DISASTER AND FIRE SAFETY COMMISSION

REGULAR MEETING

August 20, 2025

7:00 PM

Fire Department Division of Training Classroom – 997 Cedar Street

Mayor's Appointee- Andy Katz

District 1 – Michael Wilson
District 2 – Weldon Bradstreet
District 3 – Todd Darling
District 4 – Robert Kinosian
District 5 – Shirley Dean
District 6 – Greg Murphy*
District 7 – Taj Herzer-Baptiste
District 8 – Theo Gordon**

AGENDA

Preliminary Matters

Call to Order:

Public Present

Approval of the Agenda
Discussion –
Agenda approved as amended by Acclamation or Vote?

Public Comment on Non-Agenda Matters
Public speakers:

1. Chairperson's Report
2. Fire Department Staff Report

REGULAR AGENDA MATTERS *All Regular Agenda Matters are for discussion and possible action.*

3. **Action/Discussion*:*** Minutes of June 25, 2025 (Murphy)

   Recommendation: Approve the draft minutes of the June 25, 2025 Regular Meeting.

   Public speakers*:*

   Written Material*:* DFSC 6/25/25 Regular Meeting Minutes

4. **Action/Discussion*:*** Update on the Commission Recommendation on Transfer tax Rebate for Home Hardening (Katz)

   Recommendation: Adopt Recommendation to City Council of Additional Ordinance Amendments.

   Public speakers*:*

   Written Material: Recommendation to Council "Remove Pre-transfer Eligibility Restriction of the Transfer Tax Rebate for Wildfire Hardening"

5. ***Action/Discussion:*** Evacuation Time Study Presentation (Staff)

   Recommendation: None

   Written Material: PowerPoint Presentation

6. **Work Group Reports**
   Receive reporting on recent activities by the following work groups:
   - Plan& Budget Oversight
   - Home Hardening
   - Wildland Urban Interface
   - Safe Passages
   - Community Outreach
   - Street Trauma Prevention

   Written Materials:
   Presentation:

7. Future Agenda Items and Next Steps
   -

Adjournment

This meeting will be conducted in accordance with the Brown Act, Government Code Section 54953.

Any member of the public may attend this meeting. Questions regarding this matter may be addressed to Keith May, kmay@berkeleyca.gov 510-981-5508.
Communications to Berkeley boards, commissions or committees are public record and will become part of the City's electronic records, which are accessible through the City's website. Please note: E-mail addresses, names, addresses, and other contact information are not required but, if included in any communication to a City board, commission, or committee, will become part of the public record. If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service or in person to the secretary of the relevant board, commission, or committee. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the secretary to the relevant board, commission, or committee for further information.
Any writings or documents provided to a majority of the commission regarding any item on this agenda will be made available for public inspection at Berkeley Fire Department located at 2100 Martin Luther King Jr. Way Berkeley, CA.

COMMUNICATION ACCESS INFORMATION:
This meeting is being held in a wheelchair-accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at 981-6418 (V) or 981-6347 (TDD) at least three business days before the meeting date. Please refrain from wearing scented products to this meeting.
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I hereby certify that the agenda for this regular/special meeting of the Berkeley City's Disaster and Fire Safety Commission was posted at the front of the Division of Training, 997 Cedar Street, as well as on the City's website, three days prior to the scheduled Commission meeting.

