

# APPENDIX

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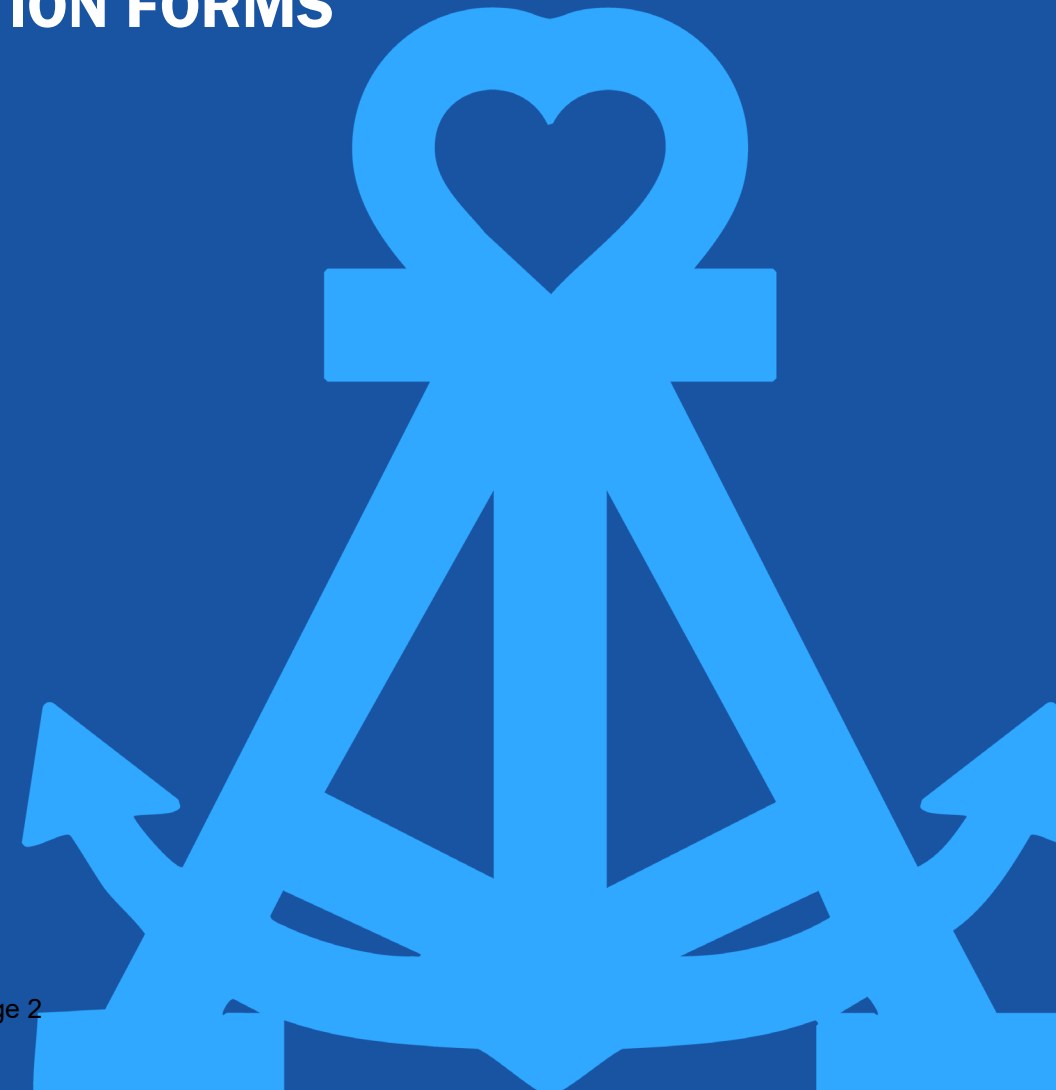
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# APPENDIX A

## A - FACILITY ASSESSMENT CONDITION FORMS



# FACILITY ASSESSMENT

## FLEET SERVICE GARAGE

Facility Condition Assessment Matrix								
Alameda Fleet Service Center								
Site Visit - 2/5/2025								
No.	Building Component	Code Rating		Code Comments	Operational Standards Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
		<b>Code Compliance of Existing Building</b>			<b>Operations Compliance of Existing Building</b>			
		California Building Code (CBC)						
		Americans with Disabilities Act (ADA)						
<b>Building Condition</b>								
1	Service Bays		X	Five exits bolted, verify if floor drains to oil separator, verify non-rated roof	Slab Cracking, Lighting inadequate poor visibility, currently 3 service bays but need one long bay for fire truck that now has to be worked on outside. Radiuses to exit bays are very tight.		X	
2	Service Bay Storage		X	Oil storage and battery storage should have containment curbs Storage blocking some of the overhead doors.	Lack of office space so office materials in service bay area. Chemical storage and lock parts need better storage.		X	
3	Supervisor Office	X		Adequate office space for supervisor	Facility has no meeting space so office is used for small meetings. Need a conference room for staff meetings and vendor meetings.		X	
4	Break Area		X	36" high cabinets, non-ADA sink and cabinet. Need to verify adequacy of fire separation. Exit door bolted, materials blocking path of travel	Need better break area separated from shop space.		X	

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5	Parts	X			Overflows into service bays. Well-organized parts section but tightly packed into existing space.		X	
6	Locker/Restroom		X	Not ADA. Only one unisex locker area	Need more lockers and provide for gender equity.		X	
7	Mezzanine		X	Not accessible, head height substandard	Should have storage in accessible areas		X	
8	Vehicle Wash		X	Removed wash equipment because of improper drainage	Would need to be replaced or built at a new facility with proper drainage system		X	
9	Tire Storage		X	Bay storage height	Tight space for tires		X	

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	<b>Building Components</b>							
	Roof	X		Just replaced roofing. Very flat roof	Overhead clearance too low for fire truck		X	
	Walls - Exterior		X	Block is cracked at vehicle wash/break area. Ceiling is coming down			X	
<i>Note: Comments above assume that the facility is to have an accessible path of travel throughout.</i>								

# FACILITY ASSESSMENT

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<b>Site Condition</b>								
	Department Vehicle Parking				Need a secured lot sized for department vehicles. No space for potential resale fleet vehicles which are stored at Bldg 6 on West Ranger		X	
	Staff Personal Parking				Inadequate number of spaces. Parking tickets are common. Conflicts with public parking to boat launch.		X	
	Security				No secured gate or fencing. Homeless issue.		X	
	Secured Parking Lot				Too small at back of service bays. Shuffle vehicles all the time to work on them. Need better access but not enough space for adequate drive aisle at back of service bays. Need a pull through bay with better turning radius for longer vehicles.		X	

# FACILITY ASSESSMENT

## FLEET SERVICE GARAGE

**Facility Condition Assessment Matrix**  
**Alameda Fleet Service Center**  
**Site Visit - 2/5/2025**

No.	Building Component	Code Rating		Code Comments	Operational Standards Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	

***Building Systems Condition*** *refer to Engineering Reports for detail*

	Structural			CMU cracks at Break Room header (Clarifying with tructural Engineer)				
	Mechanical		X	Air compressor inside building so extremely loud. Two of three unit heaters need to be replaced. Office has an electric baseboard heater that doesn't work and is abandoned in place. No other space conditioning in the facility.	Existing vehicle exhaust with underground duct and rooftop exhaust not used in over 10 years. No Plymovent Vehicle Tailpipe Exhaust. General bay exhaust system in place but exhaust fan needs to be replaced. Restroom exhaust fans need to be replaced.		X	
	Plumbing		X	Water closets and sinks all need to be replaced	Break Room counter/sink needs to be replaced.		X	
	Electrical		X		Poor lighting levels. Can't support an electrified fleet. No capacity for EV chargers with existing electrical service.		X	
	Environmental		X	Clarifiers at drains in yard areas				

# FACILITY ASSESSMENT

## MAINTENANCE SERVICE CENTER

Facility Condition Assessment Matrix Alameda Maintenance Service Center February 5, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standards Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
		<b>Code Compliance of Existing Building</b>			<b>Operations Compliance of Existing Building</b>			
		California Building Code (CBC)						
		Americans with Disabilities Act (ADA)						
<b>Building Condition</b>								
1	Traffic Signal		X	Needs better separation of activities for shop, storage, office and computer workstations and employee break time. Doors and racks may have accessibility issues. Potential exiting issue.	Storage of equipment is in the middle of floor to allow computers at perimeter with existing power. Computer equipment should be separated from shop functions to avoid exposure to dust and other possible contaminants.		X	
2	Traffic Signal - East Wing		X	Per Mechanical Engineer, rooftop general exhaust fan needs to be replaced	Work Stations and electrical equipment in Shop area. Enclosed storage room needed for sensitive electronics.		X	
3	Plumbing + Electrical Shop		X	Space has gas and exhaust smell, Furniture blocking doors	Office, computers, staff lockers and eating area all located in single shop space. Should be separate areas within shop.		X	
4	Sewer + Storm Water Shop				Current configuration works	X		
5	Concrete Shop				Mostly office space/personnel staff area	X		
6	Utility Shop				Big pumps, valves for flooding emergencies stored at Building 6 at Alameda Point. In emergencies need to travel to the Point then go to repair location.		X	
7	Parking Meter Shop					X		
8	Paint & Sign Shop				Fumes present. Need better exhaust.		X	

# FACILITY ASSESSMENT

## MAINTENANCE SERVICE CENTER

### Facility Condition Assessment Matrix Alameda Maintenance Service Center February 5, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standards Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
9	Buildings + Facilities Shop				No exhaust system. Dust collection is snorkel type system that is nearing the end of useful life but doesn't need replacement yet.		X	
10	SSO Storage					X		
11	General Note				Per Supervisors, shops should be larger for better efficiency. If staff lockers could go to a new central locker area, shops would have more work space. If MSC had more protected outdoor space, more shop space could be available indoors.			
12	Warehouse				Main switchgear located here. Also Lock/Keyshop is located here. Need separate storage area for gas and chemicals		X	
13	Uniform Storage				Contract service area to drop off clean uniforms.			
14	SCADA Office				Small office, ideally adjacent to main office and cluster of Supervisor offices. Currently one Primary Workstation in IT/SCADA Room and one workstation in Plumbing.		X	
15	Offices and Conference Room				Front office has space that is not staffed and could be reconfigured for more Supervisors' offices. Good size conference room.		X	
16	Lunch Room				Heavily used for eating, meetings, and training sessions. Adequate size but larger desired.	X		

# FACILITY ASSESSMENT

## MAINTENANCE SERVICE CENTER

### Facility Condition Assessment Matrix Alameda Maintenance Service Center February 5, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standards Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
<b>Site Condition</b>								
17	Department Vehicle Parking				Currently 43 vehicles and 5 sweepers. Some parking covered bays have been taken over for protected storage. Pavement is degrading.		X	
18	Staff Personal Parking				Supervisor Parking with 8 spaces. Not enough spaces to accommodate all staff. Currently only 20 spaces available for over 40 staff members. During fishing/crab season there is no street parking available.		X	
19	Delivery Parking				Large trucks park in front in the middle of the street which has residential across from MSC with forklift unloading truck. Sometimes need traffic control assistance. Back up beeping/signals are annoying to neighbors.		X	
20	Equipment Storage and Parking				Storage at multiple sites at MSC and Fire Training took over Building 6, MSC moved storage to Viking near Recreation Corp Yard. Ideally, items on Viking should be at MSC (trailers, backhoe, clean and debris stockpiles). Light poles, excavators, two skid steers, three Bypass Pumps, two equipment trailers, boat, forklift, two portable generators at Alameda Point (yard at Fire Training Building 6/former Fire Station 5).		X	

# FACILITY ASSESSMENT

## MAINTENANCE SERVICE CENTER

Facility Condition Assessment Matrix Alameda Maintenance Service Center February 5, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standards Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
21	Vehicle Wash		X	Not being used. Clarifier in yard not currently operable. 3-chamber pit in line with drain.	Not in operation. Clarifier in yard not currently operable		X	
22	Fueling Station		X		Currently two islands with three pumps. Pumps are super slow and air bound. Tanks have no secondary containment though required in 2025 and will need to be removed.		X	
23	Material Stockpiles			Clarifier in yard not currently operable	Clarifier in yard not currently operable. Need more room for sand stockpile and for distributing sandbags to the public in emergencies.		X	
24	Waste Management				Should be under a covered roof area to protect materials and prevent runoff. Separate location at Alameda Point/Skyhawk site for sewer and other waste bins, three 8-yard bins.		X	

# FACILITY ASSESSMENT

## MAINTENANCE SERVICE CENTER

### Facility Condition Assessment Matrix Alameda Maintenance Service Center February 5, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standards Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
<b>Building Systems Condition</b> refer to Engineering Consultant Reports								
25	Structural							
26	Mechanical			Office has an electric baseboard heater that is abandoned in place. AC for office ok. Gas fired furnaces in shop mezzanine service common restroom and storage areas. Gas fired shop heaters are original and need replacement. There is no space conditioning to office or break room .	Traffic Signal Shop has a rooftop general exhaust fan in need of replacement. No other shops have exhaust. Bldg-Facilities Shop has dust collector nearing the end of its life		X	
27	Plumbing				Water heater ok Water closets and sinks ok Showers ok	X		
28	Electrical-Telecomm				EV charging will require new additional service. Antenna tower in yard takes up space but not part of MSC Operations.		X	
29	Security				Staff and supervisor parking not behind secured gate. Existing fence is low at some parking. Existing security cameras not fully operating.		X	
30	Environmental				Noise, fumes, odors from MSC is potentially incompatible with neighboring homes.		X	

# FACILITY ASSESSMENT

## RECREATION & PARKS CORPORATION

Facility Condition Assessment Matrix								
Alameda Recreation and Parks Corporation Yard + Storage								
Site Visit - 2/5/2025								
No.	Building Component	Code Rating		Code Comments	Operational Standards Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
		Code Compliance of Existing Building			Operations Compliance of Existing Building			
		California Building Code (CBC)						
		Americans with Disabilities Act (ADA)						
<b>Building and Site Conditions</b>								
1	270 West Ticonderoga @ Viking Street		X	Two-story metal industrial type building but barely functional. No electrical service at all in the facility since copper wiring has been stolen and stripped out of the building. There are no restrooms at this location.	Building is used for some storage but mostly has value to Recreation and Parks because of parking not the building.		X	Replace
2	Quonset Hut		X	Old and worn building used for storage.			X	
3	Parking Lot		X	There is site fencing but no site lighting. No security cameras or alarms. Vehicles he been stolen from here. The facility is fairly isolated.	There is site fencing and Recreation Department Vehicles are kept in the parking area. During the day, while on-the-job, employees park their personal vehicles here. At the start of their work day they switch from their personal vehicle to a department vehicle then drive to the old pool building at 1101 W. Red Line for daily staff briefings.		X	
4	Service Yard							
5	1101 West Red Line Avenue		X	Former Natatorium Building., one large space. Over time, the pool has been filled in /covered with concrete (still in progress). Driving access into the building is a challenge due to narrow access and turning maneuvers required.  There are no restrooms in the facility and no locker or changing areas. No shower or safety shower.	To be a useful space, the former pool has been filled in and partially covered with concrete (ongoing process) to allow for parking of vehicles and equipment inside the facility. T  There is no meeting space to conduct the morning briefing for all staff.		X	Replace
6	Service Yard		X	Minimal outdoor yard area	Outdoor space is insufficient to provide corporation yard work.		X	
7	Parking Lot		X	No fenced in parking for City or personal vehicles. High value and large maintenance and groundskeeping equipment is parked inside the building.	There is no enough outdoor space to provide parking for Department Vehicles and equipment so parking has been created indoors. There is no employee personal vehicle parking and staff must drop their cars at West Ticonderoga which is 2.5 miles away and an 8 minutes drive.		X	

# FACILITY ASSESSMENT

## ANIMAL SHELTER

Facility Condition Assessment Matrix Alameda Animal Shelter								
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		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
		Code Compliance of Existing Building			Operations Compliance of Existing Building			
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<b>Building Condition</b>								
1	Entry		X	Pedestrian access to main entry may conflict with parked cars backing out.	Entry door leads directly into narrow space at reception counter.		X	REPLACE BUILDING
2	Lobby Reception		X	All one counter height, not ADA Accessible height. Narrow, limited clearance in front of service counter. Former lobby/reception is now work space for service counter personnel.	All -glass storefront system at front of building leaves reception desk fully exposed. Very cramped and congested entry. No separation for animals being adopted and strays bring brought in.or surrendered. Serves as Emergency Room and business reception. The narrow space has three doors to access adjacent rooms.such as animal holding room opposite the service counter. No room for chairs for waiting. Need a separate entry for staff and volunteers. This space was originally designed as the reception lobby but now has service counter work station plus two other workstations.		X	
3	General Office		X	Circulation and path of travel through the office is limited and constricted.	Not enough offices or workstation spaces for Animal Control Officers, and both paid Staff and volunteer staff. Existing offices are extremely cramped. The area originally designed as "General Office" has been partitioned into two offices for a front office (3 workstations) and two in a smaller section at the back. The number of offices in insufficient and offices are cramped and serve multiple functions. One former private office has been converted to Visitation-Adoption Get Acquainted Room but also has a work desk.		X	

# FACILITY ASSESSMENT

## ANIMAL SHELTER

Facility Condition Assessment Matrix Alameda Animal Shelter								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
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4	Conference-Lounge	X			This single space has been converted to a small animal holding area for species other than dogs and cats or for individual animals needing a quiet environment. It is also used for meetings and a break room with a microwave, sink, and refrigerator as well as tall storage cabinets and feed and cat litter bins. The room is too small as a meeting room. Small patio off of lounge has been converted to a holding area with cages for birds, rabbits, poultry, reptiles and other small animals.		X	
5	Hallway @ Office		X	Storage boxes, a computer workstation, office equipment, mails slots and office supplies along the hallway constrict path of travel.	Boxes being stored in hallway due to inadequate storage space throughout building. Status boards, whiteboards and informational posters line the hallway. High traffic gets clogged here due to kennel entry door and door to Get Acquainted Rooms. Desktop printer and mail slots, office supplies also line the hallway.		X	
6	Restroom	X			Single restroom serves the entire facility and is not adequate for the number of staff and volunteers at the Shelter. No separate public restroom in the facility. Should have a single public toilet near lobby.		X	
7	Lockers	X			9 lockers but need 15-20 for staff and Animal Control Officers. Shower is used to hang rain gear and uniforms. Space cannot accommodate more lockers, changing and showering. Radio charging sits on a locker room bench.		X	
8	Private Office	X			Office has been converted to a Get Acquainted Room for potential adoptions. This room has a desk that is shared by staff. Desks and offices are inadequate - 40 employees but only ten desks.		X	

# FACILITY ASSESSMENT

## ANIMAL SHELTER

Facility Condition Assessment Matrix Alameda Animal Shelter								
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9	Temporary Holding	X			After hours kennels are broken so of limited use for the temporary housing function.		X	
10	Clinic	X			Space is cramped and has items stored up to the ceiling. Need more clinic space. Spay & Neuter is contracted out. FAAS Medical Village (container structures for clinic spaces) to open this year Should have multiple treatment rooms for surgery, dental work, radiology and pharmacy/lab, controlled and not controlled drugs, refrigeration and work stations. Should be away from main holdin areas.		X	
11	Hallway to Kennels		X		Electrical Cabinets stick out into path of travel Kennels and access corridors are insufficient and poorly configured so that cats don't have to be carried through dog areas.		X	
12	Cat and Puppy Room	X			Kennels in general lack proper heating and lighting. Cats and dogs need to be kept in separate areas so original design is obsolete. Existing cat room has a small community play space for cats to socialize but space is limited.		X	
11	Food Prep		X	Too small with inadequate storage cabinets and sink area. Items stored very high up on shelving.	Though well-organized the room is too small to provide adequate counters, work areas for food prep.		X	
14	Food Storage		X	Items are stored very high up on shelving.	Though well organized the space is packed full of food for animals.		X	

# FACILITY ASSESSMENT

## ANIMAL SHELTER

Facility Condition Assessment Matrix Alameda Animal Shelter								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
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15	Laundry	X		Storage cabinets overflowing with clean towels and blankets	Room has three sets of stacked washers and dryers but was originally designed for a single pair. Very limited counter space. Upper and lower cabinets and a closet cannot hold all the needed clean towels, animal beds and blankets. What is now the laundry room was designed as a "Grooming Room"so it has an animal wash tub at counter height.		X	
16	Isolation Room	X			Now used for Cat Isolation but transporting cats here space requires bringing cats through dog kennel areas.Should have 2 cat isolation rooms with 6 cages each and 2 dog isolation areas with cafes for large and small dogs.Need to separate Parvovirus vases from upper respiratory cases.		X	
17	Mechanical /ElectricalRoom	X			Mechanical Rooms are small and barely accommodate the water heater. IT Closet is severely cramped, has no Air Conditioning andserver rack sits directly on the floor.		X	
18	Euthanasia		X		Now used as the "Clinic" space. Need more clinic rooms to handle the cases that come through the shelter. Two staff members use the room and procedure table as desk and office space.		X	
19	Freezer Room		X		Not used as a freezer area. There is a cabinet freezer in outdoor covered area that runs off inadequate electrical service and can be turned off inadvertently. Need at least one more freezer with reliable electrical power. Freezer is holding area for Contract service.		X	

# FACILITY ASSESSMENT

## ANIMAL SHELTER

Facility Condition Assessment Matrix Alameda Animal Shelter								
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20	Covered Work Area		X		Provides covered area for storage of supplies on pallets, large items such as kennels with space to wash them down. Multiple other "tuff sheds" for storage. Kitten Cottage is a free-standing pre-fabricated shed used for seasonal influx of kittens. Holding area till foster homes can be found for kittens.		X	
21	Dog Kennels and Runs	X			Not enough to separate general population and adoptable dogs from aggressive dogs, dogs in protective custody, owned dogs, Kennel area is not treated for sound abatement and is very loud and stressful for animals and potential adopters. Neighbors complain about dogs barking though they are kept indoors after hours..			
22	Outside Covered Animal Cages	X			All birds need to be separated. Feral Cats need 10 cages. Need a Cat Intake Room and a separate dog intake room. All need to be accessible to staff from outdoors.			
				<i>Note: Comments above assume that the facility is to have an accesible path of travel throughout.</i>				
<b>Site Condition</b>								
	Storage				Limited site area. Congestion with vehicles, pedestrians and storage containers		X	
	Public Parking		X	Very limited	All parking is very limited. Area serves as truck access for deliveries. No separation for pedestrians and cars backing out of parking. In the mornings the main gate is closed and dogs are allowed to run in the parking lot.		X	
	Department Vehicle Parking	X		Very limited	Van and trailer/box.		X	

# FACILITY ASSESSMENT

## ANIMAL SHELTER

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	Staff Personal Vehicle Parking		X	Very limited to not available.	Virtually non-existent. Very poor		X	
	Security	X			Should have separate entry for staff. Sometimes irate individuals are at the shelter. Facility has CCTV but needs additional camera locations.		X	
	Emergency Generator							
	Landscape-Patios							
<b>Building Systems Condition - see refer to engineering reports for details</b>								
	Structural				Damaged interior paint at CMU walls and potential water damage, Damage to steel siding. Cracking at CMU walls. Rusted steel at cantilever exterior joist.			
	Mechanical				Air Conditioning units are at the end of their useful life and need replacement within 5 years. Furnaces need replacement now. Unit heaters at kennels need to be replaced. Electric radiant heaters at the exterior wall of kennels are poorly hung and served by extension cords and need a more permanent solution. Exhaust systems in all zones need replacement.		X	
	Plumbing				Laundry equipment relatively new for may need to be commercial grade. Toilets need replacement. Restroom and animal care sinks all need replacement. Water heaters are assumed to have ten more years of useful life.		X	
	Electrical				Staff report frequent tripping circuit, likely due to overloading. An additional circuit should be added to balance the load. IT Closet lacks proper working clearance of 3 feet. Fire Alarm system appears adequate. Light fixtures are a mix of fluorescents and LEDs. Converting to all LEDs would help energy efficiency and lower maintenance. Occupancy sensors and dimming switches would need to be installed for Title 24.		X	
	Environmental				Possible Drainage issue from Washdown kennel areas (where does it drain to?)		X	

# FACILITY ASSESSMENT

## FIRE ADMINISTRATION AND FIRE STATION 1

Facility Condition Assessment Matrix Fire Administration and Alameda Fire Station No. 1 February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	Upgrade/ Renovate or Replace
		Code Compliance of Existing Building			Operations Compliance of Existing Building			
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		Americans with Disabilities Act (ADA)						
<b>Building Condition</b>								
<b>FIRE ADMINISTRATION</b>								
	Public Entry Lobby from Park Street				Entry area with two existing service windows. Only one in use into Business Office. Other service window into Deputy Chief Moxley's Office is blocked off.		X	
	Corridor		X	Corridor is narrow		X		
	Business Office			Small hallway, organization has grown but now maxed out, no more room Current offices, Chief, Dep Chief, Division Chief, Fire Admin Svcs Mgr,	Office space is too small, cramped and currently houses One Executive Assistant, Data Assistant, Accounts Receivable and Office Assistant. Small cubicles provide minimal space and sound separation for staff.		X	
	Chief's Office				Adequate size	X		
	Conference Room and Break Room				Conference Room too small, was designed as an office. Only has a conference table and 8 chairs Need conference room for 20 chairs/table, with a hospitality counter for coffee and an undercounter refrigerator. Conference Room also serves as a break room. Need a dedicated break area that is separate from Conference Room.		X	
	Toilet				Two toilet rooms. Sound from toilet carries into hallway where office copier/work room is located.		X	
	Janitor's Closet				Does not exist, should have a janitor's closet near toilets.		X	

# FIRE ADMINISTRATION AND FIRE STATION 1

Facility Condition Assessment Matrix								
Fire Administration and Alameda Fire Station No. 1								
February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	IT Closet				Former Coat Closet now IT Room, needs better ventilation and cooling		X	
	Deputy Chiefs/Division Chief/Administrative Services Manager Offices			NOTE IF FIRE ADMIN IS RELOCATED OUTSIDE OF FIRE STATION 1: A whole new Administrative Facility, should include Fire Administration, EMS, and Fire Prevention (the latter two now at City Hall West). Admin could be near Fire Training that has one Division Chief, a Captain, and an Administrative Assistant. EMS has a Division Chief, Captain, Nurse Educator/EMS Coord and Mgmt Analyst. Fire Prevention has a Deputy Chief, 3 inspectors, 1 pt inspector and admin assist (56 people plus 1 PT probably future FT plus another FT, inspectors) don't currently do plan checks but if it comes back in-house, would need more office space. EMS doesn't need to be at City Hall West.	Limited office space at full capacity for Deputy Chiefs, Division Chief and Administrative Services Manager		X	
	Back Entry Lobby		X	Narrow small area with office equipment provides back door from rear apron of Apparatus Bay	Narrow space serves as office work room with copier, printer, recycling, work counter. Need a secure file room with file cabinets, keyed room for files and supplies, now crammed in with Business Office cubicles and back entry.		X	
					Kitchen exhaust too close to office HVAC intake on roof, so smells. Can't open Admin office windows for ventilation due to street noise and road grime.		X	

# FACILITY ASSESSMENT

## FIRE ADMINISTRATION AND FIRE STATION 1

Facility Condition Assessment Matrix Fire Administration and Alameda Fire Station No. 1 February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	Upgrade/ Renovate or Replace
<b>Building Condition</b>								
	<b>FIRE STATION</b>							
	Dayroom				No transition space from App Bay into Dayroom, just a single door with conventional door seals. Person-door and sliding door out to BBQ. Open directly to Dining Room. Adequate size dayroom.		X	
	Closet off Dayroom				Designed as Turn Out Closet but now Janitor's Closet for household supplies. Needs a floor sink.		X	
	Dining				Open to Day Room. Large table and chairs. Adequate size.	X		
	Kitchen				Kitchen exhaust is too close to office HVAC intake on roof so odors drift into offices. Kitchen needs remodel and cabinet replacements. Need better windows, street noise and road grime enters kitchen from windows.		X	
	Exercise Area			Weight room windows are covered with road grime.	Cardio and Weight room are split into two areas. Exercise bikes for cardio in a glassed in room (via storefront double doors) directly off the App Bay. Poor Air Conditioning though there is a ceiling fan. No Wall-mounted TV or monitor.		X	
	Stairs to 2nd Floor				Stairwell is directly off the App Bay via a single door with conventional door seals. No transition zone from App Bay into living quarters. Flooring is worn. Stair treads shallow. Old building exhaust fan over stairs potentially pulls air in from adjacent App Bay.		X	
	Hallway				Kitchen storage in built-in closets along hallway	X		
	Restroom			.Need a public restroom connected to the lobby/ it's the Captain's bathroom. First Amendment auditor . Touching the station at all will require a public restroom	Worn finishes and fixtures. For a remodel, need to reserve some floor space for Sauna for firefighter wellness.		X	

# FACILITY ASSESSMENT

## FIRE ADMINISTRATION AND FIRE STATION 1

Facility Condition Assessment Matrix Fire Administration and Alameda Fire Station No. 1 February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	Watch Office				Good visibility into App Bay but no transition zone. Single glass storefront door from App Bay to Office, no special door seals or vestibule. Has a Murphy bed in the office.		X	
	Public Station Entry				No secure separation from public entry point.	X		
	Telecomm			Radio charging. ASK CREWS WHERE CHARGING SHOULD GO.	Does IT Room serve anything other than the Station. It serves it's hub for station alerting but new system is distributed to all stations. But City has a geological earthquake monitor. City IT owns that room.next to the stairs off the app bay. Needs cooling fan.		X	
	Captain's Office				Has Murphy bed, office desk	X		
	Private Offices					X		
	Officer Restroom							
	Mezzanine Storage			33 turn out lockers, if don't have mezzanine then need 33 more to be able to put wildland bag and 2nd set of turnouts all together. At FS 3 there's a turn out room with gear grid lockers and now pared down each person gets two lockers . New standared is two lcokers per person. 66 lockers total for FS 1. Or a full ht locker and a two-level one between. Station 3 personnel have extra is because of their dive equipment. Two is nice but 1.5 is doable. 50 lockers or 66 lockers.	Extra turn outs and Out-of-County bags stored here. Old EMS files in 1x10 storage cubbies.			

# FACILITY ASSESSMENT

## FIRE ADMINISTRATION AND FIRE STATION 1

Facility Condition Assessment Matrix								
Fire Administration and Alameda Fire Station No. 1								
February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	Apparatus Bay			Add an extractor and dryer for hose and turn outs. Would prefer to be able to grab turn outs when fire fighters arrive for duty at the station to quickly put it by or on the the rig. Propose Handwash sink before go into vestibule to house. No space available for an additional app bay. Third-party cell tower and an easement in rear apron takes up usable yard and parking area	App Bay wide front doors, coling doors ok but have controls issues, but not sure if bifold doors work with existing bays and site access. May not be able to make turn with tiller, swing out is hard with short front apron. Would need to check turning radius first. Firefighters report concrete slabs lift when apparatus drive across sections. 2nd kitchen refrigerator, ice machine and washer/dryer are on the App Bay floor. Should be relocated but space is not available. Old decon shower is used as a mop sink. Best practices would align spaces with decon process. walk in from exterior door to a decon room. Need a restroom/shower directly off app bay ideally, but not required. Could go back out or in to an extractor, then go into app bay or turn out storage room, Exterior/decon entry, separate room for PPE storage, Dayroom becomes turn out room, kitchen becomes day room and kitchen moves to cubicles of Fire Admin business office		X	
	Hose Drying Storage				Hose storage could be on App Bay floor	X		
	Shop				Shop space is too small, put question about preferred shop size in Firefighter questionnaire.		X	
	Storage Room							
	SCBA			SCBA is generally in separate room. But test/fit/tech to remain at Station 4	Fill station available at FS 1	X		
	Turn Out Gear Storage				Turn outs on gear grid storage racks in App Bay and in a separate storage room off the App Bay. personal wildland gear is in 33 gear grid lockers in App Bay, 2nd set of turn outs are up in mezzanine loft. Ideally would have first-use turn outs and gear bags all in one location.		X	

# FACILITY ASSESSMENT

## FIRE ADMINISTRATION AND FIRE STATION 1

Facility Condition Assessment Matrix Fire Administration and Alameda Fire Station No. 1 February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	Laundry-Extractor				Drying cabinet for hose and turn outs on App Bay Floor. Washer and Dryer on App Bay Floor			
	Medical Supply Storage				Meds being moved into locked cabinet inside locked storage room. Would be nice to have EMS storage nicer and cleaner not just a locked closet, ASK CREWS about size of EMS closet. Ask EMS equipment guy/FF. Cody: each station needs a basic EMS supply room. Don't necessarily need main EMS supply at FS 1, but it could be moved somewhere else or not, current wildland room could or fire admin wing.	X		
	<b>SECOND FLOOR</b>							
	Men's Locker Room				Built in wooden lockers.		X	
	Women's Locker Room							
	Men's Restroom				Old, worn finishes and fixtures. If possible, redesign shared toilet/shower facilities for single occupancy bathrooms. Provide a 30-year model to provide gender equity, better privacy for firefighters. Current configuration: 2 showers, 6 sinks, 3 toilets, and 2 urinals		X	
	Women's Restroom				No floor drains		X	

# FACILITY ASSESSMENT

## FIRE ADMINISTRATION AND FIRE STATION 1

Facility Condition Assessment Matrix Fire Administration and Alameda Fire Station No. 1 February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	Upgrade/ Renovate or Replace
	Dorms			High windows, not egress windows (apparently not required by AHJ at the time of design-construction)	Recent remodel of dorms created six small, single occupancy dorm room, plus one windowless room that isn't generally used. Walls and drop ceiling replaced one shared dorm room with curtains for separation. Need double pane windows, lots of street noise, bar across the street, strong afternoon sun from the west. If two additional firefighters are added there are no dorms for them. Would need to convert current weight room to two dorm rooms. Prefer wardrobe lockers and bedding lockers in hallways instead of in dorm rooms		X	
<i>Note: Comments above assume that the fire station is to have an accesible path of travel throughout.</i>								
<b>Site Condition</b>								
	Storage Sheds				Storage sheds have generators, portable water pumps, some EMS, and miscellaneous storage. Some storage needs to stay at FS 1, some could go to FS 5 and free up space at rear of Station.. ConEx box on cell tower easement. FS 1 May need to move into Fire Admin space if want to relocate EMS storage. The Station holds discarded EMS equipment and biohazards for service contractor removal. Would be good to take out of existing shed and provide a more formal/secure way to temporarily hold items pending contractor pick up for proper disposal. Yard storage shed needed. Flammables locker is out in back too, Wildland gear room, by the car port, pump and tool storage room and wildland, gear., some cots and sleeping bags, talking about moving that out to Station 4		X	

# FACILITY ASSESSMENT

## FIRE ADMINISTRATION AND FIRE STATION 1

Facility Condition Assessment Matrix								
Fire Administration and Alameda Fire Station No. 1								
February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	Upgrade/ Renovate or Replace
	Public Parking				None available		X	
	Firefighter Parking				Confined but nine spaces for crew, shift change and Fire Administration. No space for future EV charging of Department or personal vehicles.		X	
	Apparatus Wash Area				Two drains go to the bay but should have a clarifier box with chambers/sand/oil/separator to go into sewer. not to bay. Has a specialized switch if rains, we put in a hose bib that goes to rear apron automatically has a catch basin with a plunger, goes to sewer when you wash apparatus. Would need to do a straight line trench to them to catch a sewer line to that location. Figure out where sewer is and tie it together.		X	
	Secure Rear Apron				Pavement cracking and degraded			
	Hose Ramp			none, typically use Drying cabinet		X		
	Fuel Tank				Operating but tight maneuvering space at rear yard.	X		
	Generator				On-site but tight space at rear yard	X		
<b>Building Systems Condition</b> Refer to Engineering Consultant reports								
	Structural			Seismic upgrade				
	Mechanical							
	Plumbing							
	Electrical							
	Environmental							

# FACILITY ASSESSMENT

## STATION 2

Facility Condition Assessment Matrix								
Alameda Fire Station No. 2								
February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	Upgrade/ Renovate or Replace Bldg
		Code Compliance of Existing Building			Operations Compliance of Existing Building			
		California Building Code (CBC)						
		Americans with Disabilities Act (ADA)						
<b>Building Condition</b>								
	Fire Department Entry Door and Reception			Existing concrete ramp at entry but drops pedestrian onto front apron not a pedestrian only sidewalk.	Large old wooden door	X		
	Station Office				Old counter and cabinet finishes. Office has a Murphy Bed and a counter desk work station and white board behind a curtain for minimal separation from office activities. Single door, no transition zone from App Bay into Station Office, Conventional door seals. Step down from office into App Bay is unexpected and a challenge, especially to those unfamiliar with the facility.		X	
	Accessible Restroom near entry				Although clean, floor finishes and fixtures are old and worn but functional. Damaged floor cove base.	X		
	Meeting Room				Large original meeting room at front of building with old, attractive bay windows. Contains department and station historic displays, wooden ladder bookshelf with training binders. Large map table in center. Nice space and largest space in the Fire Station but use is limited with two bunk rooms directly off this meeting space.		X	

# FACILITY ASSESSMENT

## STATION 2

Facility Condition Assessment Matrix								
Alameda Fire Station No. 2								
February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	Captains' Offices aand Bunk Rooms				Bunk Room contains bed, work desk and four wardrobe, gear and bedding. Only one of the two bunk rooms has a window to outside.		X	
	Firefighter Bunk Room				Small rooms with bed and small desk only no wardrobe or bedding locker but provides single occupancy privacy for better sleep quality.	X		
	Firefighter Toilet-Shower				Although clean, floor and counter finishes and fixtures are old but operational. Painted wood cabinets are worn due to age. Terrazzo shower pan cracked.		X	
	Hallway				Skylight offers good natural light	X		
	Kitchen				Small kitchen for a firefighter crew of 8. Limited counter and food preparation space. Recently redone flooring. Relatively new appliances.		X	
	Dayroom				Small space for a crew of eight and 8 large recliners . Tiered with one step up installed by Department. But good location directly off dining area and kitchen. Residential type curtains provide some blackout ability.		X	
	Hose Drying Tower				At rear of building outside the kitchen	X		
	Shop				Small but well organized space within the App Bay		X	

# FACILITY ASSESSMENT

## STATION 2

Facility Condition Assessment Matrix								
Alameda Fire Station No. 2								
February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	Clean Up Decon				No separate decon area		X	
	Exercise Area				Located in a small garage type structure at back of site. Double french doors good but space is small for a crew of 8.		X	
	Apparatus Bay				Only two bays, not pull through but one front overhead door. Front and back doors don't line up so backing up apparatus is difficult. Recently spent \$60,000 to repair damage to front overhead door and supports. Steps down from Office and living quarters. Concrete floor has several large cracks. Lacks adequate storage rooms so turn outs on racks, ice machine, medical supplies and stacked washer/dryer are all directly on the App Bay floor. Tight squeeze between turn out gear grid racks and apparatus. Needs more circulation space.		X	
<p><i>Note: Comments above assume that the fire station is to have an accessible path of travel throughout.</i></p>								

# FACILITY ASSESSMENT

## STATION 2

Facility Condition Assessment Matrix								
Alameda Fire Station No. 2								
February 20, 2025								
No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
<b>Site Condition</b>								
	Storage				Old Paint Shed contains yard storage and building maintenance supplies and equipment.	X		
	Public Parking				Street parking only		X	
	Firefighter Parking				Behind secured gate, limited space so lots of maneuvering around.		X	
	Apparatus Wash Area				Cramped back apron and short front apron		X	
	Secure Rear Apron				Extremely small space that backs up onto residential neighbors. Generator is cramped in.		X	
<b>Building Systems Condition</b> <i>refer to engineering consultant reports</i>								
	Structural							
	Mechanical							
	Plumbing							
	Electrical							
	Environmental							

# FACILITY ASSESSMENT

## STATION 4

### Facility Condition Assessment Matrix Alameda Fire Station No. 4 February 20, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation  Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
		<b>Code Compliance of Existing Building</b>			<b>Operations Compliance of Existing Building</b>			
		<i>California Building Code (CBC)</i>						
		<i>Americans with Disabilities Act (ADA)</i>						
<b>Building Condition</b>								
	Entry Door and Lobby				Spacious entry lobby but not a heavily used space. Eliminate tile floor throughout replace with concrete	X		
	Station Office		X	Service counters too high but not really used.	Two offices directly off the lobby, each with a high service counter and roll down fire window that aren't used. One office has a Murphy Bed.		X	
	Command Office				Offices are good size and have beds, large built in lockers and a desk. One off the lobby has radio chargers.	X		
	Toilet				Finishes in good condition.	X		
	Corridor				Nice wide corridors and wall space for displays.	X		
	Officer Sleeping				Two sleeping rooms each with one bed with three built in lockers	X		
	Study Room				Originally a dorm room for ambulance personnel. Now a study room but also has a bed for overflow use.	X		

# FACILITY ASSESSMENT

## STATION 4

### Facility Condition Assessment Matrix Alameda Fire Station No. 4 February 20, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	SCBA Room				Designed as General Storage now used as SCBA Storage, Repairs and Fit Test for all of Alameda Fire Department	X		
	Women's Restroom Shower				Prefer separate toilet/shower room with shared locker area for men/women. Could use the space in existing women's restroom for single accommodation. RECONFIGURE EXISTING BATHROOMS FOR GENDER NEUTRAL FACILITIES.		X	
	Locker Room			Need gender diverse locker rooms Work force is diverse and all need to feel welcome. MLS: best is eliminate large shared restroom/showers/toilets, so off the hall have a toilet shower sink a unisex restroom, then have four single unisex and then lockers room is shared MLS typically 3 lockers in dorms or one large locker room since no space in dorm room, they can change in locker room.	No room in new private dorm rooms for lockers. Captains needs own lockers. Is 26 the right number of lockers. Probably 19 or 20 lockers, 4 staff per shift plus duty captain.		X	
	Electrical Room				Designed as Telephone Room now houses electrical panels.			
	Dormitory				Former dormitory has been divided into 7 individual single occupancy sleeping rooms for privacy and quality sleep. Bedding lockers in hallway.	X		
	Men's Toilet Shower				Needs reconfiguration for gender neutral facilities.		X	

# FACILITY ASSESSMENT

## STATION 4

### Facility Condition Assessment Matrix Alameda Fire Station No. 4 February 20, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	Cardio Exercise Room				Designed for Library but space has been turned into exercise room with Cardio equipment. Weight Room is separate, but prefer all in one space.		X	
	Kitchen				Kitchen is small. One frig in kitchen (but also one in App Bay and one in dining). Kitchen remodel needed to extend use for 30 more years, same footprint but upgrade appliances, finishes, and cabinets. Need more robust cabinet substrates.		X	
	Dining				Table for 5	X		
	Dayroom				6 recliners	X		
	Exercise Room				Too small, so some weight training equipment is out on the App Bay Floor		X	
	Shop				Space is too small		X	

# FACILITY ASSESSMENT

## STATION 4

### Facility Condition Assessment Matrix Alameda Fire Station No. 4 February 20, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	Apparatus Bay				No transition zone between App Bay and house side of Station. Three of five existing App Bay overhead doors are obsolete. The doors are a chronic problem. Need to replace last two doors with roll up or all five with bifold, two are original two were replaced recently. MLS bifold way less maintenance three times front end cost. Lots put bifold on front and coiling (less maintenance than sectional) on back. Mantceca hasn't needed maintenannace in bifold doors, can retrofit and Stn 4 has good ceiling ht but need to look at structural frame to beef up for bifold. the ones at are 25-30K per door. Bifold prices are coming done but at least double the cost per door. Could be worth it with less mainenance and over 30 years it pays off. Pigeons in app bay rafters.		X	
	Hose Dry				Drying cabinet on the App Bay floor. Should be in separate space.		X	
	Medical Supply Storage				Designed as Hose Storag being converted to Medical Supply space. Need an ice machine	X		

# FACILITY ASSESSMENT

## STATION 4

### Facility Condition Assessment Matrix Alameda Fire Station No. 4 February 20, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	IT Closet-Stairs to Storage Loft				IT Closet is cramped below stairs. Wiring is spaghetti like. IT closet too small, shoved under stairwell. New station alerting cant be housed in it.		X	
	SCBA				SCBA Air Fill Equipment and bottle storage on App Bay Floor. Serves whole AFD. Need a small test fit room, bigger space for an SCBA filling station and work bench for Tech to be separate and away from App Bay floor		X	
	Air Compressor				On the App Bay floor, ideally should be in a separate closet off the floor. New air compressor recently installed.		X	
	Turn Out Storage				Gear Grid Lockers for first use Turn Outs (16 lockers) Should be in an enclosed and vented space off of the App Bay Floor but readily accessible to apparatus. Additional gear stored in mezzanine. Chief doesn't want to lose App Bay space to store Turn outs. Highly unlikely another rig will be housed there. Current crew of five, so it would be a big change to staff a whole nother company, so no to additional company. Not likely to expand a staffed truck out there. Keep current Gear Grid Rack system.		X	

# FACILITY ASSESSMENT

## STATION 4

### Facility Condition Assessment Matrix Alameda Fire Station No. 4 February 20, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	Upgrade/ Renovate or Replace Bldg
	Turn Out Laundry				Can get dryer for hose and for turnouts. Ancient hose dryer cabinet should be replaced. Prefer both hose and turn out dryers. All Stations should have an extractor align with best practices.		X	
	Decon				No separate decon area off the App Bay		X	
<i>Note: Comments above assume that the fire station is to have an accesible path of travel throughout.</i>								

# FACILITY ASSESSMENT

## STATION 4

### Facility Condition Assessment Matrix Alameda Fire Station No. 4 February 20, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	Upgrade/ Renovate or Replace Bldg
<b>Site Condition</b>								
	Storage				Tuff shed for yard storage	X		
	Public Parking				Available street parking. Not a lot of need for public parking.	X		
	Firefighter Parking					X		
	Apparatus Wash Area					X		
	Secure Rear Apron				Need better covered parking for reserve parking we keep ambulance and SUV and inside a reserve engine. Need Two covered spaces for reserve , CERT trailer/vehicle.		X	
	Fuel Tank					X		
	Generator					X		
	Landscaping			Drought tolerant landscaping needed. Water bill for FS 4 iriigation is bad, couldn't find a leak but water bills high, drought friendly landscaping would be good. City Hall just redid landscape.	Built own shade structure in back, nice to have a real spaces in shade, not homemade, back fence dillapitdated, bird problem		X	

# FACILITY ASSESSMENT

## STATION 4

### Facility Condition Assessment Matrix Alameda Fire Station No. 4 February 20, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	Slab				Chief Moxley: FS 4 a fissure runs through, crack in tv room in the floor runs through the bathroom and a lot of weakening in the showers, leak in wall and out into hallway. Don't know what's causing it. Leak from water in the showers, as the floor is moving the tile no shower pan it's a tile floor so it causes leaks. If bathrooms are redone that would be taken care of.		X	
<b>Building Systems Condition</b>		<i>See Engineering Consultant Reports</i>						
	Structural							
	Mechanical							
	Plumbing							
	Electrical				Chief Luby: Electrify station per City Policy, if it can be, what would it take to support electric engines, need at least a new main, transformer. Should address and identify potential scope and costs.			
	Environmental							
	Building Envelope			Roof leaks and skylight leaks on CIP list, not sure of AC status.				

# FACILITY ASSESSMENT

## STATION 5

### Facility Condition Assessment Matrix Alameda Fire Training (at former Alameda Fire Station No. 5 closed since 2009) February 20, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation  Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	

		Code Compliance of Existing Building	Operations Compliance of Existing Building	
		<i>California Building Code (CBC)</i> <i>Americans with Disabilities Act (ADA)</i>		

### ***Building Condition***

Fire Training Entry Door and Reception		X	Heavy door with high threshold			
Training Office				Banks of radio chargers on table in entry		X
Division Chief's Office					X	
Captain's Office					X	
Restroom				Old original fixtures		X
Conference Room				Size is adequate	X	
Laundry				Extractor and stacked Washer/Dryer, wall is not full height		X
Meeting- Break Room Library				Round table and chairs, stove, refrigerator, bookshelves	X	
Office Work Room				Copier-Printer-Office supplies area	X	
Kitchen		X	old original Fire Station Kitchen	Large space. Use counters for microwaves, sink, coffee. Does large stove/ovens work?		X
Open Office Space			Work Counters. Space not in use?			
Training Classroom				Converted App Bay space used for large classroom. Tables and chairs for 16-20		X
Toilet-Shower		X		Very poor condition from original construction		X
Locker Room		X		Very poor condition		
Apparatus Bay				Plymovent Exhaust. Single doors no transition area into office' training areas. No door seals.		X

# FACILITY ASSESSMENT

## STATION 5

### Facility Condition Assessment Matrix

Alameda Fire Training (at former Alameda Fire Station No. 5 closed since 2009)

February 20, 2025

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	
	SCBA				Bauer Air Fill System and Bottle Storage	X		
	Air Compressor				Not in a separate closet		X	
	Hose Tower or Drying/Storage				In App Bay			
	Clean Up Decon				None			
	Turn Out Storage				Gear on wall hooks in App Bay and gear bags on floor		X	
	Exercise Areas			Exercise Equipment spread out in at least three locations. Downstairs with Bauer SCBA machine and air bottles but also upstairs?	Used by Training Staff and Fire Prevention personnel (from nearby City Hall West).		X	
	Roof							
	Walls - Exterior							
	Walls and Ceiling - Interior		X	Leaks in several roof, ceiling and wall locations			X	
	Doors and Windows		X	Leaks, single pane	Old metal frames in poor condition. Heavy metal doors with rust, peeling paint.		X	
	Stairs		X		Flooring in very poor condition		X	
				<i>Note: Comments above assume that the fire station is to have an accessible path of travel throughout.</i>				

# FACILITY ASSESSMENT

## STATION 5

**Facility Condition Assessment Matrix**  
**Alameda Fire Training (at former Alameda Fire Station No. 5 closed since 2009)**  
**February 20, 2025**

No.	Building Component	Code Rating		Code Comments	Operational Standard Comments	Operations Rating		Recommendation  Upgrade/ Renovate or Replace Bldg
		Potentially Compliant	Potentially Non-Compliant			Compliant	Non-Compliant	

**Site Condition**

	Storage				Yard and old, former apparatus bays full of storage. Upper mezzanine loft is full of stored items. In addition, Public Works and Library have storage areas on site. Not highly secure or protected indoor and outdoor storage space. Police may also have storage here (need to confirm)		X	
	Public Parking				Visitor Parking available, also plenty of street parking available	X		
	Fire Department Parking				Informal but space is available	X		
	Apparatus Wash Area							
	Secure Rear Apron							
	Fuel Tank							
	Generator							

**Building Systems Condition** *refer to Engineering Consultant Reports*

	Structural							
	Mechanical							
	Plumbing							
	Electrical							
	Environmental							

# PROGRAM DOCUMENTS

## FLEET SERVICE GARAGE – SPACE NEEDS

CITY OF ALAMEDA - FLEET SERVICES  
 SPACE NEEDS OUTLINE  
 Draft - March 20, 2025

FLEET SERVICES	Adjacency <i>Required = R Preferred = P</i>		Staff Head count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
						QTY	TOTAL SF	Staff Head Count	QTY	TOTAL SF
1.0	Fleet Services Supervisor		1	12' x 12'	144	1	144	1	1	144
2.0	Parts Counter Public Access Control point		1	8' x 10' 8' x 8'	80 64	1 1	80 64	0 2	1 2	80 128
3.0	Parts Storage		0	48' x 64'	3,072	1	3,072	0	1	3,072
4.0	Tire Storage		0	24' x 36'	864	1	864	0	1	864
5.0	Copier/Printer/Supplies		0	8' x 12'	96	1	96	0	1	96
6.0	Fleet Coordinator		1	10' x 12'	120	1	120	1	1	120
7.0	Fleet Mechanics		1	8' x 8'	64	1	64	4	1	64

# PROGRAM DOCUMENTS

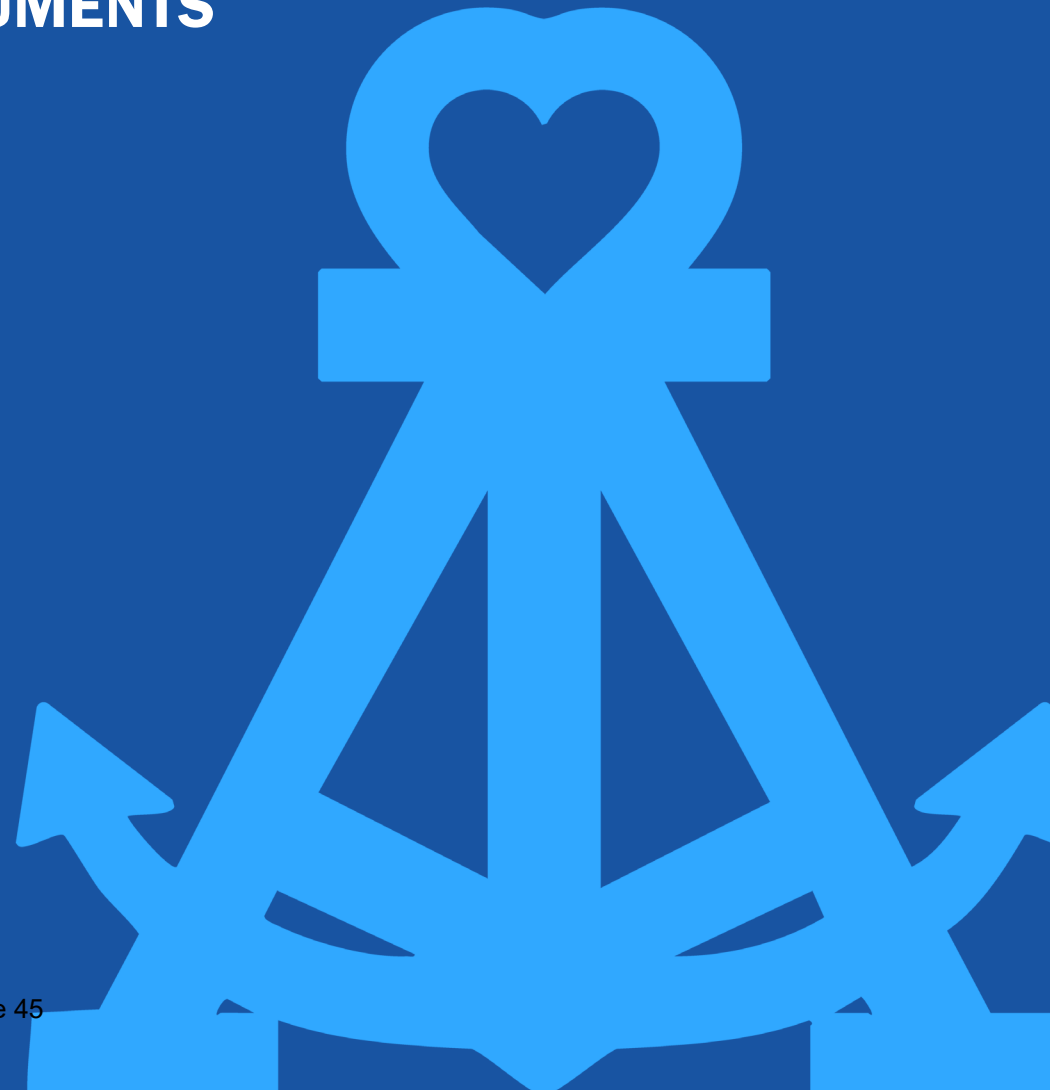
## FLEET SERVICE GARAGE - SPACE NEEDS

8.0	Service Bays		One with large lift, 5 small lifts, 1 lube pit	0	20' x 74'	1,480	5	7,400	0	5	7,400
9.0	Shop			0	20' x 20'	400	1	400	0	1	400
10.0	Staff Lockers		Curtain Area for changing 18" Wide Single Full-Height Lockers	0	10' x 12'	120	1	120	0	1	120
11.0	Shower		With changing space	0	8' x 12'	96	1	96	0	1	96
12.0	Toilet		Close to Shower and Lockers	0	8' x 8'	64	1	64	0	1	64
13.0	Break Room		Close to outdoor seating area Adjacent to Lockers Table/chairs for 8	0	12' x 14'	168	1	168	0	1	168
<b>Net Area Subtotal</b>				<b>4</b>				<b>12,752 SF</b>	<b>8</b>		<b>12,816 SF</b>
<i>Flex Space Allowance (5%)</i>								<b>638 SF</b>			<b>641 SF</b>
<i>Structure-Circulation (20%) (2040 is @ 30%)</i>								<b>2678 SF</b>			<b>4037 SF</b>
<b>TOTAL</b>								<b>16,068 SF</b>			<b>17,494 SF</b>

This document contains space needs identified as of the date above. The design team should verify and confirm data prior to commencement of actual project design.

# APPENDIX B

## B - SPACE NEEDS PROGRAM DOCUMENTS



# PROGRAM DOCUMENTS

## FLEET SERVICE GARAGE - SPACE NEEDS

City of Alameda - Fleet Services  
 SITE NEEDS OUTLINE  
 Draft - March 20, 2025

SPACE REQUIREMENT		SPACE ATTRIBUTES	SPACE DIMENSIONS			SF	QTY
1.0	City Vehicles	<i>Within secured fenced area</i> Uncovered is acceptable 20 stalls	9'	x	20'	180'	20
2.0	City Trailers/Trucks, Non-Passenger Vehicles	<i>Within Secured fenced area</i> Generator Trailer	12'	x	22'	264'	3
3.0	Employee Private Vehicle Parking Total Spaces Required = 7 current HC	<i>Within Secured fenced area</i> Employee Headcount = 8 by 2040	9'	x	20'	180'	8
4.0	Visitor and Public Parking 3 truck/van/SUV type for supplier deliveries	<i>Visitor and ADA Parking per Code, but Dept suggests 5</i> <i>Outside of Secured Fencing</i>	9'	x	20'	180'	5
		2 EV Charging 9'W min x 18' l + 5' access aisle	14'	x	18'	252'	3
		1 EV Van Charging (12' w min + 5' access aisle)	17'	x	18'	306'	1
5.0	Resale Vehicle Parking	<i>Within Secured fenced area</i>	9'	x	20'	180'	10

# PROGRAM DOCUMENTS

## FLEET SERVICE GARAGE - SPACE NEEDS

SITE YARD							
6.0	Employee Outdoor Break-Patio	Adjacent to kitchen/break room. Provide trellis or shade structure. Out of public view					
7.0	Emergency Generator						
8.0	Fuel Dispensing	Under covered area					
9.0	EV Chargers for Fleet Vehicles	Parking stalls with chargers Standard Vehicles require: <i>EV Charging (9' w min x 18' long + 5' access aisle)</i> <i>EV Van Charging (12' w min x 18' long + 5' access aisle)</i>					
10.0	Vehicle Wash Bay	Covered					
11.0	Antenna						
12.0	Trash and Recycling						
13.0	Scrap Metal Bin						
14.0	Used Oil Collection						
15.0	Oil and Lube Storage						
16.0	Chemical Storage						
17.0	Large Item Storage (Tanks+Ladders)						
		Subtotal					
		Circulation 40%					
		<b>TOTAL SITE SF REQUIRED</b>					

# PROGRAM DOCUMENTS

## MAINTENANCE SERVICE CENTER – SPACE NEEDS

MAIN OFFICE		Adjacency <i>Required = R</i> <i>Preferred = P</i>		Staff Head Count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
							QTY	TOTAL SF	HC	QTY	TOTAL SF
<b>ADMINISTRATION</b>											
Entry Lobby - Waiting			Seating for 4 visitors	0	10' x 14'	140	1	140	1	1	140
			Service Counter	0	8' x 10'	80	1	80	0	1	80
Reception - Admin Staff Noelle			Only 1 FTE remains here, others moved to City Hall West	1	10' x 12'	120	1	120	1	1	120
Superintendent Office				1	14' x 15'	210	1	210	1	1	210
Supervisors Offices			Locate all supervisors together	5	12' x 12'	144	5	720	5	5	720
SCADA Workstations			Currently Primary WS is in IT + one with Plumbing	2	10' x 11'	110	2	220	2	2	220
Safety Officer			New position needed	0	10' x 12'	120	1	120	1	1	120
Coffee Station-Counter- Sink Alcove				0	4' x 5'	20	1	20	0	1	20
Printer-Copier-Supplies				0	10' x 12'	120	1	120	0	1	120
				0	0' x 0'	0	0	0	0	0	0
<b>Net Area Subtotal</b>				<b>9</b>				<b>1,750</b>	<b>11</b>		<b>1,750</b>
<i>Flex Space Allowance (5%)</i>								<b>88 SF</b>			<b>88 SF</b>
<i>Structure-Circulation (30%)</i>								<b>551 SF</b>			<b>551 SF</b>
<b>TOTAL</b>								<b>2,389 SF</b>			<b>2,389 SF</b>

# PROGRAM DOCUMENTS

## MAINTENANCE SERVICE CENTER – SPACE NEEDS

MAINTENANCE	Adjacency <i>Required = R</i> <i>Preferred = P</i>		Staff Head Count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
						QTY	TOTAL SF	HC	QTY	TOTAL SF
<b>FACILITIES</b>										
Maintenance Supervisor Gerry Torres		Buildings + Facilities Maintenance Locate all supervisors together in main front office area	0	12' x 12'	144	0	0	0	0	0
Carpentry Shop Shop Space Shop Storage			3	25' x 56'	1,400	1	1,400	5	1	1,400
Computer Workstations Shared Office Area		Shared workstations for 50% FTE Shared desktop printer-copier	0	8' x 8'	64	3	192	0	3	192
			0	8' x 8'	64	1	64	0	1	64
Counter-Sink Alcove			0	4' x 5'	20	1	20	0	1	20
			0	0' x 0'	0	0	0	0	0	0
<b>Net Area Subtotal</b>			<b>3</b>				<b>1,676</b>	<b>5</b>		<b>1,676</b>
<i>Flex Space Allowance (5%)</i>							<b>84 SF</b>			<b>84 SF</b>
<i>Structure-Circulation (30%)</i>							<b>528 SF</b>			<b>528 SF</b>
<b>TOTAL</b>							<b>2,288 SF</b>			<b>2,288 SF</b>

# PROGRAM DOCUMENTS

## MAINTENANCE SERVICE CENTER – SPACE NEEDS

	Adjacency <i>Required = R</i> <i>Preferred = P</i>		Staff Head Count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
						QTY	TOTAL SF	HC	QTY	TOTAL SF
<b>SEWER + PUMPS</b>										
Maintenance Supervisor Manny Rios		Sewer, Pumps, Lagoon, Urban Runoff Locate all Supervisors together in main/front office	0	12' X 12'	144	0	0	0	0	0
Sewer Shop Shop Storage			15	22' x 35'	770	1	770	17	1	770
Plumbing Shop			0	25' x 35'	875	1	875	0	1	875
SSO Storage		formerly "Auto Service" Room	0	14' x 25'	350	1	350	0	1	350
Computer Workstations Shared Office Area		Shared workstations for 50% FTE Shared desktop printer-copier	0	8' x 8'	64	9	576	0	9	576
			0	8' x 8'	64	1	64	0	1	64
Counter-Sink Alcove			0	4' x 5'	20	1	20	0	1	20
			0	0' x 0'	0	0	0	0	0	0
<b>Net Area Subtotal</b>			<b>15</b>				<b>2,655</b>	<b>17</b>		<b>2,655</b>
<i>Flex Space Allowance (5%)</i>							<b>133 SF</b>			<b>133 SF</b>
<i>Structure-Circulation (30%)</i>							<b>836 SF</b>			<b>836 SF</b>
<b>TOTAL</b>							<b>3,624 SF</b>			<b>3,624 SF</b>

# PROGRAM DOCUMENTS

## MAINTENANCE SERVICE CENTER – SPACE NEEDS

	Adjacency <i>Required = R</i> <i>Preferred = P</i>		Staff Head Count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
						QTY	TOTAL SF	HC	QTY	TOTAL SF
<b>SIDEWALKS + STREETS</b>										
Maintenance Supervisor Pat Papalagi			0	12' X 12'	144	0	0	0	0	0
Concrete Shop			11	20' x 35'	700	1	700	12	1	700
Paint + Sign Shop			0	25' x 35'	875	1	875	0	1	875
Shop Storage			0	0' x 0'	0	0	0	0	0	0
Computer Workstations Shared Office Area			0 0	8' x 8' 8' x 8'	64 64	6 1	384 64	0 0	6 1	384 64
Counter-Sink Alcove			0	4' x 5'	20	1	20	0	1	20
			0	0' x 0'	0	0	0	0	0	0
<b>Net Area Subtotal</b>			<b>11</b>				<b>2,043</b>	<b>12</b>		<b>2,043</b>
<i>Flex Space Allowance (5%)</i>							<b>102 SF</b>			<b>102 SF</b>
<i>Structure-Circulation (30%)</i>							<b>644 SF</b>			<b>644 SF</b>
<b>TOTAL</b>							<b>2,789 SF</b>			<b>2,789 SF</b>

# PROGRAM DOCUMENTS

## MAINTENANCE SERVICE CENTER – SPACE NEEDS

	Adjacency <i>Required = R</i> <i>Preferred = P</i>		Staff Head Count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
						QTY	TOTAL SF	HC	QTY	TOTAL SF
<b>SIGNALS + STREETLIGHTS</b>										
Maintenance Supervisor Mike Magaro		Traffic signals, street lights Locate with all Supervisors in main/front office	0	12' X 12'	144	0	0	0	0	0
Traffic Signal Shop			5	25' x 40'	1,000	1	1,000	6	1	1,000
Traffic Signal Shop		"Active Storage" per As Built	0	30' x 50'	1,500	1	1,500	6	1	1,500
Shop Storage			0	0' x 0'	0	0	0	0	0	0
Computer Workstations Shared Office Area		Shared workstations for 50% FTE Shared desktop printer-copier	0	8' x 8'	64	3	192	0	3	192
			0	8' x 8'	64	1	64	0	1	64
Counter-Sink Alcove			0	4' x 5'	20	1	20	0	1	20
			0	0' x 0'	0	0	0	0	0	0
<b>Net Area Subtotal</b>			<b>5</b>				<b>2,776</b>	<b>12</b>		<b>2,776</b>
<i>Flex Space Allowance (5%)</i>							<b>139 SF</b>			<b>139 SF</b>
<i>Structure-Circulation (30%)</i>							<b>874 SF</b>			<b>874 SF</b>
<b>TOTAL</b>							<b>3,789 SF</b>			<b>3,789 SF</b>

# PROGRAM DOCUMENTS

## MAINTENANCE SERVICE CENTER – SPACE NEEDS

	Adjacency <i>Required = R</i> <i>Preferred = P</i>		Staff Head Count 2025	DIMS.	SF	Proposed SF		Projected Need 2040			
						QTY	TOTAL SF	HC	QTY	TOTAL SF	
<b>PARKING + TRAFFIC</b>											
Supervisor		Parking, CIP, Doolittle Landfill Locate with all supervisors in front/main office	0	12' X 12'	144	0	0	0	0	0	
Parking Shop		Parking Meters Shop per as-built	1.5	13' x 35'	455	1	455	2	1	455	
Shop Storage			0	0' x 0'	0	0	0	0	0	0	
Computer Workstations Shared Office Area		Shared workstations for 50% FTE Shared desktop printer-copier	0	8' x 8'	64	1	64	0	1	64	
			0	8' x 8'	64	1	64	0	1	64	
Counter-Sink Alcove		or share with another shop	0	4' x 5'	20	1	20	0	1	20	
			0	0' x 0'	0	0	0	0	0	0	
<b>Net Area Subtotal</b>			<b>1.5</b>				<b>603</b>	<b>2</b>		<b>603</b>	
<i>Flex Space Allowance (5%)</i>								<b>30 SF</b>			<b>30 SF</b>
<i>Structure-Circulation (30%)</i>								<b>190 SF</b>			<b>190 SF</b>
<b>TOTAL</b>								<b>823 SF</b>			<b>823 SF</b>

# PROGRAM DOCUMENTS

## MAINTENANCE SERVICE CENTER – SPACE NEEDS

SHARED COMMON		Adjacency <i>Required = R</i> <i>Preferred = P</i>		Staff Head Count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
							QTY	TOTAL SF	HC	QTY	TOTAL SF
<b>SHARED COMMON</b>											
	Lunch Room			0	20' X 28'	560	1	560	0	1	560
	Meeting Room			0	17' x 20'	340	1	340	0	1	340
	Uniform Storage		Contract service for clean uniforms needs central locker area	0	12' x 16'	192	1	192	0	1	192
	Men's Restroom		<b>EXISTING RESTROOMS AND LOCKERS TO BE RECONFIGURED IN CURRENT CENTRAL CORE LOCATION</b>	0	0' x 0'	0	1	1,000 SF total of all restrooms + locker rooms	0	1	1,000 SF total of all restrooms + locker rooms
	Men's Locker Room		Could have gender neutral locker room, one per person for rain gear, extra clothes. Now in Shops but if moved to central lockers could free up shop floor area <b>61 total employees by 2040</b>	0	0' x 0'	0	0	0 included in 1000 SF above	0	1	0 included in 1000 SF above
	All Gender Restroom			0	0' x 0'	0	0	0 included in 1000 SF above	0	1	0 included in 1000 SF above

# PROGRAM DOCUMENTS

## MAINTENANCE SERVICE CENTER – SPACE NEEDS

Women's Restroom				0	0' x 0'	0	0	0	0	1	0	0 included in 1000 SF above	0 included in 1000 SF above
Women's Locker Room				0	0' x 0'	0	0	0	0	1	0	0 included in 1000 SF above	0 included in 1000 SF above
Gas and Chemical Storage			Indoors? Outdoors?	0	10' x 12'	120	1	120	0	1	120		
Warehouse Lockshop			Based on current warehouse size	0	0' x 0'	0	1	2,200	0	1	2,200		
				0	0' x 0'	0	0	0	0	0	0		
<b>Net Area Subtotal</b>				<b>0</b>				<b>4,412</b>	<b>-</b>		<b>4,412</b>		
<i>Flex Space Allowance (5%)</i>								<b>221 SF</b>			<b>221 SF</b>		
<i>Structure-Circulation (30%)</i>								<b>1,390 SF</b>			<b>1,390 SF</b>		
<b>TOTAL</b>								<b>6,022 SF</b>			<b>6,022 SF</b>		

# PROGRAM DOCUMENTS

## MAINTENANCE SERVICE CENTER – SPACE NEEDS

MAINTENANCE TOTAL:		Staff Head Count 2025	GSF	HC	GSF
ADMINISTRATION	Area Subtotal	9	2,389	11	2,389
FACILITIES	Area Subtotal	3	2,288	5	2,288
SEWER + PUMPS	Area Subtotal	15	3,624	17	3,624
SIDEWALKS + STREETS	Area Subtotal	11	2,789	12	2,789
SIGNALS + STREETLIGHTS	Area Subtotal	5	3,789	12	3,789
PARKING + TRAFFIC	Area Subtotal	1.5	823	2	823
SHARED COMMON	Area Subtotal	0	6,022	0	6,022
MSC Total		44.5	21,724	59	21,724

**CITY OF ALAMEDA - RECREATION + PARKS CORPORATION YARD**  
**SPACE NEEDS OUTLINE**  
 Draft - August 14, 2025

RECREATION + PARKS	Adjacency <i>Required = R</i> <i>Preferred = P</i>		Staff Head Count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
						QTY	TOTAL SF	HC	QTY	TOTAL SF
<b>CORPORATION YARD</b>										
			1	12' x 12'	144	1	144	1	1	144
		Shared office for two	2	12' x 14'	168	1	168	2	1	168
		Dedicated workstation	1	8' x 8'	64	1	64	1	1	64
		Briefing Room for 30 capacity plus 4 small workstation carrels. Also used for Training and break area  Sink-counter, microwave, small refrigerator	0	18' x 25'	450	1	450	0	1	450
			0	2' x 4'	8	4	32	0	4	32
			0	4' x 6'	24	1	24	0	1	24
		Shop for fabricating-repairing equipment + site furnishings. Welding. Wood Shop. One vehicle lift bay. Shop clean-up sink area. Eyewash station.		30' x 50'	1,500	0	0	0	0	1,500

RECREATION + PARKS		Adjacency <i>Required = R</i> <i>Preferred = P</i>		Staff Head Count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
							QTY	TOTAL SF	HC	QTY	TOTAL SF
	<b>Warehouse</b> should it be here or site ancillary storage, Preengineered type? They said 6500 SF is good but what dimensions are best?			0	65' x 100'	6,500	1	6,500	0	1	6,500
	<b>Locker Room</b>			0	12' x 30'	360	1	360	0	1	360
	<b>Shower Room</b>			0	0' x 0'	0	0	0	0	0	0
	<b>Restrooms</b>			0	8' x 8'	64	2	128	2	2	128
	<b>Janitor's Closet</b>			0	6' x 8'	48	1	48	0	1	48
	<b>Mechanical Room</b>			0	6' x 8'	48	1	48	0	1	48
	<b>Electrical/IT</b>			0	6' x 8'	48	1	48	0	1	48
				<b>Net Area Subtotal</b>	<b>4</b>			<b>8,014</b>	<b>6</b>		<b>9,514</b>
								<b>401 SF</b>			<b>476 SF</b>
								<b>2,524 SF</b>			<b>2,997 SF</b>
							<b>TOTAL</b>	<b>10,939 SF</b>			<b>12,987 SF</b>

DEPARTMENT VEHICLES-TRAILERS		SPACE ATTRIBUTES	SPACE DIMENSIONS	SF	QTY	SITE SF REQUIRED	
1.0	<b>Department Vehicles</b> Vehicle Model/Dept # Approximately 40 vehicles, including mowers, utility carts	Within secured fenced area.	9'   x   20'	180'	40	7200	
		Covered parking	standard vehicles				
		PV Canopies should be considered	12'   x   22'	264'	40	10560	
		Smaller vehicles, golf carts	specialty large vehicles				
		EV Charging for City Vehicles	9'   x   20'	180'	25	4500	
	<i>EV Standard Vehicle Charging (9' w min x 18' long + 5' access aisle)</i>	14'   x   18'	252'	0	0		
	<i>EV Van Charging (12' w min x 18' long + 5' access aisle)</i>	17'   x   18'	306'	0	0		
2.0	<b>Department Trailers</b>	Within Secured fenced area Covered parking	12'   x   25'	300'	15	4500	
3.0	<b>Employee Private Vehicle Parking</b> <b>Total Spaces Required = 38</b>	Within Secured fenced area	9'   x   20'	180'	38	6840	
		EV Charging for Personal Vehicles					
		<i>EV Standard Vehicle Charging (9' w min x 18' long + 5' access aisle)</i>	14'   x   18'	252'	0	0	
		<i>EV Van Charging (12' w min x 18' long + 5' access</i>	17'   x   18'	306'	0	0	
4.0	<b>Plant Nursery</b>	Wind protection and shade cloth Area to hold tree deliveries for planting	25'   x   50'	1250'	1	1250	

5.0	<b>Stockpile Enclosures</b>	Base rock, decomposed granite, gravel, compost/mulch, bark, sand, cold patch asphalt 3-sided CMU wall enclosures Front load access	12'	x	16'	192'	7	1344
6.0	<b>Site Supplies, Equipment and Furnishings Storage</b>	Trash Receptacles, BBQs, Barricades, Temporary Fencing, Cones. Park benches, picnic tables, playground equipment. Forklift access. Covered and caged areas	20'	x	50'	1000'	1	1000
7.0	<b>Project Laydown Areas</b>		0'	x	0'	6000'	1	6000
8.0	<b>Employee Outdoor Break-Patio</b>	Adjacent to break room. Provide shade and wind screen	12'	x	16'	192'	1	192
9.0	<b>Waste Bins/Roll Off Dumpster (Organics, Green Waste, Metal, Trash, Hazardous Materials)</b>	Enclosed in secure area. Dumpsters with front loading truck access 10' x 6'x 6' high minimum. One Roll Off for Green Waste.	6'	x	10'	60'	4	240
			8'	x	22'	176'	1	176
10.0	<b>Vehicle-Equipment Wash Fueling Station, if not with Fleet PW</b>	Covered, wash rack, autoswitch drain connected to clarifier	14'	x	20'	280'	1	280
			<b>TOTAL SITE SF REQUIRED</b>					<b>44082</b>
<b>GENERAL</b>								
	Site Lighting Security Cameras Access to high flow hydrant to fill water tanks							

**CITY OF ALAMEDA -ANIMAL SHELTER  
SPACE NEEDS OUTLINE  
Revised - October 2, 2025**

The existing Animal Shelter facility is owned by the City and operated in conjunction with the non-profit Friends of the Alameda Animal Shelter (FAAS). Most staff positions and programs are funded by the City as mandated under California Animal Services, Control and Protection requirements. These are considered basic services and are indicated by a "Yes" under the "Regulatory Requirement" column in the table below. In many cases FAAS contributes staffing and program funds for "enhanced" services to optimize services such as medical care, adoption and education programs and others. Current programs could not be sustained without this City-FAAS collaboration. The Space Needs shown here represents some limited functions and programs that are currently operating off-site at a local shopping center and some medical services that will occupy an innovative medical village constructed of shipping containers located in the North Loop area of Alameda. If City funding shifts or decreases, some operations may need to be contracted out. That results in higher operating costs for contractors, but may result in a minimal space reduction. In the future it would be most efficient to have all operations consolidated in one location, so for master planning purposes, all programs are listed here and shown in site

ANIMAL SHELTER		Regulatory Requirement		Staff Head count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
							QTY	TOTAL SF	Staff Head Count	QTY	TOTAL SF
<b>RECEPTION + INTAKE</b>											
1.0	Reception / Front Desk	yes	Desk with staff + volunteer workstations to greet public	3	16' x 32'	512	1	512	3	1	512
2.0	Lobby	yes	Display Monitors, Donation + Adoption Portals-Kiosks W/ divider between adoption and intake	0	18' x 16'	288	1	288	0	1	288
3.0	Communal Cat Room for adoptable cats	yes	Direct access to 220 SF Catio outside, vestibule, tables and chairs	0	12' x 12'	144	2	288	0	2	288
4.0	Meet + Greet Rooms for adoptions	yes		0	10' x 10'	100	2	200	0	2	200
5.0	Intake Exam	yes		0	12' x 12'	144	2	288	0	2	288
<b>Net Area Subtotal</b>				<b>3</b>				<b>1,576 SF</b>	<b>3</b>		<b>1,576 SF</b>
<i>Flex Space Allowance (5%)</i>								<b>79 SF</b>			<b>79 SF</b>
<i>Structure-Circulation (30%)</i>								<b>496 SF</b>			<b>496 SF</b>
<b>RECEPTION + INTAKE TOTAL</b>								<b>2,151 SF</b>			<b>2,151 SF</b>

	Regulatory Requirement	Staff Head count 2025	DIMS.	SF	Proposed SF		Projected Need 2040				
					QTY	SF	HC	QTY	SF		
<b>COMMUNITY SPACES</b>											
6.0	Training + Education Rooms	enhanced	Chair + Table Storage  1/3 can be sectioned off to become conference room w/ 12-person table.	0	24' x 40'	960	1	960	0	1	960
7.0	Flex Rooms	enhanced		0	10' x 12'	120	2	240	0	2	240
8.0	Public Restroom	yes	Gender Neutral	0	12' x 16'	192	1	192	0	1	192
<b>Net Area Subtotal:</b>				<b>3</b>				<b>1,392 SF</b>	<b>3</b>		<b>1,392 SF</b>
<i>Flex Space Allowance (5%)</i>								<b>70 SF</b>			<b>70 SF</b>
<i>Structure-Circulation (30%)</i>								<b>438 SF</b>			<b>438 SF</b>
<b>COMMUNITY SPACES TOTAL</b>								<b>1,900 SF</b>			<b>1,900 SF</b>

	Regulatory Requirement		Staff Head count 2025	DIMS.	SF	Proposed SF		Projected Need 2040			
						QTY	TOTAL SF	HC	QTY	TOTAL SF	
<b>STAFF/VOLUNTEERS + ANIMAL CONTROL</b>											
10.0	CEO	yes	Director's Office	1	12' x 14'	168	1	168	1	1	168
<b>Business Office</b>											
11.0	Finance-HR Manager	yes	Private office	1	10' x 11'	110	1	110	1	1	110
12.0	Finance Admin	yes	Workstation	1	8' x 8'	64	1	64	1	1	64
13.0	Grants Manager	enhanced	Workstation	1	8' x 8'	64	1	64	1	1	64
14.0	Development Manager	enhanced	Private office	1	10' x 11'	110	1	110	1	1	110
15.0	Communications Manager	enhanced	Private office	1	10' x 11'	110	1	110	1	1	110
16.0	Healthy Pets/Healthy People Program / Veteranary Social Worker	enhanced	Private Office	1	10' x 11'	110	1	110	1	1	110
17.0	Healthy Pets/Healthy People Program / Community Programs Lead	enhanced	Workstation	1	8' x 8'	64	1	64	1	1	64
<b>Animal Control</b>											
18.0	Animal Control Officers	yes	Shared Office w/ space for lockers	2	14' x 16'	224	1	224	4	1	224

Animal Care + Operations											
19.0	Animal Care Director	yes	Director's Office	1	12' x 14'	168	1	168	1	1	168
20.0	Operations Manager	yes	Private Office	1	10' x 11'	110	1	110	1	1	110
21.0	Volunteer Engagement Manager	yes	Private Office	1	10' x 11'	110	1	110	1	1	110
22.0	Adoptions-Fosters Manager	yes	Private Office	1	10' x 11'	110	1	110	1	1	110
23.0	Adoptions Marketing Manager	enhanced	Private Office	1	10' x 11'	110	1	110	2	2	220
24.0	Enrichment + Training Manager	enhanced	Private Office	1	10' x 11'	110	1	110	1	1	110
25.0	Senior Animal Care Team Lead	yes	Hotel Workstation	1	4' x 6'	24	1	24	1	1	24
26.0	Animal Care Team	yes	Hotel Workstation	1	4' x 6'	24	1	24	1	1	24

Shared Spaces											
27.0	Volunteer Workstations	enhanced	Small Conference Room w/ 12 Stacked Lockers	3	12' x 14'	168	1	168	3	1	168
28.0	Animal Care / Medical Team Lockers	yes	10 Lockers Full-height (5'-0" min. height) w/ Changing Curtain	0	10' x 12'	120	1	120	0	1	120
29.0	Staff Restrooms	yes		0	8' x 8'	64	2	128	0	2	128
30.0	Staff Shower	yes		0	8' x 8'	64	1	64	0	1	64
31.0	Break Room	yes	For staff and volunteers adjacent to patio	0	14' x 20'	280	1	280	0	1	280
32.0	Office Work Room- Printer-Copier-Supplies- Recvclina	yes		0	10' x 12'	120	1	120	0	1	120
33.0	Conference Room	yes	w/ 12-person table	0	14' x 20'	280	1	280	0	1	280
<b>Net Area Subtotal:</b>				<b>21</b>				<b>2,950 SF</b>	<b>24</b>		<b>3,060 SF</b>
<i>Flex Space Allowance (5%)</i>								<b>148 SF</b>			<b>153 SF</b>
<i>Structure-Circulation (30%)</i>								<b>929 SF</b>			<b>964 SF</b>
<b>STAFF/VOLUNTEERS + ANIMAL CONTROL TOTAL</b>								<b>4,027 SF</b>			<b>4,177 SF</b>

Regulatory Requirement				Staff Head count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
							QTY	SF	HC	QTY	SF
<b>MEDICAL SERVICES</b>											
40.0	Medical Director & Veterinarian	yes	Director's Office - shared	2	12' x 14'	168	1	168	2	1	168
41.0	Veterinary Technicians & Assistants	yes	Shared Office	4	12' x 14'	168	1	168	4	1	168
42.0	Treatment Room	yes	For non-sterile procedures and wound repair	0	12' x 14'	168	1	168	0	1	168
43.0	Dental Care	enhanced		0	10' x 12'	120	1	120	0	1	120
44.0	Radiology	enhanced	1 Cart Workstation	0	10' x 12'	120	1	120	0	1	120
45.0	Pharmacy	enhanced	Shelves, Drug Sage, Fridge	0	10' x 14'	140	1	140	0	1	140
<b>SURGICAL SUITE</b>											
46.0	Prep Room	enhanced	Split into clean and dirty sides Adjacency to Surgical Laundry	0	12' x 18'	216	1	216	0	1	216
47.0	Surgery	yes		0	16' x 18'	288	1	288	0	1	288
48.0	Isolation / Recovery	yes		0	12' x 14'	168	1	168	0	1	168
<b>Net Area Subtotal:</b>				<b>6</b>				<b>1,556 SF</b>	<b>6</b>		<b>1,556 SF</b>
<i>Flex Space Allowance (5%)</i>								<b>78 SF</b>			<b>78 SF</b>
<i>Structure-Circulation (30%)</i>								<b>490 SF</b>			<b>490 SF</b>
<b>MEDICAL SERVICES TOTAL</b>								<b>2,124 SF</b>			<b>2,124 SF</b>

Regulatory Requirement				Staff Head count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
							QTY	SF	HC	QTY	SF
<b>ANIMAL CARE + HOUSING</b>											
50.0	Dog Isolation	yes	4 double-sided kennels One for medical, 1 for bite quarantine Adjacent to Medical	0	16' x 28'	448	2	896	0	2	896
51.0	Cat Isolation	yes	Adjacent to Medical One space for ringworm, 1 for infectious diseases	0	10' x 10'	100	2	200	0	2	200
53.0	Animal Washing-Grooming	yes	With bathtub dog wash  Adjacent to Medical Storage for shampoo and towels	0	10' x 16'	160	1	160	0	1	160
54.0	Whelping Room	yes	Adjacent to Medical	0	10' x 10'	100	1	100	0	1	100
55.0	Wildlife + Farm Animals	yes	Covered outdoor space  2 Chicken cages (2-4 chickens)  Misc. holding cages	0	18' x 30'	540	1	540	0	1	540
56.0	Birds	yes	Indoor space 2-3 cages	0	14' x 14'	196	1	196	0	1	196
57.0	Small Exotic Animals	yes	For holding and transfer 2-3 cages	0	10' x 10'	100	1	100	0	1	100

58.0	Rabbits & Guinea Pigs	yes	20 cages	0	14' x 14'	196	1	196	0	1	196
59.0	Cat Condos	enhanced	40 condos	0	16' x 22'	352	1	352	0	1	352
60.0	Kennel Pod	yes	8 kennels max per pod One pod for emergency boarding	0	28' x 28'	784	8	6,272	0	8	6,272
61.0	Food Kitchen Prep within kennel area dish sanitizer	yes		0	16' x 20'	320	1	320	0	1	320
62.0	Overnight Drop-Off	yes		0	10' x 10'	100	1	100	0	1	100
63.0	Large Dog Play Yard		<b>OUTDOOR SPACE</b>	0	20' x 40'	800	2	1,600 SF not in bldg total below	0	2	1,600 SF not in bldg total below
64.0	Small Dog Play Yard		<b>OUTDOOR SPACE</b>	0	20' x 20'	400	2	800 SF not in bldg total below	0	2	800 SF not in bldg total below
<b>Net Area Subtotal:</b>				<b>0</b>				<b>9,432 SF</b>	<b>0</b>	<b>9,432 SF</b>	
<i>Flex Space Allowance (5%)</i>								<b>472 SF</b>		<b>472 SF</b>	
<i>Structure-Circulation (30%)</i>								<b>2971 SF</b>		<b>2971 SF</b>	
<b>ANIMAL CARE + HOUSING TOTAL</b>								<b>12,875 SF</b>		<b>12,875 SF</b>	

