COUNTY OF MARIN

FIRE FACILITIES VISION PLAN

Prepared in collaboration with:

County of Marin Administrator's Office

County of Marin Fire Department

County of Marin Public Works Department

Prepare by Beverly Prior Architects

Mary McGrath, Project Director

Frederick Hormann, Designer

Final Report

October 4, 2010

TABLE OF CONTENTS

- Meeting Minutes

Point Reyes Fire Station

Detailed Facility Study

1. Fire Facility Space Needs Standards and Site Requirements
2. Budget Detail
    a. Conceptual Equipment Budgets
    b. Facility Design Budget
    c. Overall Conceptual Project Budget

Appendix

- Cost Estimates
- Existing Facility Engineering Reports
- List of Reference Documents

Tomales Fire Station

Detailed Facility Study

1. Fire Facility Space Needs Standards and Site Requirements
2. Budget Detail
    a. Conceptual Equipment Budgets
    b. Facility Design Budget
    c. Overall Conceptual Project Budget

Appendix

- Cost Estimates
- Existing Facility Engineering Reports
- List of Reference Documents

Mt. Barnabe & Mt. Tamalpais Fire Lookouts (Data from Dept. of Public Works)

Vision Plan Report – Volume I

A. EXECUTIVE SUMMARY

The purpose of this document is to provide policy makers with the Fire Department's long-term vision for their facilities. This planning tool is meant to help prioritize and inform future capital improvement decisions. Given current fiscal conditions, many of these improvements will not be funded in the short term; nonetheless, it is important that policy makers are aware of them for long-term capital planning purposes.

This plan was a collaborative team effort with members of the County Administrative Office, Marin County Fire Department, Marin County Department of Public Works and Beverly Prior Architects. The MCFD Headquarters and Fire Station at Woodacre (Headquarters), Hicks Valley Fire Station, Tomales Fire Station, Pt. Reyes Public Safety Building, both Fire Lookouts and a new Tamalpais Fire Crew facility were the subjects of this study. Marin City and Throckmorton Fire Stations were not studied, as they are facilities constructed within the last 10 years.

A summary of key findings are as follows:

- The Headquarters and the Fire Station at Woodacre, the Tomales Fire Station, and Hicks Valley Fire Station are past their useful life and are recommended to be replaced.
- The Headquarters including the administration/emergency command center, fire station No. 1, vehicle maintenance and warehouse facilities are recommended to be relocated to a larger site and centrally located within the Marin County service area.
- The Hick Valley Fire Station is recommended to be relocated to a larger site near its current location.
- Tomales Fire Station is recommended to be replaced on its existing site.
- Point Reyes Fire Station is recommended to be seismically upgraded, expanded and a new building added to the site to house the sheriff operations and a community meeting room.
- Subject to securing on-going funding for services, a future Tamalpais Fire Crew Facility was studied and is recommended to be co-located with one of the existing fire stations if there is enough land. This report has it co-located with Hicks Valley Fire Station and this proposal is subject to land availability and cost verification.
- A strategy for construction phasing is possible for the Headquarters, Hicks Valley and Tomales facilities.

FINAL PROJECT PRIORITY RANKINGS – PHASED PROJECTS

Priority	Facility	Description
A	**Headquarters Administration, Emergency Command Center/Dispatch - Phase 1**	Secure funding; develop master plan, community outreach and entitlements. Phase 1 construction documents and construction of new facility.
A	**Headquarters Fire Station Replacement - Phase 2**	Construction documents and construction of new facility.
A	**Hicks Valley Fire Station Replacement – Phase 1**	Secure funding; develop master plan, community outreach and entitlements. Phase 1 construction documents and construction.
B	**Headquarters Maintenance Building & Warehouse - Phase 3**	Construction documents and construction of new facility.
B	**Point Reyes Renovation & Addition**	Choose development option, secure funding, community outreach, entitlement, construction documents and construction.
C	**Headquarters Training Tower - Phase 4**	Construction documents and construction of new facility.
C	**Hicks Valley Fire Crew – Phase 2 (subject to Program funding being in place)**	Construction Documents and Construct Fire Crew Facility at Hicks Valley site.
C	**Tomales FS Station Replacement – Phase 1**	Replace fire station on existing site planning for future training tower
C	**Mt. Tamalpais Fire Lookout**	Perform maintenance repairs
C	**Mt. Barnabe Fire Lookout**	Perform maintenance repairs and technical upgrades
C	**Hick Valley Training Tower – Phase 3**	Add Training tower at Hicks Valley site
C	**Tomales Training Tower – Phase 2**	Add Training Tower at Tomales site

Cost Estimate

The cost estimate for the Vision Plan improvements is between $57M and $68M. This range was established using two contrasting budgeting methods. One evaluated each proposed improvement on a cost per square foot basis based on recent project types and a second method using a quantitative unit take-off basis was used as a check to the cost per square foot budget. The cost estimates are based on today's dollars and will require evaluation based on escalation factors as each project moves forward.

Schedule and Priorities

A qualitative and quantitative ranking was used to rank the facility needs of the Fire Department similar to county facility rankings in the Capital Improvement Program, although these rankings were not completed under that County-led procedure. This process identified the Administration / Emergency Command Center, currently co-located in Woodacre with a station and preferred by the Fire Administration to remain in that general area, as the most critical replacement project as there are no other redundant resources within the County that can command a major fire operation and meet the CalFire contract requirements for wildland fire response. Importance factors, redundant operations and call volumes were factors used in the priorities set above.

B. VISION PLAN PURPOSE, METHODS OF ANALYSIS & REPORT ORGANIZATION

Purpose – The Fire Facilities Vision Plan (Plan) will establish a vision for the Marin County Fire Department's (MCFD) fire facility needs, current and future. The Plan is based on an assessment of current resources and facilities, the Department's operational goals/latest fire suppression strategies; code/legal requirements balanced with the County's available resources for funding and schedule impacts. Beverly Prior Architects (BPA) specifically reviewed MCFD Headquarters and Fire Station, Hicks Valley Fire Station (FS), Tomales FS, Point Reyes FS and the Tamalpais Fire Crew. In addition, fire lookout information was provided by the County and incorporated into this report. Marin City FS and Throckmorton FS were considered too new to be included in this study. At the conclusion of this report, facility priorities are offered with accompanying detailed explanation and rationales.

Methods of Analysis – Beverly Prior Architects and its consulting engineers, in coordination with MCFD, CAO and DPW staff, conducted several meetings and site visits to evaluate existing facilities and to determine current/future fire operation needs and goals. To determine space standards, comparative analysis was undertaken with other county fire departments similar to Marin's Fire Department, the newer Marin City and Throckmorton Fire Stations, and survey material. Then, using space standards, building codes, NFPA recommendations and the latest industry standards, site diagrams were produced with accompanying cost estimates. Based on this information, schedule considerations and the assumption of a 50-year performance lifespan for new facilities, renovation and replacement alternatives were ranked or prioritized for each reviewed facility. Criteria used for ranking include:

- Removes Reduces Threats to Health & Safety
- Meets Legal Mandates
- Maintains Operations & Functions
- Prevents Major Repair or Replacement Costs
- Environmentally / Energy Efficient
- Meets County Goals in reference to the County's Strategic Plan
- Large Aesthetic Benefit
- Large Functional Benefit

Report Organization--The Report is organized with this summary section that addresses the key elements of the Vision Plan, specifically:

- An Overview of Marin County Fire Facilities and Fire Operations
- Existing Facility Findings
- Summary of Proposed Facility Space Needs, attributes and site arrangements
- Vision Plan Implementation Budget summary
- Priority Rankings

Supplemental information includes:

- Comparative Department Survey Analysis
- Industry Standards Overview and Matrix of Relevancy
- Station Profiles and Matrix of Compliance with Space Standards
- Detailed Facility Studies including space needs listings, component diagrams outlining space standards, site arrangement diagrams and overall project budgets per facility

These documents are within tabbed sections that follow this summary report. Detailed costs estimates, existing facility reports, user work session meeting notes and reference material listings are included in the appendix of the Detailed Facility Studies.

COUNTY Participants

Marin County Fire Dept.

Leadership

Ken Massucco, Fire Chief

Rich Lopez, Deputy Fire Chief

County Administrator's Office

David Speer, Facilities Planning & Development Manager

Jeff Wong, Capital Planning & Project Manager

Department of Public Works

Kevin McGowan, Principal Civil Engineer

Work Session Participants

Phoenicia Thomas,

Administrative Services Officer

Keith Parker, Senior Captain

Tim Thompson, Battalion Chief

Bill Vieira, Senior Captain

Al Rodoni, Heavy Equipment Mechanic

Chris Martinelli, Senior Captain

Joe Morena, Senior Captain

Tim Walsh, Superintendant

Graham Groneman, Foreman/Captain

PROJECT CONSULTANTS

Beverly Prior Architects

Mary McGrath, AIA, LEED AP

Frederick Hormann, Assoc. AIA

Cornerstone Engineering – Structural

Tom Swayze, Principal Engineer

Thoma Electric – Electrical

Jimmy Dean, Project Manager

Brummel, Myrick and Associates – Mechanical and Plumbing

Larry Myrick, Principal

NJ Fearon and Assoc. – Cost

Katie Fearon, Principal Quantity Surveyor

C. MARIN COUNTY FIRE DEPARTMENT

MCFD MISSION STATEMENT

"It is the mission of the Marin County Fire Department to provide the highest level of life and property protection services through and aggressive fire control system, an integrated pre-hospital care system, fire prevention, public education, and emergency management.

To accomplish our mission we will provide suppression and prevention programs, a state of the art pre-hospital care system, and effective scene management. We will stand ready to support and assist other fire service organizations in accomplishing their missions.

Our employees are important assets in the actualization of our mission. They each play a vital role and carry the responsibility to express our department values in their daily work."

The Marin County Fire Department (MCFD) has enjoyed a rich and colorful history. The Tamalpais Forest Fire Protection District (TFFPD) was created by an act of the State legislature in 1917. A governing board of trustees was appointed which consisted of one trustee from each municipality and one trustee appointed by the board of supervisors. Each member served for a term of two years.

Funds necessary for the operation of the District were derived from county taxes, and state and federal appropriations. At the time of creation, the County tax rate could not exceed ten cents for every hundred dollars of assessed valuation. Original boundaries of the district can be found in Senate Bill 555, Chapter 560 of May 21, 1917. In the years to come, the district boundaries were expanded several times and, eventually, covered over two hundred and fifty seven square miles. At the time, the district staffing consisted of one fire chief, nine fire wardens, one relief warden, two lookouts, and one dispatcher.

Until 1921, the fire warden's method of patrol was by horseback and the tools of the day included shovels, brush hooks, and axes. The automobile was introduced in 1922 and in 1928 water cans were placed in service on the warden's car. In 1935, the district purchased its first fire truck, which was a one and a half ton truck that carried enough hand tools to outfit a crew of nearly 100 firefighters, water cans, hose and 200 gallons of water.

The Department was created by the Marin County Board of Supervisors in 1941. The basic structure remained the same as in the TFFPD. The wardens worked 120 hours per week, with many taking the fire vehicles home in order to be able to respond on a 24 hour, as-needed basis.

Marin's unincorporated areas of service are mostly rural/suburban terrain with community pockets spread out throughout the open space areas. According to the California Department of Finance,

Marin County's population is roughly 259,000 in 2009. Marin is considered a slow growth population county.

In 1978 the Department upgraded its basic life support (BLS) transport ambulance to advanced life support (ALS) paramedics and in 1995 the MCFD entered into a co-operative agreement with the county's Department of Public Works to form an Urban Search and Rescue Team (USAR).

Today, the MCFD is an all risk agency that provides a full range of Emergency Medical Services (EMS), Urban Search and Rescue (USAR) resources, water rescue teams, structural fire protection, wildland fire protection, fire prevention, public education, and hazardous material (Haz-mat) response. As one of six contract counties with the State of California, the department is responsible for protection of nearly 200,000 acres of State Responsibility Area (SRA).

The Department provides services to its response area from six stations that provide six Type I engines (three are Advanced Life Support capable), ten Type III engines, three water tenders, four Advanced Life Support (ALS) transport units, one medium rescue, two USAR heavy rescue vehicles, and a variety of chief officer and utility vehicles. The Marin County Fire Department also staffs an Emergency Command Center (ECC)/Dispatch, which dispatches for the Department, coordinates wildland incidents within the State Responsibility Area (SRA) or Federal Responsibility Area (FRA), Local Responsibility Areas (LRA) and acts as the Marin Operational Dispatch Center that coordinates local resources for out of county missions for California Emergency management Agency (CalEMA). The MCFD has several contracts/agreements for service, mutual aid and auto aide with different agencies.

The Department has maintained an independent dispatch center since the 1930's. The Emergency Command Center (ECC)/Dispatch functions to receive, disseminate, and transmit information to field units. The ECC/Dispatch has the additional responsibility to act in a supervisory role for incidents prior to the arrival of field units. The ECC/Dispatch also acts as the central ordering point for all state resources that are committed to SRA incidents in Marin County. In addition to the state responsibility areas, the ECC/Dispatch acts as a central ordering point for OES requests and OES coordination of local government resources entering or leaving the County of Marin Operation Area.

The ECC/Dispatch is staffed by one 24-hour dispatcher year round. Beginning in the spring each year, a dispatch clerk is hired to work 10-hour shifts, 7 days a week through the end of fire season. During complex emergencies the ECC utilizes a call back system to assist in up-staffing or back-filling for large-scale emergencies and to maintain minimum staffing needs. The ECC/Dispatch processes nearly 3,000 calls annually, and is also responsible for handling all business calls that come into the department. In 2005, the ECC/Dispatch was remodeled and upgraded to incorporate a Computer Aided Dispatch (CAD) system. To order, fill, and track requests for OES and State resources, the ECC/Dispatch uses a statewide intercom system and the new Resource Ordering Status System (ROSS). With the introduction of this technology for computerized dispatch systems, the workload demand on the ECC/Dispatch has increased significantly.

Existing Fire Facilities

The MCFD Headquarters and fire station (Headquarters) was established in Woodacre on an abandoned Northwestern Pacific Railroad right of way with dispatch, shop and sleeping quarters added at this location over time. The fire station in Woodacre was rebuilt in 1972 and over the years existing garage structures have been added and then converted for office and other uses. The day the new facilities opened in Woodacre in 1972, it was immediately obsolete because staffing was changed from two platoons to three, increasing staffing by 30%. Currently the Department's Fire Marshal and Forester are housed in a portable building on this site and what is now the mechanic's shop was originally the building that contained all aspects of the department; the living quarters, machine shop, mechanic shop and office.

From the date the Department was established and throughout the 1950s fire fighters would respond from their homes housing the apparatus at home while on duty. Department personnel built the first fire station in Point Reyes in the late 1950s and then Throckmorton Ridge was built in 1959. Following Throckmorton, fire stations were then built in Marin City (1972) (850 Drake Avenue). In the 1870's a building was built at 650 Drake Avenue. Originally used as a blacksmith and stage coast stop, it was taken over by Marin County Fire in 1960 and used as a station until it was condemned for public inhabitance in 1970., Hicks Valley (1963) and Tomales (1970). Point Reyes was replaced in 1984. Since the year 2000 the County has replaced two of the original stations; Marin City (2000) and most recently Throckmorton (2007). Woodacre, Hicks Valley, Point Reyes and Tomales remain very similar to the original designs with some small renovations and additions. These four facilities, two fire lookouts, a proposed new fire crew and the Headquarters facility are the focus of this study.

New Developments in Fire Operations

There have been several major shifts in fire suppression operations over the last 30 years that directly affect the operational functionality of the fire stations and the headquarters facility. These include:

1. The size and weight of fire apparatus has increased greatly since the 1960's to accommodate larger pumps, carry larger equipment, additional emission control standards, and more personnel causing the apparatus bays to be undersized.