SECRETARY SIGNATURE

8/14/2025
~~~~~~

DFSC Staff Report

August 20, 2025

1. Measure FF Monthly Report
    a. Budget Overview –
    b. Quarter 1 (July, August, September) report due in November
       Quarter 2 (October, November, December) report due in February
       Quarter 3 (January, February, March) report due in May
       Quarter 4 (April, May, June) End of Year Report due in October
        i. Program Review

            - **WUI Interns –** The Interns provide Berkeley Fire Department with a trained, mobile and mission-specific workforce that is principally assigned to monitor vegetative hazardous fuel on or near structures, collect data, and identify reduction activities

                - **Updates**: No new updates.

            - **Wildfire Prevention / Mitigation – Vegetation Management Inspections –**

                - **Updates:** No new Updates.

                - **Safe Passage - The Fire Department has contracted with a vendor to help the City of Berkeley meet the requirements outlined in SB 99, AB 747, and AB 1409, provide City with professional services in the areas of traffic and evacuation modeling and planning, given various evacuation and/or emergency response scenarios as determined by the City.**
                    - **Update:** Staff presentation on the 8/20/25 Agenda.

2. Measure GG Monthly Report
    a. Budget Overview – No new update
    b. Quarter 1 (July, August, September) report due in November
       Quarter 2 (October, November, December) report due in February
       Quarter 3 (January, February, March) report due in May
       Quarter 4 (April, May, June) End of Year Report due in October

3. Fire Facilities Master Plan (FMP): Berkeley Fire Department stations are undersized, in poor condition and in need of remodels or replacement. The Department initiated a long-term replacement planning process to better understand infrastructure needs. This process will provide the City leaders of today and tomorrow with actionable information ahead of future infrastructure bond measures. (*Measure FF has funded the study only*)

a. **Update**: No new Updates.

4. Department Activities
   a. **113th Firefighter Academy:** Twelve new firefighters graduated on June 19th and are currently doing their orientations.
   b. **114th Firefighter Academy:** Background Process still underway.
   c. **EMS 6 Paramedic Academy:** Offers were made to three candidates earlier this month.
   d. **Emergency Services Coordinator:** Due to a vacancy, we were granted an exemption to hire during the hiring freeze. The application period closed with just over 50 applications received.
   e. **National Night Out (NNO)**: This year there were 94 block party's requests received. Well attended by City staff from various departments including City Council, Berkeley Police Department, Alameda County Coroner Office, Parks, Recreation & Waterfront, Public Health. Berkeley Fire Department had all seven stations participating as well as our Office of Emergency Services staff and some of our Command staff.
   f. **Training:** The months of June and July included Water Tender Training, Auto Extrication, CPR Refresher, EMS Training, Rapid Intervention Crew Training, Control Wildland Burn in a neighboring jurisdiction.

5. Call Volume Report

Fire Department Report by California Incident Type		
	June	**July**
Fires – including Encampment Fires (structures, mobile properties, vegetation, rubbish, equipment, cooking, chimney,	59	56
Explosion - no fire (overpressure ruptures, explosions)	0	0
Rescue & EMS (medical assist, vehicle accident	762	840
Hazardous Condition - no fire (combustible spills/leaks,	44	

chemical release, radioactive condition, electrical wiring problem, biological hazard, potential accident w/ building/aircraft/vehicles)		50
Service Calls (person in distress, water issue, smoke/odor problem, animal issue, public assist, cover assignment/standby)	97	88
Good Intent (canceled en-route, wrong location, nothing found, steam mistaken for smoke)	87	96
False Alarm Calls (malicious, malfunction, unintentional, biohazard scare)	167	164
Severe WX (lightening, wind storms)	0	0
Special Incidents (citizen complaints)	2	0
TOTAL	**1,216**	**1,294**
	Apparatus Count	
	2,720	**2,912**

DFSC Action Tracker

Date of DFSC Action	Description	Status

3/26/2025	Remove the 1-year pre-transfer eligibility restriction of the transfer tax rebate for wildfire hardening from BMC 7.52.060, to encourage early mitigation efforts.	Referred to the Budget & Finance Committee and heard on 5/22/25. Committee has postponed item to a future date.

WILDLAND FIRE MITIGATION MONTHLY REPORT

JUNE & JULY 2025

Prepared by the SPP Division

Program Data - Cumulative 2024-2025 (+/- current month)

Grizzly Peak Clean-up

Wildfire vegetation management along Grizzly Peak. In partnership with EBMUD, UC Berkeley, and EBRPD. Funded by the California Department of Forestry and Fire Protection's (CAL FIRE) Wildfire Prevention Grants Program.

- Phase I: Completed 4 miles
- Phase 2: Completed 3.24 miles to date
- Total: 683.2 tons vegetation removed

FireWise Application Status

18 FireWise Communities **3** Pending / In-Progress

Home Hardening Mesh Program

Program on hold

Pick-ups and deliveries provided bi-weekly

Applications	Pickups	Deliveries
261 (+25) (+5)	**129** (+1) (+0)	**85** (+2) (+19)

Eucalyptus Understory Program

Program on hold

Applications	Properties Completed	Total Spent
51 (+0) (+0)	**31** (+0) (+0)	**156,698**

Chipping Program

Program active March - December

Cubic yards removed	Pickups	Weeks Completed
5161.5 (+789.5) (+269)	**1686** (+241) (+111)	**44** (+5) (+3)

Defensible Space Inspections YTD (+/- current month)

874 (+39) (+156)	**Inspections**
40 (+2) (+0)	Re-Inspections
528 (+19) (+347)	Violations
415 (+89) (+70)	Discoveries
540 (+32) (+30)	Resolved Violations
11 (+0) (+0)	Total Citations
187 (+53) (+29)	Resolved Items
9 (+4) (-3+6)	Inspectors

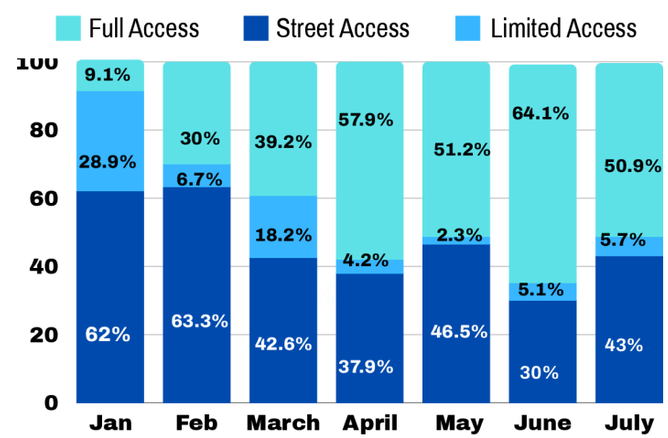
Right of Entry Agreement Program

50.9% of our total inspections were full access.

6315 Invitations Sent

492 RoE's Signed

Inspection Access %



Announcements

Alameda County Coordinator

Chris Pinto was selected as the new Alameda County Coordinator following a multi-agency panel interview process. Berkeley Fire hosts the position, which is funded by Cal FIRE through the California Fire Safe Council. Pinto brings 32+ years of experience in wildfire mitigation.

EMBER Initiative Timeline

Effective Mitigations for Berkeley's Ember Resilience (EMBER)

- **Introduced EMBER-** January 2025
- **First Reading of the Ordinance-** March 2025
- **Council Meeting to Adopt the Resolution-** April 15, 2025
- **Public Hearing to Adopt the Code-** June 17, 2025