Regulatory Requirement				Staff Head count 2025	DIMS.	SF	Proposed SF		Projected Need 2040		
							QTY	SF	HC	QTY	SF
<b>STORAGE + UTILITY AREAS</b>											
70.0	Laundry Room	yes		0	12' x 20'	240	1	240	0	1	240
71.0	Surgical Laundry	yes	Adjacent to surgery	0	12' x 20'	240	1	240	0	1	240
72.0	Janitor's Closet	yes		0	6' x 8'	48	3	144	0	3	144
73.0	Food, Bedding + Cleaning Storage	yes		0	16' x 20'	320	1	320	0	1	320
74.0	Emergency Preparedness Supplies	yes		0	16' x 20'	320	1	320	0	1	320
75.0	Engagement Storage	enhanced		0	16' x 20'	320	1	320	0	1	320
76.0	Pet Food Pantry Healthy Pets Healthy People program	enhanced		0	16' x 20'	320	1	320	0	1	320
77.0	Waste Disposal Systems	yes		0	8' x 12'	96	1	96	0	1	96
78.0	IT Room	yes		0	10' x 14'	140	1	140	0	1	140
79.0	Electrical Room	yes		0	10' x 14'	140	1	140	0	1	140
80.0	Mechanical Room	yes		0	10' x 14'	140	2	280	0	2	280
<b>Net Area Subtotal:</b>				<b>0</b>				<b>2,560 SF</b>	<b>0</b>		<b>2,560 SF</b>
								<b>128 SF</b>			<b>128 SF</b>
								<b>806 SF</b>			<b>806 SF</b>
<b>STORAGE + UTILITY AREAS TOTAL</b>								<b>3,494 SF</b>			<b>3,494 SF</b>

BUILDING TOTAL:					Projected Need 2040	
					HC	GSF
			Staff Head count 2025	GSF		
RECEPTION + INTAKE		Area Subtotal	3	2,151	3	2,151
COMMUNITY SPACES		Area Subtotal	3	1,900	3	1,900
STAFF/VOLUNTEERS + ANIMAL CONTROL		Area Subtotal	21	4,027	24	4,177
MEDICAL SERVICES		Area Subtotal	6	2,124	6	2,124
ANIMAL CARE + HOUSING		Area Subtotal	0	12,875	0	12,875
STORAGE + UTILITY AREAS		Area Subtotal	0	3,494	0	3,494
<b>ANIMAL SHELTER TOTAL</b>			<b>30</b>	<b>26,571</b>	<b>33</b>	<b>26,721</b>

# PROGRAM DOCUMENTS

## ANIMAL SHELTER - SPACE NEEDS

77.0	Waste Disposal Systems			0	8' x 12'	96	1	96	0	1	96
78.0	IT Room			0	10' x 14'	140	1	140	0	1	140
79.0	Electrical Room			0	10' x 14'	140	1	140	0	1	140
80.0	Mechanical Room			0	10' x 14'	140	2	280	0	2	280
<b>Net Area Subtotal:</b>				<b>0</b>				<b>2,560 SF</b>	<b>0</b>		<b>2,560 SF</b>
<i>Flex Space Allowance (5%)</i>								<b>128 SF</b>			<b>128 SF</b>
<i>Structure-Circulation (30%)</i>								<b>806 SF</b>			<b>806 SF</b>
<b>STORAGE + UTILITY AREAS TOTAL</b>								<b>3,494 SF</b>			<b>3,494 SF</b>

# PROGRAM DOCUMENTS

## ANIMAL SHELTER – SPACE NEEDS

BUILDING TOTAL:					Projected Need 2040	
			Staff Head count 2025	GSF	HC	GSF
RECEPTION + INTAKE		Area Subtotal	3	2,151	3	2,151
COMMUNITY SPACES		Area Subtotal	3	8,439	3	8,439
STAFF/VOLUNTEERS + ANIMAL CONTROL		Area Subtotal	21	4,027	24	4,177
MEDICAL SERVICES		Area Subtotal	6	2,637	6	2,637
ANIMAL CARE + HOUSING		Area Subtotal	0	11,024	0	11,024
STORAGE + UTILITY AREAS		Area Subtotal	0	3,494	0	3,494
<b>ANIMAL SHELTER TOTAL</b>			<b>30</b>	<b>27,592</b>	<b>33</b>	<b>27,742</b>

*This document contains space needs identified as of the date above. The design team should verify and confirm data prior to commencement of*

# APPENDIX

## STATION 1 – SPACE NEEDS

ALAMEDA FIRE STATION NO. 1 SPACE NEEDS OUTLINE DRAFT - March 23, 2025		
<b>COMPANY PERSONNEL:</b>		
Station to accommodate 9 current personnel including: 1 Battalion Chief, 3 Engineers, 3 Firefighters, 2 Medics		
Per shift, Captain, Engineer, Paramedic (at least one of the three on-duty is a medic)		
SITE OPERATIONS		SPACE ATTRIBUTES
1.0	<b>Fire Dept Parking</b>	Need minimum 12 Crew spaces within secured fenced area for shift change + Fire Admin; tandem parking (9 current crew + Fire Admin, but should have 18 for shift change + Fire Admin) Gate Operator. Keypad and remote control. Provide Knox Box. Keypad with Intercom
	<b>Wash Rack/Hose Rack</b>	Ground-mounted, Gear Grid type on apron. Department uses synthetic hoses which can be loaded wet Also put hose in drying cabinet
	<b>Ancillary Storage</b>	Covered Storage Parking for trailers
	<b>Outdoor Storage</b>	ConX containers on base rock for PPE, hoses, tools, pumps, portable generators and other supplies. 8' x 20.' Power not required. Currently have 3 + 2 Tuff Sheds at FS 1
	<b>Vehicle Wash</b>	At Rear apron, connect to clarifier, provide hose bib
	<b>Visitor and Public Parking</b>	Limited spaces, access via secured gate
	<b>Front + Rear Aprons + Yard</b>	Enclosed by secure fencing at rear. Concrete paving. Rolling gate with operators, key pad. Existing front apron too short, need 45' for ladder truck

# APPENDIX

## STATION 1 - SPACE NEEDS

<b>Fire Fighter Patio</b>	Adjacent to kitchen/dining room. Trellis or shade structure not required, but wind protection needed, Exterior door chime from station front door. No patio at present time Hose Bib plus Gas for grill Area to be secured and screened
<b>Emergency Generator</b>	Diesel Generator sized to support whole station. Connect with direct pipe to fuel tank for full time storage of 72 hours of fuel. Protected in secure compound in close proximity to fuel tank with minimal visibility to public . Provide sound enclosure built on to generator
<b>Fire Department Fuel Refill</b>	Diesel fuel dispensing connected to generator. 750 Gallons of Diesel/250 Gas with split off to Generator.
<b>EV Charging</b>	None at present. Need in future for apparatus, staff and personal vehicles (staff can be billed for usage).
<b>Security Fence</b>	Secured yard with fencing - 8' block wall with 8' gates

# APPENDIX

## STATION 1 - SPACE NEEDS

	<b>Trash and Recycling</b>	Enclosure in secure area, place for front loading truck access. Specifications as required by waste provider and Fire Marshal. Hose Bib
	<b>Phone Antenna</b>	3rd Party Cell Tower for town service,, currently occupies back corner of the yard
	<b>Fire Hydrants</b>	
	<b>Site Lighting</b>	Security lighting at exterior fencing, controlled lighting at rear apron
	<b>Landscaping</b>	Low landscaping to minimize hiding places in landscape
	<b>Signalization - Off Site Requirements</b>	Verify off-site requirements with City

# APPENDIX

## STATION 1 - SPACE NEEDS

STATION BUILDING								
FINISH LEGEND								
A. Simple Finishes		B. Standard Office Type Finishes		C. Intense Finish				
				DIMS.	SF	Proposed		Finish Type
						QTY	TOTAL SF	
<b>APPARATUS BAYS / APPARATUS BAY SUPPORT AREAS</b>								
2.0	<b>Apparatus Bay</b>  <b>Apparatus:</b> Truck Engine Ambulance BC all first out drive thru except BC BC  Reserve engine behind BC	<b>2 Apparatus Bays</b> Currently one drive through one stacked Reports of slab lifting under truck pressure Plymovent vehicle exhaust system Prefer Bi-Fold doors at front, standard at back Red/Green light overhead door status indicator Gang control door operators Sectional Coiling Overhead app bay doors with as much light/vision panels as possible. Factory-coated finish and thermal insulation Person-door to App Bay with vision panel and panic hardware Radios are charged on rigs Air drops toward middle of App Bay <b>and</b> quick connects on perimeter walls (4) Electrical drops at each bay, to 4' A.F.F. Hose bibs - Garden Valve 3/4" Opening 2 on each wall (6 total) Two (2) high access drops for wireless access points over the engines Three (3) 2" conduits across Apparatus Bay for data - overhead is preferred. Conduits to be concealed. Map and Monitor in adjacent vestibule	20' x 72'	1,440	4	5,760	A  A  A	

# APPENDIX

## STATION 1 - SPACE NEEDS

3.0	<b>Work Room/Shop</b> Separate Room  20x20 look at current size	Bench vise and hard wired grinder. Built-in workbench with galvanized top with base cabinet (some open, some with doors). Freestanding 30" Shop Sink & work bench Tool chest area Flammable Liquids Cabinet - with legs to raise above ground Mop sink and mop rack with shower head with hose. Upper cabinet storage with under cabinet light (3) duplex outlets min. above bench and (2) duplex outlets min. below at each wall. Tool charging Evidence Storage Cabinet - Flammable cabinet Safety Shower in App Bay but currently storage	15' x 20'	300	1	300	A
4.0	<b>Wash Alcove</b>	Handwashing sink near entrance to living area from app bay Hose Bib	3' x 2'	6	2	12	A
5.0	<b>Air Fill</b>	Separate room/space from compressor and regulators (those could be outside) Existing Bauer system serves all Stations Locate near Shop area Racks to store 27 ideally but minimum 18 cylinders (9 cylinders per apparatus)	10' x 15'	150	1	153	A
6.0	<b>Hose Rack Area</b>	One 8' long rack, 3 reels high on App Bay floor Near Shop	12' x 16'	192	0	0	A

# APPENDIX

## STATION 1 - SPACE NEEDS

7.0	EMS/Medical Supply Closet	EMS Storage combined with Medical Supply	8' x 12'	96	1	96	A
8.0	Janitor	Cleaning Supplies and Equipment	6' x 8'	48	1	48	A
9.0	App Bay Restrooms	Sink and Toilet -	8' x 8'	64	1	64	A
		Shower	4' x 6'	24	1	24	A
		Floor Area for future Sauna	8' x 8'	64	1	64	A
10.0	Vestibule	Transition zone Positive ventilation	6' x 12'	66	2	132	B
11.0	Response/Charging Alcove	Located in the App Bay/vestibule Battery charging, radios and cell phones. Laptop, Radio, Tick, Lights, Defib, Jaws Wall Monitor and Map Shelf for spare radios and radios are assigned/dedicated to individuals	2' x 12'	24	1	24	A
12.0	Clean Up / Wash Room	Direct access from the App. Bays with connecting door into station Freestanding stainless steel sink with drain board and faucet Drying rack above sink drain board Gear Drying Cabinet Bio Hazard Bin/Closet Shelving for cleaning supplies	10' x 11'	110	1	110	A

# APPENDIX

## STATION 1 - SPACE NEEDS

13.0	<b>Communication and Equipment Room</b>	Wall space for backboards for phone system - 3/4" plywood face out on all walls 8' high	10' x 10'	100	1	100	A
14.0	<b>Utility/Water Heater Room</b>	HVAC Equipment Water Heater with recirculation pump.	10' x 10'	100	1	100	A
15.0	<b>Yard Storage</b>	Yard maintenance and tool storage Should be in new outside Storage Building but exterior door from Storage Building	6' x 6'	36	1	36	A
16.0	<b>Locker Turnout Room</b>	(33) firefighter turnout full height storage lockers (36" wide x 24" deep) One per person to hold regular gear plus Type 3 Wildland gear, Lite "Go" bag (1) Extractor Drying rack with floor drain for turnouts Floor drains throughout Gear Drying Cabinet Gear grid type lockers, 30" wide Need storage for additional uniforms Need Biohazard Pick Up Closet - service picks up Washer/Dryer here is to be confirmed with fire department	24' x 38'	912	1	912	A
	<b>33 ff lockers</b>  <b>Turnout Cleaning Room</b>		10' X 10'	100	1	100	
17.0	<b>Cache Storage</b>	Protect from app bay contamination Ice Machine Need Gatorade and water storage as well + MRE, sleeping bags and coolers	10' x 20'	200	1	200	A
	Current general storage in mezzanine						
18.0	<b>Compressor Room</b>		8' X 12'	90	1	90	A
<b>Apparatus Bays / Apparatus Bay Support Area</b>						<b>8,325 SF</b>	
<b>Subtotal:</b>							

# APPENDIX

## STATION 1 - SPACE NEEDS

			DIMS.	SF	Proposed		Finish Type
					QTY	TOTAL SF	
<b>FIREFIGHTER LIVING AREA</b>							
19.0	<b>Kitchen</b>	(3) 36" wide refrigerators, one per shift Gas Range with 6 burners and griddle Pot filler at range Double wall oven One dishwasher -- commercial quality, stainless steel - with heating element One Microwave on counter, One on shelf Upper and Lower Cabinets, general shared storage Individual 1' x 3' or half-height food cabinets/lockers Island with a step down counter section with prep sink Trash containers exposed in plain view	16' x 16'	255	1	255	C
20.0	<b>Dining Area</b>	Table and seating to accommodate <b>10 people</b> Space to allow a 15 foot table for holiday family meals Smart Board Marker Board Phone and data outlets Direct access to patio Monitor on Wall	16' x 13'	204	1	204	B

# APPENDIX

## STATION 1 - SPACE NEEDS

21.0	Day Room	<p>Sized to accommodate 10 lounge chairs            Tiered seating            Separate room but adjacent to dining/kitchen            Wired for surround sound speakers            Built-in Base Cabinet with shelf for AV equipment            3'x6' Bulletin Board            4'x8' Dry Erase Board            TV/Speakers, provide blocking and power/data wall            mounted outlet unit for flat screen TV            Phone and data outlets            CAD status, pre/post ~40" monitor-HDMI drop</p>	16' x 24'	376	1	376	B
22.0	Janitor/Utility/Laundry	<p>Storage for living quarter cleaning supplies            Roof Access Ladder (as needed)            Storage for brooms, vacuum, etc            Deep Utility Sink with cabinets above            Water Heater (Placeholder-alternate location preferred,            separate metal)            Full Height Storage Cabinet            Mop Bucket space            Mop sink            Mop hooks over floor drain            Washer/Dryer</p>	12' x 8'	96	1	96	C

# APPENDIX

## STATION 1 - SPACE NEEDS

23.0	<b>Exercise Room</b> Currently split in 2 spaces, for cardio and weights  City provides equipment	3/4" plywood under gyp. Board, typ. Rubber up the wall 30" high Mirror wall near elliptical machines Provide sound insulation in walls If near sleeping areas, provide sound resistive gyp. Elliptical (1) Treadmill (1) Multi-Use Exercise Machine (1) Operable windows <b>double door to exterior</b> Phone and data outlets Ceiling Fans CAD Display - HDMI drop	20' x 20'	400	1	400	B
24.0	<b>Water Fill Station</b>	One near exercise and one near Crew Office					
<b>Firefighter Living Area Subtotal:</b>				<b>1,331 SF</b>			

# APPENDIX

## STATION 1 - SPACE NEEDS

			DIMS.	SF	Proposed		Finish Type
					QTY	TOTAL SF	
<b>FIREFIGHTER QUARTERS AREA</b>							
<b>25.0</b>	<p><b>Firefighter Dorm Rooms</b></p> <p>Currently 6 (maybe 7) FF dorm rooms upstairs not including Murphy beds in offices. Could use adding 2 FF but no dorm space Bedding Lockers in hallway Wooden wardrobe lockers in Locker Room</p> <p>NEED 7 Dorm Rooms</p>	<p>One Extra long bed/on standard frame (drawers below) Avoid adjacent beds with other dorm rooms Four (4) wardrobes lockers (24" wide) each room w/ storage above plus one guest locker 24" wide Storage above lockers for linens One (1) built-in counter 30" min. wide desk area w/ pencil drawer with desk light above Sound separation from living areas Ceiling fan TV wall mount bracket and cable hookup Night table. USB plug-ins Operable egress window Sound Rated windows with Blackout Shades Volume controlled speaker.</p>	10' x 12'	120	7	840	B

# APPENDIX

## STATION 1 - SPACE NEEDS

26.0	<b>Firefighter's Toilet/Shower Room</b> <i>Separate toilet/shower rooms.</i>  Captain's now use toilet/shower near their office and Watch Office	Separate area with one (1) shower w/ bench and changing area. Shower with door One (1) accessible height toilet Corner bench at shower Access Panel for Shower Plumbing One (1) sink with base cabinet w/ no base + floor drain below for cleaning supply storage Response Strobe and volume controlled speaker near shower Mirror Floor drains One (1) FF Toilet shower room shall be ADA compliant, with bench in shower and grab bars and lavatory in place of sink cabinet.	8' x 12'	96	4	384	C
27.0	<b>Captain's Dorm Room</b>  Currently Murphy beds in Captain's Offices  <b>Replace Murphy's w/ std bed. locker</b>	One extra long twin size bed in each room CAD Display - HDMI drop Night Table Reading Light above bed Three (3) full height wardrobe lockers (24" wide) with storage above and one quest locker (24" wide) Sound rated window with blackout shades One (1) 5' wide desk area w/ side drawers and pencil drawer Separate Response light and speaker to home run to Comm. Room Ceiling fan Sound separation from living areas Operable egress window	12' x 10'	120	2	240	B
<b>Firefighter Quarters Area Subtotal:</b>				<b>1,464 SF</b>			

# APPENDIX

## STATION 1 - SPACE NEEDS

			DIMS.	SF	Proposed		Finish Type
					QTY	TOTAL SF	
<b>STATION OFFICE AND RECEPTION AREA</b>							
<b>28.0</b>	<b>Watch Room</b> Currently has one Murphy bed	Adjacent to entry with non-operable window with line of sight into entry vestibule (2) standard built-in 30" x 60" desks with counter space for (2) computer workstations Lateral files below work counter Area for copier / FAX / printer Tackable wall surface between the counter and upper cabinets Release button for Lobby front doors - Verify location with Fire Department Library storage for training materials and Pro-Con Conferencing System - Monitor/Camera Mail Alcove Water Fill Station nearby	11' x 18'	198	1	198	B
			2' x 9'	18	1	18	
			2' x 9'	18	1	18	
<b>29.0</b>	<b>Reception Area/Lobby</b>	911 Phone at Exterior near Front Doors Hollow Metal Doors with Glazing at Entry Exterior Door bell and intercom to Crew Office next to front door w/ video camera Display Area - Cabinets and Wall Space Medical Walk-ins so needs easy access to restroom	10' x 16'	160	1	160	B
<b>30.0</b>	<b>Captain's Office</b>	CAD Display - HDMI drop Adjacent to Watch Room	10' x 12'	120	2	240	B

# APPENDIX

## STATION 1 - SPACE NEEDS

31.0	<b>General Storage</b>	For files, supplies	8' x 11'	84	1	84	A
32.0	<b>Public Restroom</b>	Unisex accessible restroom Accessible grab bars and toilet accessories One lavatory and one toilet Adjacent to Front Entry Lobby	8' x 8'	64	1	64	C
33.0	<b>Conference Room</b>	<b>Are Conference Rooms required at all Fire Stations?</b>  If Admin goes off-site need to add in Conf Room or use kitchen	0' x 0'	0	0	0	
<b>Fire Station Office and Reception Area Subtotal:</b>						<b>782 SF</b>	

# PROGRAM DOCUMENTS

## STATION 1 - SPACE NEEDS

CONCEPTUAL SPACE NEEDS SUMMARY			
<b>BUILDING TOTAL:</b>			
APP. BAYS / APP. SUPPORT:	Area Subtotal	8,325	SF
FIREFIGHTER LIVING:	Area Subtotal	1,331	SF
FIREFIGHTER QUARTERS:	Area Subtotal	1,464	SF
FIRE STATION OFFICE & RECEPTION:	Area Subtotal	782	SF
	Building Subtotal	11,903	SF
	<i>Structure and Circulation (23%)</i>	2,738	SF
	<b>GRAND TOTAL</b>	<b>14,642</b>	<b>SF</b>

**FIRE ADMINISTRATION  
SPACE NEEDS OUTLINE  
DRAFT - March 23, 2025**

SITE OPERATIONS		SPACE ATTRIBUTES	Parking #	SF	TOTAL SF
1.0	Fire Dept Parking	<b>31 Building Staff includes Command Staff and administrative staff. HOW MANY DRIVE DEPT VEHICLES HOME? How many spaces needed for personal vehicles? secured fenced area; additional 5 spaces per day for other department personnel which is not needed if at other fire facility. 36 spaces (9' x 20')</b>	36	180	6480
	EV Charging	EV Charging Standard space 9' Wide x 18' Long + 5' drive aisle, EV Van Charging Space 12' Wide x 18' Long + 5' access aisle.	0 0	252 306	0 0
	Visitor and Public Parking EV Charging	Outside of secured gate	0	0	0
	Staff Patio	Adjacent to break room. Trellis or shade structure not required, but wind protection needed,			
	Emergency Generator	Not needed if co-locate with a Fire Station or Training Facility.			
	Fire Department Fuel Refill	Not needed if co-locate with a Fire Station or Training Facility.			
	Security Fence	Secured yard with fencing - 8' block wall with 8' gates			
	Trash and Recycling				
	Radio Antenna				
	Site Lighting	Lots of lighting - lots of transients, Security lighting at exterior fencing, controlled lighting at rear apron			
	Landscaping	Low landscaping to minimize hiding places in landscape			
<b>GENERAL FACILITIES CHARACTERISTICS</b>					
		Potential PV canopies over parking			
<b>OTHER FACILITIES CONSIDERATIONS</b>					

**FIRE ADMINISTRATION  
SPACE NEEDS OUTLINE  
DRAFT - March 23, 2025**

**STATION BUILDING**

**FINISH LEGEND**

**A. Simple Finishes**

**B. Standard Office Type Finishes**

**C. Intense Finish Systems**

			DIMS.	SF	Proposed		Finish Type
					QTY	TOTAL SF	
<b>FIRE ADMINISTRATION OFFICE AREA</b>							
1.0	<b>Reception Area/Lobby</b>	911 Phone at Exterior near Front Doors Display Area - Cabinets and Wall Space Service Counter Window into Business Office Department History-Awards Displays	10' x 16' 2' x 10'	160 20	1 1	160 20	B
2.0	<b>Business Office</b>	Open Office Area with workstation cubicles	8' x 8'	64	4	256	B
3.0	<b>Staff-Manager Offices</b>		10' x 11'	110	2	220	B
4.0	<b>Staff Break Room</b> Shared with all building occupants	Counter with sink Refrigerator, microwave, table and chairs	12' x 14'	168	1	168	B
5.0	<b>Office Work Room</b> Shared with building occupants	Copier/Printer Supplies Trash/Recycling Bins	10' x 16'	160	1	160	A
6.0	<b>Chief's Office</b> Chief Luby	With Uniform Closet	14' x 18'	252	1	252	B
7.0	<b>Deputy Chief's Offices</b> DC Moxley + Hearn	DC Hearn in Chief's area but close to Prevention	12' x 14'	168	2	336	B
8.0	<b>Division Chief's Offices</b> DC Port + Nijmeh	Training Chief Office at Training DC Nijmeh in Chief's Area but near EMS	12' x 12'	144	2	288	B
9.0	<b>Battalion Chief Offices</b>		12' x 12'	144	3	432	B
10.0	<b>Staff Restrooms</b>	Two Toilet Rooms, One Shower Room	8' x 8'	64	3	192	C
11.0	<b>Conference Room</b>	Conference Table and Chairs for 10 Counter with Sink	16' x 20' 10' X 2'	320 20	1 1	320 20	B
12.0	<b>General Storage</b>	File Room	8' x 11'	84	1	84	A

13.0	Public Restroom	Unisex accessible restroom	8' x 8'	64	1	64	C
14.0	Janitor's Closet	Cleaning Supplies and Equipment	12' x 10'	120	1	120	A
16.0	Communication and Equipment Room	Wall space for backboards for phone system - 3/4" plywood face out on all walls 8' high	10' x 10'	100	1	100	A
17.0	Utility/Water Heater Room	HVAC Equipment Water Heater with recirculation pump.	10' x 10'	100	1	100	A
			0' x 0'	0	0	0	
<b>Fire Administration Office Area Subtotal:</b>						<b>3292 SF</b>	

<b>FIRE PREVENTION OFFICE AREA</b>							
18.0	Administrative Tech		10' x 12'	120	1	120	B
19.0	Captain-Asst Fire Marshall		12' x 12'	144	1	144	B
20.0	Fire Inspectors	Open Office with cubicles Four full-time, 4 part-time	8' x 10'	80	8	640	B
21.0	Plan Storage		8' x 12'	96	1	96	A
22.0	Conference Room	Conference Table and Chairs for 12	20' x 24' 10' X 2'	480 20	1 1	480 20	B
23.0	Prevention Education Storage		8' x 8'	64	1	64	A
			0' x 0'	0	0	0	
<b>Fire Prevention Area Subtotal:</b>						<b>2996 SF</b>	

<b>EMERGENCY MEDICAL SERVICES</b>							
24.0	EMS Captain		10' x 12'	120	1	120	B
25.0	EMS Personnel	Shared open office area with 5 cubicles	8' x 8'	64	5	320	B
			0' x 0'	0	0	0	B
<b>Emergency Medical Services Area Subtotal:</b>						<b>2004 SF</b>	

CONCEPTUAL SPACE NEEDS SUMMARY			
<b>BUILDING TOTAL:</b>			
<b>FIRE STATION OFFICE &amp; RECEPTION:</b>	Area Subtotal	3,292	SF
<b>FIRE PREVENTION</b>	Area Subtotal	2,996	SF
<b>EMERGENCY MEDICAL SERVICES</b>	Area Subtotal	2,004	SF
	Building Subtotal	8,292	SF
	<i>Structure and Circulation (23%)</i>	1,907	SF
<b>GRAND TOTAL</b>		<b>10,200</b>	<b>SF</b>

# APPENDIX

## STATION 2 – SPACE NEEDS

ALAMEDA FIRE STATION NO. 2  
SPACE NEEDS OUTLINE  
DRAFT - March 23, 2025

**COMPANY PERSONNEL:**

Station to accommodate current personnel, including:

8 total personnel. Two Captains, Two AOs, Four Fire Fighters

SITE OPERATIONS		SPACE ATTRIBUTES
1.0	Fire Dept Parking	<i>Need 10 minimum but 20 for shift change</i> Gate Operator. Keypad and remote control. Provide Knox Box. Keypad with Intercom
	Wash Rack/Hose Rack	Currently use hose cabinet, prefer ground mounted wire mesh, sloped, tied into catch basin/clarifier switch if space allows
	Vehicle Wash	At Rear apron, connect to clarifier, provide hose bib
	Visitor and Public Parking	3 Spaces desired If Community Room included, may need 18-20 unsecured spaces for CPR classes, meetings, etc.
	Front + Rear Aprons	Enclosed by secure fencing. Concrete paving. Rolling gate with operators, key pad Full length apron, front and rear. 40' for engine as long as pull thru room in back
	Ancillary Storage under cover	CERT Supplies
	Fire Fighter Patio Patio trellis/cover	Adjacent to kitchen/dining room. Trellis or shade structure not required, but wind protection needed, Exterior door chime from station front door. Hose Bib plus Gas for grill Area to be secured and screened

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

<b>Emergency Generator</b>	<p>Diesel Generator sized to support whole station.          Connect with direct pipe to fuel tank for full time storage of 72 hours of fuel.          Protected in secure compound in close proximity to fuel tank with minimal visibility to public .          Provide sound enclosure built on to generator          Day tank under generator. Co-locate with Convault.</p>
<b>Fire Department Fuel Refill</b>	<p>Diesel fuel dispensing connected to generator. 750 Gallons of Diesel and 250 gallons of gas with split off to Generator.</p>
<b>EV Charging</b>	<p>None at present. Need in future</p>
<b>Security Fence</b>	<p>Secured yard with fencing</p>
<b>Trash and Recycling</b>	<p>Enclosure in secure area</p>
<b>Radio Antenna</b>	<p>Antenna mounted on building</p>
<b>Fire Hydrants</b>	<p>Fire Hydrant on FS meter in addition to required curbside hydrant. 50' from FDC.</p>
<b>Site Lighting</b>	<p>Controlled lighting at rear apron</p>
<b>Landscaping</b>	<p>Low landscaping to minimize hiding places in landscape</p>
<b>Signalization - Off Site Requirements</b>	<p>Verify off-site requirements with City.</p>

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

STATION BUILDING											
FINISH LEGEND											
A. Simple Finishes			B. Standard Office Type Finishes			C. Intense Finish Systems					
					DIMS.	SF	Proposed w/ Ladder Truck		Proposed W/O Ladder Truck		Finish Type
							QTY	TOTAL SF	QTY	TOTAL SF	
<b>APPARATUS BAYS / APPARATUS BAY SUPPORT AREAS</b>											
2.0	<p><b>Apparatus Bay</b></p> <p><b>Apparatus:</b>  <b>Engine 2</b>            Truck 2 - May be Here or Station 5            Medic 2            Would be room for a spare ambulance             If some of rear App Bay is avail, can do SCBA room but priority is bigger kitchen             Could put spare ambulance behind engine</p>	<p><b>3 Apparatus Bays - pull through</b>            Two bays, stacked two deep  <i>Slope floor to trench drains in each bay</i>  <i>Control joints at drains and at 10' intervals</i>  <i>Plymovent vehicle exhaust system</i>  <i>Gang control door operators</i>  <i>Red/Green light overhead door status indicator</i>  <i>Sectional Coiling Overhead app bay doors with as much light/vision panels as possible. Factory-coated finish and thermal insulation</i>            Person-door to App Bay with vision panel and panic hardware             Radios are charged on rigs            Air drops toward middle of App Bay <b>and</b> quick connects on perimeter walls            (4) Electrical drops at each bay, to 4' A.F.F.            Hose bibs - Garden Valve 3/4" Opening 2 on each wall (6 total)            Two (2) high access drops for wireless access points over the engines            Phone and data outlets            Three (3) 2" conduits across Apparatus Bay for data - overhead is preferred. Conduits to be concealed.            Map and Monitor in adjacent vestibule            Reserve garage - two bays, one deep            Good drainage required</p>	20' x 72'	1,440	3	4,320	2	2,880	A		

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

<p><b>3.0</b></p>	<p><b>Work Room/Shop</b>                  Separate Room yes                   Station 3 size is good</p>	<p>Bench vise and hard wired grinder.                  Built-in workbench with galvanized top with base cabinet (some open, some with doors).                  Freestanding 30" Shop Sink &amp; work bench (FS 1 bench custom-made by former personnel)                   Tool chest area                  Flammable Liquids Cabinet - with legs to raise above ground                  Mop sink and mop rack with shower head with hose.                  Upper cabinet storage with under cabinet light                  (3) duplex outlets min. above bench and (2) duplex outlets min. below at each wall.                  Air Compressor and air connection - in closet for noise control                  Tool charging                  Evidence Storage Cabinet - Flammable cabinet                  Barn doors or double doors                  Eye Wash station</p>	<p>12' x 15'</p>	<p>180</p>	<p>1</p>	<p>180</p>	<p>1</p>	<p>180</p>	<p>A</p>
<p><b>4.0</b></p>	<p><b>Wash Alcove</b></p>	<p>Handwashing sink near entrance to living area from app bay                  Hose Bib</p>	<p>3' x 2'</p>	<p>6</p>	<p>2</p>	<p>12</p>	<p>2</p>	<p>12</p>	<p>A</p>
<p><b>5.0</b></p>	<p><b>Air Fill</b>                   Get it off the floor                  Ideal every station has their own, but ok if one main, all came to FS 1, or could do at certain stations                  Desirable not required                   JH: could go to FS 5 if no room. NL: if fits, garage?</p>	<p>Separate room/space from compressor and regulators (those could be outside)                  Existing Bauer system                  Locate near Shop area                   Racks to store 27 ideally but minimum 18 cylinders (9 cylinders per apparatus)                  Exterior door or connection to rescue unit</p>	<p>10' x 15'</p>	<p>150</p>	<p>1</p>	<p>150</p>	<p>1</p>	<p>150</p>	<p>A</p>

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

6.0	<b>Hose Rack</b>	One 8' long racks, 3 reels high Near Shop, On a rack in App Bay like FS 3 and 4	3' x 8'	24	0	0	0	0	A
7.0	<b>EMS/Medical Room</b> Separate room, sink and clean off items ok with combo medic and ems	EMS/Medical Supply Storage Shallow shelves for storage, work counter	8' x 10'	80	1	80	1	80	A
8.0	<b>Janitor</b>	Cleaning Supplies and Equipment	6' x 8'	48	1	48	1	48	A
9.0	<b>App Bay Restrooms</b> With shower for decon	Sink and Toilet - Shower Area for Sauna	8' x 8' 4' x 6' 8' x 8'	64 24 64	1 1 1	64 24 64	1 1 1	64 24 64	A A A
10.0	<b>Vestibule</b>  ICE Machine Radio Charging Closet	Transition zone Positive ventilation Ice near kitchen, near App Bay vestibule Radio charging shelf in closet, somewhere in the app bay is best most batteries are on the rig.	6' x 12'	66	2	132	2	132	B
11.0	<b>Response/Charging Closet</b>	Located off the App Bay/vestibule Battery charging, radios and cell phones. Two (2) fourplex outlets minimum above casework, Two (2) fourplex outlets within casework below Laptop, Radio, Tick, Lights, Defib, Jaws Wall Monitor and Map Phone and data outlets Built-in casework on both sides of space uppers and lowers Shelf for spare radios (DC also has 10 spares) and radios are assigned/dedicated to individuals	6' x 8'	48	1	48	1	48	A

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

12.0	<b>Clean Up / Wash Room</b>	Direct access from the App. Bays with connecting door into station Freestanding stainless steel sink with drain board and faucet Drying rack above sink drain board Gear Drying Cabinet Bio Hazard Bin/Closet Shelving for cleaning supplies Exterior Shower adjacent to this room for gross decon/clean up	10' x 11'	110	1	110	1	110	A
13.0	<b>Communication and Equipment Room</b>  normal size, little larger than current.	Wall space for backboards for phone system - 3/4" plywood face out on all walls 8' high provide separate AC system similar to FS 3	8' x 10'	80	1	80	1	80	A
14.0	<b>Utility/Water Heater Room</b>	HVAC Equipment Water Heater with recirculation pump.	10' x 10'	100	1	100	1	100	A
15.0	<b>Yard Storage</b> Needed, currently in tuff shed, consider tear down garage	Yard maintenance and tool storage Should be in new outside Storage Building but exterior door from Storage Building	6' x 8'	48	1	48	1	48	A

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

16.0	<b>Locker Turnout Room</b>	<b>(30) firefighter turnout full height storage lockers (36" wide x 24" deep)</b> 30 total with Truck, each person gets two, one full and one half height for Type 3 Wildland gear, Lite "Go" bag (1) Extractor Drying rack with floor drain for turnouts Floor drains throughout Gear Drying Cabinet Gear grid type lockers Need storage for additional uniforms Need Biohazard Pick Up Closet - service picks up Washer/Dryer. <i>Dirty rag service picks up, but W/D is still desired</i>	32' x 40'	1,280	1	1,280			A
	<i>Without Truck (24) lockers</i>		32' x 34'	1,088			1	1088'	
	Turnout Cleaning Room		10' X 10'	95	1	95	1	95	
17.0	<b>Cache Storage</b>	Protect from app bay contamination Ice Machine Need Gatorade and water storage as well + MRE, sleeping bags and coolers Inside but open to outside CERT and general storage	10' x 20'	200	1	200	1	200	A
	<i>OR, Auxiliary building for CERT for their supplies, mimic the fire districts, not a trailer, not interfere with daily crew ops, small garage</i>								
18.0	<b>Compressor Room</b>		8' X 8'	60	1	60	1	60	A
<b>Apparatus Bays / Apparatus Bay Support Area Subtotal:</b>						<b>7,095 SF</b>	<b>5,463 SF</b>		

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

			DIMS.	SF	Proposed w/ Ladder Truck		Proposed W/O Ladder Truck		Finish Type
					QTY	TOTAL SF	QTY	TOTAL SF	
<b>FIREFIGHTER LIVING AREA</b>									
19.0	<b>Kitchen</b>	(3) 36" wide refrigerators, one per shift Gas Range with 6 burners and griddle Pot filler at range Double wall oven Two dishwasher -- non commercial quality, stainless steel - with heating element (Hearn tried all kinds, Two Microwaves - One on counter, One on shelf Upper and Lower Cabinets, general shared storage All community supplies, no individual shift supplies, everything communal and three taller pantries per shift Island with a step down counter section with prep sink Trash containers exposed in plain view ABC Shift + General Food Lockers	16' x 20'	320	1	320	1	320	C
20.0	<b>Dining Area</b>	Table and seating Space to allow a table for holiday family meals Smart Board Marker Board Phone and data outlets Direct access to patio Monitor on Wall	14' x 18'	252	1	252			B
	<i>8 People without Truck 12 People with Truck</i>		14' x 14'	196			1	196	

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

21.0	<p><b>Day Room</b></p> <p>6 Chairs W/O Truck</p> <p>10 chairs w/ Truck</p>	<p>Sized to accommodate 10 lounge chairs Not tiered Separate room but adjacent to dining/kitchen Wired for surround sound speakers (by Association) Built-in Base Cabinet with shelf for AV equipment 3'x6' Bulletin Board 4'x8' Dry Erase Board TV/Speakers, provide blocking and power/data wall mounted outlet unit for flat screen TV Phone and data outlets <b>CAD status, pre/post ~40" monitor-HDMI drop</b></p>	18' x 24'	432	1	432	1	360	B
22.0	<p><b>Janitor/Utility/Laundry</b></p>	<p>Storage for living quarter cleaning supplies Roof Access Ladder (as needed) Storage for brooms, vacuum, etc Deep Utility Sink with cabinets above Water Heater (Placeholder-alternate location preferred, separate metal) Full Height Storage Cabinet Mop Bucket space Mop sink Mop hooks over floor drain Washer/Dryer</p>	10' x 12'	120	1	120	1	120	C

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

23.0	<b>Exercise Room</b>  <b>Equipment by FF assoc.</b>	3/4" plywood under gyp. Board, typ. Rubber up the wall 30" high Mirror wall near elliptical machines Provide sound insulation in walls If near sleeping areas, provide sound resistive gyp. Elliptical (1) Treadmill (1) Multi-Use Exercise Machine (1) Operable windows <b>double door to exterior</b> Phone and data outlets Ceiling Fans CAD Display - HDMI drop	20' x 20'	400	1	400	1	400	B
24.0	<b>Water Fill Station</b>	One near exercise and one near Crew Office							
<b>Firefighter Living Area Subtotal:</b>						<b>1,524 SF</b>	<b>1,396 SF</b>		

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

			DIMS.	SF	Proposed w/ Ladder Truck		Proposed W/O Ladder Truck		Finish Type
					QTY	TOTAL SF	QTY	TOTAL SF	
<b>FIREFIGHTER QUARTERS AREA</b>									
<b>25.0</b>	<b>Firefighter Dorm Rooms</b> <i>10 Single Dorm Rooms</i>	<p>One Extra long bed/on standard frame (drawers below)            Avoid adjacent beds with other dorm rooms  <b>Four (4) wardrobes lockers (24" wide)</b> each room w/            storage above plus one quest locker 24" wide            Storage above lockers for linens            One (1) built-in counter 30" min. wide desk area w/            pencil drawer with desk light above            Sound separation from living areas            Separate response light and speaker to home run to            Comm. Room            Ceiling fan            TV wall mount bracket and cable hookup            Night table. USB plug-ins            Reading light 42" above bed with switch            Operable egress window            Sound Rated windows with Blackout Shades            Volume controlled speaker.            Two of dorms for Captains, near captain's offices</p>	10' x 12'	120	10	1,200	7	840	B

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

26.0	<b>Firefighter's Toilet/Shower Room</b> <i>Separate toilet/shower rooms.</i>  <i>6 individual restrooms</i>	Separate area with one (1) shower w/ bench and changing area. Shower with door One (1) accessible height toilet Corner bench at shower Access Panel for Shower Plumbing One (1) sink with base cabinet w/ no base + floor drain below for cleaning supply storage Response Strobe and volume controlled speaker near shower Mirror Floor drains One (1) FF Toilet shower room shall be ADA compliant, with bench in shower and grab bars and lavatory in place of sink cabinet.	8' x 12'	96	6	576	4	384	C
27.0	<b>Captain's Bunk Room</b>	Currently 2 off of front meeting room combined w/ office							
		<b>Firefighter Quarters Area Subtotal:</b>				<b>1,776 SF</b>	<b>1,224 SF</b>		

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

			DIMS.	SF	Proposed w/ Ladder Truck		Proposed W/O Ladder Truck		Finish Type
					QTY	TOTAL SF	QTY	TOTAL SF	
<b>STATION OFFICE AND RECEPTION AREA</b>									
28.0	<b>Watch Room - Station Office</b>	Adjacent to entry with non-operable window with line of sight into entry vestibule or video monitor (2) standard built-in 30" x 60" desks with counter space for (2) laptops Lateral files below work counter Area for copier / FAX / printer Tackable wall surface between the counter and upper cabinets (2) Phone/data outlets Release button for Lobby front doors - Verify location with Fire Department Center conference table. Library storage for training materials and Pro-Con Conferencing System - Monitor/Camera Mail Alcove Water Fill Station nearby	11' x 18'	198	1	198	1	198	B
			2' x 9'	18	1	18	1	18	
			2' x 9'	18	1	18	1	18	
29.0	<b>Reception Area/Lobby</b>	911 Phone at Exterior near Front Doors Hollow Metal Doors with Glazing at Entry Exterior Door bell and intercom to Crew Office next to front door w/ video camera Display Area - Cabinets and Wall Space Security cameras, don't need service window, separate entry, vestibule doors double, tempered glass	10' x 12'	120	1	120	1	120	B

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

30.0	<b>Captain's Office</b> <i>Two w/ Truck, separate from living, separate room from dorm but walk in hallway to office next door.</i>	CAD Display - HDMI drop Adjacent to Watch Room	10' x 12'	120	2	240	1	120	B
31.0	<b>General Storage</b>	For files, supplies	8' x 11'	84	1	84	1	84	A
32.0	<b>Public Restroom</b>	Unisex accessible restroom Accessible grab bars and toilet accessories One lavatory and one toilet Adjacent to Front Entry Lobby	8' x 8'	64	1	64	1	64	C
<b>Fire Station Office and Reception Area Subtotal:</b>						<b>742 SF</b>	<b>622 SF</b>		

			DIMS	SF	Proposed		Proposed W/O Ladder Truck		Finish Type
					QTY	TOTAL SF	QTY	TOTAL SF	
<b>CONFERENCE ROOM</b>									
33.0	<b>Conference Room</b>	Conference Table and chairs for 15	18' x 24'	432	1	432	1	432	B
	<b>Hospitality Counter</b>		2' X 8'	16	1	16	1	16	
<b>Community Room/Training Room Area Subtotal</b>						<b>448 SF</b>	<b>448 SF</b>		

# PROGRAM DOCUMENTS

## STATION 2 - SPACE NEEDS

CONCEPTUAL SPACE NEEDS SUMMARY				
<b>BUILDING TOTAL:</b>				
APP. BAYS / APP. SUPPORT:	Area Subtotal	7,095	5,463	SF
FIREFIGHTER LIVING:	Area Subtotal	1,524	1,396	SF
FIREFIGHTER QUARTERS:	Area Subtotal	1,776	1,224	SF
FIRE STATION OFFICE & RECEPTION:	Area Subtotal	742	622	SF
CONFERENCE ROOM:	Area Subtotal	448	448	SF
	Building Subtotal	11,586	9,154	SF
	<i>Structure and Circulation (23%)</i>	2,665	2,105	SF
	<b>GRAND TOTAL</b>	<b>14,252</b>	<b>11,260</b>	<b>SF</b>

# PROGRAM DOCUMENTS

## STATION 5 – SPACE NEEDS

### COMPANY PERSONNEL:

Station to accommodate 3 current personnel, including:

Minimum 3 Firefighters per Shift, three shifts. Plus 2 Ambulance personnel. In the future may have 3 to 4 Firefighters on the Truck for a total of 9 Firefighters and two companies

SITE OPERATIONS		SPACE ATTRIBUTES	SITE SF
1.0	<b>Fire Dept Parking</b>  3 FF on Engine 3-4 FF on Truck 2 FF on Ambulance	<b>20 spaces required behind secured fence/gate</b> (18 spaces for firefighters + 2 spots for other fire personnel not based at FS 5)  Gate Operator. Keypad and remote control. Provide Knox Box. Keypad with	
	<b>EV Charging</b>	Verify ammount with City	
	<b>Ancillary Storage</b>	CERT Trailer	
	<b>Wash Rack/Hose Rack</b>	Ground-mounted, Gear Grid type on apron. Department uses synthetic hoses	
	<b>Vehicle Wash</b>	At Rear apron, connect to clarifier, provide hose bib	
	<b>Visitor Parking</b>	If Community Room included, need 18-20 unsecured spaces for CPR classes,	
	<b>Front + Rear Aprons + Yard</b>	Enclosed by secure fencing. Concrete paving. Rolling gate with operators, key Full length apron, front and rear. 40' for ladder truck	
	<b>Fire Fighter Patio</b>	Adjacent to kitchen/dining room. Trellis or shade structure. Exterior door chime from station front door. Hose Bib plus Gas for grill Area to be secured and screened	

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

	<b>Emergency Generator</b>	Diesel Generator sized to support whole station. Connect with direct pipe to fuel tank for full time storage of 72 hours of fuel. Protected in secure compound in close proximity to fuel tank with minimal Provide sound enclosure built on to generator Day tank under generator. Co-locate with Convault.		
	<b>Fire Department Fuel Refill</b>	Diesel fuel dispensing connected to generator. Dual fuel with 750 Gallons of Diesel/250 Gas with split off to Generator.		
	<b>Security Fence</b>	Secured yard with fencing		
	<b>Trash and Recycling</b>	Enclosure in secure area		
	<b>Radio Antenna</b>	Antenna mounted on building		
	<b>Fire Hydrants</b>	Fire Hydrant on FS meter in addition to required curbside hydrant. 50' from FDC.		
	<b>Site Lighting</b>	Controlled lighting at rear apron		
	<b>Landscaping</b>	Low landscaping to minimize hiding places in landscape		
	<b>Signalization - Off Site Requirements</b>	Verify off-site requirements with City.		

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

STATION BUILDING											
FINISH LEGEND											
A. Simple Finishes			B. Standard Office Type Finishes			C. Intense Finish					
						DIMS.	SF	SF w/ Truck		SF w/o Truck	
APPARATUS BAYS / APPARATUS BAY SUPPORT AREAS								QTY	SF	QTY	SF
2.0	Apparatus Bay	6 Apparatus Bays - first out - double deep	20'	x	72'	1,440	6	8640	5	7200	
	Engine - 1st out	One of which is Drive-thru App Bay									
	Truck - 1st out	CMU Wall construction									
	Ambulance - 1st out, stacked w/ Investigation Pick Up	Slope floor to trench drains in each bay									
	Water Tender, stack w/ OES Type 1	Control joints at drains and at 10' intervals									
	Spare Truck	Plymovent vehicle exhaust system									
		Gang control door operators									
		Red/Green light overhead door status indicator									
		Bifold app bay front doors and roll ups at back doors with as much light/vision panels as possible. Factory-coated finish and thermal insulation									
		Person-door to App Bay with vision panel and panic hardware									
		Radios are charged on rigs									
		Air drops toward middle of App Bay <b>and</b> quick connects on perimeter walls									
		(4) Electrical drops at each bay, to 4' A.F.F.									
		Hose bibs - Garden Valve 3/4" Opening 2 on each wall (6 total)									
		Two (2) high access drops for wireless access points over the engines									
		Phone and data outlets									

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

		Three (3) 2" conduits across Apparatus Bay for data - overhead is preferred. Conduits to be concealed. Map and Monitor in adjacent vestibule Reserve garage - two bays, one deep Good drainage required						
<b>3.0</b>	<b>Historic: 3 apparatus</b>  Out front in glass near exterior parklet. High visibility with lights shining on the rigs	or butler bldg, non-essential garage, would be nice to showcase, maybe one with glass doors	14' x 40'	560	3	1680	3	1680
<b>4.0</b>	<b>Work Room/Shop</b> Separate Room  <i>Can be bigger than other stations and alongside training for a main shop</i>  <i>Training shop can be additional 20x20</i>	Bench vise and hard wired grinder. Built-in workbench with galvanized top with base cabinet (some open, some with doors). Freestanding 30" Shop Sink & work bench  Tool chest area Flammable Liquids Cabinet - with legs to raise above ground Mop sink and mop rack with shower head with hose. Upper cabinet storage with under cabinet light (3) duplex outlets min. above bench and (2) duplex outlets min. below at each wall. Air Compressor and air connection - in closet for noise control Tool charging Evidence Storage Cabinet - Flammable cabinet Barn doors or double doors Eye Wash station	20' x 20'	400	1	400	1	400

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

5.0	<b>Wash Alcove</b>	Handwashing sink near entrance to living area from app bay Hose Bib	2' x 4'	8	1	8	1	8
6.0	<b>Air Fill</b> <i>At Training</i>	Separate room/space from compressor and regulators (those could be outside) Existing Bauer system Locate near Shop area Racks to store 15-16 cylinders Exterior door or connection to rescue unit	10' x 15'	150	0	0	0	0
7.0	<b>Hose Rack in App Bay like other stations in app bay</b>	One rack 8' long rack, 3 reels high in App Bay Near Shop , use synthetic hose, goes in dryer	3' x 8'	24	0	0	0	0
8.0	<b>EMS/Medical Closet</b>	EMS Storage Shallow shelves for storage, work counter	8' x 10'	80	1	80	1	80
9.0	<b>Janitor's Closet</b>	Cleaning Supplies and Equipment	6' x 8'	48	2	96	2	96
10.0	<b>App Bay Restroom</b>	Sink and Toilet Shower Floor Space for future sauna	8' x 8' 4' x 6' 8' x 8'	64 24 64	1 1 1	64 24 64	1 1 1	64 24 64
11.0	<b>Vestibule</b>	Transition zone Positive ventilation Ice Machine	8' x 12'	96	1	96	1	96

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

12.0	<b>Response/Charging</b> <i>Closet off App Bay</i>	Located in the App Bay/vestibule Battery charging, radios and cell phones. Two (2) fourplex outlets minimum above casework, Two (2) fourplex outlets within casework below Laptop, Radio, Tick, Lights, Defib, Jaws Wall Monitor and Map Phone and data outlets Built-in casework on both sides of space uppers and lowers Shelf for spare radios (DC also has 10 spares) and radios are assigned/dedicated to individuals	6' x 8'	48	1	48	1	48
13.0	<b>Clean Up / Wash Room</b>	Direct access from the App. Bays with connecting door into station Freestanding stainless steel sink with drain board and faucet Drying rack above sink drain board Gear Drying Cabinet Bio Hazard Bin/Closet Shelving for cleaning supplies Exterior Shower adjacent to this room for gross decon/clean up	10' x 11'	110	1	110	1	110
14.0	<b>Communication and Equipment Room</b>	Wall space for backboards for phone system - 3/4" plywood face out on all walls 8' high provide separate AC system	8' x 10'	80	1	80	1	80
15.0	<b>Utility/Water Heater Room</b>	HVAC Equipment Water Heater with recirculation pump..	8' x 10'	80	1	80	1	80

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

16.0	<b>Yard Storage outside of Station</b>	Yard maintenance and tool storage Should be in new outside Storage Building but exterior door from Storage Building	6' x 8'	48	0	0	0	0
17.0	<b>Locker Turnout Room</b>	<b>(30) firefighter turnout full height storage lockers (36" wide x 24" deep)</b> Locker 36" wide for each person + Type 3 Wildland gear, Lite "Go" bag in same locker	24' x 36'	864	1	864	0	0
		<b>(18) lockers, 36" wide if no Ladder Truck at FS 5</b>	20' x 30'	600	0	0	1	600
18.0	<b>Turnout Cleaning Room</b>	(1) Extractor Drying rack with floor drain for turnouts Floor drains throughout Gear Drying Cabinet Gear grid type lockers, 30" wide Need storage for additional uniforms Need Biohazard Pick Up Closet - service picks up <b>Washer/Dryer here is to be confirmed with fire department</b>	10' X 14'	140	1	140	1	140
19.0	<b>General Storage</b>	Protect from app bay contamination Need Gatorade and water storage as well + MRE, sleeping bags and coolers	10' x 20'	200	1	200	1	200
20.0	<b>Compressor Room</b>		8' X 8'	64	1	64	1	64
<b>Apparatus Bays / Apparatus Bay Support Area Subtotal:</b>						<b>12,738</b>		<b>11,034</b>

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

			DIMS.	SF	SF w/ Truck		SF w/o Truck	
FIREFIGHTER LIVING AREA					QTY	SF	QTY	SF
21.0	Kitchen	(3) 36" wide refrigerators, one per shift Gas Range with 6 burners and griddle Pot filler at range Double wall oven Two dishwashers -- commercial quality, stainless steel - with heating element Two Microwaves - One on counter, One on shelf Upper and Lower Cabinets, general shared storage 3 Shift Food lockers fro ABC Shifts Island with a step down counter section with prep sink Trash containers exposed in plain view	16' x 20'	320	1	320	1	320
22.0	Dining Area	Table and seating to for <b>12 people w/ truck</b> here 8 people w/out truck here Space to allow a extendable table for holiday family meals Smart Board Marker Board Phone and data outlets Direct access to patio Monitor on Wall	14' x 18'	252	1	252		
	Table for 12 w/ Truck		Table for 8 w/o Truck	14' x 14'	196			1

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

23.0	<b>Day Room</b>	Sized to accommodate 10 <b>lounge chairs</b> w/ Truck or 7 w/o Truck here Tiered seating Separate room but adjacent to dining/kitchen Wired for surround sound speakers (by Association) Built-in Base Cabinet with shelf for AV equipment 3'x6' Bulletin Board 4'x8' Dry Erase Board TV/Speakers, provide blocking and power/data wall mounted outlet unit for flat screen TV Phone and data outlets <b>CAD status, pre/post ~40" monitor-HDMI drop</b>	18' x 24'	432	1	432		
	<i>10 chairs with truck</i>							
	<i>7 chairs no truck</i>		16' x 20'	320			1	320
24.0	<b>Janitor/Utility/Laundry</b>	Storage for living quarter cleaning supplies Roof Access Ladder (as needed) Storage for brooms, vacuum, etc Deep Utility Sink with cabinets above Full Height Storage Cabinet Mop Bucket space Mop sink Mop hooks over floor drain Washer/Dryer	10' x 12'	120	1	120	1	120

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

25.0	<b>Exercise Room</b>  <b>Equipment by FF assoc.</b>	3/4" plywood under gyp. Board, typ. Rubber up the wall 30" high Mirror wall near elliptical machines Provide sound insulation in walls If near sleeping areas, provide sound resistive gyp. Elliptical (1) Treadmill (1) Multi-Use Exercise Machine (1) Operable windows <b>double door to exterior</b> Phone and data outlets Ceiling Fans <b>CAD Display - HDMI drop</b>	20' x 20'	400	1	400	1	400
26.0	<b>Water Fill Station</b>	One near exercise and one near Watch Room						
<b>Firefighter Living Area Subtotal:</b>						1,524		1,356

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

			DIMS.	SF	SF w/ Truck		SF w/o Truck	
FIREFIGHTER QUARTERS AREA					QTY	SF	QTY	SF
27.0	<b>Firefighter Dorm Rooms</b> 7= w/o truck 10 w/ truck  MAKE IT 10 and 7 FS 5	<b>One</b> Extra long bed/on standard frame (drawers below)  Avoid adjacent beds with other dorm rooms <b>Four (4)</b> wardrobes lockers ( <b>24" wide</b> ) each room w/ storage above plus one guest locker 24" wide Storage above lockers for linens One (1) built-in counter 30" min. wide desk area w/ pencil drawer with desk light above Sound separation from living areas Separate response light and speaker to home run to Comm. Room Ceiling fan TV wall mount bracket and cable hookup Night table. USB plug-ins Reading light 42" above bed with switch Operable egress window Sound Rated windows with Blackout Shades Volume controlled speaker.	10' x 12'	120	10	1200	7	840

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

28.0	<b>Firefighter's Toilet/Shower Room</b> <i>Separate toilet/shower rooms.</i>	Separate area with one (1) shower w/ bench and changing area. Shower with door One (1) accessible height toilet Corner bench at shower Access Panel for Shower Plumbing One (1) sink with base cabinet w/ no base + floor drain below for cleaning supply storage Response Strobe and volume controlled speaker near shower Mirror Floor drains One (1) FF Toilet shower room shall be ADA compliant, with bench in shower and grab bars and lavatory in place of sink cabinet.	8' x 12'	96	6	576	4	384
		<b>Firefighter Quarters Area Subtotal:</b>				<b>1,776</b>		<b>1,224</b>

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

			DIMS.	SF	SF w/ Truck		SF w/o Truck	
STATION WATCH OFFICE + RECEPTION					QTY	SF	QTY	SF
29.0	<b>Watch Room</b>	Adjacent to entry with non-operable window with line of sight into entry vestibule 2 to 3 standard built-in 30" x 60" desks with counter space for 2 to 3 computer workstations Lateral files below work counter Library Mail Alcove Area for copier / FAX / printer Tackable wall surface between the counter and upper cabinets (4) Phone/data outlets Release button for Lobby front doors - Verify location with Fire Department Water Fill Station nearby	11' x 18'	198	1	198	1	198
			2' x 9'	18	1	18	1	18
			2' x 9'	18	1	18	1	18
30.0	<b>Reception Area/Lobby</b>	911 Phone at Exterior near Front Door Hollow Metal Doors with Glazing at Entry Exterior Door bell and intercom to Crew Office next to front door w/ video camera Display Area - Cabinets and Wall Space Medical Walk-ins so needs easy access to restroom	10' x 12'	120	1	120	1	120
31.0	<b>Captain's Office</b> <i>2 w/ truck, 1 w/o truck here</i>	CAD Display - HDMI drop Adjacent to Watch Room	10' x 12'	120	2	240	1	120

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

32.0	General Storage	For files, supplies	8' x 11'	84	1	84	1	84	
33.0	Public Restroom	Unisex accessible restroom Accessible grab bars and toilet accessories One lavatory and one toilet Adjacent to Front Entry Lobby	8' x 8'	64	1	64	1	64	
			0' x 0'	0					
<b>Fire Station Office and Reception Area Subtotal:</b>						<b>742</b>		<b>622</b>	
				<b>DIMS</b>	<b>SF</b>	<b>SF w/ Truck</b>		<b>SF w/o Truck</b>	
<b>CONFERENCE ROOM</b>						<b>QTY</b>	<b>SF</b>	<b>QTY</b>	<b>SF</b>
34.0	Conference Room if training only nice to have Hospitality Counter	Capacity for 15 Conference Room for 15 people only if training nearby  Secure from station	18' x 24'	432	1	432	1	432	
			2' x 8'	16	1	16	1	16	
<b>Conference Room</b>						<b>448</b>		<b>448</b>	

# PROGRAM DOCUMENTS

## STATION 5 - SPACE NEEDS

CONCEPTUAL SPACE NEEDS SUMMARY					
BUILDING SUMMARY:		SF w/ Truck		SF w/o Truck	
			SF		SF
APP. BAYS / APP. SUPPORT:	Area Subtotal		12,738		11,034
FIREFIGHTER LIVING:	Area Subtotal		1,524		1,356
FIREFIGHTER QUARTERS:	Area Subtotal		1,776		1,224
FIRE STATION WATCH OFFICE + RECEPTION:	Area Subtotal		742		622
CONFERENCE ROOM:	Area Subtotal		448		448
<b>Building Subtotal</b>			<b>17,228</b>		<b>14,684</b>
<i>Structure and Circulation (23%)</i>			<i>3,962</i>		<i>3,377</i>
<b>TOTAL</b>			<b>21,190</b>		<b>18,061</b>

IF TRAINING IS NOT CO-LOCATED WITH STATION 5, THE FOLLOWING SHOULD BE ADDED TO THE STATION 5 PROGRAM

Air Fill Station	150	150
Large Classroom Meeting Space	980	980
Additional Restroom for Classroom	64	64
<b>Subtotal</b>	<b>1,194</b>	<b>1,194</b>
Structure and Circulation (23%)	275	275
<b>GRAND TOTAL</b>	<b>22,659</b>	<b>19,530</b>

## PROGRAM DOCUMENTS

# FIRE TRAINING FACILITY – SPACE NEEDS

SITE OPERATIONS		SPACE ATTRIBUTES	SITE REQUIREMENT
1.0	Trainee Parking	Not required for student vehicles	0
	Fire Department Vehicles	8 spaces - Division Chief, Captain.plus 6 for Fire Prevention/EMS for fitness (if Prevention-EMS not already co-located here)	1440
	Instructor and Training Staff Vehicles	5 spaces	900
	Visitor Parking	5 spaces outside secured area	900
	Wash Rack/Hose Rack	Not required	0
	Outdoor Storage	Con Ex containers on base rock for PPE, hose, tools, paint, construction materials, flammable cabinets and supplies. 8' x 20.' Power not required. Currently have 3 at FS 1	300
	Department Logistics Warehouse	Emergency Water Supply Vehicles, Butler type building, roll up doors, forklift access, rescue trailers, shelter equipment, CERT, generators, pumps, extra PPE Storage	15000
	Propane Tank		
	Vehicle Wash	At Rear apron, connect to clarifier, provide hose bib	

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

<b>Front + Rear Aprons + Yard</b>	Enclosed by secure fencing. Concrete paving. Rolling gate with operators, key pad	
<b>Trainee Patio</b>	Adjacent to break room. Trellis or shade structure not	<b>320</b>
<b>Staff Patio</b>	Adjacent to Break Room	<b>192</b>
<b>Emergency Generator</b>	Classroom Space should be connected for potential Emergency Operations use	
<b>Security Fence</b>	Secured yard with fencing	
<b>Trash and Recycling</b>	Enclosure in secure area	
<b>Radio Antenna</b>	Not Required	
<b>Fire Hydrants</b>	Fire Hydrants in Training yard.	
<b>Site Lighting</b>	Security lighting at exterior fencing	
<b>Landscaping</b>	Low landscaping to minimize hiding places in landscape	
<b>Signalization - Off Site Requirements</b>	Verify off-site requirements with City.	

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

OUTDOOR TRAINING FACILITIES		SITE REQUIREMENT
<b>Driving Course</b>	Road course currently at the Hornet. Should have Rodeo at Training for DMV Commerical License maneuvers. Section 12 DMV. For Basic Control Skills (BCS) testing area is a minimum of 260 ft. long by 40 ft. wide to accommodate most combination vehicles with trailers up to 53 ft. in length. Longer combination vehicles will require additional length. Space for straight line backing, offset backing right/left, parallel parking and alley docking. Large paved area with pavement markings/cones by Fire Department.	
<b>3-Story Training Tower</b>		
<p><b>currently 3 stories</b> need to check height limit to go 4-stories</p> <p><b>Need 3-stories + basement, if basement is feasible in that soil</b></p> <p>Could be modular but prefer site built/CMU/concrete</p>	<p>Burn Props</p> <p>Vent</p> <p>Water</p> <p>Stand Pipe</p> <p>Forcible Entry</p> <p>Confined Space - prefer raised/above ground</p> <p>Vertical Confined Space/Shaft - to be able to lower/raise someone</p> <p>Trench Rescue - able to dump material, provide sump pump</p> <p>Shoring - Large Concrete Slab, Door Props</p> <p>Rubble Pile - not necessarily dedicated ground space, could be multipurpose space to drop material</p> <p>USAR area (no search dogs, just lifting exercise)</p> <p>Fuel - Diesel and Gas</p> <p>EV Charger</p> <p>Propane</p>	

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY – SPACE NEEDS

	<p>Multiple Rooms</p> <p>Draft Pit - maybe fill with water as needed for partial car prop, single-purpose stand-alone pool not required</p> <p>Shipboard Prop - desirable, only if space available</p> <p>Class A burns in multiple stories</p> <p>Hot Smoke vs Cold Smoke</p> <p>Agreed to limit to 12 days</p> <p>Mechanical Screening</p> <p>Class B</p> <p>Car Prop - portable/propane</p> <p>Bin</p> <p>Dumpsters</p>	<p>800</p>
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# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

Modular Tower		2500
	<p>Anchor Points</p> <p>Lights</p> <p>Vent Trailer Incorporated</p> <p>Fall Protection Training</p> <p>Anchor Points for Adding Sheeting/Sheathing</p> <p>Roof Vent Prop</p> <p style="padding-left: 20px;">Residential Pitched 12 x 24</p> <p style="padding-left: 20px;">Commercial Flat 12x24</p> <p>Apparatus Parking and Spotting</p> <p>Hydrants Inside</p> <p style="padding-left: 20px;">Tower stand pipe stays dry</p> <p>Forcible Entry</p>	
	<p>Pool - nice to have 10' x 25' long, car in pool - Not Required</p> <p>Fire Boat - integrate if possible - Not Required</p> <p>Elevator Door Prop or Movable Elevator Door Prop if durable/reliable. Need product data on Elevator Door Props. Chief talk to Tommy Abercrombie.</p>	0

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY – SPACE NEEDS

	<p>Tower w/ different sides for different building types</p> <ul style="list-style-type: none"> <li>Hotel</li> <li>Residential/Commercial</li> </ul> <p>Balconies on different levels</p> <ul style="list-style-type: none"> <li>Lots of applications</li> </ul> <p>Exterior and Interior Stairs</p> <p>If a Concrete Tower, need a ConEx box nearby</p> <p>Frame out concrete with wood for window conversions</p> <p>Half basement - may work at Draft Pit or full basement - Is basement feasible in this soil?</p> <p>Need Class A and Class B burn</p> <p>Replace primary burn room</p> <p>Standpipe at Interior/Exterior Stairs, interior goes up to roof</p> <p>Dry standpipe is acceptable but connect to FDC</p> <p>Provide Sprinkler Head to practice capping faulty head</p> <p>Existing Tower needs to be wide, longer</p> <p>Needs 80' x 80' with room for rigs on all 4 sides of Tower like in a U shape with short legs</p>	6400
<b>TOTAL TRAINING PROPS SITE REQUIREMENT</b>		<b>9,700</b>
<b>GENERAL FACILITIES CHARACTERISTICS</b>		
		Potential PV canopies over parking

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

TRAINING CENTER								
FINISH LEGEND								
A. Simple Finishes		B. Standard Office Type Finishes		C. Intense Finish				
				DIMS.	SF	Proposed		Finish Type
						QTY	TOTAL SF	
<b>TRAINING APPARATUS BAYS + SUPPORT</b>								
2.0	<b>Apparatus Bay</b>  Two Type 1 Engines Forklift  One Reserve Truck ideally @ FS 5	<b>2 Apparatus Bays</b> One stacked two deep <i>One 70' for Reserve Truck</i> <i>Slope floor to trench drains in each bay</i> <i>Control joints at drains and at 10' intervals</i> <i>Plymovent vehicle exhaust system</i> <i>Gang control door operators</i> <i>Red/Green light overhead door status indicator</i> <i>Sectional Coiling Overhead app bay doors with as much light/vision panels as possible. Factory-coated finish and thermal insulation</i> Person-door to App Bay with vision panel and panic hardware Air drops toward middle of App Bay <b>and</b> quick connects on perimeter walls (4) Electrical drops at each bay, to 4' A.F.F. Hose bibs - Garden Valve 3/4" Opening 2 on each wall (6 total) Two (2) high access drops for wireless access points over the engines	20' x 72'	1,440	2	2,880	A  A  A	

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

<p><b>2A</b></p>	<p><b>Reserve Apparatus Bay</b></p> <p>OES Engine Engine Reserve Water Tender Ambulance Reserve</p>	<p>2 Reserve Apparatus Bays <i>Slope floor to trench drains in each bay</i> <i>Plymovent vehicle exhaust system</i> <i>Gang control door operators</i> <i>Red/Green light overhead door status indicator</i> <i>Sectional Coiling Overhead app bay doors with as much light/vision panels as possible. Factory-coated finish and thermal insulation</i></p> <p>Person-door to App Bay with vision panel and panic hardware (4) Electrical drops at each bay, to 4' A.F.F. Hose bibs - Garden Valve 3/4" Opening 2 on each wall</p>	<p>20' x 72'</p>	<p>1,440</p>	<p>2</p>	<p>2,880</p>	<p>A</p>
<p><b>2B</b></p>	<p><b>Shop</b></p> <p>Separate but prefer adjacent to FS 5 Shop</p> <p>Co-locate w/ FS 5 FS 5 Shop = 200 SF if Training is nearby</p>	<p>Bench vise and hard wired grinder. Built-in workbench with galvanized top with base cabinet (some open, some with doors). Freestanding 30" Shop Sink &amp; work bench (FS 1 bench custom-made by former personnel) Tool chest area Flammable Liquids Cabinet - with legs to raise above ground Mop sink and mop rack with shower head with hose. Upper cabinet storage with under cabinet light (3) duplex outlets min. above bench and (2) duplex outlets min. below at each wall. Air Compressor and air connection - in closet for noise control Tool charging Evidence Storage Cabinet - Flammable cabinet Eye Wash station</p>	<p>20' x 20'</p>	<p>400</p>	<p>1</p>	<p>400</p>	<p>A</p>

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY – SPACE NEEDS

2C	Wash Alcove	Handwashing sink near entrance to office and classroom from app bay Hose Bib	3' x 2'	6	2	12	A
2D	Air Fill Room	Separate room/space from compressor and regulators (those could be outside) Locate near Shop area Racks to store 18-20 cylinders	10' x 15'	150	1	153	A
2E	Hose Rack Area	One 8' long racks, 3 reels high Near Shop but on App Bay floor	3' x 8'	24	0	0	A
3.0	EMS Room	EMS and Medical Supplies combined Storage Shallow shelves for storage, work counter with sink for clean up	8' x 10'	80	1	80	A
4.0	Janitor for App Bay	Cleaning Supplies and Equipment	12' x 10'	120	1	120	A
5.0	Vestibule	Transition zone from App Bay to Office/Classrooms Positive ventilation/. Not needed if detached buildings	6' x 12'	66	0	0	B
6.0	Response/Charging Closet	Not required at App Bay. Battery charging, radios and cell phones. Laptop, Radio, Tick, Lights, Defib, Jaws Training still needs radios	2' x 12'	24	1	24	A

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

7.0	<b>Clean Up / Wash Room</b>  <b>Short-term turnout hanging area</b>	Not critical to be near App Bay. Add it to Outdoor Classroom Freestanding stainless steel sink w/ drain board & faucet  Drying rack above sink drain board Gear Drying Cabinet Bio Hazard Bin/Closet Shelving for cleaning supplies Exterior Shower adjacent to this room for gross decon/clean up	10' x 12'	120	0	0	
8.0	<b>Communication and Equipment Room</b>	Wall space for backboards for phone system - 3/4" plywood face out on all walls 8' high	10' x 10'	100	1	100	A
9.0	<b>Utility/Water Heater Room</b>	HVAC Equipment Water Heater with recirculation pump.	10' x 10'	100	1	100	A
10.0	<b>Locker Room</b>	(20) Trainee/Academyr turnout full height storage lockers (30" wide x 24" deep)	20' x 10'	200	1	200	A
11.0	<b>Instructor/Staff Lockers</b>	10 Lockers for Division Chief, Captain, instructors Add changing area	12' X 10' 6' X 8'	120 48	1 1	120 48	C
12.0	<b>Laundry Room</b>	Washer/Dryer For Cleaning clothing, not turnouts Counter and sink Cabinetry	14' X 18'	252	1	252	C

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

13.0	Turnout Cleaning Room	(1) Extractor Drying rack with floor drain for turnouts Floor drains throughout Gear Drying Cabinet Gear grid type lockers, 30" wide Need storage for additional uniforms Need Biohazard Pick Up Closet - service picks up Washer/Dryer  <i>Dirty rag service picks up</i>	14' X 18'	252	1	252	C
14.0	Staff Shower-Toilet Rooms	Gender Neutral	8' x 12'	96	2	192	C
14.A	Staff Turn Out Storage		14' x 14'	196	1	196	A
15.0	Disaster Preparedness Storage	Protect from app bay contamination Need Gatorade and water storage as well + MRE, sleeping bags and coolers Dept Logistics Warehouse in 15K SF ancillary building	10' x 15'	150	1	150	A
16.0	Compressor Room		8' X 12'	90	1	90	A
<b>Apparatus Bays / Apparatus Bay Support Area Subtotal:</b>						<b>8,249 SF</b>	

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

			DIMS.	SF	Proposed		Finish Type
					QTY	TOTAL SF	
<b>TRAINEE COMMONS - Academy is 3 to 15 Students</b>							
17.0	<b>Trainee Break Alcove</b>	Microwave, Sink and Counter Eat outside or classroom Small Refrigerator	8' x 12'	96	1	96	C
18.0	<b>Janitor/Utility</b>	Cleaning supplies Roof Access Ladder (as needed) Storage for brooms, vacuum, etc Deep Utility Sink with cabinets above Mop Bucket space Mop sink Mop hooks over floor drain	10' x 8'	80	1	80	C
19.0	<b>Exercise Room</b>  <i>For Trainees, Instructors and Fire Prevention</i>	3/4" plywood under gyp. Board, typ. Rubber up the wall 30" high Mirror wall near elliptical machines  Provide sound insulation in walls Provide sound resistive gyp. Elliptical (1) Treadmill (1) Multi-Use Exercise Machine (1) Operable windows, double door or roll up to exterior Phone and data outlets Ceiling Fans	20' x 40'	800	1	800	B
<b>Trainee Commons Subtotal</b>						<b>976 SF</b>	

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

			DIMS.	SF	Proposed		Finish Type
					QTY	TOTAL SF	
<b>CLASSROOMS</b>							
20.0	<b>Dividable Classroom</b>	70 person capacity, dividable with good sound divider Multiple Large Screens Computer Charging	44' x 56'	2,464	1	2,464	B
21.0	<b>Large Training Room</b>	delete	44' x 56'	2,464	0	0	
22.0	<b>Holding / Waiting Area</b>	delete	20' x 24'	480	0	0	
23.0	<b>Assessment Rooms</b>	delete	14' x 16'	224	0	0	B
24.0	<b>Lab "Dirty" Classroom</b>	Holds 5 Students and 1 Engine also use as Assessment Room	20' x 40'	800	1	800	B
25.0	<b>Restrooms</b>	delete shower, include RR only if code requires	6' x 8'	48	2	96	C
<b>Classrooms Area Subtotal</b>						<b>3,360 SF</b>	

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

			DIMS.	SF	Proposed		Finish Type
					QTY	TOTAL SF	
<b>TRAINING OFFICE + RECEPTION</b>							
26.0	<b>Training Reception</b>	Entry vestibule Adjacent to entry with non-operable window with line of sight from Admin Assistant office Reception - Waiting Area	10' x 14'	140	1	140	B
27.0	<b>Training Office</b>						
	<b>Administrative Asst Office</b>	Administrative Assistant Work Station Release button for front door Wall of bookcases	10' x 12'	120	1	120	B
		Workstations for light duty/academy assigned staff	6' x 8'	48	3	144	B
28.0	<b>Office Work Room</b>	Printer/Copier/Supplies/Recycling Mail Alcove Locked Storage Closet Water Fill Station nearby	10' x 12' 2' x 9' 6' x 8'	120 18 48	1 1 1	120 18 48	B
29.0	<b>Storage</b>	General storage, comuters, mobile TVs Lockable	12' x 10'	120	1	120	B
30.0	<b>Storage - Secure</b>	Storage for files, some are personelle files to be secure	12' x 10'	120	1	120	B
31.0	<b>Division Chief Office</b>	Desk and Files	12' x 12'	144	1	144	B

# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY - SPACE NEEDS

32.0	Captains Offices	Desk and Files	10' x 12'	120	2	240	B
33.0	Conference Room	Space for 15 People at Conference Table Computer Space	20' x 30'	600	1	600	B
34.0	Employee Break Room	Table and Chairs Microwave Sink and Counter Refrigerator Storage Cabinets	14' x 14'	196	1	196	B
35.0	Training Admin Turnout Storage	Hanging Racks	14' x 14'	196	1	196	B
36.0	Public Restroom	Unisex accessible restroom Adjacent to Training Reception Entry Lobby Number of restrooms TBD per code	8' x 8'	64	2	128	C
<b>Training Office and Reception Area Subtotal:</b>						<b>2334 SF</b>	

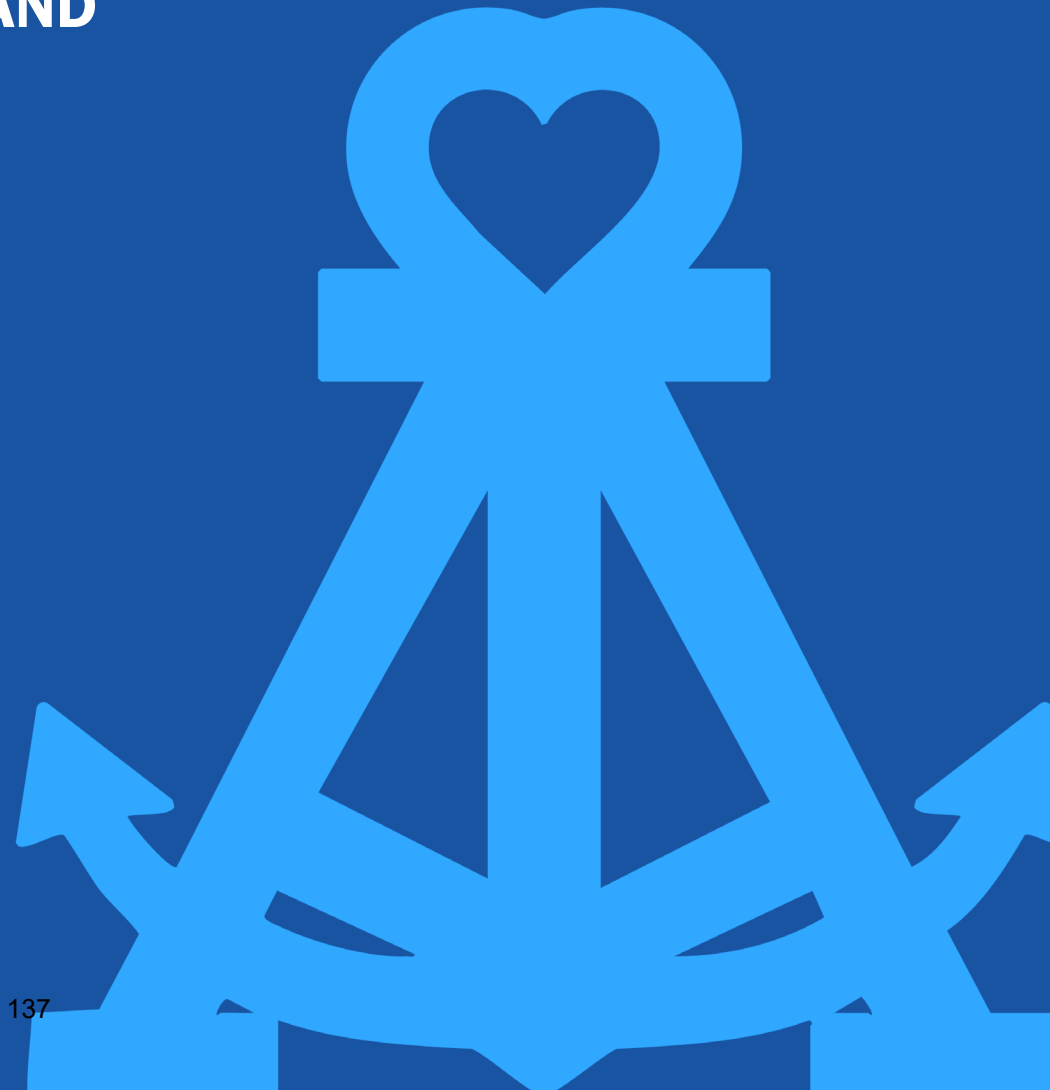
# PROGRAM DOCUMENTS

## FIRE TRAINING FACILITY – SPACE NEEDS

CONCEPTUAL SPACE NEEDS SUMMARY			
<b>BUILDING TOTAL:</b>			
APP. BAYS / APP. SUPPORT:	Area Subtotal	8,249	SF
TRAINEE COMMONS	Area Subtotal	976	SF
CLASSROOMS	Area Subtotal	3,360	SF
TRAINING OFFICE + RECEPTION	Area Subtotal	2,334	SF
	Building Subtotal	14,920	SF
	<i>Structure and Circulation (23%)</i>	3,432	SF
	<b>GRAND TOTAL</b>	<b>18,353</b>	<b>SF</b>

# APPENDIX C

## C - CODE, INDUSTRY STANDARDS AND GUIDING PRINCIPLES



# CODE REQUIREMENTS

In addition to the Space Needs described by current City staff in those units, facility requirements were also developed based on building codes, and industry and professional standards. The City's Climate Action and Resiliency Plan has articulated guiding principles for the City that include sustainability, environmental responsibility, resilience, inclusion, and wellness. These codes, standards and guiding principles combined with user needs, provide the foundation for the space needs described in this Plan.

## **BUILDING REQUIREMENTS**

### **APPLICABLE CODES AND REQUIREMENTS**

(California Code of Regulations, Title 24) "2019 California Building Code (CBC)" :

- Part 1 – California Administrative Code
- Part 2 – California Building Code
- Part 3 – California Electrical Code
- Part 4 – California Mechanical Code
- Part 5 – California Plumbing Code
- Part 6 – California Energy Code
- Part 9 – California Fire Code
- Part 11 – California Green Building Standards Code (CALGreen)
- Part 12 – California Reference Standards Code

The California Building Standards Code is a compilation of three types of building standards from three different origins.

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes;
- Building standards that have been adopted and adapted from national model codes to address California's ever-changing conditions; and
- Building standards, authorized by the California legislature, that constitute amendments not covered by national model codes, that have been

created and adopted to address particular California concerns.

All occupancies in California are subject to national model codes adopted into Title 24, and occupancies are further subject to amendments adopted by state agencies and ordinances implemented by local jurisdictions' governing bodies.

### **ESSENTIAL SERVICES REQUIREMENTS**

In 1986, California enacted the Essential Services Buildings Seismic Safety Act requiring that buildings providing essential services should be capable of providing those services to the public after a disaster. As noted in the California Administrative Code Section 4-207 and California Building Code, fire stations are deemed Essential Services buildings and their structure and systems will be designed to continue facility operations after extreme environmental events such as earthquakes, floods, winds and storms. In addition to code-required structural strengthening, the facility will contain several non-structural building systems such as HVAC, plumbing, and telecommunications. Those critical systems typically require seismic anchoring, bracing, special seismic certifications and special inspections called out in the Codes.

# INDUSTRY STANDARDS

## CORPORATION YARDS

The California Water Resources Board publishes Best Management Practices for Municipal Operations to address issues such as water discharge and environmental compliance for soil management and waste management. Other yard activities raise concerns about noise and odor management, landscape management for visual, sound and safety buffers to separate vehicle traffic and parking from the public. Site safety and security to protect employees and City property is also a priority. These guidelines are useful for planning Public Works facilities such as the Alameda Maintenance Service Center, Fleet Services and Recreation and Parks Corporation Yard.

## ANIMAL SHELTERS

Animal control shelters are regulated under the California Food and Agriculture Code and the California Civil and Penal Code. The Association of Shelter Veterinarians, UC Davis Koret Shelter Medicine Program and the ASPCA have all published guidelines for animal shelter design.

## FIRE STATIONS

The primary goals of Fire Departments are to provide safe, responsive service to their communities while providing a safe working and living environment for fire fighters. Professional fire design standards focus on several critical factors including:

- Service area coverage
- Organization of building spaces and functional flow to optimize response times
- Separation of apparatus bays and clean fire house living zones with transition spaces to promote containment of potentially hazardous particulates and proper decontamination facilities
- Community access and presence
- Vehicular and pedestrian safety for exiting and returning fire apparatus
- Essential Services such as fire stations are required by law to be designed to a higher level than standard buildings. The Essential Services Act mandates that fire station structures and building systems be designed to continue in operation after earthquakes, floods, winds and storms.
- Seismic Assessments were conducted by Biggs Cardosa Structural Engineers for Fire Stations 1, 2, 4 and 5. The evaluation memos are in Appendix H of this Report.

# INDUSTRY STANDARDS

## FIRE STATIONS – CONTINUED

### RESPONSE

Location is the first criteria to support response and provide service within set standard time frames.. The circulation across the front apron and connection to roadways determines the ability for rapid response for the apparatus once fire fighters are in the vehicle. Clear lines of sight and traffic control at busy roadways contribute to fast response. Alerting systems with clear signalization and visual and audible direction provide firefi ghters with the information they need to respond. Apparatus bay doors that operate quickly and automatically allow the apparatus to exit the station when the crew is ready. A plan layout of the facility should be organized to provide firefi ghters with direct access to the apparatus bay as quickly as possible from all areas of the station. Priority should be given to the areas the firefighters may be in most such as Office areas and living areas. Sleeping areas should be prioritized with a direct path to the apparatus bay as longer internal response to the apparatus occurs when the fire fighters are sleeping. Areas that may need to be visited as part of response should be placed on the path to that apparatus bay, such as radio charging stations and response alcoves providing information for the call.

### COMMUNITY PRESENCE AND ACCESS

A fire station is a connection to the community to provide service and a destination for assistance and care for those in danger. The fire station should be accessible to the community. Parking and walkways to the lobby of the station and emergency phone should follow ADA requirements to allow all members of the community to be able to approach the station for assistance. Alameda County Fire Stations are surrender sites under California's Safely Surrendered Baby Program. Station site configuration, building orientation and exterior facade should provide a clear indication of the entry to the facility to receive help or information.

### FIRE FIGHTER SAFETY AND WELLNESS

Fire fighter health and safety is a top priority to protect them from the hazardous materials that they encounter when fighting fires and from the vehicle exhaust from the apparatus. Station design facilitates the proper decontamination process a fire fighter must follow when returning from a call. Placing the decontamination room, turnout cleaning and turnout storage along a linear and unobstructed path to the apparatus bay supports the process of decontamination and turnout cleaning prior to entering the app bay. The addition of hand washing sinks and boot cleaning stations at any entrance to

the living area in addition to the decontamination zone helps fi refi ghters maintain a clean living area called the "Clean Zone" that is separated from the "Hot Zone" of the apparatus bay and support area. A facility also should provide an air-lock vestibule as a "Transition Zone" at the connection points of the "Clean" and "Hot" zones to keep the vehicle exhaust from the apparatus bay from infi ltrating the fi refi ghters' living and sleeping quarters. Firefi ghter processes for decontamination when returning from a call and when entering the "Clean" living area will help protect the long term health of the fire fighters living at the station. At the same time, the station layout can encourage these proper cleaning processes to help embed healthy practices into the culture of the department.

### PUBLIC TO PRIVATE SEPARATION

Fire Stations are not only a beacon and refuge to the community in times of emergency, they are also the home to the fi refi ghters while on duty. A separate lobby space should be provided to allow for the public to come to the station. This lobby should be secure and separate from the private living area of the fire station. Ideally, the offi ce function of the fire station should be as close as possible to the lobby so on-duty fire fighters can monitor the lobby and to provide a transition from the public space to the public interaction offi ce area to the living area.

