

Department of Fire and Emergency Services

**Agenda
For the Regular Meeting of the
Disaster and Fire Safety Commission**

DATE: Wednesday, September 25, 2019
TIME: 7:00 PM
PLACE: Fire Department Training Facility - 997 Cedar Street

Preliminary Matters

Call to Order.

Approval of the Agenda

Public Comment on Non-Agenda Matters

1. Fire Department and Office of Emergency Services Staff Report

Consent Items

2. Approval of Draft Minutes of Meeting of August 7, 2019*

Action Items

3. Recommendation for City Council Action on Ensuring Fire Equipment Access*

Discussion Items

4. Safe Passages Project Update
5. Vegetation Management Update
6. Wildfire Priority Issues: Parking and Prevention*
7. Public Outreach on Emergency Preparedness
8. Update on Sirens Recommendation*

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E-mail: fire@ci.berkeley.ca.us

9. Public Safety Power Shut-offs Possible Actions*
10. Special Tax Assessment for Wildfire Prevention Possible Future Action*
11. Drone Technology for Disaster Management
12. Future Agenda Items

Adjournment

(*Material attached for Commissioners for this month's meeting)

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Disaster & Fire Safety Commission
Regular Meeting
Wednesday, August 7, 2019
997 Cedar Street, Berkeley, CA 94710

Present: Ruth Grimes, Gradiva Couzin, Bob Flasher, Jose Luis Bedolla, Annie Bailey, Toby Simmons, Shirley Dean, Paul Degenkolb

Absent: Toni Stein (Excused)

Staff: Khin Chin, Keith May

Public: Sarah Jones, Susan St. George, Chris Cullander

Preliminary Matters

Call to Order

G. Couzin called meeting to order at 7:01 pm

Approval of the Agenda

Move item 5 ahead of Item 3. Approved by Acclimation

Public Comment on Non-Agenda Items

Susan St. George said BDPNN is hosting a disaster preparedness Demo fair in October 2012.

Chris Cullander said McGee Baptist Church National Night Out went very well and was well attended.

Robert Flasher read an excerpt from the SF Chronicle article “8 fires prompt shelter in place order by Clayton”

1. Fire Department and Office of Emergency Services Staff Report

6/9 Grass fire on Olympus and Wilson. Area burned was contained to 100’x15’ area. Cause was the discharging of fireworks.

6/27 tree fire next to the train tracks at the end of Dwight. Homeless area abut no physical signs that camp is occupied.

7/4 BFD responded for a fire on the 1200 block of Josephine (not caused by fireworks). Fire contained to a shed in the backyard, a car and fence.

7/5 & 8/1 small homeless encampment fires.

8/4 BFD responded for an alarm sounding at 1501 Blake (senior living facility). A small fire in an apartment was extinguished by the sprinkler system, but caused a lot of smoke in the building. Cause determined to be discarded cigarette ashes in an unattended paper bag next to the couch.

7/25 BFD responded to a woman who was in the water for nearly an hour holding onto a support column. BFD deployed swimmers and Rescue Boat 456. Patient suffered from hypothermia but survived.

Interviews for the Emergency Services Coordinator position were held in July. Khin Chin has accepted one of the positions and we have submitted a name to HR for the other position.

Falck is the new 911 provider and the City of Berkeley contracted ambulance provider for 5150 non-emergency calls

The wildfire evacuation drill was conducted on August 4 with two more schedule for August 11 and August 25. Approximately 70 community members participated.

Consent Items

2. Approval of Draft Minutes for Meeting of June 26, 2019*

Motion approve minutes as revised: R. Grimes

Second: J. Bedolla

Vote: 8 Ayes: Grimes, Flasher, Bailey, Couzin, Degenkolb, Simmons, Dean, Bedolla;
0 Noes; 1 Absent: Stein; Abstain:

Action Items

3. Pacific Gas & Electric (PG&E) Public Safety Power Shutoff (PSPS)

Motion submit a memorandum to City Council that Outdoor Public Warning Siren System is made more crucial by PG&E planned power outages: Flasher

Second: Couzin

Vote: 8 Ayes: Grimes, Flasher, Bailey, Couzin, Degenkolb, Simmons, Dean, Bedolla;
0 Noes; 1 Absent: Stein; Abstain:

4. Memo on Coordination of Vegetation Management*
5. Recommendation for City Council Action on Ensuring Fire Equipment Access*

Discussion Items

6. Public Outreach on Emergency Preparedness
7. Wildfire Priority Issues: Parking and Prevention*
8. Future Agenda Items

Adjournment

Adjourn

Motion approve minutes as revised: R. Flashers

Second: P. Degenkolb

Vote: 8 Ayes: Grimes, Flasher, Bailey, Couzin, Degenkolb, Simmons, Dean, Bedolla;

0 Noes; 1 Absent: Stein; Abstain:

Adjourned at 9:09pm

DRAFT ITEM FOR DISASTER AND FIRE SAFETY COMMISSION
TO CONSIDER SENDING TO CITY COUNCIL

CALENDAR –Action or Consent
September XX, 2019

To: Honorable Mayor and Members of the City Council

From: Disaster and Fire Safety Commission

Submitted by: Gradiva Couzin, Chair, Disaster and Fire Safety Commission

Subject: Recommendation to Immediately Fund and Implement the Safe Passages Program and Additional Actions to Ensure Emergency Equipment Access to All Parts of the City

RECOMMENDATION

The recommendation as stated above from the Disaster and Fire Safety Commission (DFSC) to the Council includes the following seven components:

1. Allocate full funding of the Fire Department's Safe Passages Program;
2. Initiate immediate action;
3. Recognize that parking restrictions are necessary on some streets for the health and well-being of Berkeley residents;
4. Establish priorities for enacting parking restrictions;
5. Develop a departmental coordinated team effort;
6. Inform the public; and
7. Document and distribute the extent of the access and ingress problem.

THE CURRENT SITUATION:

1. Funding the Fire Department's Safe Passages Program:

On February 5, 2019: At a Council Work Session, Fire Chief Brannigan described the Fire Department's Safe Passages Program as follows:

“The Berkeley Safe Passages pilot program is designed to blend traditional parking restrictions with innovative road markings and signage. Many roads in Fire Zones 2 and 3 are too narrow for parking and safe passage of vehicles when emergencies arise. Three locations will be selected to demonstrate Keep Clear corridors, no parking zones, and pedestrian access so that staff and the public can evaluate the efficacy and impact of Safe Passage corridors.”

The Chief listed three actions that needed to be done for the Safe Passages Program:

- *Identify, paint, and provide signage for new “Keep Clear” pinch points on streets*
- *Expand “No Parking” areas throughout dangerously narrow streets*
- *Identify funding for additional capacity for parking enforcement*

During the Council discussion of the 2020-2021 budget, the Council received a recommendation from the Council Committee on Budget and Finance that funding for the Safe Passages Program should be deferred and that the City should seek grants for this program. The City's website indicates that the recommendation from the Council Committee was adopted, but that Safe Passages would be reviewed again in November 2019 and grant funding would be considered.

Because of concerns generated by the disastrous recent wildfires around our City and the increased fire danger due to the heavy vegetation fuel level generated by rains earlier in the year, the Department began to evaluate and document the problem of emergency equipment access on the many narrow roads in the City's designed high fire risk areas. While that process has begun, it has been significantly hampered by the lack of adequate staffing. The DFSC also points out that seeking grant funding to do this work would take a considerable amount of time before any action would occur.

2. There is a clear historic need for immediate action:

There is consensus among fire officials throughout California that while the risk of fire is high throughout the entire year, and communities must be ever-vigilant, the months in the fall are the times of the greatest danger.

This is born out historically as shown by the following list of the top 10 most destructive wildfires in California ranked by structures (homes, commercial properties, barns, garages, sheds, etc.) destroyed since 1900, Please note that 80% occurred in the months of October through December:

	<u>Date</u>	<u>Deaths</u>	<u>Structures Destroyed</u>
1. Camp Fire (Butte)	Nov 2018	86	18,804
2. Tubbs Fire (Napa, Sonoma)	Oct 2017	22	5,636
3. Tunnel Fire (Alameda)	Oct 1991	25	2,900
4. Cedar Fire (San Diego)	Oct 2003	15	2,820
5. Valley Fire (Lake,Napa,Sonoma)	Sept 2015	4	1,955
6. Witch Fire (San Diego)	Oct 2007	2	1,650
7. Woolsey Fire (Ventura)	Nov 2018	3	1,643
8. Carr Fire (Shasta, Trinity)	July 2018	8	1,614
9. Nuns (Sonoma)	Oct 2017	3	1,355
10. Thomas (Ventura, Santa Barbara)	Dec 2017	2	1,063

The 1923 fire in Berkeley occurred on September 17th and, according to notarized affidavits at the time, the first house to be destroyed was at 125 Shasta Road (presumably this address was in the upper portion of Shasta Road), and the second was at 1350 Tamalpais Road. The fire destroyed around 640 structures of which 584 were homes and depending on which article is sourced, it burned to around Oxford or to Hearst at Shattuck before the strong northeasterly wind shifted. Most articles about this fire state that it was stopped *only* because of the wind shift, The origin of the fire is said to have come into Berkeley from Wildcat Canyon, somewhere around Inspiration Point, or possibly close to the where Fire Station 7 is now located, 3000 Grizzly Peak

Blvd. It is interesting to note that while the origin of this fire was never determined, one of the factors mentioned was that the City Council had declined that year to pay for the usual allocation to fund a fire break along the City's northern border.

At that time, the City of Berkeley had a total population of 56,000. Today's current population is approximately 122,000.

In addition, Berkeley is among those communities in the State that are at high risk from earthquakes. It is likely that fires will occur after such an event. The Hayward Fault runs north to south in the eastern part of our community. This area, known as the Alquist-Priolo Zone, is well-mapped. But the vulnerable mapped quake areas also include identified liquefaction zones in West Berkeley. According to the USGS website, they have found evidence of 11 major earthquakes along the Hayward Fault over the past 1,900 years: The last six (in years 1134, 1317, 1475, 1629, 1725 and 1856) occurred at average intervals of 150 years. The 150th year anniversary following the 1856 quake occurred on October 21, 2018. In 1856, there were 24,000 residents living in the area, today there are close to 3 million, which places the Hayward Fault in the category of being highly dangerous due to potential death and injuries to residents and the adverse economic impacts to the communities that lie within the fault area. It is important to note that the USGS website states much can be done to prevent loss of life and reduce economic impact, IF local jurisdictions and populations take action to prepare ahead of time.

