

May 16, 2023 – Berkeley City Council Presentation

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.

- Berkeley's Community Wildfire Protection Plan 2022-2023
- Standards of Coverage analysis and report prepared by Citygate Associates (first ever assessment), 2022-2023
- Internal Operations Reorganization discussions and plan, started 2015
- Dispatch Needs Analysis, 2021
- Kitchell Facilities Condition Assessment, 2021
- 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- Evaluate aging and outdated facilities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>HighRise/Tall Building Firefighting</u>

Operational Changes - Apparatus and Specialty Units

Since the 1960's Berkeley's fire operations and equipment have changed.

- Fire fighters 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:

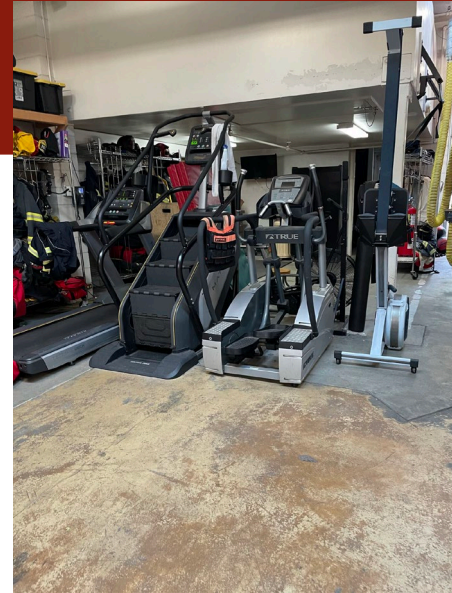
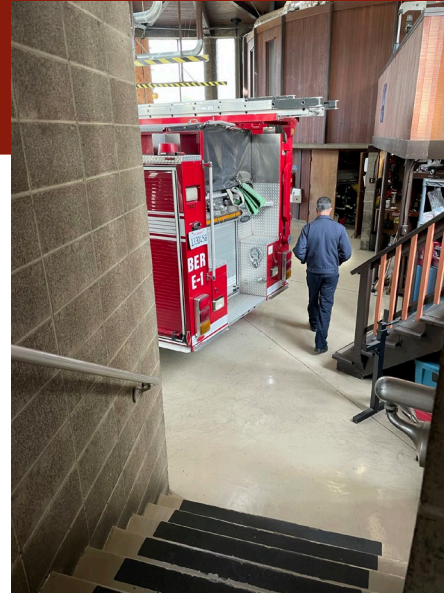
- Seismic upgrades in the 1990's
- Additional units and staffing without adding or expanding the spaces for privacy, health and safety protocols.
- Ongoing minor upgrades and maintenance including lighting, kitchens, restrooms and the like.



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

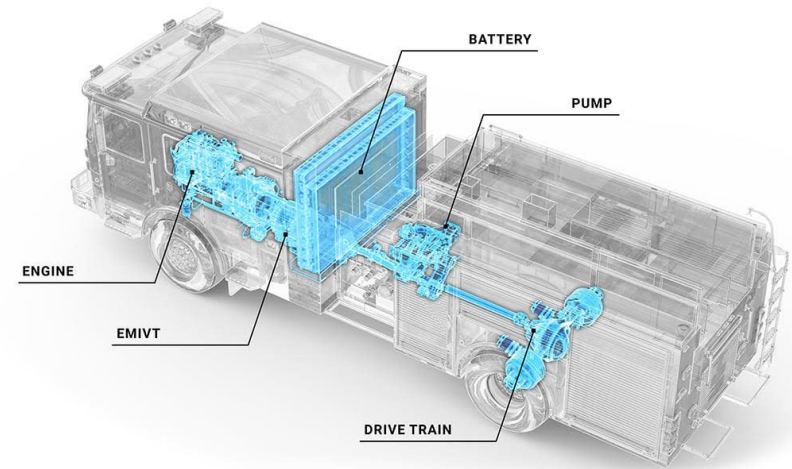
The Citygate Standards of Coverage report and Internal Operations Reorganization efforts identified need for additional operational changes and space accommodations for:

- Additional Ambulances
- Alternative Medical Response Program (Mobile Integrated Paramedic, MIP)
- Expanding administration for WUI and EMS
- Larger dispatch center to allow for triaging of calls and pre-arrival instructions (requires BFD 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:

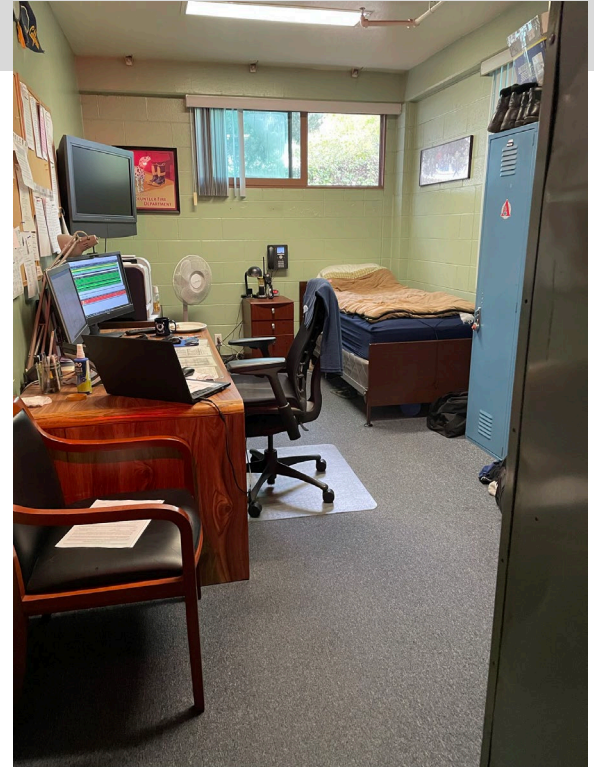
1. Study existing facilities and review provided construction drawings;
2. Document the fire department's program needs;
3. Lay out the program needs over the existing sites and buildings plans;
4. Initial planning efforts attempted to accommodate programmatic needs through renovation;
5. When renovation was not possible, the design team studied replacement options.

High level findings:

- **The new Alternative Medical Response 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.

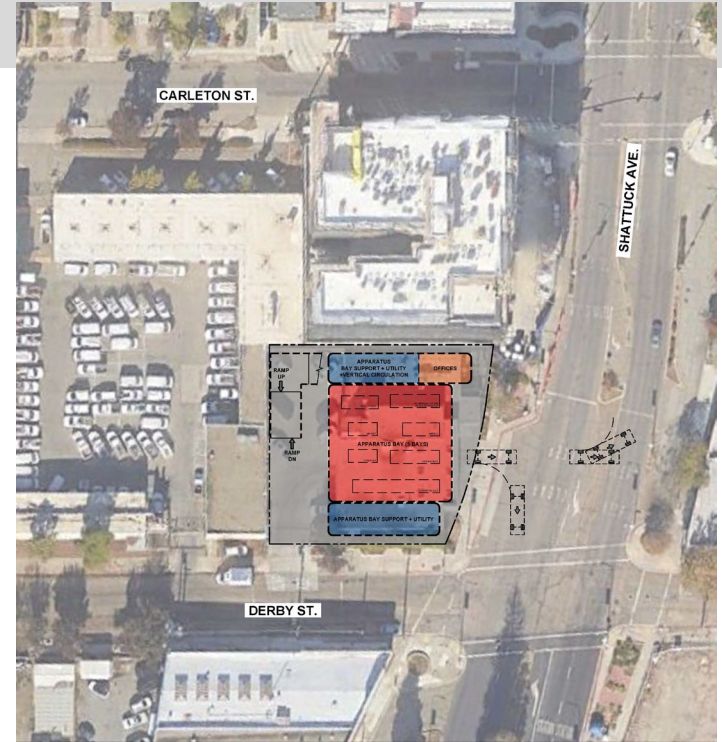
Renovation Approach - Space Addition and Arrangement Priorities

- 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 –7
- Division of Training
- Fire Department Headquarters
- Fire Department Warehouse
- Water Rescue Assets



