feet east of Snake Road <p><u>Nighttime Congestion</u></p> <ul style="list-style-type: none"> • Claremont Avenue, from Tanglewood Road to Alvarado Road • Grizzly Peak Boulevard, from Fish Ranch Road to 0.4 mi. south of SR-24 • Centennial Drive, from Lower Fire Trailhead to 1300 feet E of Stadium Rim Way • Monterey Boulevard, S of Park Boulevard • Moraga Avenue, from Thornhill Drive to La Salla Avenue • Skyline Boulevard, from Burton Drive to Joaquin Miller Road • SR-13, parallel to Glenwood Glade • Mountain Boulevard, from Pinewood Road to La Salla Avenue • Snake Road, from Armour Drive to Skyline Boulevard • Thornhill Drive, between Moraga Avenue and Gouldin Road 	<ul style="list-style-type: none"> • SR-13, from Carson Street to Mountain Boulevard • Joaquin Miller Road, from Mountain Boulevard to Butters Drive • Campus Drive, from Keller Avenue to Redwood Road • Keller Avenue, from Greenridge Drive to Campus Drive • I-580, from Seminary Avenue to Edwards Avenue/Leona Drive • Edwards Ave, from Hillmont Drive to Sunnymere Avenue • Mountain Boulevard, from SR-13 off-ramp to Kearney Avenue 	<ul style="list-style-type: none"> • Malcolm Avenue, from 106th Avenue to Leamont Court • I-580, from Golf Links Road to 106th Avenue • 98th Avenue, from MacArthur Boulevard to Golf Links Road

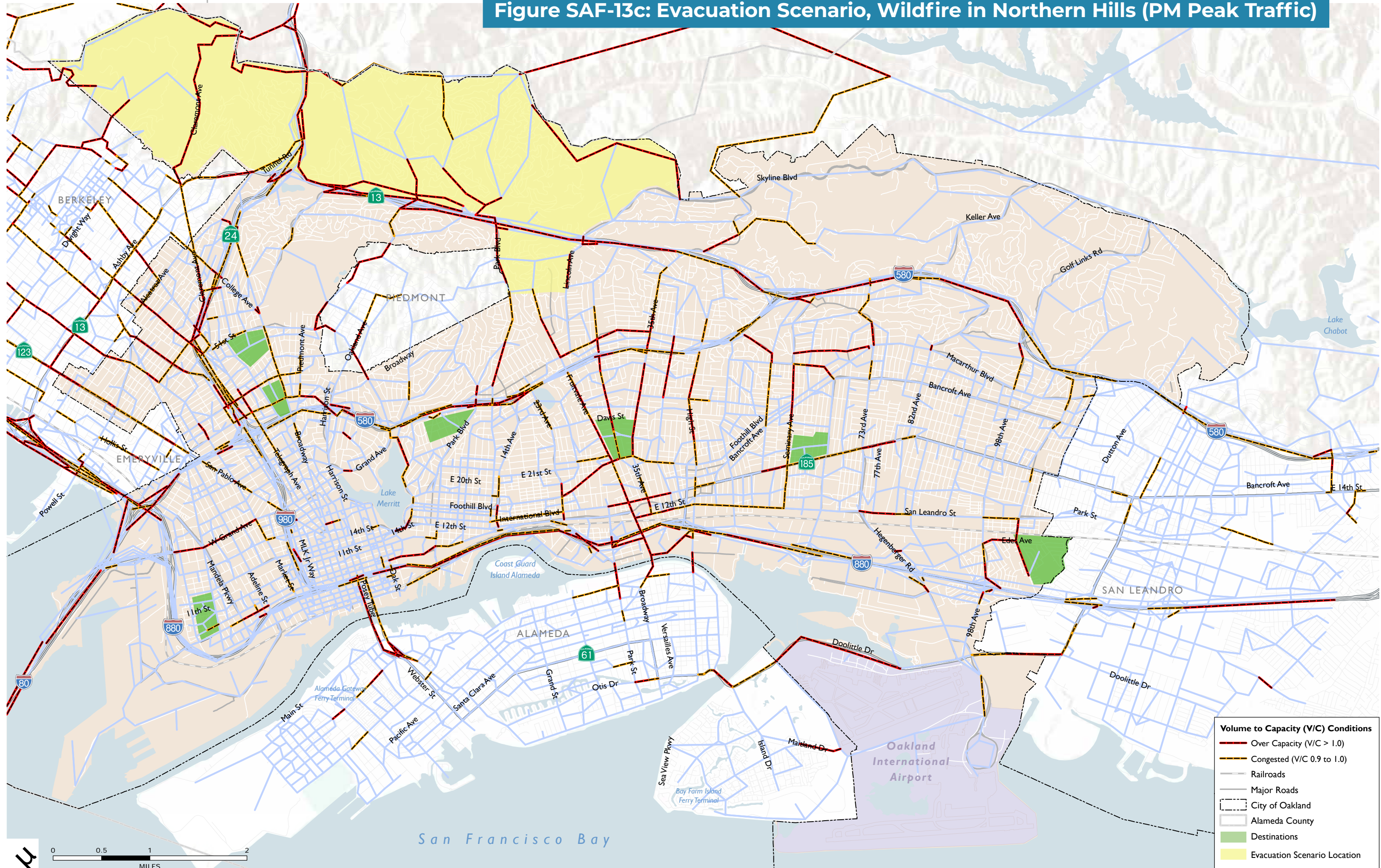
Figure SAF-13b: Residential Areas with Less Than Two Access Points To Evacuation and Combined Hazard Zone