3. The importance of enacting as official City policy in all appropriate documents the recognition that parking restrictions on streets that impede emergency equipment access are necessary for the health and well-being of Berkeley residents:

Although full documentation is difficult to establish, it can be established that the City has known of emergency equipment access problems for at least 41 years. In March 1978, a 29-year old woman lost her life and world-renowned conductor George Cleve suffered severe burns when fire equipment was hampered in responding to a house fire on Tamalpais Road. Despite years of knowing about the access problem and numerous recommendations and referrals, some, but not all narrow streets in Berkeley have had parking restrictions enacted. Examples of that history are as follows:

On June 24, 2005, Berkeley attorney, Paul M. Schwartz wrote a letter "placing the City of Berkeley on notice" about hazardous conditions that continued to exist on Tamalpais Road. He wrote that when two cars are parked across from one another, fire equipment access is denied, that blockages caused by dumpsters and construction equipment exist, and he suggested ways to alleviate such situations. He wrote that this was "a formal request" for the City to "create a parking plan for this street that assures the safety of all individuals and protection of property."

On February 9, 2016 the Council approved a January 12, 2016 recommendation from DSFC requesting that they:

“refer to staff the Design of a parking restriction program in the Hills Fire Zone to ensure access for emergency vehicles and to allow for safe evacuations in an emergency and to hold public meetings to get community input in the design of such a program

That report stated:

“Today we are 24 years after the devastating Oakland Hills Fire and 50 years after concern was first expressed for the safety of residents given the conditions that will save lives in the Berkeley Hills”

On November 28, 2017 the City Council asked the DFSC and the City Manager’s Office to explore developing a five-year plan for expanded disaster preparedness services which specifically included limiting parking to one side of streets narrower than 26 feet.

On January 30, 2018: The City Council asked the City Manager to study and evaluate in consultation with relevant Commissions several fire safety and prevention measures which included a *“red curb program to address specific identified conditions on streets that are impassable by Emergency Vehicles or present unusual ingress or egress challenges.”*

On March 28, 2018: The DFSC recommended that the City Council review some 80 items listed on a spread sheet regarding wildfires. Eight of the items pertained to parking, one of which was identified as “immediate priority” which is to:

Item 9: Enforce CVC 22514 for stopping or parking near a fire hydrant, including adding proper signage and/or red paint.

The other seven parking-related items are:

#8: Design and Propose a tailored red-curb program to address specific identified conditions on streets impassable by emergency vehicles or present ingress or egress challenges.

#10: Complete installation of blue reflectors marking location of fire hydrants.

#11: Have Beat Police Officers ticket hydrant infractions when making rounds in the hills fire zone.

#12: Adopt parking restrictions on narrow streets in hills fire zone.

#13: Limit parking one side of street narrower than 26 feet.

#14: Restrict parking on red flag days, similar to LA Red Flag restricted parking program.

#15: Have traffic control personnel randomly canvass hills fire zone to ensure parking compliance.

On February 27, 2019: The DFSC approved submitting comments for the Local Hazard Mitigation Plan update to *“recommend coordination with other City plans including the General Plan, the Climate Action Plan and Zero Waste Plan, addition of maps including narrow streets and pinch points and improving the plan’s maps via the City’s GIS portal, inclusion of a transparent process to reach homeless, ESL and disabled population and inclusion of a list of priority goals for each of the upcoming years of the 5-year plan.”*

There can be no doubt that many streets in Berkeley’s Hazardous Fire Zones are too narrow and/or winding to accommodate both parking and access by emergency response vehicle, and

while parked cars are the main culprit intruding on access, the problem is exacerbated by lack of sidewalks, on-street storage of trash bins and intruding vegetation, and construction and delivery vehicles. Additionally, even in areas where parking has been restricted, there have been instances of non-compliance, particularly involving parking that hinders access to fire hydrants. This situation creates a life-safety hazard in the Hills in all emergency situations, but especially in a wildfire scenario, when rapid evacuation of residents will be necessary.

4. Establish priorities for enacting parking restrictions:

As parking restrictions on narrow streets that impede emergency equipment access involve a large area, it is recommended that a ranking system be created. Such a system would place a higher priority on locations within Hazardous Fire Zones which have particularly dangerous conditions and designation of streets that are established as, or will be, potential evacuation routes. Since not all work will be able to be done at the same time, the purpose of such ranking will be to enable the City to proceed in an orderly fashion which will first place such restrictions on streets where they will be most effective in saving lives.

5. Develop a departmental coordinated team effort

Enactment and implementation of a program of ensuring emergency access to all properties in the City of Berkeley will require coordination among many Departments. Particularly Police, Public Works and Transportation. It is recommended that the Fire Department have the lead position in such an effort but that the duties and responsibilities of each department in the team be fully defined.

Further, deadlines for completion of tasks must be established in order to receive progress reports from appropriate departments at regular intervals until the completion especially of:

- installing signs and other markers which indicate No Parking or Stopping Zones around fire hydrants
- installing pavement markers to identify hydrant locations – particularly important for guiding mutual aid responders who are unfamiliar with Berkeley streets
- developing and implementation of the enforcement of new parking restrictions, including ticketing and towing

Enforcement of restrictions by the Police Department is of high import because the public must fully understand that violation of parking regulations is of such seriousness that it will be enforced consistently. Additionally, over and above those issues, there needs to be a definition of Police Department responsibility in an early evacuation plan for vulnerable residents (seniors and disabled) who may require not only early notice but also auto-related assistance in evacuation, as well as use of the ENRAD announcement system in police cars as an integral part of the City's alert system both for red flag days and impending fire danger.

6. Inform the Public

It is recommended that the City institute a broad public outreach campaign which includes direct mailing to property owners with instructions to notify any tenants of properties or in homes of affected properties, all rental agencies including those that offer short term rentals such as Abnb,

all job and home care placement agencies, and all news and social media that the City is undertaking a program of new parking restrictions in the Hazardous Fire Zones and other areas which impede emergency access vehicles.

As a part of the public education campaign, the Disaster and Fire Safety Commission will hold two community meetings regarding the parking restriction issue in order to circulate information and make reports to the Council regarding attendance and outcomes. In the planning and participation of these meetings, the DFSC will reach out to other commissions such as Public Works, Transportation, Police, and Planning.

7. Assess and document the extent of the access and egress problem

Produce a current and accurate map that displays:

- all narrow streets without parking restrictions along with their width
- all narrow streets with parking restrictions already in place
- “pinch-points” on other streets that constrain emergency equipment access
- major streets and “collector” streets planned for use in evacuation
- include pathways if technically possible within such a map. If not possible, attach a separate map identifying the exact location of pathways
- indications of the priority ranking as that information becomes available

This map shall be available to the public and kept up-to-date as the status changes. As a visual example, this map will assist residents to understand the need for parking restrictions. It will also serve as an information tool that would be helpful to residents during an emergency.

FISCAL IMPACTS OF RECOMMENDATION

Exact costs and staff time are to be determined. This program is expected to require a substantial investment of staff time from multiple departments, including the City Attorney, Fire Department, Public Works, and the Police Department - Parking Enforcement.

The Council could consider discussing in general how to increase overall Fire Department resources available for disaster preparedness and response. In a April 12, 2019 letter to the University of California regarding their increase in enrollment, the City indicated that responding to calls for service in the high-rise buildings currently being constructed in our City requires twice the staff on emergency equipment because of the numbers of people in such buildings. Possibly an annual fire assessment on buildings housing over a certain number of people might be in order, or a direct request to the University which relies on the Berkeley Fire Department to service the Berkeley campus.

ENVIRONMENTAL SUSTAINABILITY

More parking restrictions in residential areas of the City may have a positive environmental impact by reducing the use of private vehicles for transportation.

In addition to potentially saving lives and property, providing improved access for firefighting equipment may reduce the spread of house-fires and wildland-urban interface fires, reducing the

pollution, hazardous waste, loss of habitat, and other environmental damage caused by uncontrolled fire

RATIONALE FOR RECOMMENDATION

As seen in the years of background and the multiple times that parking restrictions have been recommended by the DFSC and by Council, we believe there appears to be a consensus that narrow streets that impede emergency vehicle access are a threat to life safety in Berkeley, and that parking restrictions are needed to address this problem.

Given the many years that the City has been aware of this problem, it is perplexing that no action has been taken to complete what needs to be done, nor has funding been allocated for the Safe Passages program. This issue must not be delayed any further. It is time to recognize the reality of the often-repeated statement that “it is impossible to evacuate everyone safely at the same time,” and with that recognition, take immediate action.

ALTERNATIVE ACTIONS CONSIDERED

In the DFSC recommendation from 2016, “Restrict Parking in the Hills Hazardous Fire Area” numerous alternative actions were considered and discussed with staff, following models used in other jurisdictions including LA, Pasadena, Santa Barbara, and Mill Valley.

CITY MANAGER

The City Manager [TYPE ONE] concurs with / takes no position on the content and recommendations of the Commission’s Report. [OR] Refer to the budget process.

Note: If the City Manager does not (a) concur, (b) takes any other position, or (c) refer to the budget process, a council action report must be prepared. Indicate under the CITY MANAGER heading, “See companion report.” Any time a companion report is submitted, both the commission report AND the companion report are Action reports.

