



## PROCLAMATION CALLING A SPECIAL MEETING OF THE BERKELEY CITY COUNCIL

In accordance with the authority in me vested, I do hereby call the Berkeley City Council in special session as follows:

**Tuesday, May 16, 2023  
6:00 PM**

SCHOOL DISTRICT BOARD ROOM - 1231 ADDISON STREET, BERKELEY, CA 94702

TELECONFERENCE LOCATION - 1404 LE ROY AVE, BERKELEY 94708

JESSE ARREGUIN, MAYOR

Councilmembers:

DISTRICT 1 – RASHI KESARWANI  
DISTRICT 2 – TERRY TAPLIN  
DISTRICT 3 – BEN BARTLETT  
DISTRICT 4 – KATE HARRISON

DISTRICT 5 – SOPHIE HAHN  
DISTRICT 6 – SUSAN WENGRAF  
DISTRICT 7 – RIGEL ROBINSON  
DISTRICT 8 – MARK HUMBERT

*This meeting will be conducted in a hybrid model with both in-person attendance and virtual participation. For in-person attendees, face coverings or masks that cover both the nose and the mouth are encouraged. If you are feeling sick, please do not attend the meeting in person.*

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*Please be mindful that the meeting will be recorded and all rules of procedure and decorum apply for in-person attendees and those participating by teleconference or videoconference.*

To submit a written communication for the City Council's consideration and inclusion in the public record, email [council@cityofberkeley.info](mailto:council@cityofberkeley.info).

*This meeting will be conducted in accordance with the Brown Act, Government Code Section 54953 and applicable Executive Orders as issued by the Governor that are currently in effect. Any member of the public may attend this meeting. Questions regarding this matter may be addressed to Mark Numainville, City Clerk, (510) 981-6900. The City Council may take action related to any subject listed on the Agenda. Meetings will adjourn at 11:00 p.m. - any items outstanding at that time will be carried over to a date/time to be specified.*

## Preliminary Matters

### Roll Call:

## Action Calendar

*The public may comment on each item listed on the agenda for action as the item is taken up. For items moved to the Action Calendar from the Consent Calendar or Information Calendar, persons who spoke on the item during the Consent Calendar public comment period may speak again at the time the matter is taken up during the Action Calendar.*

*The Presiding Officer will request that persons wishing to speak line up at the podium, or use the "raise hand" function in Zoom, to determine the number of persons interested in speaking at that time. Up to ten (10) speakers may speak for two minutes. If there are more than ten persons interested in speaking, the Presiding Officer may limit the public comment for all speakers to one minute per speaker. Speakers are permitted to yield their time to one other speaker, however no one speaker shall have more than four minutes. The Presiding Officer may, with the consent of persons representing both sides of an issue, allocate a block of time to each side to present their issue.*

*Action items may be reordered at the discretion of the Chair with the consent of Council.*

## Action Calendar – Scheduled Public Comment Period

*During this public comment period, the Presiding Officer will open and close a comment period for each Action item on this agenda (excluding any public hearings, appeals, and/or quasi-judicial matters). The public may speak on each item. Those who speak on an item during this comment period may not speak a second time when the item is taken up by Council.*

- 1. Approval of the City of Berkeley Community Wildfire Protection Plan**  
**From: City Manager**  
**Recommendation:** Approve the City of Berkeley Community Wildfire Protection Plan (CWPP) as recommended by the Fire Chief.  
**Financial Implications:** See report  
Contact: David Sprague, Fire, (510) 981-3473
- 2. Fire Department Facilities Master Plan**  
**From: City Manager**  
Contact: David Sprague, Fire, (510) 981-3473

## Adjournment

I hereby request that the City Clerk of the City of Berkeley cause personal notice to be given to each member of the Berkeley City Council on the time and place of said meeting, forthwith.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the official seal of the City of Berkeley to be affixed on this 11<sup>th</sup> day of May, 2023.



Jesse Arreguin, Mayor

Public Notice – this Proclamation serves as the official agenda for this meeting.

ATTEST:



Date: May 11, 2023  
Mark Numainville, City Clerk

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Claremont Branch – 2940 Benvenue, West Branch – 1125 University,  
North Branch – 1170 The Alameda, Tarea Hall Pittman South Branch – 1901 Russell

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Office of the City Manager

ACTION CALENDAR

May 16, 2023

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: David Sprague, Fire Chief

Subject: Approval of the City of Berkeley Community Wildfire Protection Plan

RECOMMENDATION

Approve the City of Berkeley Community Wildfire Protection Plan (CWPP) as recommended by the Fire Chief.

SUMMARY

The City of Berkeley CWPP was developed through a collaborative approach to protect the community from wildfire. The actions proposed will empower citizens to partner with the City and other allied agencies, to move forward in a together. This CWPP is a roadmap for fire hazard mitigation and preparedness at both the City and neighborhood level and offers ways to mitigate the risks posed by wildfires. This includes goals for improving wildfire response, community preparedness, fuel management, infrastructure, ignition reduction, home hardening, and more.

City of Berkeley CWPP HUB

<https://cwpp-berkeley.hub.arcgis.com/>

City of Berkeley CWPP

<https://cwpp-berkeley.hub.arcgis.com/documents/berkeley::city-of-berkeley-cwpp-draft-2-15-23/about>

FISCAL IMPACTS OF RECOMMENDATION

The costs associated with implementation of the CWPP will be covered through Measure FF, other budgeted funds, or grants. The Department does not expect to make any budget requests associated with CWPP project implementation in FY24.

CURRENT SITUATION AND ITS EFFECTS

The City of Berkeley Community Wildfire Protection Plan is a Strategic Plan Priority Project, advancing our goal to create a resilient, safe, connected, and prepared city.

BACKGROUND

There are extreme threats to the entire Berkeley community from a wildfire that starts in or adjacent one of the City's hazardous fire zones. The fire threat is complex and

dynamic as the environment changes with global warming. Berkeley's flatlands are also exposed to a fire that spreads west from the hills. The flatlands, in addition to the hills, are densely-covered with old wooden buildings housing low-income and vulnerable populations, including isolated seniors, persons with disabilities and students.

On October 15th 2019 the Berkeley City passed Resolution 69,147- N.S. making wildfire prevention and safety a stated top priority for the city of Berkeley. Berkeley is considered to be in the Very High Fire Hazard Severity Zone. A hazard zone that is considered amongst the most vulnerable to life safety during a wildfire event in the state of California.

The overall goal of the CWPP is to reduce the risk of wildfire to communities and infrastructure while increasing the effectiveness and efficiency of wildfire response and management. One of the key components of the CWPP is the promotion of increased information and education about wildfires. This includes educating community members about the risks of wildfire and how to prepare for them, as well as providing information about the benefits and potential impacts of different wildfire mitigation strategies. In doing so, this CWPP considers several adopted plans which include the General Plan (especially the Disaster and Safety Element and the Housing Element), the Local Hazard Mitigation Plan, Vision 2050, Watershed Master Management Plan, Resiliency Strategy, the City's Strategic Plan, and the Climate Action Plan.

#### ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

As the climate changes, the State is experiencing longer and drier summer conditions, leading to wildfires of greater frequency and duration.

#### RATIONALE FOR RECOMMENDATION

The City of Berkeley CWPP was collaboratively developed. The development process included: presentations at the Disaster and Fire Safety Commission meetings, a project website and GIS hub, media releases, newsletters, community surveys and a dedicated email address for questions or comments. This plan identifies and prioritizes areas for hazardous fuels reduction treatments, reducing ignitibility of structures, and recommendations that will protect community members at risk of wildfire. Moving forward as a community with a well-defined action plan will be critical to making Berkeley more resistant to wildfire.

#### ALTERNATIVE ACTIONS CONSIDERED

None

#### CONTACT PERSON

Dan Green, Assistant Chief, Berkeley Fire Department, wildfire@berkeleyca.gov

#### Attachments:

- 1: City of Berkeley Community Wildfire Protection Plan
- 2: Memorandum from Disaster and Fire Safety Commission

RESOLUTION NO. ##,###-N.S.

APPROVE CITY OF BERKELEY WILDFIRE PROTECTION PLAN

WHEREAS, there are extreme threats to the entire Berkeley community from a wildfire that starts in or adjacent one of the City's hazardous fire zones. The fire threat is complex and dynamic as the environment changes with global warming, and

WHEREAS, Berkeley's flatlands are also exposed to a fire that spreads west from the hills. The flatlands, in addition to the hills, are densely-covered with old wooden buildings housing low-income and vulnerable populations, including isolated seniors, persons with disabilities and students, and

WHEREAS, on October 15th 2019 the Berkeley City Council passed Resolution 69,147-N.S. making wildfire prevention and safety a stated top priority for the city of Berkeley, and

WHEREAS, on February of 2022 the Berkeley City Council passed Resolution 70,210-N.S. approving a contract with Wildland Res Mgmt. for the Development of a Community Wildfire Protection Plan (CWPP), and

WHEREAS, the CWPP includes goals for improving wildfire response, community preparedness, fuel management, infrastructure, ignition reduction, home hardening, and more, and

WHEREAS, the CWPP will serve as the map for the Cities wildfire prevention and preparation efforts for the years to come.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Council approve the City of Berkeley Community Wildfire Protection Plan (CWPP) as recommended by the Fire Chief.

Exhibits

A: City of Berkeley Community Wildfire Protection Plan



# CITY OF BERKELEY COMMUNITY WILDFIRE PROTECTION PLAN

Prepared for the City of Berkeley

*by*

Wildland Res Mgt

Cheryl Miller, RLA

Digital Mapping Solutions

April 2023



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## Preface: What is a Community Wildfire Protection Plan (CWPP)?

As established by the 2003 Healthy Forest Restoration Act, a Community Wildfire Protection Plan is a strategic plan typically developed by a local fire department, federal and state land managers, local governments, and communities. CWPPs organize a community's efforts to protect itself from wildfire and empower citizens to move in a cohesive, common direction. This CWPP is a roadmap for fire hazard mitigation and preparedness at both the City of Berkeley (hereby known as the City) and neighborhood level and will offer ways to mitigate the risks posed by wildfires, including goals for improving wildfire response, community preparedness, fuel management, infrastructure, ignition reduction, home hardening, and more. Input from the public and other stakeholders will help inform priorities.<sup>1</sup>

Some of the key goals of the City of Berkeley CWPP, which was developed collaboratively by citizens and state and local management agencies in consultation with Federal agencies, are:

- Align with the County, CAL FIRE, and Federal cohesive pre-fire strategies, which include educating homeowners and building an understanding of wildland fire, ensuring defensible space and structure ignition resistance, safeguarding communities through fuels treatment, and protecting evacuation corridors.
- Identify and prioritize areas for hazardous fuel-reduction treatment.
- Recommend the types and methods of treatment that will reduce damages from wildfire.
- Recommend measures to reduce the ignitability of structures throughout the City.

Additional desired results and outcomes include:

- Shared vision of current situation
- Common, shared, and parallel paths for improvement
- Compatible planning documents
- Open statement of priorities
- Increased potential for funding/efficiency
- Great collaboration with partners/stakeholders

Additionally, this document is intended to serve as a companion to the City of Berkeley CWPP Hub Site, which holds a rich range of information (via tabs) contained in the Community Base Map, as well as the various Story Maps. New versions of CWPP Hubs are available through ESRI. Maps on the Hub Site depict Integrated Fire Hazard, Fire Hazard Severity Zones, Fuel Reduction and/or Wildfire Mitigation Projects, and Evacuation Zones and Routes, and also go into greater detail regarding topics such as the existing vegetation and fuel models across the City more effectively than equivalent sections of this document. Hence, while this document

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<sup>1</sup> Note: The CWPP is not to be construed as indicative of project "activity" as defined under the "Community Guide to the California Environmental Quality Act, Chapter Three, Projects Subject to CEQA." Any actual project activities undertaken that meet this definition of project activity and are undertaken by the CWPP participants or agencies listed shall meet with local, state, and federal environmental compliance requirements.

covers similar ground, the enhanced levels of detail and searchable tools in the Hub Site make it an irreplaceable resource for the City of Berkeley. Use the links throughout this document to be directed to the [Hub Site](#), the Community Base Map, the Wildfire Hazard Map, and other relevant resources.

This CWPP will be updated as the products on the Hub Site are revised. An interval of 12-18 months between updates is anticipated.

## Executive Summary

In 2022, the City of Berkeley embarked on the development of a city-wide Community Wildfire Protection Plan (CWPP). A Core Team comprised of interested parties was assembled. Members of the team include City staff from Berkeley Fire Department, Parks and Waterfront, Planning, Public Works, and two members of the Disaster and Fire Commission (DFSC). Core Team members were tasked with attending DFSC meetings, sharing expertise and local knowledge with other stakeholders, proposing projects, participating in prioritization, and reviewing plans and offering comments on recommendations and implementation actions. Signators for approval of the Berkeley CWPP will include the Berkeley Fire Chief, the CAL FIRE Santa Clara Unit Chief, and the Berkeley City Council.

Public engagement is a key component in the creation of a CWPP. The Core Team promoted several ways to enhance public awareness and involvement, including encouraging attendance at DFSC meetings, offering media releases about the CWPP process, publishing information in City of Berkeley newsletters, and offering online public surveys. An online Hub Site for the CWPP was designed, and a dedicated email was created to facilitate public comments. The CWPP and the products on the Hub Site serve as the basis for project planning and implementation, and additionally offer resources to support community awareness and engagement. A central initial effort was the development of a Community Base Map to describe the many physical facets of Berkeley. The Community Base Map can be found at <https://cwpp-berkeley.hub.arcgis.com/apps/a57399d9ddf141dfb100c9f095a4ebc0/explore>.

The organizing model for this project is Fire Adapted Communities, a national model based on fire resilience (<https://fireadapted.org/>). The Fire Adapted Communities model promotes a strategy involving local multi-jurisdictional stakeholders working together to identify risk, mitigate it, and maintain the work over time. Part of the strategy is the creation of an Action Plan to guide prioritization and implementation of projects.

An Action Plan was developed based on the results of the public surveys from the Hub Site, and in tandem with recommendations from the Core Team and expert consultant input. This Action Plan prioritizes projects that address prevention, safety and evacuation, resident mitigation, wildfire response, and large-scale landscape treatments. Some strategies are also covered by existing departments/processes/plans etc., including regulations, policies, and plans; infrastructure and business; recovery; partnership and community engagement; and public health.

## Overview

### Berkeley Community Wildfire Protection Plan

Tasks	Timeframe	Outcome/ Results/ Deliverables
<p><b>Task 1 Convene decision-makers and interested parties.</b></p> <p>Develop list of decision-makers (minimum = local government, fire agencies and Cal Fire) + potential core CWPP advisory group (for 5 work sessions).</p> <p>Discuss requirements for the development of a Community Base Map based on available information</p> <p>Develop informational materials regarding process and stakeholder involvement. Post on CWPP on-line hub when established (Task 2).</p> <p>Convene core CWP advisory group. Provide follow-up information.</p>	<p style="text-align: center;">May 13, 2022 @1:00 Work Session #1 Core Team</p> <p style="text-align: center;">May 19, 2022 – report activities @ Wildfire community meeting</p>	<p><i>Invitations to participate to potential stakeholders for core CWPP advisory group.</i></p> <p><i>Work session #1 material: Agenda, scope, schedule; communication methods; participation opportunities; requirements of CWPP; Written summary.</i></p>
<p><b>Task 2 – Geospatial Hazard and Risk Assessment</b></p> <p>Review existing databases and analyses.</p> <p>Preliminary Community Base Map based on available information</p> <p>Develop geospatial hazard and risk assessment (available topo, fine-grained vegetative fuels, structure characteristics and density, access, fuel mitigation, power lines, typical traffic).</p> <p>Create wildfire hazard story map: CWPP on-line hub. Organize by watersheds. Summary of associated hazards.</p> <p>Calculate overall wildfire risk (if sufficient data).</p>	<p style="text-align: center;">Core Team mtg Work Session #2 July 27, 2022 @1:00</p> <p style="text-align: center;">Disaster and Fire Safety Commission #1 August 3, 2022 Wildfire hazard story map (and overall risk assessment if sufficient data) +on-line hub for public input</p>	<p><i>Work session #2 material: Agenda, preliminary community base map wildfire hazard summary, risk assessment. Written summary of geospatial hazard and risk assessment CWPP on-line hub to share information and facilitate public input.</i></p>
<p><b>Task 3 – Projects and Priorities</b></p> <p>Prioritize potential hazard reduction strategies.</p> <p>Preliminary project recommendations, roles, responsibilities, funding needs and timetables.</p> <p>Link to CWPP on-line hub with project mapping tools.</p>	<p style="text-align: center;">Core Team mtg Work Session #3 Sept 21, 2022 @ 1:00</p> <p style="text-align: center;">Disaster and Fire Safety Commission #2: Sept 28, 2022 Strategies &amp; projects</p>	<p><i>Work session #3: Agenda, strategies &amp; projects materials. Written summary session #3. CWPP on-line hub update for input on project and priorities</i></p>
<p><b>Task 4 –Assessment Priorities &amp; Action Plan</b></p> <p>Determine priority of projects and confirm action plans for implementation of highest priority projects.</p> <p>Link to CWPP on-line hub.</p>	<p style="text-align: center;">Core Team mtg Work Session #4 Nov 30 @ 1:00</p> <p style="text-align: center;">Disaster and Fire Safety Commission #3 Dec 7, 2022 Assessment Priorities &amp; Action Plan</p>	<p><i>Work session #4: Agenda, priorities &amp; action plan. Written summary session #4 CWPP on-line hub update for input on project and priorities</i></p>
<p><b>Task 5 – Admin &amp; Public Review Draft Plan</b></p> <p>Admin Draft Plan.</p> <p>Circulate Draft Plan for Public Review and Comment.</p>	<p style="text-align: center;">Core Team mtg Work Session #5 Jan 25, 2023 @ 1:00 Admin Draft</p>	<p><i>Work session #5: Agenda, Admin Draft Plan Written summary session #5 CWPP on-line hub update with Public Draft Plan</i></p>
<p><b>Task 6 – Final Berkeley CWPP Adoption</b></p> <p>Finalize the Berkeley CWPP. Coordinate with agency partners and required signators.</p> <p>Present for City Council signature.</p>	<p style="text-align: center;"><u>Recommend 60 days after #5</u> Final Plan for Signatures</p>	<p><i>Presentations to signators Post final CWPP to on-line hub.</i></p>

Figure 1. The process used to develop the CWPP.

Five major categories of projects are identified in this CWPP Action Plan:

1. Fuel management
2. Wildfire response support
3. Community education and outreach
4. Critical Infrastructure
5. Planning

Other strategies, as identified in the Fire Adapted Communities program, as supported by existing City policies, programs, and plans. These strategies are:

1. Regulations, policies & plans
2. Infrastructure and business recovery
3. Partnerships and community
4. Engagement
5. Public Health

The CWPP describes fire hazard and risk on a city-wide scale, displaying CAL FIRE-derived products as tabs on the Community Base Map along with city-specific analysis of hazard and risk based on new high-resolution fuels maps and fire behavior analysis, plus a multitude of other weighted factors.

## Section 1: Existing Conditions

### A. Overview

The CWPP addresses the entire City of Berkeley, with particular focus on Wildland Urban Interface (WUI) areas as identified by the Berkeley Fire Code. This includes the areas identified as Fire Zone 2 (Hillside Overlay) and Fire Zone 3 (Panoramic Hill). A map of the WUI area can be found at our Community Base Map.

Because wildfire is not specific to jurisdictional boundaries, the CWPP hazard and risk analyses area will include a 1,000-foot buffer around the City WUI area to evaluate its impact on the City. Actions identified within the CWPP may include collaborative projects with adjacent agencies including the Cities of Albany, El Cerrito, Emeryville, and Oakland, the Community of Kensington, East Bay Regional Park District, East Bay Municipal Utility District, Lawrence Berkeley National Laboratory, and the University of California, Berkeley. However, as a local plan, most actions in the CWPP will be focused on the City of Berkeley WUI owned by private citizens, businesses, public entities, and the City of Berkeley.



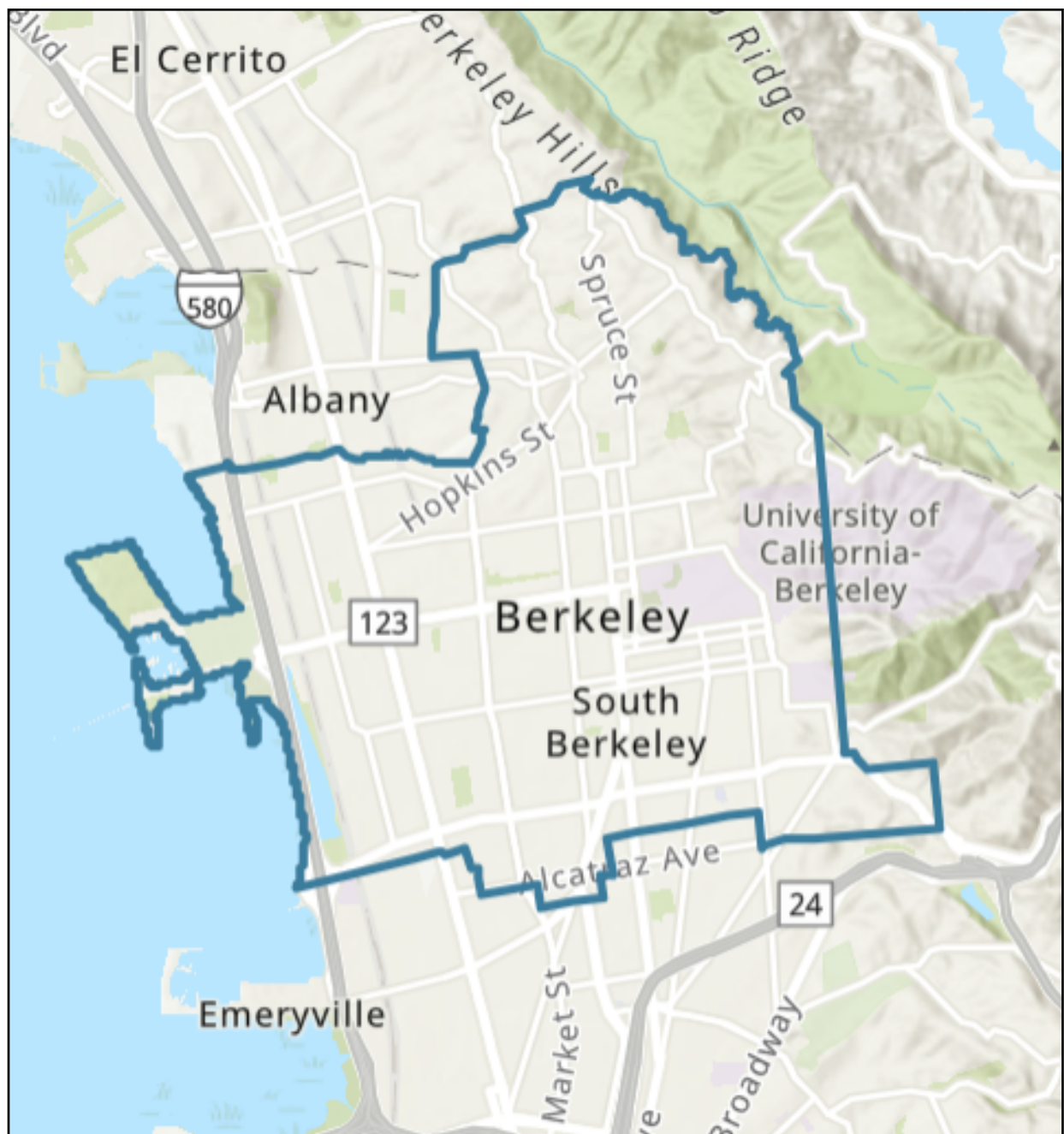


Figure 2. City of Berkeley CWPP boundary (in blue).

## B. Existing Natural and Built Conditions

### 1. Topography and Watersheds

Elevation ranges from sea level to roughly 200 feet above sea level, from the shoreline to Shattuck Ave. Then elevation raises sharply from 200 feet above sea level to over 1300 feet to the eastern boundary of the City.

There are several canyons in Berkeley: Strawberry Canyon, Blackberry Canyon, canyons below La Loma and Berryman Reservoir, and canyons south of Panoramic Hill.

Watershed values are appreciated by the public, including the creeks' role as a wildlife corridor and important reservoir of biodiversity. The creeks contain abundant fuel. There are 10 watersheds within the City limits. The largest watershed is the Derby Creek watershed, which encompasses most of South Berkeley. The Strawberry Creek watershed is almost as big and drains the UC Hill Campus and residential areas immediately north of the UC Berkeley main campus. The Cordinices Creek watershed covers most of the northern half of the Berkeley Hills and spans the neighborhood around Hopkins. The Schoolhouse watershed starts below Shattuck Avenue, while the Marin watershed covers the northern hills of Berkeley around Marin Avenue. Three watersheds share boundaries outside the City to the north, east, and south; the Cerrito Cree, Temescal, and Wildcat Creek watersheds. Two short watersheds start near the San Francisco Bay: Aquatic Park and Gilman.

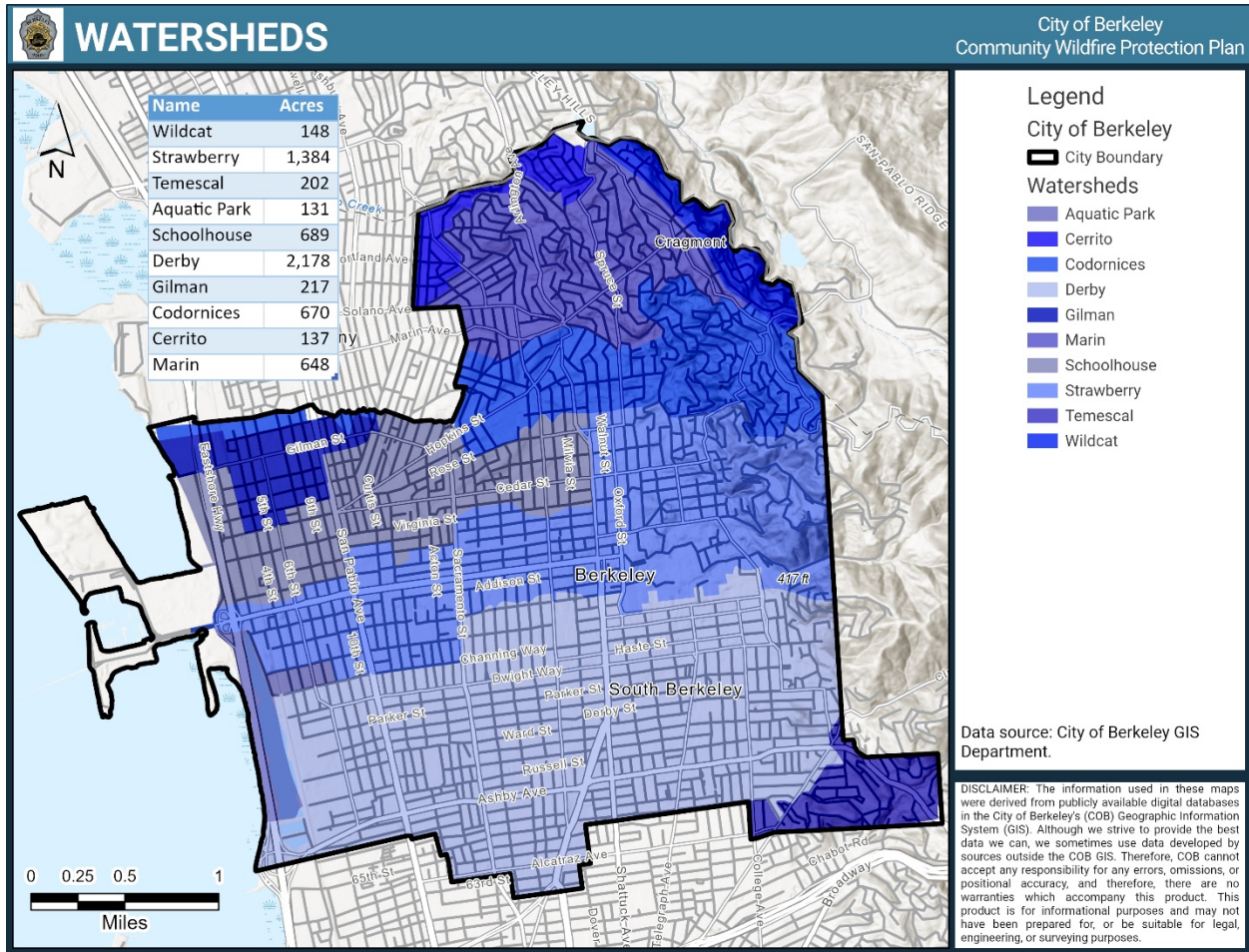


Figure 3. Map of watersheds in the City of Berkeley.

## 2. Climate and Weather

Berkeley's climate has historically been characterized by warm, dry summers and cool, wet winters. Annual rainfall averages 26.74 inches. Precipitation mainly occurs as storm fronts, with approximately 85 percent of these occurring between November and March. The warm season lasts from June to October, with an average daily high temperature above 71°F. The hottest month of the year in Berkeley is September, with an average high of 75°F and low of 53°F. The cool season lasts from December to February, with an average daily high temperature below 59°F. The coldest month of the year in Berkeley is January, with an average low of 42°F and high of 58°F.

As the climate changes, Alameda County is experiencing longer and drier summer conditions, leading to wildfires of greater frequency and duration. The hotter weather increases lightning incidence, which is the primary cause of wildfires. Increased drought conditions provide greater opportunities for arson, which is another common source of wildfire.

Critical fire weather occurs during warm and dry periods coupled with a north wind or cold front passage, which suppresses the normal diurnal weather variation. Despite efforts to improve neighborhood safety and firefighting capability, uncontrollable fire storms will occur under the extreme, but periodic conditions of "Red Flag" weather days. "Red Flag" warnings are issued by the National Weather Service when weather elements such as low relative humidity and strong winds facilitate ignitions and promote rapid spread of wildfires.

"Red Flag" weather can mean the occurrence of strong, hot, dry offshore winds (technically called "foehn" winds). These winds are known locally as "Diablo Winds" since they come from the north or northeast in the direction of Mount Diablo. "Diablo Winds" carry extremely dry air at high velocity, and they quickly desiccate vegetation and other flammable materials and can push a fire down or up a slope with amazing speed. These can occur at any time of year, but are especially dangerous in the driest months of summer and fall. During these times, fighting a fire becomes far more difficult.

## 3. Vegetation

While most of the City of Berkeley is dominated by a developed, urban landscape, areas along the eastern boundary and the entire northeast section of the City have more heavily vegetated areas (Figure 4 below). Along the eastern boundary of the City are areas of forest/shrub; scattered forest/shrub areas exist along the southern boundary, with denser areas of forest/shrub along the northern boundary adjacent to Tilden Park. The park is dominated by dense forest/shrub. The entire northeastern part of the City from north of UC Berkeley to Kensington is scattered forest/shrub. This swath includes the Cragmont and Thousand Oaks areas along Grizzly Peak Road, Spruce Street, and Arlington. The UC Berkeley campus also contains pockets of forest/shrub and mixed hardwood. Acres and percent cover of the various vegetation types are shown in Table 1 below.

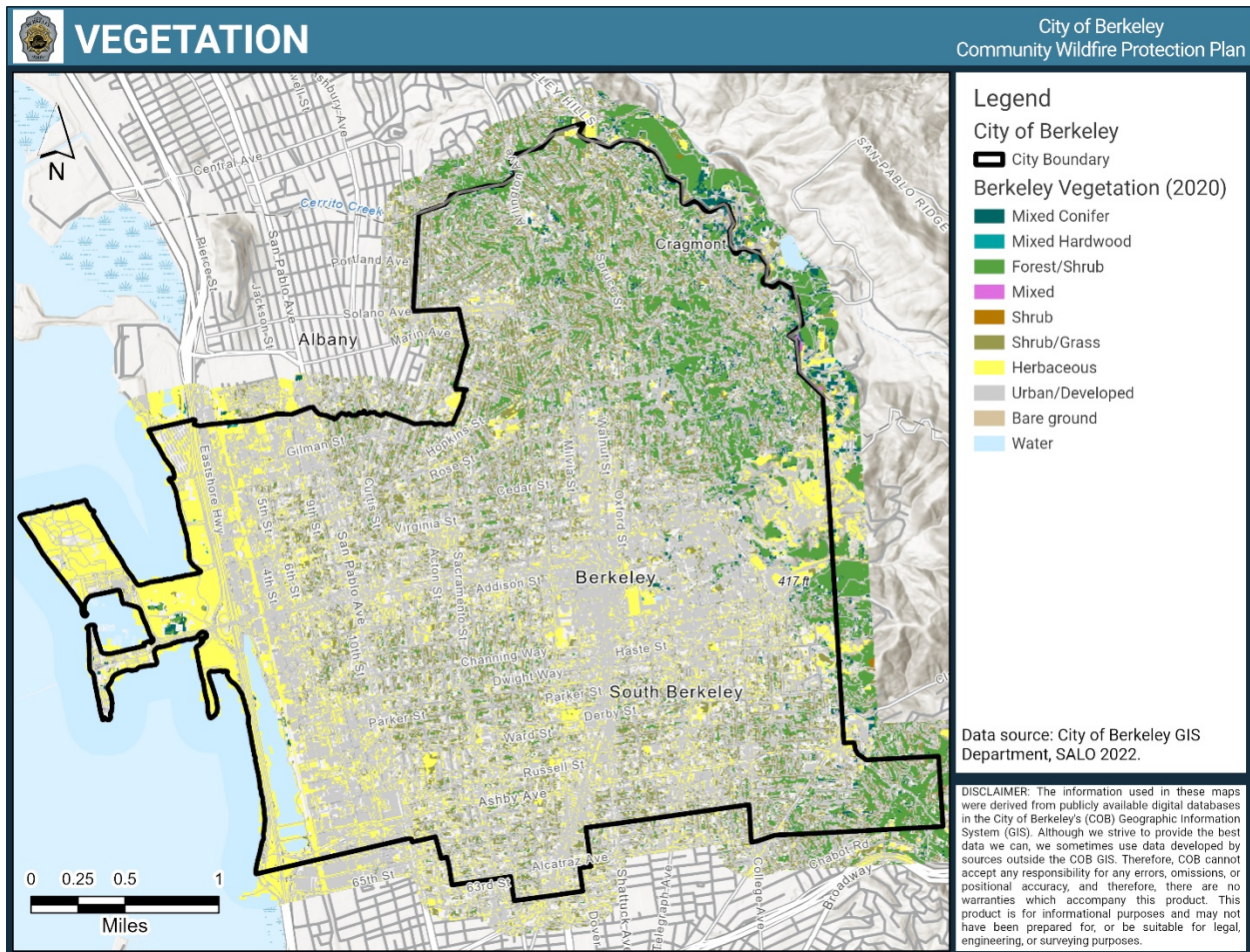


Figure 4. Vegetation map of the City of Berkeley.

Table 1. Vegetation acres by vegetation categories within the City of Berkeley.

Veg Type	Acres	Percent
Urban/Developed	3,245.96	58%
Water	75.39	1%
Herbaceous	893.22	16%
Shrub/Grass	740.62	13%
Shrub	1.16	0.02%
Forest/Shrub	610.40	11%
Mixed Hardwood	2.73	0.05%

Mixed Conifer	61.63	1%
Mixed	0.04	0.001%

#### 4. Public Ownership

While 95% of the City of Berkeley is privately owned, there are some key public lands just outside the City boundaries, most notably Tilden Regional Park to the northeast. The UC Berkeley campus accounts for another 100 acres within the City. The map below highlights the importance of private landowners participating in this CWPP process.<sup>2</sup>

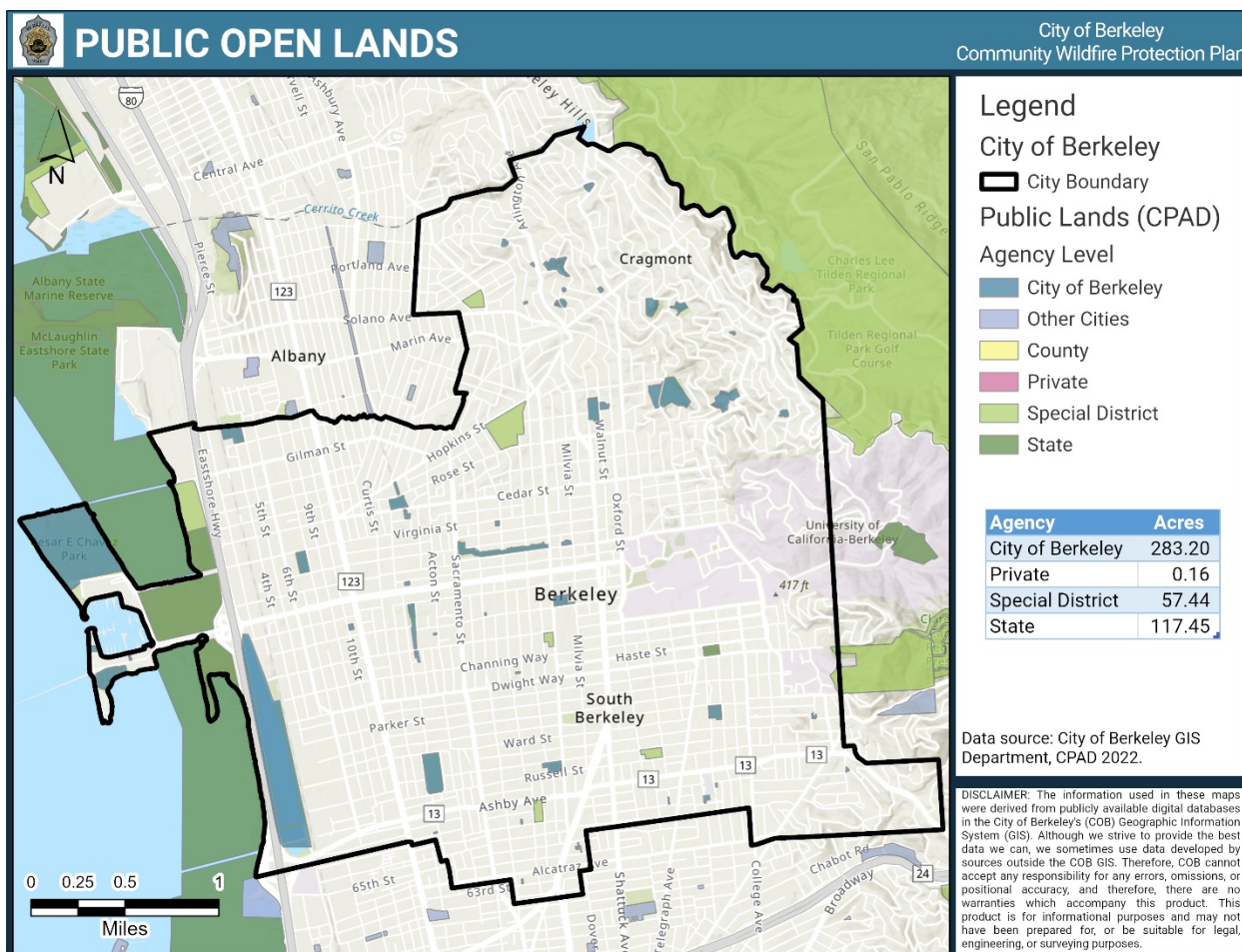


Figure 5. Ownership map of the City of Berkeley.

The City of Berkeley owns 283.2 acres of park lands, the largest of which is the aquatic park (97.6 acres). The 46 other parks comprise the remainder of the land owned by the City of Berkeley. Lands owned by a special district cover 57.44 acres; the Tom Bates Sports Complex

<sup>2</sup> Data for this map was provided by GreenInfo Network's California Protected Areas program (2020 version). More info about the California Protected Area Database can be found at <https://www.calands.org/>.

and the King School Park are the largest such parks and are both roughly 19 acres in size. A private park covers 0.16 acres. The State also owns two parks: the McLaughlin Eastshore State Park (117.5 acres) and Peoples' Park (2.8 acres).

## 5. Fire History

Fortunately, wildland fires are rare within the City limits. However, for decades, the 1923 Berkeley Fire held the record for the most structures in California destroyed by wildfire; 584 structures were destroyed. The fire started in Wildcat Canyon and spread west to Hearst Avenue and Shattuck Avenue.

In 1991, the Tunnel Fire burned to the southeast of the City, claiming over 2,800 structures and over 425 apartment/condominium units. In addition, 25 people ultimately perished due to the fire. More recent fire occurrence data shows that fire starts have been reported in the same area as well as other areas east of the City where wildland fuels are abundant (though increasingly well managed).

Both the 1923 and 1991 fires burned with strong northeasterly (Diablo) winds.

The map below shows the recorded wildfire history near the City of Berkeley and shows fire occurrence (marked as points).<sup>3</sup> This map indicates that more wildfires start outside Berkeley, mostly east of the City boundary. This is likely because of an abundance of wildland fuels.

While not mapped (due to limits in data collection), the Berkeley Disaster and Safety Element of the General Plan states, “[i]n the Berkeley and Oakland Hills there have been 14 wildland fires since 1923, which collectively have burned 9,000 acres and destroyed more than 3,500 structures.”

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<sup>3</sup> Data on this map provided by CAL FIRE's (latest data as of 7/11/2022) and the US Forest Service (USFS Enterprise Content).

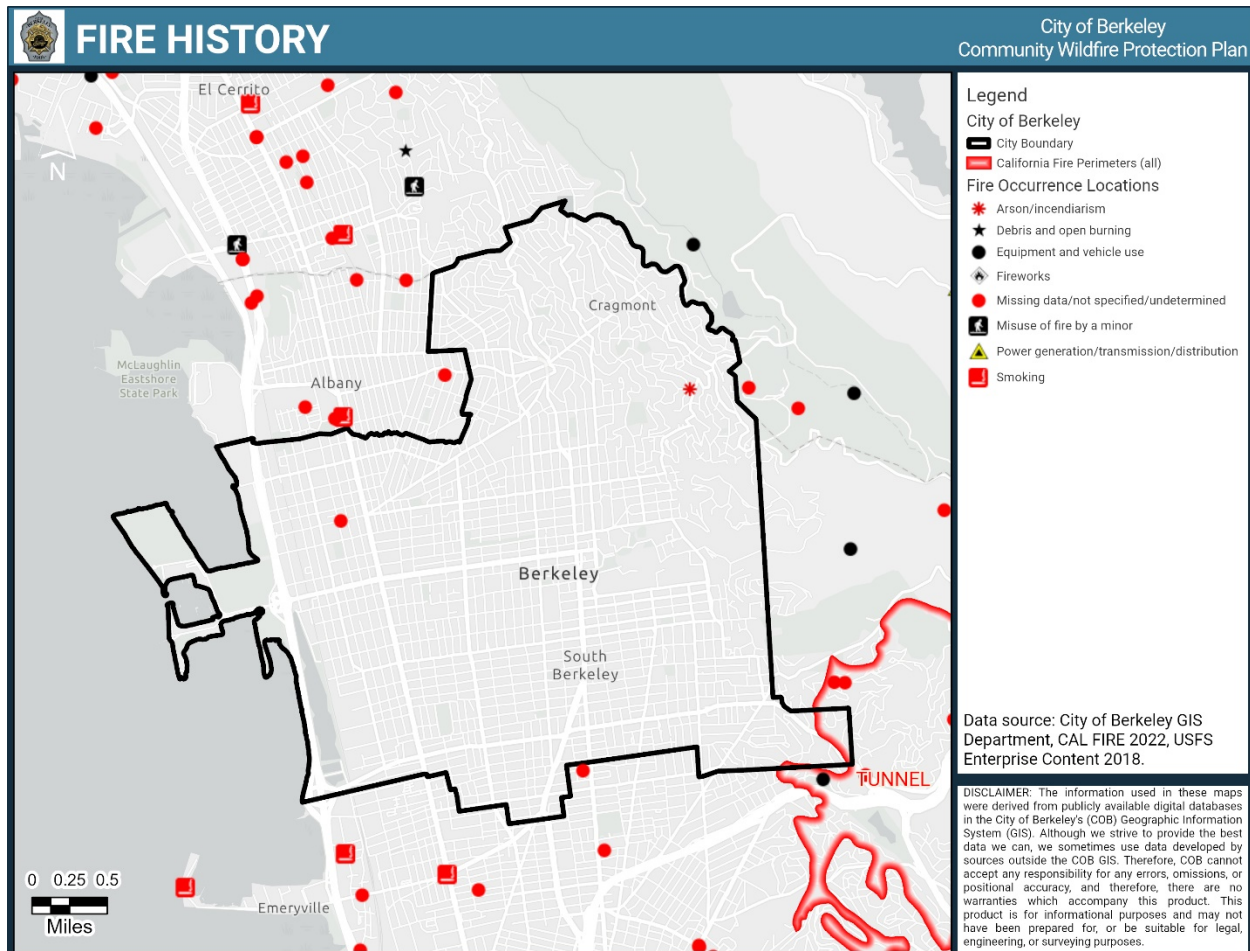


Figure 6. City of Berkeley Fire History.

## 6. Hazard Assessment

Using remote sensing technology and expertise in fire behavior, the City of Berkeley prepared a series of maps depicting the site and fire hazard of the City. The following maps are visual aids from which stakeholders and community members can assess and make recommendations.

We utilized recently released data products produced by the Pyrologix (a consulting firm) for the US Forest Service and CAL FIRE (<http://pyrologix.com/reports/Contemporary-Wildfire-Hazard-Across-California.pdf>). These data can be downloaded from this website: <https://storymaps.arcgis.com/stories/32de73f1cfb040c79f80c189ccef061>.

In the summer and fall of 2020, Pyrologix used spatial datasets of historical weather and fire occurrence to parameterize and calibrate a comprehensive USFS fire modeling system called FSim to estimate annual burn probability across California. FSim also produced an “event set” that was later used to estimate transmission of fire damage to homes - from the origin locations of simulated wildfires to where their damage occurred. During this time, Pyrologix also applied a comprehensive simulation of potential wildfire behavior characteristics based on FlamMap, another US Forest Service fire modeling system. These simulations of wildfire hazard (likelihood



and intensity) were used to calculate indices such as Suppression Difficulty Index and Wildfire Hazard Potential. Other models included an Ember Production Index and Ember Load Index. The Suppression Difficulty Index indicates where it will be hard to put a fire out based on access. Due to the many roads within the city, the Suppression Difficulty Index is relatively low. Wildfire Hazard Potential (WHP) is an index that quantifies the relative potential for wildfire that may be difficult to control. Ember Production Index represents the relative number of embers produced at a pixel as a function of the fire environment multiplied by the burn probability. Ember Load Index is a relative index of the relative number of embers that land at a given location, including nonburnable pixels. Similar to ember production, ember load is based on surface and canopy fuel characteristics, climate, and topography at the pixel. Ember load incorporates downwind ember travel.

Each layer was not considered equally. The Integrated Fire Hazard was given the highest weight (70%), while the remaining 30% was divided up between the other three layers. Probable Ignition Sources was given a weight of 20%, with 5% each to Suppression Difficulty Index and Other Factors.

For Integrated Fire Hazard, we combined the Pyrologix Hazard Potential model, their Ember Load model, and their Ember Production model along with locally identified Hazardous Vegetation (primarily Eucalyptus groves). Together, these data layers resulted in a layer called Integrated Fire Hazard.

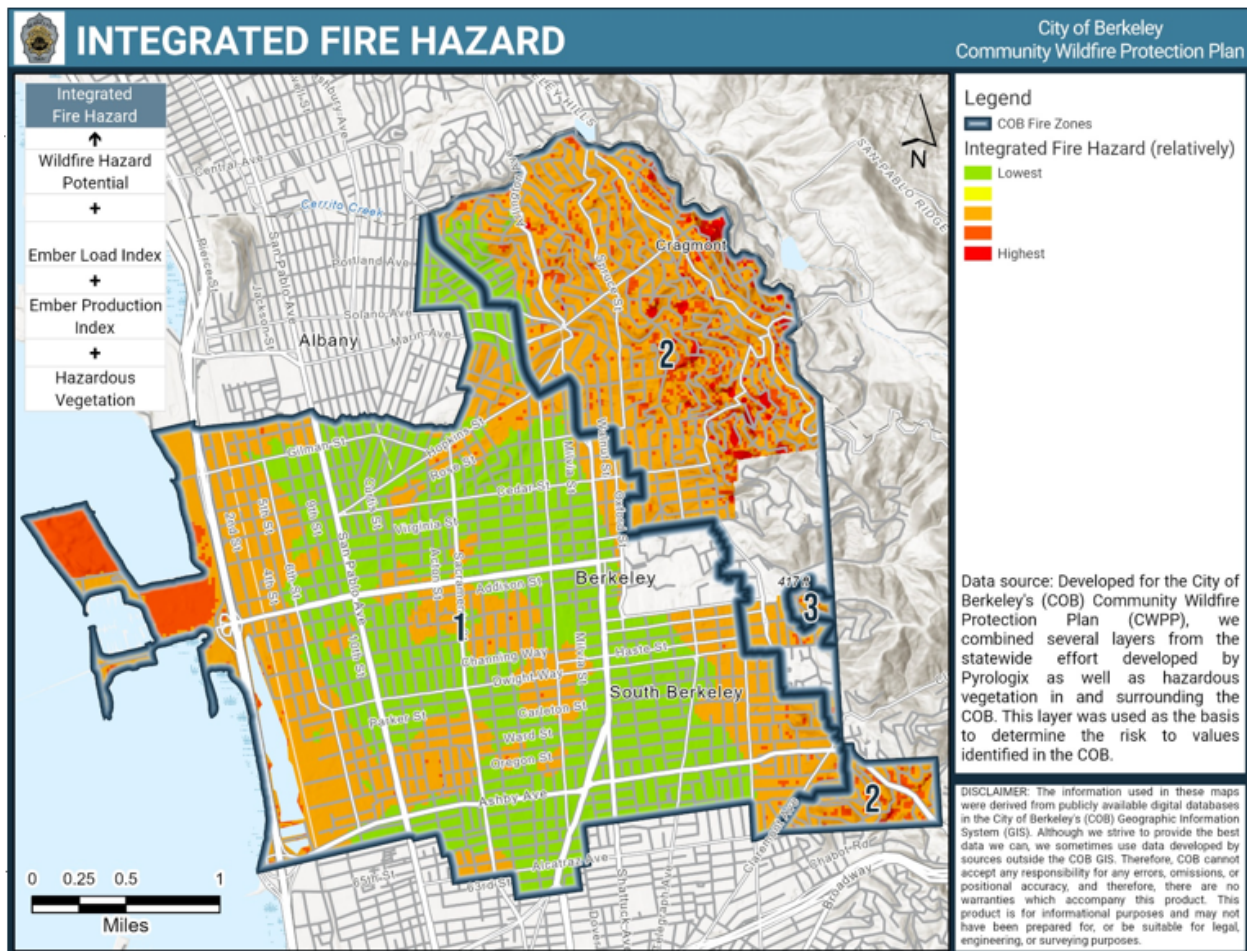


Figure 7. Integrated Fire Hazard for the City of Berkeley derived from Pyrologix data products and locally identified hazardous vegetation.

The Integrated Fire Hazard shows where in the city one would likely encounter vegetation that could support high flame lengths and exhibit crown fire activity (shown above). Green and yellow represent low to moderate wildfire hazard; orange to dark red represent high to very high wildfire hazard. The map shows the Marina area of Zone 1 is an area of relatively high hazard due to grass fuels which tend to have high flame lengths. The highest residential hazard areas are located throughout the eastern part of the city, in Zone 2. The hills bordering Tilden Regional Park and to the west of Grizzly Peak Road in the northeast part of the city are areas of highest hazard; these hills are laced with narrow winding roads that do not facilitate evacuation in the event of a fire. The Claremont area near Tunnel Road in the southeast portion of Zone 2 of the city also has a concentration of areas of very high hazard. There are pockets of high hazard along some streets throughout the remainder of the city (in Zone 1), including blocks on both sides of Shattuck Avenue, adjacent to UC Berkeley; the area between San Pablo Avenue and Highway 580; and a small pocket in the area of Martin Luther King Jr. Middle School.

## 7. Risk Assessment

In anticipation of a new state-wide hazard map in 2023 and for plan consistency, links and references from the adopted General Plan and the City’s recently updated Local Hazard and Mitigation Plan are part of this CWPP. The overlay zones labeled Zones 1, 2, and 3 are used as the formal map of risk for this CWPP.

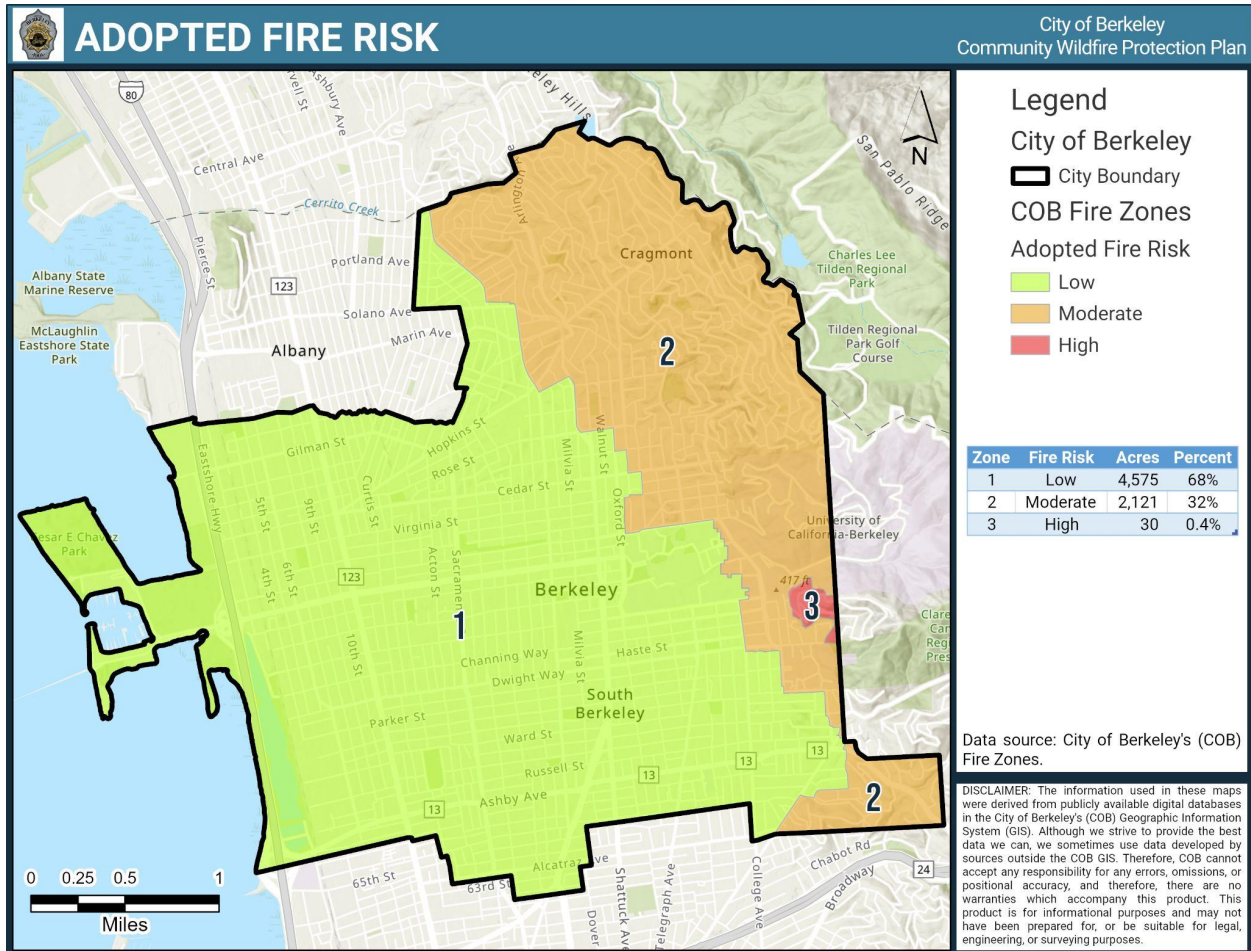


Figure 8. Adopted Fire Risk for City of Berkeley, based on the city’s Fire Zones (per Ordinance No. 7,157-N.S.).

## C. Regulatory and Planning Context

Planning is not done in a vacuum; it instead builds upon and weaves in plans already in existence. This CWPP considers several adopted plans which include the General Plan (especially the Disaster and Safety Element and the Housing Element), the Local Hazard Mitigation Plan, Vision 2050, Watershed Master Management Plan, Resiliency Strategy, Strategic Plan, and the Climate Action Plan. Section 2E, Implementing the CWPP Using a Leveraging Strategy, describes these plans in more detail and relates their contents to the CWPP's program and projects.<sup>4</sup>

## D. Social Environment

One of the keystones of the development of a CWPP is to recognize and integrate the social environment of the planning area. This includes integrating the already-existing organizations and influencers within the community. While many more informal opinion-leaders are involved in the planning process, a sample of the social environment is described below.

### 1. Firewise Communities

Currently, three communities within the City of Berkeley have been recognized as a National Fire Protection Association Firewise Community. Firewise Communities are those that have taken appropriate measures to become more resistant to wildfire structural damage.<sup>5</sup> These communities are the Park Hills Homeowner Association, Acacia Ave., and the San Diego-Indian Rock Firewise Community. Many more neighborhoods have expressed interest and are in the process of becoming recognized as Firewise Communities.

### 2. Hills Emergency Forum (HEF)

The City of Berkeley is a charter member of the Hills Emergency Forum, a consortium of nine agencies working on fire mitigation measures for the East Bay Hills. It was one of the original six signators to the Hills Emergency Forum October 19, 1993, Letter of Intent.

After a major fire occurred in the early 1990s, the City joined with other public entities to create the Hills Emergency Forum (HEF), in order to share best practices and develop a multi-jurisdictional approach to preparedness for these seasonal Diablo Wind-driven fires. As a member of the Hills Emergency Forum, Berkeley collaborates with other members (representatives from the neighboring cities of Berkeley and Oakland, the East Bay Municipal Utility District, and the University of California, Berkeley) to improve vegetation management and fire response in the Wildland-Urban Interface of the East Bay Hills.<sup>6</sup>

"The Hills Emergency Forum exists to coordinate the collection, assessment and sharing of information on the East Bay Hills fire hazards and, further, to provide a forum for building

<sup>4</sup> <https://www.opr.ca.gov/news/2022/11-16.html>

<sup>5</sup> <https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA>

interagency consensus on the development of fire safety standards and codes, incident response and management protocols, public education programs, multi-jurisdictional training, and fuel reduction strategies.

“The HEF is organized through its member agencies, working through its administrative component – the Staff Liaison Committee (SLC). The SLC is responsible for developing and monitoring progress on the Forum’s annual workplan, maintaining liaison with agency executives on HEF issues, identifying issues for possible legislative support, and coordinating the HEF annual public meeting.”<sup>6</sup>

Almost 21 years later, the City remains active with the other eight members of the HEF at monthly staff work sessions and an annual meeting. The City served as HEF Chair in 2020. Staff continues to share best management practices, implement training, and establish regional guidelines, protocols, and standards,<sup>7</sup> including:

- Fire Danger Operating Plan and Procedures (2010)
- Equipment Operational Guide (2014)
- Roadside Standards (2003)
- Best Management Practices to reduce potential environmental impacts and mitigations from fuel reduction treatments (ongoing)
- Biomass Management (2007)
- Training – East Bay Photo Series for Fuels Inventory (2014)
- Wildland Urban Interface Building Standards (2008)

### 3. Diablo Firesafe Council

Through the HEF, the City is involved with Diablo Fire Safe Council (DFSC), a 501(c)3 non-profit organization. The DFSC’s role in Alameda and Contra Costa Counties is to serve as a catalyst for bringing together people, agencies, and the means to substantially reduce the impact of wildland fire on our communities.<sup>8</sup>

Whereas the HEF provides an agency-to-agency forum, DFSC provides the City with regular contact with community members and other regional stakeholders to discuss issues related to wildfire.

In 2012, the City provided input to the [Alameda County Community Wildfire Protection Plan](#) (ACWPP). The ACWPP was collaboratively prepared through an 18-month planning process, with input from over 30 agencies and stakeholder organizations, as well as through community surveys. Further information about the planning process can be found at [www.diablofiresafe.org/ala\\_co\\_CWPP.html](http://www.diablofiresafe.org/ala_co_CWPP.html). A letter of support for the CWPP was signed by City Fire Marshal Steve Riggs in conjunction with other members of the HEF.<sup>9</sup>

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<sup>6</sup> From <http://www.hillsemergencyforum.org/mission-goals.html>. Accessed 6/4/2014.

<sup>7</sup> Available on [www.hillsemergencyforum.org](http://www.hillsemergencyforum.org)

<sup>8</sup> From <http://www.diablofiresafe.org/> accessed 6/4/2014

<sup>9</sup> HEF letter of support from [www.diablofiresafe.org/pdf/HEF\\_CWPP\\_support.pdf](http://www.diablofiresafe.org/pdf/HEF_CWPP_support.pdf) accessed 6/4/2014

The City staff participated in the DFSC sponsored April 30, 2014 “Workshop on Defensible Space,” including the afternoon exercise for inspectors.

Through the HEF, the City gets regular updates on DFSCs current activities, grants, and issues.

#### 4. Neighborhood Groups

The City meets with nearby neighborhood groups (i.e., Panoramic Hill Association, Upper Summit Road Homeowner Association) to inform them of regulations and best practices to improve wildland fire safety. On June 2, 2014, the City of Berkeley sponsored a regional fire forum.

### E. City Services and Capabilities

#### 1. Berkeley Fire Department Operations

The Berkeley Fire Department provides 24-hour response to fires, medical emergencies, hazardous materials events, water rescues, disasters, and other life-threatening situations. The Department serves the City of Berkeley and UC Berkeley and responds to over 14,000 calls each year. Berkeley Fire’s seven fire stations are each equipped with an engine, as well as additional equipment including the City’s four reserve engines, two trucks, and four ambulances (plus reserve ambulances), which are all staffed with paramedics. Additionally, Station 2 is equipped with a Hazmat Vehicle and a Utility Vehicle, and Station 7 is equipped with a Quick Response Vehicle and a seasonal EBRPD Engine. Station 11 at the Marina has a fireboat and water rescue equipment.

#### 2. Fire Prevention Division

Berkeley Fire Department’s Fire Prevention Division works to decrease the number and severity of all fires in Berkeley through an active code-enforcement program, public education activities, engineering and plans review, and vegetation management. When fires do occur, Fire Prevention staff investigate fire origin and cause and, if needed, prosecute those who are responsible.

#### 3. Wildland Urban Interface (WUI) Division

City of Berkeley Fire Department instituted a WUI division in 2021. The WUI Division is primarily responsible for the coordination of wildland mitigation efforts and related inspection activities. This Division manages or assists wildfire suppression operations, emergency scenarios, planning department-wide activities and functions, programs, and coordinating personnel for the purpose of community service and fire protection.

Responsibilities of the WUI division include:

- Develop and establish policies and procedures to implement a comprehensive pre-fire management/wildfire prevention program.

- Develop pre-fire management solutions and implement cooperative projects to reduce potential wildfire losses.
- Development and refine data to be used as a guide for specifying wildland fire protection levels, pre-fire prescriptions, program results and resource allocations.
- Work with federal, state, and local agency staff, and ensure the development of data to support pre-fire analyses.
- Develop subsidiary high risk/high value maps; review field validation of mapping results and develop pre-fire management plans, all-hazard incident mapping and other associated mapping projects.
- Develop vegetation management and control techniques (chipping, masticating, fuel breaks, prescribed fire) and oversee implementation as well as program development and maintenance.
- Assist with post-fire suppression repair and restoration of ecosystem health.
- Assist with wildfire-focused public education programs.
- Develop, implement, and maintain programs related to defensible space inspection, targeted fuel reduction, etc.
- Ensure compliance with California Environmental Quality Act (CEQA) as appropriate for projects and programs.
- Liaise with officials of neighboring fire agencies and allied agencies.

#### 4. Disaster and Fire Safety Commission

This body advises the City Council on all matters affecting fire safety and/or disaster resilience within Berkeley. This commission serves as the citizens' oversight committee for expenditure of the proceeds of the Special Tax to Fund Fire Protection and Emergency Response and Preparedness, as set forth in Berkeley Municipal Code (BMC) Section 7.81.060.

#### 5. Other City Departments involved in the CWPP Planning

This CWPP was fortunate to have the involvement of many City Departments, including Public Works, Planning, and Parks and Waterfront. The other departments offered additional perspectives and insights to the many ways the CWPP can bolster City functions.

### F. Pertinent Regulations, Funding Mechanisms

#### 1. Hill Hazard Fire Area District

The Disaster and Safety Element states, "In the aftermath of the 1991 Fire, the City established the Hill Hazardous Fire Area District. The purpose of the District was to expand inspection programs, reduce excess vegetation, and educate residents about the special needs for vegetation management and fire prevention for people living in the urban/wildland interface. Hazardous fire area inspections are conducted annually by fire companies, between May and September. Vegetation removal programs, including the chipper and debris box programs, continue with funding provided by a surcharge on the refuse bills for residents in the hill area. In

1997, the City Council-approved assessment district in the Berkeley Hills area ended; however, the danger from a wildfire has not. The continued commitment of the residents to a fire-safe area is critical.”

## 2. Measure FF

On November 2020, Berkeley voters passed Measure FF with 74.2% approval. Measure FF provides \$8.5 million in funding annually from parcel taxes to pay for fire services, emergency response, 9-1-1 communication, hazard mitigation and wildfire prevention. The Fire Department manages the emergency response and preparedness projects funded by Measure FF, and the Disaster and Fire Safety Commission and the City Council review and approve projects to receive Measure FF funding.

In the 2022 financial year, the City of Berkeley spent \$3 million on 11 projects in the areas of disaster preparedness, department operations, emergency medical services, and employee development and training. \$1.5 million was spent on disaster preparedness through 3 key projects:

- Established a Wildland Urban Interface Division within the Fire Department to focus on improving the City’s preparedness for and resilience to wildfire. This team inspected 8,500 properties (83% more than the previous year) to ensure that they meet the City’s requirements for ‘defensible space,’ a buffer between buildings and any combustible materials (such as vegetation).
- Initiated public outreach for the development of a [Community Wildfire Protection Plan](#). This plan will lay out the risks that Berkeley faces from wildfires, and goals and projects to help manage these risks.
- Purchased a city-wide outdoor warning system to assist with emergency notifications. Staff have started the process of identifying 15 locations to install the outdoor speakers.

Other notable projects funded by Measure FF include:

- \$500,000 was spent on Department Operations, including assessment of the City’s seven fire stations to provide recommendations for safety improvements.
- \$800,000 was spent on Emergency Medical Services including staffing the City’s ambulances with Emergency Medical Technicians (EMTs) and paramedics.
- \$100,000 was spent on Employee Development and Training, including making training a stand-alone division with its own Assistant Fire Chief and additional staff, and beginning work on the development of a fire training center.

## 3. Fire Code Adoption

Through Ordinance 7,839-N.S. the City of Berkeley updated and modified the Municipal Code Chapter 19.48, which comprised the Fire Code on December 6, 2022, and was first effective January 5, 2023.



## Section 2: Collaboration

Strong working relationships are critical in ensuring our communities are well-prepared. This section describes key partners and paints a full picture of the community's landscape as well as its local preparedness and firefighting resources.

### A. Community Engagement Process

Strong community relationships are critical in ensuring our communities are well-prepared. This section describes the community engagement process. The CWPP planning process included seven methods for robust citizen involvement in the development of the Berkeley Community Wildfire Protection Plan:

1. Public meetings. The Disaster and Fire Safety Commission (DFSC) meetings provided real-time opportunities for participation. Four presentations provided interested residents and stakeholders a way to learn more about the CWPP as it developed, as well as to ask questions and provide input.
  - On August 3, 2022, the planning team provided an overview to the Commission about what is a CWPP, the process and timeline for developing the plan, and public engagement opportunities. They also introduced the community base map and the online Hub.
  - On September 28, 2022, the Commission meeting focused on wildfire hazards and risk in Berkeley and potential hazard reduction strategies. The planning team introduced the national Fire Adapted Communities framework to help identify preliminary projects and priority ideas.
  - On December 7, 2022, the planning team presented a preliminary action plan for implementation of the highest priority projects to the Commission.
  - On February 22, 2023, the Commission reviewed the Public Review Draft CWPP with the Priority Action Plan, funding, and implementation strategy.
2. City website (<https://berkeleyca.gov/safety-health/disaster-preparedness/community-wildfire-protection-plan>). A project-dedicated page on the City of Berkeley website served as a central location for information. On the webpage were the e-mail link for comments, the ability to subscribe to a mailing list and receive newsletters, a project overview and timeline, as well as resources and links to related documents.
3. Media releases. The planning team worked with the City Public Information Officer to issue media releases timed to announce the four DFSC meetings. These releases also provided information to the City Newsletter and email list.
4. Newsletters. Newsletters issued through the City of Berkeley provided updates throughout the planning process with links to related information. Interested residents could sign up at the City website or on hub to receive the news.
5. Surveys. The CWPP community engagement process included four surveys to gather input. Links to the survey appeared in the media release, newsletter, on the City website and the Hub.

6. The City of Berkeley Hub (<https://cwpp-berkeley.hub.arcgis.com/>). The online “Hub” provided the opportunity for spatial information and feedback, including an app to “Map your Project.” The online hub included maps and layers such as a community base map with the CWPP boundary, fire hazards, evacuation routes, WUI areas, community assets, topography and watersheds, vegetation, existing fuel reduction projects, fire history, and City Council district boundaries. Also included were FAQs and contact information.

In addition to the CWPP Community Base map, the Hub also provided resources to support community awareness and engagement, housing the surveys and survey results, Frequently Asked Questions (FAQs), and a dedicated email to facilitate public comments.

7. Email ([cwpp@cityofberkeleyinfo](mailto:cwpp@cityofberkeleyinfo)). Responses to questions or comments were added to the FAQs.

## 1. Core Team Meetings

The planning process included working sessions with a core team including city staff from Berkeley Fire Department, Parks and Waterfront, Planning, Public Works, and two members of the DFSC. The core team assisted the consultant team throughout the development of the CWPP. The objectives of these meetings included: gathering data; reviewing risk assessment; establishing the Hub site; developing the Community Base Map; gathering public input through submitted surveys and emails; identifying projects; and prioritizing projects. The group also reviewed the administrative draft plan and led the adoption process of the final plan.

## 2. Surveys

Four surveys were designed as a series of engagement and educational tools to facilitate communication during the development of the Berkeley CWPP. The following results were not intended to be scientific or statistically valid and should not be assumed to reliably reflect the opinions of all Berkeley residents. The surveys, detailed results and community member comments were posted on the Hub <https://cwpp-berkeley.hub.arcgis.com/>. The results of the survey are described in detail in Appendix A.

Three online surveys were conducted to offer the community an opportunity to provide input on the Action Plan to protect the Berkeley community from wildfire hazards and risks. These surveys ranked priority projects, identified roles, and considered responsibilities, funding needs, and timetables that were used to develop this Action Plan.

Survey 1 focused on overall awareness of wildfire issues and identifying what folks have already done around their own homes and neighborhoods to reduce fire hazard. 205 community members participated in this survey. See Appendix A for survey results.

Survey 2 offered a framework with ten types of hazard reduction strategies and asked the public to prioritize various programs, projects, and activities. 89 community members participated in this survey. See Appendix A for survey results.

Survey 3 asked the public to rank priority projects and provide input on roles, responsibilities, funding needs and timetables. 85 community members participated in this survey. See Appendix A for survey results.

### 3. CWPP Hub Site

The City of Berkeley CWPP Hub is where the maps, outreach, and information for the CWPP are being organized. The public and stakeholders may view and participate throughout the CWPP process at the Hub Site: <https://cwpp-berkeley.hub.arcgis.com/>. The CWPP and the products on the Hub Site serve as the basis for project planning and implementation and offer resources to support community awareness and engagement.

In addition to the CWPP Community Base map, the Hub also offers resources to support community awareness and engagement, housing the surveys and survey results, news releases, FAQs, and a dedicated email to facilitate public comments.

### 4. DFSC and Core Team Meetings

To encourage collaboration and involvement, the City of Berkeley participated in three Disaster and Fire Commission (DFSC) meetings. The objectives of these meetings included: gathering data; reviewing risk assessment; establishing the Hub site; developing the Community Base Map; gathering public input through submitted surveys and emails; identifying projects, and prioritizing projects.

## B. Key Partners

The City of Berkeley led the development of this CWPP, with guidance and support from several partners, including the Disaster and Fire Safety Commission. The DFSC's purpose is to advise the City Council on all matters affecting fire safety and/or disaster resilience within Berkeley. The Commission serves as the citizens' oversight committee for expenditure of the proceeds of the Special Tax to Fund Fire Protection and Emergency Response and Preparedness.<sup>10</sup> The DFSC along with the City Council also reviews and approves projects funded by Measure FF.

Other key partners in the development of the CWPP include HEF members, Firewise Communities, and the Hillside Safety Group. Adjacent landowners and jurisdictions are also key partners, including EBRPD, UC Berkeley, Kensington, El Cerrito, Albany, Oakland, and Orinda.

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<sup>10</sup> Berkeley Municipal Code Section 7.81.060.

## Section 3: Proposed Projects and Action Plan

### A. Introduction to Fire Adapted Community Concept

Wildfires do not stop at property boundaries. More than 70,000 communities and 44 million homes are at risk from wildfire in the Wildland Urban Interface (WUI) – where vegetative fuels and the built environment meet. In the U.S., over the last ten years, more than 35,000 structures were destroyed by wildfires – an average of 3,500 a year.

Pre-fire risk reduction, on a variety of fronts, can help communities adapt to wildfire. Fire adaptation means communities take mitigation actions so they can live with wildfire without harm and without extensive wildfire suppression efforts.

A key component of community fire adaptation is that there isn't one tool that reduces risk; there are many tools that, when used together and strategically, reduce risk. Similarly, there is not one agency or group solely responsible for mitigation: it is the shared responsibility of everyone who lives and works in the community. Fire adaptation happens when local multi-jurisdictional stakeholders work together to identify risk, mitigate it, and maintain the work over time.

Fire adaptation is not a recognition program and is not a checklist. A community doesn't achieve "fire adapted community" status or certification because the work to reduce wildfire risk never ends.

Foundational tools of fire adaptation include:

- A local multi-jurisdictional mitigation group to share risk reduction responsibility in the community. This core group teaches, mentors, and develops trusted relationships with local residents and other stakeholders to foster on-the-ground mitigation. Research indicates face-to-face communications with trusted community leaders is the best way to share information about mitigation and to move residents to do mitigation work on the ground.
- A community wildfire protection plan (CWPP) which identifies where wildfire risk exists, outlines ways to reduce or mitigate that risk, and helps do the risk reduction work on the ground. It's not enough to have a CWPP, it must be updated and implemented. The risk reduction tasks must be accomplished and maintained.
- Hazardous fuels treatments inside and around the community on public and private lands. This means the landscape can experience wildfire (small and manageable wildfires or prescribed burns) and its benefits without the threat of catastrophic wildfire.

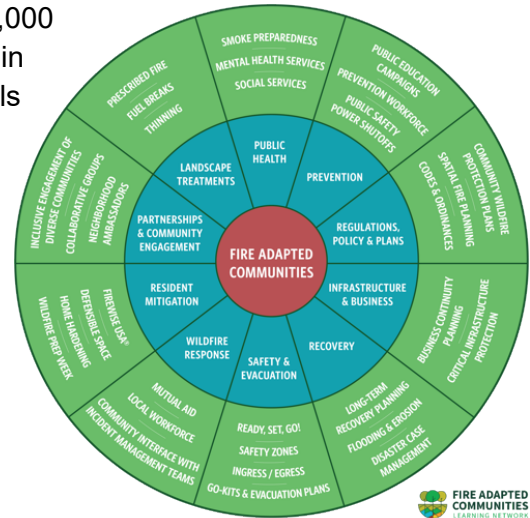


Figure 9. Wheel of Fire Adapted Strategies.

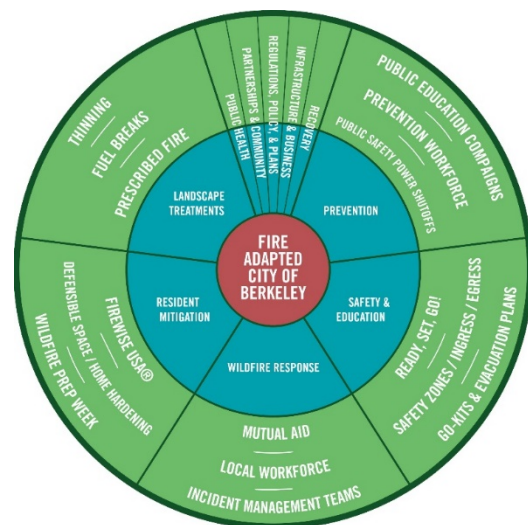
In addition, a fuel buffer around a community and reduced fuels inside the community keep wildfire at bay and provide safe zones for residents and firefighters alike.

- A volunteer or career fire department or fire protection association plays a big role in reducing risk from wildfire and being ready to respond should a wildfire occur. Research shows that firefighters are a local trusted authority in delivering the mitigation message and in helping stakeholders do mitigation. Fire departments are also often the local hero in coalescing local stakeholders in wildfire risk reduction actions on the ground. Fire departments and Sheriffs are critical to evacuation training, designation of safe zones and evacuation routes, and promotion of wildfire prevention messaging. More information can be found at [Ready, Set, Go!](#)
- Defensible space around structures means flammable fuels – like leaf piles, unmown dry grass, lawnmowers and gas, lawn furniture, propane tanks and wood piles, leaves and needles in the gutters and on the roof, and flammable trees too near the home – are removed or stored in more appropriate places. This defensible space provides a fuel buffer for the structure and a place for firefighters to do structure protection if the home is defensible. More information can be found at [Firewise](#) and [Living with Wildfire](#).
- Resilient structures are less susceptible to ignition from embers – the primary cause of structure loss. A resilient structure, for instance, is constructed of less flammable materials, has a class “A” roof (not a cedar shake roof or siding), has metal screen over eave vents, and under decks. More information can be found at [Wildfire Disaster Safety](#).
- Wildland Urban Interface codes and ordinances can define best practices for construction and location of new development in a WUI community and outline resilient materials for developments. For instance, some communities don’t allow cedar shake roofs, siding, or fencing in high-risk areas. Others restrict new developments in high-risk wildfire risk areas where it’s difficult to protect structures at risk. Codes and ordinances are location specific and designed to meet local needs. Not every community has the capacity or funding to develop, implement, or enforce codes and ordinances.<sup>11</sup>

## B. Proposed Priority Strategies

As a result of Survey 2, five strategies were selected by respondents as higher in priority (shown in blue in Figure 10). These are:

1. Fire Prevention
2. Safety & Evacuation
3. Resident Mitigation
4. Wildfire Response
5. Large-scale Landscape Treatment



## C. Proposed Projects within Strategies

Each of the Priority Strategies has projects that support the strategy. The set of projects form the foundation of the Action Plan.

*Figure 10. Wheel of Fire Adapted Strategies Customized for the City of Berkeley.*

1. Fire Prevention projects encompass actions that both prevent ignition and loss, through public education campaigns, property inspection, fire weather alerts, community organization and continuing outreach regarding prevention of loss from wildfire.
2. Safety & Evacuation projects improve the community's safety, and assist the community in evacuation process, through actions revolving around planning, notification, signage.
3. Resident Mitigation projects focus on actions individual residents take to improve the wildland fire safety of their own residence and the community, spanning vegetation management and retrofitting homes to become ignition resistant. This includes actions by the City to develop demonstration areas, as well.
4. Wildfire Response projects bolster the effectiveness of wildfire response by improving technology, equipment, coordination and agreements.
5. Large-scale Landscape Treatment (mapped in Figure 11) addresses vegetation management to reduce wildland fire hazards on private and public lands, by creating fuelbreaks, removing dead and dying and hazardous trees and reducing overall fuel volume.

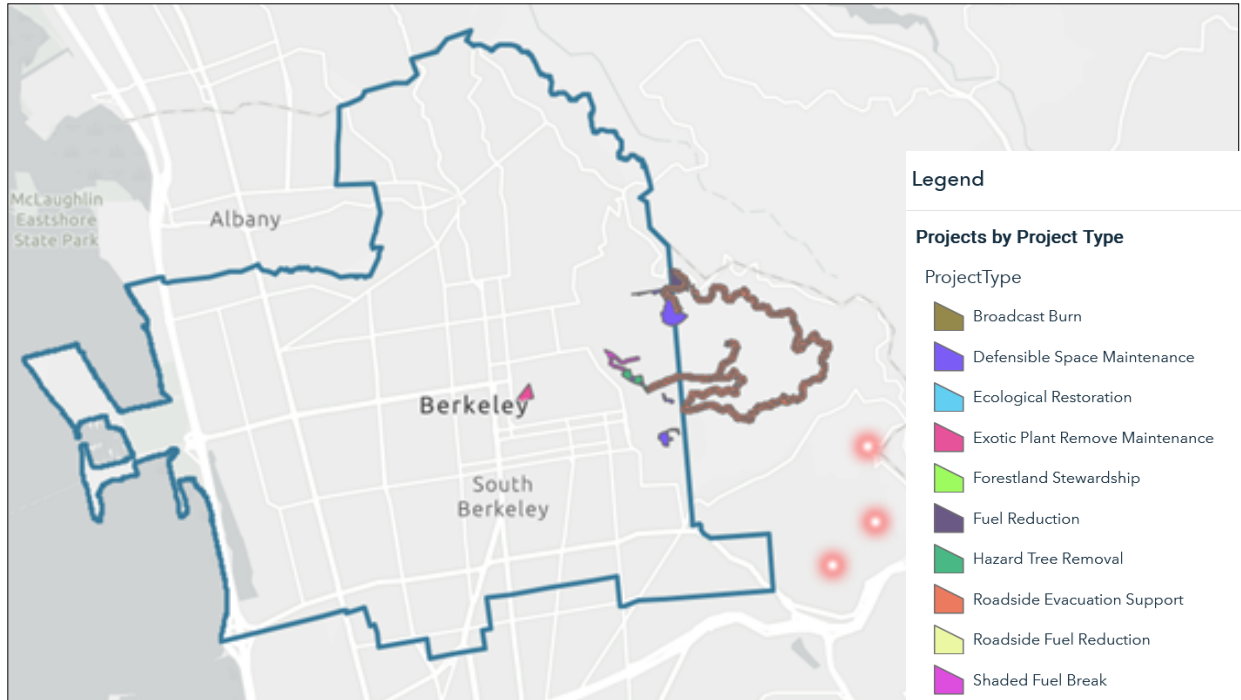


Figure 11. Map of fuel reduction or fuel mitigation projects that are planned or have been completed within the City of Berkeley.

## D. Action Plan

### 1. Project Description

Community Wildfire Protection Plans are effective when the projects and priorities are implemented. Thus, the Action Plan sets the stage for implementation of the City’s projects and priorities. It is a “Call to Action” involving all interested parties, including:

- Private landowners on an individual basis;
- Firewise Communities, acting together; and
- External partners such as neighboring landowners and agencies.

Table 3 is a matrix organized by the strategy it supports with a brief description of the program or project and where it would take place.

The Action Plan identified different programs under the five priority strategies. Some strategies – like Prevention Communication – have ten programs/projects, while other strategies – like Large-scale Landscape Treatment –have six programs that support it. Many of these actions are integrated into work planned by the City Fire Department.

## 2. Funding Sources

Funding for wildfire mitigation projects comes from a variety of sources, such as State or Federal grants, City budgets (from property tax, special assessments, or general funds), or donations. Each funding mechanism has unique requirements, strengths, and weaknesses. Some are best suited for one-time expenditures, such as capital improvements, while others are suited for ongoing maintenance activities. The requirements and conditions related to each mechanism should not be overlooked.

While some funding sources can be directed through allocation of City departments' budgets other funding sources could best be developed through collaborative planning (such as the Community Wildfire Protection Plan). Some funding sources are relatively easy to obtain, while others require an intricate application process. Some include administrative burdens associated with monitoring how funds are spent and complex reporting requirements. The sustainability of funds is another key difference.

Many projects do not require funding, but are sustained instead through collaboration, staff time, volunteerism, and the self-interest of parties involved. However, most projects in this CWPP require funds to hire staff, purchase equipment, or increase training, and to pay vendors to conduct work and perform services.

Implementation of the Action Plan of this CWPP requires a patchwork of mechanisms to cover fire mitigation projects. Multiple sources provide greater stability, more funds, increased continuity, more stakeholders with greater buy-in, and the ability to expand the scope and scale of work. Different stakeholders within the City can collaborate on the acquisition of funds. For example, some funding can be obtained by only fire departments, while other sources require private non-profit entities or communities to receive funds. Anticipated sources of funding include:

### **Municipal Funding**

Measure FF has been a boon to funding for programs aimed at wildfire fire safety. This funding mechanism can be expected to continue, to support the many programs outlined in the Action Plan. If the county populace so chooses, projects could be funded through a regular, ongoing funding mechanism.

### **Federal Programs**

Federal funding is distributed through many avenues, and most federal grants can be researched electronically. Commonly used major programs for fire safety fund mitigation are the National Fire Plan and the Healthy Forest Restoration Act. Major grants are provided through the Federal Emergency Management Agency (FEMA) and the U.S. Fire Administration. Many grants are extremely competitive, with requests for funding far exceeding available funds, while others have a specific focus.

Two primary programs funded by FEMA provide assistance to fire departments. These vary on grant size, non-Federal match requirements, the population size a fire department serves, and



the location in relation to the funding agency's lands. They typically provide funding for organizing, training, prevention materials, and equipment to protect the health and safety of the public and firefighting personnel. All FEMA grants offer large-scale funding opportunities, and also carry a significant administration burden.

**Assistance to Firefighters:** This FEMA grant program includes the overall Assistance to Firefighters Grant (AFG) and the Fire Prevention and Safety Grant Program. AFG is limited to fire departments. Fire Prevention and Safety Grants are open to a wider range of organizations.

**FEMA Disaster Mitigation Programs:** The Disaster Mitigation Program includes the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Program (PDM). In order to qualify for these funds, the local jurisdiction must have a Local Hazard Mitigation Plan (LHMP) that is reviewed by the State Mitigation Officer and then approved by FEMA.<sup>12</sup>

- HMGP funds are available after a disaster has been declared to mitigate future risk from any type of disaster (amounts available are linked to the total emergency funds). The HMGP program coordinates with CAL OES and their local support of their Hazard Mitigation Planning.<sup>13</sup>
- The PDM facilitates cooperation between state and local authorities with funds awarded competitively for both planning and project implementation activities at the state and local level, as a subgrantee.

**FEMA Building Resilient Infrastructure and Communities (BRIC):** Building Resilient Infrastructure and Communities (BRIC) supports local communities, as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. This program supports communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large projects; maintaining flexibility; and providing consistency.

**National Conservation of Resources Services (NCRS):** NCRS implements a grant program aimed at promoting effective and safe land management practices on private lands. Grants are provided for equipment, planning and management, and reward collaboration and cooperation between adjacent landowners. Fire hazard reduction that increases habitat and watershed value is more likely to be funded.

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<sup>12</sup> Local governments must have a Local Hazard Mitigation Plan (LHMP) that is reviewed by the State Mitigation Officer and then approved by FEMA, prior to November 1, 2004, as this is a required condition of receiving FEMA mitigation project assistance. LHMPs must be revised, reviewed, and approved every five years. Source: Governor's Office of Planning and Research. Fire Hazard Planning Technical Advisory. 2020 Update. [https://opr.ca.gov/docs/20201109-Draft\\_Wildfire\\_TA.pdf](https://opr.ca.gov/docs/20201109-Draft_Wildfire_TA.pdf)

<sup>13</sup> <https://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/hazard-mitigation-planning>

## State Aid Programs

The State of California operates a Grants Portal<sup>14</sup> that can be used to find out about the latest grants that could support fire hazard planning or implementation, including fire hazard mitigation, climate adaptation, forest management, urban forest programs, community engagement projects, and other related projects and programs.

There are two primary sources of funding from the State of California that may be accessed to fund implementation of the Action Plan. One of these is the suite of CAL FIRE grants, spanning its Wildfire Prevention Grant, Forest Health Grant, and the Research and Development Grant. Of these, the most applicable would be the Wildfire Prevention Grant, which supports implementation of projects aimed at reducing damage from wildfire and release of greenhouse gases.

The other, the Regional Forest and Fire Capacity Program (RFFC) of the Department of Conservation in the Resources Agency,<sup>15</sup> is emerging as a key source of funding to address gaps in capacity for project development, testing and evaluation of innovative risk reduction strategies, and support for regional collaborations and networks such as Orange County's COAST Fire Prevention Working Group, or more locally, the Resource Conservation Districts.

The RFFC Program is a newer funding program of the state administered through the Department of Conservation. It makes block grants to regions based on a formula, to increase regional capacity to collaboratively prioritize, plan, develop, and implement projects and initiatives to reduce wildfire risk and improve habitat health and resilience including increasing carbon sequestration.

CAL FIRE also plays an important role in distributing implementation grant funds aimed at assisting private landowners. The following programs are under the State and Private Forestry branch of USDA Forest Service, the Natural Resources Conservation Service, and the Cooperative State Research, Education, and Extension Service.

- While many programs are aimed at more rural landowners, an Urban and Community Forestry (U&CF) Program, and the Economic Action Program (EAP) could assist implementation of projects and programs in Berkeley's CWPP.
- Urban and Community Forestry Program funds local grants that optimize the benefits of trees and related vegetation through multiple-objective projects as specified in the California Urban Forestry Act of 1978 (PRC Section 4799.06-4799.12). These projects further the goals of AB 32, result in a net greenhouse gas benefit, and provide environmental services and cost-effective solutions to the needs of urban communities and local agencies. This program is funded by California Climate Initiative (CCI). In recent years, the program has funded: urban forest expansion and improvement, urban forest management activities, and urban wood and biomass utilization. Three types of grants are currently being provided: Urban Forest

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<sup>14</sup> <https://www.grants.ca.gov/>

<sup>15</sup> <https://www.conservation.ca.gov/dlrp/grant-programs/Pages/Regional-Forest-and-Fire-Capacity-Program.aspx>.

Expansion and Improvement, Urban Forest Management Activities, and Urban Wood and Biomass Utilization.<sup>16</sup>

### 3. Projects

Programs and projects, some of which have specific initial implementation actions, have been identified. See table 3 below for details on locations, roles/responsibilities, beneficiaries, funding requirements, time requirements, and effort required for each of the strategies and programs and projects.

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<sup>16</sup> CAL FIRE Urban and Community Forestry Grant programs at <https://www.fire.ca.gov/grants/urban-and-community-forestry-grant-programs/>

Berkeley CWPP Action Plan			
Priority	Strategy	Program/ Project	Location
1.1	Prevention	Expand the Wildland Division workforce (for outreach + vegetation removal crews)	Zone 2 & 3
1.1a	Prevention	Implement appropriate initial and on-going training for fire inspectors responsible for conducting the annual Defensible Space Inspections.	Zone 2 & 3
1.2	Prevention	Recruit and retain WUI inspectors to perform risk assessments of individual properties and homes	Zone 2 & 3
1.3	Prevention	Develop a comprehensive public education campaign to encourage property protection for fire, including home hardening, defensible space, and vegetation management. Partner with community groups in campaign delivery.	City wide
1.3a	Prevention	Ensure outreach, education, and response messages are provided in multiple formats to ensure effective communication with all community members.	City wide
1.3b	Prevention	Work cooperatively to educate private landowners on fire-safe and defensible measures to increase compliance with regulations.	Zone 2 & 3
1.3c	Prevention	Support neighborhood collaboration to reach NFPA Firewise certification. Provide financial incentives to support participation by all community members, including low-income households.	Zone 2 & 3
2.1	Safety & Evacuation	Evaluate the Berkeley roadway network's ability to support evacuation and response. Identify and implement network improvements to reduce response times and speed evacuation times.	Zone 2 & 3 ROWs
2.1a	Safety & Evacuation	Coordinate with partners to develop and adopt joint emergency notification and evacuation procedures for use in wildfires that cross jurisdictional boundaries.	City wide + Regional
2.1b	Safety & Evacuation	Design, procure, install, and maintain a citywide Outdoor Warning System to enhance public alerting during evacuations.	City wide
2.2	Safety & Evacuation	Provide ongoing public education about safe fire evacuation practices. Promote community understanding of fire weather (red flag warnings and extreme fire weather). Encourage preemptive relocation during extreme fire weather to reduce risks to community members.	Zone 2 & 3
2.2a	Prevention	Collaborate with HHCS to incorporate community readiness for fire weather and wildfire into existing outreach programs.	City wide
2.2b	Prevention	Conduct community-facing exercises to build community capacity to protect health and safety during fire weather and wildfires.	City wide
2.3	Safety & Evacuation	Use roadway network evacuation/response analysis to inform fire evacuation plans for responders and the community.	Zone 2 & 3
2.3a	Safety & Evacuation	Identify areas that may serve as temporary areas of refuge for responders and community members during wildfire events.	City wide
3.1	Resident Mitigation	Initiate annual inspection cycle to assess defensible space and enforcement compliance (including undeveloped properties + vacant homes)	Zone 2 & 3
3.1b	Resident Mitigation	Use public open spaces as demonstration areas for Zone 0 landscaping.	City wide
3.2	Resident Mitigation	Promote home hardening retrofit of existing structures by providing guides, training, consultation, incentives, and inspections	Zone 2 & 3
4.1	Wildfire Response	Use technology and volunteer / BFD fire patrols to detect fire ignition and enforce closures/ restrictions, no fireworks, no open flame, no smoking, and no portable BBQs	City wide + Regional
4.2	Wildfire Response	Update and enhance our regional wildfire response coordination policies and protocols to include training, temporary firefighter safety zones, response conditions, mutual and automatic aid agreements.	City wide + Regional
4.2a	Wildfire Response	Design, procure, and maintain apparatus, equipment, and trained personnel capable of delivering emergency water in the event that water delivery infrastructure is insufficient. This shall include wildland fire command vehicles, fire attack vehicles, water tenders, and a system to deliver sustained water over multiple days.	City wide + Regional

Berkeley CWPP Action Plan			
Priority	Strategy	Program/ Project	Location
4.2b	Wildfire Response	Review and update existing mutual and automatic aid agreements to improve fire suppression resources	City wide + Regional
5.1	Large-scale landscape Treatment	Create incentives for hazardous tree and vegetation management within 100' of homes	Zone 2 & 3
5.2	Large-scale landscape Treatment	Promote urban forest health through removal of hazardous trees and vegetation on public property (parks and roadsides) and collaborate with agency partners on adjacent lands	City wide
5.2a	Large-scale landscape Treatment	Work with partner departments to maintain public open spaces and urban forests so that ground fuels are less likely to promote the ignition and spread of wildfire and aerial fuels are less likely to spread fire through the tree canopy.	City lands
5.2b	Large-scale landscape Treatment	Balance and integrate fuel modification with habitat and open space management, vegetative soil cover/erosion management, and urban greening, to reduce the potential for conflicts between safety and environmental goals.	City wide
5.2c	Large-scale landscape Treatment	Work with public landowners and fire departments adjacent to the City to disrupt fuel continuity in key fire pathways and provide fuel breaks in key strategic areas and near points of special interest.	Zone 2 & 3 + Regional

## E. Implementing the CWPP Using a Leveraging Strategy

Community wildfire protection planning has evolved from the 2003 Healthy Forest Restoration Act to the current focus on Fire Adapted Communities. The process of addressing wildfire risk has expanded beyond collaboration, prioritization of fuel reduction projects, and reduction of structure ignitability to include a wide range of additional issues as identified in the Berkeley CWPP Priority Action Plan.

Similarly, the type of interested parties have expanded beyond the collaboration between fire agencies and residents and includes a wide coalition of partners to reach the goal of resilience to wildfire, while supporting many other mutual benefits.

The implementation strategy of the Berkeley CWPP recognizes the power of leveraging on-going efforts, and new directions from many partners, including:

- City of Berkeley departments: City staff efforts can be achieved through plan integration and consistency with existing programs and campaigns in many departments including Fire, Public Works, Planning, and Parks and Waterfront. A multi-department task force was created during the development of the CWPP.

Berkeley Fire Department outreach and education efforts incorporate multiple channels including direct contact, media coverage, social media, and paid advertising. A developing “ambassador program” will recruit volunteer students, residents with “lived experience of wildfire,” and others to serve as amplifiers to increase the reach throughout Berkeley and help share information. These ambassadors will assist with canvassing neighborhoods with educational flyers and other direct contact educational programs. Examples include a chipping program door hanger and attractive stickers with “QR codes” for more detailed information about new programs. Meetings, such as the popular Councilmember Townhalls early in fire season, will be expanded by other seminars, presentations, and workshops. Formal meetings will be augmented with informal presence at community events, such as farmers markets, city holiday events and emergency preparedness fairs. School programs will be coordinated with the Office of Emergency Services to provide basic emergency preparedness and wildland urban interface fire information.

The Fire Department “Firesafe Berkeley” website continues to play a central role to facilitate dissemination of information on new services and educational materials (<https://www.berkeleyfire.com/firesafe>). The website provides information on: preparing for your annual inspections, understanding wildfire risks in Berkeley, create your defensible space, harden your home and use our free chipper service offered throughout the city, The CWPP Hub will continue to have a role in outreach and education, identifying locations of new Firewise Communities and other geographic information (<https://cwpp-berkeley.hub.arcgis.com/>).

Other outreach and education efforts include:

- Enhanced defensible space inspections that provide not only inspections of residential properties, but also person-to-person education about defensible space and home hardening. Data from these inspections and the chipping service will be aggregated to be able to show progress made by residents.
  - A workforce development program partnering with Berkeley Youthworks. This program brings interns into the Wildland Urban Interface Division as an initial step in their fire department careers.
  - A demonstration area at Station 4 showcasing how to create “Zone 0” around your home.
- **Adjacent public agencies:** Fire does not recognize jurisdictional boundaries. Neighboring fire agencies respond through the mutual aid agreements and the State Emergency Management System. Many of the region’s residents evacuate along same routes. Given these facts, adjacent cities and public lands management agencies share many of the goals identified in the Berkeley CWPP. These include the Cities of Albany, El Cerrito, Kensington, and Oakland. Land management agencies include the East Bay Municipal Utility District, East Bay Regional Parks District, Lawrence Berkeley National Laboratory, and University of California, Berkeley. Many of these partners have adopted plans, programs, and ongoing projects addressing wildfire hazards (see Figure 12 in Appendix C). Alameda and Contra Costa Countywide CWPPs and the Regional Priority Plan for both counties identify projects for funding.

Shared mitigation approaches can begin to address some of the more difficult regional challenges identified in the CWPP. Key challenges include coordination on fire weather information, red flag days, policies to close operations, and the identification of buildings suitable for temporary sheltering. Adjacent public agencies also coordinate on protocols for the potential evacuation of summer day camps, such as those operated on lands owned by Berkeley, EBRPD, UC Berkeley, Lawrence Hall of Science etc. These day camps often depend upon shared evacuation routes, buses, and other resources. Coordination also includes planning for the city-owned residential camps located in the Sierra where planning, grant funding fuel mitigation and evacuation needs are similar to facilities located within the City of Berkeley.

- **Regional multi-agency collaboratives:** The East Bay has several multi-agency collaboratives that Berkeley staff has helped shape. These include the Hills Emergency Forum, Diablo FireSafe Council and the Association of Bay Area Government technical advisory for wildfire and housing. Continued involvement can offer new approaches from other regions for the implementation of the CWPP.
- **Other stakeholders:** Successful implementation of the CWPP will require collaboration with other stakeholders to reach areas that the public sector does not or cannot manage. Stakeholders include residents, HOAs, community organizations, Firewise communities and special interest groups. Many of these private landowners play key roles as they are the only people can who make the final decision about their own property: to retrofit their

home to be ignition resistant, maintain their gardens, or prepare their family for evacuation.

Table 4 provides a snapshot of which strategies, programs, or projects are supported. This table relates the strategies in the CWPP as noted in the top columns with the various plans, programs, and policies listed to the left in the table. The plans policies and programs include:

1. City of Berkeley Adopted Plans and Policies;
2. City of Berkeley Codes and Ordinances;
3. City of Berkeley programs and implementation measures;
4. Adjacent Agencies Wildfire Hazard Reduction Plans + CWPP; and
5. Compliance with State Laws (Legislative/ State requirements).

The table identifies which priority actions can take a “lead” role in a plan policy or programs, such as implementing compliance standards for defensible space inspections or the safe passages program. It also identifies where it makes sense to incorporate portions of the CWPP priority actions into another existing plan or program where the CWPP may play a supporting role or provide information, such as in the Housing Element or Berkeley Vision 2050 plan. The third category that is identified is where the CWPP complements another set of policies and programs but may not have an active role in the strategy. For example, the priority actions complement or link to plans by other agencies, or in City of Berkeley codes and ordinances.

Appendix C explores the existing adopted plans and policies, codes and ordinances, programs and implementation measures, adjacent agencies’ plans, and legislation/state requirements with their unfunded mandates for local government, and explains how they can be leveraged during the implementation of the CWPP to achieve the Priority Action Plan.



Table 4. Existing plans, programs and policies that support CWPP Action Plan.

Leveraging the Berkeley CWPP						Lead	CWPP to lead plan or program				
Existing plans, programs and policies that support CWPP Action Plan						Incorporate	CWPP to be incorporate into plan or program				
						Complement	CWPP complements or links to plan or program				
	Supports Priority Action Plan					Supports additional FAC strategies					
	Prevention	Safety & Evacuation	Resident Mitigation	Wildfire Response	Large Scale Landscape Treatment	Regulations, Policies & Plans	Infrastructure & Business	Recovery	Partnerships and Community Engagement	Public Health	
<b>City of Berkeley Adopted Plans and Policies</b>											
Disaster Preparedness & Safety Element of the City of Berkeley General Plan.	see LHMP for Updated Plan										
Local Hazard Mitigation Plan, 2019.	Incorporate	Incorporate	Incorporate	Incorporate	Incorporate	Incorporate	Incorporate	Incorporate	Incorporate	Incorporate	
Housing Element, 2023 in progress		Incorporate				Incorporate				Incorporate	
Berkeley Vision 2050 - Planning for a Sustainable and Resilient Future, 2020. Implementation reports 2021+.	Incorporate	Incorporate				Incorporate	Incorporate			Incorporate	
Subdivision Review, Response to AB2011, 2022 in progress		Incorporate								Incorporate	
Fire Risk Reduction Community, 2022, Response to AB1823.		Incorporate				Incorporate					
Berkeley Watershed Master Management Plan, 2012		Incorporate			Incorporate		Incorporate				
Berkeley Resilience Strategy, 2016	Incorporate	Incorporate				Incorporate	Incorporate	Incorporate		Incorporate	
Berkeley Strategic Plan, 2018	Incorporate	Incorporate				Incorporate	Incorporate	Incorporate	Incorporate	Incorporate	
Climate Action Plan, 2009, Update 2022.	Incorporate		Incorporate			Incorporate		Incorporate		Incorporate	
<b>City of Berkeley Codes and Ordinances</b>											
Municipal Code Chapter 19.48.020 Amendments to CA Fire Code known as "Berkeley Fire Code" (BFC).	Complement		Complement			Complement				Complement	
Compliance standards for Defensible Space Inspections	Lead		Lead			Lead			Lead		
Chapter 6.52 City Trees and coast live oak	Complement		Complement		Complement						
Chapter 7.80 Fire Prevention and Preparedness Assessment	Complement		Complement			Complement				Complement	
Chapter 12.99 Wildfire evacuation risk mitigation ordinance		Lead				Complement				Complement	
Chapter 17.08 Preservation and restoration of natural watercourses					Complement	Complement				Complement	
Chapter 19.28.030 CBC Chapter 7A materials and construction methods for exterior wildfire exposure			Complement			Complement				Complement	
Chapter 19.29.05 CRC Section R337 Materials and Construction Methods for Exterior Wildfire Exposure			Complement			Complement				Complement	
Code 19.48 Berkeley Fire Code + 19.48.020 Amendments to CA Fire Code			Complement			Complement				Complement	
Chapter 21.40 Design requirements			Complement			Complement				Complement	
Chapter 23.108.020 Zoning Districts			Complement			Complement				Complement	
Chapter 23.202.070 ES-R Environmental Safety - Residential District (Panoramic Hill)			Complement			Complement				Complement	
Chapter 23.210.020 Hillside Overlay Zones			Complement			Complement				Complement	
Chapter 23.306 Accessory Dwelling Units			Complement			Complement				Complement	
Ordinance 7680 amendments to CA Fire Code - adopt VHFHSZ pursuant to GCS1179(1) and 14CCR1280.02			Complement			Complement				Complement	
COB 7799 Planning and zoning requirements more conservative than 14CCR 1299.03			Complement			Complement				Complement	
<b>City of Berkeley programs and implementation measures</b>											
Measure FF + Measure GG funded programs											
• WUI Division	Lead		Lead							Complement	Complement
• Defensible Space Inspection Program.			Lead							Complement	Complement
• Vegetation removal programs	Lead		Lead							Complement	Complement
• Safe passages program		Lead								Complement	Complement
	Supports Priority Action Plan					Supports additional FAC strategies					
	Prevention	Safety & Evacuation	Resident Mitigation	Wildfire Response	Large Scale Landscape Treatment	Regulations, Policies & Plans	Infrastructure & Business	Recovery	Partnerships and Community Engagement	Public Health	

<b>Leveraging the Berkeley CWPP (continued)</b>						Lead	CWPP to lead plan or program				
<i>Existing plans, programs and policies that support CWPP Action Plan</i>						Incorporate	CWPP to be Incorporated Into plan or program				
						Complement	CWPP complements or links to plan or program				
		<b>Supports Priority Action Plan</b>					<b>Supports additional FAC strategies</b>				
		Prevention	Safety & Evacuation	Resident Mitigation	Wildfire Response	Large Scale Landscape Treatment	Regulations, Policies & Plans	Infrastructure & Business	Recovery	Partnerships and Community Engagement	Public Health
<b>City of Berkeley programs and implementation measures (continued)</b>											
• Berkeley Ready			Lead							Complement	Complement
• Evacuation outdoor warning system			Lead							Complement	Complement
• Firewise communities		Lead		Lead						Complement	Complement
• CWPP development, implementation and updates		Lead					Complement				Complement
• Additional emergency vehicles and larger training facility					Lead						Complement
<b>Adjacent Agencies Wildfire Hazard Reduction Plans + CWPP</b>											
Alameda County CWPP	Complement	Complement	Complement	Complement	Complement					Complement	Complement
Association of Bay Area Governments. Wildfires - how to preserve and protect housing	Complement	Complement	Complement		Complement	Complement	Complement	Complement	Complement	Complement	Complement
City of Albany - Albany Hill Master Plan 2012	Complement			Complement	Complement						
City of El Cerrito/ Kensington CWPP	Complement	Complement	Complement	Complement	Complement					Complement	Complement
Contra Costa County CWPP	Complement	Complement	Complement	Complement	Complement					Complement	Complement
East Bay Municipal Utility District - Watershed Master Plan	Complement			Complement	Complement						
East Bay Regional Parks District - Wildfire Management and Resource Management Plan 2010	Complement			Complement	Complement						
El Cerrito Kensington CWPP	Complement	Complement	Complement	Complement	Complement					Complement	Complement
Lawrence Berkeley Laboratory - Wildland Fire Management Plan + Comprehensive Vegetation Management Plan.	Complement			Complement	Complement						
Oakland Safety Element	Complement	Complement	Complement	Complement	Complement					Complement	Complement
Oakland Vegetation Management Plan & EIR. In progress.				Complement	Complement						Complement
University of California, Berkeley - Wildfire Mitigation Plan and EIR 2021	Complement			Complement	Complement						
<b>Compliance with State Laws (Legislative/ State requirements)</b>											
AB38 (2019) real estate transaction certifications				Complement							Complement
AB747 (2019) Evacuation routes: capacity, safety and viability under range of scenarios		Complement				Complement					Complement
AB1550 + SB535 (2012/2016). Identification of priority populations (disadvantaged and low income) for California Climate Investment funds.						Complement					Complement
AB1823 (2019) Fire Risk Reduction Communities						Complement				Complement	
AB2911 (2018) +SB99 (2019) subdivisions without secondary egress routes		Complement									Complement
AB3074 (2020) Ember resistant Zone (Zone 0)	Complement			Complement							
SB9 (2021). Housing development approvals.						Complement					Complement
SB99(2019). Identify developments without two emergency evacuation routes upon revision of housing element.		Complement									Complement
SB246, SB379, SB1035 (2015, 2018). Integrated climate adaptation and resilience strategies with ICARP.						Complement	Complement		Complement		Complement
SB1241 + SB2160. Include fire risk in SRA and VHFHSZ in safety element. Include considerations from OPR Fire Hazard Planning. Transmit VHFHSZ, safety element and tentative map or parcel map to BOF to review.						Complement					
		<b>Supports Priority Action Plan</b>					<b>Supports additional FAC strategies</b>				
		Prevention	Safety & Evacuation	Resident Mitigation	Wildfire Response	Large Scale Landscape Treatment	Regulations, Policies & Plans	Infrastructure & Business	Recovery	Partnerships and Community Engagement	Public Health

## Signatures

This plan must be approved by the following key parties: the Berkeley Fire Chief, CAL FIRE Santa Clara Unit Chief, and the Berkeley City Council. Each entity will offer a signature page that will be appended to the plan. Each signature page contains the following language:

The Community Wildfire Protection Plan as developed for the City of Berkeley:

- Was collaboratively developed and meets the intent of the Healthy Forest Restoration Act (HFRA) in emphasizing the need for agencies to work collaboratively with communities in developing hazardous fuel reduction projects, and places priority on treatment areas identified by communities themselves in a CWPP. Interested parties and federal land management agencies in the vicinity of this CWPP have been consulted.
- Identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect areas within this CWPP.
- Recommends measures to reduce ignitability of structures throughout the area addressed by the plan.
- Is intended for use as a planning and assessment tool only, utilizing a compilation of community issues and goals and projected fire mitigation strategies. The CWPP is not to be construed as indicative of project “activity” as defined under the “Community Guide to the California Environmental Quality Act, Chapter Three, Projects Subject to CEQA.” Per the Community Guide, Section 3.1.1, “CEQA only applies to public agency decisions to approve, or actions to carry out, a discretionary project.” Any actual project activities meeting this definition of project activity and undertaken by the CWPP participants or agencies listed shall meet with local, state, and federal environmental compliance requirements.
- Assists and encourages compliance with current county and state fire code standards. The Community Wildfire Protection Plan as developed for the City of Berkeley was collaboratively developed and meets the intent of the Healthy Forest Restoration Act (HFRA) in emphasizing the need for agencies to work collaboratively with communities in developing hazardous fuel reduction projects, and places priority on treatment areas identified by communities themselves in a CWPP. Interested parties and federal land management agencies in the vicinity of this CWPP have been consulted.
  - Identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect areas within this CWPP.
  - Recommends measures to reduce ignitability of structures throughout the area addressed by the plan. Is intended for use as a planning and assessment tool only, utilizing a compilation of community issues and goals and projected fire mitigation strategies.

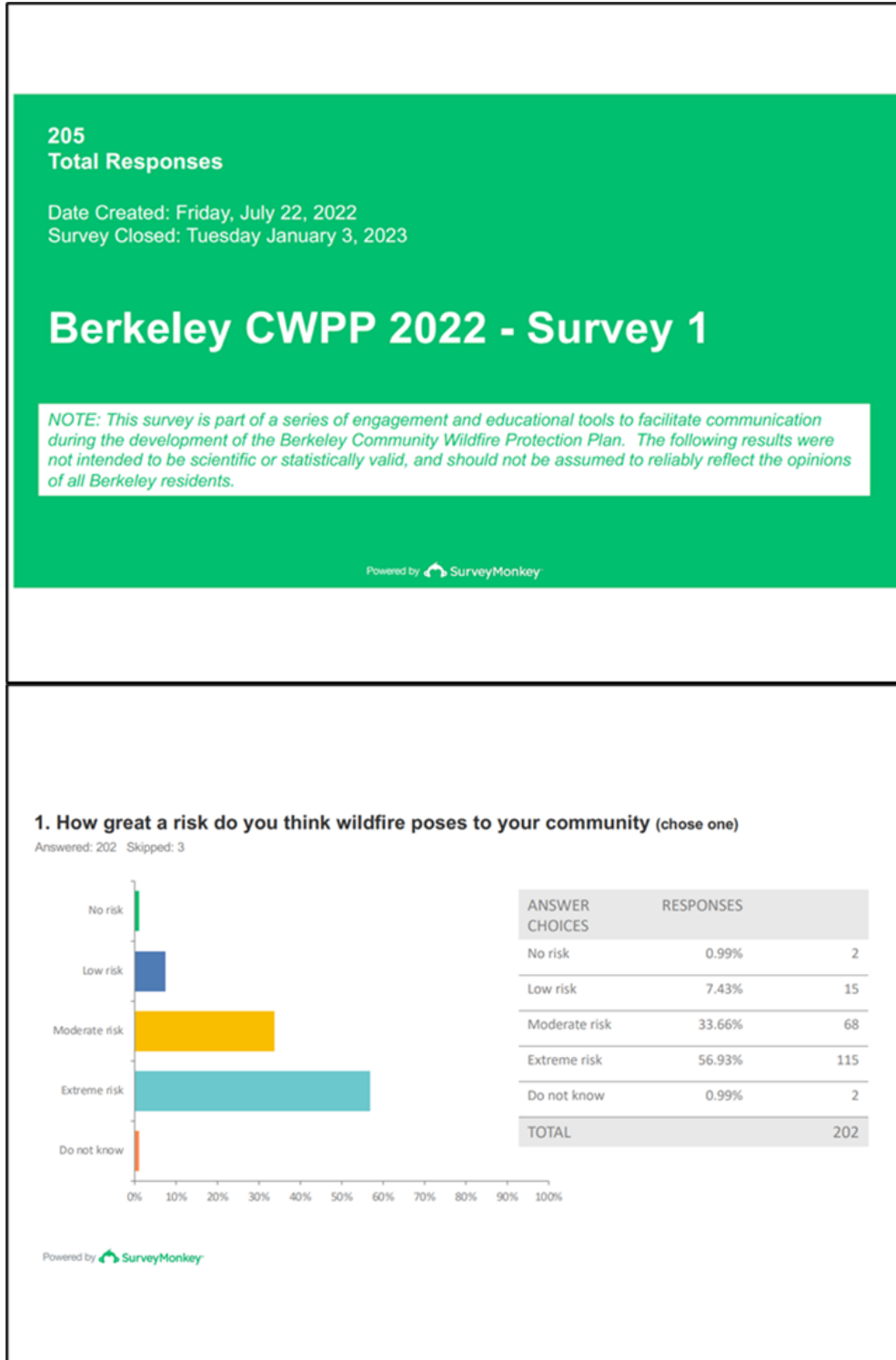
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actual project activities meeting this definition of project activity and undertaken by the CWPP participants or agencies listed shall meet with local, state, and federal environmental compliance requirements. Assists and encourages compliance with current county and state fire code standards.