- **Education Campaign** May – December 2025
- **Increased Services and Support** July 2025
- **Enforcement by Inspection** January 1, 2026
- **Reduced Risk of Loss Zone 4** 2026

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AGENDA

Preliminary Matters

Call to Order: 7:06
Present: Bradstreet, Murphy, Kinosian, Wilson, Herzer-Baptiste, Gordon, Dean
Late: Katz 7:08
Absent: Darling

Public Present: 1

Approval of the Agenda

Motion to approve from Bradstreet, seconded by Gordon
Motion by Murphy to approve by acclamation
Agenda approved by Acclamation

Public Comment on Non-Agenda Matters

Public speakers: 1

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1. Chairperson's Report: Congratulate the Dept/Council for approving Ember. Contact with Fire Safe Council and other landscape professionals, will attempt to contact UC Berkeley to help provide resources to implementation of Ember. Once work plan is adopted, if we have fire resiliency workgroup established, want them to work on resources for Ember implementation.
2. Fire Department Staff Report:

REGULAR AGENDA MATTERS *All Regular agenda Matters are for discussion and possible action.*

3. Action/Discussion:	Minutes of May 28, 2025 (Murphy)
Recommendation:	Approve the draft minutes of the May 28, 2025 Regular Meeting.
Motion:	Murphy
Motion to approve:	Herzer-Baptiste
Second:	Gordon
Vote: Ayes:	Katz, Wilson, Bradstreet, Kinosian, Dean, Murphy, Herzer Baptiste, Gordon,
Nayes:	0
Absent:	*Darling*
Written Material:	DFSC 5/28/25 Regular Meeting Minutes

4. Action/Discussion:	FY26 Work Plan (Murphy)
Recommendation:	Amendment and Approval of individual *activities* proposed in a 2025 – 2026 DFSC Work Plan that will then be finalized and submitted to City Council for Approval
Motion:	Murphy
Motion to approve:	Kinosian
Second:	Herzer-Baptiste
Vote: Ayes:	Katz, Wilson, Bradstreet, Kinosian, Dean, Murphy, Herzer Baptiste, Gordon
Nayes:	0
Absent:	Darling
Written Material:	FY26 Work Plan

Commission assigned out who would be in each work group (listed below)

5. **Work Group Reports**
   Receive reporting on recent activities by the following work groups:

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- Plan& Budget Oversight: Murphy will be discussion with Chief Sprague and setting up a formal schedule for that work group. That will be set in conjunction with regular budget reviews.
    - Murphy
    - Gordon
    - Katz
- Fire Resiliency (Home Hardening and WUI)
    - Herzer Baptiste
    - Murphy
    - Katz
- Safe Passages Gordon: delayed first meeting, waiting for the evacuation time study
    - Gordon
    - Wilson
    - Herzer Baptiste
- Community Outreach
    - Bradstreet
    - Herzer Baptiste
    - Darling *penciled in/potential*
- Vision Zero renamed to **Street Trauma Prevention**:
    - Wilson
    - Gordon
    - Herzer Baptiste

Written Materials:
Presentation:

6. Future Agenda Items and Next Steps
    - **August 20 – Evac Time Study: can there be a staff presentation?**

Adjournment 7:40
Bradstreet motion
Gordon
Acclamation

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SECRETARY SIGNATURE

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[ ] CALENDAR
Date

To: Honorable Mayor and Members of the City Council

From: Disaster and Fire Safety Commission

Submitted by: Greg Murphy, Chairperson

Subject: Remove pre-transfer eligibility restriction of the transfer tax rebate for wildfire hardening

RECOMMENDATION

Remove the 1-year pre-transfer eligibility restriction of the transfer tax rebate for wildfire hardening from BMC 7.52.060, to encourage early mitigation efforts.

FISCAL IMPACTS OF RECOMMENDATION

Increased utilization of the transfer tax exemption. Reduced risk of significant costs due to wildfire disaster.

CURRENT SITUATION AND ITS EFFECTS

The City of Berkeley has responded to wildfire risk with a variety of mitigation measures to improve prevention. One type of mitigation measure to reduce risk is through home "hardening" which is the process of increasing resistance to wildfire by replacing combustible materials with ignition resistant and/or non-combustible materials and other scientifically proven actions including:

- Reducing the home's vulnerability to heat.
- Creating fire-resistant surfaces
- Blocking any potential points of ingress for embers and other flammable material.

Retrofitting our homes against seismic damage and destruction has proven to be good policy; hardening against wildfire will be as well.

On September 10, 2024, the council approved the first reading of the Ordinance amending BMC 7.52.060 to include "Wildfire Hardening" in the Real Property Transfer Tax Exceptions. While this encourages homeowners to implement wildfire hardening at the time of sale, the limitation of eligibility to projects undertaken within a year prior to the time of transfer discourages early action, and, to the extent that such measures could be required within Fire Zone 4 as part of EMBER or a future program, dampens the ability to require the recommended measures without imposing hardship. It appears that this was an unintended consequence of the original action.

Therefore, the Commission recommends that the City Council amend Berkeley Municipal Code 7.50.060.L.3 to strike the words “up to one-year” from the current ordinance. The Commission notes that the existing rebate program for seismic upgrades does not have a one-year restriction prior to sale. While the point of sale is often an important opportunity for home renovations, the recent adoption of this ordinance with a one year prior to sale restriction could have the unintended consequence of discouraging homeowners from making wildfire hardening improvements early. Project delivery and property transfer dates are also subject to delay, which contributes to uncertainty, thereby discouraging action without this correction. Possible concerns to address permanence and verification should be studied over the next few years to integrate appropriate documentation filing requirements and/or re-inspection.

The inherent wildfire risk Berkeley faces because of the natural topography and weather conditions is increasing due to climate change which is bringing more frequent and substantial draughts, and higher temperatures. The City of Berkeley has and will continue to implement strategies that reduce the wildfire risk to our community, and should a wildfire occur, improve the emergency response. However, the City is able to address only part of the wildfire risk that the community faces as much of the risk within the City proper lies on private property in the form of structures that pre-date modern fire resistive building codes. While some of the retrofit work that must occur is inexpensive, much of it is expensive and requires professionals. Thus, there is a significant challenge to getting this work completed, even for motivated residents. There is a need to be nimble and adapt our legislation to incentivize the work we know has to get done, work that will help slow an advancing fire so firefighters can protect the community. This amendment will provide an opportunity and mechanism for the City to incentivize homeowners in making these improvements.