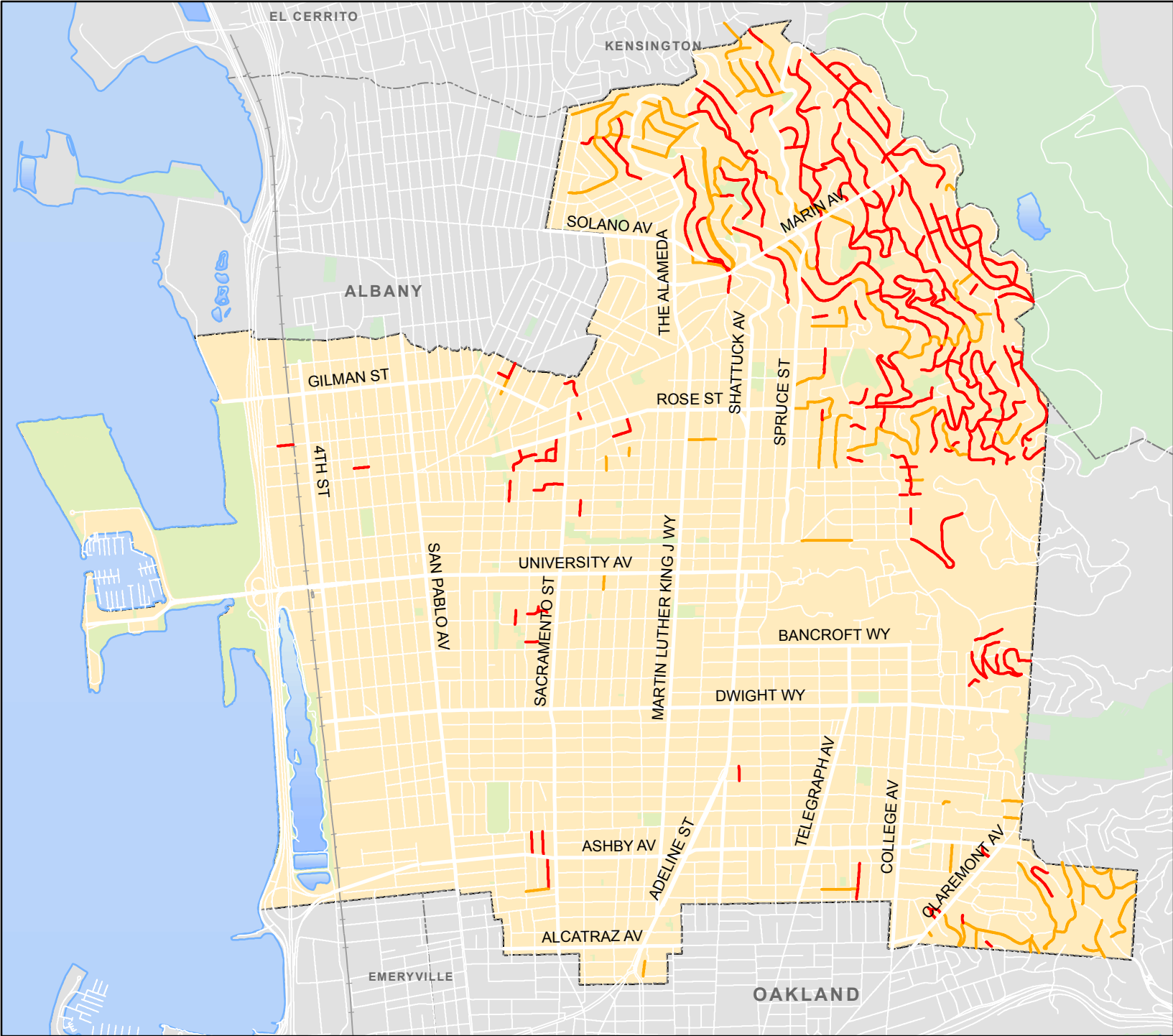
CONTACT PERSON





[Name], [Title], [Department]

Attachments:

1. Fire Access Map with Addresses on Streets Less than 26 feet, Oct 2, 2015

FIRE ACCESS MAP



-  Pavement Width Less than 24 ft
-  Pavement Width Less than 26 ft
-  Parks
-  City Limits

This map is for reference purposes only. Care was taken in the creation of this map, but it is provided "AS IS". Please contact the City of Berkeley to verify map information or to report any errors.

October 2, 2015



CITY OF BERKELEY
Land Use Planning Division
Dept of Planning & Development
2120 Milvia Street, 2nd Floor
Berkeley, CA 94704

TOTAL LENGTH (FEET) 231,679

Street Name	Beginning Location	Ending Location	Lanes	Fire Code	Pavement Width (ft)	Pavement Length (ft)
ACACIA AVE (5-98)	CRAGMONT AVE	EUCLID AVE	2	R	22	500
ACROFT CT (1400-1499)	ACTON ST	DEAD END (ACTON ST)	2	R	20	270
ACTON CIR (2-7)	DEAD END (ACTON CRESCENT)	ACTON CRESCENT	2	R	21	120
ACTON CIR (1401-1480)	ACTON ST	EAST DEAD END (ACTON ST)	2	R	21	470
AJAX PL (1-20)	AJAX LANE	SUMMIT RD	2	R	20	240
ALAMO AVE (5-98)	SPRUCE ST	HALKIN LANE	2	R	20	840
ALTA RD (20-60)	SPRUCE ST	CRAGMONT AVE	2	R	22	390
ALVARADO RD (145-617)	BRIDGE RD	NORTH CITY LIMIT AB WILLOW WK	2	R	24	1890
ALVARADO RD (1-59)	TUNNEL RD	NORTH CITY LIMIT	2	R	24	770
ALVARADO RD (111-142)	NORTH CITY LIMIT	BRIDGE RD	2	R	24	450
ARCADE AVE (1-6)	GRIZZLY PEAK BLVD	FAIRLAWN DR	2	R	23	310
ARCH ST	SPRUCE ST	SCENIC AVE	2	R	25	820
ARDEN RD (9-100)	MOSSWOOD RD	PANORAMIC WAY	2	R	15	610
ARLINGTON AVE (700-974)	THOUSAND OAKS BLVD	THE CIRCLE	2	C	25	2940
ATLAS PL (1-10)	HILL RD	SUMMIT RD	2	R	20	200
AVALON AVE (3016-3017)	CLAREMONT BLVD	CLAREMONT AVE	2	R	25	300
AVENIDA DR (27-33)	OLYMPUS AVE	QUEENS RD	2	R	20	145
AVENIDA DR (1-27)	CAMPUS DR	OLYMPUS AVE	2	R	23	300
AVENIDA DR (41-191)	QUEENS RD	GRIZZLY PEAK BLVD	2	R	18	1315
AVIS RD (20-68)	SAN ANTONIO AVE	SAN LUIS RD	2	R	16	440
BATAAN AVE (900-920)	7TH ST	8TH ST	2	R	22	330
BATEMAN ST (3015-3071)	WEBSTER ST	108 N/O PRINCE ST.	2	R	14	411
BONNIE LN (10-95)	HILLDALE AVE	MARIN AVE	2	R	18	750
BRET HARTE RD (12-51)	KEITH AVE	CREGMONT AVE	2	R	21	300
BRET HARTE RD (131-198)	CRAGMONT AVE	KEELER RD	2	R	17	750
BROOKSIDE CT (152-156)	DEAD END NR BROOKSIDE DR	BROOKSIDE DR	2	R	22	110
BROOKSIDE DR (110-190)	CLAREMONT AVE	CLAREMONT AVE	2	R	22	535
BUENA AVE (1705-1738)	MCGEE AVE	CYPRESS ST	2	R	23	400
BUENA VISTA WAY	DELMAR AVE	260' NORTH OF PRIVATE PROP	2	R	22	470
BUENA VISTA WAY (2500-3025)	EUCLID AVE	DEL MAR AVE	2	R	24	3775
CAMPUS DR (1205-1238)	SHASTA RD	QUAIL AVE	2	R	22	370
CAMPUS DR (1250-1298)	QUAIL AVE	GLENDALE AVE	2	R	22	385
CAMPUS DR (1405-1456)	DELMAR AVE	AVENIDA DRIVE	2	R	21	525
CAMPUS DR (1462-1511)	AVENIDA DR	PARNASSUS RD	2	R	22	540
CAMPUS DR (1521-1590)	PARNASSUS RD	DEAD END, U C PLOT 82	2	R	19	760
CAMPUS DR (1300-1405)	GLENDALE AVE	DELMAR AVE	2	R	22	1090
CANYON RD (15-67)	RIM ROAD (UC CAMPUS)	DEAD END	2	R	15	583
CAPISTRANO AVE (1901-1937)	THE ALAMEDA	CONTRA COSTA AVE	2	R	16	1075
CATHERINE DR (1420-1475)	KEONCREST DR	KEONCREST DR	2	R	23	410
CEDAR ST (2710-2716)	LA LOMA AVE	END ABOVE LA VEREDA	2	R	12	515
CLAREMONT CRES (1-26)	ASHBY AVE	CLAREMONT AVE	2	R	20	410

TOTAL LENGTH (FEET) 231,679

Street Name	Beginning Location	Ending Location	Lanes	Fire Code	Pavement Width (ft)	Pavement Length (ft)
CODORNICES RD (40-100)	DEAD END (EUCLID AVE)	EUCLID AVE	2	R	15	600
COLORADO AVE (42-99)	VERMONT AVE	MICHIGAN AVE	2	R	24	260
COLORADO AVE (24-32)	BOYNTON AVE	VERMONT AVE	2	R	24	250
COLUMBIA CIR (1-22)	COLUMBIA PATH	FAIRLAWN DR	2	R	21	230
COMSTOCK CT (1526-1537)	JAYNES ST	CEDAR ST	2	R	24	300
CONTRA COSTA AVE (712-929)	YOSEMITE RD	SOLAND	2	R	18	2775
CONTRA COSTA AVE (939)	SOLANO	LOS ANGELES AVE	2	R	24	150
CORONA CT (2310-2358)	ARCH ST	DEAD END (ARCH ST)	2	R	22	320
CRAGMONT AVE (1000-1032)	SANTA BARBARA RD	EUCLID AVE	2	R	22	830
CRAGMONT AVE (900-996)	MARIN AVE	SANTA BARBARA RD	2	R	23	1110
CRAGMONT AVE (1041-1099)	EUCLID AVE	BRET HARTE RD	2	R	20	1420
CRAGMONT AVE (1100-1106)	BRET HARTE RD	SHASTA RD	2	R	21	1625
CRAGMONT AVE (471-897)	GRIZZLY PEAK BLVD	MARIN AVE	2	C	22	4100
CRAGMONT AVE	SPRUCE ST	MARIN AVE	2	R	24	1050
CRESTON RD (600-798)	GRIZZLY PEAK BLVD	SUNSET LANE	2	R	22	1910
CRESTON RD (821-1097)	SUNSET LANE	GRIZZLY PEAK BLVD	2	R	22	1910
CYCLOTRON RD	HIGHLAND PL	DEAD END (CYCLOTRON RD)	2	R	23	140
CYPRESS ST (1404-1417)	ROSE ST	BUENA AVE	2	R	22	325
DEL MAR AVE (2-100)	BUENA VISTA WAY	GLENDALE AVE	2	R	21	795
DOHR ST (2905-2950)	RUSSELL ST	ASHBY AVE	2	R	22	489
EL CAMINO REAL (1-118)	DOMINGO AVE	THE UPLANDS	2	R	25	1840
EL CAMINO REAL (151-220)	THE UPLANDS	DEAD END ABOVE THE UPLANDS	2	R	24	320
EL PORTAL CT (5-11)	DEAD END (LA LOMA AVE)	LA LOMA AVE	2	R	18	250
EOLA ST (1702-1715)	VIRGINIA ST	FRANCISCO ST	2	R	22	325
ETON CT (1-15)	CLAREMONT AVE	DEAD END (CLAREMONT AVE)	2	R	25	150
EUCALYPTUS RD (1-29)	HILLCREST RD	SOUTH CITY LIMIT	2	R	25	440
EUCLID AVE	BEG OF DIVIDED ROAD	END OF DIVIDED ROAD	2	R	18	850
EUCLID AVE	CRAGMONT AVE	HILLDALE AVE	2	R	20	1240
FAIRLAWN DR (249-293)	AVENIDA DR	OLYMPUS DR	2	R	20	615
FAIRLAWN DR (9-231)	QUEENS RD	AVENIDA DR	2	R	21	1645
FOREST LN (1-95)	HILLDALE AVE	KEELER AVE	2	R	19	520
FOREST LN (106-263)	KEELER AVE	CRESTON RD	2	R	22	1160
FOUNTAIN WALK (1011)	SANTA BARBARA RD	SPRUCE ST	2	R	23	1150
GARBER ST (2710-3020)	CLAREMONT BLVD	EAST CITY LIMIT (TANGLEWOOD)	2	R	24	4505
GLEN AVE (1202-1299)	EUNICE ST	CORNER BETWEEN SUMMER/ARCH	2	R	22	620
GLEN AVE (2201-2323)	CORNER BETWEEN SUMMER/ARCH	SPRUCE ST	2	R	24	380
GLENDALE AVE (1400-1444)	LA LOMA AVE	DEL MAR AVE	2	R	22	875
GREENWOOD TER (1-1491)	ROSE ST	BUENA VISTA WAY	2	R	17	850
GRIZZLY PEAK BLVD	FAIRLAWN DR	GRIZZLY PEAK BLVD	2	R	24	700
HALKIN LN (27-70)	SPRUCE ST	CRAGMONT AVE	2	R	20	515
HAWTHORNE TER (2501-2535)	LE ROY AVE	EUCLID AVE	2	R	22	365