# INDUSTRY STANDARDS

## FIRE STATIONS – CONTINUED

### **SECURITY**

The building and site of a fire facility should be secure from theft and unauthorized visitors to protect equipment and personnel so they can perform their service to the community unhindered. The special equipment is a valuable asset to the community and requires special training to operate. The rear apron provides an area to locate this equipment as well as parking of firefighter personal vehicles while on duty. This area should be protected with a security fence and vehicle gate. Visitor entry and parking can be located outside this secure fence. The entry of the building itself should have a lobby with a secure door that allows visitors to come to the station without having access to the fire fighter living areas. This allows fire fighters to serve the community in a safe way.

### **EQUITY AND INCLUSION**

Traditional fire stations provided facilities that had limited privacy. This reduced the opportunity for a diverse staff by not providing equitable and inclusive accommodations. The traditional open dorm fire station sleeping and restroom facilities were developed based on historically all-male fire crews. In order for the fire department to be inclusive and recruit, retain and support a diverse staff, facilities need to be provided that accommodate all. Private sleeping areas and individual private restrooms and showers allow create and maintain equitable living conditions. This encourages diversity within the department by providing a station layout that is inclusive to all.

### **DEPARTMENT AND STATION CULTURE**

Because the profession of fire fighting relies heavily on the collaboration and teamwork of each crew to be able to perform together and live together in the fire house, the opportunities for privacy should be balanced with spaces that foster collaboration as a team. The apparatus bay and apparatus support spaces are areas where fire fighters work together in daily duties on the job. The living area should be configured to encourage informal, casual and more formal collaboration with areas for meeting, relaxing and eating together. The kitchen, dining and day room areas should be organized to maintain the traditional collaborative culture of the fire department, while the fire fighter sleeping areas provide the space to allow each fire fighter to maintain a comfortable level of privacy.

# GUIDING PRINCIPLES

## ENVIRONMENTAL RESPONSIBILITY-RESILIENCE-INCLUSION

### ENVIRONMENTAL RESPONSIBILITY

#### Climate Action and Resiliency plan (CARP) first adopted 2019 (updated april 2025)

CARP set a path for the City of Alameda to move towards a more sustainable, equitable, and resilient community. As a foundational document, it spells out how City operations and facilities for Public Works, Recreation and Parks, the Fire Department, and the Animal Shelter contribute to climate change adaptation and hazard mitigation while managing City resources, facilities and operations sustainably and efficiently. These strategies build upon California's Green Building Code by providing more specifics and focus on local priorities

Alameda's strategies for climate action and resiliency, specifically the City Leadership action item states:

*CL-3: City Facilities and Operations Description The City of Alameda will demonstrate leadership through efforts to achieve high-performing buildings and facilities, sustainable transportation, and more. The City will implement a series of actions that will both reduce carbon emissions from municipal operations and enhance resiliency. These actions include energy and water efficiency upgrades for City facilities, parks, managed landscapes, sustainable new construction, the electrification of existing buildings and fleet vehicles, supporting electric vehicle adoption through charger installations, and the installation of resiliency measures including solar plus storage projects. These actions will not only reduce emissions but create community bene-*

*fits by ensuring the continuity of operations through emergencies and leading by example. CARP Page 26*

Strategies: Municipal building upgrades, decarbonization for new and renovated facilities, explore opportunities for new backup power systems using carbon-free energy sources such as lithium-ion batteries or solar where feasible. Explore fleet bidirectional charging for back-up power where feasible. Low global-warming refrigerants. Water use reductions via low water-use plumbing, irrigation and plantings, identify opportunities to install rainwater capture systems and fleet electrification.

### RESILIENCE

#### CLIMATE ADAPTATION-HAZARD MITIGATION

Resilience is the ability of a community to prepare for disruptions, to adapt to changing conditions, withstand and rapidly recover from shocks and stresses, and to adapt to future change. (CARP 2025 Update, Page 14) The Fire Department, Public Works, Recreation and Parks Maintenance and the Animal Shelter have big roles to play in the City's preparations for disruptions and disaster response. For Alameda the hazards of greatest concern include earthquakes, flooding, and sea level rise.

Climate Adaptation and Hazard Mitigation Strategies identified in the CARP directly apply to new and rede-

veloped facilities for Public Works, Recreation, the Fire Department and Animal Shelter as project designs should prioritize the need to:

- Prepare for impacts of rising groundwater levels on public property
  - Design for flooding (raise finished floor levels, design for sea level and associated groundwater rise)
- Seismic Issues are identified in the Structural Assessments for Fire Stations 1, 4 and 5. New Fire Stations will be law be designed to the higher Essential Services level. Public Works, Recreation and Animal Shelter facilities will meet current California Building Code requirements.
- Cool/Green Buildings
  - Identify opportunities for onsite renewables including Distributed Energy Resources (DER) and battery installation where feasible
  - Employ Urban Greening techniques to eliminate heat island effect from site paving and roofs and by adding trees to the cityscape.
- Utilize Water Efficiency and Water Conservation measures
- Become Carbon Neutral by 2045
  - Carbon neutral: Carbon neutral, or achieving zero net emissions, means having a balance between emitting carbon and absorbing carbon from the atmosphere in carbon sinks.
  - Building and fleet electrification with the foundation provided by Alameda Municipal Power's

# ANALYSIS & EVALUATION

## GUIDING PRINCIPLES

(AMP) 100% clean energy sources. In 2023, 64% of AMP's power mix came from geothermal, biomass (landfill gas), small hydroelectric, and wind sources. An additional 36% of the power mix comes from large hydroelectric projects in California. (CARP 2025 Update, Page 12)

- Fleet Electrification Targets:
  - » 208 light duty, non-police patrol, and police patrol vehicles are EV by 2030 (2019 CARP)
  - » 50% of vehicle purchases are zero emissions beginning in 2024 and 100% of vehicle purchases are zero emissions by 2027, excluding emergency response vehicles (California Advanced Clean Fleets Regulation)
  - » Assessment of buildings and facilities by 2035
- Existing Building Decarbonization – renovation of existing public works and fire stations should incorporate all-electric strategies by utilizing heat pump water heaters and space conditioners and all electric kitchen and laundry appliances,

- Waste Management practices that are sustainable are required during construction and new and renovated facilities need appropriate spaces and infrastructure that encourages effective recycling, reuse, and site measures to prevent soils and water contamination.
- Sea Level Rise Protection includes onsite stormwater detention, measures to reduce the potential for property damage and loss of habitat from groundwater and sea level rise
- Emergent Groundwater – in coastal communities, the shallow groundwater surface will rise as sea level rises, resulting in damaged underground infrastructure, flooding of below grade structures, urban flood hazards from emerging groundwater even before coastal floodwaters overtake the shoreline. New and redeveloped facilities and sites need to consider these potential hazards.
- Soil Contaminants - CARP identifies the possibility of contaminants brought to the surface by emergent groundwater as a potential future hazard requiring more study. As groundwater brings contaminants to the surface, there may be unacceptable levels of exposure to humans and wildlife. Report on “The Response of the Shallow Groundwater Layer and Contaminants to Sea Level Rise, September 2020.” Refer to the Civil Engineering discussion of sea level rise in the Appendix.

## INCLUSION

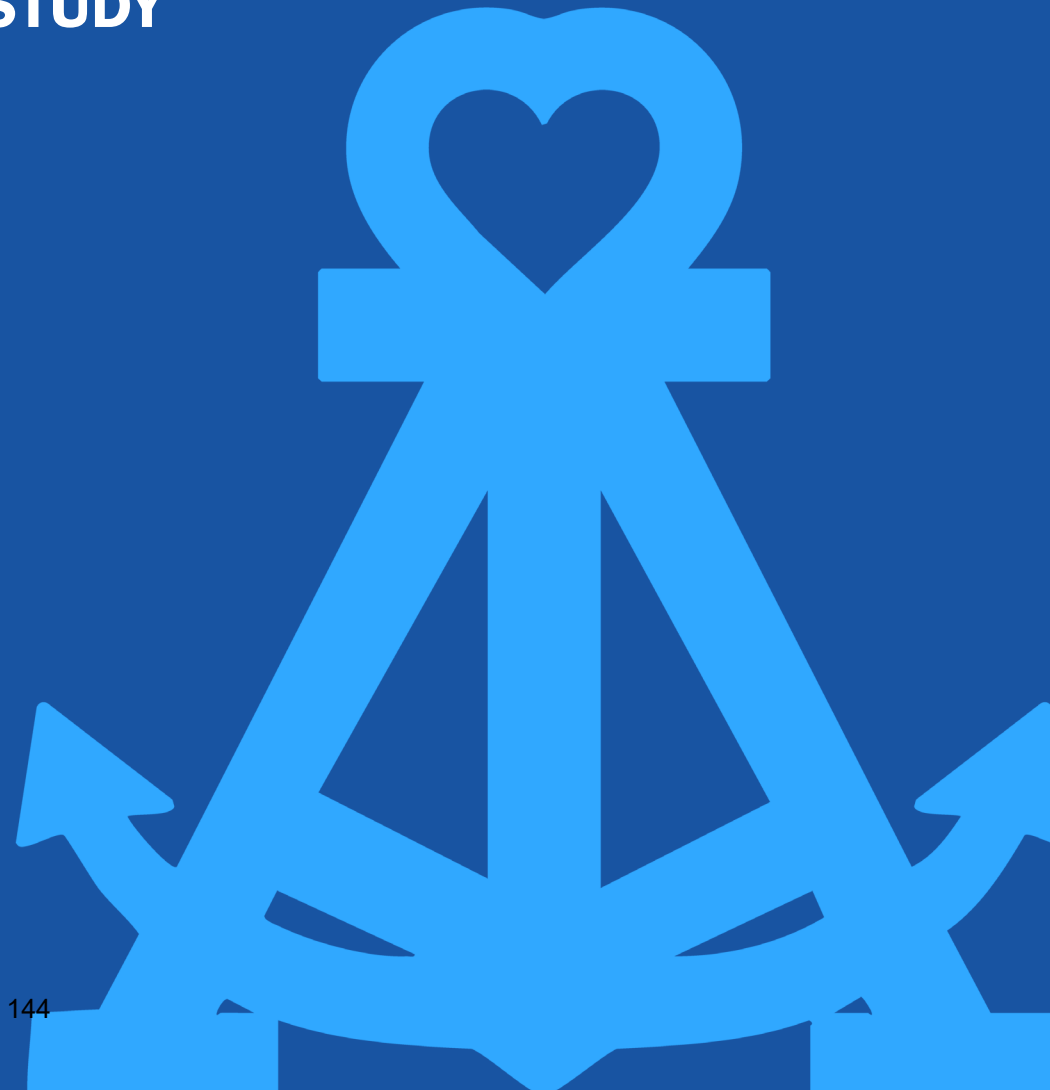
As articulated in the CARP, Alameda seeks

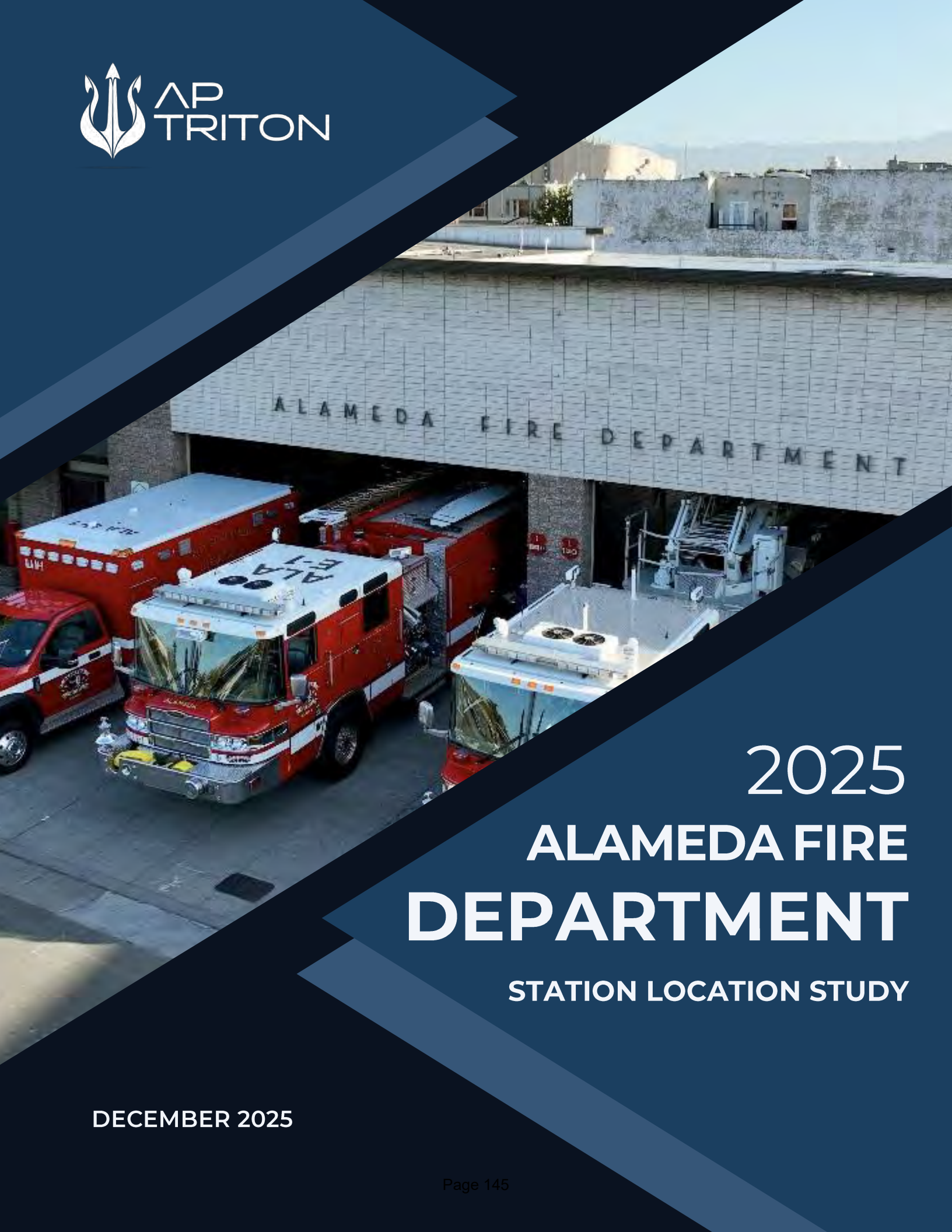
- “to prioritize the needs of frontline communities when prioritizing public investments and improvements to address climate change.”
- The Plan acknowledges that “Vulnerable communities are those that have both social vulnerability (i.e. renter, children, disabled, single parent households, lack transportation, people of color, low level of education, very low income), and exposure to environmental burdens and climate impacts.

Redevelopment and new construction of future City facilities must consider ways to minimize the impact on those population groups. The CARP also highlights Equity and Environmental Justice considerations that may be enhanced because “Improving the operations of city facilities means they can better serve all Alamedans. Though there are upfront costs to make upgrades, they can save money in the long term that can be reinvested back into the community.” (CARP, Page 27)

# APPENDIX D

## D - AP TRITON STATION LOCATION STUDY





2025  
**ALAMEDA FIRE  
DEPARTMENT**

**STATION LOCATION STUDY**

**DECEMBER 2025**

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# EXECUTIVE SUMMARY

In 2023, AP Triton completed a Community Risk Assessment and Standard of Cover (CRA/SOC) document for the Alameda Fire Department (AFD), City of Alameda, California. In general, the AFD is adequately staffed and deployed efficiently. However, the study identified a few challenges, including the usefulness of Stations 2 and 5. Additional concerns focus on adequate and timely coverage, particularly in the response road network in certain areas and some response areas. Most of the challenges identified pertain specifically to the island portion of the city, with a predominant focus on the Alameda Point development area. This is the portion of the city with the most drastic changes expected in the near future. This study, in part or in full, attempts to address some of these challenges.

This study was commissioned to evaluate the effects and potential benefits of opening a station, relocating crews, and potentially adding a crew to service delivery. The fire department asked AP Triton to evaluate seven distinct scenarios:

- **Scenario One:** Open Station 5.
  - Option 1A: Add an engine company to this location.
  - Option 1B: Add an engine company and move Truck 2 to this location.
- **Scenario Two:** Build a new station near Atlantic and Main Street, closing Station 2. The site chosen was the open land area near the static Corsair aircraft display.
  - Option 2A: Relocate the Station 2 crew and apparatus to this new station.
  - Option 2B: Add an engine company to this location and relocate the Station 2 crew and apparatus to this new station. This is known as the “Super Station” concept.
- **Scenario Three:** Build a new station at Neptune Park, closing Station 2.
  - Option 3A: Relocate the Station 2 crew and apparatus to this new station.
  - Option 3B: Add an engine company to this location and relocate the Station 2 crew and apparatus to this new station. This is known as the “Super Station” concept.
- **Scenario Four:** Build a new station at Neptune Park, and relocate the Station 2 crew and apparatus to this new station, subsequently closing Station 2. Open Station 5 and place a new engine crew in service.
- Discuss the optimal location for Station 5.

During the evaluation phase of the different models, another option became apparent: opening a site near the chosen Atlantic or Midway and Main site, designated as Station 5. This option will be discussed as part of the best location for Station 5.

Upon creating and validating computer travel time and coverage models, each option was evaluated using the same criteria. It became clear that the Neptune location would not be a suitable choice for coverage or deployment, regardless of whether Station 5 is opened. Opening Station 5, either at its current location or near the new Midway or Atlantic station sites, with an additional crew, is the best option for improved coverage. This is true whether or not the Truck 2 crew is moved. The following figure illustrates the expected performance relative to each model's historical performance and the option's historical performance.

**Figure 1: Expected Performance Compared to Historical Performance**

Rank	Deployment Model	Total Firefighting Staff	Relative Cost	Demographic Coverage Comparison
0	Current Deployment	29	\$	Baseline
<b>Bonus Scenario: Build a New Station 5, Add an Engine Crew, &amp; Remodel Station 2</b>				
1	Bonus A (1 Engine, Truck 2) – Midway Site.	32	\$\$\$\$\$\$	Improvement
	Bonus B (1 Engine, Truck 2) – Atlantic Site	32	\$\$\$\$\$\$	Improvement
<b>Scenario 1: Remodel &amp; Open Station 5</b>				
2	Option 1A (1 Engine)	32	\$\$	Improvement
	Option 1B (1 Engine, Truck 2)	32	\$\$	Improvement
<b>Scenario 4: Build Neptune, Close Station 2, &amp; Remodel and Open Station 5</b>				
3	Station 2 Crew to Neptune, Open 5 with 1 Engine	32	\$\$\$\$\$	Similar to Baseline
<b>Scenario 2: Build Atlantic Station—Close Station 2</b>				
4	Option 2A (Station 2 Crew)	29	\$\$\$	Decreased Coverage
	Option 2B (Station 2 Crew & Additional Engine)	32	\$\$\$\$	Decreased Coverage
<b>Scenario 3: Build Neptune—Close Station 2</b>				
5	Option 3A (Station 2 Crew)	29	\$\$\$	Decreased Coverage
	Option 3B (Station 2 Crew & Additional Engine)	32	\$\$\$\$	Decreased Coverage
<b>Generally Better Than Current Deployment</b>		<b>Generally Similar to Current Deployment</b>		<b>Generally Worse Than Current Deployment</b>

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# **Section I: CURRENT CONDITIONS ASSESSMENT**

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# PHYSICAL LAYOUT CHALLENGES

The first identified concerns are the physical layout of the community, specifically the island community. Some of the identified challenges include access, buildings, and the expected growth.

## **CRA/SOC IDENTIFIED CONCERNS—ACCESS**

This report is not intended to repeat or expand on the risks and performance issues identified in the 2023 AFD CRA/SOC document. However, it is essential to address a few key concerns identified regarding stations and staffing. These include risk types and geography specific to the Alameda community, as well as facilities and expected growth and population density increases.

One of the first issues unique to the Alameda community is the potential lack of readily available mutual aid units on the island. With four bridges and two tunnels serving as the access points to the island portion of the community, AFD must be prepared to handle expected emergencies with the resources available on the island. As noted in the CRA, there is a history of access points to the community being blocked or drawbridges being stuck open. Additionally, the limited number of lanes and restricted access through the tunnels can reduce the availability of mutual aid units due to traffic congestion. This same issue may also affect Station 4 crews' ability to respond. If the Bay Farm Bridge access is cut off, the travel distance to the island increases from a little over one mile to over ten miles. While this is a worst-case scenario, it is prudent for the agency, city, and its citizens to plan for and staff for this historically proven possibility. The following figure illustrates the potential choke points and access limitations for responding mutual aid units.

Figure 2: Bridges & Tunnels



Another access issue is the limited access of some units to particular areas on the island. Smaller, dead-end streets with water surrounds and the built-up areas may make travel times to certain areas difficult in themselves. This access problem was highlighted earlier in 2025, when a wind-driven event prevented additional units from approaching a multi-building fire. This report will not be able to address these particular issues, which are more community planning issues. However, the speed and ferocity of the wind-driven fire highlight the need for a rapid response from sufficient units to handle a small problem before it becomes a significant issue, as seen on Maui in 2024.

This type of limited access can be especially concerning, given some of the island's more hazardous conditions. As reported in the CRA/SOC, there is a high potential for seismic shaking on the island and a significant flooding hazard. Since none of the bridges meet the lifeline standard, an earthquake or large volumes of water may make them impassable. Several flood-type concerns have been identified, including the probable FEMA tsunami hazard scenario and the less likely but potentially more hazardous USGS tsunami prediction.

## CRA/SOC IDENTIFIED CONCERNS—FACILITIES

One major issue identified in the CRA/SOC is the size and layout of Station 2, as well as the significant facility-maintenance needs at Station 5. Station 2 is not designed with the safety and operational requirements of a modern fire service in mind. When the station was built, little was known about the carcinogenic nature of firefighting or the evolving risks associated with petroleum-based products, whether from vehicle exhaust or from the products themselves when burned. There was also concern about the firefighters' health and fitness. Station 2 lacks adequate decontamination facilities, separation of contaminated equipment and uniforms from living quarters, and sufficient shower facilities for firefighters after exposure to these contaminants. It is also crowded with personnel and equipment, forcing the ambulance to exit the building in a complex and inefficient manner.

**Figure 3: AFD Station 2**



Station 5, built as a pre-World War II military fire station, is similarly inadequate. It also needs significant upgrades and maintenance to provide a living environment for firefighters. Plumbing, electrical, heating, and air conditioning were all found to be inadequate.

**Figure 4: AFD Station 5 (Training)**

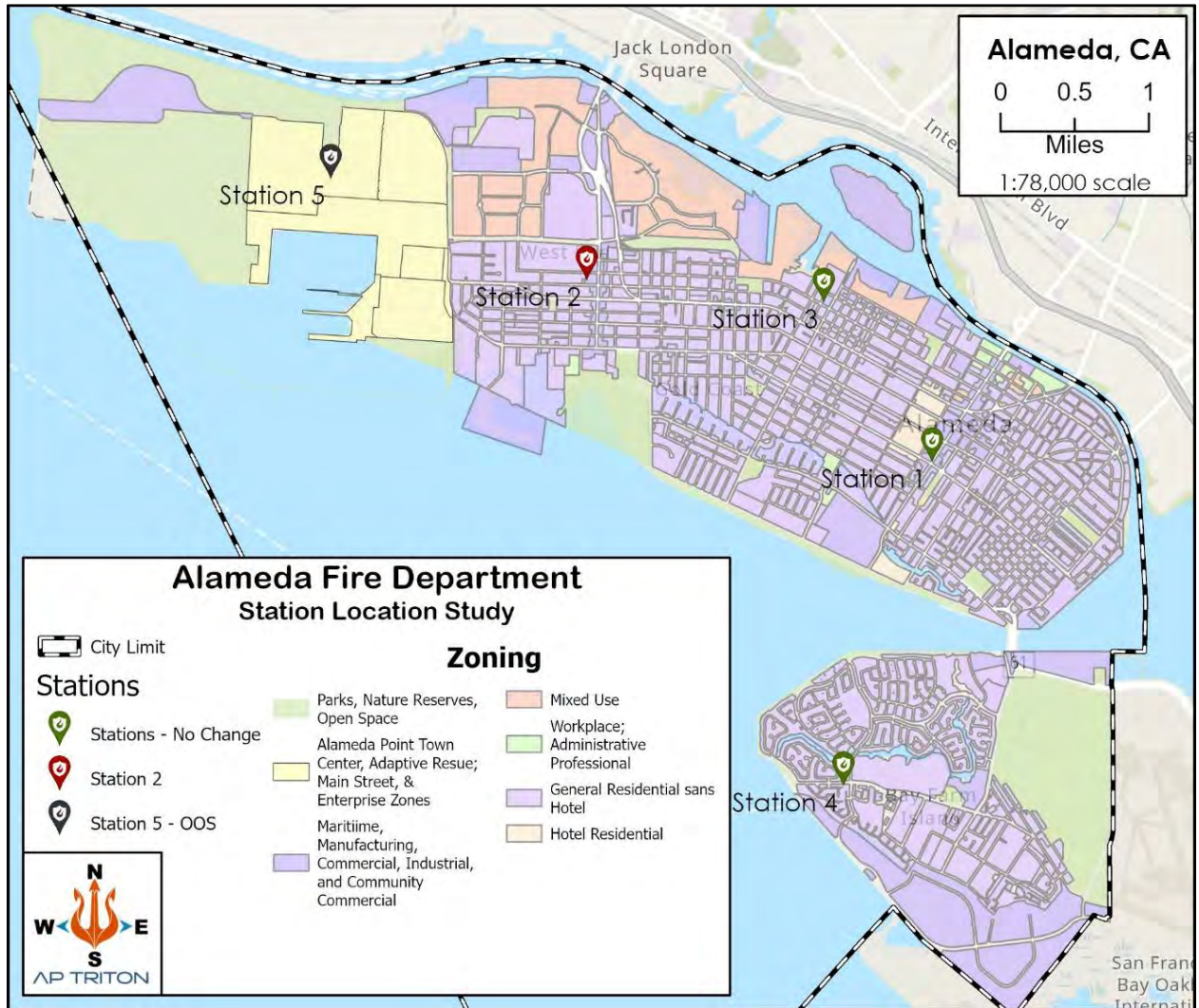


## CRA/SOC IDENTIFIED CONCERNS—GROWTH

One final identified concern with the physical properties of the island community is the intense growth and changing dynamics of the buildings and layout. Adding higher, multi-use, and more densely packed housing in downtown areas, as well as the development of the old Alameda Naval Air Station (NAS), now known as Alameda Point, will put pressure on the fire department's ability to respond effectively. While changes to this area are evolving, it can be assumed that it will eventually experience growth, along with increases in population and visitors.

Before the NAS closed, the city enjoyed assistance from the Department of Defense (DoD) fire department. Additionally, it did not have to worry about responding to the area. With the removal of DoD personnel and the assumption of the land, the AFD's responsibility grew. However, the station deployment did not change to meet that additional requirement. Much of the discussion in this study is directly related to the Alameda Point community. The following figure shows the island's city zoning, with the highest-growth area, Alameda Point, highlighted.

Figure 5: Alameda Zoning



This growth in area, along with the expected increase in visitors, places stress on one of the busiest stations in the system. While additional staffing may not be required, AFD resource deployment and addressing the build-out to the Alameda Point area will become increasingly urgent.

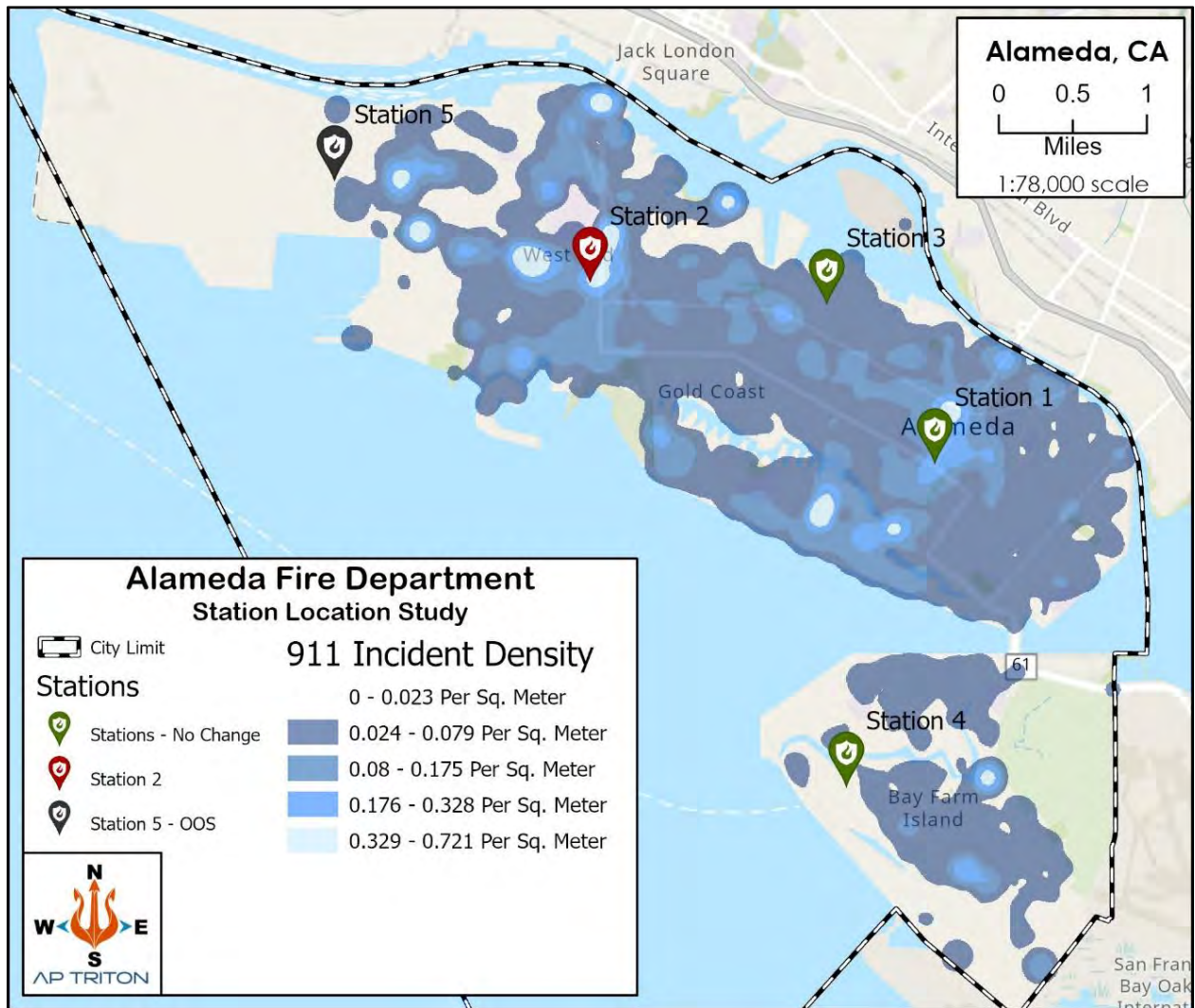
# RESPONSE COVERAGE CHALLENGES

The AFD attempts to meet the National Fire Protection Association's response time performance goal found in standard 1710. This standard identifies the types of units, the order, and the response and performance times that fire departments should adopt for the most effective deployment. This report will not repeat the thorough evaluation found in the CRA/SOC. However, some of the more pertinent studies are repeated here using more updated information.

## INCIDENT DENSITY

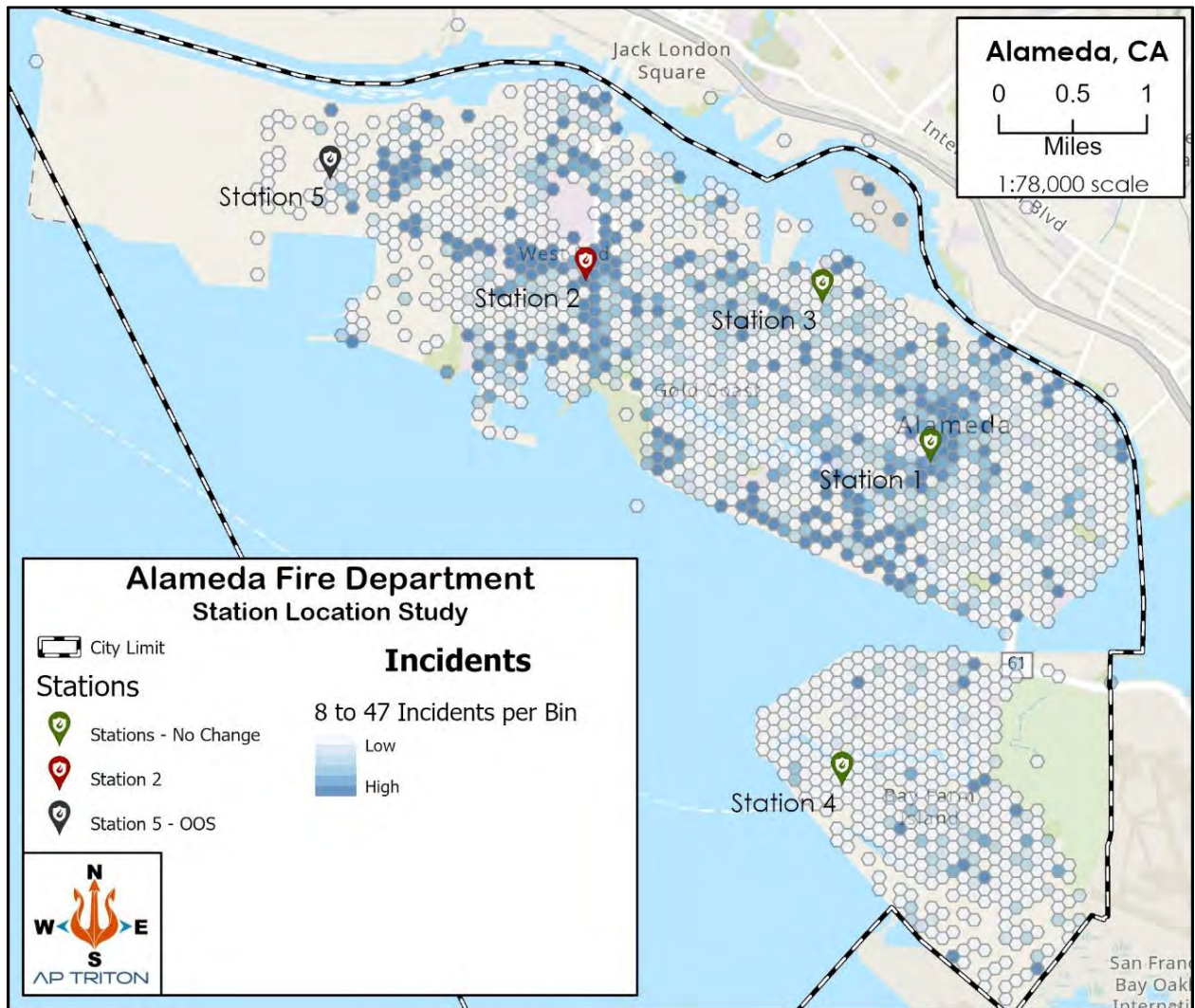
One goal of proper deployment is to place the fire stations closest to the areas of greatest need. The community incident density is highest in the areas closest to Stations 1 and 2. This is particularly concerning, as the area with the least coverage places additional stress on Station 2 crews. AFD responds primarily with an engine for all incidents and an ambulance for EMS incidents, with an extra engine or truck as required. AFD has also deployed a specialty unit to address the needs of individuals with mental health, general poor health, or substance abuse problems. The following figure illustrates the relational emergency incident density for the island.

Figure 6: 9-1-1 Incident Density per Square Meter



Another way to visualize the data is to examine incident density, binned by volume. Binning is the process of aggregating incident counts and grouping them into geographic areas of equal size and shape. This is different from the mathematical process in the relative density map. The relative density map shows hot and cold regions across the entire incident volume. The binning enables a more precise count by location. The following figure shows the incident count by specific areas rather than a density evaluation.

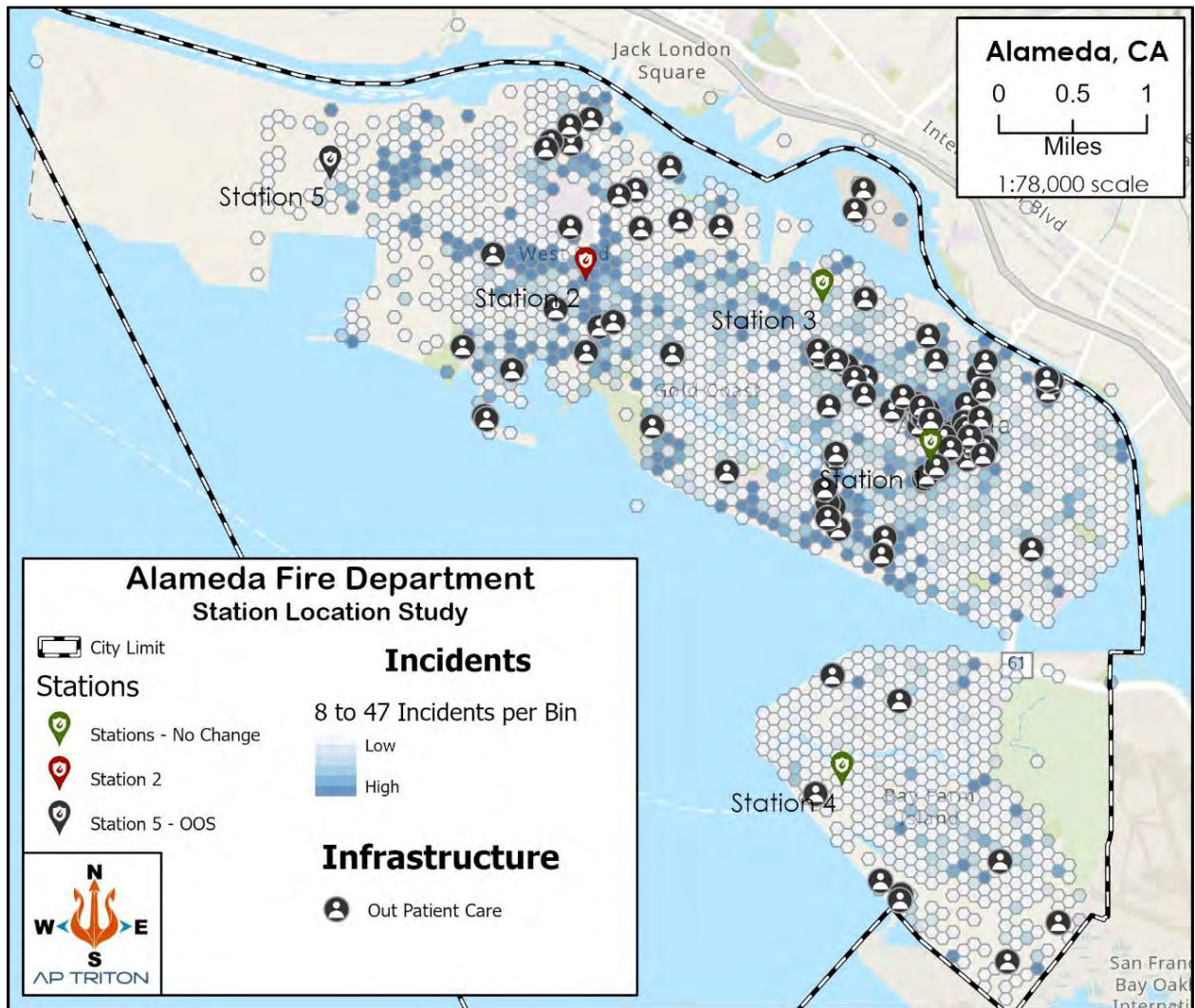
Figure 7: Incident Heat Hex Bin



While the incident density map shows a relative density primarily around Stations 1 and 2, the binning map indicates that incident density is already increasing in the Alameda Point area. This trend is likely to continue as the area develops and more people begin to work, visit, and live there.

Interestingly, the heavier volume can be directly correlated with certain healthcare-related occupancies. The city has several facilities dedicated to those with health-related issues. These include assisted living facilities, hospitals, outpatient clinics, and other healthcare occupancies. The following figure overlays the incident binning analysis. The following figure achieves this by overlaying healthcare-related occupancies on the incident binning data.

**Figure 8: Incident Heat/Hexbin with Outpatient Facilities**



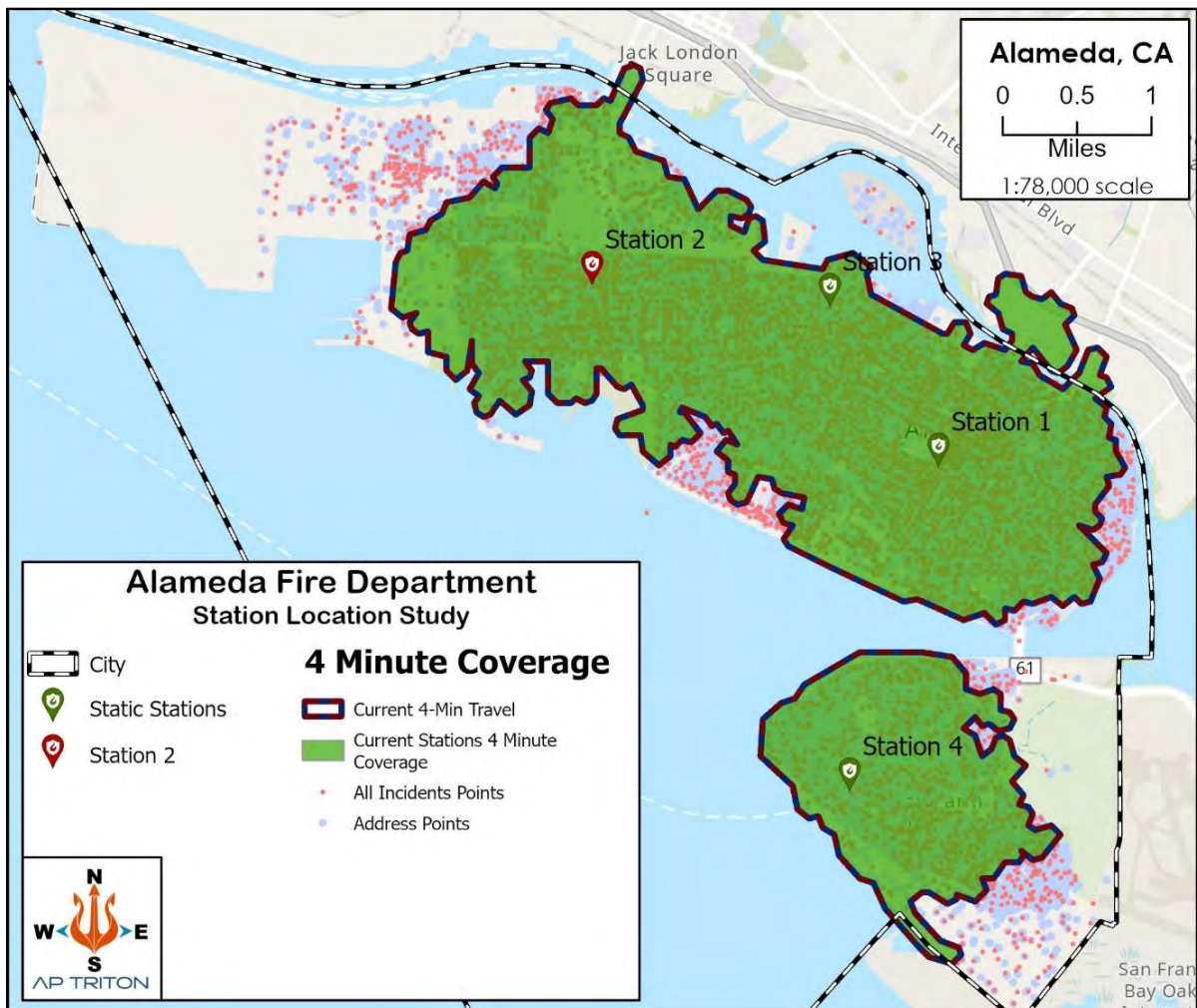
There is no direct evidence that these types of occupancies are causal; however, there is strong evidence of a correlational relationship between these types of occupancies and incident volume. In the industry, there is also a correlational relationship between occupancies, such as senior living housing, high-density housing, public assistance housing, correctional institutions, and areas with high crime rates. There is little direct evidence proving why these occupancies or their occupants are associated with incidents; instead, there are likely a wide variety of reasons for this type of correlation.

## TRAVEL-TIME PERFORMANCE—FIRST DUE

First due travel responses are a function of the distribution of resources and stations. The engine company is the most flexible unit in the inventory. It is equipped to address almost all hazards and incident types that AFD faces. They are typically the first unit from a station to respond. During the more hazardous incidents, such as a structure fire, multiple units are needed to address the emergency.

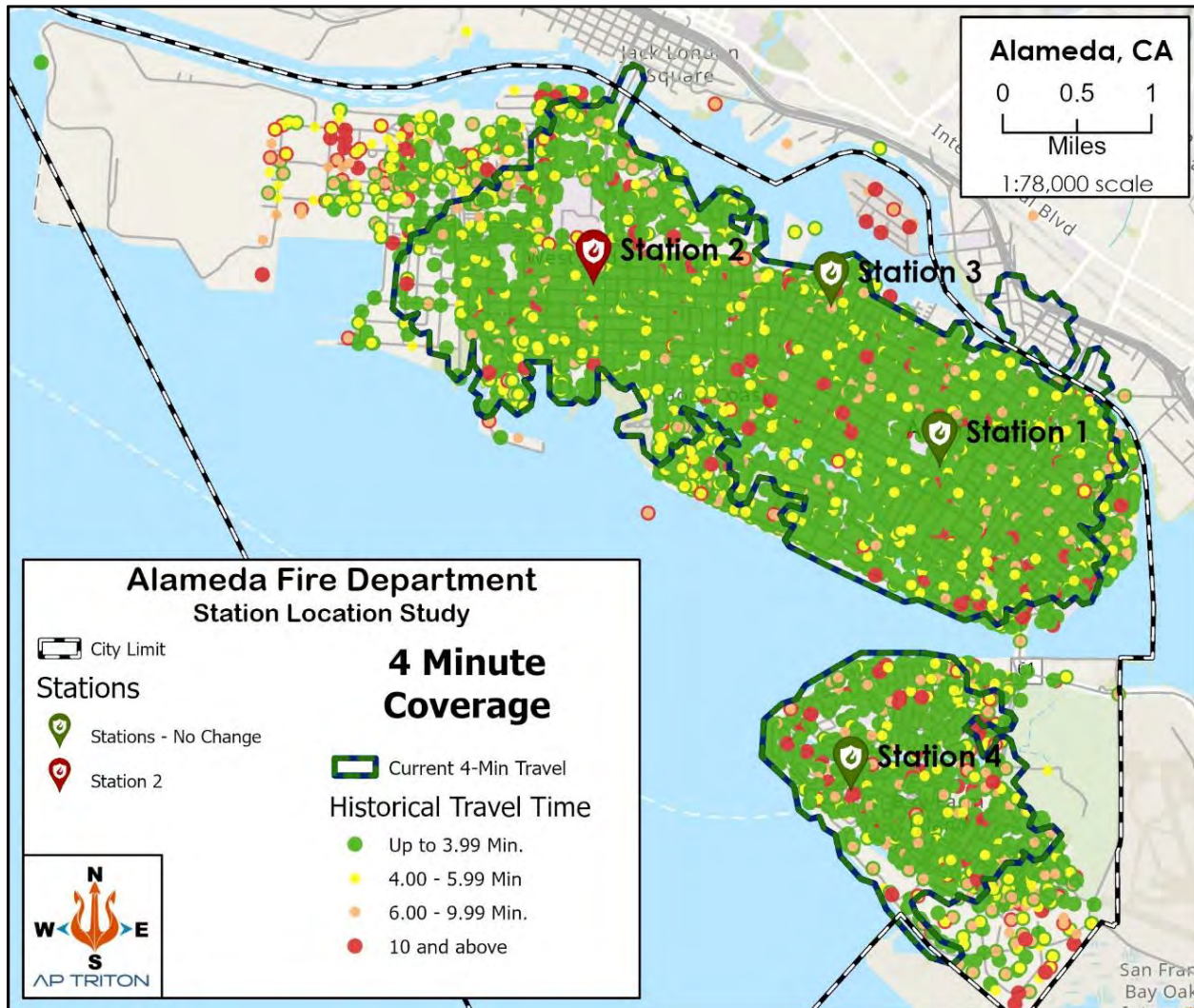
AFD has adopted the NFPA 4-minute travel time for the first due engine company as its performance goal. Travel time can be affected by factors such as road conditions, distance, speed limits, road type, and proximity to an incident. Because the City of Alameda has adopted a 25 MPH speed limit throughout the city and the potential for extreme traffic congestion, the models presented here have adopted a 25 MPH road speed for all response areas. The following figure shows the 4-minute predicted travel time for the current AFD unit deployment from their stations.

**Figure 9: Current Deployment 4 Minute Travel Time Model**



Because the travel time is of primary importance to this study, particular care was taken to validate the model. The agency provided several years of travel time data for analysis, and those were layered onto the 4-minute travel map to determine whether historic performance matched the model. In addition to the time, performance, type, and priority levels of the incidents, the latitude and longitude from which the apparatus responded were also provided. Because AFD used the closest unit dispatch with automatic vehicle location (AVL), travel times were evaluated from stations where the responding unit was within 10 meters of a specified station. This allowed actual travel times from stations to be considered, rather than just the unit travel time. The incident data provided included response priority (emergency versus non-emergency) and included scheduled transport events. For this analysis, incidents were filtered to show only unscheduled emergency incidents, capturing those in which travel time has the most significant impact. The following figure illustrates that the model generally aligns with historical response data.

**Figure 10: Current 4-Minute Travel/Historical Travel Comparison**



As the previous figure illustrates, the model generally aligns with historical information. While some travel times do not match the model, the analysis aimed to determine whether the 4-minute model's borders typically align with historical information. This appears to be the case, and the travel model seems valid, if not slightly conservative. This cautious approach to travel models is preferable to more aggressive ones, as encouraging unsafe travel practices or speeds can have tragic consequences.

Once the model was confirmed, it became crucial to understand which parts of the community were served during this timeframe. This becomes the statistical measure of the new station and deployment options presented in the next section.

### Addresses Covered

The city provided a list of address points within the city limits. These were evaluated to see how many address points fell within the 4-minute travel time. Of the 38,469 address points, 4,939 fell outside of the 4-minute travel time. This means currently 87.2% of all address points fall within a 4-minute travel time of a fire station. The following figure shows the scorecard for the addresses covered within the time limit.

**Figure 11: Current Deployment—Addresses Within 4 Minutes**

Deployment Model	Metric	Measure Total	Outside the Coverage	Percent Coverage
Current Deployment	Addresses with the 4-minute travel time model	38,469 Total Addresses	4,939	87.2%

### Incidents Covered

Similar to the address points, each historical incident included all computer-aided dispatch records from January 1, 2023, through June 30, 2025, which were also clipped and evaluated. Of the 22,631 incidents in the record, 6,952 fell outside the 4-minute travel distance. Unlike the travel time analysis, which focused only on emergency unscheduled incidents, this record set included all incidents within the dataset. The following figure shows the scorecard for the incident points covered within the time limit.

**Figure 12: Current Deployment—Incidents Within 4 Minutes**

Deployment Model	Metric	Measure Total	Outside the Coverage	Percent Coverage
Current Deployment	Incidents with the 4-minute travel time model	22,631 Total Incidents	6,952	69.3%

It should be noted that this is a historical evaluation and does not necessarily guarantee future performance or call volume. Incident density and calls for service are likely to be distributed slightly differently, especially as the Alameda Point area develops. However, given the significant volume, this analysis is expected to be representative of future performance, if not exact.

### Population & Demographics Served

The individuals being served are of special interest to the city and the fire department. Therefore, an additional level of analysis was performed using 2023 and 2024 population information by census tract. There were three different variables evaluated. First, the total Population is based on the 2024 annual community survey (ACS) estimates from the U.S. Census. Next, an evaluation of households below the poverty level was calculated using 2023 ACS data. Finally, households with one or more individuals with disabilities were also evaluated using the 2023 ACS data.

These three levels were selected as those with disabilities, and lower-income individuals are considered at risk. People with disabilities are at risk because they may require more assistance in an emergency and may need more help in general. The risks associated with poverty are primarily driven by access to wellness care and insurance. The total population is self-explanatory. The following figure lists the statistics for these demographics within the current deployment model.

**Figure 13: Current Deployment—Demographics Within 4 Minutes**

Deployment Model	Metric	Measure Total	Outside the Coverage	Percent Coverage
Current Deployment	2024 Total Population within 4-Minute Travel	80,337 Total Addresses	11,079	86.2%
	2023 Households Under the Poverty Line	2,322 Total Households	243	89.5%
	2023 Homes with One or More Individuals with Disabilities	5,822 Total Homes	797	86.3%

## STAFFING LEVELS AVAILABLE

The daily minimum firefighter staffing available to the community is 29, 24 of which are located on the island. The fire department staffs four engine companies, two trucks, four ambulances, one battalion chief, and one Community Assessment Response & Engagement (CARE) team specialty unit. The battalion chief operates independently; the engines and trucks are supervised by a captain or equivalent, a qualified apparatus operator, and one firefighter. The ambulances and CARE team are both minimally staffed by a firefighter and a firefighter-paramedic. All firefighters are fully trained in all-hazard mitigation and possess the necessary personal protective equipment to operate effectively in any fire department incident.

The current deployment features an engine and ambulance at all stations, a truck at Stations 1 and 2, a CARE team at Station 3, and a battalion chief based at Station 1. The department cross-staffs and operates a fireboat from the marina, a rescue boat and trailer at Stations 1 and 2, a rescue unit from Station 3, and a water tender at Station 4. Station 4 is on the peninsula east of the Oakland Airport and, unlike the island, will not be cut off from mutual aid companies if the bridges are unavailable. The AFD can support Station 4, typically by approaching across the Bay Farm Bridge. The following figure shows the current staffing distribution.

**Figure 14: Current Deployment—Staffing Levels**

Station	Engine Staffing	Truck Staffing	Ambulance & CARE Unit	Battalion Chief	Total
Station 1	3	3	2	1	9
Station 2	3	3	2		8
Station 3	3		4		7
Station 4	3		2		5
<b>Total</b>	<b>12</b>	<b>6</b>	<b>10</b>	<b>1</b>	<b>29</b>

This staffing level is sufficient to handle the most likely hazard levels faced by the AFD, even if access to the island is cut off from outside resources. While staffing levels are adequate, as discussed above, the distribution of resources creates some challenges.

## TRAVEL-TIME PERFORMANCE—EFFECTIVE RESPONSE FORCE

While the first due unit is of primary importance, NFPA 1710 also directs that a total effective response force (ERF) should arrive promptly. NFPA indicates that the first unit should arrive in 4 minutes, the second unit in 6 minutes, and a full ERF in under 8 minutes. AFD used the total number of responders as its judgment of when a full ERF is fulfilled for each service type and risk category. The CRA/SOC identifies each ERF, and Figure 182 from that document is reproduced below.

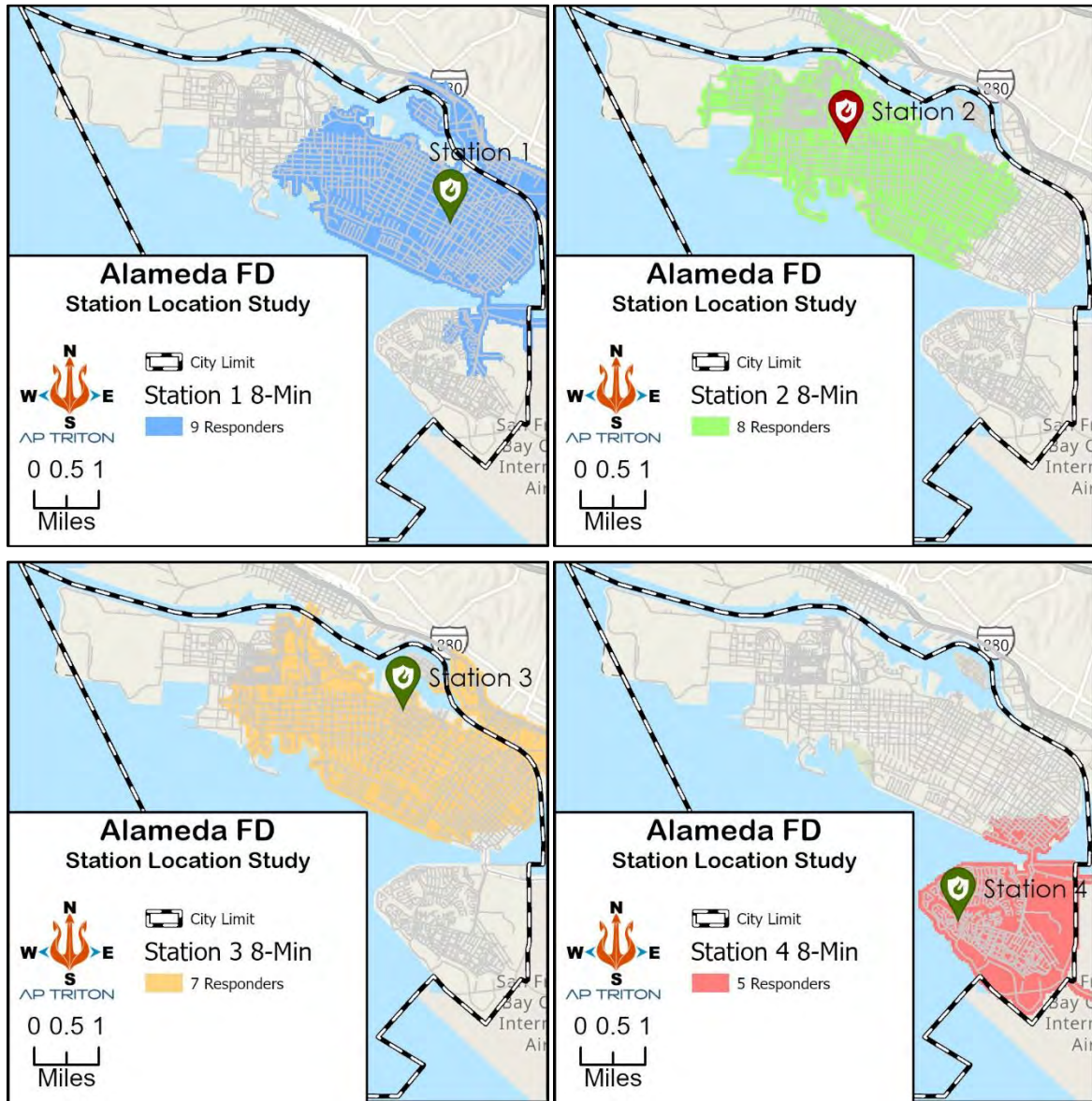
**Figure 15: AFD ERF Staffing Levels by Type and Risk**

Incident Type	Maximum Risk	High Risk	Moderate Risk	Low Risk
Fire	34	24	17	3
Emergency Medical	24	12	6	2
Technical Rescue	29	21	6	4
Hazardous Materials	30	21	6	3

To determine whether AFD meets the ERF, a concentration analysis is performed. The concentration evaluates the total number of firefighters available to respond to specific areas based on station staffing. This analysis is also completed in the CRA/SOC; however, because the concentration deployment is a function of station staffing and station locations, which are part of this evaluation, it is repeated here for clarity. Each model will be evaluated similarly to understand the changes in this performance metric when the station location and staffing are altered.

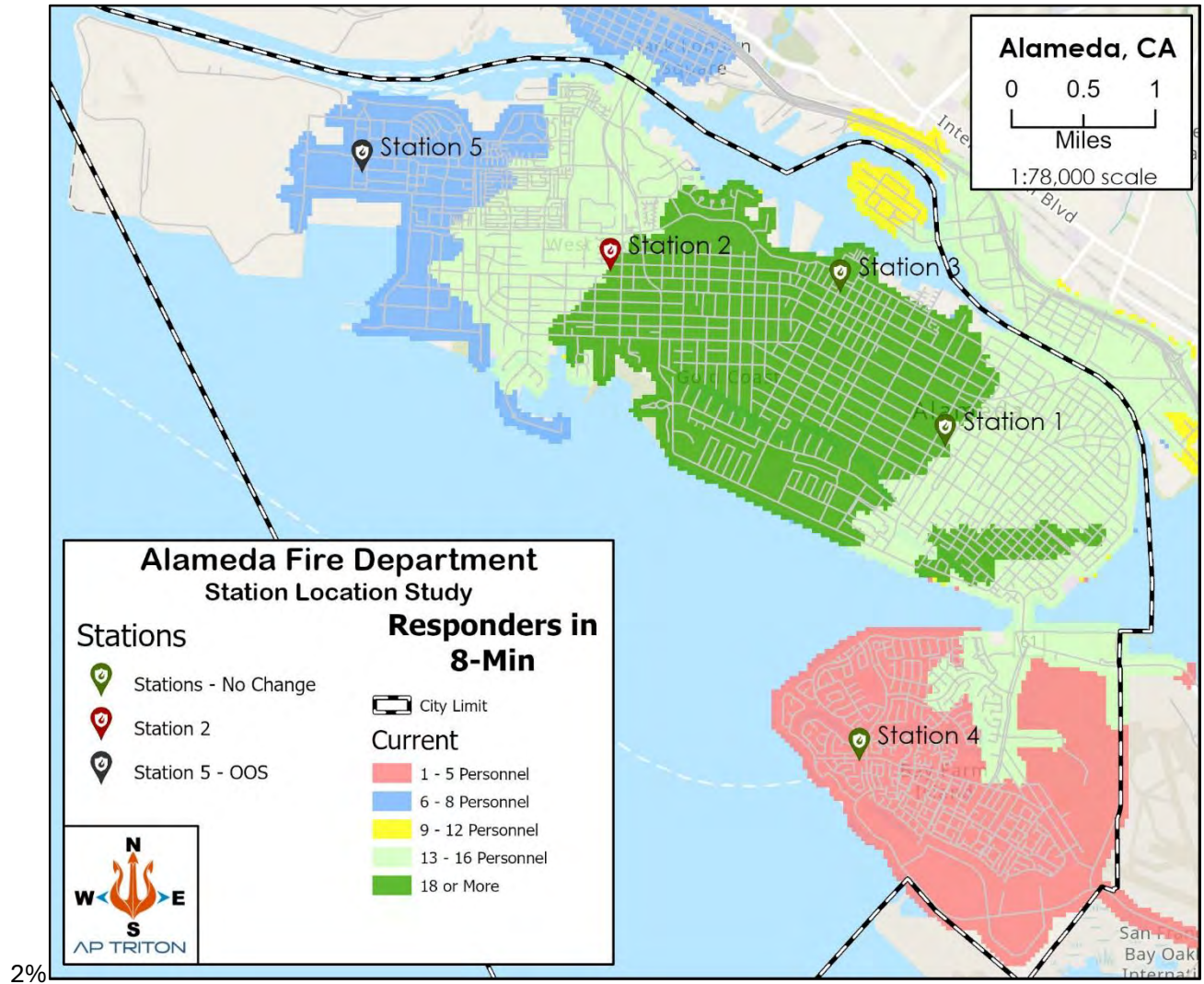
To understand the effect of distribution on the concentration of an effective response force, it is essential to grasp the concept clearly. Each station is staffed by a specific number of personnel and apparatus types as listed in Figure 14. NFPA 1710 indicates that the first unit should arrive within 4 minutes of travel time, while the entire effective response force should arrive within 8 minutes of travel time. AFD calculates the effective response force based on the total number of firefighters and officers who arrive. Therefore, to calculate the projected effective response force, each station, with its associated number of responders and estimated 8-minute travel time, is aggregated and grouped. The following figure shows the four current stations and their respective 8-minute travel times to the nearest station.

Figure 16: Individual Station 8 Minute Travel Times



Once these 8-minute travel time areas are identified, the total number of responders expected within each region is summed to create a single 8-minute travel map, with the number of responders associated with each layer. The following shows the total number of responders expected to be gathered in an area within 8 minutes, assuming everyone is available and responds from their quarters.

**Figure 17: Current Deployment 8-Minute Staffing Deployment**



As expected, due to the station distribution, the area between Stations 1 and 2 has the heaviest coverage. The Bay Farm area can expect its own station and Station 1 within approximately 8 minutes. The Alameda Point area can expect the total for Station 2, but Stations 3 and 1 will take longer. Station 4 plays a minor role in assembling a timely response force at Alameda Point.

# CURRENT CONDITION

## CONCLUSION

AFD's current situation is not necessarily dire, but some areas could be improved. There are sufficient personnel and equipment on the island to address most incident types and risk levels, even if the island is cut off from external support. The Bay Farm area has access to mutual aid agencies, regardless of the island's firefighters' ability to respond. The workload is unevenly distributed, but manageable at this point.

### GAP ANALYSIS

Certain areas require improved coverage to enjoy the same level of service as the rest of the city. While there are a few pockets of underserved locations, the most significant area is along the western portion of the island. As stated in the CRA/SOC, the Alameda Point area lacks sufficient coverage, given the 4-minute NFPA first-unit travel time and the Insurance Service Office 1.5-mile road-mile standards. Overall service delivery is adequate, but the current first-due travel time performance of 5 minutes, 1 second or faster 90% of the time could be improved by addressing station distribution.

As identified in the CRA/SOC, Engine 2 is approaching a cautionary usage rate of 10%, which may render it a less effective response resource. The most recent three-year average unit hour utilization, 2023 to 2025, is 9.2%. This is slightly higher than the four-year average CRA/SOC usage rate for 2019 to 2022, which was 8.45%. The general trend for Engine 2 is an increased annual usage percentage.

Station 2, as used, is in a great location to support the surrounding area and areas to the east. However, it is not an adequately sized or designed station for the current deployment needs. With an engine, a truck, an ambulance, and eight firefighters on duty daily, it is stretched to capacity. It also needs system and design updates to meet modern firefighting safety standards.

### SCORE CARD

Each model will be evaluated against the current conditions and coverage. It will be grouped by staffing, relative costs, and demographic coverage. Staffing is the sum of all daily emergency personnel staffing. Next is a relative cost comparison. The last evaluation is a relational analysis of the 4-minute response coverage across five segments. Those five segments will be the bottom part of each scorecard.

Staffing is a straightforward count and needs no definition. Demographic coverage can be shown as percentage coverage relative to the total city data and the data points covered by the different mapping models. Financial comparison is the column in the scorecard and is the most generalized analysis. While it is outside the scope of this report to assess actual costs, a relative fiscal implication can be presented.

The financial analysis is based on a comparison of the current situation and the likely costs required to maintain the current deployment. Costs were determined based on current operational personnel costs, divided by the total number of operations personnel. New facility costs were estimated following recent recommendations to other coastal fire departments, but it is only an estimate. The remodel cost is estimated at 25% of a new building's cost. It must be emphasized that this is a generally accepted concept. However, there is every indication that remodeling Station 5 will be much more expensive. AFD should have a qualified builder provide a quote for actual costs before making a financial judgment.

The financial indicators evaluated are the current fixed and short-term obligations resulting from changes in the AFD deployment. The current fixed costs include operating the stations, firefighter labor costs, equipment, supplies, and replacement costs for apparatus. It is also assumed that upgrading and repairing Station 2 will be accomplished if that station remains in service, regardless of whether the AFD makes any changes or follows one of the future models. Short-term relative costs are the relationship between each potential model and the current fixed costs, and are presented with the following graphics:

- \$ = Current situation costs, including the remodeling and repair of Station 2.
- \$\$ = Remodeling Station 2 and adding a crew and apparatus.
- \$\$\$ = Closing Station 2, building a new station, and not adding any crew or apparatus.
- \$\$\$\$ = Closing Station 2, building a new station, and adding a new crew and apparatus.
- \$\$\$\$\$ = Closing Station 2, remodeling a station, building a new station, and adding a new crew and apparatus.
- \$\$\$\$\$\$ = Remodeling Station 2, building a new station, and adding a new apparatus and crew.

Differences in long-term costs are driven by the number of apparatus and firefighters. A three-person crew staffed 24 hours a day, every day, is the sum of the salaries of three captains, three apparatus engineers, three firefighters, taxes and benefits, and the overtime costs to maintain a three-person minimum staff. The current staff cost estimate ranges from \$1.5 million to \$1.9 million annually.

The combination of demographics, staffing, and relative costs forms a scorecard. The following figure illustrates the baseline scorecard for the current deployment model.

**Figure 18: Current Conditions—Base Scorecard**

Deployment Model	Total Firefighting Staff	Relative Cost	Demographic Coverage Comparison
Current Deployment	29	\$	Baseline
Demographic Coverage Scores			
Metric	Measure Total	Outside the Coverage	Percent Coverage
Addresses with the 4-minute travel time model	38,469 Total Addresses	4,939	87.2%
Incidents with the 4-minute travel time model	22,631 Total Incidents	6,952	69.3%
2024 Total Population within 4-Minute Travel	80,337 Total Addresses	11,079	86.2%
2023 Households Under the Poverty Line	2,322 Total Households	243	89.5%
2023 Homes with One or More Individuals with Disabilities	5,822 Total Homes	797	86.3%

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# **Section II: DEPLOYMENT SCENARIO MODELING**

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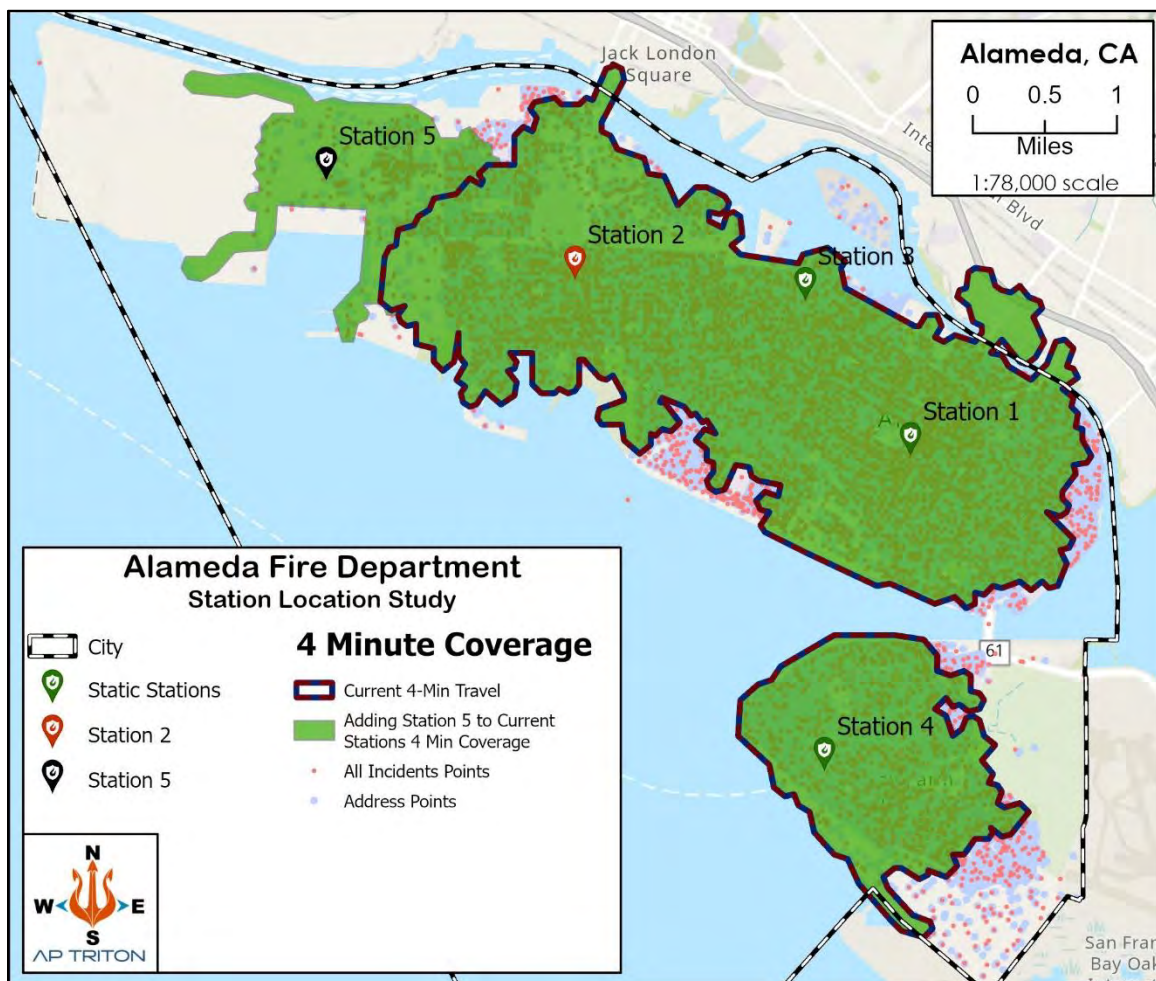
## SCENARIO 1: OPEN STATION 5

Two options are under discussion for opening Station 5. The first option is to update Station 5 and staff it with a new engine company. The second option identified is to remodel and open Station 5 with an engine company and move Truck 2. Both have similar overall 4-minute coverage, which will be evaluated together. The scorecard is driven by the distribution of fire apparatus within a 4-minute travel radius. Additionally, the concentration, in terms of an effective response force, will be discussed.

### 4-MINUTE COVERAGE

Interestingly, when the stations were finalized and built in the 1930s, the location was generally well thought out. Considering the development plan for the Alameda Point area, with most of the runway area designated for wilderness, the buildings will be well within a 4-minute travel time. The following figure illustrates the incidents, address points, and 4-minute travel times when Station 5 is staffed.

Figure 19: Current & Station 5 Travel Times



## DISCUSSION & SCORECARD

Potentially the least expensive option with the best distribution effect is to remodel Stations 2 and 5 and add an engine. Expenses may skyrocket depending on the cost of renovating the Stations. The assumption was that a remodel may be 25% of a new station, but the cost of Station 5 may be notably higher. Station 5 is of wartime construction, which could significantly increase the cost of a remodel. Leaders should consider this before relying on the relative cost analysis presented here.

This deployment allows for the second-best distributed coverage. However, both Stations 2 and 5 require capital investment. A significant amount of updating and remodeling is necessary to improve these two buildings. Additionally, although well thought out, the station's location is not perfect. As discussed in the optimal station site section, an ideal location is not far away, potentially just a few blocks. Adding Station 5 to the current stations will enhance the 4-minute incident response and improve overall demographic service provision. The following figure is the 4-minute scorecard for adding Station 5 to the current lineup.

**Figure 20: Current Stations and Adding Station 5 Scorecard**

Deployment Model	Total Firefighting Staff	Relative Cost	Demographic Coverage Comparison
Open Station 5	32	\$\$	Improvement
Demographic Coverage Scores			
Metric	Measure Total	Outside the Coverage	Percent Coverage
Addresses with the 4-minute travel time model	38,469 Total Addresses	3,922	<b>89.8%</b>
Incidents with the 4-minute travel time model	22,631 Total Incidents	2,013	<b>91.1%</b>
2024 Total Population within 4-Minute Travel	80,337 Total Addresses	9,243	<b>88.5%</b>
2023 Households Under the Poverty Line	2,322 Total Households	118	<b>94.9%</b>
2023 Homes with One or More Individuals with Disabilities	5,822 Total Homes	667	<b>88.5%</b>

## EFFECTIVE RESPONSE FORCE OPTIONS

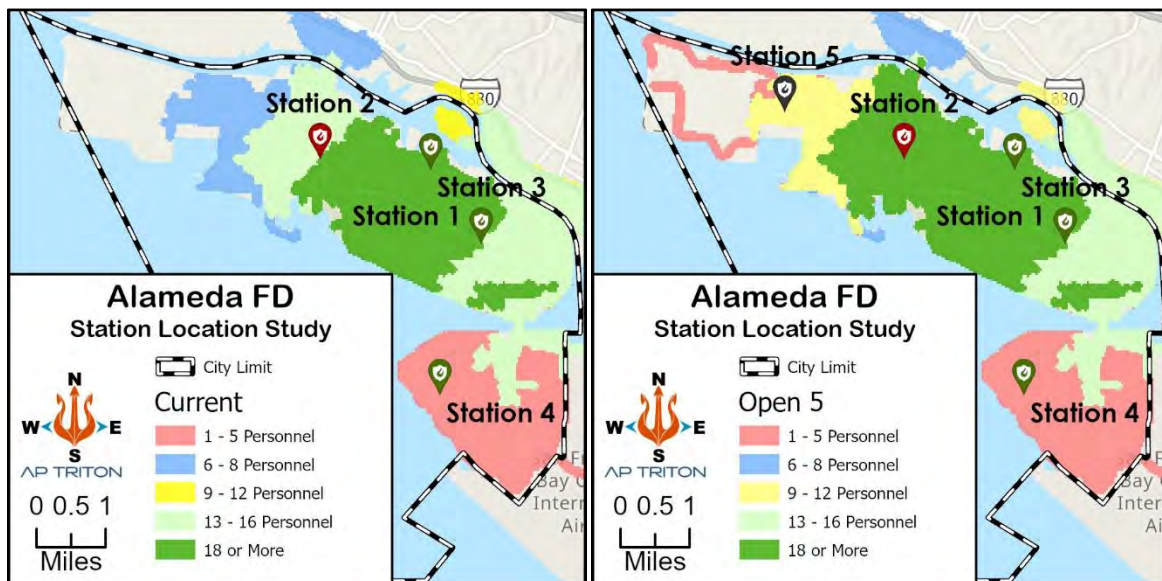
As stated in the opening of this section, there are multiple staffing possibilities for Station 5. AFD will likely add an engine, thereby improving overall capabilities in the Station 5 area. However, AFD may decide to move Truck 2 to Station 5 to reduce the staffing and apparatus impacts on Station 2. The agency indicated that these were the likely choices, and the ERF analysis was completed using those rules. The following figure shows the staffing deployment by station if Station 5 is staffed with an engine.

**Figure 21: Staffing Distribution Adding Engine 5**

Station	Engine Staffing	Truck Staffing	Ambulance & CARE Unit	Battalion Chief	Total
Station 1	3	3	2	1	9
Station 2	3	3	2		8
Station 3	3		4		7
Station 4	3		2		5
Station 5	3				3
<b>Total</b>	<b>15</b>	<b>6</b>	<b>10</b>	<b>1</b>	<b>32</b>

With this deployment, the ERF towards Alameda Point is improved without any changes to areas east of Station 2. The following figure shows both the current deployment and the addition of an engine to the Station 5 deployment ERF.

**Figure 22: Current and Adding Station 5 Engine ERF**



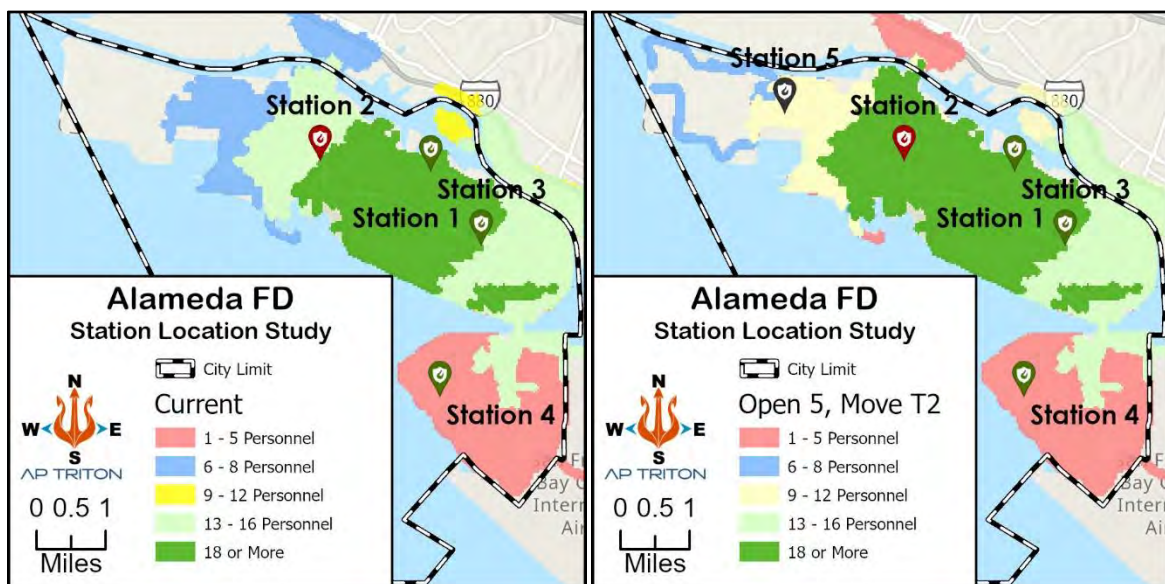
The other option being discussed was to add an engine and relocate Truck 2 to Station 5, thereby enhancing the usefulness of Station 2. In this deployment, Station 5 is staffed with 6 instead of three. The following figure shows the staffing layout after opening Station 5 with an engine and moving Truck 2.

**Figure 23: Staffing Distribution by Adding Engine 5 and Moving Truck 2 to Station 5**

Station	Engine Staffing	Truck Staffing	Ambulance & CARE Unit	Battalion Chief	Total
Station 1	3	3	2	1	9
Station 2	3		2		5
Station 3	3		4		7
Station 4	3		2		5
Station 5	3	3			6
<b>Total</b>	<b>15</b>	<b>6</b>	<b>10</b>	<b>1</b>	<b>32</b>

This distribution model moves some of the ERF away from the eastern half of the city and covers the western half, including Alameda Point, more aggressively. The following figure shows the current ERF distribution and what a distribution would look like after opening Station 5 with an engine and Truck 2.

**Figure 24: Current and Adding Station 5 Engine and Move T2 ERF**



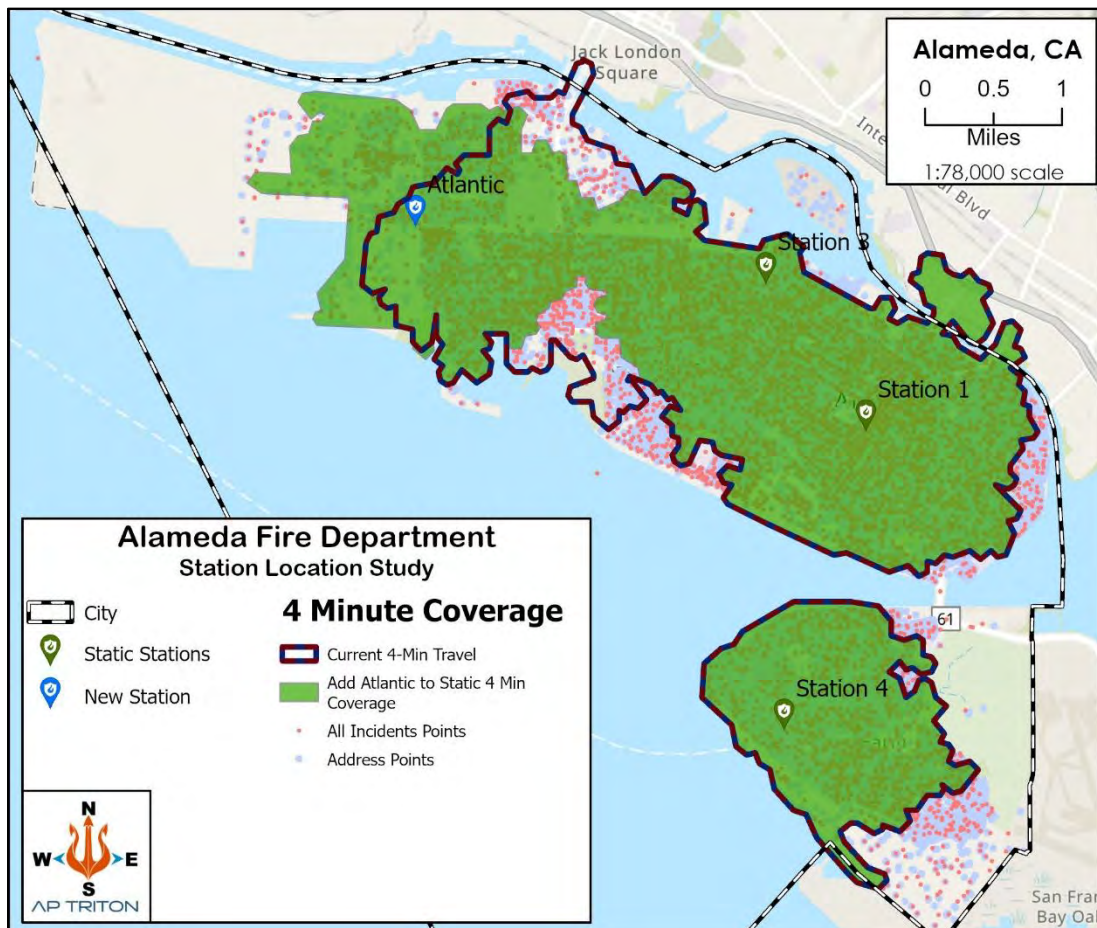
## SCENARIO 2: BUILD A STATION AT ATLANTIC NEAR MAIN STREET, CLOSING STATION 2

The concept for this scenario was to replace the aging Station 2 with a new station further west on Atlantic, between Main Street and Ferry Point. On the surface, this seems to meet many of the requirements for station distribution. It would provide more westward coverage and allow Station 3 to pick up a little more work. However, upon evaluation, it was found that it did not improve coverage and was actually the second-worst statistical coverage model.

### 4-MINUTE COVERAGE

Moving Station 2 further west to the Atlantic and Main area leaves a large portion of what would have been covered by the old station uncovered. While this does improve performance at Alameda Point, it decreases the overall performance that Station 2 previously achieved, regardless of whether an engine is added. The following figure shows the 4-minute travel time after Station 2 is moved.

Figure 25: Moving Station 2 to Atlantic 4-Minute Performance



## DISCUSSION & SCORECARD

The scorecard shows that the actual coverage of the demographics has been reduced compared to leaving Station 2 intact. Total historic incidents improved markedly, but the overall address and population demographics decreased. The households under the poverty line remained consistent, with Station 2 remaining intact. The following figure shows the scorecard for moving Station 2 to the Atlantic site.