Fire Station Space Needs

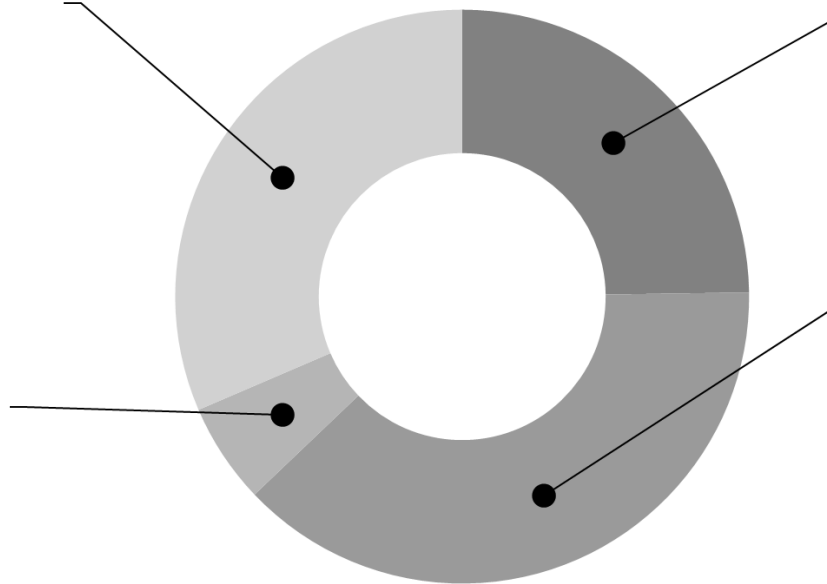
TYPICAL STATION AREA BREAKDOWN

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

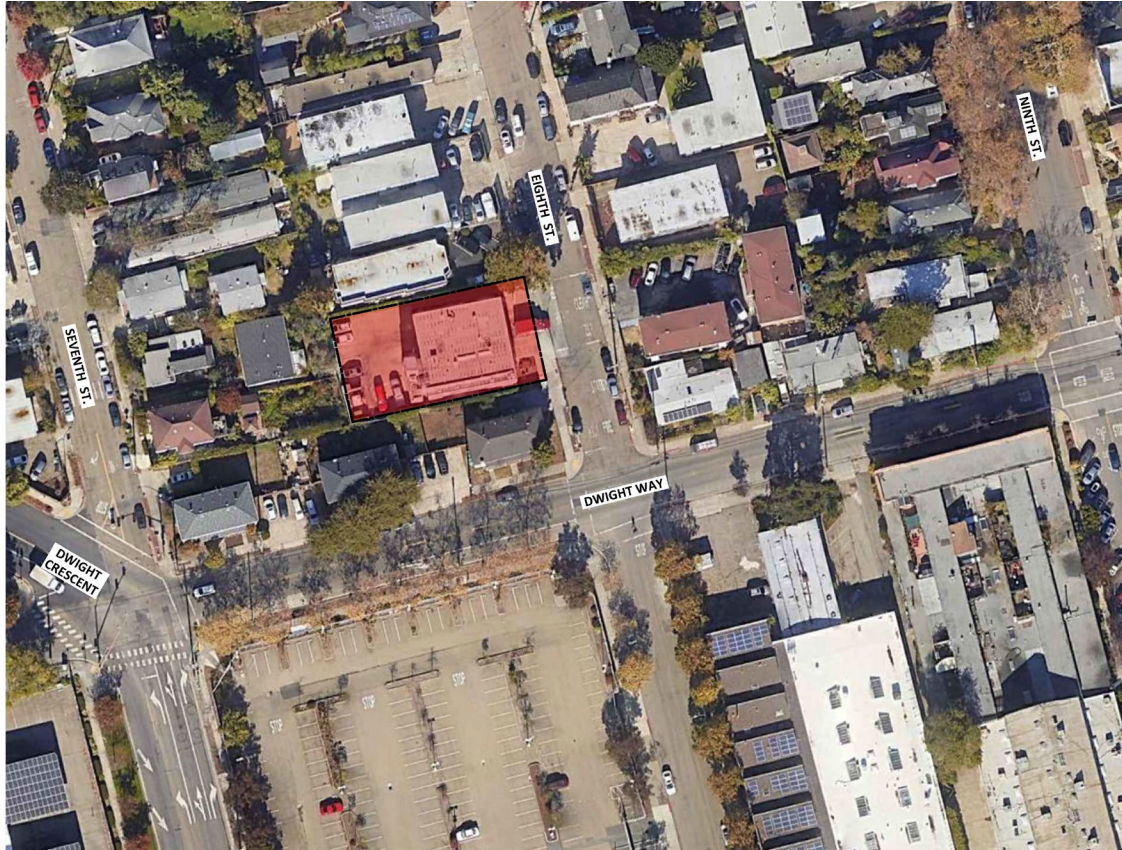
- 25% > Kitchen
> Dining
> Day Room
> Bedrooms
> Bathrooms
> Laundry
> NEW Fitness Room 4% of total

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

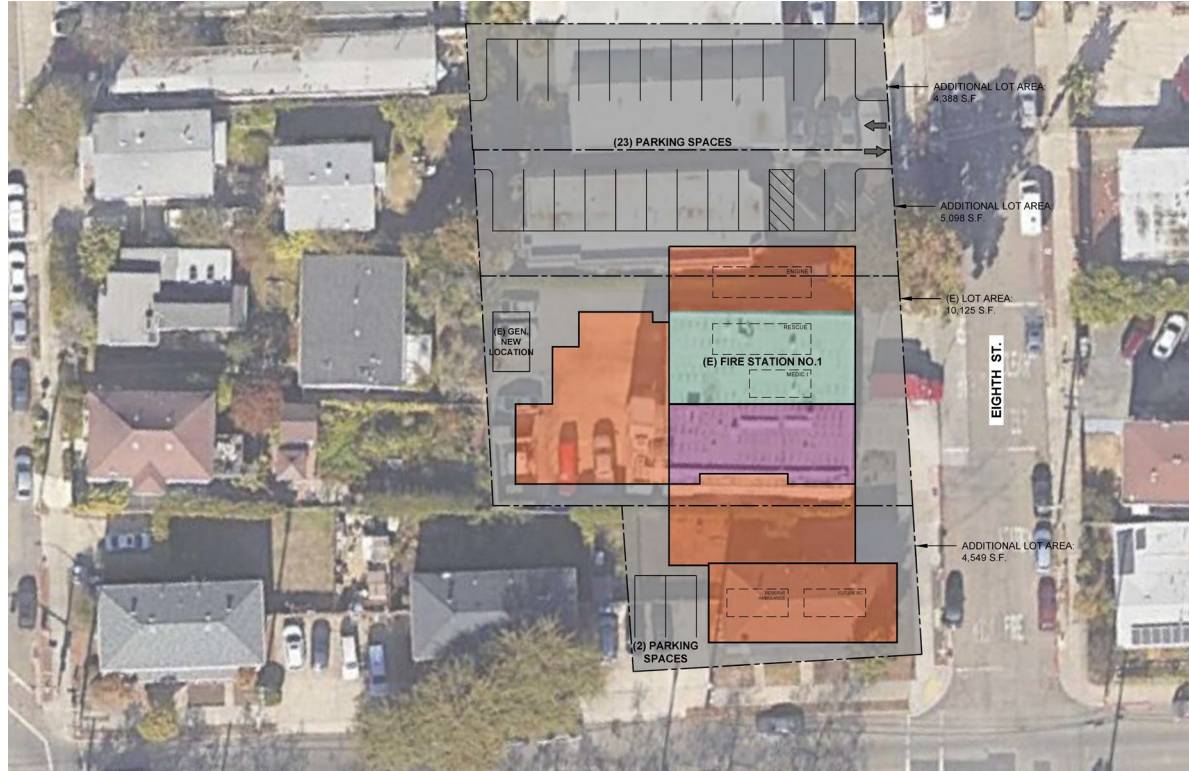


Fire House Company Make-up – Staffing Per Shift	Current	Need
Engine 1 – Captain, Engineer, Firefighter/Paramedic	3	4
Medic 1 (Ambulance) – Medic, EMT	2	2
Future Additional Ambulance/Future Mobile Integrated Paramedic (MIP)	0	0
Future Battalion Chief	0	1
Medic Trainee	1	1
Ambulance – Reserve	0	0
TOTAL CURRENT AND PLANNED STAFFING	6	8

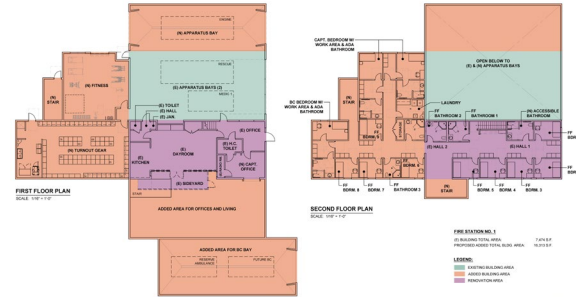
Station 1: Option 1 - 2442 Eighth Street

15,700 sf 2 story building renovation & additional area
 Purchase three adjacent properties, expand and renovate station.