Action: Motion to approve the Commission recommendation Katz. Second: Kinosian.

Votes: Ayes: 7 Katz, Wilson, Bradstreet, Herzer-Baptiste, Gordon, Murphy, Kinosian;

Noe’s: 0

Abstain: 0

Absent: 2 Dean, Darling

BACKGROUND

Maintaining our housing stock is essential to the health and welfare of our city. The impacts from a wildfire are not just seen in the structures; it has devastating consequences on mental health, individual sense of security, and our financial stability as a community. The Loma Prieta Earthquake took the Bay Area by surprise on October 17,1989. According to the California Department of Conservation, that 6.9 magnitude earthquake killed 63 people, injured close to 4,000 and displaced over 12,000 people. Less than two years later, June 25, 1991, Berkeley City Council voted for an exception on transfer property taxes to help homeowners pay for seismically upgrading their homes, and BMC 7.52.060, Sub-section K was established. In the last 10 years, the Finance Department processed approximately 1,200 seismic upgrade rebates for a total of $7.2M. Since the seismic retrofit exception was included in BMC 7.52.060 in 1991 no expanded safety exceptions have been added. The City of Berkeley is in one of the highest wildfire risk areas in the state. We have a long history of catastrophic wildfire here in Berkeley.

Most notably, in 1923, when a wildfire destroyed more than 600 homes, leaving more than 1,000 residents homeless. In 1991, the Berkeley/Oakland Tunnel Fire was responsible for 25 deaths and destroyed more than 3,000 homes. In 2024 valuation, that conflagration cost 4 billion dollars. Now is the time to improve and adapt policies, and help residents harden their homes against wildfire. Fire science studies are decisive. Wildfire hardening reduces the chances of a home catching fire.

ALTERNATIVE ACTIONS CONSIDERED

- The Commission previously evaluated requiring that some investment to harden against wildfire while making major renovations and / or additions to the property will comply owners to undertake these important upgrades and reduce our vulnerability to destruction and damage as a result of a wildfire. This approach was found to be difficult for the Building Department to implement in a broader area, indicating that incentive approaches are important until staff can develop more experience after implementation of these aspects of the EMBER program within Fire Zone 4.
- The Commission considered recommending that pre-transfer rebate value be indexed to inflation, so homeowners not planning to transfer property ownership in the near term retain the real value of the incentive. The Commission did not recommend this feature at this time based on the Council declining to adopt a similar, although higher inflation adjustment for the rebate of home energy efficiency deposits. This feature could be considered in the future after further review.

CITY MANAGER

The City Manager concurs with the content and recommendations of the Commission's Report to the extent that it can incentivize Berkeley residents to perform work on the homes in an effort to reduce fire ignition and spread. The City Manager also

acknowledges that homeowner efforts will recognize a minor revenue that will be available at the point of sale or transaction of the property.

CONTACT PERSON
Keith May, Commission Secretary, Deputy Fire Chief, (510) 510-981-5508.

Attachments:
1: Ordinance Amending Sections of 7.52.060 of the BMC

ORDINANCE NO. #### -N.S.

AMENDING SECTIONS 7.52.060 OF THE BERKELEY MUNICIPAL CODE
BE IT ORDAINED by the Council of the City of Berkeley as follows:

Section 1. That Berkeley Municipal Code 7.52.060, Real Property Transfer Tax Exceptions, Sub-section L, is amended to read as follows:

BMC 7.52.60 Sub-section L

L. 1. Up to one-third of the tax imposed by this chapter shall be rebated, on a dollar for dollar basis, for all expenses incurred on or after January 1, 2025 to "wildfire harden" either any structure which is used exclusively for residential purposes, or any mixed-use structure which contains two or more dwelling units. Multiple rebate applications may be submitted for a partial rebate of the tax paid. However, the total rebate for any combination of seismic retrofit and/or wildfire hardening shall not exceed the maximum of one-third (1/3) of the tax paid per property.

2. The term "wildfire harden" within the meaning of this chapter means work which is the process of increasing resistance to wildfire by replacing combustible materials with ignition resistant and/or non-combustible materials and other scientifically proven actions. The work must be permanent and not vegetation management or gardening adaptations that require continued maintenance. To be eligible for a rebate, the parcel level mitigations set forth in the California Department of Insurance "Safer from Wildfires" Framework REG-2020-00015 adopting California Code of Regulations Title 10, Chapter 5, Subchapter 4.8, Article 4, Section 2644.9 must be satisfactorily completed as determined by the Building Official (when a permit is required) and a Berkeley Fire Department Defensible Space Inspection. These include:

(a) All improvements must be permanent and comply with design, material and construction methods as described in the California Building Code, Chapter 7A. and BMC 19.28.030.

(b) Structures with a wood shake roof must be replaced with a Class A fire rated roof before qualifying for the transfer tax rebate.

(c) Clearing combustible materials including fences and gates, and all movable combustible objects, from the area within five (5) feet of the building being evaluated (Replace with only noncombustible materials.).

(d) At least six (6) inches of noncombustible vertical clearance at the bottom of the exterior surface of the building, measured from the ground up.
(e) Fire-Resistant Vents and Gutter Covers of 1/16 to 1/8 inch noncombustible, corrosion-resistant metal mesh or OSFM Category 8165 approved ember resistant vents.

(f) Multi-paned windows, including dual pane windows, or functional shutters, which when closed, cover the entire window and do not have openings. (g) Enclosed eaves.