2. The introduction and growth of the Emergency Medical Services response within the fire service requiring specialty apparatus and equipment, decontamination facilities, specialty storage and additional apparatus bay space. Emergency Medical Services has become a key component within the fire service. As such, it is ever changing and growing to accommodate improvements to systems and operations. A number of outside influences affect the delivery of medical care within the fire service industry. Mandates from a number of entities have led to changes in the way the fire department cares for patients and protect our employees. Among these:

- Cal OSHA has enacted regulations that require specialized areas within fire stations to provide for decontamination of equipment and clothing
- State and Local EMS regulations that require the use of new equipment and supplies requiring additional storage space, training and costs.
- Additional requirements for medical education requiring locations for the storage of training equipment, increased training events on varied scales, and increased costs for obtaining and maintaining certifications.
- Increased need for classroom space to facilitate mandated training.
- Increased use of technology in the field requires additional technological changes and enhancements in our infrastructure at the administrative and instructional levels
- Changes in the design of ambulances that may create a shift in the current design of apparatus bays.

3. The introduction and growth in the number of female firefighters led to the development of gender-neutral facilities. For example, restrooms/shower rooms are now unisex and bedrooms include individual lockers as opposed to central locker rooms.
4. The recognition that health and safety risks involved in the fire service can be mitigated through fire station design including the addition of tail-pipe exhaust to capture direct diesel exhaust, the understanding that physical fitness is an important factor in the ability of a fire fighter to perform their job effectively and safely leading to the addition of fitness rooms and the concerns regarding air quality leading to the recommendation that turn-out gear be stored in a dedicated room with continuous exhaust systems and the availability of both gross and medical decontamination stations separated from living spaces.
5. The staffing recommendations in NFPA 1710 suggest that staffing levels necessary to optimize efficiency and safety in an engine company be four people. Current minimum staffing for MCFD is two person engine companies, striving to meet NFPA standards would lead to an increase in personnel assigned to each fire station location.
6. The steady increase in the number of annual training hours required by each fire fighter for not only suppression but also medical training has led the growth in on-site training facilities to limit the payment of overtime for training.
7. The introduction of specialty units/response capabilities including Urban Search and Rescue, Water Rescue and Tamalpais Fire Crew increase the need for equipment, apparatus storage and in the case of the Tamalpais Fire Crew, a new facility.

8. The population growth which has occurred in Marin County drives the need for additional responding units. In 1960 the Fire Department had 40 firefighters. Today the department has 87 full time personnel and over 70 seasonal personnel.

9. In 1986, the California Legislature determined that buildings providing essential services should be capable of providing those services to the public after a disaster. Their intent in this regard was defined in legislation known as the Essential Services Buildings Seismic Safety Act of 1986 and includes requirements that such buildings shall be "…designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds." This enabling legislation can be found in the California Health and Safety Code, Chapter 2, sections 16000 through 16022. In addition, the California Building Code defines how the intent of the act is to be implemented in Title 24, Part 1 of the California Building Standards Administrative Code, Chapter 4, and Articles 1 through 3. The intent of the act is to ensure the facility is able to remain operational in the event of a major earthquake of other disaster. For example, the openings around the apparatus bay doors are strengthened to prevent a possible collapse that could trap the responding apparatus in the station and each facility is required to have access to a source of back-up emergency power. Any major renovation is required to bring the structural building system in compliance with this act. In some cases the renovation is so extensive it is more cost effective to replace the building than to update the structure. For essential service facilities, immediate occupancy after a major disaster is the goal.

10. The State of California Office of Emergency Services (OES) is now called the California Emergency Management Agency or (CAL EMA) and Marin County Fire Department works closely with CAL EMA. To enhance the departments' disaster response capabilities for the communities in Marin County and throughout the state, in 2008 the Marin County Fire Department/Urban Search and Rescue Water Rescue Team became an assignee for a CAL EMA (California Emergency Management Agency) swift water/flood water cache. This cache includes a 24ft trailer and tow vehicle. In 2009 the Marin County Fire Department also became an assignee for a CAL EMA Type I/Medium Rescue Engine. While increasing our response capabilities and participation in local, statewide and national emergencies, the addition of these vehicles has also compounded the department's issues related to inadequate emergency vehicle storage capabilities. Being committed to both programs the department is also required to provide personnel that have been properly trained in specialized operations. This is driving the need for additional apparatus storage space and training props.

Being a Contract County with the California Department of Forestry and Fire Protection (CALFIRE), the Marin County Fire Department regularly sends wildland resources throughout the state to major wildland fires. With the increase of fire activity during the last 10 years, the department has had to augment their reserve fleet to make sure they can adequately respond to local fire activity during the fire season. This increase in the reserve engine fleet has compounded the emergency vehicle storage problems resulting in the department having to move some of their USAR assets off site. In addition to the increase in the fleet, the department has enhanced their seasonal staffing to include longer shifts and more positions. These changes have increased the demands on the stations, equipment needs, training requirements, and full-time personnel.

In short, these shifts in fire operations demand better equipped fire facilities to be effective, and have also significantly increased the size of these facilities. As an example, the newer Throckmorton and Marin City Fire Stations were designed to address many of the changes in operations noted above and are both designed as “Essential” structures. The space needs studies prepared in this report were based on and refined from the standards put into place in those stations. The Hicks Valley, Tomales and Point Reyes locations are similar in operation to these newer stations and were developed to similar space criteria.

The Headquarters operation provides services unique to the department. In addition to suppression units, Headquarters operations include Administrative and Prevention functions, Dispatch, Vehicle Maintenance, Training and Warehousing. According to a Station Location Study by Citigate Associates, the central location of the Headquarter facility is an important contributor to the Department’s efficiency and effectiveness in serving the county’s service area. Previous studies have also identified that the current site and all structures are known to have served the Department well beyond their useful life and represent the largest risk to the County from an operational standpoint in the event of a major earthquake.

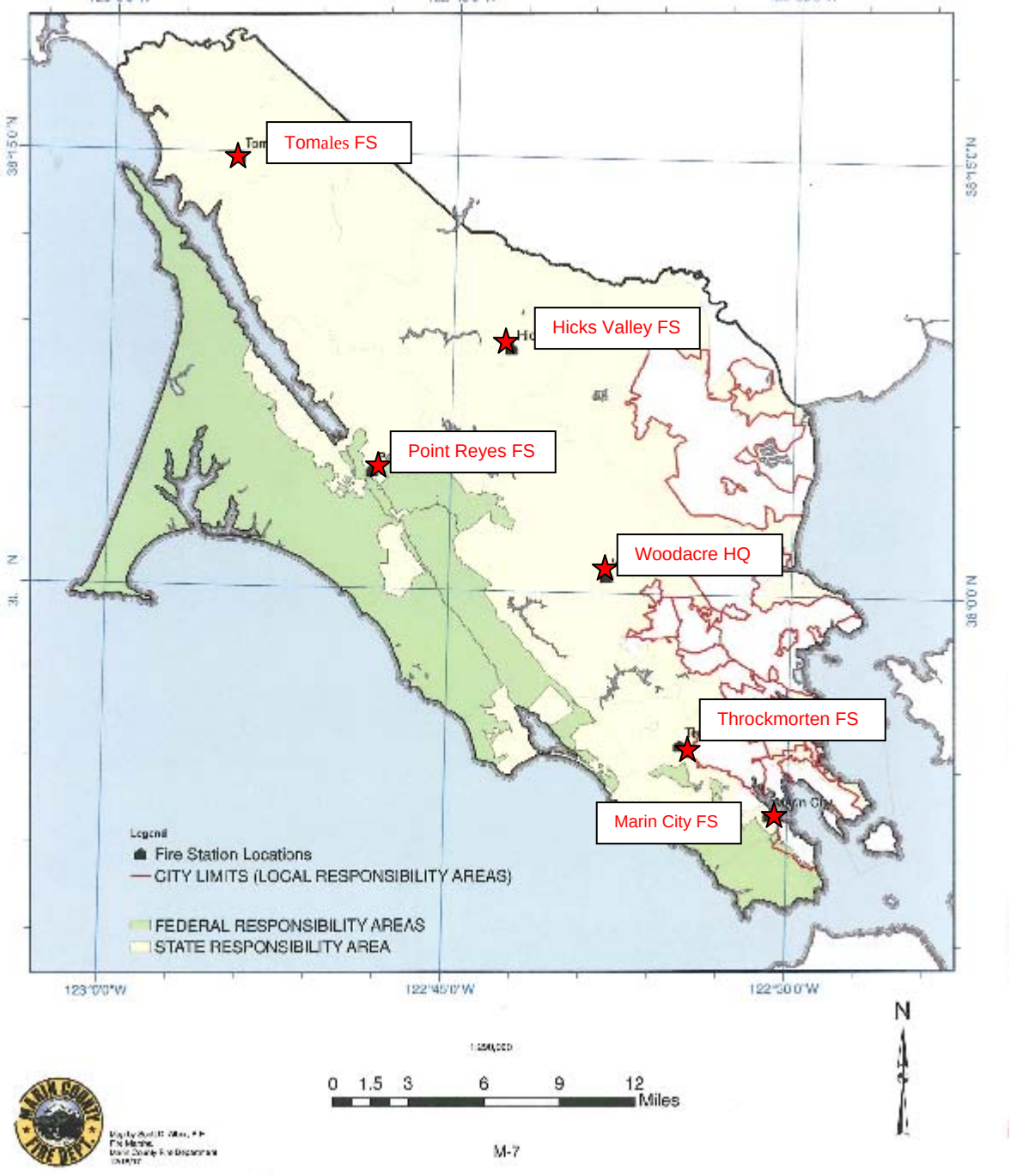
The County Fire Department lacks a dedicated training facility with training props, classrooms and drill ground. Currently the fire department travels to Novato to use their drill ground, training props and classroom. All similar county fire departments surveyed have a training facility centrally located in their service area and/or training facilities at each fire station. This is an important resource which if available to the County Training Officer would increase training efficiency and allow most training to occur in-service (not requiring overtime hours) to meet training requirements. The unique geographic nature of Marin County Fire Department does not allow for engine companies to routinely gather and work together in a multi-company format. A central training facility located in a strategic location within our response area is important for an efficient training operation. Allowing, multiple engine companies to meet and work together, is a critical element in reducing the time it takes to perform company evolutions on actual incidents. Also, developing smaller training props at each station such as ventilation, forcible entry and confined space props, will allow companies to build their skill base as

well as train new firefighters while remaining available in their service area. The combination of a central training facility as well as station training props will allow us to reduce our overtime costs associated with multi-company exercises and build our skill base as an organization.

The Fire Department, through grant funding, has established the Tamalpais Fire Crew program which works year round as a vegetation management and fire suppression crew. Currently, the crew is housed at neighboring fire district fire station. The district is offering the space without cost and it is a short-term housing solution. The Tamalpais Fire Crew has proven to be a valuable fire prevention resource for the department and long term funding of the program is anticipated. Through discussions with MCFD, the most probable location for the Tamalpais Fire Crew is at Hicks Valley FS.

D. EXISTING FACILITY FINDINGS

Fire Facility Location Map



MARIN COUNTY FIRE DEPARTMENT FACILITY ADDRESSES

MCFD Headquarters & FS ta. Woodacre
33 Castle Rock Road
Woodacre, CA 94973
Ph: 415-499-6717

Hicks Valley Fire
7330 Red Hill Road
Petaluma, CA 94952
415-662-2503

Mt. Barnabe Fire Lookout
P.O. Box
Near Samuel P. Taylor State Park

Tamalpais Fire Crew
5 Bolling Drive
Novato, CA 94949

Marin City Fire Station (Not part of Study)
850 Drake Ave.
Marin City, CA 94965
415-446-4463

Point Reyes Public Safety
4th & B
Point Reyes Station, CA 94956
415-663-1018

Tomales Fire Station
599 Dillion Beach Road
Tomales, CA
707-878-2464

Mt. Tamalpais Fire Lookout
End of East Ridge Boulevard on top of Mt. Tamalpais

Throckmorton Fire Station (Not part of Study)
816 Panoramic Highway
Mill Valley, CA 94941
415-388-5414

Existing Facility Summary

FACILITY NAME AND DESCRIPTION	Date Built	Building Size	Site Area	Current Staffing per shift	Calls Per Year
MCFD HEADQUARTERS & FIRE STATION AT WOODACRE					
1. Existing Headquarters Fire Station and Dispatch 2. Garage Converted to Offices and Conference Room 3. Apparatus Bay 4. Wood Framed Storage and Fitness Building 5. Original Apparatus Bay Converted to Maintenance Shop 6. Portable Building – Prevention Offices 7. Metal Storage Containers	1973 1940's 1940's 1940's 1940's N/A N/A	8,200 SF 1,800 SF 5,200 SF 1,000 SF 1,500 SF 600 SF N/A	1.37 Acres	Fire Station No. 1 – 4 full time with 6 seasonal Admin. and Dispatch – 15 Vehicle Maintenance and warehouse – 1 1/2	769
Pt. Reyes Public Safety Building	1984	7,250 SF	.75 Acre	3 full time with 3 seasonal	583
Hick Valley Fire Station					
1. Fire Station 2. Accessory Building	1963 2000's	1,986 SF 750 SF	1.3 Acres	2 full time with 2 seasonal	148
Tomales Fire Station					
1. Fire Station 2. Accessory Building	1971 2000's	2,411 SF 500 SF	1.6 Acres	2 full time with 2 seasonal	206

Each was evaluated for the following elements:

Structural Performance - In 1986, the California Legislature determined that buildings providing essential services should be capable of providing those services to the public after a disaster. Their intent in this regard was defined in legislation known as the Essential Services Buildings Seismic Safety Act of 1986 and includes requirements that such buildings shall be "…designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds." Each facility was evaluated for their compliance with the current seismic codes.

Accessibility Compliance - The Americans with Disabilities Act of 1990 (ADA) is a law that was enacted by the U.S. Congress in 1990. Its long title is "An Act to establish a clear and comprehensive prohibition of discrimination on the basis of disability." The ADA is a wide-ranging civil rights law that prohibits, under certain circumstances, discrimination based on disability. In this application is applies to and evaluation of the accessibility to and use of this public facility by the disabled. Elements of each facility that were evaluated start with a designated disabled parking space with loading zone, a path of travel to the facility and accessible spaces within each space. Each of the facilities had elements that were not complaint with current accessibility standards. This is to be addressed through renovation (Pt. Reyes) or replacement (balance of the facilities).

General Facility Conditions and Program Compliance - Each facility was evaluated to determine the condition of the architectural fit and finishes, mechanical, electrical, data and structural systems. Detailed existing facility reports are included in the Detailed Facility Studies (Volumes II and III).

Program spaces were compared to the relevant spaces within each facility for determination of compliance with the program goals. Refer to the Facility Compliance Matrix in the Comparative Analysis Reference section of the report for a space-by-space evaluation.

MCFD HEADQUARTERS & FIRE STATION AT WOODACRE

The main MCFD Headquarters & Fire Station at Woodacre (Headquarters) was constructed in 1973 and many of the structures still in use date back to the 1940s when the Department was first established. Many of the structures have been renovated and converted to serve functions other than originally intended. Currently the site has six buildings and one portable trailer serving as offices for the Fire Prevention and pre-fire management functions. Each of the facilities has long out served their useful life and the site is not longer suitable in size nor location to support the operation.

1. Existing Headquarters Fire Station and Dispatch
2. Garage Converted to Offices and Conference Room
3. 1940s Warehouse
4. 1940s Wood Framed Storage and Fitness Building
5. Original 1940s Apparatus Bay Converted to Maintenance Shop
6. Portable Building – Prevention Offices
7. Metal Storage Containers

- The main building serves as Marin County Fire Department Headquarters, is a two-story, 8,200 square feet wood framed shear wall building, constructed in 1973. This building also features a large third floor attic used for storage and mechanical facility equipment. The facility is not designed to essential facility seismic standards, is not compliant with current accessibility standards, does not contain fire sprinklers and provides an inefficient work environment for the administrative staff that has been partially relocated to adjacent buildings.

- Additional administrative offices are housed in a single story, 1,800 square foot wood frame building, constructed at an unknown date. This facility was originally a garage and currently lacks heat, mechanical ventilation, and restroom facilities. The facility is not compliant with current accessibility standards and is not fire sprinklered. The Fire Chief, supporting staff and the only conference room in the facility are located in this building.

- The apparatus building (engine barn) is a single story, 5,200 square feet pre-engineered steel frame building, constructed in the 1940's. It houses the fire departments front line apparatus. The facility is not designed to essential facility seismic standards, is not ADA compliant, and is not fire sprinklered or secure.