ROM Project Budget \$34-40M



SITE / FIRST FLOOR DIAGRAM



LEGEND:

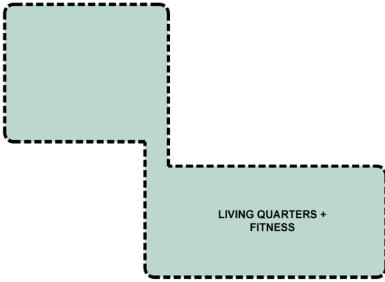
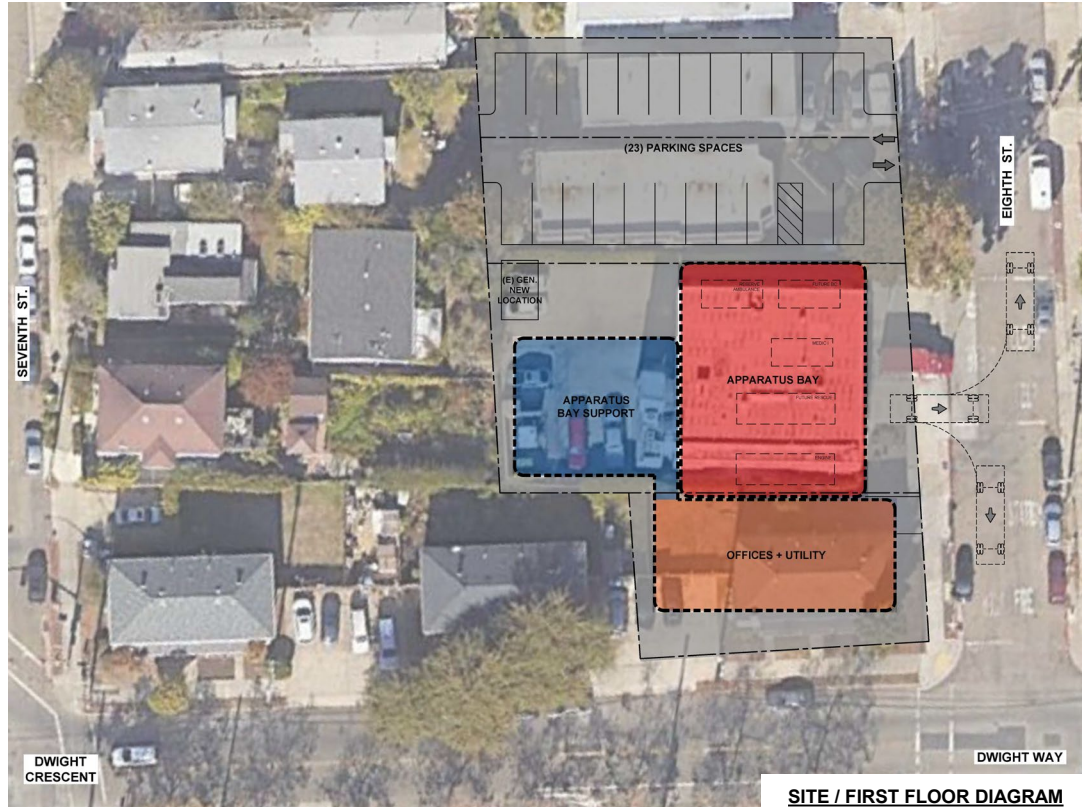
- EXISTING BUILDING AREA
- ADDED BUILDING AREA
- RENOVATION AREA



Station 1: Option 2 - 2442 Eighth Street

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"

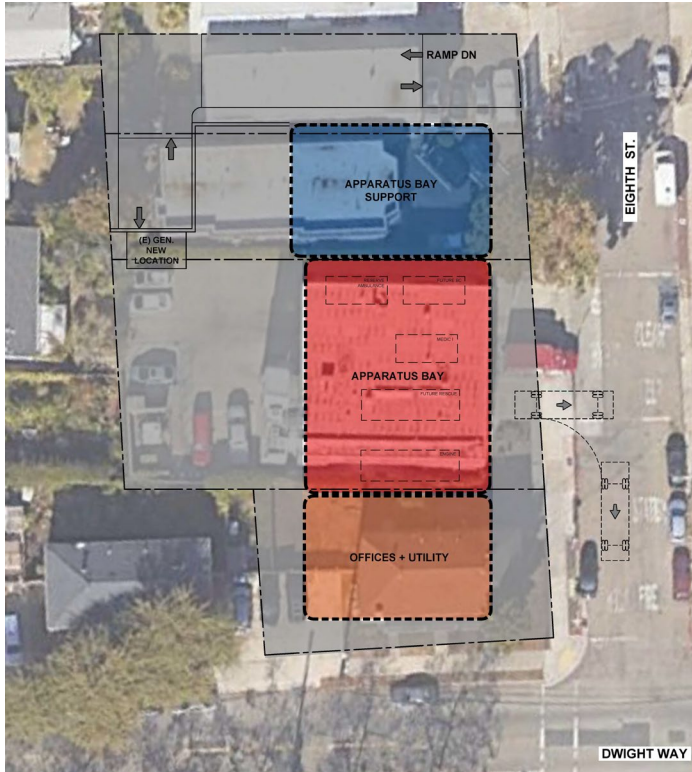
SITE / FIRST FLOOR DIAGRAM

Station 1: Option 3 - 2442 Eighth Street

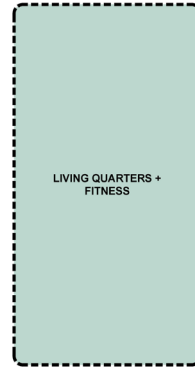
15,700 sf 2-story building & basement parking

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

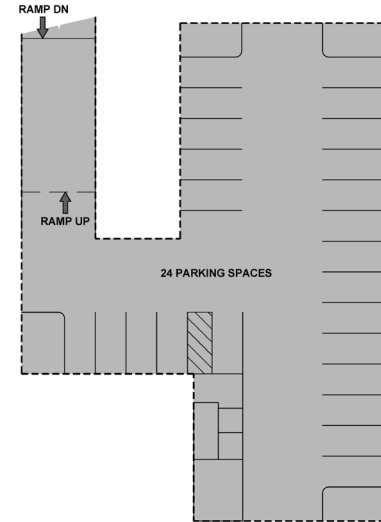


DWIGHT WAY **DIAGRAM**



SECOND FLOOR DIAGRAM

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



BASEMENT FLOOR DIAGRAM

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

Station 1: Option 4 - 2442 Eighth Street

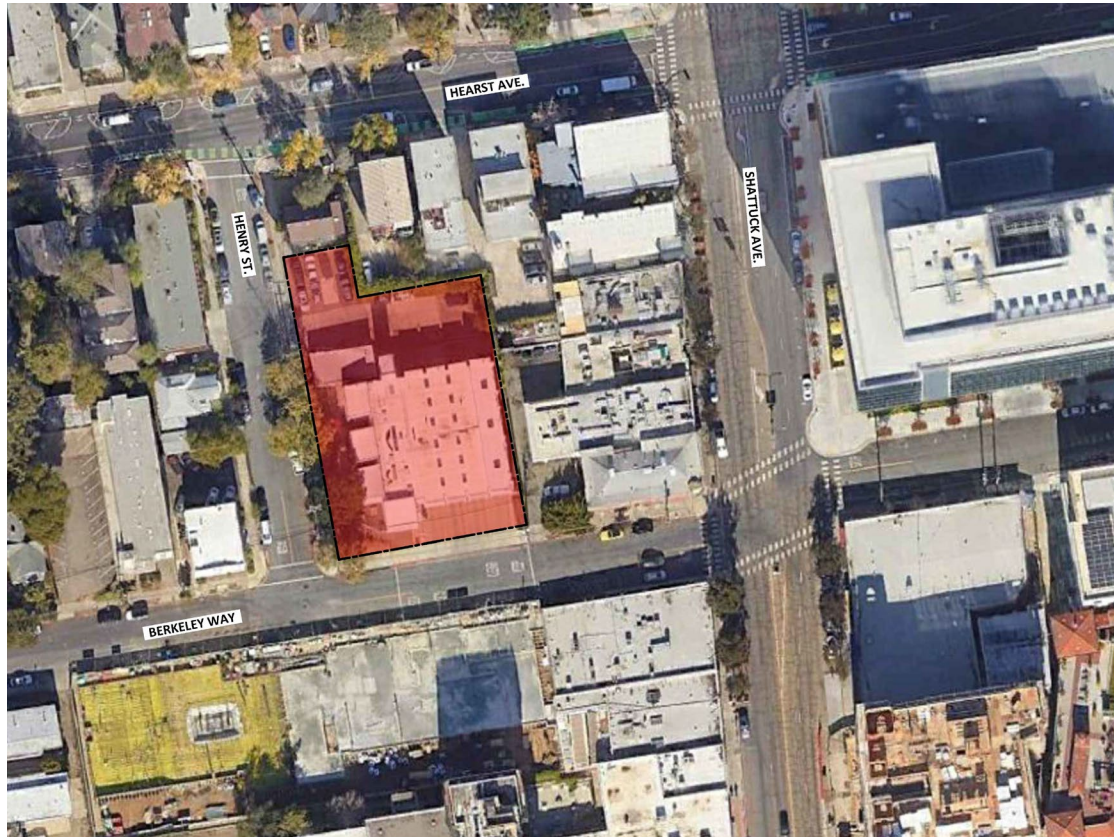
NEW LOCATION- 15,700 sf 2 story building, plus parking.
Purchase new property and replace station.