(h) Remove combustible materials and debris from under decks and installation of non-combustible siding or ember resistant mesh of 1/8" or finer around deck perimeter.

(i) Removal or absence of combustible structures, including sheds and other outbuildings, from the area within thirty (30) feet of the building being evaluated or, in the event that the applicant does not control the entirety of the area extending thirty feet from the building being evaluated, removal of combustible structures from as much of such area as is under the control of the applicant.

(j) Block spaces between roof covering and sheathing with noncombustible materials (bird stops).

(k) The property upon which the building being evaluated is situated complies with Section 4291 of the Public Resources Code, when applicable, and any applicable local ordinances, governing defensible space.

(l) Any other work found by the Building Official or Fire Marshal (or their designee) to substantially increase the capability of those structures, specified in subsection L.1, to withstand destruction or damage in the event of a wildfire.

3. The work to wildfire harden as provided herein shall be completed either ~~up to one-year~~ prior to the transfer of property or as provided in subsection L.5.

4. If the work to wildfire harden structures and property provided for herein is to be performed after the transfer of property which is subject to the tax imposed by this chapter, upon completion of such work and certification by the building official as to the amount of the expenses of such work the City Manager or their designee may refund such expenses not to exceed one-third of the tax imposed to the parties to the sale in accordance with the terms of such sale. Any remaining tax shall be retained by the City.

5. From the date of the recordation of the transfer document, the applicant shall have one year to complete all wildfire hardening work and submit a wildfire hardening verification application to the Codes and Inspection Division of the City of Berkeley. If the work is not completed at the end of one year, that portion which has been completed may be credited as a rebate to the applicant upon submission of a Home Hardening verification application and substantiating documentation, as required by the codes and inspections division of the City of Berkeley, showing the dollar amount of work completed up to that date.

6. Within the one-year period established by paragraph 5, an applicant may request, and the City Manager may approve, an extension of up to one year. The City Manager or their designee may grant such an extension only for good cause. The decision of the City Manager or their designee shall be entirely within their discretion and shall be final.

> (a) "Good cause" includes (i) the inability of the applicant, after a prompt and diligent search to find and retain the services of an architect, engineer, contractor or other service provider whose services are necessary for the Home Hardening work; (ii) unforeseen and unforeseeable circumstances such as a significant change in the scope of the Wildfire Hardening work due to circumstances in the field which could not reasonably have been known earlier; and (iii) serious illness or other extraordinary and unforeseeable circumstances that prevented the timely commencement or completion of the Wildfire Hardening work.
>
> (b) "Good cause" does not include (i) ignorance of the applicable City ordinances or regulations concerning the Wildfire Hardening rebate provided in this chapter or state or local laws relating to the standards with which wildfire hardening work must comply; or (ii) any delays which were within the control or responsibility of the applicant.

Section 2. Copies of this Ordinance shall be posted for two days prior to adoption in the display case located near the walkway in front of Council Chambers, 2134 Martin Luther King Jr. Way. Within 15 days of adoption, copies of this Ordinance shall be filed at each branch of the Berkeley Public Library and the title shall be published in a newspaper of general circulation.

Status Update RE: DFSC Recommendation on Transfer Tax Rebate - August 20, 2025

The City Council referred the DFSC recommendation on transfer tax rebate (TTR) for wildfire/home hardening to the Budget and Finance Committee. The Committee discussed it on July 10, 2025 with Commission representation and requested review of issues, which the Neighborhood Fire Resilience workgroup reviewed, with summary below.

1. **Cost Estimates and Administration.**

Some members were interested in receiving cost estimates in their role as a Budget and Finance Committee. This was directed to the City Manager's office, and could have implications for geographic eligibility. The workgroup recommends that if cost considerations require, that the Council may consider limiting eligibility to Very-High Fire Hazard Severity Zones, to focus the incentive on parcels with regulatory burden and the greatest public safety benefit:

> *To be eligible for a rebate, the parcel must be located in a Very-High Fire Hazard Severity Zone, as defined by BMC 19.48.020.FFF*

The existing Home Hardening TTR has not yet been implemented yet with an Application, and the responsible departments/divisions must also be updated within the Ordinance.

2. **Scope of TTR Compared to EMBER**

The TTR expansion for wildfire hardening was enacted before the EMBER program, and was initially designed with a scope that was focused on traditional home hardening. The Council committee requested additional review of the scope of potential overlap with EMBER.

The Neighborhood Resilience workgroup recommends that the City maintain eligibility for existing vegetation removal activities in the TTR program, provided that they are demonstrated to be permanent, as required by BMC 7.52.60.L.2(a). However, a new comma could be helpful for interpretation and clarity:

> (a). The work must be permanent*,* and not vegetation management or gardening adaptations that require continued maintenance.

The partial overlap comes from BMC 7.52.60.L.2(c). The workgroup recommends maintaining eligibility for permanent vegetation removal within Zone Zero, but clarifying so that the TTR rebate is not applicable for activities outside of Zone Zero, which the previous drafting permitted:

> (c) Clearing combustible materials including fences and gates *where they are*~~, from the area~~ within five (5) feet of the building being evaluated, *provided that* all movable combustible objects *are removed or* ~~(R~~*r*eplaced with only noncombustible materials~~)~~.