Streets with Pavement Width less than 26 feet

TOTAL LENGTH (FEET) 231,679

Street Name	Beginning Location	Ending Location	Lanes	Fire Code	Pavement Width (ft)	Pavement Length (ft)
HAWTHORNE TER (1400-1598)	EUCLID AVE	CEDAR ST	2	R	24	1465
HEARST AVE (2309-2451)	ARCH ST	EUCLID AVE	2	A	25	1160
HIGH CT (1101-1151)	DEAD END	OAK ST	2	R	24	710
HIGHLAND PL (1730-1771)	LE CONTE AVE	RIDGE RD	2	R	13	280
HILGARD AVE (2709)	LA LOMA AVE	LA VEREDA	2	R	10	180
HILGARD AVE (2725-2808)	LA VEREDA	DEAD END	2	R	24	340
HILL CT (2501-2525)	EUCLID AVE	DEAD END (EUCLID AVE)	2	R	14	310
HILL RD (80-185)	DEAD END NR AJAX LANE	GRIZZLY PEAK BLVD (SOUTH)	2	R	17	510
HILL RD (11-75)	SHASTA RD	DEAD END	2	R	14	530
HILLCREST CT (2-18)	THE FOOTWAY	HILLCREST RD	2	R	20	190
HILLCREST RD	CLAREMONT AVE	ROANOK RD	2	R	25	3150
HILLCREST RD (6-240)	ROANOK RD	DEAD END ABOVE ROANOK RD	2	R	24	390
HILLDALE AVE (900-998)	MARIN AVE	REGAL RD	2	R	20	1265
HILLDALE AVE (630-876)	GRIZZLY PEAK BLVD	MARIN AVE	2	R	21	1870
HILLSIDE CT (11-23)	DEAD END (HILLSIDE AVE)	HILLSIDE AVE	2	R	16	290
HILLVIEW RD (1100-1149)	WOODSIDE RD	PARK HILLS RD	2	R	22	1265
HOPKINS CT (2-39)	ALBINA AVE	HOPKINS ST	2	R	22	570
JEFFERSON AVE (2015-2060)	UNIVERSITY AVE	ADDISON ST	2	R	24	335
JUANITA WAY (1505-1569)	ROSE ST	CEDAR ST	2	R	23	595
KEELER AVE (1064-1099)	STERLING AVE	BRET HARTE RD	2	R	18	400
KEELER AVE (1000-1049)	MILLER AVE	POPPY LANE	2	R	18	600
KEELER AVE (900-998)	MARIN AVE	MILLER AVE	2	R	19	1025
KEELER AVE (700-893)	GRIZZLY PEAK BLVD	MARIN AVE	2	R	20	1350
KEELER AVE (1101-1199)	BRET HARTE RD	SHASTA RD	2	R	23	1760
KEITH AVE (1001-1067)	SPRUCE ST	EUCLID AVE	2	C	22	1472
KEITH AVE (1075-1202)	EUCLID AVE	SHASTA RD	2	C	25	2570
KENTUCKY AVE (433-494)	MARYLAND AVE	MICHIGAN AVE	2	R	18	840
KEONCREST DR (1410-1558)	ROSE ST	ACTON ST	2	R	23	950
LA LOMA AVE (1343-1401)	QUARRY RD	ROSE ST	2	C	22	400
LA VEREDA RD (1550-1595)	LA LOMA AVE	CEDAR ST	2	R	15	550
LA VEREDA RD (1601-1736)	CEDAR ST	DEAD END ABOVE VIRGINIA ST	2	R	15	820
LATHAM LN (125-130)	CRESTON RD	OVERLOOK RD	2	R	21	275
LATHAM LN (11-70)	MILLER AVE	GRIZZLY PEAK	2	R	21	550
LINCOLN ST (1400-1483)	ACTON ST	SACRAMENTO ST	2	R	22	750
LOS ANGELES AVE (1928-1992)	THE CIRCLE	CONTRA COSTA AVE	2	R	24	845
M L KING JR WAY (3333-3359)	63RD ST	MARTIN LUTHER KING JR WAY	2	R	24	520
MAGNOLIA ST (2930-2970)	ASHBY AVE	WEBSTER ST	2	R	24	660
MARIN AVE (2314-2457)	SPRUCE ST	EUCLID AVE	2	C	23	1050
MARIN AVE (2520-2637)	EUCLID AVE	GRIZZLY PEAK BLVD	2	C	23	1078
MARIN AVE (2006-2275)	THE CIRCLE	SPRUCE ST	2	C	23	1646
MENDOCINO AVE (811-965)	ARLINGTON AVE	LOS ANGELES AVE	2	R	22	1650

Streets with Pavement Width less than 26 feet

TOTAL LENGTH (FEET) 231,679

Street Name	Beginning Location	Ending Location	Lanes	Fire Code	Pavement Width (ft)	Pavement Length (ft)
MENLO PL (1-51)	THOUSAND OAKS BLVD	SANTA ROSA AVE	2	R	25	490
MENLO PL (53-90)	SANTA ROSA AVE	THE ALAMEDA	2	R	24	450
MICHIGAN AVE (401-500)	MARYLAND AVE	SPRUCE ST	2	R	24	1480
MIDDLEFIELD RD (1000-1019)	THE CROSSWAYS	THE SHORTCUT	2	R	21	360
MIDDLEFIELD RD (1020-1050)	THE SHORTCUT	PARK HILLS RD	2	R	21	410
MILLER AVE (959-1190)	HILLDALE AVE	SHASTA RD	2	R	21	3510
MILLER RD	HILLDALE AVE	SHASTA RD	2	R	21	3510
MIRAMONTE CT (1358-1367)	ADA ST	SOUTH DEAD END (ADA ST)	2	R	21	180
MONTROSE RD (1-44)	SAN LUIS RD	SANTA BARBARA RD	2	R	23	375
MONTROSE RD (101-194)	SANTA BARBARA RD	SPRUCE ST	2	R	24	640
MOSSWOOD RD (1-48)	PANORAMIC WAY	DEAD END ABOVE ARDEN RD	2	R	15	800
MUIR WAY (3-16)	GRIZZLY PEAK BLVD	PARK HILLS RD	2	R	25	385
NORTH ST (1501-1515)	NORTH DEAD END (JAYNES ST)	JAYNES ST	2	R	24	155
NORTHAMPTON AVE (4-98)	SANTA BARBARA RD	SPRUCE ST	2	R	23	1150
NORTHBRAE TUNNEL	SANTA BARBARA RD	SPRUCE ST	2	R	23	1150
NORTHGATE AVE (1-99)	DEAD END (NORTHGATE PATH)	SHASTA RD	2	R	21	880
OAK ST (2301-2395)	ARCH ST	HIGH CT	2	R	24	660
OAK ST (2410)	DEAD END	OAK ST	2	R	24	710
OAKRIDGE RD (10-92)	TUNNEL RD	DEAD END (OAK RIDGE STEPS)	2	R	17	1200
OLYMPUS AVE (1530-1590)	FAIRLAWN DR	DEAD END (U C PLOT 82)	2	R	21	760
OLYMPUS AVE (1451-1520)	AVENIDA DR	FAIRLAWN DR	2	R	21	1140
OVERLOOK RD (964-1072)	END NORTH OF THE CROSSWAYS	PARK HILLS RD	2	R	22	1715
OXFORD ST (807-850)	INDIAN ROCK AVE	MARIN AVE	2	R	23	975
OXFORD ST (900-1053)	MARIN AVE	LOS ANGELES AVE	2	R	23	1400
PAGE ST (648)	2ND ST	RAILROAD TRACKS	2	R	16	345
PALM CT (2817-2828)	KELSEY ST	DEAD END (KELSEY ST)	2	R	25	150
PANORAMIC WAY (1-61)	CANYON RD	1ST TURN	2	R	17	670
PANORAMIC WAY (62-130)	1ST TURN	ARDEN RD	2	R	15	1215
PANORAMIC WAY (136-367)	ARDEN RD	EAST CITY LIMIT	2	R	15	1695
PARK HILLS RD (1002-1042)	WILDCAT CANYON RD	MIDDLEFIELD RD	2	R	22	850
PARK HILLS RD (1141-1180)	PARK GATE	SHASTA RD	2	R	22	920
PARK HILLS RD (1051-1131)	MIDDLEFIELD RD	PARK GATE	2	R	22	1305
PARNASSUS CT (5-12)	PARNASSUS RD	DEAD END (PARNASSUS RD)	2	R	22	210
PARNASSUS RD (2-100)	DEL MAR AVE	CAMPUS DR	2	R	24	1145
POPLAR ST (10-190)	CRAGMONT AVE	HILLDALE AVE	2	R	20	1240
POPPY LN (8-80)	HILLDALE AVE	KEELER AVE	2	R	22	860
PRINCE ST (1401-1490)	ACTON ST	STANTON ST	2	R	24	523
PRINCE ST (2436-2511)	DANA ST	BATEMAN ST	2	R	24	771
QUAIL AVE (60-90)	CAMPUS DR	QUEENS RD	2	R	21	325
QUAIL AVE (1-39)	NORTHGATE AVE	CAMPUS DR	2	R	21	340
QUEENS RD (1200-1260)	SHASTA RD	QUAIL AVE	2	R	22	640