# Appendices

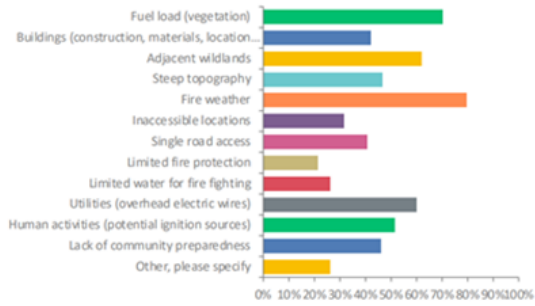
# Appendix A: Surveys

## A. Survey 1



**2. Check those factors you think add to your neighborhood's risk of wildfire (check all that apply)**

Answered: 202 Skipped: 3

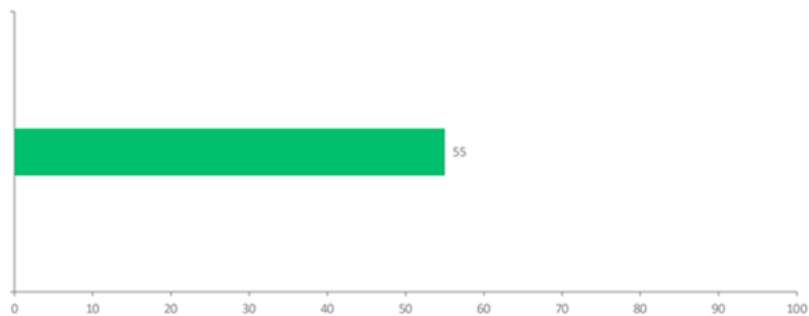


ANSWER CHOICES	RESPONSES
Fuel load (vegetation)	70.30% 142
Buildings (construction, materials, location or design)	42.08% 85
Adjacent wildlands	61.88% 125
Steep topography	46.53% 94
Fire weather	79.70% 161
Inaccessible locations	31.68% 64
Single road access	40.59% 82
Limited fire protection	21.29% 43
Limited water for fire fighting	26.24% 53
Utilities (overhead electric wires)	59.90% 121
Human activities (potential ignition sources)	51.49% 104
Lack of community preparedness	46.04% 93
Other, please specify	26.24% 53
<b>TOTAL</b>	<b>1220</b>

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**3. On a scale of 1 to 100, how ready are you and your family ready to deal with wildfire.**

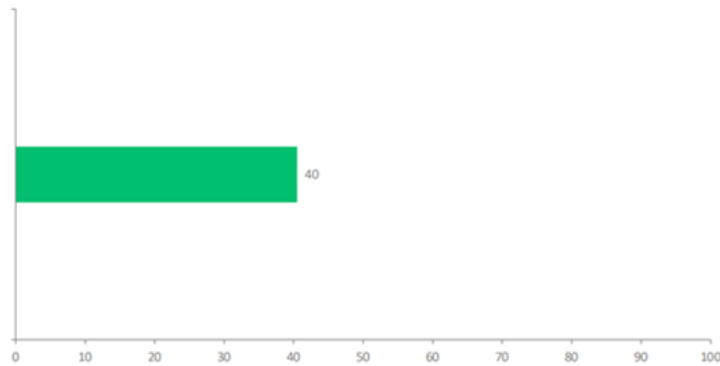
Answered: 201 Skipped: 4



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**4. On a scale of 1 to 100, how ready is your neighborhood to deal with wildfire.**

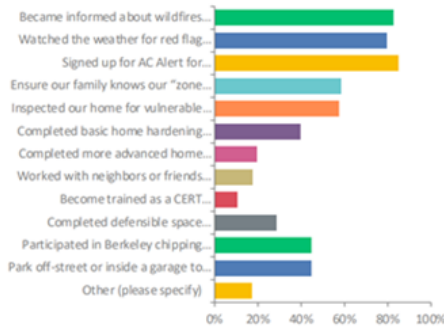
Answered: 197 Skipped: 8



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**5. What actions have you taken to prepare your family, home, property and community to reduce the risk of wildfire? (check all that apply).**

Answered: 199 Skipped: 6



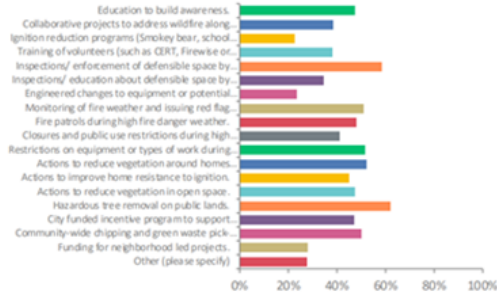
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ANSWER CHOICES	PERCENTAGE	RESPONSES
Became informed about wildfires and what we can do as a family to reduce the risk.	82.41%	164
Watched the weather for red flag days and taken ignition reduction actions.	79.40%	158
Signed up for AC Alert for emergency communications ( <a href="https://aega.org/emergencychat/">https://aega.org/emergencychat/</a> ).	84.92%	169
Ensure our family knows our "zone" for evacuation ( <a href="https://myzone.zonehaven.com/">https://myzone.zonehaven.com/</a> ).	58.29%	116
Inspected our home for vulnerable areas and done easy ignition prevention actions	57.29%	114
Completed basic home hardening retrofits (DIY projects: screen vents, gutter covers, chimney screens, caulk gaps etc.)	39.70%	79
Completed more advanced home hardening retrofits (contractor projects: double pane windows, enclose eaves, class A roof etc.)	19.60%	39
Worked with neighbors or friends to reduce chance of wildfire around our homes.	17.59%	35
Become trained as a CERT volunteer, active in Firewise, or fire patrols during red flag.	10.55%	21
Completed defensible space inspection requirements.	28.64%	57
Participated in Berkeley chipping and green waste pick-up program.	44.72%	89
Park off-street or inside a garage to improve fire engine access along our narrow street.	44.72%	89
Other (please specify)	17.09%	34
<b>TOTAL</b>		<b>1164</b>



**6. In developing Berkeley's Community Wildfire Protection Plan we are exploring a variety of actions to reduce the risk of wildfire to neighborhoods. Which of the following recommendations do you think would be effective for your neighborhood? (check all that apply)**

Answered: 200 Skipped: 5

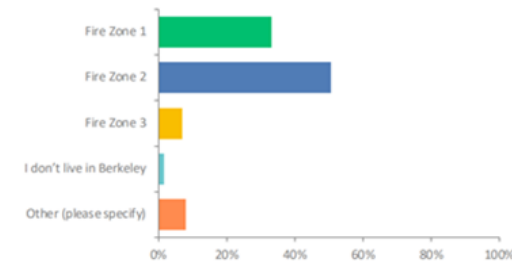


ANSWER CHOICES	RESPONSES
Education to build awareness	47.50% 95
Collaborative projects to address wildfire along with other issues (such as creek restoration, fire prevention, smoke abatement etc.)	38.50% 77
Ignition reduction programs (smokey bear, school programs, wildfire information)	23.50% 47
Training of volunteers (such as CERT, Firewise or volunteers in prevention programs)	38.00% 76
Inspections/enforcement of defensible space by City and fire personnel	55.00% 117
Inspections/ education about defensible space by trained peers and neighbors	34.50% 69
Engineered changes to equipment or potential ignition sites	23.50% 47
Monitoring of fire weather and issuing red flag warnings	51.00% 102
Fire patrols during high fire danger weather	48.00% 96
Closures and public use restrictions during high fire danger weather	41.00% 82
Restrictions on equipment or types of work during high fire danger weather	31.50% 63
Actions to reduce vegetation around homes (create defensible space)	52.00% 104
Actions to improve home resistance to ignition	45.00% 90
Actions to reduce vegetation in open space	47.50% 95
Hazardous tree removal on public lands	42.00% 84
City funded incentive program to support vegetation removal on private property	47.00% 94
Community-wide chipping and green waste pick-up programs	30.0% 60
Funding for neighborhood led projects	28.00% 56
Other (please specify)	27.50% 55
<b>TOTAL</b>	<b>1627</b>

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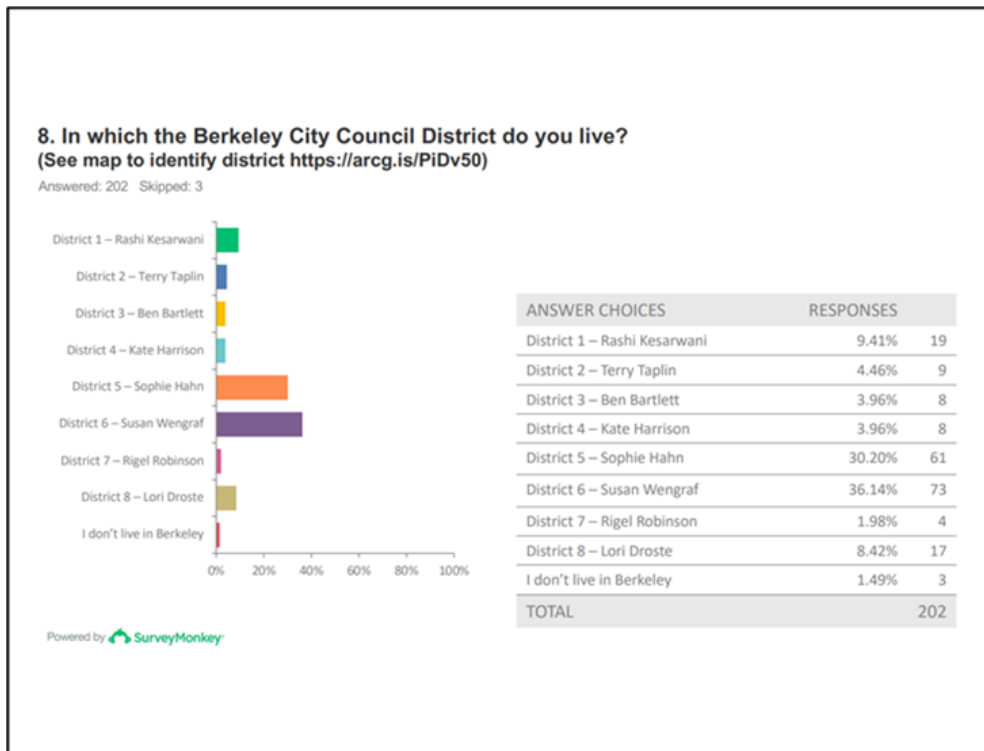
**7. In which Fire Zone do you live? (See map to identify zone <https://arccg.is/1v9Xm4> )**

Answered: 202 Skipped: 3



ANSWER CHOICES	RESPONSES
Fire Zone 1	33.17% 67
Fire Zone 2	50.50% 102
Fire Zone 3	6.93% 14
I don't live in Berkeley	1.49% 3
Other (please specify)	7.92% 16
<b>TOTAL</b>	<b>202</b>

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**Comment provided on individual questions on Survey 1**

205 responses survey closed 1/3/23

**2. Check those factors you think add to your neighborhood's risk of wildfire**

Other = 53 responses

1. Driving in the Berkeley Hills is dangerous. There are houses with driveways and garages, but people park in the streets instead, which leads to only single road access. Berkeley should force people to park on their property instead of the narrow streets.
2. garbage cans left in narrow streets will impede evacuation
3. Climate change
4. Cars parked on both sides of the street so that it would be difficult for emergency vehicles, particularly fire engines, to get through. Also an evacuation would be difficult because of narrow winding streets. Trying to do both these things at once would be very difficult or impossible.
5. Narrow winding steep streets. Most houses were built more than 50 years ago. Vegetation close to houses
6. My neighborhood is very low risk; Telegraph at Blake.
7. Narrow streets, obstructed by parked vehicles. Many intersections should have no parking near them.
8. I know there is an effort to reduce vegetation around homes. I don't think there is a good plan for evacuation. Though there are supposed evacuation routes, they are not at all adequate
9. Poor infrastructure - electric wires overhead, should be buried; poor quality roads; limited fire hydrants.
10. More prepared fire stations, put utility wires underground, it's ridiculous that that has not been done already
11. Poor evacuation routes
12. Evacuation plans
13. I encourage the City to front-load its efforts in the direction of fuels reduction, since that's the quickest way to mitigate the worst risk. Other important methods, such as Home hardening, will take more time and money.
14. Diablo winds, over 1,000 eucalyptus trees inside the city, many more to the east, steep terrain, and lack of sufficient fuel reduction by UC Berkeley and the City of Berkeley make our city extremely susceptible to catastrophic fire risk. Public entities must clean up the eucalyptus understory on both public and private property ASAP, then remove and replace the eucalyptus trees.
15. Eucalyptus fire ladders will quickly spread a major fire.
16. Vacant and overgrown homes
17. Human activities on Grizzly Peak (no parking signs do not deter if not enforced) and in the LHS parking lot are the biggest danger to hills residents. We do our part in vegetation clearing but illegal activity - just one spark - voids the effort. Police the area, prevent fires. Residents do everything we can to prevent fires but in the end it won't matter. Allocate funds where they can be best used. Police the area! Stop policing the hills home owners for compliance. We are not the ones starting fires.

Comments from Survey 1 as of 1-3-23

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18. Eucalyptus trees on private property, rental properties not maintained, drought prompt fast weed growth
19. Large and tall trees are not maintained. Lightening was responsible to tree fire and explosion around our home.
20. All those Eucalyptus trees in Tilden.
21. Lack of enforcement of no-smoking / no open flame laws for the Berkeley parks in the hills and in Tilden. Lack of parking rules enforcement in the Berkeley hills fire zones. There are cars parked for over a year at a time, cars parking on the sidewalks and many other hazards to emergency access.
22. Lack of enforcement following inspections. Inadequate tree trimming and removal of hazardous and dying trees.
23. Even in the flat land around north Berkeley Bart they are lots of tall redwood. They can be hit by lightning. It's already Helen's twice in this neighborhood. Neighbors love their trees but not really take care of them. Some time they have too many trees on their lot. I think the city need to control that and make sure it safe. Those produce a lot of dry leave and roof and yard. Even in the flat land.
24. Parked cars on both sides of streets block access, evacuation, and firefighting trucks and equipment from responding. Regular occurrence of impassible streets on trash pickup days each week.
25. One word... Tilden. Lovely place. A gem. But EBRPD does ZERO to clear the dead trees along and just below Wildcat Canyon Road
26. BBQs in Public Parks, especially the disposable BBQs people bring.
27. Lots of dangerous trees that can catch fire
28. Properties not maintained by owner or renters or elderly who can't afford or won't hire yard people to clean up. City needs to provide \$ assistance to remove overgrown trees or eucalyptus/pine trees on private property in the hills. Put this on the next election to earmark \$.
29. Too many cars parked in the road in the hills. Too many multi-vehicle families and people not using their driveways. Cars blocking pedestrian access/sidewalks. Large cars especially.
30. Neighbors that refuse to maintain trees and vegetation. Have multiple dead and oversized trees in an urban setting and issues like pine needles covering their roof which is an ignition source. No way to force them to reduce fire risk in the Berkeley flats at this point. We need a way to force homeowners to maintain their property in the flats.
31. No comment
32. Also climate change. We are out of balance, our climate is drier and hotter than usual, and we are in a drought.
33. Poor city planning, which allows development in high fire risk areas (the hills, adjacent to wildlands). Insurance policies which provide insurance to those living in high fire risk areas & allow them to rebuild there.
34. Homeless encampments.
35. mentally ill starting fires, also politically-motivated people coming in and doing the same
36. We live in fire zone 2. Even with fire department visits to homeowners, we have many neighbors who are completely surrounded by overgrown bushes, trees, ivy and walls of bamboo. I also think the city should not allow large trees that overhang streets, potentially falling on our few escape routes. Many walking paths from our house are

Comments from Survey 1 as of 1-3-23

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tunnels of dense vegetation! The paths and streets need to be the responsibility of the city. We as homeowners have paid thousands of dollars to remove trees, maintain our vegetation and fireproof our house, yet the roads and paths are not safe ways out because of trees and vegetation overgrowth.

37. Our neighborhood in the flats is at low risk. Traditionally wildfires have started at the ridges. Reduce fuel load there and carefully watch during fire weather and have quick response ready. The suggestion that people with mobility problems leave the hill fire areas during extreme risk times is a good one.
38. Lack of understanding about the different kinds of houses around Berkeley and lack of realistic ideas about implementing fair changes that don't cost the owner more than is reasonable.
39. Although I'm a tree-lover, I draw the line at eucalyptus in Berkeley. They're a non-native species that is causing serious fires everywhere they've been imported (including Greece and Turkey!).
40. Lack of action by city officials for a known major issue
41. Adequate funding/financing to stimulate the prioritization (within family budgets) of major hardening/vegetation projects on private property.
42. Between College and Claremont. Fire can just come down from hills as did the Oakland fire. I'm a renter. Landlord does not care about overgrowth.
43. We need more veg management in our residents' hill areas and more veg management in Tilden and Claremont canyon
44. We have got to chop down all the eucalyptus
45. junk and other stuff outside homes. Easily flammable materials outside homes - for example, my neighbor has a wall of "prayer flags" (paper, fabric, plastic) 8 feet high and approx. 40 feet long/wide on and on top a wooden fence. This stuff would ignite a lot faster than trees.
46. I worry particularly about the large proportion of hills residents who are older and may have limited mobility. In addition, I have heard and read many troubling comments from some of these older hills' dwellers, comments that lead me to believe they don't truly grasp that no one is going to be able to come save them once a fire has already started.
47. Lack of community awareness of the level of risk.
48. Anyone have a "hate-my-neighbor" tree/foliage fence at the property line, hills and low land of Berkeley?
49. There are too many cars parking on the street in wildfire zones. Narrow streets mean slower response times for emergency responders. Please make it harder to park on the street in the hills.
50. Climate change
51. Narrow road.
52. Parking allowed on narrow hill roads making it hard for first responders
53. The swath that has goat vegetation removal below Wildcat is not nearly wide enough, given the severity of the wildfires we've seen in the last few years. I'd also like to see trees removed in that swath to make a more defensible break.

**Q5 What actions have you taken to prepare your family, home, property and community to reduce the risk of wildfire? (check all that apply).**  
Other = 34 responses

Comments from Survey 1 as of 1-3-23

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1. Survey is asking for a comment.
2. Neighborhood is newly approved Firewise group
3. Education to all Berkeley citizens especially homeowners/renters in Zones 1&2
4. Our street is so narrow and has no parking limitations so it remains a hazard in case a fire engine needs to have access to it, there are more cars than there are off street parking spaces.
5. The driveway is too steep. Cannot drive our car into the garage
6. My neighborhood is very low risk; Telegraph at Blake.
7. member of Berkeley Hillside Fire Safety Group
8. pack emergency bag during fire season -scary
9. Helped a neighbor by clearing dried grasses from her property--there's no one to do this because she's elderly & doesn't speak much English. Educational, printed materials in MANY languages should be distributed throughout Berkeley.
10. Organize the community to get the city and university to remove all the hazardous fuel.
11. It's not the neighbors we're worried about. It's the folks that park on Grizzly Peak and LHS that don't care if we go up in flames.
12. Need referrals to contractors qualified to perform home hardened ( ember prevention to vents, gutter guards, etc.)
13. removed flammable plants, keep remaining trimmed & watered.
14. Clear my yard and roof from dry leaves.
15. Remove all flammable plants and water existing fire-resistant plants.
16. Wildcat Watch volunteer
17. Pls provide reputable agencies to hire to harden my home (gutter covers, vent screens, prepare eaves. Offer courses to these companies & certify them so we know which companies know fire rules.
18. Developed a parking restriction proposal for our street and submitted to city (no action yet)
19. I've been a leader in our neighborhood Hillside Fire Safety Group since its founding.
20. I made a documentary film about megafires and have screened it in Berkeley and more than 400 other communities. Wilder than Wild has also been broadcast nationwide.
21. I'm a renter, so much of this I can do nothing about.
22. Neighborhood preparedness group participation
23. packed go bags, informed neighbors about how to pack and prepare, and tried to stay informed about proximity of fires
24. spread information to others in my apartment building (most of the actions on this list only apply to homeowners, which only make up half of the population of Berkeley)
25. Purchased a small camper van that we can park in the flats at a friend's house during red flag warnings
26. It's not reasonable to have people park off street or inside garage when they don't have that as an option and parking on sidewalk to allow fire trucks enough room has been the norm for ages.
27. using very low, dense groundcover plants to choke out weeds that were overgrown, removed all bark chip on landscape
28. Renter has no control
29. DIY home hardening projects in progress.
30. Go kit by the door always and a plan for evacuating in 5, 10, 15 and 20-minute intervals.

Comments from Survey 1 as of 1-3-23

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31. my neighborhood has an organized group and we have taken some steps to prepare for emergencies together
32. Extensive emergency kits, go bags, earthquake supply shed. NOTE: we are renter and not able to do DIY projects on the property. Landlord is not too concerned and unwilling to do anything beyond legal requirements.
33. Smoke alarms
34. NOTE: the question says "check all that apply" but the survey tool limits the responses to 3 boxes maximum. So my answers are not accurate for this question. I've actually paid to have eucalyptus removed from neighbor's property (with their approval). In the larger scheme, I shouldn't have to pay. The city should step up and have a comprehensive eucalyptus reduction program.

**Q6. In developing Berkeley's Community Wildfire Protection Plan we are exploring a variety of actions to reduce the risk of wildfire to neighborhoods. Which of the following recommendations do you think would be effective for your neighborhood? (check all that apply)**

Other = 55 responses

1. On street parking limitations in hills, i.e. efforts to facilitate evacuation
2. Honestly, there are elderly homeowners that aren't keeping up with vegetation or paying for vegetation clean up. They need to be fined.
3. Unsure I don't talk to anyone or receive much information
4. Defensible space must be defined in a reasonable manner since our homes are close together and we all treasure our trees and greenery, which are important for shade and a healthy environment.
5. Red-curb narrow streets
6. Develop an overall plan that is clear to everyone; there seems to be piecemeal efforts with no real oversight
7. Wildfire public awareness days, information kiosks at local events, evacuation route information distribution in Berkeley hills
8. Hazardous brush clearance (goats?), Handrail on Marin
9. Hazardous vegetation removal on all private property
10. Mass Evacuation planning
11. Assistance to seniors, disabled, etc., in landscape maintenance, awareness, etc.; discontinuing construction activities during high-fire-risk days (we had construction workers next door shooting sparks into dry grasses on several days when the bldg. next door was being remodeled).
12. Moving overhead power and utility lines underground
13. City funded tree removal or trimming
14. Dedicated city staff for in-person site hardening consultations.
15. Hazardous tree removal on private property by the city. The eucalyptus.
16. Remove dangerous trees on private land.
17. Police the area. Put funds to deter and prevent fires from starting in the first place.
18. Undergrounding power lines
19. UNDERGROUND ELECTRICAL WIRES
20. allow high ignition point plants to remain--McKinney fire had photos of houses burning with Camellias untouched at foundation.

Comments from Survey 1 as of 1-3-23

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21. Community efforts to underground electric wires - San Diego has figured out how to get utilities to pay, why can't we?
22. Have the city check all the yard with big trees.
23. Develop a mechanism to remove Eucalyptus Trees. They are like match sticks ready to burn. One idea for people who cannot afford the expense of removal is for the City to pay for tree removal and place a lien on the property to get reimbursed when the home is sold or transfers ownership.
24. Undergrounding utilities; red striping for no parking one side of each street at least in zones 2 and 3 and in evacuation routes; enhanced prep for evac of disabled persons (wheelchair users can't take paths, recommendations for vehicles to park on sidewalks prohibits disabled from evacuating on "foot".
25. Grants or other financial help for residents to use to clear vegetation and create a defensible perimeter. It is too expensive to hire help with cutting, trimming trees and removing plants. We also need help communicating/negotiating with neighbors, i.e. our neighbor's trees are within 5 feet of our home but not theirs-- who has to pay to remove those?
26. Ban BBQs in public parks
27. Matching grant for hazardous tree removal
28. Continue house to house inspections by Berkeley Fire in Zones 1 & 2 + start enforcing so people know this is serious.
29. People on fixed incomes need financial help to take more extensive actions.
30. Undergrounding power lines
31. City needs to take the lead and not rely on CERT or FireWise groups. Neighbors don't like to pester neighbors. We need the city to strengthen and enforce its defensible space requirements because the majority of folks won't act otherwise.
32. Clearing hazardous vegetation fuel in the hills whether it's located on public or private property.
33. Community education about evacuation routes. Neighborhood meetings identified those who need help to leave their homes in emergencies.
34. Renter education and information to pass onto landlords. Mandatory hardening of renter properties w mandatory assistance by renters.
35. A big part of protecting our communities from wildfire danger is protecting air quality year-round with common sense measures to mitigate the negative health effects of the large amount of smoke and air pollution during fire season. This includes banning very polluting 2-stroke engines (gas leaf blowers, lawn mowers, etc.), rapidly phasing out wood burning fireplaces/stoves with a carrot-and-stick, and reducing the number of cars on the road that can be replaced by bikes or ebikes if everyone felt safe (and actually "were" safe) biking around Berkeley. These measures would have a huge impact on the negative effect of wildfire season, both in their immediate impact as well as via their long-term mitigation of climate change. Berkeley should be a leader on these important public health and safety policies.
36. define evacuation routes & mark with signage
37. Make sure that all recommendations are in an ecological, systems-based framework. Just reducing vegetation can also change the climate. We need vegetation and we need to manage it in an ecological way that protects life. Please consider consulting

Comments from Survey 1 as of 1-3-23

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- with Occidental Arts & Ecology Center or other experts to ensure we do this with our longer-term future in mind.
38. the city needs to trim dead branches out of street trees
  39. This should be going on all the time, but we also have to deal with the fact that many wildfires come from public utilities not keeping areas clear as well, mental illness and politically-motivated fires started by humans is also not being mentioned on here
  40. City funded tree removal overhanging streets in hills, and city funded removal of vegetation surrounding paths. Both are escape routes
  41. It's not productive to suddenly ask people to make huge changes to their property without funding those requirements. Many houses are right next to others and each home in the hills has different trees and vegetation. You need to come up with a better plan that does not penalize property owners for issues they can't control or for changes that require a financial investment that is extreme--like cutting down trees.
  42. restrict drug camp equipment during high danger weather
  43. Please consider allowing low groundcovers in zone 0. With many houses on a slope, if you only allow dirt or rock that can migrate, it will result in weeds that grow tall right next to houses and defeat the purpose.
  44. City-funded incentive programs to support wildfire-hardening home-retrofit and private vegetation-removal projects.
  45. Fines for landlords who don't keep property fire safe. Annual inspection
  46. Specifically make a militia response illegal to avoid a situation like this: <https://www.nbcnews.com/news/us-news/california-town-militias-help-welcomed-cautioned-others-rcna40218>
  47. I checked all the boxes but the form only allows three. I think we need to be doing all of these things!!
  48. State wide ban on all fireworks and severe punishment for those who use illegal fireworks. Should no longer be available or sold in California.
  49. Too many cars in the hills are a real problem. That this isn't even an action on the list of choices is shocking.
  50. Funding for fire prevention measures required by the city.
  51. Underground electrical wires (use Rule 20 funds); widen street
  52. Sensible fire danger assessment
  53. Enforce one side of street parking
  54. NOTE: the question says "check all that apply" but the survey tool limits the responses to 3 boxes maximum. So my answers are not accurate for this question. (1) Require people to remove highly flammable trees (eucalyptus, for example) on their property. (2) during fire season, limit parking on major evacuation routes (Grizzly Peak, for example) and enforce abandoned vehicle parking on all streets within high fire risk areas.
  55. Put electric wires underground

**Any Final Comments? 88 responses**

1. Fine people for not being compliant or for not being safe!
2. I'm m not even sure my district I've contacted d1 and d2 and been both confirmed and denied I am a part of either

Comments from Survey 1 as of 1-3-23

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3. Extend chipping program to include Thousand Oaks neighborhood between Colusa and Arlington.
4. No but thanks.
5. Create traffic control plan for evacuation of hill residents
6. Thank you for taking this issue so seriously!
7. Berkeley's wildfire preparations are haphazard at best. Needs to be an ongoing program.
8. It is important to get rid of dead vegetation near homes, but not to destroy all greenery in our yards and along our streets.
9. Our homes are too close together in the hills. Before we are forced to spend \$\$ removing vegetation, underground the power lines that are the biggest threat to our community.
10. I don't think residents of Zone 1 should have to subsidize the fire prevention costs for the richer residents of Zones 2 and 3. They should buy their own insurance and shoulder the costs.
11. I would like recommendations from the city on how to create more defensible home. Also if you do inspections on homes and give us a list of items to be completed. Please mandate removal of dried out trees and limit the height and size of redwood trees on private properties. If my neighbor's redwood tree explodes die to a wild fire, it makes my home much more vulnerable
12. keep up the important work
13. No thank you...;-)
14. map needs a better key
15. It would help if there were, we would know about, fire watch efforts during high-risk times and how exactly to proceed if there were a nearby fire.
16. Thanks for doing this. I really think we need to be better prepared.
17. I became trained last summer as FFT2 and work in fuel reduction. I'm willing to help.
18. Please: fix roads, underground utilities, reduce fuel especially eucalyptus and podocarpus and Pittosporum
19. I think the risk of wildfire in my immediate neighborhood is relatively small. BUT there have been at least 3 house fires in our area with the past 12 months. Also, I support reducing risks for Berkeley's Zone 3 areas
20. We need to work on our streets and evacuation.
21. I don't know who in the city is interested in maintaining Berkeley's mass evacuation planning in case of fire.
22. Construction enforcement seems to need A LOT of improvement--it's difficult to even find who to notify on the website, calling 311 doesn't really work ("we need a photo"), and there are A LOT of fire-producing activities during construction projects in the residential neighborhoods.
23. None
24. Thanks for the survey!
25. My area almost burned in 1923 so it is vulnerable. I think the major problem is one house catching fire that spreads to neighboring houses
26. Berkeley needs a department dedicated to just wildfire risk reduction. If it takes an assessment added to tax on properties in the WUI to fund this, then do it. I strongly believe there should be experts on staff who can meet residents on site to answer questions and provide advice. Fire department inspections are nearly useless because

Comments from Survey 1 as of 1-3-23

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they don't have adequate staffing or time to inspect the extensive area of hills neighborhoods and they only see what's visible from the street. This is totally inadequate.

27. More coordination with East Bay Regional re Tilden and Claremont Canyon and UCB to reduce vegetation load and remove trees and more defensible space in the No Berkeley Hills and near Claremont and strawberry canyon
28. Please encourage the City to support residents' efforts to reduce fuels, especially blue gum eucalyptus. That species is widely understood to be the worst in terms of fire risk. Such support should include financial subsidies especially for low income residents.
29. The eucalyptus species is "The Elephant in the Room." We must acknowledge the science that it is far and away the most dangerous species and remove it. Everyone will be far safer.
30. We need to city to help neighborhoods organize and develop a plan to help each other prepare
31. Why haven't the eucalyptus been cleaned up on Berkeley property/parks?
32. Vacant home tax would also over time benefit fire preparedness and prevention. Every block around us has 1 vacant home which is overgrown and very cluttered, putting neighbors at risk
33. Enough said. I'm sad to see my tax dollars not helping.
34. Vegetation varies greatly in flammability. Please educate yourselves and the public on choosing proper plants (i.e. ceanothus vs eucalyptus), rather than promoting blanket vegetation removals. See [https://www.laspilatas.com/classes/fire\\_burn\\_times.html](https://www.laspilatas.com/classes/fire_burn_times.html) for more information.
35. Did not receive info on the 8/3/22 Zoom meeting. Please add me to your email list for upcoming Zoom events
36. Please inspect large/tall trees in the flatland to insure it's been properly maintained.
37. The overhead electrical wires are a serious hazard. They not only go through trees, but also can come down in windy weather or during quakes. We need to move from 19th century to 21st century tech
38. We would lose privacy, shade, and our cherished garden if we were forced to remove plants within 5' of house.
39. It's important to recognize that mature trees can help retain moisture and prevent fires - I am concerned that Berkeley will start taking out lots of mature trees that provide shade and moisture for our neighborhoods. This, I hope Berkeley will involve environmental scientists in this effort.
40. Don't require removal of pruned & watered fire-resistant plants around our homes!!!
41. Please decrease street parking in the hills to make them passable.
42. I appreciate what Berkeley is doing to inform residents about fire prevention and evacuation. Let's don't forget reminders about earthquake preparedness and evacuation.
43. City has got to institute 1-side only street parking. Citizens simply and tragically will not get out.
44. Now that you have created fancy report and cutting edge ARC/GIS product, why not start spending on concrete fire prevention projects in the neighborhoods? We need a cooperative access to tree trimming and removal, or we will not do the work. Unaffordable now. Why not build a voucher program for tree removal and let us pay it back in installments on our parcel tax!

Comments from Survey 1 as of 1-3-23

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- 45. Parking on red flag days is a major issue- need to enforce use of driveways and single side parking. Under grounding wires would obviously reduce risk as well. All Eucalyptus groves should be cut in Tilden.
- 46. The single greatest improvement in fire safety would be a massive fuel reduction program in the WUI-specifically Tilden Park, EBMUD, and UC open spaces.
- 47. Evaluate how Evacuation warnings are determined. In 2020 there were so many warnings to evacuate my neighbors considered them White Noise because no fire occurred.
- 48. The entire thing is overwhelming. How will I pay for it all?
- 49. Most parts of Berkeley are not the kind of rural, dry, unmaintained landscape where wildfires pose the greatest concern. Houses are close together, gardens are well-watered, and the fire department is competent and never far away. Here, clearing 5ft around every house would turn the city into a barren desert and ruin one of it's better assets; it doesn't make sense to apply strategies designed for places like Paradise or rural Sonoma County to an urban area like Berkeley.
- 50. We are right on the border of Zone 1 and 2; on the state map we are in Zone 1
- 51. Would love to see more tree and vegetation removal projects in the Berkeley Hills and Tilden Park
- 52. I am not aware of available CERT trainings for wildfire. I've completed more earthquake-centered trainings. We need wildfire-centered trainings and speakers available for neighborhood CERT events to educate around city-enforced veg management and home hardening requirements.
- 53. We need to make sure that politics don't interfere with public safety by moving forward right away to clear hazardous vegetation in the hills, whether this vegetation fuel load is located on public or private property.
- 54. Susan Wengraf has proposed a community screening of Wilder than Wild in a Berkeley park. I would be glad to work with her in assembling a panel of speakers and helping with public discussion about wildfires.
- 55. Over past couple of years I have attended meetings hosted by Wengraf/Hahn with different folks from Fire/Police, but still am confused as to how to learn about evacuation routes in emergency situation.
- 56. Yes as I mentioned there needs to be hardening of rental properties. This should be mandatory. Such hardening of properties should be required of both renters and landlords so both groups have to work together collectively to protect their properties and homes.
- 57. I didn't see this anywhere in the survey, but I'm wondering if there's any effort (perhaps in conjunction with EBRPD) to get rid of the Eucalyptus trees throughout Berkeley and Tilden. A more holistic approach that includes restoration and community participation would be amazing.
- 58. The lack of declared & enforced evacuation routes is irresponsible.
- 59. My neighbor says "I have insurance I don't care if my house burns down". It would be great if there was a way to counter this narrative. Appealing to this particular person to be a good neighbor doesn't work. There needs to be a way to exert force of some kind to force them to do the right thing.

Comments from Survey 1 as of 1-3-23

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- 60. Please take climate disruption seriously. If our city truly took it seriously, and moved toward just, regenerative, ecologically based solutions we could care for each other and our ecosystems for the long term.
- 61. Thanks for asking for my opinion!
- 62. Thank you. I got bring proactive. As a public school teacher I always worked on fire safety and evacuation and emergency plans in October.
- 63. more talk about dangers of wildfire smoke inhalation as well, please! I was safe in my home from flames but still passed out for four hours when we went into the purple zone a couple summers ago!
- 64. Please remove trees that overhang the streets that are our escape routes. Please remove vegetation that overhangs and surrounds the paths, if we are told to escape on foot using the paths!
- 65. I would appreciate a better understanding of how we are going to get everyone out of the Berkeley Hills in the event of a fire. Will Marin become a two lane one-way road downhill!
- 66. It seems obvious what needs to be done. Stop wasting our money and pave our streets instead.
- 67. I do think this is a great effort. But I worry that the eagerness to make a fire safe city will rob this city of its trees and demand a compliance that is not realistic for a short term goal. This is a long-term problem and you all need to think of it that way. Slow change and goals works better. Example: why don't you offer the debris bins year round! Why don't you give out those paper debris bags! I love living in Berkeley and am happy to make the effort to improve the preparedness of my property. But you need to be realistic. There are all kinds of homes here. Many that are neck in neck with others. Many that have trees that provide important shade as the temperatures are rising. One size fits all does not fit in this town. It never has.
- 68. Glad we're doing this!
- 69. Thanks for all your work on this vital issue!
- 70. survey tool reported error "1. This question requires you check up to 3 boxes maximum." for question with "Check all that apply" instructions.
- 71. For zone 0 around houses: Please allow low groundcovers and/or plants < 12 inches tall that are fire resistant in order to choke out weeds!
- 72. Three additional comments: (1) My family lives in Zone 1 in District 5 but right near the Colusa Ave. dividing line with Zone 2. Private-property conditions, on-street car-parking practices, and the general landscape and neighborhood/street development patterns uphill of us make me nervous that Berkeley FD might not be able to stop significant wildland-urban fires at Colusa Ave. (2) I would encourage the City to explore a real-estate-transfer-tax-funded program for incentivizing wildfire-hardening home-retrofit and private vegetation-removal projects, like the existing program for seismic-strengthening home-retrofit projects. Could this be done equitably? (3) It was frustrating that this survey form only allowed one to select a maximum of 3 items in reply to question #6 above. I would have selected more things there if I had been allowed, as your prompt text indicated should have been possible: "(check all that apply)."
- 73. Please inspect rental buildings for brush, gutter, and general upkeep

Comments from Survey 1 as of 1-3-23

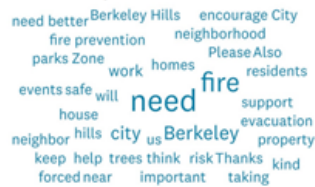
Page 11 of 13

- 74. An equitable plan must be a key consideration. Furthermore, there needs to be specific language about excluding militias in a disaster response, which will only heighten fears and hamper residents from accessing needed services.
- 75. More coordination with east bay parks Tilden and Claremont canyon and management in the hills
- 76. Need money for homeowners to professionally remove vegetation and replace with alternatives
- 77. financial assistance (or free service) for very low income homeowners for some simple fireproofing measures like closing gaps on house, screening of vents, etc., and maybe hiring and training a crew that can provide some basic services, especially for seniors/low income.
- 78. The UC needs to get those spindly eucalyptus matchsticks out of Strawberry Canyon and we need more eucalyptus removal in Tilden.
- 79. I truly think we need to be doing all of the actions listed in question number 6 -- if you're asking me to pick the top three, you need to say that in the instructions, but also, I can't pick just three!! Also the map you link to in question 7 is confusing because it overlays the city's zones with the state's. I already know I'm in zone 2 but for someone who doesn't know their zone, I think the map at this link on the city's website is clearer: <https://berkeleyca.gov/sites/default/files/2022-04/Berkeley-Fire-Zone-Map.pdf>
- 80. you aren't policing Grizzly Peak or Tilden. You aren't doing anything about cars pulled off to side in Grizzly Peak...the barriers did nothing...this is the highest risk to the Hills, we had a firestarter a couple years ago starting fires just off Grizzly
- 81. Thanks for helping to keep our city safe!
- 82. Please improve bus service to the hills so that more people can use their cars less. We cannot tackle this problem effectively without reducing driving.
- 83. Efforts at fire prevention by those of us living in the high-fire-danger zones will benefit all of Berkeley by keeping fires from igniting and moving down the hill, potentially to the Marina. Therefore, I feel the city should cover the costs of the fire-prevention measures we undertake.
- 84. I strongly encourage the City to continue messaging before fire season begins (Mar, April) and to continue to fund and encourage more civic engagement through CERT trainings. Promote participation as a great way to support neighbors, promote mutual aid, encourage collaboration.
- 85. Lower risk here in the flats, but you never know, so want to be ready!
- 86. All burden placed on homeowners adding costs to already prohibitive place to live for middle class families. Risks seem exaggerated. Zone 2 is way too large. City should assist with the cost of fire prevention.
- 87. City should work to underground utilities.
- 88. (1) Underground the power lines along Wildcat, Grizzly, and within the high fire zone areas. (2) We listened to a fire chief give a talk to our neighborhood group a couple of years ago. I was honestly SHOCKED that the line of defense for a wildfire originating in Tilden is SHATTUCK AVENUE. That means the entire hillside worth of homes is lost. Are you kidding me! We need to do better. Give the firefighters more equipment. Set up more remote observation stations. Do more/better predictive fire modeling.

Comments from Survey 1 as of 1-3-23

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Word Cloud of top 37 words from Final Comments



Comments from Survey 1 as of 1-3-23

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## B. Survey 2

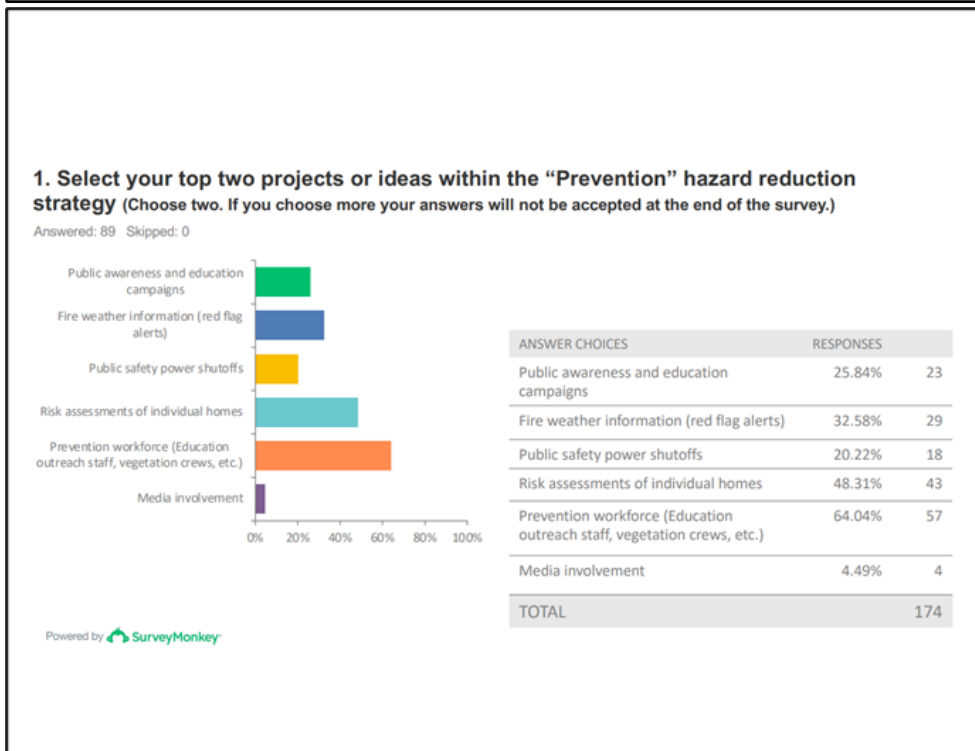
**89**  
**Total Responses**

Date Created: **Wednesday, September 07, 2022**  
Survey Closed: **Tuesday January 3, 2023**

# Berkeley CWPP 2022 - Survey 2

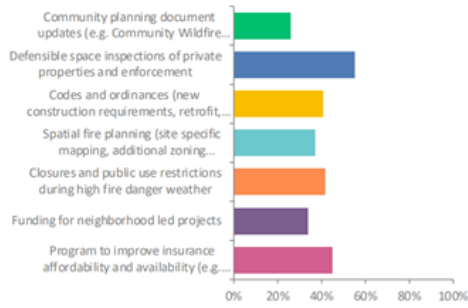
*NOTE: This survey is part of a series of engagement and educational tools to facilitate communication during the development of the Berkeley Community Wildfire Protection Plan. The following results were not intended to be scientific or statistically valid, and should not be assumed to reliably reflect the opinions of all Berkeley residents.*

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**2. Select your top three projects or ideas within the “Regulations, policy and plans” hazard reduction strategy. (Choose three. If you choose more your answers will not be accepted at the end of the survey.)**

Answered: 89 Skipped: 0

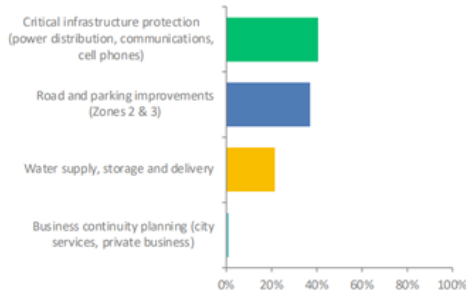


Powered by SurveyMonkey

ANSWER CHOICES	RESPONSES
Community planning document updates (e.g. Community Wildfire Protection Plan, Local Hazard Mitigation Plan, Safety Element and others)	25.84% 23
Defensible space inspections of private properties and enforcement	55.06% 49
Codes and ordinances (new construction requirements, retrofit, and other development standards)	40.45% 36
Spatial fire planning (site specific mapping, additional zoning restrictions for Zones 1, 2, and 3, project planning)	37.08% 33
Closures and public use restrictions during high fire danger weather	41.57% 37
Funding for neighborhood led projects	33.71% 30
Program to improve insurance affordability and availability (e.g. incentives for defensible space and home hardening)	44.94% 40
<b>TOTAL</b>	<b>248</b>

**3. Select your top project or idea within the “Infrastructure & Business” hazard reduction strategy (choose one).**

Answered: 89 Skipped: 0

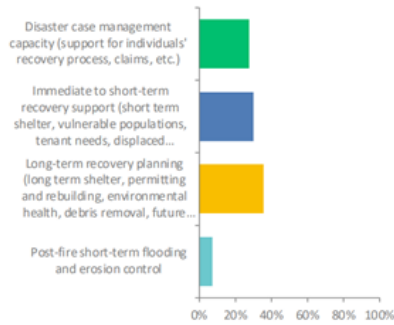


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ANSWER CHOICES	RESPONSES
Critical infrastructure protection (power distribution, communications, cell phones)	40.45% 36
Road and parking improvements (Zones 2 & 3)	37.08% 33
Water supply, storage and delivery	21.35% 19
Business continuity planning (city services, private business)	1.12% 1
<b>TOTAL</b>	<b>89</b>

**4. Select your top project or idea within the “Recovery” hazard reduction strategy (choose one).**

Answered: 87 Skipped: 2

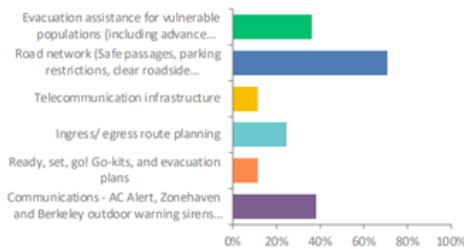


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ANSWER CHOICES	RESPONSES	
Disaster case management capacity (support for individuals' recovery process, claims, etc.)	27.59%	24
Immediate to short-term recovery support (short term shelter, vulnerable populations, tenant needs, displaced workers, language barriers)	29.89%	26
Long-term recovery planning (long term shelter, permitting and rebuilding, environmental health, debris removal, future mitigation)	35.63%	31
Post-fire short-term flooding and erosion control	6.90%	6
Post-fire short-term flooding and erosion control	6.90%	6
<b>TOTAL</b>		<b>87</b>

**5. Select your top two focus areas, projects or ideas within the “Safety and Evacuation” hazard reduction strategy (choose two).**

Answered: 89 Skipped: 0

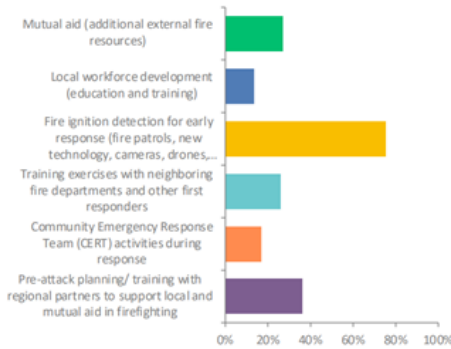


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ANSWER CHOICES	RESPONSES	
Evacuation assistance for vulnerable populations (including advance evacuations)	35.96%	32
Road network (Safe passages, parking restrictions, clear roadside obstructions)	70.79%	63
Telecommunication infrastructure	11.24%	10
Ingress/ egress route planning	24.72%	22
Ready, set, go! Go-kits, and evacuation plans	11.24%	10
Communications - AC Alert, Zonehaven and Berkeley outdoor warning sirens evacuation alerting systems	38.20%	34
<b>TOTAL</b>		<b>171</b>

**6. Select your top two projects or ideas within the “Wildfire response” hazard reduction strategy (choose two).**

Answered: 89 Skipped: 0

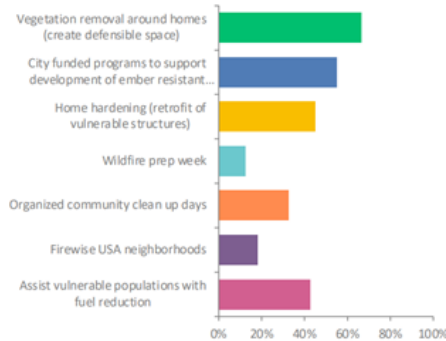


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ANSWER CHOICES	RESPONSES
Mutual aid (additional external fire resources)	26.97% 24
Local workforce development (education and training)	13.48% 12
Fire ignition detection for early response (fire patrols, new technology, cameras, drones, satellites, etc.)	75.28% 67
Training exercises with neighboring fire departments and other first responders	25.84% 23
Community Emergency Response Team (CERT) activities during response	16.85% 15
Pre-attack planning/ training with regional partners to support local and mutual aid in firefighting	35.96% 32
<b>TOTAL</b>	<b>173</b>

**7. Select your top three projects or ideas within the “Resident mitigation” hazard reduction strategy (choose three).**

Answered: 89 Skipped: 0

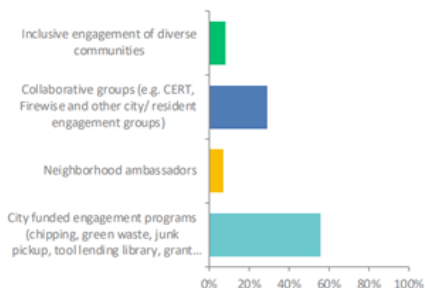


Powered by SurveyMonkey

ANSWER CHOICES	RESPONSES
Vegetation removal around homes (create defensible space)	66.29% 59
City funded programs to support development of ember resistant "Zone 0" to comply with new requirement for all homes.	55.06% 49
Home hardening (retrofit of vulnerable structures)	44.94% 40
Wildfire prep week	12.36% 11
Organized community clean up days	32.58% 29
Firewise USA neighborhoods	17.98% 16
Assist vulnerable populations with fuel reduction	42.70% 38
<b>TOTAL</b>	<b>242</b>

**8. Select your top project or idea within the “Partnerships and community engagement” hazard reduction strategy (choose one)**

Answered: 86 Skipped: 3

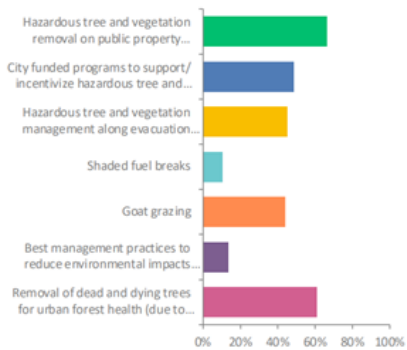


ANSWER CHOICES	RESPONSES
Inclusive engagement of diverse communities	8.14% 7
Collaborative groups (e.g. CERT, Firewise and other city/ resident engagement groups)	29.07% 25
Neighborhood ambassadors	6.98% 6
City funded engagement programs (chipping, green waste, junk pickup, tool lending library, grant writing assistance, special needs assistance program)	55.81% 48
<b>TOTAL</b>	<b>86</b>

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**9. Select your top three projects or ideas within the “Landscape treatments (large scale vegetation management)” hazard reduction strategy (choose three).**

Answered: 89 Skipped: 0

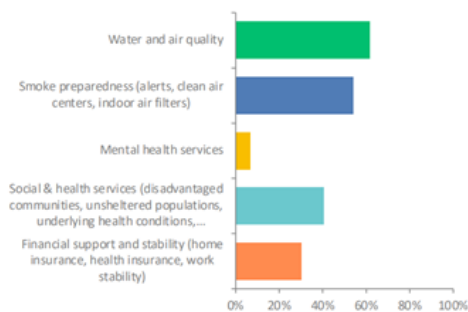


ANSWER CHOICES	RESPONSES
Hazardous tree and vegetation removal on public property (e.g. parks and roadsides).	66.29% 59
City funded programs to support/ incentivize hazardous tree and vegetation management within 100' of a home in compliance with state and city regulations	48.31% 43
Hazardous tree and vegetation management along evacuation routes (Safe Passages)	44.94% 40
Shaded fuel breaks	10.11% 9
Goat grazing	43.82% 39
Best management practices to reduce environmental impacts during hazardous tree and vegetation management	13.48% 12
Removal of dead and dying trees for urban forest health (due to climate change, disease, drought, age)	60.67% 54
<b>TOTAL</b>	<b>256</b>

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**10. Select your top two projects or ideas within the "Public health" hazard reduction strategy (choose two).**

Answered: 89 Skipped: 0

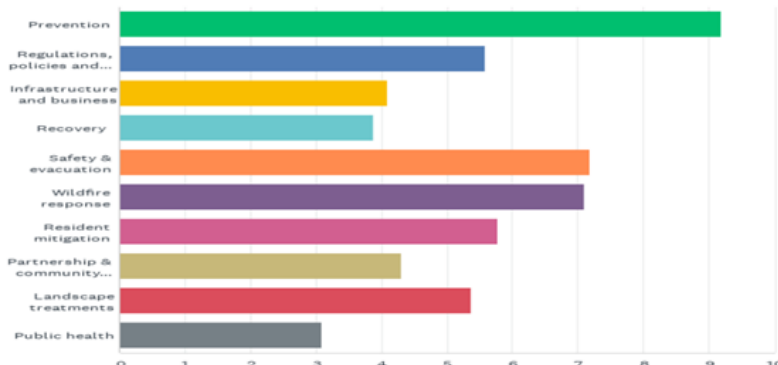


ANSWER CHOICES	RESPONSES
Water and air quality	61.80% 55
Smoke preparedness (alerts, clean air centers, indoor air filters)	53.93% 48
Mental health services	6.74% 6
Social & health services (disadvantaged communities, unsheltered populations, underlying health conditions, outdoor workers)	40.45% 36
Financial support and stability (home insurance, health insurance, work stability)	30.34% 27
<b>TOTAL</b>	<b>172</b>

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**10. Rank the groups of potential hazard reduction strategies (1= favorite to 10 = least favorite).**

Answered: 87 Skipped: 2



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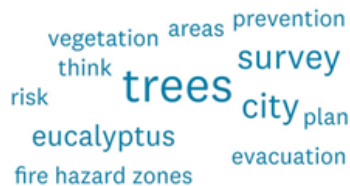
**Final comments provided on Survey 2 – 28 responses survey closed 1/3/23**

1. I don't think I know enough, or am expert enough, to answer these questions. Leave this kind of decision-making to experts!
2. Why does the state make all statewide ADU setbacks 4'; but then fire hazard zone 0 clearance is 5.' Why don't these departments talk to each other? Shouldn't residential setbacks in Calfire highest fire hazard zones get residential setbacks automatically made 5'? All decks, railings, fences in high fire hazard zones should be mandatory NOT wood or flammable materials.
3. No removal of well-watered & pruned, high-ignition point plants! Privacy, cooling, wildfire all call for this!
4. Focus on projects that actually reduce fires and impacts - dead vegetation, impediments to evacuation and firefighting. Too much money wasted on "talking " about this. We know the problems - start remediation!
5. No—but good, thought-provoking, and -eliciting, survey! Now I'm going out to chop and sweep up, legally and appropriately!
6. Survey was a bit too complicated but thanks for doing this.
7. stop mere talking - get into action already
8. Underground utilities along evacuation routes extremely important. We are all very concerned with state of Tilden Park; even if we denuded Berkeley & hardened every home, we are at the mercy of conditions there. Finally, the City should identify and build shelter areas where possible for people to use in worst case scenarios as is being done elsewhere.
9. Some of the terms in this survey are not defined, so voting for them was not possible to do in an informed way . Example: resident mitigation means what???
10. Defensible space requirements must be reasonable to preserve trees and greenery which are critical to environmental health.
11. Far more attention should be given to prevention, in the form of reducing fire-prone vegetation (eucalyptus and juniper, for example) both within the city and in public wildlands east of the city.
12. R2 is too large - these areas are not equally at risk and should not have the same mitigation requirements
13. Greatest hazard is eucalyptus. We need a plan to remove them all, even from private property.
14. Residents of Zone 1 should not subsidize the fire risk of the richer residents in Zone 2 and 3. Please throw away my other responses, the survey forced me to check some boxes but I don't support funding any of these programs.
15. Please allow for weed-suppressing vegetation in zone 0-- rocks migrate and tan bark is flammable.
16. What can we learn and implement from the area's Native people?
17. Not a great survey, don't know what I'm choosing
18. Undergrounding powerlines isn't even on this survey and is the best mitigation/prevention one can do in high-risk areas.
19. This list was very difficult to rate.
20. Fuel load reduction is the most important action item.
21. These categories don't make that much sense to me. Prevention should have crews on lookout during high danger periods. There needs to be some structured plan to keep evacuation from being chaotic. I don't see that in the plans; too many categories too little clarity.
22. Reduce fire hazards on public and private property. Keep shade and cool urban and wildlife interface cool. Stop PG&E from cutting trees to accommodate utility wires and instead save trees

(except eucalyptus) and underground utilities or at least move wires and poles i stead of destroy tree canopies with poor tree cutting measures.

23. I think it's important to do everything we can to reduce the likelihood of a fire starting, and if it does, detect and respond to it as fast as humanly possible, with sufficient resources to prevent it from becoming a disaster. Escalate rapidly and with more resources than might be deemed necessary at first. Those extra resources could be thought of as the payment on an insurance policy: not strictly needed, and seen by some as unnecessary expense. But avoiding a disaster far outweighs the cost of the "unnecessary" extra resources.
24. I think the two top priorities should be 1) assisting low-income residents to mitigate risk everywhere in the city and 2) enforce risk mitigation requirements in Fire Hazard Severity zones 3 and 2
25. Evacuation plans in cities must be maintained.
26. Please focus on preventing the spread of wildfire by starting with reduction and removal of hazardous vegetation in the hills.
27. Many of these questions are overlapping, not categorized clearly, or otherwise unclear. (For example, Q10, "landscape treatments" is part of "prevention".
28. I appreciate the stepped-up efforts to remove Eucalyptus and other trees on the park side of Wildcat Canyon Road that could catch fire and spew embers into the neighborhoods. But on the residential side of that street, MANY tall Eucalyptus trees stand on private property. I'd like to see the City actively enable removal of these trees by providing financial assistance to property owners, lining up qualified contractors to do the work, and scheduling it efficiently along that corridor.

**Word Cloud of top 12 words from Final Comments**



### C. Survey 3

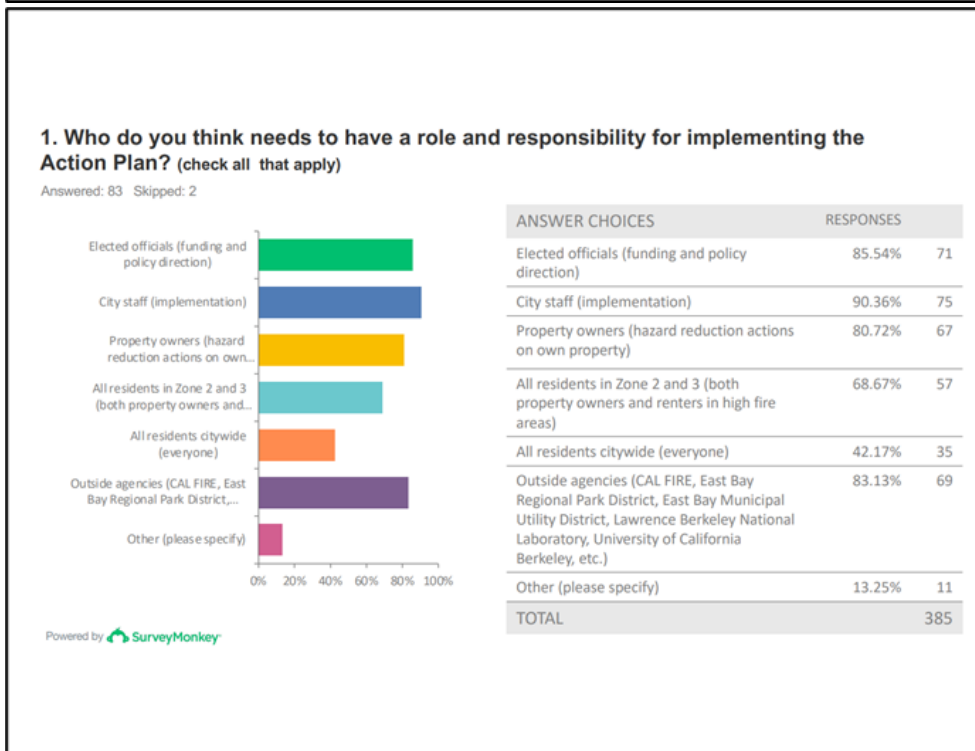
**85**  
**Total Responses**

Date Created: **Monday, November 14, 2022**  
Survey Closed: **Tuesday January 3, 2023**

## Berkeley CWPP 2022 - Survey 3

*NOTE: This survey is part of a series of engagement and educational tools to facilitate communication during the development of the Berkeley Community Wildfire Protection Plan. The following results were not intended to be scientific or statistically valid, and should not be assumed to reliably reflect the opinions of all Berkeley residents.*

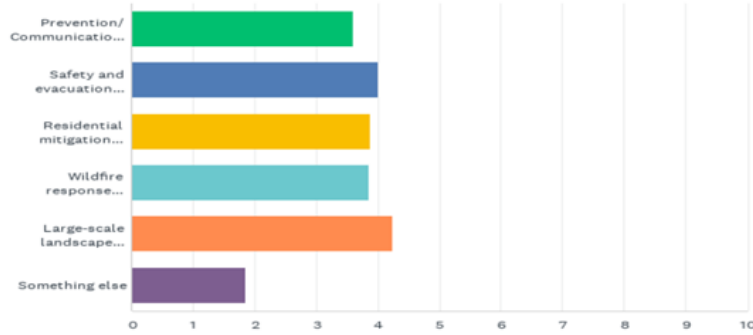
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**2: Rank the order you think the strategies should be addressed in the Action Plan (1= first to 6 = last).**

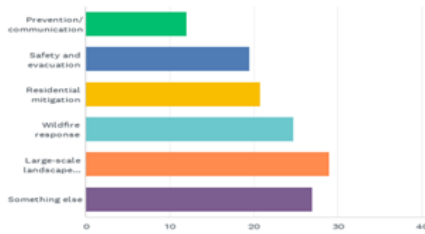
Answered: 84 Skipped: 1



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**3. What percentage of available funding (Measure FF, grants, etc.) should be use for each of the strategies? (Your answers should add up to 100%).**

Answered: 72 Skipped: 13



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Prevention/ communication	12	762	63
Safety and evacuation	19	1,228	63
Residential mitigation	21	1,370	66
Wildfire response	25	1,655	67
Large-scale landscape treatments	29	1,915	66
Something else	27	270	10
Total Respondents: 72			

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**4: What do you think of the CWPP planning process. On a scale of 1 to 5 how hard were the project documents to understand? (1=hard to 5=easy)**

Answered: 71 Skipped: 14

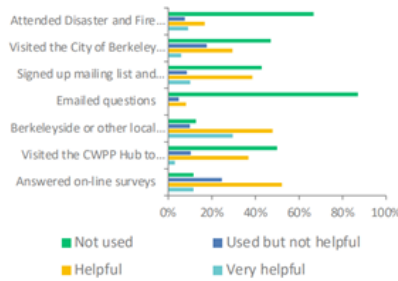


	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
★	8.45%	9.86%	56.34%	18.31%	7.04%	71	3.06
	6	7	40	13	5		

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**5. How did you get information about the planning process and provide input to the CWPP? Which sources were most helpful? (check all that apply)**

Answered: 73 Skipped: 12



	NOT USED	USED BUT NOT HELPFUL	HELPFUL	VERY HELPFUL	TOTAL	WEIGHTED AVERAGE
Attended Disaster and Fire Safety Commission Meetings	66.67%	7.58%	16.67%	9.09%	66	1.68
Visited the City of Berkeley webpage	47.06%	17.65%	29.41%	5.88%	68	1.94
Signed up mailing list and received City Newsletters via email	42.86%	8.57%	38.57%	10.00%	70	2.16
Emailed questions	87.10%	4.84%	8.06%	0%	62	1.21
Berkeleyside or other local media outlets	12.68%	9.86%	47.89%	29.58%	71	2.94
Visited the CWPP Hub to review information as it developed, including base maps, projects and FAQs	50.0%	10.29%	36.76%	2.94%	68	1.93
Answered on-line surveys	11.59%	24.64%	52.17%	11.59%	69	2.64

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**Comments provided on individual questions in Survey 3**

85 responses survey closed 1/3/23

**1. Who do you think needs to have a role and responsibility for implementing the Action Plan?**

Other Comments (11 comments)

1. Underground utilities
2. Regional police and rangers. Public education groups. People still use charcoal in Tilden on even on high-risk days, fireworks still launched off Grizzly Peak all summer, an occasional cigarette butts on the ground.
3. PG&E to underground utilities particularly along evacuation routes, East Bay Regional Parks District to truly address Tilden Park
4. PG&E to underground biggest danger of power lines
5. The Neighborhood Emergency Preparedness Groups, the BDPNN, the Firewise Groups, should all be actively engaged in this process.
6. Keep the elected officials out
7. Insurance Companies
8. USGS for their predictions of 50,000 homes on fire after a 7.0 quake on the Hayward fault.
9. PG&E as their equipment is the major fire risk
10. Dedicated city positions for implementing prevention, evacuation, shelter, support -otherwise responsibility gets slippery
11. State agencies

**2. Rank the order you think the strategies should be addressed in the Action Plan**

Something else (14 comments)

1. Needs more emphasis on quicker detection of fires
2. Underground utilities
3. Parking enforcement
4. Firework enforcement
5. Remove non-native eucalyptus
6. Understand that removing well-watered & pruned high-ignition point plants does not lessen wildfire risk. But it does reduce privacy/wildlife habitat/shade & increases global warming.
7. I think the first 3 are all #1. Shouldn't have to choose.
8. There needs to be consideration of other aspects in the CWPP plan including aesthetics, green space and healthy activities, and shade for cooling. The program has swung too far to an extreme of fire mitigation at all costs. There are other factors that need to be considered in balance. Obviously, fire prevention is important but living in a concrete jungle is also not reasonable nor desirable. It can't be ALL about fire.
9. PG&E to underground the power lines as the biggest threat to our community from fire
10. City should not be funding things on individual property; home owner should manage. If they cannot, they should sell and move. Why aren't there options under residential and large scale that don't include city funding for mitigation. Provide a multi-year implementation if needed.
11. Need to have a program to remove the eucalyptus, even on private property.
12. The City of Berkeley needs to do more NOW to clear trees and vegetation around and over all Berkeley Paths, so they can become safe evacuation routes. Right now they are tunnels of

Comments from Survey 3 as of 1-3-23

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- vegetation and falling tree limbs = inferno. With very little possibility of escaping once you've started down a path!
13. Computer modeling of traffic if all East Bay residents attempt to flee earthquake induced fires on the Hayward Fault.
  14. undergrounding powerlines in high-risk areas

**3. What percentage of available funding (Measure FF, grants, etc.) should be use for each of the strategies?**

Something else (10 responses with following % for something else)

- 0%=3
- 5%=2
- 10%=2
- 40%=1
- 100%= 2

**7. Any final comments or ideas not captured in the three surveys?**

(24 comments)

1. Needs more emphasis on quicker detection of fires, particularly those that start in homes. Needs some attention to undergrounding of egress routes, and quake caused utility breaks.
2. Measure FF is a citywide measure. It should not be totally diverted to the needs of the hills. It was described in the voter language as supporting fire services, emergency response, 9-1-1 communication, hazard mitigation and wildfire prevention.
3. No
4. Parking enforcement should be prioritized 24/7 with 10x the focus it has now in fire zones
5. Please extend chipping program to Thousand Oaks neighborhood between Arlington and Colusa! Thanks.
6. There is a huge cost to removing well-cared for gardens, including increased global warming, lack of privacy and removal of wildlife habitat. Spain is planting Camellias to fight wildfires. Why doesn't California follow suit instead of requiring their removal?
7. Consider linking to your planning documents in your surveys! I have been trying to get more info about this process for months and have only found random pieces of information on Berkeleyside and Twitter
8. Some questions confusing re what is being asked
9. The answers I provided were more guesses than truly informed responses. Even as a member of the DFSC I feel like there is both too much information to assimilate and too little information to provide reasoned responses. I do not think that the CWPP should be run by popular opinion for that reason. (Address popular opinion, agreed. However, from the DFSC meeting last night there are still a lot of people in Berkeley that believe that the wildfire risk will be eliminated if we just cut down all of the eucalyptus trees. A point negated by one of the films you have on the website, and negated in my view by years of personal experience.
10. Everything seems too vague in description within the survey format. Also very hard to access past community meetings on City's website. Many neighbors have no idea what is happening, what's being decided, and are frightened the City expects people to undertake huge projects when both impossible to finance or find decent honest contractors (many scammers or no calls back). Meanwhile people talk a lot about the awful shape Tilden is in and that no matter what we do, we are doomed if it's not cleaned up. There is also a fear that the cities aren't working closely together enough, pooling resources, communicating at bureaucratic levels even if fire

Comments from Survey 3 as of 1-3-23

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departments have mutual aid agreements (example of Grizzly Peak Road). And finally we are all upset that PG&E has no under-grounding plans for the East Bay; not only to prevent fires but to protect evacuation routes. The City must act more aggressively on our behalf.

- 11. Repeating my comment above: There needs to be consideration of other aspects in the CWPP plan including aesthetics, green space and healthy activities, and shade for cooling. The program has swung too far to an extreme of fire mitigation at all costs. There are other factors that need to be considered in balance. Obviously, fire prevention is important but living in a concrete jungle is also not reasonable nor desirable. It can't be ALL about fire.
- 12. I hope that the final plan will include a list of fire-prone and fire-resistant plants, and a recommendation for which (and in what circumstances) they should be targets for removal. For example, it could endorse FIREsafe Marin's recommendations (e.g., that junipers be removed within 100' of structures and 10' (minimum) of roadways and driveways. Period.)
- 13. Survey outreach to residents was poor,
- 14. stop burdening homeowners with cost of cities wildfire protection
- 15. The hardest part of mobilizing residents will be getting them to understand their plants are a real & present danger to their homes and their lives. One of my neighbors wants to believe that green plants can't burn.
- 16. I found next door neighbors working together helped convince the reluctant neighbor to understand the importance of this
- 17. Haven't read CWPP materials yet, but very concerned about fire safety.
- 18. Parking should be a serious focus, despite the howls of protest that will ensue. Most streets in the hills have too many cars on them, making them unsafe for any emergency, not just fires.
- 19. Need to have a program to remove the eucalyptus, even on private property.
- 20. Get going with cutting down Berkeley's eucalyptus trees = proven results!
- 21. Have been asking for "years" that City officials and staff use their resources to model and address the 50,000 post-quake fires the USGS predicts. Nothing yet.
- 22. Berkeley has spent enormous amount of money on studies rather than actions. The time for studies is long past and an enormous waste of tax payer dollars. Time to actually DO something!
- 23. Who is in charge of making sure fire evacuation and disaster routes are clear and usable? the city is narrowing the routes.
- 24. Pls use an evidence-based approach and not a public sentiment approach. You are the professionals. Thank you

Word cloud of top 10 words from final comments

s neighbors  
 plan fire City  
 plants Needs  
 wildfire will routes



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# Appendix B: General Plan Excerpt

## General Plan S-23 Disaster Preparedness and Safety Element, Adopted April 23, 2002

### **Fire Hazards**

#### *Policy S-21 Fire Preventive Design Standards*

Develop and enforce construction and design standards that ensure new structures incorporate appropriate fire prevention features and meet current fire safety standards.

#### Actions:

- A. Strengthen performance review and code enforcement programs.
- B. Promote the installation of built-in fire extinguishing systems and early warning fire alarm systems.
- C. Maintain City standards for minimum width and vertical clearance, and ensure that new driveways and roadways meet minimum standards of the Uniform Fire Code or subsequent standards adopted by the City.
- D. Provide adequate water for fire suppression for new development in accordance with City standards for minimum volume and duration of flow.
- E. Establish criteria for the installation of gas shutoff valves in new and existing construction, to reduce the risk of post-earthquake fires.

#### *Policy S-22 Fire Fighting Infrastructure*

Reduce fire hazard risks in existing developed areas.

#### Actions:

- A. Develop proposals to make developed areas more accessible to emergency vehicles and reliable for evacuation. Consider restricting on-street parking, increasing parking fines in hazardous areas, and/or undergrounding overhead utilities. Require that all private access roads be maintained by a responsible party to ensure safe and expedient passage by the Fire Department at any time, and require approval of all locking devices by the Fire Department. Ensure that all public pathways are maintained to provide safe and accessible pedestrian evacuation routes from the hill areas. (Also see Transportation Policies T-28 and T-52.)
- B. Evaluate existing access to water supplies for fire suppression. Identify, prioritize, and implement capital improvements and acquire equipment to improve the supply and reliability of water for fire suppression. Continue to improve the water supply for firefighting to assure peak load water supply capabilities. Continue to work with EBMUD to coordinate water supply improvements. Develop aboveground (transportable) water delivery systems.
- C. Provide properly staffed and equipped fire stations and engine companies. Monitor response time from initial call to arrival and pursue a response time goal of four minutes from the nearest station to all parts of the city. Construct a new hill area fire station that has wildland firefighting equipment and ability.

*Policy S-23 Property Maintenance*

Reduce fire hazard risks in existing developed areas by ensuring that private property is maintained to minimize vulnerability to fire hazards.

Actions:

- A. Continue and expand existing vegetation management programs.
- B. Property owners shall be responsible for maintaining their structures at a reasonable degree of fire and life safety to standards identified in adopted codes and ordinances.
- C. Promote smoke detector installation in existing structures. Require the installation of smoke detectors as a condition of granting a permit for any work on existing residential and commercial buildings and as a condition for the transfer of property.
- D. Promote fire extinguisher installation in existing structures, particularly in kitchens, garages, and workshops.
- E. Require bracing of water heaters and gas appliances and the anchoring of houses to foundations to reduce fire ignitions following earthquakes.

*Policy S-24 Mutual Aid*

Continue to fulfill legal obligations and support mutual aid efforts to coordinate fire suppression within Alameda and Contra Costa Counties, Oakland, the East Bay Regional Park District, and the State of California to prevent and suppress major wildland and urban fire destruction.

Actions:

- A. Work with inter-agency partners and residents in vulnerable areas to investigate and implement actions to improve fire safety, using organized outreach activities and councils such as the Hills Emergency Forum and the Diablo Fire Safe Council.
- B. Establish close coordination with the California Department of Forestry to minimize the risk of wildland fire in the hill areas.

*Policy S-25 Fire Safety Education*

Use Fire Department personnel to plan and conduct effective fire safety and prevention programs.

Actions:

- A. Provide fire safety presentations and programs to local schools, community groups, and neighborhoods.
- B. Provide fire safety classes for high-occupancy institutional land uses, and commercial and industrial occupancies.
- C. Develop and implement a program to improve public awareness and disseminate appropriate warnings during times of high fire danger.

## Appendix C: Implementing the CWPP Using a Leveraging Strategy

### 1. Berkeley Adopted Plans and Policies Relevant to Implementing the Community Wildfire Protection Plan

The Berkeley General Plan is a comprehensive, and long-range statement of community priorities and values developed to guide public decision-making in future years. Berkeley adopted plans and ordinances reflect Berkeley's values and actions, and many relate to community wildfire protection. Many of the adopted plans directly address wildfire. Others recognize that wildfire is an issue that impacts the plan's topic and offer the opportunity for leverage.

Disaster Preparedness & Safety Element of the City of Berkeley General Plan.<sup>17</sup>  
Planning Department.

The General Plan Disaster Preparedness and Safety Element's goals, objectives, and policies serve as a guide for day-to-day decisions that are essential for responsive government. Decisions made by Berkeley City Council and its advisory boards, and commissions about the physical development of the City should be consistent with the goals, objectives, and policies of this Plan. The City Council and Planning Commission use the General Plan when evaluating land use changes and making funding and budget decisions. It is used by the Zoning Adjustments Board and City staff to help regulate development proposals and make decisions on projects. The policies of the Plan apply to all property, both public and private, within the Berkeley City limits. Although the University of California and other State/County agencies are not legally obligated to comply with the Plan, mutual cooperation benefits all agencies.<sup>18</sup>

The Disaster Preparedness and Safety Element of the City of Berkeley General plan was adopted 2002 as a part of the Berkeley General Plan as required by State law. Senate Bill 1241 (Kehoe 2012) modified Government Code Section 65302 and 65302.5 requiring cities and counties to address fire risk in SRAs and VHFHSZ in the safety element of their general plans.

The 2002 Safety Element was updated with adoption of the Local Hazard Mitigation Plan (see LHMP for details). On July 29, 2019, the Board of Forestry and Fire Protection completed its review of Berkeley's Disaster Preparedness and Safety Element; the City accepted the Board's recommendations.

Within the General Plan, the Disaster and Safety Element is where most of the current wildland fire programs and strategies are found. See (pages S-10 onward):

[https://berkeleyca.gov/sites/default/files/documents/07\\_Disaster%20Preparedness%20and%20Safety%20Element-FINAL\\_0.pdf](https://berkeleyca.gov/sites/default/files/documents/07_Disaster%20Preparedness%20and%20Safety%20Element-FINAL_0.pdf)

<sup>17</sup> <https://berkeleyca.gov/your-government/our-work/adopted-plans/berkeley-resilience-strategy>

<sup>18</sup> City of Berkeley, General Plan. <https://berkeleyca.gov/your-government/our-work/adopted-plans/general-plan> and General Plan: Disaster Preparedness and Safety Element. [https://berkeleyca.gov/sites/default/files/documents/07\\_Disaster%20Preparedness%20and%20Safety%20Element-FINAL\\_0.pdf](https://berkeleyca.gov/sites/default/files/documents/07_Disaster%20Preparedness%20and%20Safety%20Element-FINAL_0.pdf) Accessed 1/30/22.

Five policies were established, each with their set of actions: The Policies and Actions appear in Appendix C. The following are the five policies:

- *Policy S-21 Fire Preventive Design Standards*  
Develop and enforce construction and design standards that ensure new structures incorporate appropriate fire prevention features and meet current fire safety standards.
- *Policy S-22 Fire Fighting Infrastructure*  
Reduce fire hazard risks in existing developed areas.
- *Policy S-23 Property Maintenance*  
Reduce fire hazard risks in existing developed areas by ensuring that private property is maintained to minimize vulnerability to fire hazards.
- *Policy S-24 Mutual Aid*  
Continue to fulfill legal obligations and support mutual aid efforts to coordinate fire suppression within Alameda and Contra Costa Counties, Oakland, the East Bay Regional Park District, and the State of California to prevent and suppress major wildland and urban fire destruction.
- *Policy S-25 Fire Safety Education*  
Use Fire Department personnel to plan and conduct effective fire safety and prevention programs.

Relevance to the CWPP: See LHMP for the role the Safety Element plays during implementation of the CWPP.



Leveraging the Berkeley CWPP										
Existing plans, programs and policies that support CWPP Action Plan										
	Supports Priority Action Plan					Supports additional FAC strategies				
	Prevention	Safety & Evacuation	Resident Mitigation	Wildfire Response	Large Scale Landscape Treatment	Regulations, Policies & Plans	Infrastructure & Business	Recovery	Partnerships and Community Engagement	Public Health
<b>City of Berkeley Adopted Plans and Policies</b>										
Disaster Preparedness & Safety Element of the City of Berkeley General Plan.	see LHMP for Updated Plan									
Local Hazard Mitigation Plan, 2019.	*	*	*	*	*	*	*	*	*	*
Housing Element, 2023 in progress		*				*				*
Berkeley Vision 2050 - Planning for a Sustainable and Resilient Future, 2020. Implementation reports 2021+.	*	*				*	*			*
Subdivision Review, Response to AB2011, 2022 in progress		*								*
Fire Risk Reduction Community, 2022. Response to AB1823.		*				*				
Berkeley Watershed Master Management Plan, 2012					*		*			
Berkeley Resilience Strategy, 2016	*	*				*	*	*		*
Berkeley Strategic Plan, 2018	*	*				*	*	*	*	*
Climate Action Plan, 2009. Update 2022.	*		*			*		*		*
<b>City of Berkeley Codes and Ordinances</b>										
Municipal Code Chapter 19.48.020 Amendments to CA Fire Code known as "Berkeley Fire Code" (BFC).	*		*			*				*
Compliance standards for Defensible Space Inspections	*		*			*			*	
Chapter 6.52 City Trees and coast live oak	*		*		*					
Chapter 7.80 Fire Prevention and Preparedness Assessment	*		*			*				*
Chapter 12.99 Wildfire evacuation risk mitigation ordinance		*				*				*
Chapter 17.08 Preservation and restoration of natural watercourses					*	*				*
Chapter 19.28.030 CBC Chapter 7A materials and construction methods for exterior wildfire exposure			*			*				*
Chapter 19.29.05 CRC Section R337 Materials and Construction Methods for Exterior Wildfire Exposure			*			*				*
Code 19.48 Berkeley Fire Code + 19.48.020 Amendments to CA Fire Code			*			*				*
Chapter 21.40 Design requirements			*			*				*
Chapter 23.108.020 Zoning Districts			*			*				*
Chapter 23.202.070 ES-R Environmental Safety - Residential District (Panoramic Hill)			*			*				*
Chapter 23.210.020 Hillside Overlay Zones			*			*				*
Chapter 23.306 Accessory Dwelling Units			*			*				*
Ordinance 7680 amendments to CA Fire Code - adopt VHFHSZ pursuant to GCS1179(1) and 14CCR1280.02			*			*				*
COB 7799 Planning and zoning requirements more conservative than 14CCR 1299.03			*			*				*
<b>City of Berkeley programs and implementation measures</b>										
Measure FF + Measure GG funded programs										
• WUI Division	*		*						*	*
• Defensible Space Inspection Program.			*						*	*
• Vegetation removal programs	*		*						*	*
• Safe passages program		*								*
• Berkeley Ready		*							*	*
	Supports Priority Action Plan					Supports additional FAC strategies				
	Prevention	Safety & Evacuation	Resident Mitigation	Wildfire Response	Large Scale Landscape Treatment	Regulations, Policies & Plans	Infrastructure & Business	Recovery	Partnerships and Community Engagement	Public Health

Figure 12. Existing plans, programs and policies that support Priority Actions and additional FAC Strategies identified in the CWPP Action Plan.

Leveraging the Berkeley CWPP (continued)										
Existing plans, programs and policies that support CWPP Action Plan										
	Supports Priority Action Plan					Supports additional FAC strategies				
	Prevention	Safety & Evacuation	Resident Mitigation	Wildfire Response	Large Scale Landscape Treatment	Regulations, Policies & Plans	Infrastructure & Business	Recovery	Partnerships and Community Engagement	Public Health
<b>City of Berkeley programs and implementation measures (continued)</b>										
• Evacuation outdoor warning system		*							*	*
• Firewise communities	*		*						*	*
• CWPP development, implementation and updates	*					*				*
• Additional emergency vehicles and larger training facility				*						*
<b>Adjacent Agencies Wildfire Hazard Reduction Plans + CWPP</b>										
Alameda County CWPP	*	*	*	*	*				*	*
Association of Bay Area Governments. Wildfires - how to preserve and protect housing	*	*	*		*	*	*	*	*	*
City of Albany - Albany Hill Master Plan 2012	*			*	*					
City of El Cerrito/ Kensington CWPP	*	*	*	*	*				*	*
Contra Costa County CWPP	*	*	*	*	*				*	*
East Bay Municipal Utility District - Watershed Master Plan	*			*	*					
East Bay Regional Parks District - Wildfire Management and Resource Management Plan 2010	*			*	*					
El Cerrito Kensington CWPP	*	*	*	*	*				*	*
Lawrence Berkeley Laboratory - Wildland Fire Management Plan + Comprehensive Vegetation Management Plan.	*			*	*					
Oakland Safety Element	*	*	*	*	*				*	*
Oakland Vegetation Management Plan & EIR. In progress.				*	*					*
University of California, Berkeley - Wildfire Mitigation Plan and EIR 2021	*			*	*					
<b>Compliance with State Laws (Legislative/ State requirements)</b>										
AB38 (2019) real estate transaction certifications			*							*
AB747 (2019) Evacuation routes: capacity, safety and viability under range of scenarios		*				*				*
AB1550 + SB535 (2012/2016). Identification of priority populations (disadvantaged and low income) for California Climate Investment funds.						*				*
AB1823 (2019) Fire Risk Reduction Communities						*			*	
AB2911 (2018) +SB99 (2019) subdivisions without secondary egress routes		*								*
AB3074 (2020) Ember resistant Zone (Zone 0)	*		*							
SB9 (2021). Housing development approvals.						*				*
SB99(2019). Identify developments without two emergency evacuation routes upon revision of housing element.		*								*
SB246, SB379, SB1035 (2015, 2018). Integrated climate adaptation and resilience strategies with ICARP.					*	*		*		*
SB1241 + SB2160. Include fire risk in SRA and VHFHSZ in safety element. Include considerations from OPR Fire Hazard Planning. Transmit VHFHSZ, safety element and tentative map or parcel map to BOF to review.						*				
	Supports Priority Action Plan					Supports additional FAC strategies				
	Prevention	Safety & Evacuation	Resident Mitigation	Wildfire Response	Large Scale Landscape Treatment	Regulations, Policies & Plans	Infrastructure & Business	Recovery	Partnerships and Community Engagement	Public Health

Figure 12. Existing plans, programs and policies that support Priority Actions and additional FAC Strategies identified in the CWPP Action Plan (continued).

Local Hazard Mitigation Plan (LHMP). Planning Department.

In 2019, Berkeley updated their Local Hazard Mitigation Plan<sup>19</sup> (LHMP) first developed in 2014. The major update to the Wildland Urban Interface Fire Section was to integrate the mapping on hazardous fire zones on a single map and provide a new map locating pathways as a key resource for pedestrian evacuation. The Plan is organized in 5 elements: A. planning process; B. hazard analysis; C. mitigation strategy; D. plan review, evaluation and implementation; and E. plan adoption. Wildfire was identified as a hazard of greatest concern, along with earthquakes.

The 2019 LHMP is an Appendix to the General Plan Safety Element per City Council Resolution 69,236-N.S. Resolution 29237. The document was reviewed by the Board of Forestry on June 11, 2019, for conformance with GC 65302.5(b). Plan monitoring and updates are on a five-year planning cycle. Comprehensive plan evaluation update will occur if a disaster occurs, or no later than the 4-year mark of the 2019 plan (late 2023).

The LHMP states Berkeley will focus on three goals to reduce and avoid long-term vulnerabilities to the hazards identified in Element B: *Hazard Analysis*:

1. The City will evaluate and strengthen all City-owned properties and infrastructure, particularly those needed for critical services, to ensure that the community can be served adequately after a disaster.
2. The City will establish and maintain incentive programs and standards to encourage local residents and businesses to upgrade the hazard resistance of their own properties.
3. The City will actively engage other local and regional groups to collaboratively work towards mitigation actions that help maintain Berkeley's way of life and its ability to be fully functional after a disaster event.

Five objectives guide the mitigation strategy:

- A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.
- B. Increase City government's ability to serve the community during and after hazardous events by mitigating risk to key City functions.
- C. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.
- D. Preserve Berkeley's unique character and values from being compromised by hazardous events.
- E. Protect Berkeley's historically underserved populations from the impacts of hazardous events by applying an equity focus, including equal access, to mitigation efforts.

Further overview of high priority actions in mitigation strategies address WUI fire issues that dovetail with the CWPP priorities. Each action in the Mitigation Strategy identifies a Staff Lead. As part of their day-to-day work, Staff Leads will monitor, evaluate, and report on the progress of their assigned LHMP actions at necessary meetings with other staff, institutional community partners, the Disaster Council, relevant City commissions, and the Berkeley City Council.

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<sup>19</sup> <https://berkeleyca.gov/safety-health/disaster-preparedness/local-hazard-mitigation-plan>

At the beginning of each calendar year the Office of Emergency Services will coordinate a monitoring, evaluation, and reporting effort for the entire LHMP. OES will collect an updated progress report from each identified Staff Lead for each action. The progress report will:

- Provide qualitative and quantitative evaluation of City progress on activities
- Identify any necessary changes to the action in order to more effectively achieve stated purpose and goals
- Identify new Plan actions to be incorporated into the Strategy

The Safety Element (update and adoption of the LHMP) is a key planning document as it is required by state law with a 5-year mandated update.

*Relevance to the CWPP:* There is an opportunity to link both the Safety Element/ LHMP and the CWPP updates, as the Safety Element often looks to the CWPP to address wildfire risks and mitigation measures. Mitigation strategies specifically support the CWPP Action Plan in the following areas:

- Prevention and resident mitigation: with enforcement programs including annual inspections of over 1,200 high-risk properties annually;
- Regulations, policies, and plans: through development regulations with strict building and fire code provisions, as well as more restrictive local amendments for new and renovated construction;
- Resident mitigation and large-scale landscape treatments: including natural resource protection through four different vegetation management programs;
- Safety and evacuation with focus on improvement of access and egress routes and evaluation of traffic to ensure calming measures (bulb outs, bike lanes, raised crosswalks, etc.) are not a hindrance to evacuation; and
- Wildfire response, infrastructure, and business: through infrastructure maintenance and improvements to support first responders' efforts.

Housing Element.<sup>20</sup> Planning Department.

The housing element is the primary planning guide to identify and prioritize housing needs of the City and determine the best ways to meet these needs while balancing community objectives and resources.<sup>21</sup> On January 18, 2023, the Berkeley City Council approved and adopted the 2023-2031 Housing Element (v6) with amendments. It was submitted to the Department of Housing and Community Development on January 23, 2023. The Council found the 2023-2021 Housing Element to be in substantial compliance with State Housing Element law.

The Housing Element update 2023-2031 recognizes the hazards presented by wildfire. The City of Berkeley's Building and Safety Codes set forth additional restrictions for structures within the City's designated fire hazard zones. Program 29 – "Middle Housing" encourages and promotes a mix of dwelling types and sizes, particularly infill and converted existing housing in high resource neighborhoods. Zoning updates will allow for by-right multi-unit development on one lot, often called "accessory dwelling units" (ADU). The Housing Element recognizes the need to coordinate ADU policies and zoning updates with the CWPP and Fire Department Standards of Coverage.<sup>22</sup>

<sup>20</sup> [Adopted 2023-2031 Housing Element and Appendices \(v6\) with resolutions, 01/23/2022](#)

<sup>21</sup> City of Berkeley Housing Element Update 2023-2031. Public Hearing Draft 12-1-22. [https://berkeleyca.gov/sites/default/files/documents/Berkeley\\_HEU\\_Combined\\_12-01-2022.pdf](https://berkeleyca.gov/sites/default/files/documents/Berkeley_HEU_Combined_12-01-2022.pdf) Accessed 1/30/22.

<sup>22</sup> City of Berkeley Housing Element Update 2023-2031 pg. 144.

In the accompanying Draft Environmental Impact Report,<sup>23</sup> Section 4.17 Wildfire, discusses the impacts associated with wildfire and development in the very high fire severity zone, including impacts associated with emergency evacuation and exposure to pollutants from a wildfire. Information about the City's Standard Condition of Approval for a TCP is discussed<sup>24</sup>. Impact HAZ-5 in Section 4.18, Hazards and Hazardous Materials. These impacts were found to be significant and unavoidable.

Relevance to the CWPP: Housing Element shares implementation measures related to the CWPP Action Plan priorities of safety and evacuation, as well as regulations policies and plans, and public health.

Berkeley Vision 2050: Planning for a Sustainable and Resilient Future. Public Works Engineering.

Berkeley Vision 2050<sup>25</sup> is a long-term plan adopted May 2020<sup>26</sup> to build, upgrade, and repair Berkeley's aging infrastructure to be more sustainable and resilient in order to meet the serious challenges of the future, including climate change, and is driven by a set of core values: equity, public health and safety, a strong local economy, resiliency, and sustainability. The Plan includes a strategy to adopt sustainable and safe technologies which addresses having an integrated approach to fire safety, including preparing a wildfire mitigation and safety plan (CWPP).

Among the identified challenges facing Berkeley's infrastructure is the need to "adapt to our higher fire risk climate by improving forest management, creating viable escape routes in high hazard areas, expanding pre-fire education and outreach programs, improving emergency warning systems, undergrounding overhead utility wires, creating "smoke-free" community centers during major smoke events, and taking other significant steps to protect our residents. A critically important action will be to work with PG&E, the California Public Utilities Commission, and other agencies to ensure that any Public Safety Power Shutoff activity (PSPS) does not block Berkeley's emergency services, keep basic infrastructure from functioning, or adversely affect residents who require electric power in their homes for medical support. This work will be essential as Berkeley makes a major transition from natural gas to electricity for buildings and from gasoline-powered cars to electric vehicles. Building more self-sufficiency and flexibility is

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<sup>23</sup> City of Berkeley Housing Element Update 2023-2031. Draft Environmental Impact Report. August 2022. <https://berkeleyca.gov/sites/default/files/documents/Berkeley%202023-2031%20Housing%20Element%20Update%20Draft%20EIR.pdf> Accessed 1/30/23.

<sup>24</sup> Final EIR and Responses to Comments on the Draft Environmental Impact Report SCH#2022-1-331. pg. 100 "Construction of individual housing developments could interfere with adopted emergency response or evacuation plans as a result of temporary construction activities within rights-of-way. However, temporary construction barricades or other construction-related obstructions used for project development that could impede emergency access would be subject to the City's Standard Conditions of Approval, which include a condition to prepare a Transportation Construction Plan (TCP) subject to City review and approval. Implementation of a TCP would limit the extent to which construction activities during the planning period of the HEU would impair or physically interfere with adopted emergency response or evacuation procedures."

[https://berkeleyca.gov/sites/default/files/documents/ATT%20%20FEIR\\_RTC.pdf](https://berkeleyca.gov/sites/default/files/documents/ATT%20%20FEIR_RTC.pdf) Accessed 1/30/23.

<sup>25</sup> <https://berkeleyca.gov/community-recreation/news/weigh-improving-city-streets-buildings-and-infrastructure>

<sup>26</sup> Sustainable and Resilient Infrastructure. Presented May 2020.

<https://berkeleyca.gov/sites/default/files/documents/Vision-2050-Framework.pdf> Accessed 1/30/23.

an essential feature of Berkeley's resilient clean energy future. Critical facilities and services are vulnerable to power shutoffs caused by fires or other disasters. Clean energy microgrids, capable of providing electricity even when the larger grid is down, must be prioritized at public health and safety facilities, and encouraged elsewhere in the city. They can work in parallel with the grid, contributing to our state and national GHG reduction goals, but also harness local clean energy resources to provide power during extended outages. There may also be opportunities to underground more of the infrastructure, improving local safety and upgrading switches, relays, transformers, and other essential elements of the grid."<sup>27</sup>

Vision 2050 serves as a framework for a variety of implementation measures over five years. The Program Plan was released in May 2021 for public review to establish expected outcomes, work priorities, funding, and accountability, including revenue options and funding strategies. In 2021, Vision 2050 completed a scientific survey (see Results of Scientific Survey, and Direction on Revenue Measure(s)<sup>28</sup> and a Strategic Asset Management Plan as groundwork to look at funding measures. Undergrounding was identified as a tier 2 priority along with stormwater, parks, trees, and waterfront. As of the December 2022 progress report, the program had achieved 25% their mid-term focus.

*Relevance to the CWPP:* Vision 2050 shares several implementation measures related to the CWPP Action Plan priorities of prevention, safety, and evacuation, as well as regulations policies and plans, and infrastructure and business. The Vision 2050 program could serve as a model for implementation and tracking of the CWPP.

Berkeley Watershed Master Management Plan (WMP) and Final Mitigated Negative Declaration (MND), October 22, 2012. Public Works Engineering.

The Watershed Management Plan (WMP)<sup>29</sup> offers an integrated and sustainable strategy for managing urban water resources. It is intended to guide City efforts to establish a healthier balance between the urban environment and natural ecosystems. The WMP looks at addressing water quality, flooding, and the preservation of creeks and aquatic habitats using multi-objective approaches where possible. This entails supplementing the existing engineered storm drain infrastructure with green infrastructure approaches that mimic natural hydrologic processes including filtration and infiltration by soils and evapotranspiration by plants. Additionally, various green retrofit measures appropriate for the public right-of-way as well as for public and private property are recommended in the WMP.

The WMP includes potential programs, projects, relevant city policies and refinements to City policy development. Implementation of the WMP will depend on available funding and is a 30-plus year program based on costs and scope. Two watersheds, Potter and Cordonices, are identified for capital improvement projects as funding becomes available. Programs and projects could be integrated in with the CWPP projects to address large scale landscape treatment in the watersheds as well as resident mitigation (where creeks and watershed improvements extend onto private property adjacent to homes).

<sup>27</sup> Vision 2050. 10-5-20 pg. 40. <https://berkeleyca.gov/sites/default/files/documents/Vision-2050-Framework.pdf>

<sup>28</sup> <https://berkeleyca.gov/sites/default/files/documents/2022-05-31%20Item%2037%20Presentation.pdf>  
Accessed 1/30/23.

<sup>29</sup> <https://berkeleyca.gov/your-government/our-work/adopted-plans/watershed-management-plan>

Relevance to the CWPP: The Watershed Master Plan shares several implementation measures related to the CWPP Action Plan priorities of large-scale landscape treatment, as well as infrastructure and business. The WMP could offer guidance for hazardous fuel reduction in watersheds as part of preservation of creek and multi-objective approach. The MND could serve as a foundation for complying with the California Environmental Quality Act (CEQA) for these projects.

Berkeley Resilience Strategy, April 1, 2016. City Manager's Office.

The Berkeley Resilience Strategy<sup>30</sup> advances preparedness and equity in Berkeley, a community known for inclusiveness and innovation. A city's resilience is defined by the ability of the community to survive, adapt, and thrive no matter what acute shock or chronic challenge it experiences. Advancing Berkeley's resilience requires working together to identify solutions that have multiple benefits and address multiple challenges at once.

On April 1, 2016, Berkeley released its Resilience Strategy, which identifies six long-term goals and short-term actions to help address some of Berkeley's most pressing challenges.

1. Build a connected and prepared community
2. Accelerate access to reliable and clean energy
3. Adapt to the changing climate
4. Advance racial equity
5. Excel at working together within City government to better serve the community
6. Build regional resilience

*Relevance to the CWPP:* The 2016 Resilience Strategy offers several long-term goals that support the CWPP especially those related to a prepared community and regional resilience including: prevention, safety and evacuation, regulations, policies and plans, infrastructure and business, recovery, and public health.

Berkeley Strategic Plan (2018). City Manager's Office

The City of Berkeley's Strategic Plan<sup>31</sup> identifies the long-term goals and short-term priorities that the City government will focus on to benefit the Berkeley community. Its goals include creating affordable housing and housing support services for the most vulnerable community members; being a global leader in addressing climate change, advancing environmental justice and protecting the environment; providing an efficient and financially healthy City government with state of the art well maintained infrastructure, amenities and facilities; foster a dynamic and sustainable and locally based economy; create a resilient safety connected and prepared community; be customer focused organization with excellent, timely, easily accessible service and information; and attract and retain a talented and diverse City Government workforce.<sup>32</sup>

Relevance to the CWPP: The Berkeley Strategic plan offers several goals that specifically address actions in the CWPP. These relate to the action plan priorities of prevention, safety and evacuation, regulations, policies and plans, infrastructure and business, recovery, partnerships

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<sup>30</sup><https://berkeleyca.gov/your-government/our-work/adopted-plans/berkeley-resilience-strategy>

<sup>31</sup> <https://berkeleyca.gov/your-government/our-work/strategic-plan>

<sup>32</sup> Strategic Plan, <https://berkeleyca.gov/your-government/our-work/strategic-plan> Accessed 1/30/23.

and community engagement and public health. Performance measures and progress on priorities are tracked with quarterly reports and posted to the City website. See quarter report July 2022 for detail under the goal of “resilient city.”

Climate Action Plan, 2009 + annual updates. Office of Energy and Sustainable Development.

The City of Berkeley’s Climate Action Plan<sup>33</sup> sets forth a vision of “a more sustainable, livable, equitable, and economically vibrant community. By using energy more efficiently, harnessing renewable electricity to power buildings, enhancing access to sustainable transportation, reducing waste, and building local food systems, Berkeley can keep dollars in the local economy, create new green jobs, and improve quality of life.”<sup>34</sup>

The Climate Action Plan focuses on an annual greenhouse gas (GHG) inventory to understand the sources of community-wide GHG emissions, to measure progress towards meeting the City’s Climate Action Plan (CAP) goals, and to move toward becoming a Fossil Fuel-Free city. Like previous annual inventories, Berkeley’s 2019 community-wide GHG inventory focuses on emissions specifically occurring within the City and includes the following sources: transportation (on-road vehicles and public transit), building electricity usage, building natural gas consumption, landfill solid waste, and emissions from water consumption and wastewater treatment.

The Berkeley Climate Action Coalition is a network of local non-profits, educational institutions, businesses, faith-based organizations, public health organizations, neighborhood groups, government agencies and committed individuals, all working together to implement the 40-year Berkeley Climate Action Plan. The Ecology Center, a non-profit organization, convenes the coalition.

Since the development of the 2009 plan there have been several statewide initiatives that have recognized wildfire as a component of Climate Action. Climate change vulnerability assessment and adaptation are now requirements for the safety element are specified in GC § 65302(g)(4).

The Integrated Climate Adaptation and Resiliency Program (ICARP) ([PRC 71350-71360](#)) drives California’s response to climate impacts, prioritizing equitable approaches that integrate mitigation and adaptation. ICARP’s home within the Governor’s Office of Planning and Research (OPR) enables the State to coordinate across local, regional, and state efforts to support cohesive strategies. ICARP achieves this statutory directive through four primary workstreams: policy and programmatic alignment, climate services, actionable climate science, and direct investments.

In August 2022, the Governor’s Office of Planning and Research issued an updated Fire Hazard Planning Technical Advisory and new Wildland-Urban Interface (WUI) Planning Guide. The City of Berkeley’s 2019 Local Hazard Mitigation Plan was showcased as a case study in the Technical Advisory.

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<sup>33</sup> [www.CityofBerkeley.info/climate](http://www.CityofBerkeley.info/climate)

<sup>34</sup> [Berkeley Climate Action Plan, 2009 + annual reports \(Feb. 2022\).  
https://berkeleyca.gov/sites/default/files/2022-05/February%208%202022%20CAP%20Workshop\\_Slides\\_final\\_0.pdf](https://berkeleyca.gov/sites/default/files/2022-05/February%208%202022%20CAP%20Workshop_Slides_final_0.pdf). Accessed 1/30/23



*Relevance to the CWPP:* There is no mention of wildfire hazards or mitigation in 2009 Climate Action Plan and subsequent annual progress updates. However, the final two items in the “vision for a more sustainable Berkeley” could incorporate wildfire impacts:

- *Our community is resilient and prepared for the impacts of global warming*
- *The social and economic benefits of the climate protection effort are shared across the community.*

Specifically, an updated Climate Action Plan that complies with new state requirements to address wildfire could support: prevention, resident mitigation, regulations, policies & plans, recovery, and public health.

## 2. Codes and Ordinances

The City of Berkeley’s Building and Safety, and Code Enforcement Divisions adopted the 2022 California Building Standards Code together with local amendments with an effective date of January 1, 2023<sup>35</sup>. These building codes and the enforcement process directly support the prevention and resident mitigation priority actions and are key tools in regulations, policies and plans supporting public health in the built environment.

The City has adopted several local amendments to the City of Berkeley code. Most notably, the City has incorporated additional restrictions for structures within the City’s designated fire hazard zones, including limitations on roofing materials, requirements for spark arrestors on appliances using solid fuel, and undergrounding of utilities. While these requirements may add to the cost of construction of residential units, they are necessary to help mitigate the risk of damage by wildfire in these areas. These codes can be found under Municipal Code Chapter 19.48.020 Amendments to CA Fire Code known as “Berkeley Fire Code” (BFC). Interior sprinklers (903.2.23). WUI (4902.1 - 4908). Berkeley Fire Code Chapter 48, Berkeley Building Code Chapter 7A. Adopt 2019 CA Fire Code and IFC 2018 edition.  
<https://berkeley.municipal.codes/BMC/19.48>

*Relevance to the CWPP:* In addition to the building and fire codes, there are several other codes that support the CWPP Action Plan areas of: prevention, safety and evacuation, resident mitigation, large scale treatment, regulations policies and plans, partnerships and community engagement and public health, including:

- Compliance standards for Defensible Space Inspections - Inspection Form. Refers to PRC 4291, CCR Title 14, Div 1.5, Cpt 4, Sub Chapter 3 Section 1299.
- Chapter 6.52 City Trees and coast live oak - <https://berkeleyca.gov/city-services/streets-sidewalks-sewers-and-utilities/city-trees-and-coast-live-oak-ordinance>.
- Chapter 7.80 Fire Prevention and Preparedness Assessment <https://berkeley.municipal.codes/BMC/7.80>
- Chapter 12.99 Wildfire Hazard Evacuation Risk Mitigation Ordinance. City of Berkeley 7799 Planning and zoning requirements are more conservative than those required by the State under 14CCR 1299.03. <https://berkeley.municipal.codes/BMC/12.99>

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<sup>35</sup> <https://berkeley.municipal.codes/>

- Chapter 17.08 Preservation and restoration of natural watercourses. <https://berkeley.municipal.codes/BMC/17.08>
- Chapter 19.28.030 CBC Chapter 7A materials and construction methods for exterior wildfire exposure. <https://berkeley.municipal.codes/BMC/19.28.030>
- Chapter 19.29.05 CRC Section R337 Materials and Construction Methods for Exterior Wildfire Exposure. <https://berkeley.municipal.codes/BMC/19.29.050>
- Chapter 21.40 Design requirements. <https://berkeley.municipal.codes/BMC/21.40>
- Chapter 23.108.020 Zoning Districts. <https://berkeley.municipal.codes/BMC/23.108.020>
- Chapter 23.202.070 ES-R Environmental Safety - Residential District (Panoramic Hill). <https://berkeley.municipal.codes/BMC/23.202.070>
- Chapter 23.210.020 Hillside Overlay Zones. <https://berkeley.municipal.codes/BMC/23.210.010>
- Chapter 23.306 Accessory Dwelling Units. <https://berkeley.municipal.codes/BMC/23.306.010>
- Ordinance 7680 amendments to CA Fire Code - adopt VHFHSZ pursuant to GC51179(1) and 14CCR1280.02 <https://berkeley.municipal.codes/BMC/19.48.020>

### 3. City of Berkeley Programs and Implementation Measures

Two voter approved measures, Measure FF (2020) and Measure GG (2008), provide funding for fire protection, emergency response and preparedness. Several of these programs focus on wildfire mitigation including:

- WUI Division: The Berkeley Fire Department Wildland-Urban interface Division was formed in 2021 with a dedicated Staff focused solely on citywide wildfire hazard mitigation and strengthening community wildfire resiliency.
- Defensible Space Inspection Program. Berkeley has expanded its' Defensible Space Inspection Program to all of Fire Zones 2 & 3. This encompasses Zones 2 and 3. Dedicated inspectors from the WUI Division inspect 8,600 parcels on an annual basis. The Defensible Space Inspection Program is open year-round, and each annual inspection cycle begins on May 1. Customized defensible space inspection software, "Fire Aside," provides personalized reports to property owners, including notice of defensible space code violations, a home hardening evaluation, and wildfire education resource links. Property owners can now clear violations with photo evidence online.
- Vegetation Removal Programs. The WUI Division is also working to develop a comprehensive WUI work plan that will provide strategic guidance for related work for the next five years. Plans are to expand existing programs and extend some services city-wide, including fuel reduction public land, roadside, private land incentives, debris bins, and city-wide chipping services. The last three years, Berkeley has removed nearly 300 hazardous trees mostly eucalyptus and Monterey Pine from city parks, paths, and street rights-of-way. Another roughly 40 trees have been trimmed or cut back.
- Safe Passages Program. The Fire Department and public works are expanding the Safe Passages program that effectively widens existing streets through identification of bottle

necks, installing red curb, remove parking etc. to improve evacuation and emergency access.

- Berkeley Ready. Berkeley Fire Department's Office of Emergency Services hosts Berkeley Ready<sup>36</sup> with disaster preparedness resources to help residents prepare their households and community for emergencies and disasters. The program addresses multiple hazards including wildfire. They offer training for Community Emergency Response Teams (CERT) emergency notifications, and a host of materials for creating a disaster plan, building supply kits, presentations on home hardening and fire weather preparation, links to plans, community resilience centers, BEACON network (Berkeley emergency accessible community organizations network), as well as disaster supply caches and dumpsters for neighborhood groups. Evacuation related programs include evacuation drills, use of AC Alert and Zonehaven evacuation zones for notifications<sup>37</sup>,
- Evacuation outdoor warning system. During July 2022, City of Berkeley introduced a new outdoor warning system. The first five speaking sirens were installed to alert residents about all types of emergencies and providing hyperlocal evacuation messages. Berkeley's speaking sirens system join the Oakland and UC Berkeley alert & warning sirens heard throughout the East Bay that indicate residents should follow local emergency broadcast news stations.
- Firewise Communities. The National Fire Protection Agency (NFPA) program, Firewise Communities, provides a framework for communities to develop and implement local solutions for wildfire preparedness. Beginning in 2022, new Firewise neighborhoods have been recognized, with more forming. The Firewise program has been recognized the California Insurance Commissioner and many insurance companies as an effective program to harness resident participation in prevention, safety and evacuation and resident mitigation. During the preparation of the CWPP, information was added to the Hub of existing and pending Firewise communities.
- Additional Measure FF programs include the creation of the Community Wildfire Prevention Plan, additional emergency vehicles, and a larger training facility.

*Relevance to the CWPP:* The Measure FF and GG programs tie directly to the Priority Action Plans including prevention, safety and evacuation, resident mitigation, wildfire response, large-scale landscape treatments, regulations policies and plans, partnerships and community engagement, and public health.

#### 4. Adjacent Agencies' Wildfire Hazard Reduction Plans and CWPPs

Adjacent cities and public lands management agencies share many of the goals identified in the Berkeley CWPP. Neighboring fire agencies respond through the mutual aid agreements and the State Emergency Management System. Plans and CWPPs include:

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<sup>36</sup> Disaster Preparedness resources. <https://berkeleyca.gov/safety-health/disaster-preparedness>  
Accessed 1/30/23.

<sup>37</sup> AC Alert: <https://member.everbridge.net/453003085612570/login> and Zonehaven  
<https://community.zonehaven.com/?latlon=37.869729601064535,-122.25564253984373&z=12&selected=US-CA-XAL-BER-E04> Accessed 1/30/23.

- Alameda County Community Wildfire Protection Plan, 2016
- Association of Bay Area Governments. Wildfires - how to preserve and protect housing, 2021.
- Contra Costa County CWPP, 2022.
- City of Albany - Albany Hill Master Plan 2012.
- City of El Cerrito/ Kensington Wildfire Action Plan, 2017.
- East Bay Municipal Utility District - Watershed Master Plan, 2018.
- East Bay Regional Parks District - Wildfire Management and Resource Management Plan, 2010.
- Lawrence Berkeley Laboratory - Wildland Fire Management Plan and Vegetation Management Guide, in progress.
- Oakland Vegetation Management Plan & EIR. In progress. Draft, 2020.
- Oakland Safety Element and Local Hazard Mitigation Plan, 2021.
- University of California, Berkeley - Wildfire Mitigation Plan and EIR, 2021.

*Relevance to the CWPP:* Shared mitigation approaches can begin to address some of the more difficult regional challenges identified in the CWPP, especially those concerning: safety and evacuation, wildfire response, large-scale landscape treatment, recovery, partnerships and community engagement and public health

## 5. Compliance with State Laws

State laws set minimum standards for local government in many areas of wildfire protection. Some state laws include incentives through grant programs, while others are unfunded mandates. New requirements are usually identified by the enabling legislation initiated either as Assembly Bills (AB) or Senate Bills (SB), that once passed and signed into law by the governor, are incorporated into sections in the Civil Code (CC), Government Code (GC) Public Resource Code (PRC), etc.

*Relevance to the CWPP:* Since the increase in devastating wildfire activity in 2017, many new California laws have been passed that have yet to take full effect. These new or forthcoming requirements support the CWPP Action Plan in areas of prevention, safety and evacuation, resident mitigation, large scale landscape treatments, regulations policies and plans, recovery, and public health. Recent legislation includes:

AB38 (2019) - Real estate transaction certifications.

As of July 1, 2021, AB-38 requires a seller of real property located in a High or Very High Fire Hazard Severity Zone (FHSZ) provide the buyer with documentation that the property is in compliance with defensible space requirements if the residential home was built before January 1, 2010. Disclosure requires documentation of compliance with Section 4291 of the Public Resources Code or local vegetation management ordinances. Disclosure is listed on the real estate Natural Hazard Disclosure (NHD) report as an AB-38 Notice.

AB747 (2019) - Evacuation routes: capacity, safety, and viability under range of scenarios.

This legislation requires, upon the next revision of a local hazard mitigation plan on or after January 1, 2022, that the safety element to be reviewed and updated as necessary to

identify evacuation routes and their capacity, safety, and viability under a range of emergency scenarios. Added to GC 65302.15.

#### AB1550 + SB535 (2012/ 2016) - Identification of priority populations.

Disadvantaged communities (DAC) in California are specifically identified for investment of proceeds from the state's Cap-and-Trade Program also known as "California Climate Investments (CCI)". These investments are aimed at improving public health, quality of life and economic opportunity in California's most burdened communities, and at the same time, reducing pollution that causes climate change. In 2016, Assembly Bill 1550 directed CalEPA to identify DACs and also established the currently applicable minimum funding levels from the CCI proceeds. Portions of Berkeley are identified as disadvantaged and low-income communities.<sup>38</sup> Projects in DAC areas are given precedence in grant applications related to State CCI funding.

#### AB1823 (2019). PRC 4290.1 - Fire Risk Reduction Communities

In 2019, Assembly Bill 1823 amended Public Resource Code Section 4290.1 to require that, on or before July 1, 2022, the State Board must develop criteria for and maintain a list of local agencies considered to be a "Fire Risk Reduction Community" located in the SRA or VHFHSZ, identified pursuant to GC § 51178, that meet best practices for local fire planning. Criteria be used to develop the Fire Risk Reduction Community list include recently developed or updated CWPPs, adoption of the board's recommendations to improve the Safety Element, participation in Fire Adapted Communities and Firewise USA programs, and compliance with the Board's minimum fire safety standards.

In 2022, the City of Berkeley applied for and was accepted onto the inaugural Fire Risk Reduction Communities List as one of only 32 local governments throughout California to meet the requirements. Continued coordination and consistency among the CWPP and other plans is important to retain this status as a Fire Risk Reduction Community meeting state recognized best practices and gaining precedence in grant applications related to State CCI funding.

#### AB2911 (2019). PRC 4290.5 - Subdivision Review Program

The Subdivision Review Program<sup>39</sup> was developed to fulfill the requirements of Assembly Bill 2911 (Friedman), and several goals of CAL FIRE's 2019 Strategic Plan. AB 2911 added Section 4290.5 to the Public Resource Code, which requires the CA Board of Forestry and Fire Protection (the Board), in consultation with the State Fire Marshal and the local jurisdiction to identify existing subdivisions with more than 30 dwelling units located in the State Responsibility Area (SRA) or Local Responsibility Area (LRA) Very High Fire Hazard Severity Zone, identified pursuant to Section 51178 of the Government Code, without a secondary means of egress route that are at significant fire risk. Additionally, the Board in

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<sup>38</sup> Priority populations map. <https://webmaps.arb.ca.gov/PriorityPopulations/> Accessed 1/30/23

<sup>39</sup> Subdivision Review Program. <https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/subdivision-review-program/> Accessed 1/30/23.

consultation with the State Fire Marshal and the local government that identified the subdivisions shall develop recommendations to improve the subdivision's fire safety.

The Subdivision Review Program is a resource that provides CAL FIRE Units and local jurisdictions support in fire hazard planning to:

1. Work collaboratively with CAL FIRE Units, Land Use Planning Program, and local jurisdictions in providing technical assistance related to specific fire hazard planning within the Safety Element of the General Plan.
2. Provide guidance on the Subdivision Map Act related to Very High Fire Hazard Severity Zones (VHFHSZ's).
3. Provide guidance and support to group leaders with the application process in becoming Firewise USA communities.
4. Assist local CAL FIRE Units to work cooperatively with local governments and stakeholders with the development and creation of more fire resilient communities.