**Figure 26: Moving Station 2 to Atlantic Scorecard**

Deployment Model	Total Firefighting Staff	Relative Cost	Demographic Coverage Comparison
Open Atlantic, Move 2 Crew	29	\$\$\$	Decreased
Open Atlantic, Move 2 Crew & Additional Engine	32	\$\$\$\$	Decreased
Demographic Coverage Scores			
Metric	Measure Total	Outside the Coverage	Percent Coverage
Addresses with the 4-minute travel time model	38,469 Total Addresses	5,831	84.8%
Incidents with the 4-minute travel time model	22,631 Total Incidents	3,855	83.0%
2024 Total Population within 4-Minute Travel	80,337 Total Addresses	13,203	83.6%
2023 Households Under the Poverty Line	2,322 Total Households	268	88.5%
2023 Homes with One or More Individuals with Disabilities	5,822 Total Homes	981	83.2%

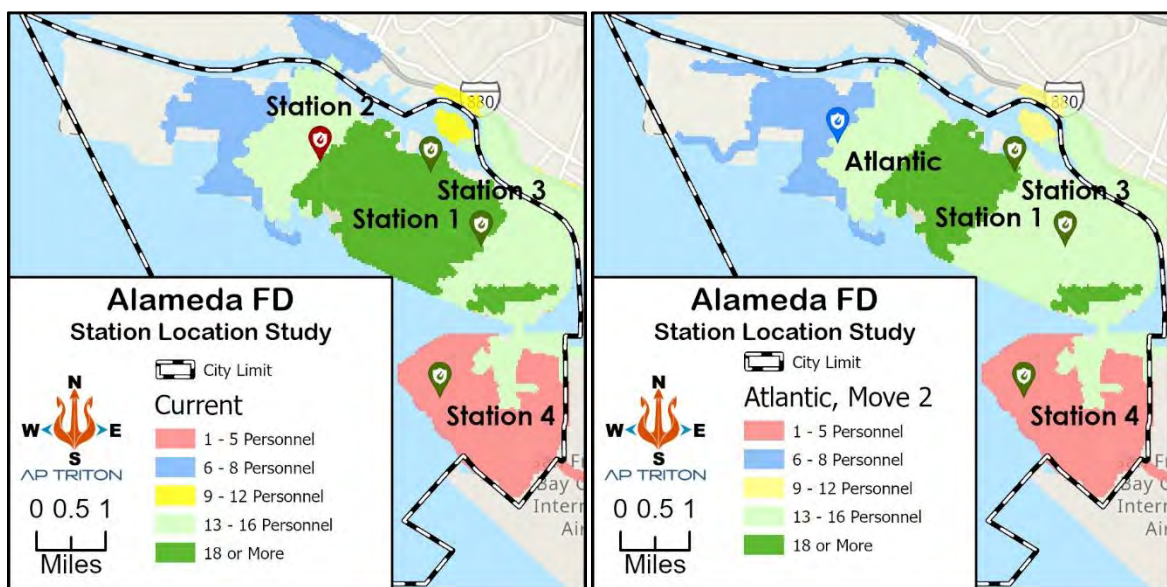
## EFFECTIVE RESPONSE FORCE OPTIONS

The first option for the total response force is to move the current crew and apparatus from Station 2 and close that house. This results in the same total number of responders on the island, which is why the cost is slightly lower. However, as the ERF maps indicate, the shift in current ERF performance improves overall performance in the Alameda Point area. Still, it worsens the overall ERF to the east, most notably near Station 1. The following figures illustrate the staffing distribution and ERF performance, compared with current performance, if Station 2 were relocated to the Atlantic location.

**Figure 27: Staffing Distribution Moving Station 2 to Atlantic**

Station	Engine Staffing	Truck Staffing	Ambulance & CARE Unit	Battalion Chief	Total
Station 1	3	3	2	1	9
Atlantic Station 2	3	3	2		8
Station 3	3		4		7
Station 4	3		2		5
<b>Total</b>	<b>12</b>	<b>6</b>	<b>10</b>	<b>1</b>	<b>29</b>

**Figure 28: Current and Moving Station 2 to Atlantic ERF**

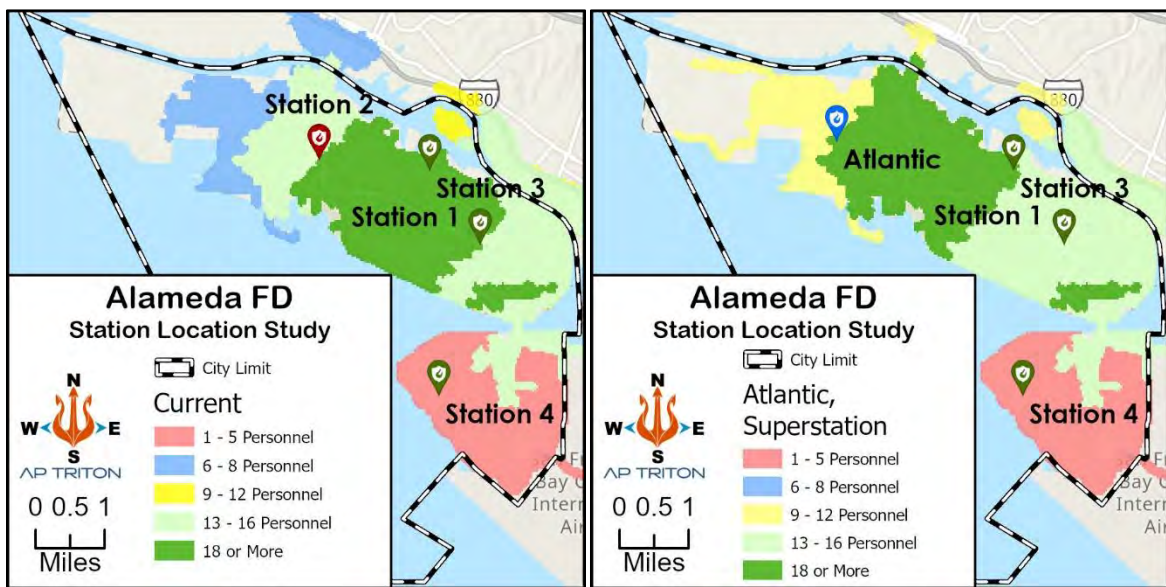


The second option was to add an engine to cover the area and reduce some of the volume pressure on Engine 2. This added engine classifies the new station as a "superstation," a larger building that houses more on-duty crews and more apparatus. While increasing overall staffing levels to 32, the maps show that it improves Alameda Point performance, but not in the center section near Station 1. The following figure illustrates the staffing distribution after building the new station, relocating the Station 2 crew and apparatus, and adding an engine with a three-person crew.

**Figure 29: Staffing Distribution Moving Station 2 to Atlantic with an Engine**

Station	Engine Staffing	Truck Staffing	Ambulance & CARE Unit	Battalion Chief	Total
Station 1	3	3	2	1	9
Atlantic Station 2	6	3	2		11
Station 3	3		4		7
Station 4	3		2		5
<b>Total</b>	<b>15</b>	<b>6</b>	<b>10</b>	<b>1</b>	<b>32</b>

**Figure 30: Current and Moving Station 2 to Atlantic with Additional Engine ERF**



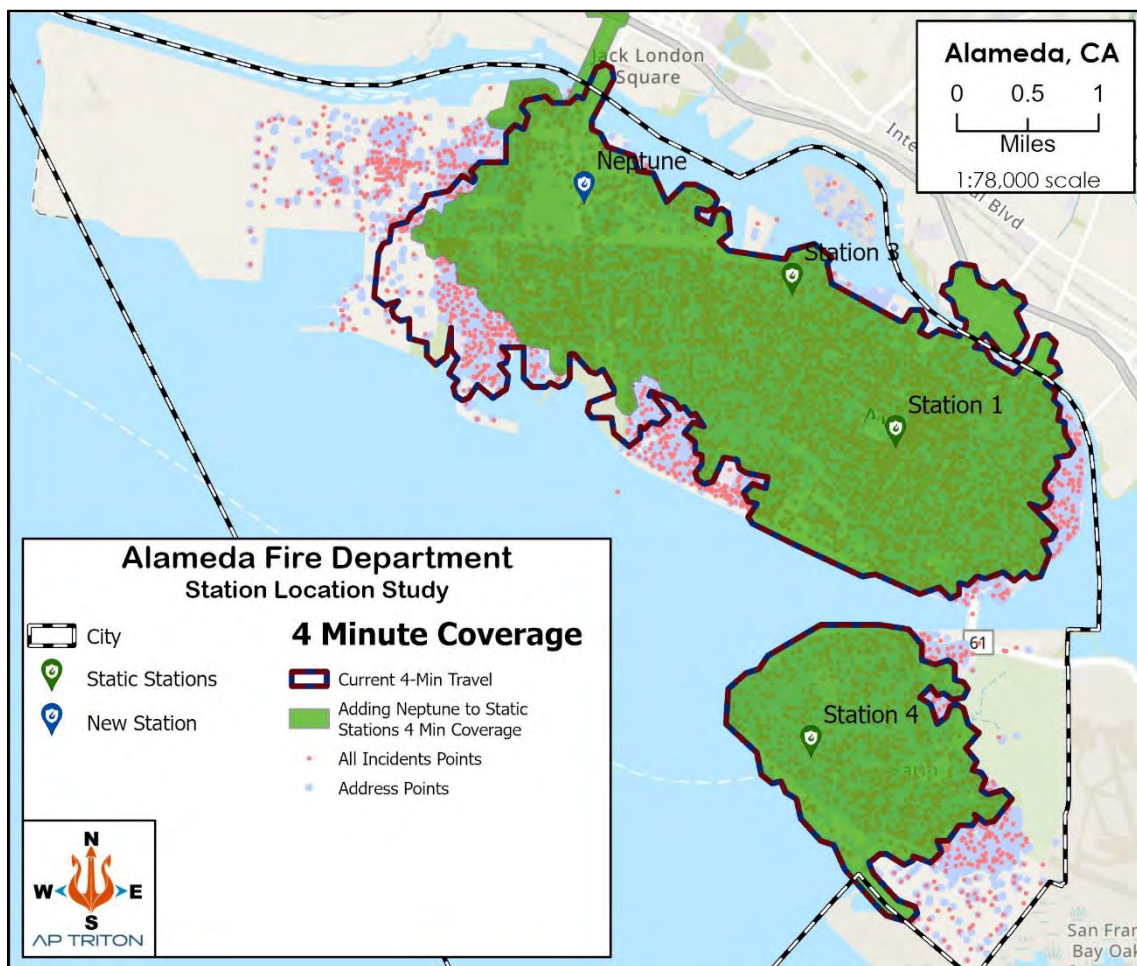
## SCENARIO 3: BUILD A STATION AT NEPTUNE PARK

Two deployment options are discussed for building a new station at Neptune Park. The first deployment involves relocating the Station 2 crew to create a new station at this location. The second deployment would be to add an additional engine to relieve some of the response duties of an already busy engine company. The only difference between these two options is the change in the 8-minute ERF studies. This option proves to be the worst in terms of 4-minute coverage. Moving the station too far north leaves much of the southern portion of the island uncovered. Adding the engine company improves the 8-minute ERF, but it still does not address coverage in the south.

### 4-MINUTE COVERAGE

Moving Station 2 to the new Neptune station proves to be the worst in terms of area covered in a 4-minute travel time. The following figure illustrates this challenge.

**Figure 31: Moving Station 2 to Neptune Park 4-Minute Travel**



## DISCUSSION & SCORECARD

The general concept is to replace Station 2. Unfortunately, neither option increases coverage for the island, leaving much of the southern central portion outside the 4-minute response zone. While this addresses the much-needed updates at Station 2, it does not facilitate the deployment of firefighting forces. As the scorecard illustrates, coverage for all addresses and demographics is worse. Historical incident coverage was better, but not as good as the improvement seen by moving to the Atlantic location. The following figure shows the scorecard for this option.

**Figure 32: Moving Station 2 to Neptune Park Scorecard**

Deployment Model	Total Firefighting Staff	Relative Cost	Demographic Coverage Comparison
Open Neptune, Move 2 Crew	29	\$\$\$	Decreased Coverage
Open Neptune, Move 2 Crew & Additional Engine	32	\$\$\$\$	Decreased Coverage
Demographic Coverage Scores			
Metric	Measure Total	Outside the Coverage	Percent Coverage
Addresses with the 4-minute travel time model	38,469 Total Addresses	6,653	82.7%
Incidents with the 4-minute travel time model	22,631 Total Incidents	4,594	79.7%
2024 Total Population within 4-Minute Travel	80,337 Total Addresses	14,201	82.3%
2023 Households Under the Poverty Line	2,322 Total Households	375	83.9%
2023 Homes with One or More Individuals with Disabilities	5,822 Total Homes	1,073	81.6%

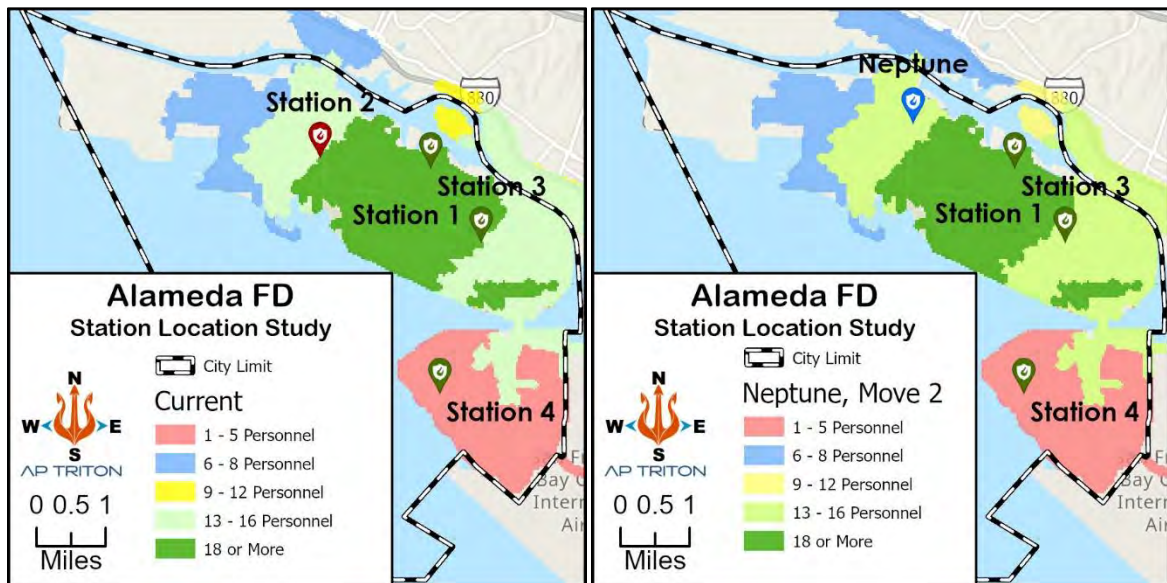
## EFFECTIVE RESPONSE FORCE OPTIONS

A slight difference between this option and moving Station 2 to Atlantic is that the move does not impede ERF performance to the east. Like the Atlantic option, two options were evaluated. This included relocating the Station 2 crew and apparatus, as well as a second option that adds an engine. The following figures illustrate the staffing distribution and ERF effects of relocating Station 2 to Neptune Park.

**Figure 33: Staffing Distribution Moving Station 2 to Neptune Park**

Station	Engine Staffing	Truck Staffing	Ambulance & CARE Unit	Battalion Chief	Total
Station 1	3	3	2	1	9
Neptune Station 2	3	3	2		8
Station 3	3		4		7
Station 4	3		2		5
<b>Total</b>	<b>12</b>	<b>6</b>	<b>10</b>	<b>1</b>	<b>29</b>

**Figure 34: Current and Moving Station 2 to Neptune Park ERF**

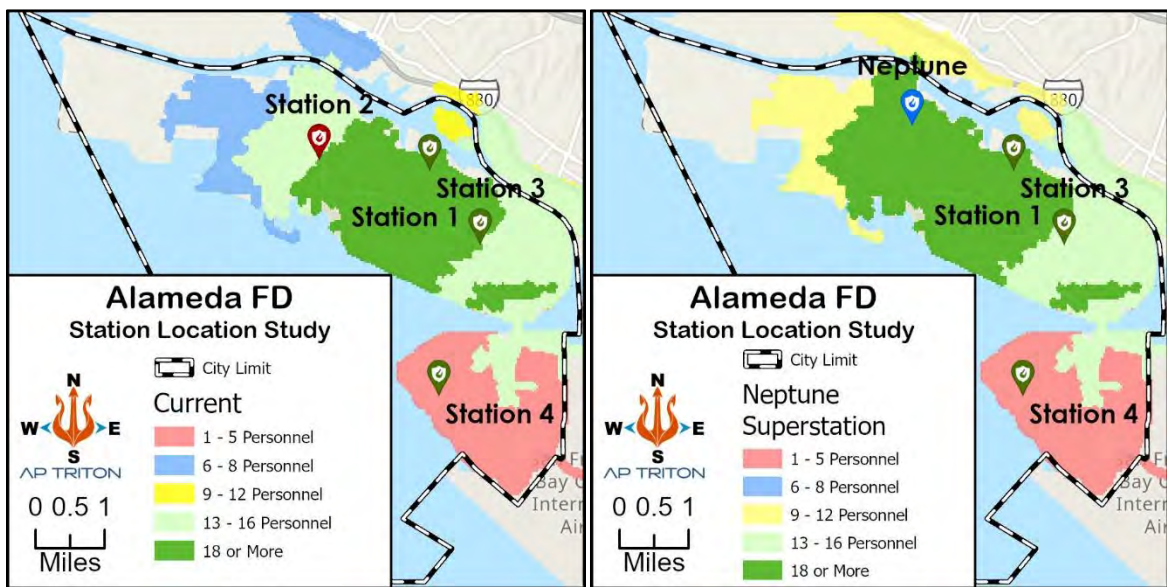


The second option, which involves adding an engine company and relocating Station 2 to Neptune Park, shows an overall increase in the number of responders available. It also improves ERF coverage to Alameda Point without degrading performance to the east side near Station 1. The following figures illustrate the staffing distribution and ERF performance for relocating the Station 2 crew and apparatus to Neptune Park, as well as adding an engine crew of three.

**Figure 35: Staffing Distribution Moving Station 2 to Neptune Park and Adding an Engine**

Station	Engine Staffing	Truck Staffing	Ambulance & CARE Unit	Battalion Chief	Total
Station 1	3	3	2	1	9
Neptune Station 2	6	3	2		11
Station 3	3		4		7
Station 4	3		2		5
<b>Total</b>	<b>15</b>	<b>6</b>	<b>10</b>	<b>1</b>	<b>32</b>

**Figure 36: Current and Moving Station 2 to Neptune Park while Adding an Engine ERF**



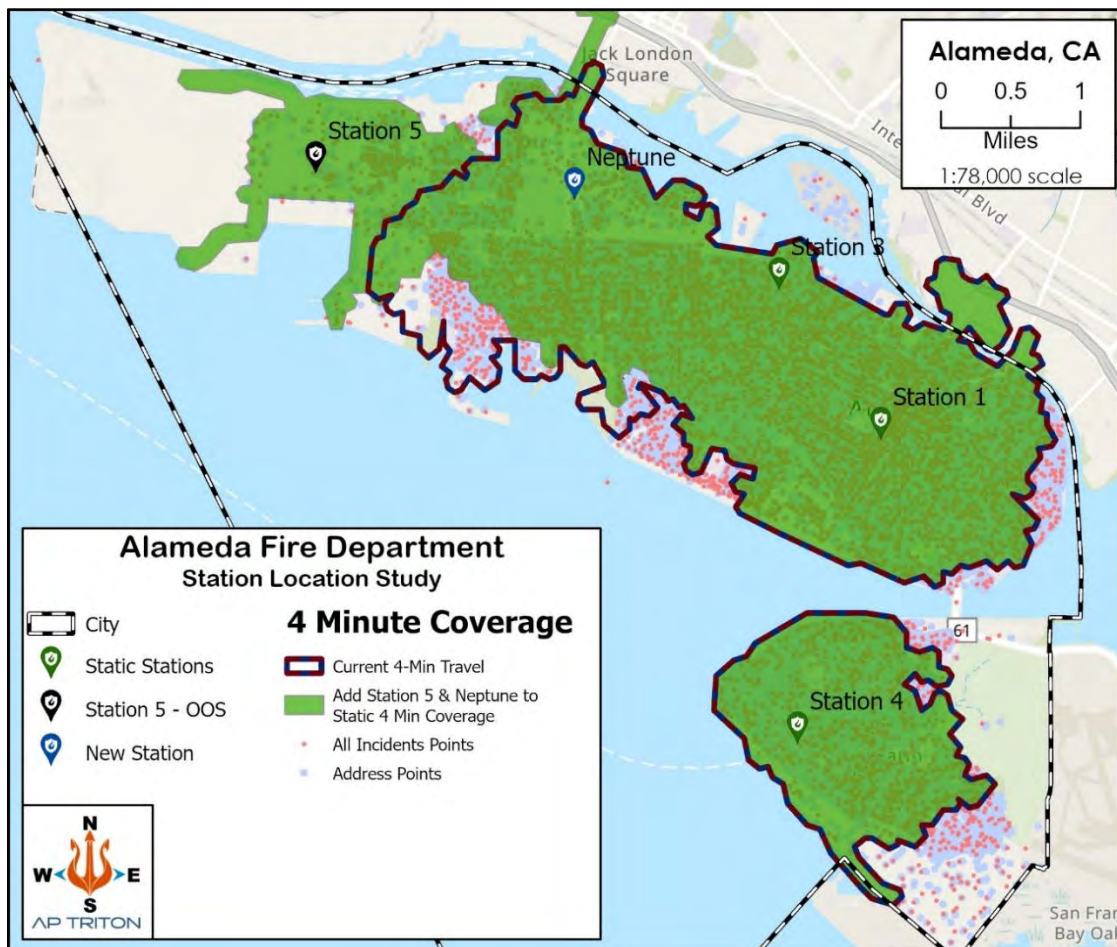
## SCENARIO 4: BUILD A STATION AT NEPTUNE PARK & OPEN STATION 5

Similar to Scenario 3, the following scenario is designed to improve coverage to the west by updating and opening the additional engine company at Station 5 and moving Station 2 to Neptune Park. While this does improve the northwest and northeastern 4-minute coverage, it has little impact on the southern performance. Additionally, it reduces the 8-minute coverage to the southeast of Station 5 compared with leaving Station 2 in service.

### 4-MINUTE COVERAGE

While the addition of Station 5 to the Station 2 to Neptune Park model improves overall first-due performance in the Alameda Point area, it does little to alleviate gaps in coverage to the south of the station. The following figure shows the 4-minute travel time if Station 2 is moved to Neptune Park and Station 5 is opened.

**Figure 37: Moving Station 2 to Neptune Park and Opening Station 5 4-Minute Travel**



## DISCUSSION & SCORECARD

Essentially, this adds a new station for Station 2, reducing coverage in the southern portion. However, with the addition of Station 5, the coverage statistics remain very close to the current deployment situation. This is a costly option that does not add to overall performance. Historical incident coverage improves, but the other markers are either similar to current conditions or worsen slightly. The improved incident coverage is driven by the additional station. The following figure shows the scorecard if Station 2 is relocated to Neptune Park and Station 5 is established with an engine company.

**Figure 38: Moving Station 2 to Neptune Park and Adding Station 5 Scorecard**

Deployment Model	Total Firefighting Staff	Relative Cost	Demographic Coverage Comparison
Open Neptune, Move 2 Crew & Open Station 5	32	\$\$\$\$\$	Similar to Baseline
Demographic Coverage Scores			
Metric	Measure Total	Outside the Coverage	Percent Coverage
Addresses with the 4-minute travel time model	38,469 Total Addresses	5,364	86.1%
Incidents with the 4-minute travel time model	22,631 Total Incidents	3,122	86.2%
2024 Total Population within 4-Minute Travel	80,337 Total Addresses	11,900	85.2%
2023 Households Under the Poverty Line	2,322 Total Households	245	89.4%
2023 Homes with One or More Individuals with Disabilities	5,822 Total Homes	926	84.1%

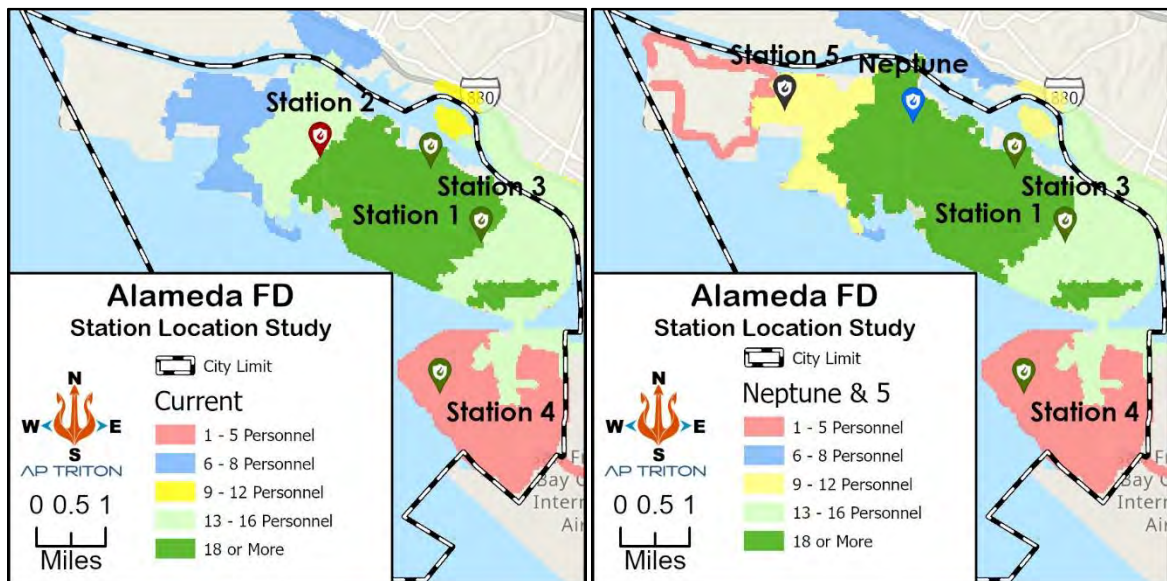
## EFFECTIVE RESPONSE FORCE

Moving the Station 2 crew and apparatus alleviates the need to reassign the truck company to a new location. This is a preferred method, as keeping the apparatus centered helps the entire island more than moving it further west. Adding the engine at Station 5 improves overall western performance, especially in Alameda Point. From an ERF perspective, this is an effective option. The following figure illustrates the staffing distribution of relocating Station 2's crew and apparatus to Neptune Park, as well as adding an engine to Station 5 with a staff of three.

**Figure 39: Staffing Distribution Moving Station 2 to Neptune Park and Opening Station 5**

Station	Engine Staffing	Truck Staffing	Ambulance & CARE Unit	Battalion Chief	Total
Station 1	3	3	2	1	9
Neptune Station 2	3	3	2		8
Station 3	3		4		7
Station 4	3		2		5
Station 5	3				3
<b>Total</b>	<b>15</b>	<b>6</b>	<b>10</b>	<b>1</b>	<b>32</b>

**Figure 40: Current and Moving Station 2 to Neptune Park and Opening Station 5**



## STATION 5 OPTIMAL LOCATION

One question initially asked of AP Triton was to identify the best location for Station 5 based on the development of Alameda Point. Simple geographical rules were used to determine the optimal location for Station 5. The first step was to establish the outside points of the area that needed coverage. Since the eastern region is largely set, depending on the options selected by leadership, only the western area was marked. This was done based on the likely build-out of Alameda Point but did not include the potential Veterans Administration building to the northwest.

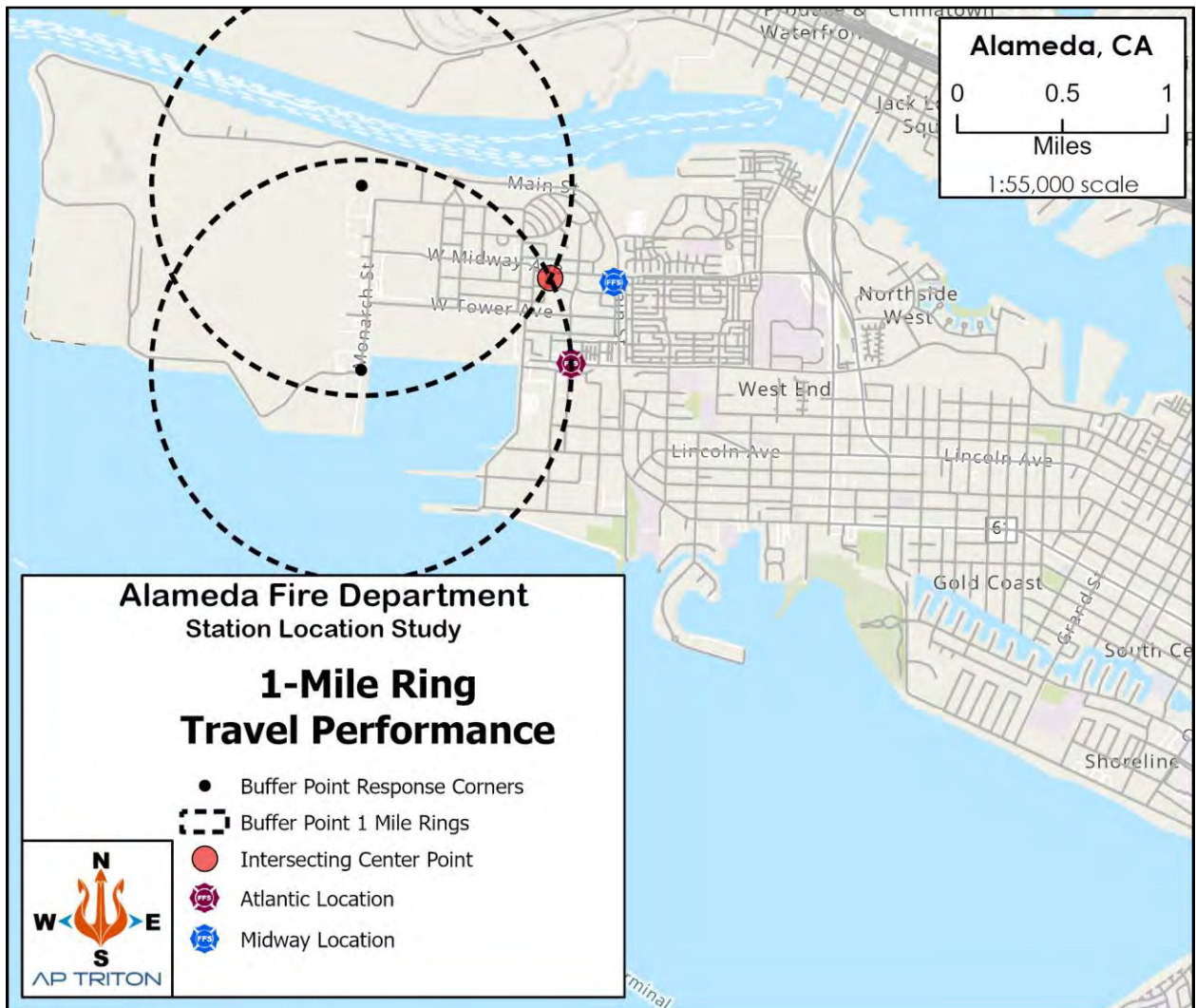
The second step was to determine an approximate service ring rather than run multiple road-mile models. For AFD and the set speed limit of 25 MPH, it was found that a one-mile ring was analogous to a 4-minute travel time. The following figure shows the simple proof of the one-mile ring assumption by overlaying a one-mile circle over the Station 2 4-minute travel model.

**Figure 41: 1-Mile Ring with 4-Minute Travel for Reference**



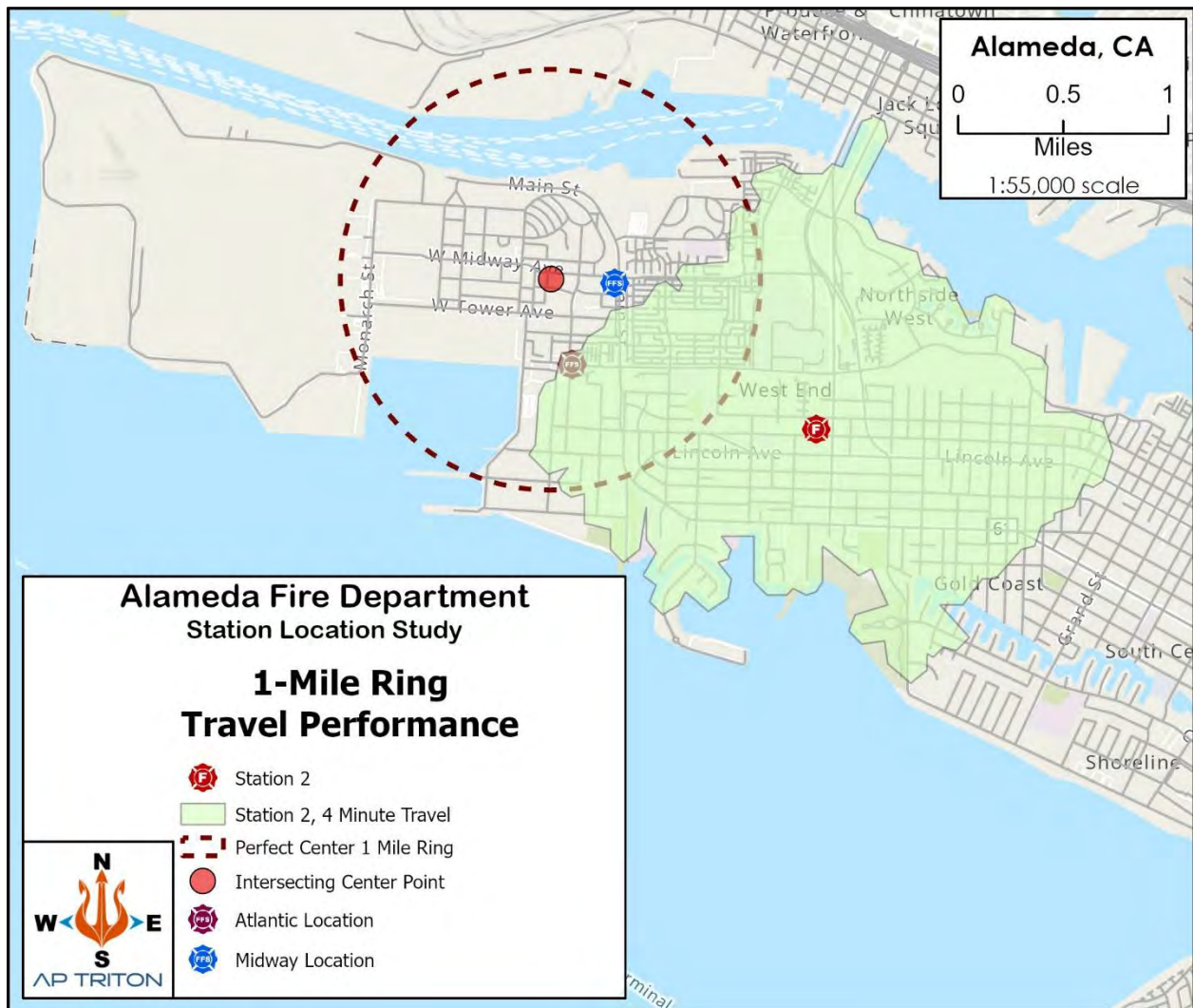
This allowed the analysis to continue by anchoring the two western points of the city, located in the north and south corners, and drawing a one-mile ring around those points. The theory suggests that the intersection of the two rings provides the optimal location for a 4-minute distributed travel time. This placed the dot on Rainbow Court between Midway Avenue and Stardust Place. As it turns out, this is equally about 4 tenths of a mile from the current Station 5 location and the new station site on Atlantic, and three tenths of a mile from another available location at Midway and Main. The following figure shows the ring method used and the proximal location of the intersecting circles.

**Figure 42: Station 5 Center Location**



Much of the area designated as a suitable location is already under development and unavailable for a new station. However, the planning and fire departments may be able to identify an available area near this center, such as a potential location at Main and Midway. In addition to the theoretical best location, it introduced the concept that the Atlantic location could replace Station 5 rather than Station 2. Both the Atlantic and Midway sites would provide Alameda Point coverage and complement Station 2 well. This would allow the new location to move the truck, thus alleviating the crowding at Station 2. The following figure shows the estimated travel ring at the Rainbow Court location, along with the 4-minute travel time from Station 2, for reference to ensure complete coverage.

**Figure 43: Estimated Center Location 4-Minute Coverage**



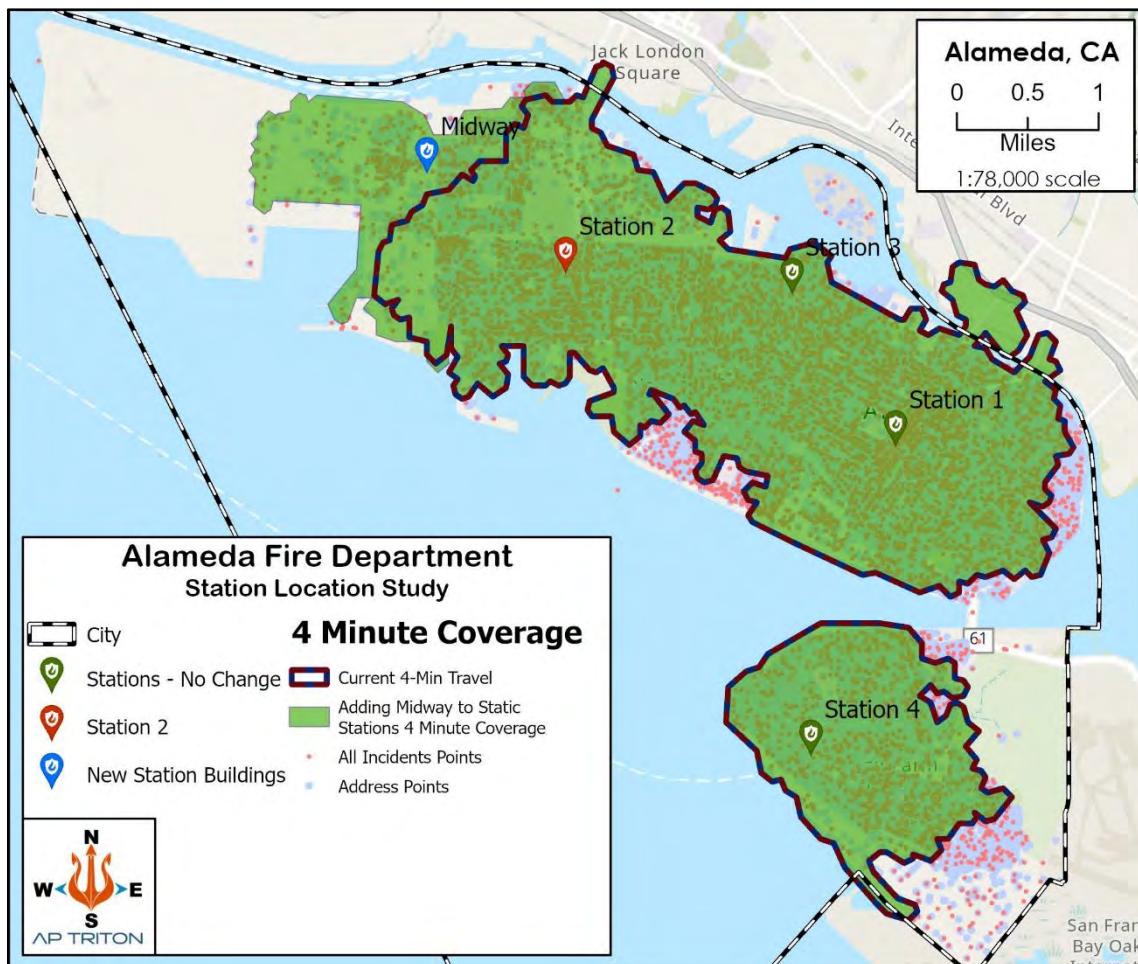
## BONUS SCENARIO A: BUILD STATION 5 AT MIDWAY AND MAIN, LEAVING STATION 2 OPEN

After consultation with other city departments, the Fire Chief found that the parking area and surrounding land at Midway and Atlantic may be available for city development. As this is very close to the optimal center coverage for Station 5, this first scenario proposes building a new station at Midway and Main, adding an engine, moving Truck 2 to the new location, and leaving Engine 2 and Medic 2 at Station 2.

### 4-MINUTE COVERAGE

The overall coverage is very similar to opening Station 5, with the added benefit of creating a structure that adds coverage to the core of the city. The following figure illustrates the 4-minute coverage of keeping the current stations and building a new station on the Midway site.

**Figure 44: Moving Station 5 to Midway 4-Minute Coverage**



## DISCUSSION & SCORECARD

Like opening Station 5, the overall score shows an improvement in coverage. The relative cost is higher, but the overall score is the best of all the models. The following figure shows the scorecard if this station were to replace Station 5, with Station 2 remaining in service.

**Figure 45: Moving Station 5 to Midway Scorecard**

Deployment Model	Total Firefighting Staff	Relative Cost	Demographic Coverage Comparison
Open Station 5	32	\$\$\$\$\$\$	Improvement
Demographic Coverage Scores			
Metric	Measure Total	Outside the Coverage	Percent Coverage
Addresses with the 4-minute travel time model	38,469 Total Addresses	3,535	<b>90.8%</b>
Incidents with the 4-minute travel time model	22,631 Total Incidents	1,859	<b>91.8%</b>
2024 Total Population within 4-Minute Travel	80,337 Total Addresses	7,998	<b>90.0%</b>
2023 Households Under the Poverty Line	2,322 Total Households	105	<b>95.5%</b>
2023 Homes with One or More Individuals with Disabilities	5,822 Total Homes	657	<b>88.7%</b>

As will become evident, the performance statistics for this performance and bonus scenario B are very similar. This means that, using historic information, either location provides approximately the same coverage. Although this location offers a little more coverage in the northern portion of the island, the southern area is likely to change its demographics as construction progresses. Therefore, the planning, building, and fire departments must discuss how the locations will be built out and which of the two bonus scenarios will best serve the city's future needs.

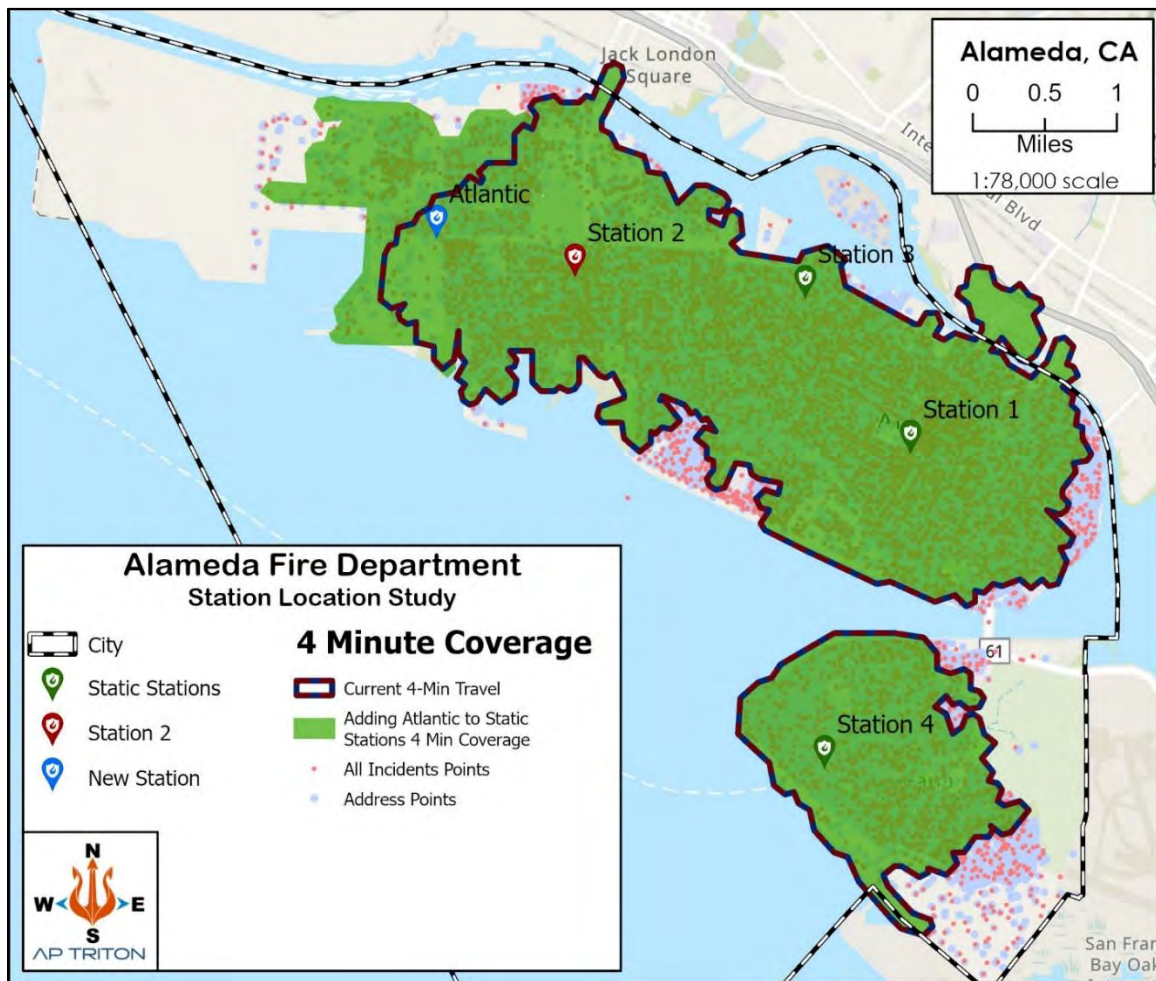
## BONUS SCENARIO B: BUILD STATION 5 AT ATLANTIC NEAR MAIN STREET, LEAVING STATION 2 OPEN

The second option is to replace Station 5 with a new building at the Atlantic site. This would leave an engine and a medic at Station 2, and a new engine and Truck 2 at the new Atlantic Station 5 location. Station 2 will still need maintenance and upgrades as previously discussed.

### 4-MINUTE COVERAGE

Given that the best location for Station 5 is so close to the Atlantic location, the overall coverage is very similar to what it would be with Station 5 open. This option provides the added benefit of a station that slightly better covers the city's core. The following figure illustrates the 4-minute coverage of keeping the current stations and building a new station on the Atlantic site.

Figure 46: Moving Station 5 to Atlantic 4-Minute Coverage



## DISCUSSION & SCORECARD

Like opening Station 5, the overall score shows an improvement in coverage. The relative cost is higher, but the overall score is the second-best of all the models. The following figure shows the scorecard if this station were to replace Station 5, with Station 2 remaining in service.

**Figure 47: Moving Station 5 to Atlantic Scorecard**

Deployment Model	Total Firefighting Staff	Relative Cost	Demographic Coverage Comparison
Open Station 5	32	\$\$\$\$\$\$	Improvement
Demographic Coverage Scores			
Metric	Measure Total	Outside the Coverage	Percent Coverage
Addresses with the 4-minute travel time model	38,469 Total Addresses	3,727	<b>90.3%</b>
Incidents with the 4-minute travel time model	22,631 Total Incidents	1,988	<b>91.2%</b>
2024 Total Population within 4-Minute Travel	80,337 Total Addresses	8,832	<b>89.0%</b>
2023 Households Under the Poverty Line	2,322 Total Households	105	<b>95.5%</b>
2023 Homes with One or More Individuals with Disabilities	5,822 Total Homes	657	<b>88.7%</b>

## EFFECTIVE RESPONSE FORCE SCENARIOS A & B

The only ERF model evaluated was one in which the new station added an engine, and Truck 2 was moved to the new house. The following figure shows the staffing distribution at the Midway and Atlantic stations (specifically Station 5), as well as the movement of Truck 2.

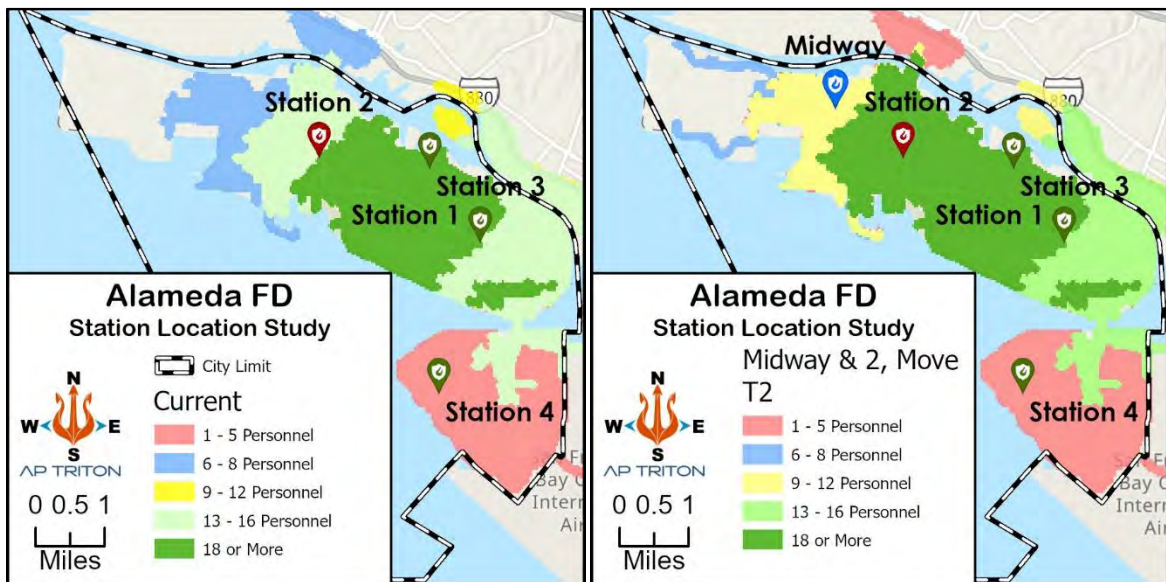
**Figure 48: Staffing Distribution Moving 5 to Atlantic**

Station	Engine Staffing	Truck Staffing	Ambulance & CARE Unit	Battalion Chief	Total
Station 1	3	3	2	1	9
Station 2	3		2		5
Station 3	3		4		7
Station 4	3		2		5
Atlantic or Midway Station 5	3	3			6
<b>Total</b>	<b>15</b>	<b>6</b>	<b>10</b>	<b>1</b>	<b>32</b>

It is essential to illustrate the changes in ERF for each potential new station location. Therefore, the following series of figures will compare current ERF coverage with both options and compare the two options to each other. Both options yield results like having Station 5 staffed and moving Truck 2 there; these new station locations maintain a solid ERF for Alameda Point while protecting the ERF to the east.

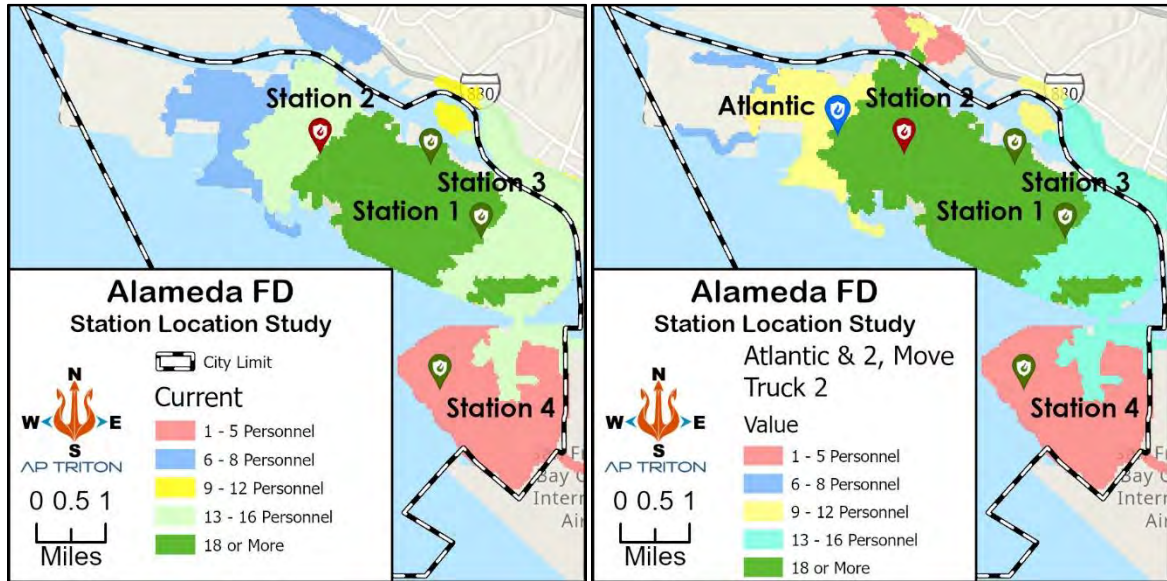
The following figure illustrates the ERF study comparing the current situation, opening the Midway location as Station 5, and relocating Truck 2.

**Figure 49: Current and Build Station 5 At Midway Near Main Street, Leaving Station 2 Open**



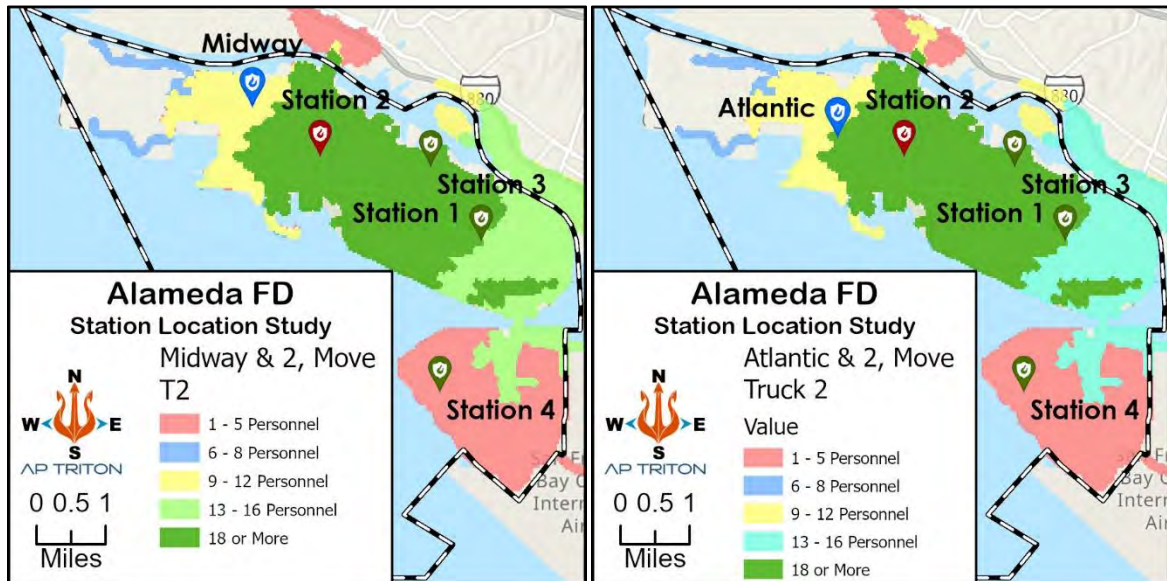
The following figure illustrates the ERF study comparing the current situation, opening the Atlantic location as Station 5, and relocating Truck 2.

**Figure 50: Current and Build Station 5 At Atlantic Near Main Street, Leaving Station 2 Open**



The following figure illustrates the ERF study comparing the very slight differences between the Midway and Atlantic options for Station 5 with Truck 2.

**Figure 51: Comparison of Station 5 at Midway versus Atlantic Locations**



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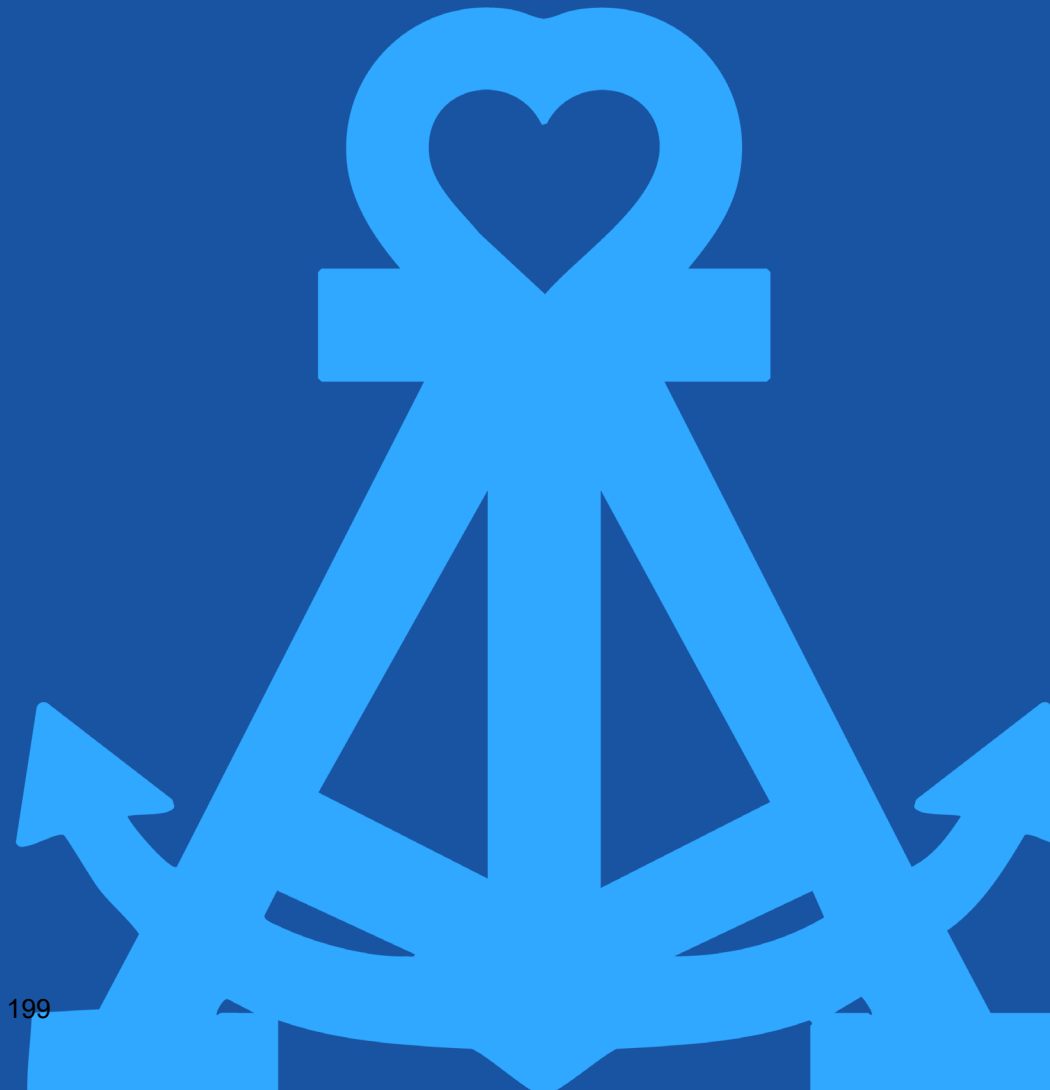
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# APPENDIX E

## E - DETAILED COST ESTIMATES



# OPTION A

## CENTRALIZED MAINTENANCE & FIRE



Conceptual Cost Plan  
for

### ALAMEDA CITY FACILITIES MASTER PLAN OPTION A: CENTRALIZED MAINTENANCE & FIRE

December 8, 2025



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Conceptual Cost Plan

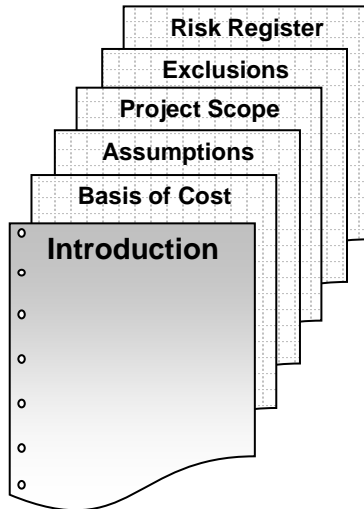
Commentary

**ALAMEDA CITY FACILITIES MASTER PLAN  
OPTION A: CENTRALIZED MAINTENANCE & FIRE**

Introduction  
Basis of Cost  
Assumptions  
Exclusions

December 8, 2025

**introduction**

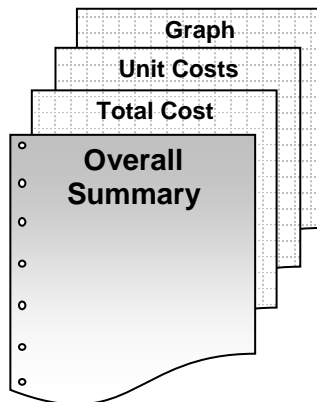


mack5 was requested to carry out a Cost Plan for the Alameda City Facilities Master Plan.

The first part of the Report contains the basis of the report, the assumptions made, description of the project scope, and exclusions to the costs which contain items that have potential to impact cost at some point in the future.

The Overall Summary section contains a Summary of Gross Floor Areas, an Overall Project Summary, and Component and Trade Cost Summaries with Graphs.

Each section contains Control Quantities, a Cost Summary and Graph, and a Detailed Breakdown of Costs.



**project introduction**

Nine major City facilities were identified as requiring in-depth space planning as well as siting and feasibility analysis. The high priority was applied to facilities that are old and are out-of-step with professional or technical standards and practices, building code requirements, a growing demand for services and finally, encroaching residential uses.

RRM Team evaluated facilities for Public Works at their Fleet Services Building and Maintenance Service Center.

The Animal Shelter operated by the City in partnership with the non-profit Friends Of The Alameda Animal Shelter (FAAS) was also reviewed.

The Alameda Fire Department facilities at Fire Station 1 including Fire Administration, Fire Station 2, Fire Station 4, Fire Station 5 and the Training Facility.

**items used for cost estimate**

narrative Alameda City Facilities MasterPlan prepared by rrm design group, dated November 2025 (31 pages)

Structural Seismic Report prepared by Briggs Cardosa Associates Inc.

Alameda Fire Station No.1, dated June 16, 2025

Alameda Fire Station No 2, dated Nov. 6, 2025

Alameda Fire Station No.4, dated Nov. 6, 2025

Alameda Fire Station No.5, dated Nov. 6, 2025 (Not Used)

**assumptions**

- (a) The general contract will be competitively bid by a minimum of five (5) qualified contractors
- (b) The general contractor will have full access to the site during normal business hours
- (c) There are no phasing requirements
- (d) The contractor will be required to pay prevailing wages

**exclusions**

- (a) Loose furniture and equipment except as specifically identified
- (b) Compression of schedule, premium or shift work, and restrictions on the contractor's working hours
- (c) Environmental impact mitigation
- (d) Temporary housing for displaced management and staff
- (e) Moving and relocation cost
- (f) Solar/Photovoltaic (PV) System
- (g) Land acquisition cost
- (h) Demolition of existing buildings
- (i) Off-site requirements / Signalization

Conceptual Cost Plan

Overall Summary

**ALAMEDA CITY FACILITIES MASTER PLAN**

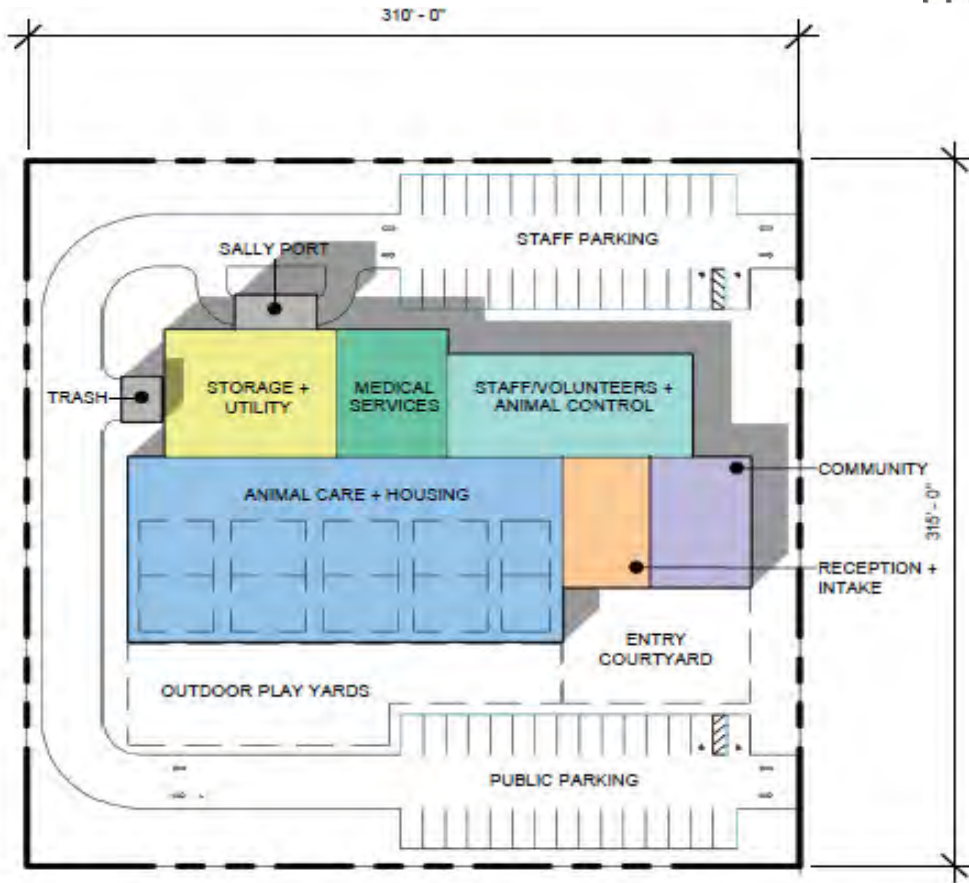
Gross Floor Areas  
Overall Summary  
Component Summary  
Trade Summary

December 8, 2025

	Current Construction Cost August 2025				Including Soft Cost x 1.35%	Project Cost (Inclgd. Soft Cost +Cost Escalation To Midpoint Of Construction)			
	AREA	%	\$/SF	\$		\$	Project Cost	%	Start Date
<b>OPTION A: CENTRALIZED MAINTENANCE &amp; FIRE</b>									
1. (N) Animal Shelter + Site Improv. (Combined Campus)	26,721 SF	20%	\$1,546.80	\$41,331,960	\$55,798,146	\$68,771,215	23.25%	Jan. 2030	24 Months
2. (N) Fleet Service Garage + Site Improv. (Combined Campus)	17,494 SF	13%	\$1,493.42	\$26,125,910	\$35,269,978	\$46,644,546	32.25%	Jan. 2032	24 Months
3. (E) Maintenance Service Center (MSC), Remodel & Expand	16,400 SF	6%	\$713.37	\$11,699,322	\$15,794,085	\$21,183,816	34.13%	Jan. 2033	12 Months
4. (N) Recreation & Parks Corp. Yard + Site Improv. (Combined Campus)	12,987 SF	12%	\$1,822.95	\$23,674,697	\$31,960,841	\$42,268,212	32.25%	Jan. 2032	24 Months
5. (E) Fire Station #1: Expand Into Admin Area	12,742 SF	4%	\$611.59	\$7,792,910	\$10,520,428	\$11,743,428	11.63%	Jan. 2028	12 Months
6. (N) Fire Admin Bldg.: Relocate To (N) Fire Stn.#5	10,200 SF	6%	\$1,241.02	\$12,658,428	\$17,088,878	\$20,293,043	18.75%	Jan. 2029	24 Months
7. (E) Fire Station #2: Remodel (Without Truck)	11,260 SF	4%	\$658.47	\$7,414,328	\$10,009,343	\$12,974,611	29.63%	Jan. 2032	12 Months
8. (E) Fire Station #4: Minor Repairs	11,234 SF	2%	\$317.28	\$3,564,331	\$4,811,847	\$6,670,423	38.63%	Jan. 2034	12 Months
9. (N) Fire Station #5 + Site Improvement	22,659 SF	17%	\$1,505.58	\$34,114,927	\$46,055,152	\$54,690,492	18.75%	Jan. 2029	24 Months
10.(N) Fire Training Facility + Site Improvement	18,353 SF	17%	\$1,818.31	\$33,371,433	\$45,051,434	\$61,607,836	36.75%	Jan. 2033	24 Months
<b>TOTAL CONSTRUCTION &amp; SITEWORK</b>	<b>160,050 SF</b>	<b>100%</b>	<b>\$1,260.53</b>	<b>\$201,748,246</b>	<b>\$272,360,132</b>	<b>\$346,847,622</b>			

**NOTES:**

1. Cost Escalation is calculated at 4.5% per annum - compounded
2. +35% SOFT COST includes cost for :
  - 2.1 Entitlement & Permits
  - 2.2 Architect/Engineers Design Fees
  - 2.3 Specialty Consultants
  - 2.4 Project & Construction Management Fees
  - 2.5 Public Arts
  - 2.6 Utility Fees
  - 2.7 Testing & Inspection
  - 2.8 Third Party Cabling & Network Equipments
  - 2.9 FF&E
  - 2.10 Audio-Visual Equipment
  - 2.11 Scope Change/Post Contract Contingency



**ANIMAL SHELTER**

Program Site Area: 97,650 sf

Program Building Area 26,721 sf

Conceptual Cost Plan

**(N) Animal Shelter + Site Improv. (Combined Campus)  
ALAMEDA CITY FACILITIES MASTER PLAN**

Control Quantities  
(N) Animal Shelter + Site Improv. (Combined Campus) Summary  
Detailed Cost Breakdown

December 8, 2025

Enclosed Areas

(N) Animal Shelter

26,721

Subtotal of Enclosed Area

26,721

Site Area

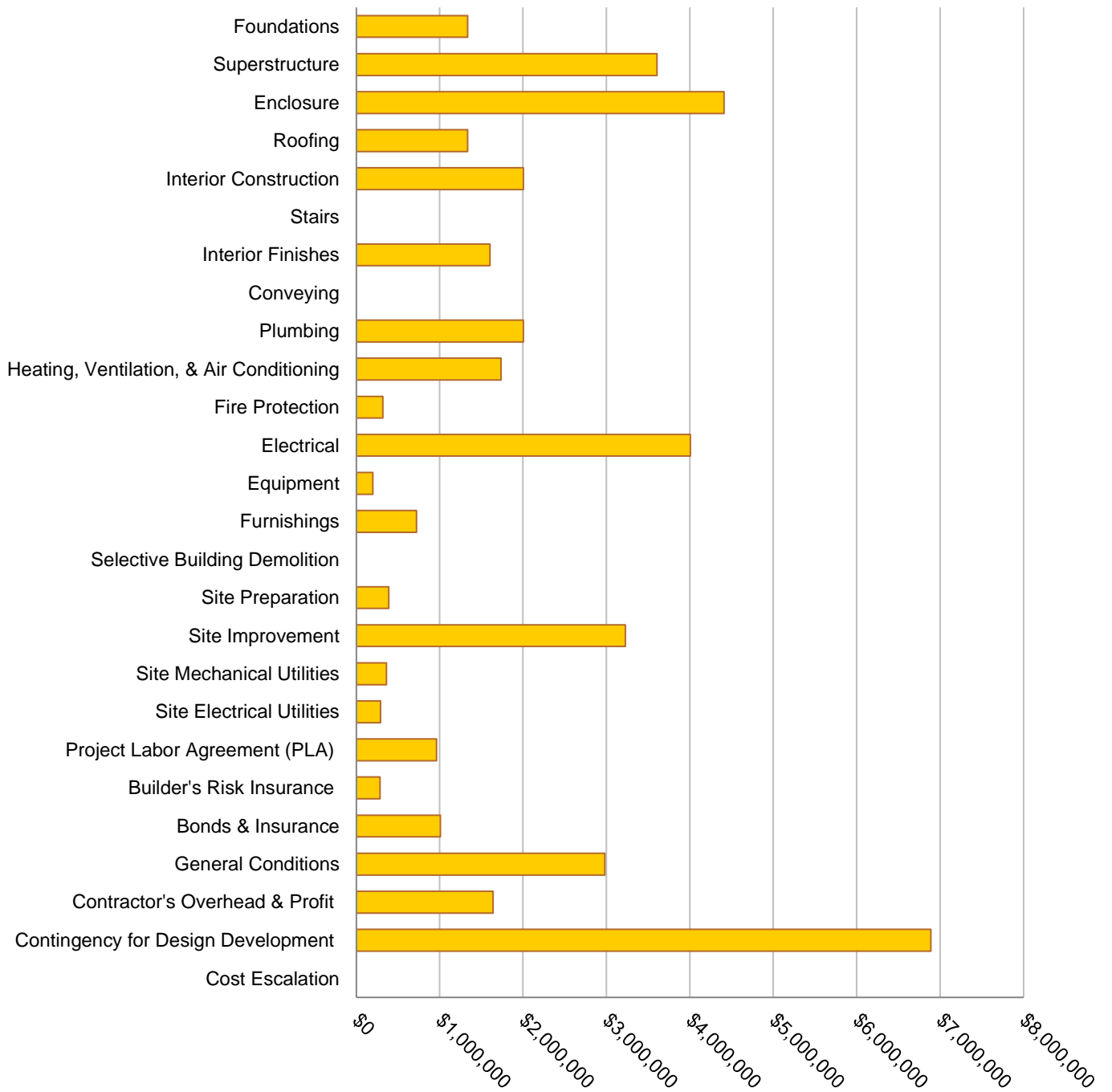
Program Site Area

97,650

<b>CSI UniFormat Summary</b>	<b>26,721 SF</b>	<b>%</b>	<b>\$/SF</b>	<b>\$</b>
Foundations		3%	\$50.00	\$1,336,050
Superstructure		9%	\$135.00	\$3,607,335
Enclosure		11%	\$165.00	\$4,408,965
Roofing		3%	\$50.00	\$1,336,050
Interior Construction		5%	\$75.00	\$2,004,075
Stairs		0%	\$0.00	\$0
Interior Finishes		4%	\$60.00	\$1,603,260
Conveying		0%	\$0.00	\$0
Plumbing		5%	\$75.00	\$2,004,075
Heating, Ventilation, & Air Conditioning		4%	\$65.00	\$1,736,865
Fire Protection		1%	\$12.00	\$320,652
Electrical		10%	\$150.00	\$4,008,150
Equipment		0%	\$7.48	\$200,000
Furnishings		2%	\$27.03	\$722,210
Selective Building Demolition		0%	\$0.00	\$0
<b>Subtotal - Building Construction</b>		<b>56%</b>	<b>\$871.51</b>	<b>\$23,287,687</b>
Site Preparation		1%	\$14.62	\$390,600
Site Improvement		8%	\$120.80	\$3,227,843
Site Mechanical Utilities		1%	\$13.58	\$362,787
Site Electrical Utilities		1%	\$10.99	\$293,716
<b>Subtotal - Sitework</b>		<b>10%</b>	<b>\$159.98</b>	<b>\$4,274,946</b>
<b>Total - Building and Sitework Construction</b>		<b>67%</b>	<b>\$1,031.50</b>	<b>\$27,562,633</b>
Project Labor Agreement (PLA)	3.50%	2%	\$36.10	\$964,692
Builder's Risk Insurance	1.00%	1%	\$10.68	\$285,273
Bonds & Insurance	3.50%	2%	\$37.74	\$1,008,441
General Conditions	10.00%	7%	\$111.60	\$2,982,104
Contractor's Overhead & Profit	5.00%	4%	\$61.38	\$1,640,157
<b>Subtotal</b>		<b>83%</b>	<b>\$1,289.00</b>	<b>\$34,443,300</b>
Contingency for Design Development	20.00%	17%	\$257.80	\$6,888,660
Cost Escalation		<i>NIC/Excluded, See Overall Summary</i>		
<b>TOTAL CONSTRUCTION BUDGET</b>		<b>100%</b>	<b>\$1,546.80</b>	<b>\$41,331,960</b>

NOTE: Inclusions and Exclusions listed in the Commentary Section.

**CSI UniFormat Summary**



FOUNDATIONS	Quantity	Unit	Rate	Total (\$)
Standard Foundations Reinforced concrete shallow column footings, wall footings, grade beams	26,721	GSF	\$30.00	\$801,630
Slab On Grade Reinforced concrete slab on grade, over AB subbase and water vapor barrier	26,721	GSF	\$20.00	\$534,420
<b>Subtotal For Foundations:</b>				<b>\$1,336,050</b>

SUPERSTRUCTURE	Quantity	Unit	Rate	Total (\$)
Vertical Structure Column & shearwall	26,721	GSF	\$35.00	\$935,235
Roof Structure Structural framing and plywood sheathing	26,721	GSF	\$100.00	\$2,672,100
<b>Subtotal For Superstructure:</b>				<b>\$3,607,335</b>

ENCLOSURE	Quantity	Unit	Rate	Total (\$)
Exterior Enclosure Exterior Wall Finishes, Exterior doors/Frames & Door Hardware, Exterior Windows & Exterior Soffit	26,721	GSF	\$165.00	\$4,408,965
<b>Subtotal For Enclosure:</b>				<b>\$4,408,965</b>

ROOFING	Quantity	Unit	Rate	Total (\$)
Roof Coverings Roofing system; including insulation, flashing and sheet metal and parapet cap	26,721	GSF	\$50.00	\$1,336,050
<b>Subtotal For Roofing:</b>				<b>\$1,336,050</b>

INTERIOR CONSTRUCTION	Quantity	Unit	Rate	Total (\$)
Interior Construction Interior partitions, interior windows, interior doors/frames & hardwares, Fittings and Specialties	26,721	GSF	\$75.00	\$2,004,075
<b>Subtotal For Interior Construction:</b>				<b>\$2,004,075</b>

STAIRS	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Stairs:</b>				

INTERIOR FINISHES	Quantity	Unit	Rate	Total (\$)
Interior Finishes Floor, Wall & Ceiling Finishes	26,721	GSF	\$60.00	\$1,603,260
<b>Subtotal For Interior Finishes:</b>				<b>\$1,603,260</b>

CONVEYING	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Conveying:</b>				

PLUMBING	Quantity	Unit	Rate	Total (\$)
Plumbing System Plumbing Fixtures and connection piping; including domestic water, sanitary waste, vent and service piping (including drainage cost for indoor kennel)	26,721	GSF	\$75.00	\$2,004,075
<b>Subtotal For Plumbing:</b>				<b>\$2,004,075</b>

HEATING, VENTILATION, & AIR-CONDITIONING	Quantity	Unit	Rate	Total (\$)
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HVAC

HVAC; including heat generation and chilling equipments, pumps, piping, air handling equipment, air distribution and return, diffusers & return grilles, controls, exhaust ventilation, system testing and balancing

26,721 GSF \$65.00 \$1,736,865

**Subtotal For Heating, Ventilation, & Air-Conditioning: \$1,736,865**

FIRE PROTECTION	Quantity	Unit	Rate	Total (\$)
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Fire Sprinkler System

Automatic fire sprinkler system

26,721 GSF \$12.00 \$320,652

**Subtotal For Fire Protection: \$320,652**

ELECTRICAL	Quantity	Unit	Rate	Total (\$)
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Electrical System

Electrical service & distribution, machine & equipment connections, Lighting & power specialties, lighting switching and control

26,721 GSF \$100.00 \$2,672,100

Low-Voltage

Fire Alarm, Communication, Security & AV System

26,721 GSF \$50.00 \$1,336,050

**Subtotal For Electrical: \$4,008,150**

EQUIPMENT	Quantity	Unit	Rate	Total (\$)
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Commercial Equipments

Pressure washer, dishwasher/sanitizer, breakroom equipments, etc.

1 LS \$200,000.00 \$200,000

**Subtotal For Equipment: \$200,000**

<b>FURNISHINGS</b>	Quantity	Unit	Rate	Total (\$)
<b>Fixed Furnishings</b>				
Pre-fabricated kennel system, cages/condos, play yard	91	EA	\$5,000.00	\$455,000
Fire extinguisher cabinets, walk-off mat, mecho shades/window blinds	26,721	GSF	\$10.00	\$267,210
<b>Moveable Furnishings</b>				
FF&E Allowance				NIC, OFOI
Medical equipments				NIC, OFOI
Conference/meeting tables and chairs				NIC, OFOI
Office tables and chairs				NIC, OFOI
Office workstation/cubicles				NIC, OFOI
<b>Subtotal For Furnishings:</b>				<b>\$722,210</b>

<b>SELECTIVE BUILDING DEMOLITION</b>	Quantity	Unit	Rate	Total (\$)
<i>See Building Demo under Site Preparation Section</i>				
<b>Subtotal For Selective Building Demolition:</b>				

<b>SITE PREPARATION</b>	Quantity	Unit	Rate	Total (\$)
<b>Demolition Of Building</b>				
Demo and remove (E) building				NIC, Excluded
<b>Site Clearing and Demolition</b>				
Site clearing & grading	97,650	SF	\$2.00	\$195,300
Demo and remove of (E) hardscape and landscape	97,650	SF	\$1.00	\$97,650
<b>Site Protective Construction</b>				
Erosion control/SWPP	97,650	SF	\$1.00	\$97,650
<b>Hazardous Materials Abatement</b>				
				NIC, Excluded
<b>Subtotal For Site Preparation:</b>				<b>\$390,600</b>

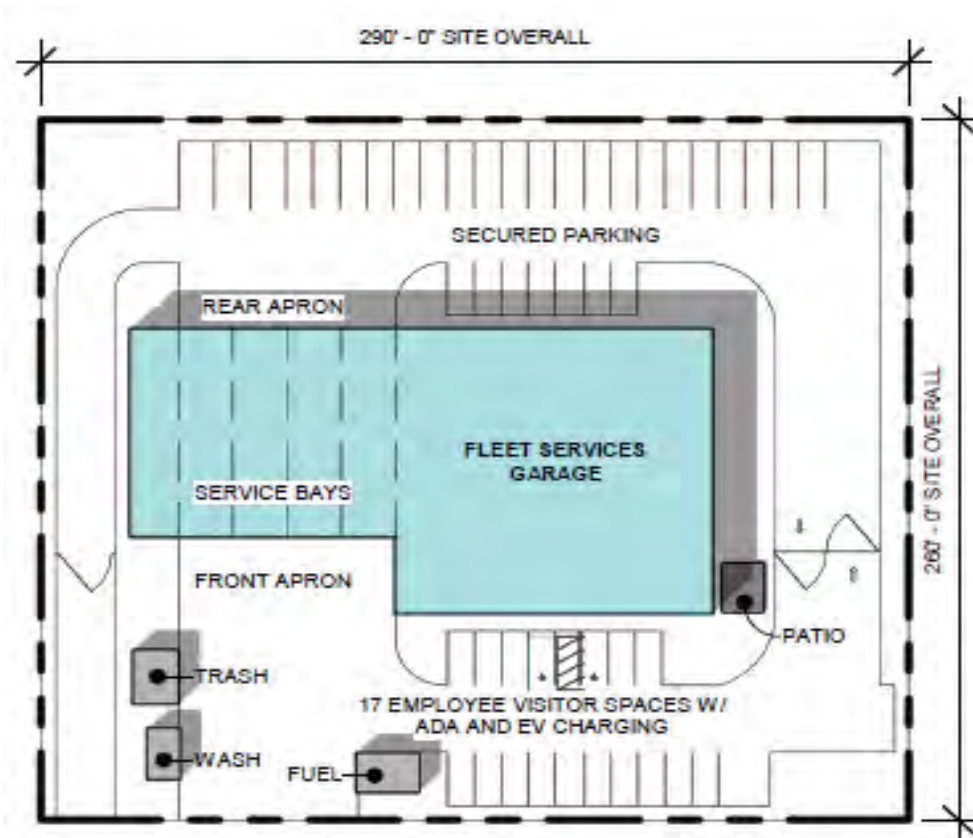
<b>SITE IMPROVEMENT</b>	Quantity	Unit	Rate	Total (\$)
<b>Vehicular Paving</b>				
Parking & driveway, asphalt paving	29,780	SF	\$15.00	\$446,700
Striping & pavement marking	29,780	SF	\$1.00	\$29,780
Concrete curbs & gutter	29,780	SF	\$3.00	\$89,340
Driveway apron/ramp	2	EA	\$10,000.00	\$20,000
<b>Pedestrian Paving</b>				
Pedestrian Walkway	3,000	SF	\$25.00	\$75,000
Interior Courtyard	4,000	SF	\$25.00	\$100,000
Outdoor Play yard	6,800	SF	\$20.00	\$136,000
<b>Landscaping &amp; Irrigation</b>				
Planting including trees	54,070	SF	\$20.00	\$1,081,400
Premium for stormwater/bio-retention area	2,704	SF	\$35.00	\$94,623
Automatic Irrigation	54,070	SF	\$5.00	\$270,350
<b>Site Structure</b>				
Trash Enclosure, covered	360	SF	\$450.00	\$162,000
<b>Fencing &amp; Miscellaneous Accessories</b>				
Perimeter fence and gate, including structural foundation - prorated	1,250	LF	\$500.00	\$625,000
Miscellaneous site furnishing; including flag pole, trash receptacle, bike rack, benches, bollards, etc.	97,650	SF	\$1.00	\$97,650
<b>Subtotal For Site Improvement:</b>				<b>\$3,227,843</b>

<b>SITE MECHANICAL UTILITIES</b>	Quantity	Unit	Rate	Total (\$)
<b>Domestic Water</b>				
Cold water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
<b>Fire Water Service</b>				
Fire water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
<b>Sanitary Sewer</b>				
Sewer line, including connection to (E)	1	LS	\$50,000.00	\$50,000
<b>Storm Drainage</b>				
Storm drain lines & area drain, including connection to (E)	70,929	SF	\$3.00	\$212,787
<b>Subtotal For Site Mechanical Utilities:</b>				<b>\$362,787</b>

(N) Animal Shelter + Site Improv. (Combined Campus) Detail	Job #25902 December 8, 2025
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<b>SITE ELECTRICAL UTILITIES</b>	Quantity	Unit	Rate	Total (\$)
Electrical Service and Distribution Connection to existing	1	LS	\$10,000.00	\$10,000
Site Lighting Site lighting	70,929	SF	\$3.00	\$212,787
Site Communications and Security Allowance	70,929	SF	\$1.00	\$70,929
<b>Subtotal For Site Electrical Utilities:</b>				<b>\$293,716</b>



**FLEET SERVICES GARAGE**

Program Site Area: 75,400 sf

Program Building Area 17,494 sf

Conceptual Cost Plan

**(N) Fleet Service Garage + Site Improv. (Combined Campus)  
ALAMEDA CITY FACILITIES MASTER PLAN**

Control Quantities  
(N) Fleet Service Garage + Site Improv. (Combined Campus) Summary  
Detailed Cost Breakdown

December 8, 2025

Enclosed Areas  
Ground Floor 17,494

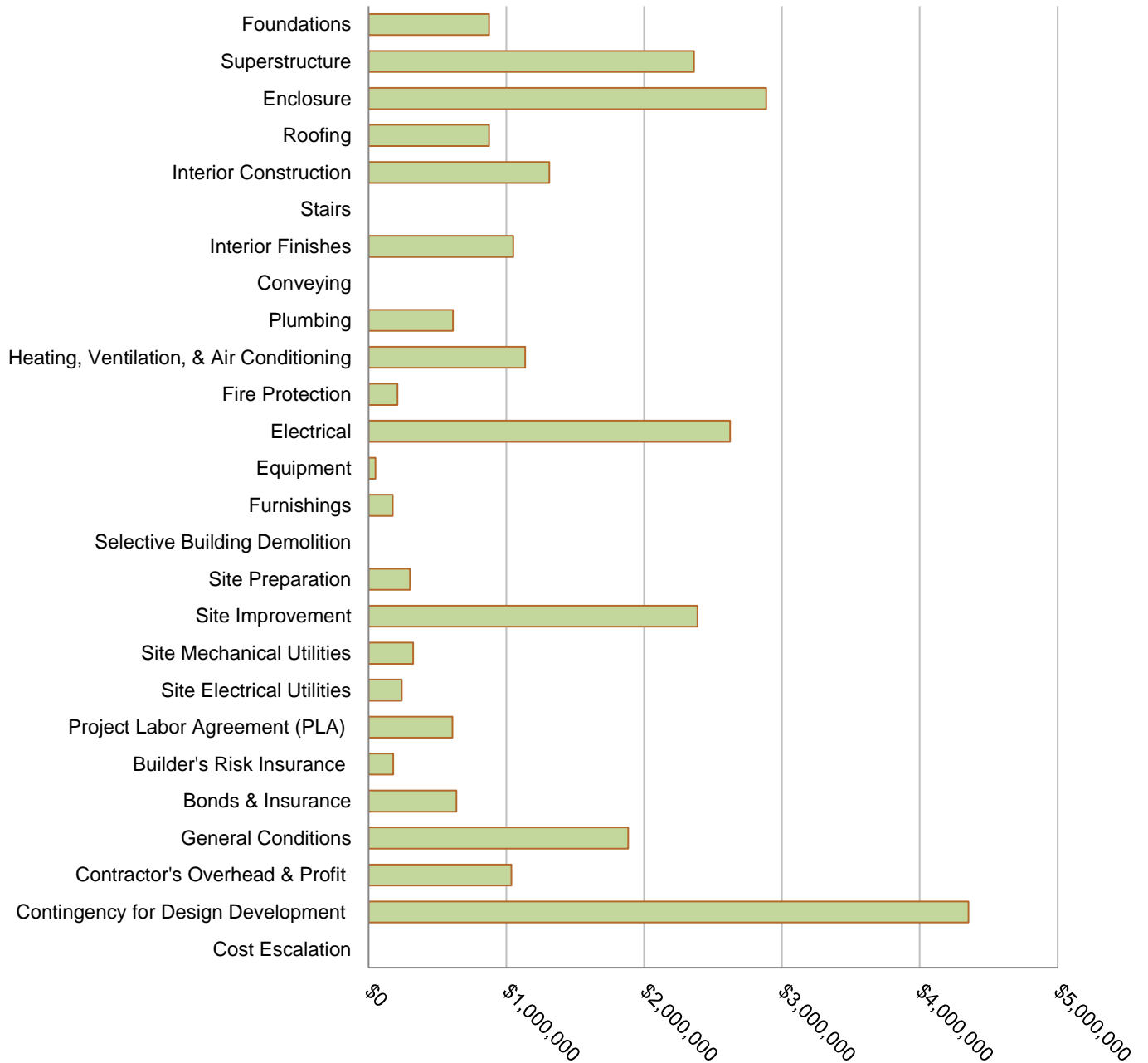
Subtotal of Enclosed Area 17,494

Site Area  
Program Site Area 75,400

<b>CSI UniFormat Summary</b>	<b>17,494 SF</b>	<b>%</b>	<b>\$/SF</b>	<b>\$</b>
Foundations		3%	\$50.00	\$874,700
Superstructure		9%	\$135.00	\$2,361,690
Enclosure		11%	\$165.00	\$2,886,510
Roofing		3%	\$50.00	\$874,700
Interior Construction		5%	\$75.00	\$1,312,050
Stairs		0%	\$0.00	\$0
Interior Finishes		4%	\$60.00	\$1,049,640
Conveying		0%	\$0.00	\$0
Plumbing		2%	\$35.00	\$612,290
Heating, Ventilation, & Air Conditioning		4%	\$65.00	\$1,137,110
Fire Protection		1%	\$12.00	\$209,928
Electrical		10%	\$150.00	\$2,624,100
Equipment		0%	\$2.86	\$50,000
Furnishings		1%	\$10.00	\$174,940
<b>Subtotal - Building Construction</b>		<b>54%</b>	<b>\$809.86</b>	<b>\$14,167,658</b>
Site Preparation		1%	\$17.24	\$301,600
Site Improvement		9%	\$136.49	\$2,387,725
Site Mechanical Utilities		1%	\$18.50	\$323,718
Site Electrical Utilities		1%	\$13.81	\$241,624
<b>Subtotal - Sitework</b>		<b>12%</b>	<b>\$186.04</b>	<b>\$3,254,667</b>
<b>Total - Building and Sitework Construction</b>		<b>67%</b>	<b>\$995.90</b>	<b>\$17,422,325</b>
Project Labor Agreement (PLA)	3.50%	1%	\$34.86	\$609,781
Builder's Risk Insurance	1.00%	0%	\$10.31	\$180,321
Bonds & Insurance	3.50%	2%	\$36.44	\$637,435
General Conditions	10.00%	7%	\$107.75	\$1,884,986
Contractor's Overhead & Profit	5.00%	4%	\$59.26	\$1,036,742
<b>Subtotal</b>		<b>83%</b>	<b>\$1,244.52</b>	<b>\$21,771,591</b>
Contingency for Design Development	20.00%	17%	\$248.90	\$4,354,318
Cost Escalation		NIC/Excluded, See Overall Summary		
<b>TOTAL CONSTRUCTION BUDGET</b>		<b>100%</b>	<b>\$1,493.42</b>	<b>\$26,125,910</b>

NOTE: Inclusions and Exclusions listed in the Commentary Section.