Streets with Pavement Width less than 26 feet

TOTAL LENGTH (FEET) 231,679

Street Name	Beginning Location	Ending Location	Lanes	Fire Code	Pavement Width (ft)	Pavement Length (ft)
QUEENS RD (1263-1345)	QUAIL AVE	FAIRLAWN DR	2	R	21	880
QUEENS RD (1355-1444)	FAIRLAWN DR	AVENIDA DR	2	R	21	1075
REGAL RD (931-990)	EUCLID AVE	CRAGMONT AVE	2	R	22	1325
REGAL RD (801-894)	SPRUCE ST	MARIN AVE	2	R	24	1050
REGAL RD (900-925)	MARIN AVE	EUCLID AVE	2	R	24	550
ROANE	EUCLID AVE	CRAGMONT AVE	2	R	22	1325
ROANOKE RD (20-46)	HILLCREST RD & THE UPLANDS	SOUTH CITY LIMIT	2	R	24	300
ROBLE CT (5-40)	DEAD END (ROBLE RD)	ROBLE RD	2	R	24	430
ROBLE RD (6-59)	TUNNEL RD	SOUTH CITY LIMIT (ROBLE CT)	2	R	24	920
ROCK LN (1-95)	POPLAR ST	CRAGMONT AVE	2	R	22	800
ROSE ST (2555-2707)	LE ROY AVE	LA LOMA AVE	2	R	15	750
ROSE ST (2224-2333)	SPRUCE ST	SCENIC AVE	2	R	25	820
ROSEMONT AVE (1-10)	CRESTON RD	VISTAMONT AVE	2	R	23	460
ROSLYN CT (2-19)	THE SOUTH CROSSWAYS	CHABOLYN TERRACE	2	R	20	150
RUGBY AVE (355-371)	NORTH CITY LIMIT (VERMONT)	VERMONT AVE	2	R	25	210
SAN ANTONIO AVE (1901-1940)	ARLINGTON AVE	300 FT +/- EAST OF AVIS RD	2	R	17	525
SAN ANTONIO AVE (1800-1891)	SAN RAMON AVE & THE ALAMEDA	ARLINGTON AVE	2	R	24	865
SAN BENITO RD (900-954)	MARIN AVE	SPRUCE ST	2	R	24	810
SAN DIEGO RD (743-824)	SOUTHAMPTON AVE	INDIAN ROCK AVE	2	R	19	1850
SAN FERNANDO AVE (614-686; 1930)	ARLINGTON AVE	YOSEMITE RD	2	R	24	1055
SAN JUAN AVE (1815-1895)	SANTA CLARA AVE	SAN FERNANDO AVE	2	R	24	900
SAN LUIS RD (501-846)	ARLINGTON AVE	INDIAN ROCK AVE	2	R	22	3430
SAN MATEO RD (7-96)	DEAD END (SOMERSET PL)	INDIAN ROCK AVE	2	R	24	780
SAN MIGUEL AVE (600-630)	THOUSAND OAKS BLVD	SANTA ROSA AVE	2	R	22	470
SAN RAMON AVE (1800-1895)	SAN ANTONIO AVE & THE ALAMEDA	SAN FERNANDO AVE	2	R	24	1060
SANTA BARBARA RD (501-630)	ARLINGTON AVE	FLORIDA AVE	2	R	23	1040
SANTA BARBARA RD (551-699)	SPRUCE ST	CRAGMONT AVE	2	R	24	605
SANTA BARBARA RD (900-948)	MARIN AVE	SPRUCE ST	2	R	24	510
SANTA CLARA AVE (945; 951-993)	SAN RAMON AVE	THOUSAND OAKS BLVD	2	R	24	870
SANTA ROSA AVE (551-699)	MENLO PLACE	SAN LORENZO AVE	2	R	22	1735
SCENIC AVE (1350-1589)	ROSE ST	CEDAR ST	2	R	24	1720
SENIOR AVE (3-48)	FAIRLAWN DR	GRIZZLY PEAK BLVD	2	R	24	700
SHASTA RD (2701-2737)	TAMALPAIS RD	KEITH AVE	2	R	20	565
SHASTA RD (3000-3085)	PARK GATE	EAST CITY LIMIT (GOLF COURSE)	2	C	20	565
SHASTA RD (2601-2699)	TAMALPAIS RD AND ROSE ST	TAMALPAIS RD	2	R	22	1540
SHASTA RD (2800-2827)	CRAGMONT AVE	KEELER AVE	2	C	25	680
SHASTA RD (2834-2925)	KEELER AVE	QUEENS RD	2	C	24	1315
SHASTA RD (2931-2998)	QUEENS RD	GRIZZLY PEAK BLVD	2	C	25	1130
SHASTA RD (2740-2798)	KEITH AVE	CRAIGMONT AVE	2	C	24	1000
SHATTUCK AVE (800-840)	INDIAN ROCK AVE	MARIN AVE	2	R	24	615
SHATTUCK AVE (900-964)	MARIN AVE	LOS ANGELES AVE	2	R	24	950

TOTAL LENGTH (FEET) 231,679

Street Name	Beginning Location	Ending Location	Lanes	Fire Code	Pavement Width (ft)	Pavement Length (ft)
SOLANO AVE	SANTA BARBARA RD	SPRUCE ST	2	R	23	1150
SOMERSET PL (30-49)	SOUTHAMPTON AVE	DEAD END (JOHN HINKEL PARK)	2	R	22	425
SOMERSET PL (2)	ARLINGTON AVE	SAN LUIS RD	2	R	24	2050
SOUTHAMPTON AVE (221-260)	SAN LUIS RD	SANTA BARBARA RD	2	R	22	4000
SOUTHAMPTON AVE (11-180)	ARLINGTON AVE	SAN LUIS RD	2	R	24	2050
SPRING WAY (1402-1418)	DEAD END	SCENIC AVE	2	R	18	260
STANTON ST (2907-2952)	RUSSELL ST	ASHBY AVE	2	R	22	560
STANTON ST (3001-3053)	ASHBY AVE	PRINCE ST	2	R	23	706
STERLING AVE (1050-1195)	KELLER	SHASTA RD	2	R	20	2310
STEVENSON AVE (5-69)	GRIZZLY PEAK BLVD	MILLER AVE	2	R	24	520
STODDARD WAY (25-40)	DEAD END	GRIZZLY PEAK BLVD	2	R	20	260
SUMMIT LN (6-12)	SUMMIT RD NR GRIZZLY PEAK	DEAD END	2	R	6	180
SUMMIT RD	AJAX LANE	ATLAS PL	2	R	20	240
SUMMIT RD (1500-1545)	GRIZZLY PEAK BLVD	END SOUTH OF GRIZZLY PEAK BL	2	R	18	740
SUMMIT RD (1300-1498)	ATLAS PL	GRIZZLY PEAK BLVD	2	R	23	2530
SUNSET LN (50-70)	WOODMONT RD	WILDCAT CANYON RD	2	R	17	318
SUNSET LN (4-6)	GRIZZLY PEAK BLVD	WOODMONT RD	2	R	17	344
TAMALPAIS RD (1-190)	SHASTA RD	ROSE ST	2	R	22	2075
TEVLIN ST (1200-1306)	NORTH CITY LIMIT	WATKINS ST	2	R	18	300
TEVLIN ST (1248-1305)	WATKINS ST	END SOUTH OF GILMAN ST	2	R	25	425
THE ALAMEDA (500-597)	SAN ANTONIO AVE	THOUSAND OAKS BLVD	2	R	24	1385
THE BRIDGE RD (9-30)	ALVARADO RD	TUNNEL RD	2	R	24	450
THE CRESCENT (2-60)	PARK HILLS RD (NORTH)	PARK HILLS RD (SOUTH)	2	R	20	1020
THE CROSSWAYS (202-209)	OVERLOOK RD	MIDDLEFIELD RD	2	R	21	230
THE SHORT CUT	MIDDLEFIELD RD	PARK HILLS RD	2	R	22	200
THE SPIRAL (304-319)	DEAD END	WILDCAT CANYON RD	2	R	25	305
THE UPLANDS (220-305)	EL CAMINO REAL	TUNNEL RD	2	R	25	1048
THOUSAND OAKS BLVD (1601-1665)	COLUSA AVE	VINCENTE AVE	2	C	20	380
THOUSAND OAKS BLVD (1666-1797)	VINCENTE AVE	THE ALAMEDA	2	C	24	850
TOMLEE DR (1355-1380)	JUANITA WAY	ACTON ST	2	R	23	330
TWAIN AVE (1-71)	KEELER AVE	STERLING AVE	2	R	18	740
VALLEJO ST (6-52)	THE ALAMEDA	SAN RAMON AVE	2	R	24	460
VALLEY ST (2150-2183)	NORTH DEAD END (ALLSTON)	ALLSTON WAY	2	R	23	375
VASSAR AVE (350-399)	NORTH CITY LIMIT (KENTUCKY)	KENTUCKY AVE	2	R	23	375
VASSAR AVE (401-486)	KENTUCKY AVE	SPRUCE ST	2	R	24	1160
VERMONT AVE (424-499)	MARYLAND AVE	COLORADO AVE	2	R	25	750
VERMONT AVE (300-420)	DEAD END (VERMONT)	MARYLAND	2	R	24	780
VICENTE RD (1-95)	EAST CITY LIMIT NR GRAND VIEW	TUNNEL RD	2	R	24	1310
VICENTE RD (150-181)	ALVARADO RD	EAST CITY LIMIT NR GRAND VIEW	2	R	24	550
VINCENTE AVE (750-814)	COLUSA AVE	PERALTA AVE	2	R	24	1000
VINCENTE AVE (451-595)	NORTH END (VINCENTE WALK)	THOUSAND OAKS BLVD	2	R	24	1400