The subdivision review program provides the CWPP the opportunity to implement safety and evacuation and wildfire response mitigation measures in vulnerable areas of the city. One such area has been identified as a subdivision with more than 30 dwellings without a secondary means of egress route and at significant fire risk. As of January 18, 2022, the status from CAL FIRE website is "Report Forthcoming."<sup>40</sup>

SB9 (2021) – Housing Development: Approvals.

SB9 "California Housing Opportunity and More Efficiency (HOME) Act," was adopted in 2021 and requires cities to allow one additional residential unit onto parcels zoned for single-dwelling units. SB9 is complementary with the ADU Law (GC 65852,2 and 65858,22). SB9 is but one housing law among many that have been adopted to encourage the production of homes across California. The Housing Element recognizes the need to coordinate ADU policies and zoning updates with the CWPP and Fire Department Standards of Coverage.<sup>41</sup>

SB99 (2019). Safety Element: Emergency evacuation routes.

SB99 amended GC65302 to require cities or counties to identify developments without two emergency evacuation routes, upon the next revision of the housing element (after January 1, 2020). Berkeley has identified Panoramic Hill as such a development (see AB2911).

SB246, SB379, SB1035 (2015, 2018). Integrated climate adaptation and resilience strategies with ICARP.

The Integrated Climate Adaptation and Resiliency Program (ICARP) ([PRC 71350-71360](#)) drives California's response to climate impacts, prioritizing equitable approaches that

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<sup>40</sup> Subdivision Review Program viewer. <https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=a045e9e9c01c4dd7abdf14ad30646eaf> Accessed 1/30/23.

<sup>41</sup> City of Berkeley Housing Element Update 2023-2031pg 145.

integrate mitigation and adaptation. ICARP's home within the Governor's Office of Planning and Research (OPR) enables the State to coordinate across local, regional, and state efforts to support cohesive strategies. ICARP achieves this statutory directive through four primary workstreams<sup>42</sup>:

1. **Policy and Programmatic Alignment:** ICARP aligns and coordinates adaptation at all levels of government via the Technical Advisory Council, the California Climate Adaptation Strategy, long-term disaster recovery and resilience, and more.
2. **Climate Services:** ICARP supports a statewide community of adaptation practitioners through direct technical assistance at the local and regional levels; decision-support tools such as the Adaptation Clearinghouse, Vulnerable Communities Platform, and Cal-Adapt; and coordinating with other State agencies to align climate adaptation guidance and other resources.
3. **Actionable Climate Science:** ICARP coordinates the California Climate Assessment, a Science Advisory Group, and other state-funded climate science research, data, tools, and initiatives.
4. **Direct Investments:** ICARP manages three new climate resilience grant programs and supports state and federal funding and finance alignment through a Cooperative Technical Partners agreement with the Federal Emergency Management Agency (FEMA).

SB1241 + SB2160. Include fire risk in SRA and VHFHSZ in safety element.

SB1241 and SB2160 require local government include considerations from OPR Fire Hazard Planning. They also require local government transmit information on local fire hazard severity zones, the safety element and tentative map or parcel map to the California Board of Forestry to review. This includes fire hazard mapping such as Berkeley's "hillside overlay" and maps in Berkeley's LHMP that show emergency service facilities. Future updates will need to identify areas lacking service and map of roads that do not conform to current standards. Also needed are map of developments that do not conform to current state and local standards for access, water supply, fire flow, signage, and vegetation clearance.

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<sup>42</sup> About ICARP <https://opr.ca.gov/climate/icarp/> Accessed 1/30/23.

# Appendix D. General Plan S-23 Disaster Preparedness and Safety Element, Adopted April 23, 2002

## **Fire Hazards**

### *Policy S-21 Fire Preventive Design Standards*

Develop and enforce construction and design standards that ensure new structures incorporate appropriate fire prevention features and meet current fire safety standards.

#### Actions:

- A. Strengthen performance review and code enforcement programs.
- B. Promote the installation of built-in fire extinguishing systems and early warning fire alarm systems.
- C. Maintain City standards for minimum width and vertical clearance, and ensure that new driveways and roadways meet minimum standards of the Uniform Fire Code or subsequent standards adopted by the City.
- D. Provide adequate water for fire suppression for new development in accordance with City standards for minimum volume and duration of flow.
- E. Establish criteria for the installation of gas shutoff valves in new and existing construction, to reduce the risk of post-earthquake fires.

### *Policy S-22 Fire Fighting Infrastructure*

Reduce fire hazard risks in existing developed areas.

#### Actions:

- A. Develop proposals to make developed areas more accessible to emergency vehicles and reliable for evacuation. Consider restricting on-street parking, increasing parking fines in hazardous areas, and/or undergrounding overhead utilities. Require that all private access roads be maintained by a responsible party to ensure safe and expedient passage by the Fire Department at any time, and require approval of all locking devices by the Fire Department. Ensure that all public pathways are maintained to provide safe and accessible pedestrian evacuation routes from the hill areas. (Also see Transportation Policies T-28 and T-52.)
- B. Evaluate existing access to water supplies for fire suppression. Identify, prioritize, and implement capital improvements and acquire equipment to improve the supply and reliability of water for fire suppression. Continue to improve the water supply for fire fighting to assure peak load water supply capabilities. Continue to work with EBMUD to coordinate water supply improvements. Develop aboveground (transportable) water delivery systems.
- C. Provide properly staffed and equipped fire stations and engine companies. Monitor response time from initial call to arrival and pursue a response time goal of four minutes from the nearest station to all parts of the city. Construct a new hill area fire station that has wildland fire fighting equipment and ability.



*Policy S-23 Property Maintenance*

Reduce fire hazard risks in existing developed areas by ensuring that private property is maintained to minimize vulnerability to fire hazards.

Actions:

- A. Continue and expand existing vegetation management programs.
- B. Property owners shall be responsible for maintaining their structures at a reasonable degree of fire and life safety to standards identified in adopted codes and ordinances.
- C. Promote smoke detector installation in existing structures. Require the installation of smoke detectors as a condition of granting a permit for any work on existing residential and commercial buildings and as a condition for the transfer of property.
- D. Promote fire extinguisher installation in existing structures, particularly in kitchens, garages, and workshops.
- E. Require bracing of water heaters and gas appliances and the anchoring of houses to foundations to reduce fire ignitions following earthquakes.

*Policy S-24 Mutual Aid*

Continue to fulfill legal obligations and support mutual aid efforts to coordinate fire suppression within Alameda and Contra Costa Counties, Oakland, the East Bay Regional Park District, and the State of California to prevent and suppress major wildland and urban fire destruction.

Actions:

- A. Work with inter-agency partners and residents in vulnerable areas to investigate and implement actions to improve fire safety, using organized outreach activities and councils such as the Hills Emergency Forum and the Diablo Fire Safe Council.
- B. Establish close coordination with the California Department of Forestry to minimize the risk of wildland fire in the hill areas.

*Policy S-25 Fire Safety Education*

Use Fire Department personnel to plan and conduct effective fire safety and prevention programs.

Actions:

- A. Provide fire safety presentations and programs to local schools, community groups, and neighborhoods.
- B. Provide fire safety classes for high-occupancy institutional land uses, and commercial and industrial occupancies.
- C. Develop and implement a program to improve public awareness and disseminate appropriate warnings during times of high fire danger.

Memorandum

TO: City Council

FROM: Disaster and Fire Safety Commission  
W. Bradstreet, Chair

DATE: April 27, 2023

SUBJECT: Recommend That City Council Adopt The Final Draft Of the Community Wildfire Protection Plan

**Recommendation:**

The Disaster and Fire Safety Commission (DFSC) is requesting that Berkeley City Council adopt the Final Draft of the Community Wildfire Protection Plan (CWPP).

**Background:**

As the 2023 fire season rapidly approaches, the Disaster and Fire Safety Commission (DFSC) supports and recommends the approval of the City of Berkeley's Community Wildfire Protection Plan (CWPP). Our City is in critical need of action to support greater wildfire resilience in the face of climate change. This CWPP will provide a guiding framework for local agencies and residents to identify, prioritize, and mitigate risk; and will spur greater capacity to leverage additional state and federal resources for wildfire resiliency.

There is no mistaking the rise of catastrophic wildfire in California in recent years. In 1991, the Tunnel Fire claimed twenty-five lives and destroyed three-thousand two-hundred eighty housing units. The wounds from this event are still imprinted on many of the City's long-standing residents and have spurred significant efforts to reduce risk. However, forecasts reveal that future fires in the region will rise in intensity and frequency. Simultaneously, the number of residents living in fire-prone regions is anticipated to rise. Climate-drive wildfires often exceed the capacity for response systems, such as state and local firefighters, to operate, leaving mitigation and prevention as the main vehicles to disaster avoidance. The urgency for action cannot be understated.

We must take meaningful measures to reduce wildfire exposure for current and future residents. The DFSC asks you to take a substantive step towards adaptation and resiliency against climate-induced wildfires.

For this reason, the DFSC supports the passage of this CWPP with these suggested changes to the Draft:

- Second paragraph states that "Some of the key goals of the City of Berkeley CWPP...are..." Commission recommended that this section summarize all key goals, rather than some. (Pg. 4)

- Language on page 9 describing the geographic boundaries of the CWPP hazard analysis are difficult to understand. Recommend clarifying that the “1000 foot buffer” that is referenced here as “1000 feet from the westerly border of fire Zone 2”. (Pg. 9)
- included language that incorrectly suggested that lives and housing lost in Tunnel Fire were in Berkeley. Recommend clarifying specific impacts to Berkeley and/or clarifying that while Oakland suffered these impacts, Berkeley was threatened/impacted by the proximity of the threat. (Pg. 19)
- Recommends that the Action Plan chart on page 37 (currently Subsection D3) be moved up in the section, so that it falls in Subsection D1, immediately before the section describing Funding Sources (Subsection D2). This recommendation was made to improve the continuity and logical flow of the section. (Pg. 32-37)
- There is a reference to the Demonstration Garden at Fire Station 4. Please identify the address of Station #4 – 1900 Marin Ave, and provide more detail about the defensible space guidelines this space seeks to demonstrate. (Pg. 40)

Vote: 5 Ayes: W. Bradstreet, T. Gordon, S. Dean, G. Murphy, H. Raines; 0 Noes; 2 Absent: J. Bedolla, A. Stein; 0 Abstain





Office of the City Manager

WORKSESSION

May 16, 2023

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: David Sprague, Fire Chief

Subject: Fire Department Facilities Master Plan

INTRODUCTION

The purpose of the Berkeley Fire Department (Department) Facilities Master Plan (FMP) is to provide City leaders with a ten-year strategic approach for addressing the City's aging, undersized, and outdated essential facilities to meet today's needs and anticipated demands on Berkeley's fire and emergency services. The FMP recommends a series of facility improvements necessary to support the Department's mission, comply with building codes and industry standards, and align with best practices in ways that are fiscally responsible in fulfilling the forward-looking mission of the Department.

CURRENT SITUATION AND ITS EFFECTS

Most of Berkeley's fire stations were built in the 1960's and received seismic upgrades in the 1990's. The Training Facility was built in 1996, the Public Safety Building in 2000, and Station 7 in 2006. Based on existing conditions assessments, the FMP team found that since their original construction, most Department facilities have undergone some modifications but not to the extent necessary to properly house modern apparatus, equipment, additional units and new staff, nor to meet current policy, codes and health, safety and inclusion standards. Additionally, many of the stations house outdated features (such as hose drying towers) and hinder healthy environmental practices (such as physical training in apparatus bays). Without further renovation, replacement or relocation, the stations will continue to fall short of addressing the present-day needs and expanding and changing operational demands.

## Approach and Recommendations

The FMP team walked all ten properties used by the Fire Department and reviewed provided documentation relevant to the structures and programmatic needs. With each facility, the FMP team first sought the most fiscally conservative renovation approach to accommodate the evolving mission, changes to staffing and adoption of best practices at each site. When these planning priorities could not be met through renovation, the FMP team looked at accommodating operational needs with a new structure on either

existing or expanded sites. In instances where renovation or new construction on existing or expanded sites was not feasible, the team recommended relocation to a new site.

#### Fire Stations 3, 6, and 7 - RENOVATION AND EXPANSION

These stations and their sites are of a size and configuration that can be expanded and operationally upgraded in their current locations, substantially reducing project costs compared to new construction.

#### Fire Stations 2, 4, and 5 - REPLACEMENT ON SITE

These fire stations are too small for current and projected needs and require replacement to accommodate the expanded mission, increased staffing, larger and more apparatus and safe operating conditions. The existing sites of Station 2 and 5 are of ample size to accommodate new larger stations. The proposal at Station 4 includes an expansion into the adjacent roadway, yielding substantial cost savings over what would otherwise be incurred with relocation.

#### Fire Station 1 - RELOCATION

The current Station 1 building and site are too small to accommodate the increase in staffing and the new units needed within this response area. The existing and expanded Fire Station 1 units and operations are proposed to be relocated to a new site (yet to be identified) within the response area.

#### Fire Administration - RELOCATION

The administration functions including recently expanded staffing across most divisions, the newly established Wildland Urban Interface (WUI) Division, and the needed ambulance deployment center do not fit in the currently designated spaces within the Public Safety Building at 2100 Martin Luther King Jr. Way. This Master Plan includes a preliminary spatial program for a BFD Headquarters in a larger location.

#### Fire Training Center - RELOCATION

The existing Training Center on Cedar Street no longer supports the training needs of a modern fire department. The site is undersized and located in a residential neighborhood, which has created an untenable situation for neighbors and unrealistic limitations on the type of training events that can be conducted, the hours that training can occur, and the parking needs for trainers and trainees. BFD is currently collaborating with Albany, El Cerrito, and Richmond Fire Departments to identify appropriately sized and zoned sites that could be shared and would work for all jurisdictions. A portion of the current training site at Cedar Street will be used for the expansion of Station 6. The remaining training building could be modified for use as a

meeting hall and for staff accommodations during unplanned fluctuations in service demand due to emergencies such as wildfire urban interface fire events, extreme climate events, and seismic events.

#### Fire Warehouse - REMODEL

The existing Warehouse between Folger and Heinz, although small, remains useful as a central supply depot and overflow storage for reserve and specialty apparatus. A project is currently underway to add office space inside the warehouse to make the facility more usable.

#### BACKGROUND

The evolving and expanding mission of the Berkeley Fire Department has led to many changes within the Department's response and delivery since its founding in 1904. There have also been significant external changes within the larger firefighting community and the world. These operational changes include:

- Increased call volume from 6,300 annual calls in 1995 for structure fires and medical emergencies to 16,000 annual calls in 2022 for a broad range of emergencies. There have been recent further jumps in daily calls volume due to climate change induced extreme weather events.
- Apparatus have grown in size in order to accommodate firefighters and the equipment necessary to accomplish the modern all-hazards mission of the fire service. There has also been an increase in the type and number of units to include specialty units for wildland engines, ambulances, off road vehicles and boats.
- Best practices for fire stations have been updated to include fire station layouts that limit firefighters' exposure to carcinogens. This includes dedicated turnout and decontamination rooms, dedicated fitness rooms, airlock separation between apparatus bays and living quarters, and reorganized circulation.
- The City of Berkeley and the Department are dedicated to moving towards an all-electric infrastructure. Electrification of both the stations and the apparatus is a future goal of the Department to support the health of firefighters and the larger community.
- The diverse and inclusive workforce of the Department calls for increased privacy and accessibility within the stations. Gender neutral restrooms, single occupancy bedrooms, and dedicated offices for supervisors are needed. Accessibility laws also dictate that the stations be accessible for both the community and the firefighters.

These internal and external changes can no longer be accommodated within the existing fire stations and support facilities. The FMP outlines specific station needs and proposes modifications necessary to bring each of the stations into alignment with codes, industry standards, and the Department mission and culture.

### ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Electrification of the Fire Fleet: The Department is actively researching electrification of its fleet to meet the City's long-term goals outlined in the Municipal Fleet Electrification Plan. According to current policy, any new construction in Berkeley is required to be all-electric. Going all-electric for buildings and the fleet will require significant revisions to the site power supply including:

- Changing the type of power entering the building (from single to three-phase in most instances)
- Increasing the electrical service to 800 or 1200 amps
- Installing solar arrays and energy storage systems

This move improves health and safety at stations and addresses environmental considerations by:

- Improving indoor air quality by eliminating natural gas (for heating and cooking) in the buildings
- Decreasing fossil fuel reliance and carbon pollution by providing electric charging stations for fire department vehicles and apparatus, and staff's personal electric vehicles
- Employing clean energy sources while the power grid is up and during emergencies when it is down.

Council will need to provide direction to Staff as to whether fire stations should be electrified prior to a full remodel or replacement. Costs associated with both electrification and the purchase of these types of apparatus will be significant. The cost to electrify the stations will be approximately \$500,000 each. Electrical apparatus is currently double the cost of a typical diesel-powered apparatus.

### Operational Changes Secondary to Climate Change

According to a 2023 United Nations climate change report, human-caused climate change is already affecting weather and climate extremes in every region across the globe. These extreme events are leading to the increased demand for fire department services. The two weather events which are major contributors to increased call



volumes for the Department are wildfires and atmospheric rivers. Climate change projections predict that atmospheric rivers will become the main source of precipitation in western North America. This will lead to an even more pronounced “flood or drought” climate in California. The prevalence of major wildfires in drought years and the prevalence of ground saturation and flooding in wet years will impact the fire department.

The record-breaking call volume days of January 4th, 2023 and March 21-22, 2023 were both during an atmospheric river event. Moving forward the Department will need space to provide emergency accommodations for additional staff during these surges in demand

#### POSSIBLE FUTURE ACTION

Direction to pursue a bond measure to fund part or all of the proposed projects.

#### FISCAL IMPACTS OF POSSIBLE FUTURE ACTION

The budgets reflected below are known as an “Order of Magnitude Cost Plan.” As a perspective, an order of magnitude cost model has the objective of identifying costs within an order of magnitude. The budget is not meant to be the lowest possible, rather, to identify the order of Magnitude of costs in considering next steps. A range of costs was used for planning purposes. The ranges below do not include escalation beyond 2024, property acquisition costs nor program management costs. They include all construction, equipment and furnishings costs, plus fees for design, environmental review, permits, etc., associated with project delivery. In the recommended development phasing scenario, the initial focus is on the projects with highest call load and largest staffing numbers. Station 1 was proposed to be implemented first because it is a relocation project. Once a new Station One is complete and online, the existing original Station One can be used as temporary housing for the future replacement projects.

**SEQUENCED PROJECTS**

*Rough Order of Magnitude Costs*

<i>Design Start</i>		<i>LOW x \$ Million</i>	<i>HIGH x \$ Million</i>
2024	<b>Fire Station 1</b> Relocation New site on/near San Pablo Ave	\$42	\$47
2026	<b>Fire Station 2</b> Replacement Temporary Location - Station 1, 4, 5	\$51	\$56
2028	<b>Fire Station 5</b> Replacement Temporary Location - Station 1, 4, 2	\$53	\$58
2030	<b>Fire Station 4</b> Replacement Temporary Location - Station 2, 6	\$36	\$41

**INDEPENDENT PROJECTS**

*Rough Order of Magnitude Costs*

<i>Design Start</i>		<i>LOW x \$ Million</i>	<i>HIGH x \$ Million</i>
2023	<b>New Headquarters</b> Site TBD	\$33	\$36
2023	<b>Training Center</b> Phase 1 Renovation Phase 2 Replacement Regional Site TBD	\$81	\$90
2026	<b>Fire Station 3</b> Renovation + Expansion Temporary Location - Station 2, 5	\$12.0	\$16
2028	<b>Fire Station 6</b> Renovation + Expansion Temporary Location - Trailer on site	\$11.6	\$15
2030	<b>Fire Station 7</b> Renovation + Expansion Temporary Location - TBD	\$10.0	\$13
<b>TOTAL Rough Order of Magnitude Project Cost</b>		<b>\$330</b>	<b>\$372</b>

CONTACT PERSON

David Sprague, Fire Chief, Fire Department, (510) 981-3473,

Attachments:

- 1: Berkeley Fire Facilities Master Plan Volume I (Report)
- 2: Berkeley Fire Facilities Master Plan Volume II (Station Layout/Design)
- 3: Berkeley Fire Facilities Master Plan Volume II (Mixed-Use Fire Station Case Studies)
- 4: Berkeley Fire Facilities Master Plan Presentation



CITY OF BERKELEY

# BERKELEY FIRE DEPARTMENT MASTER PLAN

## VOLUME I

DRAFT MAY 08, 2023



SIEGEL & STRAIN Architects |

MARY MCGRATH | ARCHITECTS



**The Berkeley Fire Department protects life, property, and the environment through emergency response, prevention, and community preparedness.**

In 1877, the year before Berkeley incorporated as a town, several West Berkeley residents banded together to form a volunteer hose-and-bucket brigade. On August 21, 1882, the Berkeley Board of Town Trustees officially recognized Beacon #1 Fire Company as the Volunteer Fire Department. A 1,000-pound bell was installed in the nearby Church of the Good Shepherd tower to serve as both a church bell and fire alarm. The Town Trustees established the Paid Fire Department on October 1, 1904. James Kenney was appointed the first fire chief. Ironically, Town Hall burned down on October 22, just a few weeks later, after attic wires sparked a blaze.

For over 100 years the Berkeley Fire Department organization has built an unmatched legacy of trust in the community. The core of the Department's strength comes from its members' fundamental commitment to excellent customer service, high professional standards and their commitment to one another.

Today, the Department provides 24-hour response to emergencies including fires, medical emergencies, hazardous materials events, technical rescue, utility emergencies, water rescue, disaster response, active shooter, vehicle extrication, and other life-threatening situations.



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A. BFD MASTER PLAN EXECUTIVE SUMMARY





## A. EXECUTIVE SUMMARY

**THE PURPOSE OF THE BERKELEY FIRE DEPARTMENT MASTER PLAN (FDMP)** is to provide City leaders with a ten-year strategic approach for addressing the City's aging, undersized, and outdated essential facilities to meet today's needs and anticipated demands on Berkeley's fire and emergency services. The Berkeley Fire Department Master Plan recommends a series of facility improvements necessary to support its mission, comply with building codes and industry standards, and align with best practices in ways that are fiscally responsible in fulfilling the forward-looking mission of the Berkeley Fire Department.

**THE EVOLVING AND EXPANDING MISSION** of the Berkeley Fire Department has led to many changes within the Department's response and delivery since its founding in 1904. The range of operational factors facing the larger firefighting community and the world, and within BFD has increased significantly over time. These operational changes include:

- > Increased local call volume from 6,300 annual calls in 1995 for structural fires and medical emergencies to 16,000 annual calls in 2022 for a broad range of emergencies. The volume of daily calls in one 24-hour period in March 2023 due to an extreme weather event was 292 calls, compared to an average of 44 daily calls in 2022.
- > Apparatus have grown in size in order to accommodate firefighters and the equipment necessary to accomplish the modern all-hazards mission of the fire service. The type and number of specialty units, such as those for wildland engines, ambulances, off-road vehicles and boats, has also increased.
- > Best practices for fire stations have evolved to include space layouts that limit firefighters' exposure to carcinogens. This includes dedicated turnout and decontamination rooms, dedicated fitness rooms, airlock separation between apparatus bays and living quarters, and reorganized circulation.
- > The City of Berkeley and the BFD are dedicated to moving towards an all-electric infrastructure. Electrification of both the stations and the apparatus is a future goal of the Department to support the health of firefighters and the larger community, and to reduce carbon emissions.
- > The diverse and inclusive workforce of the Department calls for increased privacy and accessibility within the stations. Gender neutral restrooms, single occupancy bedrooms, and dedicated offices for supervisors are needed. Americans with Disability Act (ADA) and other local laws also dictate that the stations be accessible for both the community and the firefighters.

These internal and external changes can no longer be accommodated within the existing fire stations and support facilities. Volume II of this Master Plan outlines specific station needs and proposes modifications necessary to bring each of the stations into alignment with codes, industry standards, and the Berkeley Fire Department mission and culture.

**FACILITIES EXISTING CONDITIONS:** Most of Berkeley's fire stations were built in the 1960's and received seismic upgrades in the 1990's. The Training Facility was built in 1996, the Public Safety Building in 2000, and Station 7 in 2006. Based on existing conditions assessments, the FDMP team found that since their original construction, most BFD facilities have undergone some modifications but not to the extent necessary to properly house modern apparatus, equipment, additional units and new staff, nor to meet current policy, codes and health, safety and inclusion standards. Additionally, many of the stations house outdated features (such as hose drying towers) and hinder healthy environmental practices (such as physical training in apparatus bays). Without further renovation, replacement or relocation, the stations will continue to fall short of addressing the present-day needs and expanding and changing operational demands.

**BFD is approaching an acute situation of not being able to meet the expressed needs of the community due to a lack of adequate facility space.**



**MASTER PLAN SITES:** The FDMP scope includes ten (10) properties used by the Berkeley Fire Department:

- > Seven (7) fire stations
- > Division of Training
- > Headquarters
- > Warehouse on Folger/Heinz



**APPROACH AND RECOMMENDATIONS:** The FDMP team walked all ten properties used by the Fire Department and reviewed provided documentation relevant to the structures and programmatic needs. With each facility, the FDMP team first sought the most fiscally conservative renovation approach to accommodate the evolving mission, changes to staffing and adoption of best practices at each site. When these planning priorities could not be met through renovation, the FDMP team looked at accommodating operational needs with a new structure on either existing or expanded sites. In instances where renovation or new construction on existing or expanded sites was not feasible, the team recommended relocation to a new site.

#### **Fire Stations 3, 6, and 7 - RENOVATION AND EXPANSION**

These stations and their sites are of a size and configuration that can be expanded and operationally upgraded in their current locations, substantially reducing project costs compared to new construction.

#### **Fire Stations 2, 4, and 5 - REPLACEMENT ON SITE**

These fire stations are too small for current and projected needs and require replacement to accommodate the expanded mission, increased staffing, larger and more apparatus, and safe operating conditions. The existing sites of Station 2 and 5 are of ample size to accommodate new larger stations. The proposal at Station 4 includes an expansion into the adjacent roadway, yielding substantial cost savings over what would otherwise be incurred with relocation.

#### **Fire Station 1 - RELOCATION**

The current Station 1 building and site are too small to accommodate the increase in staffing and the new units needed within this response area. The existing and expanded Fire Station 1 units and operations are proposed to be relocated to a new site (yet to be identified) within the response area.

#### **Fire Administration - RELOCATION**

The administration functions including recently expanded staffing across most divisions, the newly established Wildland Urban Interface (WUI) Division, and the needed ambulance deployment center do not fit in the currently designated spaces within the Public Safety Building at 2100 Martin Luther King Jr. Way. This Master Plan includes a preliminary spatial program for a BFD Headquarters in a larger location.

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The existing Training Center on Cedar Street no longer supports the training needs of a modern fire department. The site is undersized and located in a residential neighborhood, which has created an untenable situation for neighbors and unrealistic limitations on the type of training events that can be conducted, the hours that training can occur, and the parking needs for trainers and trainees. BFD is currently collaborating with Albany, El Cerrito, and Richmond Fire Departments to identify appropriately sized and zoned sites that could be shared by the jurisdictions. A portion of the current training site at Cedar Street will be used for the expansion of Station 6. The remaining training building could be modified for use as a meeting hall and for staff accommodations during unplanned fluctuations in service demand due to emergencies such as wildfire urban interface fire events, extreme climate events, and seismic events.

#### **Fire Warehouse - REMODEL**

The existing Warehouse located at 1011 Folger, although small, remains useful as a central supply depot and overflow storage for reserve and specialty apparatus. A project is currently underway to add office space inside the warehouse to make the facility more usable.

B. BFD MASTER PLAN BACKGROUND





## B. BFD MASTER PLAN BACKGROUND

In 2021, the Berkeley Fire Chief and the Public Works Director, both new to their positions, realized that there was not a long-term plan that evaluated the current state of Fire Department facilities or provided a roadmap for known or projected renovation or replacement. They identified the need to create a Fire Department Master Plan (FDMP). This plan is one of five foundational studies that the Berkeley Fire Department (BFD) has undertaken over the last few years which collectively aim to provide a clear set of priorities that the City can use over the next years to guide improvements. The other foundational efforts are:

**Berkeley's Community Wildfire Protection Plan (CWPP)**, initiated in 2022, will organize a community's efforts to protect itself from wildfire, and empower citizens to move in a cohesive, common direction. This includes goals for improving wildfire response, community preparedness, fuel management, infrastructure, ignition reduction, home hardening, and more. The CWPP draft plan is currently under review with a final plan to be adopted in spring of 2023.

**Standards of Coverage and Community Risk Assessment Study (SOC)**, conducted in 2022-2023 defined appropriate levels of service based on a comprehensive analysis of a number of factors: historical performance; expectations; existing and projected community risk factors, hazards, population growth and aging, topography, the density and vertical growth of the build environment; and performance as compared to national standards and best practices. The report outlines five strategies to improve acute emergency response time, four of which have spatial implications for the fire stations that have been addressed by the FDMP. These include: increase in the number of ambulances; creation of a Mobile Integrated Paramedic (MIP) program; increase of staffing on key engines; and addition of a second Battalion Chief.

**Internal Berkeley Fire Department Reorganization**, which started in 2015, is a comprehensive re-organization of the Department designed to result in a more efficient response system, strengthen the existing culture that is community and employee centric, create pathways from the community to career positions, and build an organization that is better able to respond to the changing needs and risk of our community. These priorities are accounted for in the FDMP by proposing reconfigurations to stations to better serve both the community and the BFD.

**Dispatch Needs Analysis (DNA)**, in December of 2021 the Department contracted with Federal Engineering Inc. to conduct a comprehensive needs assessment of the Berkeley Communications Center in response to City Council's request to enhance operations to meet the community's growing needs under the omnibus reimagining package. The project will examine existing dispatch capabilities and the City's goals to develop a path forward on how to triage calls, divert non-emergency calls—including mental health calls—to appropriate resources, and implement the delivery of emergency medical instructions to callers. Federal Engineering Consultants' work will result in a wide-ranging plan that recommends adjustments to staffing, hardware and software, implementation of pre-arrival and emergency medical dispatch systems, diversion of sub-acute calls to the most appropriate resource, training for dispatchers, and dispatch center facilities.

B. BFD MASTER PLAN BACKGROUND

**Kitchell Facilities Condition Assessment**, completed in August of 2021, documents the existing conditions of the ten BFD facilities owned by The City of Berkeley. The object of the assessment was to understand the deficiencies of the buildings, proposed maintenance and corrections, and create budgets for the work at each facility. The assessment report also includes a facility condition needs index that is accounted for in the FDMP.

**Each of these four studies articulate goals and aspects that impact BFD facilities and, as such, have influenced the Berkeley Fire Department Facilities Master Plan and its planning process.**



## C. FACILITIES MASTER PLAN PURPOSE & GOALS

**THE PURPOSE** of this Fire Department Master Plan (FDMP) is to provide the City of Berkeley leaders and policy makers with a multi-year strategic approach for addressing the City's aging, undersized, and outdated essential facilities to meet today's needs and anticipated demands on Berkeley's fire and emergency services.

The FDMP recommends a series of renovations and replacement of the Fire Department's critical facilities needed to support its mission, comply with building codes and industry standards, and align with best practices in ways that are fiscally responsible and fulfill the forward-looking mission of the Berkeley Fire Department.

As a planning tool, this document is meant to help prioritize and inform capital improvement decisions necessary for the City to develop a funding and implementation plan.

**SPECIFIC PLANNING GOALS** for Fire Department Master Plan focus on:

1. Improving, expanding and/or replacing each of the City's fire stations so that they support current fire operations and have flex capacity as the mission of the fire service evolves both in day-to-day call volume and in the event of major disasters.
2. Integrating improved health, safety and personnel needs of the first responders, including reduced exposure to carcinogens, into the design and operations of Fire Department facilities.
3. Relocating current and expanding Fire Department Headquarters functions to a facility that can accommodate growing needs including: a fully functional office setting for fire department support; an Emergency Operations Center (EOC) which can be used as a conference room or classroom outside of emergency conditions; and a deployment center for additional ambulances.
4. Identifying a suitable location for the delivery of future proposed integrated community health programs which provide resources for the under-insured and other high-volume system users that require services other than ambulance trips and emergency room visits.
5. Developing facilities improvement proposals that are adequate and appropriate in meeting and not exceeding established needs through renovation where feasible, or relocation or replacement where renovation is not feasible. The development improvements must demonstrate the trust the Fire Department has established with the community and be respectful of the public funds.

D. OPERATIONAL CHANGES

EVOLVING BERKELEY FIRE DEPARTMENT MISSION

1980	1990s	2000	2010	2015-2020
Structure Fires (Low Rise)	Structure Fires	Structure Fires	Structure Fires	Structure Fires
Fire Prevention	Fire Prevention	Fire Prevention	Fire Prevention	Fire Prevention
	Emergency Medical	Emergency Medical	Emergency Medical	Emergency Medical
	Disaster Preparedness	Disaster Preparedness	Disaster Preparedness	Disaster Preparedness
	Hazardous Materials	Hazardous Materials	Hazardous Materials	Hazardous Materials
	Wildland Firefighting	Wildland Firefighting	Wildland Firefighting	Wildland Firefighting
		Weapons of Mass Destruction	Weapons of Mass Destruction	Weapons of Mass Destruction
		Vehicle Extrication	Vehicle Extrication	Vehicle Extrication
		Technical Rescue	Technical Rescue	Technical Rescue
			Active Shooter	Active Shooter
			Water Rescue Swimmer	Water Rescue Swimmers
				Routine Urban Interface Firefighting
				Vocational Education
				Boat Operations
				Pandemic Response
				Community Response Medicine
				EV Fires & Battery Management
				HighRise/Tall Building Firefighting

The Berkeley Fire Departments mission and responsibilities have evolved and expanded over the last 50 years.



## D. OPERATIONAL CHANGES

BFD is approaching an acute situation of not being able to meet the expressed needs of the community due to a lack of adequate facility space required to accommodate a number of operational changes. Only few of these needs have been properly considered or addressed in the Department's budget or space allocations. This Master Plan chapter documents the drivers behind the space needs, and Volume II documents high-level space plans that address these needs.

**EVOLVING MISSION:** The work of fire departments is constantly evolving and expanding. In most fire departments today, putting out fires is just a small part of a day's work. External and internal factors alike have influenced the arc of BFD's evolving mission.

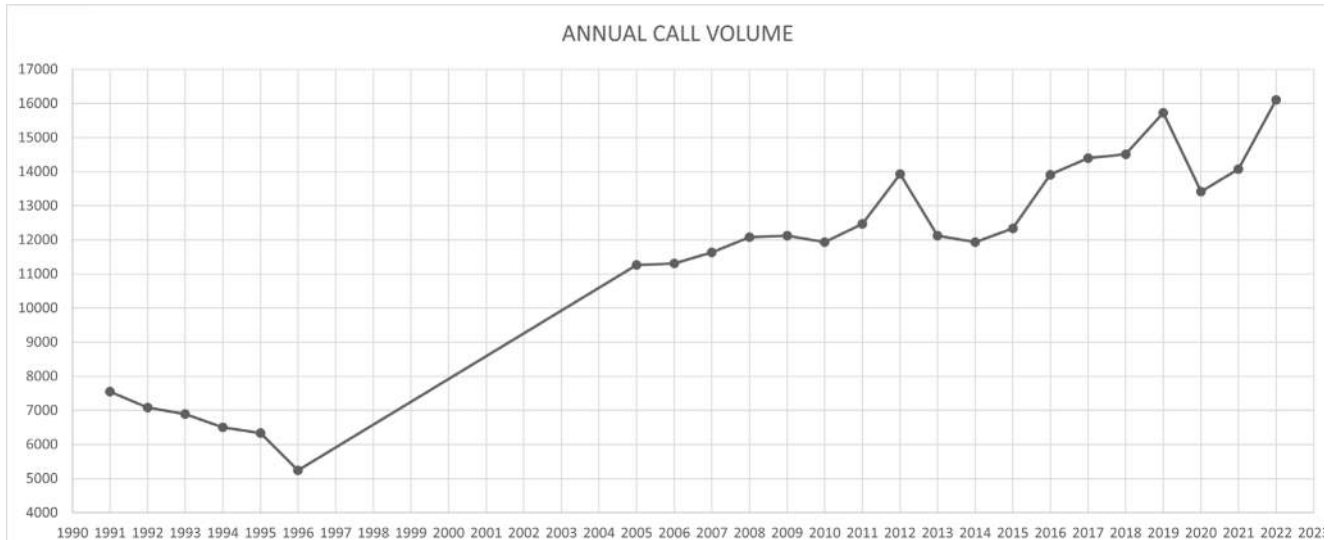
Over the years well-intentioned fire administrators and firefighters alike have seen a natural logic in tasking themselves with response capabilities motivated by the instinct to be ready to mitigate anything life throws at the Berkeley community. In the 1970s doctors home from the war in Vietnam introduced emergency medicine into firefighting. Hazardous materials response emerged in the 1990s. BFD's water rescue unit emerged from the bottom up in the early 2000's when firefighters jumped in the Bay in their underwear to rescue a drowning civilian. The number of specialty disciplines that BFD has taken on since with little to no training or infrastructure support is simultaneously impressive and staggering. While firefighters are now properly cross-trained, the stations do not have adequate space or support functions to accommodate these specialty first responder units and the added apparatus, equipment, personnel, and training requirements that come with.

This ever-expanding mission increase can be problematic, stretching resources thin and diluting firefighters' ability to be proficient at any discipline. Nonetheless, adding these disciplines to the Fire Department's scope makes sense from a service model and fiscal perspective. The alternative would likely require establishing a new department or division, adding even more staffing and infrastructure needs.

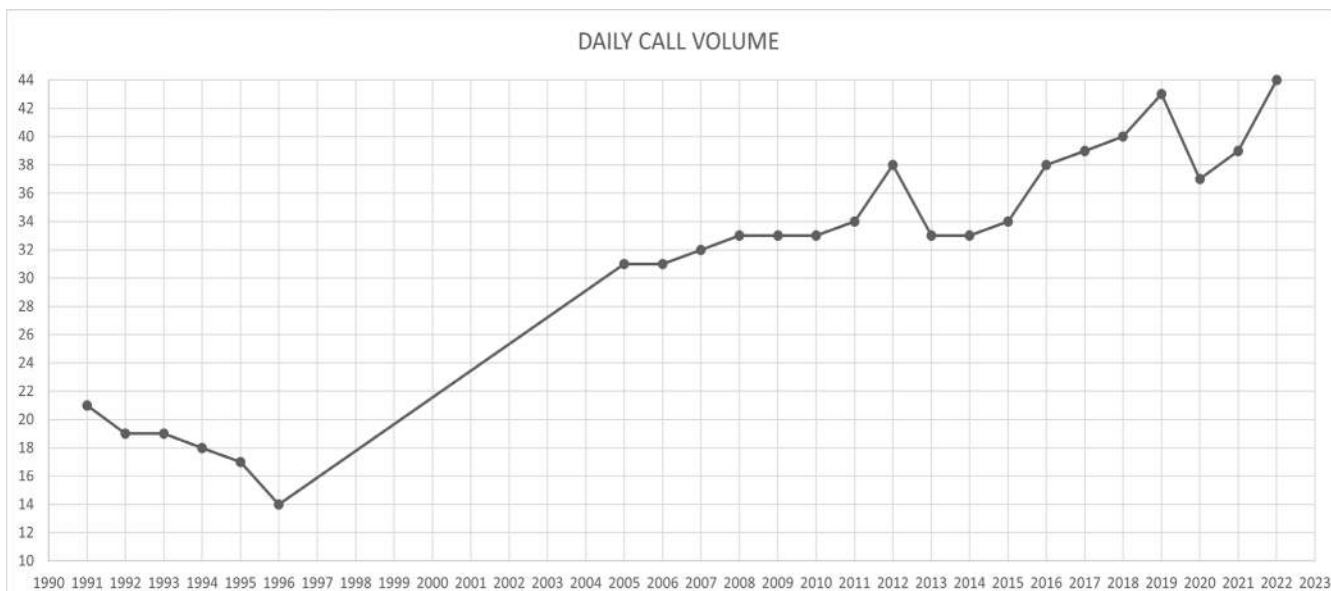
The ripple effect this evolution of BFD's mission has had on all aspects of the organization is substantial: an increase in specialized types of apparatus and equipment; more equipment on apparatus and a reciprocal increase in apparatus size; more on-duty staff to dispatch and respond to emergencies; more support staff to conduct plan checks and to educate residents in prevention, disaster preparedness and enhanced wildfire safety; and expanded training to cover more area-specific hazard types. All of these mission-critical aspects have space implications.

D. OPERATIONAL CHANGES

**CALL VOLUME:** Since its establishment in 1904, the Berkeley Fire Department (BFD) has evolved to respond to all manner of emergencies and hazards. Using call volume as a key metric for assessing fire department needs, in 1995 the BFD responded to 6,300 annual calls-for-service, mostly structure fires and medical emergencies. In 2022 the annual call volume was over 16,000 calls – or an average of 44 calls a day – for a much broader range of emergencies compared to prior years.



Daily call volume, which also drives the staffing required in the firehouses, has also recently experienced dramatic fluctuations due to extreme weather conditions and climate change, which is an emerging risk. BFD recently set two daily records: on January 4, 2023, the Department received 80 calls, nearly double the daily average; and less than three months later the Department received a dramatic 292 calls for service spanning a 24-hour period between March 21 to 22, demonstrating that demand for BFD services is ever-evolving and consistently trending higher.





## D. OPERATIONAL CHANGES

**EXTREME WEATHER EVENTS:** According to a 2023 United Nations climate change report, human-caused climate change is already affecting weather and climate extremes in every region across the globe. These extreme events are leading to the increased demand for fire department services. The two weather events which are major contributors to increased call volumes for the BFD are wildfires and atmospheric rivers. Climate change projections predict that atmospheric rivers will become the main source of precipitation in western North America. This will lead to an even more pronounced “flood or drought” climate in California. The prevalence of major wildfires in drought years and the prevalence of ground saturation and flooding in wet years will impact the fire department.

The record breaking call volume days of January 4th, 2023 and March 21-22, 2023 were both during an atmospheric river event. Moving forward the BFD will need space to provide emergency accommodations for additional staff during these surges in demand.

**RESPONSE AND DELIVERY CHANGES:** The City has changed substantially over the last 20 years, transitioning from a suburban, mostly single-story, single-family residential community to a dense, urban, vertically-oriented community. Berkeley is now the second most dense city of the top 51st most populated cities in California, behind San Francisco.

The Standards of Coverage (SOC) analysis prepared by Citygate observed “... *that the Department is organized only to accomplish ‘yesterday’s mission’ and is struggling to meet current demand, much less the future growth of the City and University.*” Relative to the FDMP, the SOC goes on to explain that “*The ongoing intensification of land uses, building heights, and population density will make several sections of the City very urban—typical of the largest metropolitan cities for building fire and rescue/EMS challenges. The cumulative effect of these projects around the City necessitates a shift in staffing and response models as well as an increase in the flexibility of emergency medical resources. The City’s fire and ambulance programs must evolve to those suitable for a major urban fire department in staffing, unit types, and facility locations. Citygate acknowledges this will not only be costly but also very difficult to find new locations for responders.*”

Changes in local policies have also driven increases in density and vertical orientation of the City and committed the City to providing services to the unhoused and to those with psychiatric emergencies. However, there have not been correlating modifications to the Fire Department facilities or staffing over that same period of time to address these changes. As a result the City, including the Fire Department, is now faced with a large, acute gap between community need and service expectation, and what the Department’s infrastructure can accommodate.

**RECOMMENDATIONS FROM RECENT EFFORTS:** The Standards of Coverage study, the re-shaping of the organization following the passage of Measure FF, the implementation of the department reorganization, and the Dispatch Needs Analysis have spatial repercussions on stations and administration headquarters, the most significant being:

- > Adding ambulances to recover and maintain Unit Hour utilization and response times.
- > Adding a Mobile Integrated Health program similar to the Department’s pilot Mobile Integrated Paramedic (MIP) program.
- > Deploying the Wildfire Urban Interface (WUI) Division.
- > Adding staff to support the modern mission of the Divisions of Training, Emergency Medical Services (EMS) and Fire Prevention.
- > Increasing the size of the dispatch center for triaging increased call volume, appropriately handling calls for psychiatric emergencies, and delivering pre-arrival instructions.
- > Adding a future Battalion Chief.

## D. OPERATIONAL CHANGES

- > Increasing full-time staff on six of nine fire companies from three to four personnel (and the remaining three companies from three to four personnel during high-fire danger days) to address changing risk and demand arising from new development in Berkeley and the implications of climate change on our natural environment.



**APPARATUS AND SPECIALTY UNITS:** To support the evolving mission and modern safety regulations, BFD apparatus have grown in size. In the past, fire department personnel rode on the rear tailboard of an engine, uncovered and unprotected, causing hundreds of firefighter injuries and deaths across the country. In addition to firefighters moving inside the cabs, apparatus have also grown in size to accommodate all the equipment necessary to accomplish the modern all-hazards mission of the fire service. Other specialty apparatus acquired to accommodate BFD's mission includes wildland engines, ambulances, off-road vehicles and boats, all of which need proper storage and maintenance facilities.

**ELECTRIFICATION:** The Department is actively researching electrification of its fleet to meet the City's long-term goals outlined in the Municipal Fleet Electrification Plan. According to current policy, any new construction in Berkeley is required to be all-electric. Going all-electric for buildings and the fleet will require significant revisions to the site power supply including:

- > Changing the type of power entering the building (from single to three-phase in most instances)
- > Increasing the electrical service to 800 or 1200 amps
- > Installing solar arrays and energy storage systems

This move towards electrification improves health and safety at stations and addresses environmental considerations by:

- > Improving indoor air quality by eliminating natural gas (for space and water heating, and cooking) in the buildings
- > Decreasing fossil fuel reliance and carbon pollution by providing electric charging stations for fire department vehicles and apparatus, and staff's personal electric vehicles
- > Employing clean energy sources while the power grid is up and during emergencies when it is down

City Council will need to provide direction to BFD as to whether fire stations should be electrified prior to a full remodel or replacement. Costs associated with both electrification and the purchase of these types of apparatus will be significant. The cost to electrify the stations will be approximately \$400,000 each. Electrical apparatus are currently double the cost of a typical apparatus.



**DECONTAMINATION:** Significant health and safety concerns related to carcinogens from turnout gear and equipment, and the overall air quality at fire stations have long been identified as unsafe. Research spanning decades, continents, and more than 80,000 firefighters validates the connection between fire fighting and occupational cancer. Cancer is the most dangerous threat to firefighter health and safety today. The Department currently has five members with active cancer cases and five recent retirees with active cancer cases. These are only the reported cases and there are likely more which have not been reported.

- > Cancer caused 66 percent of the career firefighter line-of-duty deaths from 2002 to 2019, according to data from the International Association of Firefighters (IAFF). Heart disease caused 18 percent of career LODDs for the same period.
- > Cancer caused 70 percent of the line-of-duty deaths for career firefighters in 2016 (Smith, Cardiovascular Strain of Fire fighting and the Risk of, 2016).
- > Firefighters have a 9 percent higher risk of being diagnosed with cancer and a 14 percent higher risk of dying from cancer than the general U.S. population, according to research by the CDC/National Institute for Occupational Health and Safety (NIOSH).

Firefighters' risks are significantly higher for some types of cancer than the general population, including:

- > Testicular cancer – 2.02 times the risk (100% = double = 2 times)
- > Mesothelioma – 2.0 times greater risk
- > Multiple myeloma -1.53 times greater risk
- > Non-Hodgkin's lymphoma – 1.51 times greater risk
- > Skin cancer – 1.39 times greater risk
- > Malignant melanoma – 1.31 times greater risk
- > Brain cancer -1.31 times greater risk
- > Prostate cancer – 1.28 times greater risk
- > Colon cancer -1.21 times great risk and
- > Leukemia – 1.14 times greater risk

Industry standards call for each structure/vehicle fire to be treated like a hazardous materials incident, including recommendations for firefighters to literally wash each other with special soap to remove carcinogens and to be placed out of service for additional decontamination measures following the incident. Personal Protective Equipment (PPE) needs to be properly bagged and decontaminated, and stations need facilities to keep PPE isolated from physical fitness and living areas as this equipment continues to off gas carcinogens and other toxins.

## D. OPERATIONAL CHANGES

To reduce the prevalence of cancer in the workforce, best practice recommendations that the City must begin to implement are:

- > Dedicated turnout rooms with personnel decontamination and turnout cleaning facilities
- > Reorganized path of travel to and from the apparatus bay for decontamination between each call, setting up what is referred to as the “Hot, Warm and Cool” zone organization.
- > Hands-free medical cleanup facilities
- > Dedicated physical fitness rooms not in apparatus bays
- > Airlock air separation between apparatus bay and the stations’ living and office quarters
- > Direct capture or similar vehicle exhaust systems in apparatus bays, an effort that was implemented in 2001

**INCLUSION & PRIVACY CONSIDERATIONS:** The fire service is a community-based organization and as such it is critical that the BFD staff reflects the makeup of the community it serves. This commitment to inclusion drives changes to the work environment and the facilities necessary in creating a safe workplace for a diverse workforce by increasing privacy and accessibility in living and office environments. Specific improvements include:

- > Gender neutral restrooms
- > Single occupancy bedrooms
- > Dedicated Captains’ offices
- > Accessible accommodations





## E. EXISTING FACILITIES

**ORIGINAL CONSTRUCTION:** Most of the Berkeley Fire Stations were built in the 1960's. The Training Facility was built in 1996, the Public Safety Building in 2000, and Station 7 in 2006.

The stations built in the 1960's were designed for a single engine and three personnel per shift. Additionally, at the time of original construction, each station design and site layout offered very little room for expansion or to accommodate future needs and an evolving mission.

**FACILITIES MODIFICATIONS:** While the stations have not been significantly modified since they were built, they have been stretched to perform beyond their original design by simply squeezing in additional needs and services. Since their original construction in the 1960s, the older stations have been renovated to accommodate:

- > Three ambulances when the service was established in 1977
- > Two reserve ambulances and additional equipment when paramedic services were established in 1986
- > Improved building seismic performance in the 1990s, following the 1986 Loma Prieta Earthquake
- > Hazardous Materials Response apparatus and equipment in the 1990s
- > A fourth ambulance and additional reserve ambulances in 2008 to partially meet increased call volume
- > Water rescue apparatus and equipment in 2010
- > Specialty wildfire apparatus and equipment over the past thirty years
- > Disaster response supplies and equipment in the 1990s and 2000's
- > A mobile emergency medical supervisor vehicle and staff in 2023

While the stations have undergone minor improvements and ongoing maintenance including, for example, lighting, kitchen and restroom upgrades, they have not been modified to the extent necessary to properly house modern apparatus and equipment, additional units and new staff. These expanded services have been accommodated by simply pushing the stations beyond their spatial capacity at the expense of properly addressing safety, health, and privacy (related to inclusion and diversity) protocols.

**OUTDATED FACILITIES:** As a result, the BFD stations are packed, outdated and potentially unsafe.

- > Apparatus are parked inches away from roll up doors, creating narrow spaces for personnel to circulate.
- > Towers, once necessary for drying cotton hoses, are now obsolete due to updated hose material technology.
- > Exercise equipment is typically set up in apparatus bays adjacent to apparatus and personal protective equipment (or PPE) that off-gas diesel fumes and known carcinogens.



## E. EXISTING FACILITIES

In 2021 the Berkeley Public Works Department, which is responsible for Berkeley public facilities maintenance, authorized Kitchell to prepare Facility Condition Assessments of each of the Stations and the Public Safety Building. The report found that in the short-term Fire Stations 1, 4, and 7 are in good condition, Fire Stations 2, 3, and 5 are in fair condition, and Fire Station 6 is in poor condition. In the longer-term Fire Station 1 will be in fair condition, Fire Station 7 will remain in good condition, and the rest will be in poor condition, meaning that in 15 years the bulk of the fire stations will be in poor condition.

Given the limited expansion space in stations and the fact that most Berkeley fire stations do not meet health and safety protocols or industry standards, many of the facilities are in need of major overhauls. Based on existing conditions and needs assessments, most BFD facilities are currently at or beyond capacity. Without significant expansion and modifications, they cannot be made hazards-ready nor can they support the evolving inclusive culture of the Berkeley Fire Department. Renovation or replacement or relocation is necessary to accommodate identified staffing and operational needs. Volume II of this Master Plan outlines specific station needs and proposes modifications necessary to bring each of the stations into alignment with codes, industry standards, and the Berkeley Fire Department mission and culture.



Turnouts, exercise equipment, and apparatus all in the same space do not meet current best practices.



## F. METHODOLOGY

**MASTER PLANNING TEAM:** The Fire Department Master Plan (FDMP) effort has relied on a close working relationship with the Fire Chief, members of the command team and members of IAFF Local 1227. The consultant team includes:

- > Architects with expertise in fire department facilities planning and design
- > Economic planner who investigated mixed use facilities combining fire stations with residential uses
- > Design specialists on the programming and conceptual design development of a regionally shared training facility

**MASTER PLANNING SCOPE:** The FDMP effort began in earnest in Feb 2022 and included the following tasks:

- > Collecting and reviewing the provided existing construction documents for each station
- > Visiting each site
- > Conducting a kick-off meeting with Fire Department representatives
- > Documenting the fire department's spatial program needs
- > Developing alternative layouts for each station, with the goal of reusing, renovating and/or adding to existing buildings and sites. Where renovation and reuse options did not achieve the requisite goals of improved health, safety, and service, the planning team studied replacement options.
- > Preparing high-level construction cost estimates
- > Exploring implementation and phasing scenarios to determining how improvements might roll out

### KEY TAKEAWAYS:

Primary findings thus far are that all uses fundamental to fire fighting, emergency medical service, training, rescue and prevention can be accommodated at the planned stations (including specialty units at a few specific stations), headquarters, and training center.

Given space constraints at the station sites, all new ambulances and integrated mobile health programs (MIP or similar) could not be accommodated at the stations without significant expansion which would substantially increase costs at each facility. Therefore, the FDMP team proposes that this service be part of a new BFD Headquarters.

Reserve apparatus are currently proposed by this master plan as stored outdoors at some of the fire stations which is not optimal. Ideally these apparatus would be stored indoors at a centrally located warehouse, which would free up more space at the fire stations and allow for more efficient maintenance regiment.

Adequate onsite parking for first responders' private vehicles during shift changes was a major design driver in the site plans and station design options. Adequate onsite parking for first responders' private vehicles is necessary at each site because most employees commute from outside the Bay Area from locations that lack mass-transit options. Once at work, often responders are required to move from one station to another with a hundred pounds of safety equipment in tow.

**VOLUME II of this report outlines in greater detail the implications of these findings at each station, BFD Headquarters and the Training Center.**

G. APPROACHES TO IMPROVEMENTS







## G. APPROACHES TO IMPROVEMENTS

**RENOVATION APPROACH:** For each station, the FDMP team first sought a renovation approach to accommodate the evolving mission, changes to staffing, and the adoption of best practice environmental controls by providing:

- > Private sleeping rooms for all on-duty staff
- > Gender-neutral restrooms
- > Dedicated turnout storage and decontamination spaces
- > Dedicated Fitness Room apart from the apparatus bay and vehicle exhaust
- > Office space for on-duty supervisor(s)
- > Increased size of common spaces – kitchen, dining and day rooms – to accommodate added staff
- > Clear and safe paths of travel throughout stations
- > Additional apparatus bays for future units at Stations 1 and 4
- > Sufficient parking for staff
- > Appropriate facilities for electrification of the fleet (solar, charging, storage, transformers, etc)

**REPLACEMENT APPROACH – NEW CONSTRUCTION:** When the aforementioned priorities could not be accommodated through renovation, the team then looked at accommodating all the operational needs in new structures on either existing, expanded or new sites.

**MIXED USE CASE STUDY:** The Fire Department leadership team had hoped that with the City’s goals of increasing density and affordable housing, fire stations could be rebuilt along with residential units to maximize city property that is centrally located and close to transit hubs. To research this concept, economics planner Strategic Economics researched three mixed-use projects which combined housing and fire stations on a single site. The case study sites are:



Fire Station 13, San Francisco, CA



Potomac Yard, Alexandria, VA



Lincoln Towers, Wilmington, DE

**Mixed Use Case Studies Findings:** The major takeaway from these mixed-use case studies is that combining housing and fire services on the same property is not a common development approach and for good reason. California’s seismic building codes are extremely stringent for public safety buildings making them difficult to pair with other uses. Given the costs associated with the seismic safety requirements for fire stations and other public uses, pairing affordable housing with a fire station is not cost-effective in Berkeley.

G. APPROACHES TO IMPROVEMENTS

Where this was attempted locally in San Francisco for Station 13 located at 530 Sansome Street, the residential component is a luxury hotel plus commercial uses. These non-fire station uses were designed to be separated and independently structured from the fire station by cantilevering the building that housed them over the station. This solution is only financially viable due to its location in San Francisco's financial district where the private development will generate enough value to pay for extra construction costs without impacting the rates of return. The land value in Berkeley is not comparable to the land value in San Francisco and thus this approach would not be attractive to a developer.

The projects in Virginia and Delaware were made possible because of the massive tracts of land available to the developers. This allowed for large-scale development which offset the costs of the fire stations. This is also not possible in Berkeley due to the small amount of city owned land. Another takeaway from the case studies is that each project studied benefitted from having other funding sources in place prior to design and construction to offset costs.

The complete case study report prepared by Strategic Economics is included in this Master Plan's appendix.



## H. DEVELOPMENT SCENARIO RECOMMENDATION

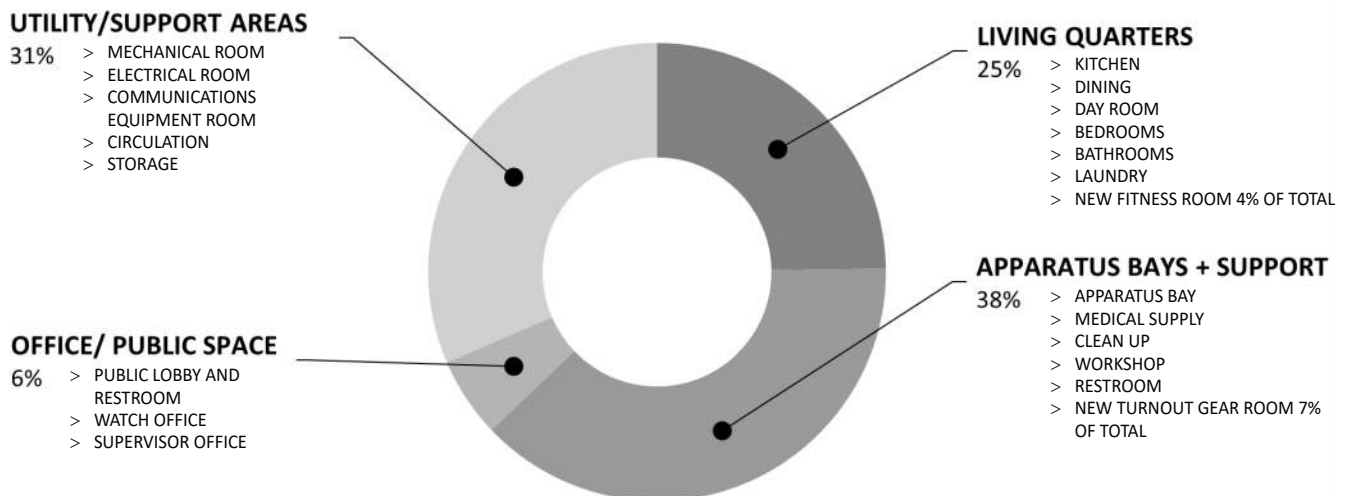
**GUIDING PRINCIPLES:** The following principles were established to inform the development of the Fire Department Master Plan.

1. All key operational efficiency and safety issues must be addressed.
2. In the station renovations, the addition of sleeping, dedicated turnout and fitness rooms are prioritized.
3. The plan prioritizes the replacement or renovation of the busiest stations first.
4. All additional ambulances or alternate response type programs (staff & vehicles) will be housed outside of the fire houses.
5. The project delivery schedule must allow funds to be maximized through the use of existing facilities as temporary unit locations during construction phases.
6. Utilize city owned property, if possible, to maximize funds for the new headquarters facility
7. Plan and build a regional training center in collaboration with other jurisdictions to the north in Alameda and Contra Costa.

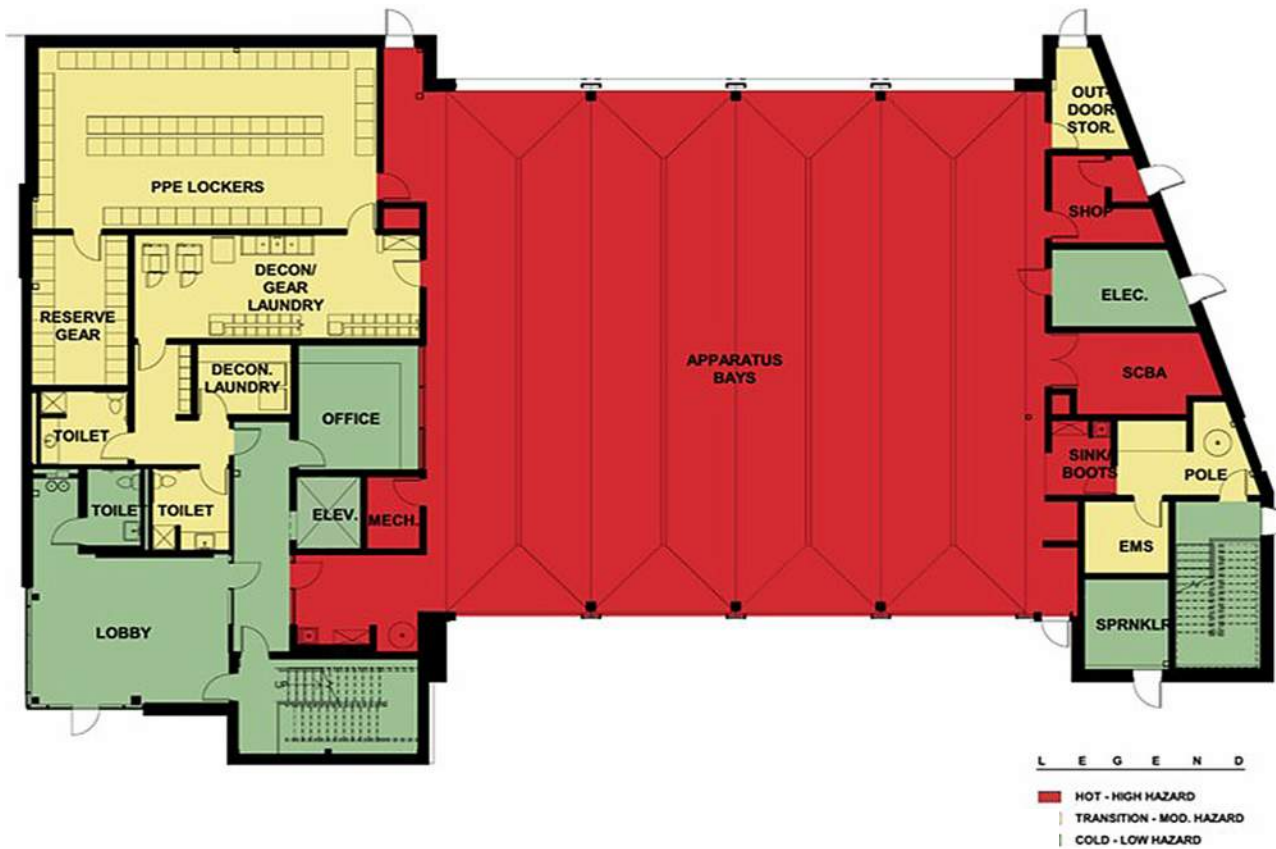
**USES IN A TYPICAL STATION:** Fire stations in and of themselves are a complex mixed-use building, combining residential, business and quasi-industrial uses under one roof. There are four major space need categories:

- > The greatest single use space in a station – roughly 38% – is taken up by apparatus, fire fighting equipment and gear, including Turnouts
- > Living quarters take up a quarter of a station and include shared and private spaces and fitness rooms which have typically been shoehorned into apparatus bays
- > A comparatively smaller area – 6% of a station – goes to administrative uses, entry and public restrooms.
- > The rest of the space – nearly a third of the stations – supports circulation and operations, such as: Storage, Mechanical, Electrical, and communication equipment rooms

### TYPICAL STATION AREA BREAKDOWN



### HOT WARM COOL ZONE DIAGRAM



The separation of the hazardous areas of the station with the living and office quarters is paramount to increased safety in a fire station. The diagram above indicates the areas of the station that are considered hazardous (Hot Zones), moderately hazardous (Warm Zones) and the balance of the areas, low hazard living quarters and office facilities are considered (Cool Zones).

H. DEVELOPMENT SCENARIO RECOMMENDATION

**RECOMMENDED SCENARIO:** The development phasing scenario recommended by this FDMP maximizes operational improvements by focusing first on the busiest and largest stations. The team tested a variety of ways to meet the guiding principles, a process which ultimately helped shape the principles themselves. For instance, the original goal was to add all the new ambulance and alternative response units to the existing stations. This proved to be impossible without expanding almost every station and purchasing adjacent residential parcels at each location. The recommended development scenario described below made the best use of the existing sites. A summary of the key points of each project follows.

**SCENARIO DESCRIPTION:** Most station projects can be implemented on city-owned property except for Station 1. This scenario successfully addresses increased staffing needs and key operational efficiencies.

The budgets reflected below are “Rough Order of Magnitude Cost Plans.” As a perspective, an order of magnitude cost model has the objective of identifying costs within an order of magnitude. The budget is not meant to be the lowest possible, but rather, to identify the order of magnitude of costs in considering next steps. A range of costs was used for planning purposes. The ranges below do not include escalation beyond 2024, property acquisition costs or program management costs. They include all construction, equipment and furnishings costs, plus fees for design, environmental review, permits, etc., associated with project delivery. In the recommended development phasing scenario, the initial focus is on the projects with highest call load and largest staffing numbers. Station 1 was proposed to be implemented first because it is a relocation project. Once a new Station 1 is complete and online, the existing original Station 1 can be used as temporary housing for the future replacement projects.

**SEQUENCED PROJECTS**

<i>Design Start</i>		<i>Rough Order of Magnitude Costs</i>	
		<i>LOW x \$ Million</i>	<i>HIGH x \$ Million</i>
2024	<b>Fire Station 1</b> Relocation New site on/near San Pablo Ave	\$42	\$47
2026	<b>Fire Station 2</b> Replacement Temporary Location - Station 1, 4, 5	\$51	\$56
2028	<b>Fire Station 5</b> Replacement Temporary Location - Station 1, 4, 2	\$53	\$58
2030	<b>Fire Station 4</b> Replacement Temporary Location - Station 2, 6	\$36	\$41

**INDEPENDENT PROJECTS**

<i>Design Start</i>		<i>Rough Order of Magnitude Costs</i>	
		<i>LOW x \$ Million</i>	<i>HIGH x \$ Million</i>
2023	<b>New Headquarters</b> Site TBD	\$33	\$36
2023	<b>Training Center</b> Phase 1 Renovation Phase 2 Replacement Regional Site TBD	\$81	\$90
2026	<b>Fire Station 3</b> Renovation + Expansion Temporary Location - Station 2, 5	\$12	\$16
2028	<b>Fire Station 6</b> Renovation + Expansion Temporary Location - Trailer on site	\$12	\$15
2030	<b>Fire Station 7</b> Renovation + Expansion Temporary Location - TBD	\$10	\$13
<b>TOTAL Rough Order of Magnitude Project Cost</b>		<b>\$330</b>	<b>\$372</b>

H. DEVELOPMENT SCENARIO RECOMMENDATION



**THE PROPOSED PROJECTS IN ORDER OF DEVELOPMENT ARE OUTLINED BELOW:**

**Fire Station No. 1 - Relocation and Replacement on a new site (to be identified)**



**Key Attributes:** Relocation and expansion of Fire Station 1 to a more commercial site in the same response area. Current station can then be used as a temporary station as others are renovated.

**Rationale:** The existing site is located in a residential neighborhood. The adjacent properties would need to be purchased to accommodate an expansion or replacement on site. These properties contain apartment buildings. Dozens of house units would need to be removed to accommodate the operational needs at this location. Therefore, it is recommended to relocate this facility to a site in a commercial area.

**Order of Magnitude Budget Range:** \$42-47M

**Schedule:** Recommended design start 2024

**Fire Station No. 2 – Replacement at existing site (2029 Berkeley Way)**



**Key Attributes:** Replace the station on the existing site with a new 3-story building that includes all required parking.

**Rationale:** Fire Station No. 2 is the Fire Department’s most populated and busiest station with multiple cross staff units. The current configuration does not allow the staging of all apparatus for response. In addition, there is not adequate on-site staff or visitor parking. The replacement of the station includes a parking deck which allows this station to meet all current and projected needs.

**Order of Magnitude Budget Range:** \$51-56M

**Schedule:** After completion of Fire Station 1

**Fire Station No. 5 - Replacement at existing site (2680 Shattuck Avenue)**



**Key Attributes:** Replacement of existing station with a new 2-story building plus basement parking in order to fully meet all programmatic and parking needs on site.

**Rationale:** Station No. 5 is the Department’s second most populated and busiest station. It also houses multiple support units. The station has been renovated multiple times and is past its useful life. The site area is very compact and does not currently allow adequate space for site operations. The recommended option replaces the station onsite and adds subterranean parking for staff and the supporting units.

**Order of Magnitude Budget Range:** \$53-58M

**Schedule:** After completion of Fire Station 2

**Fire Station No. 4** – Replace at existing expanded existing site (1900 Marin Avenue)



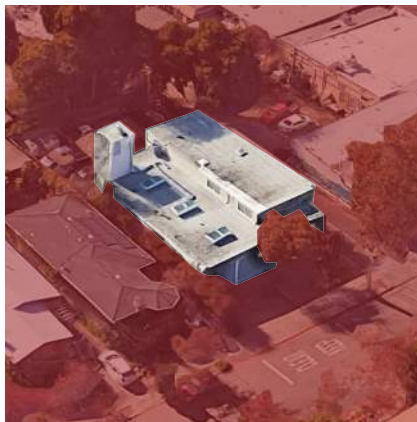
**Key Attributes:** Replacement of existing building on an expanded site to meet programmatic and parking requirements.

**Rationale:** This response area of the City has been identified as an area that should plan for an additional ambulance. The existing fire station can not be expanded to add the apparatus bay necessary for this new unit due to its unique configuration. The recommendation for this station is to replace it at the existing site and expand the site into the adjacent road right of ways.

**Order of Magnitude Budget Range:** \$36-41M

**Schedule:** Design start 2030

**Fire Station No. 3** – Renovation and addition at existing site (2710 Russell Street)



**Key Attributes:** Renovation and expansion of existing fire station to provide a dedicated fitness room, turnout storage, private office and private sleeping rooms.

**Rationale:** This station is not recommended to add new units. The renovation will focus on improving the health, safety and privacy aspects of the fire station.

**Order of Magnitude Budget Range:** \$12-16M

**Schedule:** Design start 2026

**Fire Station No. 6** – Renovation and addition at existing site at existing site (999 Cedar Street)



**Key Attributes:** Renovation and expansion of the existing fire station to provide a dedicated fitness room, turnout storage, private offices and private sleeping room. The entire station will be renovated to allow modernize the kitchen, dining and dayroom.

**Rationale:** This station is not recommended to add new units although the increases in staffing on existing units are driving the need to modernize the living quarters. In addition, the station will be expanded to improve the health, safety and privacy aspects of the station.

**Order of Magnitude Budget Range:** \$11.6-14.6M

**Schedule:** Design start 2028



**Fire Station No. 7**– Renovation and addition at existing site (3000 Shasta Road)



**Key Attributes:** Renovation and expansion of existing fire station to provide a dedicated fitness room, turnout storage and private sleeping quarters for the additional staffing staged at this location during high fire season.

**Rationale:** Station 7 is the Department’s newest station, however, it is lacking some of the basic spaces required to provide a safe work environment. Primarily the missing space is a dedicated turnout room with decontamination equipment. In addition, additional sleeping rooms are necessary to accommodate the move up staffing during fire season.

**Order of Magnitude Budget Range:** \$10-13M

**Schedule:** Design start 2030

**Headquarters** – Relocation to new site.



**Key Attributes:** Relocation of headquarters to a city owned building. Location to be big enough to Administrative offices, training classrooms, and the ambulance deployment center.

**Rationale:** Current location cannot accommodate the growing staff or the ambulance deployment center.

**Order of Magnitude Budget Range:** \$33-36M

**Schedule:** Design start 2023

**Training Facility** – New construction and renovation at site to be determined



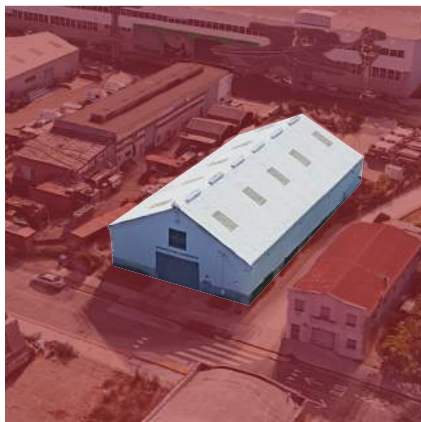
**Key Attributes:** Relocation of the training facility in partnership with other local municipalities.

**Rationale:** The current location is undersized and located in a residential neighborhood which impacts what training can occur there. The region is missing a large training facility for emergency responders

**Order of Magnitude Budget Range:** \$81-90M

**Schedule:** Phase 1 design Start 2023

**Warehouse** – Renovation at site in progress



**Key Attributes:** Renovation of this building is currently in the design phase and will provide a small office and meeting location.

**Rationale:** The current location has staff assigned but they work from a desk in the warehouse space, exposed to noise and exhaust, and without climate controls.

**Order of Magnitude Budget Range:** \$800-1.5m

**Schedule:** Design underway



## I. REFERENCES

### **FACILITY & DECONTAMINATION:**

NFPA 1584: Standard on the Rehabilitation Process for Members during Emergency Operations and Training Exercises, Section 7.4.2

NFPA 1700: Guide for Structural Fire Fighting, Section 11

NFPA 1500: Standard on Fire Department Occupational Safety, Health, and Wellness Program, Section 7, 10, 14, Annex C, Annex F

Occupational Safety and Health Act (OSHA), Occupational Safety and Health Standards (1910), Toxic and Hazardous Substances (subpart Z), Air Contaminants (§ 1910.1000)

Occupational Safety and Health Act (OSHA), Permissible Exposure Limits (PELs), OSHA Annotated Tables Z-1, Z-2, Z-3

California Occupational Safety and Health Act (Cal/OSHA), Subchapter 7, Group 16, Article 109 Hazardous Substances and Processes

California Occupational Safety and Health Act (Cal/OSHA), Subchapter 7, Group 16, Article 107 Dusts, Fumes, Mists, Vapors and Gases

California Occupational Safety and Health Act (Cal/OSHA), Table AC 1 - Permissible Exposure Limits (PELs)

Firefighter Cancer Registry Act; <https://www.congress.gov/bill/115th-congress/house-bill/931>

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Lavender Ribbon Report, Best Practicews for Preventing Firefighter Cancer, International Association of Fire Chiefs & National Volunteer Fire Council, 2018

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<https://firefightercancersupport.org/resources/faq/>



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**CITY OF BERKELEY**

# **BERKELEY FIRE DEPARTMENT MASTER PLAN**

## **VOLUME I**

**DRAFT MAY 08, 2023**



**SIEGEL & STRAIN Architects** |

 **MARY MCGRATH | ARCHITECTS**



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# FIRE STATION 1



## CITY OF BERKELEY

## FIRE HOUSE NO. 1

2442 EIGHTH STREET, BERKELEY, CA 94710

DRAFT

MAY 08, 2023

## PROJECT DESCRIPTION

The existing Fire House No. 1 is 5,410 SF and was originally designed in 1966 to provide operational space and living quarters for three personnel. The facility was seismically retrofitted in the 1990's and renovated in 2015 to provide accessible and private restrooms. The fire station currently houses 6 personnel per shift and houses Engine 1(3), Medic 1 (2) and Medic Trainee (1). This station personnel is anticipated to grow through the addition of a future ambulance or mobile integrated paramedic and a Battalion Chief. The staffing will increase to 12 personnel per shift.

Four options were evaluated. They include:

1. Renovation and expansion with 15,700 Total Square feet and all parking met. Purchase three adjacent properties.
2. Replace station with a new 15,700 SF station on the existing site with surface parking. Purchase three adjacent properties.
3. Replace station with a new 15,700 SF station on the existing site with a 12,810 SF subterranean parking garage. Purchase three adjacent properties.
4. Replace station with a new 15,700 SF Station on a new site that allows surface parking.  
(Recommended)

The renovation or replacement on the existing site is not desirable at this location because it would require the removal of three apartment buildings. The recommended option for this location is to purchase a new property which is not deep into a residential neighborhood but in the general area.

The ROM Project Budget for the Recommended Option 4 is \$42-47M; not including the property purchased and escalation beyond 2024.



**Fire House No. 1**  
**Engine 1, Medic 1 and Community Medic/MIP or Ambulance, Future Battalion Chief**  
**2442 Eighth Street**

**CONCEPTUAL SPACE NEEDS OUTLINE**

<b>Fire House Company Make-up - Staffing Per shift</b>	<b>Current</b>	<b>Future</b>
Engine 1 - Captain, Engineer, Firefighter/Paramedic	3	4
Medic 1 (Ambulance) - Medic, EMT	2	2
Community Medic (or MIP or Ambulance) - Medic, EMT	0	2
Future Battalion Chief	0	1
Medic Trainee	1	2
Ambulance - Reserve	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING:</b>	<b>6</b>	<b>11</b>

<b>No.</b>	<b>Type of Space</b>	<b>Space Attributes</b>	<b>Square Footage</b>	
			<b>Program</b>	<b>Size</b>
<b>SITE OPERATIONS</b>				
	<b>Firefighter Parking</b>	22 firefighter parking spaces, secure and separate from public parking	4,800	10'x20' ea.
	<b>Visitor Parking</b>	One regular and one ADA adjacent to entrance, shared with other public parking areas.	600	10' x 20
	<b>Apparatus Washing Area</b>	Adjacent to hydrant for refill and testing; locate at rear of App. Bays; provide clarifier for run-off	0	rear apron
	<b>Hose Maintenance Area</b>	Use rear apron area for cleaning hose; roll wet and store on apparatus	0	rear apron
	<b>Yard Hydrant</b>	Located at rear yard	0	rear apron
	<b>Generator Area</b>	Located at rear yard	150	10'x15'
	<b>Fueling Area</b>	Above Grade Convault System - 1,500 GA	240	12' x 20'
	<b>Trash Enclosure</b>	Exterior access for service; space for dumpster and recycling bins, Covered	150	10'x15'
	<b>Flagpole</b>	Flagpole area with lighting	25	5'x5'
	<b>Outdoor Patio or Deck</b>	Outdoor uses; adjacent to Kitchen	200	10'x20'

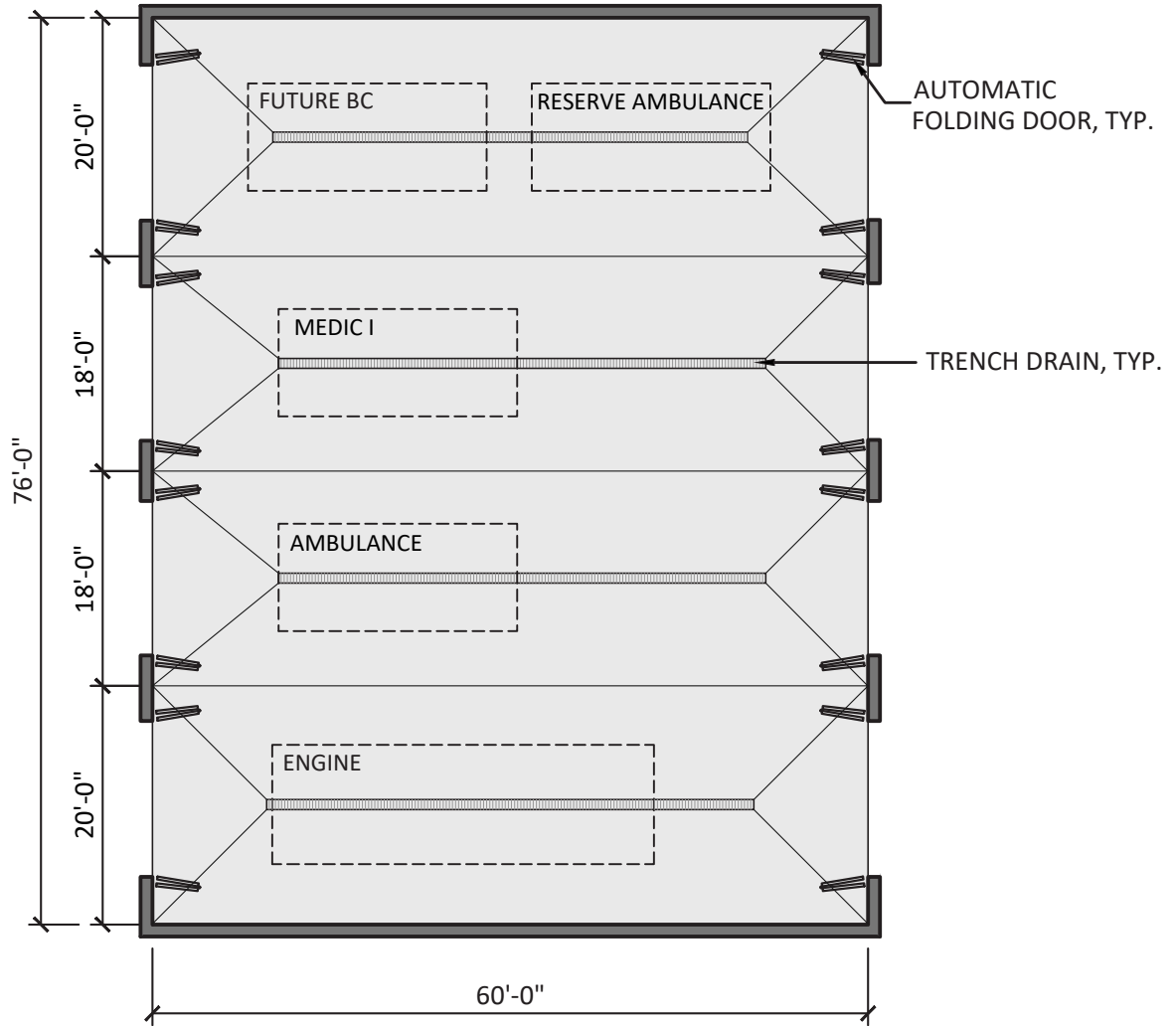
No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - APP BAY/APP BAY SUPPORT</b>				
1	Apparatus Bay (Four Drive through Bays)	Engine, Medic 1, Future Ambulance/ MIP and Future BC Vehicle; Future Front line apparatus. Reserve Ambulance Second Line Storage. Systems include tailpipe exhaust, power and air cord drops to each vehicle; electric heating system; night lighting; bi-folding auto-close doors; trench drains	4,560	(2) 20' x 60' (2) 18' x 60'
2	Medical Supply Closet	Heavy Duty Shelving; medical supplies off of apparatus bay.	24	3' x 8'
3	Clean Up	Clean-up sink, shelving, Alcove in bay.	18	3' x 6'
4	Equipment Storage	Yard equipment, bike storage (LEED Requirement), compressor	96	8' x 12'
5	Turnout Gear Room	Two lockers for each assigned personnel (11 Personnel per day x 3 = 33), 66 locker plus 6 reserve for 72 lockers total. Power at each locker, continuous exhaust fan, floor drain, heavy duty shelving; wildland gear bags. Dirty area in room with Extractor and Dryer, decon shower and hanging area. Part of response return path.	1,200	24' x 50'
6	Janitor Room	Service sink, mop rack; janitorial supplies;	48	6' x 8'
7	Work Shop Alcove	Work bench/shop area for vise, peg board, tool storage with large flat work surface, Misc. equipment storage , tool chest, Full height storage cabinet, shop sink and eyewash.	120	4' x 30'
8	Firefighter Restroom	Fire fighter toilet and sink, off of apparatus bay	64	8' x 8'
9	Fitness Room	Dedicated Fitness Room	624	26' x 24'
<b>Fire House - App Bay/Support Subtotal</b>			<b>6,754</b>	
No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - FIREFIGHTER OFFICES</b>				
10	Fire House Public Lobby	Lobby with seating; adjacent to the public restroom. Service window separation between Watch Office and lobby. Alcove in Lobby for Blood Pressure and other wellness checks.	180	12' x 15'
11	Fire House Public Restroom	One All Gender Restroom, accessible, off of Lobby	64	8'x8'
12	Watch Office	Workstations for 4-persons; provide space for lateral file cabinets (one cabinet per company) copy machine and office supply storage, book shelving; conference function	238	14' x 17'
13	Private Office (Engine Captain and Senior Medic)	Workstation for 2-persons; provide space for (2-six drawer) lateral file cabinets.	120	10' x 12'
14	Battalion Chiefs Office - Future	Workstation for 3-persons; provide space for lateral file cabinets, Meeting table for four	288	18' x 16'
<b>Fire House - Firefighter Offices Subtotal</b>			<b>890</b>	

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - FIREFIGHTER QUARTERS</b>				
15	Kitchen	3-refrigerators; 3-shift pantries; 1-house pantry and refrigerator; 2-dishwashers; electric induction range/oven with hood; large microwave; large, 12" deep sink with disposer; prep sink at island; trash and recycling areas; coffer service area; open to Dining Area	378	18' x 21'
16	Dining Area	Seating for 12 persons; wall-mounted TV; open to kitchen; open to Day Room	252	12' x 21'
17	Day Room	Seating for 11 with recliner chairs; entertainment center and book shelving; Open to Dining, one work station along wall.	720	30' x 24'
18	Laundry Room	Service sink; countertop; janitorial supplies; mop rack, Washer/Dryer	140	10' x 14'
19	Firefighter/Intern Bedrooms	9-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed with lockers outside door.	689	8'-6" X 9' (9)
20	Firefighter Bathroom ADA	1 accessible restroom with shower, sink, toilet	81	9' x 9'
21	Firefighter Bathrooms	5 restrooms with shower, sink, toilet	256	8' x 8' (5)
22	Captain Bedroom, Bathroom and Work Area, Accessible	1-separate bedroom containing desk, chair, wall-mounted TV, 1 bed. Accessible in-suite bathroom.	250	10' x 16' 10' x 9' 10' x 5'
23	BC Bedroom, Bathroom and Work Area, Accessible	1-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed. One with accessible in-suite bathroom.	250	10' x 11' 9' x 10' 5'x10' (2)
<b>Fire House - Firefighter Quarters Subtotal</b>			<b>3,016</b>	

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>UTILITY SUPPORT/VERTICAL CIRCULATION</b>				
24	Mechanical Room	HVAC equipment; hot water heater; fire sprinkler riser	108	9' x 12'
25	Electrical Room	Main service panel, fire alarm panel; sub panels	108	9' X 12'
26	Communications Room	Telephone service racks, alert response system hub, data server hub, radio equipment; security system	140	10' x 14'
27	Stairs	(2x) for each level. Two stairways from the second floor for exiting	576	18' x 8'
28	Fire House Elevator	Elevator and machine room	240	8' x 10' (3)
<b>Utility Support/ Vertical Circulation Subtotal</b>			<b>1,172</b>	

<b>Engine 1, Medic 1, Community Medic, Future Battalion Chief, Reserve Ambulance: Summary</b>		Program	
	Fire House - App Bay/Bay Support Subtotal	6,754	
	Fire House - Firefighter Offices Subtotal	890	
	Fire House - Firefighter Quarters Subtotal	3,016	
	Utility Support/Vertical Circulation Subtotal	1,172	
	<b>BUILDING SUBTOTAL (SF)</b>	<b>11,832</b>	
	Circulation at 30%	3,549	
<b>Engine 1, Medic 1, Community Medic, Future BC, Reserve Ambulance: GRAND TOTAL (SF)</b>		<b>15,381</b>	

# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



## 1. APPARATUS BAY - 4 DRIVE-THROUGH BAYS (4,560 S.F.)

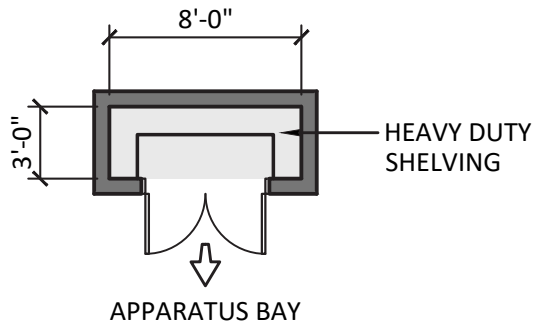
SCALE: 1/16"=1'-0"



**CITY OF BERKELEY**  
**FIRE HOUSE NO. 1**  
 ENGINE I, MEDIC I AND COMMUNITY MEDIC OR  
 MIP OR AMBULANCE

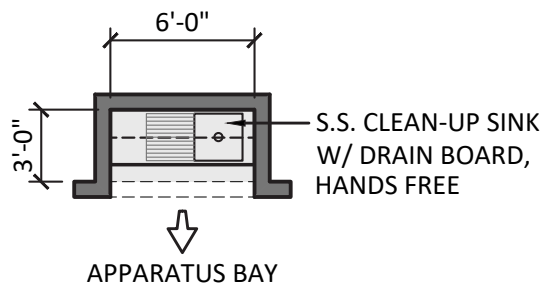


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



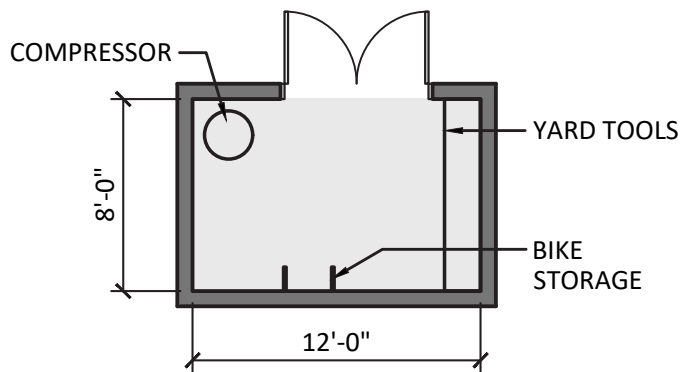
## 2. MEDICAL SUPPLY CLOSET (24 S.F.)

SCALE: 1/8"=1'-0"



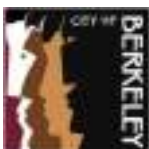
## 3. CLEAN-UP (18 S.F.)

SCALE: 1/8"=1'-0"

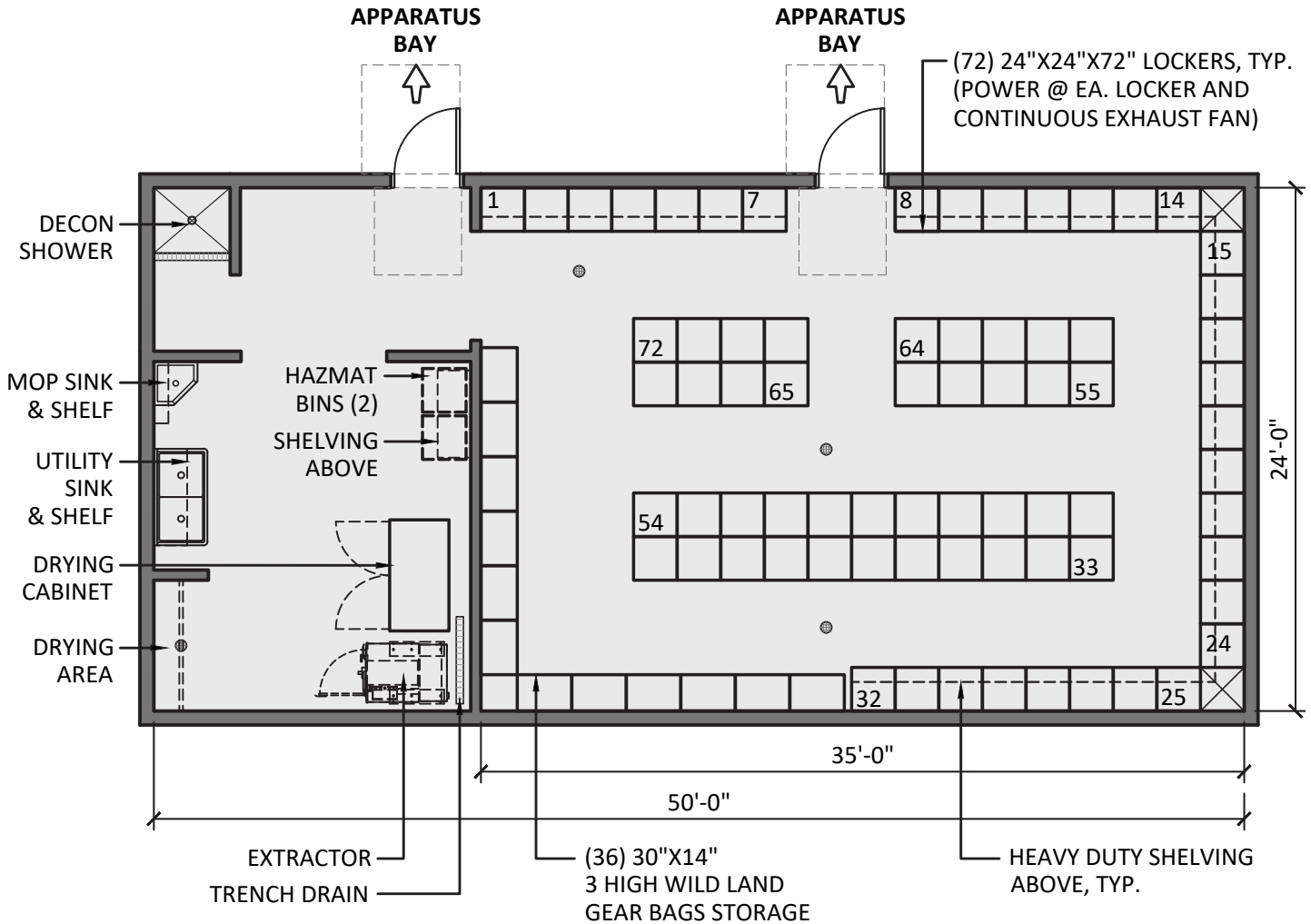


## 4. EQUIPMENT STORAGE (96 S.F.)

SCALE: 1/8"=1'-0"

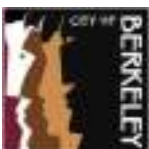


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



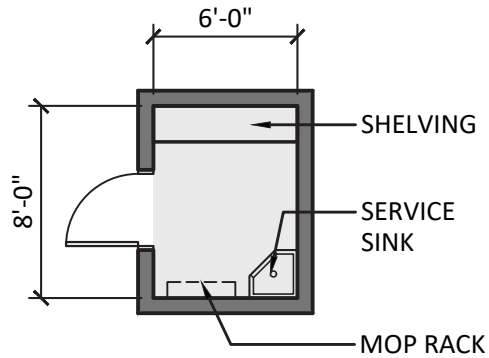
### 5. TURNOUT GEAR ROOM (1,200 S.F.)

SCALE: 1/8"=1'-0"



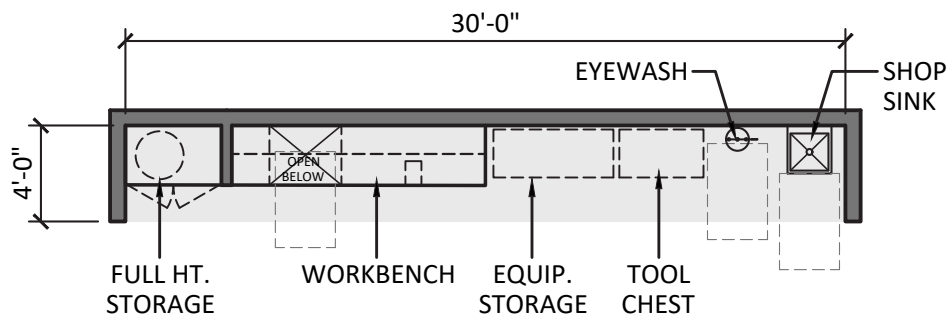


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



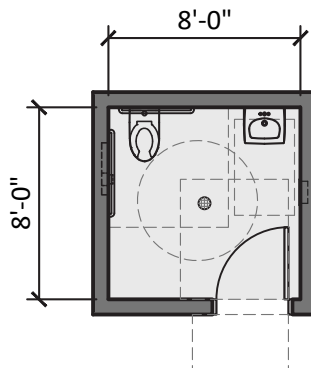
### 6. JANITOR ROOM (48 S.F.)

SCALE: 1/8"=1'-0"



### 7. WORKSHOP ALCOVE (120 S.F.)

SCALE: 1/8"=1'-0"

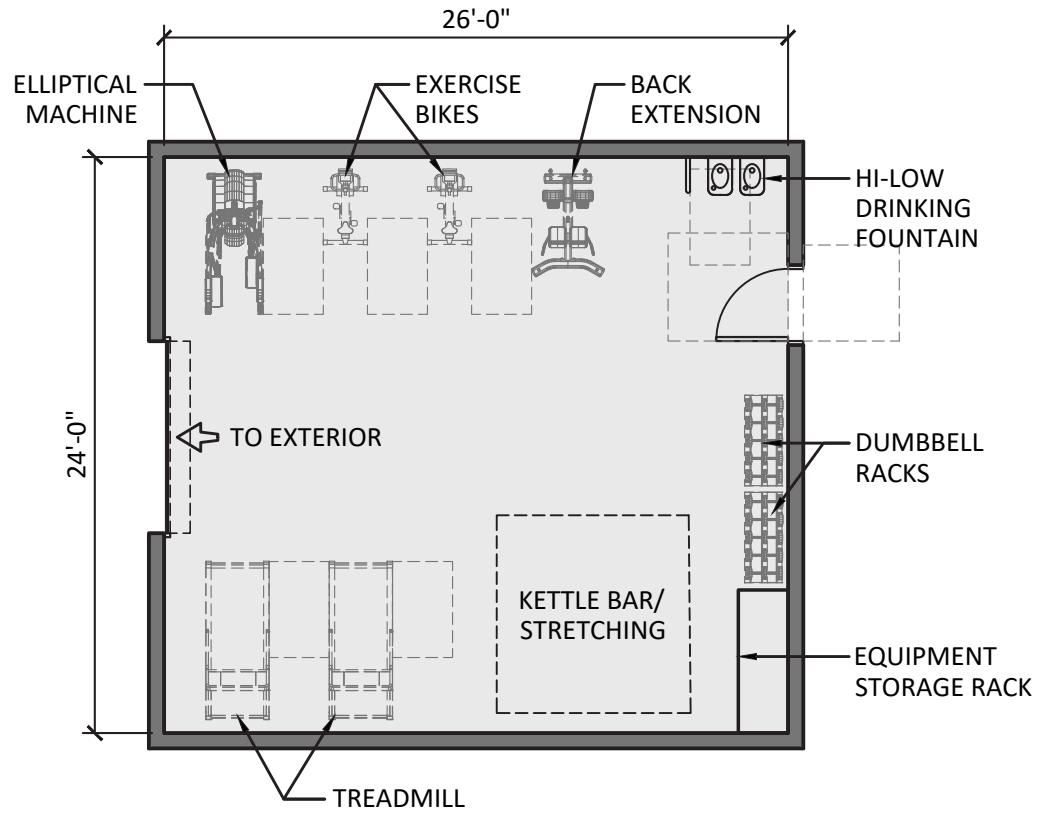


### 8. FIREFIGHTER RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"



# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

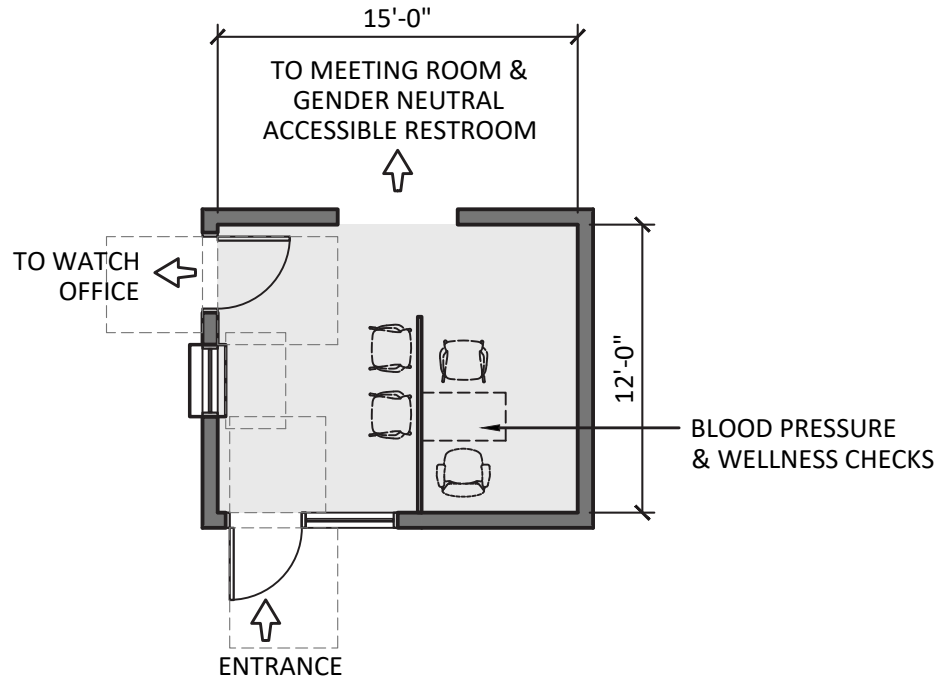


## 9. FITNESS ROOM (624 S.F.)

SCALE: 1/8"=1'-0"

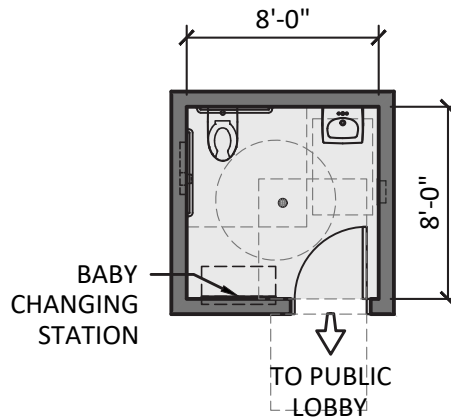


# FIRE HOUSE - FIREFIGHTER OFFICES



### 10. FIRE HOUSE PUBLIC LOBBY (180 S.F.)

SCALE: 1/8"=1'-0"

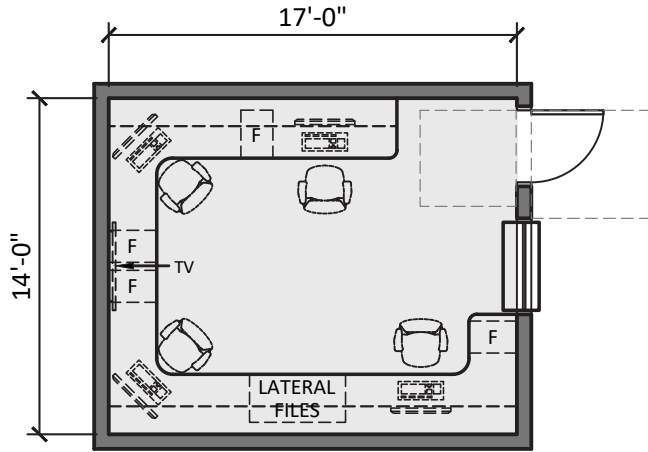


### 11. FIRE HOUSE PUBLIC RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"

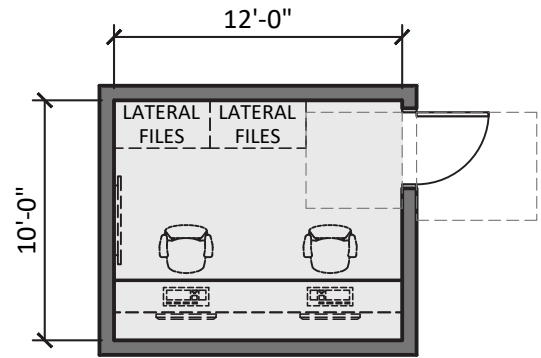


# FIRE HOUSE - FIREFIGHTER OFFICES



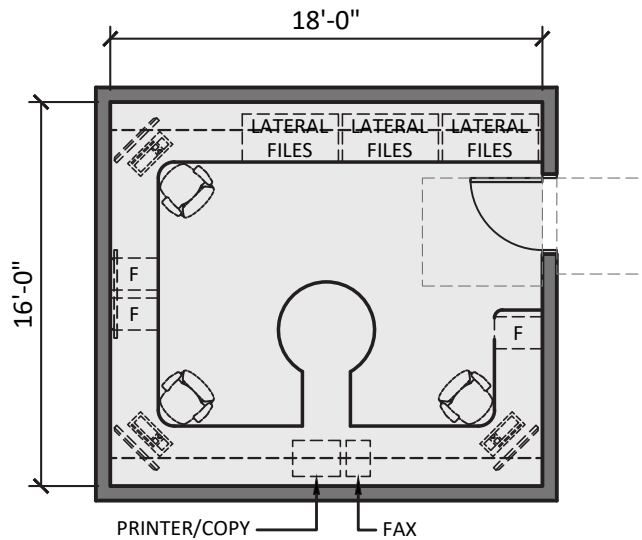
**12. WATCH OFFICE (238 S.F.)**

SCALE: 1/8"=1'-0"



**13. CAPTAIN'S OFFICE (120 S.F.)**

SCALE: 1/8"=1'-0"



**14. BATTALION CHIEF'S OFFICE-FUTURE (288 S.F.)**

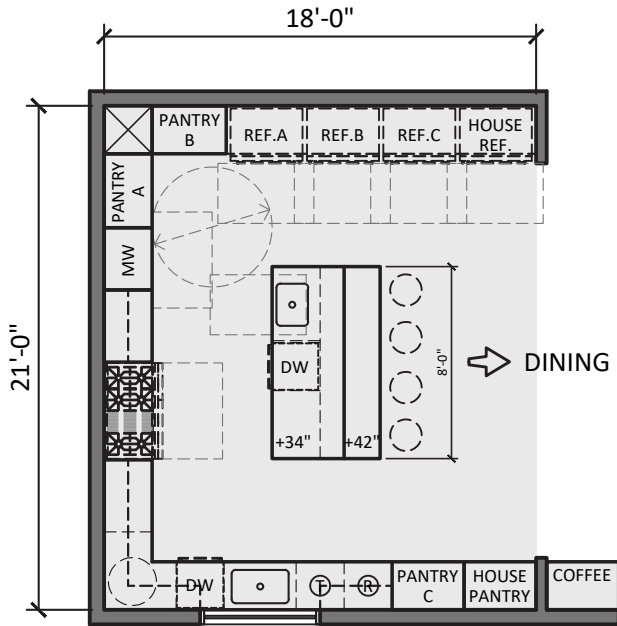
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 1**  
 ENGINE I, MEDIC I AND COMMUNITY MEDIC OR  
 MIP OR AMBULANCE

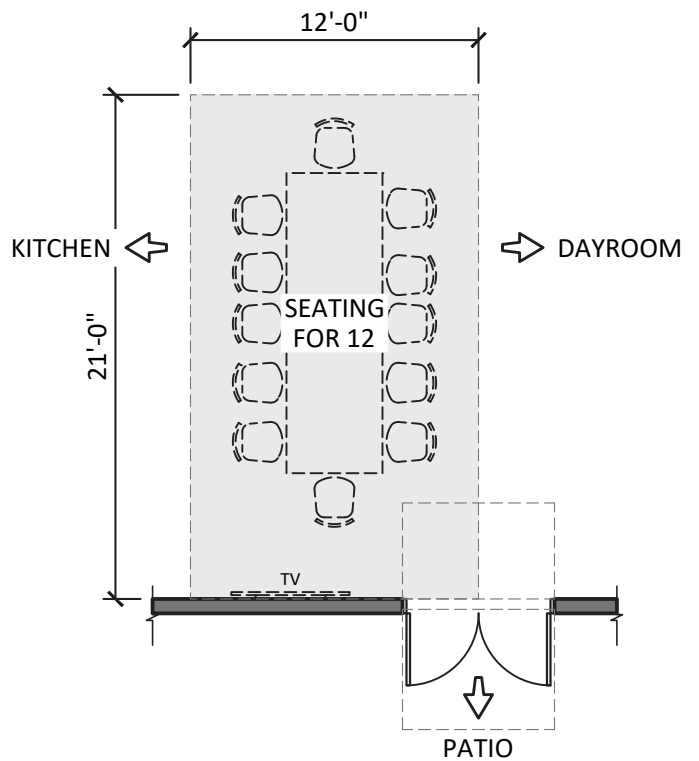


# FIRE HOUSE - FIREFIGHTER QUARTERS



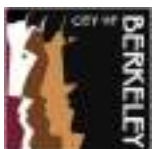
**15. KITCHEN (378 S.F.)**

SCALE: 1/8"=1'-0"

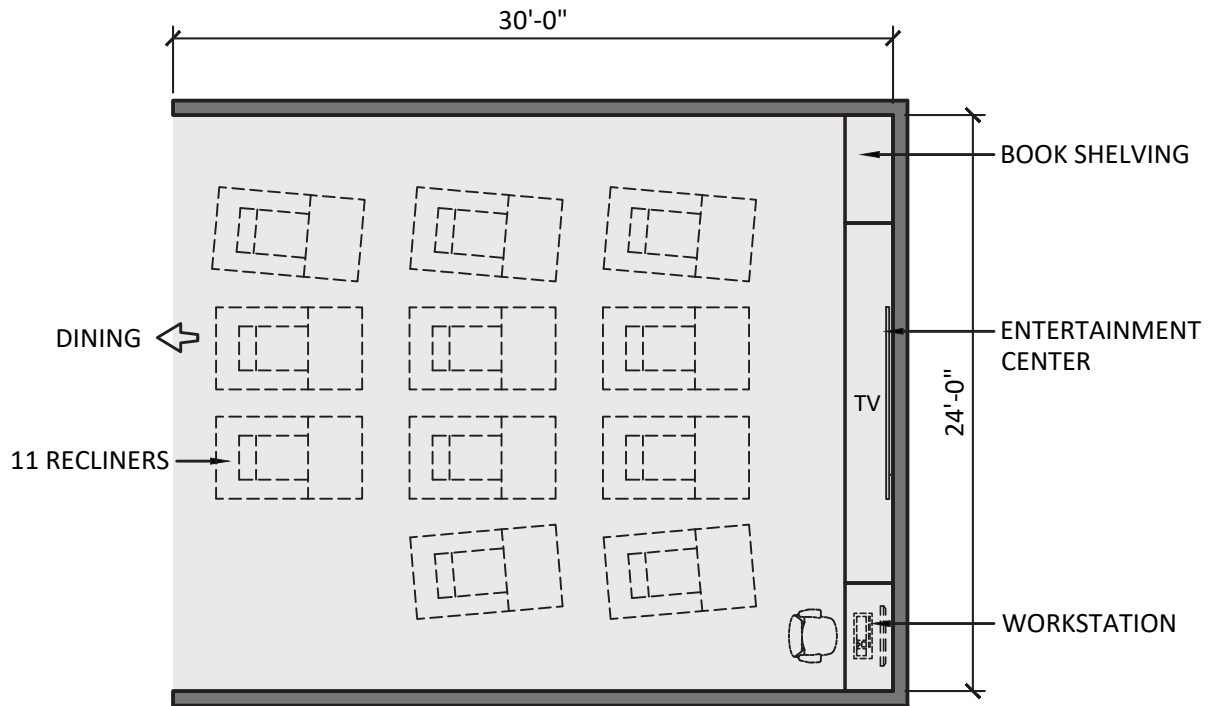


**16. DINING AREA (252 S.F.)**

SCALE: 1/8"=1'-0"

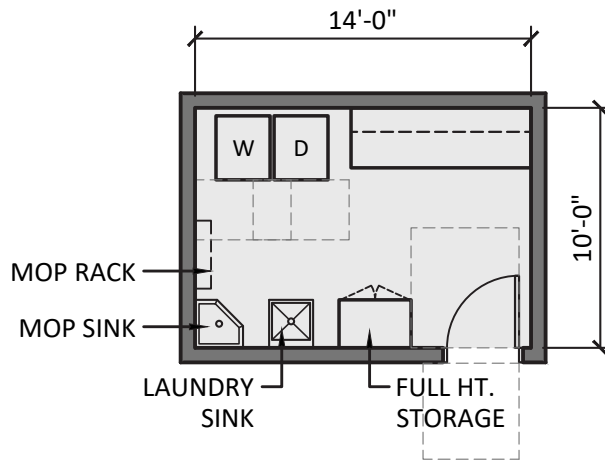


# FIRE HOUSE - FIREFIGHTER QUARTERS



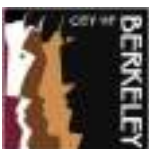
### 17. DAY ROOM (720 S.F.)