- The storage and fitness building is a single story, 1,000 square feet wood frame building, constructed in the 1940s. It houses the department's oxygen air fill station and serves as the storage and distribution center for all department supplies. The facility is not compliant with current accessibility standards and is not fire sprinklered.

- The vehicle maintenance building is a single story, 1,500 square feet wood frame building with a clerestory roof, constructed in 1940. The facility is not compliant with current accessibility standards, is not fire sprinklered and has non-compliant ventilation and electrical service in the repair area.

POINT REYES

The Point Reyes Public Safety Building was constructed in 1984 and functions as a sheriff's facility, fire station and provides a meeting room for the community. It is a two story, 7,500 square feet facility on ¾ acres site. During fire season three Seasonal Firefighters are assigned to the station to create two-three person crews for 10 hours of the day and a four-person crew for 24 hours. It is anticipated that this location will need to provide space for six personnel for 24 hours.

Although a newer structure, the public safety building was designed prior to the adoption of the Essential Services Act, which required public safety buildings to be designed for "immediate occupancy". This facility was designed as a standard commercial structure as was required at the time. The Essential Services Act was put into place in 1986. Located in one of the most seismically active zones in the state, it is particularly vulnerable to a major seismic event. The fire station does provide gender neutral and many of the living quarter elements desired in a newer facility and therefore this facility is recommended to receive a renovation to provide an "essential service" level structural system and an expansion to serve missing operational areas such as fitness and decontamination rooms.

1. Existing Fire Station and Sheriff's Office
2. Rear Yard with Storage and Septic
3. Parking and Sheriff Entrance
4. Commercial District
5. Residential Properties
6. Undeveloped Property

- A complete seismic upgrade to the facility is recommended with any renovation or expansion.
- The mechanical system does not functional well and is recommended to be redesigned and replaced with a more suitably zoned, energy efficient system. The boiler is undersized to serve both floors and has leaked in the past.
- The electrical system main panel is at its capacity and would require an upgrade if the station were expanded and/or an elevator was added.

- The facility is not compliant with current accessibility standards and a renovation would trigger a complete accessibility upgrade.
- The station lacks a dedicated communication room and has non-compliant conditions at the generator, air-fill and oxygen station that are recommended to be corrected.

- An elevated deck at the parking lot entrance is structurally unsound and is currently being replaced.
- The station lacks a dedicated fitness and turn-out rooms, as well as a dedicated decontamination area/station.
- The facility lacks a fire sprinkler system.

HICKS VALLEY FIRE STATION

The Hicks Valley Fire Station Safety Building was constructed in 1963 and was originally designed to provide living quarters for a single two-person engine company. Today it houses three pieces of apparatus (Type III Fire Engine, Water Tender and utility/pick-up truck) and during the winter the OES engine is assigned to the station. During fire season two Seasonal Firefighters are assigned to the station to create a four-person crew for 10 hours of the day and a three-person crew for 24 hours. It is anticipated that in the future this location will need to support six personnel during fire season. The existing station is a one story, 2,000 square feet facility on a ¾ acres site. The building has been well maintained and a separate garage building has been added to the site to support the Department's fitness, sewing, and hose programs. The fire station lacks many of the operationally driven spaces required to meet the current operational needs of the fire department and to expand and renovate the facility is not cost effective. The core spaces (apparatus bay and living quarters) would need to be expanded such that replacement is more efficient. The site area is not sufficient to support a new septic system and to combine this facility with a new Fire Crew Building. Discussions with the neighboring property owner have led to the exploration of relocating the fire station to a larger adjacent parcel through a land trade. This would enable the Tamalpais Fire Crew building and training building to be co-located with the fire station.

1. Existing Fire Station and Storage Building
2. Septic Leach Field
3. Parking

- The structural system is anticipated to perform “below average” compared to standard construction for similar building types during a major seismic event and was not designed as an essential structure to provide an “immediate occupancy” performance.
- The plumbing system and fixtures appear to be original and do not contain water saving features. The water service including pumps and tanks would need to be upsized to support a larger facility.

- The heating unit serving the living quarters appears to be newer and would have to be replaced with a larger unit to support a larger facility.
- The electrical system main panel is at it capacity and would require an upgrade if the station were expanded.
- The facility is not compliant with current accessibility standards and a renovation would trigger a complete accessibility upgrade.
- The station lacks a dedicated communication room.

- The station lacks a dedicated decontamination room and turn-out rooms.
- The facility lacks a fire sprinkler system.

TOMALES FIRE STATION

The Tomales Fire Station was constructed in 1971 and was originally designed to provide living quarters for a single two-person engine company. It is very similar to the Hicks Valley Fire Station in plan and elevation. Today it houses three pieces of apparatus and during fire season two seasonal firefighters are assigned to the station to create a four-person crew for 10 hours of the day and a three-person crew for 24 hours. Tomales Fire Station also houses the Tomales Volunteer Fire Company, which is a part of the Marin County Fire Department. It is anticipated that in the future this location will need to support four personnel 24 hours per day during fire season. The existing station is a one story, 2,000 square feet facility on a 1.6-acre site. The building has been well maintained and a garage building has been added to the site to support the department's fitness program, store supplies and older fire apparatus. The fire station lacks many of the operationally driven spaces required to meet the current operational needs of the fire department and to expand and renovate the facility is not cost effective. The core spaces (apparatus bay and living quarters) would need to be expanded such that replacement is more efficient. The site is in a very good location and replacing the station on the existing site is desired. The site is sloped and a replacement station would drive the need for extensive site work to provide adequate apparatus turning area and parking.

1. Existing Fire Station and Storage Building
2. Septic Leach Field
3. Parking

- The structural system is anticipated to perform “below average” compared to standard construction for similar building types during a major seismic event and was not designed as an essential structure to provide an “immediate occupancy” performance.
- The plumbing system and fixtures appear to be original and do not contain water saving features. The existing well, pumps and storage tanks would need to be relocated and upsized to support a larger facility.
- The heating unit serving the living quarters appears to be newer and would have to be replaced with a larger unit to support a larger facility.

- The electrical system main panel is at its capacity and would require an upgrade if the station were expanded.
- The facility is not compliant with current accessibility standards and a renovation would trigger a complete accessibility upgrade.
- The station lacks a dedicated communication room.
- The station lacks a dedicated decontamination room and turn-out rooms.

- The facility lacks a fire sprinkler system.

E. SPACE NEEDS SUMMARY AND SITE ARRANGEMENT

MCFD HEADQUARTERS & FIRE STATION AT WOODACRE

The Headquarters operations are divided into five distinct operations:

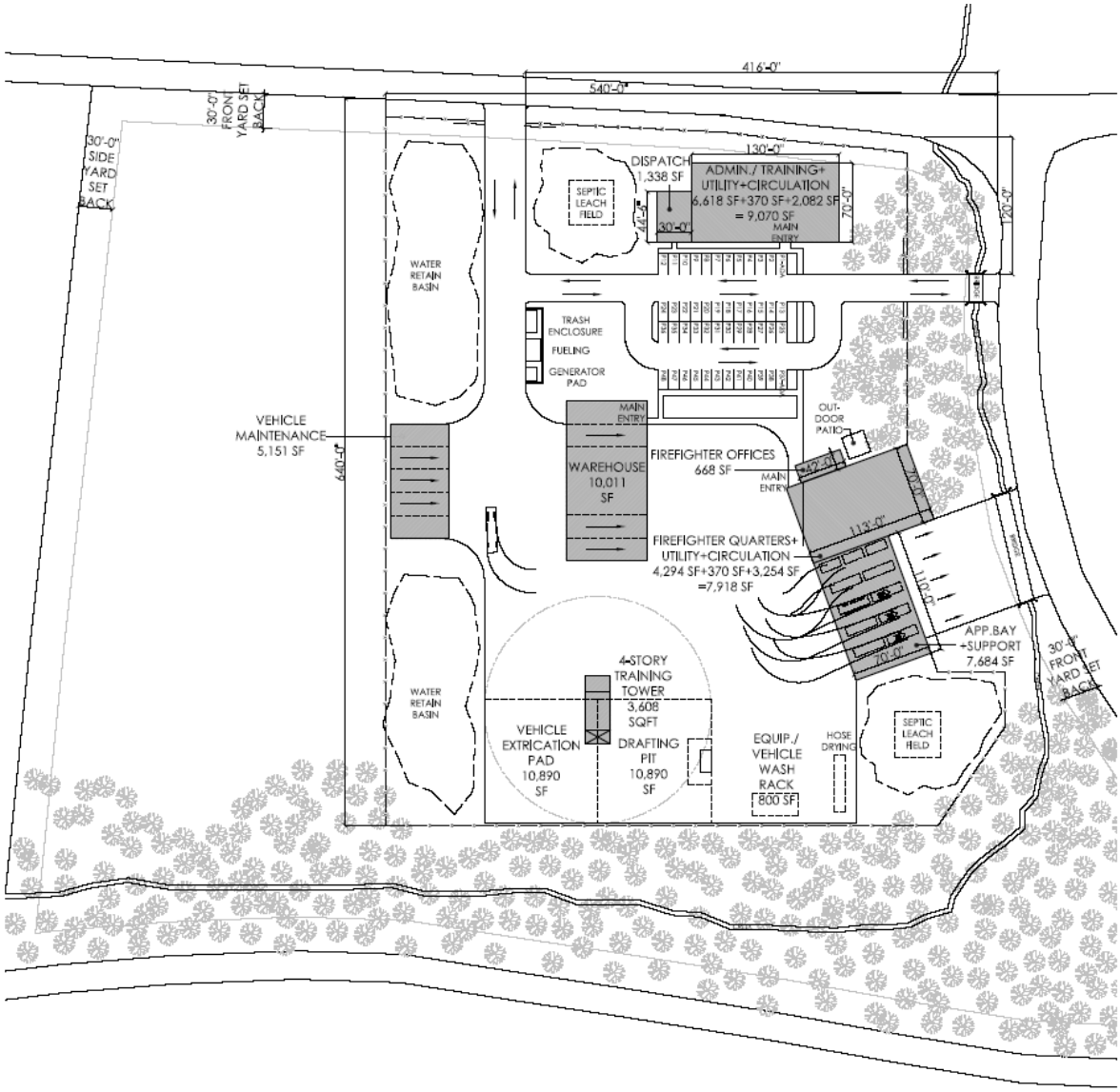
- Administration including prevention and forestry
- Emergency Command Center (Dispatch)
- Fire Suppression (Fire Station No. 1)
- Training Operations (Classroom and Drill Tower)
- Warehouse and Distribution
- Apparatus and Equipment repair and maintenance

Overall Facility Space Needs Summary

Ref.	Facility	Description	Existing	Program
(FS)	**Fire Station**	**Six bay Fire Station**	6,201	16,270 SF
(A)	**Admin, Training, ECC**	**Admin., prevention, pre-fire planning, deputy chiefs, dispatch, training classroom**	1,908	10,408 SF
(VM)	**Vehicle Maint.**	**Two repair bays, one lube bay and tire rotation bay**	2,400	5,151 SF
(WH)	**Ware-house**	**Dozer tender, USAR supplies, department wide safety gear storage, office, medical storage, administrative records storage**	4,500	10,011 SF
(TT)	**Training Tower**	**Four Story pre-engineered training tower with props**	0	800 SF Footprint

Surveys from similar Fire Departments concurred that there are tremendous operational and management advantages to having all functions identified above in a single location. Key adjacencies include the administrative leadership and the Emergency Command Center as the intercommunication between command staff and the ECC/Dispatch staff is a crucial part of the contract with the California Department of Forestry and Fire Protection (CalFire). Co-location is important during daily activities and critical in the event of an expanded dispatch required during a major event. In addition, the Department is able to maintain a minimal level of support staff when co-located with vehicle maintenance and warehousing as on-duty fire fighters often support these functions when on-duty. Key attributes to a potential new site include a location central to the fire service area, direct adjacency to a major thoroughfare and a size adequate to co-locate all facilities. A generic site was identified as a potential location for a replacement Headquarters facility as diagrammed on the following page.

SITE ARRANGEMENT STUDY – SCHEME 1



MARIN COUNTY FIRE DEPARTMENT

Woodacre Site Plan - Scheme 1 at Alternate Site

16.5 Acre Site, 8.2 Acres used

SITE NOTES:

- Administration, Training and ECC Building directly adjacent to the primary street.
- Adequate site area to mitigate storm water run off through landscape features.
- Warehousing and Vehicle maintenance is located at the center of the site limiting training area.
- Adequate site area for septic leach field with future expansion area.

SITE ARRANGEMENT STUDY – SCHEME 2 (Preferred Option)

Of the two alternatives developed, this is the preferred site arrangement because is provides separation of the response traffic from the daily maintenance and warehousing operations and administrative/training uses. The main access driveway divides the site allowing the maintenance and warehouse functions to operate separate from the Fire Station No. 1 response path and training area. The Administrative/Training/Emergency Command Center facility is separated from both the apparatus response path and the maintenance functions allowing guests and visiting companies to access this facility for training or to visit the Fire Prevention offices without impeding Station No. 1 response requirements. This option can be phased without impacting the operations of each function. There is adequate site area for storm water management and septic leach field with replacement area.

See Scheme 2 layout on the following page.

MARIN COUNTY FIRE DEPARTMENT

Woodacre Site Plan - Scheme 2 at Alternate Site
16.5 Acre Site, 8.5 Acres used

Site Notes:

- Administration, Training and ECC Building directly adjacent to the primary street.
- Adequate site area to mitigate storm water run off through landscape features.
- Warehousing and Vehicle maintenance is located edge of the site optimizing the training area.
- Adequate site area for septic leach field with future expansion area.

HEADQUARTERS SUMMARY

Fire Station No. 1

Staffing Assumptions

This station is staffed by a single engine company (four personnel per shift) for the months outside of the designated fire season. When fire season is in place six additional personnel are added per shift for a total of 10 on-duty firefighters. One additional station company (four personnel) is anticipated to be added at this location over the lifetime of this facility.

Current Winter Crew -- 4 personnel	Captain, Engineer, Engineer/Paramedic, Firefighter/Paramedic
Future Winter Crew -- 4 personnel	2 Engineers, 1 HFEO, 1 Engineer/Paramedic
Seasonal Crew -- 6 crew members	6 Seasonal Firefighters (minimum staffing in summer)

Ref.	Facility	Description	Existing	Program
(FS)	**Fire Station**	Apparatus Bays and Support	5,558 SF	7,684 SF
		Station - Firefighter Offices	330	668
		Station - Firefighter Quarters	313	4,294
		Station - Utility	0	370
		Fire Station (FS) SUBTOTAL (SF)	**6,201**	**13,016**
		Circulation at 25%		3,254
		Fire Station (FS) GRAND TOTAL (SF)		**16,270**

Administration, Training & Emergency Communications Center

Staffing Assumptions

This facility is staffed by fire department administrators and includes the command staff and support personnel, fire prevention and public education personnel and dispatchers/call takers. A total of 15 personnel currently occupy this facility at any one time. Administrative personnel work a 40-hour work week and the Emergency Communications Center staff work 48-hour shifts.

Administration/Prevention = 13 total personnel	Fire Chief, Deputy Chief, Battalion Chief, Forester, EMS BC. Training BC, Fire Marshal, GIS Technician, Prevention Specialist, Admin. Services Supervisor, Finance Administrator, Senior Clerk/Typist, Future Clerk
ECC = 2 current on-duty, 1 additional dispatcher future	Dispatch Supervisor, Dispatcher/Call Taker, Future Dispatcher/Call Taker

Ref.	Facility	Description	Existing	Program
(A)	**Admin. Training ECC**	Administration/Training (A) Subtotal	1,368	6,618
(E)		Emergency Comm. Center (E) Subtotal	540	1,338
		Utility Support Space Subtotal	0	370
		BUILDING SUBTOTAL (SF)	**1,908**	**8,326**
		Circulation at 25%		2,082
		Administration, Training and ECC/Dispatch GRAND TOTAL (SF)		**10,408**

HEADQUARTERS SUMMARY – CONTINUED

Vehicle Maintenance

Staffing Assumptions

The vehicle maintenance operations are run by a single master mechanic who works a 40 hours shift but is on-call to perform maintenance duties in the event of an emergency. He is support by Fire Station No. 1 on-duty firefighters as they are available for projects that take a second person.