While the workgroup identifies meaningful concerns with high risk vegetation outside of Zone Zero, the TTR rebate should be focused on home hardening. The EMBER ordinance requires nearly all vegetation with limited exceptions to be removed from Zone Zero, so the TTR program should provide appropriate incentive and relief.

3. **Ensuring that Hardening Measures are in Service at Time of Transfer**

Given the possibility that there could be considerable time between the home hardening activity and the time of transfer, the Council requested review of this concern to ensure hardening measures remain in service at the time of transfer.

Fire Department Staff advised that for building and construction measures (fence removal/replacement, window glass replacement, home siding, gutter/attic vents), that there is minimal to no risk of non-permanence or reversal of the hardening work. The evidence of payment to a contractor is strong likelihood of long-term service. Therefore, this does not merit a provision for verifying the measure is still in service at the time of transfer for this scope of measures, but a contemporaneous recording of expenses may be reasonable to prevent the risk of fraud.

However, there is more uncertainty for vegetation removal, especially when some species can resurface if not properly removed, and some species can require a follow-up treatment. The work group recommends that the Application require self-certification that the hardening measures remain in service for all measures, and that Applications requesting rebate including any vegetation removal attach photographic documentation of conditions at the time of transfer if the transfer occurs five or more years after the date of removal:

4 (a) [Existing section re-organized with a subsection]

(b). The City Manager or their designee may require that a rebate application require self-certification that the hardening measures remain in service for all measures, and that Applications requesting rebate including any vegetation removal attach photographic documentation of conditions at the time of transfer if the transfer occurs five or more years after the date of removal.

(c). The City Manager or their designee may require that an application for rebate for Home Hardening work that occurred more than one year prior to transfer be preceded by the Applicant's certification filed with the City documenting any eligible expenses no later than one year after the Home Hardening work is completed.

4. **Indexing**

The Commission initially deferred formal recommendation of indexing the TTR of pre-transfer rebates to inflation to maintain a streamlined process. At this time that the Council is reviewing matters in greater depth, the following language is proposed to provide an inflation adjustment to maintain the real value of the incentive:

1. *…When an application is submitted more than two years after the Home Hardening work is completed, the basis value of the rebate for all expenses incurred shall be adjusted based on changes in the Consumer Price Index for All Urban Consumers (CPI-U) for the San Francisco-Oakland-Hayward, CA Metropolitan Statistical Area, as published by the Bureau of Labor Statistics.*

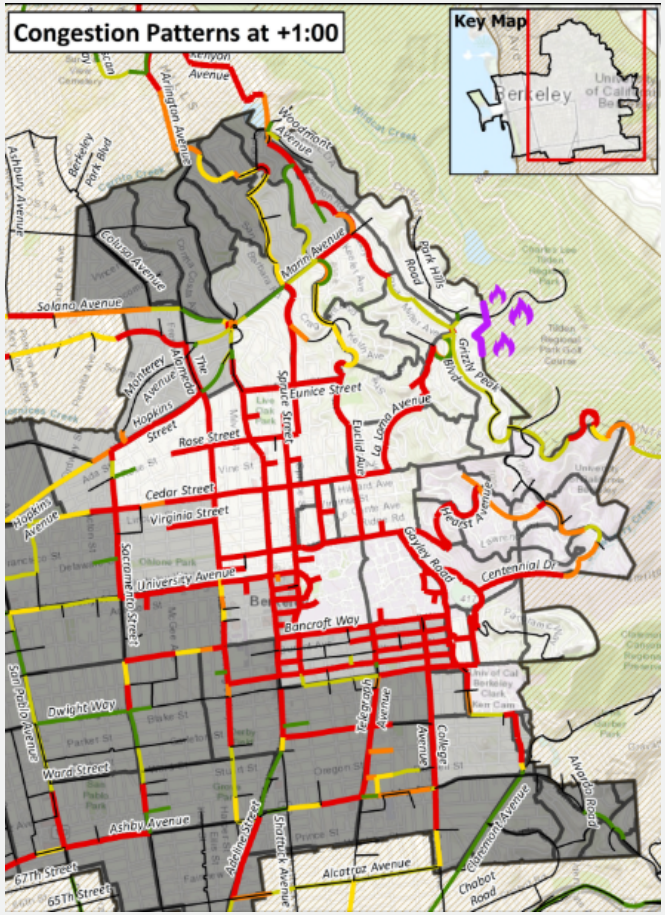
Evacuation Time Study

Disaster & Fire Safety Commission

August 20, 2025

Agenda

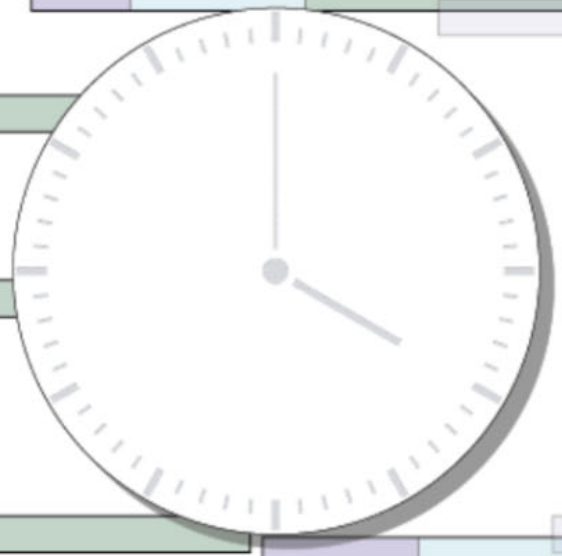
- Goals and Methodology
- Study Results and Analysis
- Recommendations
- Learn More



Goals & Methodology

Goals: Measuring Risk to the Community

How fast can people move out of harm's way?



How fast will the hazard move?

Study Topics

- **How long** will evacuations take? Will people be **safe**?
- Best evacuation **routes**
- People **without cars**
- **Roadway design** and infrastructure
- Increased **Hills density**
- How can we **improve** evacuation times?

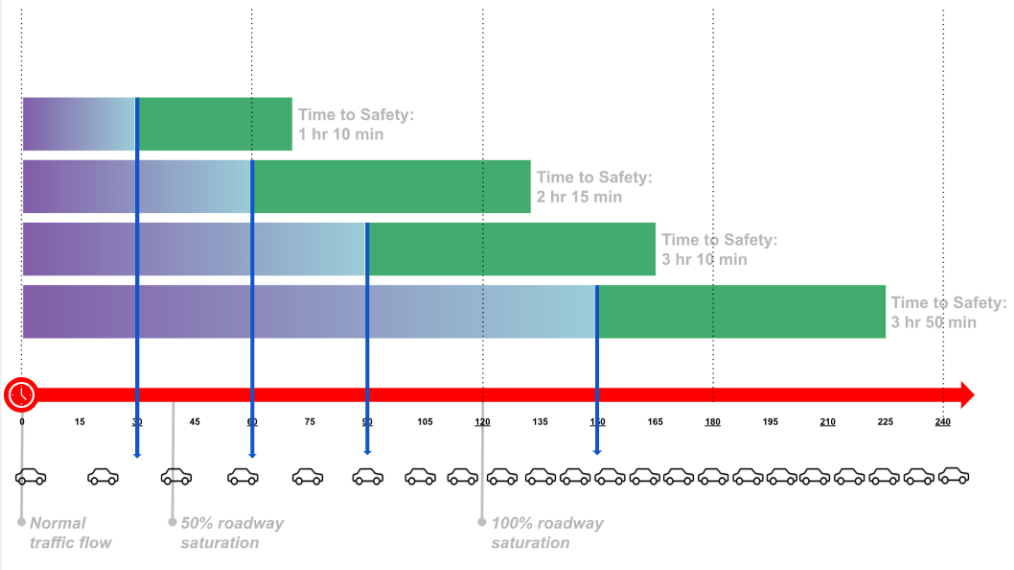
Methodology

- Field survey of roadway system/traffic
- Census demographic data analysis
- Demographic survey
- Evacuation regions
- Transit dependent analysis
- Evacuation Time Estimates
- What-if scenarios

Study Results & Analysis

Study Results & Analysis

- Evacuation Times
- Evacuation Routes
- People Without Cars
- Roadway Design and Infrastructure
- Increased Hills Density

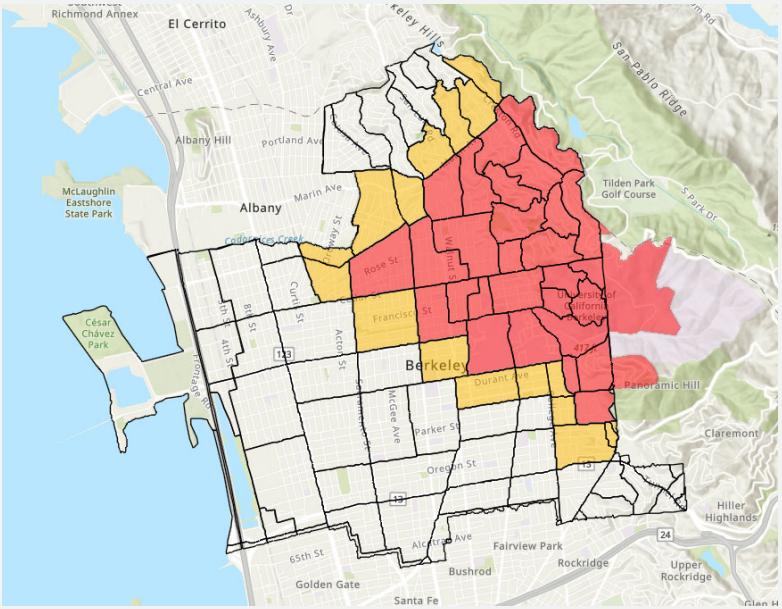


Evacuation Times

Wildfire

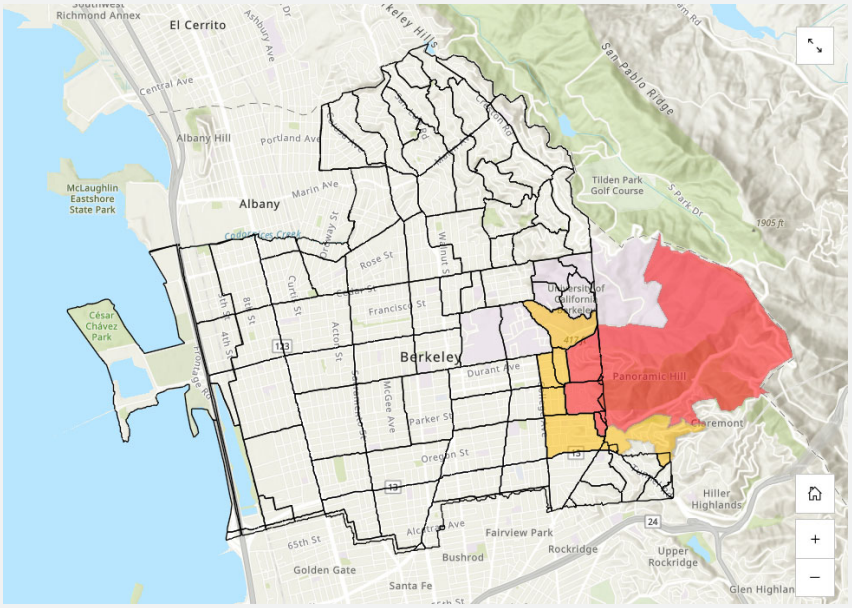
1923 Fire Repeat

1h 35m – 4h 10m



Panoramic Hill Fire

45m – 1h 45m



Wildfire

- A fast-moving fire could overtake people who are still stuck in traffic.

- Unpredictable fire spread
- Poor roadway capacity
- Mass transportation challenges

Tsunami

Max Phase Tsunami Warning

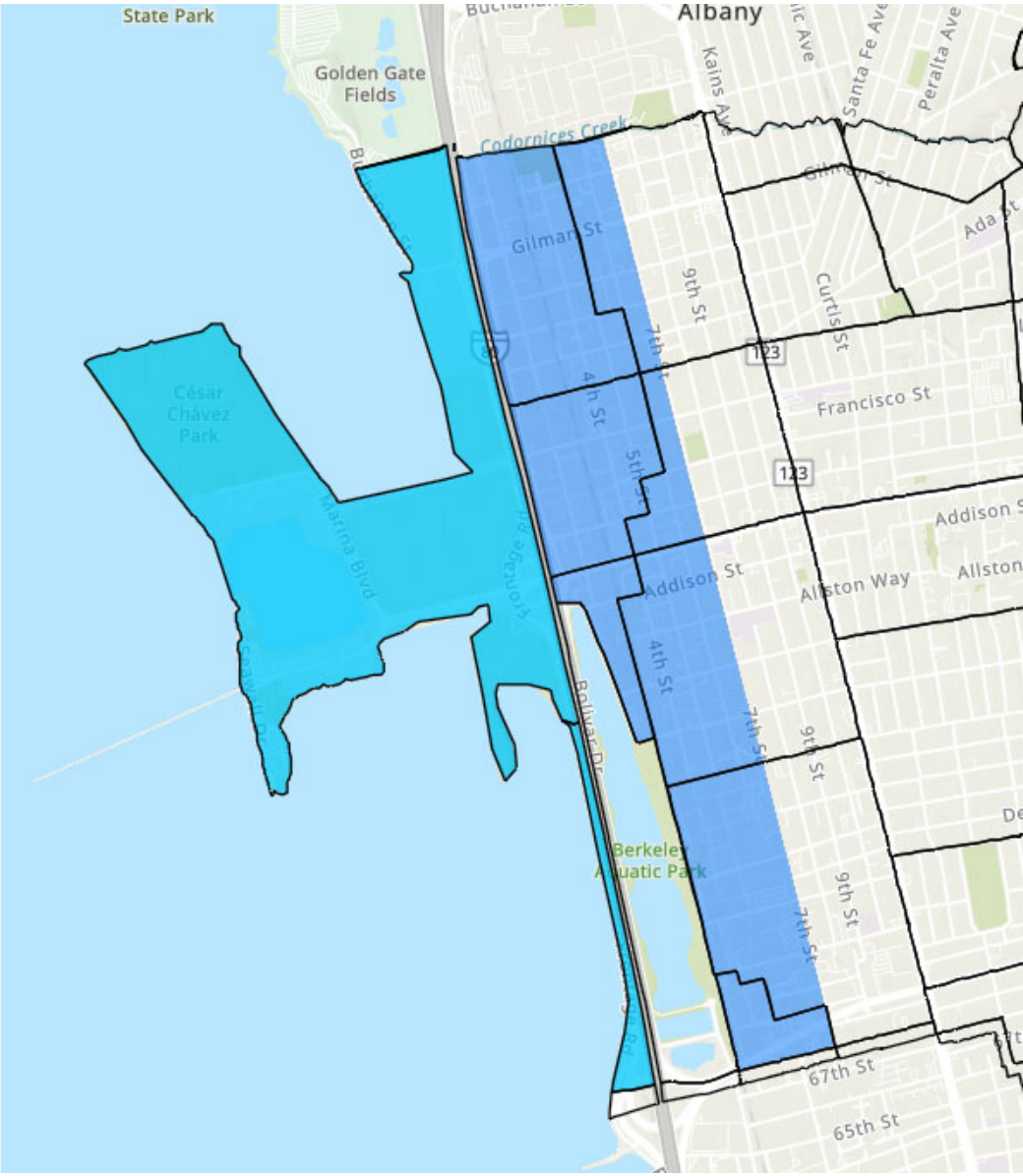
West of 7th Street

1h 50m – 2h 15m

Phase 3 Tsunami Warning

West of I-80

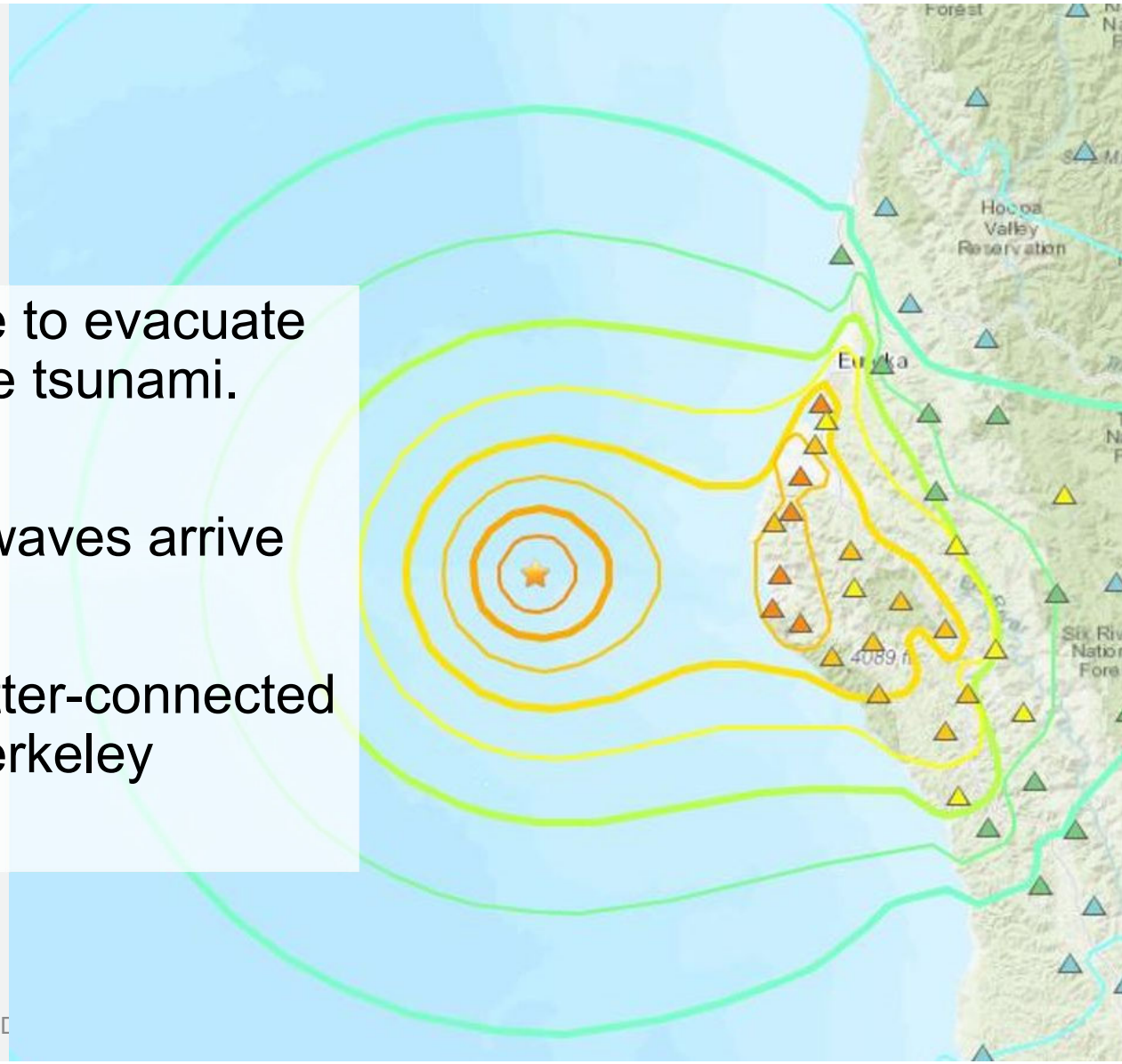
55m – 1h 45m



Tsunami

- Most people will be able to evacuate out of the path of a large tsunami.

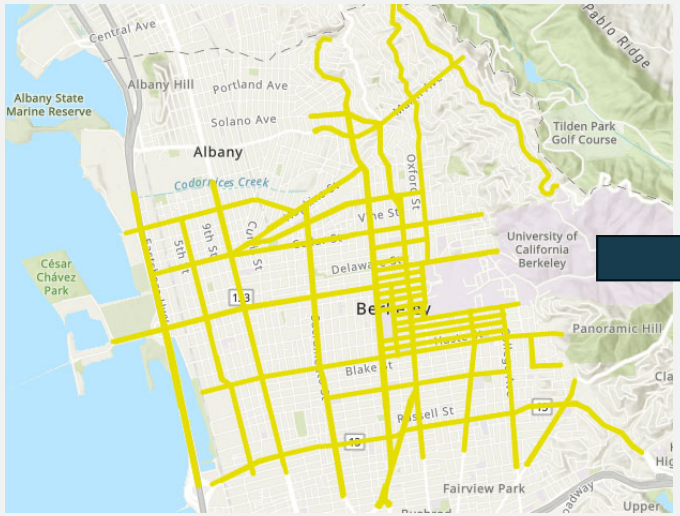
- Hours of notice before waves arrive
- Defined impact area
- Higher-capacity and better-connected road network in west Berkeley

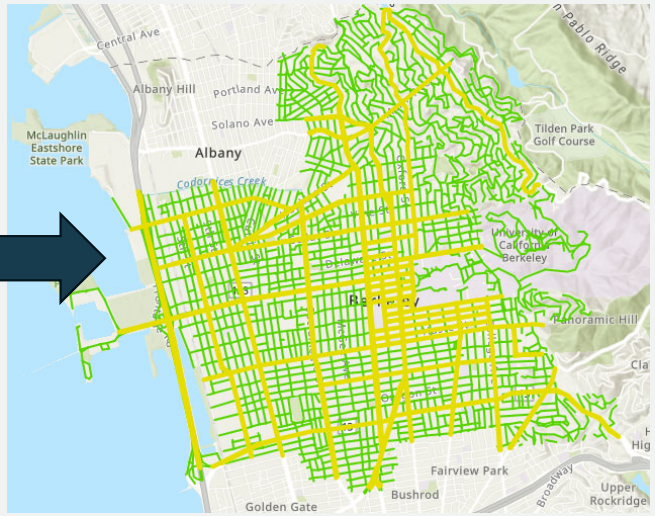


Evacuation Routes

Evacuation Routes

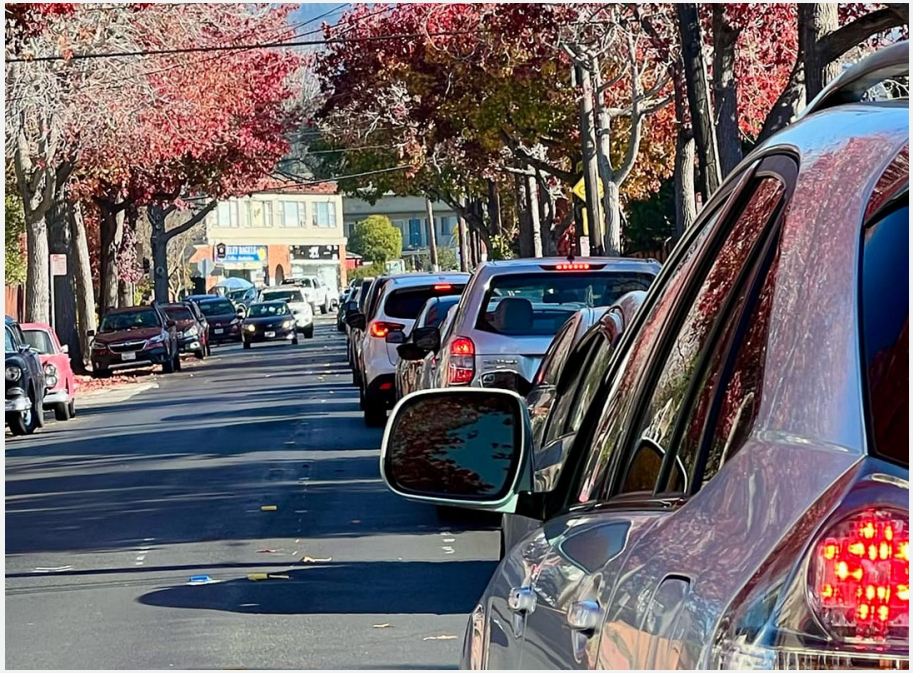
- Urban evacuation context
- Distribute traffic along the roadway network
- Evacuees should use any and all available roadways





People Without Cars

Walking and Biking for Evacuation



Good option for flats/tsunami

- Notice before tsunami impact
- Defined impact area
- Relatively short evacuation distance
- Better bike infrastructure in west Berkeley than in hills

Walking and Biking for Evacuation

Not recommended for hills fire evacuation

- Unpredictable fire spread
- No protection from toxic gases, embers, heat, and fire
- No protection in collisions

Safest option for all hills residents is to leave early

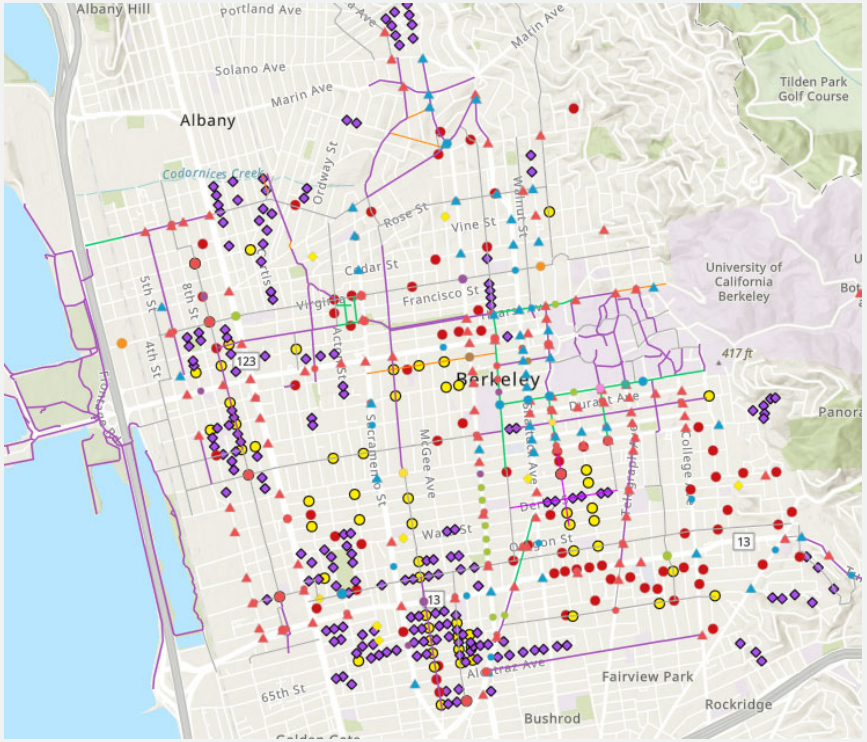
Mass transportation support

- Officials will request partner resources in large evacuations
- Mass transportation should <u>not</u> be a primary evacuation plan – critical issues with availability, access, and safety
- Recommendation to residents: Leave hills early during Extreme Fire Weather, carpool with neighbors

Roadway Design & Infrastructure

Evacuation Congestion in Study

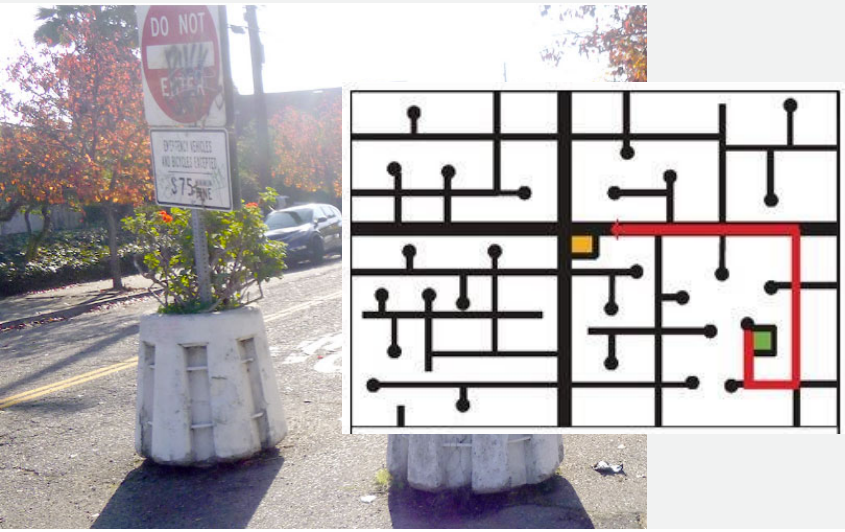
- Congestion related to pre-timed signals and traffic design:
  - South and West of the UC Berkeley Campus
  - South and West of Clark Kerr Campus
  - North of Ohlone Park
  - Lawrence Berkeley National Laboratory



What does safety look like?

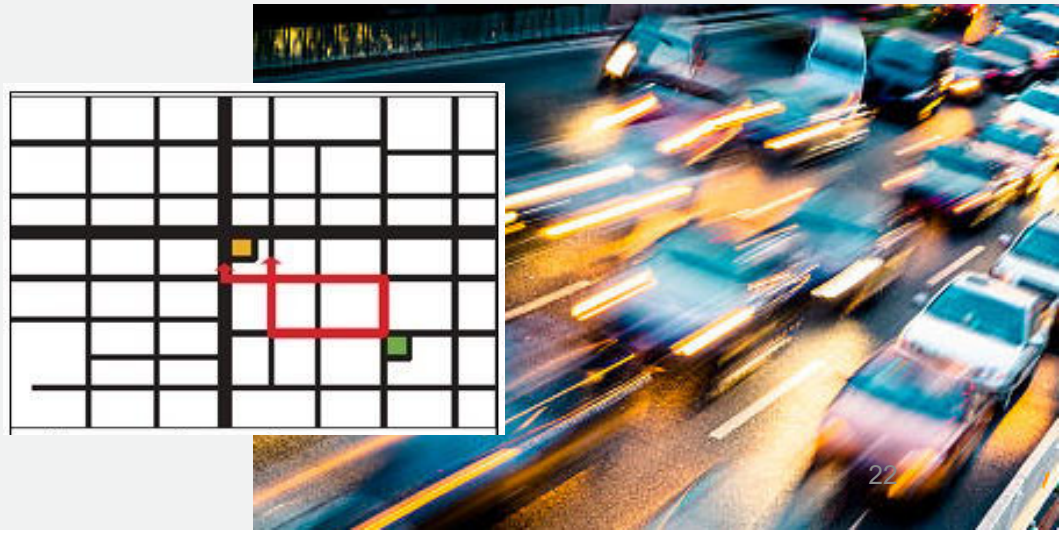
Everyday Safety

- **Reduce vehicular speeds** to ensure safety of all roadway users



Catastrophic Emergency

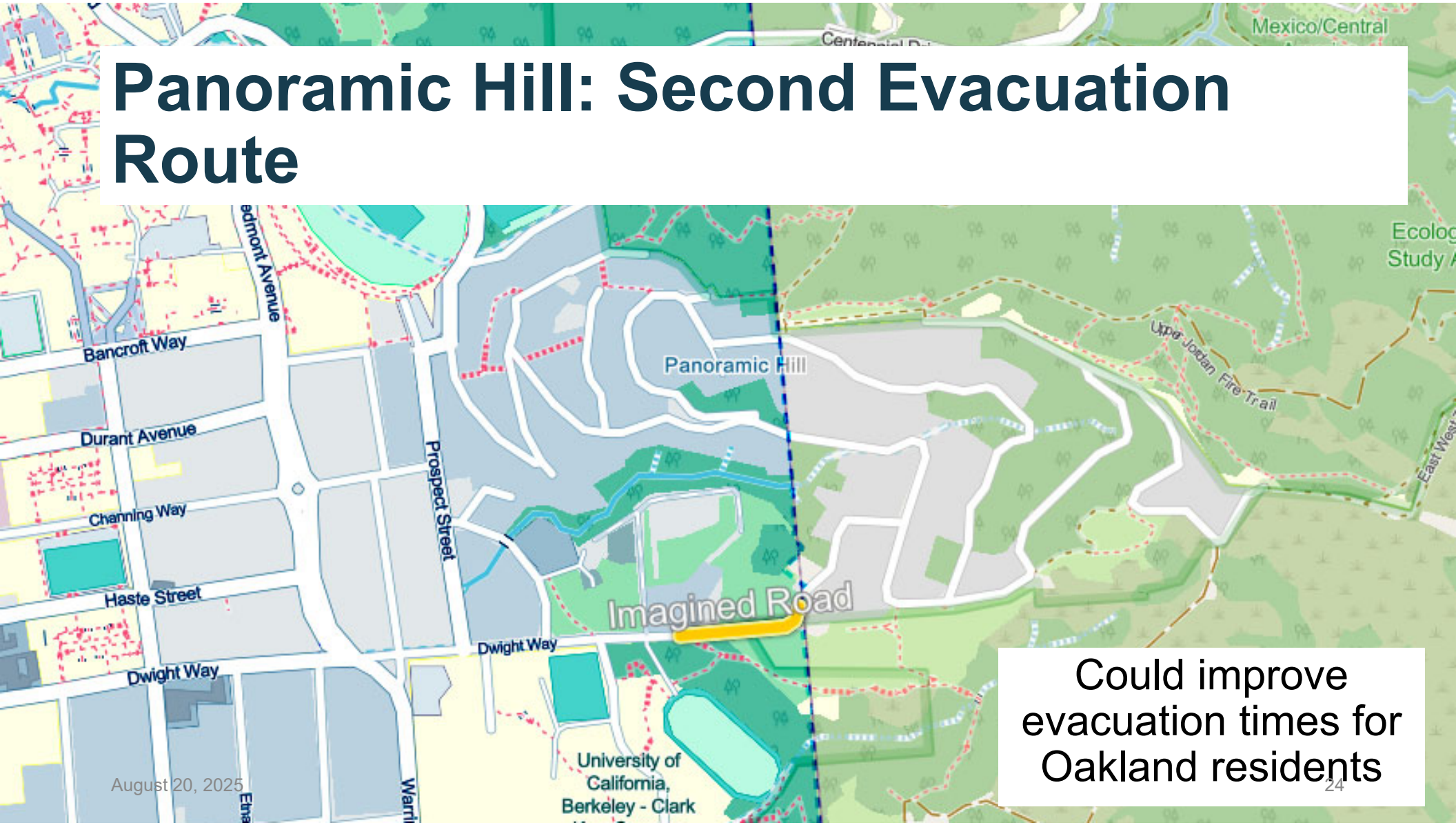
- **Expedite traffic flow** to get evacuees away from hazards