ROM Project Budget \$42-47M



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
TOTAL CURRENT AND PLANNED STAFFING	11	13

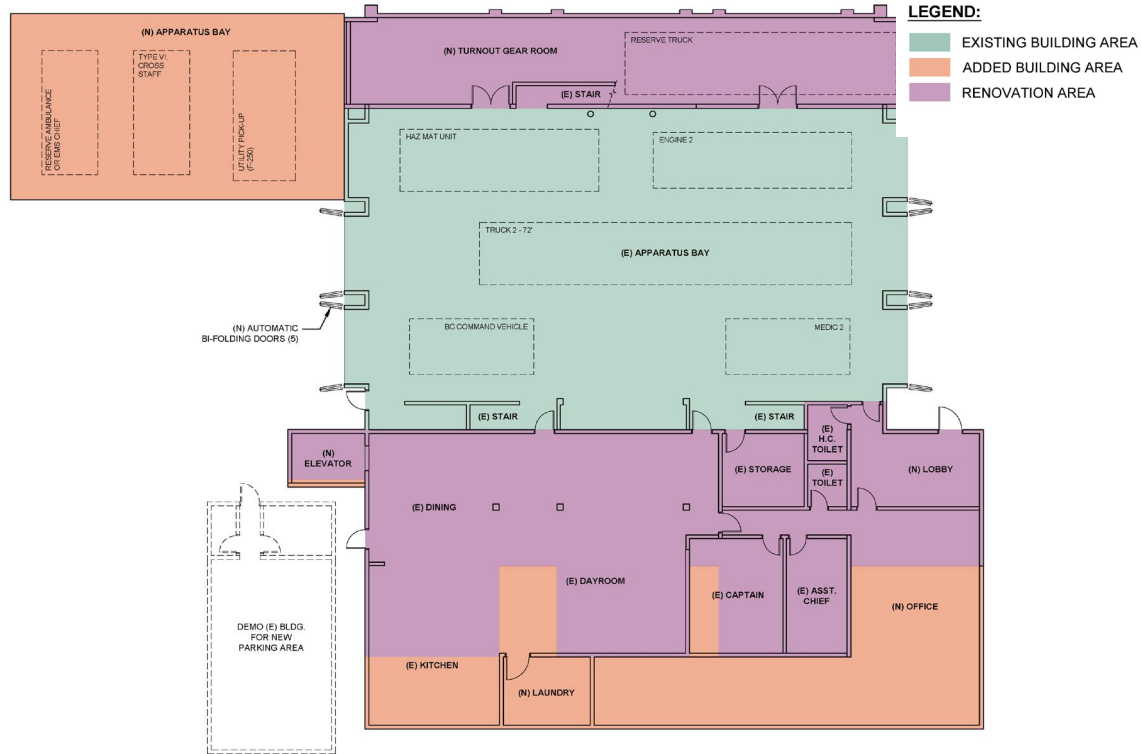
Station 2: Option 1 - 2029 Berkeley Way

21,000 sf 3-story building. Renovate existing station add 3rd level. Parking and adjacency requirements not met.

ROM Project Budget \$35-40M



SITE/FIRST FLOOR DIAGRAM
SCALE: 1/64" = 1'-0"



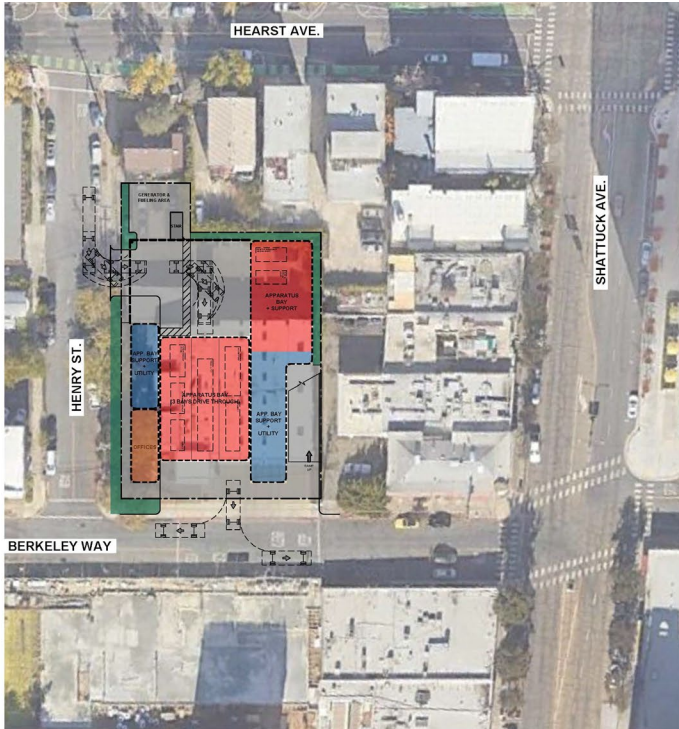
FIRST FLOOR DIAGRAM
SCALE: 1/16" = 1'-0"



Station 2: Option 3 - 2029 Berkeley Way

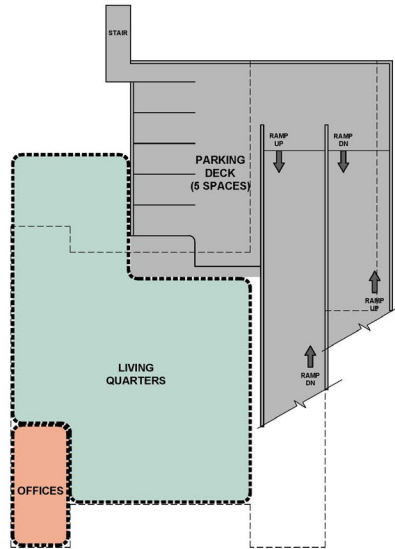
21,000 sf 3 story building. Replace with three story station.
Includes two levels of rooftop parking.

ROM Project Budget \$51-56M



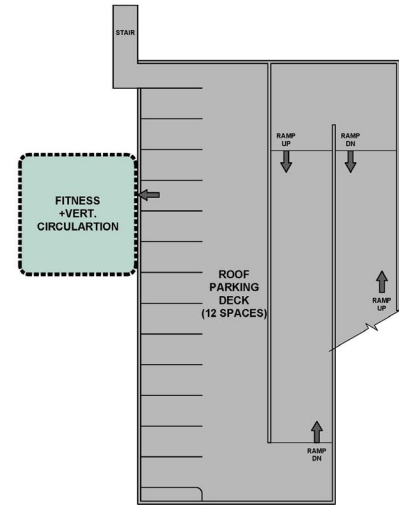
SITE/FIRST FLOOR DIAGRAM

SCALE: 1/84" = 1'-0"



SECOND FLOOR DIAGRAM

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



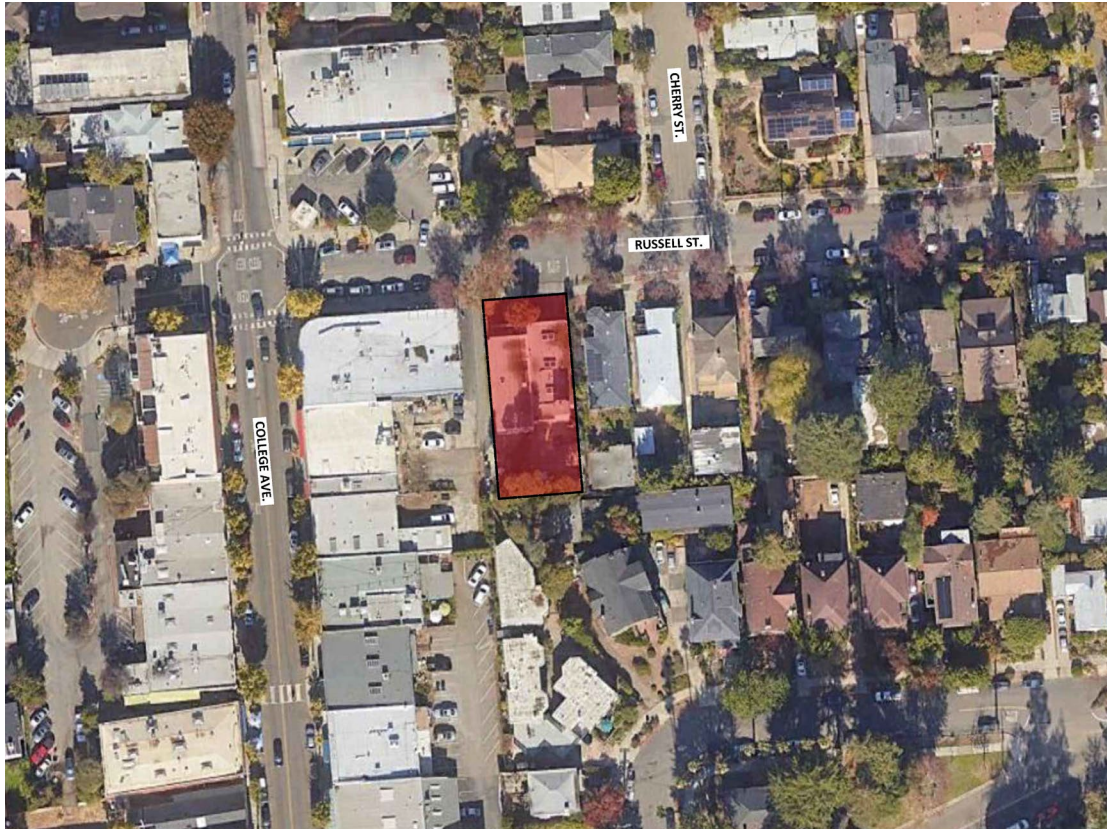
THIRD FLOOR/ROOF DECK DIAGRAM

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
TOTAL CURRENT AND PLANNED STAFFING	6	7