Current Vehicle Maintenance (1)	State Certified Master Mechanic – Fire Apparatus
Future Maintenance Support (1)	Part-time Assistant

Ref.	Facility	Description	Use	Program
(VR)	**Apparatus, Equipment Repair**	Maintenance Bays	3 single deep bays	3,000
		Work Bench	Tool Chests, parts washers, vise	--
		Welding Shop	Welding shop Hazardous Occupancy	300
		Parts Storage	Storage area for parts	400
		Tire and Rim Storage	Storage for tires and rims on storage racks	500
		Equipment Room	Room for lube equipment, compressors, storage	500
		Mechanic Office	Work station with file cabinets and shelving	100
		Janitor Room	Storage for facility supplies, service sink, mop rack	45
		Restroom	unisex, accessible near Office	54
			BUILDING SUBTOTAL (SF)	**4,899**
			Circulation/Structure (25%)	252
			Vehicle Maintenance GRAND TOTAL:	**5,151**

HEADQUARTERS SUMMARY – CONTINUED

Warehouse/Distribution

Staffing Assumptions

The warehouse operations are managed by a single part time employee. Responsibilities include inventory management, transportation of inventory to outlying stations and ordering/receiving/stocking supplies.

Warehouse Manager	Currently part-time moving to full time in the future

Ref.	Facility	Description	Program
(FS)	**Warehouse**	Public/Office Area Subtotal	315
		Warehouse Subtotal	8,219
		Utility Subtotal	202
		BUILDING SUBTOTAL (SF)	**8,736**
		Circulation/Structure	1,275
		WAREHOUSE GRAND TOTAL (SF)	**10,011**

POINT REYES

OVERALL FACILITY SPACE NEEDS SUMMARY

Staffing Assumptions

This station is staffed by a single engine company (three personnel per shift) for the months outside of the designated fire season. When fire season is in place three additional personnel are added per shift for a total of six on-duty firefighters. Additional station companies or individual staffing members are not anticipated to be added at this location for the lifetime of this facility.

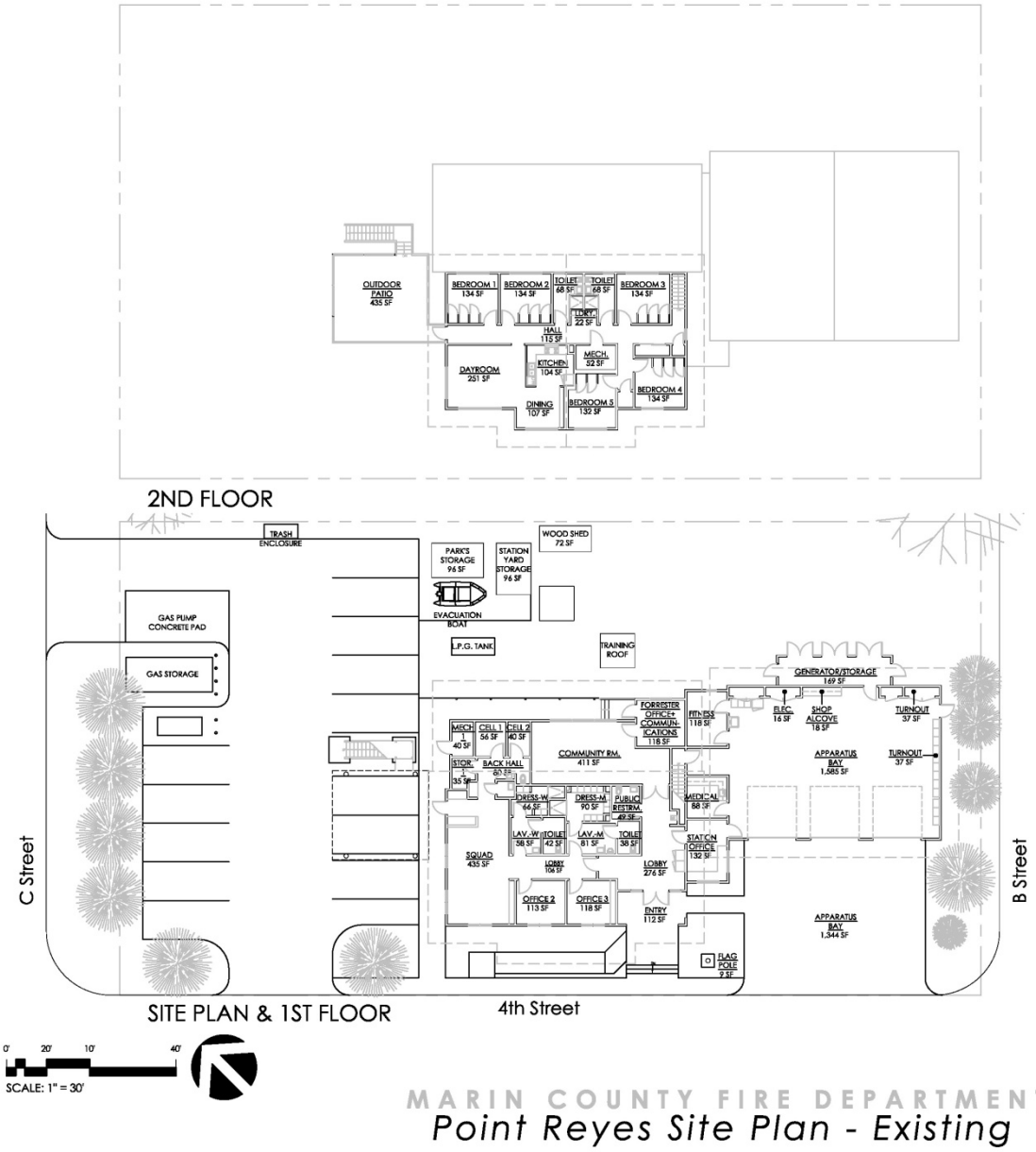
Engine Company:	Current 3
Fire Season:	Current 3
Total:	6 total on duty fire fighters. No future staffing growth at this location.

Ref.	Facility	Description	Existing	Program
(FS)	**Pt. Reyes Fire Station**	Training/Community Building	661	478
		Office/Lobby Subtotal	569	444
		Apparatus Bay Subtotal	1,739	4,390
		Living Quarters Subtotal	1,288	1,926
		Utility Support Space Subtotal	84	234
		BUILDING SUBTOTAL (SF)	**4,341**	**7,472**
		Actual Circulation/Structure SF (used in Existing Bldg. & in Renovation Schemes, Circulation/Structure at 25% only used in Program)	1,191	1,868
		Sheriff Station SF (included in Existing Bldg. and Schemes 1A & 1B)	2,900	2,070
		Point Reyes Fire Station (SF)	**8,432**	**11,410**

As a newer facility, the Point Reyes Fire Station includes some of the program spaces required to meet the current operations of the fire service including some private sleeping quarters and a medical storage room. Additional space is necessary to provide the functional spaces identified in the program standards. Alternatives including adding to the station and/or relocating the law enforcement function. A seismic retrofit is recommended as a part of any improvement solution as the station is not built to “Essential Service Standards” since it was built prior to the enacting of the Essential Services Act of 1986. As this facility is less than 500 yards from the San Andreas Fault it is highly vulnerable to a major seismic event.

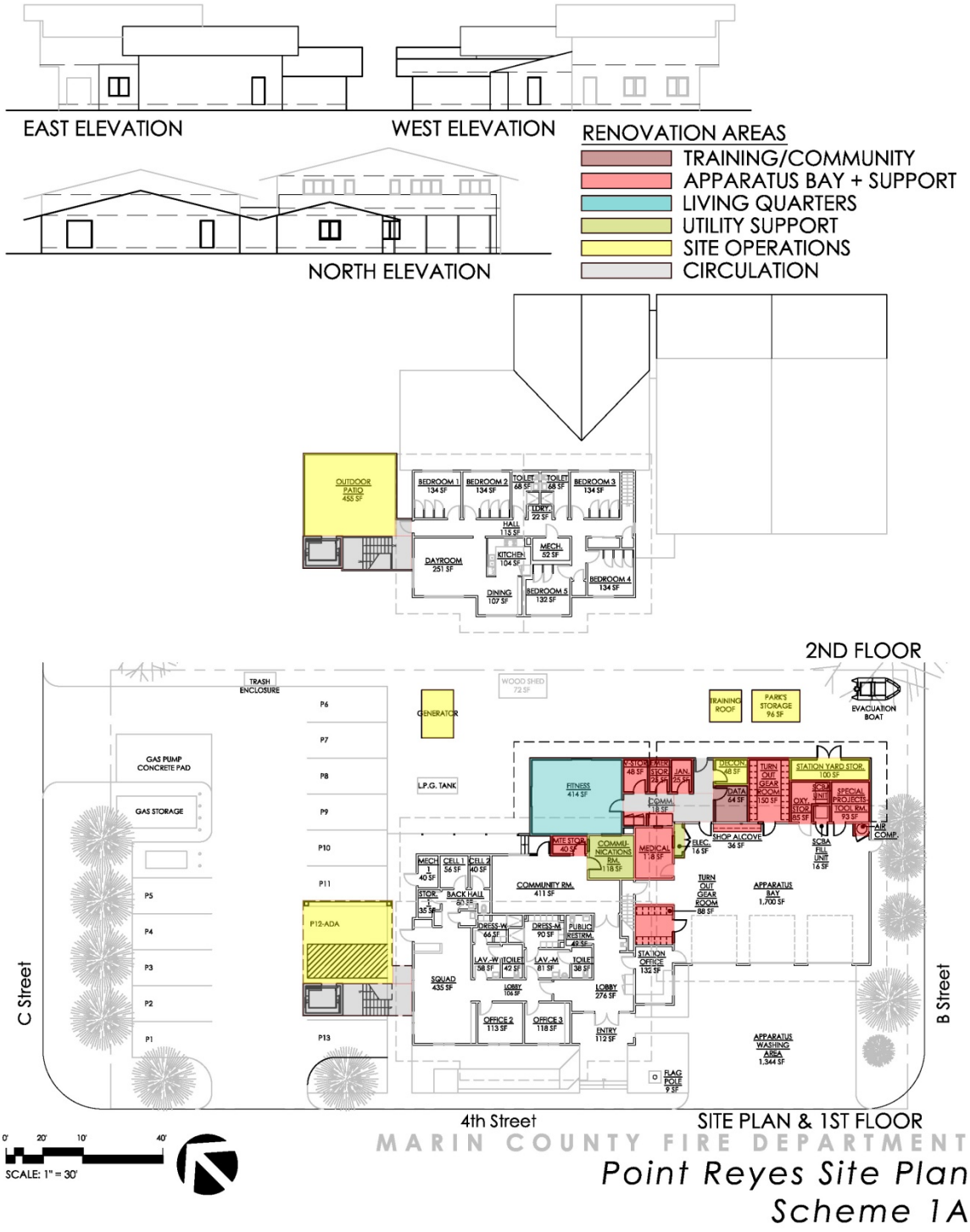
The site is impacted by a lack of parking, training area and a replacement area for the septic leach field. These impacts could be reduced by the relocation of the law enforcement functions/parking to another location, training at the Hicks Valley site and the use of a pit type leach field as the replacement sewage treatment solution.