 Residential parcels with limited access for evacuation	 Residential parcels in hazard areas	 Other residential parcels	 Combined Hazard Area	 BART Stations	 Ferry Terminals
 Priority Routes	 Regional Route	 Local Route - Primary	 Local Route - Secondary	 BART Lines	 BART Airport Connector
 Oakland Street Network	 Major Highways	 Major Roads	 City of Oakland	 Bus Rapid Transit Line	 Ferry Routes
 Alameda County	 Parks	 Railroads	 Oakland Street Network	 Major Highways	 Major Roads

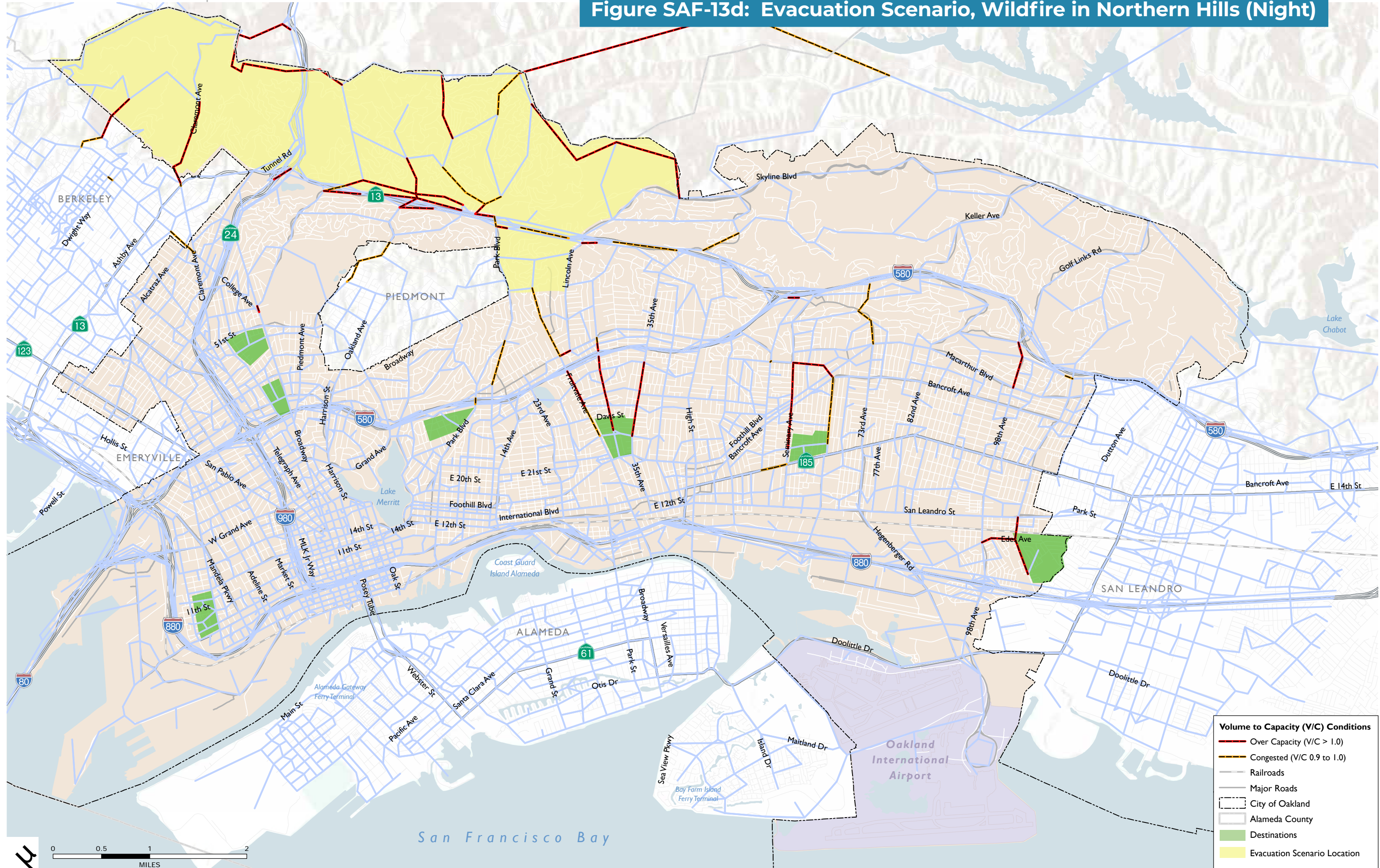
SOURCE: City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2021