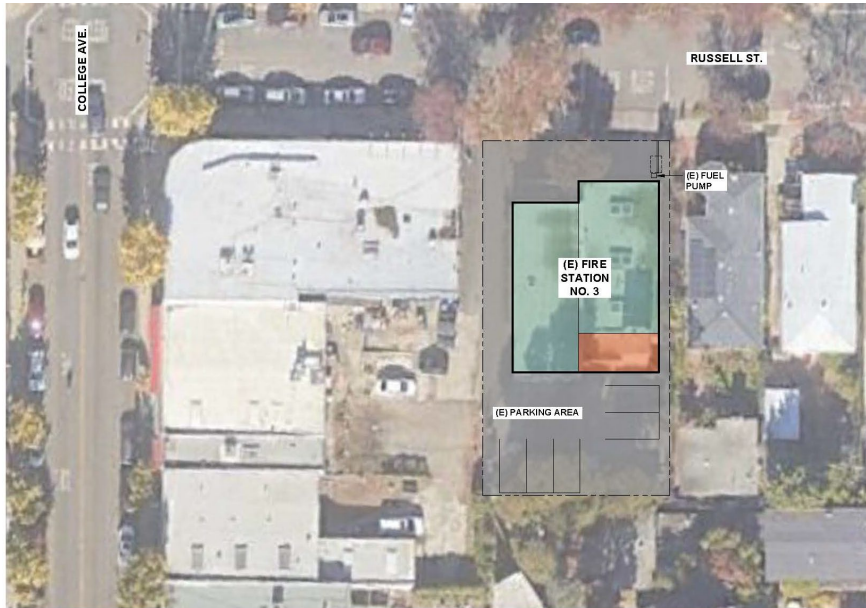
Station 3: Option 1 - 2710 Russell Street

6, 193 sf 2 story building

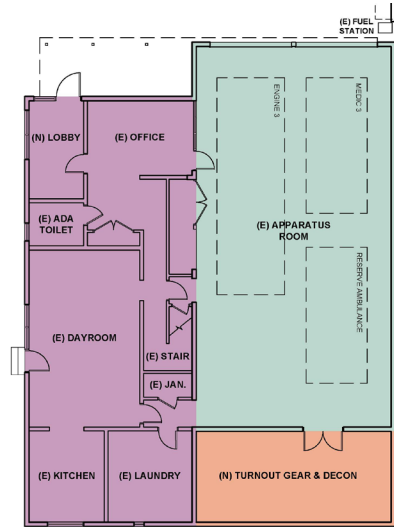
Renovate and reconfigure station to add Turnout and Fitness



ROM Project Budget \$12-16M

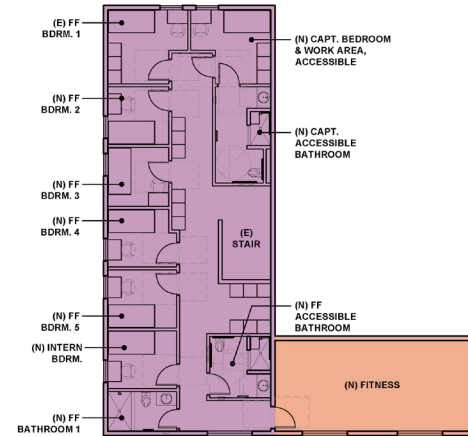


SITE PLAN DIAGRAM
SCALE: 1/32" = 1'-0"



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

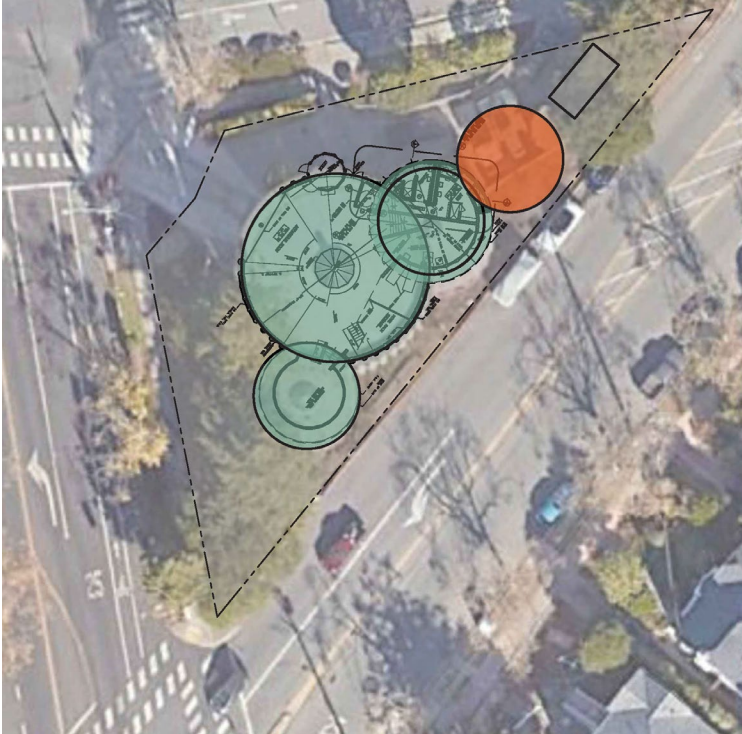


Fire House Company Make-up – Staffing Per Shift	Current	Need
Engine 4 – Captain, Engineer, Firefighter/Paramedic	3	4
Future Ambulance	0	2
Future Medic Intern	0	1
Reserve Engine	0	0
TOTAL CURRENT AND PLANNED STAFFING	3	7

Station 4: Option 1 - 1900 Marin Avenue

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

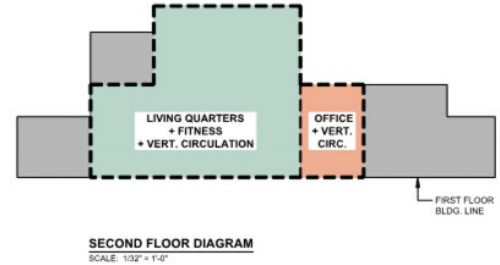
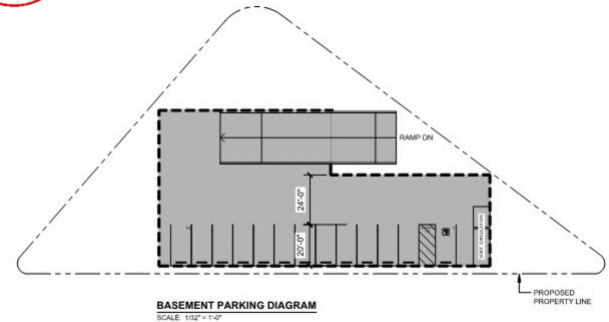
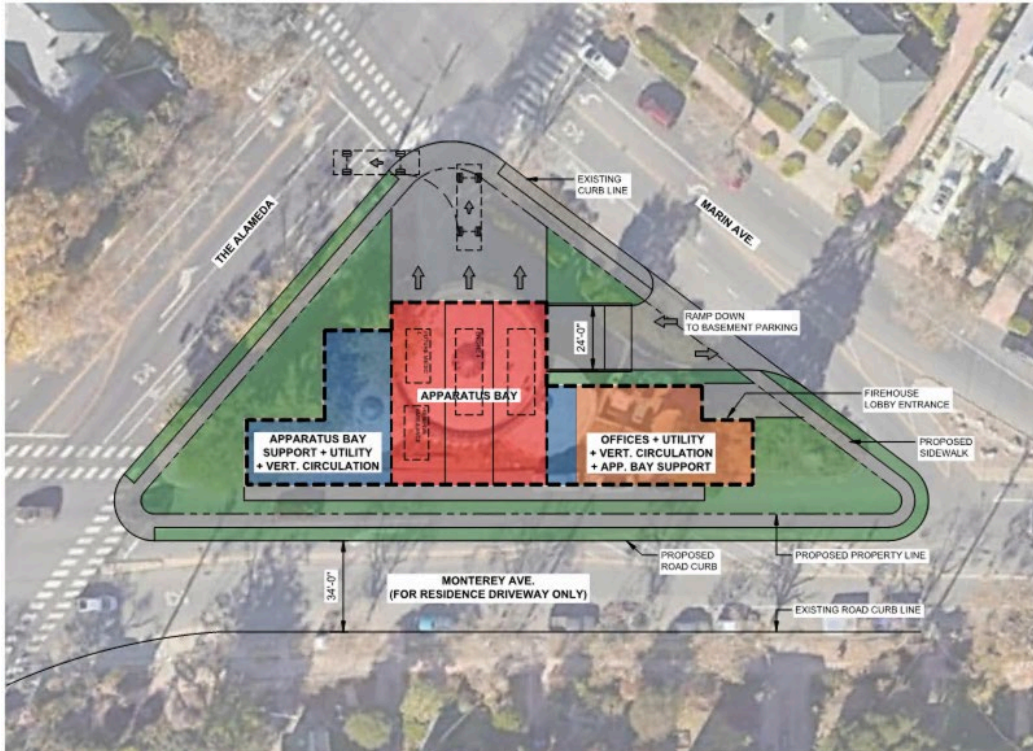


Station 4: Option 2 - 1900 Marin Avenue

12,800 sf 2 story building. Expand site and add basement parking. Replace station to add new ambulance and meet safety requirements.