POINT REYES
EXISTING SITE LAYOUT

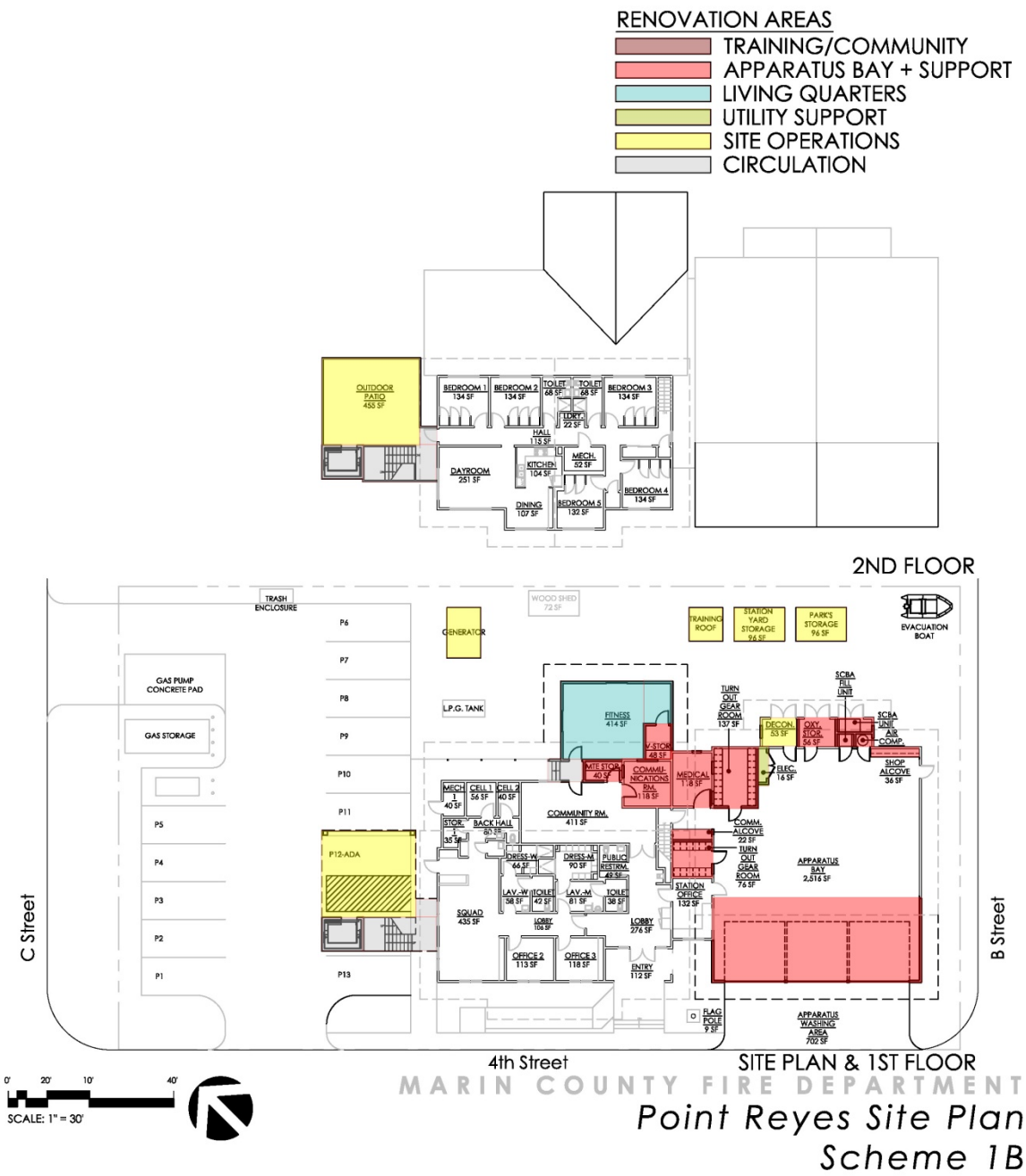


MARIN COUNTY FIRE DEPARTMENT
Point Reyes Site Plan - Existing

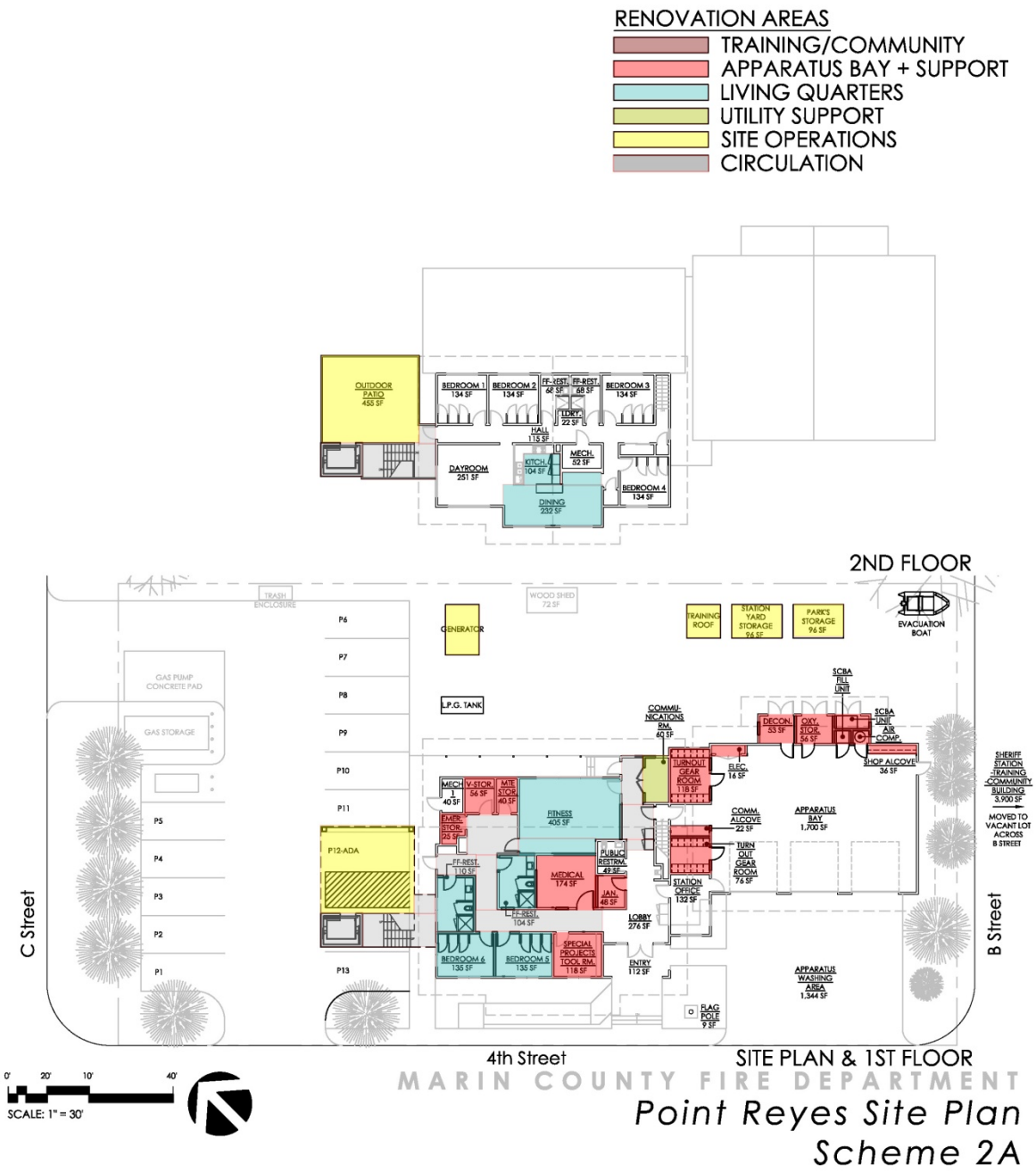
POINT REYES
DEVELOPMENT ALTERNATIVES– SCHEME 1A



POINT REYES
DEVELOPMENT ALTERNATIVES – SCHEME 1B



POINT REYES
DEVELOPMENT ALTERNATIVES– SCHEME 2A



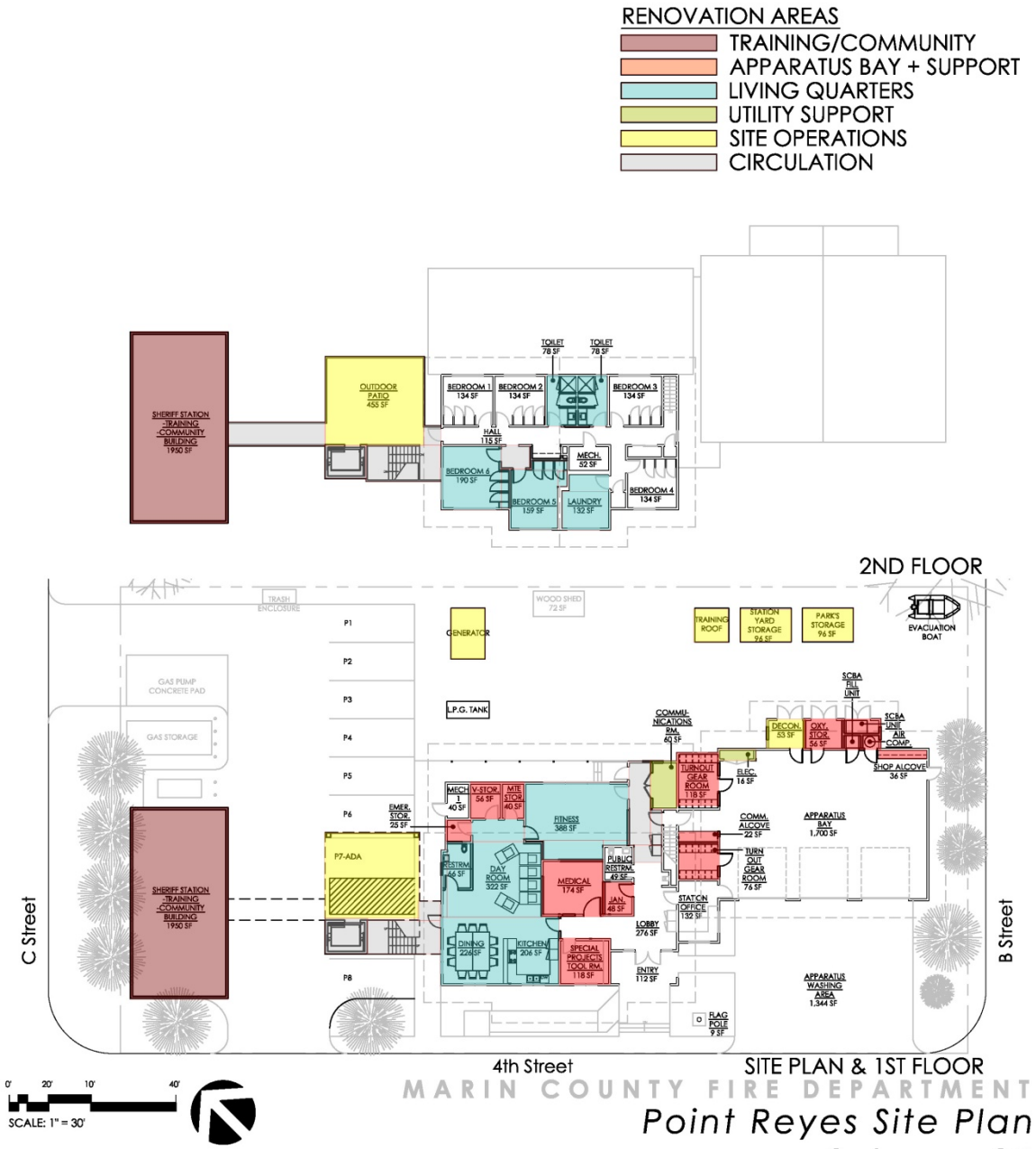
POINT REYES

DEVELOPMENT ALTERNATIVES– SCHEME 2B (Preferred)

This alternative is preferred as is meets most of the operational goals of each user group; the fire department, sheriff's department and community. This alternative requires the sheriff operations to be relocated to a new building on-site. Off-site parking would have to be secured for this option to be feasible. This scheme proposes a complete seismic upgrade and reorganizes the entire existing facility to provide a sixth sleeping room, a fitness room, missing apparatus and utility support functional area for turn-outs, decontamination, medical storage, special projects and communications for the fire department. The kitchen, dining and dayroom have been relocated to the first level and the second floor reorganized to allow a total of six bedrooms as required in the program. This alternative proposes to relocate the generator to the building exterior and does not require the relocation of the existing septic system leach field although it may need to be expanded to serve the new building. The community room and law enforcement functions, located in a new building, would be connected to the existing facility by a bridge between the second floors. This is the preferred option as it meets most of the program criteria, completely upgrades the facility and allows all public safety functions servicing the town of Pt. Reyes to remain at a single location.

POINT REYES

DEVELOPMENT ALTERNATIVES– SCHEME 2B (Preferred)



HICKS VALLEY FIRE STATION

OVERALL FACILITY SPACE NEEDS SUMMARY

Staffing Assumptions

The Hicks Valley Fire Station is staffed by a single engine company (two personnel per shift) for the months outside of the designated fire season. When fire season is in place three additional personnel are added per shift for a total of five on-duty firefighters. One full time staff member per shift (to make-up a single engine company with three personnel serving the area year round) is anticipated to be added at this location.

Current Staffing	Future Staffing	Schedule
Engine Company: 2 full time (all year around)	Engine Company: 3 full time	48 hour shifts
Fire Season: 3 additional	Fire Season: 3 (no increase)	4- ten hour days (Tues-Fri.)**
Total personnel current staffing = 5	**Total personnel at build-out = 6**	

Ref.	Facility	Description	Existing	Program
(HV)	**Hicks Valley Fire Station**	Office/Lobby Subtotal	125	444
		Apparatus Bay Subtotal	811	4,390
		Living Quarters Subtotal	867	1,926
		Utility Support Space Subtotal	0	224
		BUILDING SUBTOTAL (SF)	**1,803**	**6,984**
		Circulation/Structure at 25%	183	1,746
		Hicks Valley Fire Station (SF)	**1,986**	**8,730**

Ref.	Facility	Description	Existing	Program
(SB)	**Support Building**	Restroom	0	64
		Sewing/hose repair shop	381	494
		Supply storage room	176	168
		Fitness Room	320	414
		Haz Mat Storage Area	60	96
		Welding Shop	0	64
		BUILDING SUBTOTAL (SF)	**937**	**1,780**
		Circulation/Structure at 25%	162	178
		Support Building (SF)	**1,099**	**1,958**

TAMALPAIS FIRE CREW

OVERALL FACILITY SPACE NEEDS SUMMARY

Staffing Assumptions

This facility is staffed by a Superintendant and Engineer/Captain on a 40 hour per week schedule year around. When fire season is in place 10 -12 seasonal firefighters join those two supervisors working 4- ten-hour shifts. They are held overnight for days; up to weeks at a time; when the County is experiencing high fire danger. The program anticipates growth through the addition of three supervisorial positions (year round) and 4 additional seasonal workers for total personnel at build out to equal 21 personnel. The Fire Crew currently resides in a facility from the Novato Fire Department.

Current Staffing	**Future Staffing**	**Schedule**
Supervisor - 1 Full time (all year around)	Supervisor - 1 Full time (all year around)	4- ten hour days (Tues-Fri.)**
Eng./Captain - 1 Full time (all year around)	Eng./Captain - 2 Full time (all year around)	4- ten hour days (Tues-Fri.)**
Fire Fighter/Eng - 0 (job boss)	Fire Fighter/Eng - 2 Full time (all year around)	4- ten hour days (Tues-Fri.)**
10-11 seasonal firefighters	16 seasonal firefighters	4- ten hour days (Tues-Fri.)**
Total personnel current staffing = 13	**Total personnel at build-out = 21**	** 24 hrs/day during periods of high fire danger

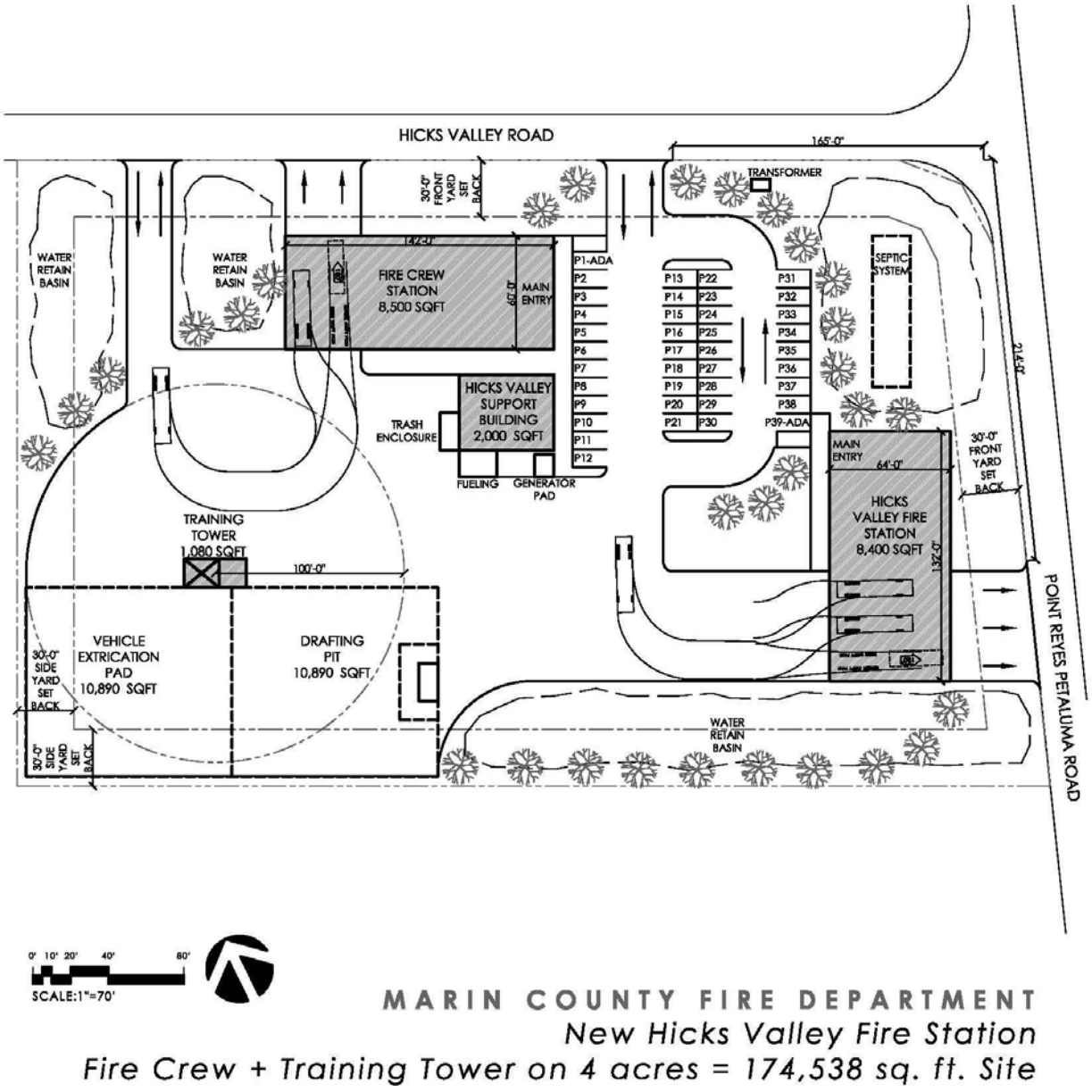
Ref.	**Facility**	**Description**	**Existing**	**Program**
(FC)	**Tamalpais Fire Crew**	Office/Lobby Subtotal	0	432
		Apparatus Bay Subtotal	0	3,256
		Firefighter Quarters Subtotal	0	3,139
		Utility Support Space Subtotal	0	178
		BUILDING SUBTOTAL (SF)	**0**	**7,005**
		Circulation/Structure at 25%	0	1,751
		CREW QUARTERS TOTAL (SF)	**0**	**8,756**

As one of the older original facilities the Hicks Valley fire station has served its useful life and is recommended to be replaced. The water to the current site is provided by the adjacent property owner and its availability not controlled by a public utility or the Department. The property owner has approached the Department about relocating the station to another site adjacent to the current location. This would provide benefits to both the property owner for development opportunities and for the fire department as it would provide a larger area and be able to support multiple functions including the Hicks Valley Fire Station, Training classroom, building for manipulative training props

and the Tamalpais Fire Crew facility. Securing the site and water rights would be an important set in upgrading this facility to meet current and future fire operations.

SITE ARRANGEMENT STUDY

The site layout for the Hicks Valley Fire Station and Tamalpais Fire Crew was developed to allow both functions to operate efficiently on-site with a focus on apparatus response from the Hicks Valley station drive through bays as the primary arrangement driver. The benefit of joining the two functions on-site is that they can share support functional areas such as the fitness and training area. They can also share the outdoor space, fueling and parking. There is adequate site area for the required storm run-off retention basin, the training area required around the tower and for septic leach fields.