Figure SAF-13c: Evacuation Scenario, Wildfire in Northern Hills (PM Peak Traffic)



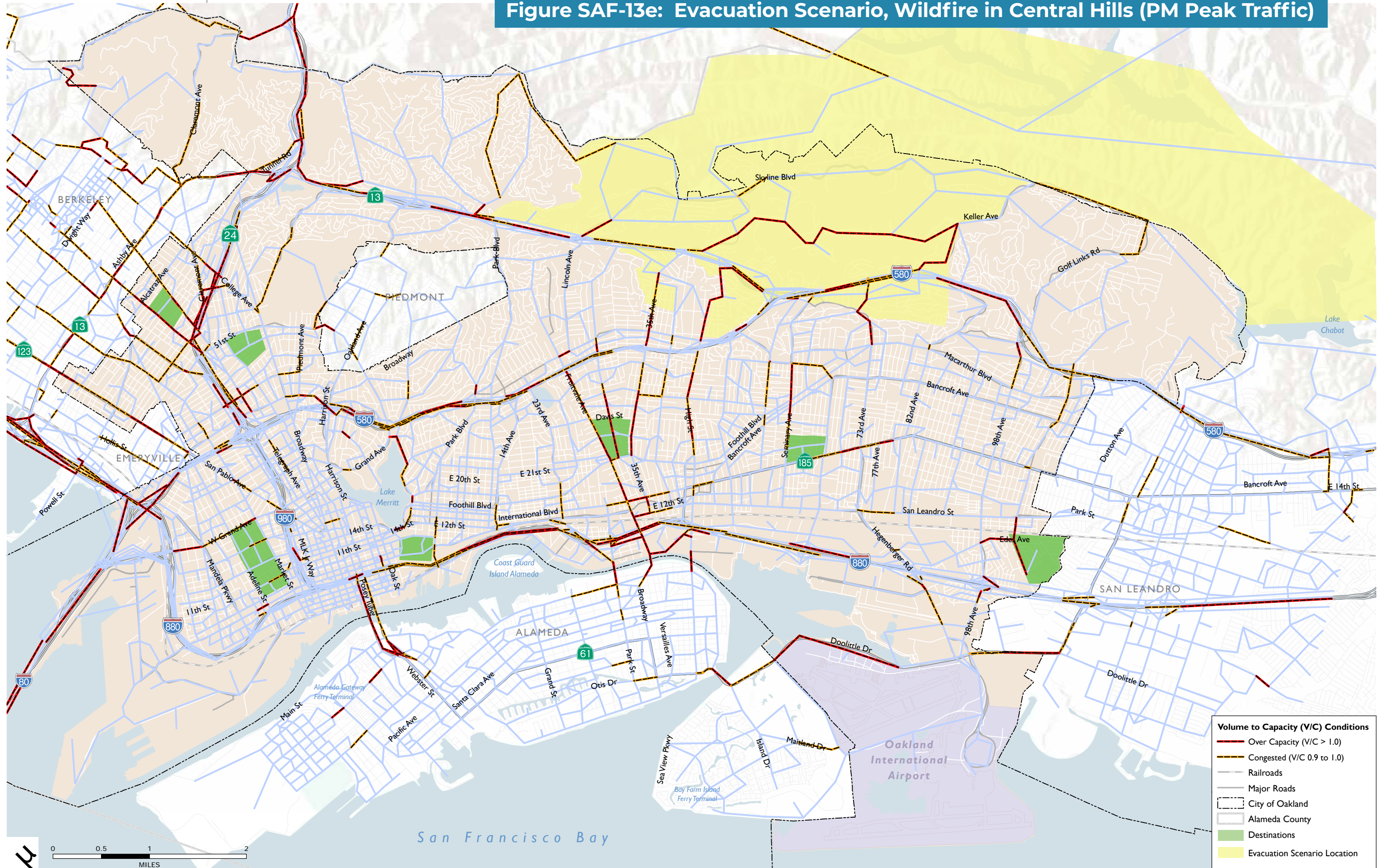
SOURCE: Kittelson & Associates, 2023; City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2023