SCALE: 1/8"=1'-0"

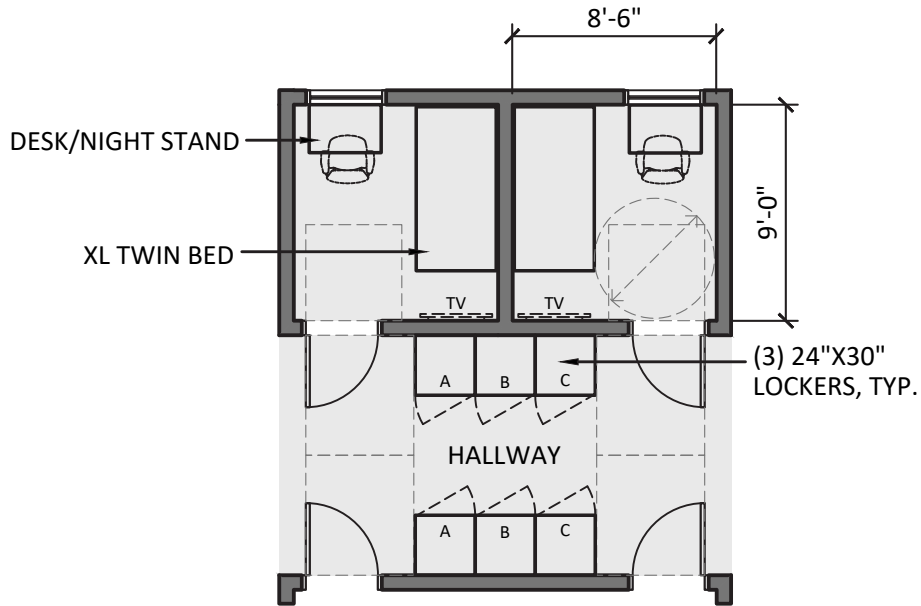


### 17. LAUNDRY ROOM (140 S.F.)

SCALE: 1/8"=1'-0"

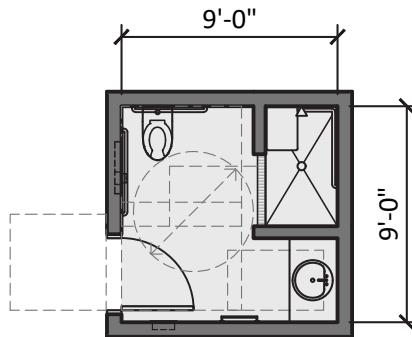


# FIRE HOUSE - FIREFIGHTER QUARTERS



## 19. FIREFIGHTER/INTERN BEDROOMS - 9 (689 S.F.)

SCALE: 1/8"=1'-0"

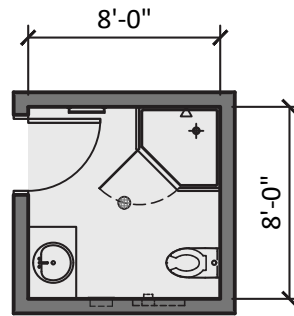


## 20. FIREFIGHTER BATHROOM - ADA (81 S.F.)

SCALE: 1/8"=1'-0"

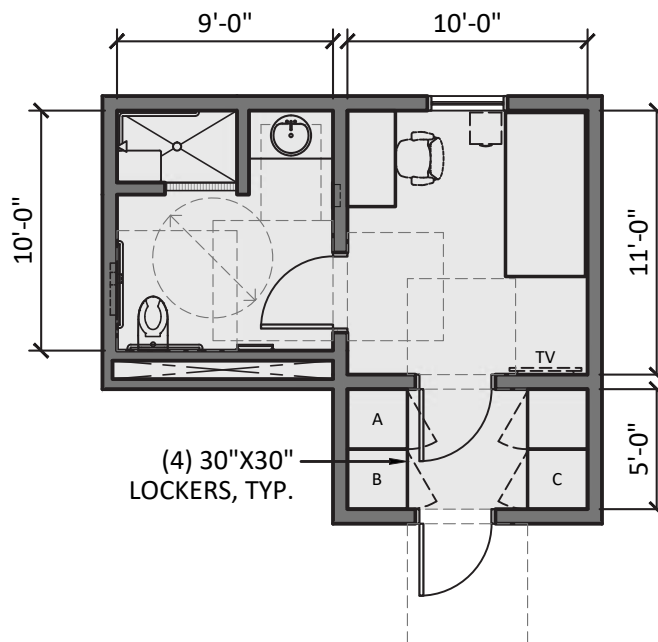


# FIRE HOUSE - FIREFIGHTER QUARTERS



### **21. FIREFIGHTER BATHROOM - 5 (256 S.F.)**

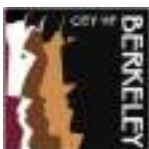
SCALE: 1/8"=1'-0"



### **22. CAPTAIN BEDROOM, BATHROOM AND WORK AREA, ACCESSIBLE (250 S.F.)**

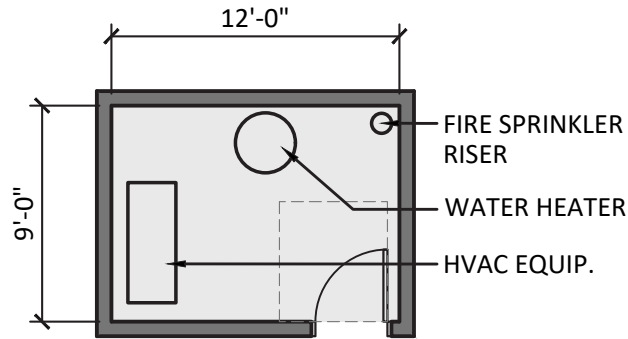
### **23. BC BEDROOM, BATHROOM AND WORK AREA, ACCESSIBLE (250 S.F.)**

SCALE: 1/8"=1'-0"



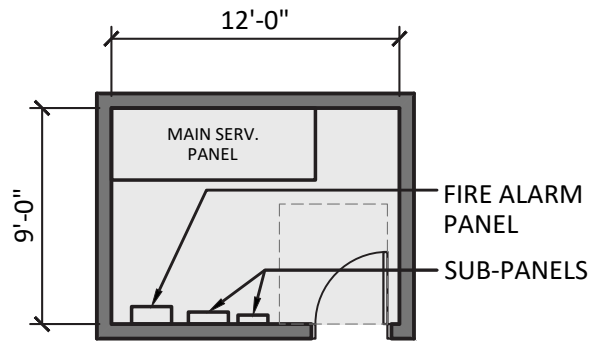


# FIRE HOUSE - UTILITY SUPPORT/VERTICAL CIRCULATION



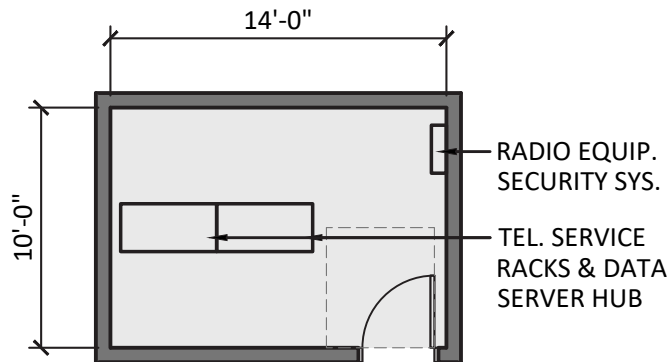
### 24. MECHANICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"



### 25. ELECTRICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"



### 26. COMMUNICATIONS ROOM (140 S.F.)

SCALE: 1/8"=1'-0"





**FIRE STATION NO. 1**

(E) LOT AREA:	10,125 S.F.
3 ADDITIONAL TOTAL LOT AREA:	14,035 S.F.
(E) BUILDING TOTAL AREA:	7,474 S.F.
(N) TOTAL BLDG. AREA:	16,333 S.F.

**LEGEND:**

- EXISTING BUILDING AREA
- ADDED BUILDING AREA
- RENOVATION AREA

**SITE PLAN DIAGRAM**

SCALE: 1/32" = 1'-0"



**CITY OF BERKELEY**  
**FIRE SERVICE MASTER PLAN**  
**SITE STUDIES**

TITLE:

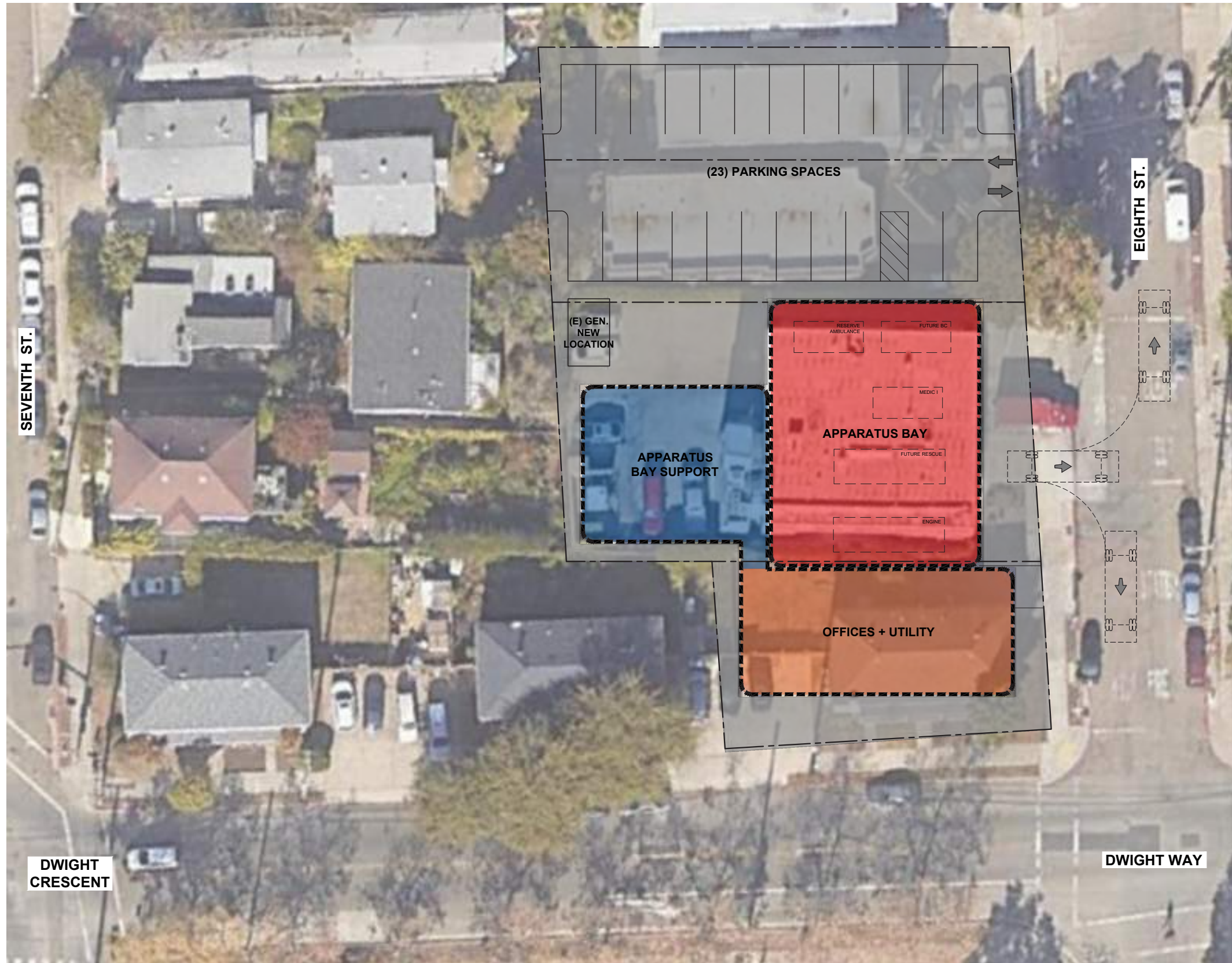
**FIRE STATION NO. 1 - SITE PLAN (OPTION 1 - BLDG. RENOVATION & ADDITIONAL AREA)**  
 2442 EIGHTH STREET, BERKELEY, CA 94710

03.17.2023

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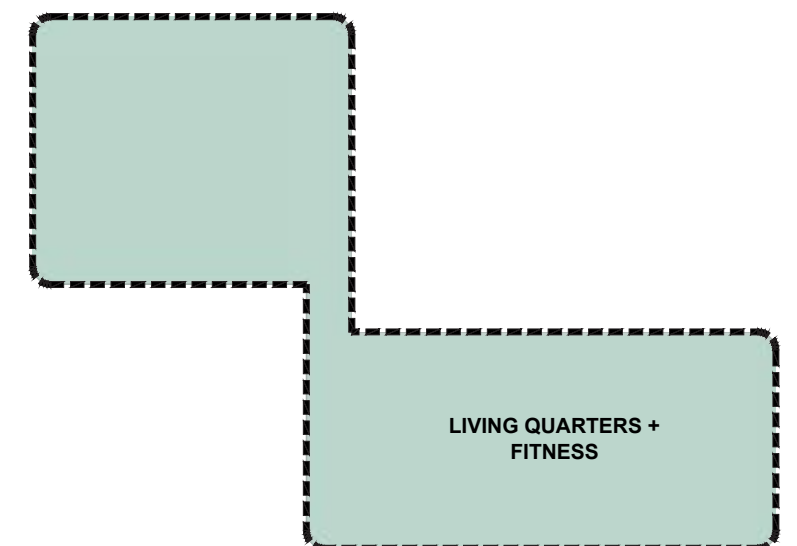
**SITE/FIRST FLOOR DIAGRAM**

SCALE: 1/32" = 1'-0"

**FIRE STATION NO. 1**

2 STORY BUILDING

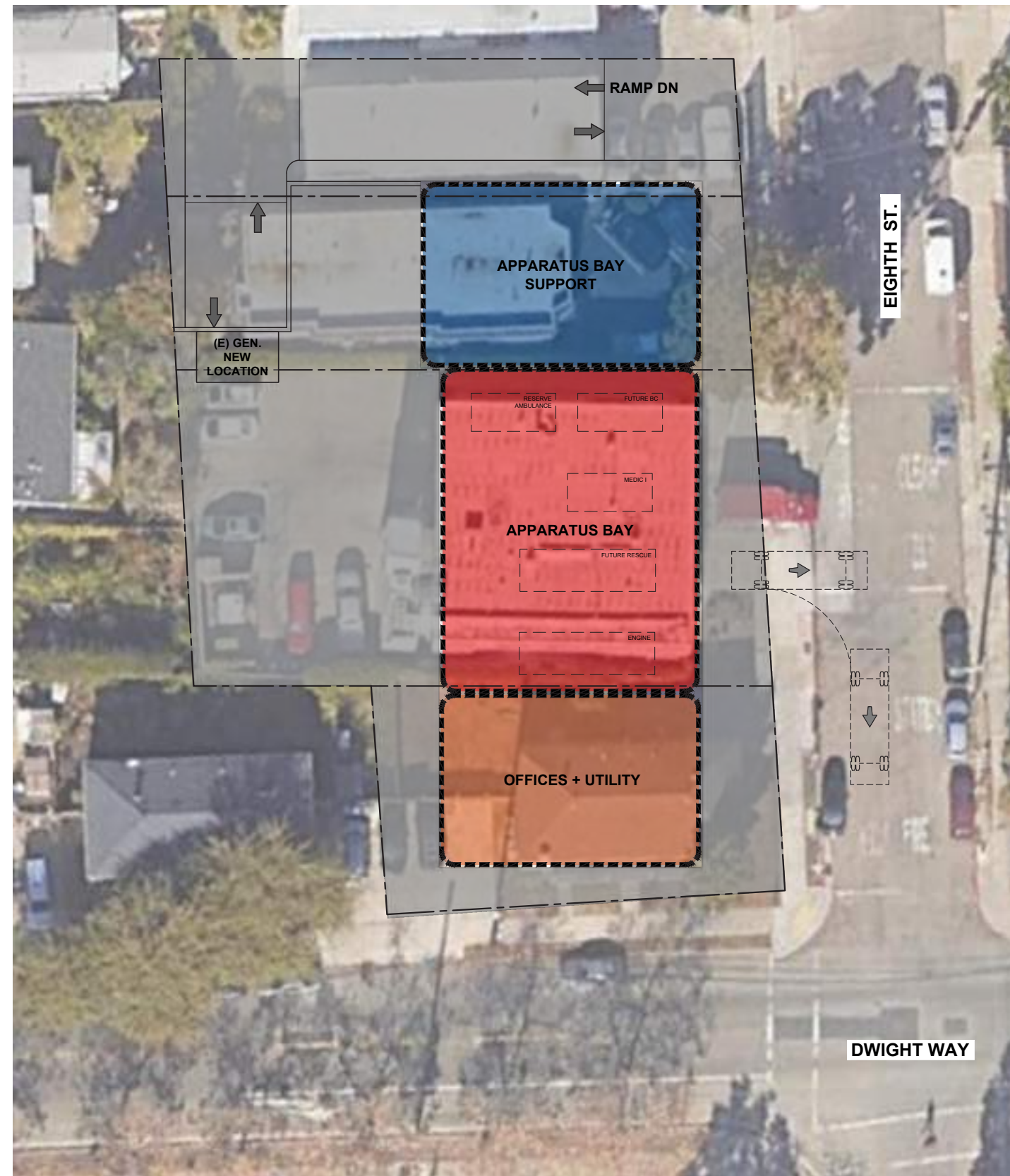
1ST FLOOR BUILDING AREA: 9,786 S.F.  
 2ND FLOOR BUILDING AREA: 5,920 S.F.  
 TOTAL BUILDING AREA: 15,706 S.F.



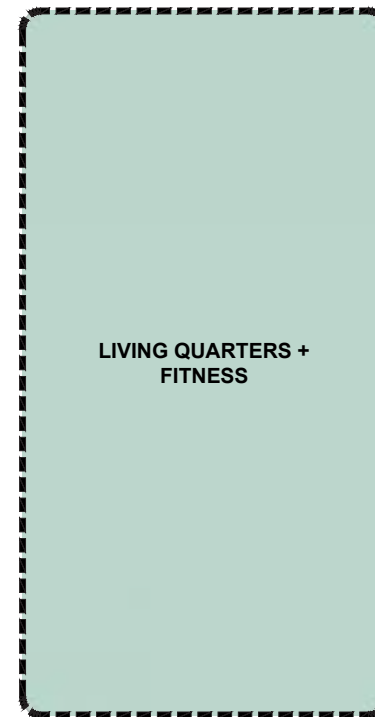
**SECOND FLOOR DIAGRAM**

SCALE: 1/32" = 1'-0"

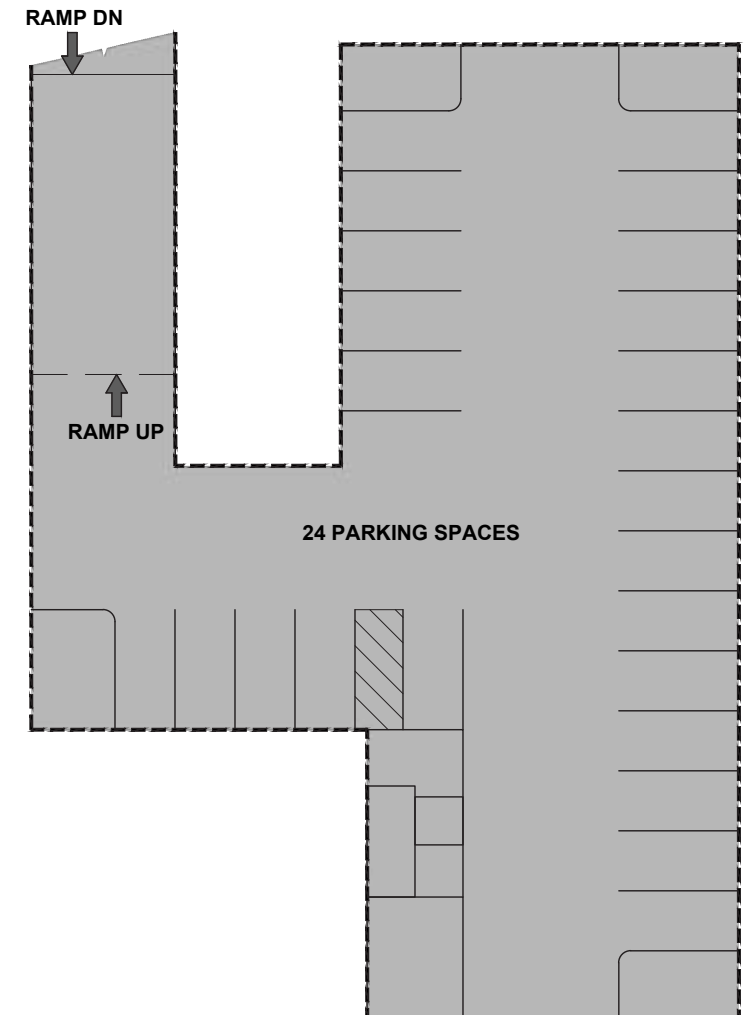




**FIRE STATION NO. 1**  
 2 STORY BUILDING + BASEMENT PARKING  
 BASEMENT PARKING AREA: 12,810 S.F.  
 1ST FLOOR BUILDING AREA: 9,461 S.F.  
 2ND FLOOR BUILDING AREA: 5,920 S.F.  
 TOTAL BUILDING AREA: 28,516 S.F.



**SECOND FLOOR DIAGRAM**  
 SCALE: 1/32" = 1'-0"



**BASEMENT FLOOR DIAGRAM**  
 SCALE: 1/32" = 1'-0"

**SITE/FIRST FLOOR DIAGRAM**  
 SCALE: 1/32" = 1'-0"



**FIRE STATION NO. 1**

NEW LOCATION - 15,700 S.F. - 2 STORY BUILDING & PARKING  
PURCHASE NEW PROPERTY AND REPLACE STATION





# FIRE STATION 2



## CITY OF BERKELEY

### FIRE HOUSE NO. 2

2029 BERKELEY WAY, BERKELEY, CA 94704

DRAFT

MAY 08, 2023

#### PROJECT DESCRIPTION

Fire House No. 2 was expanded to 13,598 SF when it was seismically upgraded in 1995. In this expansion the living quarters were modified to provide space for 8 on-duty personnel per shift and a fifth bay was added. The fire station currently houses 11 personnel per shift and Truck 2 (3), Engine 2 (3), Medic 2 (2), Medic Supervisor (1), Battalion Chief (1) and Medic Trainee (1). The staffing will increase to 13 personnel per shift. The firehouse also houses a Type VI wildland unit and the department's Hazardous Material unit, a reserve truck, reserve engine as well as an utility truck. Several of the units can not be housed in the apparatus bays.

Three options were evaluated. They include:

1. Renovation and expansion of the existing station with a 3rd story to provide 21,000 SF of space. Parking requirements are not met with this solution.
2. Replace station on existing site with one level of roof top parking. Parking requirements are not met.
3. Replace station on existing site with 3 story, 21,000 SF station and two levels of rooftop parking. Parking requirements are met with this solution.

The recommended option for this location is Option 3. All program criteria are met.

The ROM Project Budget for the Recommended Option 3 is \$51-56M; not including escalation beyond 2024.





**Fire House No. 2 - Battalion Station**  
**Engine 2, Truck 2, Medic 2, Battalion Chief, EMS Chief**  
**2029 Berkeley Way**

**CONCEPTUAL SPACE NEEDS OUTLINE**

<b>Fire House Company Make-up - Staffing Per shift</b>	<b>Current</b>	<b>Future</b>
Truck 2 - Captain , Engineer, Firefighter/Paramedic	3	4
Engine 2 - Captain, Engineer, Firefighter/Paramedic	3	4
Medic 2 - Medic, EMT	2	2
Battalion Chief - 1	1	1
EMS Chief -1	1	1
Medic Trainee	1	1
Type VI 4X4 - Cross Staffed	0	0
Hazardous Materials Unit - Cross Staffed (May be relocated)	0	0
Truck - Reserve	0	0
Reserve Ambulance	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING:</b>	<b>11</b>	<b>13</b>

<b>No.</b>	<b>Type of Space</b>	<b>Space Attributes</b>	<b>Square Footage</b>	
			<b>Program</b>	<b>Size</b>
<b>SITE OPERATIONS</b>				
	<b>Firefighter Parking</b>	26 firefighter parking spaces, secure and separate from public parking	5,200	10'x20' ea.
	<b>Visitor Parking</b>	One regular and one ADA adjacent to entrance, shared with other public parking areas.	200	10' x 20
	<b>Apparatus Washing Area</b>	Adjacent to hydrant for refill and testing; locate at rear of App. Bays; provide clarifier for run-off	0	rear apron
	<b>Hose Maintenance Area</b>	Use rear apron area for cleaning hose; roll wet and store on apparatus	0	rear apron
	<b>Yard Hydrant</b>	Located at rear yard	0	rear apron
	<b>Generator Area</b>	Located at rear yard	150	10'x15'
	<b>Fueling Area</b>	Above Grade Convault System - 1,500 GA	240	12' x 20'
	<b>Trash Enclosure</b>	Exterior access for service; space for dumpster and recycling bins, Covered	150	10'x15'
	<b>Flagpole</b>	Flagpole area with lighting	25	5'x5'
	<b>Outdoor Patio or Deck</b>	Outdoor uses; adjacent to Kitchen	200	10'x20'

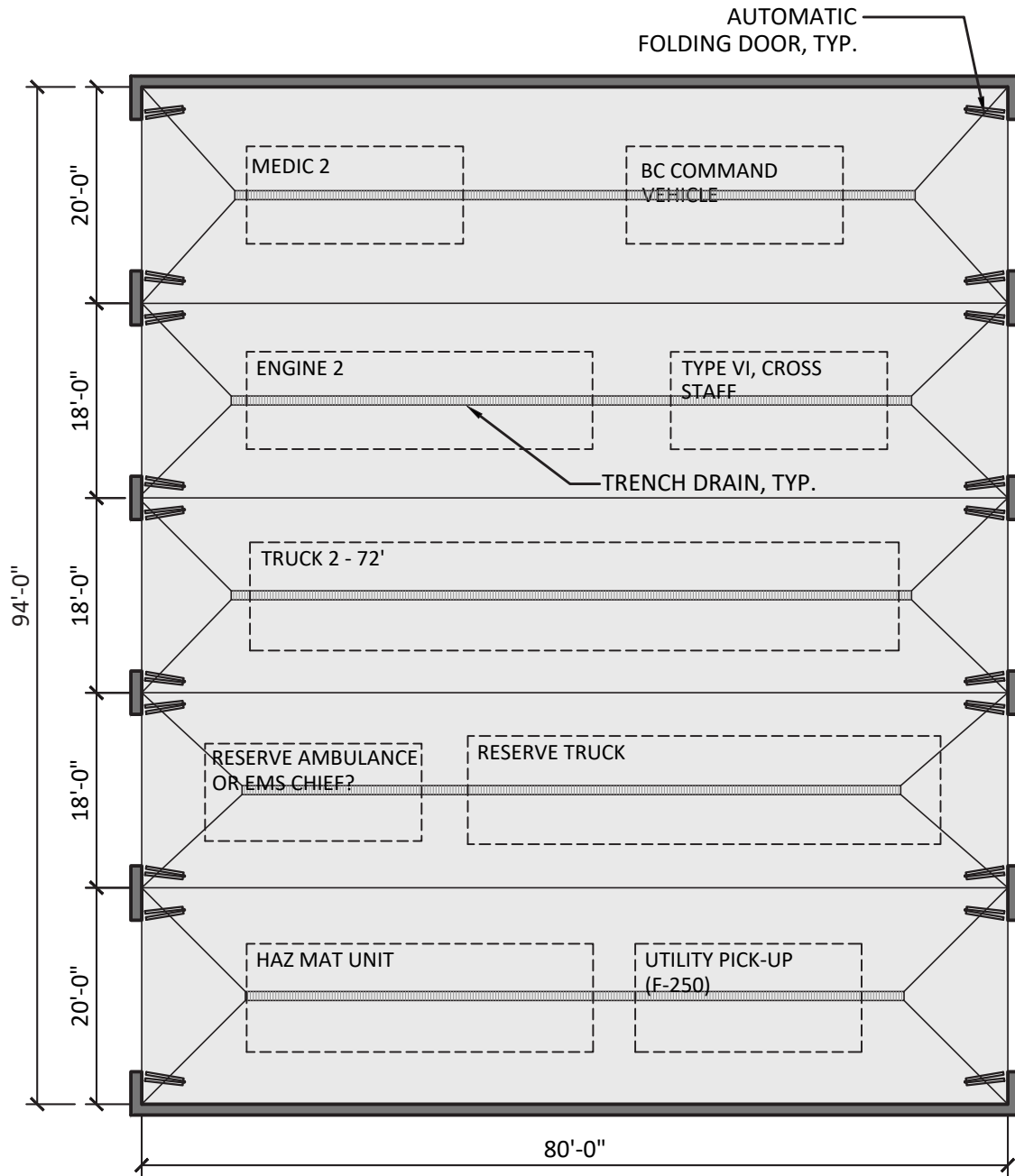
No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - APP BAY/APP BAY SUPPORT</b>				
1	Apparatus Bay (Two Truck drive through bay, five double bays)	Truck 2, Engine 2, Medic 2, BC Unit - Front line apparatus. , EMS Chief Unit, Haz Mat, Type VI Engine, Reserve truck, reserve ambulance, F-250 Utility Truck. Systems include tailpipe exhaust, power and air cord drops to each vehicle; electric heating system; night lighting; bi-folding auto-close doors; trench drains	7,520	(2) 20'x 80' (3) 18' x 80'
2	Medical Supply Closet	Heavy Duty Shelving; medical supplies off of apparatus bay.	24	3' x 8'
3	Clean Up	Clean-up sink, shelving, Alcove in bay.	18	3' x 6'
4	Equipment Storage	Yard equipment, bike storage (LEED Requirement), compressor	96	8' x 12'
5	Turnout Gear Room	Two lockers for each assigned personnel (13 Personnel per day x 3 = 39); Four unassigned for 82 total lockers. Power at each locker, continuous exhaust fan, floor drain, heavy duty shelving; wildland gear bags. Dirty area in room with Extractor and Dryer, decon shower and hanging area. Part of response return path.	1,200	50' x 24'
6	Janitor Room	Service sink, mop rack; janitorial supplies;	48	6' x 8'
7	Work Shop Alcove	Work bench/shop area for vise, peg board, tool storage with large flat work surface, Misc. equipment storage , tool chest, Full height storage cabinet, shop sink and eyewash.	120	4' x 30'
8	Firefighter Restroom	Fire fighter toilet and sink, off of apparatus bay	64	8'x8'
9	SCBA Air Fill	Four station air fill unit with cascade system, work bench and SCBA tank storage	160	10' x 16'
10	Oxygen Cascade System and storage	Four Unit Oxygen cascade fill station with medical supply storage, work bench and oxygen tank storage. Explosion Proof room.	80	8' x 10'
11	Fitness Room	Dedicated Fitness Room	624	26' x 24'
<b>Fire House - App Bay/Support Subtotal</b>			<b>9,954</b>	

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - FIREFIGHTER OFFICES</b>				
12	Fire House Public Lobby	Lobby with seating; adjacent to the public restroom. Service window separation between Watch Office and lobby. Alcove in Lobby for Blood Pressure and other wellness checks.	180	12' x 15'
13	Fire House Public Restroom	One All Gender Restroom, accessible, off of Lobby	64	8'x8'
14	Watch Office	Workstations for 4-persons; provide space for lateral file cabinets (one cabinet per company) copy machine and office supply storage, book shelving; conference function	238	14' x 17'
15	Captains Office (Truck Captain and Engine Captain)	Workstation for 2-persons; provide space for (6) lateral file cabinets.	120	10' x 12'
16	Battalion Chiefs Office	Workstation for 3-persons; provide space for lateral file cabinets, Meeting table for four	288	18' x 16'
17	EMS Chief Office	Workstation for 3-persons; provide space for lateral file cabinets, Meeting table for four	288	18' x 16'
<b>Fire House - Firefighter Offices Subtotal</b>			<b>1,178</b>	
No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - FIREFIGHTER QUARTERS</b>				
18	Kitchen	3-refrigerators; 3-shift pantries; 1-house pantry and refrigerator; 2-dishwasher; electric induction range/oven with hood; large microwave; large, 12" deep sink with disposer; prep sink at island; trash and recycling areas; coffer service area; open to Dining Area.	378	18' x 21'
19	Dining Area	Seating for 14 persons; wall-mounted TV; open to kitchen; open to Day Room	252	12' x 21'
20	Day Room	Seating for 14 with recliner chairs; entertainment center and book shelving; Open to Dining, one work station along wall.	720	24' x 30'
21	Laundry Room	Service sink; countertop; janitorial supplies; mop rack, Washer/Dryer	140	10' x 14'
22	Firefighter Bedroom	9-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed with lockers outside door.	689	8'-6" x 9' (9)
23	Firefighter Bathroom ADA	1 accessible restroom with shower, sink, toilet	81	9' x 9'
24	Firefighter Bathrooms	4 restrooms with shower, sink, toilet	256	8' x 8' (4)
25	Captain Bedroom, Bathroom and Work Area, Accessible	2-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed. One with accessible in-suite bathroom.	500	10' x 11' 9' x 10' 5'x10' (2)
26	BC Bedroom, Bathroom and Work Area, Accessible	1-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed. One with accessible in-suite bathroom.	250	10' x 11' 9' x 10' 5'x10' (2)
27	EMS Chief Bedroom, Bathroom and Work Area, Accessible	1-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed. One with accessible in-suite bathroom.	250	10' x 11' 9' x 10' 5'x10' (2)
<b>Fire House - Firefighter Quarters Subtotal</b>			<b>3,516</b>	

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>UTILITY SUPPORT/VERTICAL CIRCULATION</b>				
28	Mechanical Room	HVAC equipment; hot water heater; fire sprinkler riser	108	9' x 12'
29	Electrical Room	Main service panel, fire alarm panel; sub panels	108	9' X 12'
30	Communications Room	Telephone service racks, alert response system hub, data server hub, radio equipment; security system	170	10' x 17'
31	Stairs	(3x) for each level. Three stairways from the second floor for exiting	864	18' x 8'
32	Fire House Elevator	Elevator and machine room	240	8' x 10' (3)
<b>Utility Support/ Vertical Circulation Subtotal</b>			<b>1,490</b>	

<b>Engine 2, Truck 2, Medic 2, Battalion Chief, EMS Chief: Summary</b>		<b>Program</b>	
	Fire House - App Bay/Bay Support Subtotal	9,954	
	Fire House - Firefighter Offices Subtotal	1,178	
	Fire House - Firefighter Quarters Subtotal	3,516	
	Utility Support/Vertical Circulation Subtotal	1,490	
	<b>BUILDING SUBTOTAL (SF)</b>	<b>16,138</b>	
	Circulation at 30%	4,841	
<b>Engine 2, Truck 2, Medic 2, Battalion Chief, EMS Chief: GRAND TOTAL (SF)</b>		<b>20,979</b>	

# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



## 1. APPARATUS BAY - 5 DRIVE-THROUGH BAYS (7,520 S.F.)

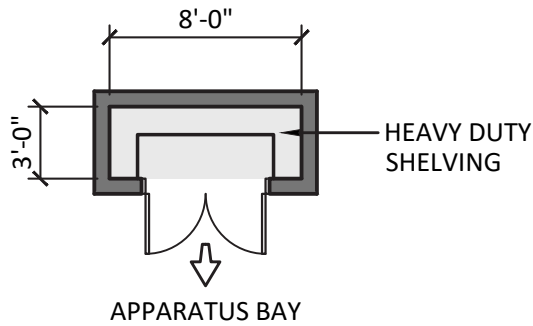
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CITY OF BERKELEY  
**FIRE HOUSE NO. 2**  
 ENGINE II, TRUCK II, MEDIC II, BATTALION CHIEF, EMS CHIEF

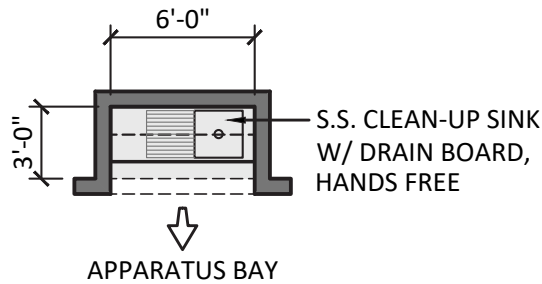


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



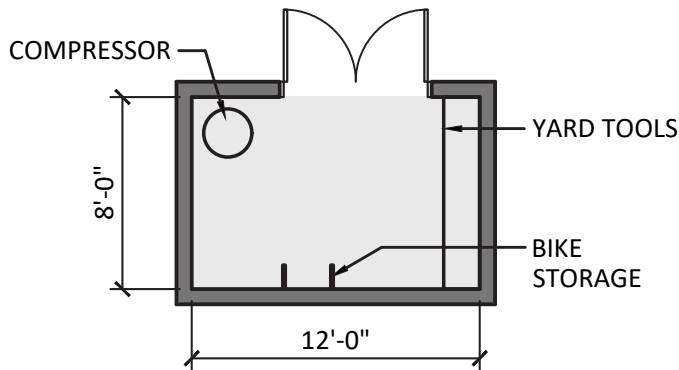
## 2. MEDICAL SUPPLY CLOSET (24 S.F.)

SCALE: 1/8"=1'-0"



## 3. CLEAN-UP (18 S.F.)

SCALE: 1/8"=1'-0"



## 4. EQUIPMENT STORAGE (96 S.F.)

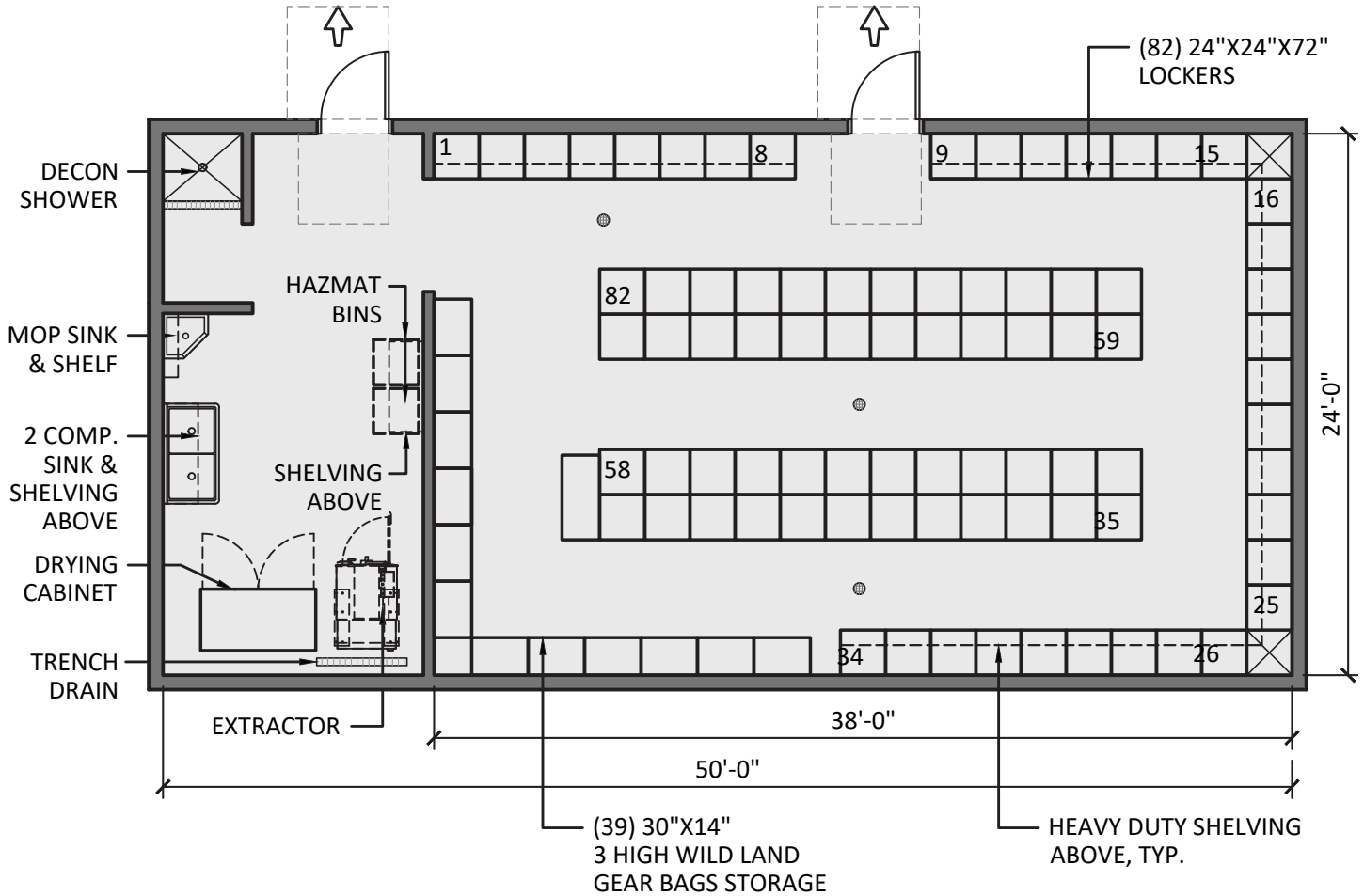
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CITY OF BERKELEY  
**FIRE HOUSE NO. 2**  
 ENGINE II, TRUCK II, MEDIC II, BATTALION CHIEF, EMS CHIEF



# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

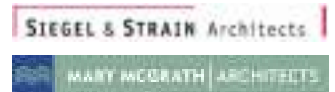


## 5. TURNOUT GEAR ROOM (1,200 S.F.)

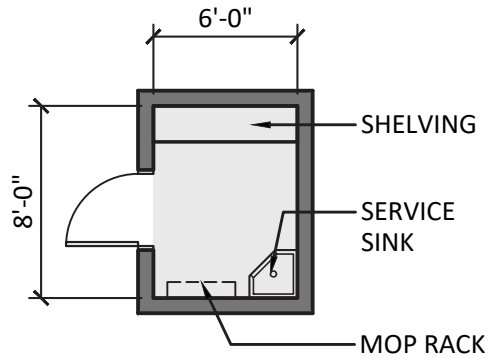
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CITY OF BERKELEY  
**FIRE HOUSE NO. 2**  
 ENGINE II, TRUCK II, MEDIC II, BATTALION CHIEF, EMS CHIEF

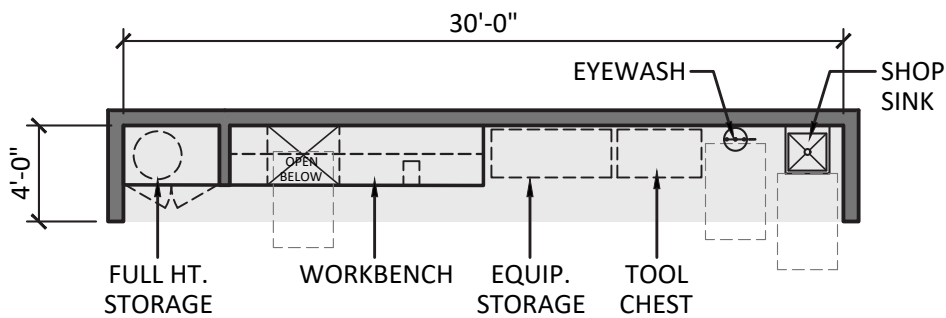


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



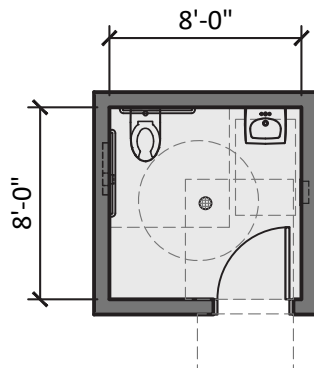
### 6. JANITOR ROOM (48 S.F.)

SCALE: 1/8"=1'-0"



### 7. WORKSHOP ALCOVE (120 S.F.)

SCALE: 1/8"=1'-0"



### 8. FIREFIGHTER RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"

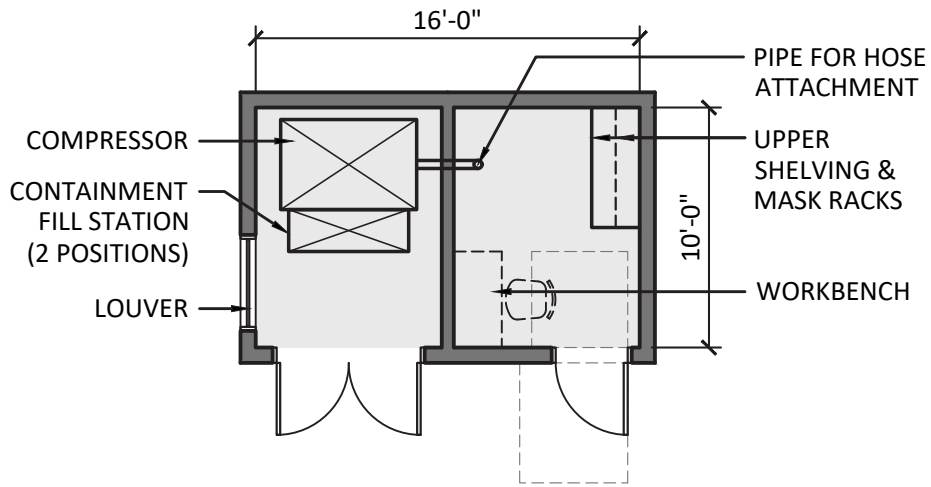


CITY OF BERKELEY  
**FIRE HOUSE NO. 2**  
 ENGINE II, TRUCK II, MEDIC II, BATTALION CHIEF, EMS CHIEF



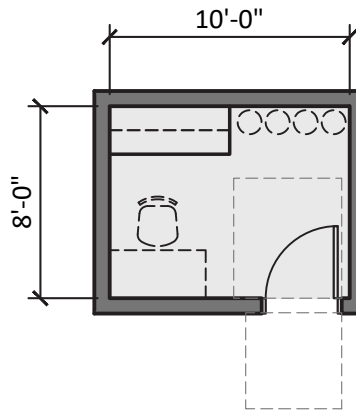


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



### 9. SCBA AIR FILL (160 S.F.)

SCALE: 1/8"=1'-0"



### 10. OXYGEN CASCADE SYSTEM AND STORAGE (80 S.F.)

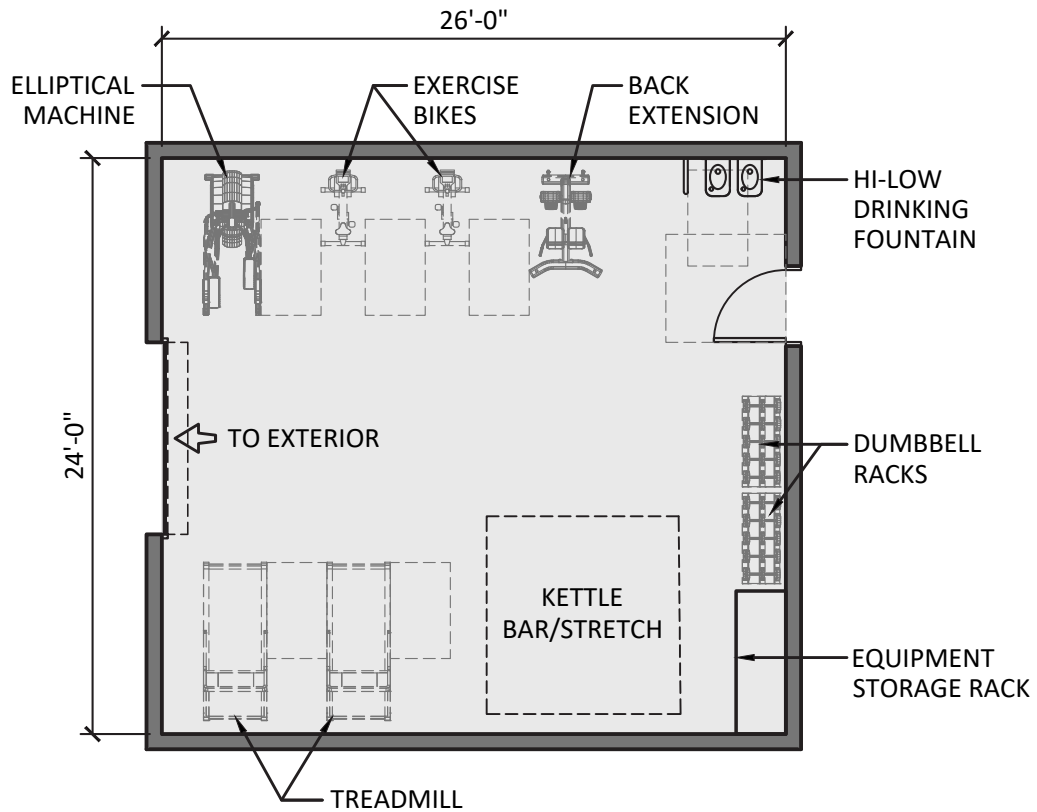
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CITY OF BERKELEY  
**FIRE HOUSE NO. 2**  
 ENGINE II, TRUCK II, MEDIC II, BATTALION CHIEF, EMS CHIEF

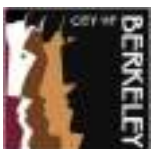


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

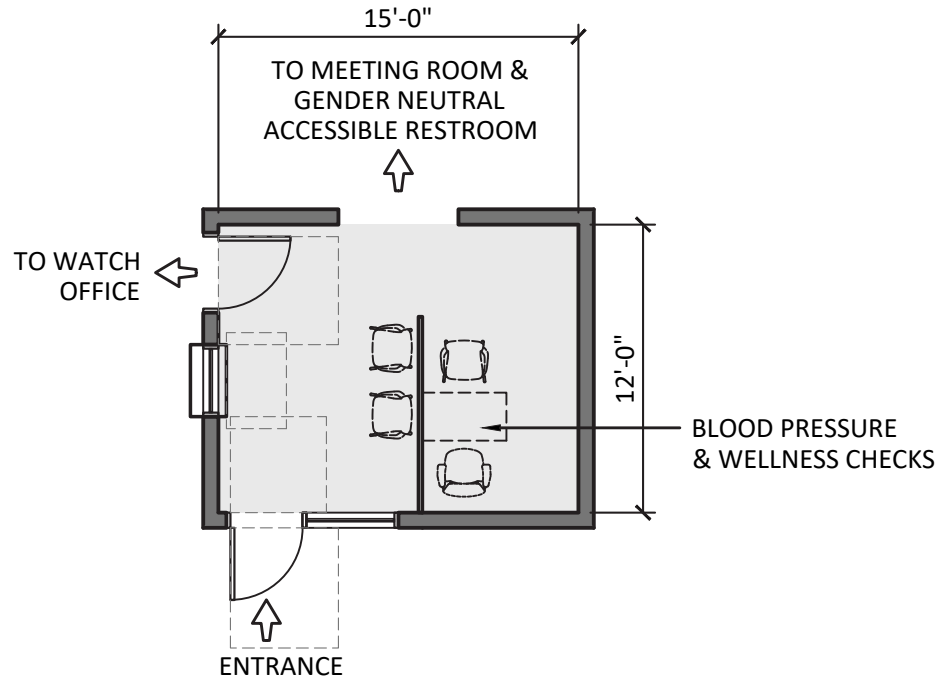


## **11. FITNESS ROOM (624 S.F.)**

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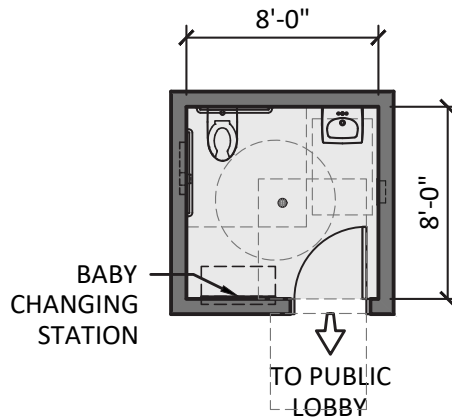


# FIRE HOUSE - FIREFIGHTER OFFICES



### 12. FIRE HOUSE PUBLIC LOBBY (180 S.F.)

SCALE: 1/8"=1'-0"

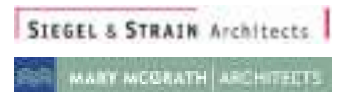


### 13. FIRE HOUSE PUBLIC RESTROOM (64 S.F.)

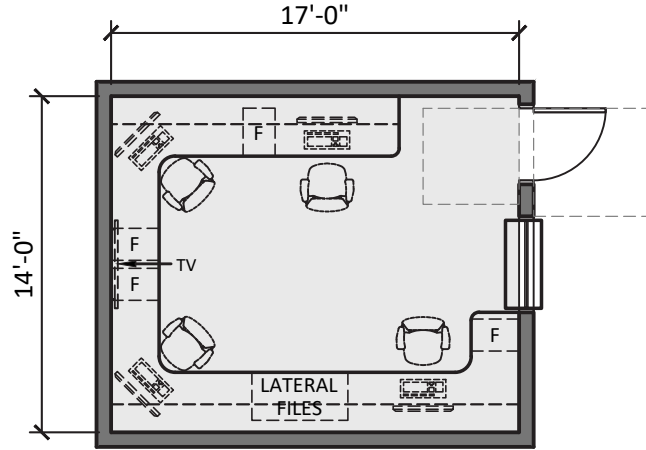
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CITY OF BERKELEY  
**FIRE HOUSE NO. 2**  
 ENGINE II, TRUCK II, MEDIC II, BATTALION CHIEF, EMS CHIEF

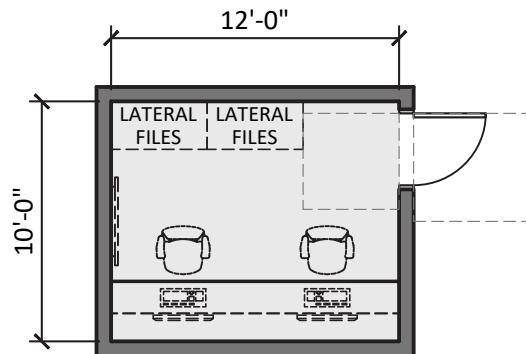


# FIRE HOUSE - FIREFIGHTER OFFICES



## 14. WATCH OFFICE (238 S.F.)

SCALE: 1/8"=1'-0"

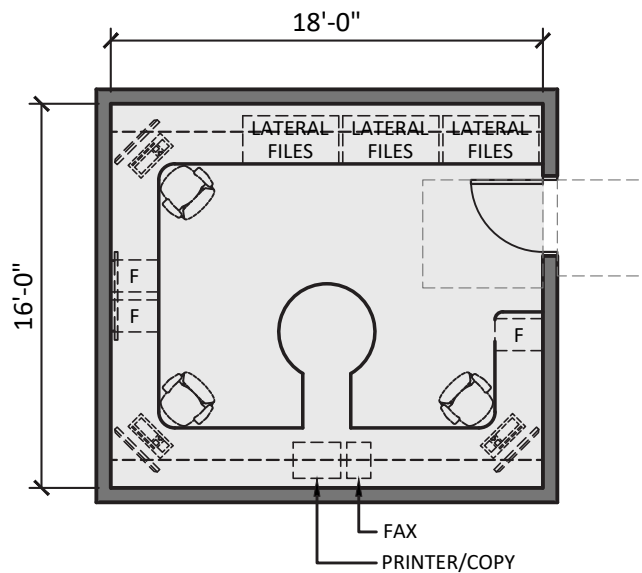


## 15. CAPTAIN'S OFFICE (120 S.F.)

SCALE: 1/8"=1'-0"



# FIRE HOUSE - FIREFIGHTER OFFICES



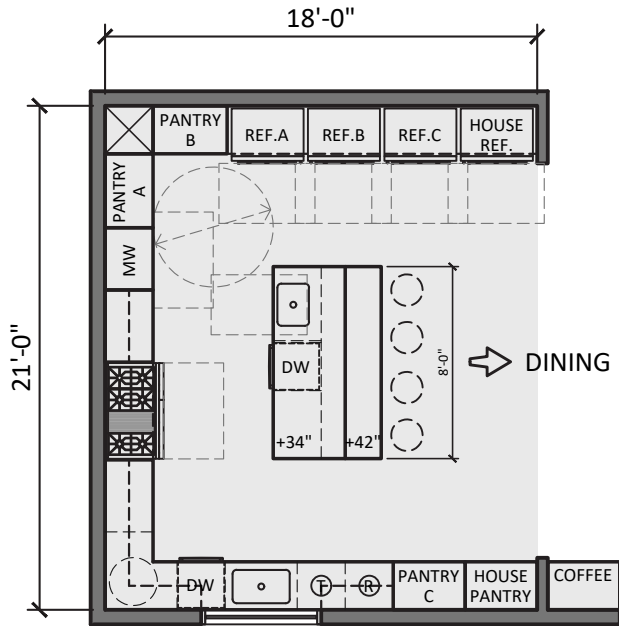
**16. BATTALION CHIEFS OFFICE (288 S.F.)**

**17. EMS CHIEF OFFICE (288 S.F.)**

SCALE: 1/8"=1'-0"

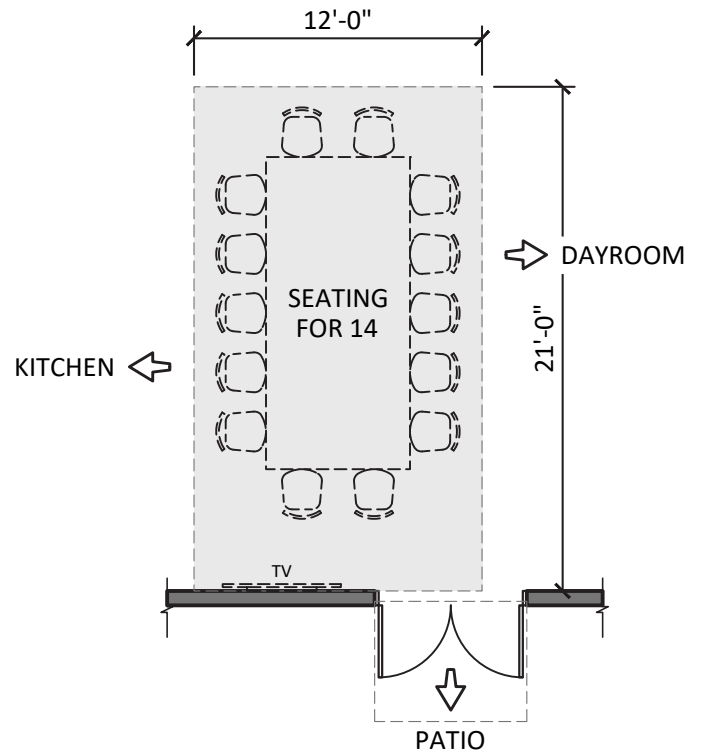


# FIRE HOUSE - FIREFIGHTER QUARTERS



**18. KITCHEN (378 S.F.)**

SCALE: 1/8"=1'-0"

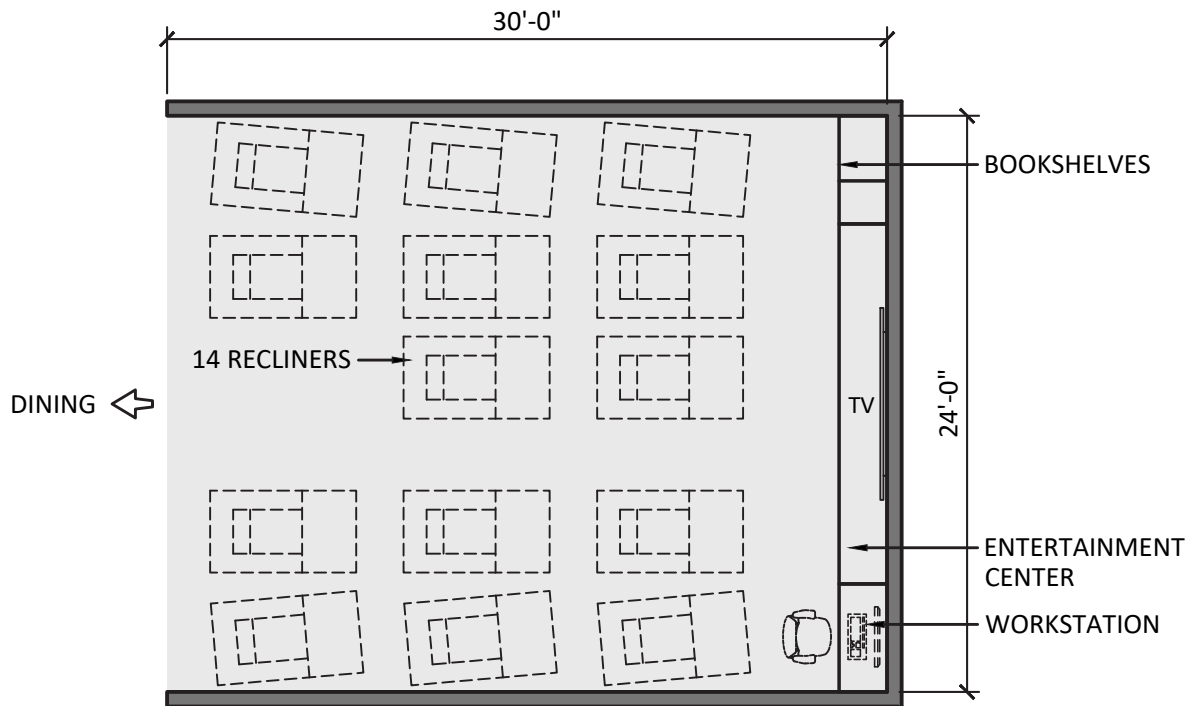


**19. DINING AREA (252 S.F.)**

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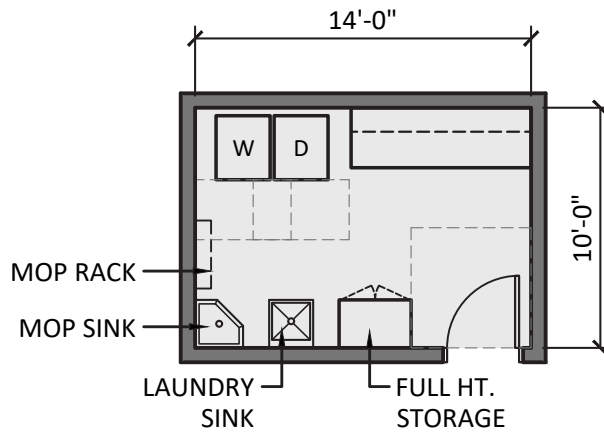


# FIRE HOUSE - FIREFIGHTER QUARTERS



### 20. DAY ROOM (720 S.F.)

SCALE: 1/8"=1'-0"

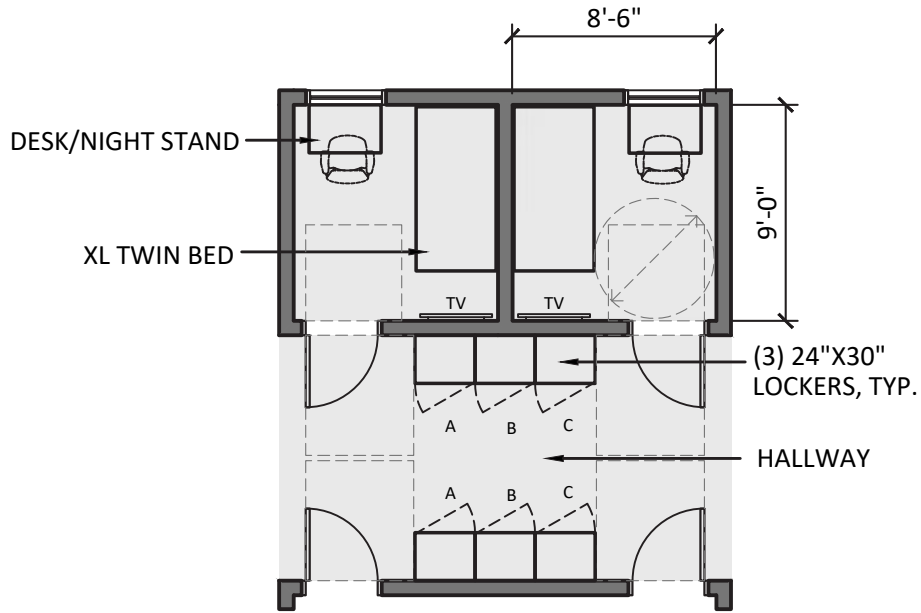


### 21. LAUNDRY ROOM (140 S.F.)

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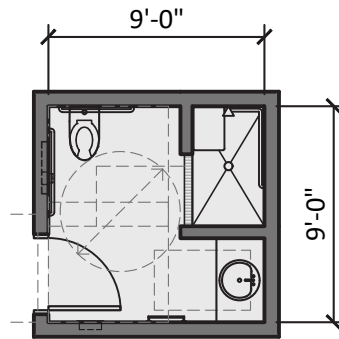


# FIRE HOUSE - FIREFIGHTER QUARTERS



## 22. FIREFIGHTER BEDROOM - 9 (689 S.F.)

SCALE: 1/8"=1'-0"



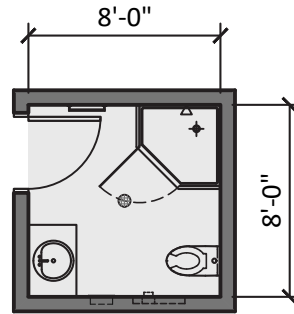
## 23. FIREFIGHTER BATHROOM - ADA (81 S.F.)

SCALE: 1/8"=1'-0"



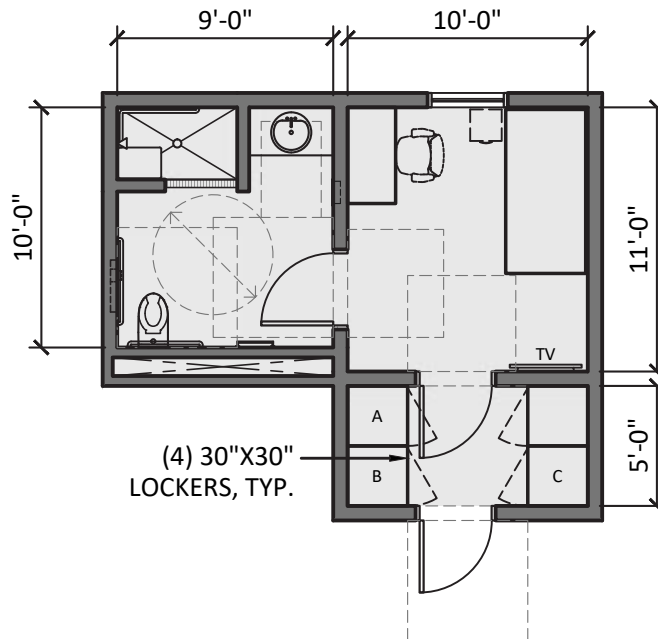


# FIRE HOUSE - FIREFIGHTER QUARTERS



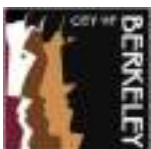
### **24. FIREFIGHTER BATHROOM - 4 (256 S.F.)**

SCALE: 1/8"=1'-0"



### **25. CAPTAIN BEDROOM, BATHROOM AND WORK AREA, ACCESSIBLE - 2 (500 S.F.)**

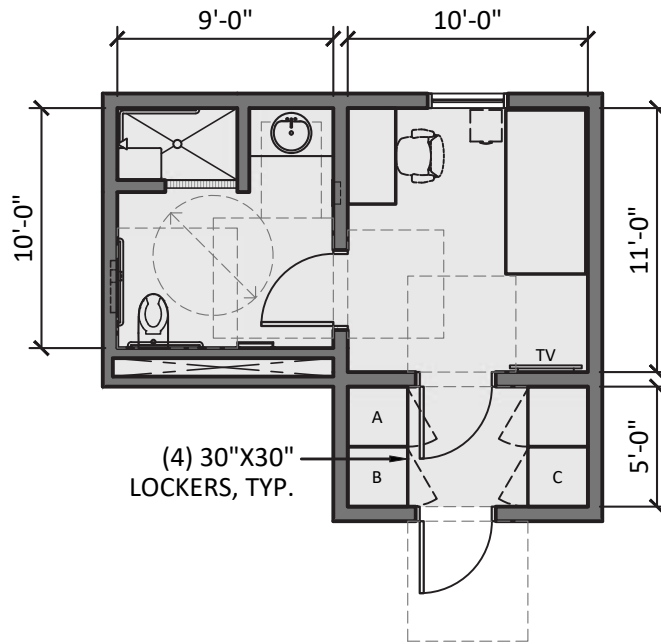
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 2**  
ENGINE II, TRUCK II, MEDIC II, BATTALION CHIEF, EMS CHIEF



# FIRE HOUSE - FIREFIGHTER QUARTERS



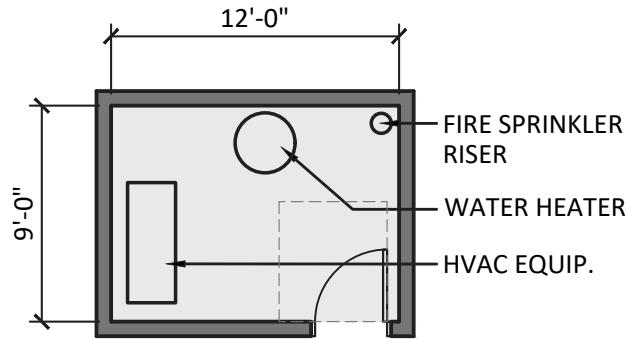
**26. BC BEDROOM, BATHROOM AND WORK AREA, ACCESSIBLE (250 S.F.)**

**27. EMS CHIEF BEDROOM, BATHROOM AND WORK AREA, ACCESSIBLE (250 S.F.)**

SCALE: 1/8"=1'-0"

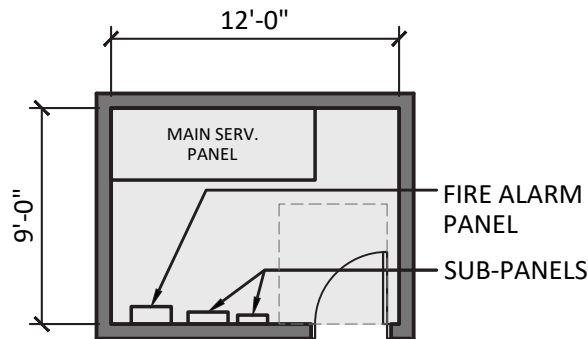


# FIRE HOUSE - UTILITY SUPPORT/VERTICAL CIRCULATION



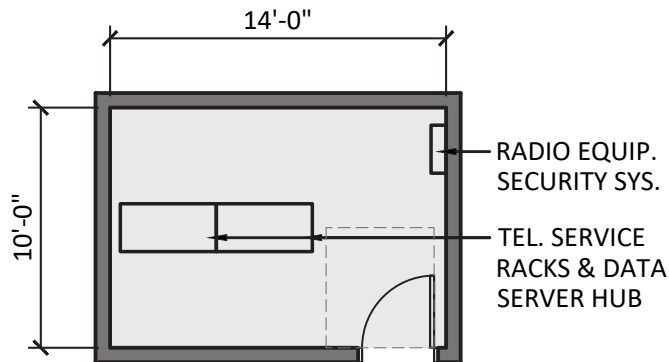
### 28. MECHANICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"



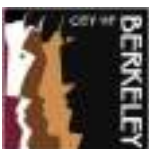
### 29. ELECTRICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"






### 30. COMMUNICATIONS ROOM (140 S.F.)

SCALE: 1/8"=1'-0"



(E) LOT AREA: 26,000 S.F.  
 (E) BUILDING TOTAL AREA: 13,955 S.F.  
 PROPOSED ADDED BLDG. AREA: 7,174 S.F.

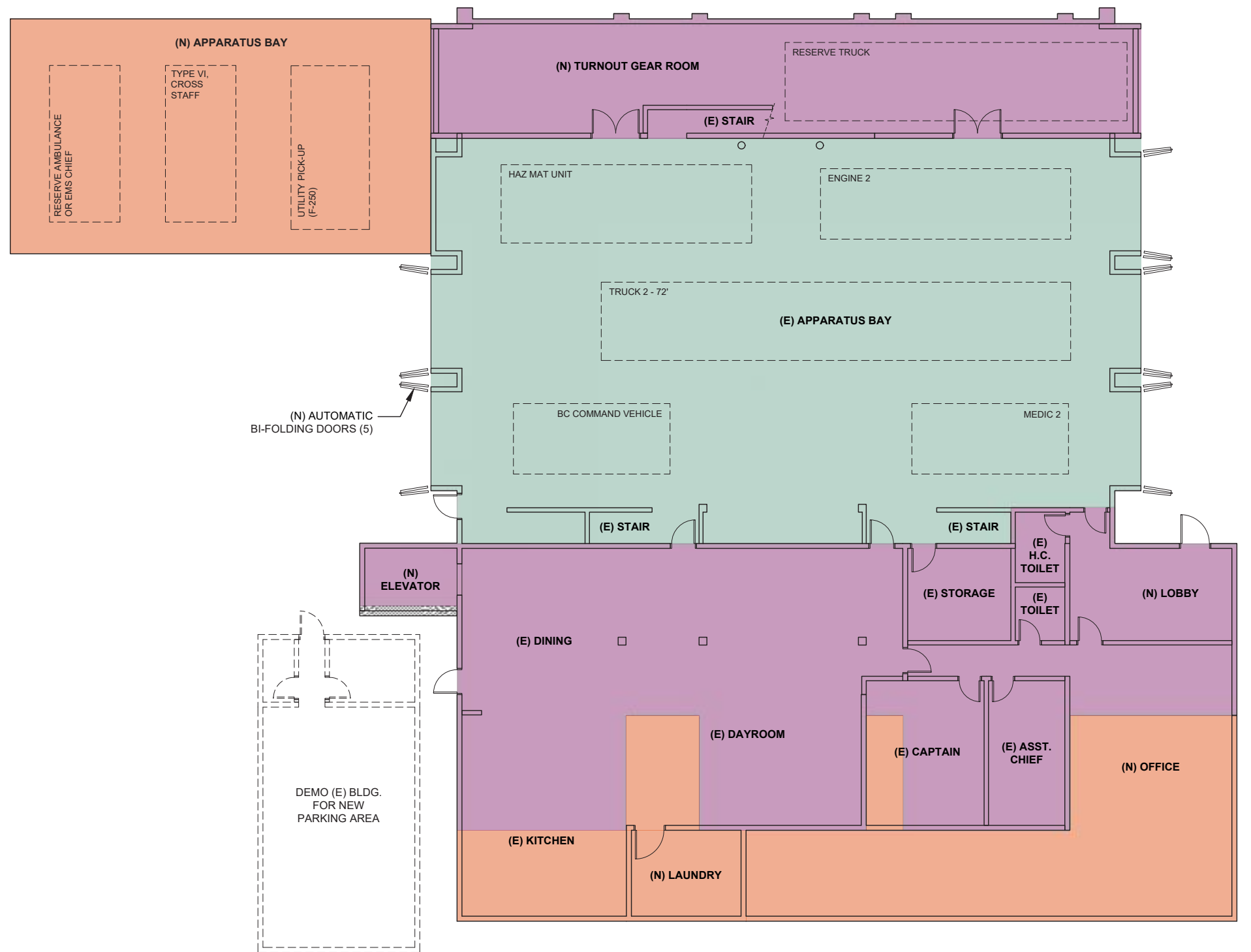
**LEGEND:**

-  EXISTING BUILDING AREA
-  ADDED BUILDING AREA
-  RENOVATION AREA



**SITE/FIRST FLOOR DIAGRAM**

SCALE: 1/64" = 1'-0"



**FIRST FLOOR DIAGRAM**

SCALE: 1/16" = 1'-0"



**CITY OF BERKELEY**  
 FIRE SERVICE MASTER PLAN  
 SITE STUDIES

TITLE:

**FIRE STATION NO. 2 - (OPTION 1 - BLDG. RENOVATION & ADDITIONAL AREA)**  
 2029 BERKELEY WAY, BERKELEY, CA 94704

03.17.2023

**SIEGEL & STRAIN Architects**  
 6201 DOYLE STREET, SUITE B,  
 EMERYVILLE, CA 94608  
 phone: 510.547.8092 | www.siegelstrain.com

**MARY MCGRATH ARCHITECTS**  
 610 16th STREET, SUITE 219, OAKLAND, CA 94612  
 phone: 510.208.9400  
 www.marymcgratharchitects.com

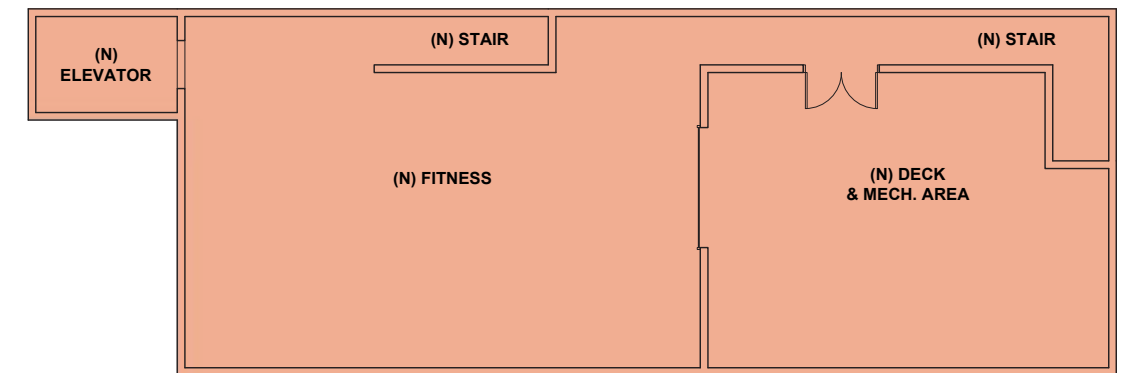


**SECOND FLOOR DIAGRAM**

SCALE: 1/16" = 1'-0"

**LEGEND:**

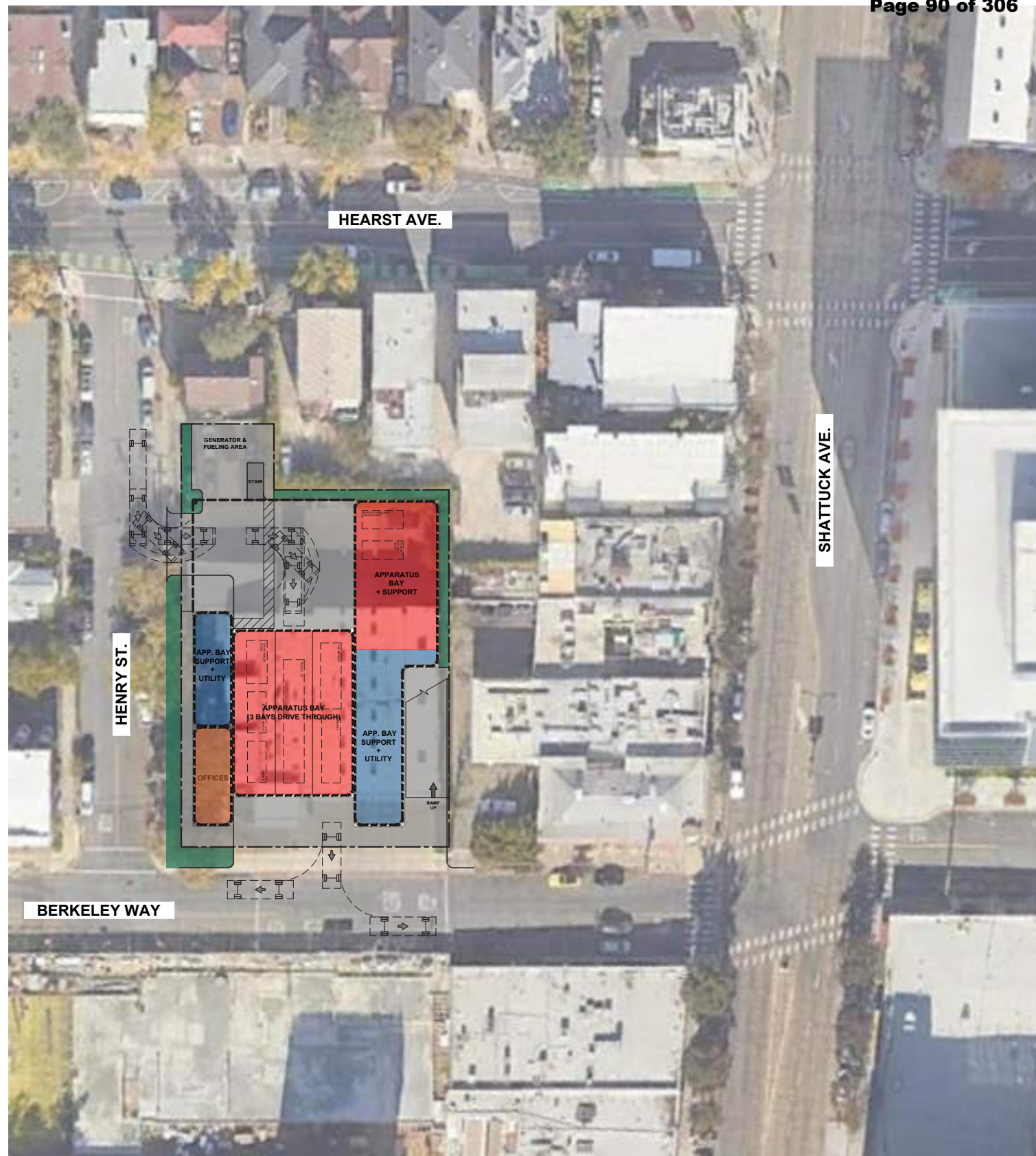
- EXISTING BUILDING AREA
- ADDED BUILDING AREA
- RENOVATION AREA



**THIRD FLOOR DIAGRAM**

SCALE: 1/16" = 1'-0"





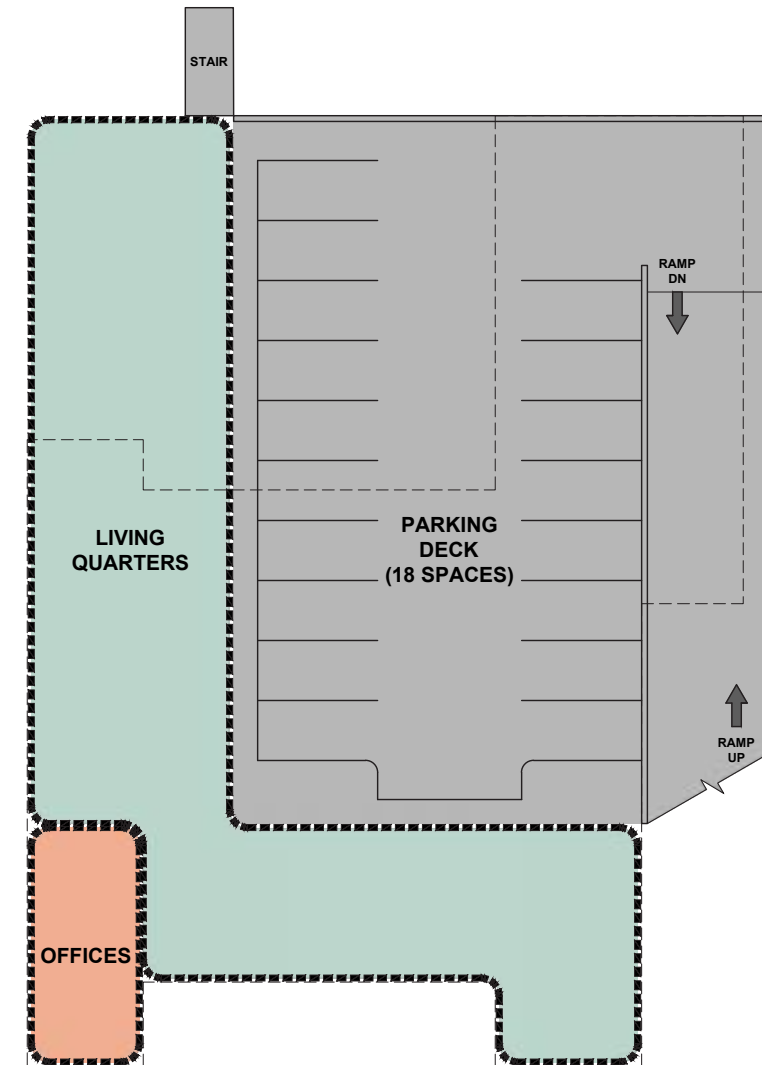
**SITE/FIRST FLOOR DIAGRAM**

SCALE: 1/64" = 1'-0"

**FIRE STATION NO. 2**

2 STORY BUILDING

1ST FLOOR BUILDING AREA:	12,070 S.F.
2ND FLOOR BUILDING AREA:	7,374 S.F.
3RD FLOOR BUILDING AREA:	1,535 S.F.
TOTAL BUILDING AREA:	20,979 S.F.



**SECOND FLOOR DIAGRAM**

SCALE: 1/32" = 1'-0"



**THIRD FLOOR DIAGRAM**

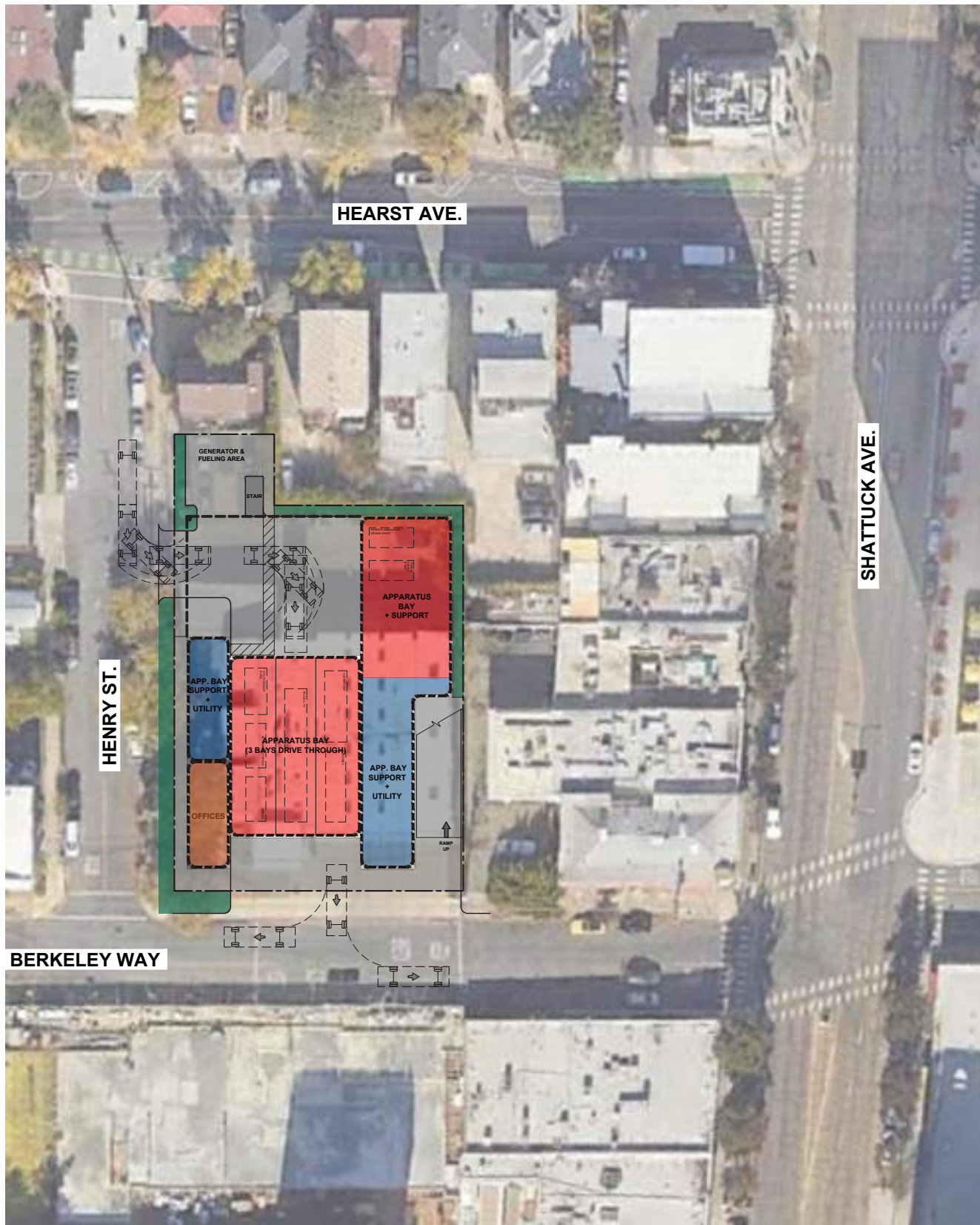
SCALE: 1/32" = 1'-0"



TITLE:

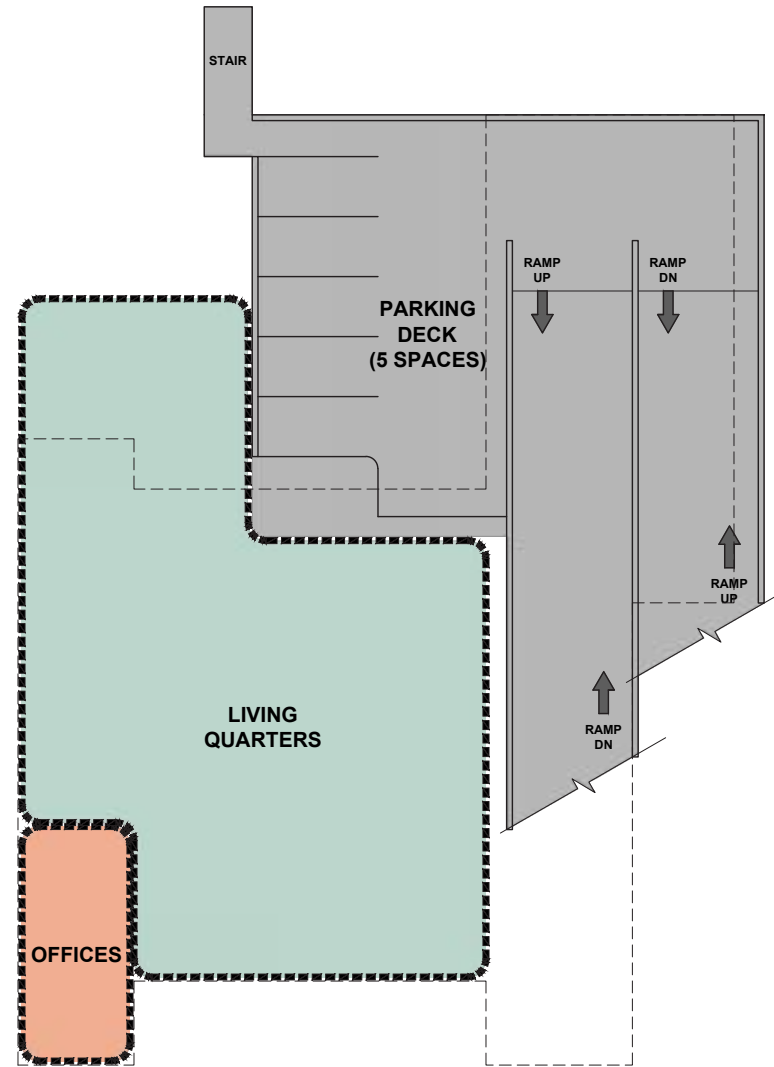
**FIRE STATION NO. 2**  
2 STORY BUILDING

1ST FLOOR BUILDING AREA: 12,070 S.F.  
2ND FLOOR BUILDING AREA: 7,336 S.F.  
3RD FLOOR BUILDING AREA: 1,573 S.F.  
TOTAL BUILDING AREA: 20,979 S.F.



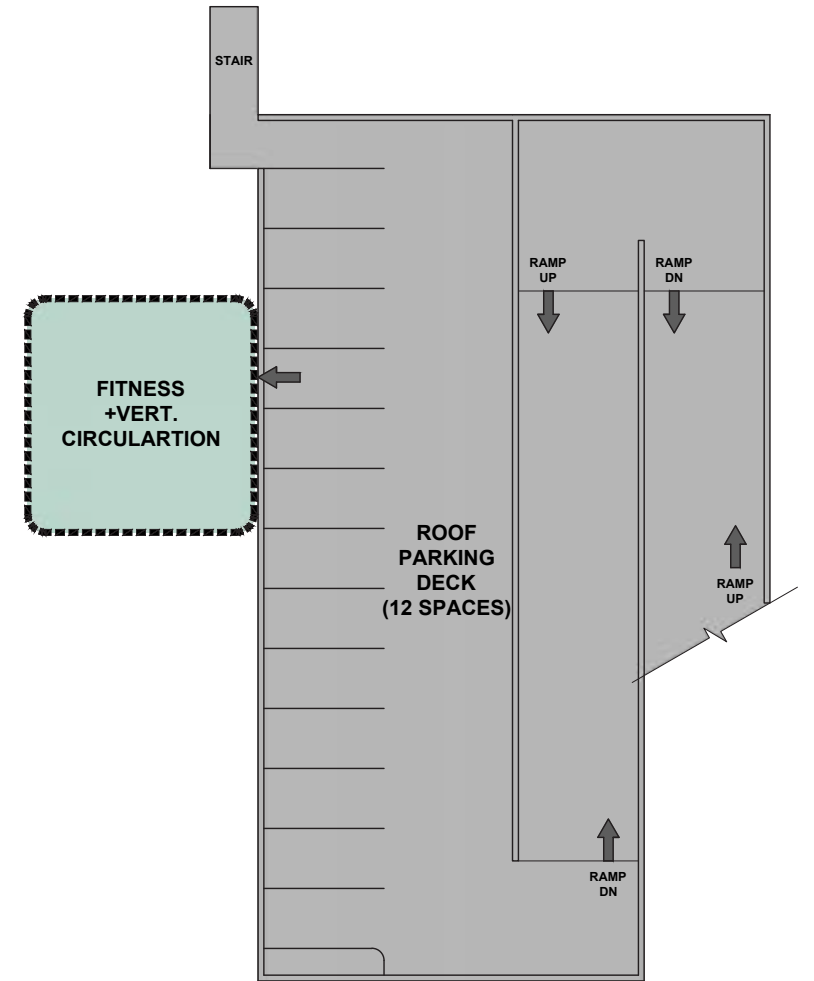
**SITE/FIRST FLOOR DIAGRAM**

SCALE: 1/64" = 1'-0"



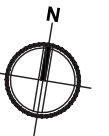
**SECOND FLOOR DIAGRAM**

SCALE: 1/32" = 1'-0"



**THIRD FLOOR/ROOF DECK DIAGRAM**

SCALE: 1/32" = 1'-0"





# FIRE STATION 3





**CITY OF BERKELEY**  
**FIRE HOUSE NO. 3**

2710 RUSSELL STREET, BERKELEY, CA 94705

**DRAFT**  
**MAY 08, 2023**

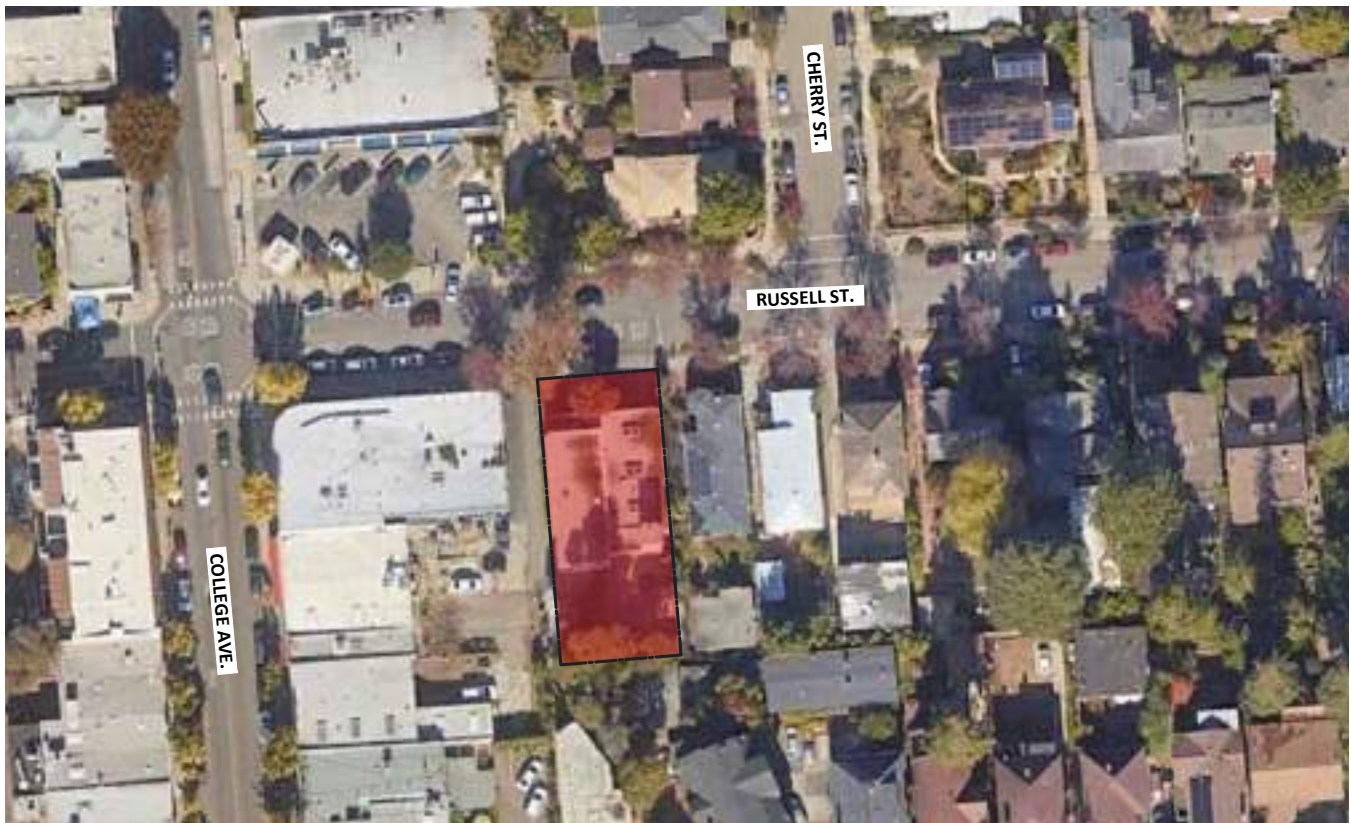
**PROJECT DESCRIPTION**

The existing Fire House No. 3 is a two-story, 5,582 SF station and was originally designed in 1961 to provide operational space and living quarters for three personnel. The facility was seismically retrofitted in the 1990's. The fire station currently houses 6 personnel per shift and the units include Engine 3(3), Medic 3 (2) and Medic Trainee (1). The staffing is anticipated to increase to 7 personnel per shift.

Because this station is not anticipated to add a new unit, only a new staff member, it is a strong candidate for renovation and addition. The recommended solution includes:

1. Renovation of the entire station and expand the first level to provide a private station office and dedicated turnout storage and expand the second level to add dedicated fitness room. The expanded area is 611 SF for a total expanded and renovated area of 6,193 SF.

The ROM Project Budget for the Recommended Option is \$12-16M; not including escalation beyond 2024.



<b>Fire House No. 3</b>
<b>Engine 3, Ambulance (Medic 3)</b>
<b>2710 Russel Street</b>

**CONCEPTUAL SPACE NEEDS OUTLINE**

<b>Fire House Company Make-up - Staffing Per shift</b>	<b>Current</b>	<b>Future</b>
Engine 3 - Captain, Engineer, Firefighter/Paramedic	3	4
Ambulance (Medic 3)	2	2
Medic Intern	1	1
Reserve Ambulance	0	0
<b>TOTAL CURRENT AND FUTURE STAFFING:</b>	<b>6</b>	<b>7</b>

<b>No.</b>	<b>Type of Space</b>	<b>Space Attributes</b>	<b>Square Footage</b>	
			<b>Program</b>	<b>Size</b>
<b>SITE OPERATIONS</b>				
	<b>Firefighter Parking</b>	14 firefighter parking spaces, secure and separate from public parking	3,200	10'x20' ea.
	<b>Visitor Parking</b>	One regular and one ADA adjacent to entrance, shared with other public parking areas.	600	10' x 20
	<b>Apparatus Washing Area</b>	Adjacent to hydrant for refill and testing; locate at rear of App. Bays; provide clarifier for run-off	0	rear apron
	<b>Hose Maintenance Area</b>	Use rear apron area for cleaning hose; roll wet and store on apparatus	0	rear apron
	<b>Yard Hydrant</b>	Located at rear yard	0	rear apron
	<b>Generator Area</b>	Located at rear yard	150	10'x15'
	<b>Fueling Area</b>	Above Grade Convault System - 500 GA located at	240	12' x 20'
	<b>Trash Enclosure</b>	Exterior access for service; space for dumpster and recycling bins, Covered	150	10'x15'
	<b>Flagpole</b>	Flagpole area with lighting	25	5'x5'
	<b>Outdoor Patio</b>	Outdoor uses; adjacent to Kitchen	200	10'x20'

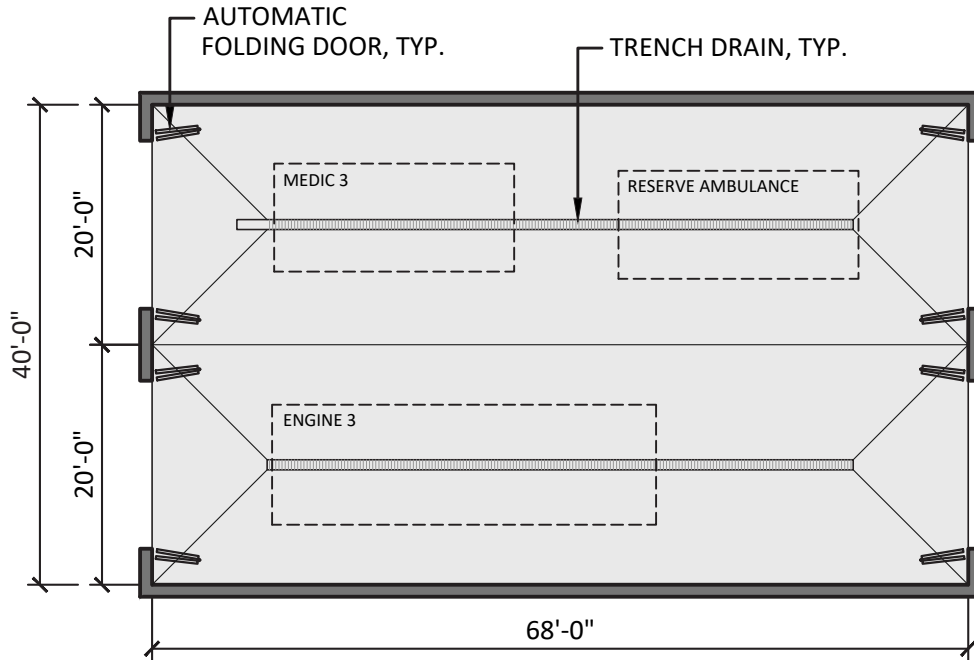
No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>FIRE HOUSE - APP BAY/APP BAY SUPPORT</b>					
1	Apparatus Bay (One Engine and two ambulance) Two Double Bays	Engine, Ambulance and Reserve Ambulance. Systems include tailpipe exhaust, power and air cord drops to each vehicle; electric heating system; night lighting; bi-folding auto-close doors; trench drains	2,720	(2) 20' x 68'	1,611
2	Medical Supply Closet	Heavy Duty Shelving; medical supplies off of apparatus bay.	24	3' x 8'	15
3	Clean Up	Clean-up sink, shelving, Alcove in bay.	18	3' x 6'	included in T.O.
4	Equipment Storage	Yard equipment, bike storage (LEED Requirement), compressor	64	8' x 8'	NIC
5	Turnout Gear Room	Two lockers for each assigned personnel (7 Personnel per day x 3 = 21 x 2= 42 lockers); Three unassigned for 45 total lockers. Power at each locker, continuous exhaust fan, floor drain, heavy duty shelving; wildland gear bags. Dirty area in room with Extractor and Dryer, decon shower and hanging area. Part of response return path.	930	14' x 24' 27' x 22'	384
6	Janitor Room	Service sink, mop rack; janitorial supplies;	48	6' x 8'	25
7	Work Shop Alcove	Work bench/shop area for vise, peg board, tool storage with large flat work surface, Misc. equipment storage , tool chest, Full height storage cabinet, shop sink and eyewash.	120	4' x 30'	50
8	Firefighter Restroom	Fire fighter toilet and sink, off of apparatus bay	64	8' x 8'	NIC
9	Fitness Room	Dedicated Fitness Room	624	24' x 26'	384
<b>Fire House - App Bay/Support Subtotal</b>			<b>4,612</b>		<b>2,469</b>

No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>FIRE HOUSE - FIREFIGHTER OFFICES</b>					
10	Fire House Public Lobby	Lobby with seating; adjacent to the public restroom. Service window separation between Watch Office and lobby. Alcove in Lobby for Blood Pressure and other wellness checks.	180	12' x 15'	117
11	Fire House Public Restroom	One All Gender Restroom, accessible, off of Lobby	64	8'x8'	51
12	Watch Office	Workstations for 2-persons; provide space for lateral file cabinets (one cabinet per company) copy machine and office supply storage, book shelving; conference function	238	14'x17'	170
13	Captains Office	Workstation for 2-persons; provide space for lateral file cabinets.	120	12' x 10'	Use Watch Office
<b>Fire House - Firefighter Offices Subtotal</b>			<b>602</b>		<b>338</b>
No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>FIRE HOUSE - FIREFIGHTER QUARTERS</b>					
14	Kitchen	3-refrigerators; 3-shift pantries; 1-house pantry and refrigerator; 1-dishwasher; electric induction range/oven with hood; large microwave; large, 12" deep sink with disposer; prep sink at island; trash and recycling areas; coffer service area; open to Dining Area	378	18' x 21'	219
15	Dining Area	Seating for 8 persons; wall-mounted TV; open to kitchen; open to Day Room	216	12' x 18'	213
16	Day Room	Seating for 8 with recliner chairs; entertainment center and book shelving; Open to Dining, one work station along wall.	576	24' x 24'	213
17	Laundry Room	Service sink; countertop; janitorial supplies; mop rack, Washer/Dryer	140	10' x 14'	96
18	Firefighter Bedroom	5-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed with lockers in the hall adjacent the room.	383	8.5' x 9' (5)	437
19	Intern Bedroom	1 bedroom each containing desk, chair, wall-mounted TV, 1 bed with lockers the hall adjacent the room.	77	8.5' x 9'	86
20	Firefighter Bathroom ADA	1 accessible restroom with shower, sink, toilet	81	9' x 9'	81
21	Firefighter Bathrooms	3 restrooms with shower, sink, toilet	192	8' x 8' (3)	59
22	Captain Bedroom, Bathroom and Work Area, Accessible	1 bedroom containing desk, chair, wall-mounted TV, 1 bed, with accessible in-suite bathroom.	250	10' x 16' 10' x 9' (1)	227
<b>Fire House - Firefighter Quarters Subtotal</b>			<b>2,292</b>		<b>1,631</b>

No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>UTILITY SUPPORT/VERTICAL CIRCULATION</b>					
23	Mechanical Room	HVAC equipment; hot water heater; fire sprinkler riser	108	9' x 12'	NIC
24	Electrical Room	Main service panel, fire alarm panel; sub panels	108	9' X 12'	NIC
25	Communications Room	Telephone service racks, alert response system hub, data server hub, radio equipment; security system	140	10' x 14'	NIC
26	Stairs	(2x) for each level. Two stairways from the second floor for exiting	576	18' x 8'	166
27	Fire House Elevator	Elevator and machine room	240	8' x 10' (3)	NIC
<b>Utility Support/ Vertical Circulation Subtotal</b>			<b>1,172</b>		<b>166</b>

<b>Engine 3, Medic 3, Reserve Ambulance: Summary</b>		Replacement Program		Renovation SF
	Fire House - App Bay/Bay Support Subtotal	4,612		2,469
	Fire House - Firefighter Offices Subtotal	602		338
	Fire House - Firefighter Quarters Subtotal	2,292		1,631
	Utility Support/Vertical Circulation Subtotal	1,172		166
	<b>BUILDING SUBTOTAL (SF)</b>	<b>8,678</b>		<b>4,604</b>
	Circulation at 30%	2,603		1,589
<b>Engine 3, Medic 3, Reserve Ambulance: GRAND TOTAL (SF)</b>		<b>11,281</b>		<b>6,193</b>

# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

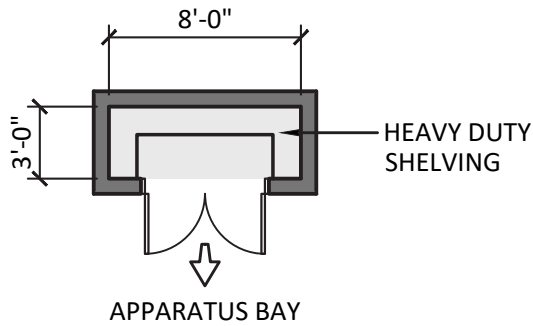


**1. APPARATUS BAY - 2 DRIVE-THROUGH BAYS (2,720 S.F.)**

SCALE: 1/16"=1'-0"

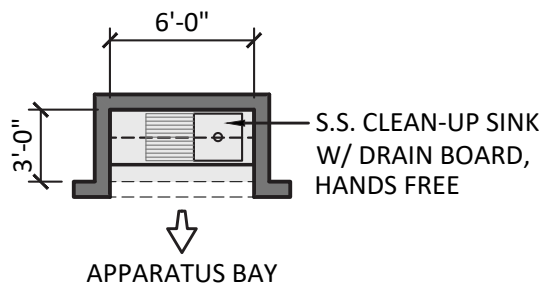


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



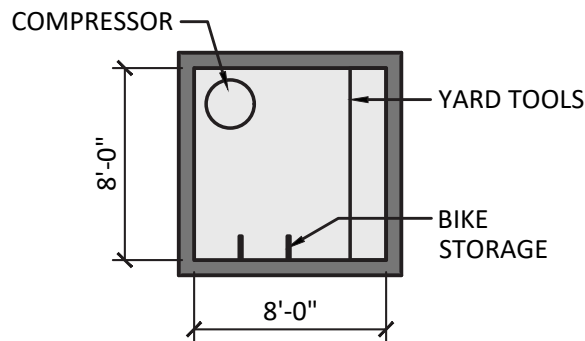
## 2. MEDICAL SUPPLY CLOSET (24 S.F.)

SCALE: 1/8"=1'-0"



## 3. CLEAN-UP (18 S.F.)

SCALE: 1/8"=1'-0"

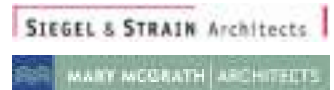


## 4. EQUIPMENT STORAGE (64 S.F.)

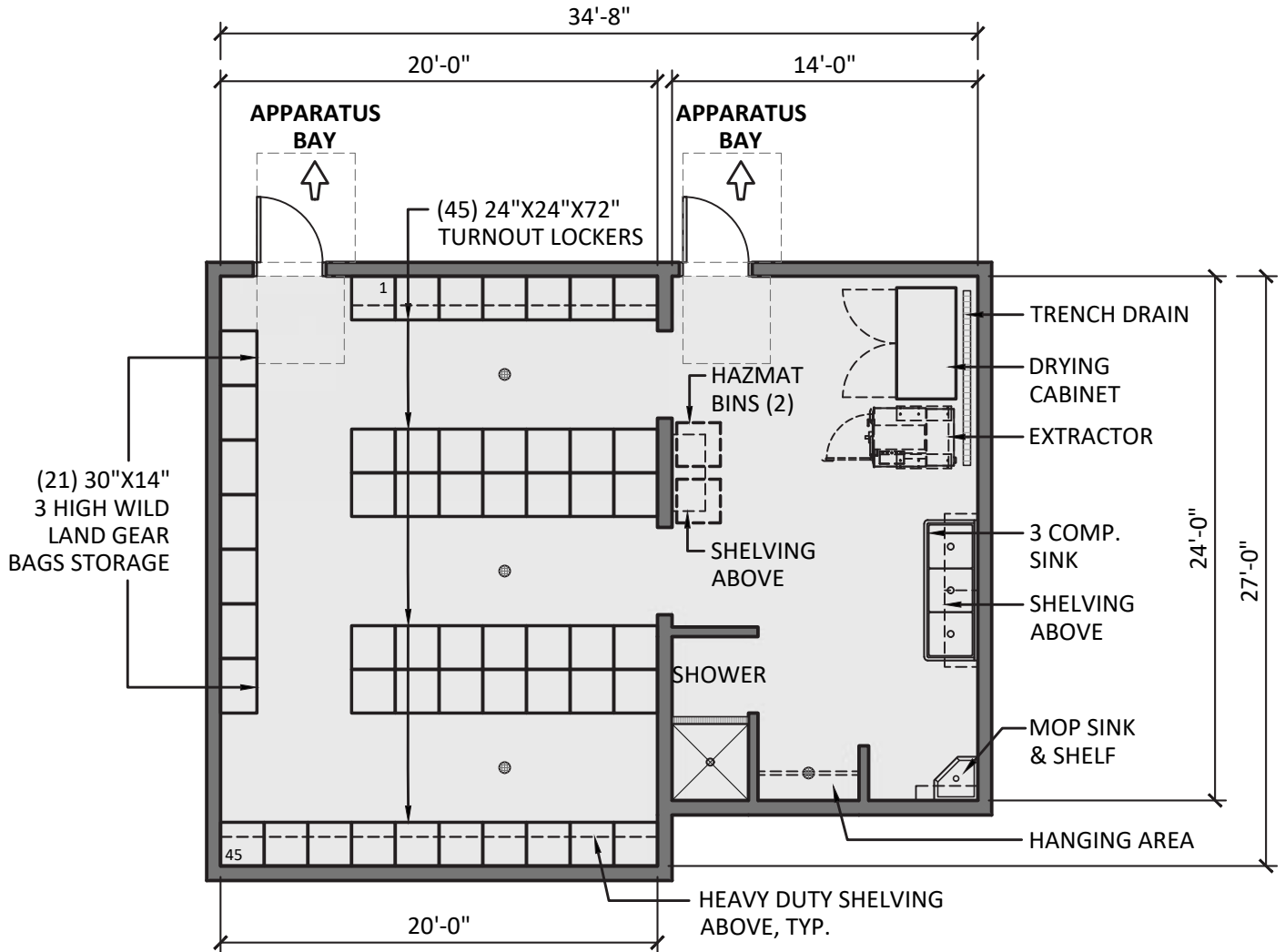
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 3**  
 ENGINE 3, AMBULANCE (MEDIC 3)



# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

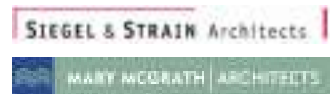


## 5. TURNOUT GEAR ROOM (930 S.F.)

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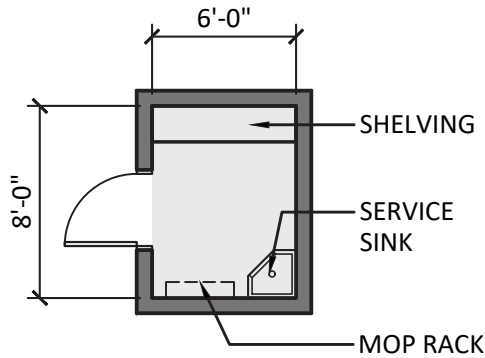


CITY OF BERKELEY  
**FIRE HOUSE NO. 3**  
 ENGINE 3, AMBULANCE (MEDIC 3)



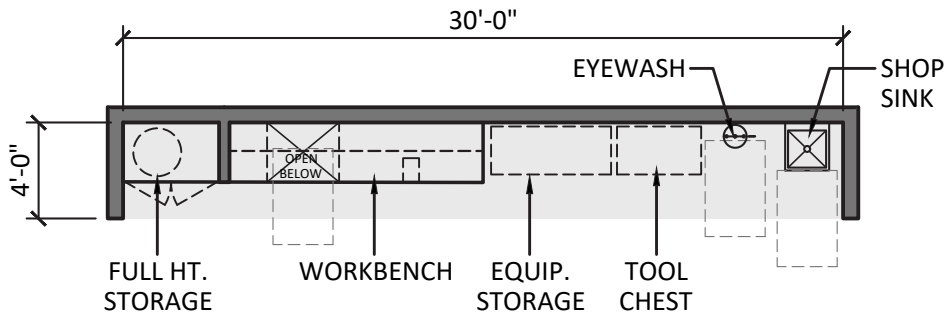


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



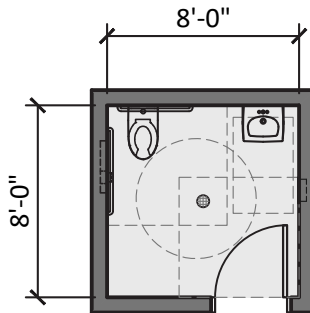
### 6. JANITOR ROOM (48 S.F.)