TOMALES FIRE STATION

OVERALL FACILITY SPACE NEEDS SUMMARY

Staffing Assumptions

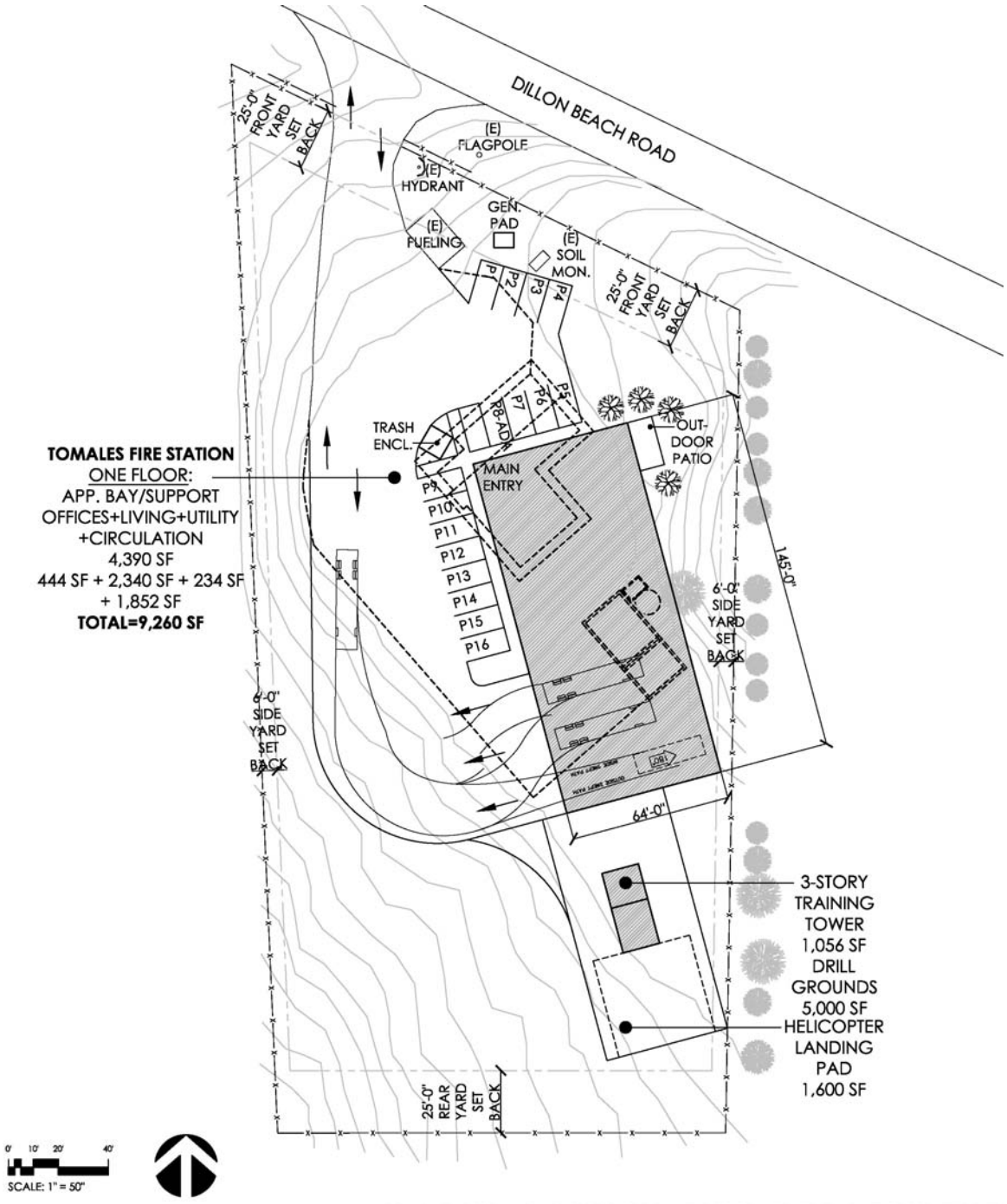
This station is staffed by a single engine company (two personnel per shift) for the months outside of the designated fire season. When fire season is in place two additional personnel are added per shift for a total of four on-duty firefighters. On occasion a 5th volunteer staff members will respond from the station for a 24-hour shift. One additional permanent fire fighter is anticipated to be added at this location for the lifetime of this facility for a total of five on-duty.

Current Staffing	**Future Staffing**	**Schedule**
Engine Company: 2 full time (all year around)	Engine Company: 3 full time	48 hour shifts
Fire Season: 2 additional	Fire Season: 2	4- ten hour days (Tues-Fri.)
Total personnel current staffing = 5	**Total personnel at build-out = 6**	

Ref.	Facility	Description	Existing	Program
(TF)	**Tomales Fire Station**	Office/Lobby Subtotal	125	444
		Apparatus Bay Subtotal	1,153	4,390
		Living Quarters Subtotal	1225	2,340
		Utility Support Space Subtotal	0	234
		BUILDING SUBTOTAL (SF)	**2,503**	**7,408**
		Actual Circulation/Structure SF used in Existing Buildings.; at 25% in Program	356	1,852
		Tomales Fire Station - Scheme 1 - 1 story (SF)	**2,859**	**9,260**
		Tomales Fire Station - Scheme 2 - 1 story, split level (SF)		**9,532**
		Tomales Fire Station - Scheme 3 - 2 stories (SF)		**9,896**

The location of the Tamales Fire station is perfectly placed to serve this community and area of the County. It is on a main vehicular route and has adequate site area for future development. This particular facility has the lowest call volume in the department and is recommended to be lower on the priority list because of the potential for slower staffing growth at this location compared to Hicks Valley and Woodacre. A two-story scheme is the desired replacement solution due to the sloping site. This location is planned to include a training building.

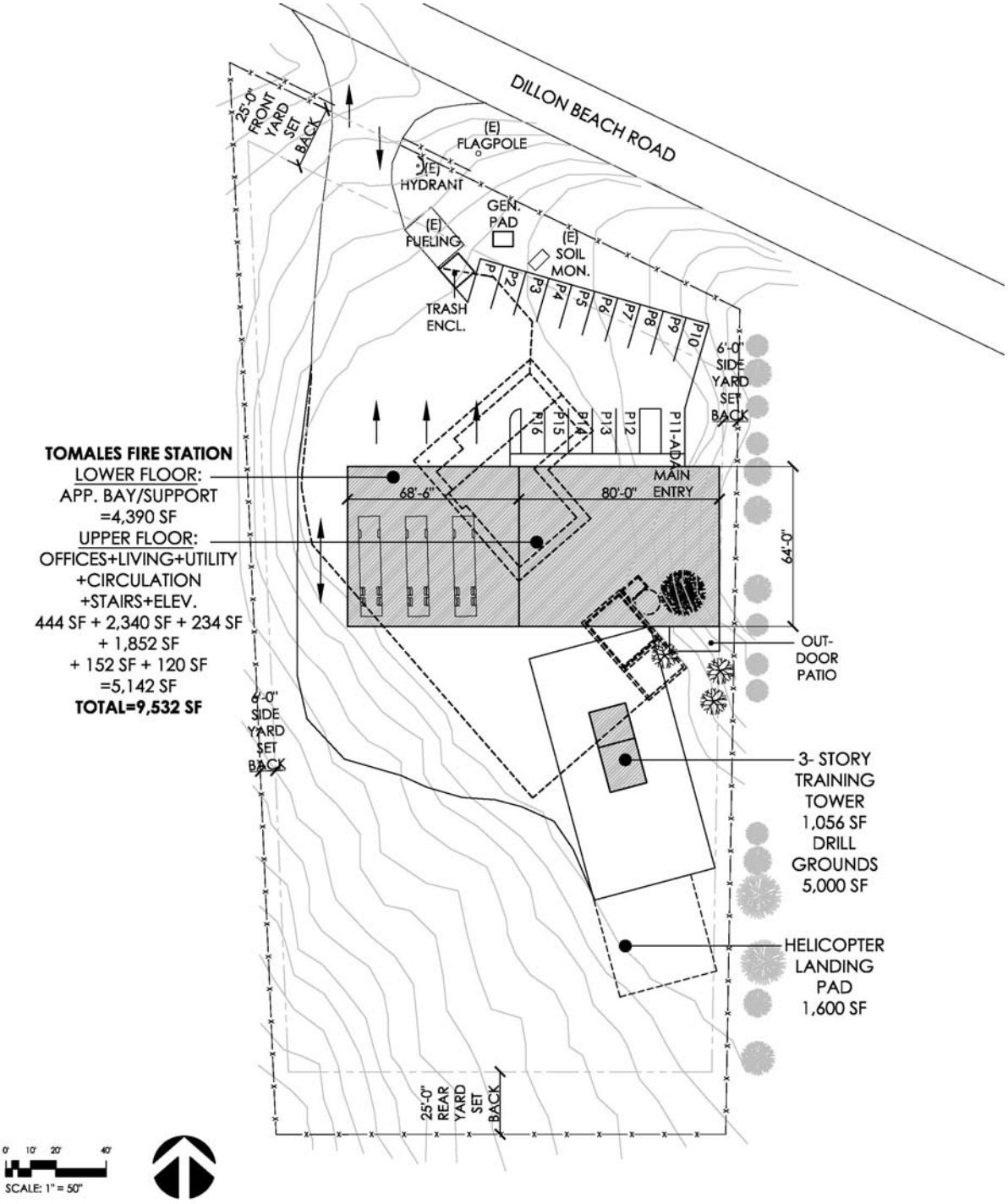
SITE ARRANGEMENT STUDY – SCHEME 1



MARIN COUNTY FIRE DEPARTMENT

Tomales Site Plan - Scheme 1, One Story
1.6 Acre Site

SITE ARRANGEMENT STUDY – SCHEME TWO

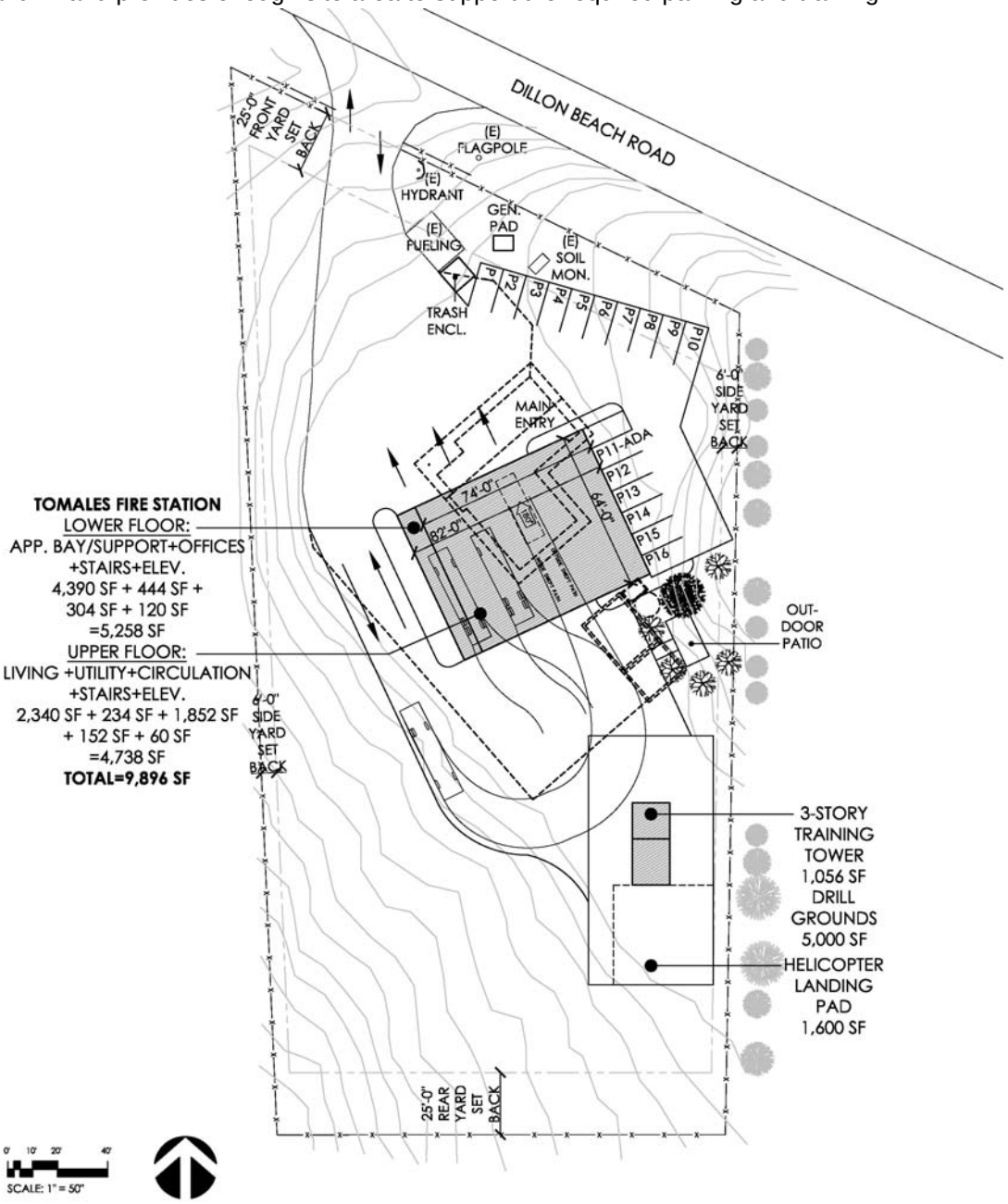


MARIN COUNTY FIRE DEPARTMENT

Tomales Site Plan - Scheme 2, One Story - Split Level
1.6 Acre Site

SITE ARRANGEMENT STUDY – SCHEME 3 (Preferred)

Of the three site arrangements studied for this location Scheme 3 is the most preferred. The wind plays a major role in the arrangement of this site and any option that is oriented to the south/southwest is not desired. Scheme 1 is not an option due to the effect of the wind. Scheme 2 is not preferred because of the amount of cut and fill required and how close the fire station is to the neighboring property. Scheme 3 is optimal as it avoids the wind effect and is held away from the property to the east. This two-story plan allows more usable site area with the least amount of cut and fill and provides enough site area to support the required parking and training.



MARIN COUNTY FIRE DEPARTMENT

Tomales Site Plan - Scheme 3, Two Story
1.6 Acre Site

F. VISION PLAN IMPLEMENTATION COST SUMMARY

OVERVIEW

Overall project budgets have been developed for each project. Comparative budgets were developed from a program level and through quantitative estimates prepared by NJ Fearon and Associates, Cost Estimators. At this level of planning a range of costs is an appropriate cost budgeting tool. The site costs for both the Woodacre Headquarters and Hicks Valley/Fire Crew projects were based on an assumed area and location. Further investigations will be necessary to determine if either of the sites used for the budget process are available for purchase and development within the timeframes identified in the recommendations section.

PROJECT BUDGET

In order to develop project budgets, both hard and soft costs were considered. Hard costs are the construction costs based on an estimate of the construction bid, and soft costs consist of professional fees, administrative costs, equipment, and contingencies that are added to the construction costs to achieve a project budget. These soft costs can add 35 to 45% depending on factors such as whether the County's internal project management and administrative costs are charged to the project.
Below is a summary indicating a budget order of magnitude for each project based on preliminary site areas and programmed square footage. Each project budget anticipates escalation to the mid point of this year (2013) and additional factors for inflation should be added to the project budget each year the anticipated construction date extends.