Figure SAF-13d: Evacuation Scenario, Wildfire in Northern Hills (Night)



SOURCE: Kittelson & Associates, 2023; City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2023

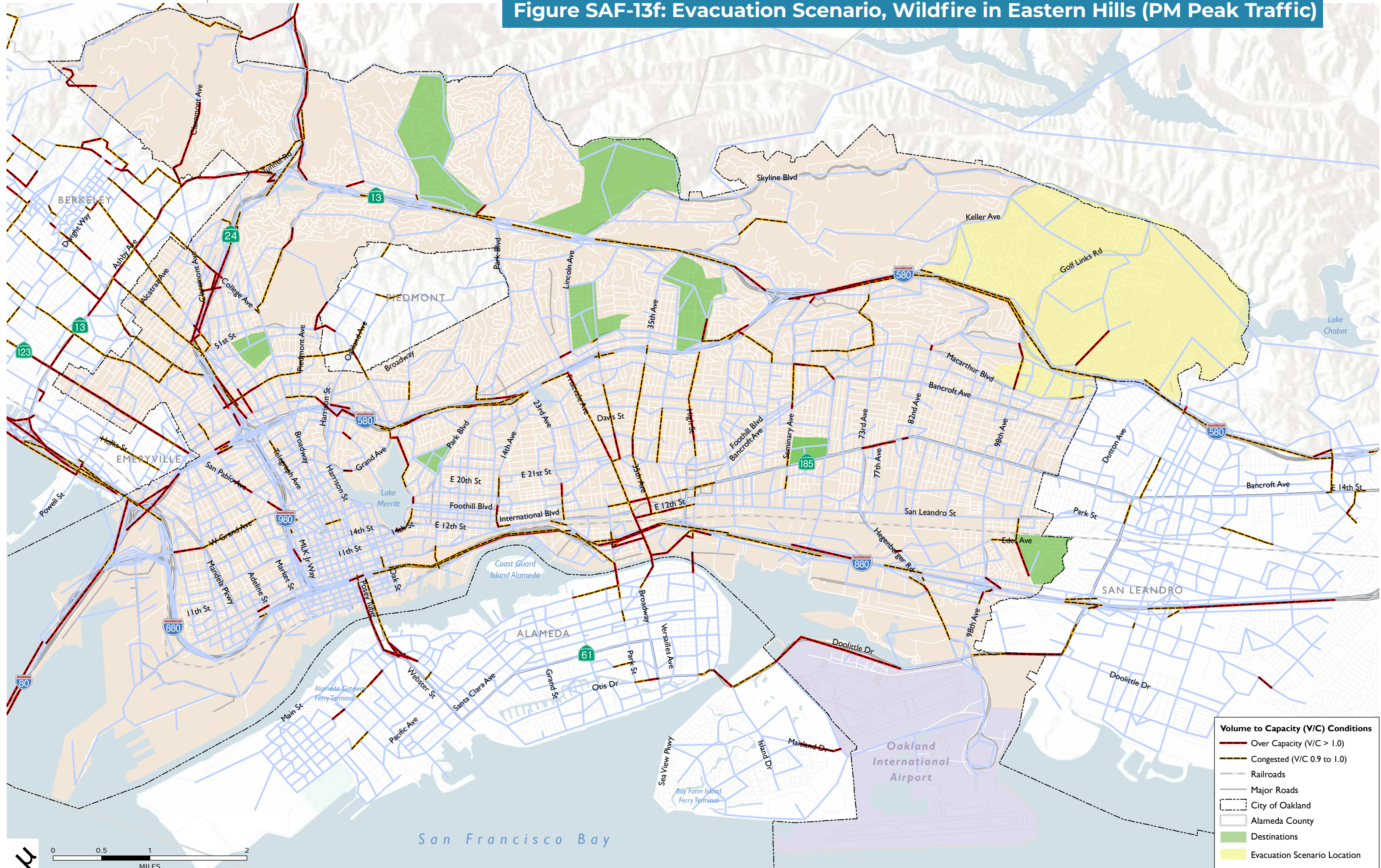
Figure SAF-13e: Evacuation Scenario, Wildfire in Central Hills (PM Peak Traffic)