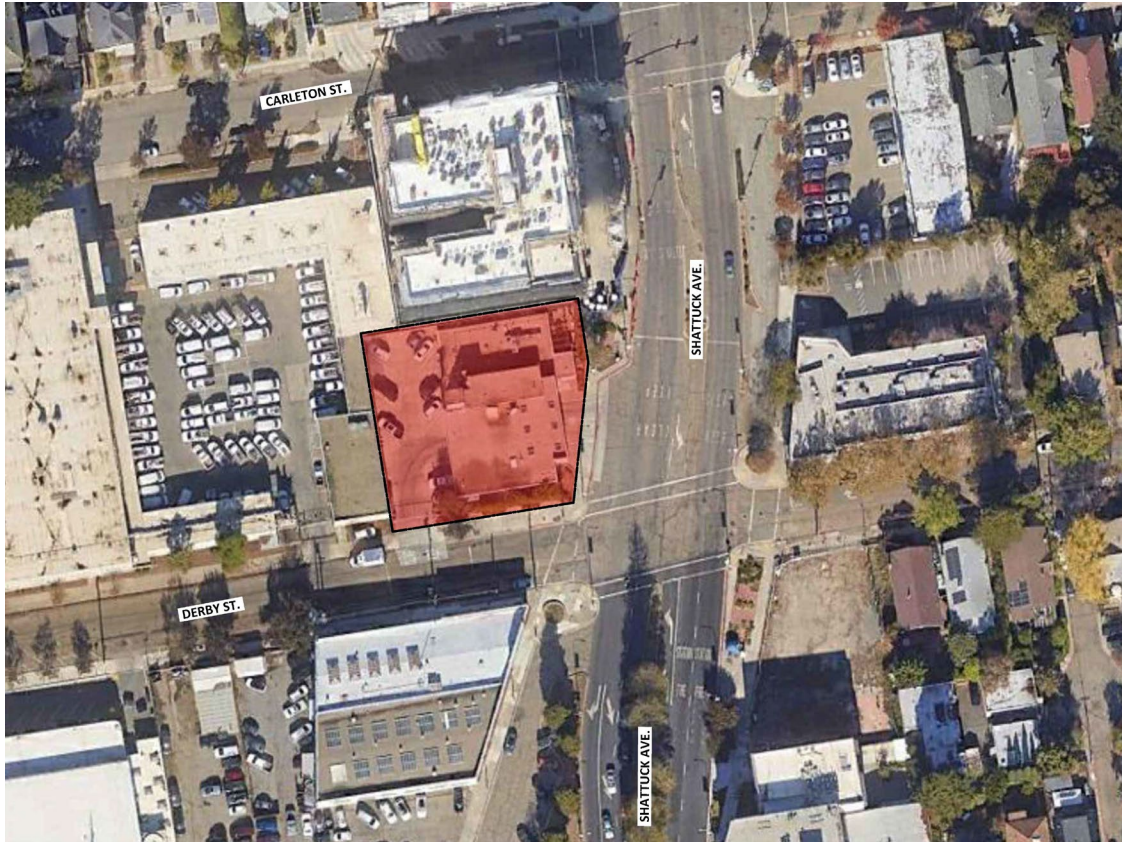


ROM Project Budget \$36-41M



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
TOTAL CURRENT AND PLANNED STAFFING	9	11

Station 5 : Option 1 - 2680 Shattuck Avenue

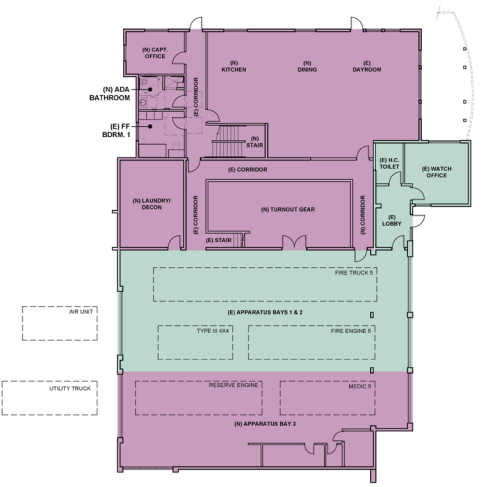
17,000 sf 2 story building

Reconfigure and expand station. Parking not met.

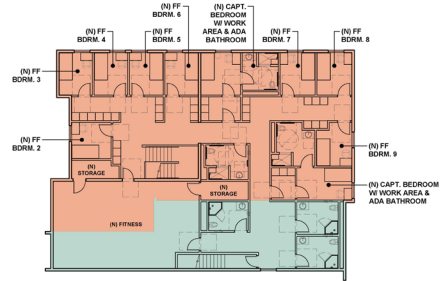
ROM Project Budget \$18-23M



SITE / FIRST FLOOR DIAGRAM



FIRST FLOOR DIAGRAM
SCALE: 1/8" = 1'-0"



SECOND FLOOR DIAGRAM
SCALE: 1/8" = 1'-0"

FIRE STATION NO. 5
2 STORY BUILDING

EXISTING SECOND FLOOR AREA:	1,132 S.F.
EXISTING FIRST FLOOR AREA:	8,454 S.F.
EXISTING TOTAL BLDG. AREA:	9,586 S.F.
ADDED SECOND FLOOR AREA:	3,094 S.F.

LEGEND:

- EXISTING BUILDING AREA
- ADDED BUILDING AREA
- RENOVATION AREA

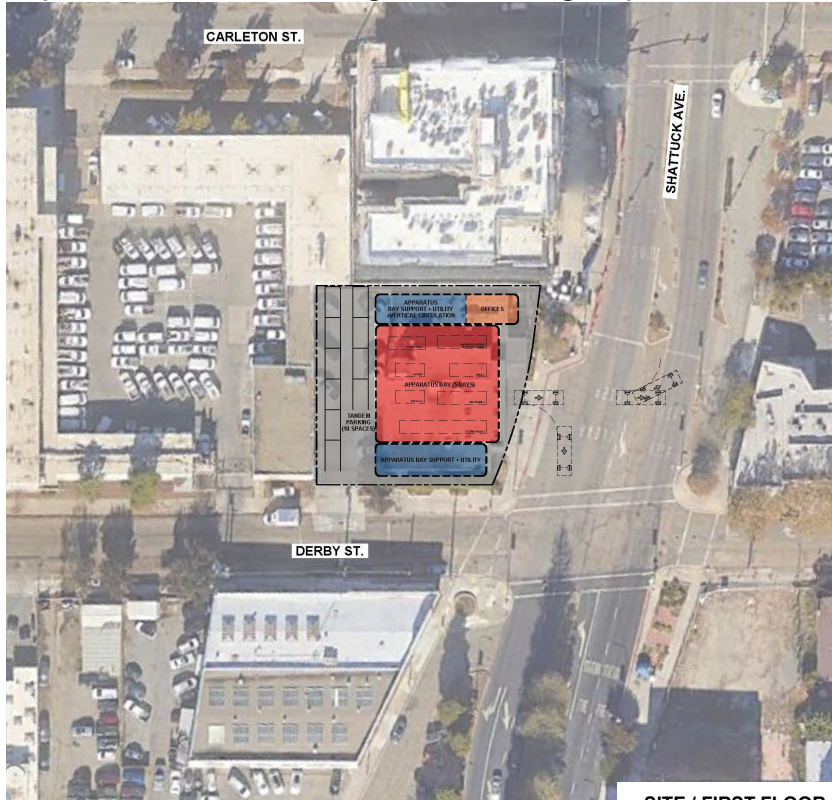


Station 5: Option 2 - 2680 Shattuck Avenue

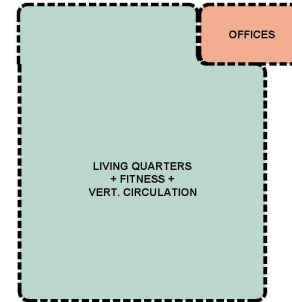
17,000 sf 2 story building

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"