**CSI UniFormat Summary**



FOUNDATIONS	Quantity	Unit	Rate	Total (\$)
Foundation Reinforced concrete shallow column footings, wall footings, grade beams	17,494	GSF	\$30.00	\$524,820
Slab On Grade Reinforced concrete slab on grade, over AB subbase and water vapor barrier	17,494	GSF	\$20.00	\$349,880
<b>Subtotal For Foundations:</b>				<b>\$874,700</b>

SUPERSTRUCTURE	Quantity	Unit	Rate	Total (\$)
Vertical Structure Column & shearwall	17,494	GSF	\$35.00	\$612,290
Roof Structure Structural framing and plywood sheathing	17,494	GSF	\$100.00	\$1,749,400
<b>Subtotal For Superstructure:</b>				<b>\$2,361,690</b>

ENCLOSURE	Quantity	Unit	Rate	Total (\$)
Exterior Enclosure Exterior Wall Finishes, Exterior doors/Frames & Door Hardware, Exterior Windows & Exterior Soffit	17,494	GSF	\$165.00	\$2,886,510
<b>Subtotal For Enclosure:</b>				<b>\$2,886,510</b>

ROOFING	Quantity	Unit	Rate	Total (\$)
Roof Coverings Roofing system; including insulation, flashing and sheet metal and parapet cap	17,494	GSF	\$50.00	\$874,700
<b>Subtotal For Roofing:</b>				<b>\$874,700</b>

INTERIOR CONSTRUCTION	Quantity	Unit	Rate	Total (\$)
Interior Construction Interior partitions, interior windows, interior doors/frames & hardwares, Fittings and Specialties	17,494	GSF	\$75.00	\$1,312,050
<b>Subtotal For Interior Construction:</b>				<b>\$1,312,050</b>

STAIRS	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Stairs:</b>				

INTERIOR FINISHES	Quantity	Unit	Rate	Total (\$)
Interior Finishes Floor, Wall & Ceiling Finishes	17,494	GSF	\$60.00	\$1,049,640
<b>Subtotal For Interior Finishes:</b>				<b>\$1,049,640</b>

CONVEYING	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Conveying:</b>				

PLUMBING	Quantity	Unit	Rate	Total (\$)
Plumbing System Plumbing Fixtures and connection piping; including domestic water, sanitary waste, vent and service piping	17,494	GSF	\$35.00	\$612,290
<b>Subtotal For Plumbing:</b>				<b>\$612,290</b>

HEATING, VENTILATION, & AIR-CONDITIONING	Quantity	Unit	Rate	Total (\$)
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**HVAC**

HVAC; including heat generation and chilling equipments, pumps, piping, air handling equipment, air distribution and return, diffusers & return grilles, controls, exhaust ventilation, system testing and balancing

17,494	GSF	\$65.00	\$1,137,110
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**Subtotal For Heating, Ventilation, & Air-Conditioning: \$1,137,110**

FIRE PROTECTION	Quantity	Unit	Rate	Total (\$)
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**Fire Sprinkler System**

Automatic fire sprinkler system

17,494	GSF	\$12.00	\$209,928
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**Subtotal For Fire Protection: \$209,928**

ELECTRICAL	Quantity	Unit	Rate	Total (\$)
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**Electrical System**

Electrical service & distribution, machine & equipment connections, Lighting & power specialties, lighting switching and control

17,494	GSF	\$100.00	\$1,749,400
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**Low-Voltage**

Fire Alarm, Communication, Security & AV System

17,494	GSF	\$50.00	\$874,700
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**Subtotal For Electrical: \$2,624,100**

EQUIPMENT	Quantity	Unit	Rate	Total (\$)
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**Commercial Equipments**

Breakroom equipments; including refrigerator, microwave, dishwasher

1	LS	\$50,000.00	\$50,000
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**Subtotal For Equipment: \$50,000**

(N) Fleet Service Garage + Site Improv. (Combined Campus) Detail	Job #25902
	December 8, 2025



FURNISHINGS	Quantity	Unit	Rate	Total (\$)
Fixed Furnishing				
Fire extinguisher cabinets, walk-off mat, mecho shades/window blinds, lockers	17,494	GSF	\$10.00	\$174,940
Moveable Furnishings				
FF&E Allowance				NIC, OFOI
Conference/meeting tables and chairs				NIC, OFOI
Office tables and chairs				NIC, OFOI
Office workstation/cubicles				NIC, OFOI
<b>Subtotal For Furnishings:</b>				<b>\$174,940</b>

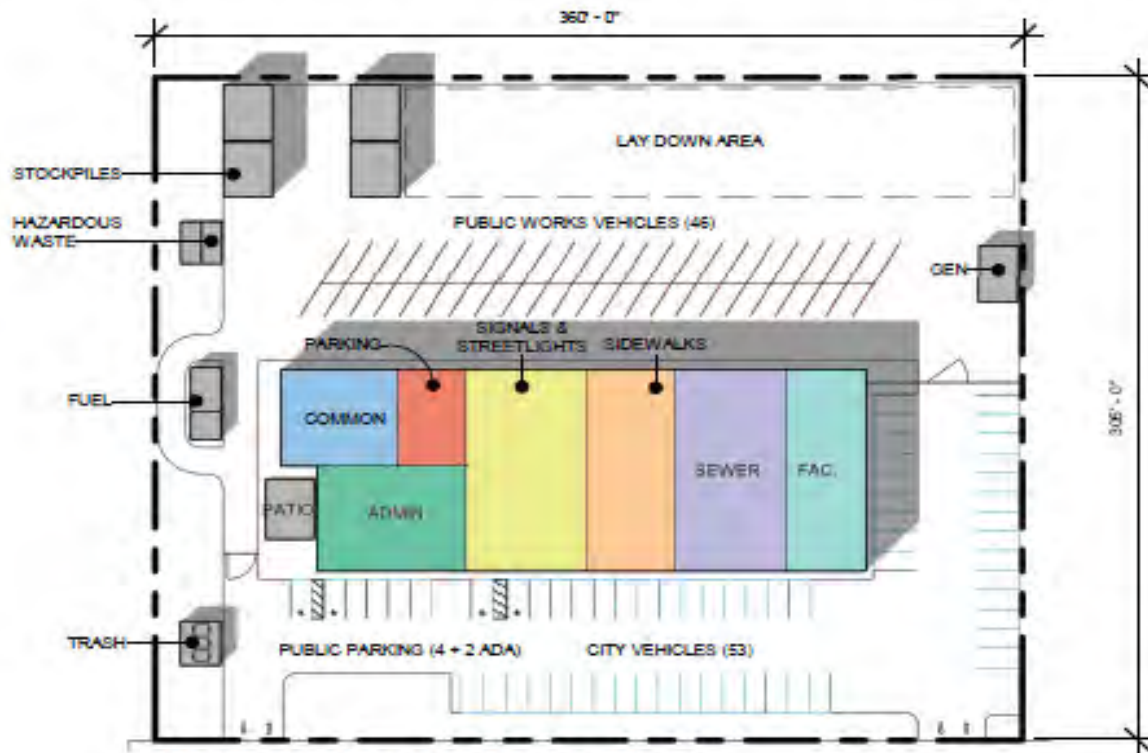
SELECTIVE BUILDING DEMOLITION	Quantity	Unit	Rate	Total (\$)
<i>See Building Demo under Site Preparation Section</i>				
<b>Subtotal For Selective Building Demolition:</b>				

SITE PREPARATION	Quantity	Unit	Rate	Total (\$)
Demolition Of Building				
Demo and remove (E) building				NIC, Excluded
Site Clearing and Demolition				
Site clearing & grading	75,400	SF	\$2.00	\$150,800
Demo and remove of (E) hardscape and landscape	75,400	SF	\$1.00	\$75,400
Site Protective Construction				
Erosion control/SWPP	75,400	SF	\$1.00	\$75,400
Hazardous Materials Abatement				NIC, Excluded
<b>Subtotal For Site Preparation:</b>				<b>\$301,600</b>

SITE IMPROVEMENT	Quantity	Unit	Rate	Total (\$)
<b>Vehicular Paving</b>				
Parking & driveway, asphalt paving	32,900	SF	\$15.00	\$493,500
Front apron, concrete paving	6,000	SF	\$30.00	\$180,000
Striping & pavement marking	38,900	SF	\$1.00	\$38,900
Concrete curbs & gutter	38,900	SF	\$3.00	\$116,700
Driveway apron/ramp	1	EA	\$10,000.00	\$10,000
<b>Pedestrian Paving</b>				
Pedestrian Walkway	7,800	SF	\$25.00	\$195,000
Patio	300	SF	\$25.00	\$7,500
Concrete pad for wash & fuel	557	SF	\$25.00	\$13,925
<b>Landscaping &amp; Irrigation</b>				
Planting including trees	27,843	SF	\$20.00	\$556,860
Premium for stormwater/bio-retention area	1,392	SF	\$35.00	\$48,725
Automatic Irrigation	27,843	SF	\$5.00	\$139,215
<b>Site Structure</b>				
Trash Enclosure, covered	360	SF	\$450.00	\$162,000
Fueling station			<i>NIC, Owner Furnished/Owner Installed</i>	
Washing station			<i>NIC, Owner Furnished/Owner Installed</i>	
<b>Fencing &amp; Miscellaneous Accessories</b>				
Perimeter fence and gate, including structural foundation	700	LF	\$500.00	\$350,000
Miscellaneous site furnishing; including flag pole, trash receptacle, bike rack, benches, bollards, etc.	75,400	SF	\$1.00	\$75,400
<b>Subtotal For Site Improvement:</b>				<b>\$2,387,725</b>

<b>SITE MECHANICAL UTILITIES</b>	Quantity	Unit	Rate	Total (\$)
Domestic Water				
Cold water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
Fire Water Service				
Fire water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
Sanitary Sewer				
Sewer line, including connection to (E)	1	LS	\$50,000.00	\$50,000
Storm Drainage				
Storm drain lines & area drain, including connection to (E)	57,906	SF	\$3.00	\$173,718
<b>Subtotal For Site Mechanical Utilities:</b>				<b>\$323,718</b>

<b>SITE ELECTRICAL UTILITIES</b>	Quantity	Unit	Rate	Total (\$)
Electrical Service and Distribution				
Connection to existing	1	LS	\$10,000.00	\$10,000
Site Lighting				
Site lighting	57,906	SF	\$3.00	\$173,718
Site Communications and Security				
Allowance	57,906	SF	\$1.00	\$57,906
<b>Subtotal For Site Electrical Utilities:</b>				<b>\$241,624</b>



**MAINTENANCE SERVICE CENTER**

Program Site Area: 109,800 sf

Program Building Area 16,400 sf

Conceptual Cost Plan

**(E) Maintenance Service Center (MSC), Remodel & Expand  
ALAMEDA CITY FACILITIES MASTER PLAN**

(E) Maintenance Service Center (MSC), Remodel & Expand Summary  
Detailed Cost Breakdown

December 8, 2025

(E) Maintenance Service Center (MSC), Remodel & Expand Control Quantities	Job #25902
	December 8, 2025

Enclosed Areas

Reuse (E) Maintenance Service Center	16,400
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Subtotal of Enclosed Area	16,400
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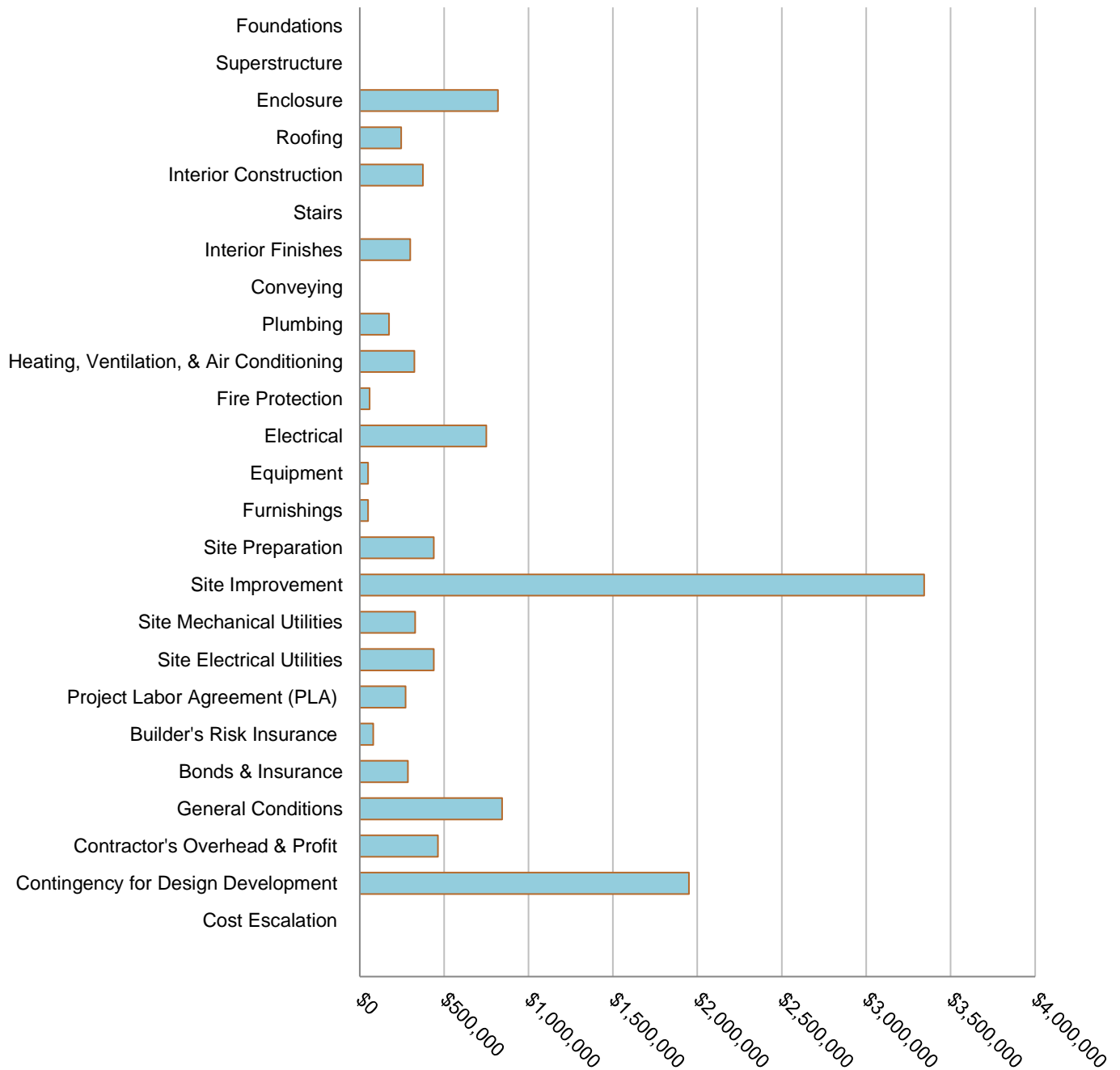
Site Area

Program Site Area	109,800
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<b>CSI UniFormat Summary</b>	<b>16,400 SF</b>	<b>%</b>	<b>\$/SF</b>	<b>\$</b>
Foundations		0%	\$0.00	\$0
Superstructure		0%	\$0.00	\$0
Enclosure		7%	\$50.00	\$820,000
Roofing		2%	\$15.00	\$246,000
Interior Construction		3%	\$22.87	\$375,000
Stairs		0%	\$0.00	\$0
Interior Finishes		3%	\$18.29	\$300,000
Conveying		0%	\$0.00	\$0
Plumbing		1%	\$10.67	\$175,000
Heating, Ventilation, & Air Conditioning		3%	\$19.82	\$325,000
Fire Protection		1%	\$3.66	\$60,000
Electrical		6%	\$45.73	\$750,000
Equipment		0%	\$3.05	\$50,000
Furnishings		0%	\$3.05	\$50,000
Selective Building Demolition		1%	\$6.10	\$100,000
<b>Subtotal - Building Construction</b>		<b>28%</b>	<b>\$198.23</b>	<b>\$3,251,000</b>
Site Preparation		4%	\$26.78	\$439,200
Site Improvement		29%	\$203.84	\$3,343,011
Site Mechanical Utilities		3%	\$20.09	\$329,400
Site Electrical Utilities		4%	\$26.78	\$439,200
<b>Subtotal - Sitework</b>		<b>39%</b>	<b>\$277.49</b>	<b>\$4,550,811</b>
<b>Total - Building and Sitework Construction</b>		<b>67%</b>	<b>\$475.72</b>	<b>\$7,801,811</b>
Project Labor Agreement (PLA)	3.50%	1%	\$16.65	\$273,063
Builder's Risk Insurance	1.00%	0%	\$4.92	\$80,749
Bonds & Insurance	3.50%	2%	\$17.41	\$285,447
General Conditions	10.00%	7%	\$51.47	\$844,107
Contractor's Overhead & Profit	5.00%	4%	\$28.31	\$464,259
<b>Subtotal</b>		<b>83%</b>	<b>\$594.48</b>	<b>\$9,749,435</b>
Contingency for Design Development	20.00%	17%	\$118.90	\$1,949,887
Cost Escalation		<i>NIC/Excluded, See Overall Summary</i>		
<b>TOTAL CONSTRUCTION BUDGET</b>		<b>100%</b>	<b>\$713.37</b>	<b>\$11,699,322</b>

NOTE: Inclusions and Exclusions listed in the Commentary Section.

**CSI UniFormat Summary**



FOUNDATIONS	Quantity	Unit	Rate	Total (\$)
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No Work Anticipated In This Section - Existing To Remain

**Subtotal For Foundations:**  

SUPERSTRUCTURE	Quantity	Unit	Rate	Total (\$)
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No Work Anticipated In This Section - Existing To Remain

**Subtotal For Superstructure:**  

ENCLOSURE	Quantity	Unit	Rate	Total (\$)
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Exterior Enclosure  
Exterior Wall Finishes, Exterior doors/Frames  
& Door Hardware, Exterior Windows & Exterior  
Soffit (allowance for minor modification)

	16,400	GSF	\$50.00	\$820,000
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**Subtotal For Enclosure:** \$820,000

ROOFING	Quantity	Unit	Rate	Total (\$)
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Roof Coverings  
Roofing system; including insulation, flashing  
and sheet metal and parapet cap (allowance  
for minor modification)

	16,400	GSF	\$15.00	\$246,000
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**Subtotal For Roofing:** \$246,000

INTERIOR CONSTRUCTION	Quantity	Unit	Rate	Total (\$)
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Interior Construction  
Interior partitions, interior windows, interior  
doors/frames & hardwares, Fittings and  
Specialties (only 5,000gsf will be renovated)

	5,000	GSF	\$75.00	\$375,000
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**Subtotal For Interior Construction:** \$375,000

STAIRS	Quantity	Unit	Rate	Total (\$)
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No Work Anticipated In This Section

**Subtotal For Stairs:**  

INTERIOR FINISHES	Quantity	Unit	Rate	Total (\$)
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Interior Finishes Floor, Wall & Ceiling Finishes (only 5,000gsf will be renovated)	5,000	GSF	\$60.00	\$300,000
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**Subtotal For Interior Finishes:** \$300,000

CONVEYING	Quantity	Unit	Rate	Total (\$)
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No Work Anticipated In This Section

**Subtotal For Conveying:**  

PLUMBING	Quantity	Unit	Rate	Total (\$)
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Plumbing System Plumbing Fixtures and connection piping; including domestic water, sanitary waste, vent and service piping (only 5,000gsf will be renovated)	5,000	GSF	\$35.00	\$175,000
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**Subtotal For Plumbing:** \$175,000

HEATING, VENTILATION, & AIR-CONDITIONING	Quantity	Unit	Rate	Total (\$)
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HVAC HVAC; including heat generation and chilling equipments, pumps, piping, air handling equipment, air distribution and return, diffusers & return grilles, controls, exhaust ventilation, system testing and balancing (only 5,000gsf will be renovated)	5,000	GSF	\$65.00	\$325,000
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**Subtotal For Heating, Ventilation, & Air-Conditioning:** \$325,000

<b>FIRE PROTECTION</b>	Quantity	Unit	Rate	Total (\$)
Fire Sprinkler System Automatic fire sprinkler system (only 5,000gsf will be renovated)	5,000	GSF	\$12.00	\$60,000
<b>Subtotal For Fire Protection:</b>				<b>\$60,000</b>

<b>ELECTRICAL</b>	Quantity	Unit	Rate	Total (\$)
Electrical System Electrical service & distribution, machine & equipment connections, Lighting & power specialties, lighting switching and control (only 5,000gsf will be renovated)	5,000	GSF	\$100.00	\$500,000
Low-Voltage Fire Alarm, Communication, Security & AV System (only 5,000gsf will be renovated)	5,000	GSF	\$50.00	\$250,000
<b>Subtotal For Electrical:</b>				<b>\$750,000</b>

<b>EQUIPMENT</b>	Quantity	Unit	Rate	Total (\$)
Commercial Equipments Breakroom equipments; including refrigerator, microwave, dishwasher	1	LS	\$50,000.00	\$50,000
<b>Subtotal For Equipment:</b>				<b>\$50,000</b>

<b>FURNISHINGS</b>	Quantity	Unit	Rate	Total (\$)
Fixed Furnishing Fire extinguisher cabinets, walk-off mat, mecho shades/window blinds (only 5,000gsf will be renovated)	5,000	GSF	\$10.00	\$50,000
Moveable Furnishings FF&E Allowance				NIC, OFOI
Conference/meeting tables and chairs				NIC, OFOI
Office tables and chairs				NIC, OFOI
Office workstation/cubicles				NIC, OFOI
<b>Subtotal For Furnishings:</b>				<b>\$50,000</b>

SELECTIVE BUILDING DEMOLITION	Quantity	Unit	Rate	Total (\$)
Selective Demolition Demo and remove (E) interior partition and doors, floor/wall/ceiling finishes, miscellaneous caseworks and plumbing, HVAC, electrical trade (only 5,000gsf will be renovated)	5,000	GSF	\$20.00	\$100,000
<b>Subtotal For Selective Building Demolition:</b>				<b>\$100,000</b>

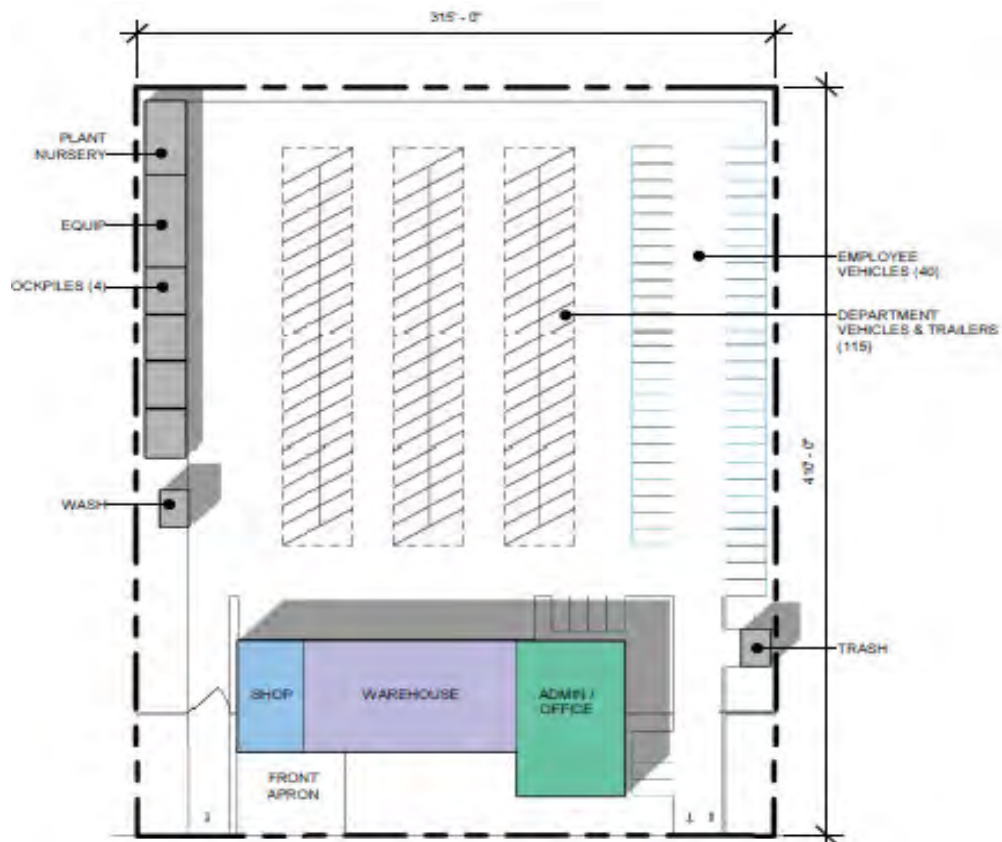
SITE PREPARATION	Quantity	Unit	Rate	Total (\$)
Demolition Of Building Demo and remove (E) building				<i>NIC, Excluded</i>
Site Clearing and Demolition Site clearing & grading	109,800	SF	\$2.00	\$219,600
Demo and remove of (E) hardscape and landscape	109,800	SF	\$1.00	\$109,800
Site Protective Construction Erosion control/SWPP	109,800	SF	\$1.00	\$109,800
Hazardous Materials Abatement				<i>NIC, Excluded</i>
<b>Subtotal For Site Preparation:</b>				<b>\$439,200</b>

SITE IMPROVEMENT	Quantity	Unit	Rate	Total (\$)
Vehicular Paving Parking & driveway, asphalt paving	52,576	SF	\$15.00	\$788,640
Lay Down area	17,500	SF	\$15.00	\$262,500
Striping & pavement marking	70,076	SF	\$1.00	\$70,076
Concrete curbs & gutter	70,076	SF	\$3.00	\$210,228
Driveway apron/ramp	2	EA	\$10,000.00	\$20,000
Pedestrian Paving Pedestrian Walkway	3,436	SF	\$25.00	\$85,900
Patio	600	SF	\$25.00	\$15,000
Concrete pad for fuel	450	SF	\$25.00	\$11,250

<b>SITE IMPROVEMENT</b>	Quantity	Unit	Rate	Total (\$)
Landscaping & Irrigation				
Planting including trees	35,238	SF	\$20.00	\$704,760
Premium for stormwater/bio-retention area	1,762	SF	\$35.00	\$61,667
Automatic Irrigation	35,238	SF	\$5.00	\$176,190
Site Structure				
Trash Enclosure, covered	360	SF	\$450.00	\$162,000
Plant nursery/equipment/4-stockpiles			<i>NIC, Owner Furnished/Owner Installed</i>	
Fueling station			<i>NIC, Owner Furnished/Owner Installed</i>	
Fencing & Miscellaneous Accessories				
Perimeter fence and gate, including structural foundation	1,330	LF	\$500.00	\$665,000
Miscellaneous site furnishing; including flag pole, trash receptacle, bike rack, benches, bollards, etc.	109,800	SF	\$1.00	\$109,800
<b>Subtotal For Site Improvement:</b>				<b>\$3,343,011</b>

<b>SITE MECHANICAL UTILITIES</b>	Quantity	Unit	Rate	Total (\$)
Storm Drainage				
Storm drain lines & area drain, including connection to (E)	109,800	SF	\$3.00	\$329,400
<b>Subtotal For Site Mechanical Utilities:</b>				<b>\$329,400</b>

<b>SITE ELECTRICAL UTILITIES</b>	Quantity	Unit	Rate	Total (\$)
Site Lighting				
Site lighting	109,800	SF	\$3.00	\$329,400
Site Communications and Security				
Allowance	109,800	SF	\$1.00	\$109,800
<b>Subtotal For Site Electrical Utilities:</b>				<b>\$439,200</b>



**RECREATION & PARKS CORP YARD**

Program Site Area: 129,150 sf

Program Building Area 12,987 sf

Conceptual Cost Plan

**(N) Recreation & Parks Corp. Yard + Site Improv. (Combined Campus)**  
**ALAMEDA CITY FACILITIES MASTER PLAN**

Control Quantities  
 (N) Recreation & Parks Corp. Yard + Site Improv. (Combined Campus) Summary  
 Detailed Cost Breakdown

December 8, 2025

(N) Recreation & Parks Corp. Yard + Site Improv. (Combined Campus) Control	Job #25902
	December 8, 2025



Enclosed Areas

(N) Recreation & Parks Corp Yard	12,987
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Subtotal of Enclosed Area	12,987
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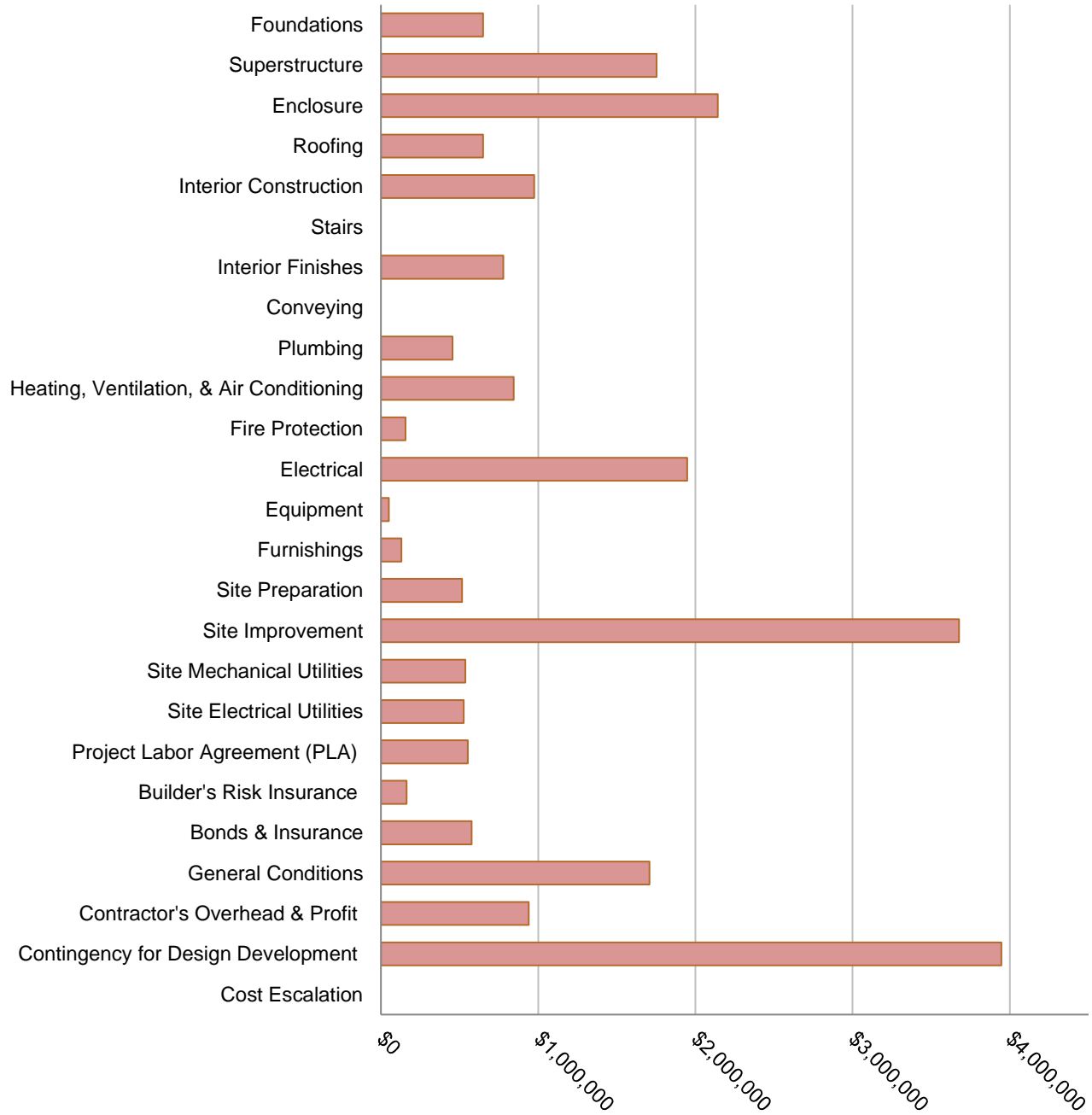
Site Area

Program Site Area	129,150
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<b>CSI Unformat Summary</b>	<b>12,987 SF</b>	<b>%</b>	<b>\$/SF</b>	<b>\$</b>
Foundations		3%	\$50.00	\$649,350
Superstructure		7%	\$135.00	\$1,753,245
Enclosure		9%	\$165.00	\$2,142,855
Roofing		3%	\$50.00	\$649,350
Interior Construction		4%	\$75.00	\$974,025
Stairs		0%	\$0.00	\$0
Interior Finishes		3%	\$60.00	\$779,220
Conveying		0%	\$0.00	\$0
Plumbing		2%	\$35.00	\$454,545
Heating, Ventilation, & Air Conditioning		4%	\$65.00	\$844,155
Fire Protection		1%	\$12.00	\$155,844
Electrical		8%	\$150.00	\$1,948,050
Equipment		0%	\$3.85	\$50,000
Furnishings		1%	\$10.00	\$129,870
Selective Building Demolition		0%	\$0.00	\$0
<b>Subtotal - Building Construction</b>		<b>44%</b>	<b>\$810.85</b>	<b>\$10,530,509</b>
Site Preparation		2%	\$39.78	\$516,600
Site Improvement		16%	\$283.09	\$3,676,550
Site Mechanical Utilities		2%	\$41.38	\$537,450
Site Electrical Utilities		2%	\$40.55	\$526,600
<b>Subtotal - Sitework</b>		<b>22%</b>	<b>\$404.80</b>	<b>\$5,257,200</b>
<b>Total - Building and Sitework Construction</b>		<b>67%</b>	<b>\$1,215.65</b>	<b>\$15,787,709</b>
Project Labor Agreement (PLA)	3.50%	1%	\$42.55	\$552,570
Builder's Risk Insurance	1.00%	0%	\$12.58	\$163,403
Bonds & Insurance	3.50%	2%	\$44.48	\$577,629
General Conditions	10.00%	7%	\$131.53	\$1,708,131
Contractor's Overhead & Profit	5.00%	4%	\$72.34	\$939,472
<b>Subtotal</b>		<b>83%</b>	<b>\$1,519.13</b>	<b>\$19,728,914</b>
Contingency for Design Development	20.00%	17%	\$303.83	\$3,945,783
Cost Escalation		<i>NIC/Excluded, See Overall Summary</i>		
<b>TOTAL CONSTRUCTION BUDGET</b>		<b>100%</b>	<b>\$1,822.95</b>	<b>\$23,674,697</b>

NOTE: Inclusions and Exclusions listed in the Commentary Section.

**CSI Unformat Summary**



<b>FOUNDATIONS</b>	Quantity	Unit	Rate	Total (\$)
Foundation Reinforced concrete shallow column footings, wall footings, grade beams	12,987	GSF	\$30.00	\$389,610
Slab On Grade Reinforced concrete slab on grade, over AB subbase and water vapor barrier	12,987	GSF	\$20.00	\$259,740
<b>Subtotal For Foundations:</b>				<b>\$649,350</b>

<b>SUPERSTRUCTURE</b>	Quantity	Unit	Rate	Total (\$)
Vertical Structure Column & shearwall	12,987	GSF	\$35.00	\$454,545
Roof Structure Structural framing and plywood sheathing	12,987	GSF	\$100.00	\$1,298,700
<b>Subtotal For Superstructure:</b>				<b>\$1,753,245</b>

<b>ENCLOSURE</b>	Quantity	Unit	Rate	Total (\$)
Exterior Enclosure Exterior Wall Finishes, Exterior doors/Frames & Door Hardware, Exterior Windows & Exterior Soffit	12,987	GSF	\$165.00	\$2,142,855
<b>Subtotal For Enclosure:</b>				<b>\$2,142,855</b>

<b>ROOFING</b>	Quantity	Unit	Rate	Total (\$)
Roof Coverings Roofing system; including insulation, flashing and sheet metal and parapet cap	12,987	GSF	\$50.00	\$649,350
<b>Subtotal For Roofing:</b>				<b>\$649,350</b>

INTERIOR CONSTRUCTION	Quantity	Unit	Rate	Total (\$)
Interior Construction Interior partitions, interior windows, interior doors/frames & hardwares, Fittings and Specialties	12,987	GSF	\$75.00	\$974,025
<b>Subtotal For Interior Construction:</b>				<b>\$974,025</b>

STAIRS	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Stairs:</b>				

INTERIOR FINISHES	Quantity	Unit	Rate	Total (\$)
Interior Finishes Floor, Wall & Ceiling Finishes	12,987	GSF	\$60.00	\$779,220
<b>Subtotal For Interior Finishes:</b>				<b>\$779,220</b>

CONVEYING	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Conveying:</b>				

PLUMBING	Quantity	Unit	Rate	Total (\$)
Plumbing System Plumbing Fixtures and connection piping; including domestic water, sanitary waste, vent and service piping	12,987	GSF	\$35.00	\$454,545
<b>Subtotal For Plumbing:</b>				<b>\$454,545</b>

HEATING, VENTILATION, & AIR-CONDITIONING	Quantity	Unit	Rate	Total (\$)
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**HVAC**

HVAC; including heat generation and chilling equipments, pumps, piping, air handling equipment, air distribution and return, diffusers & return grilles, controls, exhaust ventilation, system testing and balancing

12,987	GSF	\$65.00	\$844,155
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<b>Subtotal For Heating, Ventilation, &amp; Air-Conditioning:</b>	<b>\$844,155</b>
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FIRE PROTECTION	Quantity	Unit	Rate	Total (\$)
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**Fire Sprinkler System**

Automatic fire sprinkler system

12,987	GSF	\$12.00	\$155,844
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<b>Subtotal For Fire Protection:</b>	<b>\$155,844</b>
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ELECTRICAL	Quantity	Unit	Rate	Total (\$)
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**Electrical System**

Electrical service & distribution, machine & equipment connections, Lighting & power specialties, lighting switching and control

12,987	GSF	\$100.00	\$1,298,700
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**Low-Voltage**

Fire Alarm, Communication, Security & AV System

12,987	GSF	\$50.00	\$649,350
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<b>Subtotal For Electrical:</b>	<b>\$1,948,050</b>
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EQUIPMENT	Quantity	Unit	Rate	Total (\$)
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**Commercial Equipments**

Breakroom equipments; including refrigerator, microwave, dishwasher

1	LS	\$50,000.00	\$50,000
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<b>Subtotal For Equipment:</b>	<b>\$50,000</b>
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FURNISHINGS	Quantity	Unit	Rate	Total (\$)
Fixed Furnishing				
Fire extinguisher cabinets, walk-off mat, mecho shades/window blinds	12,987	GSF	\$10.00	\$129,870
Moveable Furnishings				
FF&E Allowance				NIC, OFOI
Conference/meeting tables and chairs				NIC, OFOI
Office tables and chairs				NIC, OFOI
Office workstation/cubicles				NIC, OFOI
<b>Subtotal For Furnishings:</b>				<b>\$129,870</b>

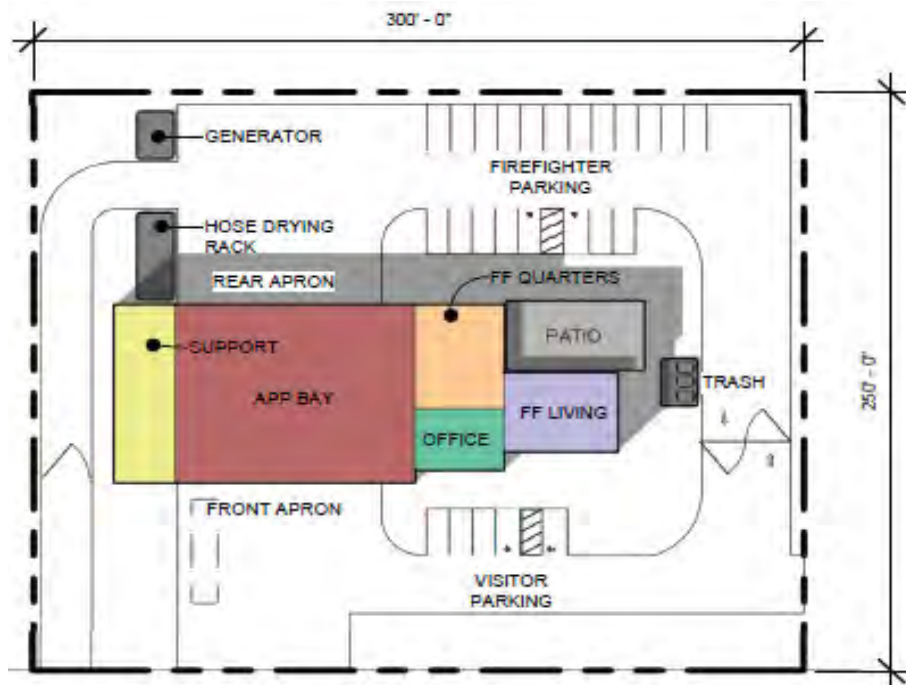
SELECTIVE BUILDING DEMOLITION	Quantity	Unit	Rate	Total (\$)
<i>See Building Demo under Site Preparation Section</i>				
<b>Subtotal For Selective Building Demolition:</b>				

SITE PREPARATION	Quantity	Unit	Rate	Total (\$)
Demolition Of Building				
Demo and remove (E) building				NIC, Excluded
Site Clearing and Demolition				
Site clearing & grading	129,150	SF	\$2.00	\$258,300
Demo and remove of (E) hardscape and landscape	129,150	SF	\$1.00	\$129,150
Site Protective Construction				
Erosion control/SWPP	129,150	SF	\$1.00	\$129,150
Hazardous Materials Abatement				NIC, Excluded
<b>Subtotal For Site Preparation:</b>				<b>\$516,600</b>

SITE IMPROVEMENT	Quantity	Unit	Rate	Total (\$)
<b>Vehicular Paving</b>				
Parking & driveway, asphalt paving	105,050	SF	\$15.00	\$1,575,750
Front apron, concrete paving	2,600	SF	\$30.00	\$78,000
Striping & pavement marking	107,650	SF	\$1.00	\$107,650
Concrete curbs & gutter	107,650	SF	\$3.00	\$322,950
Driveway apron/ramp	2	EA	\$10,000.00	\$20,000
<b>Pedestrian Paving</b>				
Pedestrian Walkway	10,600	SF	\$25.00	\$265,000
Concrete pad for wash	300	SF	\$25.00	\$7,500
<b>Landscaping &amp; Irrigation</b>				
Planting including trees	10,600	SF	\$20.00	\$212,000
Premium for stormwater/bio-retention area	530	SF	\$35.00	\$18,550
Automatic Irrigation	10,600	SF	\$5.00	\$53,000
<b>Site Structure</b>				
Trash Enclosure, covered	360	SF	\$450.00	\$162,000
Plant nursery/equipment/4-stockpiles			<i>NIC, Owner Furnished/Owner Installed</i>	
Washing station			<i>NIC, Owner Furnished/Owner Installed</i>	
<b>Fencing &amp; Miscellaneous Accessories</b>				
Perimeter fence and gate, including structural foundation	1,450	LF	\$500.00	\$725,000
Miscellaneous site furnishing; including flag pole, trash receptacle, bike rack, benches, bollards, etc.	129,150	SF	\$1.00	\$129,150
<b>Subtotal For Site Improvement:</b>				<b>\$3,676,550</b>

SITE MECHANICAL UTILITIES	Quantity	Unit	Rate	Total (\$)
<b>Domestic Water</b>				
Cold water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
<b>Fire Water Service</b>				
Fire water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
<b>Sanitary Sewer</b>				
Sewer line, including connection to (E)	1	LS	\$50,000.00	\$50,000
<b>Storm Drainage</b>				
Storm drain lines & area drain, including connection to (E)	129,150	SF	\$3.00	\$387,450
<b>Subtotal For Site Mechanical Utilities:</b>				<b>\$537,450</b>

SITE ELECTRICAL UTILITIES	Quantity	Unit	Rate	Total (\$)
<b>Electrical Service and Distribution</b>				
Connection to existing	1	LS	\$10,000.00	\$10,000
<b>Site Lighting</b>				
Site lighting	129,150	SF	\$3.00	\$387,450
<b>Site Communications and Security</b>				
Allowance	129,150	SF	\$1.00	\$129,150
<b>Subtotal For Site Electrical Utilities:</b>				<b>\$526,600</b>



**FIRE STATION 1**

Program Site Area: 75,000 sf

Program Building Area 12,742 sf

Conceptual Cost Plan

**(E) Fire Station #1: Expand Into Admin Area**  
**ALAMEDA CITY FACILITIES MASTER PLAN**

Control Quantities  
 (E) Fire Station #1: Expand Into Admin Area Summary  
 Detailed Cost Breakdown

December 8, 2025

(E) Fire Station #1: Expand Into Admin Area Control Quantities	Job #25902
	December 8, 2025

Enclosed Areas

(E) Fire Station #1, Expand Into Admin Area 12,742

Subtotal of Enclosed Area 12,742 -

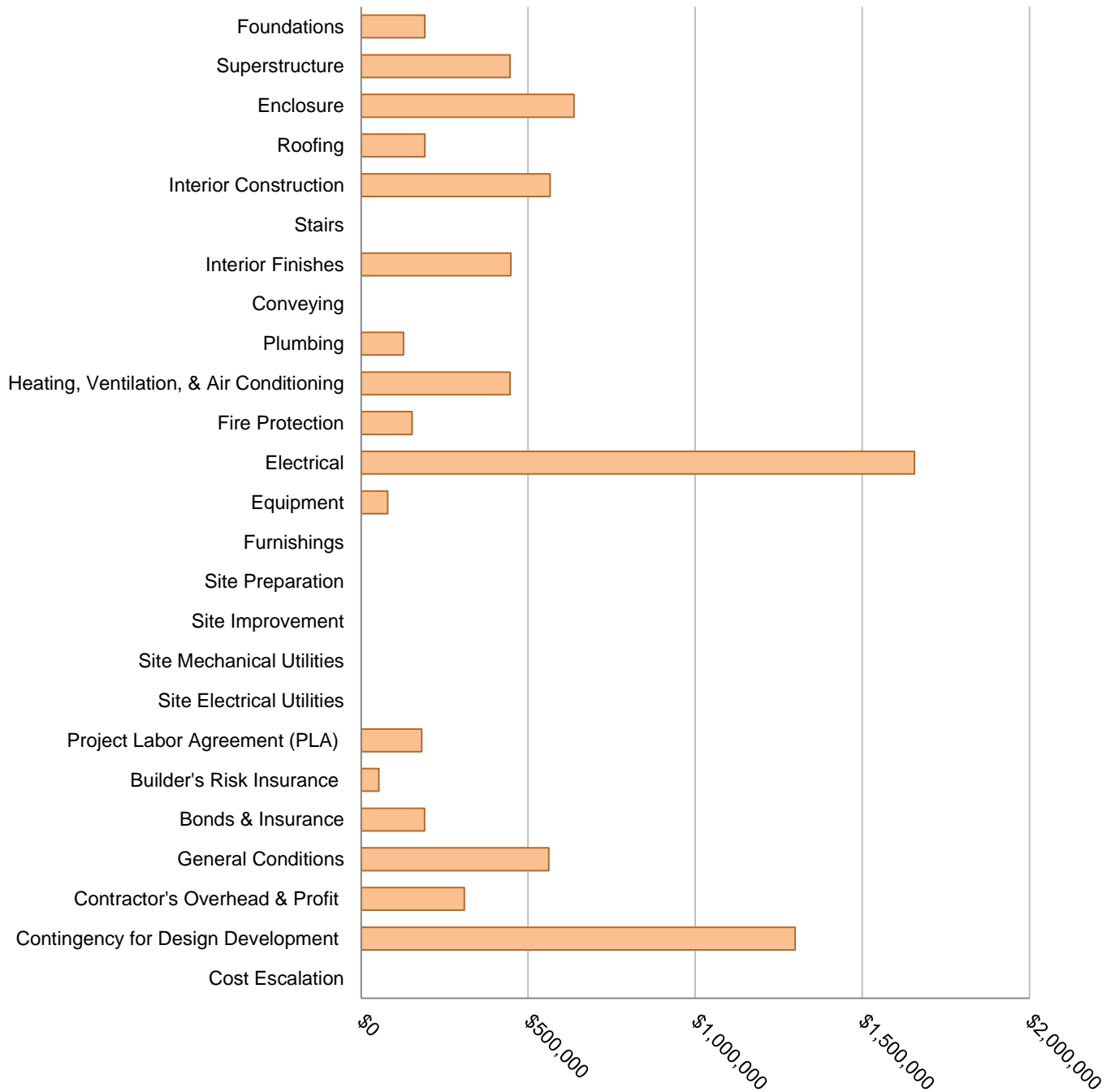
Site Area

Program Site Area 75,000

<b>CSI Unformat Summary</b>	<b>12,742 SF</b>	<b>%</b>	<b>\$/SF</b>	<b>\$</b>
Foundations		2%	\$15.00	\$191,130
Superstructure		6%	\$35.00	\$445,970
Enclosure		8%	\$50.00	\$637,100
Roofing		2%	\$15.00	\$191,130
Interior Construction		7%	\$44.39	\$565,596
Stairs		0%	\$0.00	\$0
Interior Finishes		6%	\$35.18	\$448,260
Conveying		0%	\$0.00	\$0
Plumbing		2%	\$10.00	\$127,420
Heating, Ventilation, & Air Conditioning		6%	\$35.00	\$445,970
Fire Protection		2%	\$12.00	\$152,904
Electrical		21%	\$130.00	\$1,656,460
Equipment		1%	\$6.28	\$80,000
Furnishings		0%	\$0.00	\$0
Selective Building Demolition		3%	\$20.00	\$254,840
<b>Subtotal - Building Construction</b>		<b>67%</b>	<b>\$407.85</b>	<b>\$5,196,780</b>
Site Preparation		0%	\$0.00	\$0
Site Improvement		0%	\$0.00	\$0
Site Mechanical Utilities		0%	\$0.00	\$0
Site Electrical Utilities		0%	\$0.00	\$0
<b>Subtotal - Sitework</b>		<b>0%</b>	<b>\$0.00</b>	<b>\$0</b>
<b>Total - Building and Sitework Construction</b>		<b>67%</b>	<b>\$407.85</b>	<b>\$5,196,780</b>
Project Labor Agreement (PLA)	3.50%	0%	\$14.27	\$181,887
Builder's Risk Insurance	1.00%	0%	\$4.22	\$53,787
Bonds & Insurance	3.50%	2%	\$14.92	\$190,136
General Conditions	10.00%	7%	\$44.13	\$562,259
Contractor's Overhead & Profit	5.00%	4%	\$24.27	\$309,242
<b>Subtotal</b>		<b>83%</b>	<b>\$509.66</b>	<b>\$6,494,091</b>
Contingency for Design Development	20.00%	17%	\$101.93	\$1,298,818
Cost Escalation		<i>NIC/Excluded, See Overall Summary</i>		
<b>TOTAL CONSTRUCTION BUDGET</b>		<b>100%</b>	<b>\$611.59</b>	<b>\$7,792,910</b>

NOTE: Inclusions and Exclusions listed in the Commentary Section.

**CSI Unformat Summary**



FOUNDATIONS	Quantity	Unit	Rate	Total (\$)
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Tier 1 Seismic Retrofit - Voluntary Perform geotechnical investigation to determine soil properties of building site and confirm if soil is liquifiable. Pending geotechnical results, enhance existing spread footings as required to seismic overturning forces and bearing pressures - Allow	12,742	GSF	\$15.00	\$191,130
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**Subtotal For Foundations: \$191,130**

SUPERSTRUCTURE	Quantity	Unit	Rate	Total (\$)
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Tier 1 Seismic Retrofit - Voluntary Seismic strengthening; install roof-to-wall anchors, such as steel rod hold downs at the masonry walls or new blocking and sheet metal clips	12,742	GSF	\$35.00	\$445,970
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**Subtotal For Superstructure: \$445,970**

ENCLOSURE	Quantity	Unit	Rate	Total (\$)
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Exterior Enclosure Exterior Wall Finishes, Exterior doors/Frames & Door Hardware, Exterior Windows & Exterior Soffit (allowance for minor modification)	12,742	GSF	\$50.00	\$637,100
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**Subtotal For Enclosure: \$637,100**

ROOFING	Quantity	Unit	Rate	Total (\$)
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Roof Coverings Roofing system; including insulation, flashing and sheet metal and parapet cap (allowance for minor modification)	12,742	GSF	\$15.00	\$191,130
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**Subtotal For Roofing: \$191,130**

INTERIOR CONSTRUCTION	Quantity	Unit	Rate	Total (\$)
Interior Construction Interior partitions, interior windows, interior doors/frames & hardwares, Fittings and Specialties				
Full renovation	2,200	SF	\$75.00	\$165,000
Minor renovation	10,542	SF	\$38.00	\$400,596
<b>Subtotal For Interior Construction:</b>				<b>\$565,596</b>

STAIRS	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Stairs:</b>				

INTERIOR FINISHES	Quantity	Unit	Rate	Total (\$)
Floor, Wall & Ceiling Finishes				
Full renovation	2,200	SF	\$60.00	\$132,000
Minor renovation	10,542	SF	\$30.00	\$316,260
<b>Subtotal For Interior Finishes:</b>				<b>\$448,260</b>

CONVEYING	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Conveying:</b>				

PLUMBING	Quantity	Unit	Rate	Total (\$)
Plumbing System Plumbing Fixtures and connection piping; including domestic water, sanitary waste, vent and service piping; Plumbing distribution and fixtures are in working order - allow for minimum work)				
	12,742	GSF	\$10.00	\$127,420
<b>Subtotal For Plumbing:</b>				<b>\$127,420</b>

HEATING, VENTILATION, & AIR-CONDITIONING	Quantity	Unit	Rate	Total (\$)
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HVAC

HVAC; including heat generation and chilling equipments, pumps, piping, air handling equipment, air distribution and return, diffusers & return grilles, controls, exhaust ventilation, system testing and balancing; Exhaust systems in the shop, turnout room, exercise room and future medical supply-narcotics room need replacement, exhaust in the kitchen and common restroom and lockers rooms need replacement

12,742 GSF \$35.00 \$445,970

**Subtotal For Heating, Ventilation, & Air-Conditioning: \$445,970**

FIRE PROTECTION	Quantity	Unit	Rate	Total (\$)
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Fire Sprinkler System

Automatic fire sprinkler system (minor modification affected by the remodel works)

12,742 GSF \$12.00 \$152,904

**Subtotal For Fire Protection: \$152,904**

ELECTRICAL	Quantity	Unit	Rate	Total (\$)
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Electrical System

Electrical service & distribution, machine & equipment connections, Lighting & power specialties, lighting switching and control

12,742 GSF \$100.00 \$1,274,200

Low-Voltage

Fire Alarm, Communication, Security & AV System

12,742 GSF \$30.00 \$382,260

**Subtotal For Electrical: \$1,656,460**

<b>EQUIPMENT</b>	Quantity	Unit	Rate	Total (\$)
<b>Commercial Equipments</b>				
Kitchen equipments; including refrigerator, microwave, dishwasher, washer/dryer, range/oven, etc.	1	LS	\$50,000.00	\$50,000
Fire station equipments; including extractor, turnout gear dryer, etc.	1	LS	\$30,000.00	\$30,000
<b>Subtotal For Equipment:</b>				<b>\$80,000</b>

<b>FURNISHINGS</b>	Quantity	Unit	Rate	Total (\$)
<b>Fixed Furnishing</b>				
Fire extinguisher cabinets, walk-off mat, mecho shades/window blinds, turn-out lockers				<i>NIC, Existing To Remain</i>
<b>Moveable Furnishings</b>				
FF&E Allowance				<i>NIC, OFOI</i>
Conference/meeting tables and chairs				<i>NIC, OFOI</i>
Office tables and chairs				<i>NIC, OFOI</i>
Office workstation/cubicles				<i>NIC, OFOI</i>
Recliner chair				<i>NIC, OFOI</i>
Dining room table and chair				<i>NIC, OFOI</i>
<b>Subtotal For Furnishings:</b>				

<b>SELECTIVE BUILDING DEMOLITION</b>	Quantity	Unit	Rate	Total (\$)
<b>Selective Demolition</b>				
Demo and remove (E) interior partition and doors, floor/wall/ceiling finishes, miscellaneous caseworks and plumbing, HVAC, electrical	12,742	GSF	\$20.00	\$254,840
<b>Subtotal For Selective Building Demolition:</b>				<b>\$254,840</b>

(E) Fire Station #1: Expand Into Admin Area Detail	Job #25902
	December 8, 2025



SITE PREPARATION	Quantity	pr	Rate	Total (\$)
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No Work Anticipated In This Section - On Existing Site

**Subtotal For Site Preparation:**

SITE IMPROVEMENT	Quantity	Unit	Rate	Total (\$)
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No Work Anticipated In This Section - On Existing Site

**Subtotal For Site Improvement:**

SITE MECHANICAL UTILITIES	Quantity	Unit	Rate	Total (\$)
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No Work Anticipated In This Section - On Existing Site

**Subtotal For Site Mechanical Utilities:**

SITE ELECTRICAL UTILITIES	Quantity	Unit	Rate	Total (\$)
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No Work Anticipated In This Section - On Existing Site

**Subtotal For Site Electrical Utilities:**

Conceptual Cost Plan

**(N) Fire Admin Bldg.: Relocate To (N) Fire Stn.#5**  
**ALAMEDA CITY FACILITIES MASTER PLAN**

Control Quantities  
(N) Fire Admin Bldg.: Relocate To (N) Fire Stn.#5 Summary  
Detailed Cost Breakdown

December 8, 2025

(N) Fire Admin Bldg.: Relocate To (N) Fire Stn.#5 Control Quantities	Job #25902
	December 8, 2025

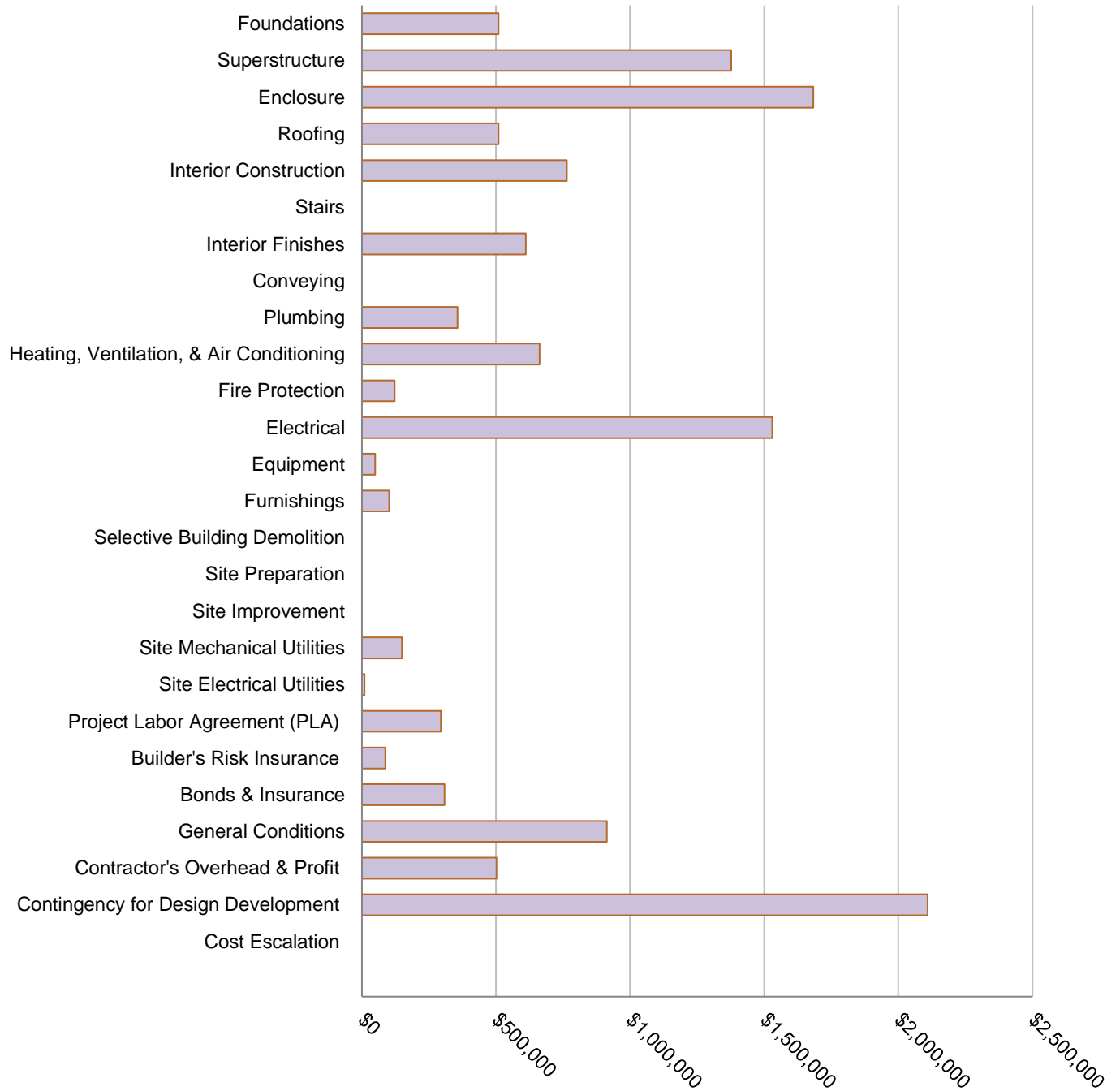


Enclosed Area	
(N) Fire Administration Building	10,200
Subtotal of Enclosed Area	10,200

<b>CSI UniFormat Summary</b>	<b>10,200 SF</b>	<b>%</b>	<b>\$/SF</b>	<b>\$,000</b>
Foundations		4%	\$50.00	\$510,000
Superstructure		11%	\$135.00	\$1,377,000
Enclosure		13%	\$165.00	\$1,683,000
Roofing		4%	\$50.00	\$510,000
Interior Construction		6%	\$75.00	\$765,000
Stairs		0%	\$0.00	\$0
Interior Finishes		5%	\$60.00	\$612,000
Conveying		0%	\$0.00	\$0
Plumbing		3%	\$35.00	\$357,000
Heating, Ventilation, & Air Conditioning		5%	\$65.00	\$663,000
Fire Protection		1%	\$12.00	\$122,400
Electrical		12%	\$150.00	\$1,530,000
Equipment		0%	\$4.90	\$50,000
Furnishings		1%	\$10.00	\$102,000
Selective Building Demolition		0%	\$0.00	\$0
<b>Subtotal - Building Construction</b>		<b>65%</b>	<b>\$811.90</b>	<b>\$8,281,400</b>
Site Preparation		0%	\$0.00	\$0
Site Improvement		0%	\$0.00	\$0
Site Mechanical Utilities		1%	\$14.71	\$150,000
Site Electrical Utilities		0%	\$0.98	\$10,000
<b>Subtotal - Sitework</b>		<b>1%</b>	<b>\$15.69</b>	<b>\$160,000</b>
<b>Total - Building and Sitework Construction</b>		<b>67%</b>	<b>\$827.59</b>	<b>\$8,441,400</b>
Project Labor Agreement (PLA)	3.50%	1%	\$28.97	\$295,449
Builder's Risk Insurance	1.00%	0%	\$8.57	\$87,368
Bonds & Insurance	3.50%	2%	\$30.28	\$308,848
General Conditions	10.00%	7%	\$89.54	\$913,307
Contractor's Overhead & Profit	5.00%	4%	\$49.25	\$502,319
<b>Subtotal</b>		<b>83%</b>	<b>\$1,034.19</b>	<b>\$10,548,690</b>
Contingency for Design Development	20.00%	17%	\$206.84	\$2,109,738
Cost Escalation		<i>NIC/Excluded, See Overall Summary</i>		
<b>TOTAL CONSTRUCTION BUDGET</b>		<b>100%</b>	<b>\$1,241.02</b>	<b>\$12,658,428</b>

NOTE: Inclusions and Exclusions listed in the Commentary Section.

**CSI UniFormat Summary**



FOUNDATIONS	Quantity	Unit	Rate	Total (\$)
Foundation Reinforced concrete shallow column footings, wall footings, grade beams	10,200	GSF	\$30.00	\$306,000
Slab On Grade Reinforced concrete slab on grade, over AB subbase and water vapor barrier	10,200	GSF	\$20.00	\$204,000
<b>Subtotal For Foundations:</b>				<b>\$510,000</b>

SUPERSTRUCTURE	Quantity	Unit	Rate	Total (\$)
Vertical Structure Column & shearwall	10,200	GSF	\$35.00	\$357,000
Roof Structure Structural framing and plywood sheathing	10,200	GSF	\$100.00	\$1,020,000
<b>Subtotal For Superstructure:</b>				<b>\$1,377,000</b>

ENCLOSURE	Quantity	Unit	Rate	Total (\$)
Exterior Enclosure Exterior Wall Finishes, Exterior doors/Frames & Door Hardware, Exterior Windows & Exterior Soffit	10,200	GSF	\$165.00	\$1,683,000
<b>Subtotal For Enclosure:</b>				<b>\$1,683,000</b>

ROOFING	Quantity	Unit	Rate	Total (\$)
Roof Coverings Roofing system; including insulation, flashing and sheet metal and parapet cap	10,200	GSF	\$50.00	\$510,000
<b>Subtotal For Roofing:</b>				<b>\$510,000</b>

INTERIOR CONSTRUCTION	Quantity	Unit	Rate	Total (\$)
Interior Construction Interior partitions, interior windows, interior doors/frames & hardwares, Fittings and Specialties	10,200	GSF	\$75.00	\$765,000
<b>Subtotal For Interior Construction:</b>				<b>\$765,000</b>

STAIRS	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Stairs:</b>				

INTERIOR FINISHES	Quantity	Unit	Rate	Total (\$)
Interior Finishes Floor, Wall & Ceiling Finishes	10,200	GSF	\$60.00	\$612,000
<b>Subtotal For Interior Finishes:</b>				<b>\$612,000</b>

CONVEYING	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Conveying:</b>				

PLUMBING	Quantity	Unit	Rate	Total (\$)
Plumbing System Plumbing Fixtures and connection piping; including domestic water, sanitary waste, vent and service piping	10,200	GSF	\$35.00	\$357,000
<b>Subtotal For Plumbing:</b>				<b>\$357,000</b>

HEATING, VENTILATION, & AIR-CONDITIONING	Quantity	Unit	Rate	Total (\$)
HVAC HVAC; including heat generation and chilling equipments, pumps, piping, air handling equipment, air distribution and return, diffusers & return grilles, controls, exhaust ventilation, system testing and balancing	10,200	GSF	\$65.00	\$663,000
<b>Subtotal For Heating, Ventilation, &amp; Air-Conditioning:</b>				<b>\$663,000</b>

FIRE PROTECTION	Quantity	Unit	Rate	Total (\$)
Fire Sprinkler System Automatic fire sprinkler system	10,200	GSF	\$12.00	\$122,400
<b>Subtotal For Fire Protection:</b>				<b>\$122,400</b>

ELECTRICAL	Quantity	Unit	Rate	Total (\$)
Electrical System Electrical service & distribution, machine & equipment connections, Lighting & power specialties, lighting switching and control	10,200	GSF	\$100.00	\$1,020,000
Low-Voltage Fire Alarm, Communication, Security & AV System	10,200	GSF	\$50.00	\$510,000
<b>Subtotal For Electrical:</b>				<b>\$1,530,000</b>

EQUIPMENT	Quantity	Unit	Rate	Total (\$)
Commercial Equipments Breakroom equipments; including refrigerator, microwave, dishwasher	1	LS	\$50,000.00	\$50,000
<b>Subtotal For Equipment:</b>				<b>\$50,000</b>

FURNISHINGS	Quantity	Unit	Rate	Total (\$)
Fixed Furnishing				
Fire extinguisher cabinets, walk-off mat, mecho shades/window blinds	10,200	GSF	\$10.00	\$102,000
Moveable Furnishings				
FF&E Allowance				NIC, OFOI
Conference/meeting tables and chairs				NIC, OFOI
Office tables and chairs				NIC, OFOI
Office workstation/cubicles				NIC, OFOI
<b>Subtotal For Furnishings:</b>				<b>\$102,000</b>

SELECTIVE BUILDING DEMOLITION	Quantity	Unit	Rate	Total (\$)
<i>See Building Demo under Site Preparation Section</i>				
<b>Subtotal For Selective Building Demolition:</b>				

SITE PREPARATION	Quantity	Unit	Rate	Total (\$)
Demolition Of Building				
Demo and remove (E) building				<i>Included In FS#5 Section</i>
Site Clearing and Demolition				
Site clearing & grading				<i>Included In FS#5 Section</i>
Demo and remove of (E) hardscape and landscape				<i>Included In FS#5 Section</i>
Site Protective Construction				
Erosion control/SWPP				<i>Included In FS#5 Section</i>
Hazardous Materials Abatement				<i>NIC, Excluded</i>
<b>Subtotal For Site Preparation:</b>				

SITE IMPROVEMENT	Quantity	Unit	Rate	Total (\$)
Vehicular Paving				<i>Included In FS#5 Section</i>
Pedestrian Paving				<i>Included In FS#5 Section</i>
Landscaping & Irrigation				<i>Included In FS#5 Section</i>
Fencing & Miscellaneous Accessories				<i>Included In FS#5 Section</i>
<b>Subtotal For Site Improvement:</b>				

SITE MECHANICAL UTILITIES	Quantity	Unit	Rate	Total (\$)
Domestic Water				
Cold water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
Fire Water Service				
Fire water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
Sanitary Sewer				
Sewer line, including connection to (E)	1	LS	\$50,000.00	\$50,000
Storm Drainage				
Storm drain lines & area drain, including connection to (E)				<i>Included In FS#5 Section</i>
<b>Subtotal For Site Mechanical Utilities:</b>				<b>\$150,000</b>

SITE ELECTRICAL UTILITIES	Quantity	Unit	Rate	Total (\$)
Electrical Service and Distribution				
Connection to existing	1	LS	\$10,000.00	\$10,000
Site Lighting				
Site lighting				<i>Included In FS#5 Section</i>
Site Communications and Security				
Allowance				<i>Included In FS#5 Section</i>
<b>Subtotal For Site Electrical Utilities:</b>				<b>\$10,000</b>



## **Alameda Fire Station No. 2**

Conceptual Cost Plan

### **(E) Fire Station #2: Remodel (Without Truck)** **ALAMEDA CITY FACILITIES MASTER PLAN**

Control Quantities  
(E) Fire Station #2: Remodel (Without Truck) Summary  
Detailed Cost Breakdown

December 8, 2025

(E) Fire Station #2: Remodel (Without Truck) Control Quantities	Job #25902
	December 8, 2025

Enclosed Areas

Remodel (E) Fire Station #2, without truck	11,260
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Subtotal of Enclosed Area	11,260
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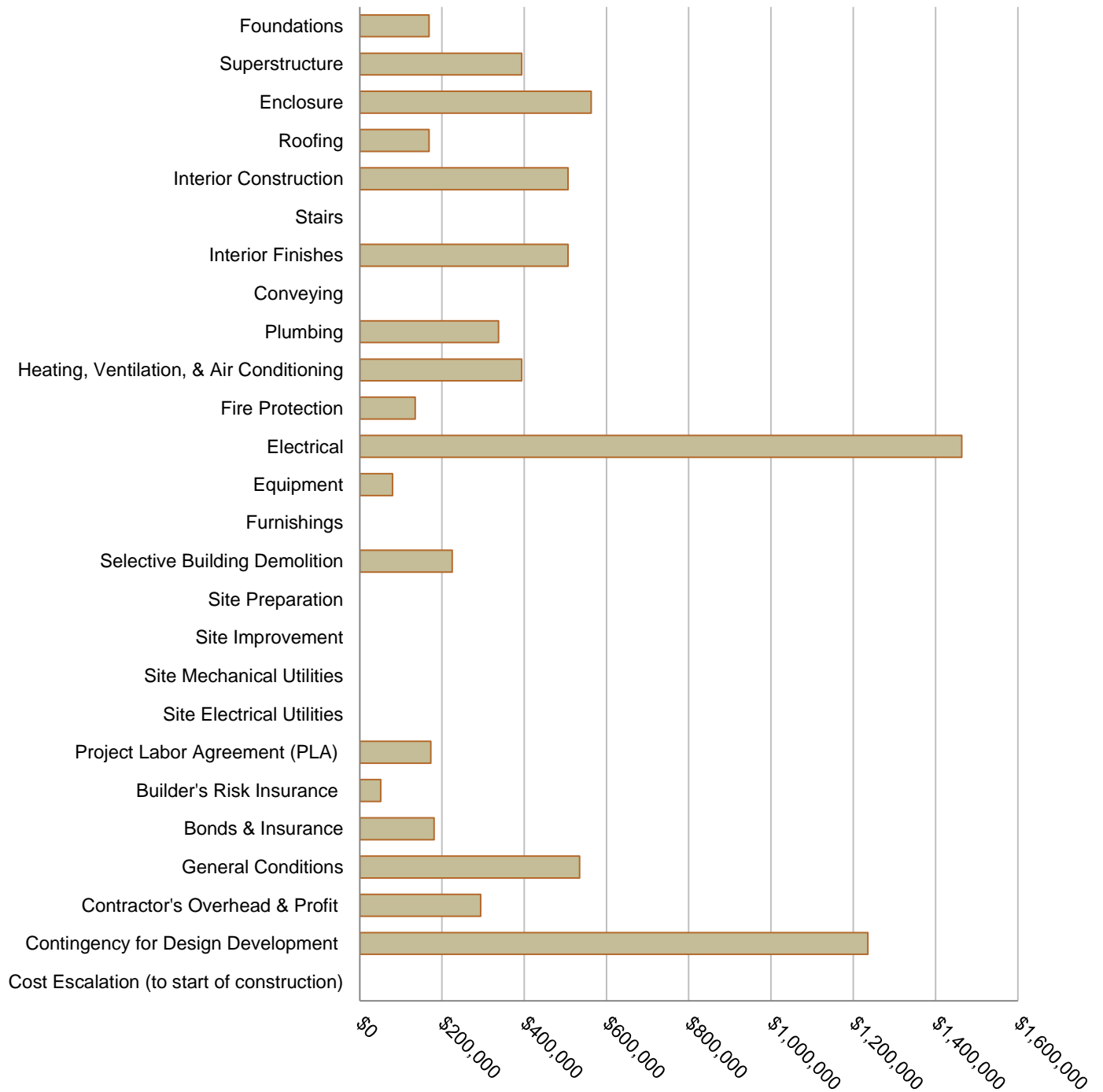
Site Area

Program Site Area	72,500
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<b>CSI UniFormat Summary</b>	<b>11,260 SF</b>	<b>%</b>	<b>\$/SF</b>	<b>\$</b>
Foundations		2%	\$15.00	\$168,900
Superstructure		5%	\$35.00	\$394,100
Enclosure		8%	\$50.00	\$563,000
Roofing		2%	\$15.00	\$168,900
Interior Construction		7%	\$45.00	\$506,700
Stairs		0%	\$0.00	\$0
Interior Finishes		7%	\$45.00	\$506,700
Conveying		0%	\$0.00	\$0
Plumbing		5%	\$30.00	\$337,800
Heating, Ventilation, & Air Conditioning		5%	\$35.00	\$394,100
Fire Protection		2%	\$12.00	\$135,120
Electrical		20%	\$130.00	\$1,463,800
Equipment		1%	\$7.10	\$80,000
Furnishings		0%	\$0.00	\$0
Selective Building Demolition		3%	\$20.00	\$225,200
<b>Subtotal - Building Construction</b>		<b>67%</b>	<b>\$439.10</b>	<b>\$4,944,320</b>
Site Preparation		0%	\$0.00	\$0
Site Improvement		0%	\$0.00	\$0
Site Mechanical Utilities		0%	\$0.00	\$0
Site Electrical Utilities		0%	\$0.00	\$0
<b>Subtotal - Sitework</b>		<b>0%</b>	<b>\$0.00</b>	<b>\$0</b>
<b>Total - Building and Sitework Construction</b>		<b>67%</b>	<b>\$439.10</b>	<b>\$4,944,320</b>
Project Labor Agreement (PLA)	3.50%	0%	\$15.37	\$173,051
Builder's Risk Insurance	1.00%	0%	\$4.54	\$51,174
Bonds & Insurance	3.50%	2%	\$16.07	\$180,899
General Conditions	10.00%	7%	\$47.51	\$534,944
Contractor's Overhead & Profit	5.00%	4%	\$26.13	\$294,219
<b>Subtotal</b>		<b>83%</b>	<b>\$548.72</b>	<b>\$6,178,607</b>
Contingency for Design Development	20.00%	17%	\$109.74	\$1,235,721
Cost Escalation (to start of construction)		<i>NIC/Excluded, See Overall Summary</i>		
<b>TOTAL CONSTRUCTION BUDGET</b>		<b>100%</b>	<b>\$658.47</b>	<b>\$7,414,328</b>

NOTE: Inclusions and Exclusions listed in the Commentary Section.

**CSI UniFormat Summary**



(E) Fire Station #2: Remodel (Without Truck) Detail	Job #25902
	December 8, 2025

FOUNDATIONS	Quantity	Unit	Rate	Total (\$)
Tier 1 Seismic Retrofit - Voluntary				
Obtain geotechnical analysis of the site to determine all soil-structure interaction parameters including liquefaction analysis and foundation type recommendations. If significant liquefaction problem is present, the mitigation will likely be extensive - Allowance				
	11,260	GSF	\$15.00	\$168,900
<b>Subtotal For Foundations:</b>				<b>\$168,900</b>

SUPERSTRUCTURE	Quantity	Unit	Rate	Total (\$)
Tier 1 Seismic Retrofit - Voluntary				
Seismic strengthening; If remediation or retrofit is to be seriously considered, obtain detailed as-built survey to determine the wood shear wall and floor layout, sheathing type, and create as-built plans - Allowance				
	11,260	GSF	\$35.00	\$394,100
<b>Subtotal For Superstructure:</b>				<b>\$394,100</b>

ENCLOSURE	Quantity	Unit	Rate	Total (\$)
Exterior Enclosure				
Exterior Wall Finishes, Exterior doors/Frames & Door Hardware, Exterior Windows & Exterior Soffit (allowance for minor modification)				
	11,260	GSF	\$50.00	\$563,000
<b>Subtotal For Enclosure:</b>				<b>\$563,000</b>

ROOFING	Quantity	Unit	Rate	Total (\$)
Roof Coverings				
Roofing system; including insulation, flashing and sheet metal and parapet cap (allowance for minor modification)				
	11,260	GSF	\$15.00	\$168,900
<b>Subtotal For Roofing:</b>				<b>\$168,900</b>

(E) Fire Station #2: Remodel (Without Truck) Detail	Job #25902
	December 8, 2025



INTERIOR CONSTRUCTION	Quantity	Unit	Rate	Total (\$)
Interior Construction Interior partitions, interior windows, interior doors/frames & hardwares, Fittings and Specialties	11,260	GSF	\$45.00	\$506,700
<b>Subtotal For Interior Construction:</b>				<b>\$506,700</b>

STAIRS	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Stairs:</b>				

INTERIOR FINISHES	Quantity	Unit	Rate	Total (\$)
Interior Finishes Floor, Wall & Ceiling Finishes	11,260	GSF	\$45.00	\$506,700
<b>Subtotal For Interior Finishes:</b>				<b>\$506,700</b>

CONVEYING	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Conveying:</b>				

PLUMBING	Quantity	Unit	Rate	Total (\$)
Plumbing System Plumbing Fixtures and connection piping; including domestic water, sanitary waste, vent and service piping; Toilet and sinks in the large, shared restrooms need replacement, combustion air needs to be brought up to code	11,260	GSF	\$30.00	\$337,800
<b>Subtotal For Plumbing:</b>				<b>\$337,800</b>

(E) Fire Station #2: Remodel (Without Truck) Detail	Job #25902
	December 8, 2025



HEATING, VENTILATION, & AIR-CONDITIONING	Quantity	Unit	Rate	Total (\$)
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**HVAC**

HVAC; including heat generation and chilling equipments, pumps, piping, air handling equipment, air distribution and return, diffusers & return grilles, controls, exhaust ventilation, system testing and balancing; the (E) ducting in the ceiling and crawl space need replacement, the plymovent vehicle exhaust in the App Bay has a fan that need replacement, exhaust system in the kitchen and restrooms need replacement

11,260	GSF	\$35.00	\$394,100
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**Subtotal For Heating, Ventilation, & Air-Conditioning: \$394,100**

FIRE PROTECTION	Quantity	Unit	Rate	Total (\$)
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**Fire Sprinkler System**

Automatic fire sprinkler system (minor modification affected by the remodel works)

11,260	GSF	\$12.00	\$135,120
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**Subtotal For Fire Protection: \$135,120**

ELECTRICAL	Quantity	Unit	Rate	Total (\$)
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**Electrical System**

Electrical service & distribution, machine & equipment connections, Lighting & power specialties, lighting switching and control

11,260	GSF	\$100.00	\$1,126,000
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**Low-Voltage**

Fire Alarm, Communication, Security & AV System

11,260	GSF	\$30.00	\$337,800
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**Subtotal For Electrical: \$1,463,800**

(E) Fire Station #2: Remodel (Without Truck) Detail	Job #25902
	December 8, 2025

EQUIPMENT	Quantity	Unit	Rate	Total (\$)
<b>Commercial Equipments</b>				
Kitchen equipments; including refrigerator, microwave, dishwasher, washer/dryer, range/oven, etc.	1	LS	\$50,000.00	\$50,000
Fire station equipments; including extractor, turnout gear dryer, etc.	1	LS	\$30,000.00	\$30,000
<b>Subtotal For Equipment:</b>				<b>\$80,000</b>

FURNISHINGS	Quantity	Unit	Rate	Total (\$)
<b>Fixed Furnishing</b>				
Fire extinguisher cabinets, walk-off mat, mecho shades/window blinds, turn-out lockers				<i>NIC, Existing To Remain</i>
<b>Moveable Furnishings</b>				
FF&E Allowance				<i>NIC, OFOI</i>
Conference/meeting tables and chairs				<i>NIC, OFOI</i>
Office tables and chairs				<i>NIC, OFOI</i>
Office workstation/cubicles				<i>NIC, OFOI</i>
Recliner chair				<i>NIC, OFOI</i>
Dining room table and chair				<i>NIC, OFOI</i>
<b>Subtotal For Furnishings:</b>				

SELECTIVE BUILDING DEMOLITION	Quantity	Unit	Rate	Total (\$)
<b>Selective Demolition</b>				
Demo and remove (E) interior partition and doors, floor/wall/ceiling finishes, miscellaneous caseworks and plumbing/HVAC/electrical trade	11,260	GSF	\$20.00	\$225,200
<b>Subtotal For Selective Building Demolition:</b>				<b>\$225,200</b>



## Conceptual Cost Plan

### **(E) Fire Station #4: Minor Repairs** **ALAMEDA CITY FACILITIES MASTER PLAN**

Control Quantities  
(E) Fire Station #4: Minor Repairs Summary  
Detailed Cost Breakdown

December 8, 2025

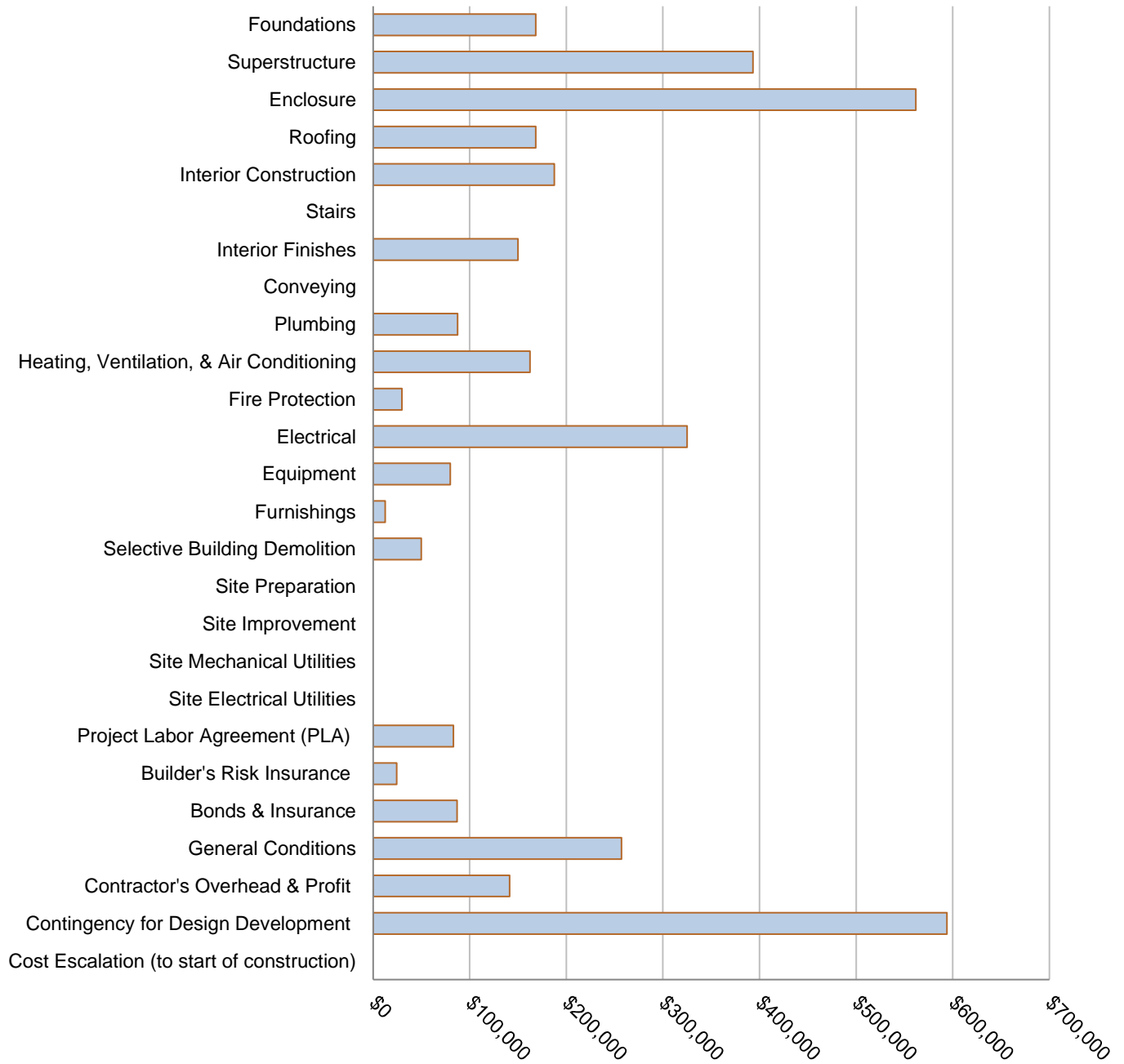
(E) Fire Station #4: Minor Repairs Control Quantities	Job #25902
	December 8, 2025

Enclosed Areas	
(E) Fire Station #4	11,234
Subtotal of Enclosed Area	11,234

<b>CSI UniFormat Summary</b>	<b>11,234 SF</b>	<b>%</b>	<b>\$/SF</b>	<b>\$</b>
Foundations		5%	\$15.00	\$168,510
Superstructure		11%	\$35.00	\$393,190
Enclosure		16%	\$50.00	\$561,700
Roofing		5%	\$15.00	\$168,510
Interior Construction		5%	\$16.69	\$187,500
Stairs		0%	\$0.00	\$0
Interior Finishes		4%	\$13.35	\$150,000
Conveying		0%	\$0.00	\$0
Plumbing		2%	\$7.79	\$87,500
Heating, Ventilation, & Air Conditioning		5%	\$14.47	\$162,500
Fire Protection		1%	\$2.67	\$30,000
Electrical		9%	\$28.93	\$325,000
Equipment		2%	\$7.12	\$80,000
Furnishings		0%	\$1.11	\$12,500
Selective Building Demolition		1%	\$4.45	\$50,000
<b>Subtotal - Building Construction</b>		<b>67%</b>	<b>\$211.58</b>	<b>\$2,376,910</b>
Site Preparation		0%	\$0.00	\$0
Site Improvement		0%	\$0.00	\$0
Site Mechanical Utilities		0%	\$0.00	\$0
Site Electrical Utilities		0%	\$0.00	\$0
<b>Subtotal - Sitework</b>		<b>0%</b>	<b>\$0.00</b>	<b>\$0</b>
<b>Total - Building and Sitework Construction</b>		<b>67%</b>	<b>\$211.58</b>	<b>\$2,376,910</b>
Project Labor Agreement (PLA)	3.50%	0%	\$7.41	\$83,192
Builder's Risk Insurance	1.00%	0%	\$2.19	\$24,601
Bonds & Insurance	3.50%	2%	\$7.74	\$86,965
General Conditions	10.00%	7%	\$22.89	\$257,167
Contractor's Overhead & Profit	5.00%	4%	\$12.59	\$141,442
<b>Subtotal</b>		<b>83%</b>	<b>\$264.40</b>	<b>\$2,970,276</b>
Contingency for Design Development	20.00%	17%	\$52.88	\$594,055
Cost Escalation (to start of construction)		<i>NIC/Excluded, See Overall Summary</i>		
<b>TOTAL CONSTRUCTION BUDGET</b>		<b>100%</b>	<b>\$317.28</b>	<b>\$3,564,331</b>

NOTE: Inclusions and Exclusions listed in the Commentary Section.