Evolving Traffic Safety Approach

- Transportation and Public Safety **partnership** to increase safety for **all roadway users:**
  - Pursue innovative roadway designs to serve **daily use** and **catastrophic emergencies**
  - Explore traffic safety strategies **beyond roadway design**

Panoramic Hill: Second Evacuation Route

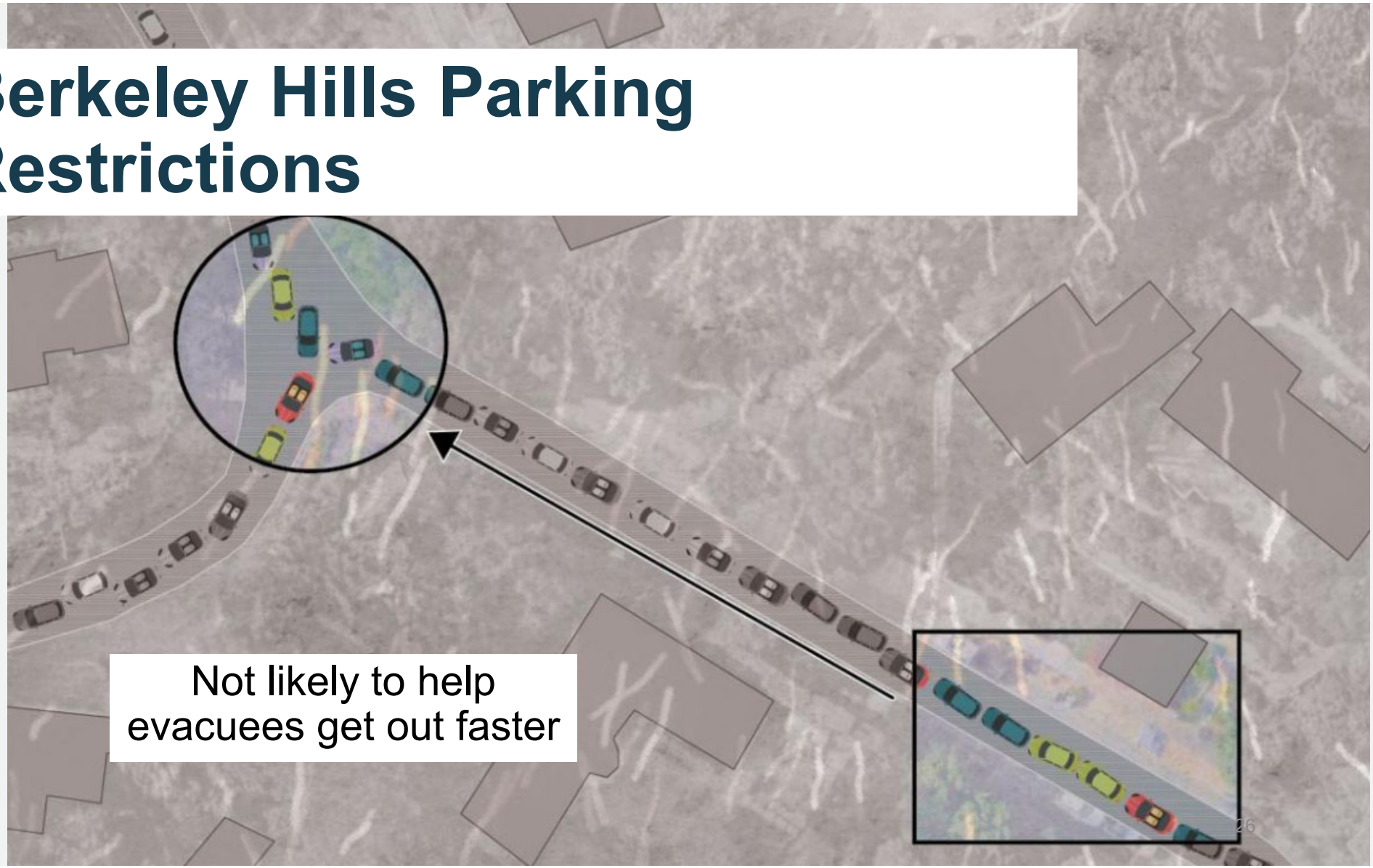


Could improve evacuation times for Oakland residents

Berkeley Hills Parking Restrictions

Not likely to help evacuees get out faster

Berkeley Hills Parking Restrictions



Berkeley Hills Parking Restrictions

Could help with responder ingress during evacuations

Increased Hills Density

Evacuation Time Study Findings

Current context

In a wind-driven wildfire at current development levels, some **evacuees will be overtaken by fire** as they try to escape.

Study Findings

More hills density will increase evacuation times.

Even if new residents evacuate using public transit, evacuation times increase.

Study Findings: Evacuation Time Increases

Development Type	1923 Berkeley Fire Repeat	Panoramic Hill Fire
Likely Middle Housing thru 2031	+6%	n/a
Max ADU/JADU Development*	+102%	+52%
Max ADU/JADU Development* AND Likely Middle Housing thru 2031	+105%	+54%
Max ADU/JADU Development* *With transit exemption zone (evacuees on buses)*	+65%	+70%
Max ADU/JADU Development* *With transit exemption zone (evacuees on buses)* AND Likely Middle Housing thru 2031	+68%	+69%

**Theoretical Max ADU/JADU Development (unlikely -- +3 ADUs on every parcel)*

Recommendations

Next Steps

- Report recommendations address:
  - Disaster response planning
  - Transportation and roadway design
  - Land use policies
  - Household-level evacuation preparedness

- Staff support recommendations and are working to incorporate them into planning and operational efforts.

Learn More

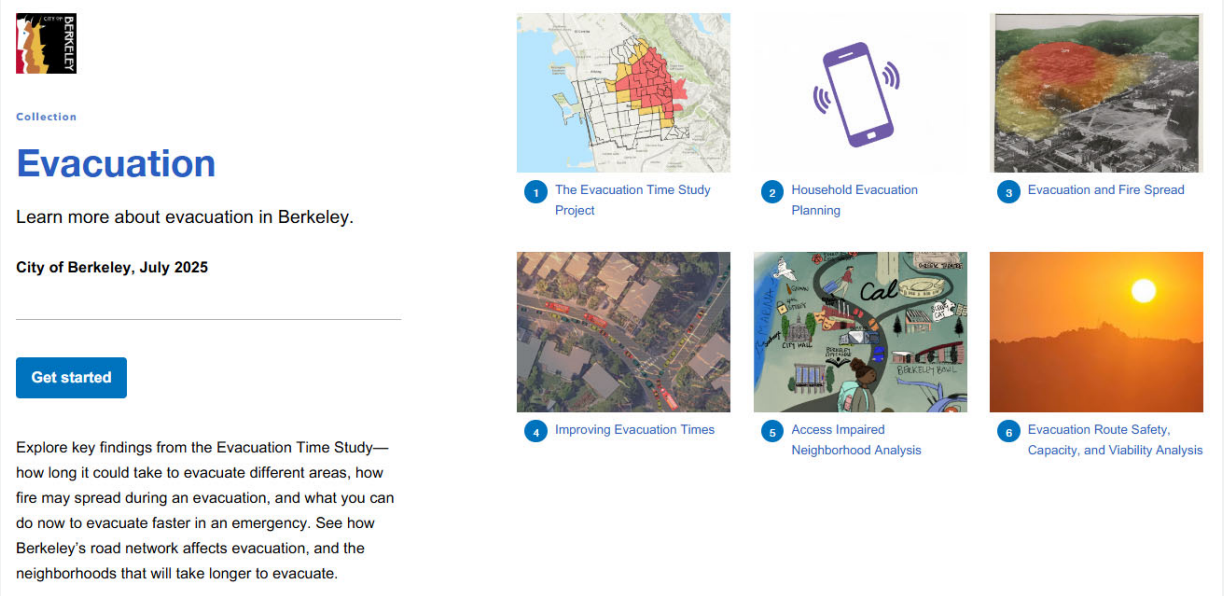
Learn More

https://bit.ly/evacstudy

Evacuation StoryMaps

- Download Study and text-based StoryMaps

Printed copies of the Study to City libraries



Discussion

From: Lana, Sarah
To: May, Keith
Subject: Communication for DFSC: Evacuation Time Study Live
Date: Wednesday, July 16, 2025 4:24:52 PM

Chief May,

Please find below a communication for the Disaster and Fire Safety Commission.

The Evacuation Time Study is now complete and is posted online.

Staff has created a collection of evacuation StoryMaps available at https://bit.ly/evacuationstory. These StoryMaps provide:

1) Key study findings, including interactive maps,
2) Additional analysis of study findings, such as analysis comparing fire progression with evacuation patterns from the Study, and
3) Links to download the Study itself.

In addition, please see the Council Off-Agenda Memo and Community Message for details.

Best,
Sarah

Sarah Lana, CEM®
she/her/hers
Emergency Services Manager
City of Berkeley Office of Emergency Services

August 13, 2025

Dear Disaster and Fire Safety Commissioners,

Walk Bike Berkeley strongly supports the City's goal of preparing for safe and efficient emergency evacuations should the city be threatened by tsunami or wildfire. However, evacuation planning should be based on sound analysis.

Unfortunately, the Evacuation Time Study (ETS) performed by KLD associates for the City of Berkeley suffers from many severe methodological issues affecting both the demographic survey instrument and demand estimation derived from population growth statistics. Its questionable assumptions and inaccurate estimates of critical model parameters lead to conclusions that are counterproductive.

The Disaster and Fire Safety Commission should not blindly accept the conclusions of the study because of its serious shortcomings. We are submitting this letter for your consideration now, and if the commission finds it helpful, we are prepared to submit a more detailed analysis of the Evacuation Time Study upon request. Our concerns with the study are as follows:

I. Methodological Shortcomings

1. Demographic survey methodology:
    a. The data generated by this survey were a primary input into the evacuation time modeling. This survey, which generated data essential to the modeling, was not a random survey and did not use stratified sampling to assure representativeness across the city, even though the report claims it was a random survey. In addition, it did not collect demographic data on respondent characteristics such as age, income, race, or gender to allow weighting of the sample to correct for non-response bias. Instead, the survey was sent out through email listservs and other City announcements - with the result being a simple convenience sample of 1,453 households who both received and responded to the survey, and who are not representative of Berkeley's population as a whole. The report falsely claims the data from the survey is representative and uses it as input to further models.
    b. This non-representative, unweighted convenience sample leads to seriously erroneous conclusions about evacuation behaviors. The most shocking error, easily refuted by primary sources, is the survey's estimate that 7.5% of households have no vehicles, which differs by a factor of 3.5x from the true number of Berkeley households with no vehicle, which is 25.3%, according to the US Census's 2023 American Community Survey.
2. Population estimate
    a. The study estimates a population of 117k for 2024, based on 2020 and 2023 population statistics and on the incorrect assumption that the population is in linear decline.

b. In reality, the California Department of Finance E1 estimates for Berkeley show a steady increase from 2023, resulting in a population that is 8.3% higher in 2024 than the study estimates, and higher yet in 2025. Once again, the survey's error is easily refuted by a primary source.

2020	127,560
2021	121,142
2022	124,642
2023	126,122
2024	126,676
2025	128,348

II. Car Only Evacuation Modeling

1. Neglecting walking and biking in ETS

a. A decision was made, *a priori*, to exclude walking or biking as possible modes of evacuation in this analysis. Accordingly, the demographic survey provided no options for respondents to choose that they would evacuate on foot or on bike. Respondents could only indicate this in a comment box elsewhere on the survey. Because of this survey limitation, the report's claim that "Citywide 2.2% of Berkeley residents, employees, and college students plan to evacuate on foot and 1.4% plan to evacuate on bicycle" is not valid. Since the survey did not ask whether people plan to evacuate using these modes, the report cannot draw accurate conclusions about them.