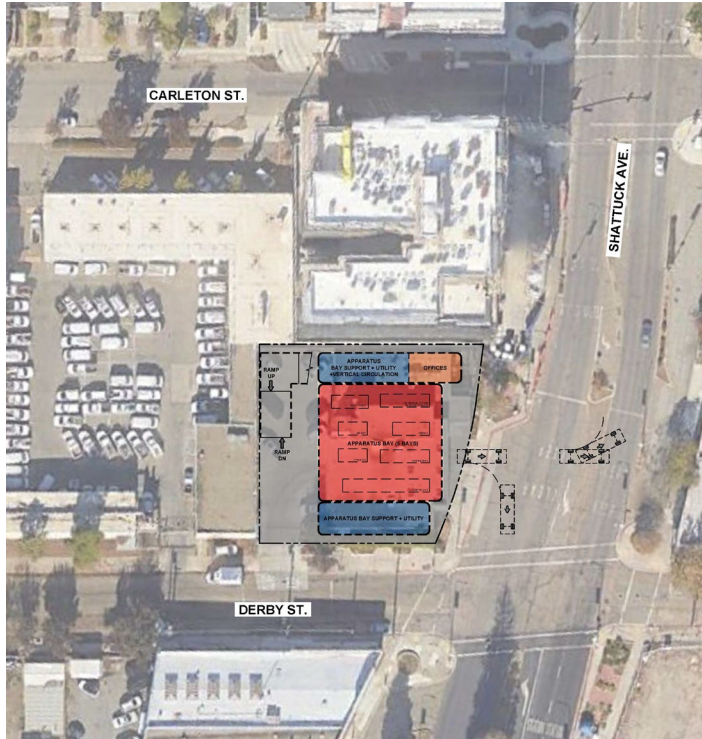


Station 5: Option 3 - 2680 Shattuck Avenue

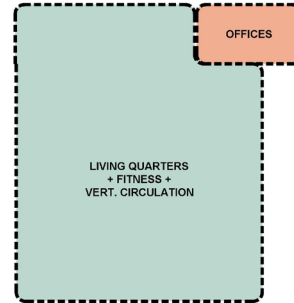
17,000 sf 2 story building

Replace building with basement parking. Program met.

ROM Project Budget \$53-58M

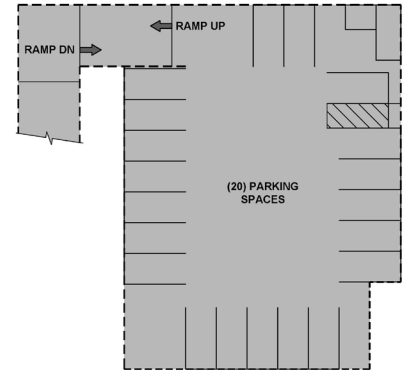


SITE / FIRST FLOOR DIAGRAM



SECOND FLOOR DIAGRAM

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



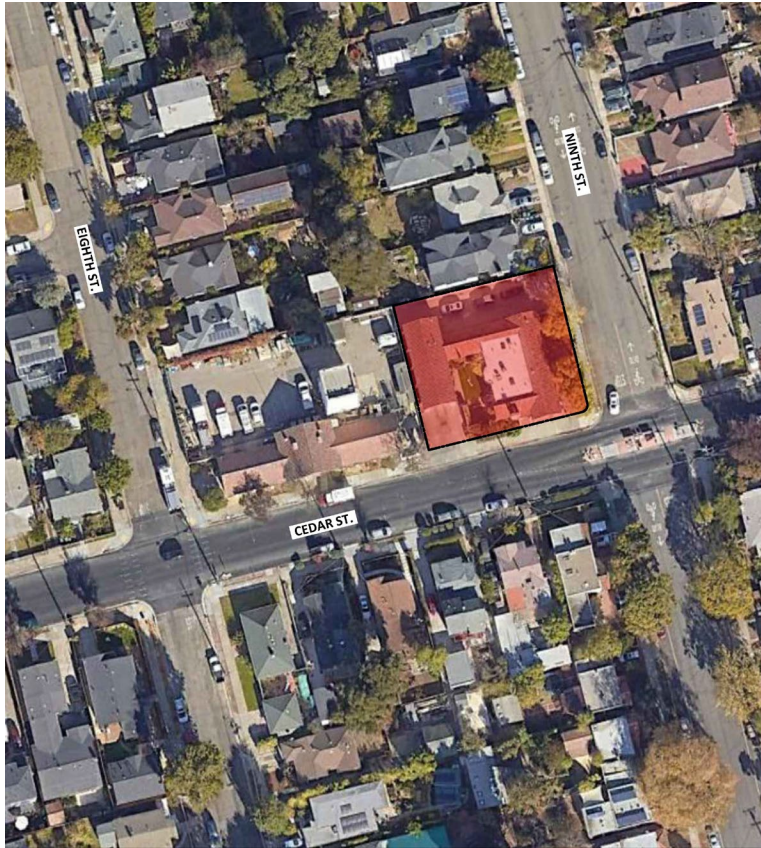
BASEMENT PARKING DIAGRAM

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



Station 6 Overview - 999 Cedar Street

Existing – 4,596 sf 1 story building

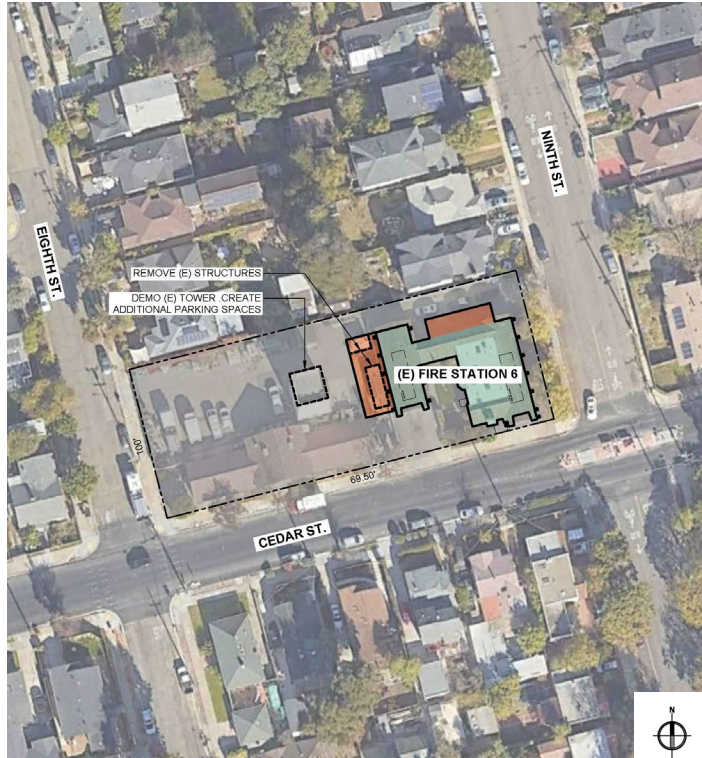


Fire House Company Make-up – Staffing Per Shift	Current	Need
Engine 6 – Captain, Engineer, Firefighter/Paramedic	3	4
Reserve Engine	0	0
TOTAL CURRENT AND PLANNED STAFFING	3	4

Station 6: Option 1 - 999 Cedar Street

6,312 sf 1 story building

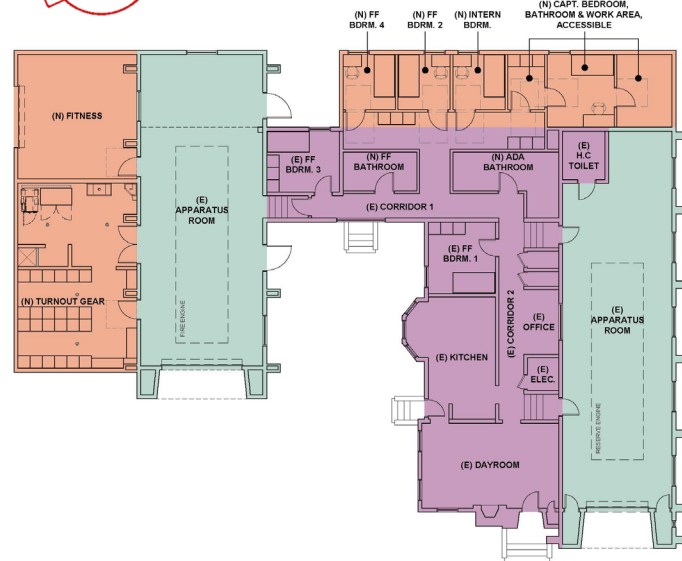
Renovation and addition using training site.