SCALE: 1/8"=1'-0"



### 7. WORKSHOP ALCOVE (120 S.F.)

SCALE: 1/8"=1'-0"

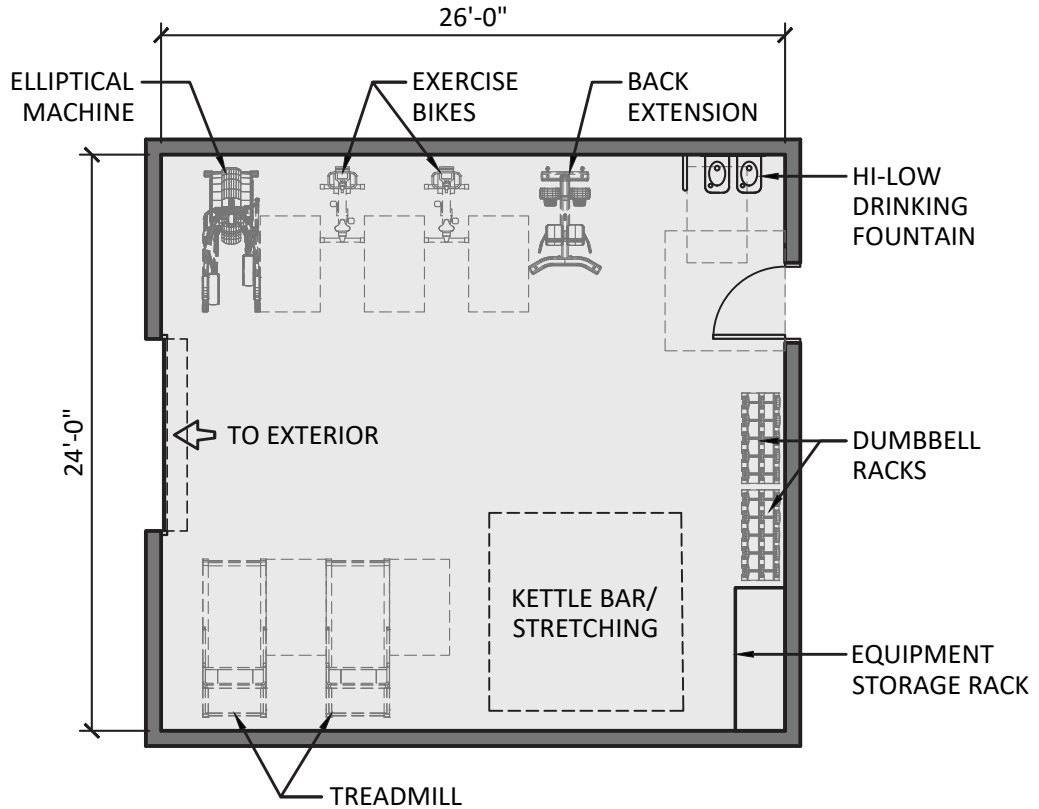


### 8. FIREFIGHTER RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"



# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

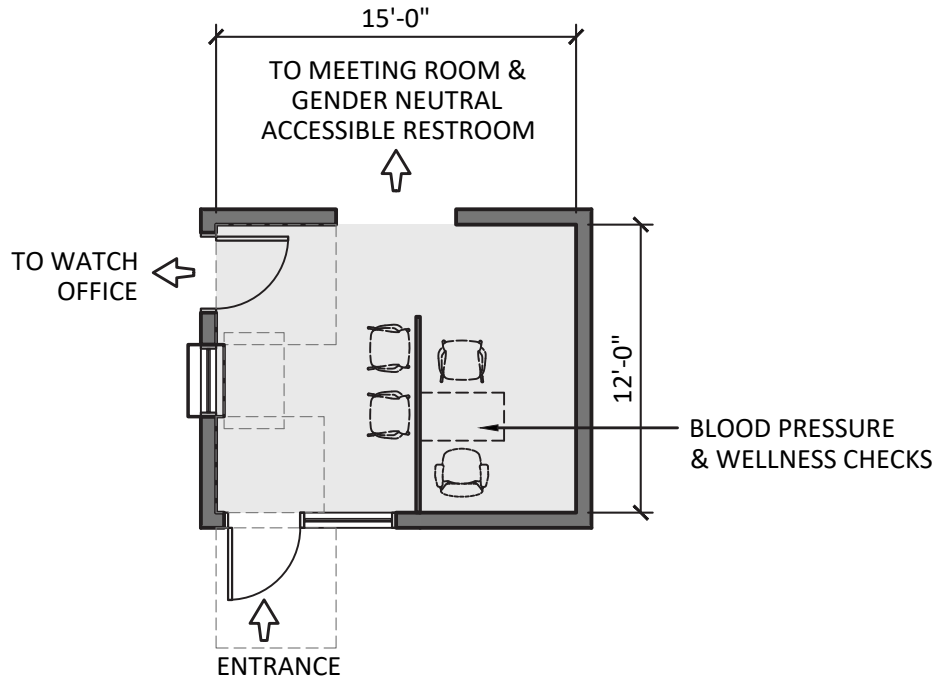


## 9. FITNESS ROOM (624 S.F.)

SCALE: 1/8"=1'-0"

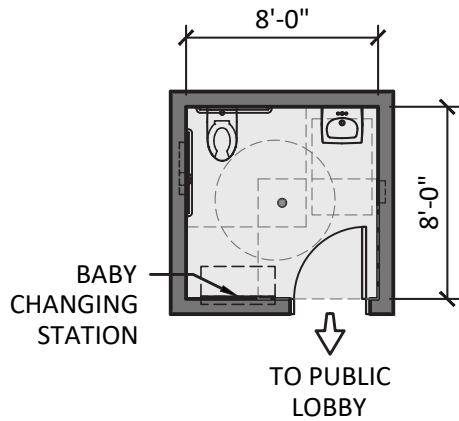


# FIRE HOUSE - FIREFIGHTER OFFICES



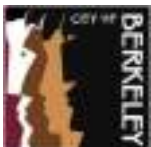
## 10. FIRE HOUSE PUBLIC LOBBY (180 S.F.)

SCALE: 1/8"=1'-0"

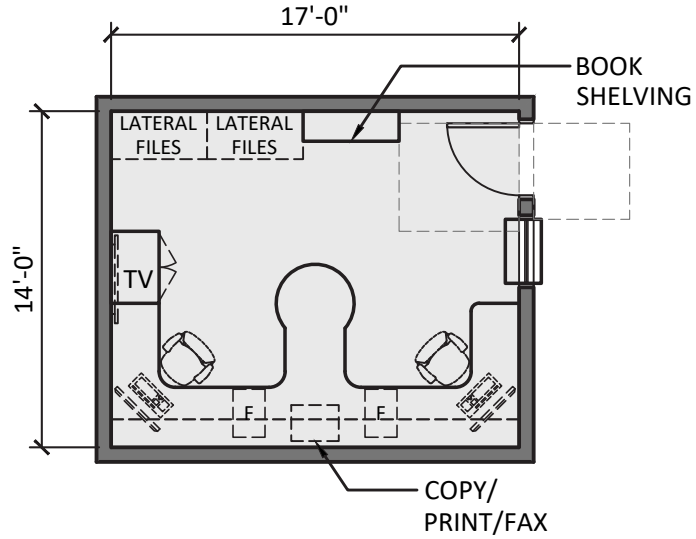


## 11. FIRE HOUSE PUBLIC RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"

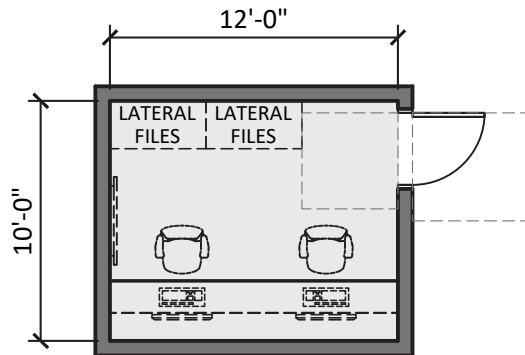


# FIRE HOUSE - FIREFIGHTER OFFICES



### **12. WATCH OFFICE (238 S.F.)**

SCALE: 1/8"=1'-0"

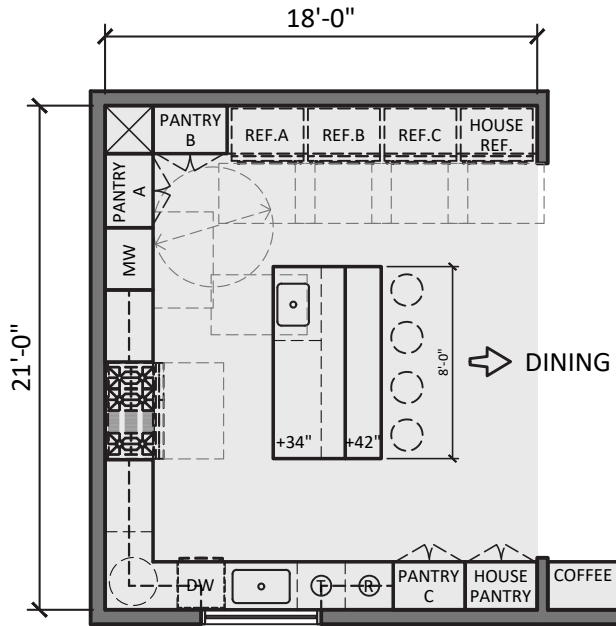


### **13. CAPTAIN'S OFFICE (120 S.F.)**

SCALE: 1/8"=1'-0"

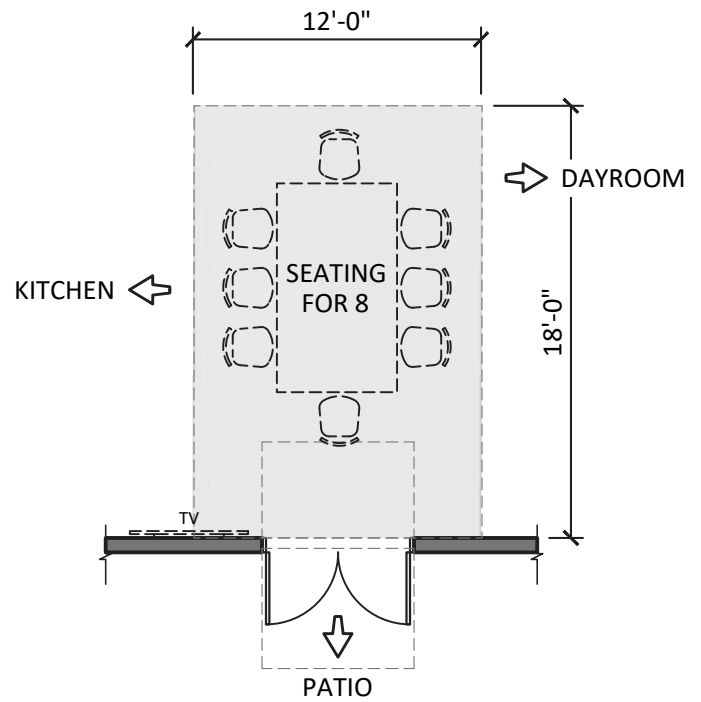


# FIRE HOUSE - FIREFIGHTER QUARTERS



**14. KITCHEN (378 S.F.)**

SCALE: 1/8"=1'-0"

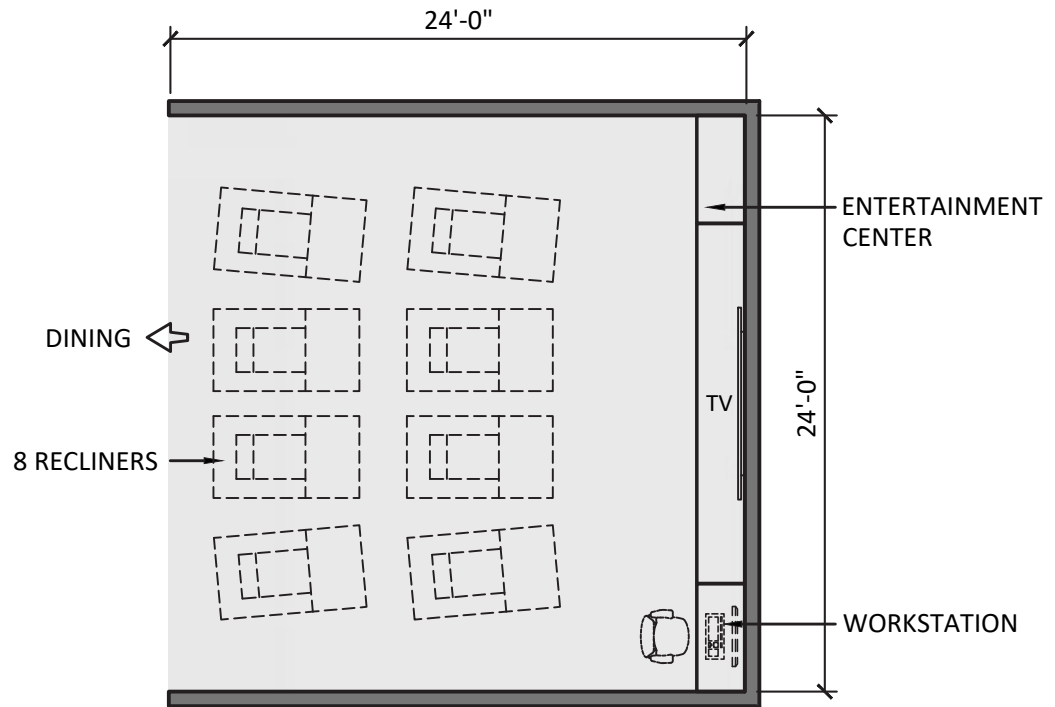


**15. DINING AREA (216 S.F.)**

SCALE: 1/8"=1'-0"

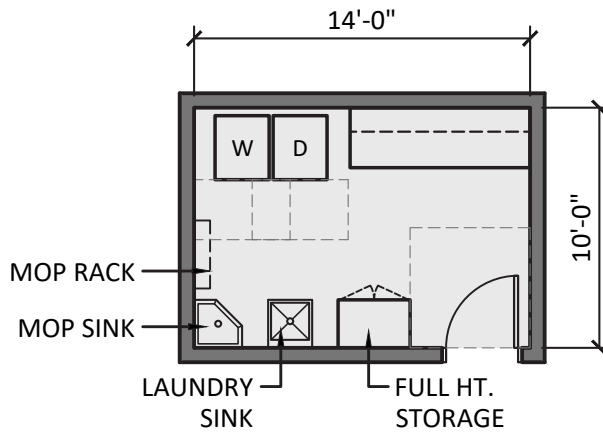


# FIRE HOUSE - FIREFIGHTER QUARTERS



**16. DAYROOM (576 S.F.)**

SCALE: 1/8"=1'-0"



**17. LAUNDRY ROOM (140 S.F.)**

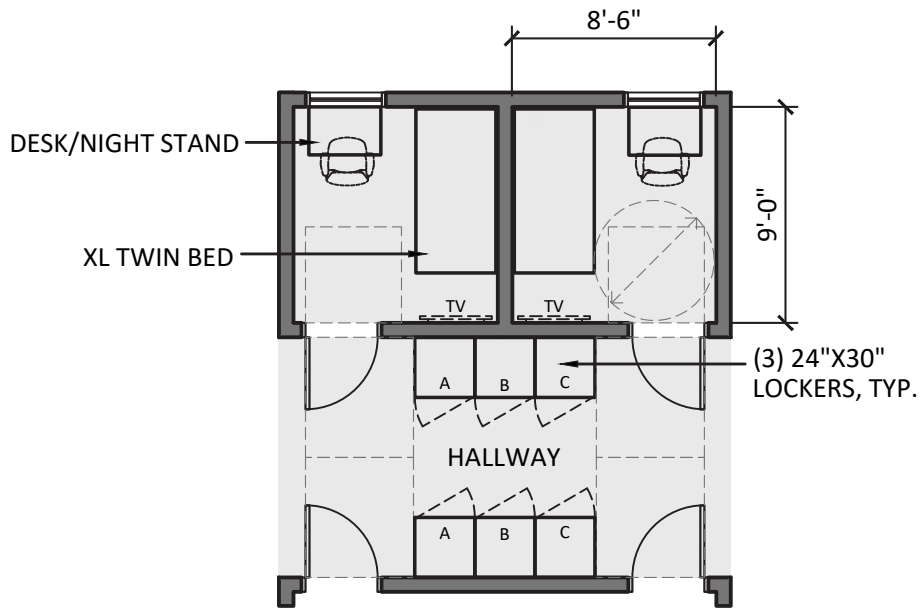
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 3**  
 ENGINE 3, AMBULANCE (MEDIC 3)

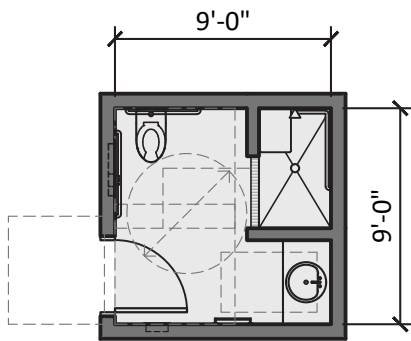


# FIRE HOUSE - FIREFIGHTER QUARTERS



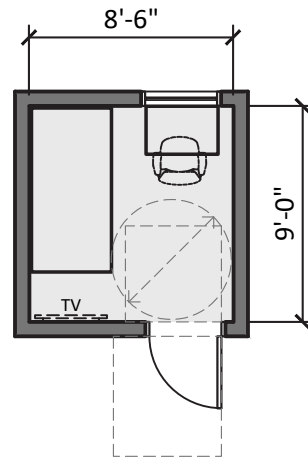
**18. FIREFIGHTER BEDROOM - 5 (383 S.F.)**

SCALE: 1/8"=1'-0"



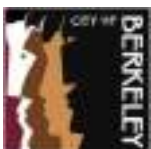
**19. FIREFIGHTER BATHROOM - ADA (81 S.F.)**

SCALE: 1/8"=1'-0"

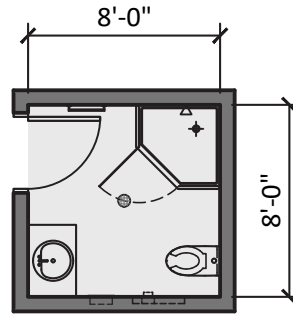


**20. INTERN BEDROOM (77 S.F.)**

SCALE: 1/8"=1'-0"

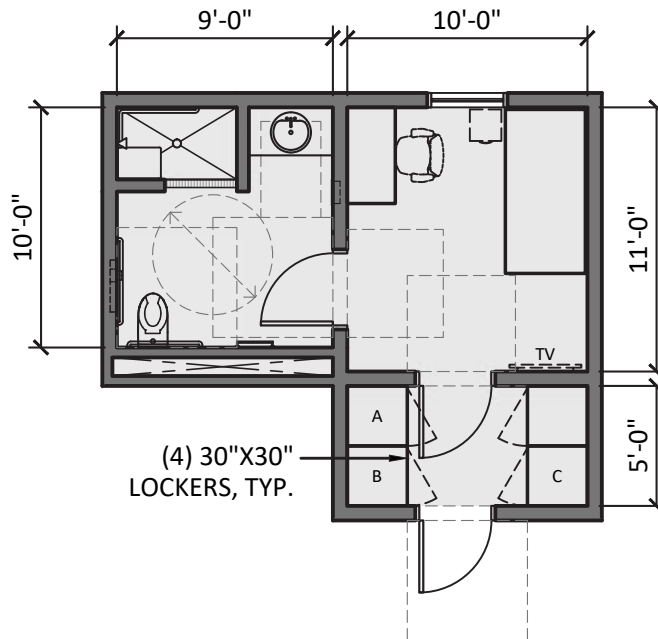


# FIRE HOUSE - FIREFIGHTER QUARTERS



## **21. FIREFIGHTER BATHROOM - 3 (192 S.F.)**

SCALE: 1/8"=1'-0"



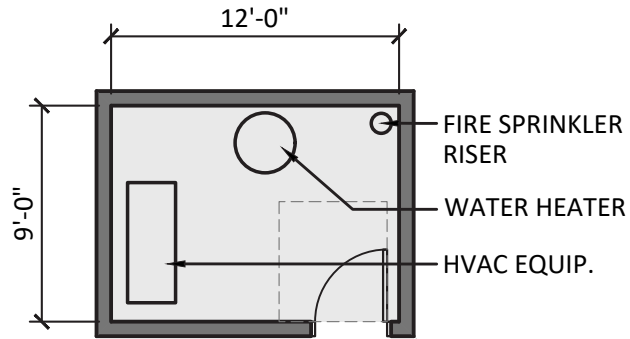
## **22. CAPTAIN BEDROOM & ACCESSIBLE BATHROOM (250 S.F.)**

SCALE: 1/8"=1'-0"



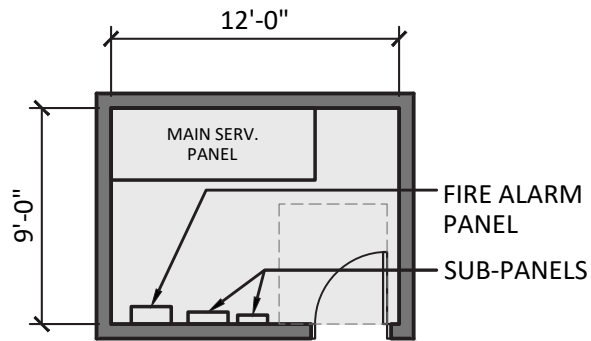


# FIRE HOUSE - UTILITY SUPPORT/VERTICAL CIRCULATION



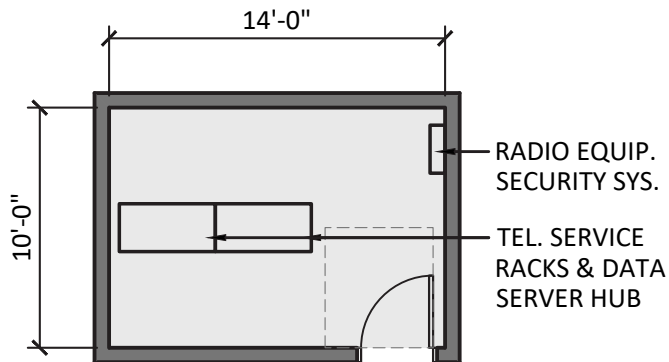
### 23. MECHANICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"



### 24. ELECTRICAL ROOM (108 S.F.)

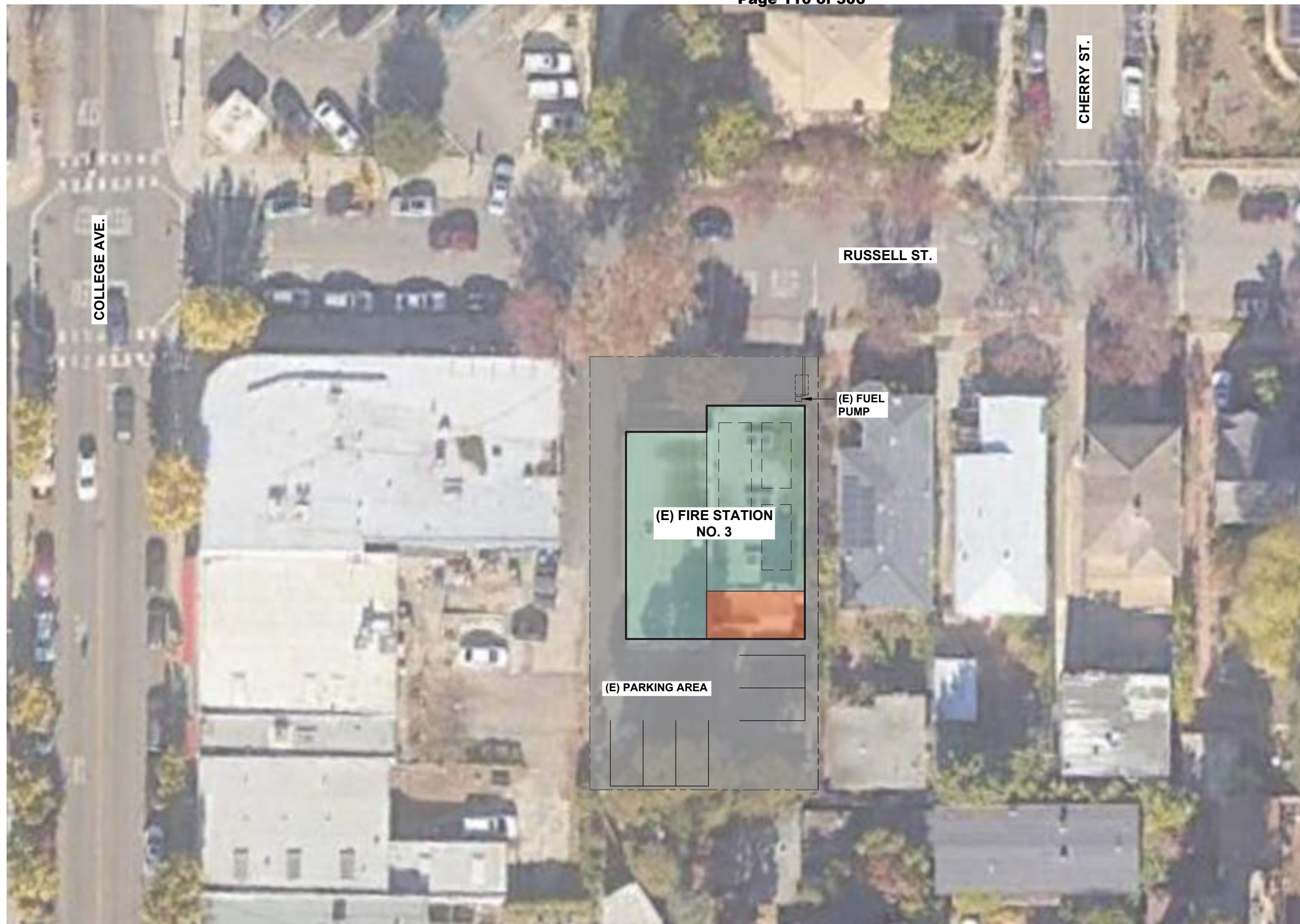
SCALE: 1/8"=1'-0"



### 25. COMMUNICATIONS ROOM (140 S.F.)

SCALE: 1/8"=1'-0"





**FIRE STATION NO. 3**

2 STORY BUILDING

EXISTING LOT AREA:

9,359 S.F.

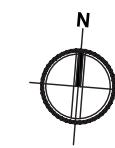
**LEGEND:**

- EXISTING BUILDING AREA
- ADDED BUILDING AREA
- RENOVATION AREA



**SITE PLAN DIAGRAM**

SCALE: 1/32" = 1'-0"



**CITY OF BERKELEY**  
**FIRE SERVICE MASTER PLAN**  
**SITE STUDIES**

TITLE:

**FIRE STATION NO. 3 - SITE DIAGRAM (BLDG. RENOVATION & ADDITIONAL AREA)**  
 2710 RUSSELL STREET, BERKELEY, CA 94705

03.17.2023

**SIEGEL & STRAIN Architects**  
 6201 DOYLE STREET, SUITE B,  
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**FIRE STATION NO. 3**




2 STORY BUILDING

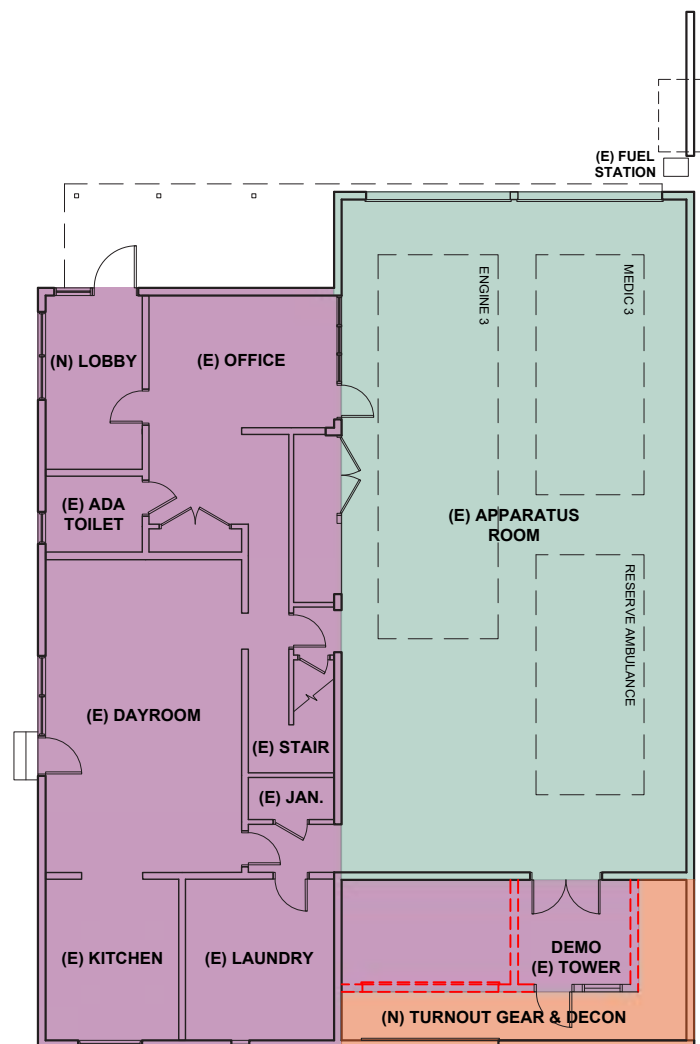
EXISTING BUILDING AREA: 5,582 S.F.

PROPOSED ADDED BUILDING AREA: 611 S.F.

TOTAL BUILDING AREA: 6,193 S.F.

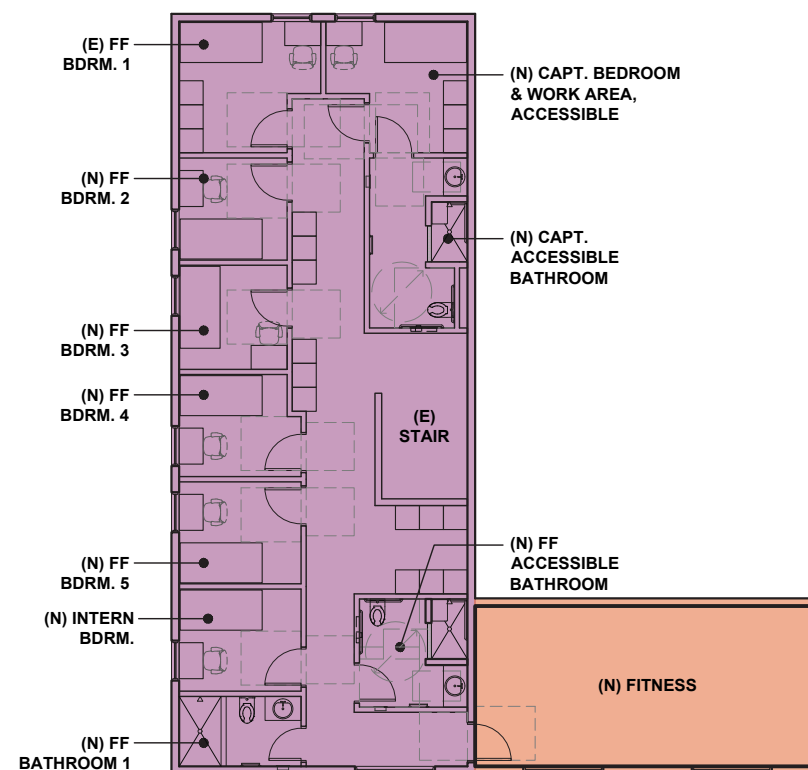
**LEGEND:**

-  EXISTING BUILDING AREA
-  ADDED BUILDING AREA
-  RENOVATION AREA



**FIRST FLOOR PLAN**

SCALE: 1/16" = 1'-0"



**SECOND FLOOR PLAN**

SCALE: 1/16" = 1'-0"





# FIRE STATION 4



## CITY OF BERKELEY

## FIRE HOUSE NO. 4

1900 MARIN AVENUE, BERKELEY, CA 94707

DRAFT

MAY 08, 2023

## PROJECT DESCRIPTION

The existing Fire House No. 4 is 5,341 SF and was originally designed to provide operational space and living quarters for two people in 1960. The facility was seismically retrofitted and expanded to the size noted above in 1998. The fire station currently houses 3 personnel per shift on Engine 4 (3). And, per the Standards of Coverage Study prepared by Citigate, the Firehouse 4 location is recommended to add a future ambulance and Medic Intern. The staffing will increase to 7 personnel per shift.

Two options were evaluated. They include:

1. Renovation and expansion of 1,600 SF for a total SF of 6,941. The expansion will add the turnout storage space and a fitness room. The site does not have enough space to expand the apparatus bay for the added ambulance nor to expand the living quarters for additional staffing. Parking and privacy goals can not be met through the expansion.
2. Replace station on the existing expanded site. This option requires the expansion of the site and adds subterranean parking. A replacement 12,802 SF station plus a 6,000SF basement for parking would allow the addition of the future ambulance in this ambulance. (Recommended)

The ROM Project Budget for the Recommended Option 2 is \$36-41M; not including escalation beyond 2024.



<b>Fire House No. 4</b>
<b>Engine 4, Future Medic 4</b>
<b>1900 Marin Avenue</b>

**CONCEPTUAL SPACE NEEDS OUTLINE**

<b>Fire House Company Make-up - Staffing Per shift</b>	<b>Current</b>	<b>Future</b>
Engine 4 - Captain, Engineer, Firefighter/Paramedic	3	4
Future Ambulance	0	2
Medic Intern	1	1
Reserve Engine	0	0
<b>TOTAL CURRENT AND FUTURE STAFFING:</b>	<b>4</b>	<b>7</b>

<b>No.</b>	<b>Type of Space</b>	<b>Space Attributes</b>	<b>Square Footage</b>	
			<b>Program</b>	<b>Size</b>
<b>SITE OPERATIONS</b>				
	<b>Firefighter Parking</b>	14 firefighter parking spaces, secure and separate from public parking	1,600	10'x20' ea.
	<b>Visitor Parking</b>	One regular and one ADA adjacent to entrance, shared with other public parking areas.	600	10' x 20
	<b>Apparatus Washing Area</b>	Adjacent to hydrant for refill and testing; locate at rear of App. Bays; provide clarifier for run-off	0	rear apron
	<b>Hose Maintenance Area</b>	Use rear apron area for cleaning hose; roll wet and store on apparatus	0	rear apron
	<b>Yard Hydrant</b>	Located at rear yard	0	rear apron
	<b>Generator Area</b>	Located at rear yard	150	10'x15'
	<b>Fueling Area</b>	Above Grade Convault System - 500 GA	240	12' x 20'
	<b>Trash Enclosure</b>	Exterior access for service; space for dumpster and recycling bins, Covered	150	10'x15'
	<b>Flagpole</b>	Flagpole area with lighting	25	5'x5'
	<b>Outdoor Patio or Deck</b>	Outdoor uses; adjacent to Kitchen	200	10'x20'

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - APP BAY/APP BAY SUPPORT</b>				
1	Apparatus Bay (One Engine, Future Ambulance and one engine reserve)	Engine, Reserve Engine and Future Ambulance. Systems include tailpipe exhaust, power and air cord drops to each vehicle; electric heating system; night lighting; bi-folding auto-close doors; trench drains	3,944	(2) 20'x 68' (1) 18' x 68'
2	Medical Supply Closet	Heavy Duty Shelving; medical supplies off of apparatus bay.	24	3' x 8'
3	Clean Up	Clean-up sink, shelving, Alcove in bay.	18	3' x 6'
4	Equipment Storage	Yard equipment, bike storage (LEED Requirement), compressor	64	8' x 8'
5	Turnout Gear Room	Two lockers for each assigned personnel (7 Personnel per day x 3 = 21x 2= 42 lockers); four unassigned for 46 total lockers. Power at each locker, continuous exhaust fan, floor drain, heavy duty shelving; wildland gear bags. Dirty area in room with Extractor and Dryer, decon shower and hanging area. Part of response return path.	876	20' x 27' 14' x 24'
6	Janitor Room	Service sink, mop rack; janitorial supplies;	48	6' x 8'
7	Work Shop Alcove	Work bench/shop area for vise, peg board, tool storage with large flat work surface, Misc. equipment storage , tool chest, Full height storage cabinet, shop sink and eyewash.	120	4' x 30'
8	Firefighter Restroom	Fire fighter toilet and sink, off of apparatus bay	64	8' x 8'
9	Fitness Room	Dedicated Fitness Room	624	26' x 24'
<b>Fire House - App Bay/Support Subtotal</b>			<b>5,782</b>	
No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - FIREFIGHTER OFFICES</b>				
10	Fire House Public Lobby	Lobby with seating; adjacent to the public restroom. Service window separation between Watch Office and lobby. Alcove in Lobby for Blood Pressure and other wellness checks.	180	12' x 15'
11	Fire House Public Restroom	One All Gender Restroom, accessible, off of Lobby	64	8'x8'
12	Watch Office	Workstations for up to 4-persons; provide space for lateral file cabinets (one cabinet per company) copy machine and office supply storage, book shelving; conference function	238	14' x 17'
13	Captains Office	Workstation for 1-person; provide space for lateral file cabinets.	120	10' x 12'
<b>Fire House - Firefighter Offices Subtotal</b>			<b>602</b>	

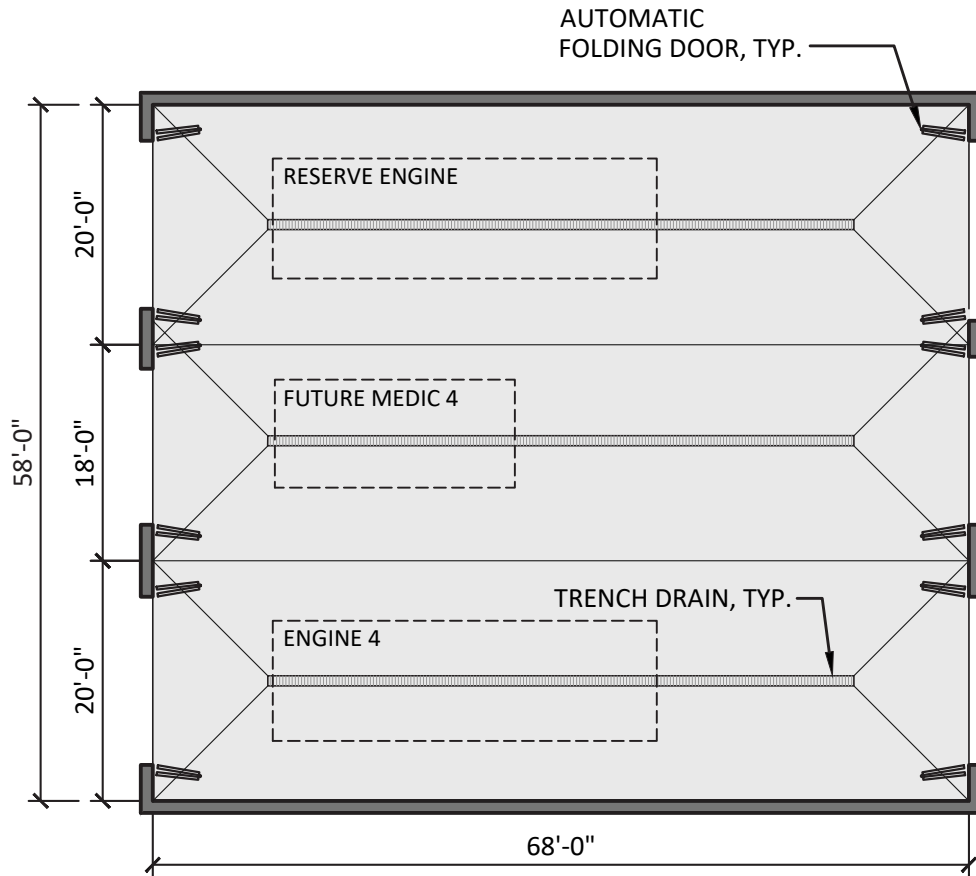
No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - FIREFIGHTER QUARTERS</b>				
14	Kitchen	3-refrigerators; 3-shift pantries; 1-house pantry and refrigerator; 1-dishwasher; electric induction range/oven with hood; large microwave; large, 12" deep sink with disposer; prep sink at island; trash and recycling areas; coffer service area; open to Dining Area	378	18' x 21'
15	Dining Area	Seating for 8 persons; wall-mounted TV; open to kitchen; open to Day Room	216	12' x 18'
16	Day Room	Seating for 8 with recliner chairs; entertainment center and book shelving; Open to Dining, one work station along wall.	576	24' x 24'
17	Laundry Room	Service sink; countertop; janitorial supplies; mop rack, Washer/Dryer	140	10' x 14'
18	Firefighter Bedroom	6-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed with lockers outside door.	459	8.5' x 9' (6)
19	Firefighter Bathroom ADA	1 accessible restroom with shower, sink, toilet	81	9' x 9'
20	Firefighter Bathrooms	3 restrooms with shower, sink, toilet	192	8' x 8' (3)
21	Captain Bedroom, Bathroom and Work Area, Accessible	1 bedroom containing desk, chair, wall-mounted TV, 1 bed, with accessible in-suite bathroom.	250	10' x 16' 10' x 9' (1)
<b>Fire House - Firefighter Quarters Subtotal</b>			<b>2,292</b>	

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>UTILITY SUPPORT/VERTICAL CIRCULATION</b>				
22	Mechanical Room	HVAC equipment; hot water heater; fire sprinkler riser	108	9' x 12'
23	Electrical Room	Main service panel, fire alarm panel; sub panels	108	9' X 12'
24	Communications Room	Telephone service racks, alert response system hub, data server hub, radio equipment; security system	140	10' x 14'
25	Stairs	(2x) for each level. Two stairways from the second floor for exiting	576	18' x 8'
26	Fire House Elevator	Elevator and machine room	240	8' x 10' (3)
<b>Utility Support/ Vertical Circulation Subtotal</b>			<b>1,172</b>	

<b>Engine 4, Future Medic 4: Summary</b>		<b>Program</b>	
	Fire House - App Bay/Bay Support Subtotal	5,782	
	Fire House - Firefighter Offices Subtotal	602	
	Fire House - Firefighter Quarters Subtotal	2,292	
	Utility Support/Vertical Circulation Subtotal	1,172	
	<b>BUILDING SUBTOTAL (SF)</b>	<b>9,848</b>	
	Circulation at 30%	2,954	
	<b>Engine 4, Future Medic 4: GRAND TOTAL (SF)</b>	<b>12,802</b>	

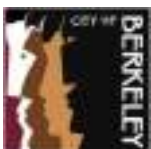


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



**1. APPARATUS BAY - 3 DRIVE-THROUGH BAYS (3,944 S.F.)**

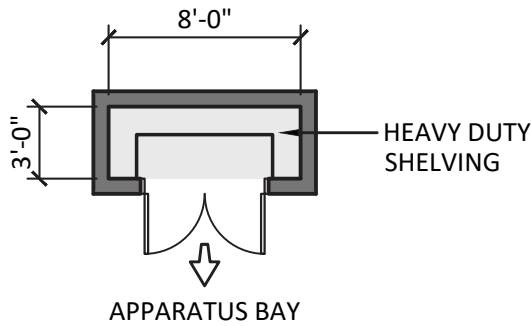
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CITY OF BERKELEY  
**FIRE HOUSE NO. 4**  
ENGINE 4, FUTURE MEDIC 4

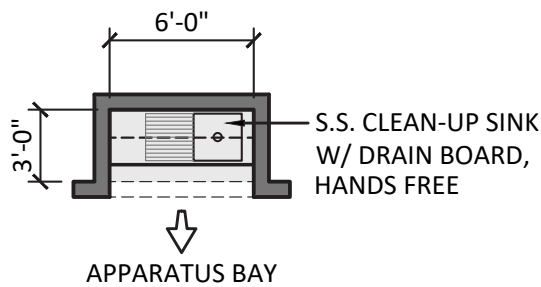


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



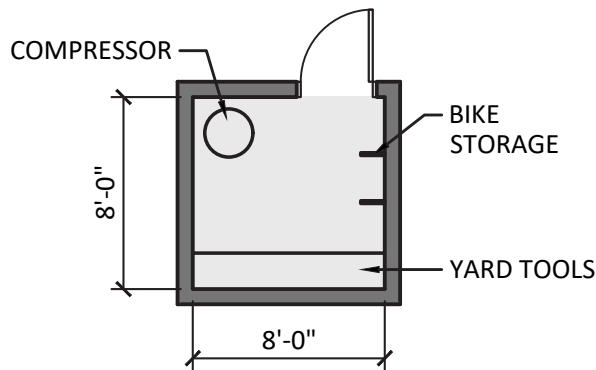
## 2. MEDICAL SUPPLY CLOSET (24 S.F.)

SCALE: 1/8"=1'-0"



## 3. CLEAN-UP (18 S.F.)

SCALE: 1/8"=1'-0"

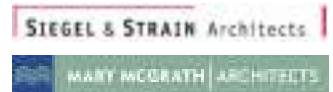


## 4. EQUIPMENT STORAGE (64 S.F.)

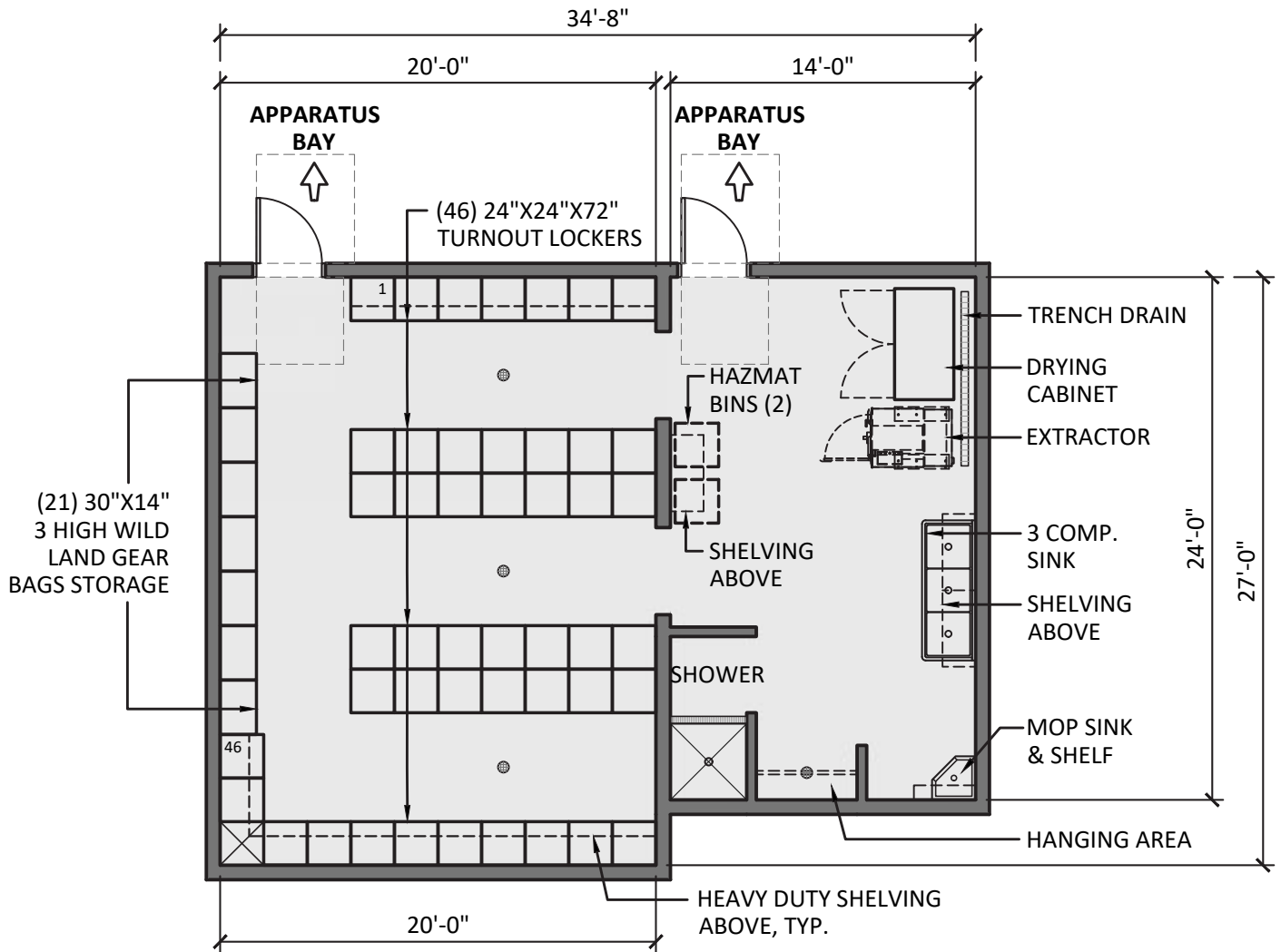
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CITY OF BERKELEY  
**FIRE HOUSE NO. 4**  
ENGINE 4, FUTURE MEDIC 4

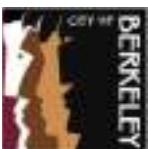


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

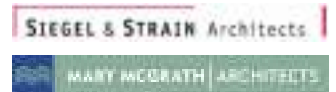


### 5. TURNOUT GEAR ROOM (876 S.F.)

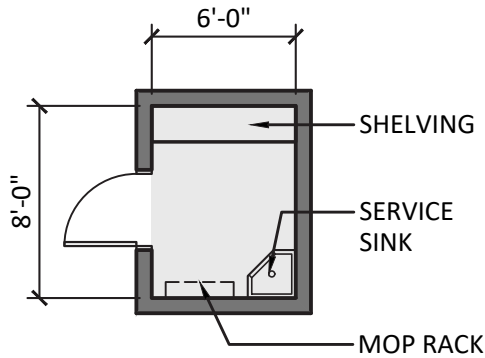
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CITY OF BERKELEY  
**FIRE HOUSE NO. 4**  
ENGINE 4, FUTURE MEDIC 4

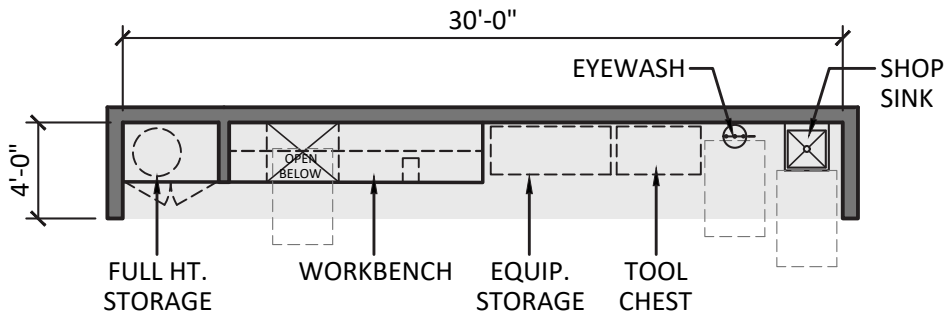


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



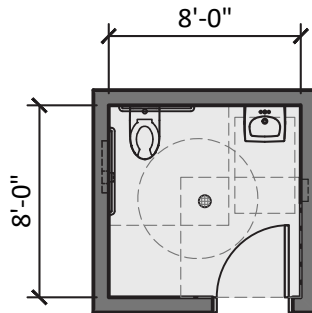
### 6. JANITOR ROOM (48 S.F.)

SCALE: 1/8"=1'-0"



### 7. WORKSHOP ALCOVE (120 S.F.)

SCALE: 1/8"=1'-0"

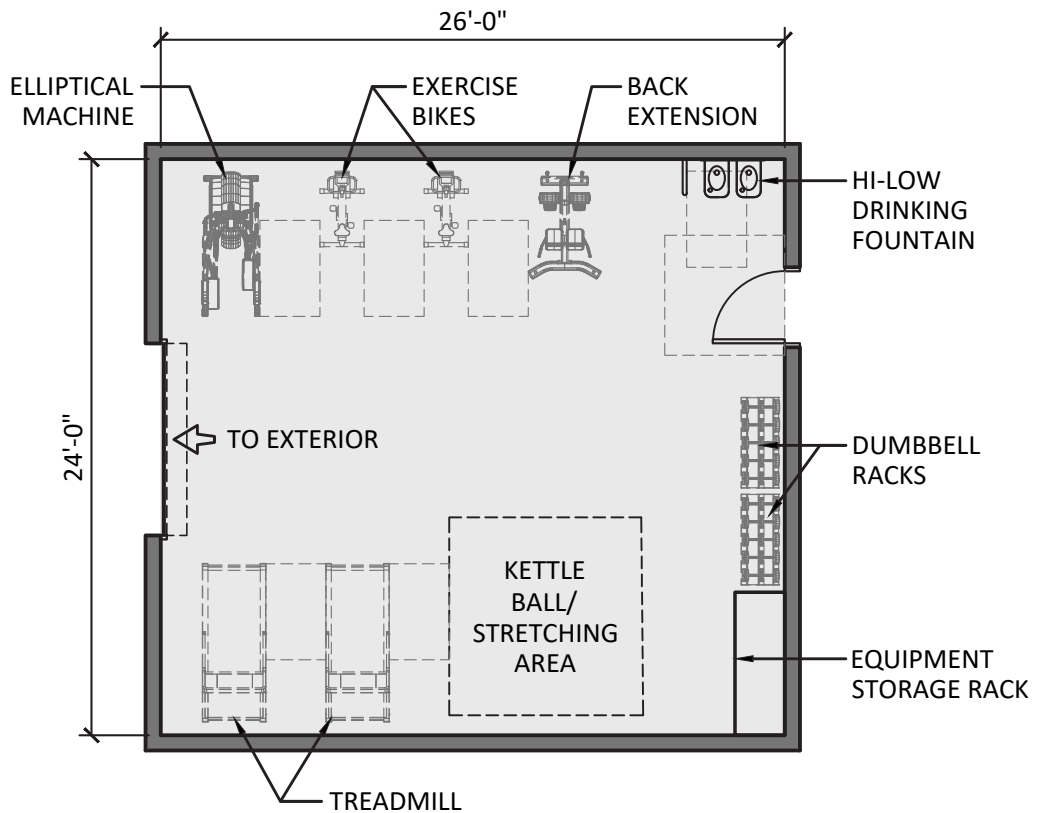


### 8. FIREFIGHTER RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"



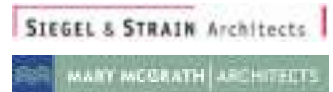
# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



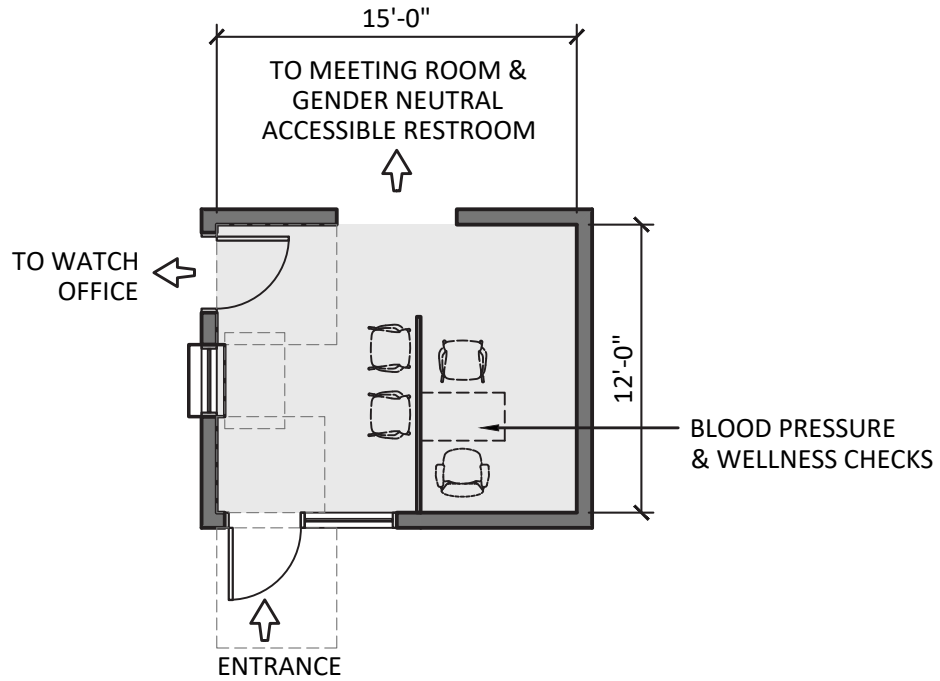
**9. FITNESS ROOM (624 S.F.)**  
 SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 4**  
 ENGINE 4, FUTURE MEDIC 4

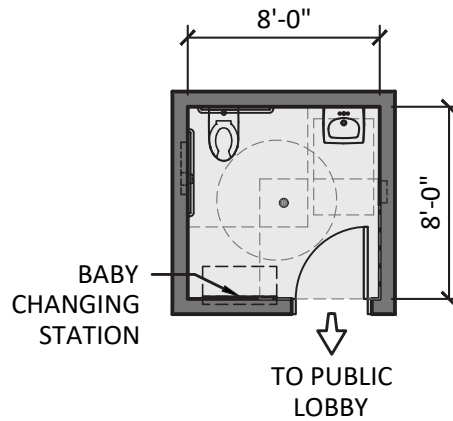


# FIRE HOUSE - FIREFIGHTER OFFICES



## 10. FIRE HOUSE PUBLIC LOBBY (180 S.F.)

SCALE: 1/8"=1'-0"



## 11. FIRE HOUSE PUBLIC RESTROOM (64 S.F.)

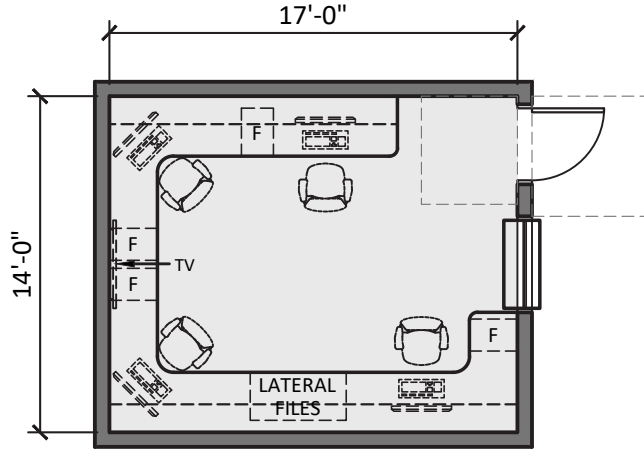
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 4**  
 ENGINE 4, FUTURE MEDIC 4

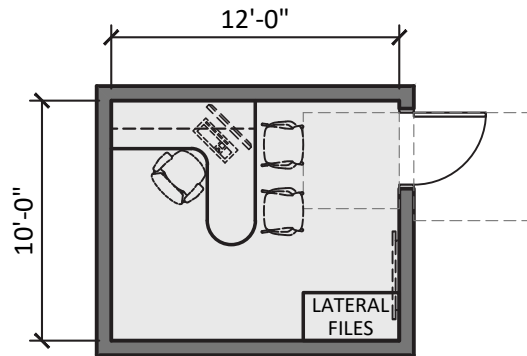


# FIRE HOUSE - FIREFIGHTER OFFICES



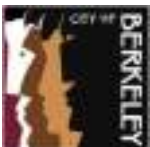
## **12. WATCH OFFICE (238 S.F.)**

SCALE: 1/8"=1'-0"

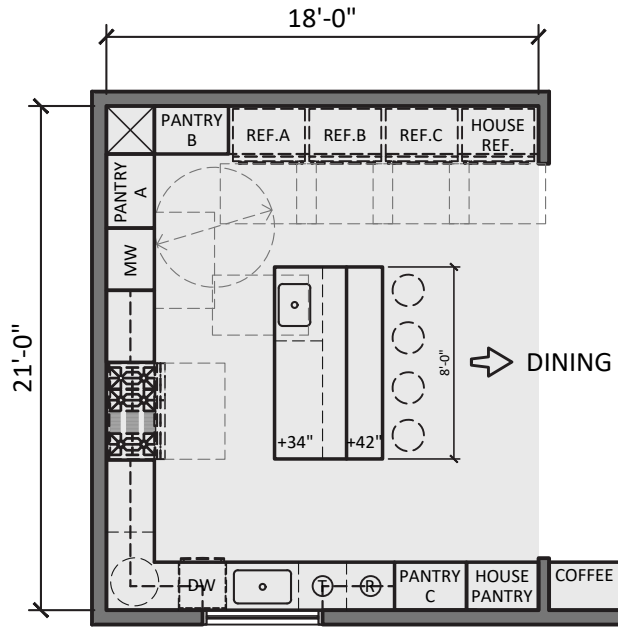


## **13. CAPTAIN'S OFFICE (120 S.F.)**

SCALE: 1/8"=1'-0"

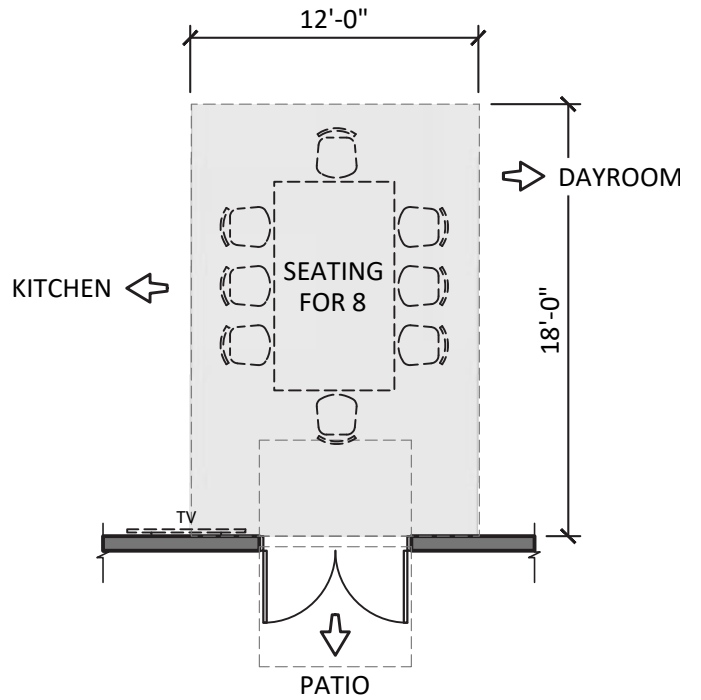


# FIRE HOUSE - FIREFIGHTER QUARTERS



**14. KITCHEN (378 S.F.)**

SCALE: 1/8"=1'-0"



**15. DINING AREA (216 S.F.)**

SCALE: 1/8"=1'-0"

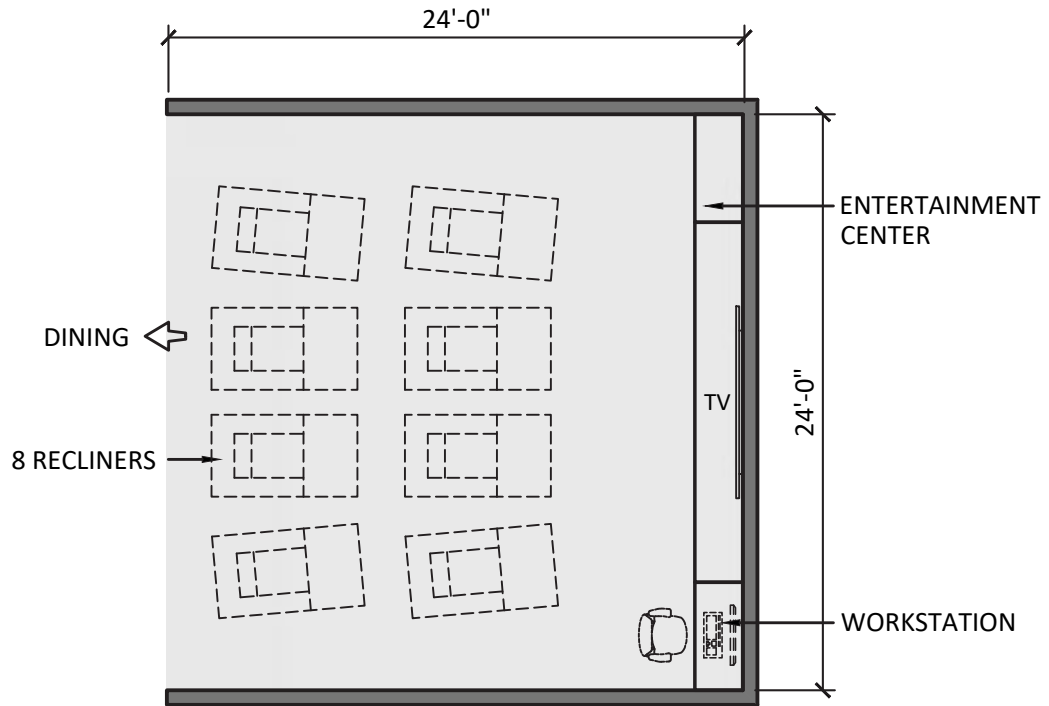


CITY OF BERKELEY  
**FIRE HOUSE NO. 4**  
 ENGINE 4, FUTURE MEDIC 4



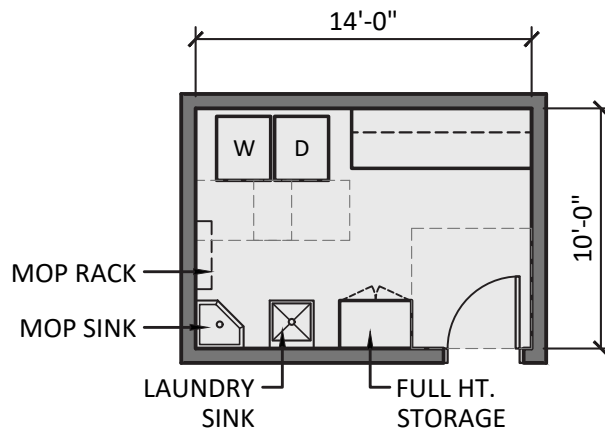


# FIRE HOUSE - FIREFIGHTER QUARTERS



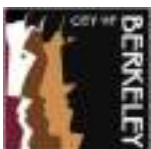
**16. DAYROOM (576 S.F.)**

SCALE: 1/8"=1'-0"

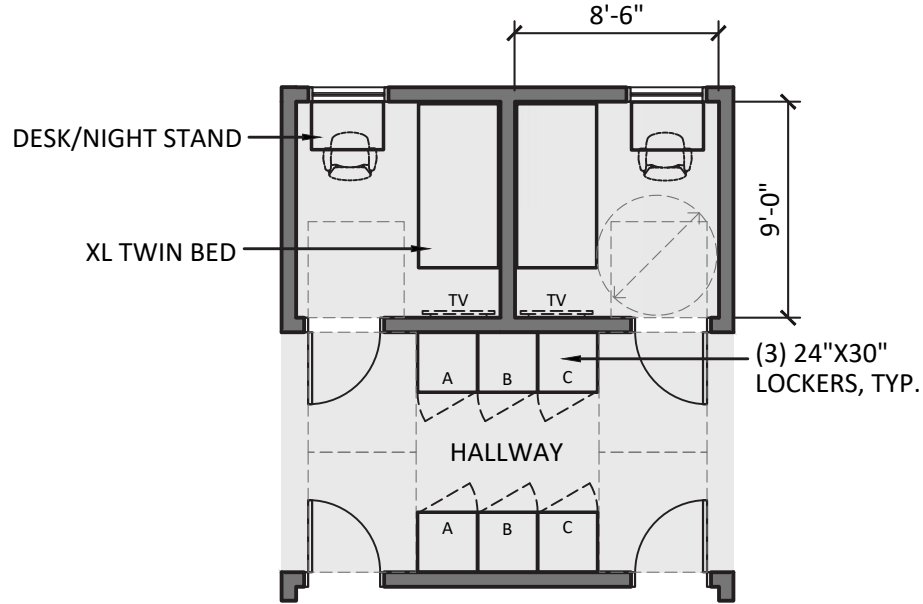


**17. LAUNDRY ROOM (140 S.F.)**

SCALE: 1/8"=1'-0"

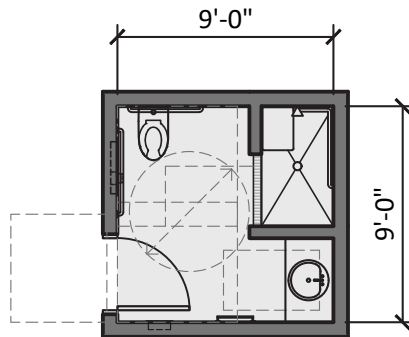


# FIRE HOUSE - FIREFIGHTER QUARTERS



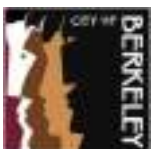
**18. FIREFIGHTER BEDROOM - 6 (459 S.F.)**

SCALE: 1/8"=1'-0"

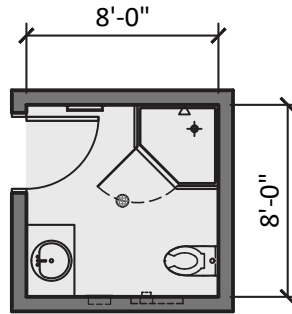


**19. FIREFIGHTER BATHROOM - ADA (81 S.F.)**

SCALE: 1/8"=1'-0"

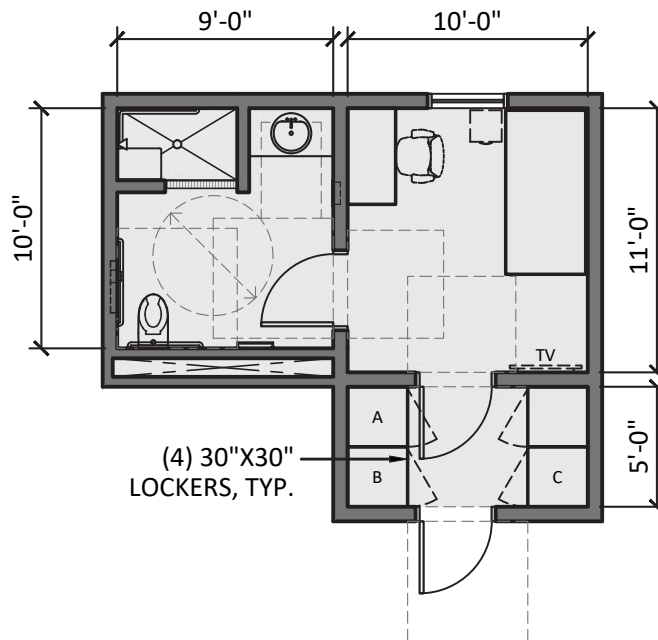


# FIRE HOUSE - FIREFIGHTER QUARTERS



**20. FIREFIGHTER BATHROOM - (3) 192 S.F.**

SCALE: 1/8"=1'-0"



**21. CAPTAIN BEDROOM, BATHROOM AND WORK AREA, ACCESSIBLE (250 S.F.)**

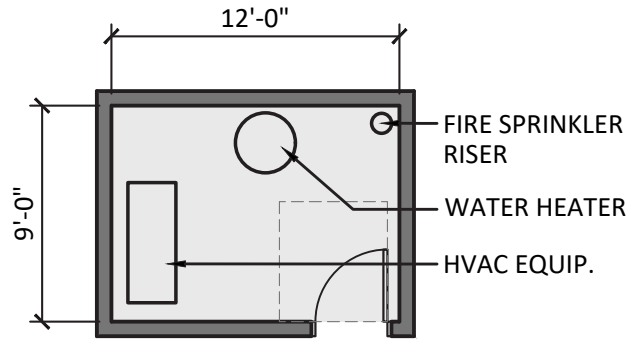
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 4**  
 ENGINE 4, FUTURE MEDIC 4

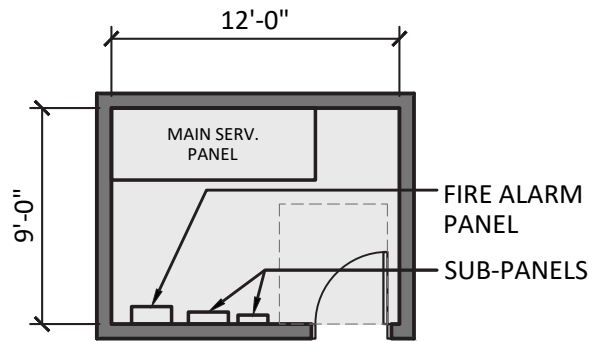


# FIRE HOUSE - UTILITY SUPPORT/VERTICAL CIRCULATION



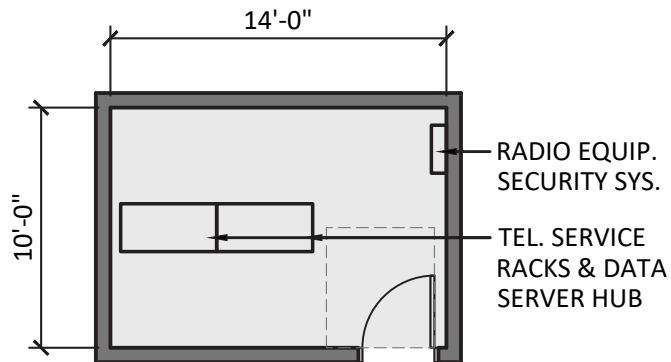
## 24. MECHANICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"



## 25. ELECTRICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"



## 26. COMMUNICATIONS ROOM (140 S.F.)

SCALE: 1/8"=1'-0"





**SITE PLAN DIAGRAM**

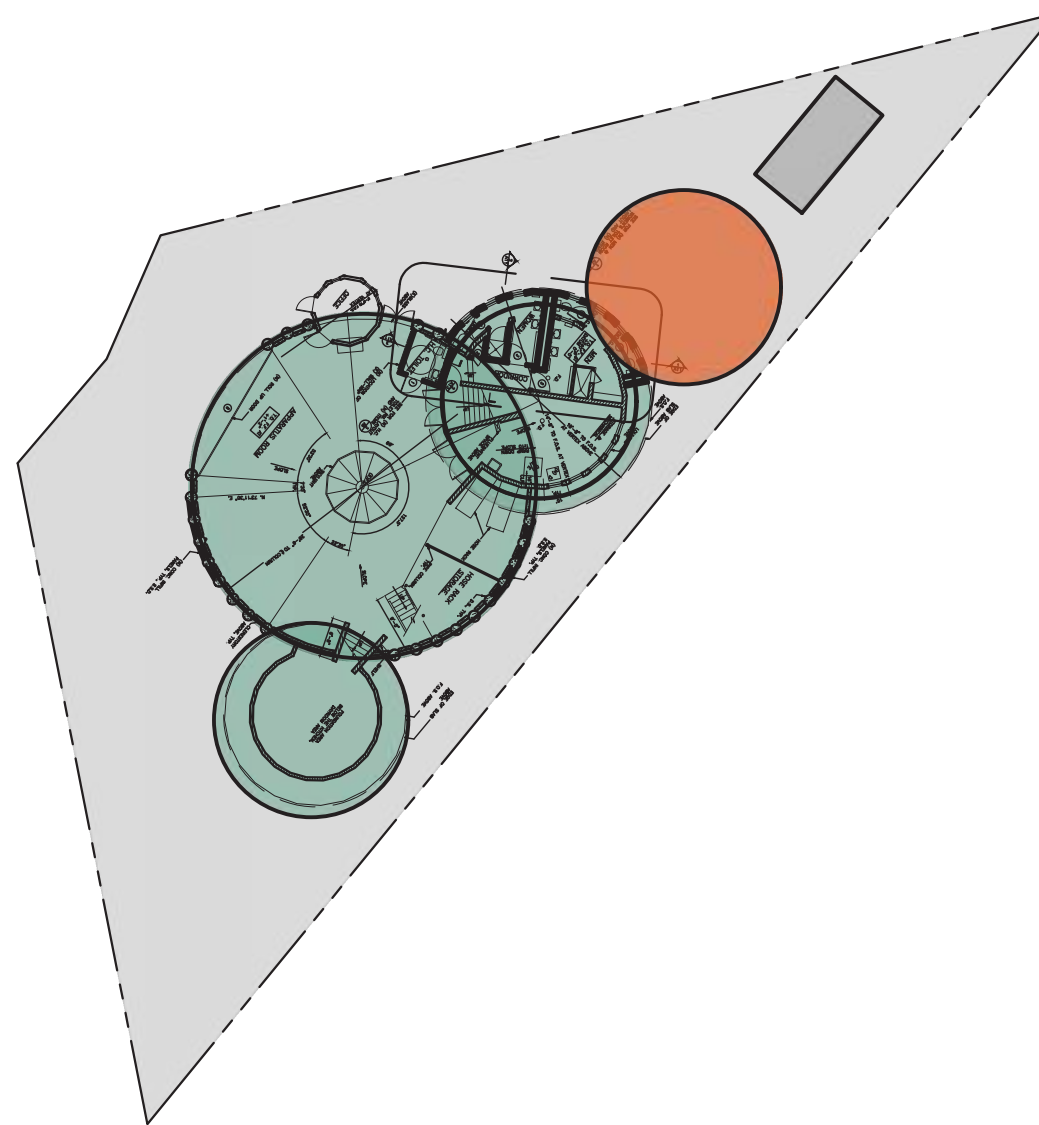
SCALE: 1/64" = 1'-0"

**FIRE STATION NO. 4**  
2 STORY BUILDING

EXISTING LOT AREA: 12,623 S.F.  
EXISTING BUILDING AREA: 5,341 S.F.  
PROPOSED NEW BUILDING AREA: 1,600 S.F.

**LEGEND:**

-  EXISTING BUILDING AREA
-  PROPOSED NEW BUILDING AREA



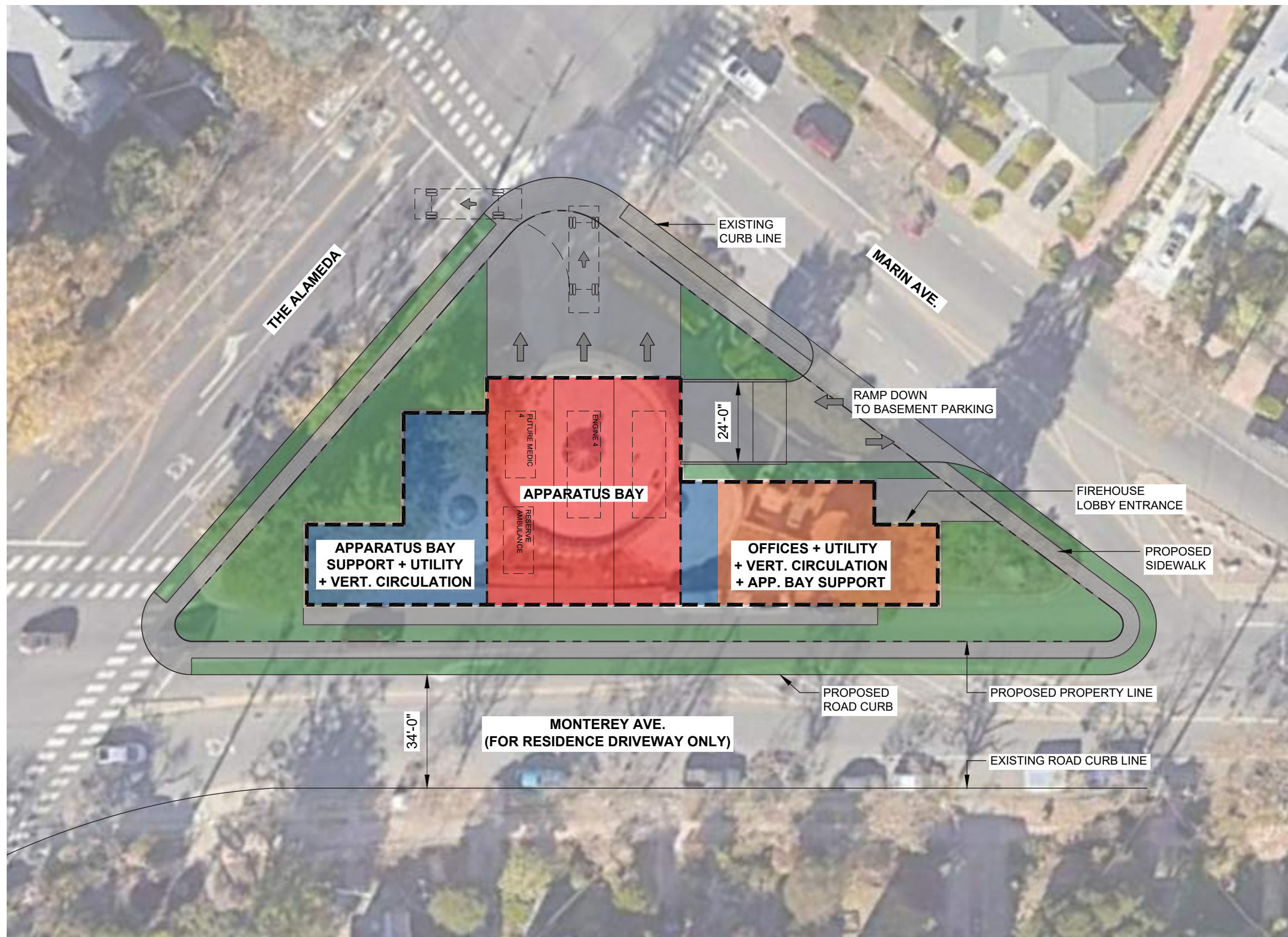
**CITY OF BERKELEY**  
FIRE SERVICE MASTER PLAN  
SITE STUDIES

TITLE:

**FIRE STATION NO. 4 - (OPTION 1 - BLDG. RENOVATION & ADDITIONAL AREA)**  
1900 MARIN AVENUE, BERKELEY, CA 94707

**SIEGEL & STRAIN Architects**  
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**FIRE STATION NO. 4  
PROPOSED 2 STORY BUILDING**

PROPOSED LOT AREA: ±20,296 S.F.  
 PROPOSED 1ST FLOOR: 8,667 S.F.  
 PROPOSED 2ND FLOOR: 4,135 S.F.  
 TOTAL BLDG. AREA: 12,802 S.F.



**SITE & FIRST FLOOR DIAGRAM**

SCALE: 1/32" = 1'-0"



**CITY OF BERKELEY**  
 FIRE SERVICE MASTER PLAN  
 SITE STUDIES

TITLE:

**FIRE STATION NO. 4 - (OPTION 2 - NEW BUILDING, EXPANDED SITE AND ADD BASEMENT PARKING)**

1900 MARIN AVENUE, BERKELEY, CA 94707

03.17.2023

**SIEGEL & STRAIN Architects**  
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# FIRE STATION 5



## CITY OF BERKELEY

## FIRE HOUSE NO. 5

2680 SHATTUCK AVENUE, BERKELEY, CA 94704

DRAFT

MAY 08, 2023

## PROJECT DESCRIPTION

Fire House No. 5 was expanded to 9,369 SF when it was seismically upgraded in 2012. In this expansion the living quarters were modified to provide space for 9 on-duty personnel per shift. The fire station currently houses 9 personnel per shift and Truck 5 (3), Engine 5 (3), Medic 5 (2), and Medic Intern (1). The staffing is planned to increase to 11 personnel per shift. The firehouse also houses a Type VI wildland unit, a reserve engine and a utility truck. Several of the units can not be housed in the apparatus bays.

Three options were evaluated. They include:

1. Renovation and expansion of the existing station on the second level to provide 16,983 SF of space. Parking requirements are not met with this solution.
2. Replace station on existing site without additional parking. Parking requirements are not met.
3. Replace station on existing site with 2 story, 16,983 SF station plus basement parking. Parking requirements are met with this solution.

The recommended option for this location is Option 3. All program criteria are met.

The ROM Project Budget for the Recommended Option 3 is \$53-58M not including escalation beyond 2024.





**Fire House No. 5****Truck 5, Engine 5, Medic 5,****2680 Shattuck Avenue****CONCEPTUAL SPACE NEEDS OUTLINE**

<b>Fire House Company Make-up - Staffing Per shift</b>	<b>Current</b>	<b>Future</b>
Truck 5 - Captain , Engineer, Firefighter/Paramedic	3	4
Engine 5 - Captain, Engineer, Firefighter/Paramedic	3	4
Medic 5 - Medic, EMT	2	2
Medic Intern	1	1
Type III 4X4 - Cross Staffed	0	0
Engine - Reserve	0	0
Utility Pick-up (F-250)	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING:</b>	<b>9</b>	<b>11</b>

<b>No.</b>	<b>Type of Space</b>	<b>Space Attributes</b>	<b>Square Footage</b>	
			<b>Program</b>	<b>Size</b>
<b>SITE OPERATIONS</b>				
	<b>Firefighter Parking</b>	22 firefighter parking spaces, secure and separate from public parking	4,400	10'x20' ea.
	<b>Visitor Parking</b>	One regular and one ADA adjacent to entrance, shared with other public parking areas.	200	10' x 20
	<b>Apparatus Washing Area</b>	Adjacent to hydrant for refill and testing; locate at rear of App. Bays; provide clarifier for run-off	0	rear apron
	<b>Hose Maintenance Area</b>	Use rear apron area for cleaning hose; roll wet and store on apparatus	0	rear apron
	<b>Yard Hydrant</b>	Located at rear yard	0	rear apron
	<b>Generator Area</b>	Located at rear yard	150	10'x15'
	<b>Fueling Area</b>	Above Grade Convault System - 1,500 GA	240	12' x 20'
	<b>Trash Enclosure</b>	Exterior access for service; space for dumpster and recycling bins, Covered	150	10'x15'
	<b>Flagpole</b>	Flagpole area with lighting	25	5'x5'
	<b>Outdoor Patio or Deck</b>	Outdoor uses; adjacent to Kitchen	200	10'x20'

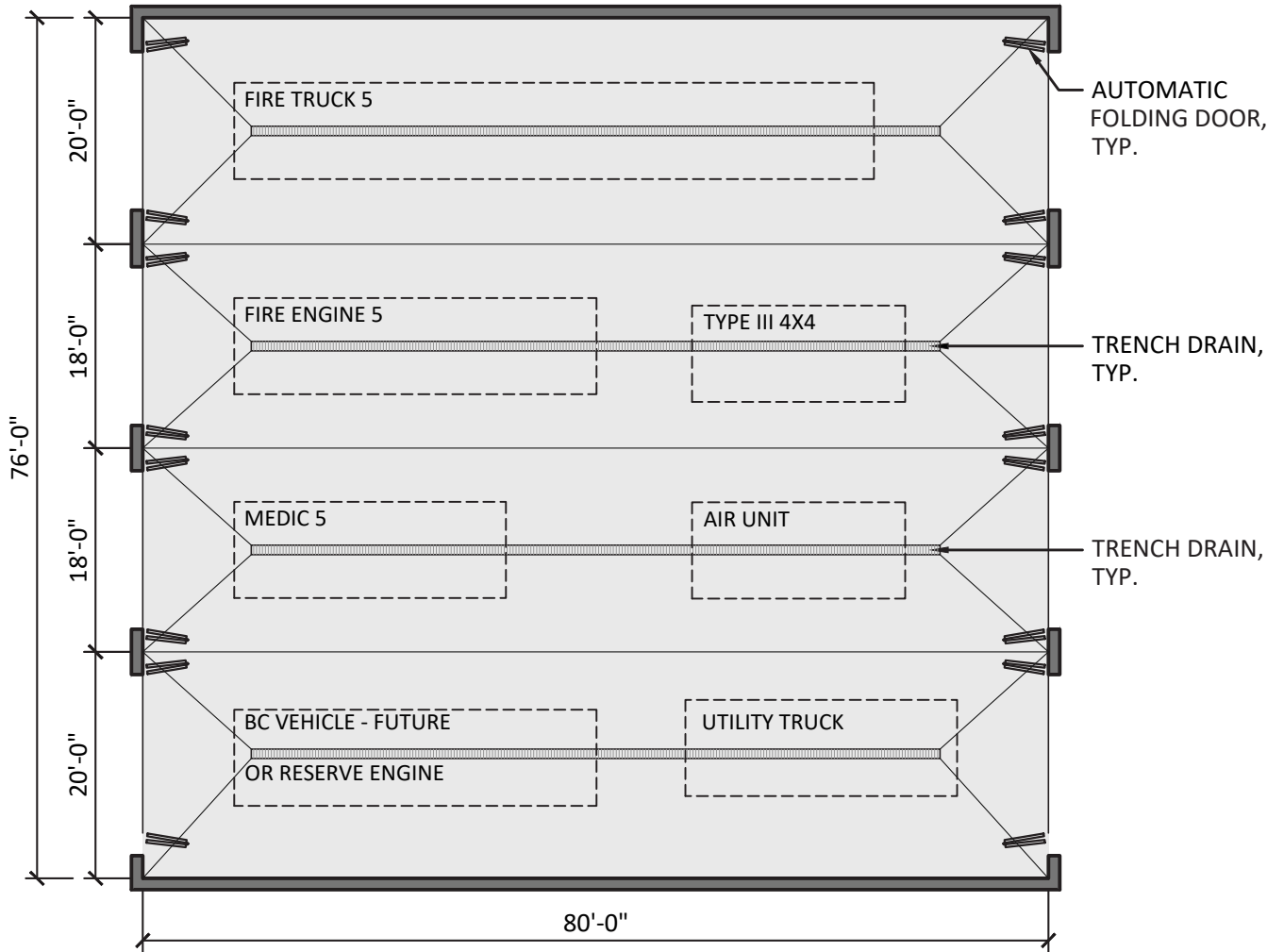
No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - APP BAY/APP BAY SUPPORT</b>				
1	Apparatus Bay (One Truck drive through bay, three double bays)	Truck, Engine, Medic - Front line apparatus. Type III 4x4, Reserve Engine, Air Unit, Utility Truck - Second Line Storage. Systems include tailpipe exhaust, power and air cord drops to each vehicle; electric heating system; night lighting; bi-folding auto-close doors; trench drains	6,080	(2) 20' x 80' (2) 18' x 80'
2	Medical Supply Closet	Heavy Duty Shelving; medical supplies off of apparatus bay.	24	3' x 8'
3	Clean Up	Clean-up sink, shelving, Alcove in bay.	18	3' x 6'
4	Equipment Storage	Yard equipment, bike storage (LEED Requirement), compressor	96	8' x 12'
5	Turnout Gear Room	Two lockers for each assigned personnel (11 Personnel per day x 3 = 33), 66 lockers); 4 unassigned for 70 total lockers. Power at each locker, continuous exhaust fan, floor drain, heavy duty shelving; wildland gear bags. Dirty area in room with Extractor and Dryer, decon shower and hanging area. Part of response return path.	1,200	24' x 50'
6	Janitor Room	Service sink, mop rack; janitorial supplies;	48	6' x 8'
7	Work Shop Alcove	Work bench/shop area for vise, peg board, tool storage with large flat work surface, Misc. equipment storage, tool chest, Full height storage cabinet, shop sink and eyewash.	120	4' x 30'
8	Firefighter Restroom	Fire fighter toilet and sink, off of apparatus bay	64	8' x 8'
9	Fitness Room	Dedicated Fitness Room	624	26' x 24'
<b>Fire House - App Bay/Support Subtotal</b>			<b>8,274</b>	
No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - FIREFIGHTER OFFICES</b>				
10	Fire House Public Lobby	Lobby with seating; adjacent to the public restroom. Service window separation between Watch Office and lobby. Alcove in Lobby for Blood Pressure and other wellness checks.	180	12' x 15'
11	Fire House Public Restroom	One All Gender Restroom, accessible, off of Lobby	64	8'x8'
12	Watch Office	Workstations for 4-persons; provide space for lateral file cabinets (one cabinet per company) copy machine and office supply storage, book shelving; conference function	238	14' x 17'
13	Captains Office (Truck Captain and Engine Captain)	Workstation for 2-persons; provide space for (6) lateral file cabinets.	120	12' x 10'
<b>Fire House - Firefighter Offices Subtotal</b>			<b>602</b>	

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>FIRE HOUSE - FIREFIGHTER QUARTERS</b>				
14	Kitchen	3-refrigerators; 3-shift pantries; 1-house pantry and refrigerator; 2-dishwasher; electric induction range/oven with hood; large microwave; large, 12" deep sink with disposer; prep sink at island; trash and recycling areas; coffer service area; open to Dining Area	378	18' x 21'
15	Dining Area	Seating for 12 persons; wall-mounted TV; open to kitchen; open to Day Room	252	12' x 21'
16	Day Room	Seating for 12 with recliner chairs; entertainment center and book shelving; Open to Dining, one work station along wall.	720	24' x 30'
17	Laundry Room	Service sink; countertop; janitorial supplies; mop rack, Washer/Dryer	140	10' x 14'
18	Firefighter Bedroom	9-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed with lockers outside door.	689	8'-6" x 9' (9)
19	Firefighter Bathroom ADA	1 accessible restroom with shower, sink, toilet	81	9' x 9'
20	Firefighter Bathrooms	4 restrooms with shower, sink, toilet	256	8' x 8' (4)
21	Captain Bedroom, Bathroom and Work Area, Accessible	2-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed. One with accessible in-suite bathroom.	500	10' x 11' (2) 5' x10 (2) 10' x 9' (2)
<b>Fire House - Firefighter Quarters Subtotal</b>			<b>3,016</b>	

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>UTILITY SUPPORT/VERTICAL CIRCULATION</b>				
22	Mechanical Room	HVAC equipment; hot water heater; fire sprinkler riser	108	9' x 12'
23	Electrical Room	Main service panel, fire alarm panel; sub panels	108	9' X 12'
24	Communications Room	Telephone service racks, alert response system hub, data server hub, radio equipment; security system	140	10' x 14'
25	Stairs	(2x) for each level. Two stairways from the second floor for exiting	576	18' x 8'
26	Fire House Elevator	Elevator and machine room	240	8' x 10' (3)
<b>Utility Support/ Vertical Circulation Subtotal</b>			<b>1,172</b>	

<b>Engine 5, Truck 5, Medic 5: Summary</b>		Program	
Fire House - App Bay/Bay Support Subtotal		8,274	
Fire House - Firefighter Offices Subtotal		602	
Fire House - Firefighter Quarters Subtotal		3,016	
Utility Support/Vertical Circulation Subtotal		1,172	
<b>BUILDING SUBTOTAL (SF)</b>		<b>13,064</b>	
Circulation at 30%		3,919	
<b>Engine 5, Truck 5, Medic 5: GRAND TOTAL (SF)</b>		<b>16,983</b>	

# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

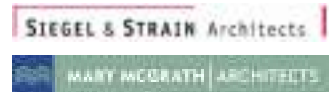


## 1. APPARATUS BAY - 4 DRIVE-THROUGH BAYS (6,080 S.F.)

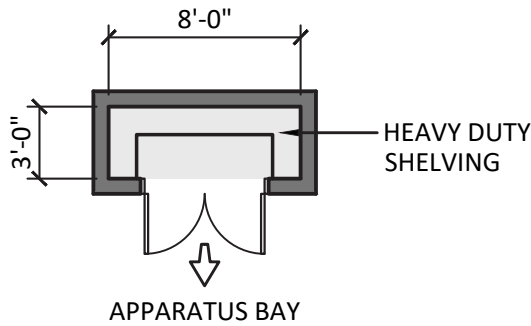
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CITY OF BERKELEY  
**FIRE HOUSE NO. 5**  
TRUCK 5, ENGINE 5, MEDIC 5

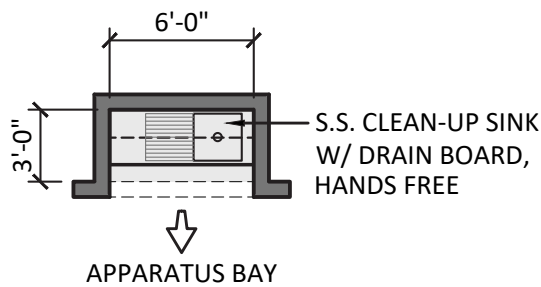


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



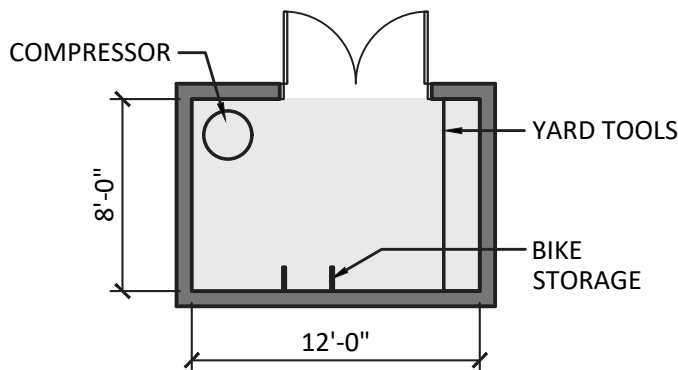
## 2. MEDICAL SUPPLY CLOSET (24 S.F.)

SCALE: 1/8"=1'-0"



## 3. CLEAN-UP (18 S.F.)

SCALE: 1/8"=1'-0"

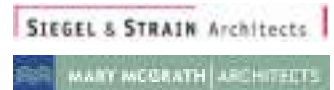


## 4. EQUIPMENT STORAGE (96 S.F.)

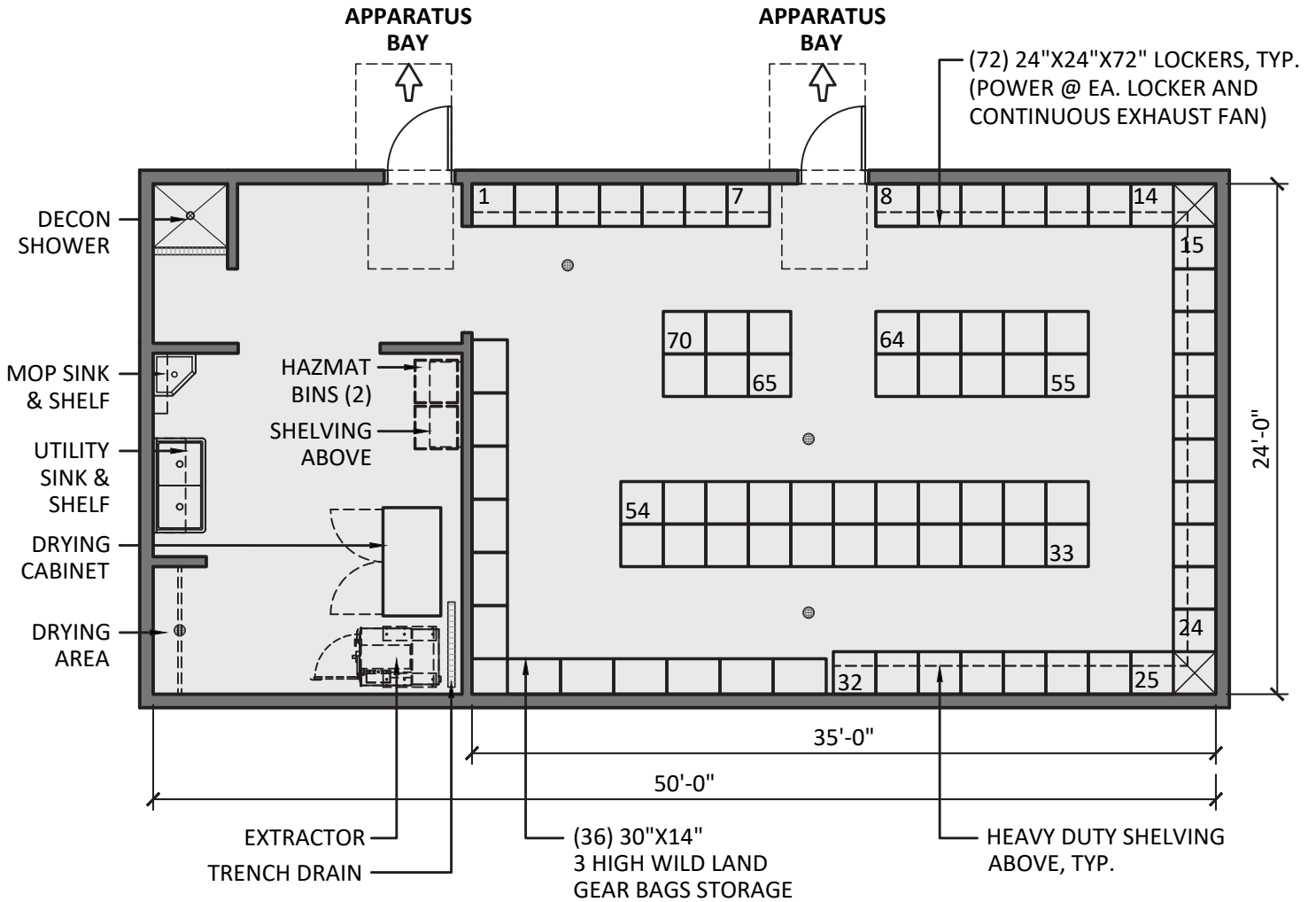
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 5**  
TRUCK 5, ENGINE 5, MEDIC 5



# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

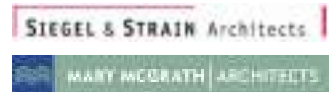


## 5. TURNOUT GEAR ROOM (1,200 S.F.)

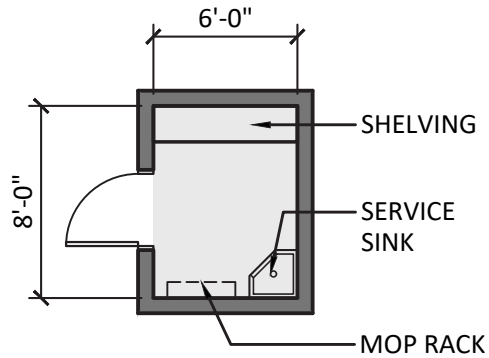
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 5**  
TRUCK 5, ENGINE 5, MEDIC 5

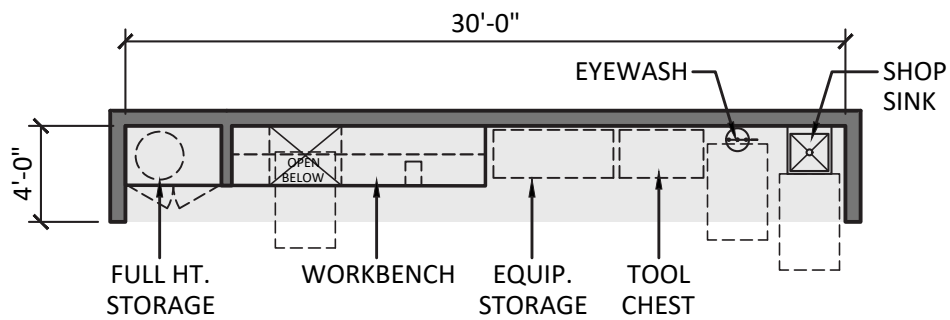


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



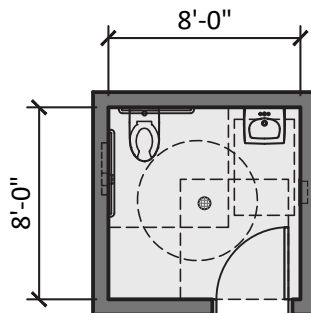
### 6. JANITOR ROOM (48 S.F.)

SCALE: 1/8"=1'-0"



### 7. WORKSHOP ALCOVE (120 S.F.)

SCALE: 1/8"=1'-0"

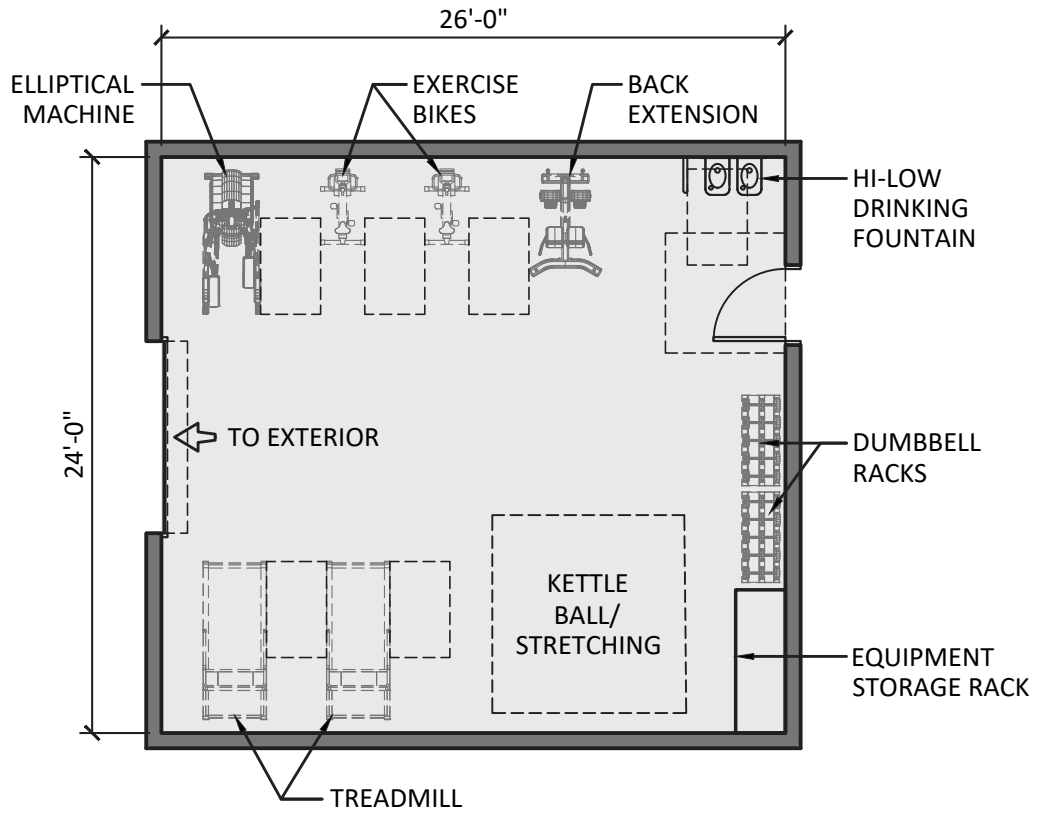


### 8. FIREFIGHTER RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"

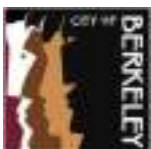


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



## 9. FITNESS ROOM (624 S.F.)

SCALE: 1/8"=1'-0"

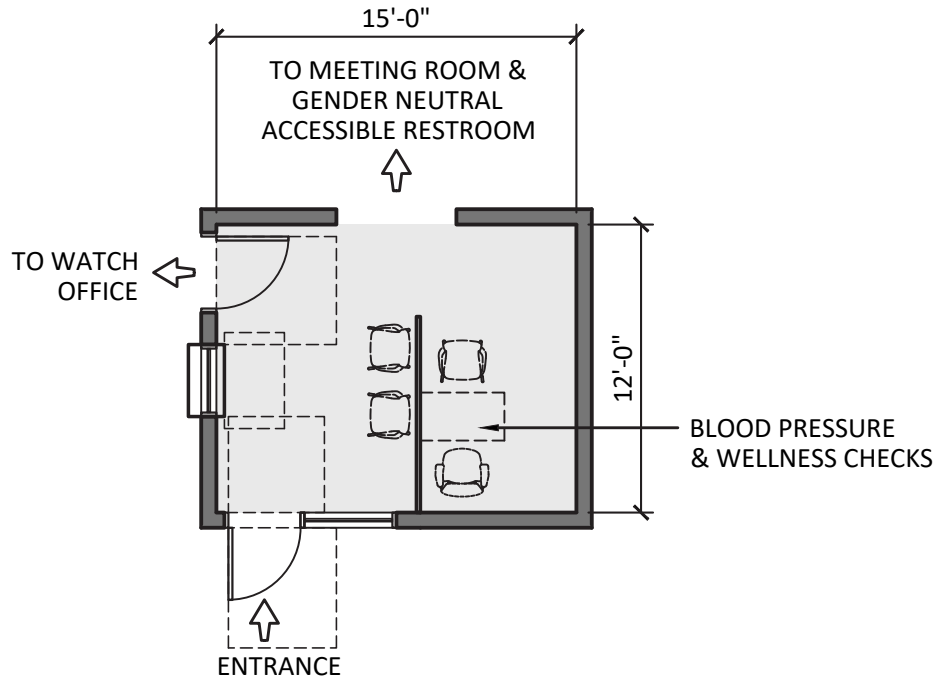


CITY OF BERKELEY  
**FIRE HOUSE NO. 5**  
TRUCK 5, ENGINE 5, MEDIC 5



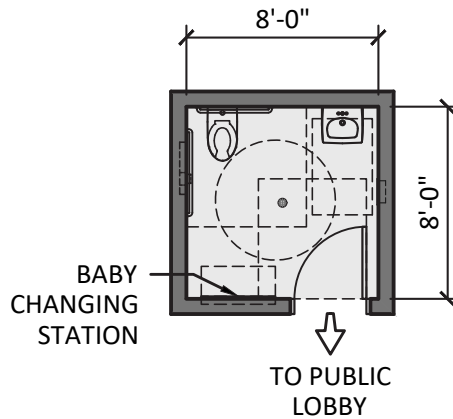


# FIRE HOUSE - FIREFIGHTER OFFICES



### 10. FIRE HOUSE PUBLIC LOBBY (180 S.F.)

SCALE: 1/8"=1'-0"



### 11. FIRE HOUSE PUBLIC RESTROOM (64 S.F.)

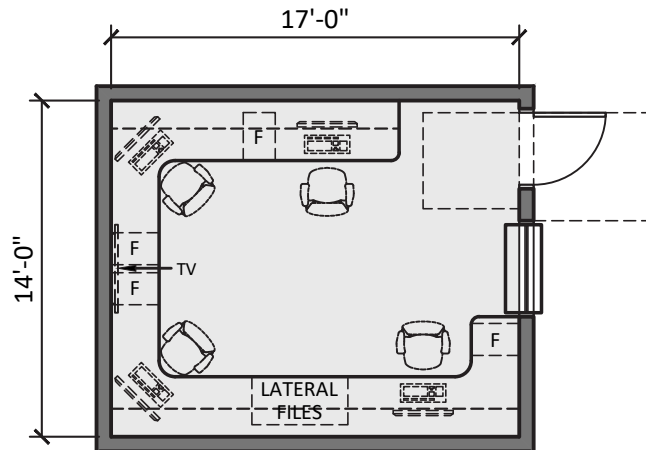
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 5**  
 TRUCK 5, ENGINE 5, MEDIC 5

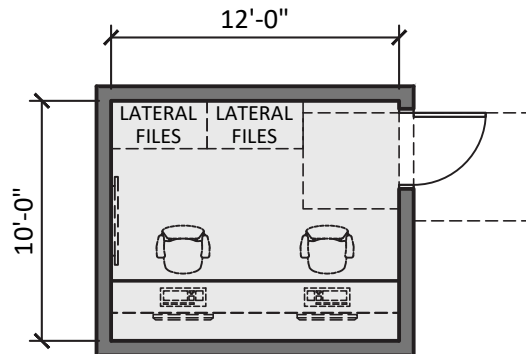


# FIRE HOUSE - FIREFIGHTER OFFICES



**12. WATCH OFFICE (238 S.F.)**

SCALE: 1/8"=1'-0"

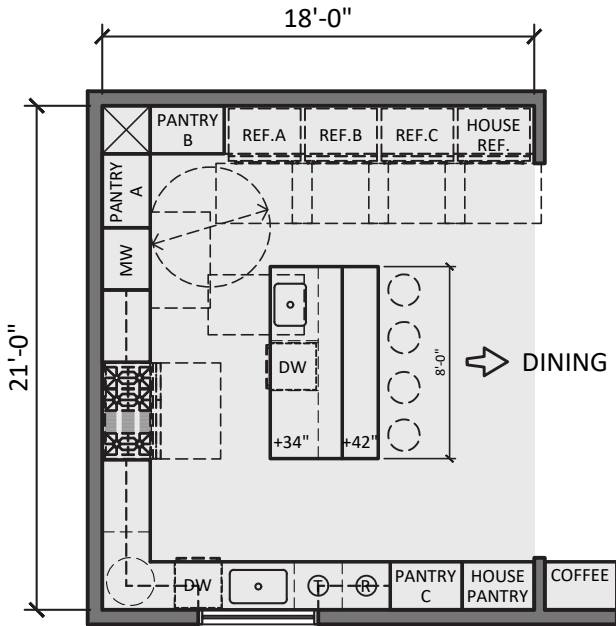


**13. CAPTAIN'S OFFICE (120 S.F.)**

SCALE: 1/8"=1'-0"

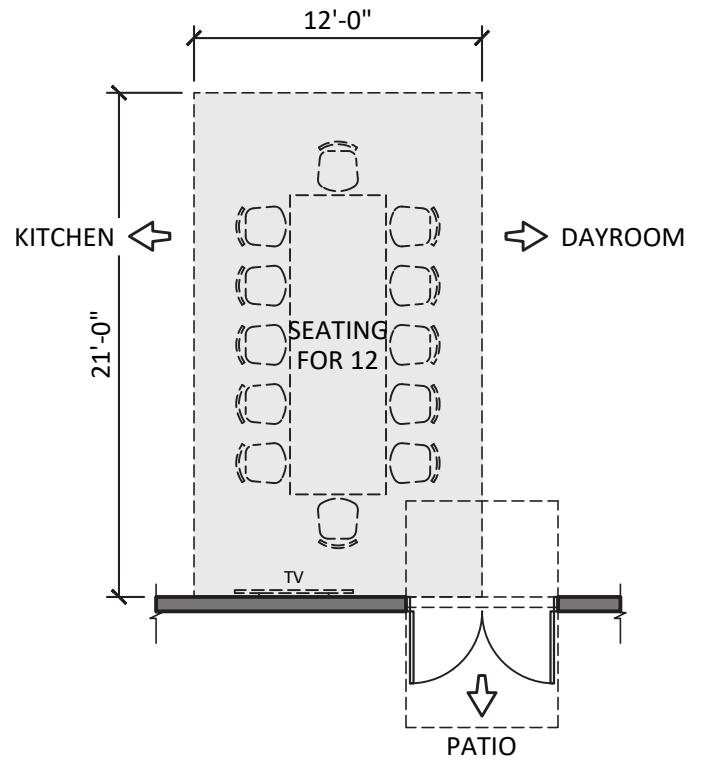


# FIRE HOUSE - FIREFIGHTER QUARTERS



**14. KITCHEN (378 S.F.)**

SCALE: 1/8"=1'-0"

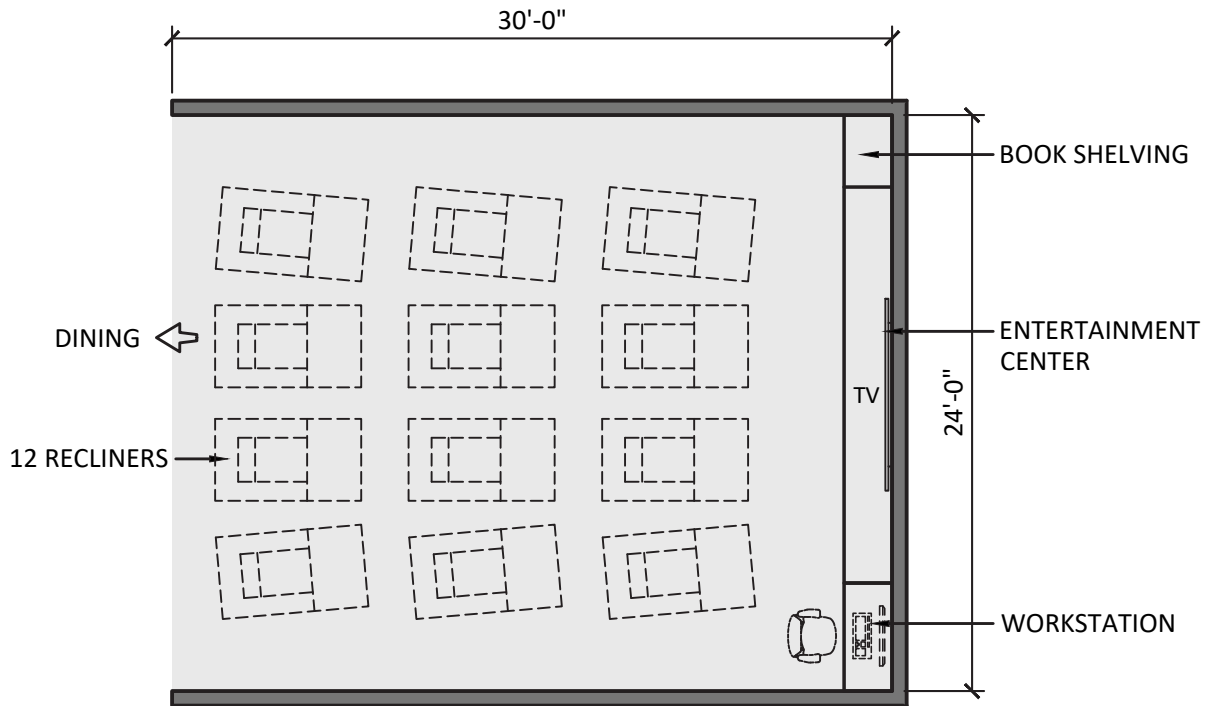


**15. DINING AREA (252 S.F.)**

SCALE: 1/8"=1'-0"

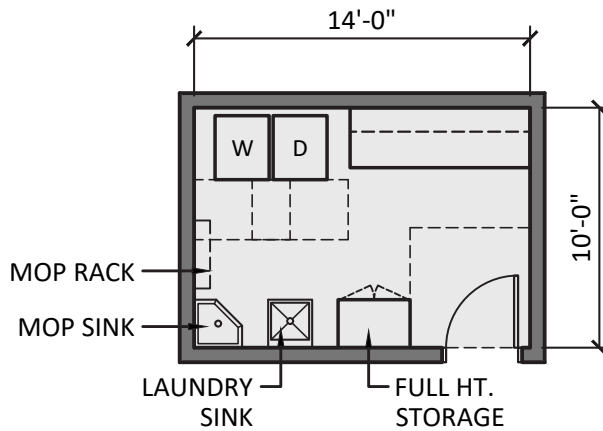


# FIRE HOUSE - FIREFIGHTER QUARTERS



### 16. DAYROOM (720 S.F.)

SCALE: 1/8"=1'-0"



### 17. LAUNDRY ROOM (140 S.F.)

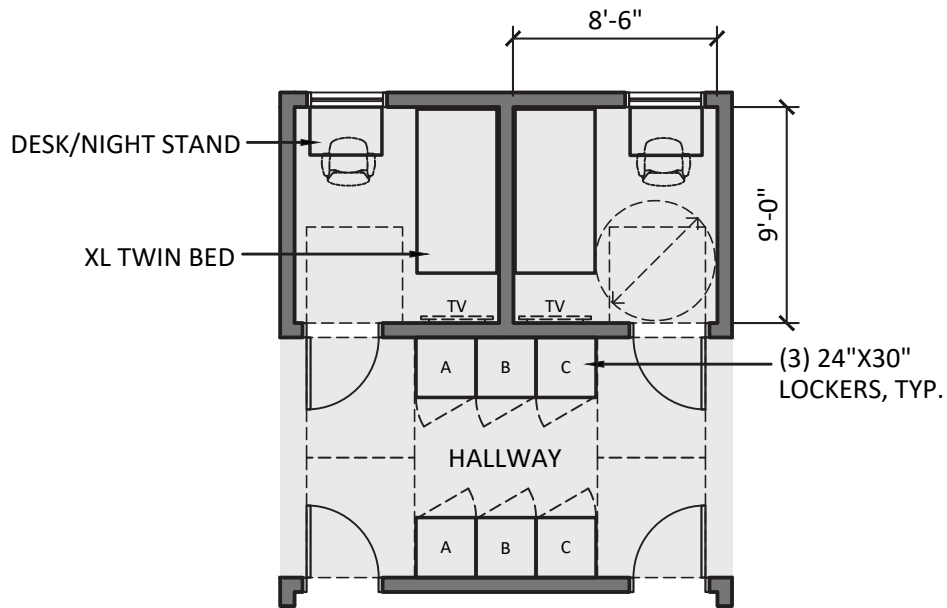
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 5**  
 TRUCK 5, ENGINE 5, MEDIC 5

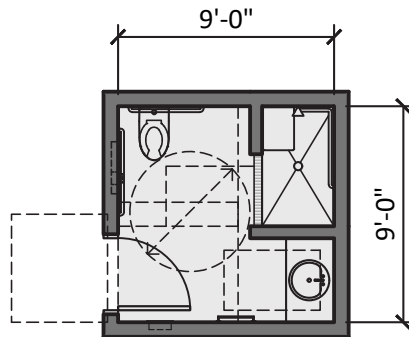


# FIRE HOUSE - FIREFIGHTER QUARTERS



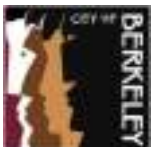
**18. FIREFIGHTER BEDROOM - 9 (689 S.F.)**

SCALE: 1/8"=1'-0"

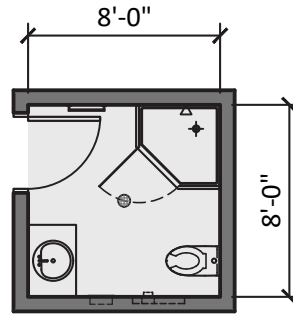


**19. FIREFIGHTER BATHROOM - ADA (81 S.F.)**

SCALE: 1/8"=1'-0"

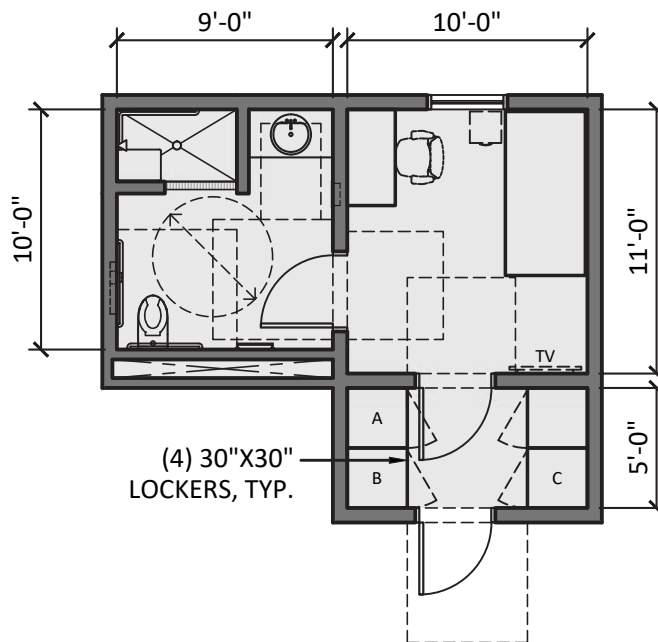


# FIRE HOUSE - FIREFIGHTER QUARTERS



**20. FIREFIGHTER BATHROOM - 4 (256 S.F.)**

SCALE: 1/8"=1'-0"

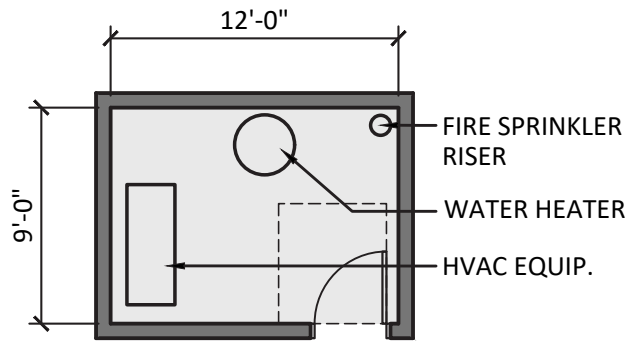


**21. CAPTAIN BEDROOM, BATHROOM AND WORK AREA, ACCESSIBLE - 2 (500 S.F.)**

SCALE: 1/8"=1'-0"

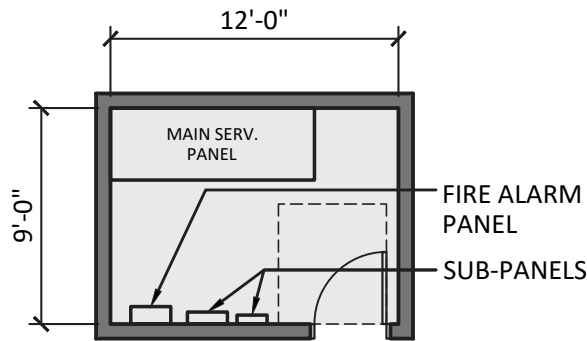


# FIRE HOUSE - UTILITY SUPPORT/VERTICAL CIRCULATION



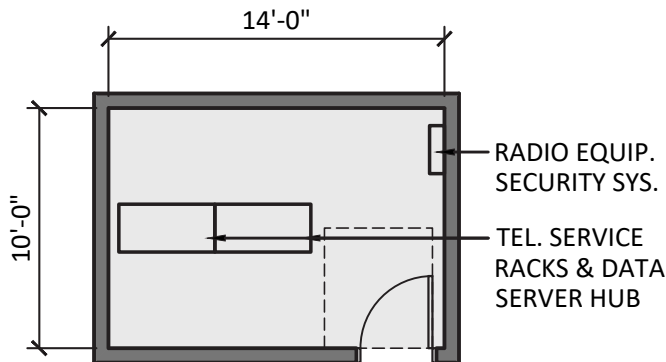
## 22. MECHANICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"



## 23. ELECTRICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"




## 24. COMMUNICATIONS ROOM (140 S.F.)

SCALE: 1/8"=1'-0"





**FIRE STATION NO. 5**  
 2 STORY BUILDING  
 EXISTING LOT AREA: 17,300 S.F.

**LEGEND:**  
 EXISTING BUILDING AREA

**SITE / FIRST FLOOR DIAGRAM**

SCALE: 1/64" = 1'-0"



**CITY OF BERKELEY**  
 FIRE SERVICE MASTER PLAN  
 SITE STUDIES

TITLE:

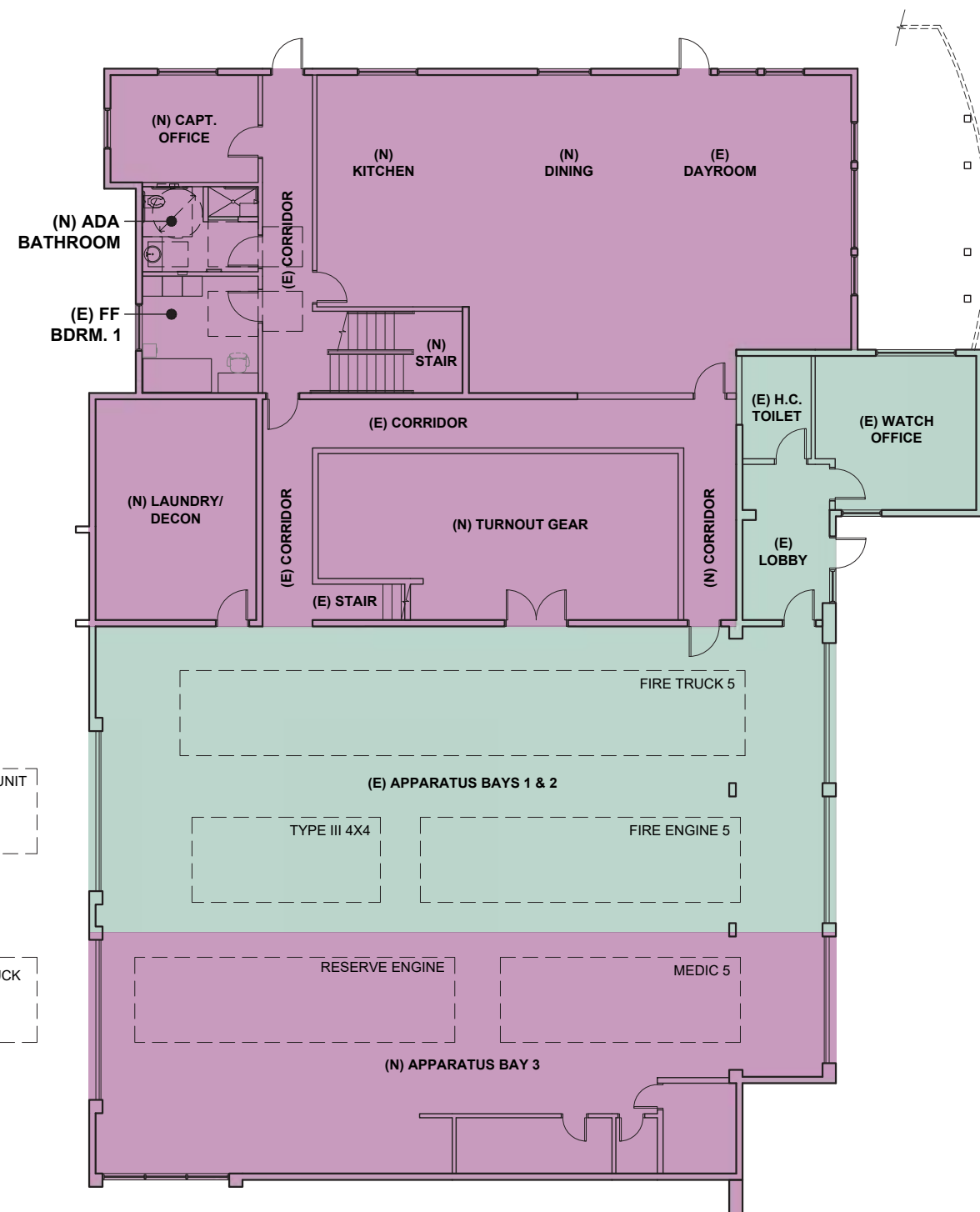
**FIRE STATION NO. 5 - SITE PLAN (OPTION 1 - BLDG. RENOVATION & ADDITIONAL AREA)**  
 2680 SHATTUCK AVENUE, BERKELEY, CA 94704

03.17.2023

**SIEGEL & STRAIN Architects**  
 6201 DOYLE STREET, SUITE B,  
 EMERYVILLE, CA 94608  
 phone: 510.547.8092 | www.siegelstrain.com

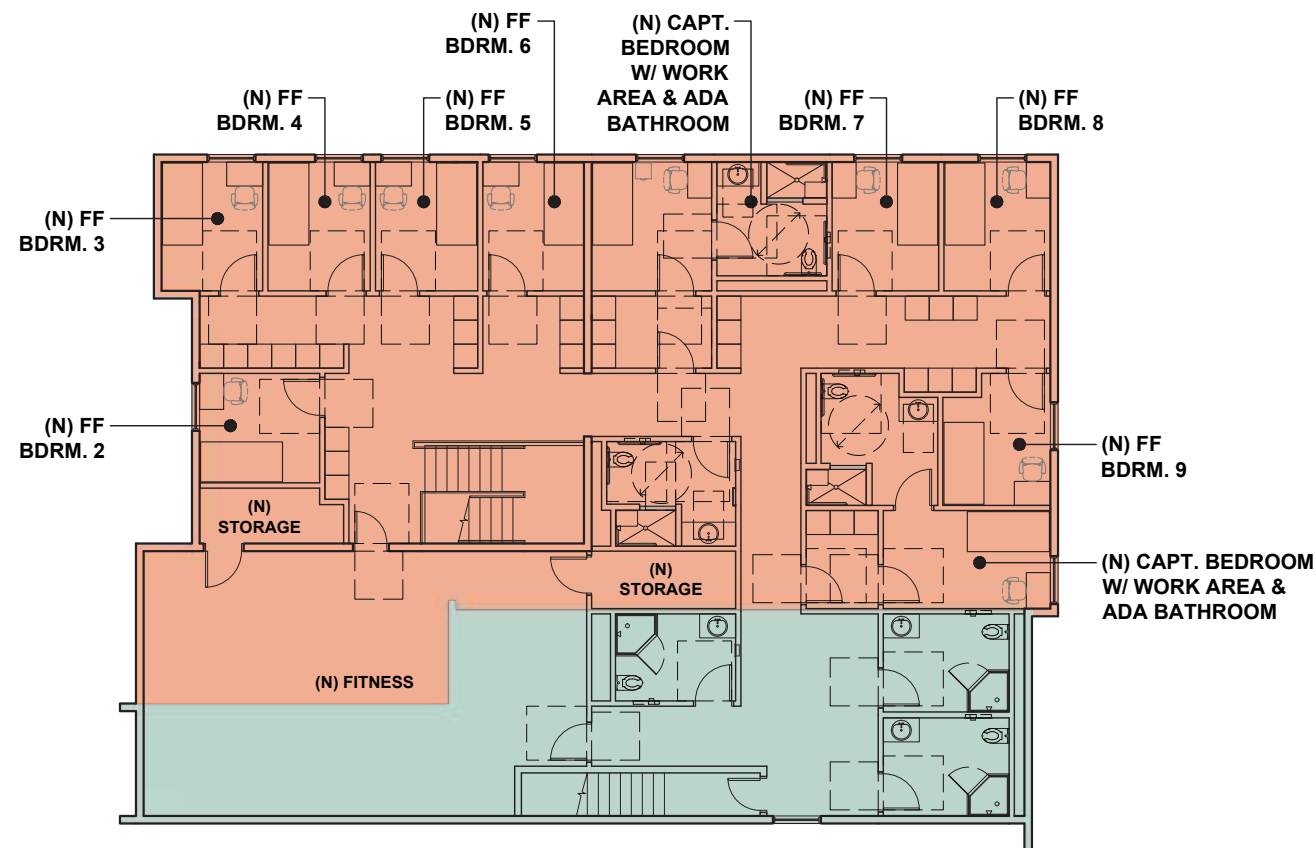
**MARY MCGRATH ARCHITECTS**  
 610 16th STREET, SUITE 219, OAKLAND, CA 94612  
 phone: 510.208.9400  
 www.marymcgratharchitects.com





**FIRST FLOOR DIAGRAM**

SCALE: 1/16" = 1'-0"



**SECOND FLOOR DIAGRAM**

SCALE: 1/16" = 1'-0"

**FIRE STATION NO. 5**

2 STORY BUILDING

EXISTING SECOND FLOOR AREA: 1,132 S.F.  
 EXISTING FIRST FLOOR AREA: 8,404 S.F.  
 EXISTING TOTAL BLDG. AREA: 9,536 S.F.  
 ADDED SECOND FLOOR AREA: 3,004 S.F.

