STAFF REPORT

TO: Mayor and City Council
FROM: Tom Welch, Fire Chief
SUBJECT: Long Range Acoustical Device (LRAD)
DATE: January 24, 2019

Approved for Forwarding:
James E. McCann, City Manager

Issue:
Staff has completed due diligence on the purchase, installation, site strategies and operations of the Long Range Acoustical Device. Staff proposes the acquisition and installation of the LRAD system pursuant to City of Mill Valley Fire Prevention Initiative # 5

Recommendation:
Consider authorization of a budget adjustment and the City Manager to execute the purchase and installation agreement. Note: A review of the purchase and installation agreement by the City Attorney is forthcoming prior to moving forward.

Background:
Following the 2017 Sonoma/Napa conflagrations, which have now been eclipsed by the mega-fires in Shasta and Butte Counties, we have been actively evaluating/implementing programs and processes to ensure our lowest overall community risk possible. Our evaluation has concluded that many City of Mill Valley processes are in alignment with and ahead of industry best practices as well as identified several gap areas needing attention. The result has been the development of six Fire Prevention
Initiatives endorsed by the City Council on February 5th, 2018 titled: *Fire Preparedness and Prevention Overview and Recommendations*. See Attachment 1 for additional background information.

**Initiative 1** – Building Codes, Standards, and Structural Ignitability: Improve building codes and standards for the built environment. Project completed.

**Initiative 2** – Hazardous Fuel Reduction: Reduction of fuels within the first 3’ of the structure and within 3’ to 30’. This will include Junipers (genus Juniperus), Bamboo, Acacia and Italian Cypress. Under consideration by City Council.

**Initiative 3** – Access and Evacuation Concepts: Reduction of hazardous fuels along primary and secondary evacuation routes to facilitate a safe egress. Access projects at Marion/Hazel, Hazel/Rose and Lee/Quarry to enhance emergency response and egress. Being designed and in progress.

**Initiative 4** – Public Education: Community Education by way of community meetings, mailings, classes and events such as the Mill Valley Campout. In progress

**Initiative 5** – Communications:
Currently: The City of Mill Valley has a number of methods available to reach the affected community in an emergency. These methods include Alert Marin, reverse 911, Wireless Emergency Alerts (WEA), neighborhood sirens, Facebook, Nixle, Twitter, email and City News web postings. We use the appropriate methods to notify residents of an actual emergency or provide information about an escalating situation such as Red Flag Warnings. During the Tubbs/Nuns fires, a gap was identified due to the destruction of infrastructure such as cellular towers causing communication delays.

Although there are many scenarios that LRAD could be helpful in resolving, we see the use of LRAD directed toward disaster communications. During wildland fire conflagrations and other dangerous incidents, a few individuals or several thousand people may be affected. LRAD systems are highly effective in communicating warnings, instructions, and notifications throughout incident sites and over vast areas during life-threatening events.

**WARN & NOTIFY**
- Notify everyone in affected areas simultaneously
- Quickly establish and enforce restricted areas
- Warn of blocked evacuation routes

**INSTRUCT & DIRECT**
- Provide stay/evacuate, safe exit routes, quickly clear hot zones towards temporary refuge areas.
Discussion:

Currently, the City of Mill Valley provides emergency notifications for wildland fire by various methods to include methods surrounding phone calls, text messages and emails as well as redundant systems such as emergency sirens. We have five strategically located sirens throughout Mill Valley that enable emergency notification. The systems are tested the first Saturday of the month at noon.

Our emergency siren system has served our community well, however, the previous two years we have witnessed several catastrophic fires that have elevated the need to provide clear, audible and concise instructions to our residents. City staff has completed our due diligence assessment and seeks approval to purchase/install the LRAD system as a replacement to our current siren systems with locations specified on attachment 2. The assessment included several site visits from LRAD subject matter experts and various meetings with the Marin County Office of Emergency Services to ensure activation during emergent scenarios. It should be noted that the coverage map is written to strict standards, however, our practical demonstrations have confirmed that coverages and overlaps are effective beyond the 1600 yards depicted on the coverage map.

California’s recent devastating fires to include the: Carr Fire (Shasta County), Camp Fire (Butte County) and the Tubbs Fire (Napa/Sonoma County) resulted in community fatalities and all suffered shortfalls in emergency notification and communications. The process of emergency notification involves many methods that range from low tech – police officers evacuating residents’ door to door and high-tech solutions such as the wireless emergency alerts (WEA) and now potentially the LRAD technology. Given that most all notification systems require an element of infrastructure to operate, we believe that sufficient redundancy exists with LRAD’s battery backup systems and satellite downlinks.