MCFD Headquarters and Fire Station Facility

	Division Totals:	**High Range (BPA)**	**Low Range (NJF)**
A.	***Fire Station, Administration, ECC, Warehouse and Vehicle Maintenance Buildings, Equipment and Furnishings Budget:***	$23,089,170	$20,040,100
B.	***Design and Other Related Fees:***	$3,963,679	$3,536,809
C.	***Administrative, Permit and Bidding Costs:***	$1,575,350	$1,392,406
D.	***Project Contingencies:***	$5,348,455	$2,924,092
	Conceptual Project Budget Range:	**$33,976,654**	**$27,893,408**

Hicks Valley Fire Station / Tamalpais Fire Crew

	Division Totals:	**High Range (BPA)**	**Low Range (NJF)**
A.	***Fire Station, Fire Crew, Training Tower and Support Buildings, Equipment & Furnishings Budget:***	$12,800,133	$11,219,250
B.	***Design and Other Related Fees:***	$2,475,764	$2,147,264
C.	***Administrative, Permit and Bidding Costs:***	$1,902,019	$1,680,695
D.	***Project Contingencies:***	$2,624,027	$2,624,027
	Conceptual Project Budget Range:	**$19,801,942**	**$17,671,237**

Point Reyes – Option 2B

	Division Totals:	High Range (BPA)	Low Range (NJF)
A.	Fire Station (Option 3 Two story), Support Buildings, Equipment and Furnishings Budget:	$3,650,500	$3,528,000
B.	Design and Other Related Fees:	$809,127	$798,262
C.	Administrative, Permit and Bidding Costs:	$256,530	$249,180
D.	Project Contingencies:	$837,866	$809,161
	Conceptual Project Budget Range:	**$5,554,023**	**$5,376,603**

Tomales Fire Station

	Division Totals:	High Range (BPA)	Low Range (NJF)
A.	Fire Station (Option 3 Two story), Training Tower and Support Buildings, Equipment and Furnishings Budget:	$5,876,560	$5,044,150
B.	Design and Other Related Fees:	$1,108,387	$991,849
C.	Administrative, Permit and Bidding Costs:	$420,062	$403,414
D.	Project Contingencies:	$1,204,695	$504,415
	Conceptual Project Budget Range:	**$8,609,704**	**$6,943,828**

Vision Plan Total Cost Summary

	Facility	High Range (BPA)	Low Range (NJF)
	Headquarters and Fire Station – Woodacre:	$33,976,654	$27,893,408
	Hicks Valley FS / Fire Crew:	$19,801,942	$17,671,237
	Point Reyes:	$5,554,023	$5,376,603
	Tomales:	$8,609,704	$6,943,828
	Mt. Barnabe and Mt. Tam Lookouts (from DPW):	$68,750	$36,750
	Vision Plan Budget Range:	$68,011,073	$57,921,826

The construction cost and project costs are both estimated in today's dollars. Each project budget will need to be evaluated for the effects of cost escalation as each project schedule with known funding is established. The Headquarters and Hicks Valley site arrangement studies were developed on generic or uninvestigated site locations. Each project budget will need to be updated to reflect the final site selected and the attributes of that location related to cost. Property costs are not included in the overall project budgets and would need to be a consideration once the final sites are confirmed.

G. PROJECT PRIORITY RANKINGS

The following chart scores each facility according criteria used by the County for capital projects. Remaining useful life of each facility was taken into account in the scoring of criteria 1, 2 & 3. Each criterion has a priority weight factor that is multiplied by each facility's score. A weighted score is then totaled on the right hand side of the chart. Although it is more functionally and economically efficient to build each project as a whole, Woodacre, Hicks Valley and Tomales are broken out into various construction phases to give the County more flexibility in project development.

Marin County Fire Department Vision Plan Project Ranking		Removes, Reduces Threats to Health and Safety	Meets Legal Mandates	Maintains Operations and Functions	Cost Effective	Environ-mentally/ Energy Efficient	Meets County Goals	Large Aesthetic Benefit	Large Functional Benefit	
	Weighting	4	3	2	2	1	1	1	1	Total Weighted Score
	Rating Range	1 to 6	1 to 6	1 to 5	1 to 5	1 to 5	1 to 5	1 to 5	1 to 5	
Woodacre -- Phase 1	Fire Station Replacement	6	6	4	1	4	5	4	5	70
Woodacre -- Phase 2	Administrative and Dispatch Facility	6	6	5	1	4	5	4	5	72
Woodacre -- Phase 3	Maintenance Building and Warehouse	4	4	3	1	4	4	4	5	53
Woodacre -- Phase 4	Training Tower	3	3	3	1	1	1	1	3	35
Hicks Valley - Phase 1	Fire Station Replacement and Support	4	4	5	1	4	5	4	5	58
Hicks Valley - Phase 2	Tam Fire Crew Building	4	2	4	1	1	5	4	4	46
Hicks Valley - Phase 3	Training Tower	2	2	2	1	1	2	1	2	26
Point Reyes Fire Station	Renovate and Addition	3	2	4	3	3	4	2	4	45
Tomales - Phase 1	Fire Station Replacement	3	3	3	1	4	5	4	4	46
Tomales - Phase 2	Training Tower	2	2	2	1	1	2	1	2	26
Mt. Tamalpais Fire Lookout		2	2	3	1	2	2	1	2	29
Mt. Barnebe Fire Lookout		2	2	2	1	1	2	1	3	27

Project Phasing

Where possible, each master planning project was phased to better prioritize each facility according to importance. In a phased project, it is assumed that the site work substantially complete while individual buildings are constructed as needed. In addition, project phasing will offer the County more flexibility in terms of funding options for each location. For each project, once the level of project phasing is known and specific site is determined, future cost estimates for each phase can be performed.

PRE-PLANNING RECOMMENDATIONS

	Facility	Description
	MCFD Headquarters and Fire Station Planning	Locate and procure a minimum of 8.5 acres in the central response zone of the Department and replace each facility. Determine funding strategies for project. Develop Phasing alternatives as necessary.
	Hicks Valley Fire Station Planning	Secure property agreement with neighboring property Owner. Determine funding strategies for project.
	Point Reyes Planning	Further develop options for renovating and expanding the Point Reyes Fire Station. Seek possible locations to relocate Sheriff Substation

FINAL PROJECT PRIORITY RANKINGS – PHASED PROJECTS

Priority	Facility	Description	Total Weighted Score
A	**Headquarters Admin., ECC/Dispatch - Phase 1**	Secure funding; develop master plan, community outreach and entitlements. Phase 1 construction documents and construction of new facility.	72
A	**Headquarters Fire St. Replacement - Phase 2**	Construction documents and construction of new facility.	67
A	**Hicks Valley Fire St Replacement – Phase 1**	Secure funding; develop master plan, community outreach and entitlements. Phase 1 construction documents and construction.	61
B	**Headquarters Maintenance Building & Warehouse - Phase 3**	Construction documents and construction of new facility.	53
B	**Point Reyes Renovation & Addition**	Choose development option, secure funding, community outreach, entitlement, construction documents and construction.	48
C	**Headquarters Training Tower - Phase 4**	Construction documents and construction of new facility.	47
C	**Hicks Valley Fire Crew – Phase 2**	Construction Documents and Construct Fire Crew Facility at Hicks Valley site.	46
C	**Tomales FS Station Replacement – Phase 1**	Replace fire station on existing site planning for future training tower	43
C	**Mt. Tamalpais Fire Lookout**	Perform maintenance repairs	29
C	**Mt. Barnabe Fire Lookout**	Perform maintenance repairs and technical upgrades	27
C	**Hick Valley Training Tower – Phase 3**	Add Training tower at Hicks Valley site	26
C	**Tomales Training Tower – Phase 2**	Add Training Tower at Tomales site	26

Again, although it is more functionally and economically efficient to build each project as a whole, Woodacre, Hicks Valley and Tomales are broken out into various construction phases to give the County more flexibility in project development.

For support documents and detailed facility reports, refer to Volumes II and III of this Vision Plan Report.

APPENDIX

LIST OF REFERENCED DOCUMENTS

Marin County Fire Department -
Department Wide Studies Transitional Review Report
September 2003
Prepared by Ronnie J. Coleman, Fire Force One

Marin County Fire Department
Facilities Strategic Plan Support Documentation
August 2005
Prepared by MCFD

Fire Station Planning Study
December 3, 2008
Prepared for the Marin County Fire Department
by Citigate Associates, LLC

Hicks Valley and Tomales Fire Stations Master Plan Study for
Hicks Valley and Tomales Fire Stations
October 7, 2005
Prepared by Hilliard Architects, Inc.

Woodacre Master Plan Study -
Woodacre Fire Complex
March 13, 2001
Prepared by Interactive Resources Architects and Engineers

Marin County Fire Department
Emergency Command Center Operations
Operational Analysis
Prepared by MCFD

Marin County Fire Department - Standards of Cover 2007
Prepared By MCFD

COMPARATIVE ANALYSIS

Station profiles and Matrix of Compliance with Space Standards

As a part of developing the vision plan priority rankings, each facility space and space attribute was ranked according to their compliance with code, polices and trends in the industry. Specific codes or regulations include the Essential Services Buildings Seismic Safety Act, the Americans with Disability Act of 1990 and the California Division of Occupational Safety and Health (Cal/OSHA).

Policy as developed by the National Fire Protection Agency including:

NFPA 1201 - Standard for Providing Emergency Services to the Public
NFPA 1500 - Standard on Fire Department Occupational Safety and Health Program
NFPA 1581 - Standard on Fire Department Infection Control Program
NFPA 1710 - Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments

Trends and guidelines as established in the development of the newer Marin City and Throckmorten Fire Stations were used as a basis for many of the space standards included in the program. In addition, a survey of 11 similar fire districts and departments was conducted to learn the operational goals of those districts and how facilities were developed in their Districts or Departments to support both the training and apparatus and equipment maintenance operations within each department. Those Districts or Departments are:

- County of San Mateo/CAL FIRE San Mateo-Santa Cruz Unit
- North County Fire Authority
- Sonoma County Fire Department
- CAL FIRE Sonoma-Lake-Napa Unit/Napa County Fire Department
- North County Fire Protection District (of Monterey County)
- Aromas Tri-County Fire Protection District (Monterey County)
- Central Fire Protection District (Santa Cruz County)
- CAL FIRE Santa Clara Unit (Santa Clara County)
- Santa Barbara County Fire
- San Luis Obispo County Fire/CAL FIRE San Luis Obispo Unit
- Ventura County Fire Department (Contract County Similar to Marin)

The following Facility Compliance Matrixes summarize each fire facility under study in terms of code and policy compliance, as well as trend & guideline conformity. The key legend below applies to all forms.

KEY
H - Meets the intent of the category
M - Partially meets the intent of the category
L - Does not meet the intent of the category
Blank = not applicable to category

Matrix of Facility Compliance

Woodacre Administration/ ECC**	Essential Services Buildings Seismic Safety Act			Americans With Disabilities Act			CAL/OSHA			NFPA 1201			NFPA 1500			NFPA 1581			NFPA 1710			Program Square Footage		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Woodacre Admin./ECC -			X			X		X			X				X			X			X			X
Site and Training Tower												X			X			X			X			X
Station Location																				X				
Offices/Lobby /Training Area																								
Public Entry Lobby					X							X						X						X
Fire Department Museum												X						X						X
Accessible Public Restroom					X							X						X						X
Fire Chief Office						X					X									X			X	
Deputy Fire Chief Office						X					X									X			X	
BC Office						X					X									X			X	
EMS BC Office						X						X									X			X
Training BC Office						X						X									X			X
Forrester Office					X						X												X	
Fire Marshall Office					X						X												X	
Fire Marshall Open Office Area						X						X												X
Administrative Supervisor Office						X					X												X	
Finance Office						X						X												X
Spare Office						X					X													X
Public Education Specialist Office/Storage						X					X													X
Admin. Open Office						X					X													X
Admin. File Storage						X						X												X
Admin. Workroom/Storage						X						X											X	
Training Classroom						X					X			X										X
Training Equipment Storage						X					X			X										X
Large Conference Room						X					X												X	
Small Conference Room/Interview Room						X						X												X
Hospitality Area						X						X						X						X
Admin./Dispatch Break Room						X		X				X						X						X
Staff Restroom/Locker Room						X		X				X						X						X
Emergency Communications Center (Dispatch)																								
Dispatch Supervisor Office						X						X						X			X			X
Dispatch Work Stations											X			X			X			X				X
Expanded Dispatch														X			X			X				X
Wall Map												X		X			X			X				X
Unisex Restroom								X															X	
Dispatch Locker Room								X				X			X			X			X			X
Dispatch Fitness Room								X			X			X			X			X				X
Utility																								
General Building Storage									X															X
Mechanical Room								X																X
Electrical Room								X				X			X			X			X			X
Communications Room									X			X			X			X			X			X

** Currently the Fire Station and Administration/ECC functions occur in the same building. This evaluates only the Admin./ECC functions of that building.

Code Requirements

Essential Services Buildings Seismic Safety Act - Essential Services Buildings Seismic Safety Act of 1986 and includes requirements that such buildings shall be "…designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds."

ADA - The Americans with Disabilities Act of 1990 (ADA) is a law that was enacted by the U.S. Congress in 1990. Its long title is "An Act to establish a clear and comprehensive prohibition of discrimination on the basis of disability."

CAL/OSHA - The Division of Occupational Safety and Health, better known as Cal/OSHA, protects workers and the public from safety hazards through its Occupational Safety and Health inspection programs.

Policy

NFPA 1201 - Standard for Providing Emergency Services to the Public - Guiding principles and policies including the development of a facilities plan, training and safety procedures, public education programs and emergency operations planning.

NFPA 1500 - Standard on Fire Department Occupational Safety and Health Program. Provides guiding principles and policies on the facility safety related to fitness programs, protective clothing maintenance and storage and response criteria.

NFPA 1581 - Standard on Fire Department Infection Control Program - provides guiding principles and policies regarding station disinfection, air quality requirements, protective gear cleaning requirements and living quarter finish/clean ability.

NFPA 1710 - Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments - This standard contains minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by substantially all career fire departments. The requirements address functions and objectives of fire department emergency service delivery, response capabilities, and resources.

Trends/Guidelines

Program Square footage - Component diagrams were developed to establish the minimum space needs for each operational area. Refer to detail space needs analysis and related component diagram.

Matrix of Facility Compliance

Woodacre Fire Station**	Essential Services Buildings Seismic Safety Act			Americans With Disabilities Act			CAL/OSHA			NFPA 1201			NFPA 1500			NFPA 1581			NFPA 1710			Program Square Footage		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Woodacre Fire Station -			X			X		X			X				X			X		X				X
Site and Training Tower												X												X
Station Location																				X				
Apparatus Bay and Support																								
Apparatus Bay						X		X				X			X									X
Vending/Ice Alcove									X			X			X			X			X			X
Medical Stor. & Treatment						X			X			X			X			X			X			X
Central Maintenance Storage												X			X			X			X			X
Turnout Gear Room									X			X			X			X			X			X
Janitor Room/ Facility Wide Storage								X										X					X	
Communications Alcove												X			X			X			X			X
Work Bench Alcove								X			X			X			X			X			X	
Decontamination Alcove									X			X			X			X			X			X
Hose Storage									X			X			X			X			X			X
Special Projects Room												X			X			X			X			X
Emergency Supply Storage												X			X			X			X			X
Offices/Lobby /Training Area																								
Firefighter Workstations						X						X			X			X			X			X
Shared Captains Office						X						X			X			X			X			X
Station Night Lobby						X					X						X						X	
Station Public Restroom				X																				X
Living Quarters																								
Kitchen						X											X						X	
Dining Room																	X						X	
Dayroom														X			X						X	
Fitness Room*									X					X			X						X	
Accessible Fitness Restroom						X																		X
Laundry/Janitor									X					X				X					X	
Dorm room											X			X			X			X				X
BC Quarters/Restroom											X			X			X			X			X	
Firefighter Bedroom											X			X			X			X			X	
Firefighter Bathroom											X			X			X			X			X	
Utility																								
General Building Storage									X															X
Mechanical Room																								X
Electrical Room																								X
Communications Room												X												X

*The fitness room is not located in the fire station but in an adjacent facility.

** Currently the fire station and administration/ECC functions occur in the same building. This evaluates only the Fire Station functions of that building.

Code Requirements

Essential Services Buildings Seismic Safety Act - Essential Services Buildings Seismic Safety Act of 1986 and includes requirements that such buildings shall be "…designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds."

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NFPA 1710 - Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments - This standard contains minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by substantially all career fire departments. The requirements address functions and objectives of fire department emergency service delivery, response capabilities, and resources.