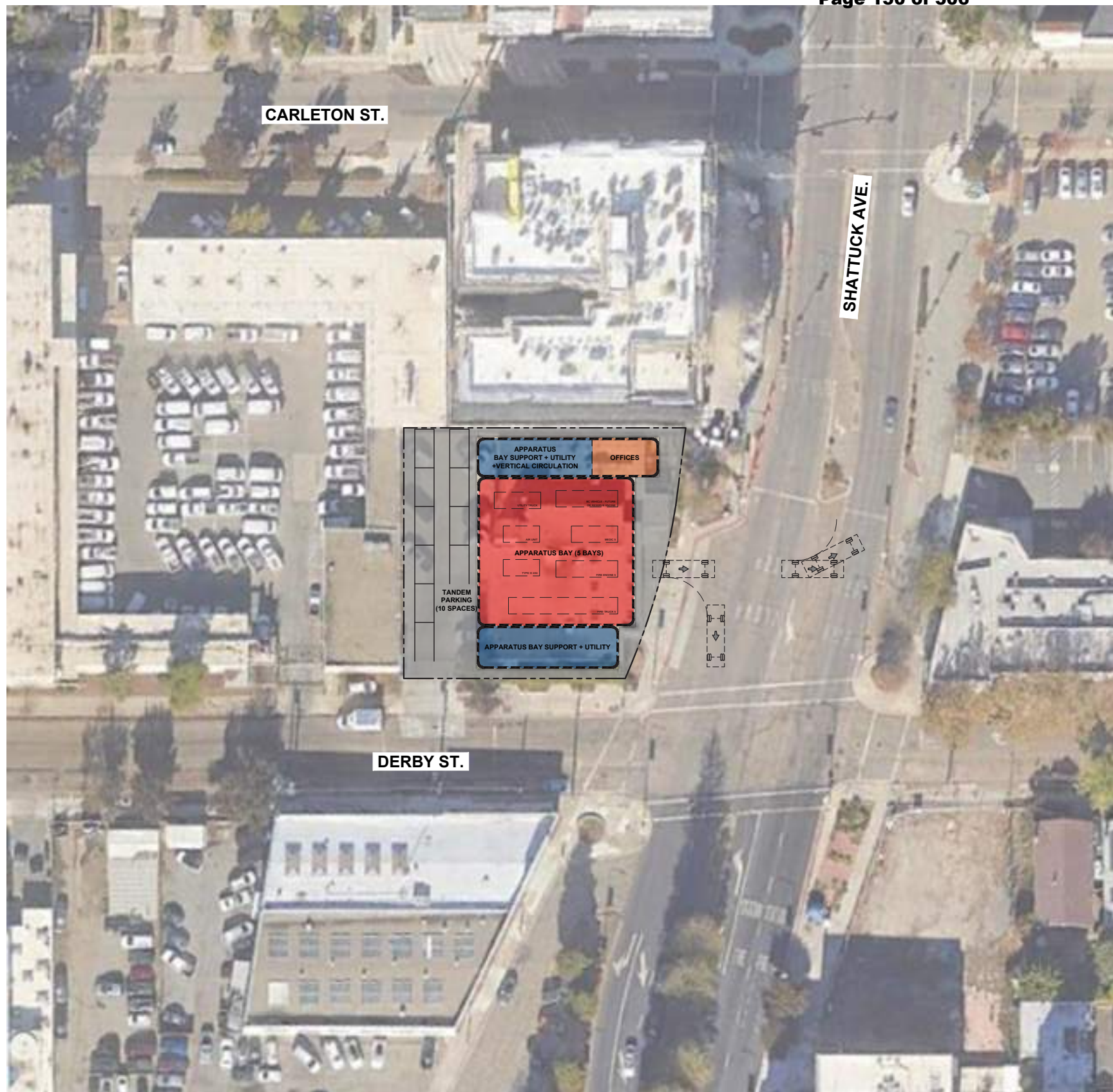
**LEGEND:**

- EXISTING BUILDING AREA
- ADDED BUILDING AREA
- RENOVATION AREA



TITLE:





**SITE / FIRST FLOOR DIAGRAM**

SCALE: 1/64" = 1'-0"

**FIRE STATION NO. 5**

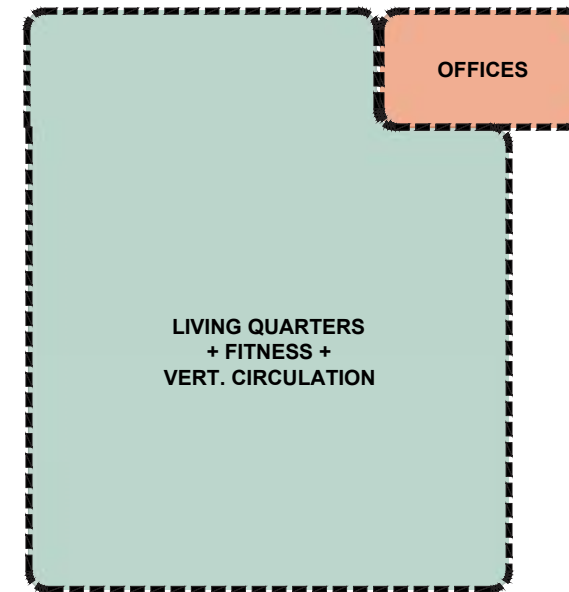
2 STORY BUILDING

EXISTING LOT AREA: 17,300 S.F.

PROPOSED SECOND FLOOR AREA: 7,099 S.F.

PROPOSED FIRST FLOOR AREA: 9,884 S.F.

PROPOSED TOTAL BLDG. AREA: 16,983 S.F.



**SECOND FLOOR DIAGRAM**

SCALE: 1/32" = 1'-0"



**CITY OF BERKELEY**  
**FIRE SERVICE MASTER PLAN**  
**SITE STUDIES**

TITLE:

**FIRE STATION NO. 5 - OPTION 2 (NEW BUILDING & EXISTING PARKING AREA)**

2680 SHATTUCK AVENUE, BERKELEY, CA 94704

03.17.2023

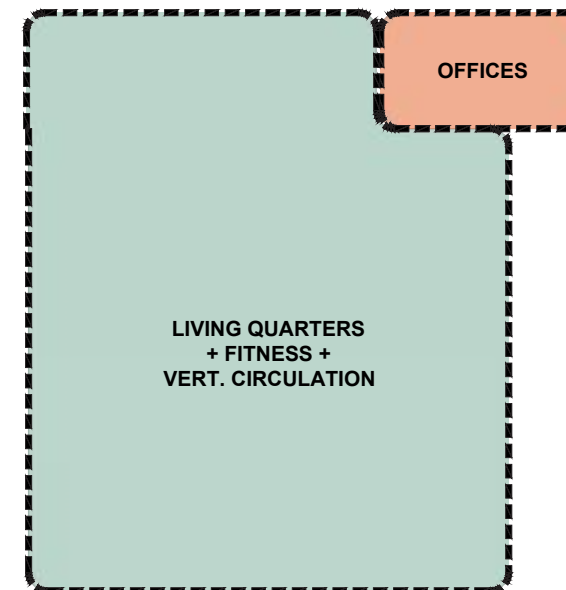
**SIEGEL & STRAIN Architects**  
 6201 DOYLE STREET, SUITE B,  
 EMERYVILLE, CA 94608  
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**MARY MCGRATH ARCHITECTS**  
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 phone: 510.208.9400  
 www.marymcgratharchitects.com



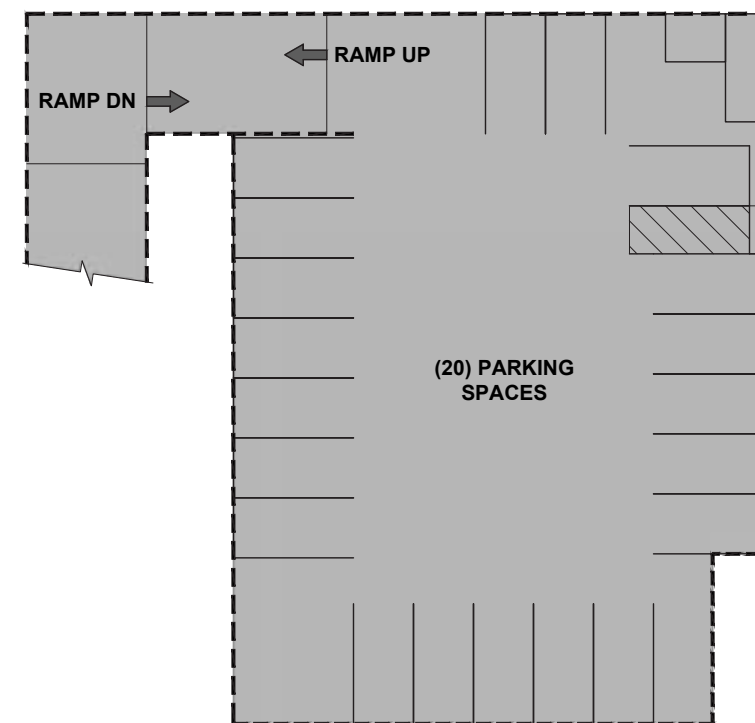
**SITE / FIRST FLOOR DIAGRAM**

SCALE: 1/64" = 1'-0"



**SECOND FLOOR DIAGRAM**

SCALE: 1/32" = 1'-0"



**BASEMENT PARKING DIAGRAM**

SCALE: 1/32" = 1'-0"

**FIRE STATION NO. 5**  
 2 STORY BUILDING  
 EXISTING LOT AREA: 17,300 S.F.  
 PROPOSED SECOND FLOOR AREA: 7,099 S.F.  
 PROPOSED FIRST FLOOR AREA: 9,884 S.F.  
 PROPOSED BASEMENT PARKING: 9,963 S.F.  
 PROPOSED TOTAL BLDG. AREA: 26,946 S.F.





# FIRE STATION 6



## CITY OF BERKELEY

### FIRE HOUSE NO. 6

999 CEDAR STREET, BERKELEY, CA 94710

DRAFT

MAY 08, 2023

### PROJECT DESCRIPTION

The existing Fire House No. 6 is a one story, 4,596 SF station and was originally designed to provide operational space and living quarters for two personnel in the 1960's. The facility was seismically retrofitted and expanded in the 1990's. The fire station currently houses 3 personnel per shift with a single unit, Engine 6 (3). The staffing is anticipated to increase to 4 personnel per shift.

Because this station is not anticipated to add a new unit, only a new staff member, it was a strong candidate for renovation and addition. The recommended solution includes:

1. Renovate the entire station and expand to 6,312 SF to provide a private station office, dedicated sleeping rooms, turnout storage and a dedicated fitness room.

The ROM Project Budget for the Recommended Option is \$12-16M; not including escalation beyond 2024.



**Fire House No. 6****Engine 6, Reserve Engine****999 Cedar Street****CONCEPTUAL SPACE NEEDS OUTLINE**

Fire House Company Make-up - Staffing Per shift	Current	Future
Engine 6 - Captain, Engineer, Firefighter/Paramedic	3	4
Reserve Engine	0	0
<b>TOTAL CURRENT AND FUTURE STAFFING:</b>	<b>3</b>	<b>4</b>

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>SITE OPERATIONS</b>				
	<b>Firefighter Parking</b>	8 firefighter parking spaces, secure and separate from public parking	2,000	10'x20' ea.
	<b>Visitor Parking</b>	One regular and one ADA adjacent to entrance, shared with other public parking areas.	600	10' x 20
	<b>Apparatus Washing Area</b>	Adjacent to hydrant for refill and testing; locate at rear of App. Bays; provide clarifier for run-off	0	rear apron
	<b>Hose Maintenance Area</b>	Use rear apron area for cleaning hose; roll wet and store on apparatus	0	rear apron
	<b>Yard Hydrant</b>	Located at rear yard	0	rear apron
	<b>Generator Area</b>	Located at rear yard	150	10'x15'
	<b>Fueling Area</b>	Above Grade Convault System - 500 GA	240	12' x 20'
	<b>Trash Enclosure</b>	Exterior access for service; space for dumpster and recycling bins, Covered	150	10'x15'
	<b>Flagpole</b>	Flagpole area with lighting	25	5'x5'
	<b>Outdoor Patio or Deck</b>	Outdoor uses; adjacent to Kitchen	200	10'x20'

No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>FIRE HOUSE - APP BAY/APP BAY SUPPORT</b>					
1	Apparatus Bay (One Engine, Reserve Engine)	Engine and Reserve Engine. Systems include tailpipe exhaust, power and air cord drops to each vehicle; electric heating system; night lighting; bi-folding auto-close doors; trench drains	2,560	(2) 20' x 64'	2,037
2	Medical Supply Closet	Heavy Duty Shelving; medical supplies off of apparatus bay.	24	3' x 8'	26
3	Clean Up	Clean-up sink, shelving, Alcove in bay.	18	3' x 6'	NIC
4	Equipment Storage	Yard equipment, bike storage (LEED Requirement), compressor	64	8' x 8'	NIC

No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>FIRE HOUSE - APP BAY/APP BAY SUPPORT CONTINUED</b>					
5	Turnout Gear Room	Two lockers for each assigned personnel (4 Personnel per day x 3 = 12 x 2= 24 lockers); four unassigned for 28 total lockers. Power at each locker, continuous exhaust fan, floor drain, heavy duty shelving; wildland gear bags. Dirty area in room with Extractor and Dryer, decon shower and hanging area. Part of response return path.	648	24' x 27'	583
6	Janitor Room	Service sink, mop rack; janitorial supplies;	48	6' x 8'	inc. in T.O.
7	Work Shop Alcove	Work bench/shop area for vise, peg board, tool storage with large flat work surface, Misc. equipment storage , tool chest, Full height storage cabinet, shop sink and eyewash.	120	4' x 30'	NIC
8	Firefighter Restroom	Fire fighter toilet and sink, off of apparatus bay	64	8' x 8'	55
9	Fitness Room	Dedicated Fitness Room	624	24' x 26'	393
<b>Fire House - App Bay/Support Subtotal</b>			<b>4,170</b>		<b>3,094</b>
No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>FIRE HOUSE - FIREFIGHTER OFFICES</b>					
10	Fire House Public Lobby	Lobby with seating; adjacent to the public restroom. Service window separation between Watch Office and lobby. Alcove in Lobby for Blood Pressure and other wellness checks.	180	12' x 15'	NIC
11	Fire House Public Restroom	One All Gender Restroom, accessible, off of Lobby	64	8' x 8'	NIC
12	Watch Office	Workstations for 2-persons; provide space for lateral file cabinets (one cabinet per company) copy machine and office supply storage, book shelving; conference function	144	12' x 12'	127
13	Captains Office	Workstation for 1-person; provide space for lateral file cabinets.	120	10' x 12'	NIC
<b>Fire House - Firefighter Offices Subtotal</b>			<b>508</b>		
No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>FIRE HOUSE - FIREFIGHTER QUARTERS</b>					
14	Kitchen	3-refrigerators; 3-shift pantries; 1-house pantry and refrigerator; 1-dishwasher; electric induction range/oven with hood; large microwave; large, 12" deep sink with disposer; prep sink at island; trash and recycling areas; coffer service area; open to Dining Area	378	18' x 21'	245

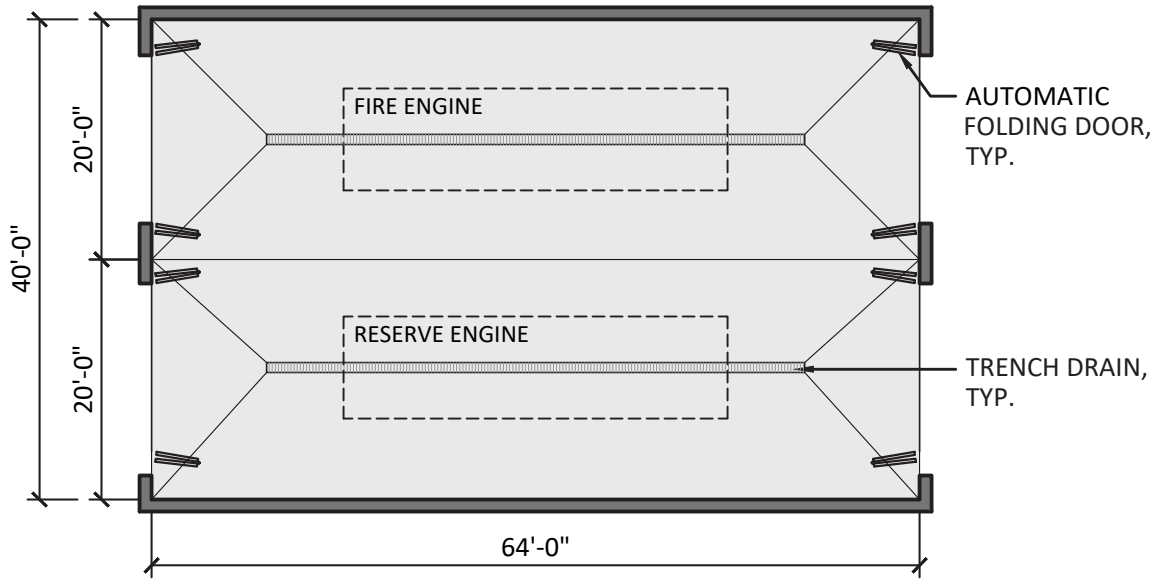
15	Dining Area	Seating for 6 persons; wall-mounted TV; open to kitchen; open to Day Room	192	12' x 16'	inc. in Kitchen
16	Day Room	Seating for 4 with recliner chairs; entertainment center and book shelving; Open to Dining, one work station along wall.	352	16' x 22'	308
No.	Type of Space	Space Attributes	Square Footage		Renovation SF
FIRE HOUSE - FIREFIGHTER QUARTERS CONTINUED			Replacement Program	Size	
17	Laundry Room	Service sink; countertop; janitorial supplies; mop rack, Washer/Dryer	140	10' x 14'	NIC
18	Firefighter Bedroom	3-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed with lockers outside door.	230	8'-6" x 9' (3)	348
19	Firefighter Bathroom ADA	1 accessible restroom with shower, sink, toilet	81	9' x 9'	132
20	Firefighter Bathrooms	1 restrooms with shower, sink, toilet	64	8' x 8' (1)	76
21	Captain Bedroom, Bathroom and Work Area, Accessible	1 bedroom containing desk, chair, wall-mounted TV, 1 bed, with accessible in-suite bathroom.	250	10' x 11' 9' x 10' 5' x 10'	299
<b>Fire House - Firefighter Quarters Subtotal</b>			<b>1,687</b>		<b>1,408</b>

No.	Type of Space	Space Attributes	Square Footage		Renovation SF
UTILITY SUPPORT			Replacement Program	Size	
22	Mechanical Room	HVAC equipment; hot water heater; fire sprinkler riser	108	9' x 12'	NIC
23	Electrical Room	Main service panel, fire alarm panel; sub panels	108	9' X 12'	27
24	Communications Room	Telephone service racks, alert response system hub, data server hub, radio equipment; security system	140	10' x 14'	NIC
<b>UTILITY SUPPORT Subtotal</b>			<b>356</b>		<b>27</b>

Fire House No. 6 : Summary		Replacement Program	Renovation SF
	Fire House - App Bay/Bay Support Subtotal	4,170	3,094
	Fire House - Firefighter Offices Subtotal	508	0
	Fire House - Firefighter Quarters Subtotal	1,687	1,408
	Utility Support/Vertical Circulation Subtotal	356	27
	<b>SUBTOTAL (SF)</b>	<b>6,721</b>	<b>4,529</b>
	Circulation at 30%	2,016	1,783
	<b>FIRE HOUSE NO. 6: GRAND TOTAL (SF)</b>	<b>8,737</b>	<b>6,312</b>

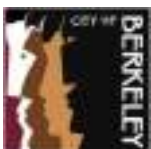


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

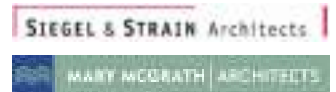


## 1. APPARATUS BAY - 2 DRIVE-THROUGH BAYS (2,560 S.F.)

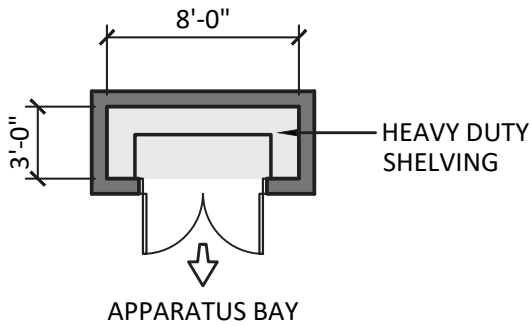
SCALE: 1/16"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 6**  
ENGINE 6 & RESERVE ENGINE

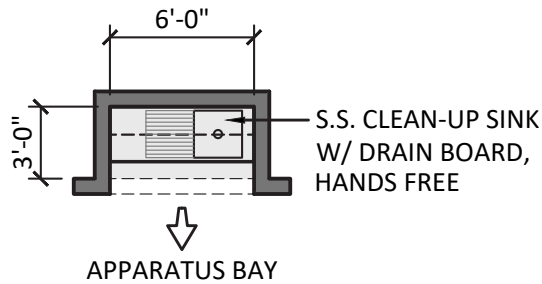


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



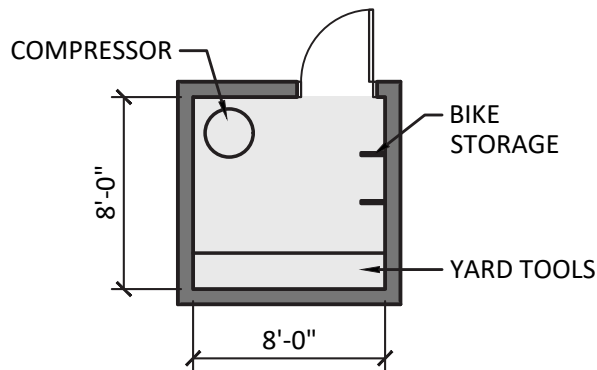
## 2. MEDICAL SUPPLY CLOSET (24 S.F.)

SCALE: 1/8"=1'-0"



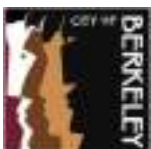
## 3. CLEAN-UP (18 S.F.)

SCALE: 1/8"=1'-0"

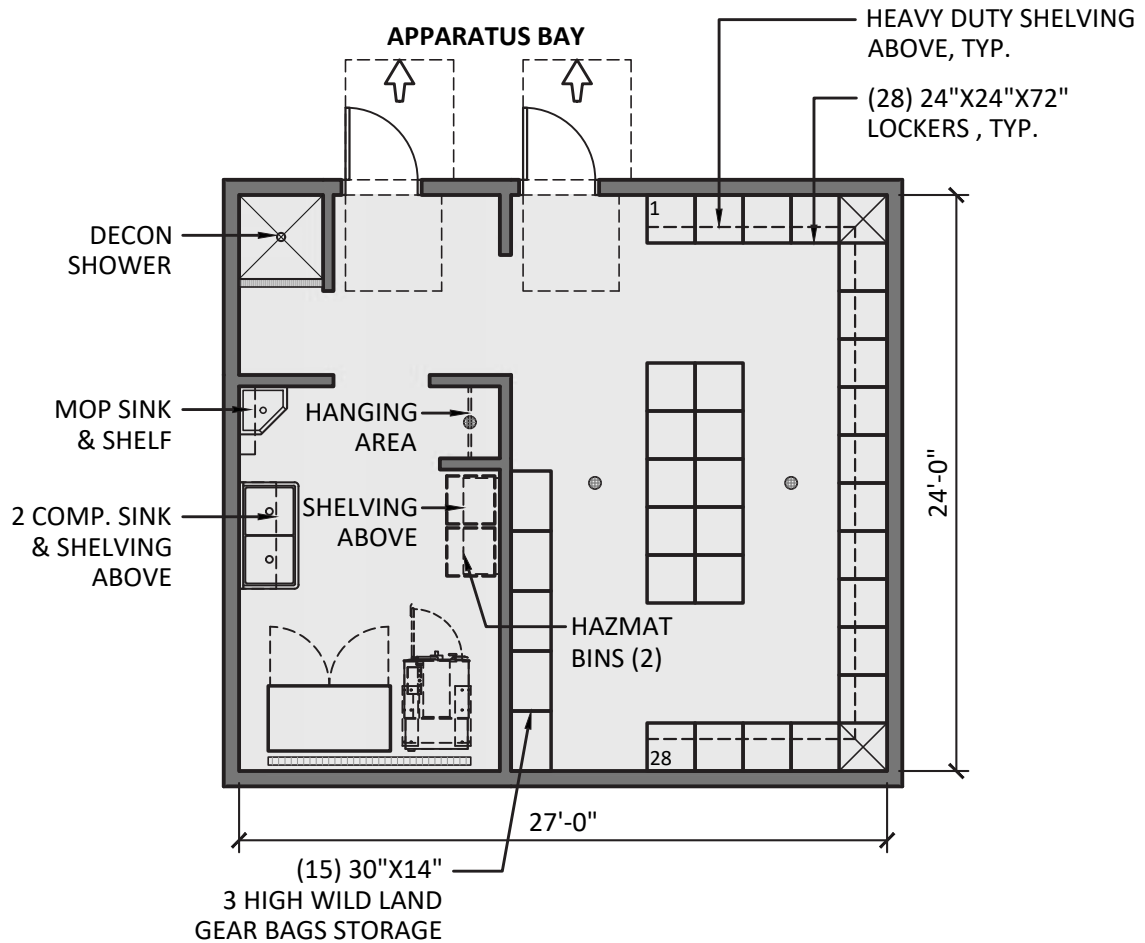


## 4. EQUIPMENT STORAGE (64 S.F.)

SCALE: 1/8"=1'-0"

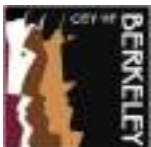


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

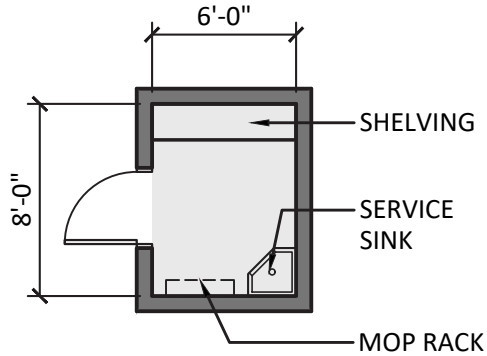


### 5. TURNOUT GEAR ROOM (648 S.F.)

SCALE: 1/8"=1'-0"

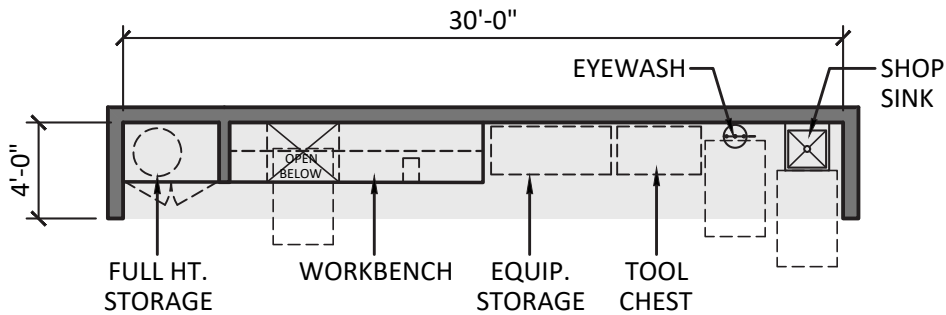


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



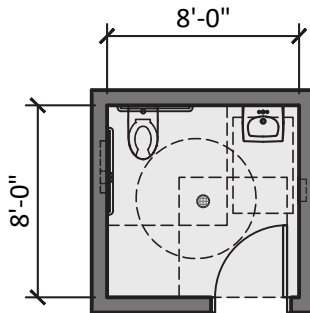
### 6. JANITOR ROOM (48 S.F.)

SCALE: 1/8"=1'-0"



### 7. WORKSHOP ALCOVE (120 S.F.)

SCALE: 1/8"=1'-0"

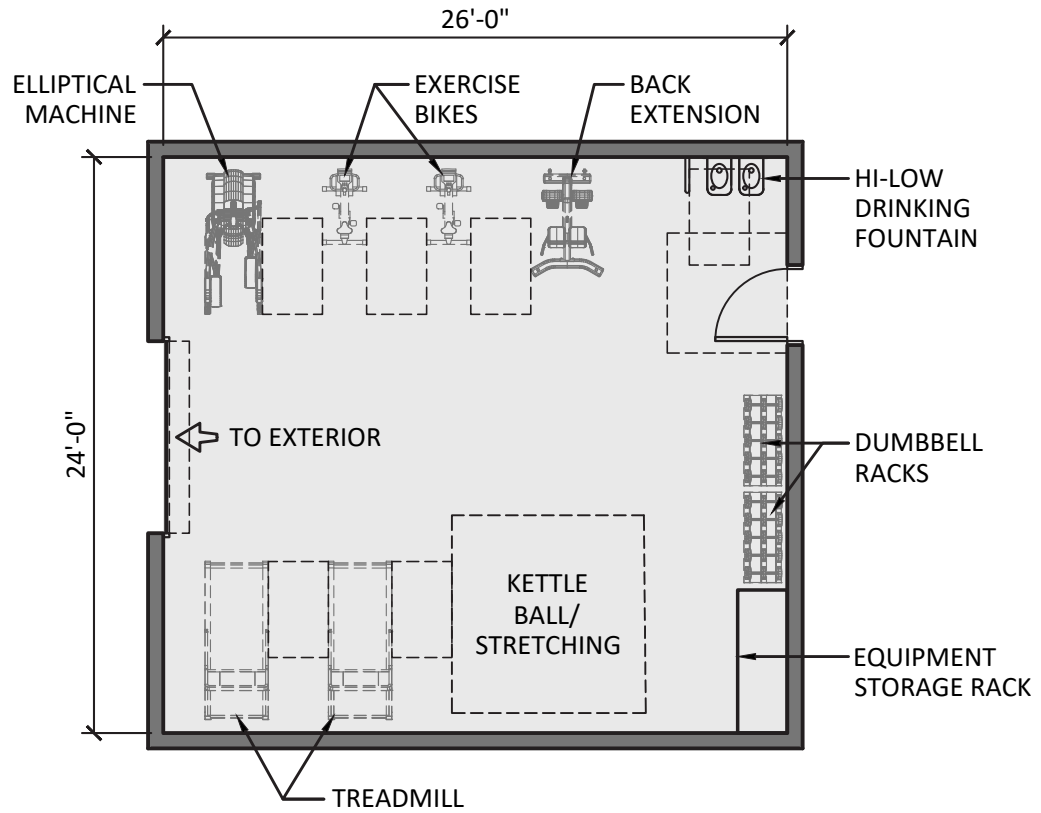


### 8. FIREFIGHTER RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"

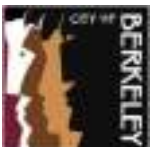


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

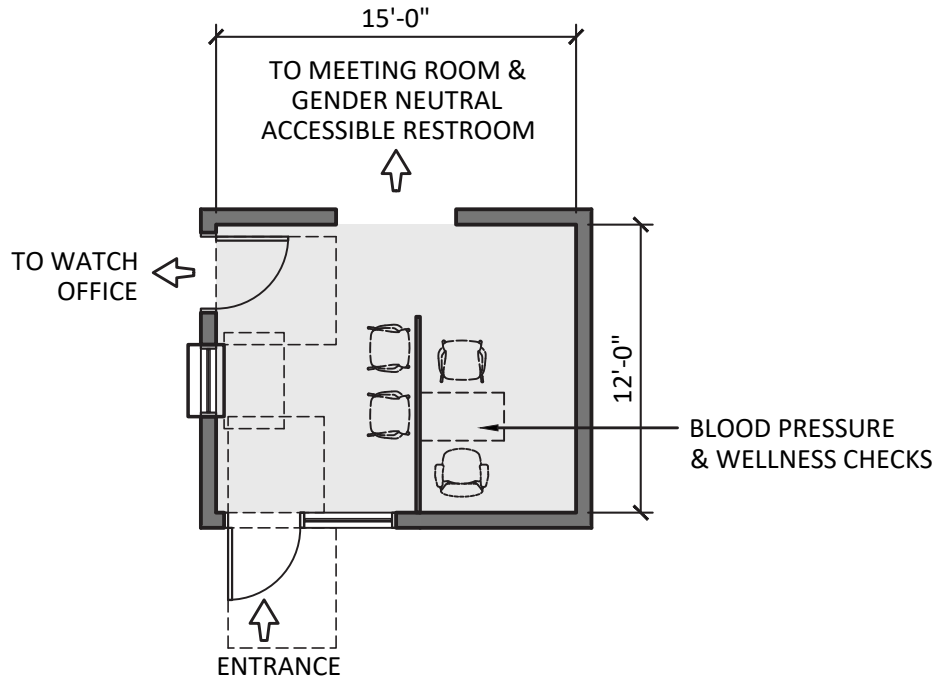


## 9. FITNESS ROOM (624 S.F.)

SCALE: 1/8"=1'-0"

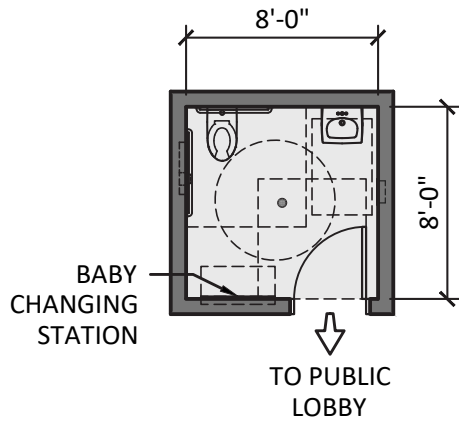


# FIRE HOUSE - FIREFIGHTER OFFICES



## 10. FIRE HOUSE PUBLIC LOBBY (180 S.F.)

SCALE: 1/8"=1'-0"

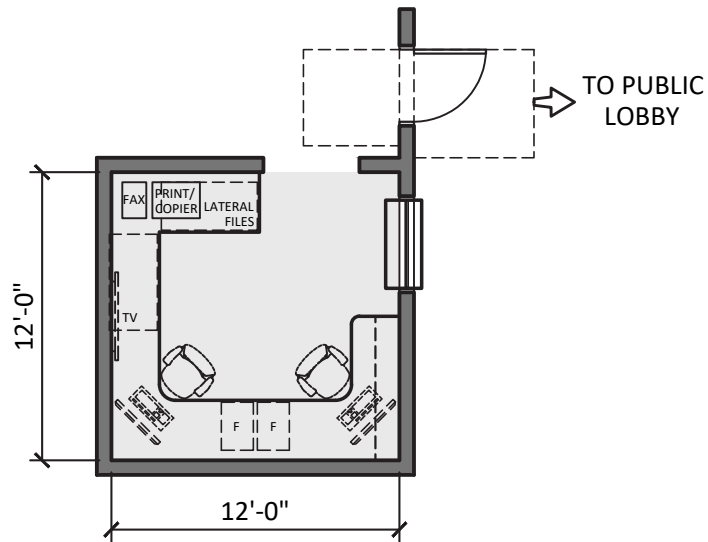


## 11. FIRE HOUSE PUBLIC RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"

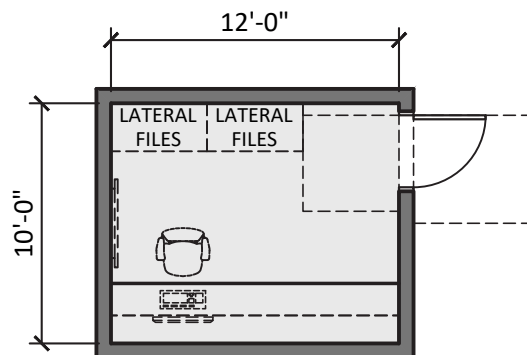


# FIRE HOUSE - FIREFIGHTER OFFICES



**12. WATCH OFFICE (144 S.F.)**

SCALE: 1/8"=1'-0"

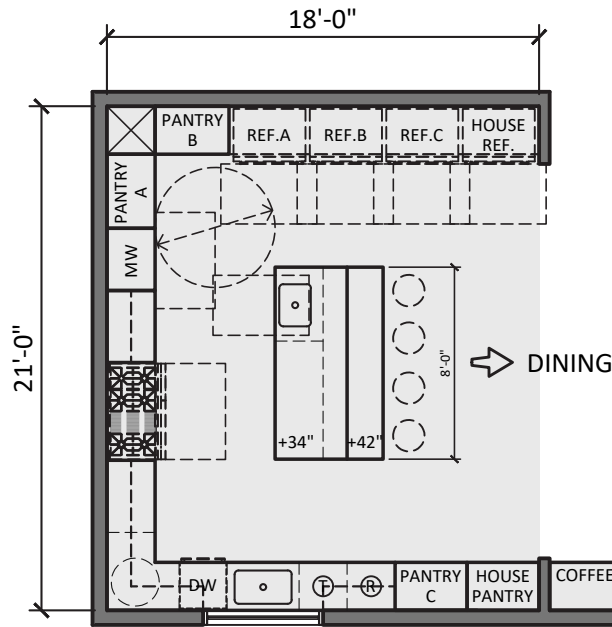


**13. CAPTAIN'S OFFICE (120 S.F.)**

SCALE: 1/8"=1'-0"

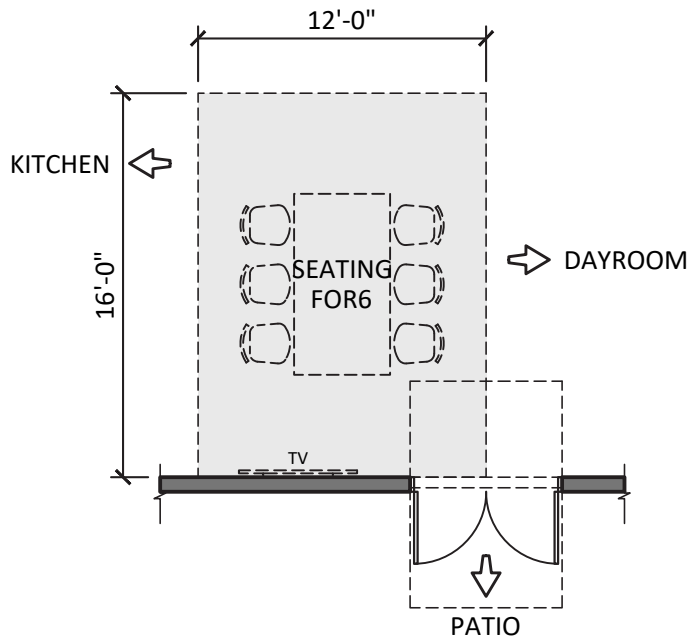


# FIRE HOUSE - FIREFIGHTER QUARTERS



## 14. KITCHEN (378 S.F.)

SCALE: 1/8"=1'-0"



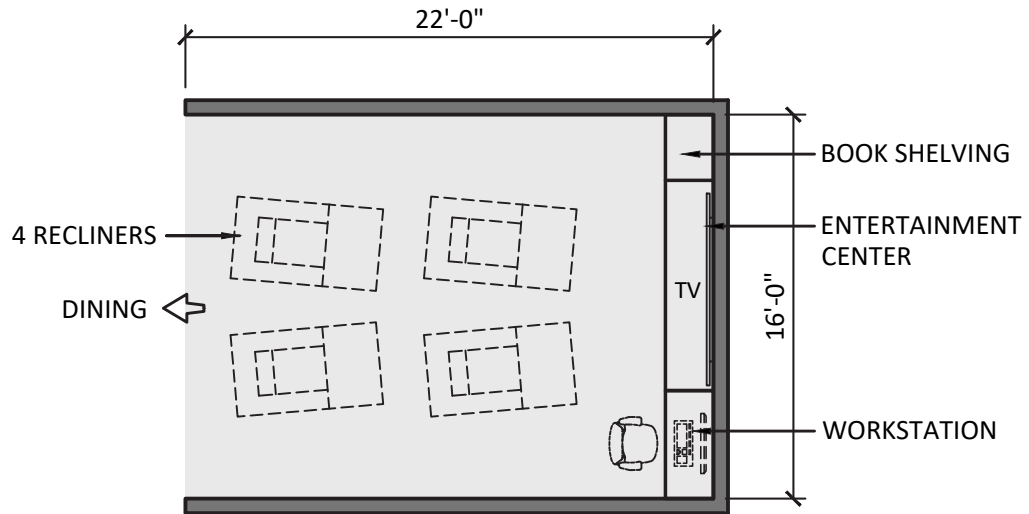
## 15. DINING AREA (192 S.F.)

SCALE: 1/8"=1'-0"



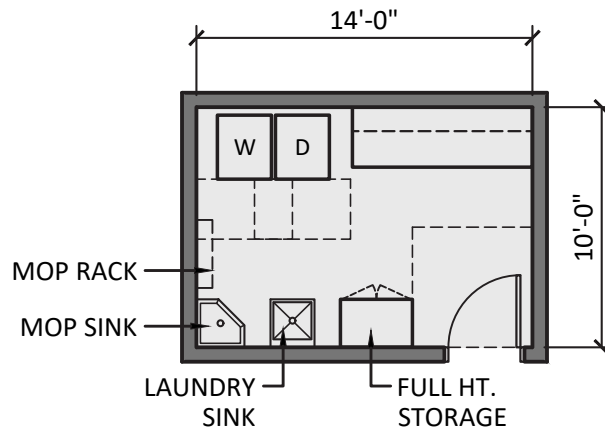


# FIRE HOUSE - FIREFIGHTER QUARTERS



### 16. DAYROOM (352 S.F.)

SCALE: 1/8"=1'-0"

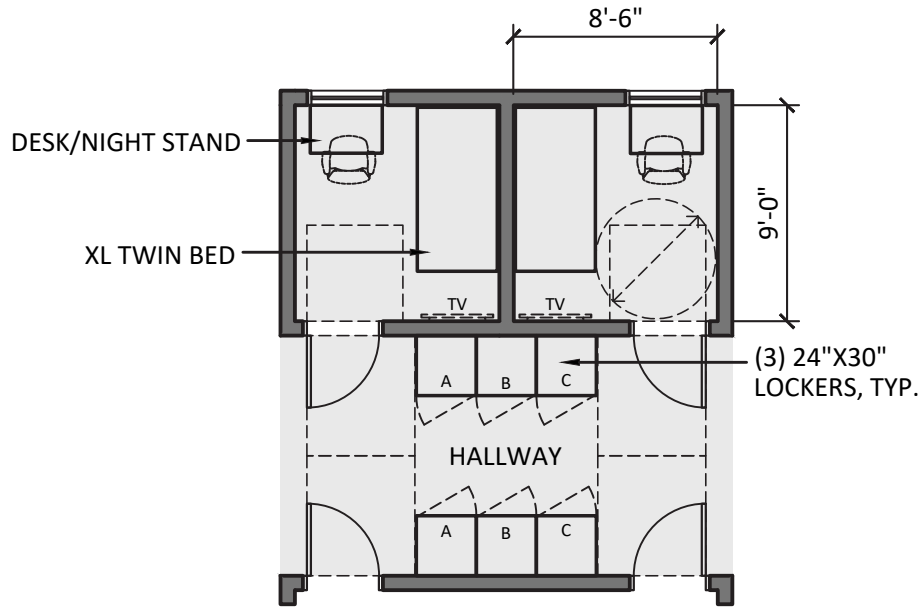


### 17. LAUNDRY ROOM (140 S.F.)

SCALE: 1/8"=1'-0"

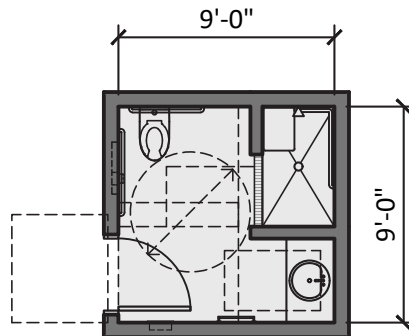


# FIRE HOUSE - FIREFIGHTER QUARTERS



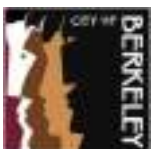
**18. FIREFIGHTER BEDROOM - 3 (230 S.F.)**

SCALE: 1/8"=1'-0"

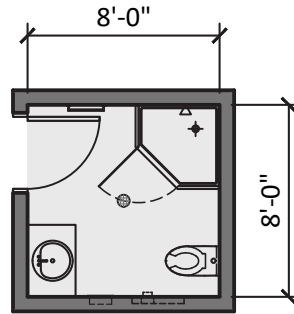


**19. FIREFIGHTER BATHROOM - ADA (81 S.F.)**

SCALE: 1/8"=1'-0"

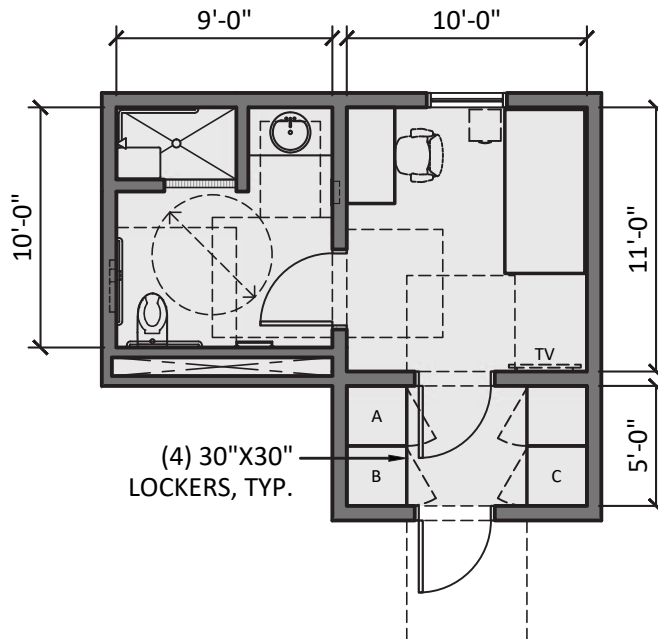


# FIRE HOUSE - FIREFIGHTER QUARTERS



**20. FIREFIGHTER BATHROOM (64 S.F.)**

SCALE: 1/8"=1'-0"

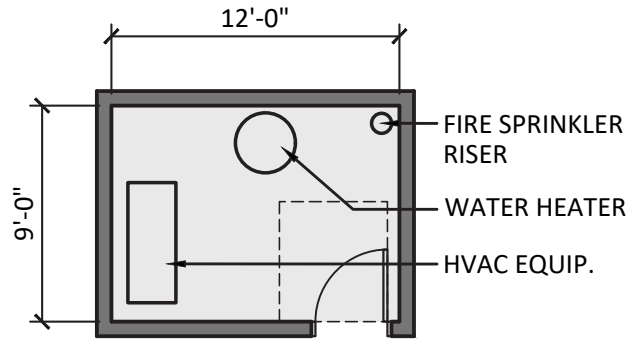


**21. CAPTAIN BEDROOM & ACCESSIBLE BATHROOM (250 S.F.)**

SCALE: 1/8"=1'-0"

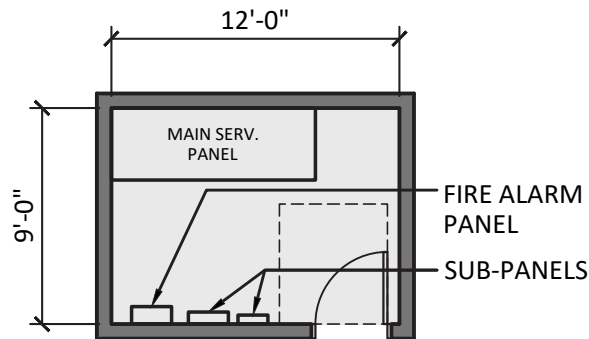


# FIRE HOUSE - UTILITY SUPPORT/VERTICAL CIRCULATION



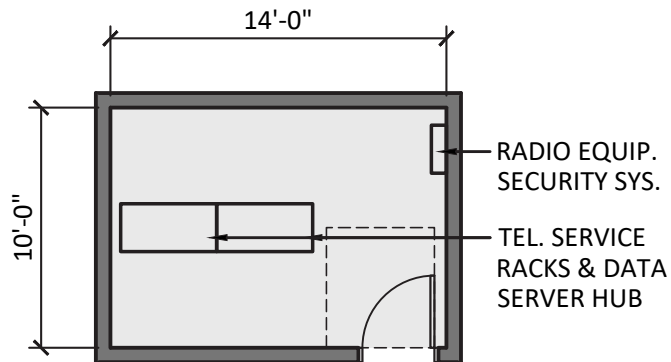
## 22. MECHANICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"



## 23. ELECTRICAL ROOM (108 S.F.)

SCALE: 1/8"=1'-0"



## 24. COMMUNICATIONS ROOM (140 S.F.)

SCALE: 1/8"=1'-0"





**SITE PLAN DIAGRAM**

SCALE: 1/64" = 1'-0"

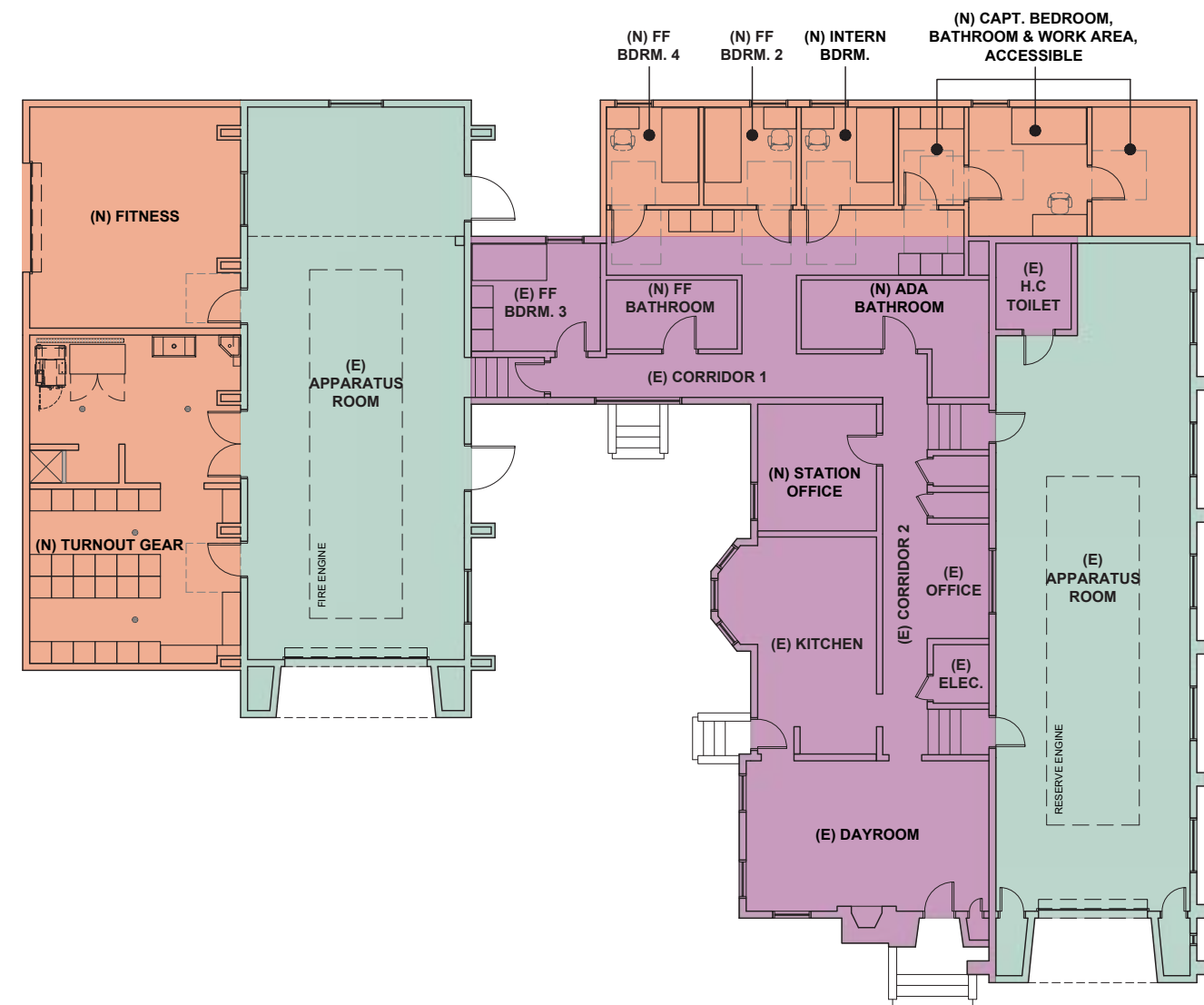
**FIRE STATION NO. 6**

EXISTING LOT AREA:	26,000 S.F.
EXISTING BUILDING AREA:	4,596 S.F.
ADDED BUILDING AREA:	1,990 S.F.
TOTAL BUILDING AREA:	6,312 S.F.



**LEGEND:**

- EXISTING BUILDING AREA
- ADDED BUILDING AREA
- RENOVATION AREA
- DEMO (E) STRUCTURE



**FLOOR PLAN DIAGRAM**

SCALE: 1/16" = 1'-0"



# FIRE STATION 7



**CITY OF BERKELEY  
FIRE HOUSE NO. 7**

3000 SHASTA ROAD, BERKELEY, CA 94708

**DRAFT  
MAY 08, 2023**

**PROJECT DESCRIPTION**

The existing Fire House No. 7 is a two story, 6,920 SF station and was designed to provide operational space and living quarters for four personnel in 2005. The fire station currently houses 6 personnel per shift during wildfire season. Apparatus at the site include Engine 7(3) and surge unit Type VI with surge staffing. The staffing is anticipated to increase to 8 personnel per shift.

Because this station is not anticipated to add a new unit, only a new staff members, it is a strong candidate for renovation and addition. The recommended solution includes:

1. Renovate a portion of the first level to provide dedicated turnout storage and decontamination space. Expand the second level to provide additional sleeping rooms and restrooms; and a dedicated fitness room. The expansion area is proposed to be 1,080SF and will occur over the existing second level roof deck. The total building SF will increase to 8,000SF.

The ROM Project Budget for the Recommended Option is \$10-13M; not including escalation beyond 2024.



<b>Fire House No. 7</b>
<b>Engine 7, Type VI (Cross staffed)</b>
<b>3000 Shasta Road</b>

**CONCEPTUAL SPACE NEEDS OUTLINE**

<b>Fire House Company Make-up - Staffing Per shift</b>	<b>Current</b>	<b>Future</b>
Engine 7 - Captain, Engineer, Firefighter/Paramedic	3	4
Surge Unit Type VI (cross-staffed)	3	4
Reserve Engine Type I	0	0
Polaris ( 2 total)	0	0
Water Tender (2 total)	0	0
Medic Intern	1	1
<b>TOTAL CURRENT AND FUTURE STAFFING:</b>	<b>7</b>	<b>9</b>

<b>No.</b>	<b>Type of Space</b>	<b>Space Attributes</b>	<b>Square Footage</b>	
			<b>Program</b>	<b>Size</b>
<b>SITE OPERATIONS</b>				
	<b>Firefighter Parking</b>	18 firefighter parking spaces, secure and separate from public parking	3,600	10'x20' ea.
	<b>Visitor Parking</b>	One regular and one ADA adjacent to entrance, shared with other public parking areas.	200	10' x 20
	<b>Apparatus Washing Area</b>	Adjacent to hydrant for refill and testing; locate at rear of App. Bays; provide clarifier for run-off	0	rear apron
	<b>Hose Maintenance Area</b>	Use rear apron area for cleaning hose; roll wet and store on apparatus	0	rear apron
	<b>Yard Hydrant</b>	Located at rear yard	0	rear apron
	<b>Generator Area</b>	Located at rear yard	150	10'x15'
	<b>Fueling Area</b>	Above Grade Convault System - 500 GA	240	12' x 20'
	<b>Trash Enclosure</b>	Exterior access for service; space for dumpster and recycling bins, Covered	150	10'x15'
	<b>Flagpole</b>	Flagpole area with lighting	25	5'x5'
	<b>Outdoor Patio or Deck</b>	Outdoor uses; adjacent to Kitchen	200	10'x20'



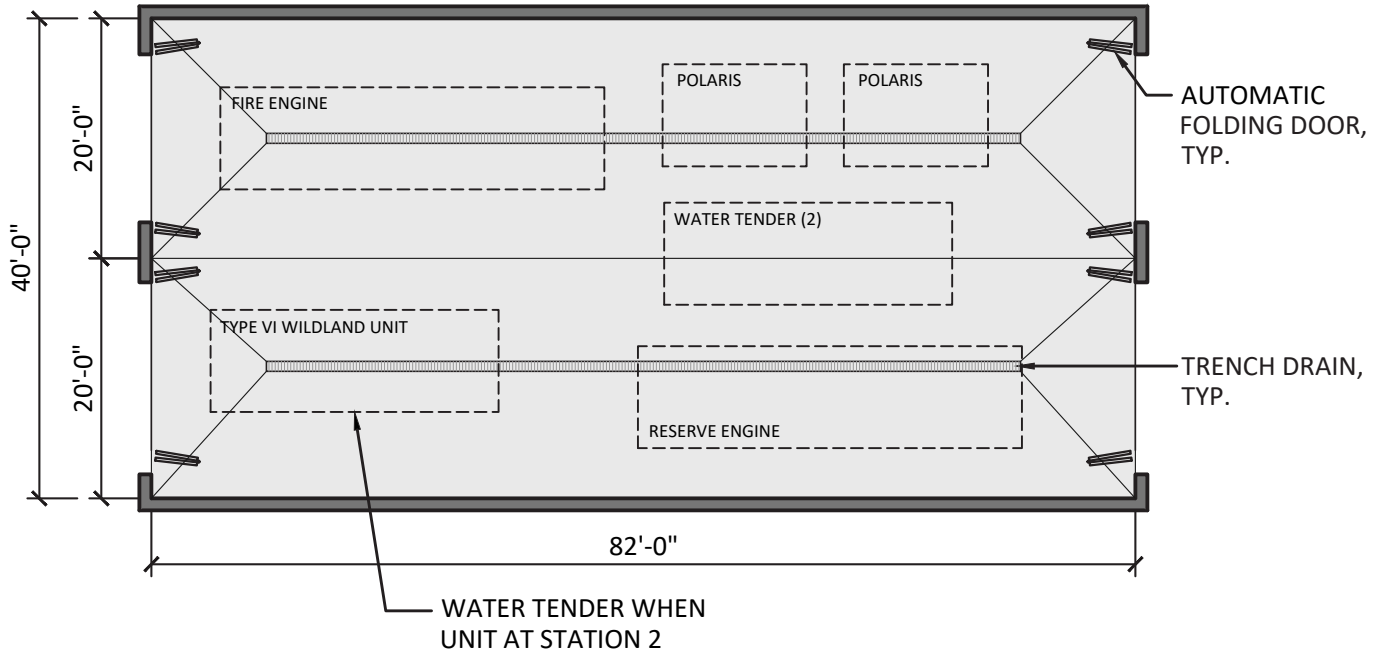
No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>FIRE HOUSE - APP BAY/APP BAY SUPPORT</b>					
1	Apparatus Bay (One Engine, Type 3 Engine) Two apparatus bays	Engine, Surge Unit Type VI, Reserve Engine Type I, Polaris Vehicle (x2), Water Tender (x2). Systems include tailpipe exhaust, power and air cord drops to each vehicle; electric heating system; night lighting; bi-folding auto-close doors; trench drains	3,280	(2) 20'x 82'	2190
2	Medical Supply Closet	Heavy Duty Shelving; medical supplies off of apparatus	24	3' x 8'	34
3	Clean Up	Clean-up sink, shelving, Alcove in bay.	18	3' x 6'	18
4	Equipment Storage	Yard equipment, bike storage (LEED Requirement), compressor	64	8' x 8'	inc. in medical closet
5	Turnout Gear Room	Two lockers for each assigned personnel (5 Personnel per day x 3 = 15 x 2= 30 lockers); One locker for each surge team member (four personnel x 3= 12), four unassigned for 46 total lockers. Power at each locker, continuous exhaust fan, floor drain, heavy duty shelving; wildland gear bags. Dirty area in room with Extractor and Dryer, decon shower and hanging area. Part of response return path.	840	24' x 35'	521
6	Janitor Room	Service sink, mop rack; janitorial supplies;	48	6' x 8'	40
7	Work Shop Alcove	Work bench/shop area for vise, peg board, tool storage with large flat work surface, Misc. equipment storage , tool chest, Full height storage cabinet, shop sink and eyewash.	120	4' x 30'	173
8	Firefighter Restroom	Fire fighter toilet and sink, off of apparatus bay	64	8' x 8'	72
9	Fitness Room	Dedicated Fitness Room	624	24' x 26'	723
<b>Fire House - App Bay/Support Subtotal</b>			<b>5,082</b>		<b>3,771</b>
No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>FIRE HOUSE - FIREFIGHTER OFFICES</b>					
10	Fire House Public Lobby	Lobby with seating; adjacent to the public restroom. Service window separation between Watch Office and lobby. Alcove in Lobby for Blood Pressure and other wellness checks.	180	12' x 15'	108
11	Fire House Public Restroom	One All Gender Restroom, accessible, off of Lobby	64	8'x8'	NIC
12	Watch Office	Workstations for 2-persons; provide space for lateral file cabinets (one cabinet per company) copy machine and office supply storage, book shelving; conference function	144	12' x 12'	196
13	Captains Office (Assume there will only be one house captain)	Workstation for 1-person; provide space for lateral file cabinets.	120	10' x 12'	inc. in Watch Office
<b>Fire House - Firefighter Offices Subtotal</b>			<b>508</b>		<b>304</b>

No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>FIRE HOUSE - FIREFIGHTER QUARTERS</b>					
14	Kitchen	3-refrigerators; 3-shift pantries; 1-house pantry and refrigerator; 1-dishwasher; electric induction range/oven with hood; large microwave; large, 12" deep sink with disposer; prep sink at island; trash and recycling areas; coffer service area; open to Dining Area	378	18' x 21'	246
15	Dining Area	Seating for 9 persons; wall-mounted TV; open to kitchen; open to Day Room	240	12' x 20'	246
16	Day Room	Seating for 9 with recliner chairs; entertainment center and book shelving; Open to Dining, one work station along wall.	528	22' x 24'	475
17	Laundry Room	Service sink; countertop; janitorial supplies; mop rack, Washer/Dryer	140	10' x 14'	157
18	Firefighter Bedroom	4-separate bedrooms each containing desk, chair, wall-mounted TV, 1 bed with lockers outside door.	306	8'-6" x 9' (4)	
19	Surge Unit Bedroom	1 bedroom containing (4) murphy beds	253	11' x 23'	240
20	Firefighter Bathroom ADA	1 accessible restroom with shower, sink, toilet	81	9' x 9'	81
21	Firefighter Bathrooms	3 restrooms with shower, sink, toilet	192	8' x 8' (3)	285
22	Captain Bedroom, Bathroom and Work Area, Accessible	1 bedroom containing desk, chair, wall-mounted TV, 1 bed, with accessible in-suite bathroom.	250	10' x 11' 5" x 10' 10' x 9'	161
<b>Fire House - Firefighter Quarters Subtotal</b>			<b>2,368</b>		<b>1,891</b>

No.	Type of Space	Space Attributes	Square Footage		Renovation SF
			Replacement Program	Size	
<b>UTILITY SUPPORT/VERTICAL CIRCULATION</b>					
23	Mechanical Room	HVAC equipment; hot water heater; fire sprinkler riser	108	9' x 12'	40
24	Electrical Room	Main service panel, fire alarm panel; sub panels	108	9' x 12'	22
25	Communications Room	Telephone service racks, alert response system hub, data server hub, radio equipment; security system	140	10' x 14'	NIC
26	Stairs	(2x) for each level. Two stairways from the second floor for exiting	576	18' x 8'	144
27	Fire House Elevator	Elevator and machine room	240	8' x 10' (3)	100
<b>Utility Support/ Vertical Circulation Subtotal</b>			<b>1,172</b>		<b>306</b>

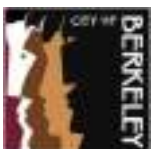
<b>Engine 7, Type VI Cross Staffed: Summary</b>		Replacement Program	Renovation SF
	Fire House - App Bay/Bay Support Subtotal	5,082	3,771
	Fire House - Firefighter Offices Subtotal	508	304
	Fire House - Firefighter Quarters Subtotal	2,368	1,891
	Utility Support/Vertical Circulation Subtotal	1,172	306
	<b>BUILDING SUBTOTAL (SF)</b>	<b>9,130</b>	<b>6,272</b>
	Circulation at 30%	2,739	1,728
	<b>Engine 7, Type VI Cross Staffed: GRAND TOTAL (SF)</b>	<b>11,869</b>	<b>8,000</b>

# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



## 1. APPARATUS BAY - 2 DRIVE-THROUGH BAYS (3,280 S.F.)

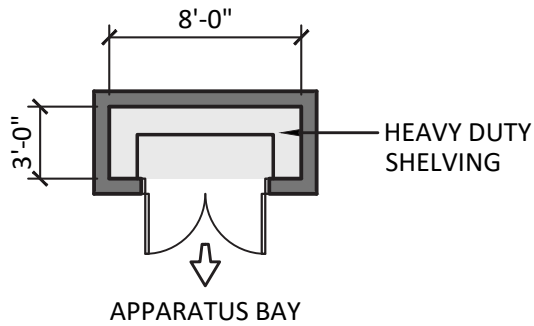
SCALE: 1/16"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 7**  
ENGINE 7, TYPE VI (Cross staffed)

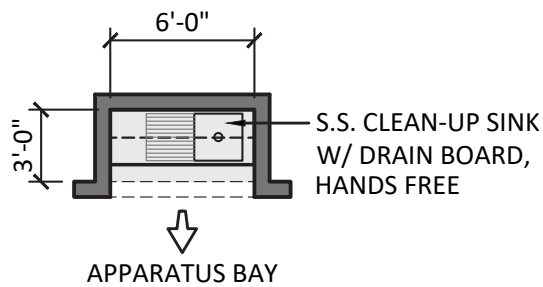


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



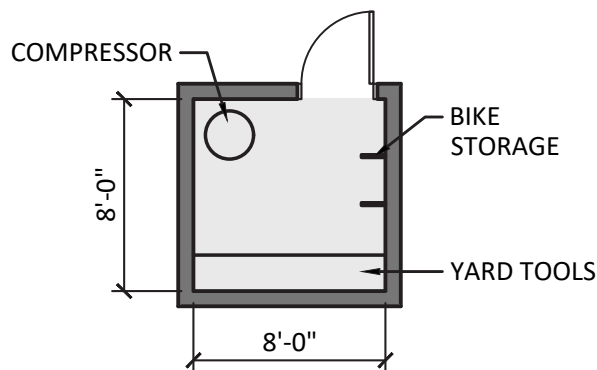
## 2. MEDICAL SUPPLY CLOSET (24 S.F.)

SCALE: 1/8"=1'-0"



## 3. CLEAN-UP (18 S.F.)

SCALE: 1/8"=1'-0"

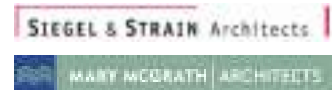


## 4. EQUIPMENT STORAGE (64 S.F.)

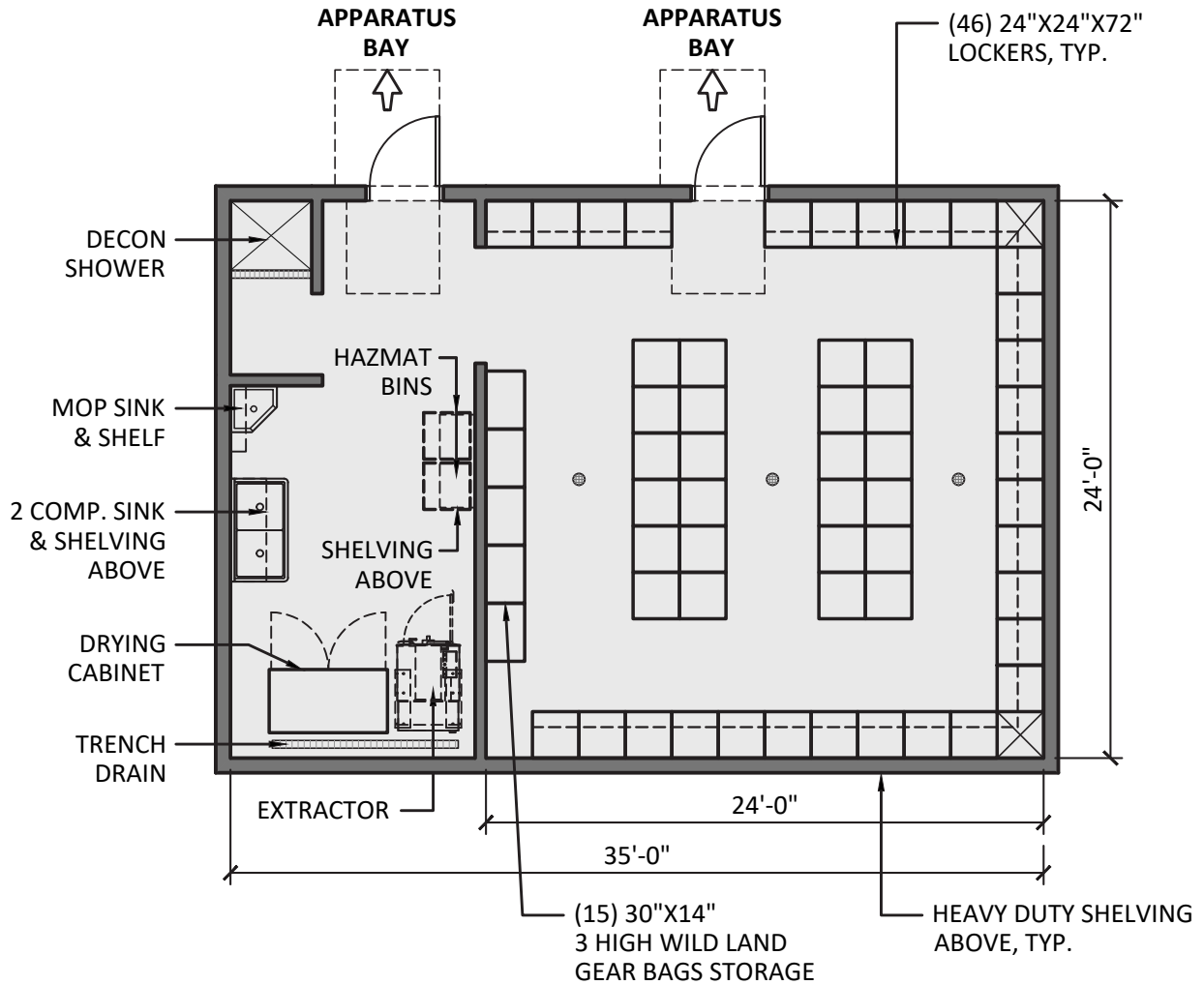
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 7**  
 ENGINE 7, TYPE VI (Cross staffed)



# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

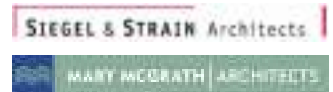


## 5. TURNOUT GEAR ROOM (840 S.F.)

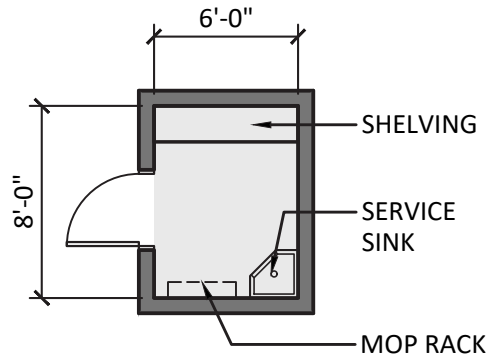
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 7**  
ENGINE 7, TYPE VI (Cross staffed)

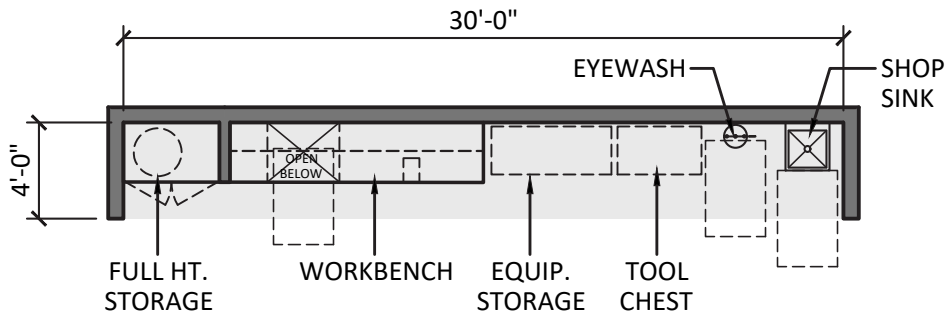


# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT



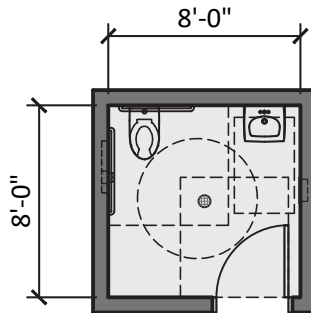
## 6. JANITOR ROOM (48 S.F.)

SCALE: 1/8"=1'-0"



## 7. WORKSHOP ALCOVE (120 S.F.)

SCALE: 1/8"=1'-0"

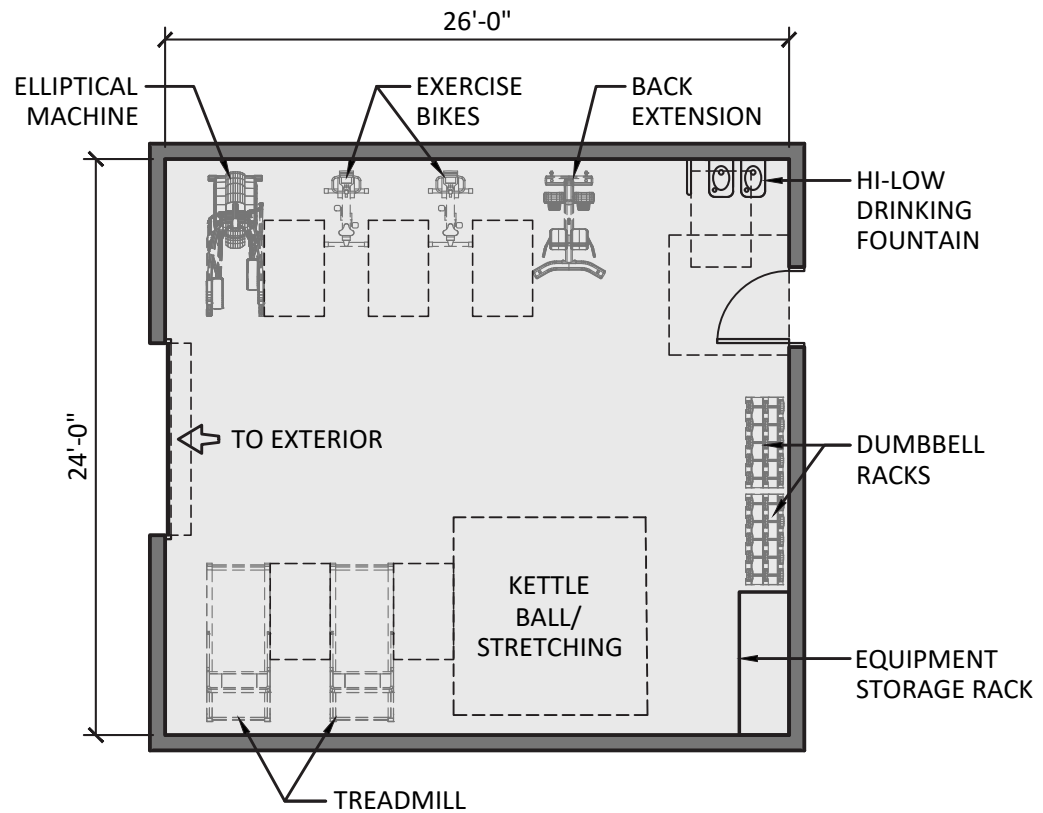


## 8. FIREFIGHTER RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"



# FIRE HOUSE - APPARATUS BAY/APPARATUS BAY SUPPORT

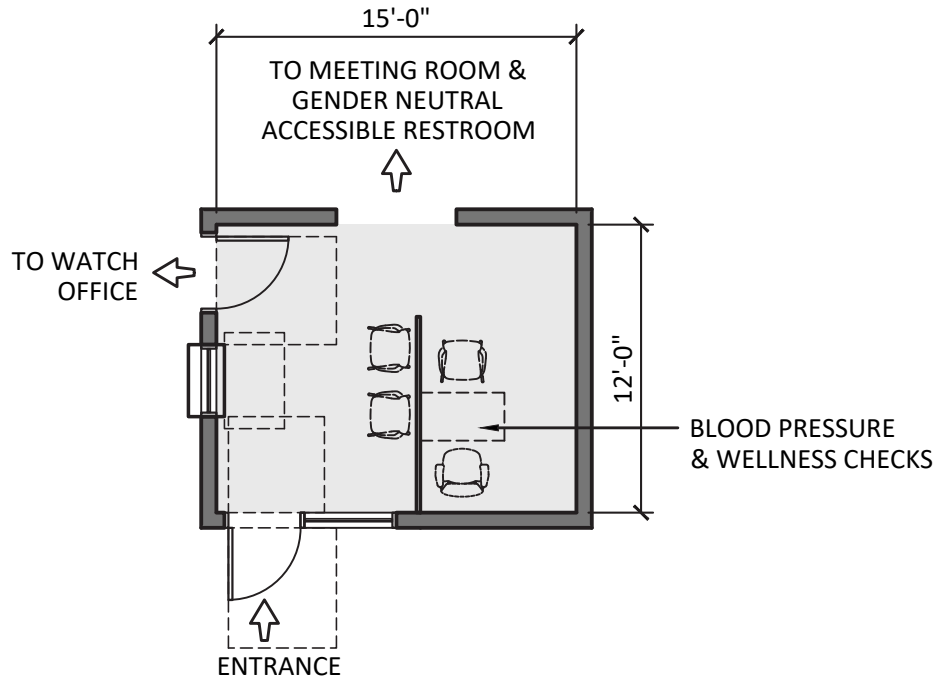


## 9. FITNESS ROOM (624 S.F.)

SCALE: 1/8"=1'-0"

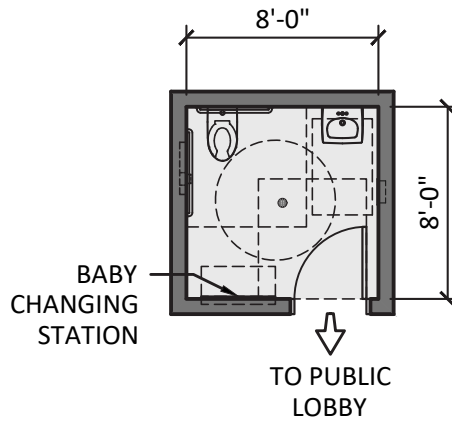


# FIRE HOUSE - FIREFIGHTER OFFICES



### 10. FIRE HOUSE PUBLIC LOBBY (180 S.F.)

SCALE: 1/8"=1'-0"



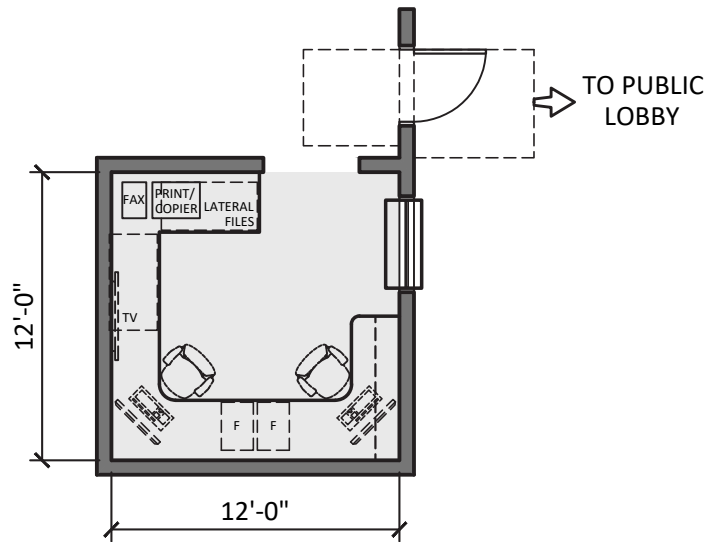
### 11. FIRE HOUSE PUBLIC RESTROOM (64 S.F.)

SCALE: 1/8"=1'-0"



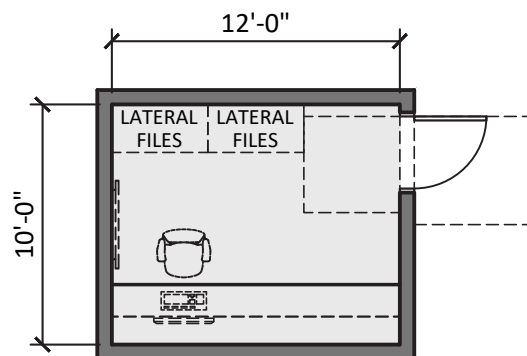


# FIRE HOUSE - FIREFIGHTER OFFICES



**12. WATCH OFFICE (144 S.F.)**

SCALE: 1/8"=1'-0"

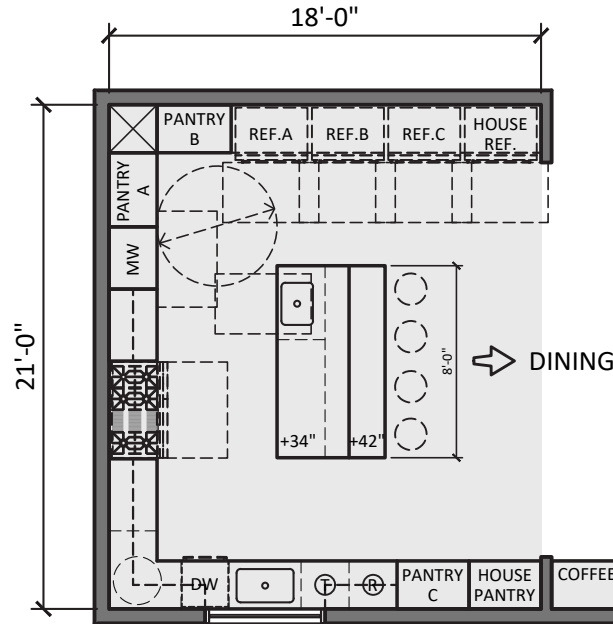


**13. CAPTAIN'S OFFICE (120 S.F.)**

SCALE: 1/8"=1'-0"

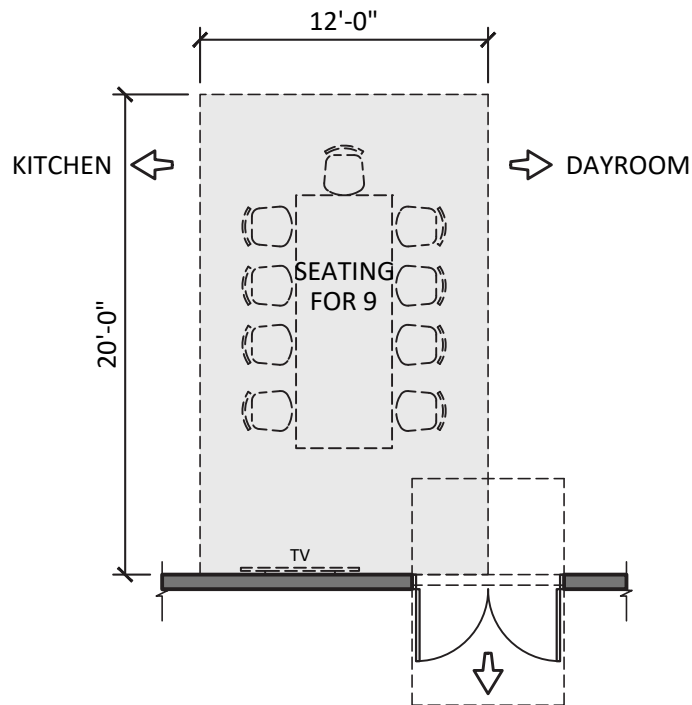


# FIRE HOUSE - FIREFIGHTER QUARTERS



### 14. KITCHEN (378 S.F.)

SCALE: 1/8"=1'-0"



### 15. DINING AREA (240 S.F.)

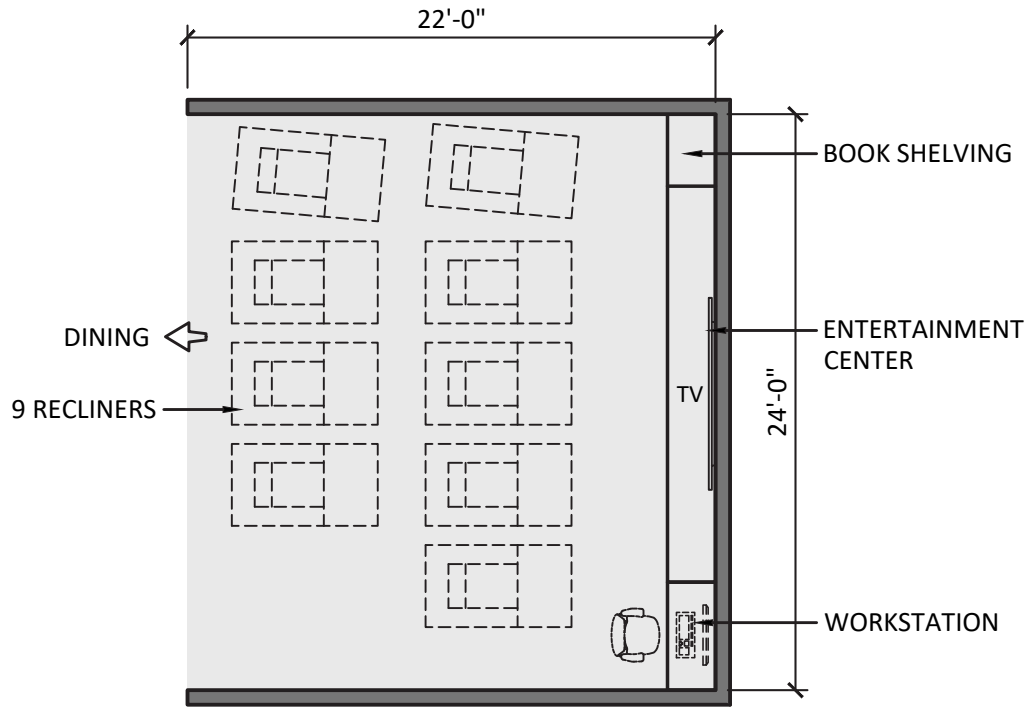
SCALE: 1/8"=1'-0"



CITY OF BERKELEY  
**FIRE HOUSE NO. 7**  
 ENGINE 7, TYPE VI (Cross staffed)

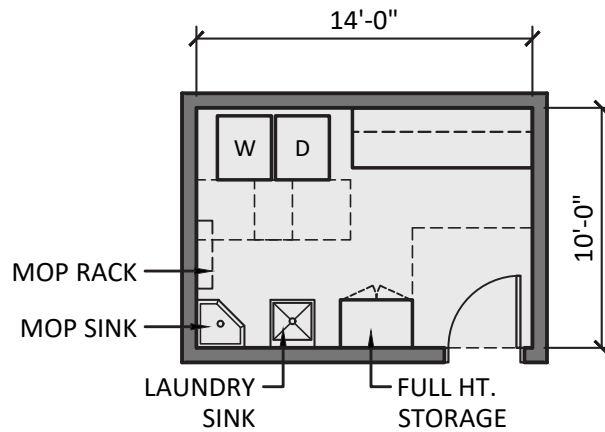


# FIRE HOUSE - FIREFIGHTER QUARTERS



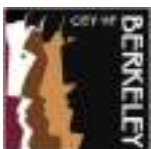
**16. DAYROOM (528 S.F.)**

SCALE: 1/8"=1'-0"

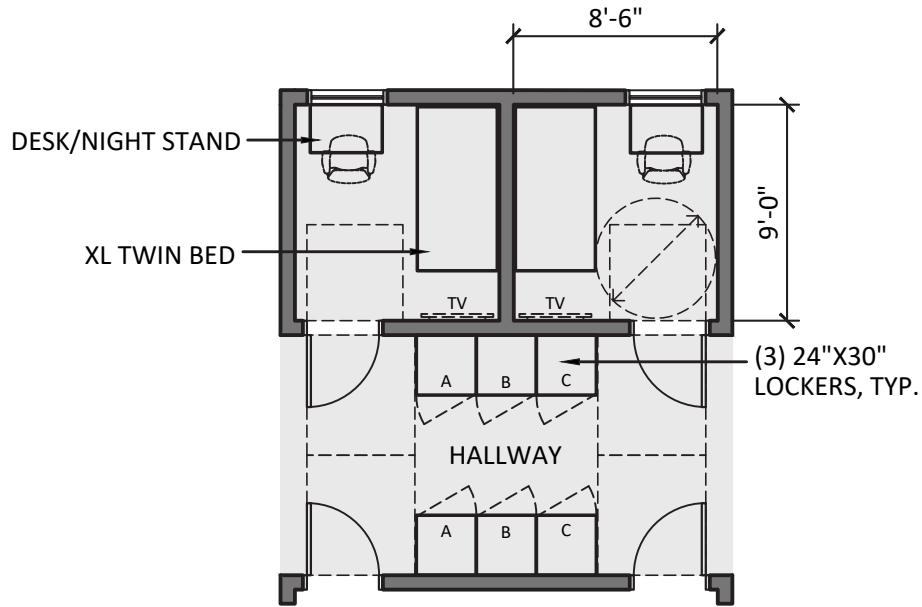


**17. LAUNDRY ROOM (140 S.F.)**

SCALE: 1/8"=1'-0"

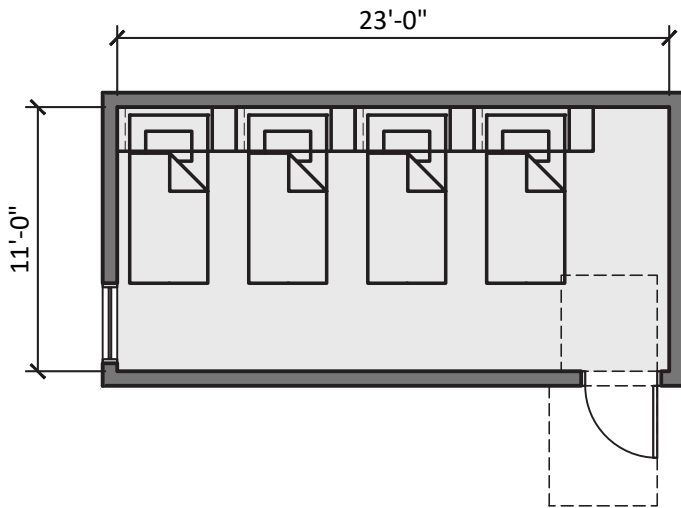


# FIRE HOUSE - FIREFIGHTER QUARTERS



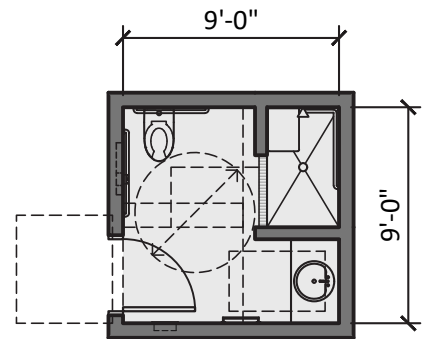
**18. FIREFIGHTER BEDROOM - 4 (306 S.F.)**

SCALE: 1/8"=1'-0"



**19. SURGE UNIT BEDROOM (253 S.F.)**

SCALE: 1/8"=1'-0"

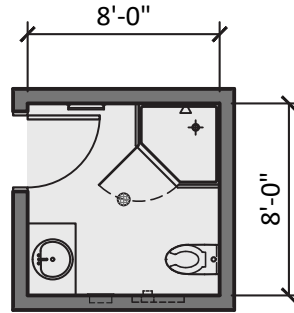


**20. FIREFIGHTER BATHROOM - ADA (81 S.F.)**

SCALE: 1/8"=1'-0"

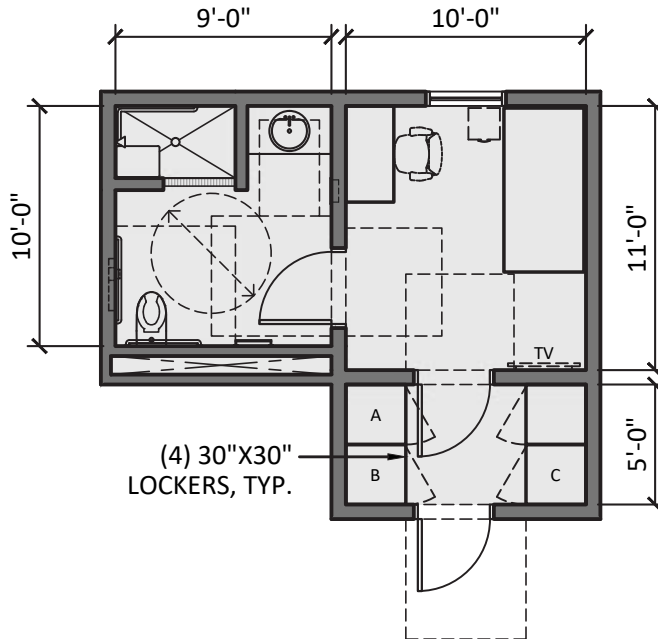


# FIRE HOUSE - FIREFIGHTER QUARTERS



## 21. FIREFIGHTER BATHROOM - 3 (192 S.F.)

SCALE: 1/8"=1'-0"

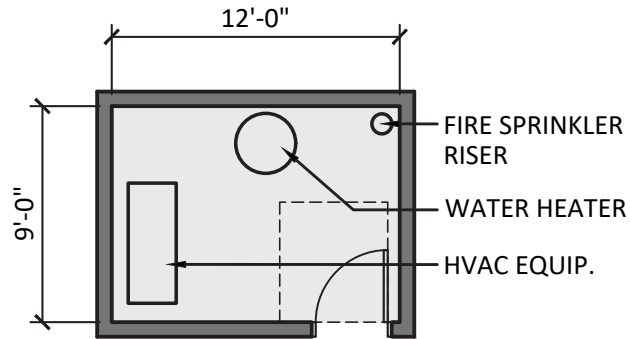


## 22. CAPTAIN BEDROOM & ACCESSIBLE BATHROOM (250 S.F.)

SCALE: 1/8"=1'-0"

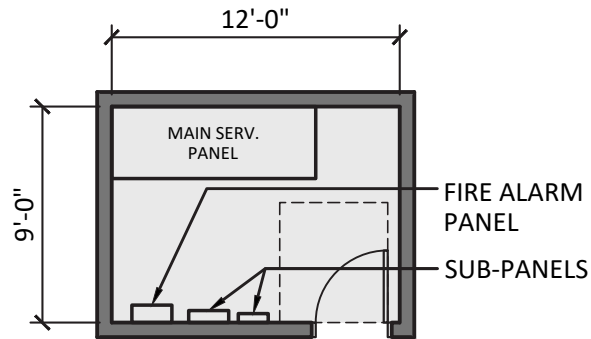


# FIRE HOUSE - UTILITY SUPPORT/VERTICAL CIRCULATION



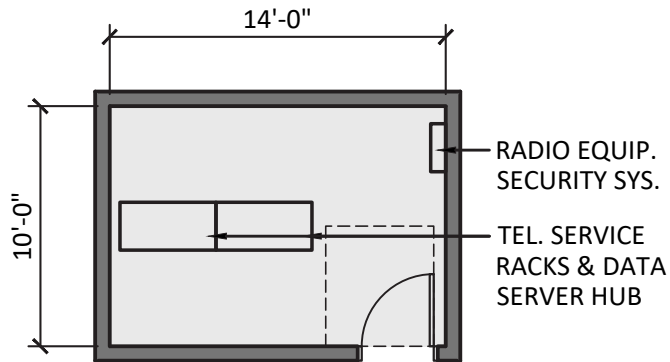
### **23. MECHANICAL ROOM (108 S.F.)**

SCALE: 1/8"=1'-0"



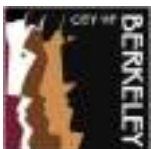
### **24. ELECTRICAL ROOM (108 S.F.)**

SCALE: 1/8"=1'-0"



### **25. COMMUNICATIONS ROOM (140 S.F.)**

SCALE: 1/8"=1'-0"



**LEGEND:**

 EXISTING BUILDING AREA



**SITE PLAN DIAGRAM**

SCALE: 1/64" = 1'-0"



**CITY OF BERKELEY**  
**FIRE SERVICE MASTER PLAN**  
**SITE STUDIES**

TITLE:

**FIRE STATION NO. 7 - SITE PLAN (BUILDING RENOVATION)**

3000 SHASTA ROAD, BERKELEY, CA 94708

03.17.2023

**SIEGEL & STRAIN Architects**  
 6201 DOYLE STREET, SUITE B,  
 EMERYVILLE, CA 94608  
 phone: 510.547.8092 | www.siegelstrain.com

**MARY McGRATH ARCHITECTS**  
 610 16th STREET, SUITE 219, OAKLAND, CA 94612  
 phone: 510.208.9400  
 www.marymcgratharchitects.com







**HEADQUARTERS,  
TRAINING CLASSROOMS &  
AMBULANCE DEPLOYMENT CENTER**



**CITY OF BERKELEY**  
**FIRE DEPARTMENT HEADQUARTERS**  
2100 MARTIN LUTHER KING JR. WAY, BERKELEY, CA 94704

**DRAFT**  
**MAY 08, 2023**

**PROJECT DESCRIPTION**

The current BFD Headquarters is located within the Public Safety Building in downtown Berkeley. There is not adequate space at this location for all of the current staff nor the proposed additional staff, WUI division, training classrooms, or the proposed ambulance deployment center.

The recommendation is to relocate the headquarters to a city owned building which is large enough to accommodate the administrative offices, training classrooms, and the ambulance deployment center.

The ROM Project Budget for the Recommended Option is \$33-36 not including escalation beyond 2024.