TOTAL LENGTH (FEET) 231,679

Street Name	Beginning Location	Ending Location	Lanes	Fire Code	Pavement Width (ft)	Pavement Length (ft)
VINE ST	COLUSA AVE	PERALTA AVE	2	R	24	1000
VIRGINIA GDNS (1-22)	NORTH DEAD END (CEDAR)	VIRGINIA ST	2	R	20	470
VIRGINIA ST (2701-2711)	LA LOMA AVE	DEAD END (AT LA VEREDA)	2	R	17	220
VISALIA AVE (1500-1598)	WEST CITY LIMIT (NEILSON)	COLUSA AVE	2	R	24	325
VISALIA AVE (1606-1697)	COLUSA AVE	VINCENTE AVE	2	R	24	890
VISTAMONT AVE (520-669)	WOODMONT AVE	WOODMONT AVE NR SUNSET LANE	2	R	18	2410
WALKER ST (2701-2708)	DERBY ST	WARD ST	2	R	18	330
WATKINS ST (1341-1350)	NEILSON ST	TEVLIN ST	2	R	22	250
WHITAKER AVE (1-99)	MILLER AVE	STERLING AVE	2	R	18	550
WILSON CIR (2-14; 1579)	OLYMPUS DR	WILSON WALK	2	R	23	180
WOODMONT AVE (515-581)	WILDCAT CANYON & GRIZZLY PEAK	ROSEMONT AVE	2	R	20	1355
WOODMONT AVE (600-691)	ROSEMONT AVE	SUNSET LANE	2	R	20	1700
WOODMONT AVE (800)	SUNSET LANE	DEAD END	2	R	12	1950
WOODMONT CT (1-5)	WOODMONT AVE (NORTH)	WOODMONT AVE (SOUTH)	2	R	23	285
WOODSIDE RD (1051-1155)	THE CRESCENT	PARK HILLS RD	2	R	22	1450
YOSEMITE RD (1800-1891)	THE ALAMEDA	SAN FERNANDO AVE	2	R	24	870

Chin, Khin

From: Shirley Dean <shirley.dean@sbcglobal.net>
Sent: Saturday, September 07, 2019 3:33 PM
To: Chin, Khin
Cc: May, Keith; 'Gradiva Couzin'
Subject: FW: Council Agenda Sept 10, 2019, Item 33

Khin,
Please forward to members of the DFSC for their information.

Thank you,

Shirley Dean

From: Shirley Dean <shirley.dean@sbcglobal.net>
Sent: Saturday, September 07, 2019 3:28 PM
To: 'Jesse Arreguin' <Mayor@cityofberkeley.info>; 'Rashi Kesarwani' <rkesarwani@cityofberkeley.info>; 'Cheryl Davila' <cdavila@cityofberkeley.info>; 'Ben Bartlett' <bbartlett@cityofberkeley.info>; 'Kate Harrison' <kharrison@cityofberkeley.info>; 'Sophie Hahn' <shahn@cityofberkeley.info>; 'Rigel Robinson' <rrobinson@cityofberkeley.info>; 'Lori Droste' <ldroste@cityofberkeley.info>; 'Dee Williams-Ridley' <manager@cityofberkeley.info>; 'Mark Numainville' <clerk@cityofberkeley.info>
Subject: Council Agenda Sept 10, 2019, Item 33

Dear Mayor Arreguin and Council Members Kesarwani, Davila, Bartlett, Harrison, Hahn, Wengraf, Robinson and Droste,

I am writing to urge that you take action at your September 10, 2019 Council Meeting to implement Item 33 regarding the installation of an outdoor public warning system. I believe this is an essential item that will help save the lives of many.

You need to be informed that I currently serve on the Disaster and Fire Safety Commission (DFSC), and as a Commissioner I worked on the drafting of this item and supported sending the item to you. However, I am NOT writing this on behalf of that Commission. I am writing this as an individual who is a long-time resident living in a designated high-risk fire area.

I have closely followed the many reports that have been issued around the lessons learned from the recent California wildfires and common sense, and all the statistics confirm that those residents who are elderly and those with mobility problems are the most vulnerable, but also consider those with babies and small children as well. My own personal experience includes riding in a fully equipped fire engine up Panoramic Hill following the Oakland Hills Fire in order to clearly understand the problems that residents face in the event of a disaster. This was, to put it mildly, a journey that was unforgettable. While Panoramic Hill is special, the many narrow streets in the hills of North Berkeley pose the same kinds of hazards. An early, far-reaching and clear warning, such as an outdoor siren, is a vital part of an effective warning system.

I know that all of you understand that all residents of Berkeley, not just those in the hills, need such a warning system. Berkeley is only 8 to 9 square miles, an area that could, under certain circumstances, burn from the top of the hills to the shore in one hour. This cannot be ignored. Certainly we have nixle, and AC alert, but in one of the last evacuation drills, even though I was signed up for both, I received no notice of the drill. Because of publicity, I knew a drill was taking place, so my husband and I got in the car and went looking for the designated "safe area." We found it only because a police car was parked at the Marin Circle Fountain, broadcasting that "this was a drill and we should report to Live Oak Park. It was great the police car was there, but what if it was a real life situation, AC Alert had failed,

and no warning had gone out. I don't think residents should wait until they see flames or smell smoke. That's why an outdoor siren as part of a holistic system is so important to the survival of many residents.

Please vote to implement Item 33 on September 10th.

Thank you for your consideration of these views.

Shirley Dean

Chin, Khin

From: Gradiva Couzin <gradiva@gmail.com>
Sent: Monday, September 09, 2019 9:32 AM
To: Chin, Khin
Cc: May, Keith; Toni Stein; Sarah JONES
Subject: Notes from Siren Ceremony - Mill Valley 9/7/2019

hi Khin,

Could you distribute these notes to the Disaster and Fire Safety Commission?

Thanks!

Gradiva

Siren Ceremony - Mill Valley 9/7/2019

I attended the Mill Valley siren ribbon cutting at Mill Valley City Hall on Saturday, 9/7/2019. Also present from Berkeley were Disaster & Fire Safety Commission member Toni Stein, BFD Chief Keith May, and CERT volunteer & former commission member Sarah Jones.

Here is some information I learned from speaking with Mill Valley's fire chief, various commissioners, and other parties involved in the process of purchasing and installing Mill Valley's outdoor public warning system:

- Mill Valley has sirens installed at five sites.
- The company that manufactured and installed the system is called LRAD Corporation (<https://lradx.com/>). I believe that Berkeley already owns two mobile systems from this company.
- I was told three different costs for the 5-unit system in Mill Valley: \$419,000, \$500,000, and \$600,000. I have asked Chief Welch to clarify the amount.
- I was not able to learn what (if any) other manufacturers were considered, but I have sent an email to fire chief Tom Welch asking for that information.
- Chief Welch mentioned that they had spoken with Menlo Park, San Jose, and a city in SoCal about their siren choice.
- At least one of Mill Valley's sirens were installed on pre-existing poles that had previously held old sirens. This presumably saved them money and made installation simpler.
- These systems have up to 14-day battery backup, and the batteries will last for 72 hours of continuous operation.
- The sirens can be activated via satellite if cell towers are down. Radio activation is also an option. Sirens do not emit any signal to the surrounding area.
- The sirens can play any sound file that the City may choose. This includes tones, wailing, voice, etc. The City generates the sound files.
- An LRAD employee told me that he had done a preliminary layout for Berkeley and estimated that Berkeley would need at least 10 units, based on Berkeley's topography. This preliminary review didn't include a review of actual sites where installation would be possible (public property), or other details. Taking into account the potential limitation of actual sites, the number of units needed for coverage throughout Berkeley may be higher than 10. According to Wikipedia, Mill Valley has a total area of 4.8 square miles and Berkeley's area is 17.7 square miles.

In listening to the siren demonstrations, I have these observations:

- The first demonstration took place at City Hall, standing within approx. 50 feet of the sirens. The sirens are very loud/painful when you are this close to them. This would be a concern for installing them too close to any homes.
- The second demonstration took place at Edna McGuire Elementary School. We had a clear view of the sirens which I would estimate at 1/4 mile away. From that distance the sound was easily heard and the voice was clear. When I listened from inside my car, it was not very loud. To me, this indicates that at distances of 1/4-1/2 mile or more, the sirens would not sound very loud to a person who is indoors with the windows shut. While this is not a scientific measurement whatsoever, it seemed to me that the volume I heard would not be loud enough to awaken a sleeping person indoors at that distance.