On June 14, 2018, the City conducted a demonstration of the LRAD system at the Public Safety Building. LRAD Test Video:

https://www.dropbox.com/s/fv7mc5pju1j80hl/LRAD%20Test%20.mov?dl=0
Staff Report
Implementation of Fire Prevention Enhancement Initiative #5. (LRAD)
January 24, 2019

Basic Specifications:

Directionality, power & range

- 60-degree beam width for improved area coverage for emergency warning and public address
- LRAD’s superior voice intelligibility and range
- Efficient, low power consumption.

Features

- Rugged enclosure for permanent outdoor installation
- All weather electronics cabinet.

Notification Systems:

- Although there are several notification platforms to the siren to include GSM (cellular), T-1 (internet) and Satellite. Satellite downlink is the preferred platform to enable control and discharge of the siren. Lessons gleaned from the recent catastrophic fires have demonstrated the inherent weakness with our cellular phone network during a disaster. This adds a level of redundancy and resiliency to the communication systems.

Activated Platforms.

- Pre-programable messages
- Live Voice Streaming for refined messaging to the neighborhoods.

Battery Backup

- 72 hours of standby
- 1 hour at full blast sound activation.

Readiness Checks

- Due to the life safety value, the system conducts regular readiness checks on the health of the system once every minute.

Next Steps:

- Attorney review of agreements
- Installation of equipment to include acceptance and testing
- Community outreach
- Integration of operations with Marin County OES
- Internal training with staff on operation

Conclusion:

Early community notification in addition to a prepared public improves our odds of surviving a catastrophic wildland fire. Public preparation is essential. Grab and go checklists, understanding two
ways from your home and being able to change modes of transportation to walking as well as
knowing/helping your neighbors all aids in a successful community evacuation.

The recent catastrophic fires have illustrated weak points in emergent communications from authorities
to residents. Although there are no full proof or one size fits all systems for public notification, we
believe that the purchase and installation of LRAD goes a long way to improve the resiliency and
redundancy of our communication systems. The proposal represents a system that we hope to never use
but rest assured that it will work during an emergent situation.

Fiscal Impacts:

Purchase:
One-time funding has been identified within the Equipment Replacement Fund totaling $418,465.00

Ongoing costs:
The annual satellite user fee is $6,500 which will be built into the Fire Departments Operating Budget.

See attachment 3 for cost breakdown.

Attachments:

Attachment 1 - Fire Preparedness and Prevention Overview and Recommendations
Attachment 2 - Coverage Map.
Attachment 3 - Quote and cost breakdown
STAFF REPORT

TO: Mayor and City Council

FROM: Fire Chief Tom Welch

SUBJECT: Fire Preparedness and Prevention Overview and Recommendations

DATE: February 5, 2018

Approved for Forwarding:

James C. McCann, City Manager

Issue:
Comprehensive review of wildfire community preparedness, prevention and recommendations based on recent destructive fires.

Recommendation:
Receive report, discuss and provide direction as appropriate.

Background:
This report outlines several of the risks associated with our community, specifically those areas located within the wildland urban interface (WUI). The City of Mill Valley has under-taken a number steps to mitigate the wildfire risks within our community and there are additional practical actions recommended in this report. In short, these actions focus on improving the survivability of residential structures due to wildfire, enhance access and egress as well outlining educational campaigns underway and proposed throughout the neighborhoods. Although we are not requesting action on any one of the recommendations listed below tonight, we do desire feedback and direction as several of the concepts are complex and will require additional outreach, program and budget development.
The fire environment is changing for California and Mill Valley. Our fire seasons are longer, more intense and increasingly more destructive than ever before. We are susceptible to fires year-round, but fires that occur in fall are especially dangerous. The effects of hot, dry temperatures during the summer worsen in later months due to hot dry winds from the Sacramento Valley. Known as North Winds or Diablo Winds in Northern California, these powerful warm winds cause fires to spread faster and be sustained for longer time periods. The frequency of these wind events coupled with unpredictable winters lend themselves to the fact that our environment is changing. The California fire seasons are deadlier too. Eight of the 10 deadliest fires burned during the Fall season. The wine country fires in October were the deadliest in state history.

For the last century, the City of Mill Valley has been involved in vegetation management by way of clearing fire roads for emergency access into the watershed areas or clearing of city properties. For the last 22 years, we have maintained an aggressive approach to vegetation management, fire preparedness/prevention and continue to be a leader within the region. Our assertive approach was spawned from the devastation witnessed in the Oakland Hills Fire (1991) and then improved upon by studying the effects of the Mount Vision Fire (1995) in West Marin County. The most recent fire season (Tubbs, Nuns and Thomas Fires in Sonoma, Napa and Ventura/Santa Barbara Counties) has demonstrated in spectacular fashion our need to evaluate and adjust current programs and policies as well as develop new ones geared towards reducing risk and improving survivability.