SITE / FIRST FLOOR DIAGRAM



ROM Project Budget \$11.6-15M



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
TOTAL CURRENT AND PLANNED STAFFING	6	8

Station 7: Option 1 - 3000 Shasta Road

8,000 sf 2 story building

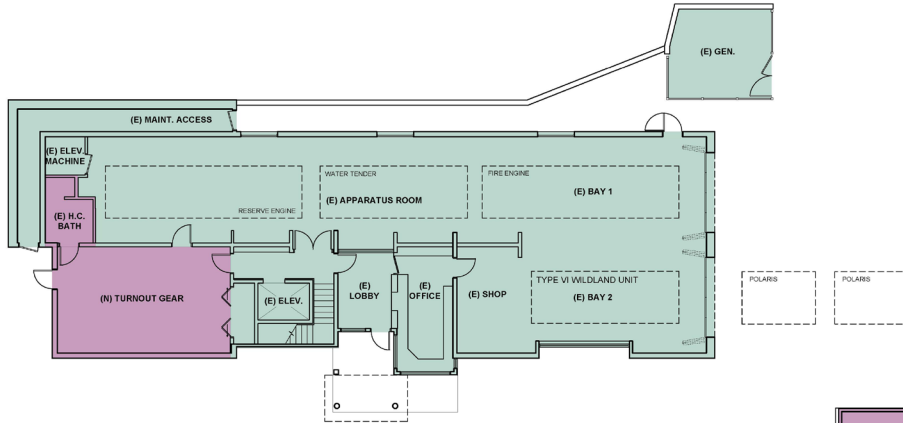
Reconfigure and expand to add additional living quarters & fitness

ROM Project Budget \$10-13M



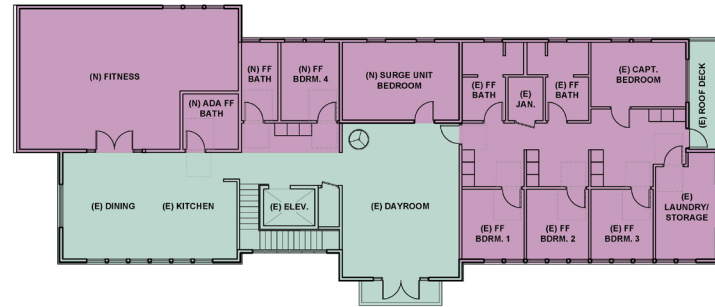
LEGEND:

- EXISTING BUILDING AREA
- RENOVATION AREA



FIRST FLOOR PLAN

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



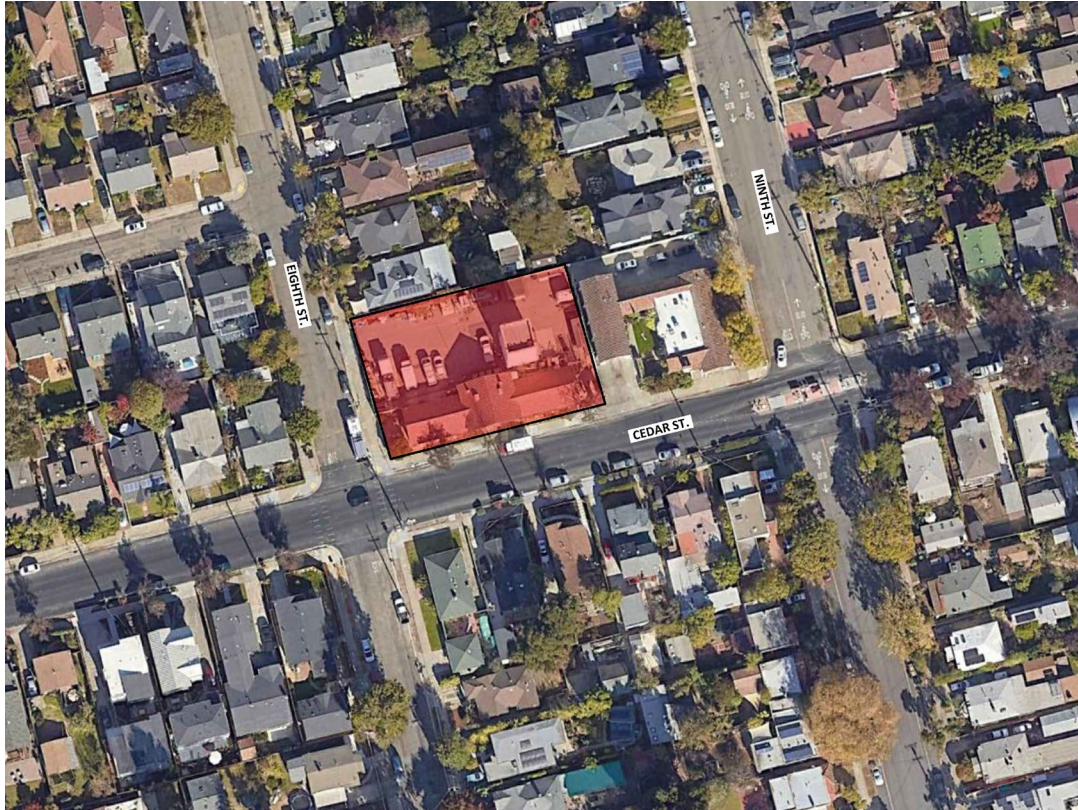
SECOND FLOOR PLAN

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



Division of Training Overview - 997 Cedar Street

Existing – 3,893 sf 1+ story building



Division of Training – Richmond

Proposal – Joint 30,694 sf training facility with cities of Albany, Richmond, and El Cerrito

ROM Project Budget \$81-90M



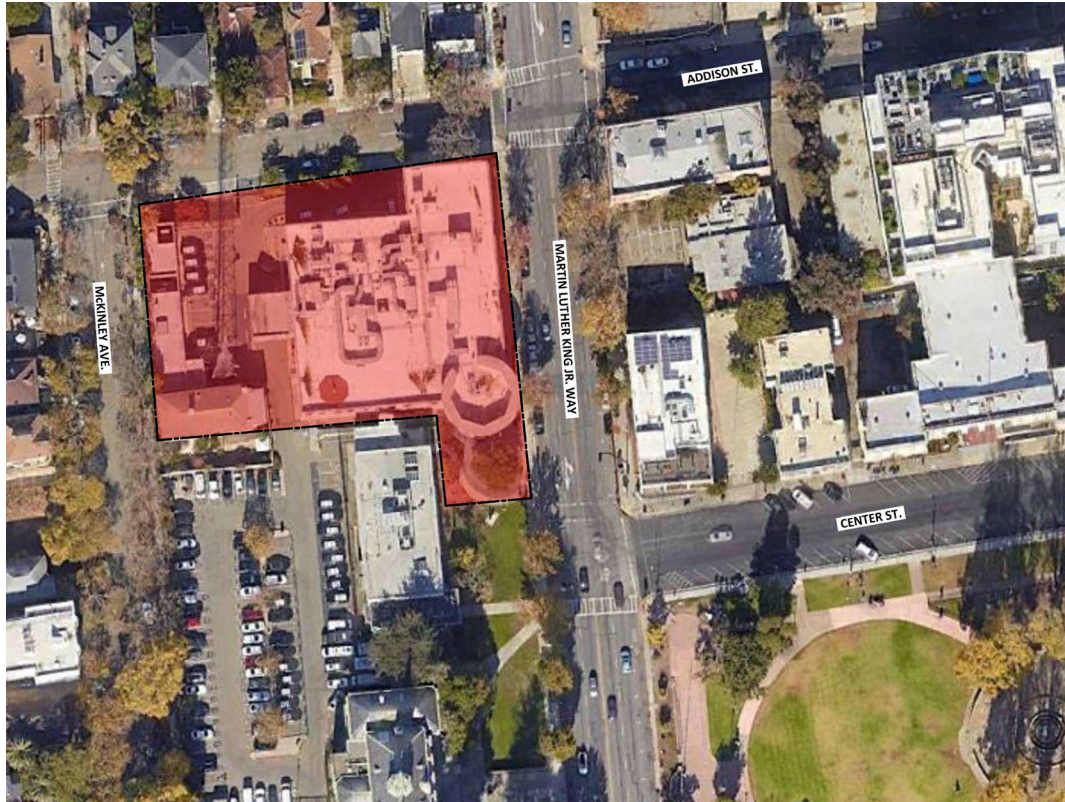
Division of Training – El Cerrito

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

Proposal – Relocate the Fire administration offices, EOC center, and Ambulance program.

ROM Project Budget \$33-36M

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
Headquarters Subtotal (SF)	17,176

Training Classroom Space Needs	Program
Main Classroom	2,208
Equipment Storage	180
Table and Chair Storage	192
Secondary Classroom	768
Training Classrooms Subtotal (SF)	3,348

Headquarters Subtotal (SF)	17,176
Training Classrooms Subtotal (SF)	3,348
Ambulance Deployment Center Subtotal (SF)	8,324
Grossing Factor 15%	4,327
Grand Total	33,175

Priorities and Phasing

Phased process starting with the most impacted stations – Stations 1, 2 & 5 with goal to increase staffing in the Downtown area:

- A new Training Center and Headquarters are high priorities.
- 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.



Priorities and Phasing

SEQUENCED PROJECTS

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

INDEPENDENT PROJECTS

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

Seeking Direction

- Accept the plan, provide feedback and direct the City Manager to return to Agenda & Rules to schedule a date to formally adopt the FMP.
- Provide feedback on the following:
 - To electrify pre or post remodel or rebuild
 - To move headquarters and training as soon as possible. To move headquarters and training as soon as possible.
 - On the proposed sequence of station remodel/rebuilds with Station 1 as the top priority, which will require beginning the process of identifying a new location.
- We need future direction on how to proceed in terms of a funding source.

Thank you