**CSI UniFormat Summary**



**FOUNDATIONS**

	Quantity	Unit	Rate	Total (\$)
Tier 1 Seismic Retrofit - Voluntary Perform geotechnical investigation to determine soil properties of building site and confirm if soil is liquifiable - Allow	11,234	GSF	\$15.00	\$168,510
<b>Subtotal For Foundations:</b>				<b>\$168,510</b>

**SUPERSTRUCTURE**

	Quantity	Unit	Rate	Total (\$)
Tier 1 Seismic Retrofit - Voluntary Seismic strengthening; install hold-downs at the shearwalls missing hold-downs, retrofit the beam to column connections at the steel moment frames with additional steel plates & welds, add flange bracing at the steel moment frame beams , perform additional analysis of the wood shear walls, steel moment frames and beams	11,234	GSF	\$35.00	\$393,190
<b>Subtotal For Superstructure:</b>				<b>\$393,190</b>

**ENCLOSURE**

	Quantity	Unit	Rate	Total (\$)
Exterior Enclosure Exterior Wall Finishes, Exterior doors/Frames & Door Hardware, Exterior Windows & Exterior Soffit (allowance for minor modification)	11,234	GSF	\$50.00	\$561,700
<b>Subtotal For Enclosure:</b>				<b>\$561,700</b>

**ROOFING**

	Quantity	Unit	Rate	Total (\$)
Roof Coverings Roofing system; including insulation, flashing and sheet metal and parapet cap (allowance for minor modification)	11,234	GSF	\$15.00	\$168,510
<b>Subtotal For Roofing:</b>				<b>\$168,510</b>

**INTERIOR CONSTRUCTION**

Quantity Unit Rate Total (\$)

## Interior Construction

Interior partitions, interior windows, interior doors/frames &amp; hardwares, Fittings and Specialties (only 2,500gsf will be renovated)

2,500 SF \$75.00 \$187,500

**Subtotal For Interior Construction: \$187,500****STAIRS**

Quantity Unit Rate Total (\$)

*No Work Anticipated In This Section***Subtotal For Stairs:****INTERIOR FINISHES**

Quantity Unit Rate Total (\$)

## Interior Finishes

Floor, Wall &amp; Ceiling Finishes (only 2,500gsf will be renovated)

2,500 SF \$60.00 \$150,000

**Subtotal For Interior Finishes: \$150,000****CONVEYING**

Quantity Unit Rate Total (\$)

*No Work Anticipated In This Section***Subtotal For Conveying:****PLUMBING**

Quantity Unit Rate Total (\$)

## Plumbing System

Plumbing Fixtures and connection piping; including domestic water, sanitary waste, vent and service piping; Plumbing distribution and fixtures are in working order (only 2,500gsf will be renovated)

2,500 SF \$35.00 \$87,500

**Subtotal For Plumbing: \$87,500**

**HEATING, VENTILATION, & AIR-CONDITIONING**

Quantity Unit Rate Total (\$)

**HVAC**

HVAC; including heat generation and chilling equipments, pumps, piping, air handling equipment, air distribution and return, diffusers & return grilles, controls, exhaust ventilation, system testing and balancing; (N) exhaust fans needed on the roof for the shop & turn-out rooms, 2-wall exhaust fans and kitchen exhaust fan need replacement)(only 2,500gsf will be renovated)

2,500 SF \$65.00 \$162,500

**Subtotal For Heating, Ventilation, & Air-Conditioning: \$162,500**

**FIRE PROTECTION**

Quantity Unit Rate Total (\$)

**Fire Sprinkler System**

Automatic fire sprinkler system (minor modification affected by the remodel works)(only 2,500gsf will be renovated)

2,500 SF \$12.00 \$30,000

**Subtotal For Fire Protection: \$30,000**

**ELECTRICAL**

Quantity Unit Rate Total (\$)

**Electrical System**

Electrical service & distribution, machine & equipment connections, Lighting & power specialties, lighting switching and control (only 2,500gsf will be renovated)

2,500 SF \$100.00 \$250,000

**Low-Voltage**

Fire Alarm, Communication, Security & AV System (only 2,500gsf will be renovated)

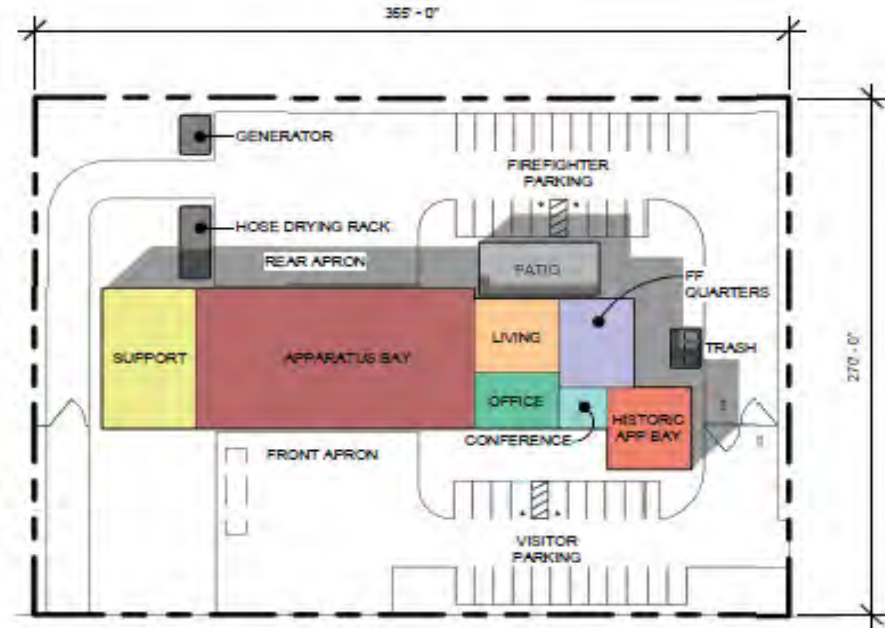
2,500 SF \$30.00 \$75,000

**Subtotal For Electrical: \$325,000**

<b>EQUIPMENT</b>	Quantity	Unit	Rate	Total (\$)
<b>Commercial Equipments</b>				
Kitchen equipments; including refrigerator, microwave, dishwasher, washer/dryer, range/oven, etc.	1	LS	\$50,000.00	\$50,000
Fire station equipments; including extractor, turnout gear dryer, etc.	1	LS	\$30,000.00	\$30,000
<b>Subtotal For Equipment:</b>				<b>\$80,000</b>

<b>FURNISHINGS</b>	Quantity	Unit	Rate	Total (\$)
<b>Fixed Furnishings</b>				
Fire extinguisher cabinets, walk-off mat, mecho shades/window blinds, turn-out lockers (only 2,500gsf will be renovated)	2,500	SF	\$5.00	\$12,500
<b>Moveable Furnishings</b>				
FF&E Allowance				NIC, OFOI
Conference/meeting tables and chairs				NIC, OFOI
Office tables and chairs				NIC, OFOI
Office workstation/cubicles				NIC, OFOI
Recliner chair				NIC, OFOI
Dining room table and chair				NIC, OFOI
<b>Subtotal For Furnishings:</b>				<b>\$12,500</b>

<b>SELECTIVE BUILDING DEMOLITION</b>	Quantity	Unit	Rate	Total (\$)
<b>Selective Demolition</b>				
Demo and remove (E) interior partition and doors, floor/wall/ceiling finishes, miscellaneous caseworks and plumbing, HVAC, electrical trade (only 2,500gsf will be renovated)	2,500	SF	\$20.00	\$50,000
<b>Subtotal For Selective Building Demolition:</b>				<b>\$50,000</b>



**FIRE STATION 5**  
 Program Site Area: 95,850 sf  
 Program Building Area 22,659 sf

Conceptual Cost Plan

**(N) Fire Station #5 + Site Improvement**  
**ALAMEDA CITY FACILITIES MASTER PLAN**

Control Quantities  
 (N) Fire Station #5 + Site Improvement Summary  
 Detailed Cost Breakdown

December 8, 2025

Enclosed Areas

(N) Fire Station #5

22,659

Subtotal of Enclosed Area

22,659

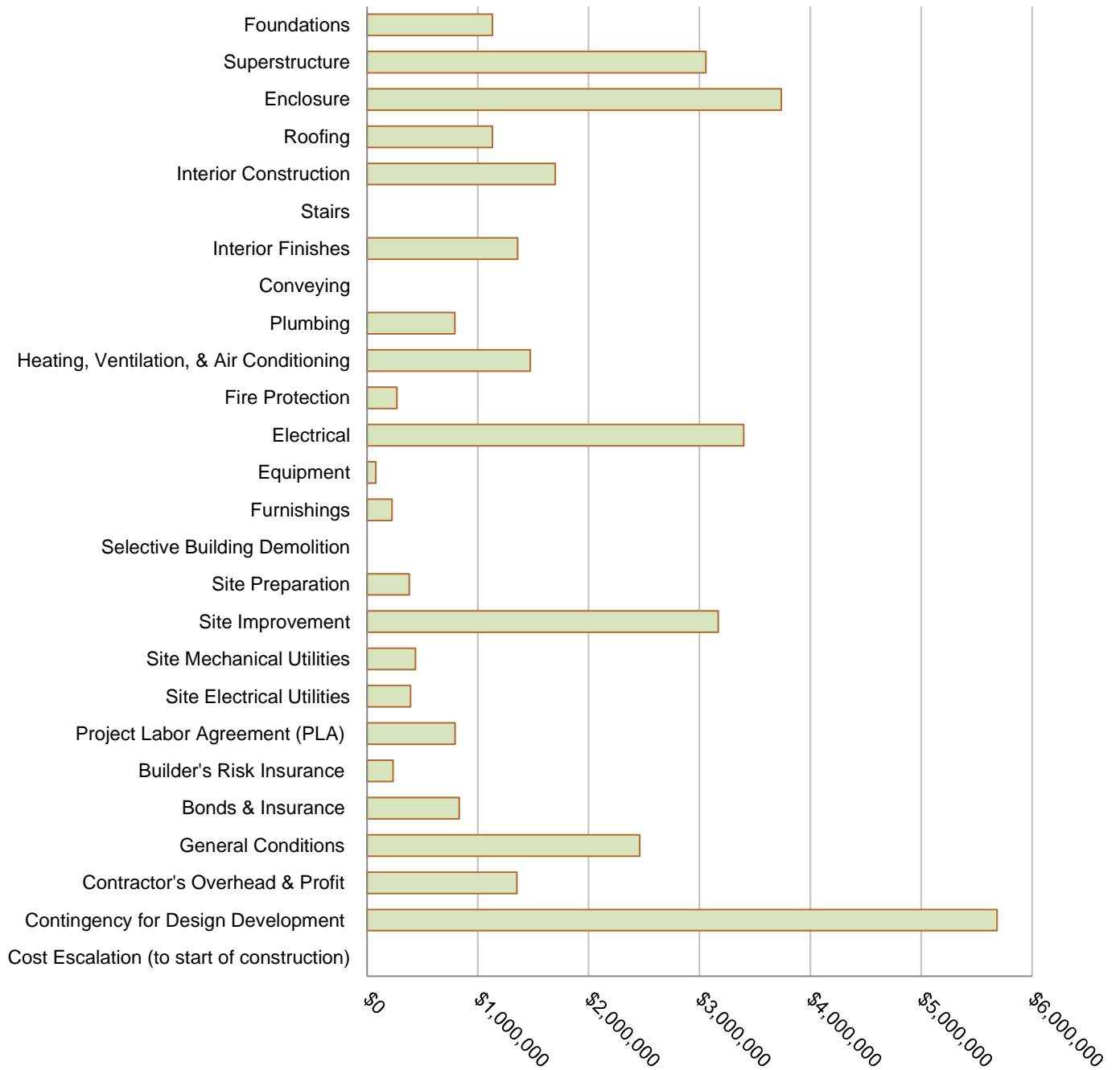
Site Area, 355' x 270'

95,850

<b>CSI UniFormat Summary</b>	<b>22,659 SF</b>	<b>%</b>	<b>\$/SF</b>	<b>\$,000</b>
Foundations		3%	\$50.00	\$1,132,950
Superstructure		9%	\$135.00	\$3,058,965
Enclosure		11%	\$165.00	\$3,738,735
Roofing		3%	\$50.00	\$1,132,950
Interior Construction		5%	\$75.00	\$1,699,425
Stairs		0%	\$0.00	\$0
Interior Finishes		4%	\$60.00	\$1,359,540
Conveying		0%	\$0.00	\$0
Plumbing		2%	\$35.00	\$793,065
Heating, Ventilation, & Air Conditioning		4%	\$65.00	\$1,472,835
Fire Protection		1%	\$12.00	\$271,908
Electrical		10%	\$150.00	\$3,398,850
Equipment		0%	\$3.53	\$80,000
Furnishings		1%	\$10.00	\$226,590
Selective Building Demolition		0%	\$0.00	\$0
<b>Subtotal - Building Construction</b>		<b>54%</b>	<b>\$810.53</b>	<b>\$18,365,813</b>
Site Preparation		1%	\$16.92	\$383,400
Site Improvement		9%	\$139.89	\$3,169,719
Site Mechanical Utilities		1%	\$19.31	\$437,550
Site Electrical Utilities		1%	\$17.36	\$393,400
<b>Subtotal - Sitework</b>		<b>13%</b>	<b>\$193.48</b>	<b>\$4,384,069</b>
<b>Total - Building and Sitework Construction</b>		<b>67%</b>	<b>\$1,004.01</b>	<b>\$22,749,882</b>
Project Labor Agreement (PLA)	3.50%	2%	\$35.14	\$796,246
Builder's Risk Insurance	1.00%	1%	\$10.39	\$235,461
Bonds & Insurance	3.50%	2%	\$36.73	\$832,356
General Conditions	10.00%	7%	\$108.63	\$2,461,394
Contractor's Overhead & Profit	5.00%	4%	\$59.75	\$1,353,767
<b>Subtotal</b>		<b>83%</b>	<b>\$1,254.65</b>	<b>\$28,429,106</b>
Contingency for Design Development	20.00%	17%	\$250.93	\$5,685,821
Cost Escalation (to start of construction)		<i>NIC/Excluded, See Overall Summary</i>		
<b>TOTAL CONSTRUCTION BUDGET</b>		<b>100%</b>	<b>\$1,505.58</b>	<b>\$34,114,927</b>

NOTE: Inclusions and Exclusions listed in the Commentary Section.

**CSI UniFormat Summary**



FOUNDATIONS	Quantity	Unit	Rate	Total (\$)
Foundation				
Reinforced concrete shallow column footings, wall footings, grade beams	22,659	GSF	\$30.00	\$679,770
Slab On Grade				
Reinforced concrete slab on grade, over AB subbase and water vapor barrier	22,659	GSF	\$20.00	\$453,180
<b>Subtotal For Foundations:</b>				<b>\$1,132,950</b>

SUPERSTRUCTURE	Quantity	Unit	Rate	Total (\$)
Vertical Structure				
Column & shearwall	22,659	GSF	\$35.00	\$793,065
Roof Structure				
Structural framing and plywood sheathing	22,659	GSF	\$100.00	\$2,265,900
<b>Subtotal For Superstructure:</b>				<b>\$3,058,965</b>

ENCLOSURE	Quantity	Unit	Rate	Total (\$)
Exterior Enclosure				
Exterior Wall Finishes, Exterior doors/Frames & Door Hardware, Exterior Windows & Exterior Soffit	22,659	GSF	\$165.00	\$3,738,735
<b>Subtotal For Enclosure:</b>				<b>\$3,738,735</b>

ROOFING	Quantity	Unit	Rate	Total (\$)
Roof Coverings				
Roofing system; including insulation, flashing and sheet metal and parapet cap	22,659	GSF	\$50.00	\$1,132,950
<b>Subtotal For Roofing:</b>				<b>\$1,132,950</b>

INTERIOR CONSTRUCTION	Quantity	Unit	Rate	Total (\$)
Interior Construction Interior partitions, interior windows, interior doors/frames & hardwares, Fittings and Specialties	22,659	GSF	\$75.00	\$1,699,425
<b>Subtotal For Interior Construction:</b>				<b>\$1,699,425</b>

STAIRS	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Stairs:</b>				

INTERIOR FINISHES	Quantity	Unit	Rate	Total (\$)
Interior Finishes Floor, Wall & Ceiling Finishes	22,659	GSF	\$60.00	\$1,359,540
<b>Subtotal For Interior Finishes:</b>				<b>\$1,359,540</b>

CONVEYING	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Conveying:</b>				

PLUMBING	Quantity	Unit	Rate	Total (\$)
Plumbing System Plumbing Fixtures and connection piping; including domestic water, sanitary waste, vent and service piping	22,659	GSF	\$35.00	\$793,065
<b>Subtotal For Plumbing:</b>				<b>\$793,065</b>

HEATING, VENTILATION, & AIR-CONDITIONING	Quantity	Unit	Rate	Total (\$)
<b>HVAC</b> HVAC; including heat generation and chilling equipments, pumps, piping, air handling equipment, air distribution and return, diffusers & return grilles, controls, exhaust ventilation, system testing and balancing	22,659	GSF	\$65.00	\$1,472,835
<b>Subtotal For Heating, Ventilation, &amp; Air-Conditioning:</b>				<b>\$1,472,835</b>

FIRE PROTECTION	Quantity	Unit	Rate	Total (\$)
<b>Fire Sprinkler System</b> Automatic fire sprinkler system	22,659	GSF	\$12.00	\$271,908
<b>Subtotal For Fire Protection:</b>				<b>\$271,908</b>

ELECTRICAL	Quantity	Unit	Rate	Total (\$)
<b>Electrical System</b> Electrical service & distribution, machine & equipment connections, Lighting & power specialties, lighting switching and control	22,659	GSF	\$100.00	\$2,265,900
<b>Low-Voltage</b> Fire Alarm, Communication, Security & AV System	22,659	GSF	\$50.00	\$1,132,950
<b>Subtotal For Electrical:</b>				<b>\$3,398,850</b>

EQUIPMENT	Quantity	Unit	Rate	Total (\$)
<b>Commercial Equipments</b> Kitchen equipments; including refrigerator, microwave, dishwasher, washer/dryer, range/oven, etc.	1	LS	\$50,000.00	\$50,000
Fire station equipments; including extractor, turnout gear dryer, etc.	1	LS	\$30,000.00	\$30,000
<b>Subtotal For Equipment:</b>				<b>\$80,000</b>

FURNISHINGS	Quantity	Unit	Rate	Total (\$)
Fixed Furnishing				
Fire extinguisher cabinets, walk-off mat, mecho shades/window blinds	22,659	GSF	\$10.00	\$226,590
Moveable Furnishings				
FF&E Allowance				NIC, OFOI
Conference/meeting tables and chairs				NIC, OFOI
Office tables and chairs				NIC, OFOI
Office workstation/cubicles				NIC, OFOI
<b>Subtotal For Furnishings:</b>				<b>\$226,590</b>

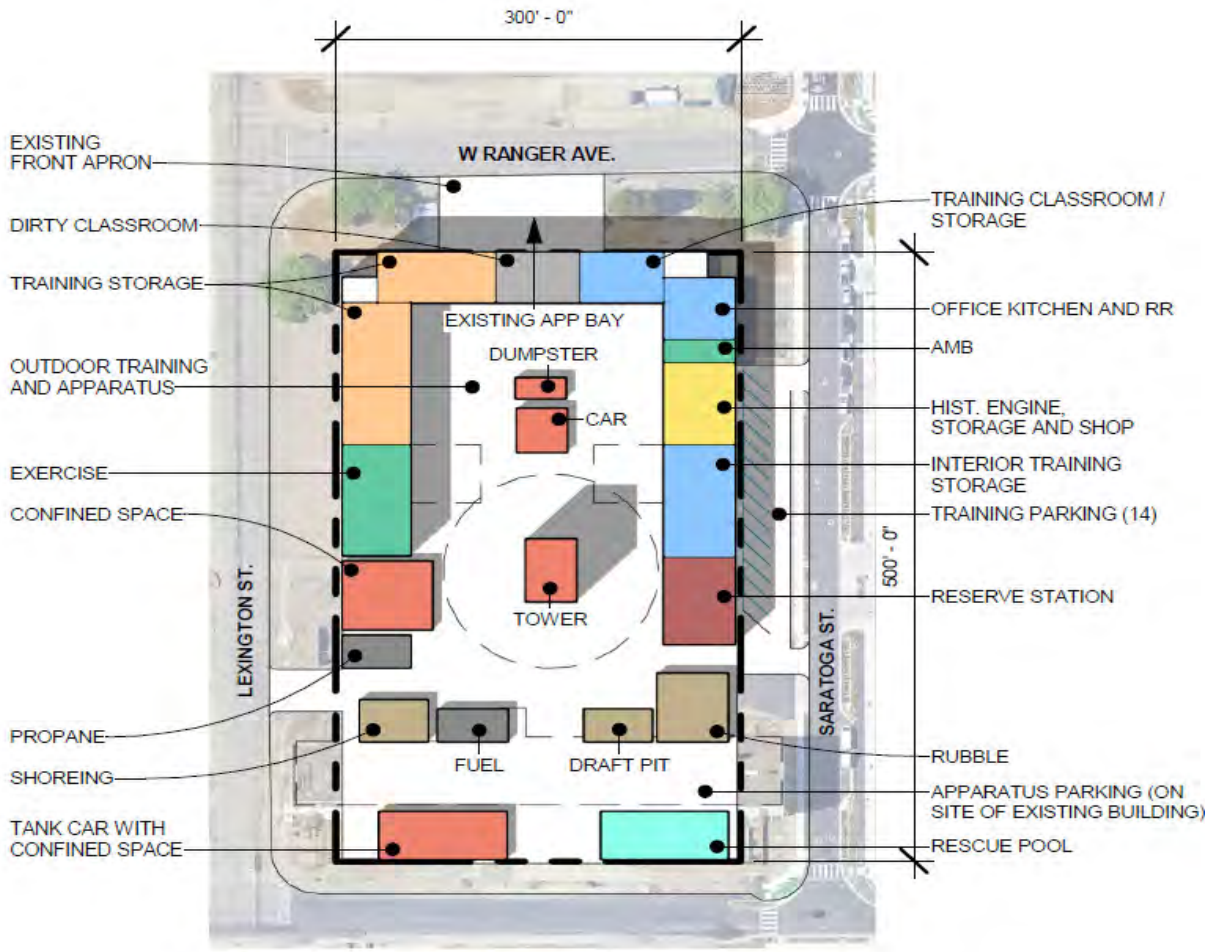
SELECTIVE BUILDING DEMOLITION	Quantity	Unit	Rate	Total (\$)
<i>See Building Demo under Site Preparation Section</i>				
<b>Subtotal For Selective Building Demolition:</b>				

SITE PREPARATION	Quantity	Unit	Rate	Total (\$)
Demolition Of Building				
Demo and remove (E) building				NIC, Excluded
Site Clearing and Demolition				
Site clearing & grading	95,850	SF	\$2.00	\$191,700
Demo and remove of (E) hardscape and landscape	95,850	SF	\$1.00	\$95,850
Site Protective Construction				
Erosion control/SWPP	95,850	SF	\$1.00	\$95,850
Hazardous Materials Abatement				NIC, Excluded
<b>Subtotal For Site Preparation:</b>				<b>\$383,400</b>

SITE IMPROVEMENT	Quantity	Unit	Rate	Total (\$)
<b>Vehicular Paving</b>				
Parking & driveway, asphalt paving	38,200	SF	\$15.00	\$573,000
Front apron, concrete paving	9,400	SF	\$30.00	\$282,000
Striping & pavement marking	47,600	SF	\$1.00	\$47,600
Concrete curbs & gutter	47,600	SF	\$3.00	\$142,800
Driveway apron/ramp	2	EA	\$10,000.00	\$20,000
<b>Pedestrian Paving</b>				
Pedestrian Walkway	21,535	SF	\$25.00	\$538,375
Patio	1,690	SF	\$25.00	\$42,250
Concrete pad for generator/hose drying rack wash	900	SF	\$25.00	\$22,500
<b>Landscaping &amp; Irrigation</b>				
Planting including trees	24,125	SF	\$20.00	\$482,500
Premium for stormwater/bio-retention area	1,206	SF	\$35.00	\$42,219
Automatic Irrigation	24,125	SF	\$5.00	\$120,625
<b>Site Structure</b>				
Trash Enclosure, covered	300	SF	\$450.00	\$135,000
<b>Fencing &amp; Miscellaneous Accessories</b>				
Perimeter fence and gate, including structural foundation	1,250	LF	\$500.00	\$625,000
Miscellaneous site furnishing; including trash receptacle, benches, bollards, etc.	95,850	SF	\$1.00	\$95,850
<b>Subtotal For Site Improvement:</b>				<b>\$3,169,719</b>

<b>SITE MECHANICAL UTILITIES</b>	Quantity	Unit	Rate	Total (\$)
Domestic Water				
Cold water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
Fire Water Service				
Fire water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
Sanitary Sewer				
Sewer line, including connection to (E)	1	LS	\$50,000.00	\$50,000
Storm Drainage				
Storm drain lines & area drain, including connection to (E)	95,850	SF	\$3.00	\$287,550
<b>Subtotal For Site Mechanical Utilities:</b>				<b>\$437,550</b>

<b>SITE ELECTRICAL UTILITIES</b>	Quantity	Unit	Rate	Total (\$)
Electrical Service and Distribution				
Connection to existing	1	LS	\$10,000.00	\$10,000
Site Lighting				
Site lighting	95,850	SF	\$3.00	\$287,550
Site Communications and Security				
Allowance	95,850	SF	\$1.00	\$95,850
<b>Subtotal For Site Electrical Utilities:</b>				<b>\$393,400</b>



**TRAINING PARKING REQUIRED.**  
 (PER CITY OF ALAMEDA MUNICIPAL CODE TABLE 17.52.920, ASSEMBLY USES)  
 1 PER 6 OCCUPANTS x 70 OCCUPANTS = 12 SPACES REQUIRED.  
 14 SPACES PROVIDED

Conceptual Cost Plan

**(N) Fire Training Facility + Site Improvement**  
**ALAMEDA CITY FACILITIES MASTER PLAN**

Control Quantities  
 (N) Fire Training Facility + Site Improvement Summary  
 Detailed Cost Breakdown

December 8, 2025

(N) Fire Training Facility + Site Improvement Control Quantities	Job #25902
	December 8, 2025

**Enclosed Areas**

(N) Fire Training Facility 18,353

<b>Subtotal of Enclosed Area</b>	<b>18,353</b>
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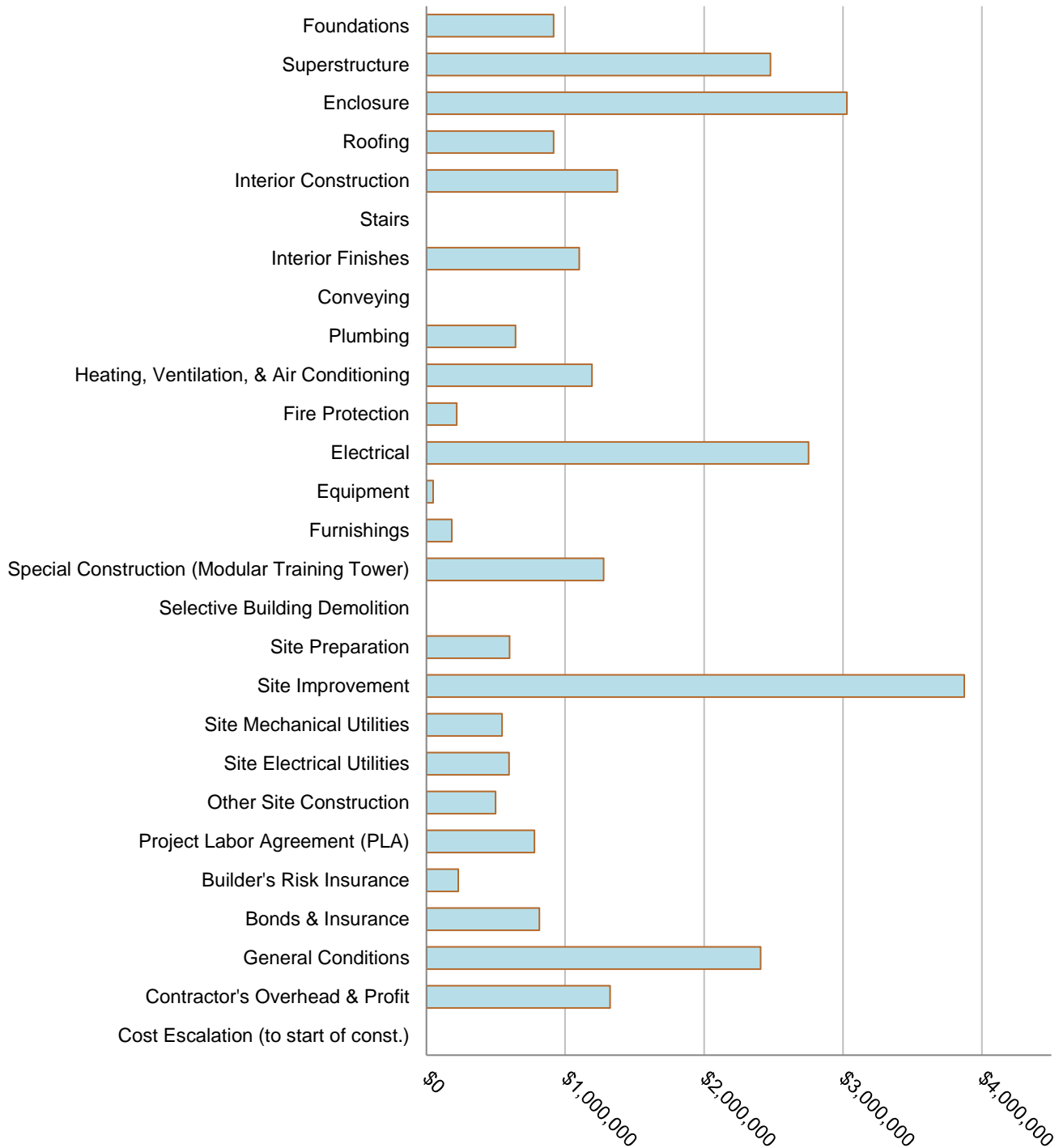
Site Area, 300 x 500 150,000

Modular Fire Training Tower, 3 Stories

<b>CSI UniFormat Summary</b>	<b>18,353 SF</b>	<b>%</b>	<b>\$/SF</b>	<b>\$</b>
Foundations		3%	\$50.00	\$917,650
Superstructure		7%	\$135.00	\$2,477,655
Enclosure		9%	\$165.00	\$3,028,245
Roofing		3%	\$50.00	\$917,650
Interior Construction		4%	\$75.00	\$1,376,475
Stairs		0%	\$0.00	\$0
Interior Finishes		3%	\$60.00	\$1,101,180
Conveying		0%	\$0.00	\$0
Plumbing		2%	\$35.00	\$642,355
Heating, Ventilation, & Air Conditioning		4%	\$65.00	\$1,192,945
Fire Protection		1%	\$12.00	\$220,236
Electrical		8%	\$150.00	\$2,752,950
Equipment		0%	\$2.72	\$50,000
Furnishings		1%	\$10.00	\$183,530
Special Construction (Modular Training Tower)		4%	\$69.63	\$1,278,000
Selective Building Demolition		0%	\$0.00	\$0
<b>Subtotal - Building Construction</b>		<b>48%</b>	<b>\$879.36</b>	<b>\$16,138,871</b>
Site Preparation		2%	\$32.69	\$600,000
Site Improvement		12%	\$211.06	\$3,873,675
Site Mechanical Utilities		2%	\$29.69	\$544,941
Site Electrical Utilities		2%	\$32.51	\$596,588
Other Site Construction		1%	\$27.24	\$500,000
<b>Subtotal - Sitework</b>		<b>18%</b>	<b>\$333.20</b>	<b>\$6,115,204</b>
<b>Total - Building and Sitework Construction</b>		<b>67%</b>	<b>\$1,212.56</b>	<b>\$22,254,075</b>
Project Labor Agreement (PLA)	3.50%	2%	\$42.44	\$778,893
Builder's Risk Insurance	1.00%	1%	\$12.55	\$230,330
Bonds & Insurance	3.50%	2%	\$44.36	\$814,215
General Conditions	10.00%	7%	\$131.19	\$2,407,751
Contractor's Overhead & Profit	5.00%	4%	\$72.16	\$1,324,263
<b>Subtotal</b>		<b>83%</b>	<b>\$1,515.26</b>	<b>\$27,809,527</b>
Contingency for Design Development	20.0%	17%	\$303.05	\$5,561,905
Cost Escalation (to start of const.)		<i>NIC/Excluded, See Overall Summary</i>		
<b>TOTAL CONSTRUCTION BUDGET</b>		<b>100%</b>	<b>\$1,818.31</b>	<b>\$33,371,433</b>

NOTE: Inclusions and Exclusions listed in the Commentary Section.

**CSI UniFormat Summary**



### FOUNDATIONS

	Quantity	Unit	Rate	Total (\$)
<b>Standard Foundations</b>				
Reinforced concrete shallow column footings, wall footings, grade beams	18,353	GSF	\$30.00	\$550,590
<b>Slab On Grade</b>				
Reinforced concrete slab on grade, over AB subbase and water vapor barrier	18,353	GSF	\$20.00	\$367,060
<b>Subtotal For Foundations:</b>				<b>\$917,650</b>

### SUPERSTRUCTURE

	Quantity	Unit	Rate	Total (\$)
<b>Vertical Structure</b>				
Column & shearwall	18,353	GSF	\$35.00	\$642,355
<b>Roof Structure</b>				
Structural framing and plywood sheathing	18,353	GSF	\$100.00	\$1,835,300
<b>Subtotal For Superstructure:</b>				<b>\$2,477,655</b>

### ENCLOSURE

	Quantity	Unit	Rate	Total (\$)
<b>Exterior Enclosure</b>				
Exterior Wall Finishes, Exterior doors/Frames & Door Hardware, Exterior Windows & Exterior Soffit	18,353	GSF	\$165.00	\$3,028,245
<b>Subtotal For Enclosure:</b>				<b>\$3,028,245</b>

### ROOFING

	Quantity	Unit	Rate	Total (\$)
<b>Roof Coverings</b>				
Roofing system; including insulation, flashing and sheet metal and parapet cap	18,353	GSF	\$50.00	\$917,650
<b>Subtotal For Roofing:</b>				<b>\$917,650</b>

INTERIOR CONSTRUCTION	Quantity	Unit	Rate	Total (\$)
Interior Construction Interior partitions, interior windows, interior doors/frames & hardwares, Fittings and Specialties	18,353	GSF	\$75.00	\$1,376,475
<b>Subtotal For Interior Construction:</b>				<b>\$1,376,475</b>

STAIRS	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Stairs:</b>				

INTERIOR FINISHES	Quantity	Unit	Rate	Total (\$)
Interior Finishes Floor, Wall & Ceiling Finishes	18,353	GSF	\$60.00	\$1,101,180
<b>Subtotal For Interior Finishes:</b>				<b>\$1,101,180</b>

CONVEYING	Quantity	Unit	Rate	Total (\$)
<i>No Work Anticipated In This Section</i>				
<b>Subtotal For Conveying:</b>				

PLUMBING	Quantity	Unit	Rate	Total (\$)
Plumbing System Plumbing Fixtures and connection piping; including domestic water, sanitary waste, vent and service piping	18,353	GSF	\$35.00	\$642,355
<b>Subtotal For Plumbing:</b>				<b>\$642,355</b>

HEATING, VENTILATION, & AIR-CONDITIONING	Quantity	Unit	Rate	Total (\$)
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**HVAC**

HVAC; including heat generation and chilling equipments, pumps, piping, air handling equipment, air distribution and return, diffusers & return grilles, controls, exhaust ventilation, system testing and balancing

18,353	GSF	\$65.00	\$1,192,945
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**Subtotal For Heating, Ventilation, & Air-Conditioning: \$1,192,945**

FIRE PROTECTION	Quantity	Unit	Rate	Total (\$)
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**Fire Sprinkler System**

Automatic fire sprinkler system

18,353	GSF	\$12.00	\$220,236
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**Subtotal For Fire Protection: \$220,236**

ELECTRICAL	Quantity	Unit	Rate	Total (\$)
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**Electrical System**

Electrical service & distribution, machine & equipment connections, Lighting & power specialties, lighting switching and control

18,353	GSF	\$100.00	\$1,835,300
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**Low-Voltage**

Fire Alarm, Communication, Security & AV System

18,353	GSF	\$50.00	\$917,650
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**Subtotal For Electrical: \$2,752,950**

EQUIPMENT	Quantity	Unit	Rate	Total (\$)
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**Commercial Equipments**

Breakroom equipments; including refrigerator, microwave, dishwasher

1	LS	\$50,000.00	\$50,000
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**Subtotal For Equipment: \$50,000**

FURNISHINGS	Quantity	Unit	Rate	Total (\$)
<b>Fixed Furnishing</b>				
Fire extinguisher cabinets, walk-off mat, mecho shades/window blinds	18,353	GSF	\$10.00	\$183,530
<b>Moveable Furnishings</b>				
FF&E Allowance				NIC, OFOI
Conference/meeting tables and chairs				NIC, OFOI
Office tables and chairs				NIC, OFOI
Office workstation/cubicles				NIC, OFOI
<b>Subtotal For Furnishings:</b>				<b>\$183,530</b>

SPECIAL CONSTRUCTION (CUSTOM TRAINING TOWER)	Quantity	Unit	Rate	Total (\$)
<b>Modular Training Tower</b>				
Custom 3-stories WHP training simulator - allowance	1	LS	\$950,000.00	\$950,000
<b>Additional Cost By General Contractor:</b>				
Standard Foundations & Slab On-Grade	4,000	GSF	\$45.00	\$180,000
Floor Construction (concrete fill on deck)	4,000	GSF	\$5.00	\$20,000
Fire Protection	4,000	GSF	\$8.00	\$32,000
Electrical System	4,000	GSF	\$12.00	\$48,000
Communications & Security	4,000	GSF	\$12.00	\$48,000
<b>Subtotal For Special Construction (Custom Training Tower):</b>				<b>\$1,278,000</b>

SELECTIVE BUILDING DEMOLITION	Quantity	Unit	Rate	Total (\$)
<i>See Building Demo under Site Preparation Section</i>				
<b>Subtotal For Selective Building Demolition:</b>				

SITE PREPARATION	Quantity	Unit	Rate	Total (\$)
Demolition Of Building				
Demo and remove (E) building				<i>NIC, Excluded</i>
Site Clearing and Demolition				
Site clearing & grading	150,000	SF	\$2.00	\$300,000
Demo and remove of (E) hardscape and landscape	150,000	SF	\$1.00	\$150,000
Site Protective Construction				
Erosion control/SWPP	150,000	SF	\$1.00	\$150,000
Hazardous Materials Abatement				<i>NIC, Excluded</i>
<b>Subtotal For Site Preparation:</b>				<b>\$600,000</b>

SITE IMPROVEMENT	Quantity	Unit	Rate	Total (\$)
Vehicular Paving				
Driving Course	12,400	SF	\$15.00	\$186,000
Parking & driveway	54,100	SF	\$15.00	\$811,500
Striping & pavement marking	66,500	SF	\$1.00	\$66,500
Concrete curbs & gutter	3,300	LF	\$50.00	\$165,000
Driveway apron/ramp	2	EA	\$10,000.00	\$20,000
Pedestrian Paving				
Pedestrian Walkway	29,835	SF	\$25.00	\$745,875
Mechanical concrete pad (for equipments, fueling station, props, etc.)	22,800	SF	\$25.00	\$570,000
Trainee patio / staff patio	512	SF	\$25.00	\$12,800
Landscaping & Irrigation				
Planting including trees, allow 20%	12,000	SF	\$20.00	\$240,000
Premium for stormwater/bio-retention area	600	SF	\$35.00	\$21,000
Automatic Irrigation	12,000	SF	\$5.00	\$60,000
Site Structure				
Trash Enclosure, covered	300	SF	\$450.00	\$135,000
Outdoor storage / Con Ex containers on base rock	300	SF	\$300.00	\$90,000

(N) Fire Training Facility + Site Improvement Detail	Job #25902
	December 8, 2025

SITE IMPROVEMENT	Quantity	Unit	Rate	Total (\$)
<b>Fencing &amp; Miscellaneous Accessories</b>				
Perimeter security fence and gate, including structural foundation	1,200	LF	\$500.00	\$600,000
Miscellaneous site furnishing; including flag pole, trash receptacle, bike rack, benches, bollards, etc.	150,000	SF	\$1.00	\$150,000
<b>Subtotal For Site Improvement:</b>				<b>\$3,873,675</b>

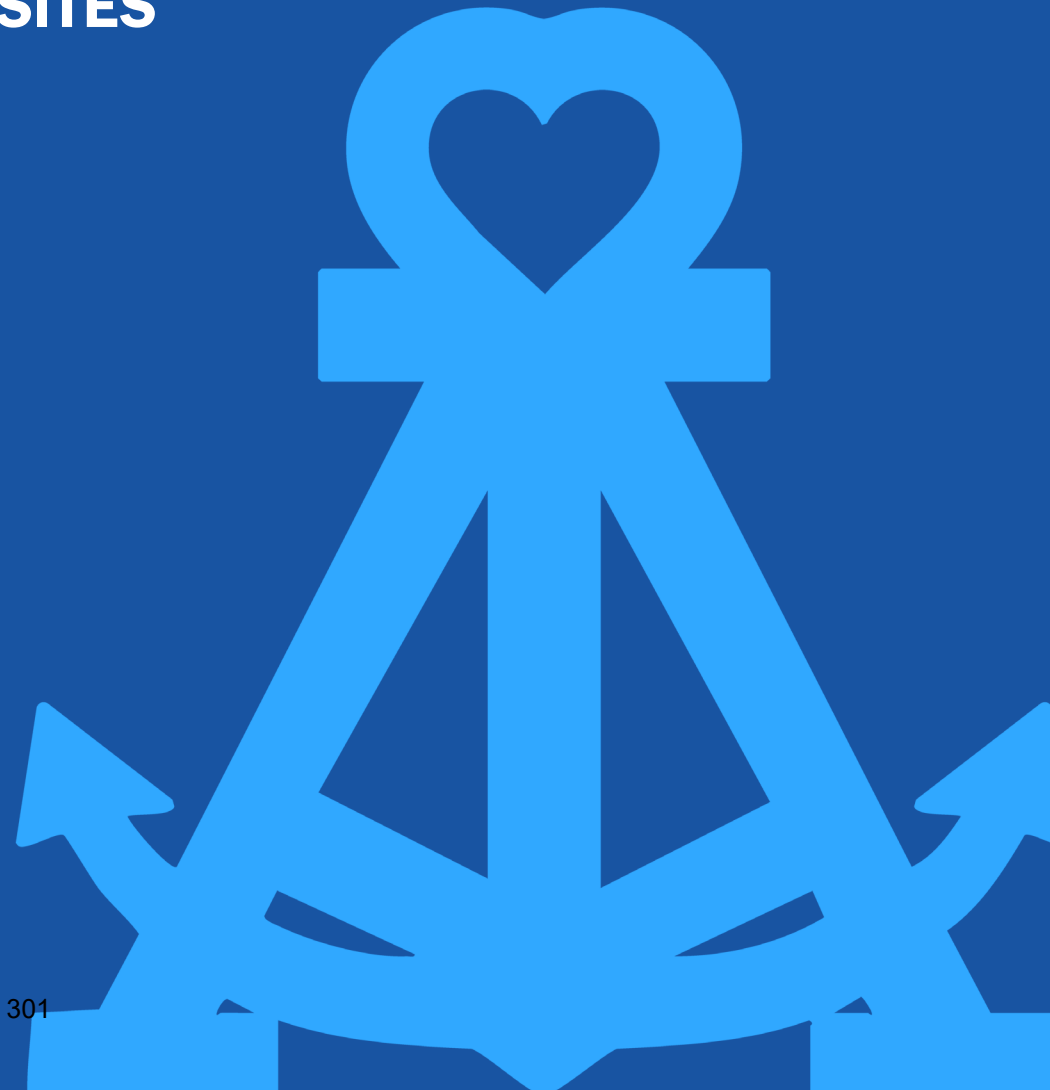
SITE MECHANICAL UTILITIES	Quantity	Unit	Rate	Total (\$)
<b>Domestic Water</b>				
Cold water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
<b>Fire Water Service</b>				
Fire water lines, including connection to (E)	1	LS	\$50,000.00	\$50,000
<b>Sanitary Sewer</b>				
Sewer line, including connection to (E)	1	LS	\$50,000.00	\$50,000
<b>Storm Drainage</b>				
Storm drain lines & area drain, including connection to (E)	131,647	SF	\$3.00	\$394,941
<b>Subtotal For Site Mechanical Utilities:</b>				<b>\$544,941</b>

SITE ELECTRICAL UTILITIES	Quantity	Unit	Rate	Total (\$)
<b>Electrical Service and Distribution</b>				
Connection to existing	1	LS	\$10,000.00	\$10,000
<b>Site Lighting</b>				
Site lighting	131,647	SF	\$3.00	\$394,941
<b>Site Communications and Security</b>				
Allowance	131,647	SF	\$1.00	\$131,647
<b>EV Charging</b>				
Charging station, including conduit and wiring - allow	4	EA	\$15,000.00	\$60,000
<b>Subtotal For Site Electrical Utilities:</b>				<b>\$596,588</b>

OTHER SITE CONSTRUCTION	Quantity	Unit	Rate	Total (\$)
<b>Fuel Storage &amp; Distribution</b>				
Above ground fuel tank, diesel/gas	1	LS	\$200,000.00	\$200,000
<b>Miscellaneous Allowance</b>				
Water rescue prop/in-ground pool	1	LS	\$100,000.00	\$100,000
Miscellaneous props	1	LS	\$200,000.00	\$200,000
<b>Subtotal For Other Site Construction:</b>				<b>\$500,000</b>

# APPENDIX F

## F - SEA LEVEL RISE SUMMARY OF SITES



<b>Date:</b> 10/23/2025	
<b>To:</b> City of Alameda	<b>Organization:</b>
<b>From:</b> Kevin Anderson	<b>Title:</b> Sr. Project Engineer
<b>Project Name:</b> City of Alameda Facilities	<b>Project Number:</b> 3645-01
<b>Topic:</b> City of Alameda Facilities Sea Level Rise Analysis	

This memo provides an assessment of sea level rise impacts and development recommendations for four key sites:

- 1) West Atlantic Ave & Main Street
- 2) Buena Vista Ave & Pacific Ave at Wilma Chan Way
- 3) Alameda Point
- 4) Viking Yard (W Ticonderoga Ave & Viking St)

The analysis considers the potential effects of Mean Higher High Water (MHHW) plus 36-inch and 77-inch sea level rise scenarios, as well as the FEMA 100-year flood zone, to evaluate the suitability of each site for development. The recommendations aim to guide planning and construction decisions by identifying areas at risk of flooding and proposing mitigation measures where necessary to ensure safe and sustainable development practices.

“MHHW” stands for Mean Higher High Water, which is the average of the higher of the two daily high tides (averaged over a standard tidal epoch) and is commonly used as the “above-ground” reference level where inundation begins. Indicating “36” MHHW” or “77” MHHW” represents a water surface that is 36 inches (3.0 ft) or 77 inches (6.42 ft) above the local MHHW datum. These values are commonly used as sea-level-rise planning scenarios.

A 2024 study conducted by Pathways Climate Institute, titled “A Sea Level Rise and Coastal Flood Exposure Assessment and Vulnerability Considerations for the Oakland-Alameda Subregion” provided 10 different MHHW rise scenarios. This analysis looks at Scenario 3 and 7 to provide a reasonable range of potential sea level rise impacts to the studies properties.

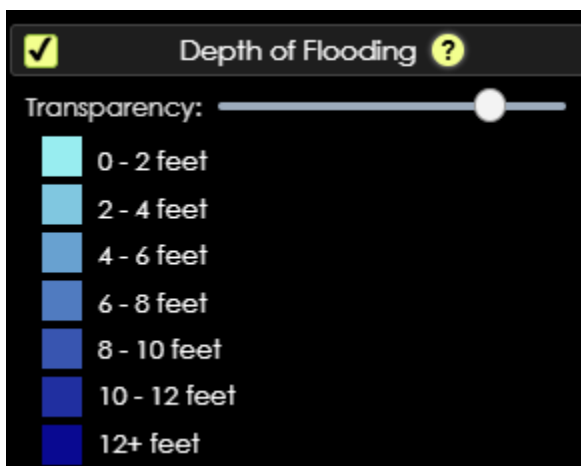
**Table 1. Adapting to Rising Tides Scenarios**

Mapping Scenario	Reference Water Level
Scenario 1	MHHW + 12”
Scenario 2	MHHW + 24”
Scenario 3	MHHW + 36”
Scenario 4	MHHW + 48”
Scenario 5	MHHW + 52”
Scenario 6	MHHW + 66”
Scenario 7	MHHW + 77”
Scenario 8	MHHW + 84”
Scenario 9	MHHW + 96”
Scenario 10	MHHW + 108”

MHHW = Mean Higher High Water

1. West Atlantic Ave & Main Street

MHHW + 36" Sea Level Rise:



Note: This legend is typical for all sea level rise conditions shown in this report.

MHHW + 77" Sea Level Rise:



Recommendation: This site is suitable for development and is outside of the mean high water + 36" sea level rise impact area. However, in the MHHW + 77" scenario, this site would not be suitable for development.

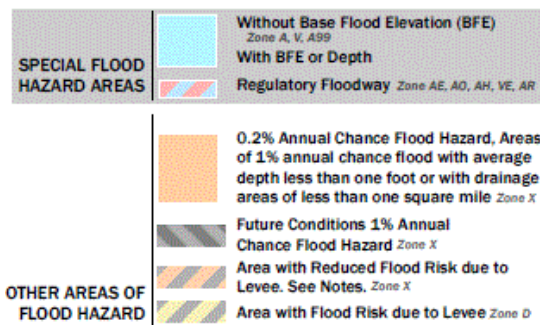
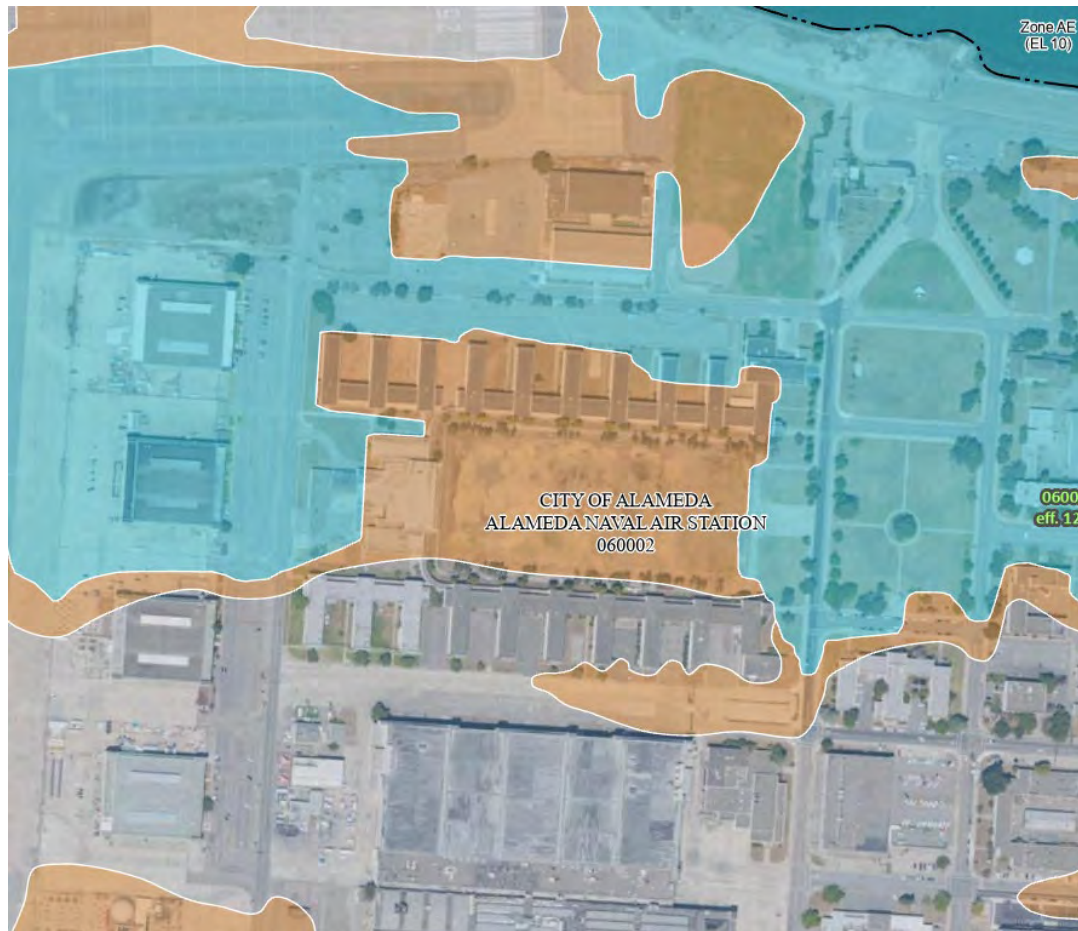
## 2. Buena Vista Ave & Pacific Ave at Wilma Chan Way

This site is outside of the impact areas for both the MHHW + 36" Sea Level Rise & MHHW + 77" Sea Level Rise. Sea level rise is not anticipated to have an impact of development.

### 3. Alameda Point

FEMA 100-year zone:

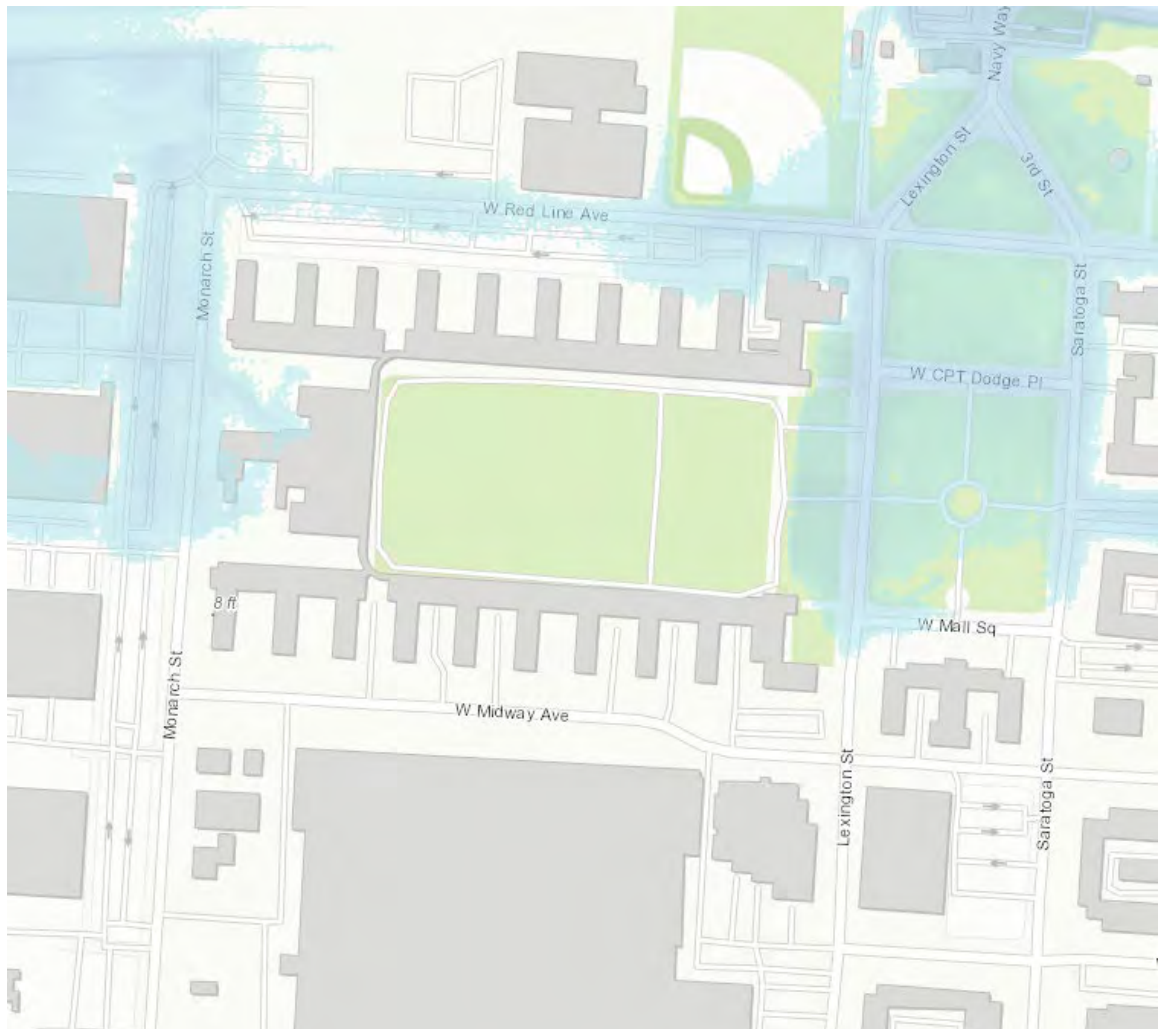
The eastern portion of Midway & Lexington is located within the FEMA 100-year zone.



Note: This legend is typical for all FEMA flood maps shown in this report.

MHHW + 36" Sea Level Rise:

The eastern portion of the site is also located within the MHHW + 36" Sea Level Rise zone.



MHHW + 77" Sea Level Rise zone:

Most of the site is located within the MHHW + 77" Sea Level Rise zone.



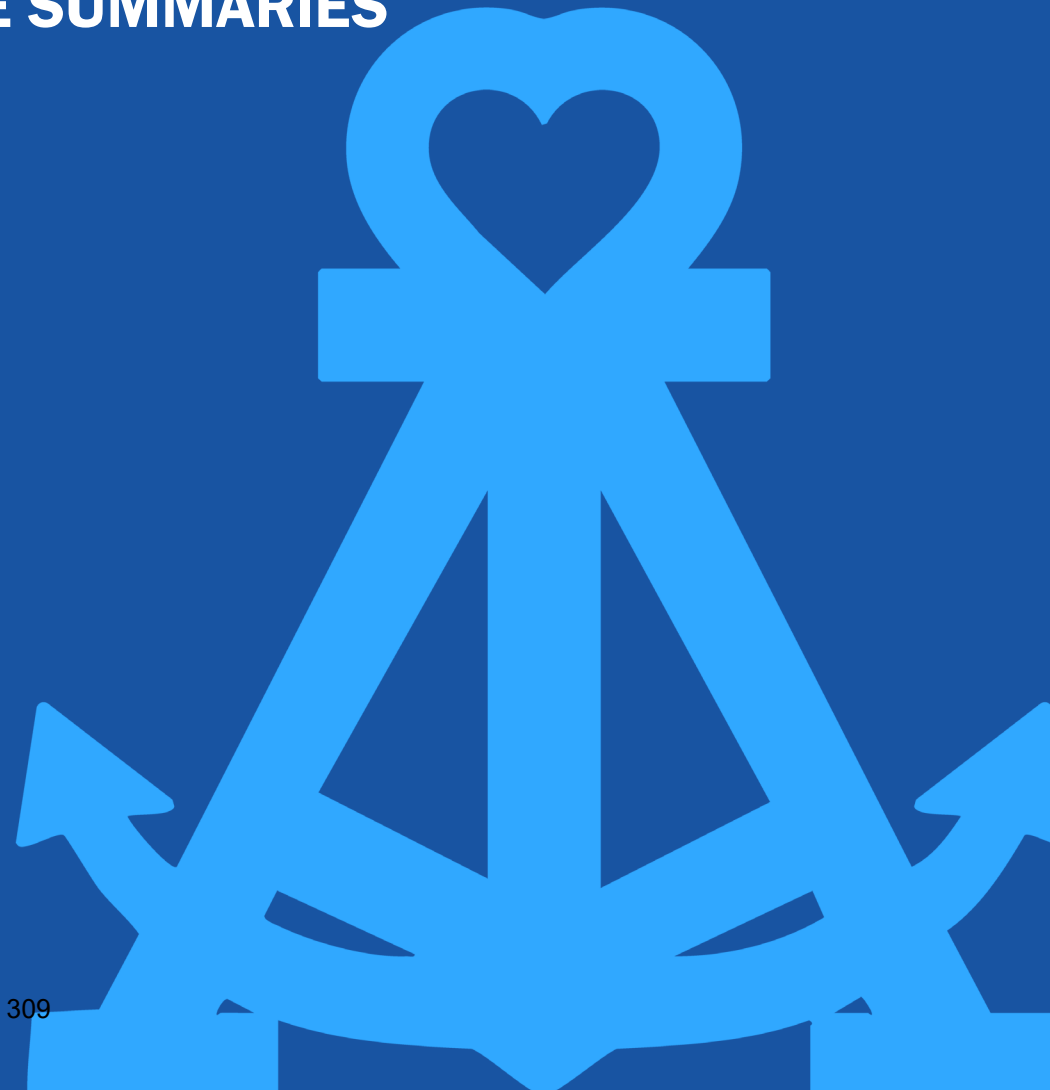
Recommendations: This site would be mostly suitable for development in the MHHW + 36" sea level rise scenario. The Midway & Lexington development and Block Z are partially within the 100-year FEMA Flood Zone and partially within the mean high water + 36" sea level rise impact area. The Midway/Lexington and Block Z developments would need to be raised approximately 2ft and a formal flooding analysis would need to be conducted prior to development. However, in the MHHW + 77" scenario, this site would not be suitable for development.

#### 4. Viking Yard (W Ticonderoga Ave & Viking St)

Recommendations: This site is outside of the mean high water + 36" and + 77" sea level rise impact area. In addition, this site is outside of the 100-year FEMA Flood Zone impact area. This site is a good location for building.

# APPENDIX G

## G - PLANNING DUE DILIGENCE SITE SUMMARIES





	Neptune Park	College of Alameda #1	Main Street Strip	West Atlantic Ave & Main Street	Grocery Outlet
APN	74-906-5-6	74-1364-2-4	74-905-23	74-1376-2	73-413-33-2
Address	2000 Webster St, Alameda, CA 94501	Webster St, Alameda, CA 94501	200 Main St, Alameda, CA 94501	Main St, Alameda, CA 94501	730 Buena Vista Ave, Alameda, CA 94501
Zoning	General Industrial (Manufacturing) District (M-2)	Residential District (R-4)	Open Space (O)	Alameda Point Zoning District – Waterfront Town Center Sub-district (AP-WTC)	Residential District (R-5)
Community Plans	NA	NA	NA	Regional Sustainable Communities Plan	NA
Overlay Districts	NA	NA	NA	NA	NA
Land Use Designation	Public Parks + Open Space	Public Institutional	Public Parks + Open Space	Mixed-Use	Medium-Density Residential
Max. FAR	NA	2.0	NA	0.25 – 5.0	2.0
<b>Setbacks</b>					
Min. Front Yard	5 feet	20 feet	NA	See AP zoning setbacks in Group 2 Table	20 feet
Min. Side Yard	None; Where a side yard is desired, minimum of 12 feet; 12 feet when adjacent to R District.	5 feet; Side yard on street side or corner lot shall not be less than 10 feet.	NA	See AP zoning setbacks in Group 2 Table	5 feet
Min. Street Side Yard	NA	NA	NA	See AP zoning setbacks in Group 2 Table	10 feet
Min. Rear Yard	None; 12 feet when adjacent to R District.	20 feet	NA	See AP zoning setbacks in Group 2 Table	20 feet
Max. Total Building Coverage (Includes accessory buildings)	80%	53% (Max. Main Building Coverage)	NA	NA	53% (Max. Main Building Coverage)



<i>Land Use Designation</i>	Mixed-Use	Public Parks + Open Space
<i>Permitted FAR</i>	0.25 – 5.0	NA
<i>Min. Front Yard</i>	Building front setback should be consistent with the setback of the other NAS Alameda Historic District contributing buildings on the block or the adjacent blocks to maintain the character defining features of the NAS Alameda Historic District. A smaller front yard setback may be approved if it can be found that the smaller setback supports a more pedestrian-oriented site plan.	
<i>Min. Side Yard</i>	20 feet when abutting a public open space/residential use; The side yard abuts a public street, the side yard setback shall be sufficient to align the building with the front setback of the adjacent buildings; In the adaptive reuse sub-district, the side street facing setback should be consistent with adjacent contributing NAS Alameda Historic District structures on the side street, unless a finding can be made that the proposed setback is consistent with the character defining features of the NAS Alameda Historic District.	
<i>Min. Street Side Yard</i>	NA	NA
<i>Min. Rear Yard</i>	No rear setback is required, except where: a. The building abuts a residential use or a public open space, a twenty (20') foot rear setback shall be provided and the height of the rear of the building shall be designed to provide an adequate transition between the height of the building and the adjacent residential building. b. The rear of the building faces a public street or public open space, the rear of the building shall be aligned with the rear or front setback of the existing buildings on the abutting parcels to maintain a consistent "street wall" and the character of the sub-district.	
<i>Max. Total Building Coverage (Includes accessory buildings)</i>	NA	NA



	up to twenty (20') feet may be approved if it can be found that the setback is necessary and appropriate to create a pleasing landscaped buffer between a building over thirty (30') feet in height and the public right-of-way or a public park.	and "street wall" along the block and maintain the character of the sub-district.
<i>Min. Side Yard</i>	No side yard setback shall be required in the enterprise or adaptive reuse sub-districts, except where: The side yard abuts a public street, the side yard setback shall be sufficient to align the building with the front setback of the adjacent buildings.	No side yard setback shall be required in the enterprise or adaptive reuse sub-districts, except where: The side yard abuts a public street, the side yard setback shall be sufficient to align the building with the front setback of the adjacent buildings.
<i>Min. Street Side Yard</i>	NA	NA
<i>Min. Rear Yard</i>	No rear setback is required, except where: (a) The building abuts a residential use or a public open space, a twenty (20') foot rear setback shall be provided and the height of the rear of the building shall be designed to provide an adequate transition between the height of the building and the adjacent residential building. (b)The rear of the building faces a public street or public open space, the rear of the building shall be aligned with the rear or front setback of the existing buildings on the abutting parcels to maintain a consistent "street wall" and the character of the sub-district.	No rear setback is required, except where: (a) The building abuts a residential use or a public open space, a twenty (20') foot rear setback shall be provided and the height of the rear of the building shall be designed to provide an adequate transition between the height of the building and the adjacent residential building. (b)The rear of the building faces a public street or public open space, the rear of the building shall be aligned with the rear or front setback of the existing buildings on the abutting parcels to maintain a consistent "street wall" and the character of the sub-district.
<i>Max. Total Building Coverage (Includes accessory buildings)</i>	NA	NA

## Historical Preservation

Per City of Alameda Municipal Code Section 13-21.5.a (Permit Restrictions; Notification to Board of Request), “No building, structure, group of structures, or site, including trees or plantings, that has been designated a Historical Monument shall be demolished, removed or altered without first referring the matter to the Historical Advisory Board for a certificate of approval, except where the Building Official or his/her designee determines that demolition, removal or alteration of any such building, structure or site is immediately necessary in the interest of the public health, safety or general welfare”.

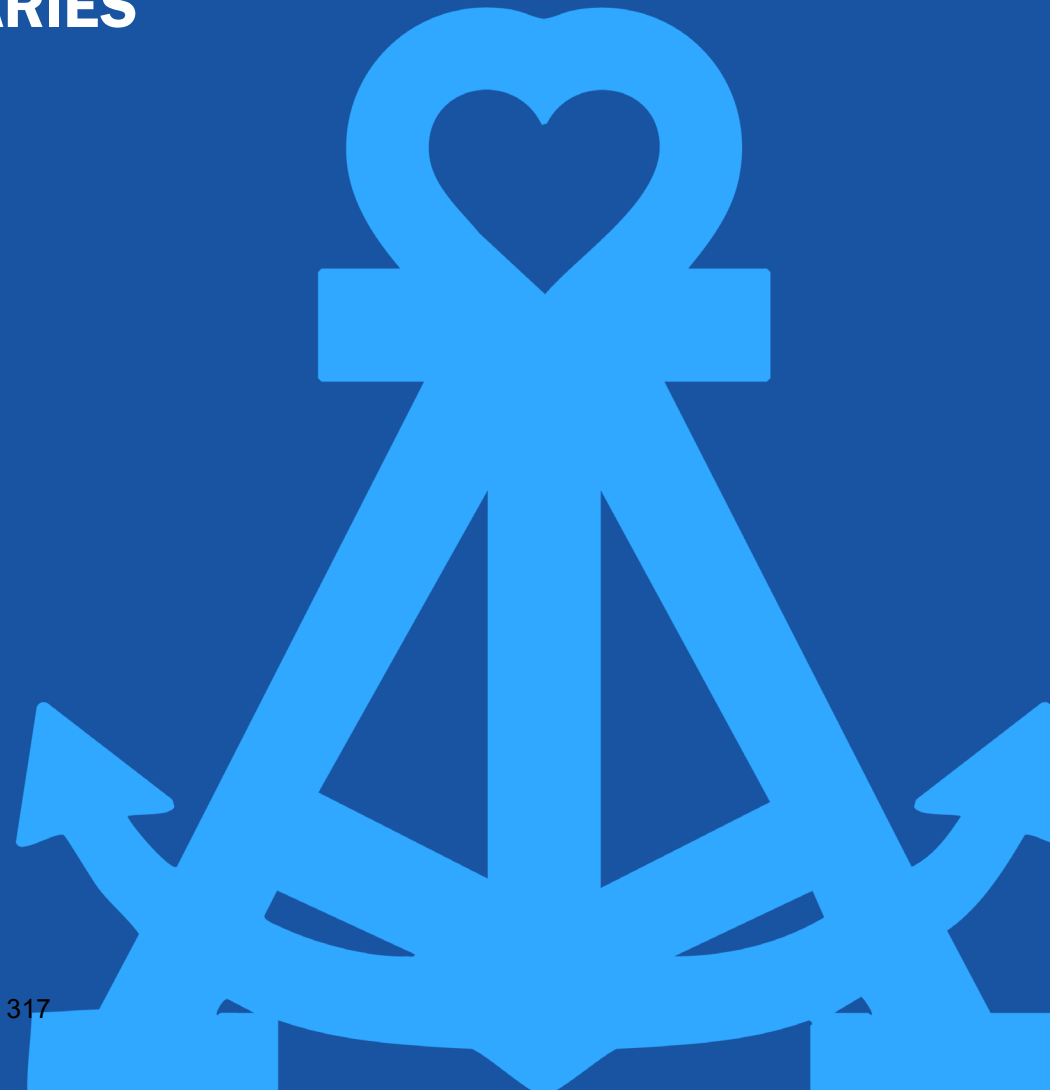
## City of Alameda Historic Monuments

Site	Designated Historical Monument (Yes or No)	Contributing to Historic District
<i>Neptune Park</i>	No	No
<i>College of Alameda #1</i>	No (Former site of Union Iron Works Turbine Machine Building is shown nearby but was demolished)	No
<i>Main Street Strip</i>	No	No
<i>West Atlantic Ave &amp; Main Street</i>	No	No
<i>Grocery Outlet</i>	No	No
<i>Building 5</i>	Yes (Part of NAS Alameda Historic District)	Yes
<i>Building 10</i>	Yes (Part of NAS Alameda Historic District)	Yes
<i>Building 32</i>	Yes (Part of NAS Alameda Historic District)	Not evaluated – Built After 1989
<i>Building 62</i>	Yes (Part of NAS Alameda Historic District)	No
<i>Between W. Midway Ave &amp; W. Red Line Ave</i>	Yes (Part of NAS Alameda Historic District)	Not eligible
<i>Viking Yard</i>	No	No
<i>Bessy Coleman</i>	No	No

Buildings 5, 10, 32, 62, and the Building Between W. Midway Ave & W. Red Line Ave are subject to submit for a Certificate of Approval for any alterations to the existing buildings. New designs will be reviewed by the Historical Advisory Board and City Planning Staff in consultation with the *Guide to Preserving the Character of the Naval Air Station Alameda Historic District*.

# APPENDIX H

## H - STRUCTURAL SEISMIC SUMMARIES



**BIGGS CARDOSA  
ASSOCIATES INC**  
STRUCTURAL ENGINEERS

40 Federal Street  
San Francisco, CA 94107-1409  
Telephone 415.986.1911

RRM Design Group  
325 Davis Street  
San Leandro, CA 94577

June 16, 2025  
2025033

Attention: Michael Scott

Subject: Alameda Fire Station No. 1  
2401 Encinal Avenue, Alameda, CA 94501

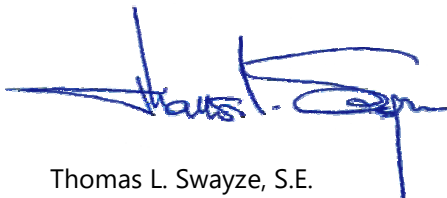
Dear Michael:

Biggs Cardosa Associates would like to present this Draft Tier 1 structural assessment report for the existing Alameda Fire Station No. 1. In accordance with our proposal, we have performed a structural review and assessment for the existing wood and masonry framed structure on the property.

We completed a site visit on January 23, 2025, and reviewed the available architectural and structural plans. The following report describes the findings of our structural review and conditional assessment of the buildings with retrofit recommendations.

It is recommended that ultimately all the retrofit options described are implemented but even this phased approach will improve the performance of the building. However, it is important to note that all the mitigation work described is entirely voluntary on the part of the city.

Sincerely,  
BIGGS CARDOSA ASSOCIATES, INC.



Thomas L. Swayze, S.E.  
Principal

## Tier 1 Seismic Assessment **DRAFT**

The City of Alameda

June 16, 2025



## Alameda Fire Station No. 1

2401 Encinal Avenue,  
Alameda, CA 94501

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## **PART 1: OVERVIEW**

### **1.1 Introduction**

The City of Alameda has requested a structural assessment of Alameda Fire Station No. 1. This report represents the results of an ASCE 41 seismic assessment and general structural condition review of the building. Alameda Fire Station No. 1 is located at 2401 Encinal Avenue, Alameda, California. The fire station consists of a single-story apparatus bay and an office and dormitory wing with both one-story and two-story portions initially constructed in 1968. The team was not provided with any data or information regarding pending or past modernizations or retrofits for this building.



**Figure 1: Aerial View of the Alameda Fire Station No. 1**

A Tier 1 level ASCE 41 structural evaluation and general condition assessment was performed for the building based on a review of the available record drawings and visual observations conducted by Biggs Cardosa Associates Inc. during a site visit on January 23, 2025. This report describes the findings of our structural review and contains qualitative observations and recommendations for seismic or condition upgrades or recommended additional studies.

## **1.2 Background**

With each building code cycle (approximately every 3 years) codes for new construction are modified to improve structural performance during seismic events. However, engineering standards to evaluate existing buildings have historically lagged in development. For the past several years, ASCE/SEI 41-17 Seismic Evaluation and Retrofit of Existing Buildings has been the accepted baseline standard of practice for the seismic evaluation of existing buildings. As described in that document, one of the primary goals is to include lessons learned from recent earthquakes.

The purpose of this study is to determine whether significant seismic deficiencies exist at the building, to determine the potential seismic risk of the building, and to provide general recommendations for reduction of seismic risk through mitigation. Buildings of recent construction are exempt from this type of analysis based on building type and the code enforced at the time of construction. Such buildings are identified as "benchmark buildings". According to ASCE 41 guidelines, none of the subject buildings of this study are classified as a "benchmark building" since they were designed and constructed prior to the benchmark cutoff date (1998) for reinforced masonry buildings.

The analysis methodology of ASCE 41-17 employs a quick check methodology (Tier 1 analysis). The Tier 1 quick check uses cursory calculations appropriate for each building type and a set of checklists which contain evaluation statements that help to identify areas of concern regarding the ability of the structure to adequately transmit seismic forces to the foundation and supporting soils.

## **PART 2: SEISMIC PERFORMANCE EVALUATION**

### **2.1 Methodology**

The potential damage to a structure in an earthquake can be evaluated provided that, (1) seismic hazards which affect the structure and site can be estimated and (2) the vulnerability of the structure to those hazards are known or can be estimated.

Site seismicity for the Alameda Fire Station No. 1 was determined using the United States Geologic Survey (USGS) web based Seismic Hazard Curves, Response Parameters and Design Parameters program. Seismic short period  $S_5$  and one second  $S_1$  response acceleration parameters were obtained through the ASCE 7 Hazard Tool.

Seismic evaluation of the structures was conducted using the ASCE 41-17 – Seismic Evaluation and Retrofit of Existing Buildings. ASCE 41 provides a three-tiered process for seismic evaluation of existing buildings based on building type and the level of seismicity for the building location. The Tier 1 study is an initial checklist evaluation of structural, non-structural, and foundation/geologic hazard elements of a building and site conditions that is intended to screen for potential seismic deficiencies. Tier 2 and 3 studies include more in-depth analysis procedures for a building or component that is identified by the Tier 1 screening process as structurally deficient or that requires further study. Non-structural items were not included as those systems are generally evaluated by an architect.

This assessment of Alameda Fire Station No. 1 utilizes the Tier 1 screening procedure to identify initial deficiencies as much as possible with the information available.

## 2.2 Performance Level

ASCE 41 Tier 1 evaluation of a building can be performed for either Collapse Prevention (CP) or Immediate Occupancy (IO) performance levels. The Basic Performance Objective focuses on Collapse Prevention for buildings in Risk Category I, II, and III and on Immediate Occupancy for buildings in Risk Category IV.

ASCE 41 summarizes the two performance levels as follows:

- CP Performance Level: After an earthquake, the structure will have damaged components and continue to support gravity loads but retains no margin against collapse. Designed to prevent only the most egregious structural failures against either partial or total collapse remains.
- IO Performance Level: After an earthquake, the basic vertical and lateral force-resisting system retains nearly all its pre-earthquake strength, very limited damage to structural and non-structural components has occurred and critical parts of the building remain habitable.

The ASCE 41 Immediate Occupancy Basic Configuration checklist (Table 17-3) and Immediate Occupancy Structural Checklist for Building Types RM1 and RM2 (Table 17-35) are appropriate for this building type and are included in this report. As these buildings are considered Risk Category IV, they are evaluated under the Immediate Occupancy criteria.

## 2.3 Seismic Source

The general seismicity in the San Francisco Bay region is influenced by several known faults, their potential faulting length, and relative orientation. The Hayward Fault extends in the North-South direction, between the North American plate and the Pacific plate. This fault is located approximately 3.8 miles east of the building. Other known, near-source faults with recorded activity, such as the San Andreas Fault, are listed in Table 1 (From California Department of Conservation) along with the estimated moment magnitude,  $M_w$ , that would occur during the Maximum Considered Earthquake (MCE).

Earthquakes in Southern California – namely Northridge and Whittier Narrows – have occurred along blind-thrust faults. These fault types do not have readily identifiable surface features and are not extensively mapped. For our project site, the potential for strong-ground motion to occur due to blind-thrust faulting is uncertain. Therefore, a moderate to large earthquake centered even closer to the site cannot be completely ruled out.

<b>Fault</b>	<b>Estimated MCE (<math>M_w</math>)</b>	<b>Distance (miles)</b>
Hayward Fault	6.5	3.8
Calaveras Fault	6.7	12.8
San Andreas Fault	7.9	14.6

**Table 1: Active Near Source Faults**

As this Tier 1 Basis of Performance level is Immediate Occupancy, the seismic standard for an existing structure is Basic Safety Earthquake-1E (BSE-1E). The BSE-1E earthquake is also referred to as the 225-year earthquake and is based on a 20 percent probability of exceedance within a 50-year time frame.

The 225-year event peak ground acceleration (PGA) is 0.44g, or 44% gravity. The USGS defined accelerations are based on Site Class D. Site Class D is assumed as recommended in ASCE 7-16 Section 20.1 where soil properties are not known in sufficient detail.

## **2.4 Liquefaction, Landslide, and other Geologic Hazards**

Liquefaction is the loss of bearing strength of saturated, cohesionless soils under strong ground motions. Liquefaction can cause settlement by consolidation of soils susceptible to liquefaction. Per the "California Earthquake Hazards Zone Application Map (EQ Zapp)," the fire station is located in a moderate liquefaction susceptibility zone. EQ Zapp is an online resource by the California Department of Conservation that maps hazard zones as evaluated by California Geological Survey (CGS).

The Alquist-Priolo Earthquake Fault Zoning (AP) Act is a state law that regulates construction in areas with close fault proximity and the potential for surface fault rupture. The AP Act was established following the 1971 San Fernando earthquake and has since been refined and revised. This building is not located in an AP zone.

The fire station is considered not at-risk for seismically induced landslides per the EQ Zapp map. Based on the aerial maps and our site visit, the building does not appear to be on any significant slopes.

## **PART 3: STRUCTURAL EVALUATION**

### **3.1 Documentation and Site Observations**

Available record or as-built drawings for the fire station include:

- Original drawings of the fire station (Sheets 1 through 12 architectural, sheets S1 through S5) dated September 1, 1967, by Treichel and Gibbs Architects.

No soils data or reports were available at this time.

Greg Tolan, SE, and Natsuki Okuda, PE, of Biggs Cardosa Associates performed a site visit on January 23, 2025. The field observation was limited to readily visible structural components; architectural finishes were not removed to expose concealed structural framing.

### **3.2 Building Systems**

#### **Foundation Systems**

The structure is constructed continuous conventional spread footings with spread footings supporting reinforced masonry shear walls and a reinforced concrete slab-on-grade.

### **Vertical Load Resisting Systems**

At the office and living quarters portion of the structure, the low roof and high roof consists of wood joists at varying spacing (16 and 12 inches) supporting plywood sheathing. The joists are supported by 2x4 interior stud walls and 8" and 12" exterior CMU walls.