Volume to Capacity (V/C) Conditions

- Over Capacity (V/C > 1.0)
- Congested (V/C 0.9 to 1.0)
- Railroads
- Major Roads
- City of Oakland
- Alameda County
- Destinations
- Evacuation Scenario Location

Figure SAF-13f: Evacuation Scenario, Wildfire in Eastern Hills (PM Peak Traffic)



SOURCE: Kittelson & Associates, 2023; City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2023

Vulnerable Populations

Individuals who cannot afford access to private transportation and services such as hotels may be disadvantaged during emergency evacuation events. Approximately 15 percent of Oakland’s households lack access to a household vehicle and may be at greater risk of harm because they lack the capacity to evacuate.¹⁰ It should be noted that this statistic does not reflect a complete picture of vulnerability during emergency evacuation; personal vehicle ownership is tied to a variety of factors that vary across income levels. Low-income residents who cannot afford personal vehicles may be less likely to live in neighborhoods that are served by a variety of transit amenities. Alternatively, moderate- and high-income residents may be more likely to live in neighborhoods well-connected by transit and choose not to own personal vehicles in spite of their ability to afford them. Homeowners who are underinsured may also be at risk-- increasingly, homes in high-fire-risk areas and high-flood-risk areas have fewer options for companies that will insure them, and higher premiums, making it harder to rebuild in cases of disaster.

While the Oakland Police, Fire, and Transportation departments are the primary agencies responsible for emergency evacuation operations, community programs like Communities of Oakland Respond to Emergencies (CORE) can help equip residents with the tools to provide additional mutual aid, resources, and support during emergencies, particularly in harder-to-reach neighborhoods. Beyond the CORE program, additional partnerships with community-based organizations may help expand the City’s evacuation transportation options during emergency events.

CAPITAL IMPROVEMENT NEEDS

The backlog of maintenance and limited financial resources has resulted in a growing list of capital needs throughout the City. A number of these unfunded capital improvement needs are related to emergency preparedness and response, such as emergency services facilities. As the Oakland 2021-2023 Capital Improvement program details, there are several capital projects for which a funding source is not presently known, including projects that replace or renovate assets that are either structurally or functionally obsolete or have deferred maintenance issues.

¹⁰ US Census Bureau ACS 5-year 2016-2020

Currently, the Police Administration Building and certain fire stations do not meet the mandate of essential service facilities (fully operational after an earthquake or similar disaster) or have significant deferred maintenance items that impact their operational status. Fire station facility improvements, described by departments as urgent, are considered critically unfunded; a 2021 informational report indicated approximately 25 stations and one training center were in need of maintenance.

One station targeted for priority replacement is Fire Station 4. Since 2019, the City has been searching for a viable site for relocation of Fire Station 4. Located at 1235 International Boulevard and designed in 1909, Fire Station 4 is one of the oldest public buildings in the city. It is also one of the busiest, responding to nearly 4,000 calls a year, with one Fire Engine and one Ladder truck. Currently, the station does not meet modern fire service, accessibility, or occupational safety standards. A modern replacement station will help better serve the community and improve public health and safety. Fire Station 4 is currently unfunded; it is estimated that land acquisition will cost \$9 million, and cost for the facility is \$25 million.