Trends/Guidelines

Program Square footage - Component diagrams were developed to establish the minimum space needs for each operational area. Refer to detail space needs analysis and related component diagram.

Matrix of Facility Compliance

Woodacre Vehicle Maintenance	Essential Services Buildings Seismic Safety Act			Americans With Disabilities Act			CAL/OSHA			NFPA 1201			NFPA 1500			NFPA 1581			NFPA 1710			Program Square Footage		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Woodacre Vehicle Maintenance - Overall			X			X			X			X					X			X				X
Site												X												X
Location																				X				
Vehicle Maintenance																								
Maintenance Bays									X			X					X							X
Work Bench									X			X					X							X
Welding Shop									X			X					X							X
Part Storage									X			X					X							X
Tire and Rim Storage								X			X						X						X	
Equipment Room									X			X					X							X
Mechanic Office									X			X					X							X
Janitor Room												X					X							X
Restroom						X						X					X							X

Code Requirements

Essential Services Buildings Seismic Safety Act - Essential Services Buildings Seismic Safety Act of 1986 and includes requirements that such buildings shall be "…designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds."

ADA - The Americans with Disabilities Act of 1990 (ADA) is a law that was enacted by the U.S. Congress in 1990. Its long title is "An Act to establish a clear and comprehensive prohibition of discrimination on the basis of disability."

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Policy

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NFPA 1500 - Standard on Fire Department Occupational Safety and Health Program. Provides guiding principles and policies on the facility safety related to fitness programs, protective clothing maintenance and storage and response criteria.

NFPA 1581 - Standard on Fire Department Infection Control Program - provides guiding principles and policies regarding station disinfection, air quality requirements, protective gear cleaning requirements and living quarter finish/clean ability.

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Trends/Guidelines

Program Square footage - Component diagrams were developed to establish the minimum space needs for each operational area. Refer to detail space needs analysis and related component diagram.

Matrix of Facility Compliance

Woodacre Warehouse	Essential Services Buildings Seismic Safety Act			Americans With Disabilities Act			CAL/OSHA			NFPA 1201			NFPA 1500			NFPA 1581			NFPA 1710			Program Square Footage		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Woodacre Warehouse -			X			X					X				X			X		X				X
Warehouse Location																				X				
Public Office Area																								
Entrance Lobby						X																		X
Staff Restroom						X																		X
Office						X																		X
Warehouse																								
Receiving/Distribution						X		X				X												X
Will Call/Drop-off						X																	X	
Flammable Liquid Storage									X									X						X
Pallet Storage												X												X
Department Records								X				X			X			X			X			X
PPE (Safety Gear) Storage												X			X			X			X			X
Firefighter Equipment Storage											X			X			X			X				X
USAR Storage											X			X			X			X				X
Station Supplies and Public Ed. Material Storage											X													X
Red Cross, Disaster Cache, SCBA Trailer/Truck Bay												X			X			X			X			X
Dozer Transporter Truck/Trailer											X			X			X			X				X
Medical Supply Storage												X			X			X			X			X
Forklift Storage/Charging																								X
Warehouse Janitor Closet									X															X
Oxygen Airfill Room									X			X			X			X			X			X
Utility																								
Mechanical Room									X															X
Electrical Room									X															X
Communications Room									X															X

Code Requirements

Essential Services Buildings Seismic Safety Act - Essential Services Buildings Seismic Safety Act of 1986 and includes requirements that such buildings shall be "…designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds."

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Trends/Guidelines

Program Square footage - Component diagrams were developed to establish the minimum space needs for each operational area. Refer to detail space needs analysis and related component diagram.

Matrix of Facility Compliance

Hicks Valley Fire Station	Essential Services Buildings Seismic Safety Act			Americans With Disabilities Act			CAL/OSHA			NFPA 1201			NFPA 1500			NFPA 1581			NFPA 1710			Program Square Footage		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Hicks Valley - Overall			X			X		X			X				X			X		X				X
Site and Training Tower												X												X
Station Location										X			X						X					X
Offices/Lobby /Training Area																								
Public Entry Lobby						X						X						X						X
Accessible Public Restroom						X						X						X						X
Station Office						X					X						X			X			X	
Supply Storage Room																								X
Apparatus Bay and Support																								
Apparatus Bay						X		X				X			X			X			X			X
Vending/Ice Alcove												X			X			X			X			X
Medical Stor. & Treatment									X			X			X			X			X			X
Communications Alcove												X			X			X			X			X
Shop Alcove								X			X			X			X			X			X	
Turn-out Gear Room									X			X			X			X			X			X
Janitor Closet									X			X			X			X			X			X
Special Projects Room																							X	
Emergency Supply Storage																					X			X
Living Quarters																								
Kitchen						X												X						X
Dining Room																		X						X
Dayroom																	X							X
Laundry/Janitor						X			X		X							X						X
Firefighter Sleeping Quarters											X			X			X				X			X
Firefighter Restrooms											X			X			X				X			X
Utility																								
Mechanical Room									X														X	
Electrical Room									X															X
Communications Room									X			X												X

Code Requirements

Essential Services Buildings Seismic Safety Act - Essential Services Buildings Seismic Safety Act of 1986 and includes requirements that such buildings shall be "…designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds."

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NFPA 1710 - Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments - This standard contains minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by substantially all career fire departments. The requirements address functions and objectives of fire department emergency service delivery, response capabilities, and resources.

Trends/Guidelines

Program Square footage - Component diagrams were developed to establish the minimum space needs for each operational area. Refer to detail space needs analysis and related component diagram.

Matrix of Facility Compliance

Pt. Reyes Fire Station	Essential Services Buildings Seismic Safety Act			Americans With Disabilities Act			CAL/OSHA			NFPA 1201			NFPA 1500			NFPA 1581			NFPA 1710			Program Square Footage		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Pt. Reyes - Overall			X		X			X			X			X			X			X				X
Site and Training Props												X			X			X			X			X
Station Location																				X				X
Training/Community Room																								
Training/Community Room					X						X						X						X	
Table and Chair Storage											X						X						X	
Fitness Room												X						X			X			X
Data Room											X													X
Offices/Lobby																								
Public Entry Lobby					X						X			X			X						X	
Accessible Public Restroom					X						X			X			X						X	
Station Office					X						X			X			X			X			X	
Supply Storage Room																								X
Apparatus Bay and Support																								
Apparatus Bay						X			X		X			X			X			X			X	
Vending/Ice Alcove												X			X			X			X			X
Medical Stor. & Treatment									X			X			X			X			X			X
Communications Alcove											X			X						X				X
Shop Alcove											X			X			X			X			X	
Turn-out Gear Room									X			X			X			X			X			X
Janitor Closet								X			X			X			X			X			X	
SCBA/Airfill Room									X			X			X			X			X			X
Emergency Supply Storage												X			X			X			X			X
Living Quarters																								
Kitchen						X								X			X						X	
Dining Room						X								X			X						X	
Dayroom						X								X			X						X	
Laundry/Janitor								X			X			X			X							X
Firefighter Sleeping Quarters											X			X			X			X			X	
Firefighter Restrooms											X			X			X			X			X	
Utility																								
Mechanical Room																							X	
Electrical Room																							X	
Communications Room												X												X

Code Requirements

Essential Services Buildings Seismic Safety Act - Essential Services Buildings Seismic Safety Act of 1986 and includes requirements that such buildings shall be "…designed and constructed to minimize fire hazards and to resist the forces of earthquakes, gravity and winds."

ADA - The Americans with Disabilities Act of 1990 (ADA) is a law that was enacted by the U.S. Congress in 1990. Its long title is "An Act to establish a clear and comprehensive prohibition of discrimination on the basis of disability."

CAL/OSHA - The Division of Occupational Safety and Health, better known as Cal/OSHA, protects workers and the public from safety hazards through its Occupational Safety and Health inspection programs.

Policy

NFPA 1201 - Standard for Providing Emergency Services to the Public - Guiding principles and policies including the development of a facilities plan, training and safety procedures, public education programs and emergency operations planning.

NFPA 1500 - Standard on Fire Department Occupational Safety and Health Program. Provides guiding principles and policies on the facility safety related to fitness programs, protective clothing maintenance and storage and response criteria.

NFPA 1581 - Standard on Fire Department Infection Control Program - provides guiding principles and policies regarding station disinfection, air quality requirements, protective gear cleaning requirements and living quarter finish/clean ability.

NFPA 1710 - Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments - This standard contains minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by substantially all career fire departments. The requirements address functions and objectives of fire department emergency service delivery, response capabilities, and resources.

Trends/Guidelines

Program Square footage - Component diagrams were developed to establish the minimum space needs for each operational area. Refer to detail space needs analysis and related component diagram.

Matrix of Facility Compliance

Tomales Fire Station	Essential Services Buildings Seismic Safety Act			Americans With Disabilities Act			CAL/OSHA			NFPA 1201			NFPA 1500			NFPA 1581			NFPA 1710			Program Square Footage		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Tomales - Overall			X			X		X			X				X			X		X				X
Site and Training Tower																							X	
Station Location										X			X			X				X				
Offices/Lobby /Training Area																								
Public Entry Lobby						X						X						X						X
Accessible Public Restroom						X						X						X						X
Station Office						X					X						X			X			X	
Tomales Volunteer Storage Room																								X
Apparatus Bay and Support																								
Apparatus Bay						X		X				X			X			X			X			X
Vending/Ice Alcove												X			X			X			X			X
Medical Stor. & Treatment									X			X			X			X			X			X
Communications Alcove												X			X			X			X			X
Shop Alcove								X			X			X			X			X			X	
Turn-out Gear Room									X			X			X			X			X			X
Janitor Closet									X			X			X			X			X			X
Special Projects Room																							X	
Emergency Supply Storage																					X			X
Living Quarters																								
Kitchen						X												X						X
Dining Room																		X						X
Dayroom																	X							X
Laundry/Janitor						X			X		X							X						X
Firefighter Sleeping Quarters											X			X			X				X			X
Firefighter Restrooms											X			X			X				X			X
Utility																								
Mechanical Room									X														X	
Electrical Room									X															X
Communications Room									X			X												X

Code Requirements

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Trends/Guidelines

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Comparative Departments and Survey Results

Through the development of Marin City and Throckmorten a fire facility space standard has been established which was refined through this report. This established the standards for fire stations into the future. The degree to which each fire station complies with these established standards is noted in the Matrix of Compliance table above. For the most part, Hicks Valley, Tomales, Woodacre and critical aspects of the Pt. Reyes public safety building do not meet those standards and this has been addressed in this report.

A survey of comparative departments was developed to validate the space needs of the supporting operations of the fire department including training and apparatus and equipment maintenance. The Administrative and Emergency Command Center operational approach and location has been evaluated and validated through the Citigate Standards of Cover analysis and were not a part of this survey. The survey was developed to explore the operational approach these similar departments used to provide training and fire apparatus and equipment repair and maintenance. Surveys were sent to 11 departments with 4 responding. A copy of the survey and survey responses are included in the appendix. The survey questions focused on how each department was meeting their training requirements both in-service (no overtime pay) and out of service (overtime pay). It also asked similar questions about how each department was providing apparatus and equipment maintenance and repair operations. A summary of the questions and responses are as follows:

<u>Training Facilities</u>

1. *What is your current operational approach to providing training at remotely located stations?*
    a. Generally, each department utilizes a central training classroom bringing staff in for out-of-service training. This is limited to required training and sometimes reduced engine company staffing is utilized to avoid overtime pay. This typically does not occur during fire season. The only exception is North County Fire District which utilizes a central training facility at a fire station location.
2. *Do you have facilities for training on each site? Is so, what type? If not, do you plan to add training facilities in the future?*
    a. Most stations have a training library and at a minimum a TV/DVD and high speed internet service for on-line training. For many of the departments the physical facilities at each station vary based on the nature of the site, although most thought that basic props for basic fire fighting training drills was a real benefit.
3. *What percentage of your training is completed in-services vs. out of service? What percentage would be ideal?*
    a. Responses ranged from “no data available” to 85% of training is in-service with 95% being the ideal percentage. Central FPD limits out of service training to 12% of the total service time. North County Fire allows no out of service training.
4. *What is the cost per company per day to complete out of service training?*
    a. Responses ranged from “varies greatly with the type of company (paid/volunteer and the time of year effecting station coverage needs” to “$3,000 per company on average.”
5. *Do you have a central training center with classroom, training tower and other props?*
    a. Cal Fire Sonoma, Lake County and Napa Unit responded: “in addition to the California Fire Academy in Ione and the regional training facility center in Magnolia, Sonoma Lake Napa had three primary training facilities. All three have classroom space for at least 30 students and 2 facilities include a fire training ground with vertical ventilation, confined space, vehicle extrication and hydrant operations props. Two have training towers. All responding departments have a central training facility with classrooms and a variety of training props.
6. *Do you share a central training center with other departments?*
    a. Each responding department has some type of joint use agreement with adjoining departments either as the host department or as a contract user of the facility.
7. *What is unique about your training needs that drive the type and location of your training facilities?*
    a. Responses varied from “none” to “the unit training bureau is responsible for the needs of a variety of contracting agencies with a spectrum of training needs,

standards and expectations. The unit as a whole is comprised of hundreds of local government volunteers, permanent state personnel and seasonal state personnel. Each accesses training facilities designed to accommodate their various needs." Central FPD (Santa Cruz) has had difficulty finding suitable flat property and the cost of property in that county has made it difficult for the department to meet their strategic planning goal of developing a regionally focused centralized training facility.

Fire Apparatus and Equipment Maintenance

1. *What type of apparatus and equipment maintenance does your department complete in house? What services by Contractor?*
    a. Responses varied from departments that have created an enterprise operation to those that outsource all work. "Central Fire has two state certified master mechanics and a fire mechanic intern, a radio/communications captain and two on-call firefighters that are certified to assist the Fire Mechanic for major tear downs, heavy repairs and installs for new apparatus. We complete all apparatus and equipment repairs in-house except transmissions, major motor works and tire services. Central Fire provides fire apparatus services to 8 neighboring fire agencies. We are also a service warranty point for Pierce, Stephen and HMC and all pre-approved vendor warranty repairs as needed." Both Ventura County and CalFire Sonoma, Lake and Napa County unit perform 95% of repairs in house. Only North County FPD outsources a majority of the apparatus maintenance and repair work.
2. *Does your department have a dedicated maintenance facility?*
    a. All responded yes with the exception of North County Fire Protection District.
3. *If so, how many bays does it have and how many full and/or part-time mechanics?*
    a. The average number of bays is three with a comment from two departments that four would be ideal. Ventura County Fire has a six bay facility and 14 personnel assigned to the equipment and apparatus maintenance and repair operation. They also have a metal fabrication shop and a pump testing facility. The number of master fire mechanics varied from 2-3 full time personnel.
4. *How important is the location of the facility relative to the based of operations for the department (headquarters/dispatch)? On the same site? Within 5 minutes of the HQ? Is the adjacency to HQ an operational concern?*
    a. Responses varied from: "being co-located is not as great a concern as being geographically central to all fire stations";" The apparatus shop is located within our headquarters fire station, adjacent to our administrative offices. Operationally this system works the best for coordination, security and access to contract fire agencies."
5. *Where do you perform other equipment and apparatus maintenance duties such as tool repair, vehicle cleaning, tire mounting and maintenance requiring welding and fueling?*
    a. Responses varied from "all of these functions are done at our repair facility" to "most of these functions with the exception of tire mounting and repairs and radio work are done at our facility. It is cheaper than outsourcing".
6. *Where do you store bulldozers and reserve fire fighting fleet?*
    a. Responses included: "all at the fleet site. We store all wildland apparatus and equipment, tools and warehouse materials at the same location". "…reserves are distributed throughout the district to the fire stations." "Dozers are assigned to various stations…our reserves are dispersed to our staffed stations to facilitate daily check-outs and routine maintenance of tools and equipment."
7. *Where do you store other pieces of specialty fire equipment, boats, personal water craft, backhoe graders, etc.?*
    a. Answers varied from: "…within the fire stations. We try to locate support equipment such as USAR Cache, utility vehicles, fire mechanic vehicles and support utility equipment at our administrative/headquarters facility." "…at the fleet site." "Specialized emergency response equipment is stored at various stations."