For the second floor, a portion of the floor framing consists of varying sizes of floor joists at 12 inches on center supported by wide flange steel beams with  $\frac{3}{4}$ " plywood sheathing. The beams and joists are connected to ledgers on all sides of the diaphragm, supported by the reinforced masonry shear walls. The remaining portion of the floor is constructed of  $\frac{3}{4}$ " plywood sheathing over floor joists 12 inches on center supported by the exterior CMU walls. .

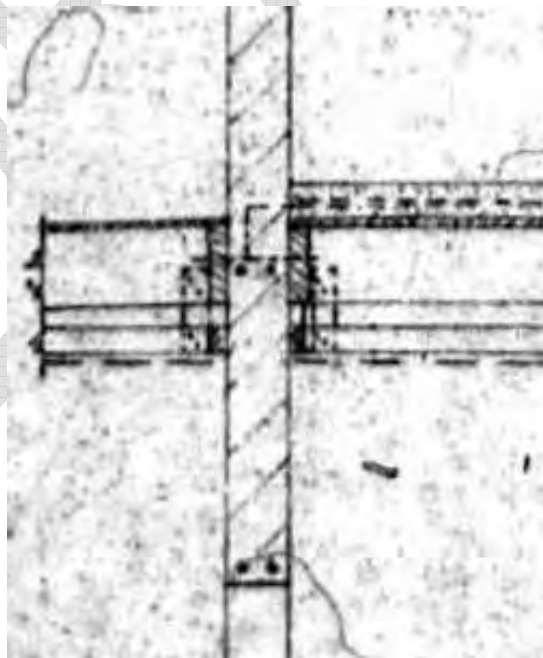
The apparatus bay roof structure is constructed of flat  $\frac{1}{2}$ " plywood overlaid over 2x tongue and groove straight sheathing spanning between purlins which are supported by glulam beams at all interior bays of framing. The exterior bays of framing are supported by wood ledgers bolted to 8" and 16" masonry walls. Plywood sheathing overlays the top of the tongue and groove sheathing.

The floor and roof framing for the storage area, located north of the of apparatus bay, are constructed of 3x10 floor joists and 2x16 roof joists at 16 inches on center supporting plywood sheathing or plywood sheathing overlaid over 2x tongue and groove straight sheathing. The floor and roof joists are supported by ledgers anchored to the exterior 8" CMU walls.

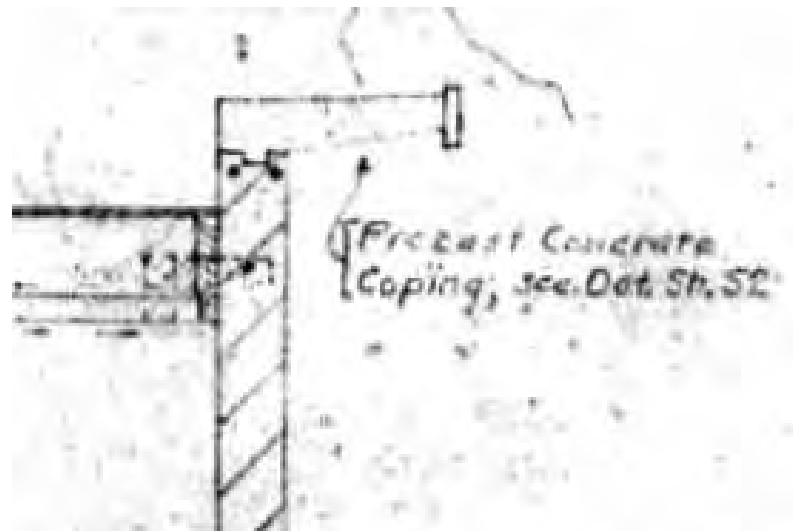
### **Lateral Load Resisting Systems**

At the office and living quarters portion of the building, the lateral load resisting system for the low and high roof consists of wood diaphragms constructed of  $\frac{1}{2}$ " ag plywood sheathing. The plywood sheathing delivers seismic loads to the masonry walls through the diaphragm nailing and into the ledgers, and then into the 8 or 12-inch-thick reinforced masonry walls. The seismic loads are transferred from the shear walls into the foundations through reinforcing dowels.

See Figure 2 and 3 for the typical framing to wall attachment at the low roof and high roof.



**Figure 2: Diaphragm to wall attachment at Low Roof and Level 2 Floor**



**Figure 3: Diaphragm to wall attachment at High Roof**

The lateral system for the apparatus bay portion of the building consists of a wood diaphragm constructed of  $\frac{1}{2}$ " plywood sheathing over flat 2"x6" tongue and groove sheathing. The plywood diaphragm delivers seismic loads to the reinforced masonry shear walls through the diaphragm connection to the ledgers, and then to the masonry shear walls. The seismic loads are transferred from the shear walls to the foundation through reinforcing dowels. There appears to have been a minor seismic upgrade at the apparatus bay roof. Several roof to wall ties appear to not be consistent with the original construction and were added at some point. There were no drawings available for this assumed upgrade. The details and adequacy of these upgrades should be evaluated.

See Figure 4 for the typical diaphragm to wall attachment at the apparatus bay as documented. More visuals of the apparatus bay framing system can be found in the Appendix (Photos 3-6).



**Figure 4: Diaphragm to wall attachment at the Apparatus Bay.**

## **PART 4: STRUCTURAL CONDITION ASSESSMENT**

Building evaluations are limited by the available construction documents and the level of access possible for the observation of structural elements of the building. During the site-walk, the interior and exterior of the building was reviewed based on what could be visually observed. Based on our review, the buildings appear to be in fair condition structurally with some areas of architectural damage and general deterioration from age.

- Cracks in masonry walls [See Appendix Photos 7-8]
- Cracks at main apparatus bay slab [See Appendix Photos 9-11]

Our observations indicate that existing field conditions substantially match the record drawings provided.

## **PART 5: STRUCTURAL EVALUATION AND FINDINGS**

### **5.1 Building Evaluation and Findings**

Based on the ASCE 41 Tier 1 review, the following items are of significance for the performance of these buildings when subjected to strong earthquake ground motions.

#### **Positive Features:**

- The structure shows an adequate vertical load path with no geometric irregularities.
- The structure complies with the requirements for redundant lateral systems with at least two lines of resistance in each direction.
- Plywood diaphragms are typically connected for transfer of in-plane seismic forces to the shear walls.
- Masonry wall reinforcement is typically doweled into the foundation. The dowels effectively transfer shear and moment to the foundation.
- The foundation elements/footings are tied with reinforced spread footings and a concrete slab-on-grade.
- Shear walls are appropriate height/thickness ratio and typical openings have additional trim reinforcing on all sides.

#### **Structural Deficiencies:**

- The structure is in a potential liquefaction zone and may be prone to settling.
- The concentration of the seismic overturning forces in foundation elements may exceed the capacity of the soil and foundation due to the CMU walls surrounding the apparatus bay not meeting length-to-height requirements.
- The roof-to-wall anchorage connection and CMU wall anchorage for lateral support does not provide adequate strength and relies on cross-grain bending in the wood ledgers, creating an undesirable load path. The bearing walls can separate from the structure and potentially cause partial collapse of floor or roof.
- There are no continuous crossties between diaphragm chords in the direction perpendicular to the joists at the low roof, high roof and second floor framing. Continuous crossties are required to develop out-of-plane wall forces into diaphragms.

Note that Precast concrete cornice at the high roof may be insufficiently connected and may be a falling hazard.

## **PART 6: CONCLUSION AND RECOMMENDATIONS**

### **6.1 General Recommendations for Condition Assessment**

The buildings are generally in fair structural condition for the time of construction. No significant structural material condition issues were observed. A visual inspection of the structure reveals there are signs of cracking and architectural damage in the concrete slab and CMU walls in the apparatus bay, especially near wall openings. Any deficient conditions noted should be repaired through general maintenance. Note that the condition repairs noted below do not necessarily represent a life safety hazard and may be completed at the city's discretion. .

### **6.2 Seismic Retrofit Recommendations**

The following recommendations are provided to address the seismic deficiencies based on the level of analysis performed (ASCE 41 Tier 1 screening and engineering judgment). While the recommendations listed below do not represent immediate life safety concerns that warrant facility closure, they do describe building components that are non-compliant for seismic performance per the ASCE 41 Tier 1 checklist review or identified as systemic deficiencies. All seismic remediation measures noted here are considered voluntary.

The mitigations listed below are recommended for seismic safety. If upgrades are to be implemented, it should be noted that the owner has the option to choose an upgrade standard for the structural components recommended below. It is suggested that new components be designed to the current seismic code level performance criteria. Alternatively, ASCE 41 Seismic Evaluation and Retrofit of Existing Buildings can be used for the design. Our understanding is that no remediation work has been mandated for this site by governing agencies; therefore, any mitigation work undertaken is voluntary on the part of the city. Mitigations are listed in order of importance from greatest to least.

### **6.3 Recommended Mitigations**

#### **Seismic Strengthening**

- Install additional roof-to-wall anchors, such as steel rod hold downs at the masonry walls or new blocking and sheet metal clips, to transfer the masonry wall out-of-plane forces into the wood diaphragm and prevent cross grain bending of wood ledgers. Sizing and frequency of attachments can be determined using the out-of-plane anchorage forces from the ASCE 41 existing building design criteria.
- Perform geotechnical investigation to determine soil properties of building site and confirm if soil is liquifiable. Pending geotechnical investigation results, enhance existing spread footings as required to seismic overturning forces and bearing pressures.

#### **Structure Condition Repair**

- Remove damaged finishes and inspect for any structural water damage. Replace in kind.
- Chip out damaged masonry and replace in kind or fill cracks and damage with repair mortar.
- Remove damaged wood and replace in kind.
- Further evaluate precast concrete cornice attachment for stability

**PART 7: LIMITATIONS AND DISCLAIMERS**

The evaluation, findings, conclusions, and recommendations outlined in this report were based on available but limited information. This report has been prepared using the same degree of care and skill ordinarily exercised for this type of professional service by structural engineers practicing in this area at this time. No other warranty, expressed or implied, is made as to the professional advice in this report.

This report has been prepared for the exclusive use of Alameda Fire Station No. 1. It may not be used by any other individual or entity without the express written approval of Biggs Cardosa Associates, Inc.

DRAFT

**PART 8: APPENDIX**

**8.1 Photos**



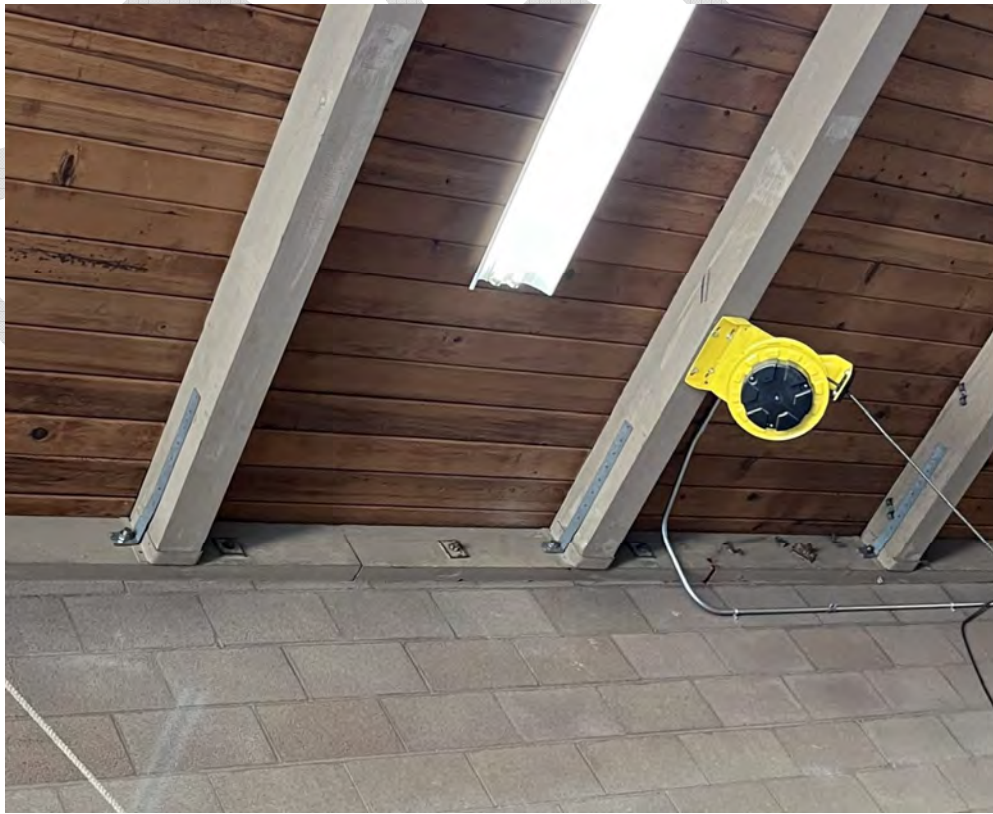
**Photo 1: Interior of Apparatus Bay**



**Photo 2: Apparatus Bay Entrance**



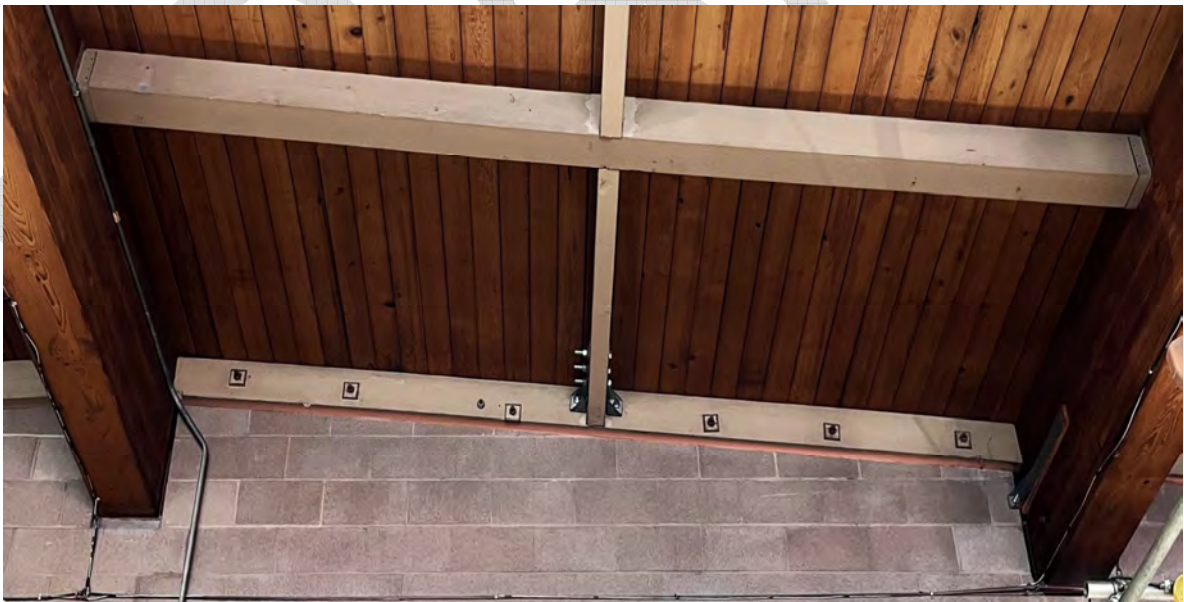
**Photo 3: Apparatus Bay Roof Framing**



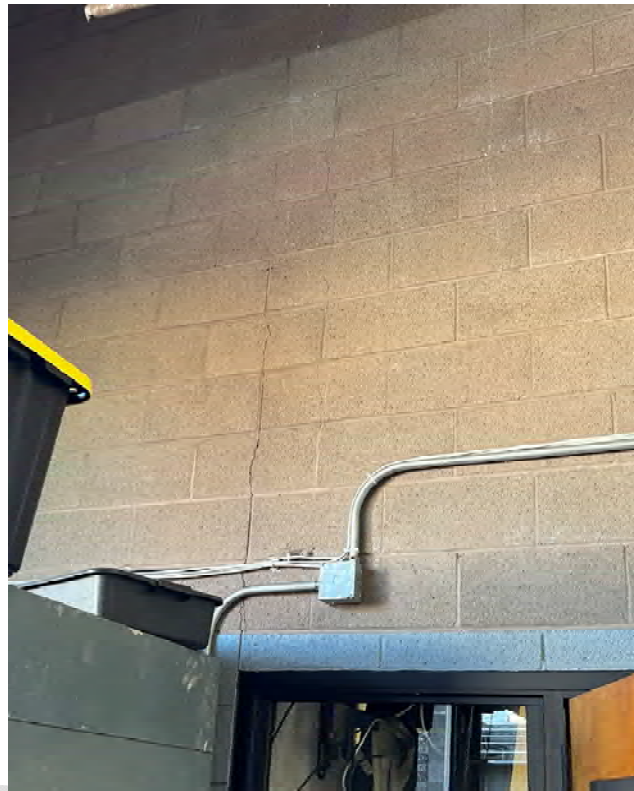
**Photo 4: Apparatus Bay – Beam/Ledger to Wall Connection**



**Photo 5: Apparatus Bay – Glulam to Wall Connection**



**Photo 6: Apparatus Bay – Roof Framing Connections**



**Photo 7: Interior of Apparatus Bay – Cracks in CMU Wall Openings**



**Photo 8: Interior of Apparatus Bay – Cracks in CMU Wall**



**Photo 9: Cracking in Main Apparatus Bay Slab**



**Photo 10: Cracking in Main Apparatus Bay Slab**



**Photo 11: Cracking in Main Apparatus Bay Slab**

**BIGGS CARDOSA  
ASSOCIATES INC**  
STRUCTURAL ENGINEERS

40 Federal Street  
San Francisco, CA 94107-1409  
Telephone 415.986.1911

RRM Design Group  
325 Davis Street  
San Leandro, CA 94577

November 6, 2025  
2025033

Attention: Michael Scott

Subject: Alameda Fire Station No. 2  
635 Pacific Avenue, Alameda, CA 94501

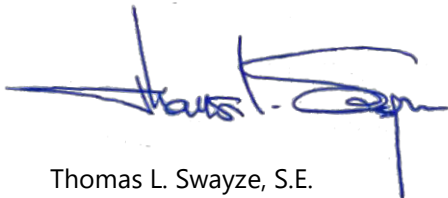
Dear Michael:

Biggs Cardosa Associates would like to present this Draft Tier 1 structural assessment report for the existing Alameda Fire Station No. 2. In accordance with our proposal, we have performed a structural review and assessment of the existing wood framed structure on the property.

We completed a site visit on October 21, 2025. No architectural and structural plans were available at the time of this report. The following report describes the findings of our structural review and conditional assessment of the buildings with retrofit recommendations.

It is recommended that ultimately all the retrofit options described are implemented but even this phased approach will improve the performance of the building. However, it is important to note that all the mitigation work described is entirely voluntary on the part of the city.

Sincerely,  
BIGGS CARDOSA ASSOCIATES, INC.



Thomas L. Swayze, S.E.  
Principal

## Tier 1 Seismic Assessment **DRAFT**

The City of Alameda

November 6, 2025



## Alameda Fire Station No. 2

635 Pacific Avenue,  
Alameda, CA 94501

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## **PART 1: OVERVIEW**

### **1.1 Introduction**

The City of Alameda has requested a structural assessment of Alameda Fire Station No. 2. This report represents the results of an ASCE 41 seismic assessment and general structural condition review of the building. Alameda Fire Station No. 2 is located at 635 Pacific Avenue, Alameda, California. The fire station consists of a single-story apparatus bay and an office and dormitory wing both initially constructed in 1921. The team was not provided with any as-built data or information regarding pending or past modernizations or retrofits for this building.



**Figure 1: Aerial View of the Alameda Fire Station No. 2**

A Tier 1 level ASCE 41 structural evaluation and general condition assessment was performed for the building. The assessment is based on visual observations and assumed construction practices associated with the period of construction. Site observations were conducted by Biggs Cardosa Associates Inc. during a site visit on October 21, 2025. This report describes the findings of our structural review and contains observations and qualitative recommendations for seismic or condition upgrades or recommended additional studies. The garage and paint shed structures are not physically connected to the station and were not evaluated in this Tier 1 report.

### **1.2 Background**

With each building code cycle (approximately every 3 years) codes for new construction are modified to improve structural performance during seismic events. However, engineering standards to evaluate existing buildings have historically lagged in development. For the past several years,

ASCE/SEI 41-17 Seismic Evaluation and Retrofit of Existing Buildings has been the accepted baseline standard of practice for the seismic evaluation of existing buildings. As described in that document, one of the primary goals is to include lessons learned from recent earthquakes.

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The ASCE 41 Immediate Occupancy Basic Configuration checklist (Table 17-3) and Immediate Occupancy Structural Checklist for Building Types RM1 and RM2 (Table 17-35) are appropriate for this building type and are included in this report. As these buildings are considered Risk Category IV, they are evaluated under the Immediate Occupancy criteria.

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### 2.4 Liquefaction, Landslide, and other Geologic Hazards

Liquefaction is the loss of bearing strength of saturated, cohesionless soils under strong ground motions. Liquefaction can cause settlement by consolidation of soils susceptible to liquefaction. Per

the "California Earthquake Hazards Zone Application Map (EQ Zapp)," the fire station is located in a moderate liquefaction susceptibility zone. EQ Zapp is an online resource by the California Department of Conservation that maps hazard zones as evaluated by California Geological Survey (CGS).

The Alquist-Priolo Earthquake Fault Zoning (AP) Act is a state law that regulates construction in areas with close fault proximity and the potential for surface fault rupture. The AP Act was established following the 1971 San Fernando earthquake and has since been refined and revised. This building is not located in an AP zone.

The fire station is not considered at-risk for seismically induced landslides per the EQ Zapp map. Based on the aerial maps and our site visit, the building does not appear to be on any significant slopes.

### **PART 3: STRUCTURAL EVALUATION**

#### **3.1 Documentation and Site Observations**

No record or as-built drawings were available for the fire station. Additionally, no soils data or reports were available. A facility condition assessment report, "Tier 1 Report - Facility Condition Assessment for Fire Station #2" by Faithful+Gould, Inc. dated January 30, 2015, was provided by the City of Alameda as additional reference information.

Greg Tolan, SE, and Natsuki Okuda, PE, of Biggs Cardosa Associates performed a site visit on October 21, 2025. The field observation was limited to readily visible structural components; architectural finishes were not removed to expose concealed structural framing.

#### **3.2 Building Systems**

##### **Foundation Systems**

The type of foundation and slab are unknown at this time. The structure is likely to have continuous conventional spread footings supporting wood bearing walls and a reinforced concrete slab-on-grade.

##### **Vertical Load Resisting Systems**

The type of roof and floor system is unknown at this time. The architectural finishes were not removed to reveal the ceiling framing. There is a 4-inch finished floor elevation increase between the apparatus bay and the office and living quarters.

At the apparatus bay, the gable roof likely consists of a wood framed roof system, constructed of wood trusses spanning in the east-west direction supporting 1x diagonal or straight sheathing. Wood trusses likely frame into wood stud walls which transfer the vertical load to the foundation. Ceiling finishes prevent visual access to framing and connections. Wood framed outriggers rafter extensions are visible at the exterior eave soffit (see Appendix Photo 12).

At the office and living quarters portion of the structure, the flat roof likely consists of a wood framed roof system, constructed of 1x diagonal or straight sheathing over wood joists framing to wood beams. A portion of the office and living quarters has a hip roof and is likely also wood framed. Wood joists frame into wood stud bearing walls, which are supported on the concrete foundation walls. The elevated first floor wood framed flooring is also supported by the foundation

walls and isolated piers (see Appendix Photos 14-16), which in turn transfers the vertical loads to the soil. A crawl space is located below the wood framed floor.

### **Lateral Load Resisting Systems**

The roof lateral system likely consists of a wood roof diaphragm of unknown sheathing. The building's lateral load resisting system also likely consists of wood framed shear walls constructed with an unknown sheathing type. The wood diaphragm delivers seismic forces to wood sheathed shear walls. The lateral loads are assumed to transfer from the shear walls to the foundation. Architectural finishes were not removed to reveal either the ceiling framing or the roof diaphragm attachment to the wall or wall sill bolting. The seismic load path for these components is unknown and likely deficient based on the age of the structure.

### **Exterior Steel Canopy Structure**

There is an exterior steel framed canopy structure behind the apparatus bay. The canopy system appears to consist of 2x flat horizontal wood spanning between W12x± steel beams. The W12x± beams are supported by C8x± channel ledgers at the apparatus bay exterior wood wall, and by a steel wide flange girder spanning between WF columns on the other side. Steel diagonal braces are provided for lateral stability between the beam and wall/columns. See Appendix Photos 6-7.

## **PART 4: STRUCTURAL CONDITION ASSESSMENT**

Building evaluations are limited by the available construction documents and the level of access possible for the observation of structural elements of the building. During the site-walk, the interior and exterior of the building were reviewed based on what could be visually observed. Based on our review, the buildings appear to be in fair condition structurally with some areas of architectural damage.

- Cracks at main apparatus bay slab [See Appendix Photos 8-10]
- Minor cracks in stucco walls [See Appendix Photos 11]

As no as-built drawings were available for this building. We cannot determine whether the existing field conditions match the original drawings.

## **PART 5: STRUCTURAL EVALUATION AND FINDINGS**

### **5.1 Building Evaluation and Findings**

Based on the ASCE 41 Tier 1 review, the following items are of significance for the performance of this building when subjected to strong earthquake ground motions. Many Tier 1 checklist items are marked as unknown, due to the lack of as-built information. Because the building is likely a wood diaphragm with a wood sheathed shear wall system, with all framing concealed by finishes, the connections and ties between systems could not be assessed from a visual review of the building.

#### **Positive Features:**

- The structure complies with the requirements for redundant lateral systems with at least two lines of resistance in each direction.
- There are no vertical irregularities in the system as the structure is a single-story building.

- There are no torsional irregularities in the structure for the regular rectangular shape of the building.
- There are no large diaphragm openings and diaphragms are continuous, with no split-levels.
- The site is flat and is not considered at-risk of landslides nor has uneven foundation embedment depths.

#### **Structural Deficiencies:**

- No as-built drawings are available. Many structural elements were not visible for evaluation. The following components were unable to be assessed:
  - Complete load path of gravity and lateral system, including the following:
    - Type of foundation and depth
    - Foundation ties/sill bolts and hold-down anchors
    - Structure roof framing and sheathing type
    - Framing connections, including girder-column connections and wood posts to foundation,
    - Roof chord continuity
  - Wood shear wall lengths and sheathing type
  - Diaphragm type and spans
- The structure is in a potential liquefaction zone and may be prone to settlement.
- Due to the lack of information regarding the existing foundation system, further analysis of the foundations is recommended, should changes be made to the existing lateral system. Analysis may include soil excavation to confirm footing sizes, as well as removal of wall finishes to confirm shear wall hold-down anchors are anchored into concrete.
- It is recommended to obtain a site geotechnical report to determine the foundation recommendations including any mitigation requirements that might include deep foundation elements or soil improvement.
- The shear walls likely have insufficient wall lengths for the seismic loads overturning loads and shear stresses, according to the quick check per ASCE 41 for an unknown wall sheathing type. Further investigation is required to understand the layout and sheathing type of all the seismic shear walls in the structure.
- Some of the shear walls are narrow and have insufficient length-to-height requirements at the apparatus bay garage door openings and at the east side of the office/residential building, which may result in exceeding overturning capacities.

## **PART 6: CONCLUSION AND RECOMMENDATIONS**

### **6.1 General Recommendations for Condition Assessment**

The buildings are generally in fair structural condition for the time of construction. No significant structural material condition issues were observed. A visual inspection of the structure reveals there are signs of cracking and architectural damage in the concrete slab and stucco walls in the apparatus bay, especially near wall openings. Apparatus bay slab cracking has been previously repaired. Any deficient conditions noted should be repaired through general maintenance. Note that the condition repairs noted below do not necessarily represent a life safety hazard and may be completed at the City's discretion.

### **6.2 Seismic Retrofit Recommendations**

The following recommendations are provided to address the seismic deficiencies based on the level of analysis performed (ASCE 41 Tier 1 screening and engineering judgment). While the recommendations listed below do not represent immediate life safety concerns that warrant facility closure, they do describe building components that are non-compliant for seismic performance per the ASCE 41 Tier 1 checklist review or identified as systemic deficiencies.

The mitigations listed below are recommended for seismic safety. If upgrades are to be implemented, it should be noted that the owner has the option to choose an upgrade standard for the structural components recommended below. It is suggested that new components be designed to the current seismic code level performance criteria. Alternatively, ASCE 41 Seismic Evaluation and Retrofit of Existing Buildings can be used for the design. Our understanding is that no remediation work has been mandated for this site by governing agencies; therefore, any mitigation work undertaken is voluntary on the part of the City. Mitigations are listed in order of importance from greatest to least.

### **6.3 Recommended Mitigations**

#### **Seismic Strengthening**

- Obtain geotechnical analysis of the site to determine all soil-structure interaction parameters including liquefaction analysis and foundation type recommendations. If a significant liquefaction problem is present, the mitigation will likely be extensive.
- If remediation or retrofit is to be seriously considered, obtain detailed building as-built survey to determine the wood shear wall and floor layout, sheathing type, and create as-built plans. Partial removal of existing finishes will be necessary to determine the existing framing and lateral systems, as well as confirm the lateral connectivity of the system. This will not be necessary if the station is programmed for replacement.
  - It is likely that several walls will require additional plywood sheathing and new concrete foundations.
- At the tall, narrow shear wall piers at the apparatus bay openings in the east-west direction, evaluate strengthening options to provide additional lateral resistance.
  - A variety of different systems may be appropriate based on further study. New steel moment frames, masonry or concrete shear walls or new plywood shear walls supported by new concrete foundations will very likely be required.

#### **Structure Condition Repair**

- Repair minor cracks in exterior stucco finishes.
- Repair any new cracks in the apparatus bay slab. It appears several cracks have previously been infilled with epoxy.

### **6.4 Potential Strengthening Scenarios and Scope**

We understand that there is little knowledge of the history or makeup of the building's construction. In order to better evaluate the condition of the building and verify the structure in place, additional intrusive observations, such as finish removal, scanning of concrete reinforcement, localized demolition (if deemed necessary) etc., would need to be performed. Structure conditions should be evaluated at the time of the finish removal.

**PART 7: LIMITATIONS AND DISCLAIMERS**

The evaluation, findings, conclusions, and recommendations outlined in this report were based on available but limited information. This report has been prepared using the same degree of care and skill ordinarily exercised for this type of professional service by structural engineers practicing in this area at this time. No other warranty, expressed or implied, is made as to the professional advice in this report.

This report has been prepared for the exclusive use of Alameda Fire Station No. 2. It may not be used by any other individual or entity without the express written approval of Biggs Cardosa Associates, Inc.

DRAFT

**PART 8: APPENDIX**

**8.1 Photos**



**Photo 1: Fire Station South Face**



**Photo 2: Fire Station North Face at App Bay**



**Photo 3: Fire Station North Face at Office/Residential**



**Photo 4: Fire Station East Face**



**Photo 5: Fire Station West Face**



**Photo 6: Steel Canopy at App Bay Wall**



**Photo 7: Steel Canopy at Garage**



**Photo 8: Interior of Apparatus Bay**



**Photo 9: Interior of Apparatus Bay**



**Photo 10: Cracking in Main Apparatus Bay Slab**



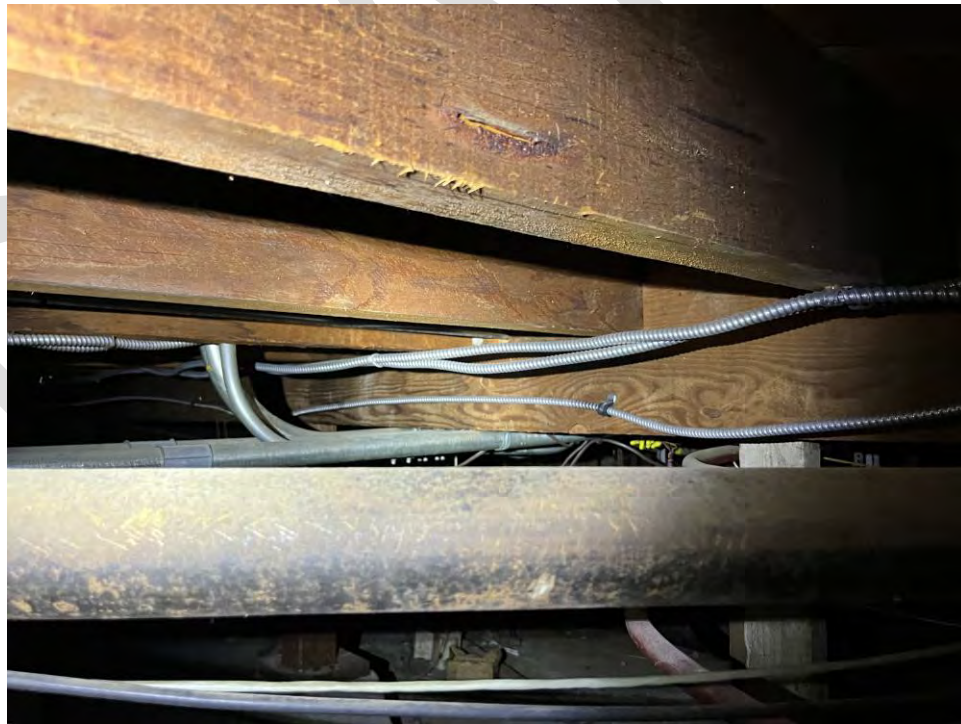
**Photo 11: Minor Chipping at Exterior Stucco**



**Photo 12: Exterior Soffit at Clay Tile Roof Overhang**



**Photo 13: Interior at Office**



**Photo 14: Joists at Crawl Space**



**Photo 15: Joists at Beam and Column at Crawl Space**



**Photo 16: Floor Joists at Concrete Foundation Wall at Crawl Space**



**Photo 17: Column and Isolated Footing at Crawl Space**

DRAFT

**BIGGS CARDOSA  
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STRUCTURAL ENGINEERS

40 Federal Street  
San Francisco, CA 94107-1409  
Telephone 415.986.1911

RRM Design Group  
325 Davis Street  
San Leandro, CA 94577

November 6, 2025  
2025033

Attention: Michael Scott

Subject: Alameda Fire Station No. 4  
2595 Mecartney Road, Alameda, CA 94502

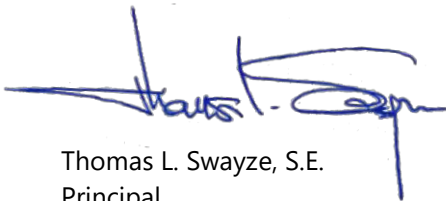
Dear Michael:

Biggs Cardosa Associates would like to present this Tier 1 structural assessment report for the existing Alameda Fire Station No. 4. In accordance with our proposal, we have performed a structural review and assessment for the existing wood and steel framed structure on the property.

We completed a site visit on January 23, 2025, and reviewed the available architectural and structural plans. The following report describes the findings of our structural review and conditional assessment of the buildings with retrofit recommendations.

It is recommended that ultimately all the retrofit options described are implemented but even this phased approach will improve the performance of the building. However, it is important to note that all the mitigation work described is entirely voluntary on the part of the city.

Sincerely,  
BIGGS CARDOSA ASSOCIATES, INC.



Thomas L. Swayze, S.E.  
Principal

## Tier 1 Seismic Assessment **DRAFT**

The City of Alameda

November 6, 2025

# Alameda Fire Station No. 4



2595 Mecartney Road,  
Alameda, CA 94502

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## **PART 1: OVERVIEW**

### **1.1 Introduction**

The City of Alameda has requested a structural assessment of Alameda Fire Station No. 4. This report represents the results of an ASCE 41 seismic assessment and general structural condition review of the building. Alameda Fire Station No. 4 is located at 2595 Mecartney Road, Alameda, California and was initially constructed in 1991. The fire station consists of a single-story apparatus bay on one side of the building, while the remaining portion is comprised of an office, dormitory and other living quarters for employees. The team was not provided with any data or information regarding pending or past modernizations and/or retrofits for this building.



**Figure 1: Aerial View of Alameda Fire Station No. 4**

A Tier 1 level ASCE 41 structural evaluation and general condition assessment was performed for the building based on a review of the available record drawings and visual observations conducted by Biggs Cardosa Associates Inc. during a site visit on January 23, 2025. This report describes the findings of our structural review and contains qualitative observations and recommendations for seismic or conditional upgrades or recommended additional studies.

## **1.2 Background**

With each building code cycle (approximately every 3 years) codes for new construction are modified to improve structural performance during seismic events. However, engineering standards to evaluate existing buildings have historically lagged in development. For the past several years, ASCE/SEI 41-17 Seismic Evaluation and Retrofit of Existing Buildings has been the accepted baseline standard of practice for the seismic evaluation of existing buildings. As described in that document, one of the primary goals is to include lessons learned from recent earthquakes.

The purpose of this study is to determine whether significant seismic deficiencies exist at a building, to determine the potential seismic risk of the building, and to provide general recommendations for reduction of seismic risk through mitigation. Buildings of recent construction are exempt from this type of analysis based on building type and the code enforced at the time of construction. Such buildings are identified as "benchmark buildings". According to ASCE 41 guidelines, none of the subject buildings of this study are classified as a "benchmark building" since they were designed and constructed prior to the benchmark cutoff date (2000) for both wood frame and steel moment resisting buildings.

The analysis methodology of ASCE 41-17 employs a quick check methodology (Tier 1 analysis). The Tier 1 quick check uses cursory calculations appropriate for each building type and a set of checklists which contain evaluation statements that help to identify areas of concern regarding the ability of the structure to adequately transmit seismic forces to the foundation and supporting soils.

## **PART 2: SEISMIC PERFORMANCE EVALUATION**

### **2.1 Methodology**

The potential damage to a structure in an earthquake can be evaluated provided that, (1) seismic hazards which affect the structure and site can be estimated and (2) the vulnerability of the structure to those hazards are known or can be estimated.

Site seismicity for the Alameda Fire Station No. 4 was determined using the United States Geologic Survey (USGS) web based Seismic Hazard Curves, Response Parameters and Design Parameters program. Seismic short period  $S_s$  and one second  $S_1$  response acceleration parameters were obtained through the ASCE 7 Hazard Tool.

Seismic evaluation of the structures was conducted using the ASCE 41-17 – Seismic Evaluation and Retrofit of Existing Buildings. ASCE 41 provides a three-tiered process for seismic evaluation of existing buildings based on building type and the level of seismicity for the building location. The Tier 1 study is an initial checklist evaluation of structural, non-structural, and foundation/geologic hazard elements of a building and site conditions that is intended to screen for potential seismic deficiencies. Tier 2 and 3 studies include more in-depth analysis procedures for a building or component that is identified by the Tier 1 screening process as structurally deficient or that requires further study. Non-structural items were not included as those systems are generally evaluated by an architect.

This assessment of Alameda Fire Station No. 4 utilizes the Tier 1 screening procedure to identify initial deficiencies as much as possible with the information available.

## 2.2 Performance Level

ASCE 41 Tier 1 evaluation of a building can be performed for either Collapse Prevention (CP) or Immediate Occupancy (IO) performance levels. The Basic Performance Objective focuses on Collapse Prevention for buildings in Risk Category I, II, and III and on Immediate Occupancy for buildings in Risk Category IV.

ASCE 41 summarizes the two performance levels as follows:

- CP Performance Level: After an earthquake, the structure will have damaged components and continue to support gravity loads but retains no margin against collapse. Designed to prevent only the most egregious structural failures against either partial or total collapse remains.
- IO Performance Level: After an earthquake, the basic vertical and lateral force-resisting system retains nearly all its pre-earthquake strength, very limited damage to structural and non-structural components has occurred and critical parts of the building remain habitable.

The ASCE 41 Immediate Occupancy Basic Configuration checklist (Table 17-3) and Immediate Occupancy Structural Checklist for Building Types W2 (Table 17-7) and S1 (Table 17-9) are appropriate for this building type and are included in this report. As these buildings are considered Risk Category IV, they are evaluated under the Immediate Occupancy criteria.

## 2.3 Seismic Source

The general seismicity in the San Francisco Bay region is influenced by several known faults, their potential faulting length, and relative orientation. The Hayward Fault extends in the North-South direction, between the North American plate and the Pacific plate. This fault is located approximately 5.3 miles east of the building. Other known, near-source faults with recorded activity, such as the San Andreas Fault, are listed in Table 1 (From California Department of Conservation) along with the estimated moment magnitude,  $M_w$ , that would occur during the Maximum Considered Earthquake (MCE).

Earthquakes in Southern California – namely Northridge and Whittier Narrows – have occurred along blind-thrust faults. These faults do not have readily identifiable surface features and are not extensively mapped. For our project site, the potential for strong-ground motion to occur due to blind-thrust faulting is uncertain. Therefore, a moderate to large earthquake centered even closer to the site cannot be completely ruled out.

Fault	Estimated MCE ( $M_w$ )	Distance (miles)
Hayward Fault	6.5	5.3
San Andreas Fault	7.9	14
Calaveras Fault	6.7	12.9

**Table 1: Active Near Source Faults**

As this Tier 1 Basis of Performance is Immediate Occupancy, the standard for an existing structure would be for a Basic Safety Earthquake-1E (BSE-1E). BSE-1E earthquake is also referred to as the 225-year earthquake and is based on a 20 percent probability of exceedance within a 50-year time frame.

The 225-year event peak ground acceleration (PGA) is 0.62g, or 62% gravity. The USGS defined accelerations are based on Site Class D. Site Class D is assumed as recommended in ASCE 7-16 Section 20.1 where soil properties are not known in sufficient detail.

## **2.4 Liquefaction, Landslide, and other Geologic Hazards**

Liquefaction is the loss of bearing strength of saturated, cohesionless soils under strong ground motions. Liquefaction can cause settlement by consolidation of soils susceptible to liquefaction. Per the "California Earthquake Hazards Zone Application Map (EQ Zapp)," the fire station is located in a very high liquefaction susceptibility zone. EQ Zapp is an online resource by the California Department of Conservation that maps hazard zones as evaluated by California Geological Survey (CGS).

The Alquist-Priolo Earthquake Fault Zoning (AP) Act is a state law that regulates construction in areas with close fault proximity and the potential for surface fault rupture. The AP Act was established following the 1971 San Fernando earthquake and has since been refined and revised. This building is not located in an AP zone.

The fire station is considered not at-risk for seismically induced landslides per the EQ Zapp map. Based on the aerial maps and our site visit, the building does not appear to be on any significant slopes.

## **PART 3: STRUCTURAL EVALUATION**

### **3.1 Documentation**

Available record or as-built drawings for the fire station include:

- Original drawings of the fire station (Sheets A0.1 through A4.3 architectural, sheets S0 through S6) dated January 3<sup>rd</sup>, 1989, by Hallenbeck Chamorro & Associates Architecture and RKI International Engineers Inc.

No soils data or reports were available at this time.

Greg Tolan, SE, and Natsuki Okuda, PE, of Biggs Cardosa Associates performed a site visit on January 23, 2025. The field observation was limited to readily visible structural components; architectural finishes were not removed to expose concealed structural framing.

### **3.2 Building Systems**

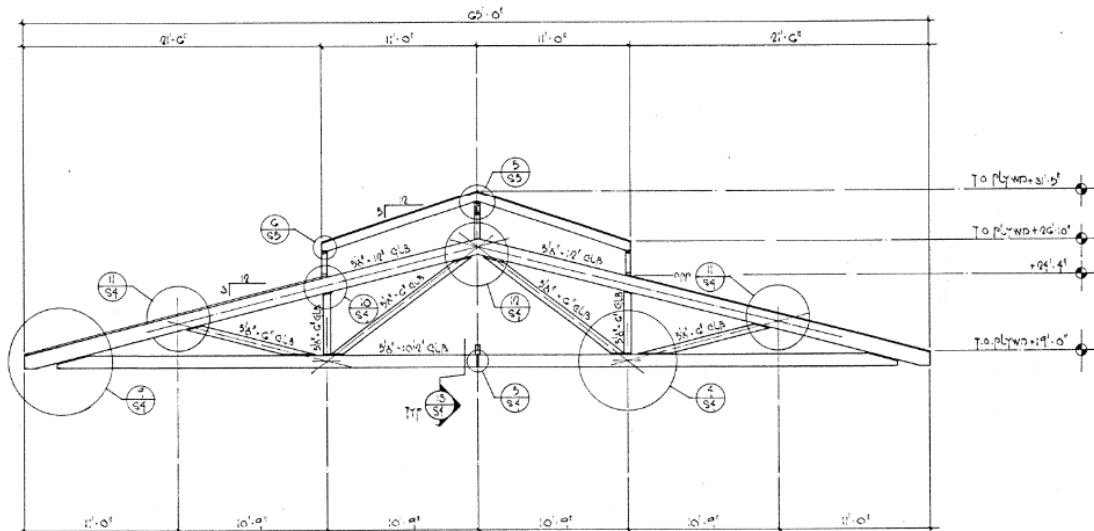
#### **Foundation Systems**

The structure is constructed on interlocking prestressed grade beams that are post tensioned supporting wood shear walls, steel moment frame columns, and a reinforced concrete slab-on-grade.

#### **Vertical Load Resisting Systems**

The main building's roof consists of 2x12 joists at 24 inches on center with plywood sheathing. The main building has a raised main entry approximately 20 by 20 feet constructed of 2x8 rafters at 24 inches on center with 2x8 collar ties. The rafters are connected to either the top of the wood shear wall or wood ledgers to transfer the vertical loads to wood shear walls.

The apparatus bay is constructed of glulam trusses equally spaced in the east-west direction, with a continuous elevated roof clerestory portion at the center. 2x10 joists at 24 inches on center span from truss-to-truss supporting plywood sheathing. The joists are connected to the top of the wood shear walls to transfer the vertical loads to wood shear walls and into the foundations. The trusses are supported at each end by HSS steel columns.

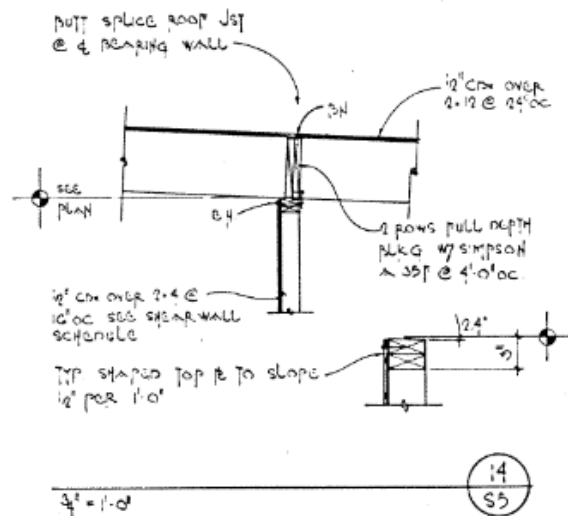


**Figure 1: Apparatus Bay Truss Elevation**

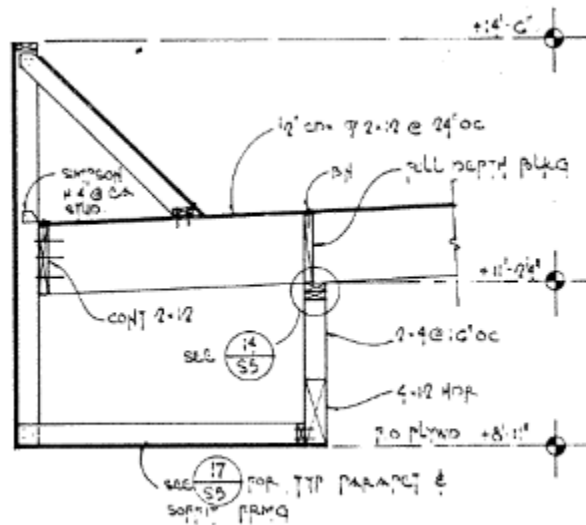
**Lateral Load Resisting Systems**

The lateral load resisting system for the office and dormitory portion of the building consists of a 1/2" plywood diaphragm supported by wood shear walls. The plywood diaphragm delivers seismic forces to the wood shear walls through blocking or ledgers, and into the wood shear wall at the main building. The lateral loads are transferred from the shear walls into the foundation.

See Figures 1 and 2 for the typical framing to wall attachment at the low roof and high roof.



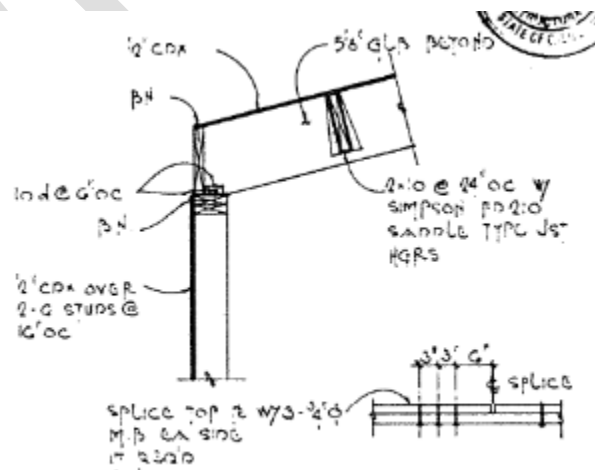
**Figure 1: Diaphragm Attachment to Shear Wall Through Blocking**



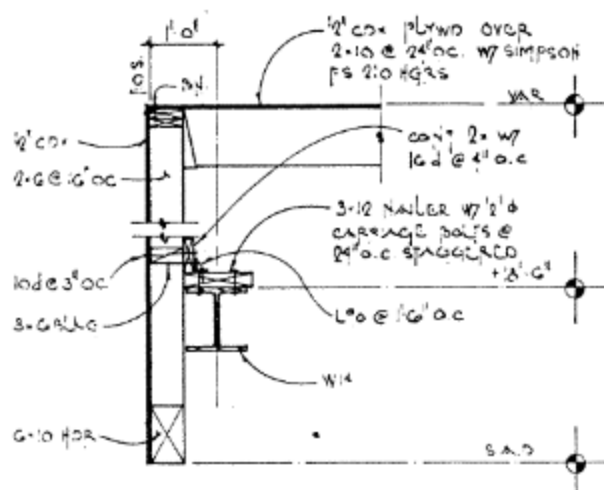
**Figure 2: Diaphragm Attachment to Shear Wall Through Ledger**

The lateral system for the apparatus bay portion of the building consists of a wood diaphragm constructed of 1/2" plywood sheathing supported by wood shear walls and steel moment frames. The wood diaphragm delivers seismic forces to the wood shear walls through the plywood diaphragm to the wood ledger, and into the shear walls in the east-west direction. In the north-south direction, the apparatus bay is laterally supported by steel moment frames along the apparatus bay door openings. The wood diaphragm delivers forces to the steel moment frame through a short plywood sheathed wall above the doors. The lateral loads are transferred from the shear walls and the moment frames into the foundations.

See Figures 3 and 4 for the typical diaphragm to wall attachment at the apparatus bay at the wood shear walls and at the steel moment frames respectively. More visuals of the apparatus bay framing system can be found in the Appendix (Photos 3-6).



**Figure 3: Diaphragm attachment at the Apparatus Bay – Wood Shear Wall Condition**



**Figure 4: Diaphragm attachment at the Apparatus Bay – Steel Moment Frame Condition**

#### **PART 4: STRUCTURAL CONDITION ASSESSMENT**

Building evaluations are limited by the available construction documents and the level of access possible for the observation of structural elements of the building. During the site-walk, the interior and exterior of each building was reviewed based on what could be visually observed. Based on our review, the buildings appear to be in good condition structurally with some areas of architectural damage and general deterioration from age.

- Minor cracking at main apparatus bay slab [See Appendix photo 6]

Our observations indicate that existing field conditions substantially match the record drawings provided.

#### **PART 5: STRUCTURAL EVALUATION AND FINDINGS**

##### **5.1 Building Evaluation and Findings**

Based on the ASCE 41 Tier 1 review, the following items are of significance for the performance of these buildings when subjected to strong earthquake ground motions.

##### **Positive Features:**

- Structure shows an adequate load path with no geometric irregularities.
- Structure complies with requirements for redundant lateral systems with at least two lines of resistance in each direction for both the shear walls and the moment frames.
- Ties exist between foundation elements to resist seismic forces.
- Structural panel wood sheathing is used for the sheathing of all shear walls for both the apparatus bay and the main building.
- All wood posts and girder connections have a positive connection to the foundation and columns respectively. The wood sill anchor bolt attachment spacing does not exceed 4 feet.
- Plywood diaphragms are connected for transfer of in-plane seismic forces to the shear wall and are not composed of split-level floors.

- The average flexural stress in the moment frame is lower than the allowable strength of steel at the beams.
- The steel columns used for the steel moment frames are anchored to the foundation.
- The diaphragm connection to the steel moment frames is able to develop the strength of the diaphragm through the nailing and steel angle attachments.
- The columns for the steel moment frames meet the compact member requirements per AISC 341, Table D1.1.
- The beam flanges have continuity plates at all moment frame joints.

**Structural Deficiencies:**

- There are several discontinuous shear wall conditions at the raised area in the apparatus bay extending in the north-south direction and on three sides of the lobby. These are clerestory walls that are all fully sheathed with no openings in them. These will act as an extension of the diaphragm rather than shear walls.
- The structure is in a high liquefaction zone and is prone to settling.
- The concentration of the seismic overturning forces in foundation elements may exceed the capacity of the soil and foundation.
- The shear stress in several of the wood shear walls exceeds the allowable shear stress at both the apparatus bay and the main building for a Tier 1 check, with the demand-to-capacity ratio exceeding 3.1 at the worst case.
- Some shear walls at the main building exceed a height to length aspect ratio of 2 to 1.
- Some shear walls at the main building in both directions and at the apparatus bay in the north south direction do not have the holdowns shown on the drawings.
- The anchorage of the steel columns for the steel moment frame cannot develop the uplift capacity of the foundation.
- The moment connections at the steel moment frame cannot develop of the expected strength of the adjoining members based on the minimum yield stress of the steel.
- The panel zones of the steel moment frames have a shear capacity less than 1.1 times the sum of the flexural strength of the beams, with a demand-to-capacity ratio of approximately 2 to 1.
- Only half of the steel moment frame joints consist of strong-column weak-beam connections. Where the column is not strong enough to force the beam to fail prior to the column, the frame may experience a concentration of inelastic forces at specific members, causing the column to potentially hinge.
- The beams for the steel moment frames do not meet the compact member requirements per AISC 341, Table D1.1. Noncompact frame elements may experience local buckling before the development of their full moment capacities, which will lead to poor ductility and behavior during a seismic event.
- None of the bottom flanges of the steel moment frame beams or the beam-to-column connections are braced out-of-plane. The flanges must be braced in order to prevent lateral torsional buckling, which limits the frames' ability to resist seismic forces.
- The out of plane attachment from the wood wall to the steel moment frame is inadequate as it relies primarily on nails in withdrawal and the wood members in cross grain bending.

## **PART 6: CONCLUSION AND RECOMMENDATIONS**

### **6.1 General Recommendations for Condition Assessment**

The buildings are generally in good structural condition for the time of construction. No significant structural material condition issues were observed. A visual inspection of the structure reveals there are signs of cracking and architectural damage in the concrete in the apparatus bay.

### **6.2 Seismic Retrofit Recommendations**

The following recommendations are provided to address the seismic deficiencies based on the level of analysis performed (ASCE 41 Tier 1 screening and engineering judgment). While the recommendations listed below do not represent immediate life safety concerns that warrant facility closure, they do describe building components that are non-compliant for seismic performance per the ASCE 41 Tier 1 checklist review or identified as systemic deficiencies. All seismic remediation measures noted here are considered voluntary.

The mitigations listed below are recommended for seismic safety. If upgrades are to be implemented, it should be noted that the owner has the option to choose an upgrade standard for the structural components recommended below. It is suggested that new components be designed to the current seismic code level performance criteria. Alternatively, ASCE 41 Seismic Evaluation and Retrofit of Existing Buildings can be used for the design. Our understanding is that no remediation work has been mandated for this site by governing agencies; therefore, any mitigation work undertaken is voluntary in part of the City. Mitigations are listed in order of importance from greatest to least.

### **6.3 Recommended Mitigation**

#### **Seismic Strengthening**

- Install holdowns at the shear walls missing holdowns.
- Retrofit the beam to column connections at the steel moment frames with additional steel plates and welds.
- Add flange bracing at the steel moment frame beams such as angled pieces of steel to the roof framing.
- Perform geotechnical investigation to determine soil properties of building site and confirm if soil is liquifiable.
- Perform additional analysis of the wood shear walls, steel moment frames, and beams supporting discontinuous shear walls to confirm sufficiency per ASCE 41 Tier 2 analysis.

## **PART 7: LIMITATIONS AND DISCLAIMERS**

The evaluation, findings, conclusions, and recommendations outlined in this report were based on available but limited information. This report has been prepared using the same degree of care and skill ordinarily exercised for this type of professional service by structural engineers practicing in this area at this time. No other warranty, expressed or implied, is given as to professional advice in this report.

This report has been prepared for the exclusive use of Alameda Fire Station No. 4. It may not be used by any other individual or entity without the express written approval of Biggs Cardosa Associates, Inc.

**PART 8: APPENDIX**

**8.1 Photos**



**Photo 1: Apparatus Bay Entrance**



**Photo 2: Interior of Apparatus Bay**



**Photo 3: Apparatus Bay Roof Framing**



**Photo 4: Apparatus Bay – Steel Moment Frame**



**Photo 5: Apparatus Bay – Truss to Wall Connection**



**Photo 6: Interior of Apparatus Bay – Cracks in Slab**



**Photo 7: Roof of Main building**



**Photo 8: Roof of Apparatus Bay**

**BIGGS CARDOSA  
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STRUCTURAL ENGINEERS

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RRM Design Group  
325 Davis Street  
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November 6, 2025  
2025033

Attention: Michael Scott

Subject: Alameda Fire Station No. 5  
950 W Ranger Ave, Alameda, CA 94501

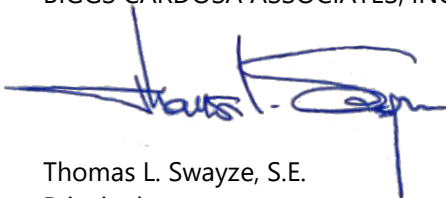
Dear Michael:

Biggs Cardosa Associates would like to present this Draft Tier 1 structural assessment report for the existing Alameda fire station number 5. In accordance with our proposal, we have performed a structural review and assessment for the existing concrete framed structure on the property.

We completed a site visit on January 23, 2025, and reviewed the available architectural and structural data that was available. The following report describes the findings of our structural review and conditional assessment of the buildings with retrofit recommendations.

It is recommended that ultimately all the retrofit options described are implemented but even this phased approach will improve the performance of the building. However, it is important to note that all the mitigation work described is entirely voluntary on the part of the city.

Sincerely,  
BIGGS CARDOSA ASSOCIATES, INC.



Thomas L. Swayze, S.E.  
Principal

## Tier 1 Seismic Assessment **DRAFT**

The City of Alameda

November 6, 2025

# Alameda Fire Station No. 5



950 W. Ranger Road  
Alameda, CA 94501

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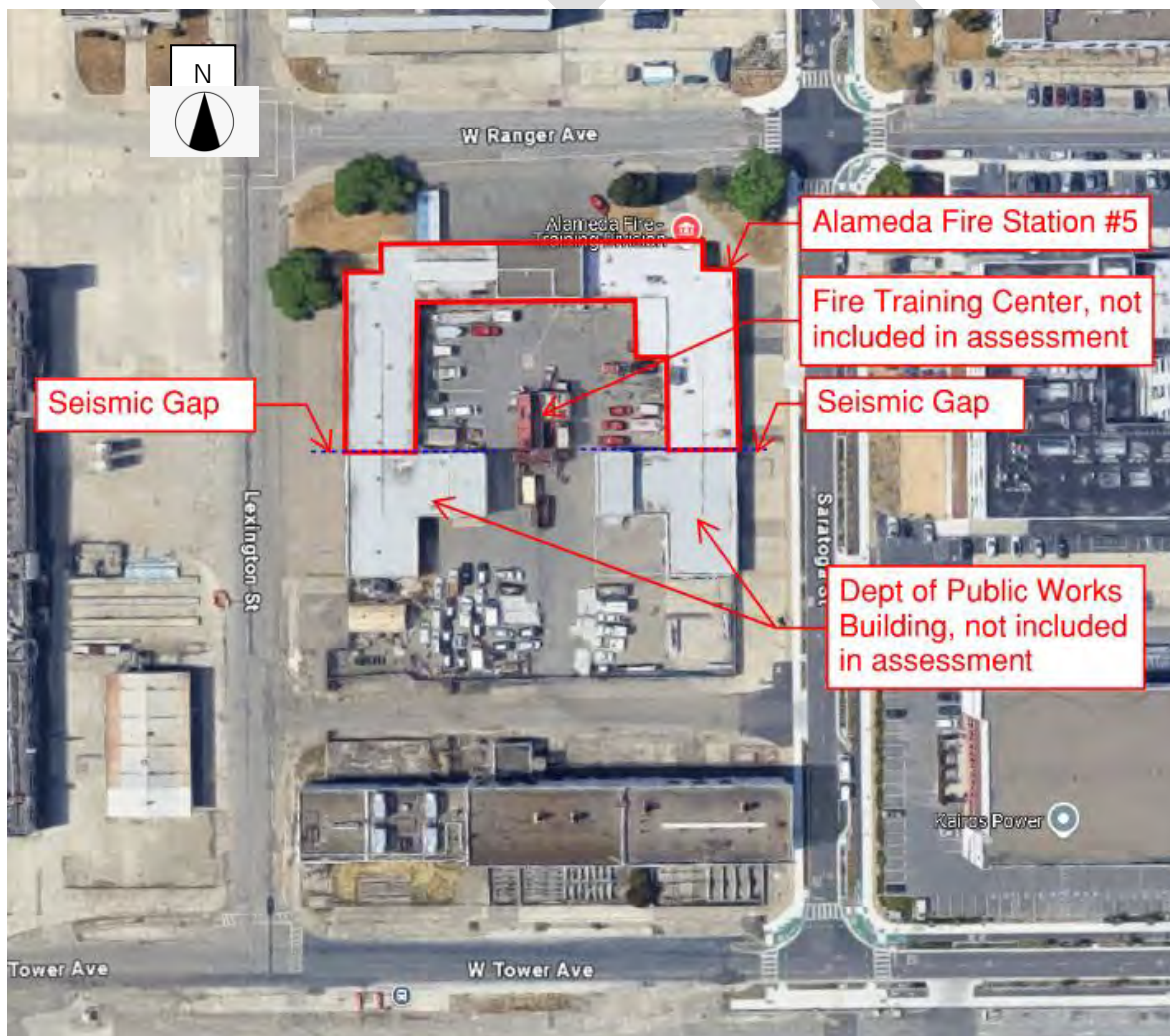
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## **PART 1: OVERVIEW**

### **1.1 Introduction**

The City of Alameda has requested a structural assessment of Alameda Fire Station No. 5. This report presents the results of a partial ASCE 41 seismic assessment and general structural condition review of the building at Alameda Fire Station No. 5, located at 950 W. Ranger Avenue in Alameda, CA. The fire station was originally a US Navy fire station on Alameda Naval Air Station before being taken over by the City in 1997. The fire station was closed in 2009 and is currently used as a fire training site. The existing building is "U"-shaped, with a small second story concrete and wood framed penthouse over a concrete roof/floor slab with concrete wall apparatus bays. The building appears to have been constructed in 1936, according to the facility assessment report dated 2015.

There is a seismic gap between the Department of Public Works buildings, south of the fire station. The team was not provided with any as-built record drawings, nor any data or information regarding pending or past modernizations or retrofits for any of the buildings.



**Figure 1: Aerial View of Alameda Fire Station No. 5 and the Alameda Fire Training Center**

Due to the limited as-built data and unknown structural data, a complete Tier 1 analysis of the building was unable to be completed. However, we have performed a qualitative review based on all available information of the building and our engineering judgment using the Tier 1 procedure as a guideline. A Tier 1 level ASCE 41 structural evaluation and general condition assessment was partially performed for the buildings based on a review of the available record drawings and visual observations conducted by Biggs Cardosa Associates Inc. during a site visit on January 23, 2025.

This report describes the findings of our structural review and contains qualitative observations and recommendations for seismic or conditional upgrades or recommended additional studies.

## **1.2 Background**

With each building code cycle (approximately every 3 years) codes for new design are modified to improve structural performance during seismic events. However, engineering standards to evaluate existing buildings have historically lagged in development. For the past several years, ASCE/SEI 41-17 Seismic Evaluation and Retrofit of Existing Buildings has been the accepted baseline standard of practice for the seismic evaluation of existing buildings. As described in that document, one of the primary goals is to include lessons learned from recent earthquakes.

The purpose of this study is to determine whether significant seismic deficiencies exist at a building, to determine the potential seismic risk of the building, and to provide general recommendations for reduction of seismic risk through mitigation. Buildings of recent construction are exempt from this type of analysis based on building type and the code enforced at the time of construction. Such buildings are identified as "benchmark buildings". According to ASCE 41 guidelines, the subject building of this study is not classified as a "benchmark building" since they were designed and constructed prior to the benchmark cutoff date (2000) for reinforced masonry buildings.

The analysis methodology of ASCE 41-17 employs a quick check methodology (Tier 1 analysis). The Tier 1 quick check uses cursory calculations appropriate for each building type and a set of checklists which contain evaluation statements that help to identify areas of concern regarding the ability of the structure to adequately transmit seismic forces to the foundation and supporting soils.

## **PART 2: SEISMIC PERFORMANCE EVALUATION**

### **2.1 Methodology**

The potential damage to a structure in an earthquake can be evaluated provided that, (1) seismic hazards which affect the structure and site can be estimated and (2) the vulnerability of the structure to those hazards are known or can be estimated.

Site seismicity for Alameda Fire Station No. 5 was determined using the United States Geologic Survey (USGS) web based Seismic Hazard Curves, Response Parameters and Design Parameters program. Seismic short period  $S_5$  and one second  $S_1$  response acceleration parameters were obtained through the ASCE 7 Hazard Tool.

Seismic evaluation of the structures was conducted using the ASCE 41-17 – Seismic Evaluation and Retrofit of Existing Buildings. ASCE 41 provides a three-tiered process for seismic evaluation of existing buildings based on building type and the level of seismicity for the building location. The Tier 1 study is an initial checklist evaluation of structural, non-structural, and foundation/geologic hazard elements of a building and site conditions that is intended to screen for potential seismic deficiencies. Tier 2 and 3 studies include more in-depth analysis procedures for building or

component that is identified by the Tier 1 screening process as structurally deficient or that requires further study. Non-structural items were not included as those systems are generally evaluated by an architect.

This assessment of Alameda Fire Station No. 5 utilizes the Tier 1 screening procedure to identify initial deficiencies as much as possible with the information available.

## 2.2 Performance Level

ASCE 41 Tier 1 evaluation of a building can be performed for either Collapse Prevention (CP) or Immediate Occupancy (IO) performance levels. The Basic Performance Objective focuses on Collapse Prevention for buildings in Risk Category I, II, and III and on Immediate Occupancy for buildings in Risk Category IV.

ASCE 41 summarizes the two performance levels as follows:

- CP Performance Level: After an earthquake, the structure will have damaged components and continues to support gravity loads but retains no margin against collapse.
- IO Performance Level: After an earthquake, the basic vertical and lateral force-resisting system retain nearly all their pre-earthquake strength, very limited damage to structural and non-structural components has occurred and critical parts of the building remain habitable.

The ASCE 41 Immediate Occupancy Basic Configuration checklist (Table 17-3) and Immediate Occupancy Structural Checklist for Building Types C2 (Table 17-25) are appropriate for this building type and are included in this report. As these buildings are considered Risk Category IV, they are evaluated under the current Immediate Occupancy criteria.

## 2.3 Seismic Source

The general seismicity in the San Francisco Bay region is influenced by several known faults, their potential faulting length, and relative orientation. The Hayward Fault runs North to South, between the North American plate and the Pacific plate. This fault is located approximately 5.8 miles east of the structure. Other known, near-source faults with recorded activity, such as the San Andreas Fault, are listed in Table 1 (From California Department of Conservation) along with the estimated moment magnitude,  $M_w$ , that would occur during the Maximum Considered Earthquake (MCE).

Earthquakes in Southern California – namely Northridge and Whittier Narrows – have occurred along blind-thrust faults. These faults do not have readily identifiable surface features and are not extensively mapped. For our project site, the potential for strong-ground motion to occur due to blind-thrust faulting is uncertain. Therefore, a moderate to large earthquake centered even closer to the site cannot be completely ruled out.

<b>Fault</b>	<b>Estimated MCE (<math>M_w</math>)</b>	<b>Distance (miles)</b>
Hayward Fault	6.5	5.8
San Andreas Fault	7.9	13.0
Calaveras Fault	6.7	15.0

**Table 1: Active Near Source Faults**

As this Tier 1 Basis of Performance is Immediate Occupancy, the standard for an existing structure would be for a Basic Safety Earthquake-1E (BSE-1E). BSE-1E earthquake is also referred to as the 225-year earthquake and is based on a 10 percent probability of exceedance within a 50-year time frame.

The 225-year event peak ground acceleration (PGA) is 0.585g, or 59% gravity. The USGS defined accelerations are based on Site Class D. Site Class D is assumed as recommended in ASCE 7-16 Section 20.1 where soil properties are not known in sufficient detail.

## **2.4 Liquefaction, Landslide, and other Geologic Hazards**

Liquefaction is the loss of bearing strength of saturated, cohesionless soils under strong ground motions. Liquefaction can cause settlement by consolidation of soils susceptible to liquefaction. Per the "California Earthquake Hazards Zone Application Map (EQ Zapp)," the fire station is located in a very high liquefaction zone. EQ Zapp is an online resource by the California Department of Conservation that maps hazard zones as evaluated by California Geological Survey (CGS).

The Alquist-Priolo Earthquake Fault Zoning (AP) Act is a state law that regulates construction in areas with close fault proximity and the potential for surface fault rupture. The AP Act was established following the 1971 San Fernando earthquake and has since been refined and revised. This building is not located in an AP zone.

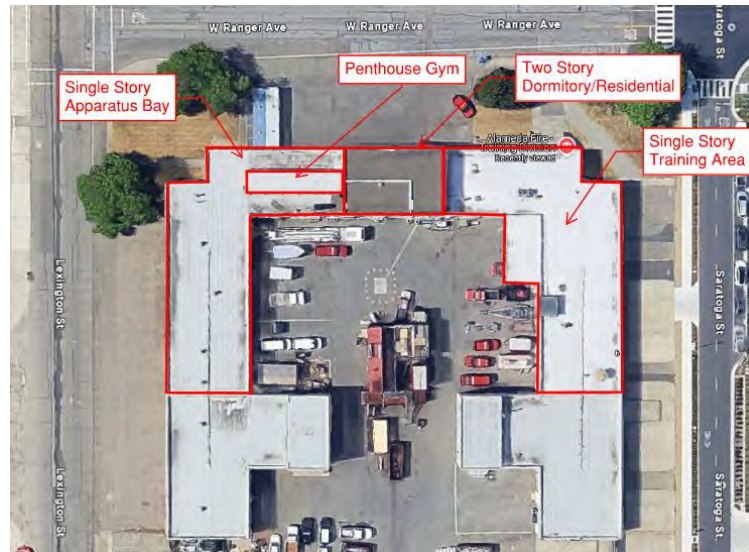
The fire station is considered not at-risk for seismically induced landslides per the EQ Zapp map. Based on the aerial maps and our site visit, the building does not appear to be on any significant slopes.

## **PART 3: STRUCTURAL EVALUATION**

### **3.1 Documentation**

No record or as-built drawings were available for the fire station. Additionally, no soils data or reports were available. A facility condition assessment report, "Tier 1 Report - Facility Condition Assessment for Fire Station #5/Bldg 6," by Faithful+Gould, Inc. dated September 3, 2015 was provided by the City of Alameda to provide additional information.

Natsuki Okuda, PE of Biggs Cardosa Associates performed a site visit on January 23, 2025. The field observation was limited to readily visible structural components; architectural finishes were not removed to expose concealed structural framing.



**Figure 2: Building Layout**

### **3.2 Building Systems**

#### **3.2-1. Single Story Apparatus Bay and Training Area**

##### **Foundation Systems**

The type of foundation and slab are unknown at this time. The structure appears to have concrete columns and a reinforced concrete slab-on-grade.

##### **Vertical Load Resisting Systems**

The building consists of a concrete roof system with concrete beams approximately spaced at approximately 6 feet on center supporting a concrete slab of unknown thickness. There are intermittent concrete girders supporting the beams as shown in Photo 5. Concrete girders frame into concrete columns which transfer the vertical load to the foundation.

##### **Lateral Load Resisting Systems**

The building lateral system appears to consist of a concrete roof diaphragm supported by concrete shear walls. The concrete diaphragm delivers seismic forces to concrete shear walls. The details of this load transfer along with the concrete wall thickness and reinforcement are unknown. The lateral loads are likely transferred from the shear walls directly to the foundation.

#### **3.2-2. Two Story Dormitory/Residential**

##### **Vertical Load Resisting Systems**

The type of roof and floor system is unknown at this time. The architectural finishes were not removed to reveal the ceiling framing. From a review of the "Tier 1 Report – Facility Condition Assessment for Fire Station #5/Bldg 6," it appears that the roof framing likely consists of wood joists framing into wood beams supporting plywood sheathing.

The floor framing likely consists of the first-floor concrete slab over concrete beams supported by concrete columns and concrete bearing walls. Concrete walls and columns transfer the vertical load into the foundation. See Photo 5.

### **Lateral Load Resisting Systems**

The roof lateral system appears to consist of a wood roof diaphragm. The wood diaphragm delivers seismic forces from the diaphragm to concrete shear walls. The lateral loads are assumed to transfer from the shear walls to the first-floor shear walls. The architectural finishes were not removed to reveal either the ceiling framing or the roof diaphragm attachment to the wall.

The floor lateral system appears to consist of a concrete diaphragm. The details of the diaphragm to wall transfer and concrete wall thickness and reinforcement are unknown. The lateral loads are assumed to transfer from the shear walls to the foundation.

### **Exterior Shade Structure**

There is an exterior wood framed shade structure within the building exterior courtyard. The structure roof system appears to consist of wood joists supporting a straight-sheathed wood diaphragm. The joists are supported by the building concrete walls and wood beams over steel posts. The shade structure lateral system appears to consist of the wood diaphragm transferring loads to the existing concrete walls of the main building.

## **PART 4: STRUCTURAL CONDITION ASSESSMENT**

Building evaluations are limited by the available construction documents and the level of access possible for the observation of structural elements of the building. During the site-walk, the interior and exterior of the building was reviewed based on what could be visually observed. Based on our review, the building appears to be in moderate to poor condition structurally with some areas of architectural damage and general deterioration from age, corrosion, and weathering. Structural damage and deterioration were observed at concrete walls around windows and corners.

The building is located approximately a quarter mile from the San Francisco Bay and therefore is exposed to salt-laden moisture, resulting in significant corrosion in locations throughout. Some of the significant concrete spalling of concrete from corrosion of reinforcement bars was observed and is noted below.

- Cracks and chipping at the exterior concrete [Photos 8, 9, 19, 20, 21]
- Paint peeling and water damage at storage apparatus bay ceilings [Photo 7]
- Cracks at ceiling slab concrete by apparatus door [Photo 10]
- Water damage at concrete roof slab and wall [Photos 11, 12]
- Crack at concrete wall at bearing connection to roof beam [Photo 13]
- Cracks at infill concrete wall [Photo 14]
- Cracks at interior concrete wall [Photo 16]
- Cracks at window opening concrete [Photos 9, 15, 20]
- Cracks at concrete floor slab [Photo 17]
- Water damage at interior finish of conference room [Photo 18]

As no as-built drawings were available for this building, we cannot determine whether the existing field conditions match the original drawings.

## **PART 5: STRUCTURAL EVALUATION AND FINDINGS**

### **5.1 Building Evaluation and Findings**

Based on the partial ASCE 41 Tier 1 review, the following items are of significance for the performance of these buildings when subjected to strong earthquake ground motions. Many Tier 1 checklist items are marked as unknown, due to the lack of as-built information. Because the building is a concrete diaphragm with a concrete shear wall system, with wood framing concealed by finishes, the connections and ties between systems could not be assessed from a visual review of the building.

#### **Positive Features:**

- The structure complies with requirements for redundant lateral systems with at least two lines of resistance in each direction. Each wing of the C-shaped structure appears to have well balanced seismic resisting elements.
- There are no weak story or soft story system concerns at the main single-story building portion. The building is concrete framed at the first story with a partial lightweight second story wood framed structure. The first story is significantly stiffer so there is likely no concern of a weak story seismic-force system.
- A seismic separation is present between the Fire Station and the adjacent Department of Public Works buildings which were not part of the evaluation. Additional analysis may be required as the size of the separation is unknown.

#### **Structural Deficiencies:**

- No as-built drawings are available. Many structural elements were not visible for evaluation. The following components were unable to be assessed:
  - Type of foundation and depth, or foundation ties
  - Concrete shear wall thickness and lengths
  - Penthouse framing and sheathing type (evaluate presence of roof to wall ties)
  - Concrete reinforcement and concrete connection details, including shear wall reinforcement, floor to wall connections, reinforcement at diaphragm boundaries.
- The building configuration shows large plan irregularities from the C shape of the building. The re-entrant corner building ties should be evaluated.
- The site is in a high liquefaction-susceptible zone per the EQ Zapp site maps and may be prone to significant settlement.
- Due to the lack of information regarding the existing foundation system, further analysis of the foundations is required. It is recommended to obtain a project geotechnical report to determine the foundation recommendations including any mitigation requirements that include deep foundation elements.
- Concrete shear walls are a part of the vertical-load-carrying system. Additional analysis is recommended to be performed to determine the adequacy of the wall to support combined vertical and lateral loads.
- It is unknown if the shear walls have sufficient wall lengths for the seismic loads. Further analysis is required to understand the layout of all the seismic shear walls in the structure.
- The shear wall at the two-story portion of the building appears to be discontinuous and does not continue to the foundation.
- Torsion may be a concern from the plan layout of the walls with walls on each leg of the diaphragm. Torsion is significant when the distance between the center-of-mass and the center-of-rigidity is large. Significant torsion can cause additional seismic demands and

lateral drifts from the rotation of the diaphragm. The building does have walls on each side of the diaphragm and appears to have a balanced system.

- The exterior shade structure at the building courtyard appears inadequate for seismic loading.

## **PART 6: CONCLUSION AND RECOMMENDATIONS**

### **6.1 General Recommendations for Condition Assessment**

The building appears to be in moderate to poor structural condition. There are many cracks and damage locations in roof slabs and concrete walls, especially around window and door openings. Assessment of existing reinforcement is recommended prior to patching cracks to determine if more substantial repairs are needed beyond patching.

### **6.2 General Recommendations for Seismic Retrofit**

The following recommendations are provided to address the seismic deficiencies based on the level of review performed in site observation and engineering judgment. While the recommendations listed below do not represent immediate life safety concerns that warrant facility closure, they do describe building components that are non-compliant or likely non-compliant for seismic performance per the ASCE 41 Tier 1 checklist review or identified as systemic deficiencies. All seismic remediation measures noted here are considered voluntary unless a change of occupancy or renovation modifications or additions trigger a mandatory seismic retrofit.

The mitigations listed below are recommended for seismic safety. If upgrades are to be implemented, it should be noted that the owner has the option to choose an upgrade standard for the structural components recommended below. It is suggested that new components be designed to the current seismic code level performance criteria. Alternatively, ASCE 41 Seismic Evaluation and Retrofit of Existing Buildings can be used as a guideline for the design. Our understanding is that no remediation work has been mandated for this site by governing agencies; therefore, any mitigation work undertaken is voluntary on the part of the City of Alameda. Mitigations are listed in order of importance from greatest to least

### **6.3 Recommended Mitigations or Further As-Built Survey Requests**

#### **Seismic Strengthening**

- Perform geotechnical analysis of the site to determine all soil-structure interaction parameters including liquefaction analysis and foundation type recommendations. If a significant liquefaction problem is present, the mitigation will be extensive.
- Perform detailed building as-built survey to determine the entire concrete wall and floor layout, wall and slab thicknesses, and create as-built plans. Perform non-destructive testing of select concrete walls and slabs and scan to generally determine typical wall and slab reinforcing.
- Perform subsequent Tier 2 structural analysis after confirmation of existing conditions. The Tier 2 analysis will allow further analysis of shear wall load transfer, story drift, collector strength, foundation adequacy and more.
- Perform additional analysis on concrete diaphragms and shear walls to determine adequacy of re-entrant corners at the roof level. Where deficiencies are present, steel straps or plates may be needed to strengthen the diaphragm.

- Perform in-depth inventory and investigation of all concrete spalling and reinforcement corrosion to document the full extent of damage and limits of repair areas.
- Where there are tall, narrow shear wall piers, evaluate benefits of infilling non-essential openings to provide additional lateral resistance.
- Remove and replace the existing wood shade structure at the exterior courtyard of the building. Retrofitting this structure would be more costly than replacement.

#### **Structure Condition Repair**

- At locations with spalling due to reinforcement corrosion, chip out damaged concrete to expose the rust, and patch with corrosion retardant and concrete repair grout or epoxy.
- Evaluate the building for hazardous materials such as lead paint or asbestos.

#### **6.4 Potential Strengthening Scenarios and Scope**

We understand that there is little knowledge of the history of the building's construction. In order to better evaluate the condition of the building and verify the structure in place, additional intrusive observations, such as finish removal, scanning of concrete reinforcement, localized destructive demolition (if deemed necessary) etc., would need to be performed. Structure conditions should be evaluated at the time of the finish removal and scanning.

### **PART 7: LIMITATIONS AND DISCLAIMERS**

The evaluation, findings, conclusions, and recommendations outlined in this report were based on available but limited information. As-built drawings for the performing arts center were not available. This report has been prepared using the same degree of care and skill ordinarily exercised for this type of professional service by structural engineers practicing in this area at this time. No other warranty, expressed or implied, is made as to the professional advice in this report.

This report has been prepared for the exclusive use of the City of Alameda. It may not be used by any other individual or entity without the express written approval of Biggs Cardosa Associates, Inc.

**PART 8: APPENDIX**

**8.1 Photos**



**Photo 1: Entrance to Building on Northern Face**



**Photo 2: Southern Face of Building**



**Photo 3: Eastern Face of Building**



**Photo 4: Western Face of Building at Seismic Gap**



**Photo 5: Wood Shade Structure**



**Photo 6: Concrete Roof/Ceiling Framing at Classroom**



**Photo 7: Concrete Roof/Ceiling Framing at Storage Apparatus Bays**



**Photo 8: Exterior Cracks at Southern Face Two Story**



**Photo 9: Exterior Cracks at Northern Face**



**Photo 10: Roof Slab Cracks at Apparatus Door**



**Photo 11: Water Damage at Concrete Roof Slab**



**Photo 12: Water Intrusion at Mechanical Room Concrete Roof Slab and Wall**



**Photo 13: Cracks at Apparatus Bay Wall and Ceiling**



**Photo 14: Crack at Interior Infill Wall**



**Photo 15: Crack at Classroom Window Concrete Wall**



**Photo 16: Crack at Locker-room Concrete Wall**



**Photo 17: Crack at Second ??? Floor Slab**



**Photo 18: Interior Water Damage at Conference Room**



**Photo 19: Second Story and Penthouse**



**Photo 20: Exposed Reinforcement at Penthouse Gym Window**



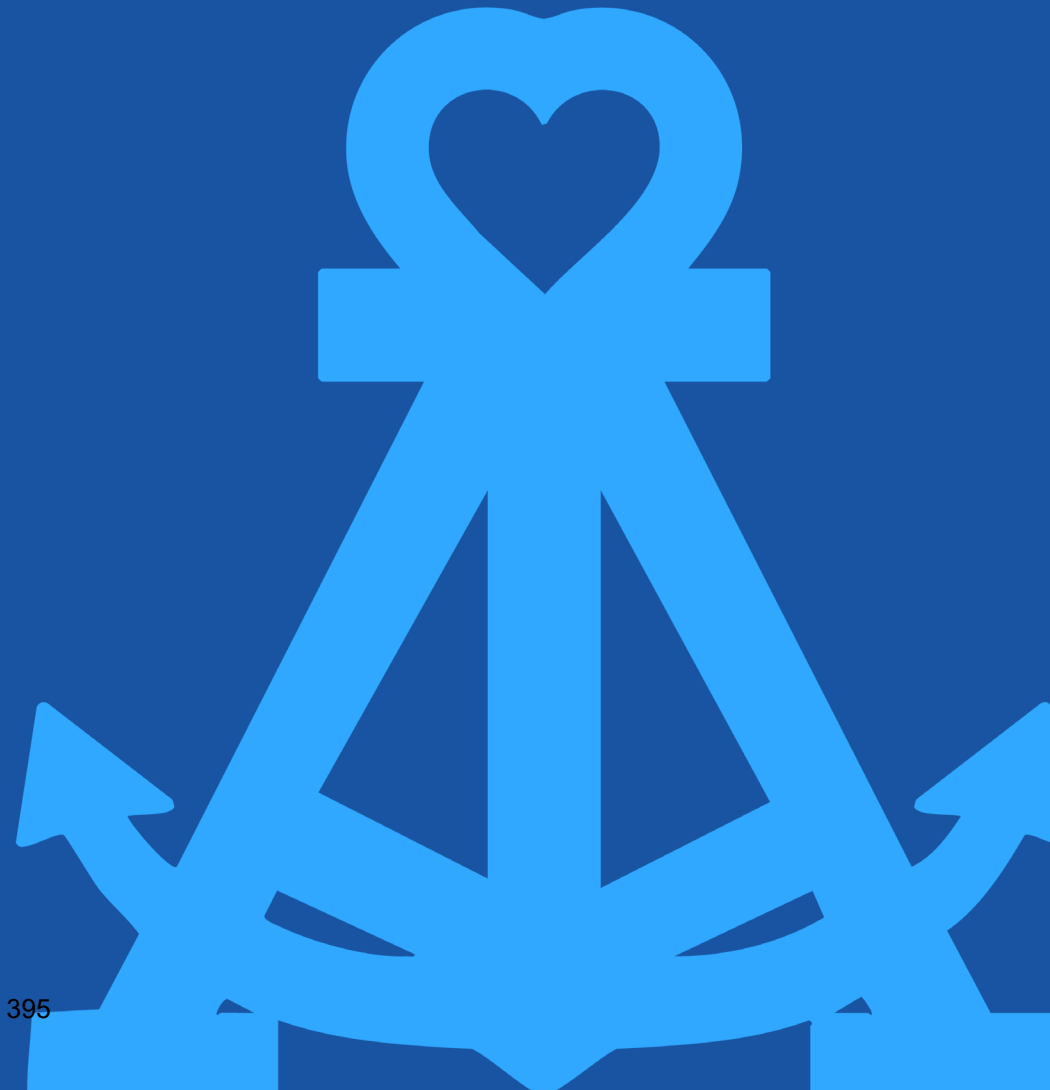
**Photo 21: Exterior Damage – Exposed Reinforcement at Roof Parapet Concrete**



**Photo 22: Cracks at Exterior Wall of Penthouse Gym**

# APPENDIX I

## I - MECHANICAL NARRATIVES





# CITY OF ALAMEDA

---

## ASSESSMENT



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2/18/2025



## City of Alameda – Fire Station 5

### Facility HVAC and Plumbing Assessments

#### Space Conditioning Systems

1. Steam boiler
  - a. There is an existing steam boiler plant that appears to be abandoned in place. Steam piping is also abandoned. The insulation appears to all be asbestos. There are associated hydronic unit heaters and steam radiators throughout the entire building that have been abandoned in place. The entire hydronic system needs to be removed.
2. PTAC (packaged terminal air conditioning) units
  - a. There are 3 abandoned PTAC units in the office/admin area that need to be removed and the walls patched.
  - b. There are a number of PTAC units in the 2<sup>nd</sup> floor bunk area that are all working but at the end of their life and need to be replaced.
3. Packaged AC units
  - a. (2) rooftop packaged 5 ton units were installed within the last 5 years to serve the office/admin area. These were installed with all new supply/return ducting. The units are assumed to have at least 10 years of life remaining.
4. Plymovent vehicle exhaust
  - a. A 3 rail vehicle tailpiece with single exhaust fan exists but the fan is at the end of it's life and needs to be replaced. The rail system and tailpiece flexible ducts appear to be in good condition and could be reused.
5. Exhaust
  - a. There are (2) separate general exhaust systems serving the east and west garage/shop areas. These systems appear to be abandoned and in need of replacement.
  - b. The restrooms are served by ceiling exhaust fans that all need to be replaced.