Another station targeted for priority replacement is Fire Station 29. The City is currently engaged with the community in a master

planning process for a new state-of-the-art fire station, fire training center and community complex located at 905 66th Avenue. The relocation of Fire Station 29 to this site is a top priority to replace the existing aging and outdated station at 10166 66th Avenue. The new Fire Station 29 facility will be funded by the City’s Measure KK Infrastructure Bond (see Table SAF-7), and built in the first phase of the site master plan. The new Fire Station will include a community room and classroom.

The overall Master Plan for Fire Station 29’s new location at 905 66th Avenue will include relocation of the obsolete OFD fire training facilities, fire training classrooms, Support Services Division and the Urban Search and Rescue Task Force #4 (USAR) Warehouse. A portion of the site will be dedicated to a community-oriented business or facility to be determined through an inclusive planning and community engagement process.

Table SAF-7 lists capital improvements for the Oakland Fire Department and Police Department funded by the Measure KK Infrastructure Bond.

As noted previously, access to internet and online information plays a critical role in modern emergency response operations and communications. It is estimated that 94,000 residents in

Table SAF-7: Police and Fire Station Capital Improvement Projects funded by Measure KK Infrastructure Bond

STATION	PURPOSE	BUDGET		
		FY 2021-22	FY 2022-23	FY 2021-23
Fire Station #20	Repaving	0	\$1,000,000	\$1,000,000
Fire Station #29	New Station & Training Resiliency	0	\$14,000,000	\$14,000,000
Fire Station #6	Building Shell Repair	0	\$645,000	0
Fire Station #7	Structural Assessment	\$652,500	0	\$652,500
Fire Stations #13, #15, #17	HVAC Replacement	0	\$815,625	\$815,625
Eastmont Police Station	Security Improvements	\$655,500	0	\$655,500

Source: City of Oakland, CA, FY 2021-23 Adopted Capital Improvement Program. Revised July 9, 2021

Oakland currently don't have access to the internet, barring them from emergency communications information shared digitally. The OakWiFi Initiative provides free wireless internet to Oakland residents to help close the digital divide at access points throughout the city. The OakWifi Initiative is listed in the 2021-2023 Capital Improvements program as an unfunded capital improvement with an anticipated cost of \$20,000,000.



GOALS AND POLICIES

GOAL SAF-8: MAINTAIN AN EMERGENCY PREPAREDNESS AND RESPONSE NETWORK THAT KEEPS ALL OAKLANDERS INFORMED, CONNECTED, AND SAFE BEFORE, DURING, AND AFTER AN EMERGENCY.

Emergency Preparedness

SAF-8.1 Emergency Response. Maintain and enhance the City's capacity for emergency response, fire prevention, and fire-fighting.

SAF-8.2 Emergency Services Review. Continue to engage the Police and Fire departments in the development review process to ensure that projects are designed and operated in a manner that minimizes the potential for public safety and fire hazards and maximizes the potential for responsive police and fire services.

SAF-8.3 Hazard and Management Plans. Maintain and update as necessary the Oakland Emergency Operations Plan, Annex of Emergency Support Functions, and Integrated Preparedness Plans, which describes how the City will prepare for, prevent, respond to, recover from and mitigate the effects of all types of hazard and threats. Incorporate EOP policy recommendations for terrorism and public health crises as part of these documents' future planning cycles.

SAF-8.4 Data-Driven Equity Approach. To support implementation of and future updates to the City's Local Hazard Mitigation Plan, and other safety-related plans, utilize the best available local data to identify racial disparities in the City of Oakland that can be used by the City to rank risk and prioritize mitigation strategies that incorporate a racial equity lens.

SAF-8.5 Cohesive Evacuation Routes Network. Ensure the evacuation routes network is interconnected with

adequate capacity and reflects ability to evacuate for multiple threats.

- Maintain adequate capacity along evacuation routes through methods such as limiting street parking where capacity may be needed.
- Maintain a higher level of tree and vegetation maintenance along evacuation routes and remove flammable trees adjacent to these routes.