## Fire Department Administrative Offices and Training Classrooms Ambulance Deployment Center

### CONCEPTUAL SPACE NEEDS OUTLINE

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>SITE OPERATIONS</b>				
	<b>Staff Parking</b>	40? staff parking spaces	TBD	10'x20' ea.
	<b>Fire Department Vehicles</b>	40? City Vehicle parking spaces	TBD	10'x20' ea.
	<b>Visitor Parking</b>	4 Total - One Accessible with ramp	1,000	10' x 20
	<b>Generator Area</b>	Located at rear yard	150	10'x15'
	<b>Trash Enclosure</b>	Exterior access for service; space for dumpster and recycling bins	150	10'x15'
	<b>Flagpole</b>	Flagpole area with lighting	25	5'x5'
	<b>Outdoor Patio</b>	Outdoor uses; adjacent to Staff Breakroom	200	10'x20'

<b>Fire Department Administrative Offices and Training Classrooms</b>				
No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>OFFICE OF THE CHIEF, OPERATIONS and SUPPORT SERVICES</b>				
A1	Fire Chief Office	Private office, lateral file cabinets, meeting table for 4, shelving	256	16' x 16'
A2	Communications Specialist	Private office, lateral file cabinets, shelving	143	11' x 13'
A3	Project Manager	Private Office	132	11' x 12'
A4	Confidential Secretary	Private office, lateral file cabinets, shelving	132	11' x 12'
A5	Deputy Fire Chief Operations Office	Private office, lateral file cabinets, meeting over desk, shelving	156	12' x 13'
A6	Administrative Assistance (2)	Open work stations	160	8' x 10' (2)
A7	Deputy Fire Chief Support Services	Private office, lateral file cabinets, meeting over desk, shelving	156	12' x 13'
A8	Assistant Fire Chief Support Services	Private office, lateral file cabinets, meeting over desk, shelving	156	12' x 13'
A9	Assistant Mgmt. Analyst (2)	Private office, lateral file cabinets, shelving	264	11' x 12' (2)
A10	Small Conference	Seating for 6-8; white board	180	15' x 12'
<b>OFFICE OF THE CHIEF, OPERATIONS, SUPPORT SERVICES Work Area Subtotal</b>			<b>1,735</b>	

<b>Training Division</b>				
No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
T1	Training Assistant Chief	Private office, lateral file cabinets, meeting over desk, shelving	156	12' x 13'
T2	Training Admin.	Open work station	80	8' x 10'
T3	Training Specialist	Private Office	132	11' x 12'
T4	Training Officer (2)	Private office, lateral file cabinets, shelving	264	11' x 12' (2)
T5	Training Support (Interns and RTO) (4)	Touch down work stations adjacent to plan WUI Captain	144	6' x 6' (4)
T6	Administrative Assistance (2)	Open work stations	160	8' x 10' (2)
T7	Human Performance Coaches Strength and Rehab (2)	Private office with area for training table.	336	12' x 14' (2)
T8	Human Performance Coaches (Nutrition and Behavior)	Private office with area for training table.	336	12' x 14' (2)
T9	Small Conference	Seating for 6-8; white board	180	15' x 12'
<b>TRAINING DIVISION Area Subtotal</b>			<b>1,788</b>	

<b>Fire Department Administrative Offices and Training Classrooms</b>				
No.	Type of Space	Space Attributes	Program	Size
<b>ADMINISTRATION AND FISCAL</b>			<b>Program</b>	<b>Size</b>
F1	Admin & fiscal Service Manager	Private office with plan layout desk, lateral file cabinets, shelving	143	11' x 13'
F2	Associate Mgmt. Analyst (2)	Private office, lateral file cabinets, shelving	264	11' x 12' (2)
F3	Accounting Office Spec. III (four positions)	Open work stations, lateral file cabinets, shelving, adjacent to copy, file, supply room	320	8' x 10' (4)
F4	Office Specialist II (2)	Open work stations, lateral file cabinets, shelving, adjacent to copy, file, supply room	160	8' x 10' (2)
F5	Budget Associate Management Analyst	Open work stations, lateral file cabinets, shelving, adjacent to copy, file, supply room	80	8' x 10' (1)
F6	Small Conference	Seating for 6-8; white board	180	15' x 12'
<b>ADMINISTRATION AND FISCAL Area Subtotal</b>			<b>1,147</b>	

<b>EMS</b>			<b>Program</b>	<b>Size</b>
EMS1	EMS Assistant Fire Chief	Private office, lateral file cabinets, shelving	143	11' x 13'
EMS2	EMS Captains (2)	Shared Private Office with two desks	156	12' x 13'
EMS3	EMS Quality Improvement	Private office, lateral file cabinets, shelving	143	11' x 13'
EMS4	EMS Open work Area 95 positions) EMS Admin. Assistant EMS CQI EMS Recruitment/Academy Interns (2)	Open work stations adjacent to lobby, lateral file cabinets, shelving, adjacent to copy, file, supply room	400	8' x 10' (5)
<b>Fire Department EMS Work Area Subtotal</b>			<b>842</b>	

<b>Emergency Management</b>			<b>Program</b>	<b>Size</b>
EM1	Emergency Manager Program Manager II	Private office with meeting space over desk, lateral file cabinets, shelving	143	11' x 13'
EM2	Emergency Services Coordinator Open work Area (3 positions)	Open work stations, lateral file cabinets, shelving, adjacent to copy, file, supply room	240	8' x 10' (3)
EM3	Emergency Planning Support (interns 2)	Open work stations, lateral file cabinets, shelving, adjacent to copy, file, supply room	160	8' x 10' (2)
<b>Fire Department Emergency Management Work Area Subtotal</b>			<b>543</b>	

<b>Fire Prevention</b>			<b>Program</b>	<b>Size</b>
FP1	Fire Marshal	Private office with meeting space over desk, lateral file cabinets, shelving	143	11' x 13'
FP2	Assistant Mgmt. Analyst	Private office, lateral file cabinets, shelving	132	11' x 12'
FP3	Deputy Fire Marshal	Private office with meeting space over desk. Layout out space for plan review.	143	11' x 13'
FP4	Fire Prevention Open Work Area Plans Review (Two Positions)	Open Work Area adjacent to Fire Marshall ; two work stations and work counter for plan layout, storage area for inactive files.	200	10' x 10' (2)
FP5	Inspector Open work Area (Five positions)	Open works station with area for plan layout	400	8' x 10' (5)
FP6	Light Duty Work Stations (2)	Open works station with area for plan layout	160	8' x 10' (2)
FP7	Library and Storage - Archives	Full-height shelving	100	10' x 10'
FP8	Small Conference	seating for 6-8; white board	180	15' x 12'
<b>Fire Prevention Work Area Subtotal</b>			<b>1,458</b>	

<b>Fire Department Administrative Offices and Training Classrooms</b>				
<b>No.</b>	<b>Type of Space</b>	<b>Space Attributes</b>	<b>Program</b>	<b>Size</b>
<b>Wildland Division (WUI)</b>			<b>Program</b>	<b>Size</b>
WD1	Assistant Chief	Private office with meeting space over desk, lateral file cabinets, shelving	143	11' x 13'
WD2	Office Specialist	Open work station, lateral file cabinets, shelving, adjacent to copy, file, supply room	80	8' x 10' (1)
WD3	WUI Captain	Open work station, lateral file cabinets, shelving, adjacent to copy, file, supply room	80	8' x 10' (1)
WD4	Vegetation Management	Open work station, lateral file cabinets, shelving, adjacent to copy, file, supply room	80	8' x 10' (1)
WD5	Inspector Open work Area (Three positions)	Touch down work stations adjacent to plan WUI Captain	108	6' x 6' (3)
WD6	Field Coordinator/Inspection education/Interns (6 TD)	Touch down work stations adjacent to plan WUI Captain	216	6' x 6' (6)
<b>Wildland Division Work Area Subtotal</b>			<b>707</b>	
<b>Shared and Support Spaces</b>			<b>Program</b>	<b>Size</b>
S1	Public Entry Lobby	Interior space for visitor seating; Reception counter, adjacent to small conference room	168	12' x 14'
S2	Historic Display	Interior lobby space for the display of BFD Historic artifacts	168	12' x 14'
S3	Public Restroom	ADA Accessible restrooms adjacent to Lobby, 2 Gender Neutral	128	8' x 8' x 2
S4	Admin Workroom/Storage	full-height shelving, open area for copy machine, central work counter for report assembly, storage for office supplies, form storage, mail box for each station and admin. personnel	224	14'x16'
S5	Large Conference Room	seating for 20-24; storage cabinets, counter space, white board, Adjacent to Lobby	900	30' x 30'
S6	Small Conference	seating for 6-8; white board (adjacent to Lobby)	180	15' x 12'
S7	Admin. Break Room	seating for 8; kitchenette, vending	224	14'x16'
S8	Staff Restroom/locker Room	ADA Accessible restroom adjacent to break room. 6- 36" high lockers. One restroom/locker room each for men and women.	384	12' x 16' (2)
S9	Fitness Room	Space for 5-6 people to work out at one time.	1,200	30' x 40'
S10	Admin. Janitors Room	Storage for cleaning supplies, vacuum, mop sink with mop rack, mop bucket, paper goods,	48	6' x 8'
S11	General Storage - Supply	Full-height shelving. Public Ed. Storage	64	8' x 8'
S12	Admin File Storage	File cabinets (locking)	108	9' x 12'
S13	General Building Storage	Storage for building supplies such as light bulbs, extra paint, ceiling tiles, etc.)	48	6' x 8'
<b>Fire Department Shared and Support Spaces Subtotal</b>			<b>3,676</b>	

Fire Department Administrative Offices and Training Classrooms				
No.	Type of Space	Space Attributes		
<b>EOC/Training Classroom</b>				
No.	Type of Space	Space Attributes		
E1	Main Classroom	Seating for 60; storage areas; counters	2,208	46' x 48'
E2	Equipment Storage	shelving for equipment	180	12' x 15'
E3	Table and Chair Storage	Table and Chair storage	192	12' x 16'
E4	Secondary Classroom	seating for 24-30	768	24' x 32'
<b>Training Classroom Subtotal:</b>			<b>3,348</b>	
<b>UTILITY SUPPORT SPACE</b>				
	UTILITY SUPPORT SPACE		Program	Size
U1	Mechanical Room	HVAC equipment; hot water heater; fire sprinkler riser.	160	8' x 10' (2)
U2	Electrical Room	Main service panel, fire alarm panel; sub panels	192	12' x 16'
U3	Communications Room	Telephone service racks, alert response system hub, data server hub, radio equipment; security system	192	12' x 16'
<b>Utility Support Subtotal</b>			<b>544</b>	
<b>Headquarters Space Needs Summary</b>			<b>Program</b>	
Fire Department Administrative Work Area Subtotal			1,735	
Training Division Subtotal			1,788	
Fire Department Finance Work Area Subtotal			1,147	
Fire Department EMS Work Area Subtotal			842	
Fire Department Emergency Management Work Area Subtotal			543	
Fire Prevention Work Area Subtotal			1,458	
Wildland Division Work Area Subtotal			707	
Fire Department Shared and Support Spaces Subtotal			3,676	
EOC and Training Classrooms			3,348	
Utility Support Subtotal			544	
<b>Headquarters Subtotal:</b>			<b>15,788</b>	
Circulation at 30%			4,736	
<b>Headquarters Subtotal (SF):</b>			<b>20,524</b>	
<b>Ambulance Deployment Center Subtotal (SF):</b> (See attached spreadsheet)			<b>8,324</b>	
Sub total:			28,848	Net SF
Grossing Factor: 15%			4,327	
<b>Grand Total HQ, Training Classrooms and Deployment Center:</b>			<b>33,176</b>	

<b>Ambulance Deployment Center</b>
<b>2 Paramedics, 8 EMTs, (12 and 10 hour shifts)</b>
<b>Located at HQ</b>

**CONCEPTUAL SPACE NEEDS OUTLINE**

<b>Deployment Center Staffing</b>	<b>Current</b>	<b>Future</b>
One ALS Unit	2	0
Four BLS Units	8	0
Ambulance - Reserve	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING:</b>	<b>10</b>	<b>0</b>

<b>No.</b>	<b>Type of Space</b>	<b>Space Attributes</b>	<b>Square Footage</b>	
			<b>Program</b>	<b>Size</b>
<b>SITE OPERATIONS</b>				
	<b>Firefighter Parking</b>	24 firefighter parking spaces, secure and separate from public parking	4,800	10'x20' ea.
	<b>Generator Area</b>	Located at rear yard	150	10'x15'
	<b>Outdoor Patio or Deck</b>	Outdoor uses; adjacent to Kitchen	200	10'x20'

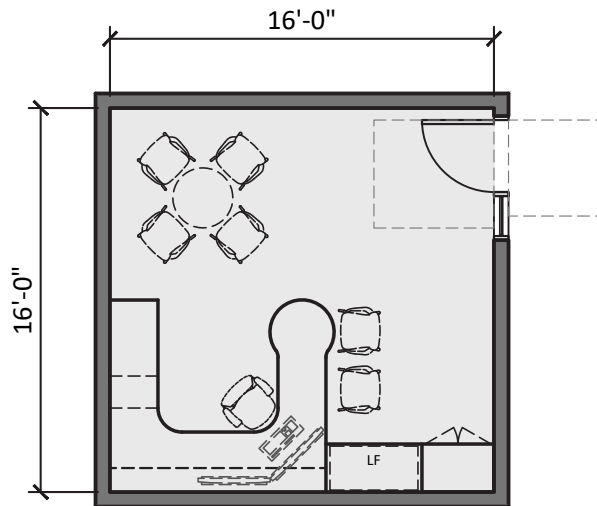
<b>No.</b>	<b>Type of Space</b>	<b>Space Attributes</b>	<b>Square Footage</b>	
			<b>Program</b>	<b>Size</b>
<b>Ambulance Deployment Center - APP BAY/APP BAY SUPPORT</b>				
1	Parking for five Ambulances	Five Ambulances . Bay size for five units. Need power to each unit.	2,400	(5) 16' x 30'
2	Medical Supply Closet	Heavy Duty Shelving; medical supplies off of apparatus bay.	160	10' x 16'
3	Medical Clean Up	Clean-up sink, shelving, Alcove in bay or near units at entry	18	3' x 6'
4	Janitor Room	Service sink, mop rack; janitorial supplies;	48	6' x 8'
5	Medical Equipment Storage and Charging	Heavy Duty Shelving Equipment Charging location	64	8' x 8'
6	Restroom	Medic/EMS toilet and sink, off of apparatus bay	64	8' x 8'
7	Fitness Room	Work out area with cardio and other equipment. Share with HQ.	576	24' x 24'
<b>Deployment Center - App Bay/Support Subtotal</b>			<b>2,754</b>	

No.	Type of Space	Space Attributes	Square Footage	
			Program	Size
<b>Deployment Center Staging Area</b>				
8	Kitchenette	Kitchen with two refrigerators, sink, dishwasher and 2 microwaves and space for ice machine. Share with HQ.	192	12' x 16'
9	Dining Area	Seating for 10 persons; wall-mounted TV; open to kitchen; Share with HQ	168	14' x 12'
10	Laundry Room	Service sink; countertop; janitorial supplies; mop rack, Washer/Dryer, Extractor and TO Dryer, SCBA Washer	240	12' x 20'
11	Locker Area	44-36" high lockers, double stacked in open room. 18" wide x 2' deep.	360	18' x 20'
12	Gender Neutral Bathroom/Shower ADA	1 accessible restroom with shower, sink, toilet	81	9' x 9'
13	Gender Neutral Bathrooms	2 restrooms with sink, toilet	128	8' x 8' (2)
14	Changing Rooms	10 private changing rooms	480	6' x 8' (10)
<b>Deployment Center - Staging Area Subtotal</b>			<b>1,649</b>	

<b>Ambulance Deployment Center:</b>		<b>Program</b>	
	App Bay/Bay Support Subtotal	2,754	
	Staging Area Subtotal	1,649	
	Utility Support Subtotal	2,000	
	<b>BUILDING SUBTOTAL (SF)</b>	<b>6,403</b>	
	Circulation at 30%	1,921	
<b>Ambulance Deployment Center: GRAND TOTAL (SF)</b>		<b>8,324</b>	

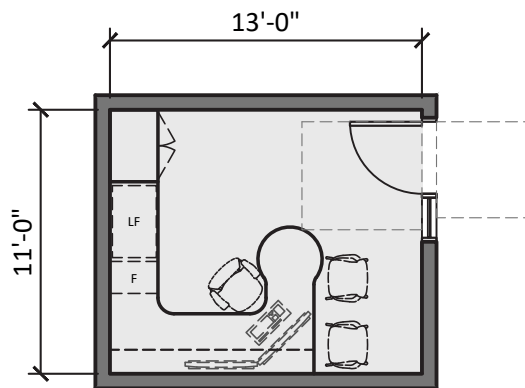


OFFICE OF THE CHIEF, OPERATIONS AND SUPPORT SERVICES



**A1 FIRE CHIEF OFFICE (256 S.F.)**

SCALE: 1/8"=1'-0"

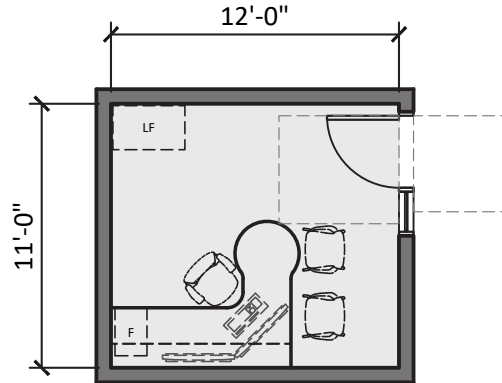


**A2 COMMUNICATIONS SPECIALIST (143 S.F.)**

SCALE: 1/8"=1'-0"



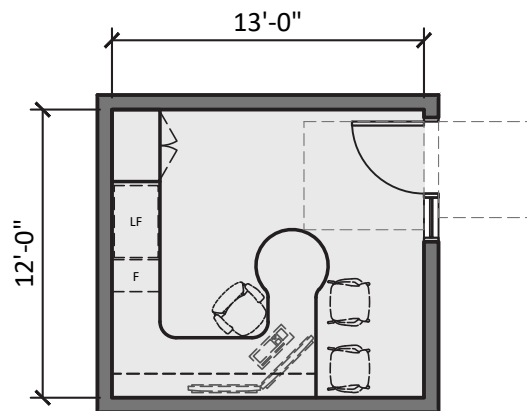
OFFICE OF THE CHIEF, OPERATIONS AND SUPPORT SERVICES



**A3 PROJECT MANAGER (132 S.F.)**

**A4 CONFIDENTIAL SECRETARY (132 S.F.)**

SCALE: 1/8"=1'-0"

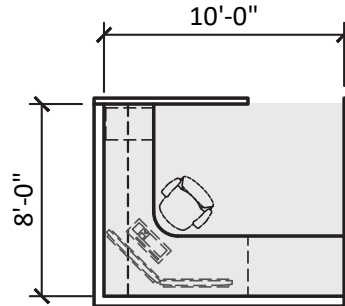


**A5 DEPUTY FIRE CHIEF OPERATIONS OFFICE (156 S.F.)**

SCALE: 1/8"=1'-0"

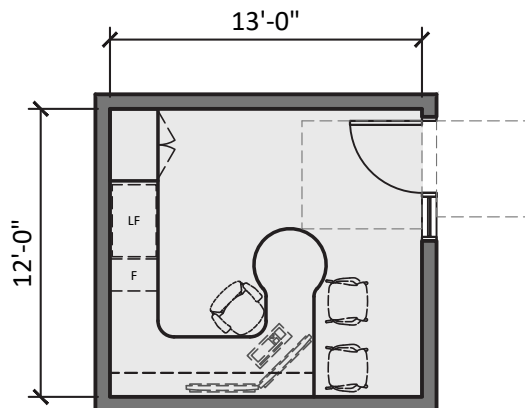


OFFICE OF THE CHIEF, OPERATIONS AND SUPPORT SERVICES



**A6 ADMINISTRATIVE ASSISTANCE - 2 (160 S.F.)**

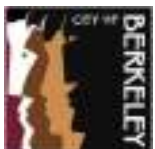
SCALE: 1/8"=1'-0"

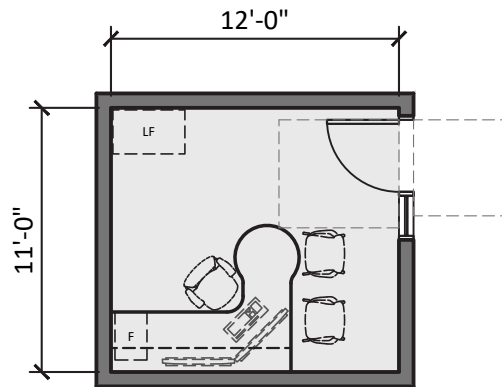


**A7 DEPUTY FIRE CHIEF SUPPORT SERVICES (156 S.F.)**

**A8 ASSISTANT FIRE CHIEF SUPPORT SERVICES (156 S.F.)**

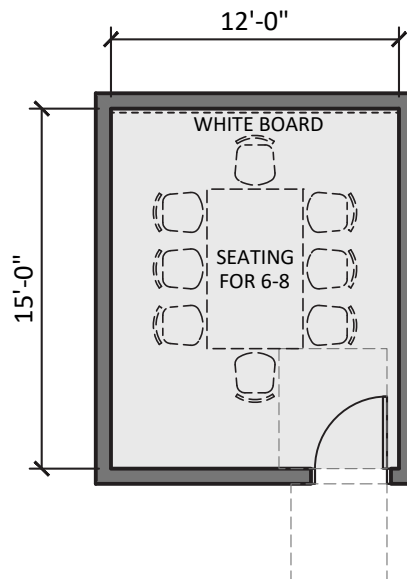
SCALE: 1/8"=1'-0"





**A9 ASSISTANT MGMT. ANALYST - 2 (264 S.F.)**

SCALE: 1/8"=1'-0"

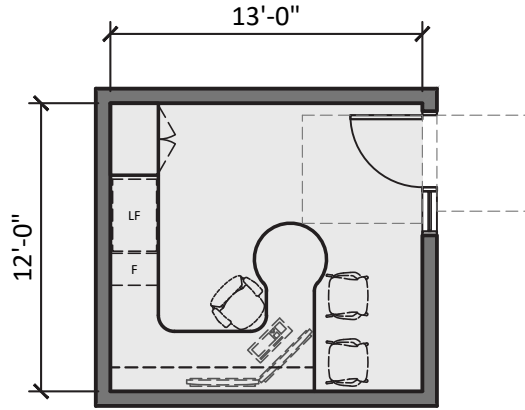


**A10 SMALL CONFERENCE (180 S.F.)**

SCALE: 1/8"=1'-0"

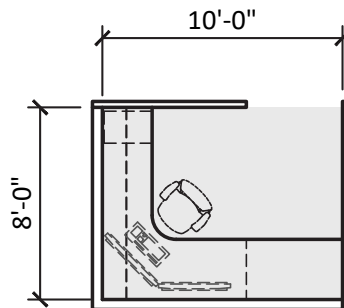


TRAINING DIVISION



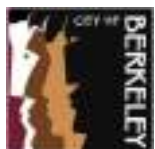
**T1 TRAINING ASSISTANT CHIEF (156 S.F.)**

SCALE: 1/8"=1'-0"

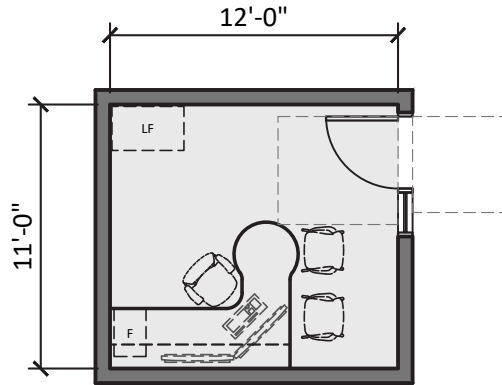


**T2 TRAINING ADMIN. (80 S.F.)**

SCALE: 1/8"=1'-0"



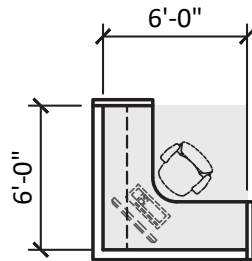
TRAINING DIVISION



**T3 TRAINING SPECIALIST (132 S.F.)**

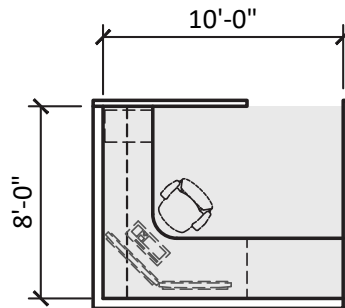
**T4 TRAINING OFFICER - 2 (264 S.F.)**

SCALE: 1/8"=1'-0"



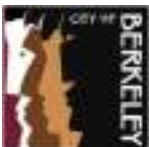
**T5 TRAINING SUPPORT (INTERNS AND RTO - 4) (144 S.F.)**

SCALE: 1/8"=1'-0"

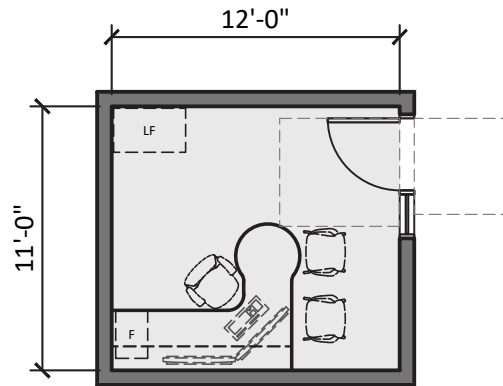


**T6 ADMINISTRATIVE ASSISTANCE - 2 (160 S.F.)**

SCALE: 1/8"=1'-0"



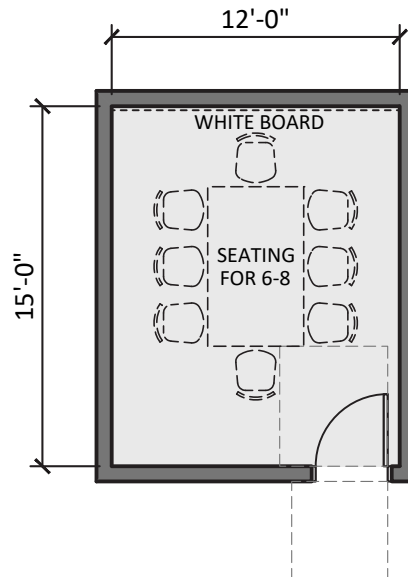
TRAINING DIVISION



**T7 HUMAN PERFORMANCE COACHES (STRENGTH AND REHAB - 2 (336 S.F.)**

**T8 HUMAN PERFORMANCE COACHES (NUTRITION AND BEHAVIOR - 2 (336 S.F.)**

SCALE: 1/8"=1'-0"

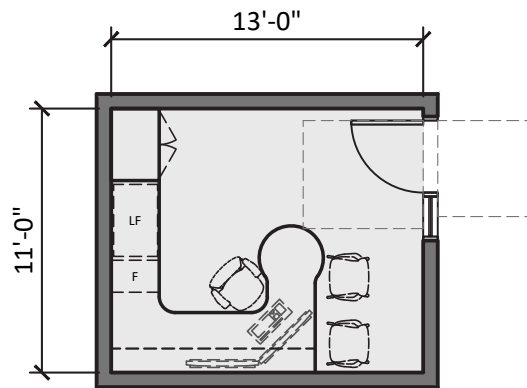


**T9 SMALL CONFERENCE (180 S.F.)**

SCALE: 1/8"=1'-0"

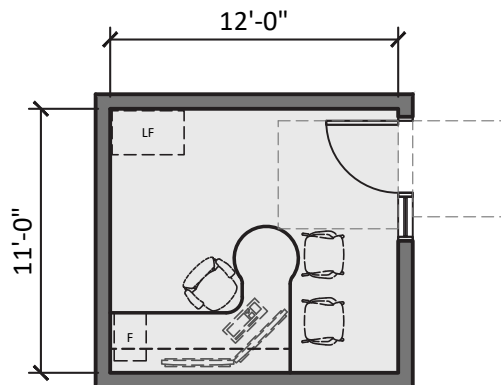


ADMINISTRATION AND FISCAL



**F1 ADMIN. & FISCAL SERVICE MANAGER (143 S.F.)**

SCALE: 1/8"=1'-0"



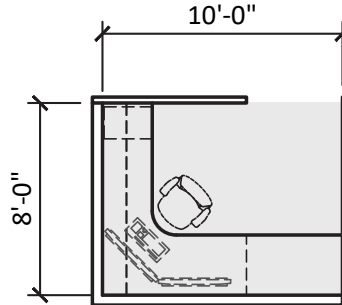
**FP2 ASSOCIATE MGMT. ANALYST - 2 (264 S.F.)**

SCALE: 1/8"=1'-0"





ADMINISTRATION AND FISCAL

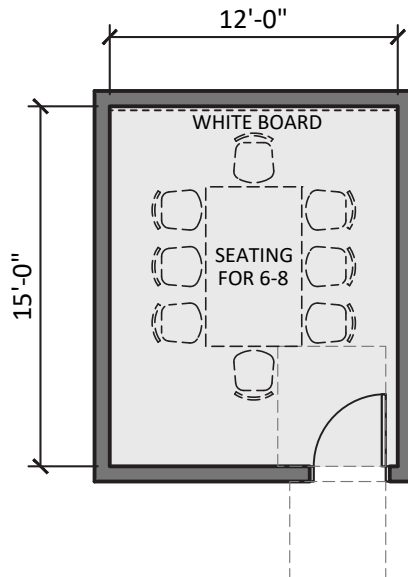


**F3 ACCOUNTING OFFICE SPEC. III - 4 POSITIONS (320 S.F.)**

**F4 OFFICE SPECIALIST II - 2 (160 S.F.)**

**F5 BUDGET ASSOCIATE MANAGEMENT ANALYST (80 S.F.)**

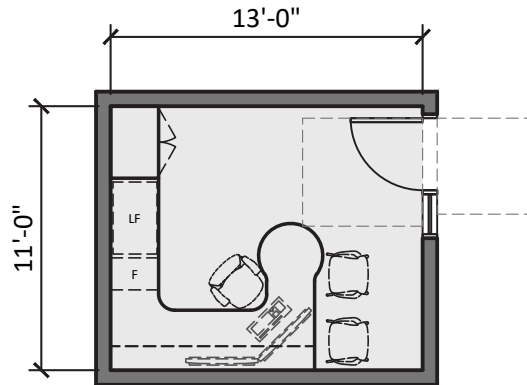
SCALE: 1/8"=1'-0"



**F6 SMALL CONFERENCE (180 S.F.)**

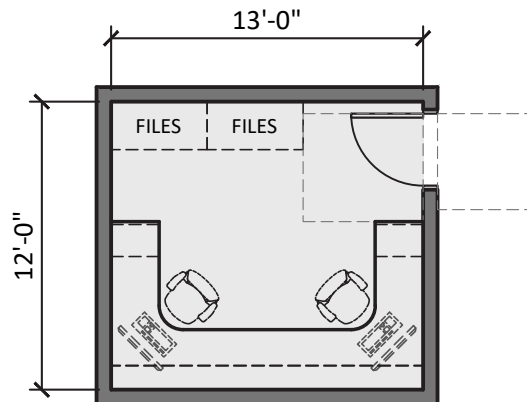
SCALE: 1/8"=1'-0"





**EMS1 EMS ASSISTANT FIRE CHIEF (143 S.F.)**

SCALE: 1/8"=1'-0"

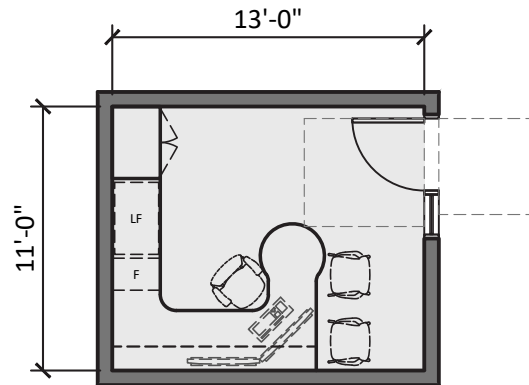


**EMS2 EMS CAPTAINS (156 S.F.)**

SCALE: 1/8"=1'-0"

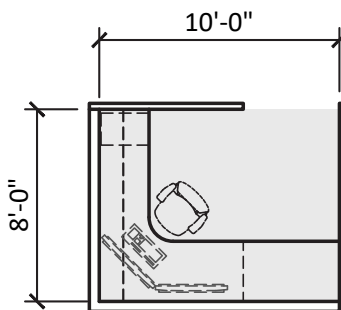


EMERGENCY MANAGEMENT



**EMS3 EMS QUALITY IMPROVEMENT (143 S.F.)**

SCALE: 1/8"=1'-0"



**EMS4 EMS OPEN WORK AREA (95 POSITIONS)**

**EMS ADMIN. ASSISTANT**

**EMS CQI**

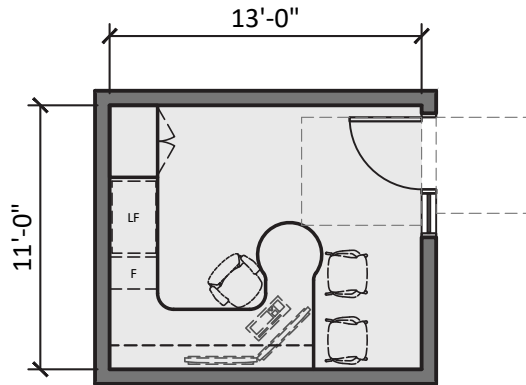
**EMS RECRUITMENT/ACADEMY INTERNS - 2**

**(8'X10') (5) 400 S.F.**

SCALE: 1/8"=1'-0"

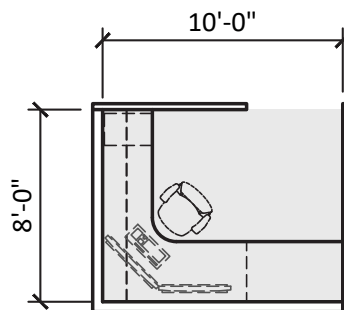


EMERGENCY MANAGEMENT



**EM1 EMERGENCY MANAGER PROGRAM MANAGER II (143 S.F.)**

SCALE: 1/8"=1'-0"



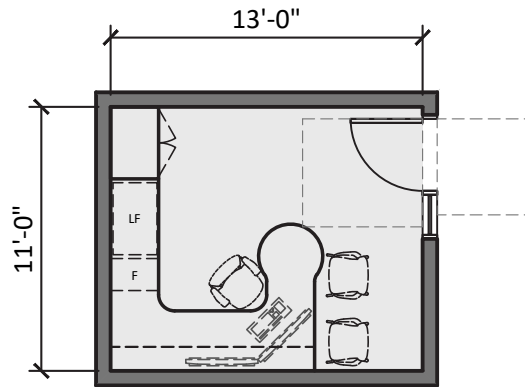
**EM2 EMERGENCY SERVICES COORDINATOR OPEN WORK AREA - 3 POSITIONS (240 S.F.)**

**EM3 EMERGENCY PLANNING SUPPORT - 2 INTERNS (160 S.F.)**

SCALE: 1/8"=1'-0"

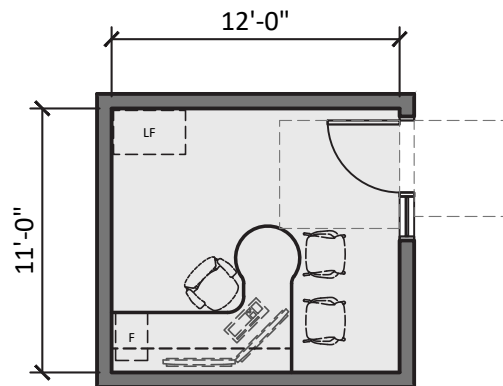


FIRE PREVENTION



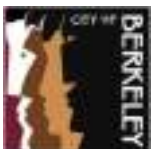
**FP1 FIRE MARSHAL (143 S.F.)**

SCALE: 1/8"=1'-0"

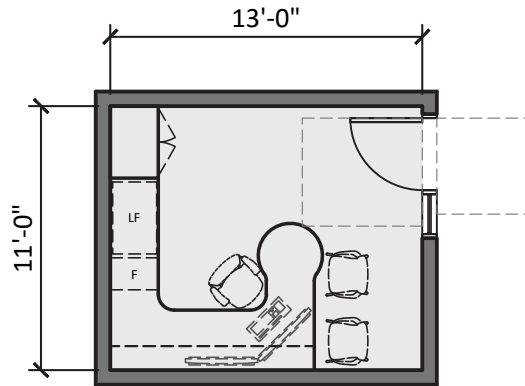


**FP2 ASSISTANT MGMT. ANALYST (132 S.F.)**

SCALE: 1/8"=1'-0"

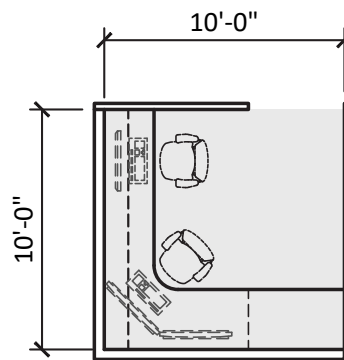


FIRE PREVENTION



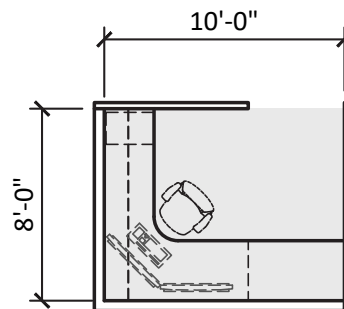
**FP3 DEPUTY FIRE MARSHAL (143 S.F.)**

SCALE: 1/8"=1'-0"



**FP4 FIRE PREVENTION OPEN WORK AREA - TWO POSITIONS (200 S.F.)**

SCALE: 1/8"=1'-0"

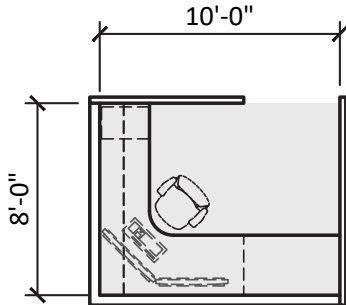


**FP5 INSPECTOR OPEN WORK AREA - FIVE POSITIONS (400 S.F.)**

SCALE: 1/8"=1'-0"

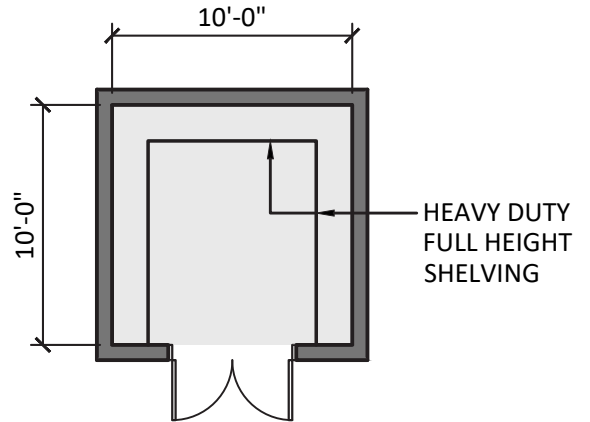


FIRE PREVENTION



**FP6 LIGHT DUTY WORKSTATIONS - 2 (160 S.F.)**

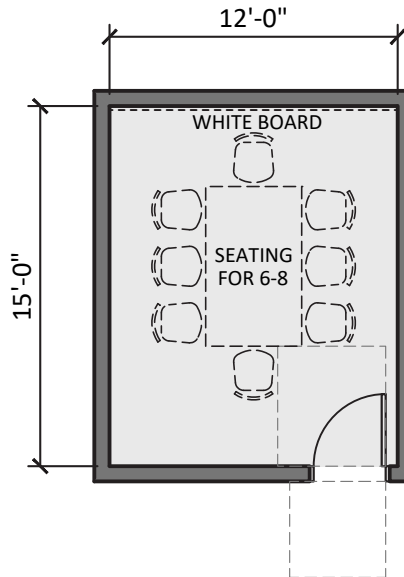
SCALE: 1/8"=1'-0"



**FP7 LIBRARY AND STORAGE**

**- ARCHIVES (100 S.F.)**

SCALE: 1/8"=1'-0"

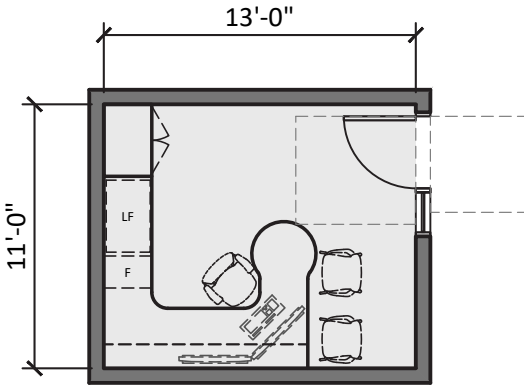


**FP8 SMALL CONFERENCE (180 S.F.)**

SCALE: 1/8"=1'-0"

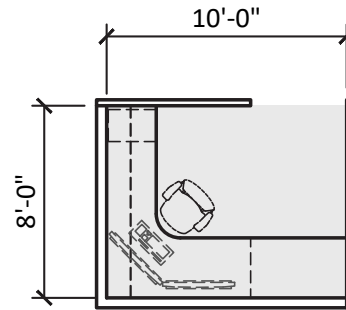


WILDLAND DIVISION (WUI)



**WD1 ASSISTANT CHIEF (143 S.F.)**

SCALE: 1/8"=1'-0"

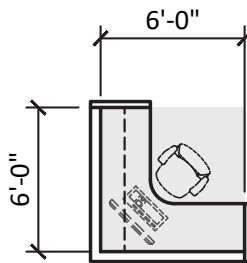


**WD2 OFFICE SPECIALIST (80 S.F.)**

**WD3 WUI CAPTAIN (80 S.F.)**

**WD4 VEGETATION MANAGEMENT (80 S.F.)**

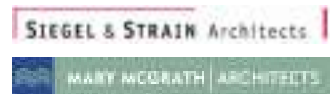
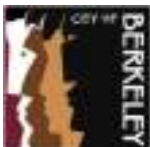
SCALE: 1/8"=1'-0"



**WD5 INSPECTOR OPEN WORK AREA - 3 POSITIONS (108 S.F.)**

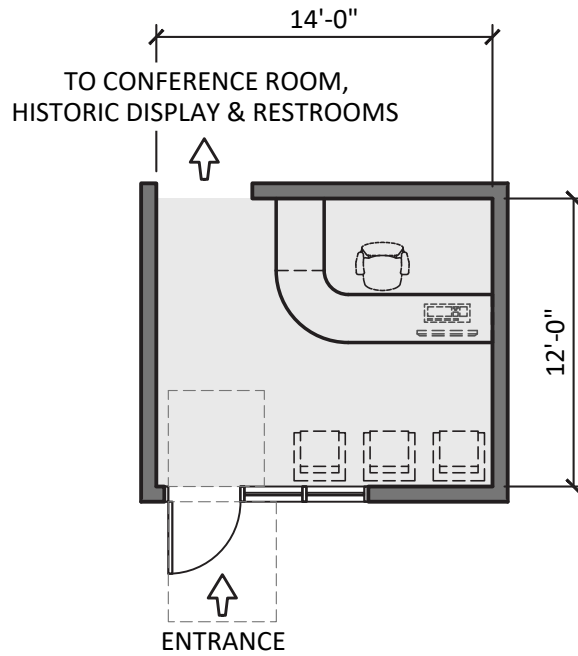
**WD6 FIELD COORDINATOR/INSPECTION EDUCATION/INTERNS - 6 TD (216 S.F.)**

SCALE: 1/8"=1'-0"



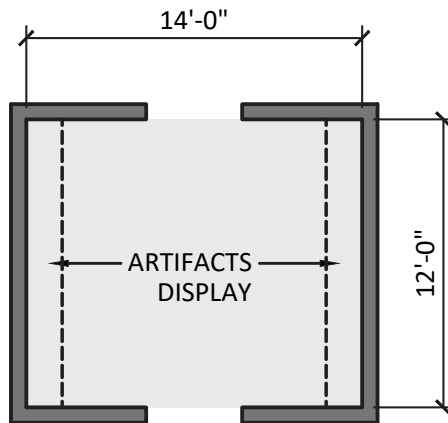


SHARED AND SUPPORT SPACES



**S1 PUBLIC ENTRY LOBBY (168 S.F.)**

SCALE: 1/8"=1'-0"

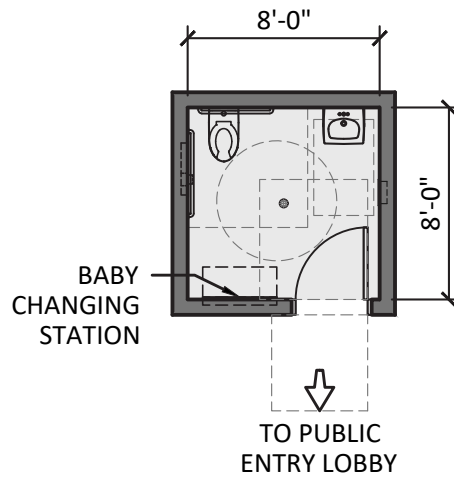


**S2 HISTORIC DISPLAY (168 S.F.)**

SCALE: 1/8"=1'-0"

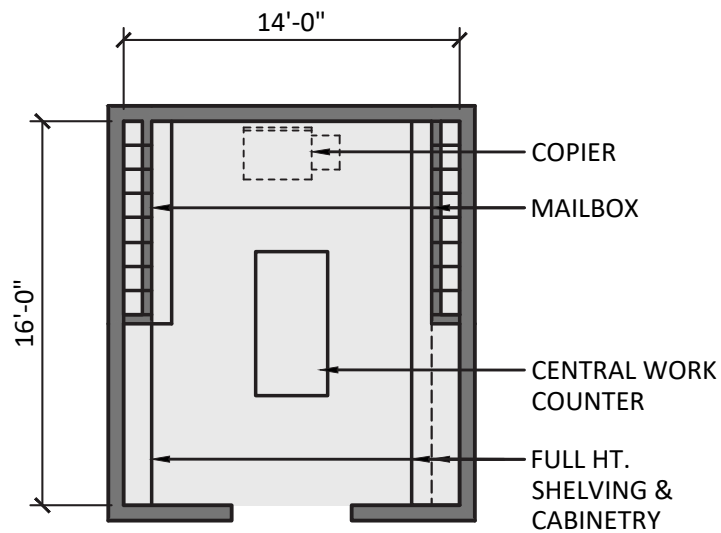


SHARED AND SUPPORT SPACES



**S3 PUBLIC RESTROOM - 2 (128 S.F.)**

SCALE: 1/8"=1'-0"

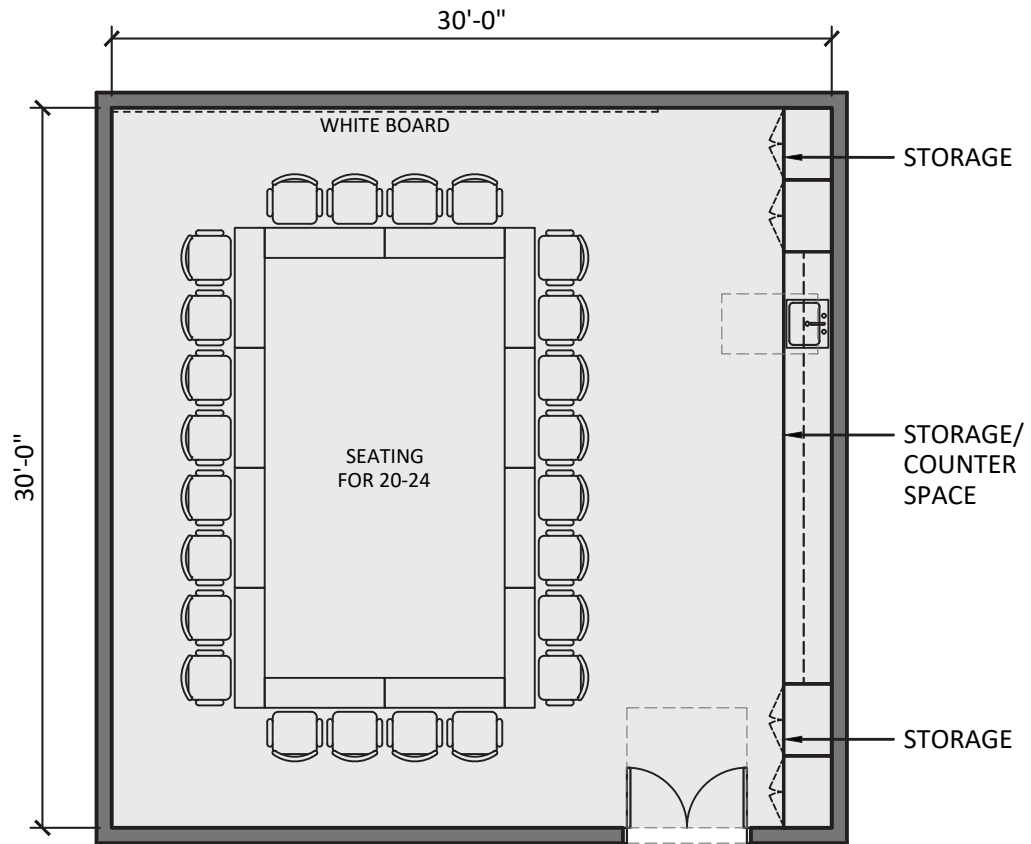


**S4 ADMIN. WORKROOM/STORAGE (224 S.F.)**

SCALE: 1/8"=1'-0"



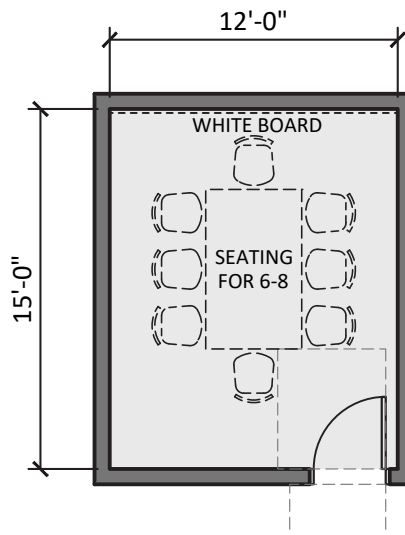
SHARED AND SUPPORT SPACES



**S5 LARGE CONFERENCE ROOM (900 S.F.)**

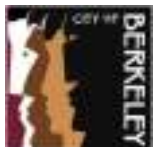
SCALE: 1/8"=1'-0"

TO PUBLIC  
ENTRY LOBBY

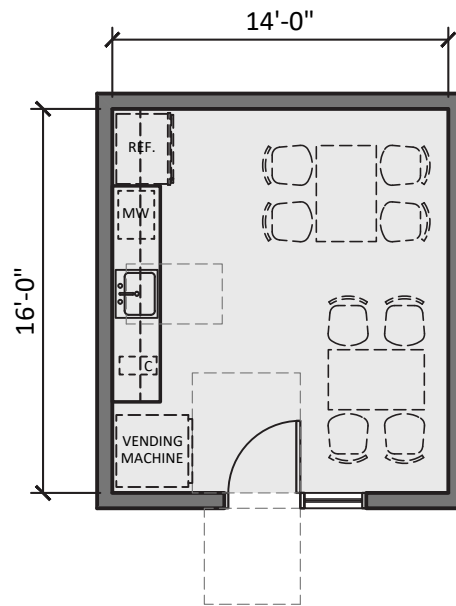


**S6 SMALL CONFERENCE (180 S.F.)**

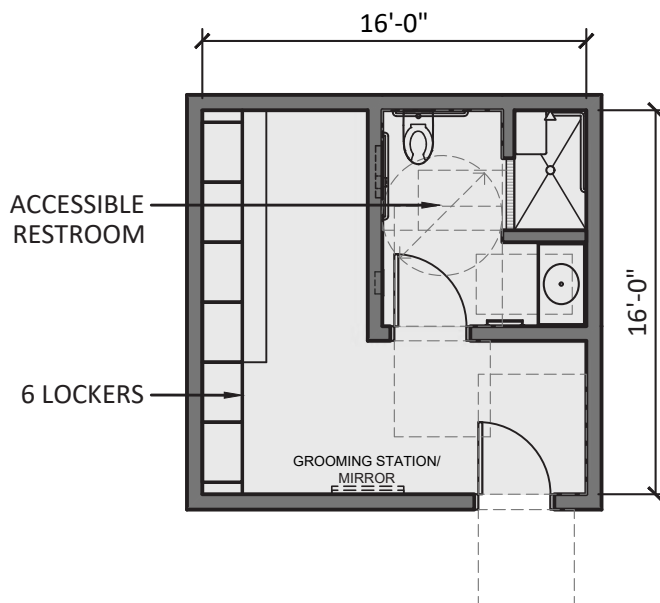
SCALE: 1/8"=1'-0"



SHARED AND SUPPORT SPACES



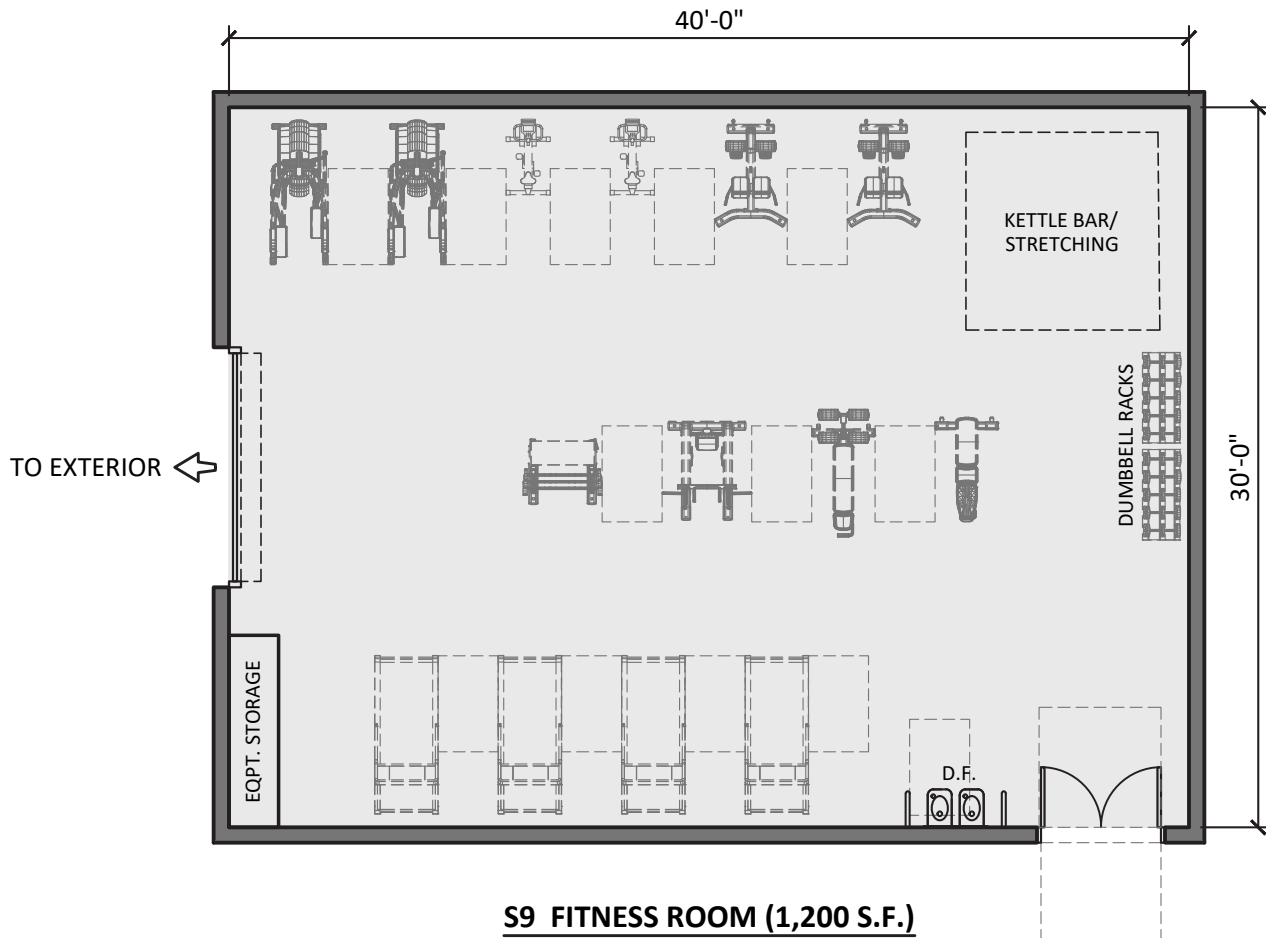
**S7 ADMIN. BREAK ROOM (224 S.F.)**  
SCALE: 1/8"=1'-0"



**S8 STAFF RESTROOM/LOCKER ROOM - 2 (384 S.F.)**  
SCALE: 1/8"=1'-0"

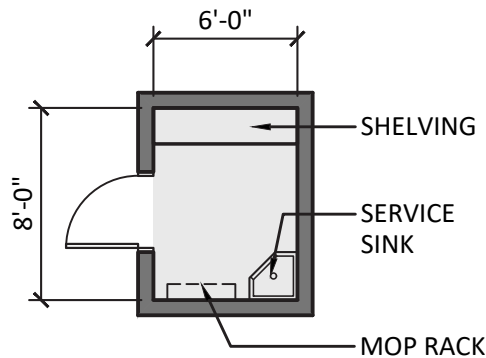


SHARED AND SUPPORT SPACES



**S9 FITNESS ROOM (1,200 S.F.)**

SCALE: 1/8"=1'-0"

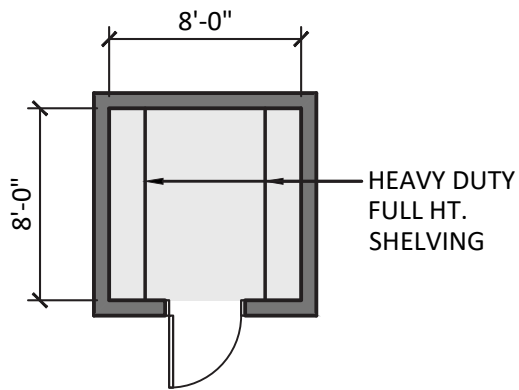


**S10 ADMIN. JANITORS ROOM (48 S.F.)**

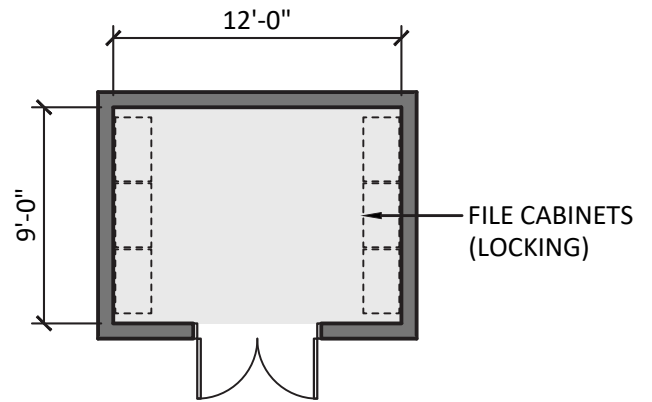
SCALE: 1/8"=1'-0"



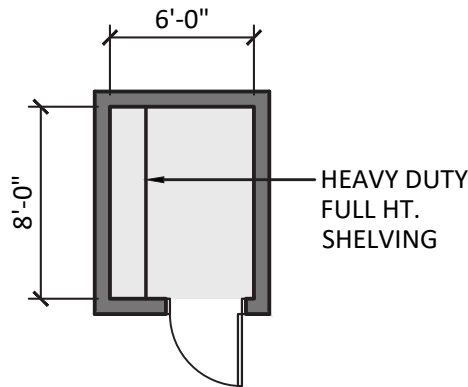
SHARED AND SUPPORT SPACES



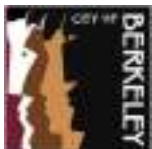
**S11 GENERAL STORAGE - SUPPLY (64 S.F.)**  
SCALE: 1/8"=1'-0"



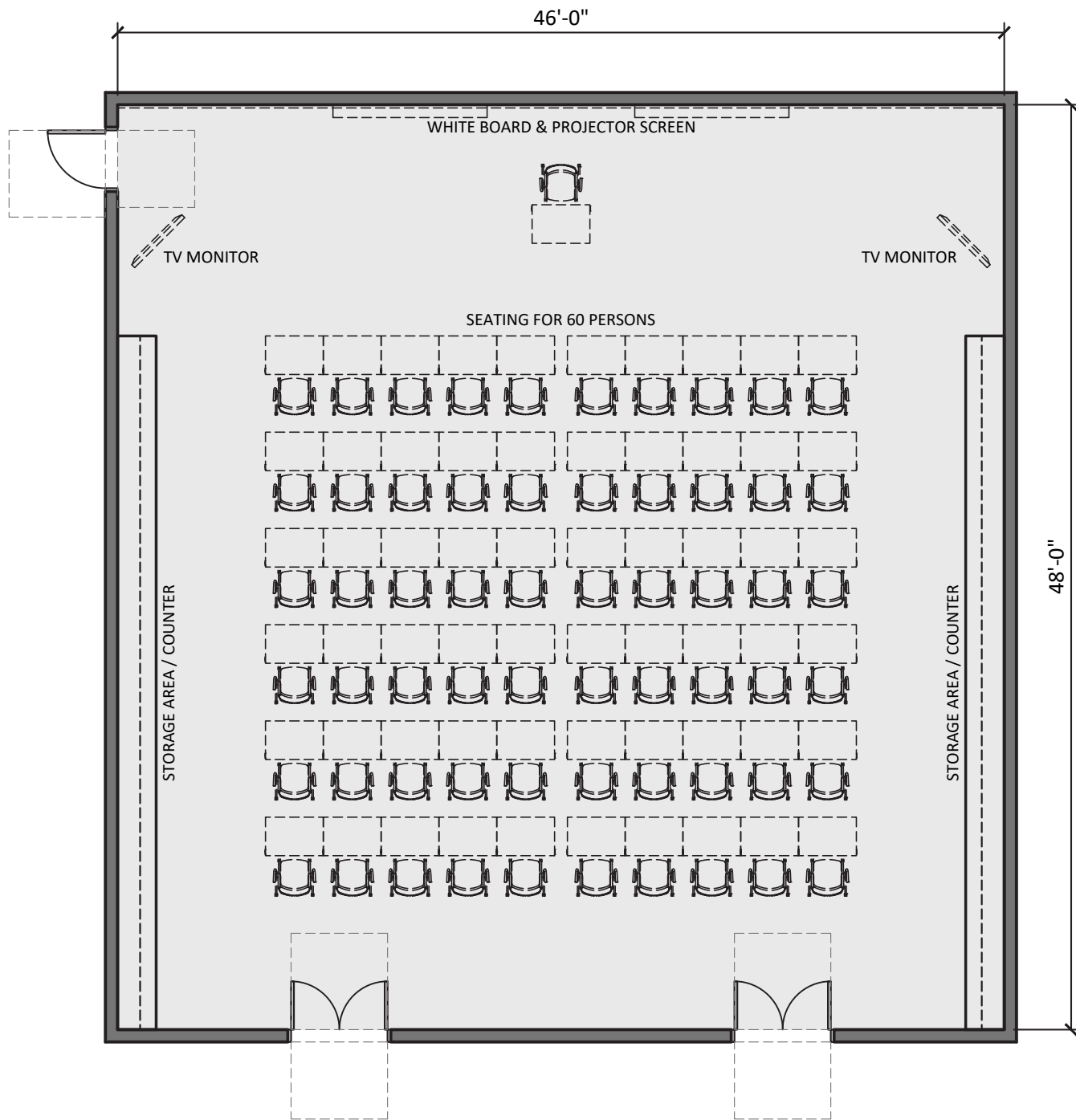
**S12 ADMIN. FILE STORAGE (108 S.F.)**  
SCALE: 1/8"=1'-0"



**S13 GENERAL BUILDING STORAGE (48 S.F.)**  
SCALE: 1/8"=1'-0"



EOC/TRAINING CLASSROOM



**E1 MAIN CLASSROOM (2,208 S.F.)**

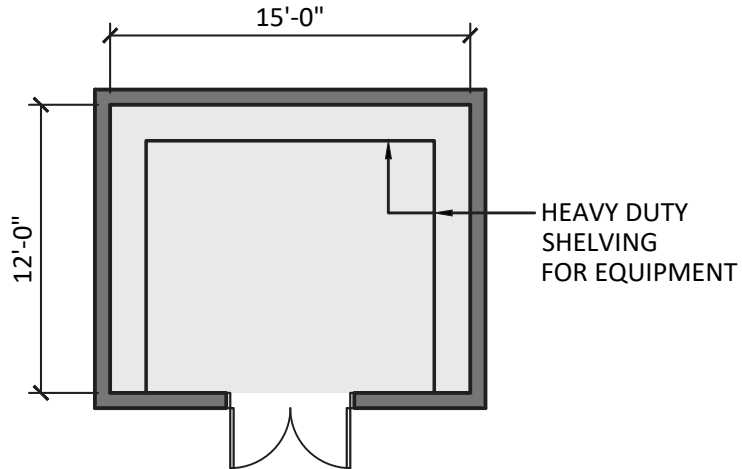
SCALE: 1/8"=1'-0"



**CITY OF BERKELEY**  
**HEADQUARTERS, TRAINING CLASSROOMS &**  
**AMBULANCE DEPLOYMENT CENTER**  
**ALS UNIT, 4 BLS UNITS & AMBULANCE-RESERVE**

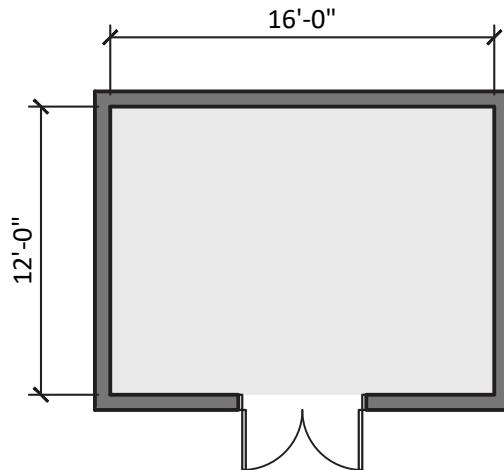


EOC/TRAINING CLASSROOM



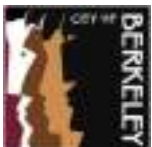
**E2 EQUIPMENT STORAGE (180 S.F.)**

SCALE: 1/8"=1'-0"



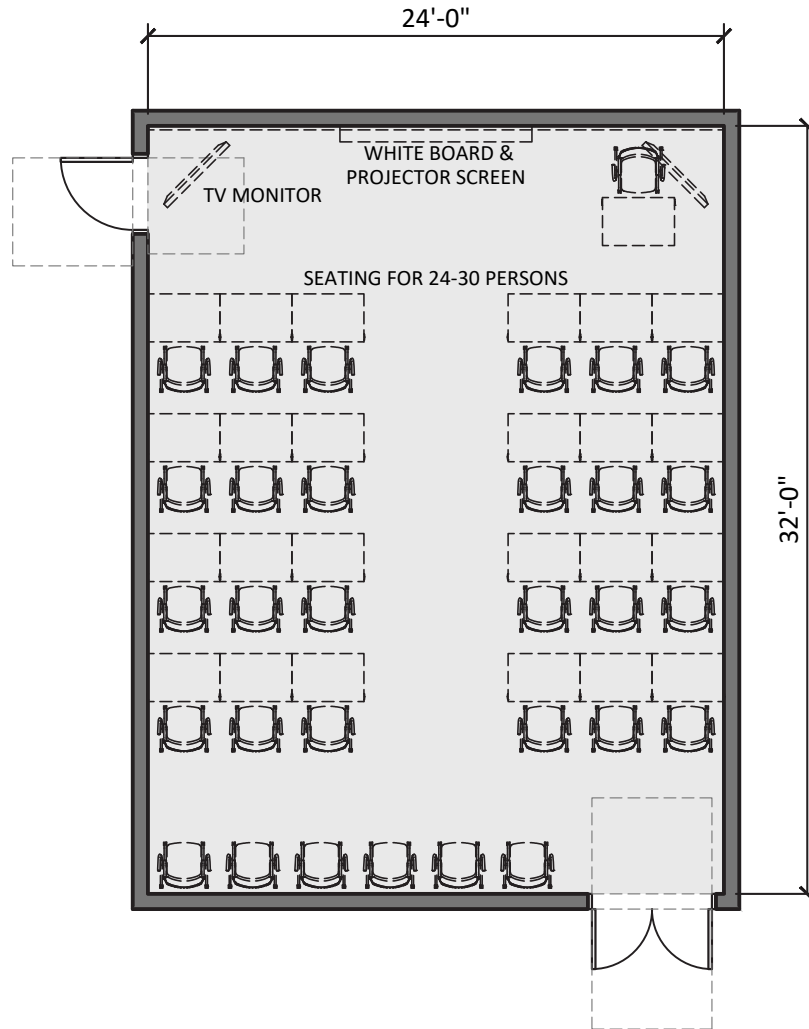
**E3 TABLE AND CHAIR STORAGE (192 S.F.)**

SCALE: 1/8"=1'-0"

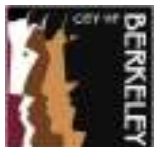




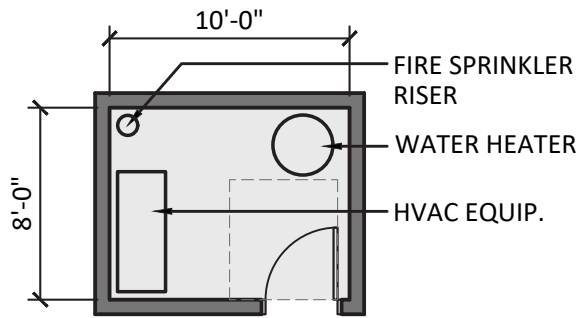
EOC/TRAINING CLASSROOM



**E4 SECONDARY CLASSROOM (768 S.F.)**  
SCALE: 1/8"=1'-0"

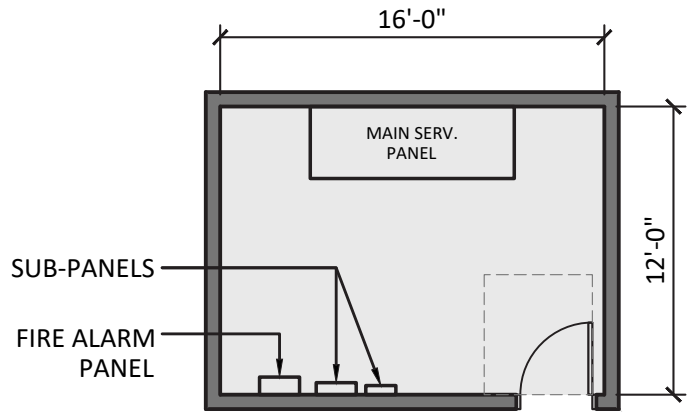


UTILITY SUPPORT SPACE



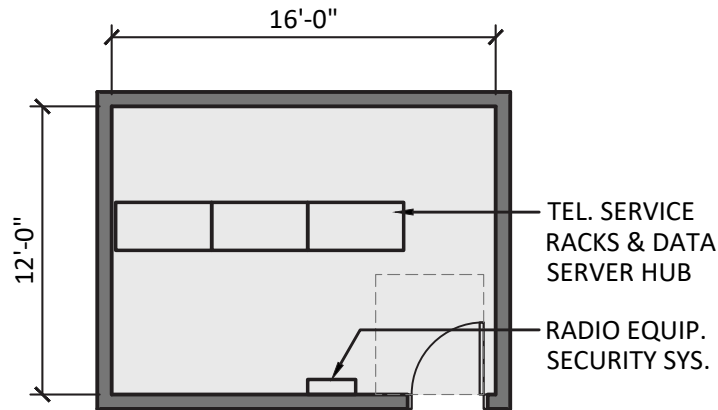
**U1 MECHANICAL ROOM - 2 (160 S.F.)**

SCALE: 1/8"=1'-0"



**U2 ELECTRICAL ROOM (192 S.F.)**

SCALE: 1/8"=1'-0"

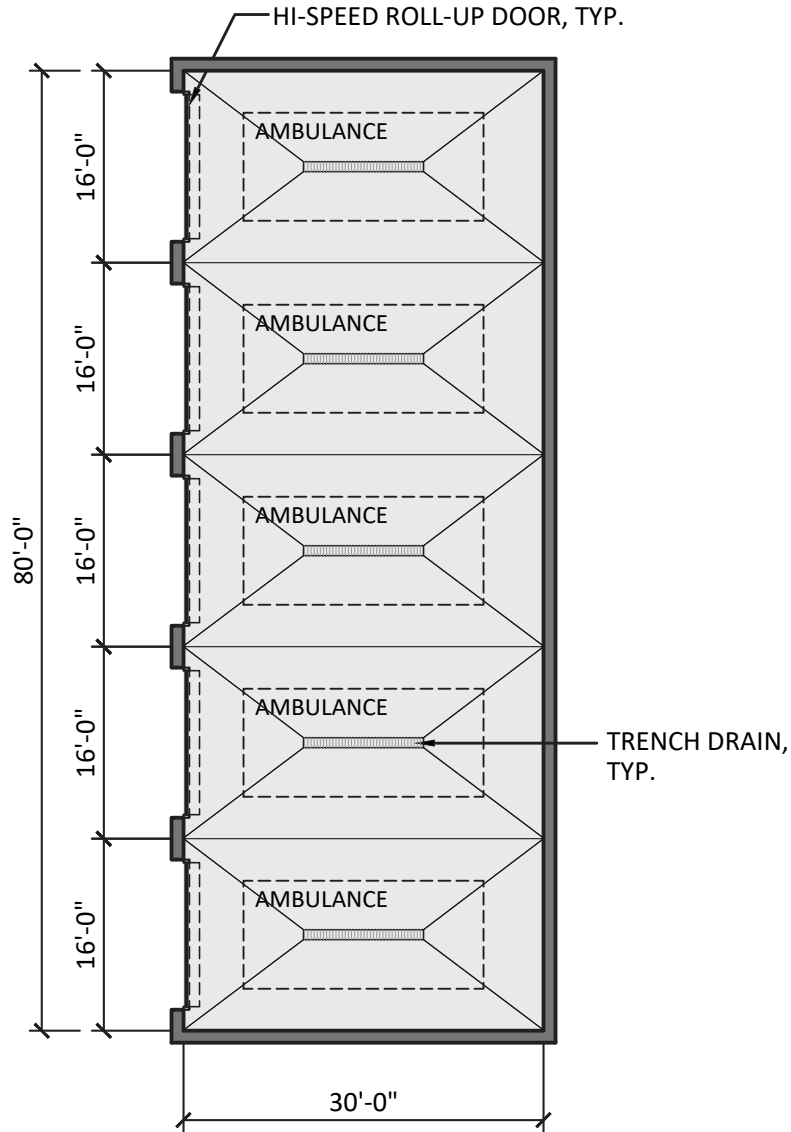


**U3 COMMUNICATIONS ROOM (192 S.F.)**

SCALE: 1/8"=1'-0"



**AMBULANCE DEPLOYMENT CENTER -  
APPARATUS BAY/APPARATUS BAY SUPPORT**

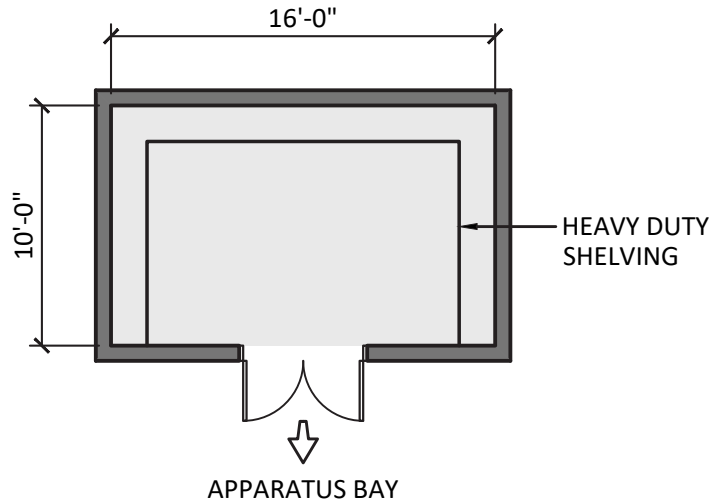


**1. APPARATUS BAY - 5 DRIVE-THROUGH BAYS (3,760 S.F.)**

SCALE: 1/16"=1'-0"

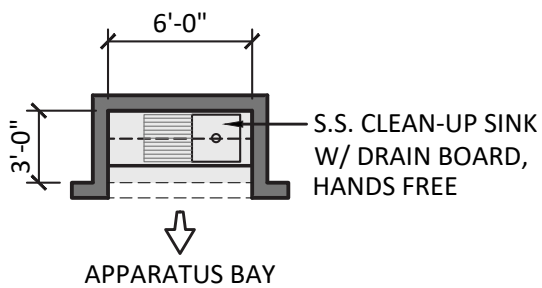


**AMBULANCE DEPLOYMENT CENTER -  
APPARATUS BAY/APPARATUS BAY SUPPORT**



**2. MEDICAL SUPPLY (160 S.F.)**

SCALE: 1/8"=1'-0"

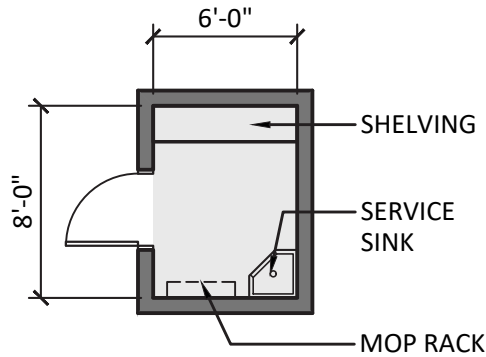


**3. CLEAN-UP (18 S.F.)**

SCALE: 1/8"=1'-0"

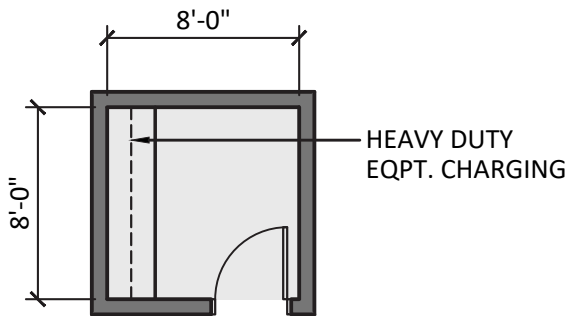


**AMBULANCE DEPLOYMENT CENTER -  
APPARATUS BAY/APPARATUS BAY SUPPORT**



**4. JANITOR ROOM (48 S.F.)**

SCALE: 1/8"=1'-0"

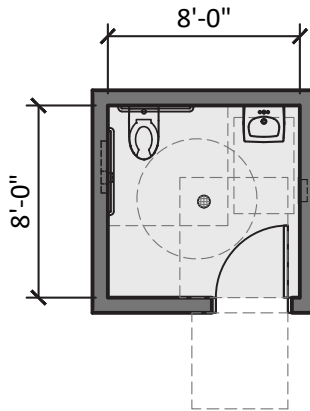


**5. MEDICAL EQUIPMENT STORAGE & CHARGING (64 S.F.)**

SCALE: 1/8"=1'-0"

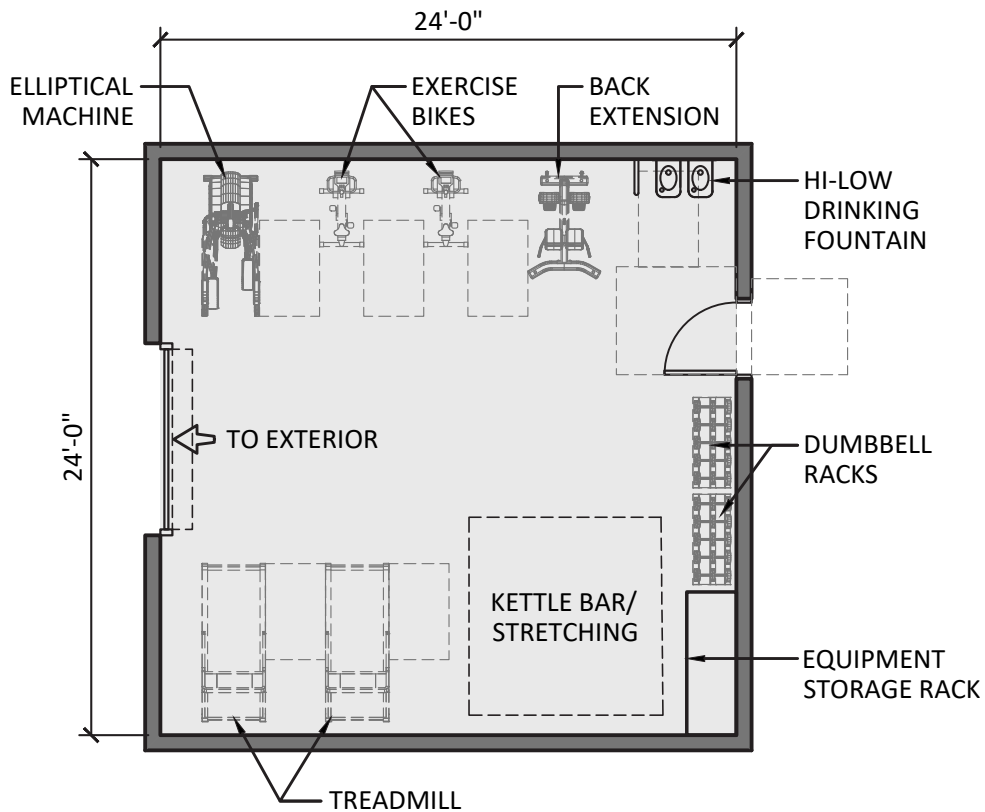


**AMBULANCE DEPLOYMENT CENTER -  
APPARATUS BAY/APPARATUS BAY SUPPORT**



**6. RESTROOM (64 S.F.)**

SCALE: 1/8"=1'-0"

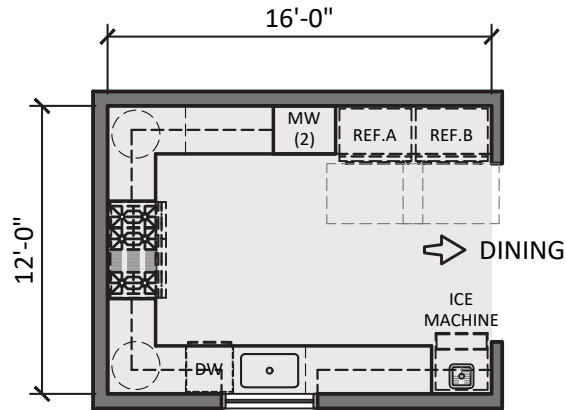


**9. FITNESS ROOM (576 S.F.)**

SCALE: 1/8"=1'-0"

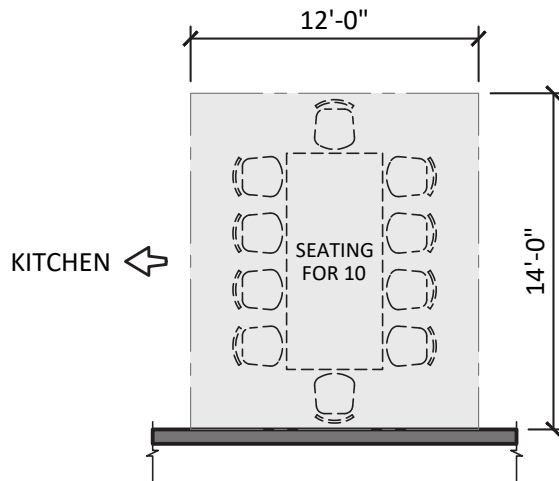


DEPLOYMENT CENTER STAGING AREA



**8. KITCHENETTE (192 S.F.)**

SCALE: 1/8"=1'-0"

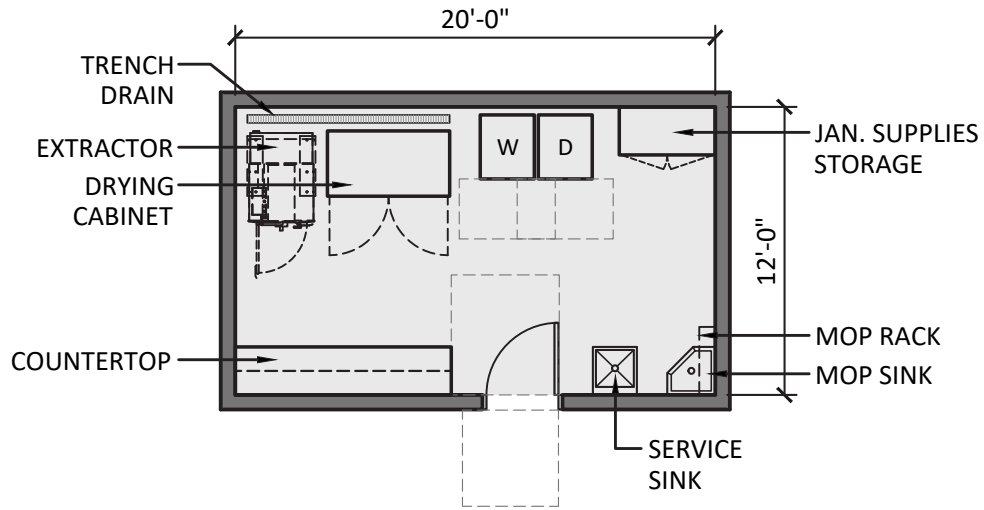


**9. DINING AREA (168 S.F.)**

SCALE: 1/8"=1'-0"

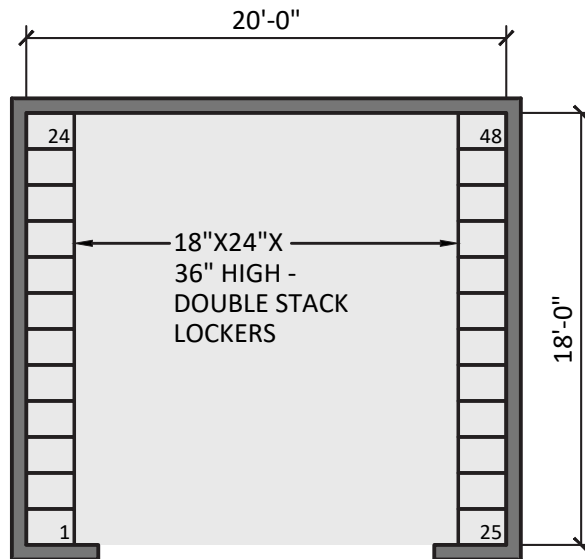


DEPLOYMENT CENTER STAGING AREA



**10. LAUNDRY ROOM (240 S.F.)**

SCALE: 1/8"=1'-0"



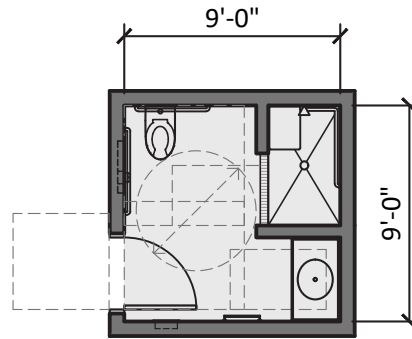
**11. LOCKER AREA (360 S.F.)**

SCALE: 1/8"=1'-0"



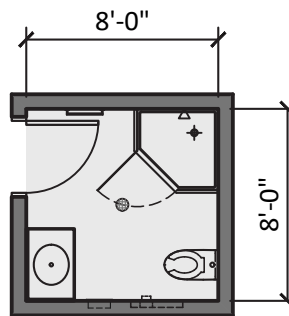


DEPLOYMENT CENTER STAGING AREA



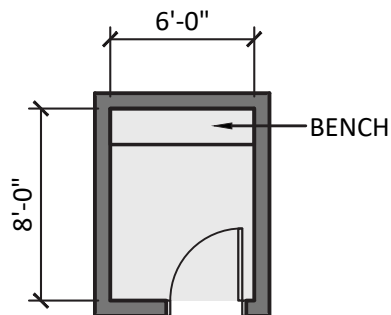
**12. GENDER NEUTRAL BATHROOM/SHOWER ADA (81 S.F.)**

SCALE: 1/8"=1'-0"



**13. GENDER NEUTRAL BATHROOMS - 2 (128 S.F.)**

SCALE: 1/8"=1'-0"



**14. CHANGING ROOMS - 10 (480 S.F.)**

SCALE: 1/8"=1'-0"







**CITY OF BERKELEY  
TRAINING CENTER**

999 CEDAR STREET, BERKELEY, CA 94703

**DRAFT  
MAY 08, 2023**

**PROJECT DESCRIPTION**

The existing training center is colocated with Fire House No. 6 and was built in 1990. Because of its location in a residential neighborhood there are many limitations to the trainings which can be held there and the time in which the trainings can take place. It is also undersized for the current needs of the Berkeley Fire Department. The region (inclusive of the cities of Berkeley, Albany, El Cerrito, Kensington, Richmond, Contra Costa County, and UC Berkeley) is devoid of adequate training space for emergency responders. The closest adequately sized facilities are in Concord and Hayward – far too great a distance to send on-duty staff to train.

The recommendation is to partner with other local municipalities to build a large technical rescue training and education center for this region's first responders.

The ROM Project Budget for the Recommended Option is \$81-90 not including escalation beyond 2024. Note that this cost would be shared with the other participating municipalities.





**BERKELEY TRAINING FACILITY  
CUTTING BOULEVARD SITE**

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**SOUTHEAST VIEW**

08/05/22 | X002



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**OVERALL PLAN**

08/05/2022 | X001

Berkeley Regional Training Facility - Brookside Drive

Draft Program  
6/13/2022

	FUNCTION	COMMENTS	QTY	NOMINAL LENGTH	NOMINAL WIDTH	UNIT NET SF	TOTAL NET SF	GROSS FACTOR	TOTAL GROSS SF
<b>A</b>						<b>INSTRUCTION BUILDING - PHASE 1</b>			
10.1	TURNOUT GEAR - TRAINEE	40 Turnout Gear Lockers	1	19.3 FT x	28.8 FT	555 NSF EACH	555 NSF	35%	749 GSF
10.2	TURNOUT GEAR - INSTRUCTOR	10 Turnout Gear Lockers	1	15.3 FT x	10.0 FT	153 NSF EACH	153 NSF	35%	207 GSF
11.0	DECON		1	29.3 FT x	19.0 FT	557 NSF EACH	557 NSF	35%	752 GSF
11.1	DECON TOILET	Locate near Turnout Gear and Dirty Classroom	2	11.0 FT x	9.0 FT	99 NSF EACH	198 NSF	35%	267 GSF
12.0	DIRTY CLASSROOM	Fit (1) apparatus	1	28.0 FT x	65.0 FT	1,820 NSF EACH	1,820 NSF	15%	2,093 GSF
13.0	UTILITY/MECHANICAL		1	14.0 FT x	10.0 FT	140 NSF EACH	140 NSF	35%	189 GSF
14.0	UTILITY/ELECTRICAL		1	14.0 FT x	10.0 FT	140 NSF EACH	140 NSF	35%	189 GSF
15.0	IT/SERVER		1	14.0 FT x	10.0 FT	140 NSF EACH	140 NSF	35%	189 GSF
16.0	WORKSHOP		1	15.0 FT x	15.0 FT	225 NSF EACH	225 NSF	35%	304 GSF
17.0	SCBA		1	12.0 FT x	11.0 FT	132 NSF EACH	132 NSF	35%	178 GSF
17.1	COMPRESSOR ROOM		1	8.0 FT x	6.0 FT	48 NSF EACH	48 NSF	35%	65 GSF
<b>SUB TOTALS</b>							<b>4,108 NSF</b>	<b>35% AVG</b>	<b>5,181 GSF</b>
<b>B</b>						<b>CLASSROOM BUILDING - PHASE 2</b>			
1.0	SECURE VESTIBULE/LOBBY		1	20.0 FT x	15.0 FT	300 NSF EACH	300 NSF	35%	405 GSF
2.0	TOILET ROOM								
3.0	CLASSROOM	60/30 Students, Dividable into 2 smaller rooms	2	54.5 FT x	38.3 FT	2,085 NSF EACH	4,169 NSF	35%	5,628 GSF
3.1	BREAKOUT ROOM		4	16.0 FT x	12.0 FT	192 NSF EACH	768 NSF	35%	1,037 GSF
4.0	OFFICE SPACES		25						
4.1	SMALL OFFICE	1 occupant	10	10.0 FT x	8.5 FT	85 NSF EACH	850 NSF	35%	1,148 GSF
4.2	MANAGER OFFICE	1 occupant		10.5 FT x	11.5 FT	121 NSF EACH	NSF	35%	GSF
4.3	GROUP OFFICE	4 occupants	4	13.0 FT x	16.0 FT	208 NSF EACH	832 NSF	35%	1,123 GSF
4.4	OPEN OFFICE	16 occupants		26.0 FT x	22.5 FT	585 NSF EACH	NSF	35%	GSF
5.0	CAFETERIA/DINING	40 People	1	41.8 FT x	26.0 FT	1,086 NSF EACH	1,086 NSF	35%	1,465 GSF
6.0	FITNESS	40 People	1	47.5 FT x	25.0 FT	1,188 NSF EACH	1,188 NSF	35%	1,603 GSF
7.0	VR SIMULATOR ROOM	was 'Command Simulation'	1	30.0 FT x	12.0 FT	360 NSF EACH	360 NSF	35%	486 GSF
8.0	DRIVING SIMULATOR ROOM	was 'VR Room'	1	20.0 FT x	16.0 FT	320 NSF EACH	320 NSF	35%	432 GSF
9.0	LOCKER & T/S ROOM	40 Lockers, 6 T/S	1	27.3 FT x	51.0 FT	1,392 NSF EACH	1,392 NSF	35%	1,880 GSF
<b>SUB TOTALS</b>							<b>9,872 NSF</b>	<b>35% AVG</b>	<b>13,328 GSF</b>
<b>C</b>						<b>APPARATUS STORAGE</b>			
1.0	VEHICLE STORAGE		1	108.5 FT x	73.5 FT	7,975 NSF EACH	7,975 NSF	0%	7,975 GSF
1.1	ENGINE		1			NSF EACH	NSF	35%	GSF
1.2	MEDIC		2			NSF EACH	NSF	35%	GSF
1.3	SPRINTER VAN		5			NSF EACH	NSF	35%	GSF

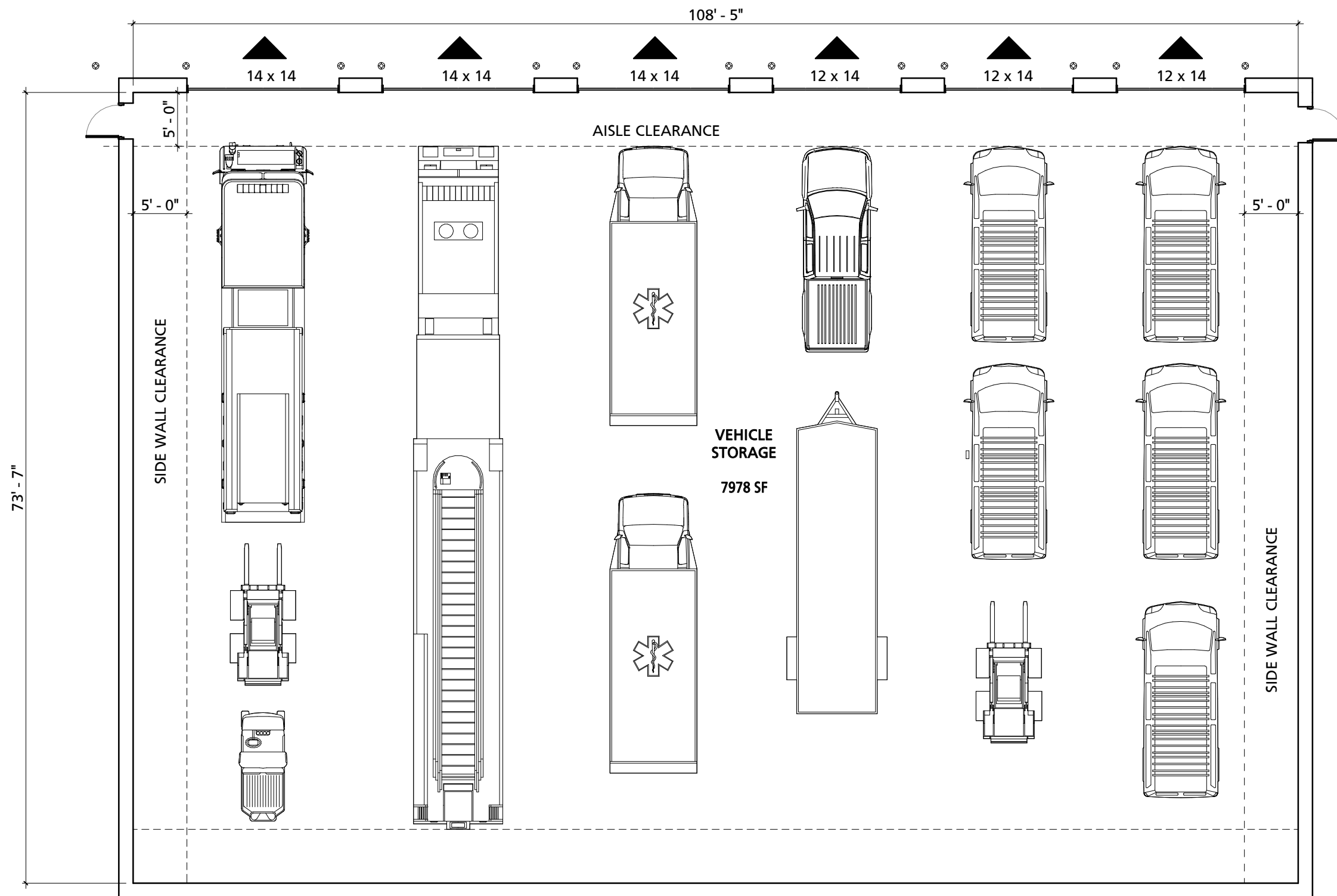
**Berkeley Regional Training Facility - Brookside Drive**

Draft Program

6/13/2022

1.4	STAFF TRUCK		1		NSF EACH	NSF	35%	GSF
1.5	RESCUE TRAILER	30' Tow	1		NSF EACH	NSF	35%	GSF
1.6	TILLER		1		NSF EACH	NSF	35%	GSF
1.7	FORKLIFT		2		NSF EACH	NSF	35%	GSF
1.8	GATOR		1		NSF EACH	NSF	35%	GSF
<b>SUB TOTALS</b>						<b>7,975 NSF</b>	<b>35% AVG</b>	<b>7,975 GSF</b>

<b>D</b>		<b>SITE TRAINING</b>						
1.0	BART STATION		1	30.0 FT x 80.0 FT	2,400 NSF EACH	2,400 NSF	0%	2,400 GSF
2.0	FLASHOVER SIM TRAILER		1		NSF EACH	NSF	0%	GSF
3.0	VEHICLE RESCUE/EXTRACTION		1	100.0 FT x 75.0 FT	7,500 NSF EACH	7,500 NSF	0%	7,500 GSF
4.0	CONFINED SPACE		1	50.0 FT x 50.0 FT	2,500 NSF EACH	2,500 NSF	0%	2,500 GSF
5.0	VENTILATION SIMULATOR		1		NSF EACH	NSF	0%	GSF
6.0	RESIDENTIAL SEARCH AND RESCUE		1	50.0 FT x 50.0 FT	2,500 NSF EACH	2,500 NSF	0%	2,500 GSF
6.1	BASEMENT SIMULATOR						0%	
7.0	BREACHING PROP		1		NSF EACH	NSF	0%	GSF
8.0	SPRINKER LAB		1		NSF EACH	NSF	0%	GSF
9.0	STANDPIPE/HIGH RISE		1		NSF EACH	NSF	0%	GSF
10.0	ELEVATOR PROP		1		197 NSF EACH	197 NSF	0%	266 GSF
12.0	TRENCH RESCUE		1	100.0 FT x 75.0 FT	7,500 NSF EACH	7,500 NSF	0%	7,500 GSF
13.0	HIGH ANGLE RESCUE		1	50.0 FT x 50.0 FT	2,500 NSF EACH	2,500 NSF	0%	2,500 GSF
14.0	DRAFTING PIT		1		NSF EACH	NSF	0%	GSF
<b>SUBTOTALS</b>						<b>25,097 NSF</b>	<b>% AVG</b>	<b>25,166 GSF</b>



**VEHICLE STORAGE**

**BERKELEY TRAINING FACILITY**

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JOB NO:21-000

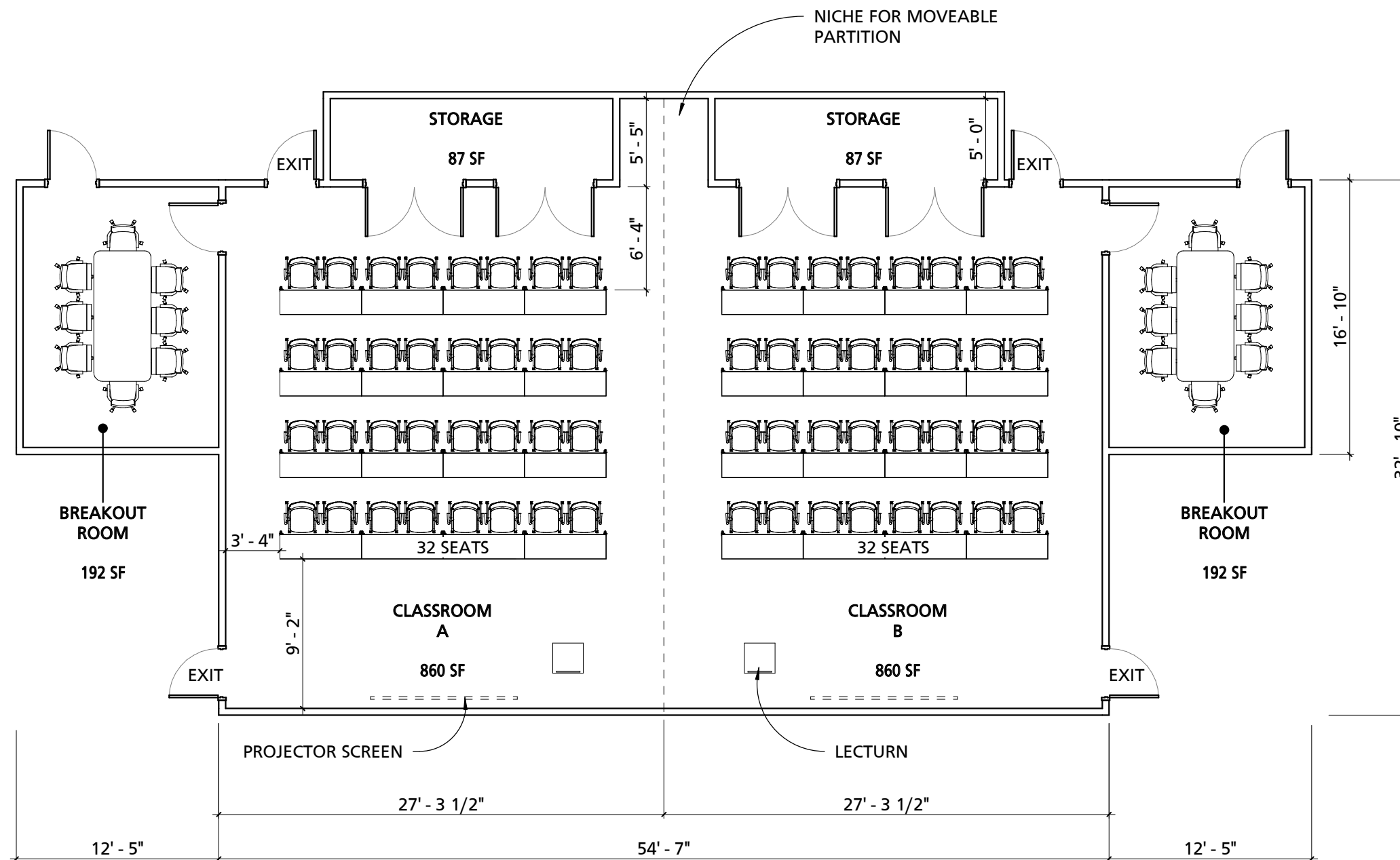
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**06/02/2022**

DWG SCALE:  
**3/32" = 1'-0"**

DWG NUMBER:  
**PR-1**

6/7/2022 5:26:50 PM





**CLASSROOM**

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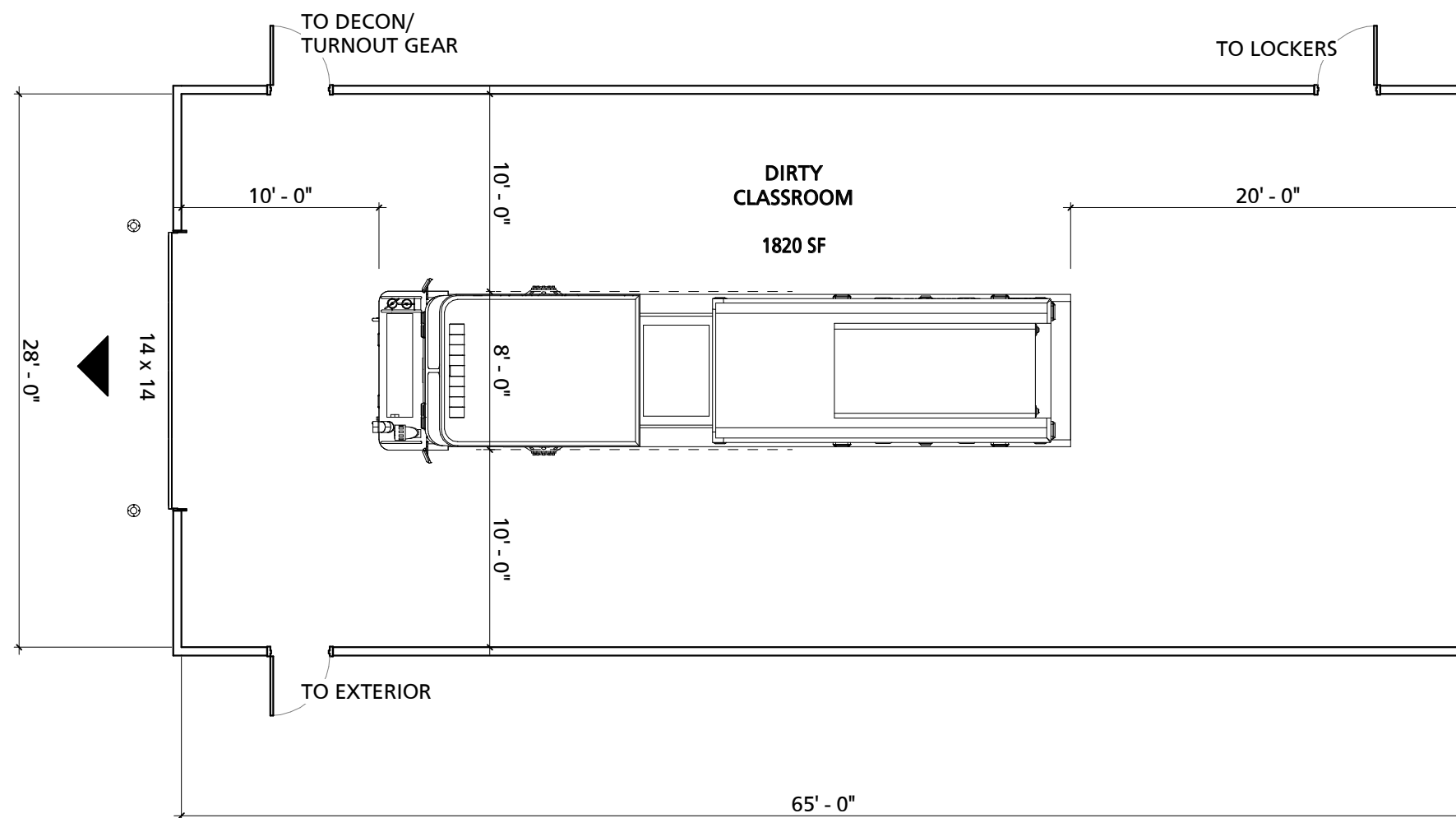
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**06/02/2022**

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DWG NUMBER:  
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**DIRTY CLASSROOM**

**BERKELEY TRAINING FACILITY**

JOB NO:21-000

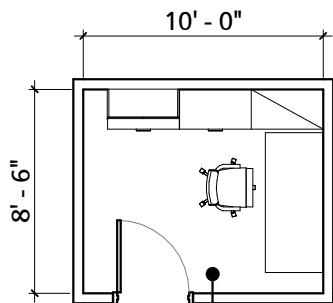
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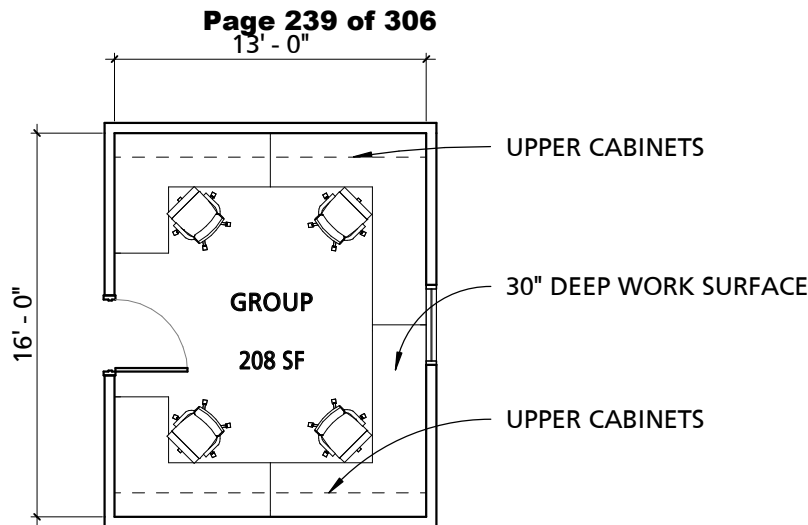
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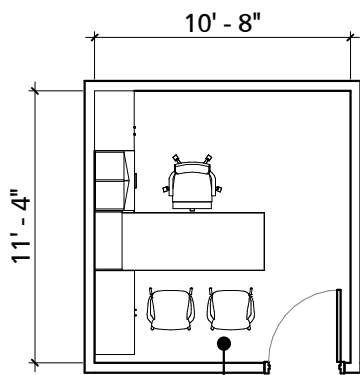
**SMALL OFFICE**

85 SF

**PR-4.1 Office**



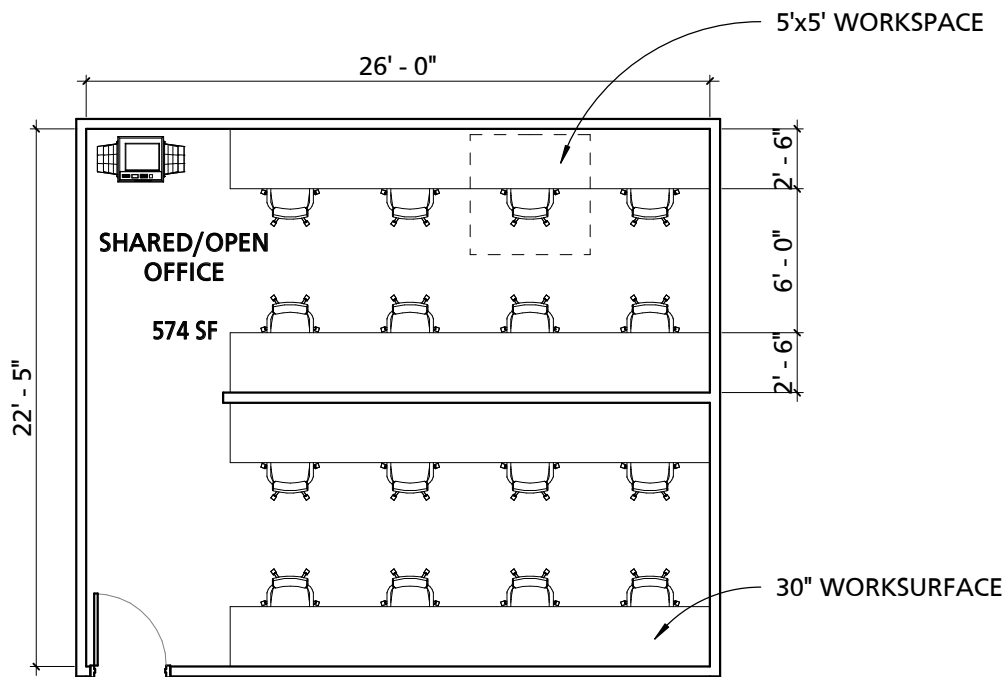
**PR-4.3 Group Office**



**SMALL MANAGER OFFICE**

121 SF

**PR-4.2 Manager Office**



**PR-4.4 Open Office**



ARCHITECTURE + MASTER PLANNING

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DISHWASHER  
REFRIGERATOR/FREEZER

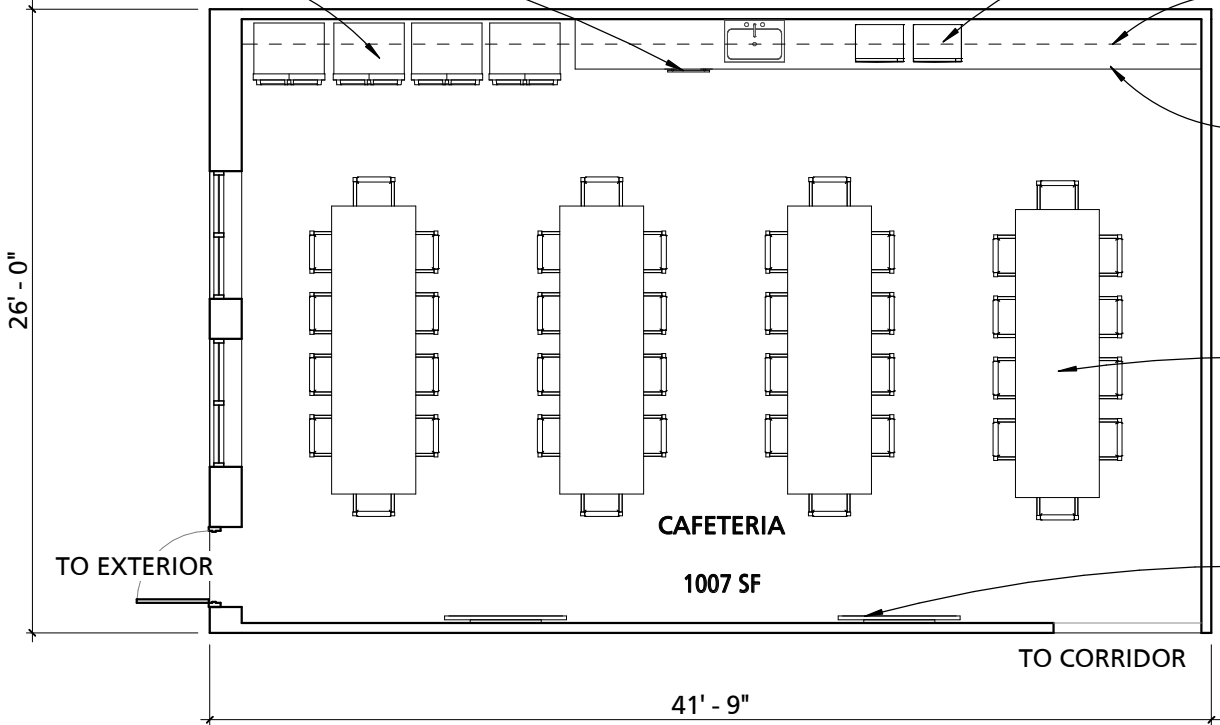
MICROWAVE

WALL CABINETS

COUNTERTOP W/  
BASE CABINETS

DINING TABLES  
(10 SEATS EACH)

WALL MOUNTED TV



CAFETERIA

1007 SF

TO EXTERIOR

TO CORRIDOR

CAFETERIA

BERKELEY TRAINING FACILITY

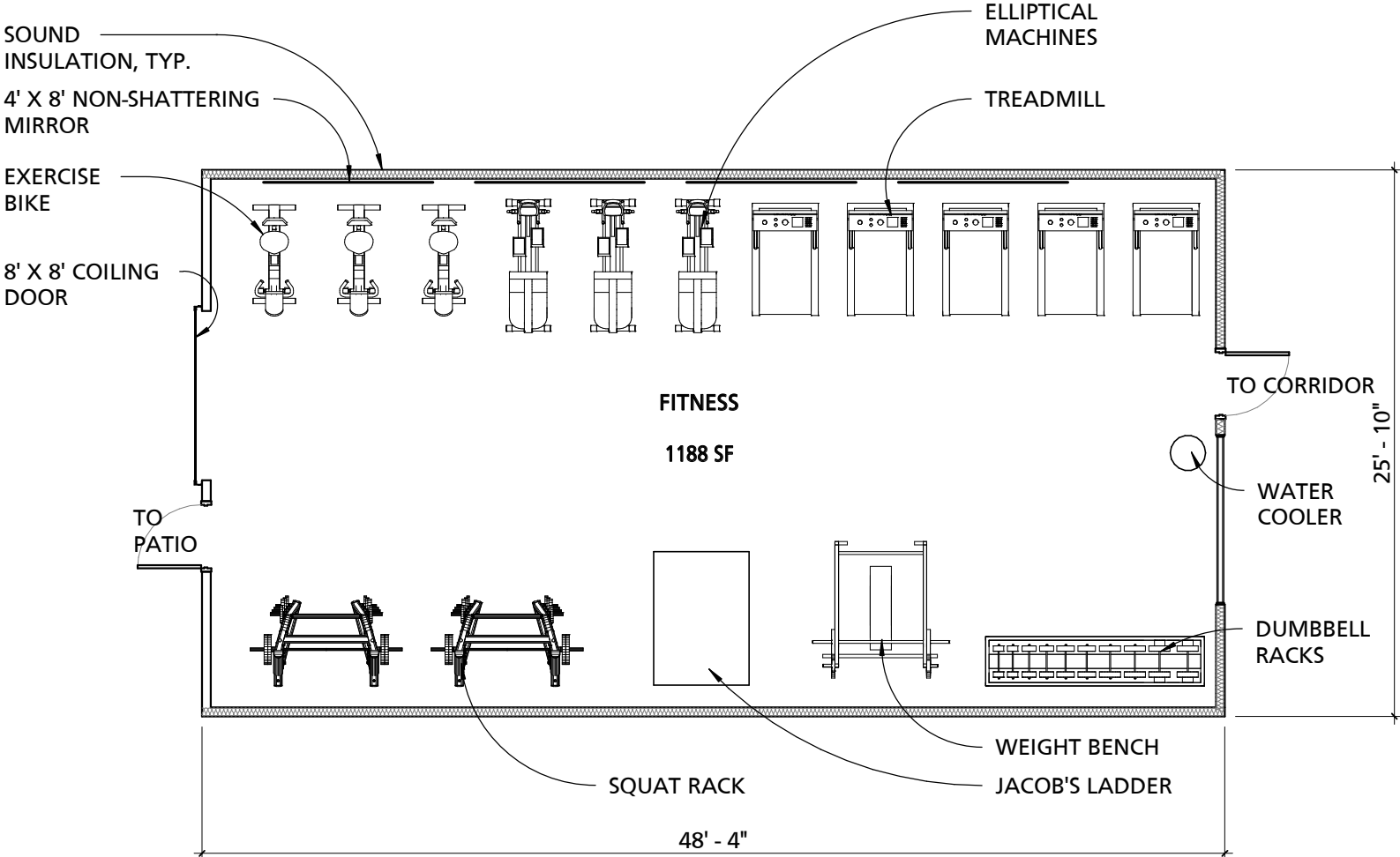
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06/02/2022  
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PR-5.0