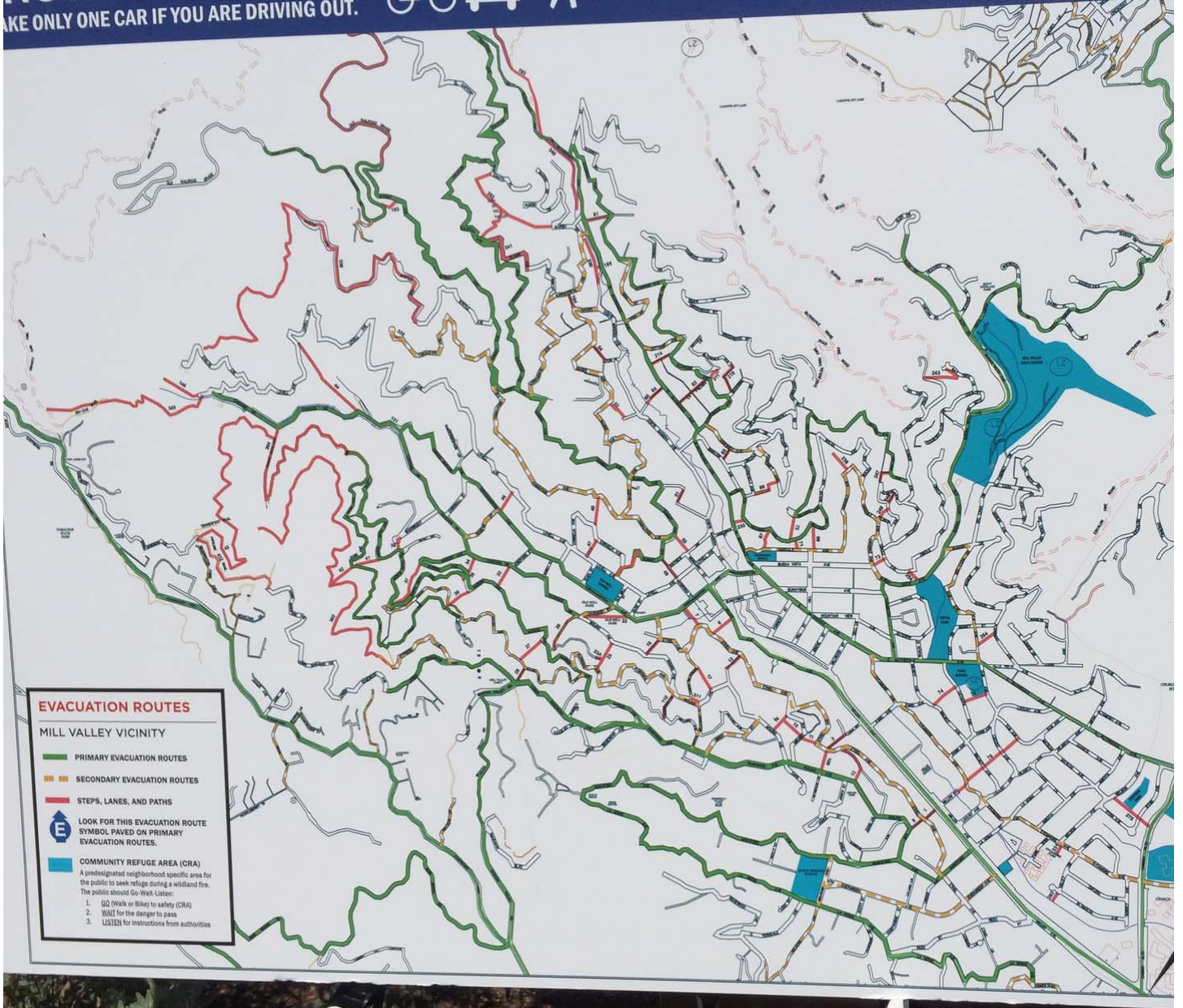
It will be good to learn more feedback from members of the community in Mill Valley who can hear the sirens from a variety of distances and situations.

An evacuation map including community refuge area locations was prominently displayed (see attached) and was also being handed out to the public.

NOW 2 WAYS OUT
TAKE ONLY ONE CAR IF YOU ARE DRIVING OUT.



ARE



EVACUATION ROUTES

MILL VALLEY VICINITY

PRIMARY EVACUATION ROUTES

SECONDARY EVACUATION ROUTES

STEPS, LANES, AND PATHS

LOOK FOR THIS EVACUATION ROUTE SYMBOL PAVED ON PRIMARY EVACUATION ROUTES.

COMMUNITY REFUGE AREA (CRA)
A pre-designated neighborhood specific area for the public to seek refuge during a wildfire fire. The public should Go-Walk-Listen.
1. GO (Walk or Bike) to safety (CRA)
2. WALL for the danger to pass
3. LISTEN for instructions from authorities

Chin, Khin

From: Gradiva Couzin <gradiva@gmail.com>
Sent: Tuesday, September 10, 2019 8:58 AM
To: Chin, Khin
Cc: May, Keith; Toni Stein
Subject: Fwd: Questions re: Siren Project

Hi Khin,

Can you include the below along with the other siren information when you send it out to the D&FS Commission?

Thanks!

Gradiva

Begin forwarded message:

From: Tom Welch <twelch@cityofmillvalley.org>
Subject: Re: Questions re: Siren Project
Date: September 10, 2019 at 8:45:47 AM PDT
To: Gradiva Couzin <gradiva@gmail.com>

Hello Gradiva,

Price for installation \$420,000 (all five locations) - however, we did have the infrastructure in place through our old siren system. Putting new infrastructure in place would have driven the costs up substantially.

Other systems evaluated:

<https://www.earthnetworks.com/product/decision-support-collaboration-tools/outdoor-alerting-system/>

https://stevenengineering.com/tech_support/PDFs/66MAIN_OUTDOOR.pdf

Ongoing Costs: Annual Genesis System License fee - \$6500
Annual Satellite User fee - \$6500

Labor Costs: Installation - none - rolled into the total price listed above
Training - All exempt employees in the admin teams for FD and PD.
OES - Our County OES is the primary user of the equipment at our request - not sure on their cots.

Staff time: Research, community demonstrations and outreach - approx 100 hours
Outreach video - approx 25 hours
Outreach mailer - 15 hours
Presentations to City Council and Emergency Preparedness Commission - 25 hours
Supervision of installation - 30 hours
Development of and upload of messages - 20 hours
Training - 40 hours - very simple system to activate
Yearly maintenance - Unk

System is tested 1 time a month for 3 min

Things that we want:

Software to schedule and set off tones without human interaction

Alternate Energy - We plan to enhance our battery backup with a plug in generator used to charge batteries during PSPS

I hope this help. Please call if you see the need.

Tom Welch, Fire Chief

Mill Valley Fire Department

twelch@cityofmillvalley.org<<mailto:twelch@cityofmillvalley.org>>

W. [415-389-4142](tel:415-389-4142)

C. [415-320-3852](tel:415-320-3852)

MEMO FOR DISCUSSION ON PUBLIC SAFETY POWER SHUTOFFS - G COUZIN

To: Disaster and Fire Safety Commission
From: Gradiva Couzin
Date: 9/12/2019
RE: PG&E Power Safety Power Shutoffs - Notes and possible actions

Greetings Fellow Commissioners,

I would like to discuss possible recommendations that our Commission may wish to make with regard to the PG&E Power Safety Power Shutoffs (PSPS) that may occur this season or in the future.

PG&E has created a shutdown forecasting page online, which you can see here:
https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/psps-weather-map.page

At this webpage, we can see a 7-day forecast and see if Berkeley is forecasted to have a shutdown within 7 days.

In my opinion, PG&E has done a good job of public outreach to make people aware of this program. Nevertheless, there are probably many people in Berkeley who will be surprised or unprepared if and when a power shutdown takes place. This could have a significant impact or be dangerous for people who rely on electricity for medical or functional devices. This also will be impactful for people who rely on electricity for communication, including communicating with emergency services via 9-1-1.

This is especially concerning to seniors, as was alerted to us in the Commission on Aging's memo to our Commission earlier this year.

I recently spoke with the director of North Berkeley Senior Center to learn if any services for seniors will be available in a PSPS. As of now, that is only under discussion and there is no plan currently in place to provide special PSPS-related services such as charging stations or temporary housing at Senior Centers.

What can or should the city do in the event of a PSPS to make sure that seniors, people with disabilities, and all of our community is safe?

I would like to discuss possible ideas with the Commission, such as the following:

- * Can Senior Centers offer temporary shelter for Berkeley seniors who do not feel safe in their homes due to a PSPS?
- * Can Berkeley's public buildings offer free charging stations for phones & devices?

PSPS-Notes-Sept2019.txt

- * If Berkeley is forecasted to have a PSPS and has 7 days to prepare, what public outreach and other actions will the city take? Can the city distribute LED lights or other emergency supplies?
- * Does Berkeley (perhaps in combination with other cities or the state) have any ability to pressure PG&E to provide power charging stations or other support in the event of a PSPS?
- * Can the City set up generators at key locations such as the senior centers?
- * Where is information available regarding what help people can get in a PSPS?

I look forward to your thoughts and suggestions.

Thank you,

Gradiva

MEMO FOR DISCUSSION ON SPECIAL TAX ASSESSMENT FOR WILDFIRE PREVENTION - G COUZIN

To: Disaster and Fire Safety Commission

From: Gradiva Couzin

Date: 9/17/2019

RE: Special tax assessment for wildfire prevention - Possible Future action

Greetings Fellow Commissioners,

In the upcoming months, I am hopeful our Commission will consider a recommendation to City Council for reinstating a special assessment zone in the hills for Wildfire prevention. This may go hand-in-hand with, or be part of, a vegetation management recommendation.

Commissioner Dean brought this up in her list of topics to consider at our last meeting, and I think that in addition to a parking recommendation, this should be a priority as well.

I'm not as familiar with the history of this assessment as some others on the Commission, but here's some background according to Commissioner Dean's notes and our last Commission discussion:

- There was previously a special assessment (tax) in the Berkeley Hills for five years 1992-1997
- The tax was \$50 per household for 8300 households, which comes to \$415,000/yearly
- This assessment funded fire prevention staff members (Ms. Dean's notes say 3 inspectors, but conversation at our last Commission meeting said there were 8 inspectors)
- The fire prevention staff provided patrols/inspections in the hills and although they had the authority to punish people with fines, they were more likely to provide nudging and pressure to get people to trim vegetation, as opposed to punitive measures
- A state law required renewal in 1997 and the special assessment was not renewed

Here are some back-of-the-envelope calculations that might help to get us started in this conversation:

- Cost for 8 additional fire prevention staff: very rough estimate \$1.2 million/year
- Approx 8300 households in the Hills Fire Zones 2 & 3
- Estimated per household assessment = \$144/year

I look forward to your thoughts and insight. Thank you,

Gradiva

Chin, Khin

From: bob flasher <rangerdude333@hotmail.com>
Sent: Monday, September 16, 2019 4:42 PM
To: Chin, Khin
Subject: Fw: Key Wildfire Prevention Bills Await Governor's Signature

Would you send out this information to commissioners so they know what bills have been passed that improve fire safety (if the governor signs them).

Bob Flasher

From: bob flasher <rangerdude333@hotmail.com>
Sent: Monday, September 16, 2019 4:23 PM
To: 'Hahn, Sophie' <SHahn@cityofberkeley.info>; Idroste@cityofberkeley.info <Idroste@cityofberkeley.info>; Khin Chin <kchin@cityofberkeley.info>; May, Keith <KMay@cityofberkeley.info>; Gradiva Couzin <gradiva@gmail.com>
Subject: Fw: Key Wildfire Prevention Bills Await Governor's Signature

Did ya'll see this?

Bob

I'm forwarding you this update from Action for Wildfire Resiliency, which I joined on behalf of the Oakland Firesafe Council.