#### Plumbing Systems

1. Laundry
  - a. There is a commercial grade extractor and 2 residential dryers that appear to be in good working order.
2. Showers



- a. There are 4 marble wall shower compartments in the gang restroom that appear to be in good condition but the shower hardware is showing signs of age and calcium buildup.
  - b. The bunk area has a couple shower areas that are showing signs of age and are recommended to be replaced.
3. Water closets
    - a. There are multiple restrooms throughout the facility with floor mounted water closets that are all in need of replacement.
  4. Lavatories
    - a. There are multiple restrooms throughout the facility with wall and counter mounted lavatories that are all in need of replacement.
  5. Water distribution piping
    - a. There weren't any visible leaks in the system so it's assumed the existing copper piping is in good condition and not in need of replacement except for where restrooms are being reconfigured.
  6. Service sinks
    - a. There are 3 service sinks that are all in need of replacement. Per code, only a single service sink is required for the facility but 1 per wing seems appropriate for janitorial services.
  7. Water heating
    - a. There is a gas fired 200 MBH / 100 gallon water heater that was installed within the last 5 years. The system is assumed to have at least 10 years of life remaining.
  8. Air compressors
    - a. Both the general use air compressor and SCBA appear to be in good working order and not in need of replacement.





## City of Alameda – Fleet Garage

### Facility HVAC and Plumbing Assessments

#### Space Conditioning Systems

1. Unit heaters
  - a. (2) gas fired 200 MBH unit heaters are original and in need of replacement. 1 gas fired unit heater was replaced within the last 5 years and is assumed to have at least 10 years of life remaining.
  - b. The office has an electric baseboard heater that isn't working and is abandoned in place.
  - c. There is no additional space conditioning beyond the unit heaters and baseboard heater. It is recommended to add space conditioning to the office, break room and parts room.
2. Exhaust
  - a. A vehicle exhaust system with underground ducting and rooftop exhaust fan exists and is still operational but according to the staff, it hasn't been used in over 10 years. If the system will be utilized in the near future, it's recommended to replace the exhaust fan.
  - b. A general maintenance bay exhaust system is existing but the fan is at the end of its life and needs to be replaced.
  - c. The restrooms are served by ceiling exhaust fans that all need to be replaced.

#### Plumbing Systems

1. Water closets
  - a. The restroom contains a single wall mounted water closet and urinal that both are in need of replacement.
2. Lavatories
  - a. There are multiple restrooms throughout the facility with wall and counter mounted lavatories that are all in need of replacement.
3. Water distribution piping
  - a. There weren't any visible leaks in the system so it's assumed the existing copper piping is in good condition and not in need of replacement except for where restrooms are being reconfigured.
4. Sinks
  - a. There is a wall mounted service sink that is in need of replacement.



- b. The breakroom has a counter mounted sink that is in need of replacement.
- 5. Emergency stations
  - a. (3) emergency eye wash & shower stations are in the maintenance area. They are in good condition and not in need of replacement.
- 6. Water heating
  - a. There is an electric 20 gallon water heater that still appears to be in good working order.
- 7. Air compressor
  - a. The general use air compressor appears to be in good working order and not in need of replacement.
  - b. Compressed air piping and quick connects/hose reels all appear to be in good condition without leaks.





## City of Alameda – Maintenance Services Center

### Facility HVAC and Plumbing Assessments

#### Space Conditioning Systems

1. Packaged AC units
  - a. (3) rooftop packaged ranging from 3-5 ton units were installed within the last 10 years to serve the office/admin area. The units are assumed to have at least 10 years of life remaining.
2. Furnaces
  - a. (2) gas fired furnace units are installed in the shop mezzanine to serve the gang restroom and storage areas.
3. Unit heaters
  - a. Gas fired unit heaters for each individual maintenance/shop area that are working but past their life. These are all original and in need of replacement.
  - b. The office has an electric baseboard heater that isn't working and is abandoned in place.
  - c. There is no additional space conditioning beyond the unit heaters and baseboard heater. It is recommended to add space conditioning to the office, break room and parts room.
4. Exhaust
  - a. (6) rooftop exhaust fans on the lower roof serve the restrooms, janitor, break and individual
  - b. Traffic signal maintenance has a rooftop general exhaust fan that is in need of replacement. No other maintenance/shop areas are provided with exhaust.
  - c. The woodshop is provided with a dust collection system with snorkel type intakes at individual pieces of equipment. This fan is in working order and nearing the end of its life but doesn't need to be replaced yet.

#### Plumbing Systems

1. Water closets
  - a. The gang and single stall restrooms have floor mounted water closets and wall mounted urinals that are in good shape and not in need of replacement.
2. Lavatories
  - a. The gang and single stall restrooms have wall mounted lavatories that are in good shape and not in need of replacement.



3. Water distribution piping
  - a. There weren't any visible leaks in the system so it's assumed the existing copper piping is in good condition and not in need of replacement except for where restrooms are being reconfigured.
4. Sinks
  - a. The gang restrooms are provided with group foot operated hand washing stations that are in good condition and not in need of replacement.
  - b. The breakroom has a counter mounted sink that is in good condition and not in need of replacement.
  - c. Service sinks throughout the facility are in good condition and not in need of replacement.
5. Showers
  - a. (5) showers serve the facility and are all in fair condition. Per maintenance feedback, these are rarely used and not recommended for replacement.
  - b. (1) emergency eye wash & shower stations are in the maintenance area. They are in good condition and not in need of replacement.
  - c.
6. Water heating
  - a. There is a gas fired 85 MBH / 100 gallon water heater that was installed within the last 10 years. The system is assumed to have at least 10 years of life remaining.





## City of Alameda – Animal Shelter

### Facility HVAC and Plumbing Assessments

#### Space Conditioning Systems

1. Packaged AC units
  - a. (1) rooftop packaged 3.5 ton unit serves the office/admin area. It appears to be at the end of its life and in need of replacement within 5 years.
2. Furnaces
  - a. (1) gas fired furnace serves the “middle wing” cat, food pantry, laundry and iso clinic. This is in need of replacement.
3. Unit heaters
  - a. (2) Gas fired unit heaters serve the dog wings. These are in need of replacement.
  - b. (16) electric radiant heaters are placed at the exterior walls of the dog kennels. These appear to be a temporary solution as they are poorly hung and plugged into extension cords. Recommend a more permanent solution.
4. Exhaust
  - a. There are (2) separate general exhaust systems serving the dog wings and “middle wing” cat, food pantry, laundry and iso clinic. These are in need of replacement.
  - b. The restroom is served by a ceiling exhaust fan that all need to be replaced.
5. Laundry
  - a. There are 3 commercial grade dryers that appear to be in good working order. The exhaust is all tied to a single outlet with an inline booster fan. It is recommended to put an additional lint trap in the duct upstream of the booster fan.

#### Plumbing Systems

1. Laundry
  - a. There are 3 commercial grade extractors that appear to be in good working order.
2. Water closets
  - a. There are multiple restrooms throughout the facility with floor mounted water closets that are all in need of replacement.
3. Lavatories
  - a. There are multiple restrooms throughout the facility with wall and counter mounted lavatories that are all in need of replacement.





4. Water distribution piping
  - a. There weren't any visible leaks in the system so it's assumed the existing copper piping is in good condition and not in need of replacement except for where restrooms are being reconfigured.
5. Service sinks
  - a. There is 1 service sink that appears to be in good condition and not in need of replacement.
6. Water heating
  - a. There is a gas fired 85 MBH / 100 gallon water heater that was installed within the last 10 years serving the shelter side. The system is assumed to have at least 10 years of life remaining.
  - b. There is an electric 30 gallon water heater that was installed within the last 10 years serving the admin side. The system is assumed to have at least 10 years of life remaining.



## City of Alameda – Fire Station 1

### Facility HVAC and Plumbing Assessments

#### Space Conditioning Systems

1. Ductless split systems
  - a. There are multiple ductless split units from a VRF fan coil that have been abandoned and need to be removed.
2. Furnaces
  - a. There are 3 furnaces in the 1<sup>st</sup> floor electrical room that serve the FS kitchen/dayroom and FS admin area. These are at the end of their life. It is recommended to remove these from this room because of a lack of clearance and add packaged rooftop heat pump units to serve these areas.
  - b. There is a furnace upstairs that serves the lockers and restrooms that is at the end of its life. It is recommended to replace it with a heat pump fan coil.
3. Fan coil – heat pump
  - a. There is a new 5 ton heat pump fan coil with condensing unit on the roof installed in 2022 serving the bunk rooms.
4. Unit heaters
  - a. There are 2 large gas fired unit heaters in the app bay that we are told do not get used. It is recommended to remove these and only install new unit heaters if heating is desired in the app bay.
  - b. The shop and turnout room don't have any heat. It is recommended to add heating to these rooms.
5. Plymovent vehicle exhaust
  - a. A 4 rail vehicle tailpiece with single exhaust fan is operating but the fan is at the end of its life and needs to be replaced. The rail system and tailpiece flexible ducts appear to be in good condition and could be reused.
6. Exhaust
  - a. The shop and turnout rooms have separate exhaust ducts up to the roof but weren't functional. It is recommended to reuse these ducts and provide new exhaust fans on the roof.
  - b. The exercise room room appears to have exhaust but it was not functioning. It is recommended to add a new exhaust fan.
  - c. There is a room that the chief said will be used as a future narcotics storage room. It is recommended to add exhaust to this room.



- d. The FS gang restroom and locker room is served by a rooftop exhaust fan that is operational but recommended to be replaced.
- e. The kitchen exhaust fan is at the end of its life and needs to be replaced.

### **Plumbing Systems**

1. Laundry
  - a. There is a residential grade washer and dryer that appears to be in good working order.
2. Showers
  - a. There are 3 shower compartments in the gang restroom that appear to be in good condition and don't need to be replaced.
3. Water closets
  - a. There 3 water closets and 4 urinals in the gang restroom that appear to be in good condition and don't need to be replaced.
4. Lavatories
  - a. There are multiple restrooms throughout the facility with wall and counter mounted lavatories that appear to be in good condition and don't need to be replaced..
5. Water distribution piping
  - a. There weren't any visible leaks in the system so it's assumed the existing copper piping is in good condition and not in need of replacement except for where restrooms are being reconfigured.
6. Sinks
  - a. There is 1 service sink that is in good condition and doesn't need to be replaced.
  - b. There is 1 kitchen sink that is in good condition and doesn't need to be replaced.
7. Water heating
  - a. There is a gas fired 85 MBH / 100 gallon water heater that was installed within the last 10 years. The system is assumed to have at least 10 years of life remaining.
8. Air compressors
  - a. Both the general use air compressor and SCBA appear to be in good working order and not in need of replacement.



## City of Alameda – Fire Station 4

### Facility HVAC and Plumbing Assessments

#### Space Conditioning Systems

1. Packaged AC units
  - a. (5) rooftop packaged 3-5 ton units serves the entire station. These were replaced 10 years ago. The units are assumed to have at least 10 years of life remaining.
2. Unit heaters
  - a. The shop and turnout room don't have any heat. It is recommended to add heating to these rooms.
3. Plymovent vehicle exhaust
  - a. A 3 rail vehicle tailpiece with single exhaust fan is operating but the fan is at the end of its life and needs to be replaced. The rail system and tailpiece flexible ducts appear to be in good condition and could be reused.
4. Exhaust
  - a. The shop and turnout rooms have separate exhaust ducts up to the roof but weren't functional. It is recommended to reuse these ducts and provide new exhaust fans on the roof.
  - b. The app bay has 2 high, through wall exhaust fans nearing the end of their life. It is recommended to replace these.
  - c. The medical storage room has a through wall exhaust fan discharging into the app bay that is in working order and doesn't need to be replaced.
  - d. The gang restroom and locker room is served by a rooftop exhaust fan that was replaced in the last 5 years and doesn't need to be replaced.
  - e. The kitchen exhaust fan is at the end of its life and needs to be replaced.

#### Plumbing Systems

1. Laundry
  - a. There is a residential grade washer and dryer that appears to be in good working order.
2. Showers
  - a. There are 3 shower compartments in the gang restroom that appear to be in good condition and don't need to be replaced.
3. Water closets





- a. There 3 water closets and 1 urinal in the men/women's restrooms that appear to be in good condition and don't need to be replaced.
4. Lavatories
  - a. There are 8 counter mounted lavatories that appear to be in good condition and don't need to be replaced..
5. Water distribution piping
  - a. There weren't any visible leaks in the system so it's assumed the existing copper piping is in good condition and not in need of replacement except for where restrooms are being reconfigured.
6. Sinks
  - a. There is 1 service sinks that is in good condition and doesn't need to be replaced.
  - b. There is 1 kitchen sinks that is in good condition and doesn't need to be replaced.
7. Water heating
  - a. There is a gas fired 76 MBH / 100 gallon water heater that was installed within the last 10 years. The system is assumed to have at least 10 years of life remaining. The high combustion air was tapped into for the dryer exhaust. Combustion air needs to be brought up to code.
8. Air compressors
  - a. Both the general use air compressor and SCBA appear to be in good working order and not in need of replacement.





## City of Alameda – Fire Station 2

### Facility HVAC and Plumbing Assessments

#### Space Conditioning Systems

1. Heat pump split systems
  - a. (2) 3-5 ton heat pump split system fan coil units with condensing units at grade serve the entire station. These were replaced 10 years ago. The units are assumed to have at least 10 years of life remaining. There is existing ducting in the ceiling and in the crawl space. It is recommended to replace all ducting.
2. Plymovent vehicle exhaust
  - a. A 3 non-rail vehicle tailpiece with single exhaust fan is operating but the fan is at the end of its life and needs to be replaced. The entire system should be replaced with sliding rails and a new fan.
3. Exhaust
  - a. The kitchen hood is served by a rooftop exhaust fan that needs to be replaced.
  - b. The restrooms are served by ceiling exhaust fans that need to be replaced.
  - c. The exercise room doesn't have any exhaust. It is a code requirement to add exhaust.

#### Plumbing Systems

1. Laundry
  - a. There is a residential grade washer and dryer that appears to be in good working order.
2. Showers
  - a. There are 3 shower compartments in the gang restroom that appear to be in good condition and don't need to be replaced.
3. Water closets
  - a. There 5 water closets and 1 urinal in the men/women's restrooms that need to be replaced.
4. Lavatories
  - a. There are 6 counter mounted lavatories that need to be replaced.
5. Water distribution piping
  - a. There weren't any visible leaks in the system so it's assumed the existing copper piping is in good condition and not in need of replacement except for where restrooms are being reconfigured.



## 6. Sinks

- a. There is a 3 comp service sink in the rear yard that is in good condition and doesn't need to be replaced.
- b. There is a single bowl kitchen sink that is in good condition and but the faucet is recommended to be replaced.

## 7. Water heating

- a. There is a gas fired 80 MBH / 100 gallon water heater that was installed within the last 10 years. The system is assumed to have at least 10 years of life remaining. The high combustion air was tapped into for the dryer exhaust. Combustion air needs to be brought up to code.

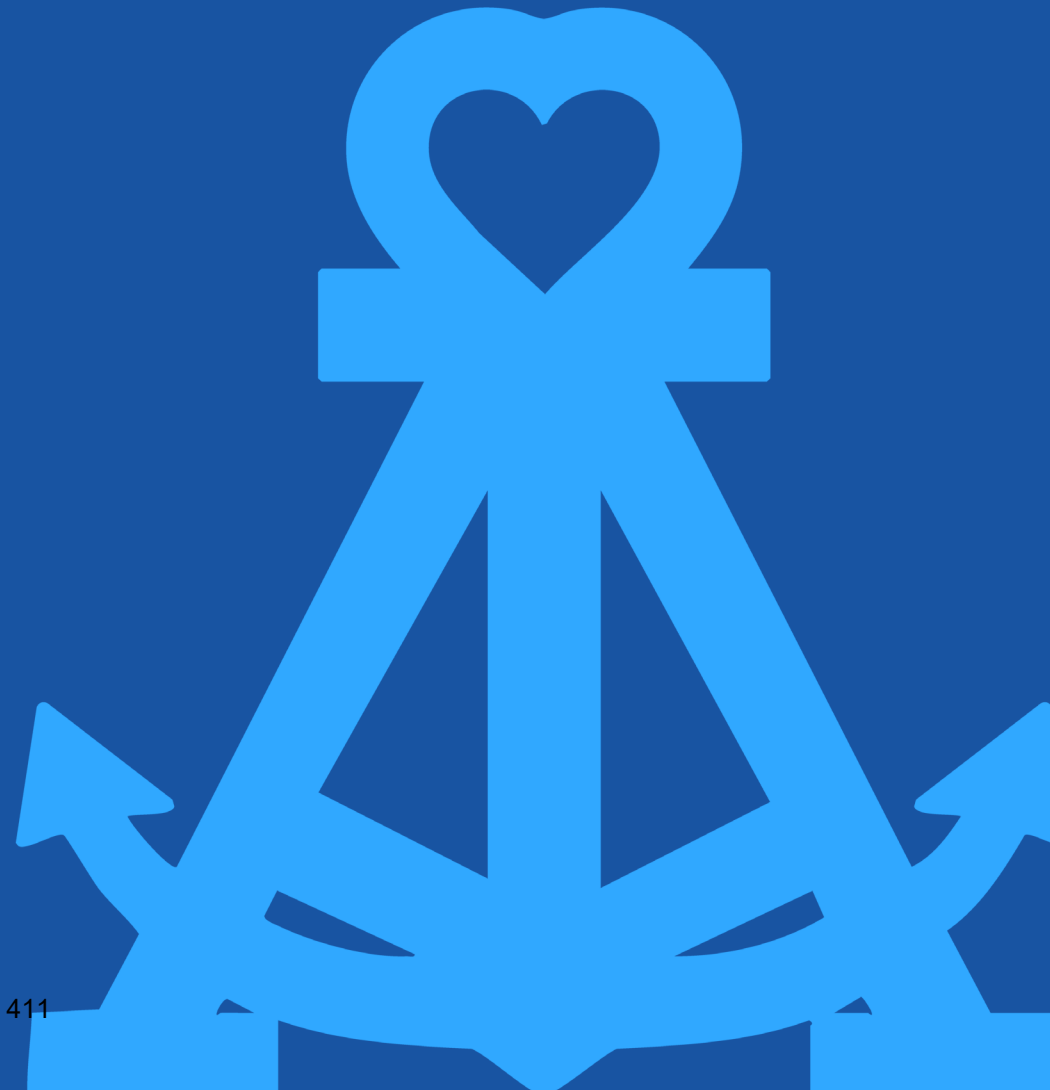
## 8. Air compressors

- a. Both the general use air compressor and SCBA appear to be in good working order and not in need of replacement.



# APPENDIX J

## J - ELECTRICAL NARRATIVES



## **Electrical Assessment**

Project: Alameda Fleet Service Garage  
2040 Grand Street, Alameda, CA 94501  
Site Visit Date: January 23, 2025  
Date Issued: March 5, 2025

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The City of Alameda Fleet Service Garage, constructed in 1984, consists of a main first floor with a mezzanine level. The facility is primarily used for vehicle maintenance and includes a small office and break room.

### **Existing Electrical System**

- Main Service: 800A, 120/208V, 3-phase switchboard located in the Electrical Room. See image A
- Switchboard: 3-section Zinsco switchboard:
  1. Utility pull section
  2. Meter and main section
  3. Distribution section
- Utility Meter: Alameda Municipal Power, Meter #90000575.
- Utility Transformer: L-873, located south of the building.

Distribution Section Breakers:

- Lift Unit – 70A/3P
- SPARE – 100A/3P
- Compressor – 90A/3P
- Panel A – 200A/3P (Located in Office)
- Panel B – 200A/3P (Located in Garage)
- Panel C – 200A/3P (Located in Garage)
- SPARE – 225A/3P

Sub-Panels: See image C

Existing GE load centers, surface-mounted:

- Panel A – Office
- Panel B & C – Garage Area
- Existing panels are fed underground.

Communication & Data:

- Telephone backboard, MPOE, and wall-mounted data rack are located in the electrical room. See image B.

Lighting & Fire Safety:

- Interior Lighting: Fluorescent fixtures (surface-mounted in offices, storage, break room, mezzanine; pendant-mounted in garage shop).
- Exterior Lighting:
  - Rear and front floodlights upgraded to LED.
  - Side exterior wall packs (possible HID) remain outdated.
  - Front entry has two recessed HID lamps (one non-functional).
- Emergency Lighting: No visible emergency or exit lighting.
- Fire Alarm System: Not present.

Security System:

- Existing security cameras are in place.

**Recommendations**

1. Switchboard and Panelboard Replacement (if Budget Allows)

- Switchboard Replacement
  - Existing Zinsco switchboards are outdated and prone to maintenance issues.
  - Lead Time: A new floor-mounted switchboard requires 35-52 weeks for delivery.
  - Consideration: Ensure new switchboard dimensions fit the existing space.
- Panelboard and Breaker Replacement
  - Existing GE load center panels are fed underground and are aged. If the budget allows, recommend replacing the panels and breakers to ensure reliability and safety.

2. Arc Flash Analysis

- Perform an Arc Flash Hazard Analysis per NFPA 70E to assess electrical hazards and determine required PPE (Personal Protective Equipment) for worker safety.

3. Short Circuit & Coordination Study

- Conduct a Short Circuit and Coordination Study to:
  - Ensure proper selective coordination of breakers.
  - Prevent nuisance tripping and enhance personnel safety.
  - Verify existing electrical system reliability and protection.

#### 4. Lighting Upgrades & Emergency Lighting

- Replace all fluorescent fixtures with LED for energy efficiency and reduced maintenance.
- Add occupancy sensors and dimming switches for compliance with Title 24 energy codes.
- Conduct a photometric study to determine proper exterior illumination levels.
- Install emergency lighting throughout the facility to ensure proper egress lighting in case of power failure.
- Electrical Room is underlit and will need more lumens and need emergency lighting.

#### 5. Electrical Device & Control Upgrades

- Replace all outlets and switches with updated, code-compliant devices.
- Confirm how exterior lights are controlled and install a time clock to automate operation and meet energy code requirements.

#### 6. Fire Alarm & Life Safety

- No existing fire alarm system observed.
- Install smoke alarms in all office and breakroom areas per current code requirements.
- If fire suppression is installed or desired, consider a full fire alarm system for enhanced safety.

#### 7. Communication & Data System Upgrades

- Upgrade all data cabling to CAT6 to improve network performance and reliability.
- Install new Wireless Access Points (WAPs) throughout the building for consistent wireless connectivity.

#### 8. Security Camera System Upgrade

- The existing security cameras should be replaced with new City-standard cameras to ensure compatibility with municipal security infrastructure.
- Additional cameras should be installed to provide full facility coverage and enhance safety and security.



**IMAGE A - EXISTING MAIN SWITCHBOARD**



**IMAGE B - TELEPHONE BACKBOARD**



**IMAGE C – EXISTING PANELS**

**Conclusion**

The City of Alameda Fleet Service Garage requires several electrical and safety upgrades to improve efficiency, security, and compliance with modern standards. Key recommendations include switchboard, panelboard replacement, arc flash analysis, lighting upgrades, fire alarm installation, security camera system upgrades, and network infrastructure improvements. A detailed site survey is recommended to confirm specific requirements and implementation feasibility.

If you have any questions or need further assistance, please feel free to contact us.

Sincerely,

A handwritten signature in blue ink that reads "Christopher M. Jose".

Christopher M. Jose

Thoma Electric, Inc.

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## Electrical Assessment

Project: Alameda Maintenance Service Center  
1616 Fortmann Way, Alameda, CA 94501  
Site Visit Date: January 23, 2025  
Date Issued: March 5, 2025

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The City of Alameda Maintenance Service Center Building, constructed in 1984, contains workshops, storage areas, a maintenance shop, offices, kitchens, and restrooms. The building also features an exterior car wash that is not in operation and a vehicle refueling area.

### Existing Electrical System

- Main Service: The existing switchboard is an 800-amp, 120/208V, 3-phase switchboard located within the shop area.
- The switchboard consists of three sections (I-T-E Switchboard, now part of Siemens, though the I-T-E brand is no longer used):
  - Section 1: Utility pull section
  - Section 2: Meter/Main
  - Section 3: Distribution
- Utility Meter: Alameda Municipal Power, Meter #90000573
- Utility Transformer: Located at the corner of Alaska Packer Place and Fortmann Way, Transformer #L-222

**3562 Empleo, Ste.C - P.O.Box 1167  
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Distribution Panel Information: The third section of the switchboard has two parts:

- Top (DP2):
  - Panel D - 100A/3P
  - Panel E - 125A/3P
  - Panel F - 60A/3P
  - DP1 - 300A/3P
- Lower (DP1):
  - Panel A - 125A/3P
  - Panel B - 225A/3P
  - Panel C - 200A/3P
  - Transfer Switch DP1 - 300A/3P

Emergency Power System:

- Automatic Transfer Switch (ATS): ASCO Product, 400A
- Generator: 75kW MTU Detroit Diesel, located outside
- Backup Power Distribution: Generator feeds the top part of the Distribution Board (DP2), supplying Panel D, Panel E, and Panel F.

Panel Boards:

- Panels are spread throughout the building and are I-T-E panelboards. Siemens still manufactures circuit breakers compatible with older I-T-E breakers.
- Panel E: Feeds another panel, EP, via a 60A/3P breaker.
- Panel EP: Square D panelboard and breakers, which power the gates and fuel system.

Lighting System:

- Interior: Combination of surface-mounted, pendant, and 2'x4' recessed fluorescent fixtures on a T-bar ceiling grid.
- Exterior: Surface-mounted fluorescent fixtures and exterior wall packs.
- Outdoor Storage Area: Pendant-mounted linear fluorescent strip lights.

Fire & Security Systems:

- Fire Alarm System: Full addressable system monitored on the property.
  - Fire Alarm Panel: Silent Knight by Honeywell, Model 5808
- Fire Sprinkler System: Installed throughout the building.
- Security System: Existing security cameras are in place.
- Communications:
  - MPOE, telephone backboard, and data rack located in a closet space adjacent to the break room.

### **Recommended Electrical Upgrades & Maintenance**

1. Service Panel & Grounding:
  - Confirm proper grounding of service panels and secure all ground connections to comply with code requirements.
2. Circuit Breaker Testing:
  - Test all circuit breakers for proper operation; replace any breakers failing to trip correctly.
3. Cleaning & Maintenance:
  - Vacuum and clean inside service panel enclosures.
  - Seal openings in enclosures to prevent dust accumulation.
4. Non-Destructive Testing & Feeder Cable Inspection:
  - Conduct non-destructive testing of feeder cables to assess their condition.
  - Inspect all feeder cables for wear, damage, or degradation; replace or repair as needed.

5. Electrical Studies & Analysis:
  - Arc Flash Analysis: Conduct per NFPA 70E to assess electrical hazards and determine required PPE.
  - Short Circuit & Coordination Study:
    - Ensure selective coordination of breakers.
    - Prevent nuisance tripping and enhance safety.
    - Verify system reliability and protection.
6. Lighting Upgrades & Emergency Lighting:
  - Replace fluorescent fixtures with energy-efficient LED lighting.
  - Add occupancy sensors and dimming switches to comply with Title 24 energy codes.
  - Conduct a photometric study for proper exterior illumination levels.
  - Install emergency lighting throughout the facility for proper egress lighting.
  - Improve lighting in the electrical room and install emergency lighting.
7. Communication & Data System Upgrades:
  - Upgrade all data cabling to CAT6 for improved network performance and reliability.
  - Install new Wireless Access Points (WAPs) for consistent connectivity.
8. Security Camera System Upgrade:
  - Replace existing security cameras with new City-standard models.
  - Install additional cameras to ensure full facility coverage.
9. Electric Vehicle (EV) Infrastructure Considerations:
  - If EV fleet vehicles are added, a new 277/480V service should be provided to accommodate the increased electrical load without impacting the existing system.



**IMAGE A - EXISTING MAIN SWITCHBOARD**



**IMAGE B – TELEPHONE BACKBOARD**



**IMAGE C – EXISTING FIRE ALARM**



**IMAGE D – EXISTING GENERATOR**

**Conclusion**

While the electrical system is in satisfactory condition, implementing these upgrades and maintenance procedures will ensure continued safe and reliable operation for the facility.

If you have any questions or need further assistance, please feel free to contact us.

Sincerely,

Christopher M. Jose  
Thoma Electric, Inc.

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## Electrical Assessment

Project: Alameda Animal Shelter  
1590 Fortmann Way, Alameda, CA 94501  
Site Visit Date: January 23, 2025  
Date Issued: March 6, 2025

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### Existing Electrical System

The City of Alameda Animal Shelter, built circa 1984, currently operates with a 200-amp, 120/208V, three-phase disconnect switch (see Image A). The utility meter is registered under Alameda Municipal Power, Meter #20013399. The service is presumed to be fed from the existing transformer L-222, which also supplies power to the Maintenance Service Building. Since the disconnect switch was not opened during the assessment, the service is assumed to have a 175-amp capacity.

There are two surface-mounted I-T-E panelboards in the facility:

- Panel S: 175-amp panel with a main breaker and 42 spaces. This panel is fully occupied, and it is recommended to replace it with a Siemens panelboard with 48-60 spaces to accommodate additional breaker needs.
- Heater Panel: Fed from Panel S with a 100-amp breaker, mounted adjacent, consisting of 30 spaces.

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San Luis Obispo, California 93406  
(805) 543-3850 FAX (805) 543-3829  
E-mail – [cjose@thomaelec.com](mailto:cjose@thomaelec.com)**

## **Recommendations**

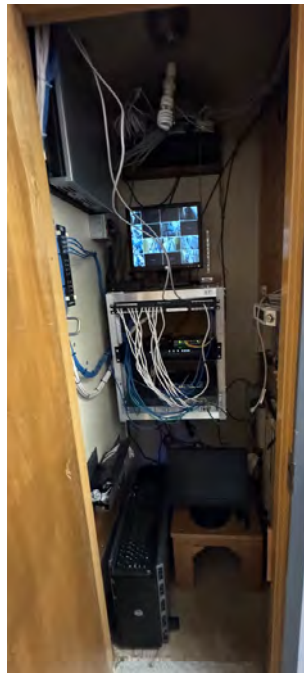
1. Service and Panel Upgrades
  - If the project requires additional load, the City should request a maximum demand load report from the utility company.
  - Panel S should be replaced if new load is added, as it is currently at full capacity.
  - Consider upgrading the 175A service to 200A.
2. Circuit Expansion
  - Staff reported a frequent tripping circuit, likely due to overloading. An additional circuit should be added to balance the load.
  - A vehicle on-site requires a 50-amp, 120/240V rated outlet with a lockable cover. A new 50-amp circuit should be installed at the exterior wall near the vehicle parking area. Routing of the circuit will require field verification.
3. Lighting Upgrades
  - Interior lighting consists of fluorescent pendants around the Kennel area and upgraded 2'x4' LED fixtures.
  - Exterior lighting includes wall packs and 4-ft vapor-tight fluorescent fixtures under the outdoor canopy. The front and rear areas are underlit and require additional illumination for safety and security.
  - Conduct a photometric study to determine proper exterior illumination levels.
  - Upgrade all fluorescent fixtures to LED for energy efficiency and reduced maintenance.
  - Install occupancy sensors and dimming switches to comply with Title 24 energy codes.
  - Install emergency lighting throughout the facility to ensure proper egress lighting in case of power failure.
4. IT & Communication System Upgrades
  - The IT closet (Image B) lacks proper working clearance (minimum 3ft required). A larger space is needed for compliance and accessibility.
  - Upgrade data cabling to CAT6 to improve network performance and reliability.
  - Install new Wireless Access Points (WAPs) for consistent wireless connectivity.
5. Fire Alarm System
  - The building has a fully addressable fire alarm system monitored externally by Protection One Security. No change required.
6. Security System Enhancements
  - The facility has a Closed Circuit Television (CCTV) system, but upgrading to City-standard security cameras is recommended for better compatibility and performance.
  - Additional security cameras should be installed to provide full facility coverage and enhance security.

7. Electrical Safety & Compliance Studies

- Arc Flash Hazard Analysis per NFPA 70E to assess electrical hazards and determine required PPE (Personal Protective Equipment) for worker safety.
- Short Circuit & Coordination Study to:
  - Ensure proper selective coordination of breakers.
  - Prevent nuisance tripping and enhance personnel safety.
  - Verify system reliability and protection.



**IMAGE A - EXISTING METER SERVICE AND SERVICE DISCONNECT**



**IMAGE B – IT CLOSET**



**IMAGE C – EXISTING PANELBOARDS**

By implementing these recommendations, the City of Alameda Animal Shelter can improve electrical safety, energy efficiency, and security while ensuring compliance with modern standards.

If you have any questions or need further assistance, please feel free to contact us.

Sincerely,

A handwritten signature in blue ink that reads "Christopher M. Jose". The signature is written in a cursive style and is positioned above the printed name.

Christopher M. Jose  
Thoma Electric, Inc.

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## Electrical Assessment

Project: Alameda Fire Station 1  
1300 Park Street, Alameda, CA 94501  
Site Visit Date: January 23, 2025  
Date Issued: March 6, 2025

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### Existing Electrical System

The City of Alameda's Fire Station 1, originally constructed in 1968, is a two-story building containing a fire administration area, offices, changing and storage areas, and a dormitory. The building operates with a 400-amp, 120/208V, 3-phase Main Switchboard (MSB) located in the equipment room. This includes a 400-amp Automatic Transfer Switch (ATS), Panel A, and mechanical units. The ATS is a 400-amp Kato Light model. The Alameda Municipal Power Meter is #90000331.

The main switchboard is Westinghouse switchgear with two sections:

- Section 1: Underground pull section.
- Section 2: Meter, main breaker, and distribution (see Image A).

The room was dark, affecting picture clarity. The distribution section includes a 50-amp, 120V emergency panel located in the IT closet. Panel A, located adjacent to the MSB, is fed with a 50-amp/3P breaker and serves the first-floor living space. Panel C is a 150-amp/3P flush-mounted panel in the workroom on the support side of the apparatus bay, serving the apparatus

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bay and support areas. Panel D, a 50-amp/3P panel, serves the second-floor living space. This panel has been replaced with a new Square D panel rated at 22KAIC. However, no AFCI breakers are present, which are required per the California Electrical Code for living spaces. Panel B, located in the administration offices, has also been replaced with a Square D panel with 22KAIC breakers.

The existing generator is a 124KW Generac (See image B), permitted on October 4, 2023. However, it appears too close to the property line and should be evaluated for compliance. A minimum clearance of 5 feet from the property line is required, and relocation may be necessary.

### **Recommendations:**

#### 1. Electrical Panels & Breakers

- Replace existing fire station Panels A, B, and C with seismically certified panels.
- Provide AFCI breakers for all living spaces.
- Ensure proper coordination of breakers per the Arc Fault Study to enhance safety and reliability.
- Replace the main switchboard (MSB), though fitting a new unit in the existing location will be challenging. The switchgear does not have a two-section board meeting utility requirements.
  - Proposed solution: Remove mechanical equipment in the room and install a new three-section switchboard opposite the existing MSB or relocate to an exterior-mounted switchgear.
  - Coordination with the utility company will be necessary to extend a new service secondary.
- Replace the ATS with a seismically certified transfer switch.

#### 2. Interior & Emergency Lighting

- Current interior lighting consists of various fluorescent fixtures (surface, pendant, and recessed mounted).
- Upgrade all fixtures to LED for energy efficiency and reduced maintenance.
- The facility has lit exit signs with battery backups and some emergency "bug-eye" lights.
  - Recommended upgrades:
    - Install additional emergency lighting where necessary.
    - Ensure proper egress lighting for compliance with life safety codes.

#### 3. Exterior Lighting

- Existing exterior lighting consists of wall-mounted fixtures.
- Replace all exterior lights with LED fixtures for improved energy efficiency and visibility.
- Conduct a photometric study to determine the required illumination levels for safety.

#### 4. Outlets & Switches

- Replace all existing outlets and switches with modern, updated equipment to meet current safety and accessibility standards.
- Tamper rated outlets will be required in the living spaces.

#### 5. Fire Alarm & Life Safety

- The building contains smoke alarms, but lacks a fire alarm control panel and fire sprinkler system.
- Recommendations:
  - Replace and install smoke alarms in all living spaces.
  - If the City desires full fire alarm coverage, install a complete fire alarm system.

#### 6. Communication & Data Systems

- The telephone service board is located in the communication closet (see image C) with a free-standing data rack and MPOE, consisting of multiple telephone lines and CAT5 cabling.
- Upgrade all data cabling to CAT6 for improved performance and reliability.
- Install new Wireless Access Points (WAPs) for building-wide wireless connectivity.

#### 7. Security System Enhancements

- The facility has a Closed Circuit Television (CCTV) system, but upgrading to City-standard security cameras is recommended for better compatibility and performance.
- Additional security cameras should be installed to provide full facility coverage and enhance security.

#### 8. Short Circuit & Coordination Study

- Conduct a short circuit and coordination study to:
  - Ensure proper selective coordination.
  - Enhance equipment protection and personnel safety.

#### 9. Arc Flash Analysis

- Perform an Arc Flash Hazard Analysis per NFPA 70E to:
  - Assess electrical hazards.
  - Determine required Personal Protective Equipment (PPE) for worker safety.

By implementing these recommendations, Fire Station 1 will enhance electrical safety, improve energy efficiency, and ensure compliance with industry codes and best practices.



**IMAGE A - EXISTING MAIN SWITCHBOARD**



**IMAGE B - EXISTING GENERATOR**



**IMAGE C - EXISTING TELECOM ROOM**

If you have any questions or need further assistance, please feel free to contact us.

Sincerely,

Christopher M. Jose  
Thoma Electric, Inc.

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## Electrical Assessment

Project: Alameda Fire Station 2  
635 Pacific Avenue, Alameda, CA 94502  
Site Visit Date: January 23, 2025  
Date Issued: March 10, 2025

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The City of Alameda Fire Station 2 was constructed in 1921. The property includes a two-door apparatus bay, offices, restrooms, showers, dormitory, kitchen, and recreational area. At the rear of the property, there are two small sheds:

- Garage – Used for exercise.
- Paint Shed – Used for storage or maintenance.

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The building appears to have undergone some renovations and electrical upgrades over the years. However, the exact timeline and details of these upgrades are unknown.

### **Existing Service and Distribution**

- Main Service: 200A, 120/240V, single-phase.
- Utility Transformer: Pole-mounted, located at the front of the building.
- Meter/Main (M/M): Surface-mounted on an exterior wall (see Image A), fed underground from the utility transformer.
- Service Panel:
  - 200A, surface-mounted (see Image B).
  - Located adjacent to a Kohler Automatic Transfer Switch (ATS) rated at 200A.
- Subpanel:
  - 125A main breaker, fed from the service panel.
  - Supplies power to:
    - 100A/2P mechanical load
    - Water heater (kitchen area)
- 8-Space Load Center:
  - Fed from the subpanel.
  - Powers laundry, refrigerator, telephone system, and gate circuit.
- Panel Recommendations:
  - Panels are in functional condition and do not require replacement.
  - A typewritten panel schedule is needed to verify branch circuits and update labeling for clarity.

### **Generator & Backup Power**

- Existing Generator:
  - 33kW Kohler (Model 30/ROZJ61) with a sub-base fuel tank (see Image C).
  - The installation date is unknown.
  - The generator appears to supply power to the entire station.
- Concerns:
  - The generator is too close to the garage/fitness shed—it should be at least 5 feet away from any structure for safety compliance.
  - Proposed Actions:
    - If budget allows, replace the generator and ATS with seismically certified units.
    - Relocate the generator to meet clearance requirements.

### **Existing Communication & Data Systems**

- Telephone System:
  - Located in the Apparatus Bay (see Image D).
  - Recommendation: Remove and disconnect. If a landline (LAN) is required, relocate copper wiring to the IT closet.
- IT Closet:
  - Contains telephone backboard, fiber termination point, CATV termination, and a data rack (see Image E).
  - Although compact, the available space is sufficient for IT needs.

- Fire Alarm:
  - A fire alarm control panel was not observed.
  - Fire alarms may not be required unless a fire sprinkler system is installed.
  - Recommendation:
    - Replace all smoke alarms with carbon monoxide detectors per NFPA requirements.

## **Recommendations**

### 1. Electrical Equipment & Safety Upgrades

- Service Panel & Grounding:
  - Verify proper grounding of service panels.
  - Secure all ground connections to meet code requirements.
- Circuit Breaker Testing:
  - Test all breakers for proper operation.
  - Replace any breakers that fail to trip correctly.
- Cleaning & Maintenance:
  - Vacuum and clean inside panel enclosures.
  - Seal any openings to prevent dust accumulation.
- Feeder Cable Inspection:
  - Conduct non-destructive testing to assess cable condition.

### 2. Interior & Emergency Lighting

- Upgrade all fluorescent lighting (surface, pendant, recessed) to LED for energy efficiency and reduced maintenance.
- Review emergency lighting:
  - Install additional egress lighting as needed.
  - Ensure compliance with life safety codes.

### 3. Exterior Lighting

- Replace all wall-mounted exterior fixtures with LED alternatives for improved efficiency and visibility.
- Conduct a photometric study to verify illumination levels meet safety standards.

### 4. Outlets & Switches

- Replace all outdated outlets and switches with modern, code-compliant equipment.
- Install tamper-resistant outlets in living spaces per safety standards.

### 5. Fire Alarm & Life Safety

- Replace and install smoke alarms with carbon monoxide detectors in all living spaces per NFPA Code.
- Upgrade the Fire Alarm System if a sprinkler system is added.

### 6. Communication & Data Systems

- Upgrade CAT5 cabling to CAT6 for better performance.
- Install Wireless Access Points (WAPs) for full-building wireless coverage.

7. Security System Enhancements

- Install additional security cameras for full facility coverage.
- Upgrade to City-standard security cameras for improved compatibility.

8. Short Circuit & Coordination Study

- Conduct a short circuit and breaker coordination study to:
  - Ensure selective coordination.
  - Enhance equipment protection and personnel safety.

9. Arc Flash Analysis

- Perform an Arc Flash Hazard Analysis per NFPA 70E to:
  - Identify electrical hazards.
  - Determine Personal Protective Equipment (PPE) requirements for worker safety.

10. Additional Considerations

- Inspect all feeder cables for wear, damage, or degradation—repair/replace as needed.
- Provide AFCI breakers in all living spaces.
- Ensure proper breaker coordination per the Arc Fault Study.



**IMAGE A - EXISTING METER/MAIN SERVICE**



**LEFT PICTURE (ATS) AND SERVICE PANEL**  
**RIGHT PICTURE SUBPANEL WITH LOAD CENTER**  
**IMAGE B - EXISTING PANELS AND ATS**



**IMAGE C - EXISTING GENERATOR**



**IMAGE D - EXISTING TELEPHONE SYSTEM**



**IMAGE E - EXISTING IT CLOSET**

Implementing these recommendations will significantly improve electrical safety, energy efficiency, and compliance with current codes and best practices at Fire Station 1. If you have any questions or need further assistance, please feel free to contact us.

Sincerely,

A handwritten signature in blue ink that reads "Christopher M. Jose". The signature is written in a cursive style and is positioned above the printed name.

Christopher M. Jose  
Thoma Electric, Inc.

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## Electrical Assessment

Project: Alameda Fire Station 4  
2595 Mecartney Road, Alameda, CA 94502  
Site Visit Date: January 23, 2025  
Date Issued: March 10, 2025

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The City of Alameda Fire Station 4 was constructed in 1991. The two-story property includes a three-vehicle apparatus area and contains offices, dormitories, a kitchen, showers, restrooms, and exercise areas.

### Existing Electrical System

#### Electrical Service & Distribution

- Main Service: 400A, 120/208V, 3-phase, fed underground from a utility transformer located at the side of the building.
- Main Switchboard (MSB): Square D "Speed D" with two sections: (See image A)
  - Section 1: Underground pull section.
  - Section 2: Meter/Main and distribution, located in the Apparatus Bay.
    - Alameda Municipal Power (AMP) meter: #90000531.
- Switchgear Breakers:
  - 20A/3P breaker for a 3-phase receptacle adjacent to the switchgear.
  - 200A/3P breaker feeding Panel M.
  - Unlabeled 200A/3P breaker feeding an adjacent panel, identified in as-built plans as Panel A, but differs from what is installed on-site.

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- Panel EM (Previously identified as Panel A in as-built plans):
  - Surface-mounted, 30 circuits, breakers rated at 10kAIC.
  - Concerns:
    - Low AIC rating for its proximity to the MSB.
    - Needs confirmation of Available Fault Current and breaker coordination.
  - Feeds:
    - Panel E – 100A/3P breaker.
    - Panel A – 100A/3P breaker.
    - Air compressor, telephone system, fuel system.
    - 70A/3P breaker for parking lot lighting.
- Automatic Transfer Switch (ATS): Adjacent to Panel EM.
- Cell Site Meter: AMP meter #20012728 (for cell site at the rear of the property).
- Generator: (See image B)
  - 50kW / 52.5kVA Generac, manufactured on 2/18/2001.
  - Provides emergency power to Panel EM.
- Panel E: Located in the MSA room, flush-mounted, 22kAIC breakers, in good condition.
- Panel A & Panel M: Located in a storage closet, flush-mounted, Square D breakers rated at 22kAIC, in good condition.
- IT Room: Contains telephone backboard, MPOE, and data systems (see Image C).
  - Issue: Lacks proper 3-foot working clearance—requires a larger space for compliance and accessibility.
- Fire Alarm System:
  - Manufacturer: Potter PFC series.
  - Monitored by: Tri-Signal Integration.
  - Building also has a fire sprinkler system.

## **Recommendations**

### **1. Electrical Equipment & Safety Upgrades**

- Switchgear & Generator Replacement: If budget allows, replace the switchboard, generator, ATS, and Panel EM with seismically certified units.
- Service Panel & Grounding:
  - Verify proper grounding of service panels.
  - Secure all ground connections to meet code requirements.
- Circuit Breaker Testing:
  - Test all breakers for proper operation.
  - Replace breakers that fail to trip correctly.
- Cleaning & Maintenance:
  - Vacuum and clean inside panel enclosures.
  - Seal any openings to prevent dust accumulation.
- Feeder Cable Inspection:
  - Conduct non-destructive testing to assess feeder cable condition.

### **2. Interior & Emergency Lighting**

- Upgrade all fluorescent lighting (surface, pendant, recessed) to LED for energy efficiency and reduced maintenance.
- Remove and replace existing occupancy switches at bedrooms. They are not required.
- Review emergency lighting:
  - Install additional egress lighting where needed.
  - Ensure compliance with life safety codes.

### 3. Exterior Lighting

- Replace all exterior wall-mounted fixtures with LED alternatives for energy efficiency and improved visibility.
- Conduct a photometric study to verify illumination levels meet safety standards.

### 4. Outlets & Switches

- Replace all outdated outlets and switches with modern, code-compliant equipment.
- Install tamper-resistant outlets in living spaces per current safety standards.

### 5. Fire Alarm & Life Safety

- Replace and install smoke alarms in all living spaces.
- Upgrade the Fire Alarm System to meet current standards.

### 6. Communication & Data Systems

- Upgrade CAT5 cabling to CAT6 for better performance.
- Install new Wireless Access Points (WAPs) for full-building coverage.

### 7. Security System Enhancements

- Install additional security cameras to achieve full facility coverage.
- Upgrade to City-standard security cameras for improved compatibility.

### 8. Short Circuit & Coordination Study

- Conduct a short circuit and breaker coordination study to:
  - Ensure selective coordination.
  - Enhance equipment protection and personnel safety.

### 9. Arc Flash Analysis

- Perform an Arc Flash Hazard Analysis per NFPA 70E to:
  - Identify electrical hazards.
  - Determine Personal Protective Equipment (PPE) requirements for worker safety.

### 10. Additional Considerations

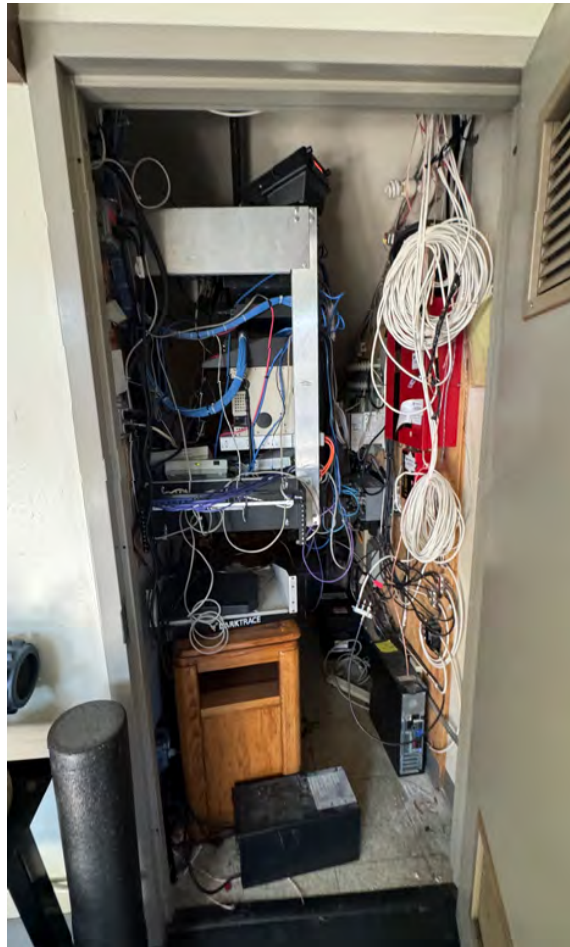
- Inspect all feeder cables for wear, damage, or degradation—repair/replace as needed.
- Provide AFCI breakers in all living spaces.
- Ensure proper breaker coordination per the Arc Fault Study.



**IMAGE A - EXISTING MAIN SWITCHBOARD**



**IMAGE B - EXISTING GENERATOR**



**IMAGE C - EXISTING IT CLOSET**

Implementing these recommendations will significantly improve electrical safety, energy efficiency, and compliance with current codes and best practices at Fire Station 4. If you have any questions or need further assistance, please feel free to contact us.

Sincerely,

A handwritten signature in blue ink that reads "Christopher M. Jose".

Christopher M. Jose  
Thoma Electric, Inc.

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## Electrical Assessment

Project: Alameda Fire Station 5  
950 W. Ranger Road, Alameda, CA 94501  
Site Visit Date: January 23, 2025  
Date Issued: February 28, 2025



The City of Alameda's Fire Station 5, originally constructed in 1940, was designed to serve as both a fire station and a public works facility. The existing electrical service is provided by Alameda Municipal Power (AMP) through transformer L1428.

### Existing Electrical System

The facility is served by a 1200A, 120/208V, 3-phase, 4-wire main switchboard, located in the Electrical Room. The switchgear is a five-section Square D QED board that includes two 600A metered services. The installation date of the switchboard is unknown, but it is noted to be a newer system. See image A.

Service #1 (Label: 950A, Meter #: 90000051)

- Main Breaker: 800A bolted pressure contact switch (assumed to have a 600A fuse).
- Distribution Breakers:
  - Back-Generator: 100A/3P
  - Panel 2+: 100A/2P
  - Panel C: 100A/2P

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- Panel B: 125A/3P
- Panel M3: 400A/3P
- HVAC Panel: 200A/3P
- Stove: 150A/3P
- Panel A: 100A/2P
- Panel D2+2: 100A/2P
- Trailer: 50A/2P

Service #2 (Label: 950B, Meter #: 90000155)

- Main Breaker: 800A bolted pressure contact switch (assumed to have a 600A fuse).
- Distribution Breakers:
  - Panel H: 125A/3P
  - Panel E+2E: 100A/2P
  - Panel F+G: 200A/3P

### **Existing Generator System**

The facility has an MTU Detroit Diesel Model 30PJS6DT2 30KW generator located outside (See image B), which only feeds selected loads. The Automatic Transfer Switch (ATS) is located in the Electrical Room, with the generator load panel adjacent to it.

Generator Load Panel Breakers:

- (1) 100A/2P main breaker
- (4) 20A/1P breakers powering:
  - Hallway Lights
  - Electrical Room Lights and Receptacles
  - Generator Charger/Heater
  - Spare Circuit
- (1) 40A/2P breaker feeding a panel in the communication room

### **Recommendations**

1. Electrical Panels & Breakers
  - Replace all existing panels with seismically certified panels.
  - Ensure all breakers are coordinated based on the Arc Fault Study for improved safety and reliability.
2. Interior & Emergency Lighting
  - The interior lighting consists of a variety of fluorescent fixtures (surface, pendant, and recessed mounted).
  - Recommend replacing all fixtures with LED for energy efficiency and reduced maintenance.
  - The facility has lit exit signs with battery backup and some emergency "bug-eye" lights; however, we recommend:
    - Adding or replacing emergency lighting throughout the facility.
    - Ensuring adequate emergency lighting along the path of egress for compliance with life safety codes.
3. Exterior Lighting
  - The facility uses wall-mounted light fixtures for exterior lighting.
  - Recommend replacing all existing exterior lights with LED fixtures to enhance visibility and energy efficiency.
  - Conduct a photometric study to determine the required light levels for proper exterior illumination.

4. Outlets & Switches
  - Recommend replacing all existing devices (outlets and switches) with new, updated equipment to meet modern safety and accessibility standards.
5. Fire Alarm & Life Safety
  - No existing fire alarm system was observed.
  - Smoke alarms will be required and should be replaced in all living spaces.
  - If a sprinkler system is installed, or if the Owner desires full fire alarm coverage, we recommend installing a complete fire alarm system for enhanced safety.
6. Communication & Data Systems
  - The telephone service board is located in multiple areas, with various telephone lines and added CAT5 cables for data.
  - Recommend consolidating all communication services into one central location.
  - Upgrade all data cabling to CAT6 to improve network performance and reliability.
  - Install new Wireless Access Points (WAPs) throughout the building to provide adequate wireless coverage.
7. Generator Replacement
  - Option 1: Full Facility Backup – Replace the existing 30KW generator with a larger unit to power the entire facility.
  - Option 2: Selected Loads Backup – If full backup is not required, size the generator to support:
    - Emergency lighting
    - Essential loads (refrigerators, overhead doors, communication equipment)
    - One dedicated outlet per office
8. Short Circuit & Coordination Study
  - Conduct a short circuit and coordination study to ensure proper selective coordination, equipment protection, and personnel safety.
9. Arc Flash Analysis
  - The contractor should perform an Arc Flash Hazard Analysis per NFPA 70E – Standard for Electrical Safety in the Workplace to assess electrical hazards and determine the required personal protective equipment (PPE).

By implementing these recommendations, the facility will enhance electrical safety, improve energy efficiency, and ensure compliance with industry codes and best practices.



**IMAGE A - EXISTING MAIN SWITCHBOARD**



**IMAGE B - EXISTING GENERATOR AND UTILITY TRANSFORMER**

If you have any questions or need further assistance, please feel free to contact us.

Sincerely,

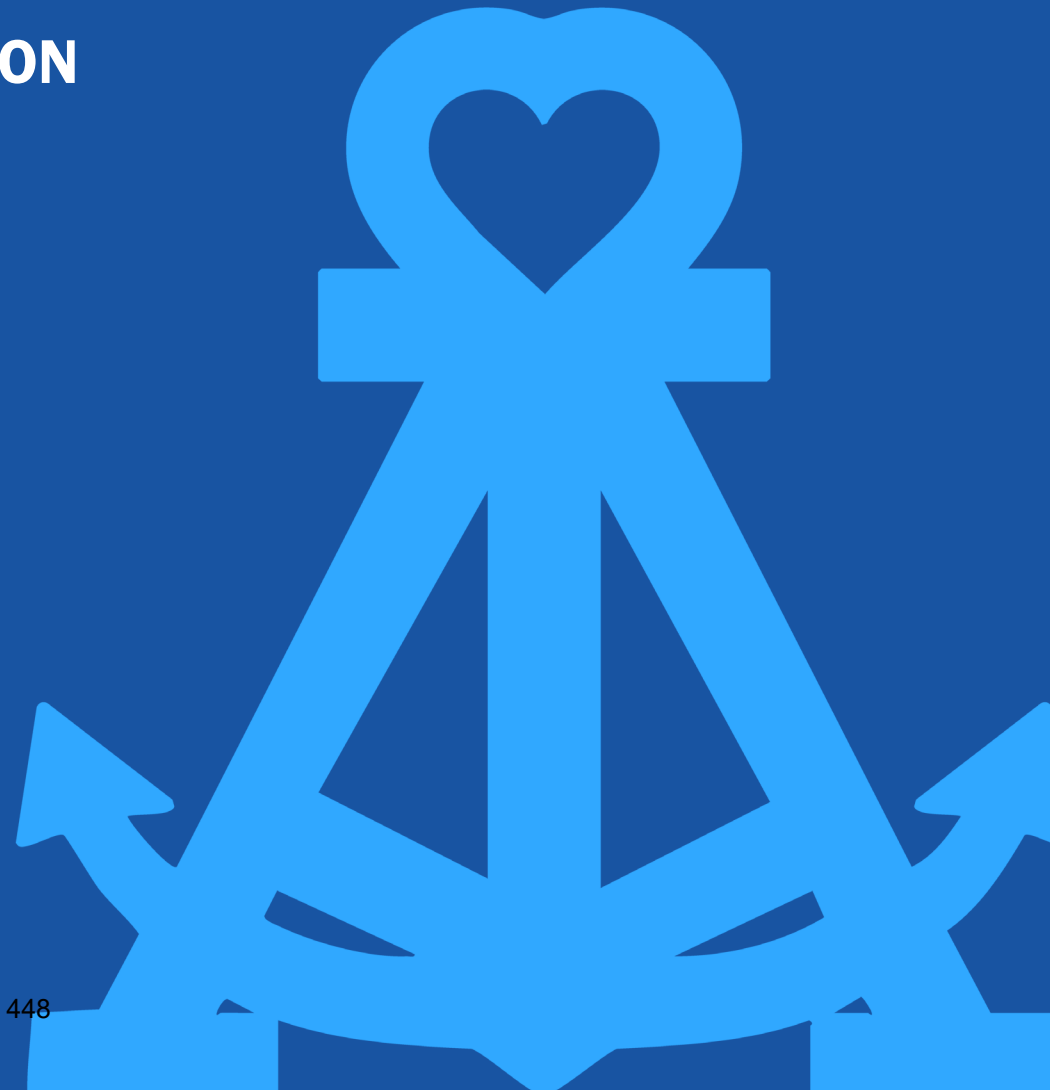
A handwritten signature in blue ink that reads "Christopher M. Jose". The signature is written in a cursive style and is placed on a light yellow rectangular background.

Christopher M. Jose  
Thoma Electric, Inc.

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# APPENDIX K

## K - STATION 5 TIDELANDS EMAIL FROM STATE LANDS COMMISSION



## Byron Wong

---

**From:** Nicholas Luby <nluby@alamedaca.gov>  
**Sent:** Thursday, July 24, 2025 5:15 PM  
**To:** Byron Wong  
**Cc:** Jennifer Ott  
**Subject:** FW: Alameda Point Fire Station/Training Center Discussion Follow-up

Byron,

I am forwarding the email we received today from the CA State Lands Commission. Since CM Ott is away for a few weeks, I wanted to ensure you have this. Please share with your team.

This confirms what we discussed yesterday.

Cheers.

-Nick

---

**From:** Plovnick, Jeffrey@SLC <Jeffrey.Plovnick@slc.ca.gov>  
**Sent:** Thursday, July 24, 2025 5:07 PM  
**To:** Jennifer Ott <jott@alamedaca.gov>; Kershen, Andrew@SLC <Andrew.Kershen@slc.ca.gov>; Kato, Grace@SLC <Grace.Kato@slc.ca.gov>; Caldwell, Vicki@SLC <Vicki.Caldwell@slc.ca.gov>  
**Cc:** Bill White <White@smwlaw.com>; Nicholas Luby <nluby@alamedaca.gov>; Abby Thorne-Lyman <athornelyman@alamedaca.gov>; Amy Wooldridge <AWooldridge@alamedaca.gov>  
**Subject:** [EXTERNAL] RE: Alameda Point Fire Station/Training Center Discussion Follow-up

Hi Jennifer,

Thank you for providing a recap of the City's fire station and training center proposal, and for engaging with Commission staff about the consistency of such a facility in regards to the Public Trust Doctrine. I would also like to thank you for taking the time to join us on our site visit. It was fantastic to see how much progress the City has made in redeveloping Alameda Point, and to hear all of the plans for continuing development in the area.

As for the proposed fire station, Commission staff understands that the City has identified an urgent need for improved emergency services within Alameda Point, the area subject to the Naval Air Station Alameda Public Trust Exchange Act (Exchange Act, as amended) and the Naval Air Station Alameda Title Settlement and Exchange Agreement (Exchange Agreement). The City has proposed demolishing, partly or wholly, an existing Fire Station (Building 6) and rebuilding a new, expanded fire station facility to meet modern standards.

The proposed fire station would serve all of Alameda Point. In this area, some filled land and all the surrounding tidelands and submerged lands have been or will be confirmed as public trust lands through the Exchange Agreement. Other land at Alameda Point has been or will be confirmed as outside the public trust. The City proposes building the fire station on lands subject to the public trust and the Exchange Act.

Staff recommends that for a fire station to meet the requirements of the Exchange Act and the Public Trust Doctrine, the City must primarily intend the fire facility to serve statewide and regional interests connected with the public trust. The fire station, as described to Commission staff, may meet this condition because the station focuses its services on public trust uses and users.

The proposed new fire station's service area would include maritime facilities and public spaces on trust land and the Oakland/Alameda Estuary, Seaplane Lagoon, and San Francisco Bay; the station would be staffed to respond to water emergencies; and the fire station would serve as a regional training center for water emergency response. Staff believes that, as proposed, the fire station could primarily benefit public trust uses.

Staff looks forward to hearing more from the City as it designs and implements a fire and emergency services facility compliant with the Exchange Act. Please feel free to reach out if you would like to discuss further.

Best,

**Jeff Plovnick** (*he/him*), Granted Lands Specialist

Land Management Division

**CALIFORNIA STATE LANDS COMMISSION**

100 Howe Avenue, Suite 100-South

Sacramento, CA 95825

916.312.4747

[Jeffrey.Plovnick@slc.ca.gov](mailto:Jeffrey.Plovnick@slc.ca.gov)



---

**From:** Jennifer Ott <[jott@alamedaca.gov](mailto:jott@alamedaca.gov)>

**Sent:** Monday, July 21, 2025 2:07 PM

**To:** Kershen, Andrew@SLC <[Andrew.Kershen@slc.ca.gov](mailto:Andrew.Kershen@slc.ca.gov)>; Kato, Grace@SLC <[Grace.Kato@slc.ca.gov](mailto:Grace.Kato@slc.ca.gov)>; Plovnick, Jeffrey@SLC <[Jeffrey.Plovnick@slc.ca.gov](mailto:Jeffrey.Plovnick@slc.ca.gov)>; Caldwell, Vicki@SLC <[Vicki.Caldwell@slc.ca.gov](mailto:Vicki.Caldwell@slc.ca.gov)>

**Cc:** Bill White <[White@smwlaw.com](mailto:White@smwlaw.com)>; Nicholas Luby <[nluby@alamedaca.gov](mailto:nluby@alamedaca.gov)>; Abby Thorne-Lyman <[athornelyman@alamedaca.gov](mailto:athornelyman@alamedaca.gov)>; Amy Wooldridge <[AWooldridge@alamedaca.gov](mailto:AWooldridge@alamedaca.gov)>

**Subject:** Alameda Point Fire Station/Training Center Discussion Follow-up

You don't often get email from [jott@alamedaca.gov](mailto:jott@alamedaca.gov). [Learn why this is important](#)

**Attention:** This email originated from outside of SLC and should be treated with extra caution.

Dear Jeffery:

First, I just want to thank you, Andrew and Vicki for coming down to the City to attend the Alameda Point tour, and for the follow up meeting with you and Andrew on the Fire Station/Regional Training Center Project. As you've seen, the City has been making significant progress toward transforming the former base into a vibrant community and spectacular public waterfront, but there is much work left to do. We sincerely value our partnership with State Lands staff and look forward to working with you on the Fire Station and other projects that will revitalize the unique trust property at Alameda Point.

To recap our discussion, the City has identified an urgent need to provide a new fire station to serve District 5, which comprises all of Alameda Point. Existing stations are too far from the site to reliably meet the national standard of responding to emergencies within 4-minutes or provide an effective fire response force that is appropriate for the level of development at Alameda Point (25+ personnel within 8 minutes). In addition, the existing fire training center at Alameda Point, located on trust lands at the historic Navy Fire Station (Building 6), must be overhauled. Building 6 is in poor condition and was not designed to meet modern fire service facility standards.

The City is proposing to respond to these needs by revamping its existing training facility to create a state-of-the-art regional training center that would also include construction of a modern fire station that meets essential services building codes. Although Building 6 is a contributing building to the NAS Alameda Historic District, some portions of the building would likely need to be demolished and rebuilt to modern facility standards. To expand the training center, the project would also likely demolish the Navy power plant (Building 10), also on trust lands, which the NAS Alameda Exchange Act identified as existing non-trust structure having a remaining useful life through 2025. Building 10 has remained vacant since the base was closed and the City has not identified any viable trust use that could be made of the building.

As we've discussed, the City believes its vision for the project is consistent with the public trust. The trust at Alameda Point covers a vast area that includes numerous buildings, maritime facilities and public spaces, as well as the waters of the Oakland/Alameda Estuary, Seaplane Lagoon, and the adjacent Bay. A substantial number of the emergency responses at Alameda Point have involved incidents on the City's trust property, both on land and in the water. It is essential that the Fire Department establish an operational presence at Alameda Point to provide the trust property with a level of emergency services that meets national standards. The station would also serve as the training base for the Department's rescue dive team (the sole dive team serving Alameda and Contra Costa Counties), would be staffed with at least one rescue swimmer at all times, and would be home to an inflatable rescue boat to respond to water emergencies. The crew for the City's fireboat docked at Fortman Marina on the estuary may also be housed in part at the new station.

The proposed regional training center and staff would also advance trust purposes. It would provide dive training, State Fire Training (SFT) water rescue swimmer certifications, SFT rescue boat training, shipboard firefighting training, and US Coast Guard training support. The new training center would assist with filling a gap within the region and would improve water emergency response capabilities throughout San Francisco Bay.

The proposed project provides an opportunity to return the Building 6 site to its historic use as an operational fire station, provide the Alameda Point trust lands with needed fire and emergency medical services, eliminate the blighted Building 10, and expand the existing fire training facility to create a premier training center. The City believes the new facility would serve trust purposes and indeed would be a significant trust asset. It is thus our opinion as trustee that the project would be a permitted use of the granted lands, even if Building 6 cannot be preserved in its current condition.

We would appreciate hearing from you as to whether State Lands staff agrees that a project along the lines described above could be consistent with the trust. We understand that the proposal is only at the conceptual stage so we are not requesting a trust consistency determination at this time but only an initial indication from your staff that the project appears feasible from a trust perspective. This will allow the City to make a more substantial investment in planning phase of the project and develop a more refined set of options for further consideration.

The slide deck from our last meeting is attached to provide some additional information about the project.

As always we look forward to working with State Lands as we continue to develop the Alameda Point trust lands.

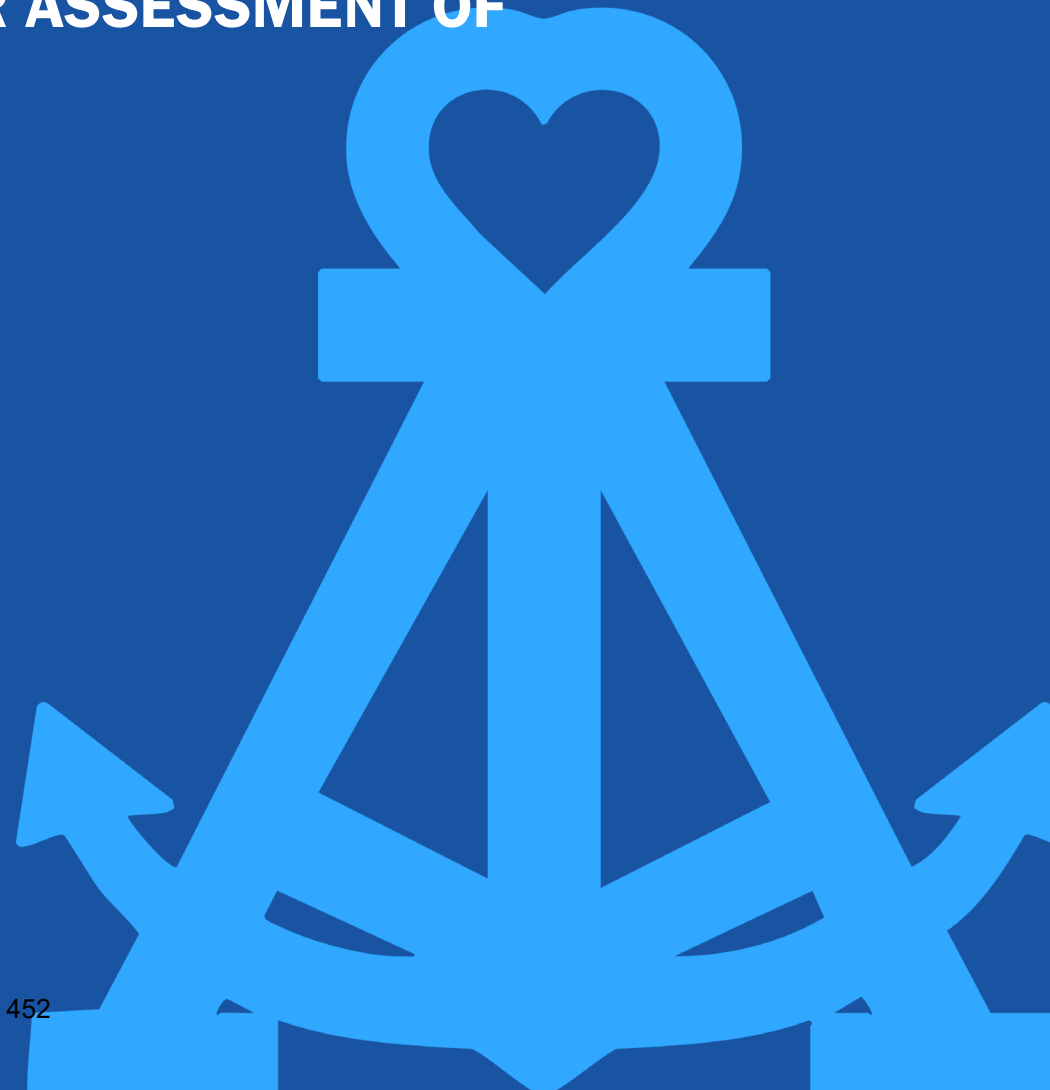
Jen

Jennifer Ott  
City Manager  
City of Alameda  
[jott@alamedaca.gov](mailto:jott@alamedaca.gov)  
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# APPENDIX L

## L - FIRE TRAINING FACILITY - ODOR ASSESSMENT OF EXISTING BURN OPERATIONS



October 29, 2024

File No. 24224362.00 Task 1

## MEMORANDUM

**TO:** Cody Moxley, Deputy Chief of Operations  
Alameda Fire Department  
1300 Park Street  
Alameda, CA 94501

**FROM:** Paul Schafer, Vice President, Project Director, and National Expert Ambient Air  
Monitoring and Odor Assessment  
SCS Engineers

Greg Hauser, Project Director  
SCS Engineers

**SUBJECT:** Memorandum of Findings – Odor Assessment of Existing Burn Operations  
Alameda Fire - Training Division Facility (950 W Ranger Avenue)

## 1.0 INTRODUCTION

SCS Engineers (SCS) was contracted by the City of Alameda (Client) to provide odor assessment services for the Alameda Fire - Training Division facility located at 950 W Ranger Avenue in Alameda, CA. The goal of this study was to review existing operations and assess future viability with respect to potential off-site nuisance odor impacts from live fire burns. To achieve this goal, SCS visited the site during one live fire training day to review recent odor complaints, observe operations, and evaluate plume trends in the surrounding area in order to recommend measures that would reduce potential off-site nuisance odor impacts. The following summarizes the findings and recommendations from the study.

## 2.0 SUMMARY OF FINDINGS

SCS conducted an initial review of information provided by the Alameda Fire – Training Division to define the parameters for a field investigation. On Tuesday, October 8, 2024, SCS conducted a site visit to observe current burn operations. This included a review of odor complaints, anecdotal wind speed and direction data for those complaint periods, and an evaluation of topographic conditions. SCS arrived on-site at 0800, observed the fire crew prepare for the day, attended the 0900 Morning Meeting, and observed the burns, which started at roughly 1000. SCS met with Cody, Alex, and Dallas, who provided the following background and logistical information on current burn practices:

- Items used in the burns include wood pallets, hay, and roughly 40 sheets/day of 4'x8'x7/16" oriented strand board (OSB).
- The OSB is first used for training purposes, simulating a roof for cutting practice, and then recycled to be used as fuel.
- Burns are conducted on roughly 12 days a year. Six (6) are reserved for Academy training. These days are less flexible compared to the remaining six (6) days designated for



professional certifications. The Academy is a 24-week program with a schedule that predetermines specific days or weeks dedicated to live fire training. This structure causes burns to occur even if the Bay Area Air Quality Management District (BAAQMD) issues a Spare the Air Day. These burns are generally in the September to October timeframe and never occur at night. The professional certification days are more flexible.

- Burns are conducted from roughly 0900 to 1500 with a one (1) hour lunch break at noon.
- Smoke from a burn clears/dissipates approximately 20 minutes after ignition.
- The burn structure consists of multiple storage containers stacked to a maximum height of three containers, with each level representing a different building floor. Most burns occur on the first floor although burns on the second and third floor also occur.
- One (1) windsock was placed above the highest storage container.
- Alameda Fire provides advance notice to neighboring buildings before conducting burns through informational flyers and at community meetings. A-frame signs are also placed at entrances to provide burn information.

### 3.0 RECOMMENDATIONS

To reduce the potential for nuisance odor impacts on downwind neighbors, it is recommended that appropriate mitigation measures be implemented. The hierarchy of controls is a system designed to prioritize methods for reducing or eliminating hazards. At the top is Elimination, followed by Substitution, then Engineering Controls, Administrative Controls, and finally Personal Protective Equipment (PPE) at the bottom. In this context, Elimination and PPE were not viable due to the nature of the operations. Therefore, SCS focused on identifying effective substitution (e.g., alternative source of smoke), engineering (e.g., ventilation systems and barriers), and administrative controls (e.g., procedural changes) tailored to the facility's needs.

In addition, this memo is not focused on the relocation of this site to another property in the immediate vicinity. Potential viable locations to relocate the burn operations in the vicinity of the current site will also experience development of residential properties downwind from operations. Therefore, relocation of the site to an alternative plot would only provide temporary reprieve.

### 3.1 SUBSTITUTION

The choice of materials burned significantly influences the resulting odor. Our observations indicated a notable increase in both odor and smoke (See Figure 1) when tar paper was burned. In the interest of preventing nuisance odors downwind, we advise discontinuing the use of this material under all circumstances. If the goal is to generate more smoke while minimizing odor, then we recommend exploring alternative materials such as Training Smoke Q - Water Based, Quick Dissipating Smoke Fluid which is used in small and medium training spaces where the smoke needs to dissipate quickly to reset exercises and provide visibility for post exercise assessment. Key features include:

- Fast dissipating fog fluid - water based fog juice
- Leaves less residue in machines for longer maintenance free periods
- Odorless, non-irritating, non-toxic, non-flammable
- Strong density, short hang time, excellent dispersion
- Froggy's Fog only uses de-ionized water and pharmaceutical grade chemicals

See the attached Safety Data Sheet for details (<https://www.trainingsmoke.com/training-smoke-fluid/water-based-training-smoke-fluid/training-smoke-q-water-based-quick-dissipating-smoke-fluid.html>).

Figure 1. (Top) Exhaust observed from far end of rooftop of neighboring apartments when tar paper was burnt. (Bottom) Exhaust observed from edge of rooftop closest to the Training Facility when no tar paper was involved. Odor and smoke opacity noticeably increased when tar paper was used.



### 3.2 ENGINEERING CONTROLS

Based on this analysis, a feasible solution to mitigate downwind impacts from air emissions is to install a filtration system above the roof vent of the storage container, where over 90% of the plume escapes (See Figure 2). Maintaining a centralized exit, as currently configured, allows for easier integration of an air treatment system. By incorporating an exhaust fan coupled with a HEPA filter, the burn smoke and associated odors can be effectively treated before it is released into the atmosphere. A HEPA filter with impregnated carbon would not only reduce particulate impacts but odorous molecules as well. This setup must also be able to accommodate the intense heat generated by each burn and the frequency of burns conducted each day. If a HEPA filter cannot be used due to the heat of the effluent, stainless steel filters can be utilized at reduced effectiveness.

Figure 2. Smoke release through roof vent on storage container. Fan and HEPA filter recommended at this exit point as an engineering control.



Alternatively, a blower filter box (or multiple), can be placed adjacent to the roof vent outlet (See Figure 3). This system would reduce odor and particulate impacts but would be less effective than a system ducted to roof vent. This system is proposed as an alternative because ducting a filtration system to the roof vent location may be logistically not practical. This system would be fairly inexpensive to implement.

Figure 3. Blower Filter Box with Blower System Example



Another potential solution is to relocate the burn site to another spot within the same property. Currently, there are two (2) sites within the property and one (1) additional site on a neighboring property that could serve as alternatives. Among these three (3) options, we observed dumpster burns at the two (2) on-site locations. One (1) of these sites demonstrated greater effectiveness in creating distance between the odor source and sensitive receptors, while also benefiting from topographical features that could help diffuse smoke and odors (See Figure 4). Anecdotal evidence suggests that prevailing winds primarily travel from west to east, so adding barriers on the east side of the burn structure could further enhance diffusion. SCS did not visit the off-site location as we believe it would be more effective to address the issue at its current location rather than moving to a new site.

Figure 4. Blue (preferred) and Red squares represent the two (2) sites within the property that could serve as alternatives. Existing burn site is seen in center of property.



### 3.3 ADMINISTRATIVE CONTROLS

Regarding administrative controls, one of the first observations SCS made was the low wind conditions the morning of the burn day. Although it may seem counterintuitive, higher winds are actually more effective for diffusing smoke and odors, even when blowing toward sensitive receptors. As we noted during the site visit, low winds caused the plume to linger in the area. Therefore, in situations where the schedule allows for flexibility, we recommend conducting burns on windy days and during peak wind speeds, ideally between 1100 and 1800 hours, rather than the current window of 0900 to 1600 hours. Upon SCS's visit, there were no windsocks in place until a few burns in, when one (1) windsock was placed at the top of the tallest container. We suggest having a permanent windsock, or better yet, a stationary meteorological (MET) system that logs, at minimum, wind speed (WS) and wind direction (WD).

Additionally, while the site has been proactive in notifying residents of the neighboring apartment complex about the burns, we still observed open windows. To enhance communication, we suggest implementing additional measures, such as mass text updates from property management to keep residents informed.

**Attachment – Safety Data Sheet for Potential Alternative Source of Smoke**



# Training Smoke Q Quick Dissipating Fog

## Safety Data Sheet

Froggy's Fog LLC  
302 Rutherford Lane  
Columbia, TN 38401  
United States  
Phone: (615) 469-4906

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Version: 1.0  
Revision Date: 10/20/2014

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

#### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** Training Smoke Q – Quick Dissipating Fog

#### 1.2. Intended Use of the Product

**Use of the Substance/Mixture:** Theatrical Fog/Haze

#### 1.3. Name, Address, and Telephone of the Responsible Party

Froggy's Fog LLC  
302 Rutherford Lane  
Columbia, TN 38401  
1-615-469-4906

[www.froggysfog.com](http://www.froggysfog.com)

#### 1.4. Emergency Telephone Number

Chemtrec: (800) 424-9300

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the Substance or Mixture

**Classification (GHS-US)**

Not classified

#### 2.2. Label Elements

**GHS-US Labeling**

No labeling required

#### 2.3. Other Hazards

**Other Hazards Not Contributing to the Classification:** Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

#### 2.4. Unknown Acute Toxicity (GHS-US)

No data available

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product Identifier	%	Classification (GHS-US)
Water	(CAS No) 7732-18-5	Proprietary	Not classified
1,2-Propylene glycol	(CAS No) 57-55-6	Proprietary	Not classified

The specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

Full text of H-phrases: see section 16

### SECTION 4: FIRST AID MEASURES

#### 4.1. Description of First Aid Measures

**First-aid Measures General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**First-aid Measures After Inhalation:** If symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

**First-aid Measures After Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

**First-aid Measures After Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persist.

**First-aid Measures After Ingestion:** Rinse mouth. Do NOT induce vomiting. Seek medical attention.

# Training Smoke Q – Quick Dissipating Fog

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 4.2. Most important symptoms and effects, both acute and delayed

**Symptoms/Injuries:** Not expected to present a significant hazard under anticipated conditions of normal use.

**Symptoms/Injuries After Inhalation:** None expected under normal conditions of use.

**Symptoms/Injuries After Skin Contact:** None expected under normal conditions of use.

**Symptoms/Injuries After Eye Contact:** None expected under normal conditions of use.

**Symptoms/Injuries After Ingestion:** None expected under normal conditions of use.

### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not flammable.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Other information:** Do not allow the product to be released into the environment. Do not allow run-off from fire fighting to enter drains or water courses.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapors, mist, spray).

#### 6.1.1. For Non-emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### 6.1.2. For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area.

### 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

### 6.3. Methods and Material for Containment and Cleaning Up

**For Containment:** Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

**Methods for Cleaning Up:** Clear up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material, then place in suitable container.

### 6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations.

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from extremely high or low temperatures, direct sunlight, incompatible materials.

**Incompatible Products:** Strong acids. Strong bases. Strong oxidizers.

### 7.3. Specific End Use(s)

Theatrical Fog/Haze.

# Training Smoke Q – Quick Dissipating Fog

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

### 8.2. Exposure Controls

<b>Appropriate Engineering Controls</b>	: Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.
<b>Personal Protective Equipment</b>	: Not generally required. The use of personal protective equipment may be necessary as conditions warrant.
<b>Materials for Protective Clothing</b>	: Chemically resistant materials and fabrics.
<b>Hand Protection</b>	: Wear chemically resistant protective gloves.
<b>Eye Protection</b>	: Chemical goggles or safety glasses.
<b>Respiratory Protection</b>	: Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of vapor or mist are expected to exceed exposure limits.
<b>Other Information</b>	: When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

<b>Physical State</b>	: Liquid
<b>Appearance</b>	: Clear.
<b>Odor</b>	: Odorless.
<b>Odor Threshold</b>	: No data available
<b>pH</b>	: Unknown
<b>Relative Evaporation Rate (butylacetate=1)</b>	: No data available
<b>Melting Point</b>	: No data available
<b>Freezing Point</b>	: No data available
<b>Boiling Point</b>	: 100 °C (212°F)
<b>Flash Point</b>	: Does not flash
<b>Auto-ignition Temperature</b>	: No data available
<b>Decomposition Temperature</b>	: No data available
<b>Flammability (solid, gas)</b>	: No data available
<b>Vapor Pressure</b>	: No data available
<b>Relative Vapor Density at 20 °C</b>	: No data available
<b>Relative Density</b>	: No data available
<b>Specific Gravity</b>	: Not available
<b>Solubility</b>	: Soluble in water.
<b>Log Pow</b>	: No data available
<b>Log Kow</b>	: No data available
<b>Viscosity, Kinematic</b>	: No data available
<b>Viscosity, Dynamic</b>	: No data available
<b>Explosive Properties</b>	: No data available
<b>Oxidizing Properties</b>	: No data available
<b>Explosive Limits</b>	: Not applicable

### 9.2. Other Information

No additional information available

## SECTION 10: STABILITY AND REACTIVITY

- 10.1 Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2 Chemical Stability:** Stable under normal conditions.
- 10.3 Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4 Conditions to Avoid:** Direct sunlight. Extremely high or low temperatures. Incompatible materials.
- 10.5 Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers.
- 10.6 Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>).

# Training Smoke Q – Quick Dissipating Fog

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information On Toxicological Effects

Acute Toxicity : Not classified

<b>Water (7732-18-5)</b>	
LC50 Inhalation Rat (ppm)	100000 ppm
<b>1,2-Propylene glycol (57-55-6)</b>	
LD50 Oral Rat	20000 mg/kg
LD50 Dermal Rabbit	20800 mg/kg

**Skin Corrosion/Irritation:** Not classified

pH: unknown

**Serious Eye Damage/Irritation:** Not classified

pH: unknown

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** None expected under normal conditions of use.

**Symptoms/Injuries After Skin Contact:** None expected under normal conditions of use.

**Symptoms/Injuries After Eye Contact:** None expected under normal conditions of use.

**Symptoms/Injuries After Ingestion:** None expected under normal conditions of use.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

<b>1,2-Propylene glycol (57-55-6)</b>	
LC50 Fish 1	51600 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	10000 mg/l (Exposure time: 24 h - Species: Daphnia magna)
EC50 Other Aquatic Organisms 1	19000 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata)
LC 50 Fish 2	41 (41 - 47) mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 2	1000 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

### 12.2. Persistence and Degradability

<b>Training Smoke Q – Quick Dissipating Fog</b>	
Persistence and Degradability	Not established.

### 12.3. Bioaccumulative Potential

<b>Training Smoke Q – Quick Dissipating Fog</b>	
Bioaccumulative Potential	Not established.

<b>1,2-Propylene glycol (57-55-6)</b>	
BCF fish 1	< 1

**12.4. Mobility in Soil** No additional information available

### 12.5. Other Adverse Effects

**Other Information** : Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, and international regulations.

# Training Smoke Q – Quick Dissipating Fog

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

## SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/IMDG/DOT

**14.1. UN Number** Not regulated for transport

**14.2. UN Proper Shipping Name** Not regulated for transport

**14.3. Additional Information**

**Other information** : No supplementary information available.

**Transport by Sea** Not regulated for transport

**Air Transport** Not regulated for transport

## SECTION 15: REGULATORY INFORMATION

### 15.1 US Federal Regulations

#### Water (7732-18-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 1,2-Propylene glycol (57-55-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### EPA TSCA Regulatory Flag

Y2 - Y2 - indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

### 15.2 US State Regulations

#### 1,2-Propylene glycol (57-55-6)

U.S. - Minnesota - Hazardous Substance List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Texas - Effects Screening Levels - Long Term  
U.S. - Texas - Effects Screening Levels - Short Term

## SECTION 16: OTHER INFORMATION

**Revision date** : 10/20/2014

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

SDS US (GHS HazCom) - US