b. While evacuation on foot or on bike during an active fire could potentially expose evacuees to harmful smoke, heat and embers, the report's failure to model the impact of walking and biking during earlier evacuation (which could potentially lead to less congestion, fewer conflicts, and thus faster evacuation) was a significant error, especially in a city with one of the highest bicycle and walk rates in the country and with walking paths out of the hills that the Pedestrian Plan notes "can be critical for evacuations in emergency situations".[1]

2. Overestimating transit capacity

The report models several future housing unit buildout scenarios, both citywide and in the Hillside overlay, along with population and vehicle estimates for each. In the highest buildout scenario with public transit parking exemptions,[2] it shows a required 1,051 buses to

[1] Among all US cities in 2022, Berkeley ranked #12 for commuting by bicycle & #8 for commuting on foot. https://data.bikeleague.org/new-data-and-competing-narratives-a-look-at-census-and-streetlight-data/

[2] JADUs are not required to provide off-street parking spaces, and ADUs are only required to provide off-street parking spaces if the parcel is located more than 1/2 mile walking distance of public transit, which is defined as "a location, including, but not limited to, a bus stop or train station, where the public may access buses, trains, subways, and other forms of transportation that charge set fares, run on fixed routes, and are available to the public."

evacuate all non-vehicle owning ADU/JADU residents (along with 15,681 additional evacuating personal vehicles). Considering AC Transit runs a fleet of only 626 buses countywide,[3] a large portion of any hypothetical new residents must use other means of transport including walking and biking. Yet the study completely fails to incorporate these active modes in any scenario or model.

III. Traffic Calming Device Modeling

1. Diverters

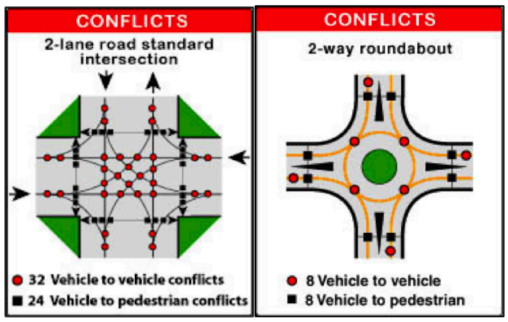
Figure G-1 and the modeling described in Appendix G treat all traffic diverters as equal and claims that they all block evacuation routes, but there are different types of diverters, including but not limited to the following:

- Full diverter impassable by any vehicle (e.g., Deakin and Ashby)
- Diverter with a raised center, passable by high clearance passenger and commercial vehicles (e.g., Milvia and Blake)
- Diagonal diverter with no gap for drivers (e.g., Grant and Berkeley Way)
- Diagonal diverter with a wide gap for drivers (e.g., Fulton and Blake)
- Diverter only covering half the roadway (e.g., Russell and Wheeler)
- Flexible delineators which can be easily driven over (e.g., Rose and Henry)

There are some diverters that drivers can easily go around or through in an emergency evacuation. The statement that “Diverters are represented as disconnected links and nodes, effectively blocking routing paths and reflecting their function in preventing through traffic” shows that the report ignored this fact, creating false inputs into the modeling.

2. Traffic Circles

The study models traffic circles as all-way stop controlled intersections, which is a simplifying assumption that makes the modeling inaccurate. As compared to traditional all-way stop intersections, traffic circles (even those with all-way stops), drastically reduce the conflict points between turning vehicles and between vehicles and pedestrians, from 32 to 8 and 24 to 8 respectively[4]. As such, they have potential to improve both safety and speed of evacuation by reducing collision incidence, yet the modeling completely ignored this fact.



[3] https://www.actransit.org/about
[4] Traffic Circle Policy and Program Recommendations https://berkeleyca.gov/sites/default/files/documents/2019-11-12%20Special%20Item%2001a%20Traffic%20Circle%20Policy%20and%20Program.pdf

3. Vertical deflection
    a. Speed humps, speed tables, and protected intersections are designed to slow speeds to 15-20 mph, but with the mass congestion predicted by this study, vehicles will already be driving slower than that. The report should include a quantitative analysis of reduction in effective capacity at each hour of evacuation. For example, do speed humps reduce effective capacity across all Berkeley roads by 3% at minute 15 and at hour 3 (both times when congestion is low overall), reduce effective capacity by 0.5% in some of the hours between, and not reduce capacity at all in the hours when congestion is greatest? Without a quantitative assessment, policymakers cannot weigh the safety tradeoffs between the benefits of vertical deflection in everyday situations and their costs during evacuations.
    b. The study treats vertical deflection elements homogeneously into the modelling by "reducing link speeds as the driver safely navigates them, thereby lowering the effective capacity of those road segments". The study fails to account for the differences among various types of devices, erroneously treating all vertical deflection as reducing capacity equally.

Conclusion

One of the study's most problematic conclusions is that car evacuation rates for all households will be 96.4%, along with a total evacuation population of 274,376 people and 150,994 personal cars. This leads to a congestion model showing a rapid level-of-service (LOS) degradation throughout the city, with primary arterials such as Hopkins, Cedar, Bancroft and Telegraph reaching LOS F[5] within just 15 minutes of the first evacuation order. But these figures are based on a model that:

- Uses simplistic, or even outright incorrect, parameter values derived from flawed survey methodology,
- Uses incorrect population estimates,
- Uses overly simplistic assumptions about traffic calming devices, and
- Fails to model the impact of walking and biking in the earlier phases of evacuation, which could lead to less congestion, fewer conflicts, faster evacuation, and a lower burden on emergency personnel.

Sincerely,
Charles Siegel, Liza Lutzker, Naveen Gattu, Jeff Baker, Benjamin Fry, Ben Gerhardstein
For Walk Bike Berkeley

Walk Bike Berkeley, an all-volunteer group founded by Berkeley residents, advocates to make walking and biking in Berkeley safe, low-stress, and fun for people of all ages and abilities. We want a healthy, just, and sustainable transportation system in Berkeley.

[5] In the context of the Highway Capacity Manual (HCM) 2022, Level of Service (LOS) F signifies the worst operating conditions for a roadway segment or intersection. It represents conditions where demand exceeds capacity, resulting in significant delays, queues, and reduced speeds. Essentially, LOS F indicates a facility is operating at or beyond its capacity, with significant disruptions to traffic flow.