Power Loss

SAF-8.6 Emergency Power. Participate in East Bay Community Energy's Critical Municipal Facility program with the goal of increasing resilience to power losses, including Public Safety Power Shutoffs (PSPS), and climate-driven extreme weather events for low income, medically dependent, and elderly populations through installation of renewable energy and onsite energy storage with islanding capabilities (such as microgrids).

Equitable Response, Notifications, and Preparedness Training

SAF-8.7 Local Hazard Mitigation Plan. To comply with federal and state law, follow and annually update the Oakland Local Hazard Mitigation Plan. Use the LHMP to guide mitigating actions to protect the whole community and environment from natural and humanmade hazards.

SAF-8.8 Risk Reduction Models. Integrate new risk reduction models (such as sea level rise modeling, wildfire mapping tools, etc.), tools, and methods into existing plans such as the General Plan, neighborhood and area plans, green infrastructure planning processes, etc., as may be appropriate.

SAF-8.9 Community Training and Awareness. Continue to offer community training on emergency prevention, preparedness and response as part of the CORE program. Partner with community organizations to target harder-to-reach populations, such as the unhoused, or linguistically isolated populations.

Infrastructure Resilience/Resilience Hubs

SAF-8.10 Public Facilities for Resilience & Relief. Prioritize capital improvements and maintenance of public facilities such as fire stations, libraries, senior centers, cultural centers, parks, and recreation centers to ensure that they can function as essential service facilities, respite centers, and local assistance centers providing emergency social and medical services in times of distress (cooling and clean air stations, free air filtration mask distribution, food and vaccine distribution, clean water, testing centers, evacuation/disaster shelters, etc.), and as resilience hubs that empower communities to build resilience. Clean energy microgrids should be prioritized at all community-serving facilities that are deemed critical during emergency events. In alignment with the ECAP, a minimum of three resilience hubs will be constructed in frontline communities by 2030. The City will continue pursuing resources to increase the number of resilience hubs beyond the minimum required, and to ensure that all frontline community members have access to a Resilience Hub.

SAF-8.11 Critical Facilities Locations. Locate critical facilities, such as hospitals and health care facilities, emergency shelters, fire stations, police stations, emergency command centers, and other emergency service facilities and utilities so as to minimize exposure to flooding, seismic, geologic, wildfire, and other hazards, except those facilities that provide frontline access, such as fire stations in areas of fire hazard. If critical facilities must be located in hazard zones, require building construction and materials that minimize hazard, safe access for emergency response vehicles, visible street signs, and adequate infrastructure for emergency scenarios, such as flooding, backup power and water supplies.

SAF-8.12 Critical Facilities Funding. Continue to explore funding sources for capital improvements necessary for emergency response, with priority given for fire station improvements.

SAF-8.13 Facilities and Climate Impacts. Consider climate impacts, risk, and uncertainty in designing and evaluating capital improvement program design and adjust infrastructure design standards and project locations to address asset- and site-specific vulnerabilities.

SAF-8.14 Heat Pumps. Equip community-serving facilities with heat pumps instead of energy-intensive air conditioning units. Prioritize community-serving facilities in neighborhoods with a high urban heat island index and higher social vulnerability.

Alerts and Evacuation

SAF-8.15 Emergency Notification. Use early warning notification systems (Zonehaven, text messages, etc.) to notify residents by wireless emergency alert of the need to evacuate in the event of an emergency and the location of evacuation routes, points, and critical facilities such as schools and day care centers, particularly residents of vulnerable areas and neighborhoods with constrained emergency access. Continue to collaborate with adjoining jurisdictions on the network of outdoor warning sirens, and to test the sirens on a monthly basis.

SAF-8.16 Traffic Signaling. Prioritize the connection of traffic signals along evacuation routes to the City's Traffic Management Center to allow for real-time modifications to signal timing that can speed evacuation in the event of an emergency.

SAF-8.17 Priority Route Coordination. Partner with Caltrans and neighboring jurisdictions on measures to protect critical evacuation routes and work with local agencies to develop contingency plans that address disconnected routes and explore roadway improvements that can provide better emergency access under emergency evacuation scenarios. Work with emergency response teams and transit providers to identify and support Oakland residents without access to transportation in the event of an emergency.