6/2/2022 5:27:33 PM



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**FITNESS**

**BERKELEY TRAINING FACILITY**

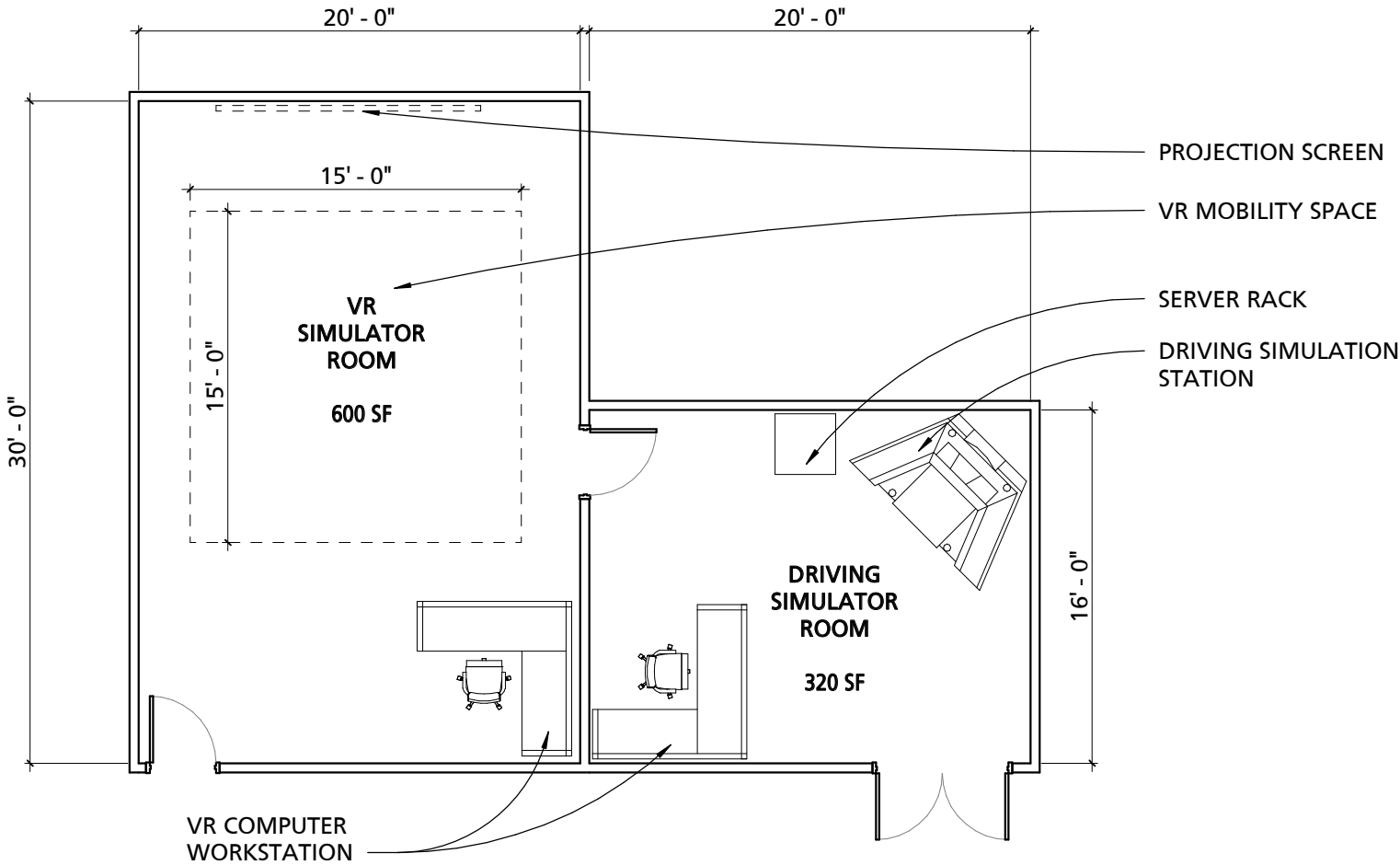
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**PR-6.0**

6/2/2022 5:27:35 PM



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**VR ROOMS**

**BERKELEY TRAINING FACILITY**

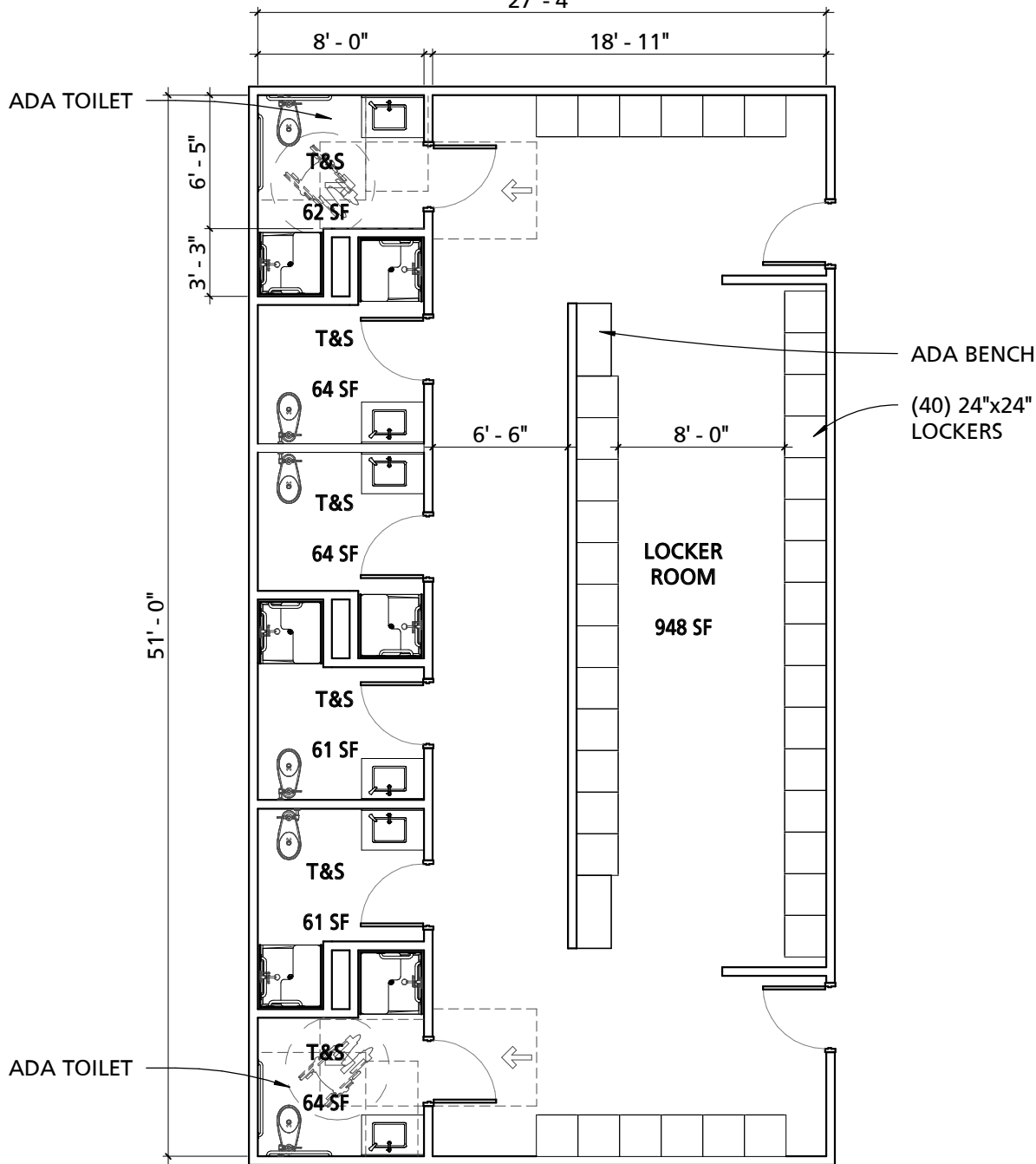
JOB NO:21-000

DWG ISSUED ON:  
06/02/2022

DWG SCALE:  
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DWG NUMBER:  
**PR-7.0**

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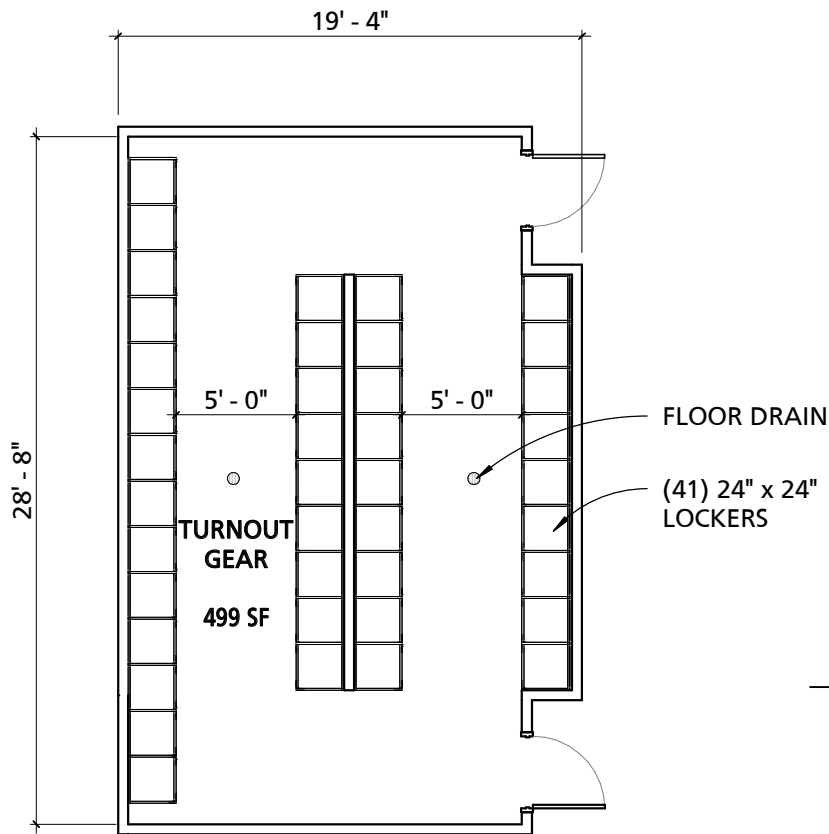
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**LOCKERS**

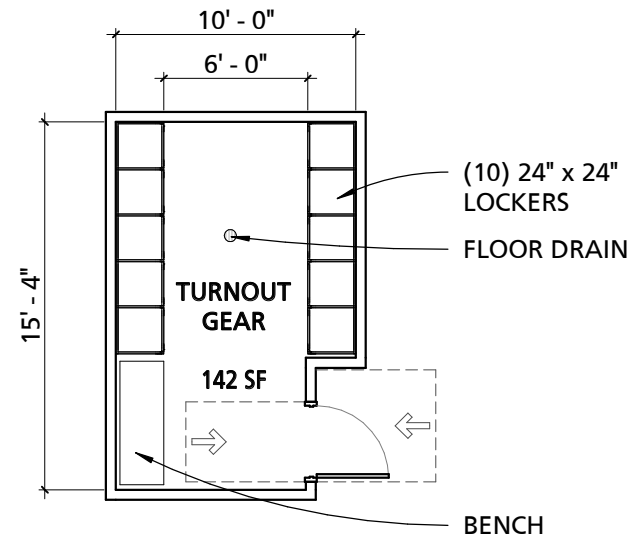
**BERKELEY TRAINING FACILITY**

JOB NO:21-000
DWG ISSUED ON: 06/02/2022
DWG SCALE: 1/8" = 1'-0"
DWG NUMBER: <b>PR-9.0</b>

6/2/2022 5:27:36 PM



**PR-10.1 Turnout Gear - Trainee**



**PR-10.2 Turnout Gear - Instructor**

**TURNOUT GEAR**

**BERKELEY TRAINING FACILITY**

JOB NO:21-000

DWG ISSUED ON:

06/02/2022

DWG SCALE:

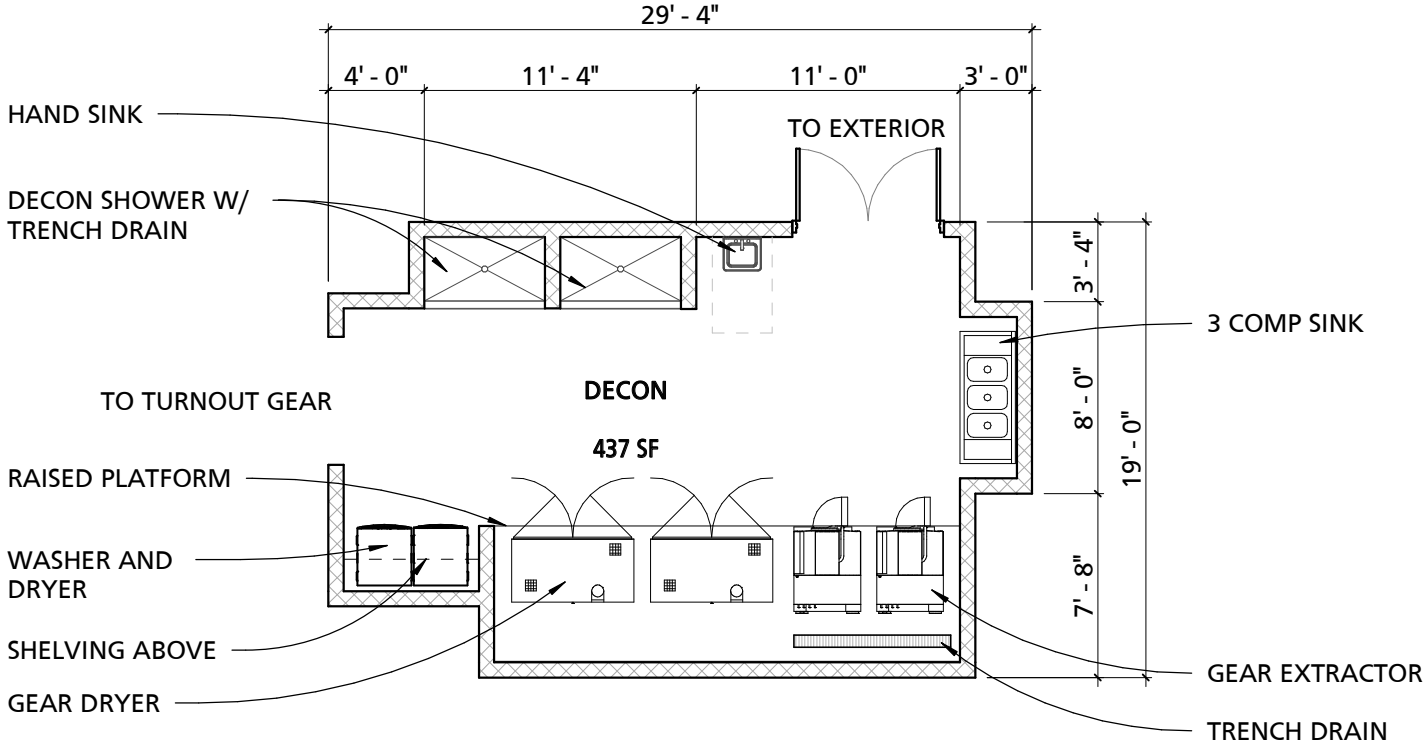
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**PR-10.0**

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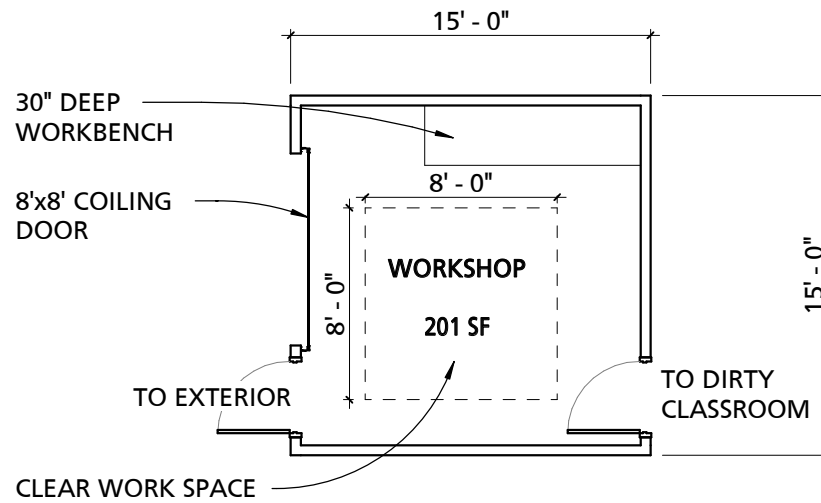


**DECON**

**BERKELEY TRAINING FACILITY**

JOB NO:21-000
DWG ISSUED ON: 06/02/2022
DWG SCALE: 1/8" = 1'-0"
DWG NUMBER: <b>PR-11.0</b>

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**WORKSHOP**

**BERKELEY TRAINING FACILITY**

JOB NO:21-000

DWG ISSUED ON:  
**06/07/22**

DWG SCALE:  
**1/8" = 1'-0"**

DWG NUMBER:  
**PR-16.0**

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## MEMORANDUM

To: Susi Marzuola and Madison Jackson, Siegel & Strain Architects

From: Dena Belzer and Tatum Troutt

Date: November 10, 2022

Project: Berkeley Fire Department Master Plan

Subject: Mixed-Use Fire Station Case Studies

The City of Berkeley Fire Department is in the process of developing an Essential Facilities Master Plan to address the replacement and/or upgrading of current Fire Department facilities. As part of this process, the potential to use “public private partnerships” involving fire stations incorporated into larger mixed-use development is being explored as an option for funding some or all of the cost to provide new or upgraded fire station facilities. Strategic Economics was hired to conduct case studies profiling mixed-use fire stations to determine how transferable these examples could be to the Berkeley context and therefore whether the public/private approach should be considered as a potential funding option.

Mixed-use fire stations are very unusual, thus limiting the potential pool of case studies to draw upon. However, there is growing interest in pursuing this type of development project, particularly in land-constrained and highly urbanized areas. The case studies presented below were identified by the consultant team based on professional knowledge and potential fit with Berkeley Fire Department’s interest in the potential to use new development to help fund fire stations. Information for each case study was collected from official planning documents, local news outlets, CoStar real estate data service, and discussions with key stakeholders. The case studies summarize each project’s development history, funding sources general takeaways, and potential applicability to the Berkeley Fire Department. This memorandum presents the following case studies:

- 1) Fire Station 13, San Francisco, California
- 2) The Station at Potomac Yard, Alexandria, Virginia
- 3) Lincoln Towers in Wilmington, Delaware

Each case study provided valuable context for the prospect of building mixed-use fire stations in Berkeley. The case studies represent diverse market conditions, site needs, funding streams, and challenges, all of which impacted the ability to build these projects. The details of each case study and their applicability to Berkeley are detailed in the body of the memo, but the following points summarize the key takeaways based on the overall differences and similarities among the case studies:

- 1) **Developer contributions to funding mixed-use fire stations are only possible when the private development generates enough value to pay for the extra construction costs without impacting expected rates of return for the overall project.** Both Fire Station 13 in San Francisco and The Station at Potomac Yards involved very large-scale development programs.
- 2) **California's seismic building codes are extremely stringent for public safety buildings.** As a result, if a fire station were to be integrated into a mixed-use building, the entire building would need to meet these high seismic safety standards, making construction costs prohibitive. Other states do not have these same seismic safety issues; therefore, it is not as challenging to integrate a fire station into a mixed-use building.
- 3) **Berkeley could use its community benefits program to help pay for fire stations, but this would create some challenges.** First, developers only provide a community benefits package when they are requesting a rezoning or General Plan amendment that would create a significant uplift in the overall value of their project. Not all development projects contribute community benefits, so this would be a limited opportunity to generate additional revenue for fire stations. Second, community benefits packages in Berkeley typically include offering more affordable housing units or deeper affordability. If developers were asked to contribute towards fire stations instead, the City would have fewer opportunities to produce affordable housing.
- 4) **Each of these projects benefitted from having other funding sources already in place to offset some costs.** In San Francisco, there was already money for the interim operations of a fire station, and in Alexandria and Lincoln, there were various sources of government funding and financing to help pay for components of the construction costs.
- 5) **Given the costs associated with the seismic safety requirements for fire stations in California, pairing affordable housing with a fire station is not cost-effective.** The projects in Alexandria and Lincoln incorporated affordable housing which inherently requires the use of many different funding and financing sources. This is also possible in Berkeley, but the extraordinary costs make combining a fire station and an affordable housing project cost prohibitive. Additionally, tax credits which are used for low-income housing would likely not be awarded to such a high-cost project.<sup>1</sup>

## Fire Station 13: San Francisco, CA

Fire Station 13 is located at 530 Sansome Street in San Francisco's Financial District near Chinatown and the Jackson Square Historic District. Built in 1975, this active fire station serves the Financial District and is one of the busiest fire stations in the City. In the early 2000s, Supervisor Aaron Peskin suggested exploring the potential to redevelop this site with housing, but the idea was not pursued further at the time. After reelection more than a decade later, Supervisor Peskin again introduced the idea in 2017. The proposal was to utilize city controlled buildable air rights to fund improvements to an outdated fire station including improved ventilation and a better layout to improve efficiency for the firefighters.

By 2017, the housing crisis in San Francisco was much more acute than in 2002, so this concept was presented as a potential source for funding affordable housing, as well as for achieving other community benefits including preserving a specific legacy business nearby and modernizing the fire station itself. The potential to capture these community benefits and to enhance to public safety by

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<sup>1</sup> [California Tax Credit Allocation Committee Regulations Implementing the Federal and State Low Income Housing Tax Credit Laws: Section 10317. State Tax Credit Eligibility Requirements.](#)

building a more efficient and effective fire station were recognized as important enough by the community and other stakeholders to enable the concept to gain more traction than it had the first time it was proposed. The combination of the needs of the City and the strong market conditions in San Francisco's Financial District at the time created an ideal opportunity to push this idea forward.

A resolution was introduced by Supervisor Peskin requesting that the City's Real Estate Division issue a request for proposals for the site, and the Board of Supervisors unanimously passed the resolution. In January of 2019, Mayor London Breed and Supervisor Peskin announced the development opportunity.<sup>2</sup> The City's Public Works and Fire departments created specifications for the fire station design to inform developer proposals, and multiple proposals were received and subsequently reviewed by the Fire Commission. Later in 2019, the City chose Related California to redevelop the parcel.

Related California submitted two scenarios for developing the site: one was primarily residential, and the other was primarily commercial. The residential scenario would yield about 250 apartments or condos on top of the fire station, going up 21 stories. The commercial scenario included the fire station, a 200-room hotel, 40,500 square feet of office, 8,000 square feet of restaurants, and a 35,000 square foot fitness center, with the building going up only 19 stories but due to different floor heights, this scenario would be about the same height as the residential scenario. Both scenarios include a fully renovated, seismically enhanced 4-story fire station.<sup>3</sup> The City has approved both scenarios, but as of 2022, the commercial scenario is moving forward.

The property is in the Downtown Office Zoning District, the highest intensity zoning area in San Francisco, and is where the City's most identifiable buildings are located. Related California has hired the architecture firm Skidmore, Owings, and Merrill which has designed other iconic buildings in San Francisco, to provide continuity between the new development and the general architectural character of this specific district. The area immediately around is already built out at densities that are consistent with either of Related California's proposed scenarios, and other strong development activity nearby, including proposals for higher intensity hotel, office, and housing, suggests that there is sufficient market support for this particular project.

The request for proposals issued by the City only included the fire station parcel, but Related California also acquired two adjacent parcels to provide greater design flexibility in the way that the fire station would be integrated with the private uses. This assemblage resulted in a parcel approximately 0.41 acres in size. Initially, the plan had been to build the private uses directly on top of the fire station, however in the final design, the private uses are in a separated component of the building that is suspended above the fire station with a physical gap in-between. This gap enables the fire station to meet extremely high seismic standards required of this use without having to apply these same standards to the remaining components of the building above. Had the private development been built directly on top of the fire station, the private uses would have been subject to the same seismic standards as the fire station. The cost to meet these additional and unnecessary seismic standards would have rendered the entire project infeasible.

Another critical component of this project is that regardless of which development scenario were to get built, either one would be subject to an affordable housing in-lieu fee typically only associated with a residential project. These fee revenues will contribute to funding more than 50 affordable units in nearby Chinatown. Additionally, a portion of the fees from this project will be used to preserve New

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<sup>2</sup> [Mayor London Breed Announces Plan To Redevelop Fire Station 13 With Housing, 2019.](#)

<sup>3</sup> [Project Authorization, 2021.](#)

Asia Restaurant, a legacy business on the site of the affordable housing project planned for Chinatown and which is a culturally significant business for the Chinatown community.

This project will result in providing a new modern fire station that is entirely privately financed. The fire station is projected to cost \$35 million, accounting for 19 percent of the total estimated project cost of over \$184 million, which includes the cost of acquiring the adjacent parcels.<sup>4</sup> However, it should be noted that these costs may increase due to the impacts of COVID-19 supply chain issues on construction costs, but the developer is still planning to move forward. The benefit to the City comes from utilizing the very valuable air rights above the fire station, while maintaining City ownership of the fire station itself. By capturing this value, the City is allowing for underutilized space to fund needed renovations of the station, provide affordable housing fees, preserve a legacy business, and enable a suitable development appropriate to the immediate neighborhood context. The developer benefits from gaining development rights in this highly valuable market location. The significant community benefits have resulted in very little community opposition which has also enhanced the viability of this development.

The case in San Francisco is particularly relevant for Berkeley because both are subject to California's stringent seismic safety codes, but it is important to also recognize that the market conditions influencing the return for the developer are very different when comparing Fire Station 13's location and overall market context with the places in Berkeley where fire stations are located. The key considerations raised by this case study that are potentially relevant to the Berkeley Fire Department Master Plan include the following points:

1. Location and real estate market conditions are critical to the success of a public/private partnership like the one between San Francisco and Related California. The value created from the site's upzoning was significant enough for the Developer to agree to completely fund the fire station's redevelopment and to pay the housing in-lieu fees despite intending to build a commercial project not subject to such fees. This project was possible because the site's use as a single-story fire station underutilized a very valuable location in one of the densest parts of a major global city with a very high-density development pattern and very high real estate values.
2. City input on the design of the project, particularly from fire department stakeholders, is crucial to frontload on the project. Stakeholders interviewed for this case study indicated that fire department stakeholders had extensive feedback on initial preliminary designs for this project related to access, frontage, seismic standards, and efficiency needs specific to emergency services. If the developer had waited to verify the needs of the fire department until later in their own design process, there could have been many wasted costs on engineering and architectural fees due to redesigns that would have been necessary. By ensuring that the needs of the fire department are prioritized at the beginning design stages, all stakeholders involved can save time and money from avoiding oversights and extensive redesigns.
3. When redeveloping an existing fire station with a mixed-use project that will include a new fire station, it is critical to create a plan to prevent disruption of services. Not planning this in advance can disrupt service and potentially be very costly. The San Francisco project was able to address this challenge because the Fire Department already had funding and plans in place for maintaining fire operations when a fire station is being rebuilt due to other stations throughout the city also undergoing renovations and seismic improvements. The

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<sup>4</sup> [San Francisco Business Times, 2021.](#)

funding and plans for continuous operations are expected to still be available when construction commences for the new Fire Station 13.

## The Station at Potomac Yard: Alexandria, VA

Potomac Yard includes approximately 295 acres and is located in northeastern Alexandria, Virginia just south of downtown Washington D.C. The Station at Potomac Yard, the City's mixed-use fire station and housing development located at 650 Maskell Street, was one of the first developments in Potomac Yard. The overall Potomac Yard site had been a rail yard that began operating in 1857. Rail operations ceased in 1987, and the property owner at the time worked with the City to begin envisioning different uses for this site as part of the citywide comprehensive planning process, which ultimately was not adopted, and at the same time, the community began pushing for a mixed-use neighborhood.

In 1992, the Potomac Yard Small Area Plan was approved by the Alexandria city council, establishing the vision guiding residential and commercial development in the area. The 1992 Area Plan allowed for approximately 12 million square feet of development with a combination of office, retail, hotel, and residential uses divided into sub-districts or "land bays" with each land bay including its own land use mix. The property owner proposed two initial ideas for this site including a football stadium and the United States Patent and Trade Office, but neither of these proposals passed the planning commission. Ongoing discussions with stakeholders and the community regarding allowable development prompted an update to the area plan by the late 1990s which ultimately lowered the overall allowable development capacity to approximately 8 million square feet.

Following the two failed proposals submitted by the property owner, in 2004 two major developers joined forces to purchase the land and create the Potomac Yard Development LLC. The master developer and the Potomac Yard Planning Commission were beginning work to realize development plans by 2005.<sup>5</sup> At the time of initial plan adoption, there was very little development in the areas immediately surrounding Potomac Yard except for a few small apartment complexes and a bit of freestanding retail, but the planning process, which had lasted nearly a decade, garnered strong community and market interest. The zoning for the Potomac Yard site was designated as a Coordinated Development District which was unique compared to the nearby areas which were primarily zoned for various levels of residential intensity with much of the city being zoned as low-density residential.

By 2006, the master plan had evolved to include enough development potential to warrant the need for additional on-site emergency services. In particular, there was a need identified for a fire station to serve the new population with acceptable response times. The developers agreed to provide an approximately **one-acre parcel** of land adjacent to the neighborhood and \$6.6 million in financial support for the construction of a new fire station that could support the required emergency service activities. This decision was beneficial to the developer because, otherwise, they would have needed to reconfigure the master plan design to accommodate the emergency services within the area, instead of directly adjacent to it, resulting in a reduction in developable area or they would have needed to reduce development overall in order to meet demand with existing emergency services. This also allowed for the developer to proceed with their planned timeline and project phasing. The fire station was planned to be 21,953 square feet including four bays, offices, day spaces, operational

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<sup>5</sup> For more information on the development history of Potomac Yard, see [History of Land Use and Planning in Potomac Yard](#), [North Potomac Yard Small Area Plan Appendix I](#), and [Building The Station at Potomac Yard: A Model for Public/Private Partnership](#).



support spaces, on-site training features, private bunk rooms and lockers for 15 fire fighters, and 20 parking spaces in a below grade garage.

Government stakeholders saw the opportunity to gain two benefits with one development by utilizing the air space above the fire station to build residential units. Eventually, this concept evolved into using these air rights to provide additional affordable housing for the city. Not only did the land donation provide cost savings for undertaking an affordable housing development, but it was also an opportunity to build up instead of further out. This was important to the community for maintaining the mixed-use urban feel of the planned development. The plan was to build four stories of housing directly over the fire station with a small amount of ground floor commercial space. To mitigate concerns regarding noise impacts on future residents, the design included a concrete buffer between the fire station and the residential space and specific window and window frame designs. Note that unlike Fire Station 13 in San Francisco, the Station at Potomac Yards did not have to meet very high seismic safety

The Station at Potomac Yards was built in 2009 as a 100 percent subsidized housing development over the fire station. It includes 64 one-, two-, and three-bedroom units, a community meeting space, garden terrace with a community garden that provides free produce for residents, and underground parking. Forty-four of the units are set aside for households earning less than 60 percent Area Median Income (AMI) with the remaining units affordable to households at or below 80 percent AMI, and housing vouchers are accepted. The entire project, including the housing, fire station, and commercial space, is LEED and Earth Craft certified.

Getting the project built was a successful public private partnership between the City of Alexandria, Potomac Yards Development LLC, and the Alexandria Housing Development Corporation. Today, the housing is operated and maintained by the Alexandria Housing Development Corporation, and the fire station is operated and maintained by the City of Alexandria. The two entities operate using a condominium governance structure but with some shared responsibilities and spaces. As shown in FIGURE 1, the project was able to utilize a variety of sources of financing and funding, and FIGURE 2 demonstrates how the financial resources were allocated. Notably, this project was the very first use of the Low-Income Housing Tax Credits (LIHTC) in Alexandria. Additionally, the Developer donated the land for this project which, although not captured in the sources or uses below, is a significant contribution to the feasibility of the project given that the value of the land at that time was approximately \$3 million.

FIGURE 1. SOURCES OF FUNDING AND FINANCING

Low Income Housing Tax Credit Equity (a)	\$8,626,657
Virginia Housing Development Authority Construction/Permanent Loan	\$8,350,000
Potomac Yards Development LLC Grant for Fire Station (b)	\$6,600,000
Potomac Yards Development LLC Voluntary Affordable Housing Contribution	\$6,000,000
City of Alexandria Loan to Alexandria Housing Development Corporation (c)	\$1,900,000
City of Alexandria Grant for 4 <sup>th</sup> Fire Bay LEED Certification	\$1,000,000
Alexandria Housing Development Corporation Deferred Developers Fee	\$880,000
Potomac Yards Development LLC Lease Income	\$363,000
Potomac Yards Development LLC Contribution to Site Work and Open Space	\$275,000
<b>Total</b>	<b>\$33,994,657</b>

Source: City of Alexandria.

Notes:

- (a) Awarded \$1,027,000 and sold at 0.84
- (b) This "grant" is a contribution from the developer.
- (c) Included additional affordable housing contribution from Potomac Yards Development LLC and City of Alexandria Capital Improvement Project Funds.
- (d) These figures are not inflation adjusted.

FIGURE 2. USES OF FUNDING AND FINANCING

Construction Hard Costs (a)	
Housing (b)	\$18,297,138
Fire Station	\$9,200,000
Retail	\$800,000
Soft Costs (c)	\$2,392,519
Architectural and Engineering Costs (d)	\$1,280,000
Alexandria Housing Development Corporation Developer Fee	\$1,750,000
Tax Credit and Loan Fees	\$275,000
<b>Total</b>	<b>\$33,994,657</b>

Source: City of Alexandria.

Notes:

- (a) Includes costs for underground parking garage with 142 spaces at \$51,000 each.
- (b) Cost per residential unit was approximately \$387,000.
- (c) Soft costs include construction management, permits and fees, insurance, transaction costs, legal, accounting, reserves, and more.
- (d) Architectural and engineering costs include consultant studies, value engineering, contract administration, and LEED AP.
- (e) These figures are not inflation adjusted. Construction costs have risen significantly since the time of this project.

Key findings from this case study provide a few lessons learned for other mixed-use fire station projects, including:

1. Developer contributions in the form of land donations and financial support made a significant impact on the ability to fund this project. This is an especially important consideration when including affordable housing units due to the costliness and complexity of building these units. Without the land donation, millions of dollars in additional funding would have been needed in order to purchase nearby land, or development capacity would have needed to be reduced.
2. Consideration of the appropriate parking ratios are important for making this type of project work financially. According to stakeholders interviewed for this case study, the project may have saved money by spending more time considering the correct parking needs for their project instead of applying the citywide parking ratio that was in place at that time. This project is widely considered overparked.

3. If incorporating affordable housing units, careful consideration of the affordability levels is important. Stakeholders interviewed for this study indicated that they decided to include” units priced at the 80 percent AMI level, but later learned that there was greater demand units at the 60 percent AMI level. These affordability thresholds impacted their ability to qualify for certain governmental financing., Ultimately, the project may have received additional funding if it had incorporated more deeply affordable units instead of workforce units.
4. Stakeholders in this case study also recommend that if utilizing a split governance structure, it is beneficial to consider responsibilities for operations and maintenance of shared spaces and building elements upfront in order to appropriately balance costs.

## Lincoln Towers: Wilmington, DE

Lincoln Towers is a 100 percent affordable housing development built on top of a fire station located at 1800 N Dupont Street in the Trolley Square neighborhood of Wilmington, Delaware. Previously, this 0.7-acre site was public housing that was built in the 1970s, but it was in very poor condition by the early 2000s. The public housing on this site was demolished in 2010, and the new development broke ground in 2011. The site was considered by government officials and community stakeholders as an important spot for maintaining affordable housing. The addition of the fire station was considered a prime opportunity to address two community needs in one unified project. The fire station replacement was needed because the one serving that area, located just a few blocks away, had been in continuous operation since the 1800s and needed to be adapted to modern day operational needs.

The site is located in the lively Trolley Square neighborhood which has easy access to restaurants, parks, transit, and is generally considered one of the most desirable neighborhoods in Wilmington. This site is zoned R-5-C: High density residential apartments. The surrounding area is zoned for neighborhood shopping with some residential zoning specific to rowhouses. According to data from the real estate data service CoStar, at the time of this development there was very little active construction of multifamily development projects in the area, but of the developments that were occurring, most were relatively large, with more than 100 units each. The majority of the other developments in the area at this time were retail uses. However, because this was a public housing redevelopment, market conditions did not have an impact on the financial viability or need for this project.

The 8-story development includes 88 one- and two-bedroom apartments for low-income seniors ages 62 and older. The housing is a mix of traditional public housing and units that are set aside for Section 8 voucher holders. Amenities for residents include a fitness center, computer lab, community space for supportive and social services, and underground parking. The fire station component of the development accommodates 16 firefighters and four battalion chiefs. The building is a “green” development in that it uses high energy efficiency systems and materials throughout.

Lincoln Towers is jointly operated with the City of Wilmington managing the fire station and the Wilmington Housing Authority managing the housing units. The project was developed by Michaels Development Company and the Wilmington Housing Authority utilizing a number of funding streams from the City of Wilmington, Prestige Affordable Housing Equity Partners, Delaware State Housing

Authority, and the United States Department of Housing and Urban Development (HUD). The development cost approximately \$27.5 million and utilized the following sources<sup>6</sup>:

- Approximately \$10 million in “green grant” money from the American Recovery and Reinvestment Act
- Approximately \$3.5 million from the City of Wilmington for the fire station
- 4% Low Income Housing Tax Credits
- Tax exempt bonds issued by the City of Wilmington
- Federal Home Loan Bank Funds
- Wilmington Housing Authority Replacement Housing Factor Funds, which are funds available from HUD for public housing authorities that have demolished public housing for the sole purpose of developing new public housing

Key take aways from this case study include the following:

1. Having the publicly owned land provided an important opportunity to build a new fire station in addition to replacing the public housing.
2. The grant from the American Recovery and Reinvestment Act incentivized the green building, but it was also essential to the project’s success.
3. Other funds were available to build this project because it was a public housing replacement. Without these sources, the project could not have been built. A layered funding approach, which is typical for affordable housing projects, was important here because there was no “value” to be captured from a private development component.

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<sup>6</sup> [Affordable Housing Finance, 2014](#); [Delaware Business Now, 2013](#).

May 16, 2023 – *Berkeley City Council Presentation DRAFT*

# Berkeley Fire Department Master Plan

## Findings Presentation

Siegel & Strain Architects  
Mary McGrath Architects



# BFD Studies and Reorganization

January 2020 Fire Chief Staff Report which identified need to study Operations, Response Times, and create a Facilities Master Plan.

- The draft Standards of Coverage analysis and report prepared by Citygate Associates (first ever assessment)
- Internal Operations Reorganization discussions and plan
- BFD Facilities Master Plan, prepared by Siegel & Strain Architects and Mary McGrath Architects, 2022 - 2023



# Purpose of BFD Facilities Master Plan

- Evaluate aging and outdated facilities
- Identify operational changes and impact on facilities
- Integrate health, safety and personnel need

## Goals of BFD Facilities Master Plan

- Make the most conservative improvements possible that meet goals
- Improve public safety by addressing current and projected needs
- Comply with industry standards and align with best practices
- Support evolved mission now and into the future

# Presentation Outline

- Facility Background
- Operational Changes
- Methodology
- Site Studies and Recommendations
- Priorities and Phasing





# Original Facilities

BFD is operating in facilities built between 1960 and 2010 with the majority built in the 1960's. Most were designed as neighborhood fire stations with:

- A single fire engine
- Three personnel per shift
- Limited space for expansion, storage, and future needs.



# Operational Changes – Evolving Mission of BFD

1980	1990s	2000	2010	2015-2020
Structure Fires (Low Rise)	Structure Fires	Structure Fires	Structure Fires	Structure Fires
Fire Prevention	Fire Prevention	Fire Prevention	Fire Prevention	Fire Prevention
	Emergency Medical	Emergency Medical	Emergency Medical	Emergency Medical
	Disaster Preparedness	Disaster Preparedness	Disaster Preparedness	Disaster Preparedness
	Hazardous Materials	Hazardous Materials	Hazardous Materials	Hazardous Materials
	Wildland Firefighting	Wildland Firefighting	Wildland Firefighting	Wildland Firefighting
		Weapons of Mass Destruction	Weapons of Mass Destruction	Weapons of Mass Destruction
		Vehicle Extrication	Vehicle Extrication	Vehicle Extrication
		Technical Rescue	Technical Rescue	Technical Rescue
			Active Shooter	Active Shooter
			Water Rescue Swimmer	Water Rescue Swimmers
				Routine Urban Interface Firefighting
				Vocational Education
				Boat Operations
				Pandemic Response
				Community Response Medicine
				EV Fires & Battery Management
				<u>High Rise/Tall Building Firefighting</u>

# Operational Changes - Apparatus and Specialty Units

Since the 1960's Berkeley's fire operations and equipment have changed.



- Firefighters have moved from the tailboard to inside, seated and belted
- Addition of Ambulance Service with interns
- Addition of Wildfire Urban Interface program with crossed staffed units (Type VI and water tankers)
- Addition of specialty equipment and units including air units, hazardous materials units, ATV's, and a Water Rescue program.



# Modified Facilities

Since their original construction in the 1960s, the older stations have been renovated and changed to accommodate:

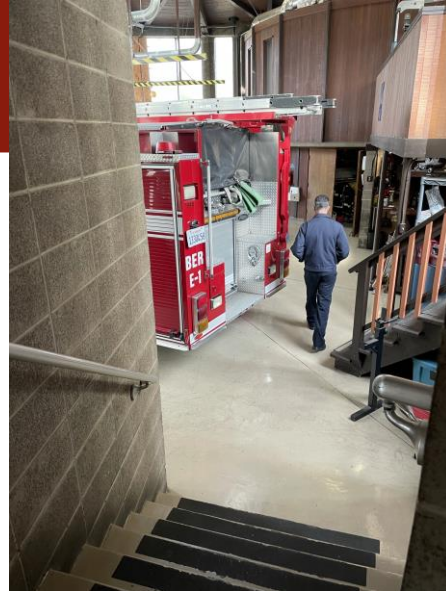
- Seismic upgrades in the 1990's
- Additional units and staffing without adding or expanding the spaces for privacy, health and safety protocols.
- Ongoing minor upgrades and maintenance including lighting, kitchens, restrooms and the like.



# Outdated Facilities

Facilities are approaching end of useful life.

- Limited expansion space at stations
- Stations do not meet health safety standards
- Stations are not hazards ready
- Hose drying towers are obsolete
- Stations do not support the evolving culture of the fire department



# Operational Changes - Response and Delivery Changes

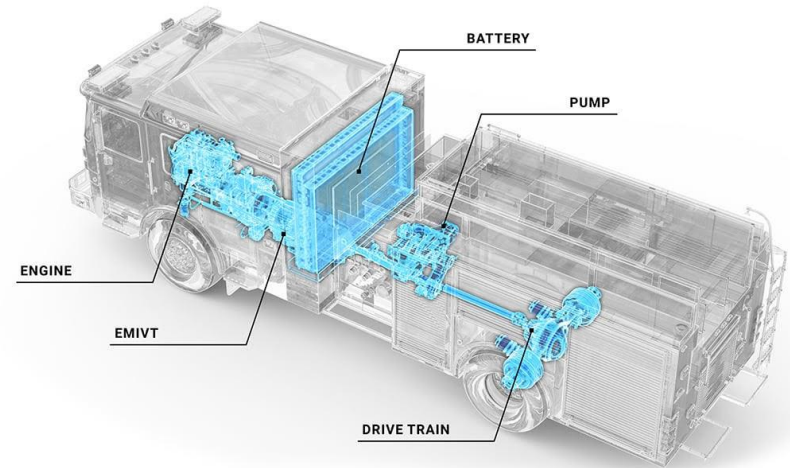
The Citygate Standards of Coverage report and Internal Operations Reorganization efforts identified need for additional operational changes and space accommodations for:

- Additional Ambulances
- Community Paramedic Program (Mobile Integrated Paramedic, MIP)
- Expanding administrative for WUI and EMS
- Larger dispatch center to allow for triaging of calls and pre-arrival instructions (requires fire to vacate 2100 HQ)
- Future Battalion Chief (Recommended by Citygate, proposed at Station 1)
- Increased staffing to address changing risk/demand from climate change & development

# Operational Changes - Electrification

The City and State are moving towards all electric buildings and vehicles.

- New Stations are required to be all electric.
- Electric charging stations will be necessary for BFD electric vehicles and apparatus, and for staff's personal electric vehicles.
- Public safety buildings will need to function off the grid in emergency situations and power outages.



# Health, Safety, and Personnel – Decontamination

Significant health and safety concerns related to carcinogens from turnout gear and equipment, and the overall air quality at Fire Stations have long been identified as unsafe. Since the 1960's the fire service has started to implement best practices to combat this issue:

- Dedicated turnout rooms with personnel decontamination and turnout cleaning facilities.
- Reorganized path of travel to and from the apparatus bay for decontamination between each call. (Known as the "Hot, Warm and Cool" zone organization.)
- Hands-free medical cleanup facilities
- Dedicated physical fitness rooms (not in apparatus bays), and airlock air separation between apparatus bay and living/office quarters
- Direct capture or similar vehicle exhaust systems in apparatus bays (Completed in 2001)





# Health, Safety, and Personnel – Inclusion & Privacy Considerations

Since the 1960's there have been significant changes in the workforce and work environment driving the need for increased privacy in the fire stations in the living and office environment:

- Gender neutral restrooms
- Single occupancy bedrooms
- Dedicated Captains' offices
- Accessible accommodations



# Methodology

The planning team's approach for developing the master plan was to:

1. Study existing facilities and review provided construction drawings;
2. Document the fire department's program needs;
3. Lay out the program needs over the existing sites and buildings plans;
4. Initial planning efforts attempted to accommodate programmatic needs through renovation;
5. When renovation was not possible, the design team studied replacement options.

## High level findings:

- **The new Mobile Integrated Paramedic program (or MIP) and additional ambulances could not be accommodated on existing sites**, whether renovation or new construction. This program element was removed from the station scope due to space constraints and needs to be located at a different (new) facility.
- Reserve apparatus take up a lot of space at stations. These could be relocated to a new warehouse location which could also facilitate ongoing maintenance.
- Parking was a variable for the replacement options. Some sites accommodate parking better than others.

# Renovation Approach - Space Addition and Arrangement Priorities

- Provide private sleeping rooms for all on-duty staff
- Provide private gender-neutral restrooms and increase numbers based on added staff.
- Provide dedicated Turnout storage, decontamination and proper paths of travel
- Provide dedicated Fitness Room (out of apparatus bay/exhaust)
- Provide office space for on-duty supervisor
- Increase size of kitchen, dining and dayroom to accommodate added staff.
- Add apparatus bays for future units (Station 1 and 4)



# Replacement Approach – New Construction

- Capture 100% of operational program including new units apart from parking.
- Add as much parking as possible, including options for fully parked stations.



# Mixed Use Case Study

As part of the master plan, economics planner Strategic Economics researched three mixed-use projects with affordable housing and a fire station.

Fire Station 13, San Francisco, CA



Potomac Yard, Alexandria VA



Lincoln Towers in Wilmington, DE



# Mixed Use Case Study Findings

Strategic Economics found that given the costs associated with the seismic safety requirements for fire stations in California, pairing affordable housing with a fire station is not cost-effective in Berkeley.

- Developer contributions to funding mixed-use fire stations are only possible when the private development generates enough value to pay for the extra construction costs without impacting expected rates of return for the overall project.
- Each project studied benefitted from having other funding sources already in place to offset some costs.
- California's seismic building codes are extremely stringent for public safety buildings making them difficult (and expensive) to pair with other uses.

# Site Studies & Recommendations

- **Stations 1 – 6**
- **Division of Training**
- **Fire Department Headquarters**



# Fire Station Space Needs

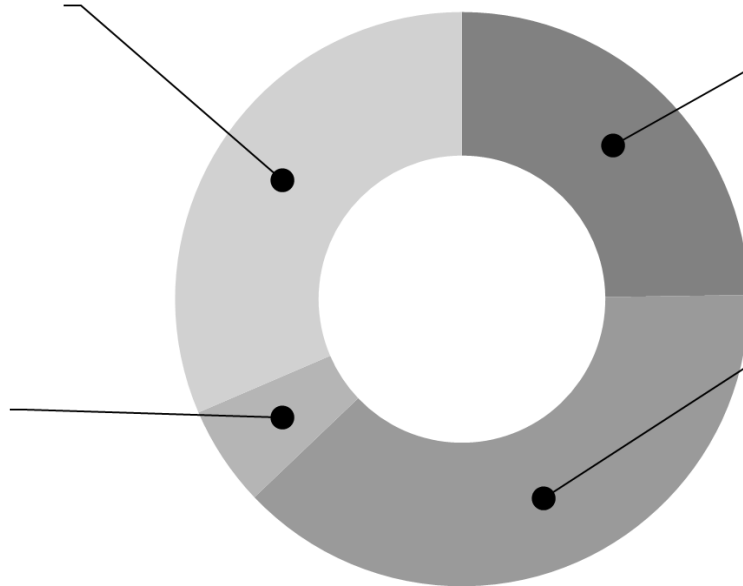
## TYPICAL STATION AREA BREAKDOWN

### UTILITY/SUPPORT AREAS

- 31% > Mechanical Room  
> Electrical Room  
> Communications  
> Equipment Room  
> Circulation  
> Storage

### OFFICE/ PUBLIC SPACE

- 6% > Public Lobby and Restroom  
> Watch Office  
> Supervisor Office



### LIVING QUARTERS

- 25% > Kitchen  
> Dining  
> Day Room  
> Bedrooms  
> Bathrooms  
> Laundry  
> NEW Fitness Room 4% of total

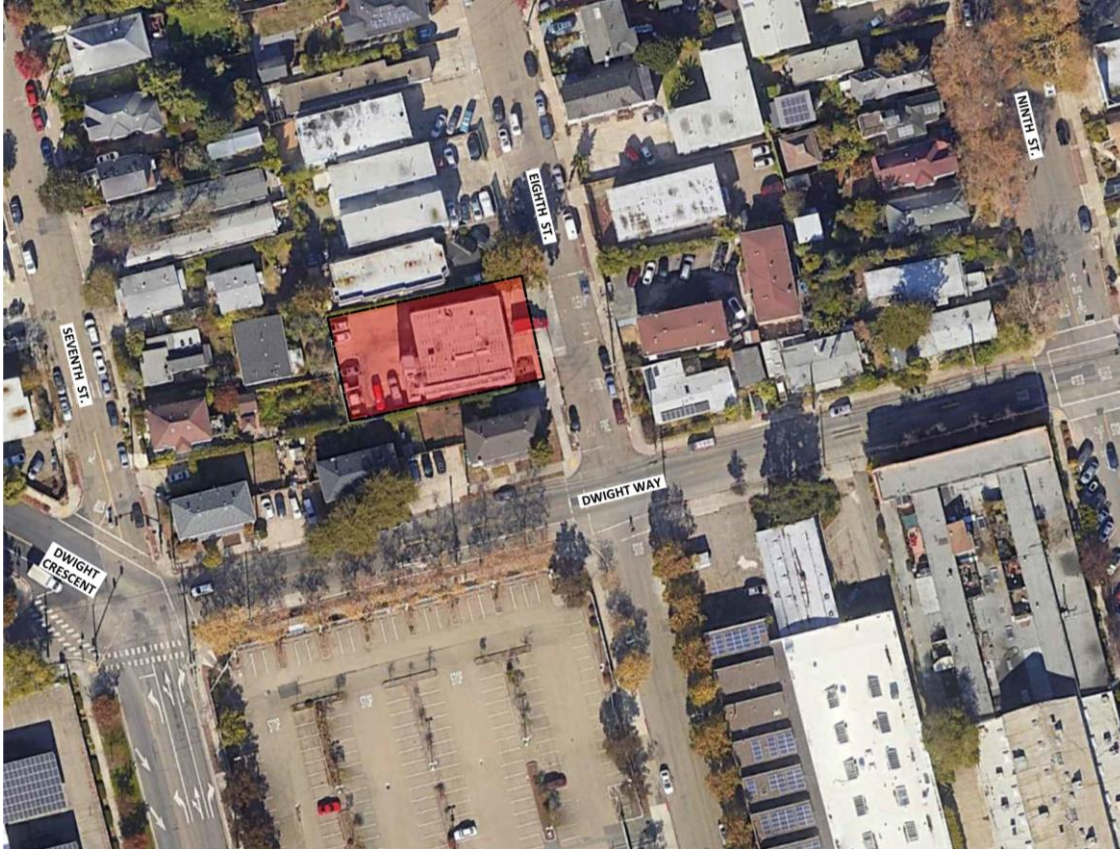
### APPARATUS BAYS + SUPPORT

- 38% > Apparatus Bay  
> Medical Supply  
> Clean Up  
> Workshop  
> Restroom  
> NEW Turnout Gear Room 7% of total



# Station 1 Overview - 2442 Eighth Street

Existing – 5,410 sf 2 story building



Fire House Company Make-up – Staffing Per Shift	Current	Need
Engine 1 – Captain, Engineer, Firefighter/Paramedic	3	4
Medic 1 (Ambulance) – Medic, EMT	2	2
Future Additional Ambulance/Future Mobile Integrated Paramedic (MIP)	0	2
Future Battalion Chief	0	1
Medic Trainee	1	1
Ambulance – Reserve	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING</b>	<b>6</b>	<b>11</b>

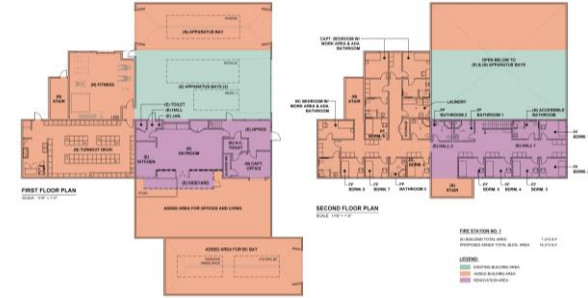
# Station 1: Option 1

15,700 sf 2 story building renovation & additional area  
Purchase three adjacent properties, expand and renovate station.



**SITE / FIRST FLOOR DIAGRAM**

## ROM Project Budget \$34-40M

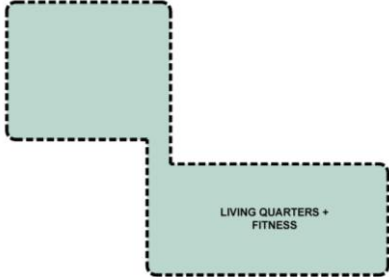
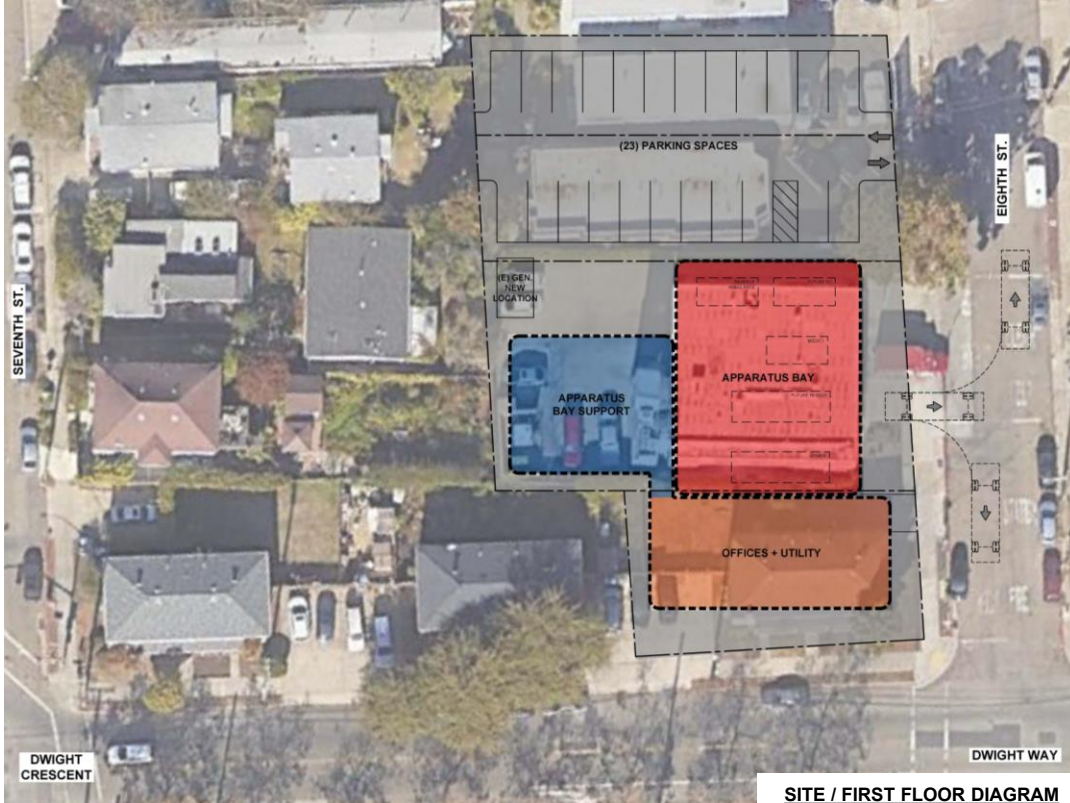


- LEGEND:**
- EXISTING BUILDING AREA
  - ADDED BUILDING AREA
  - RENOVATION AREA

# Station 1: Option 2

15,700 sf 2-story Fire Station. Replace existing station and replace with new. Purchase three properties and provide surface parking.

ROM Project Budget \$32-37M



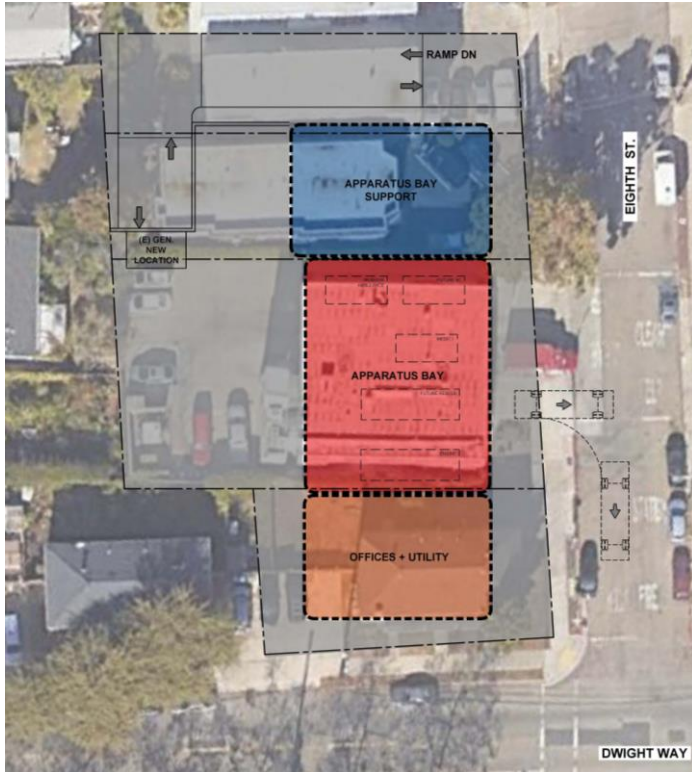
SECOND FLOOR DIAGRAM  
SCALE: 1/32" = 1'-0"

SITE / FIRST FLOOR DIAGRAM

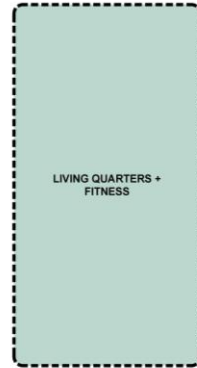
# Station 1: Option 3

15,700 sf 2-story building & basement parking  
Replace existing station and replace with new. Purchase three properties and provide basement parking and drive through bays. Meets program.

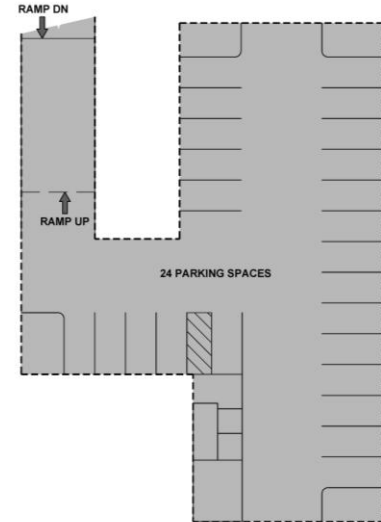
ROM Project Budget \$40-45M



DWIGHT WAY **DIAGRAM**



**SECOND FLOOR DIAGRAM**  
SCALE: 1/32" = 1'-0"



**BASEMENT FLOOR DIAGRAM**  
SCALE: 1/32" = 1'-0"

# Station 1: Option 4

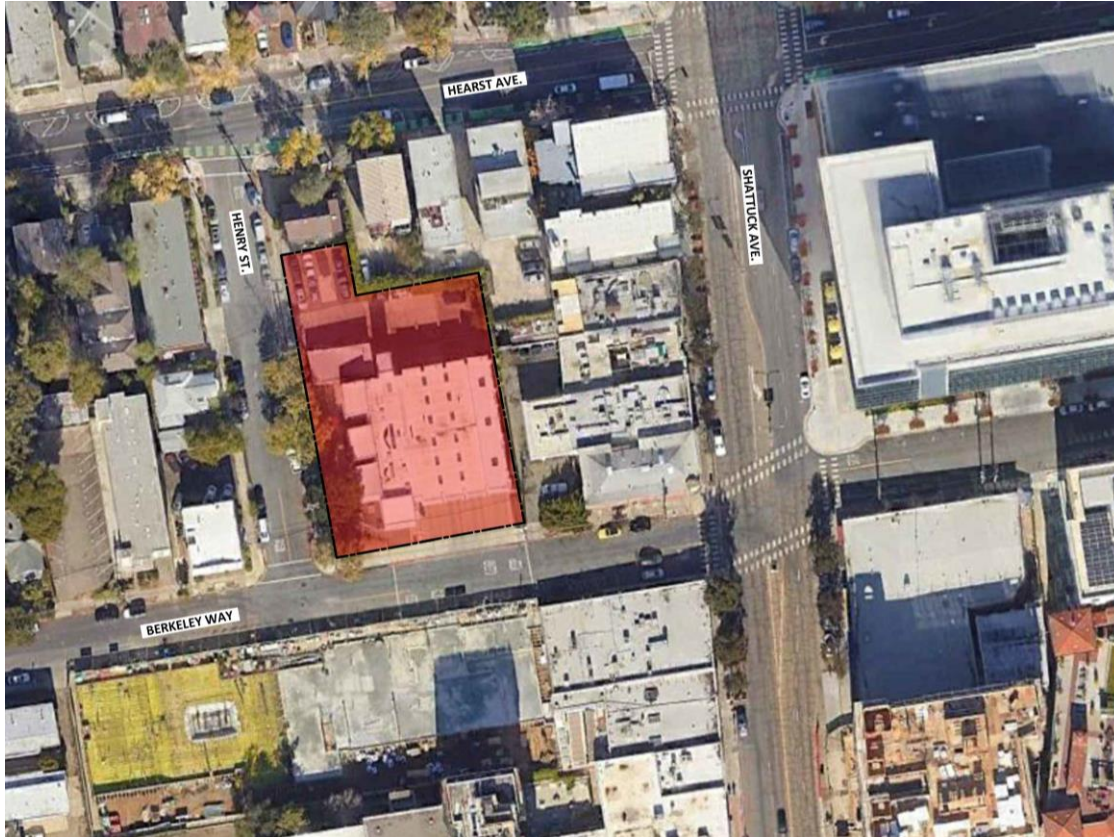
ROM Project Budget \$42-47M

NEW LOCATION– 15,700 sf 2 story building, plus parking.  
Purchase new property and replace station.



# Station 2 Overview - 2029 Berkeley Way

Existing – 13,598 sf 2 story building



Fire House Company Make-up – Staffing Per Shift	Current	Need
Truck 2 – Captain, Engineer, Firefighter/Paramedic	3	4
Engine 2 – Captain, Engineer, Firefighter/Paramedic	3	4
Medic 2 – Medic, EMT	2	2
Medic Supervisor	1	1
Battalion Chief	1	1
Medic Trainee	1	1
Type VI 4x4 - Cross Staffed	0	0
Hazardous Materials Unit – Cross Staffed	0	0
Truck – Reserve	0	0
Ambulance – Reserve	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING</b>	<b>11</b>	<b>13</b>

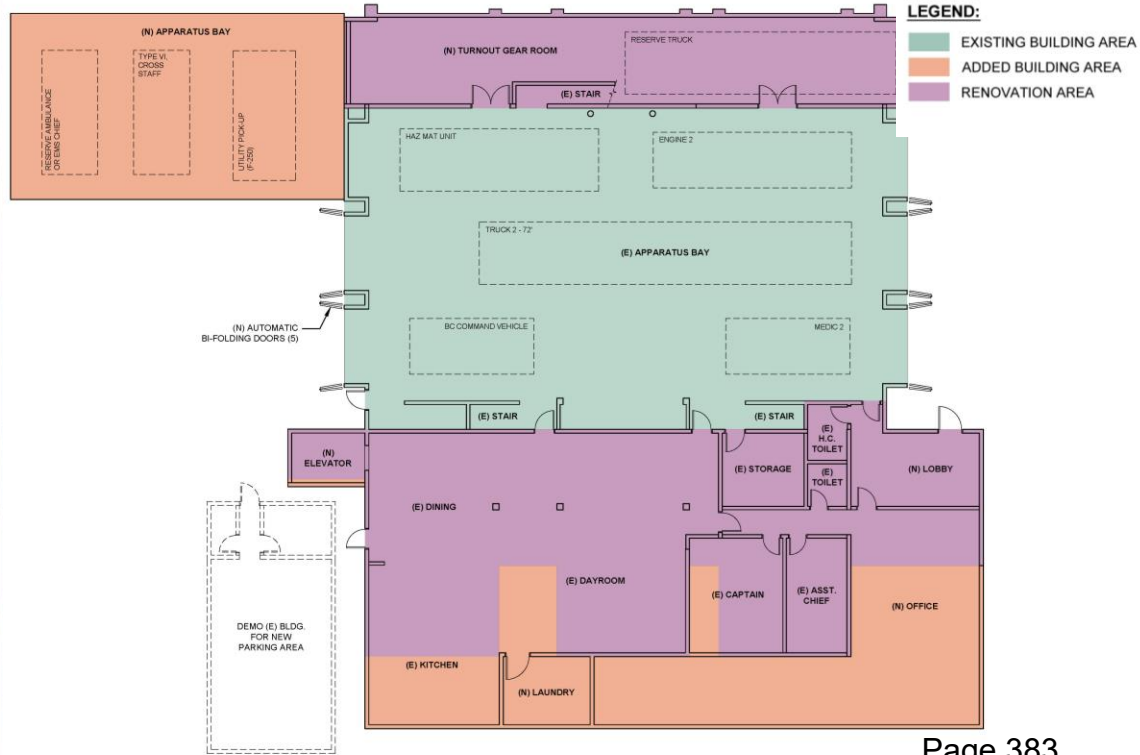
# Station 2: Option 1

21,000 sf 3-story building. Renovate existing station add 3<sup>rd</sup> level. Parking and adjacency requirements not met.

ROM Project Budget \$35-40M



**SITE/FIRST FLOOR DIAGRAM**  
SCALE: 1/64" = 1'-0"



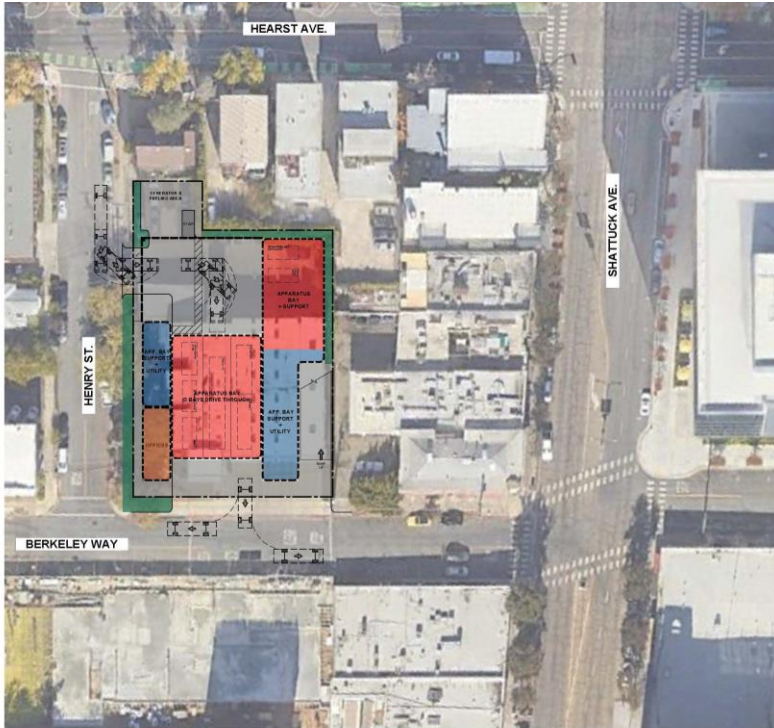
**LEGEND:**  
■ EXISTING BUILDING AREA  
■ ADDED BUILDING AREA  
■ RENOVATION AREA

**FIRST FLOOR DIAGRAM**  
SCALE: 1/16" = 1'-0"

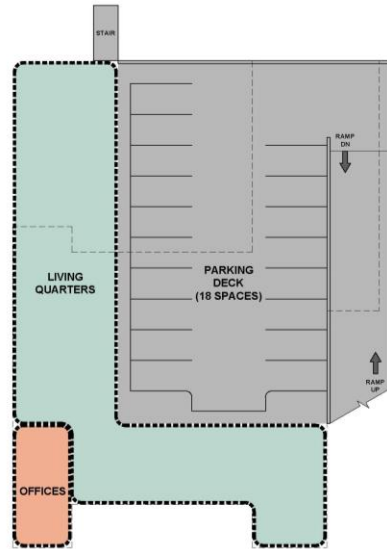


# Station 2: Option 2

21,000 sf 3 story building. Replace with three story station including rooftop parking. Parking requirement not met.



SITE/FIRST FLOOR DIAGRAM  
SCALE: 1/64" = 1'-0"



SECOND FLOOR DIAGRAM  
SCALE: 1/32" = 1'-0"



THIRD FLOOR DIAGRAM  
SCALE: 1/32" = 1'-0"

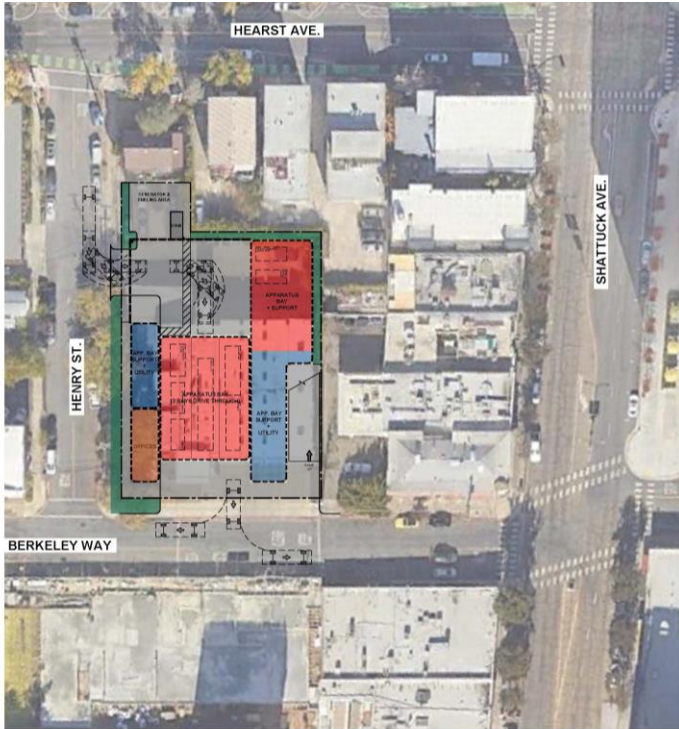




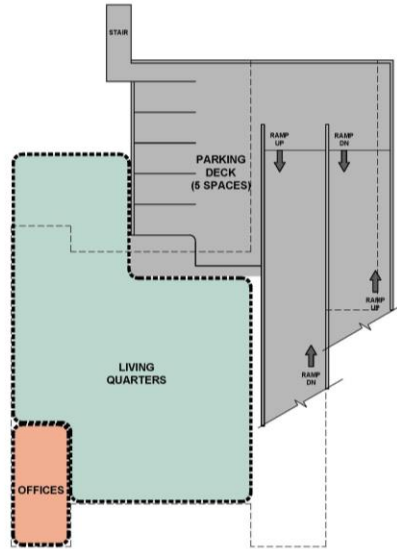
# Station 2: Option 3

ROM Project Budget \$51-56M

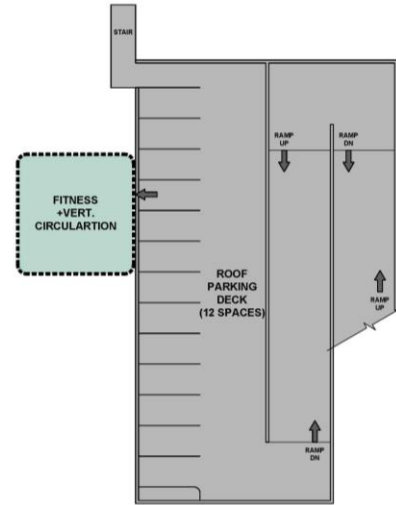
21,000 sf 3 story building. Replace with three story station.  
Includes two levels of rooftop parking.



**SITE/FIRST FLOOR DIAGRAM**  
SCALE: 1/84" = 1'-0"



**SECOND FLOOR DIAGRAM**  
SCALE: 1/32" = 1'-0"

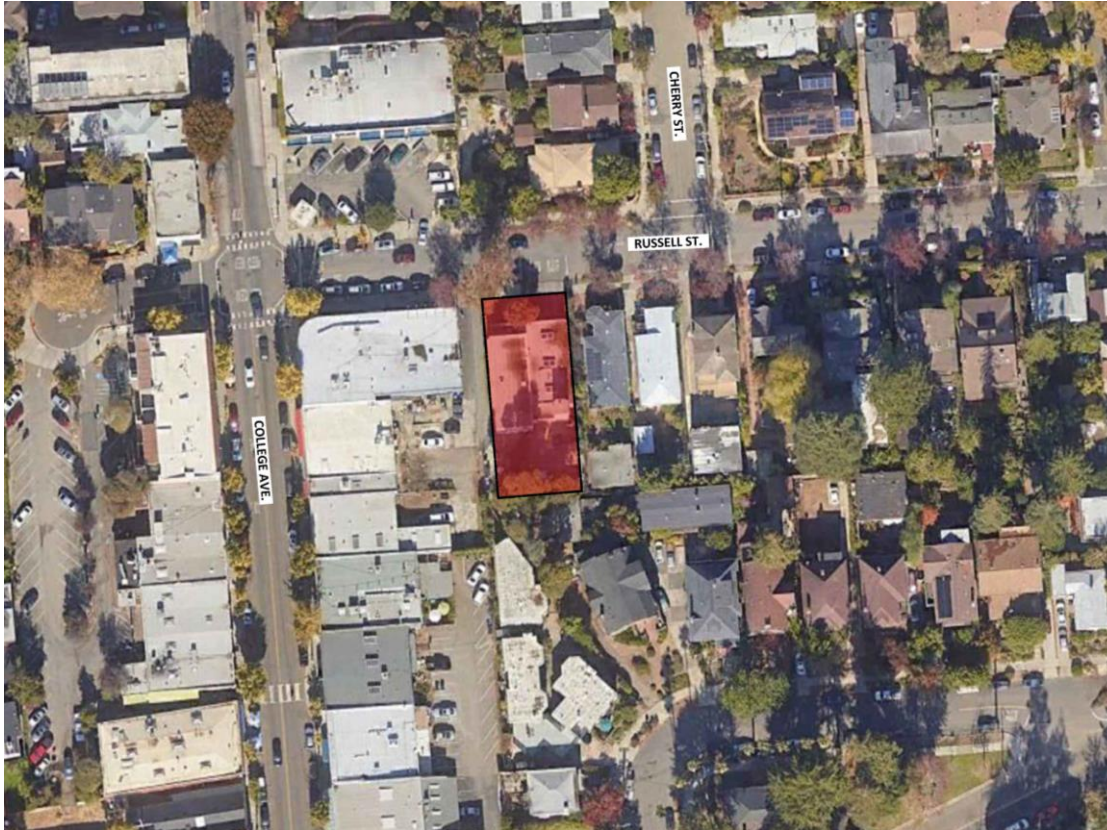


**THIRD FLOOR/ROOF DECK DIAGRAM**  
SCALE: 1/32" = 1'-0"



# Station 3 Overview - 2710 Russell Street

Existing – 5,582 sf 2 story building

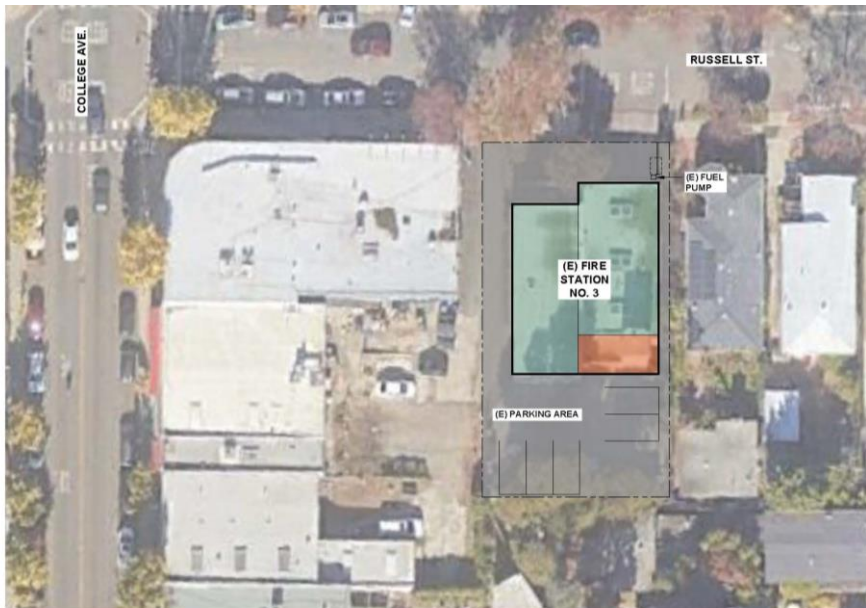


Fire House Company Make-up – Staffing Per Shift	Current	Need
Engine 3 – Captain, Engineer, Firefighter/Paramedic	3	4
Medic 3 (Ambulance) – Medic, EMT	2	2
Medic Trainee	1	1
Ambulance – Reserve	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING</b>	<b>6</b>	<b>7</b>

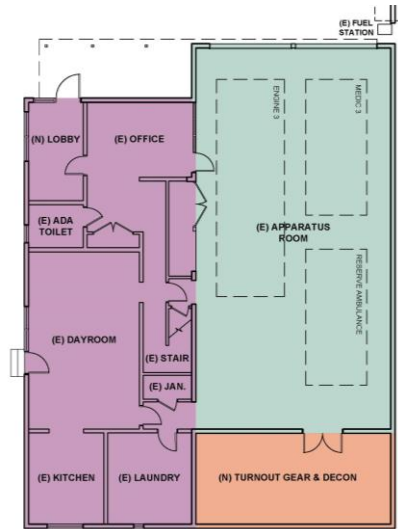
# Station 3: Option 1

ROM Project Budget \$12-16M

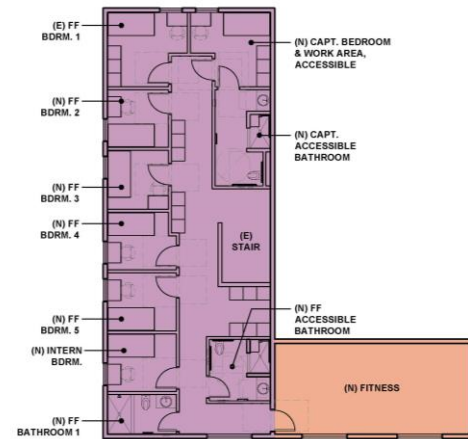
6, 193 sf 2 story building  
 Renovate and reconfigure station to add Turnout and Fitness



**SITE PLAN DIAGRAM**  
 SCALE: 1/32" = 1'-0"



**FIRST FLOOR PLAN**  
 SCALE: 1/16" = 1'-0"



**SECOND FLOOR PLAN**  
 SCALE: 1/16" = 1'-0"

# Station 4 Overview - 1900 Marin Avenue

Existing – 5,341 sf 2 story building

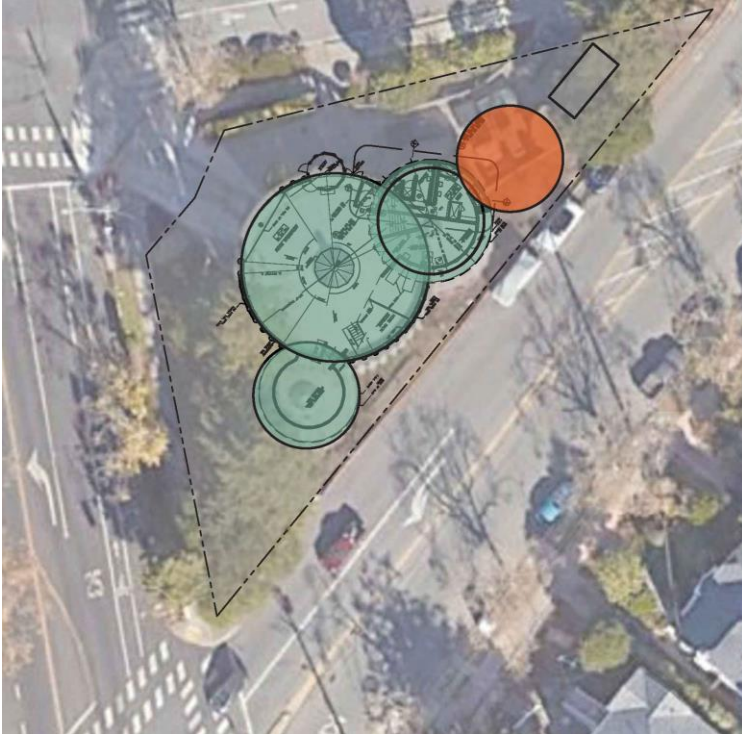


Fire House Company Make-up – Staffing Per Shift	Current	Need
Engine 4 – Captain, Engineer, Firefighter/Paramedic	3	4
Future Ambulance	0	2
Future Medic Intern	0	1
Reserve Engine	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING</b>	<b>3</b>	<b>7</b>

# Station 4: Option 1

6,941 sf 2 story building. Addition to add turnout and fitness. Does not meet need to add ambulance at this location. Parking and privacy goals not met.

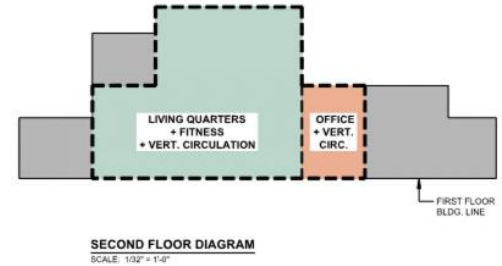
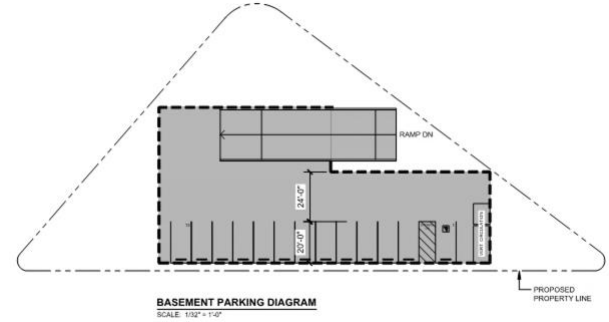
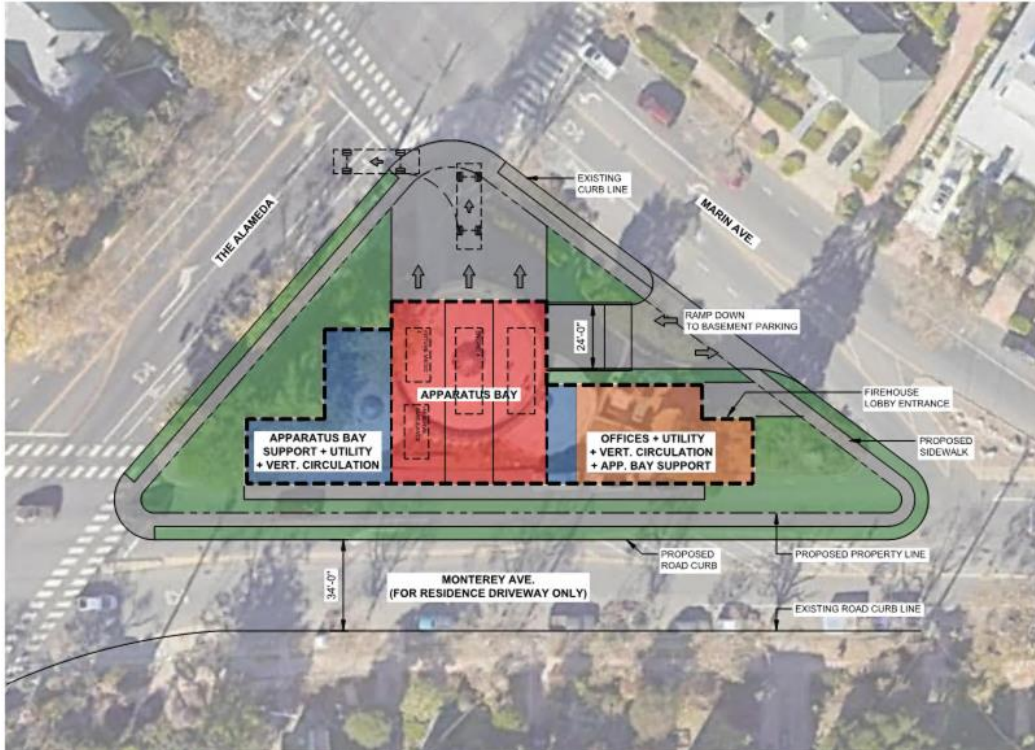
ROM Project Budget \$4-6M



# Station 4: Option 2

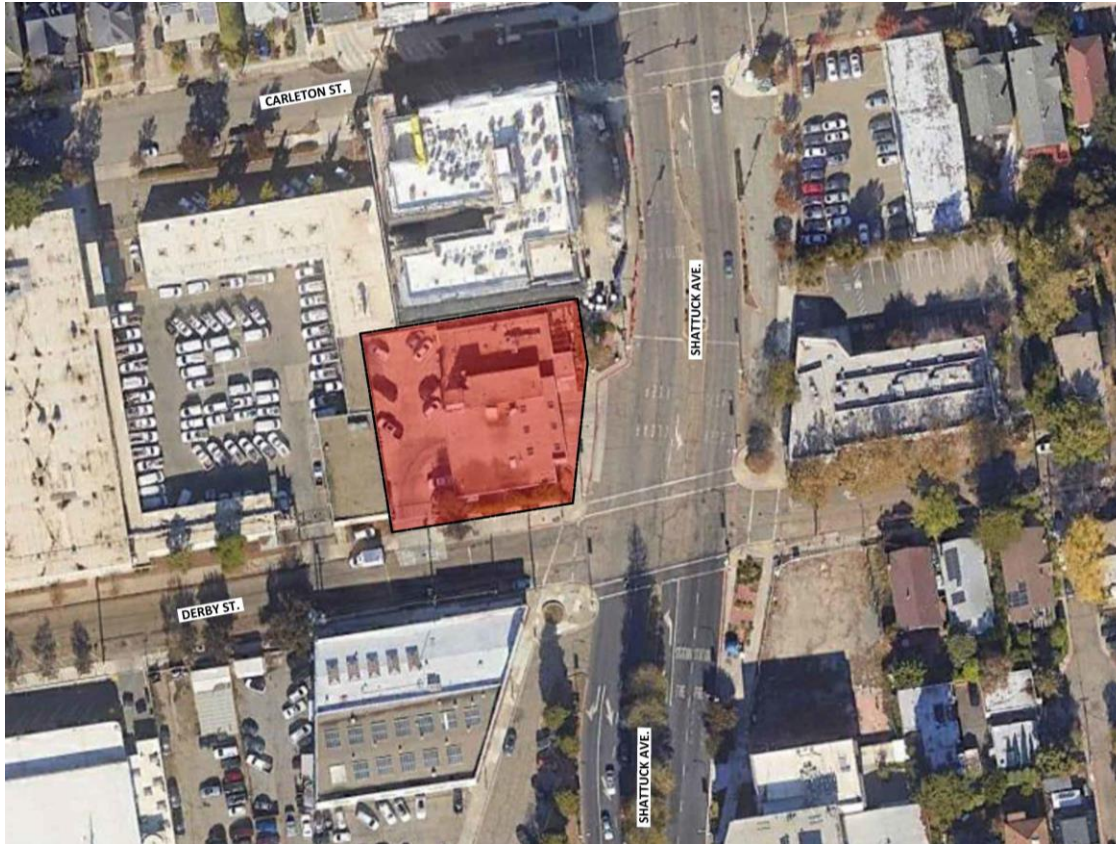
12,800 sf 2 story building. Expand site and add basement parking. Replace station to add new ambulance and meet safety requirements.

ROM Project Budget \$36-41M



# Station 5 Overview - 2680 Shattuck Avenue

Existing – 9,369 sf 2 story building



Fire House Company Make-up – Staffing Per Shift	Current	Need
Truck 5 – Captain, Engineer, Firefighter/Paramedic	3	4
Engine 5 – Captain, Engineer, Firefighter/Paramedic	3	4
Medic 5 – Medic, EMT	2	2
Medic Intern	1	1
Type VI 4x4 - Cross Staffed	0	0
Engine – Reserve	0	0
Utility Pick-up (F-250)	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING</b>	<b>9</b>	<b>11</b>







# Station 5: Option 2

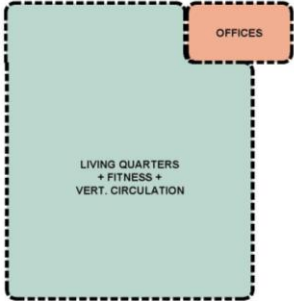
17,000 sf 2 story building

Replace station on existing site. Parking requirement not met.

ROM Project Budget \$33-38M



**SITE / FIRST FLOOR DIAGRAM**



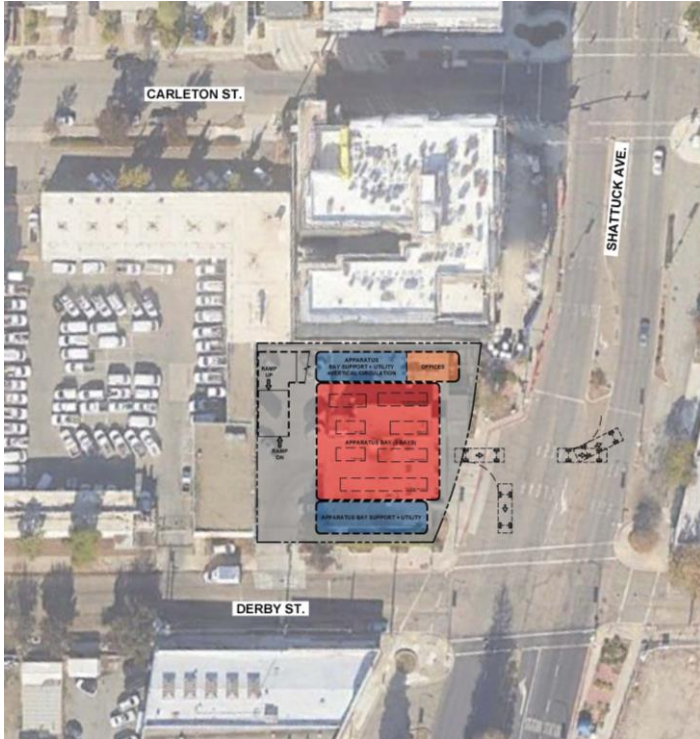
**SECOND FLOOR DIAGRAM**  
SCALE: 1/32" = 1'-0"



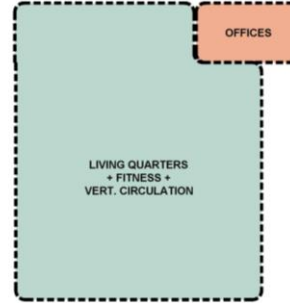
# Station 5: Option 3

ROM Project Budget \$53-58M

17,000 sf 2 story building  
Replace building with basement parking. Program met.

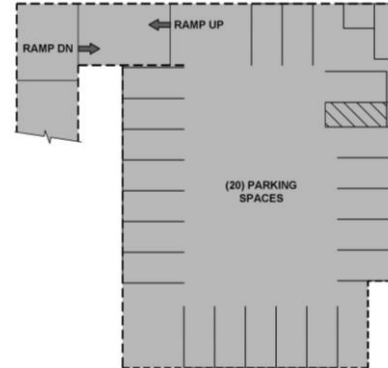


**SITE / FIRST FLOOR DIAGRAM**



**SECOND FLOOR DIAGRAM**

SCALE: 1/32" = 1'-0"

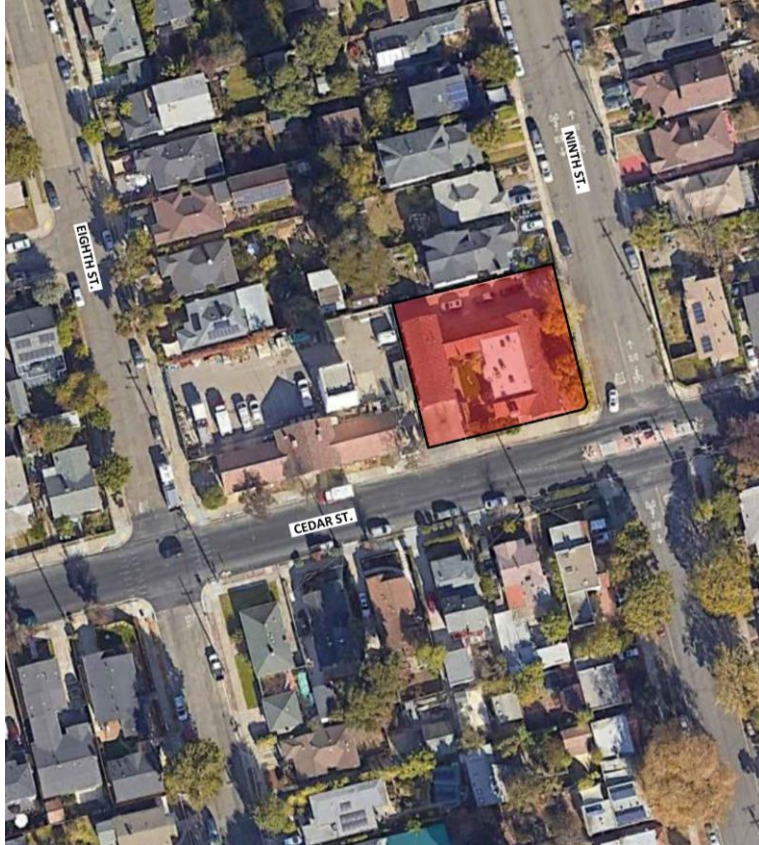


**BASEMENT PARKING DIAGRAM**

SCALE: 1/32" = 1'-0"

# Station 6 Overview - 999 Cedar Street

Existing – 4,596 sf 1 story building

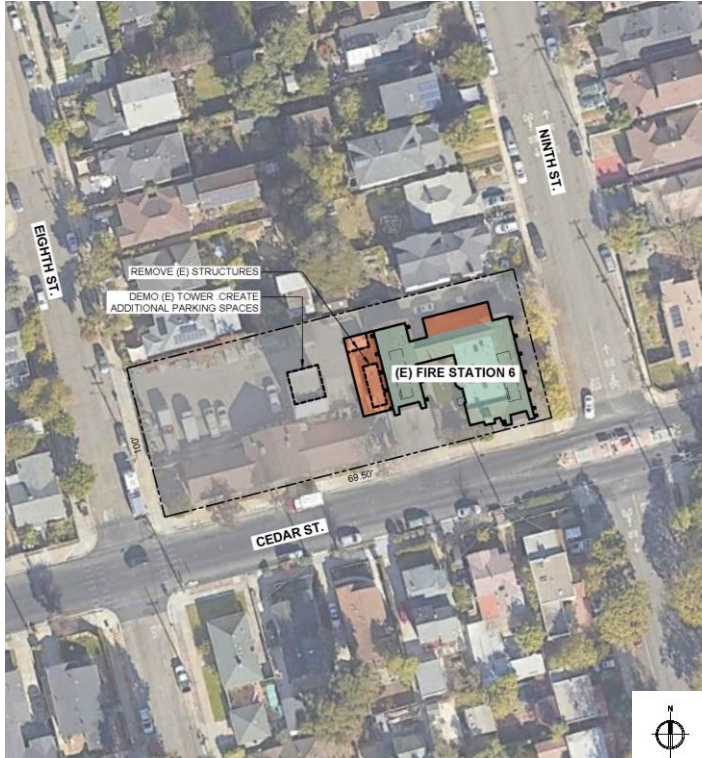


Fire House Company Make-up – Staffing Per Shift	Current	Need
Engine 6 – Captain, Engineer, Firefighter/Paramedic	3	4
Reserve Engine	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING</b>	<b>3</b>	<b>4</b>

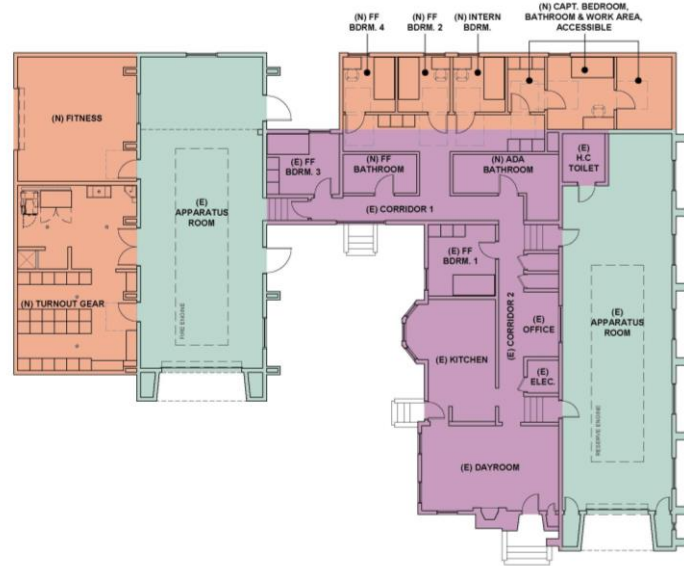
# Station 6: Option 1

6,312 sf 1 story building  
 Renovation and addition using training site.

**ROM Project Budget \$11.6-15M**



**SITE / FIRST FLOOR DIAGRAM**



**FLOOR PLAN DIAGRAM**  
 SCALE: 1/16" = 1'-0"

**LEGEND:**

- EXISTING BUILDING AREA
- ADDED BUILDING AREA
- RENOVATION AREA

# Station 7 Overview - 3000 Shasta Road

Existing – 6,920 sf 2 story building



Fire House Company Make-up – Staffing Per Shift	Current	Need
Engine 7 – Captain, Engineer, Firefighter/Paramedic	3	4
Surge Unit Type VI - Cross Staffed	3	4
Reserve Engine Type 1	0	0
Polaris (2 total)	0	0
Water Tender (2 total)	0	0
<b>TOTAL CURRENT AND PLANNED STAFFING</b>	<b>6</b>	<b>8</b>



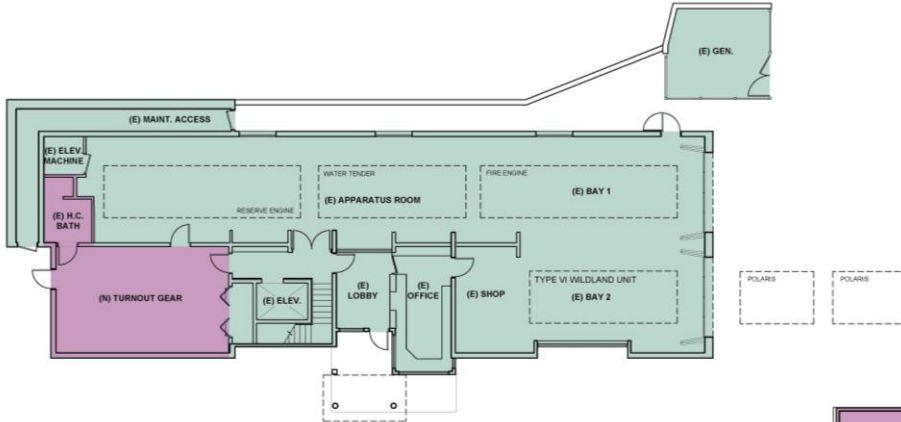


# Station 7: Option 1

ROM Project Budget \$10-13M

8,000 sf 2 story building

Reconfigure and expand to add additional living quarters & fitness

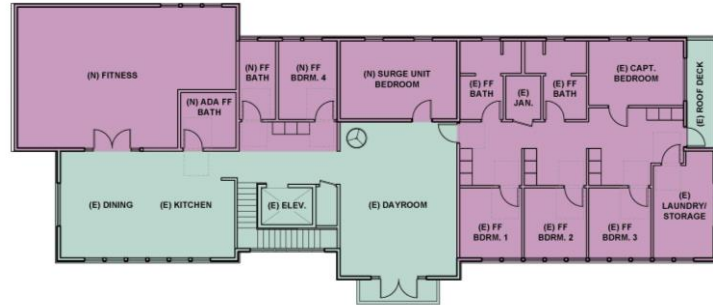


**LEGEND:**

- EXISTING BUILDING AREA
- RENOVATION AREA

**FIRST FLOOR PLAN**

SCALE: 1/16" = 1'-0"

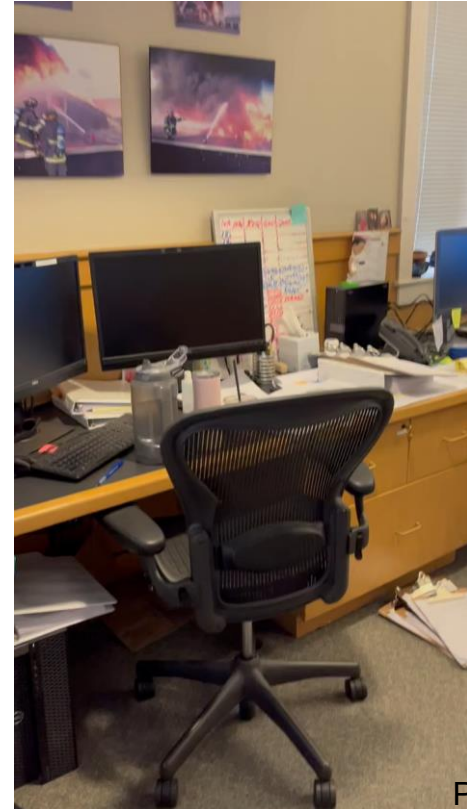
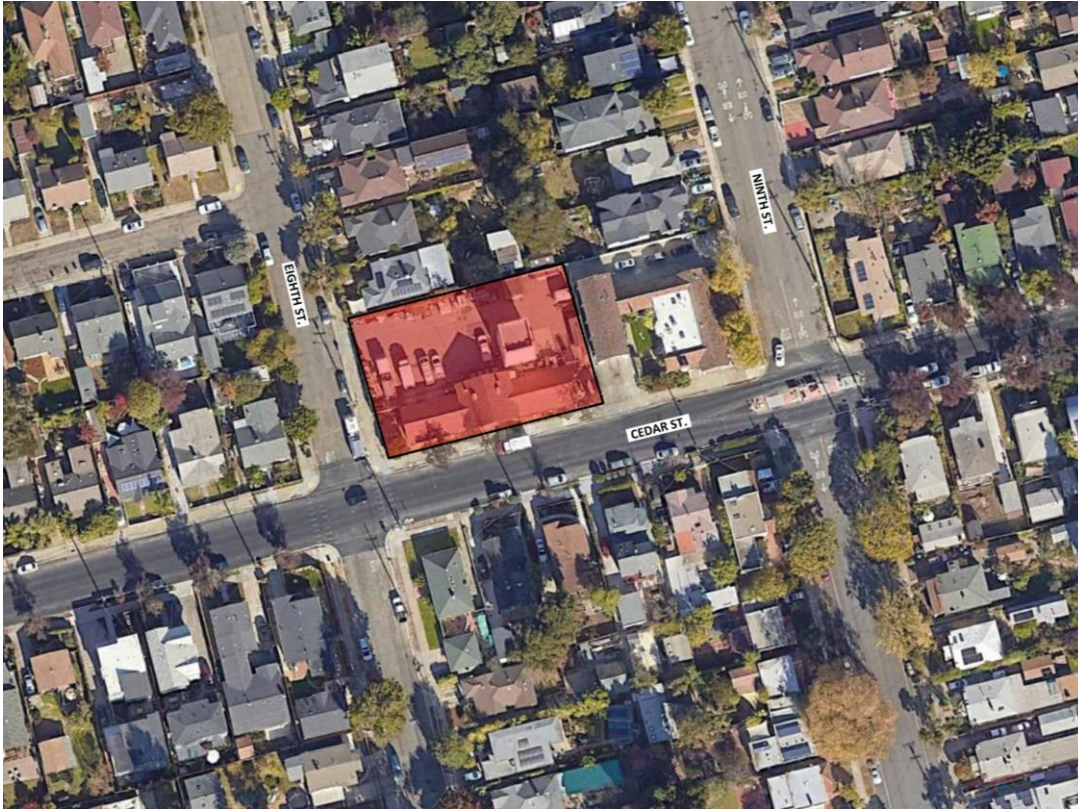


**SECOND FLOOR PLAN**

SCALE: 1/16" = 1'-0"

# Division of Training Overview - 997 Cedar Street

Existing – 3,893 sf 1+ story building



# Division of Training – Richmond

ROM Project Budget \$81-90M

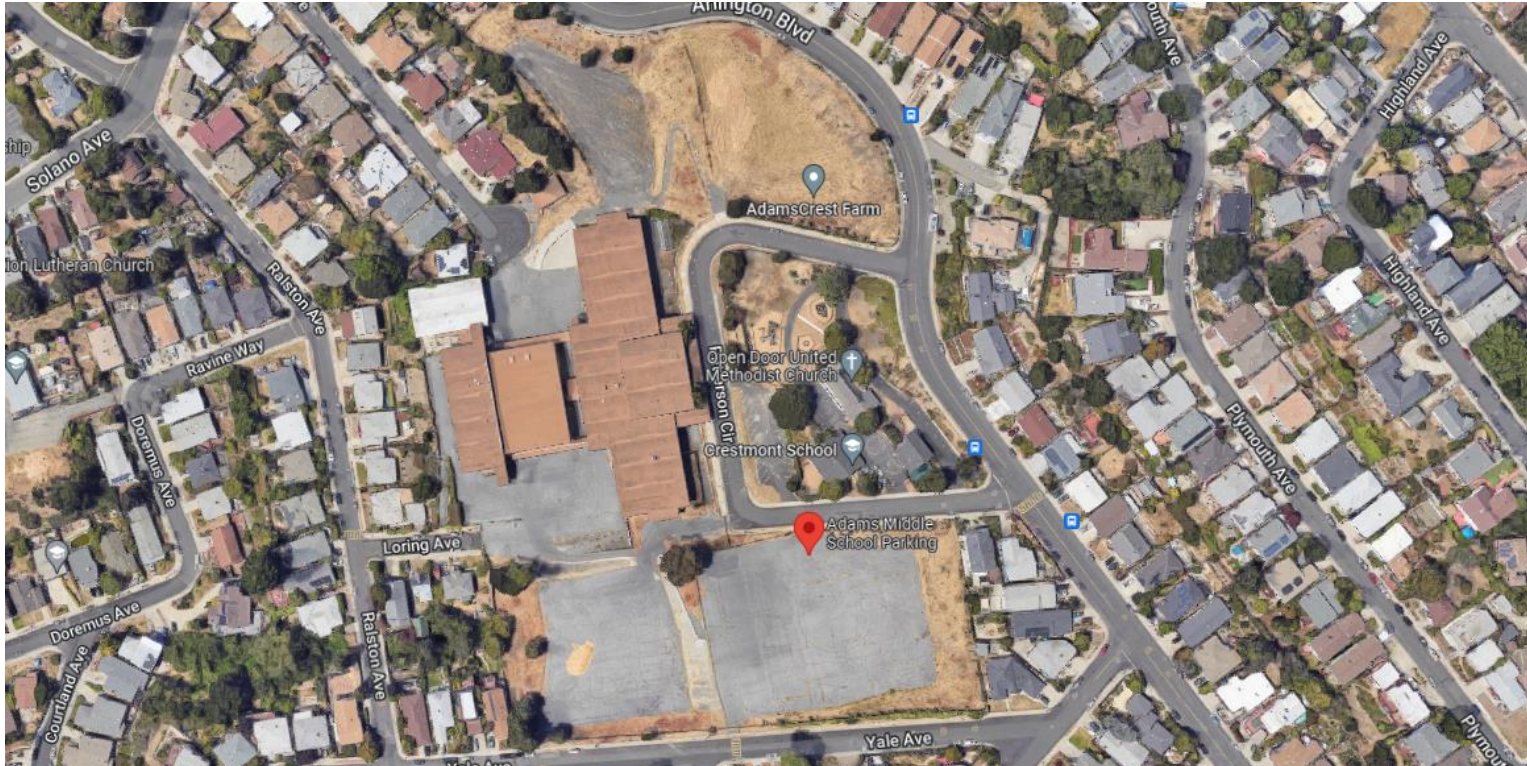
Proposal – Joint 30,694 sf training facility with cities of Albany, Richmond, and El Cerrito





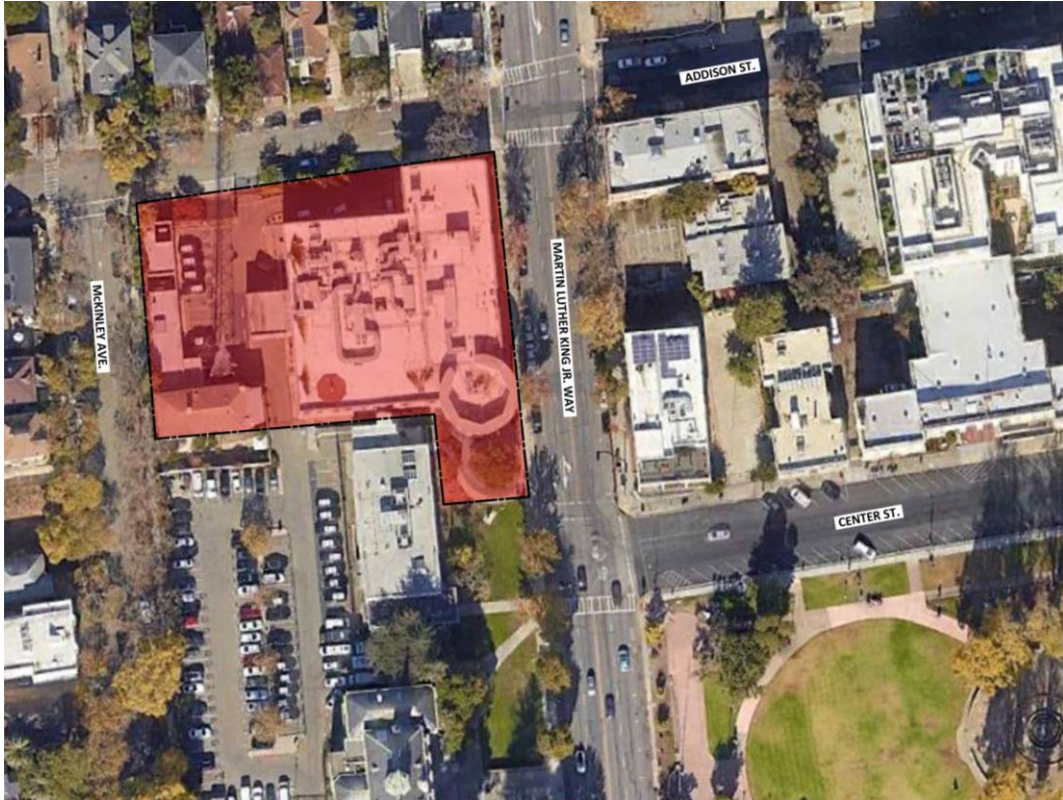
# Division of Training – El Cerrito

Proposal – Joint 12-acre training facility with cities of Albany, Richmond, and El Cerrito



# Fire Headquarters Overview - 2100 MLK Jr. Way

Existing – 11,789 sf in the Public Safety 2 story building



# Fire Headquarters - TBD

ROM Project Budget \$33-36M

Proposal – Relocate the Fire administration offices, EOC center, and Ambulance program.

Headquarters Space Needs	Program
Fire Department Admin	1,735
Fire Department Training Division	1,788
Fire Department Finance	1,147
Fire Department EMS	842
Fire Department Emergency Management	543
Fire Prevention	1,458
Wildland Division	707
Fire Department Shared and Support Spaces	3,676
Utility Support Spaces	544
Circulation at 30%	4,736
<b>Headquarters Subtotal (SF)</b>	<b>17,176</b>

Training Classroom Space Needs	Program
Main Classroom	2,208
Equipment Storage	180
Table and Chair Storage	192
Secondary Classroom	768
<b>Training Classrooms Subtotal (SF)</b>	<b>3,348</b>

Headquarters Subtotal (SF)	17,176
Training Classrooms Subtotal (SF)	3,348
Ambulance Deployment Center Subtotal (SF)	8,324
Grossing Factor 15%	4,327
<b>Grand Total</b>	<b>33,175</b>

# Priorities and Phasing

Phased process starting with the most impacted stations – Stations 1, 2 & 5 with goal to increase staffing in the Downtown area:

- Recommendation is to start with Station 1 relocation and then use the existing station as a temporary station.
- Station 2 and 5 are the most impacted by density and are high priorities.
- A new Training Center and Headquarters are also high priorities.



# Priorities and Phasing

## SEQUENCED PROJECTS

Design Start		Rough Order of Magnitude Costs	
		LOW x \$ Million	HIGH x \$ Million
2024	<b>Fire Station 1</b> Relocation New site on/near San Pablo Ave	\$42	\$47
2026	<b>Fire Station 2</b> Replacement Temporary Location - Station 1, 4, 5	\$51	\$56
2028	<b>Fire Station 5</b> Replacement Temporary Location - Station 1, 4, 2	\$53	\$58
2030	<b>Fire Station 4</b> Replacement Temporary Location - Station 2, 6	\$36	\$41

## INDEPENDENT PROJECTS

Design Start		Rough Order of Magnitude Costs	
		LOW x \$ Million	HIGH x \$ Million
2023	<b>New Headquarters</b> Site TBD	\$33	\$36
2023	<b>Training Center</b> Phase 1 Renovation Phase 2 Replacement Regional Site TBD	\$81	\$90
2026	<b>Fire Station 3</b> Renovation + Expansion Temporary Location - Station 2, 5	\$12.0	\$16
2028	<b>Fire Station 6</b> Renovation + Expansion Temporary Location - Trailer on site	\$11.6	\$15
2030	<b>Fire Station 7</b> Renovation + Expansion Temporary Location - TBD	\$10.0	\$13
<b>TOTAL Rough Order of Magnitude Project Cost</b>		<b>\$330</b>	<b>\$372</b>

**Thank you**