Sue Piper
Chair
Oakland Firesafe Council
www.oaklandfiresafecouncil.org



Significant Wildfire Prevention Progress this Legislative Session

Thank you for your engagement. Before the Legislature recessed, the Senate and Assembly approved four bills that were actively supported by **Action for Wildfire Resiliency** that will improve the state's wildfire prevention efforts:

AB 38 (Wood): would provide financial assistance and rebates for qualified owners of eligible buildings for fire hardening and vegetation management

AB 1668 (Carrillo): would open pathways to employment and skill development while increasing the available workforce to provide critical fuels reduction, vegetation management, natural resource protection and support to our front-line firefighters battling California wildfires

SB 190 (Dodd): would develop a model defensible space ordinance

SB 209 (Dodd): would create a wildfire warning center

We are hopeful the Governor will sign these bills, and we will continue to keep you informed. Thank you, again for your engagement in efforts to make California more resilient against the increasing threat of wildfires.



Action for Wildfire Resiliency was created with the support of Southern California Edison, San Diego Gas and Electric and IBEW Locals 47 and 1245 to provide diverse constituencies a unified voice to advocate for policies that better protect California against the growing threat of wildfires.

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--
Sue Piper

Chin, Khin

From: bob flasher <rangerdude333@hotmail.com>
Sent: Thursday, September 12, 2019 11:15 PM
To: Chin, Khin
Subject: Fwd: Forest thinning projects won't stop the worst wildfires. So why is California spending millions on them? - Los Angeles Times

Khin,

Will you share this link with commissioners before our meeting?

Bob

Subject: Forest thinning projects won't stop the worst wildfires. So why is California spending millions on them? - Los Angeles Times

<https://www.latimes.com/projects/wildfire-california-fuel-breaks-newsom-paradise/>

Chin, Khin

From: Toni Stein <tweil@igc.org>
Sent: Friday, August 30, 2019 9:41 AM
To: 'Gradiva Couzin'; Chin, Khin
Subject: The Facts About Supraharmonics -National Electrical Contractors Association (NECA) article and FW: September Is National Preparedness Month

Please attach for the next Meeting packet if it's not too late:

- **When the Fire Starts video: *Its best to work in unity with your whole community!!***
- U.S. Environmental Protection Agency's (EPA) [Indoor Environments Division](#) (IED) [indoor air quality \(IAQ\)](#)
--<https://www.epa.gov/indoorairplus/breathe-easy-your-indoor-airplus-home>
- Federal Emergency Management Agency (FEMA) [Ready campaign](#)'s efforts to educate Americans on the importance of being prepared for disasters and emergencies in their homes, businesses and communities. EPA has a variety of information and resources on how to protect your

Excellent excerpt from an article entitled, **A Higher Order: The Facts About Supraharmonics** by By Richard P. Bingham. Power Quality Columnist. Richard P. Bingham, a contributing editor **for power quality**, can be reached at 732.248.4393
Published In July 2019

"Sources associated with supraharmonics have been documented. Some documents refer to signals in the 9-to-150-kHz range. These sources included some of the newer industrial-size converters/inverters, such as those used in photovoltaic panels, street lamps, electric vehicle chargers, household devices and power line communication used in automatic metering reading systems. Occasional misoperation of LED lighting has been traced to these higher order signals. The filter capacitors used in nearly all electronic equipment to reduce their emissions below the present-day limits and reduce their susceptibility to these higher order signals are generally not designed to absorb energy in this higher range. Exposure to significant energy can reduce the life expectancy of the capacitors and, therefore, the equipment itself.

What does this mean for the typical PQ benchmark audit or troubleshooting application? We will ignore the aforementioned increased cost for instruments to measure this specialized area. Many of the rules of thumb that we used don't really apply here, such as the summation of the triplen harmonics in the neutral conductor and eddy current losses in transformers and electric motors. Many people who investigate PQ problems have difficulty understanding how changes in harmonic impedance over the traditional lower frequency range results in varying harmonic power. It may be a more prudent approach for the standards groups and research institutes to get more facts about supraharmonics and learn when to look for these higher order harmonics as the culprit, rather than add more burden on the investigators." <https://www.ecmag.com/section/integrated-systems/higher-order-facts-about-supraharmonics>

A Higher Order: The Facts About Supraharmonics

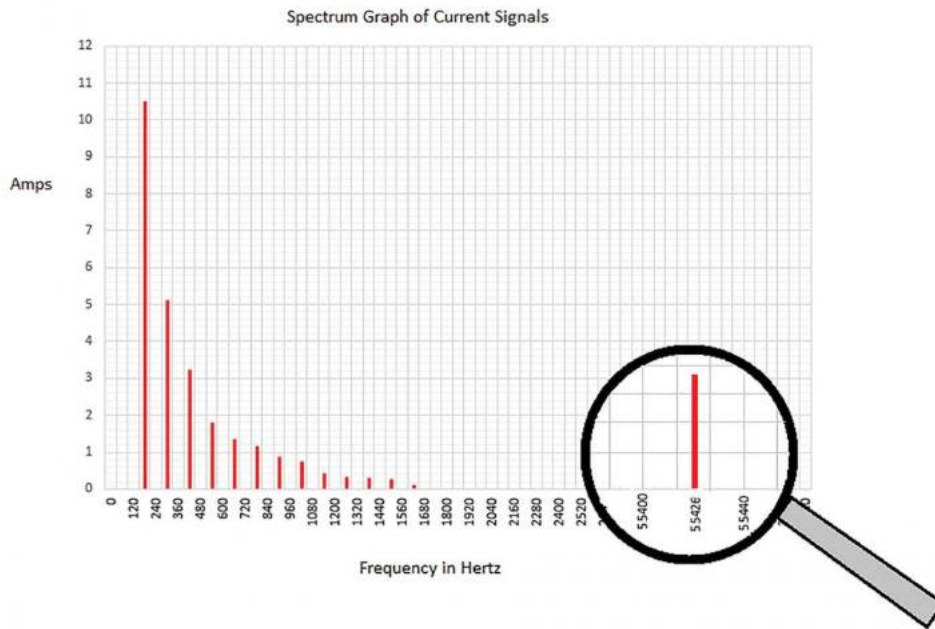


Image Credit: Richard P. Bingham

This article was

Published by the National Electrical Contractors Association (NECA), it is headquartered in Bethesda, Md. in the *ELECTRICAL CONTRACTOR* a monthly print and online magazine that serves the field of electrical construction.

From: EPA Healthy Indoor Air <EPA_Healthy_Indoor_Air@public.govdelivery.com>
Sent: Friday, August 30, 2019 8:03 AM
To: tweil@igc.org
Subject: September Is National Preparedness Month

Having trouble viewing this email? [View it as a Web page.](#)



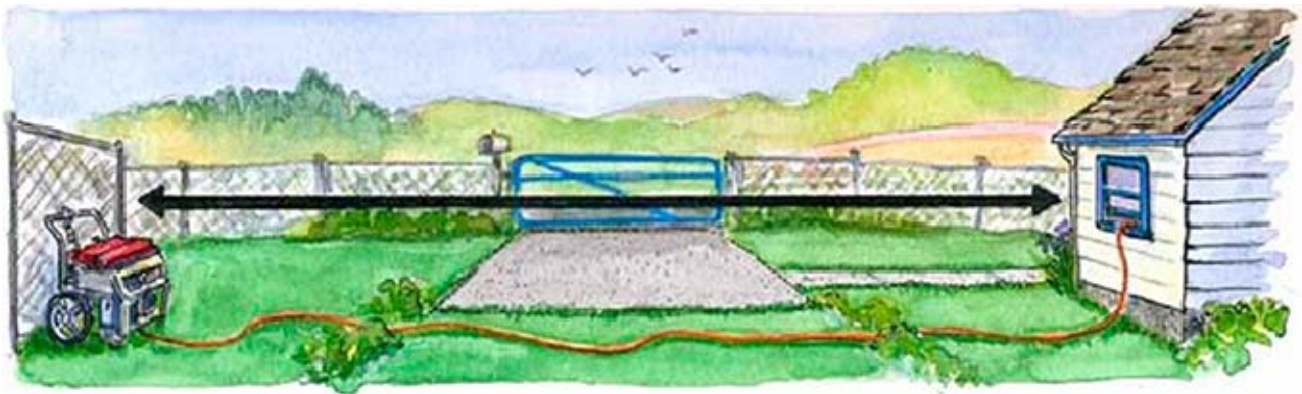
September Is National Preparedness Month



Every September, the U.S. Environmental Protection Agency's (EPA) [Indoor Environments Division](#) (IED) supports the Federal Emergency Management Agency (FEMA) [Ready campaign](#)'s efforts to educate Americans on the importance of being prepared for disasters and emergencies in their homes, businesses and communities. EPA has a variety of information and resources on how to protect your [indoor air quality \(IAQ\)](#) when [disasters and emergencies](#) occur.

Preparedness Tips to Protect IAQ and Health Following Disasters

Prevent Carbon Monoxide Poisoning During Power Outages



NEVER use portable generators indoors! Place them outside and far away from buildings.

Portable generators that run on gasoline, natural gas or kerosene emit noxious fumes, including [carbon monoxide \(CO\)](#). [CO poisoning can be fatal](#).

You can prepare for emergencies by learning how to [use a portable generator safely](#) and by making sure your home is equipped with one or more proper [CO alarms](#).



Protect Yourself When Entering Homes After a Flood

Wear an N-95 respirator, goggles, pants, long-sleeve clothing and gloves when entering a home that has been flooded recently.

N-95 respirators can protect you from breathing in dust, microorganisms and mold spores. You can usually find them at hardware stores and online.

After a flood, standing water and wet materials can be a breeding ground for microorganisms, including bacteria, viruses and mold. They can trigger allergic reactions, cause disease and continue to damage belongings. Learn about [the proper steps](#) to clean your home after a flood to protect your family's health.

Reduce Your Family's Exposure to Wildfire Smoke

Before the smoke arrives, consider purchasing a portable air cleaner and/or upgrading to a higher-efficiency HVAC (heating, ventilation and air-conditioning) filter.

Wildfire smoke can enter your home and make the indoor air unhealthy to breathe. A portable air cleaner or high-efficiency HVAC filter can remove fine particles from the indoor air. If you live in an area prone to wildfire smoke, you can learn more about steps you can take to [reduce your family's smoke exposure at home](#).




The following EPA resources can help you prepare for disasters and reduce associated health risks after specific types of events:

- [Individuals and Homeowners](#)
- [Communities](#)
- [Preparing for Hurricanes](#)
- [Flood Cleanup](#)

Join the conversation on
Twitter:

- [#PrepareNow](#)
- [#FloodSmart](#)
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Share with a friend or colleague. 

Promoting healthy indoor air quality in your community?

Access **free** media resources here!



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Indoor Air Quality (IAQ)