To understand the proposed changes, it is essential to understand the history of our efforts and our journey to get there. In 1996, the Mill Valley Fire Department’s Vegetation Management Program began as a result of the Mt. Vision Fire, Oakland Hills Fire and the subsequent Perry Report. The Perry Report (1984) was science-based approach commissioned by the Mill Valley City Council focusing on the wildland fire problem within the community. The report made several recommendations to include:

- Build homes smartly within the wildland urban interface;
- Establish fuels management programs in fire prone areas;
City Council Staff Report  
City of Mill Valley Vegetation Management Program: An Improved Approach  
February 5, 2018

- Require vegetation management plans for new construction;
- Identify funding for future programs;
- Develop a plan to improve visibility of address numbers;
- Purchase and maintain a wildland fire engine;
- Develop an information sheet(s) that focusses on vegetation management techniques;
- Evaluate and develop policies for roadside parking;
- Contract for a fire suppression helicopter;
- Conduct roadside vegetation maintenance;
- Conduct Incident Command Systems Training for the FD;
- Conduct informational campaign with local TV and news print;
- Purchase 2 portable weather stations;

The City moved quickly to implement many of the items in the Perry Report and to identify other hazards that existed in Mill Valley. A prioritized list was created, and the City established a modest budget (approximately $73,000) for vegetation management projects. As a result, the following projects began and were later made possible through the creation of the Municipal Services Tax:

- Purchase of a new Type III wildland fire engine;
- Removal of encroaching vegetation on paved roads;
- Removal of Oak trees suffering from Sudden Oak Death;
- Removal of Bay, Acacia, Pine and other non-native highly flammable trees on public lands;
- Creation of fuel breaks/buffer zones along the ridges in Mill Valley creating an essential “ring around Mill Valley”;
- Creation and maintenance of Steps, Lanes and Paths;
- Neighborhood chipper programs;
- Creation of public education material such as newsletters.
In 1997 (and later reaffirmed in 2016), the City successfully passed a Municipal Service Tax (MST) and a Community Facilities District (CFD) was formed. This allowed a funding mechanism for operating expenses to be incurred by the City for ongoing municipal service activities including, but not limited to: improve the condition of City streets and storm drains, reduce fire hazards, and shorten emergency response times.

With the passing of this Municipal Service Tax, the funding for Mill Valley’s Vegetation Management Program increased from a onetime budget allocation of $73,000.00 to $150,000.00. The City subsequently increased the budget to $300,000.00 through a resident approval of a subsequent and more substantial parcel tax measure. This increase has allowed for a substantially larger number of projects that greatly benefit the City, while following guidelines set forth in Resolution 16-39.

Since 1996, the City of Mill Valley’s Vegetation Management Program has maintained all original vegetation projects as well as expanded into other projects that enhance community safety. Vegetation management examples include:

- Large neighborhood chipper projects;
- Wide area fuel breaks in Open Space preserves that surround Mill Valley;
- Fire resistant demonstration garden;
- Defensible space DVD played throughout the year at the Sequoia Theater;
- Strategic removal of Eucalyptus trees. The Eucalyptus is then recycled and milled for treads on Steps, Lanes and Paths projects;
- Strategic removal of Pines, Acacia, Bay and other non-native trees on public lands;
- Vegetation reduction along the fire roads surrounding Mill Valley;
- Creation and installation of fire road signage for mutual aid resources, hikers and mountain bikers on all fire roads surrounding Mill Valley;
- Development and delivery of public educational materials, poster boards, newsletters and informational pieces;
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- Vegetation removed during monthly paved road fuel reduction projects:
- Hazard Assessment Program designed to assist residents who are threatened with fire insurance cancellations. Approximately half of all insurance cancellations have been reversed;
- Partnerships in fire fuel reduction with external stakeholders such as Cal Trans, PG&E, Marin County Open Space, Marin Municipal Water District, Marin County Fire Department and Union Pacific Railroad;
- Clearing of City owned property
- Delivery of regular and frequent National Fire Protection Association’s Hazard Recognition in the Wildland Urban Interface class for residents;
- Developed a defensible space internet based mobile phone application allowing residents to determine defensible space zones on their property;
- Creation of five (5) nationally recognized Firewise Communities with more in the works;
- Construction of a mid-slope fuel break on Fern Canyon, Corte Madera and Blithedale ridges among other locations;
- Partnerships with Home Owner Associations to create Firewise Communities;
- Vegetation management of steps, Lanes and Paths (SLP) throughout the community. All improved SLP’s are cleared twice a year so as to enable swift evacuation by foot;

As of 1996, the Vegetation Management Program has removed approximately 6700 tons of flammable vegetation from Mill Valley. Mill Valley is extremely fortunate to have the Municipal Service Tax and is improving our condition through fuels management annually. Without this regular funding source, the programs listed above would not be possible in a regular and sustained manner.

As noted above, the City of Mill Valley focused on the regional disasters, developed plans to reduce risk, implemented programs and have maintained said programs. The City of Mill Valley is now evaluating and adapting to changing conditions. We are now developing new plans and implementing new programs.

Discussion:

The City of Mill Valley should be proud of its accomplishments. Our fire department is an Insurance Services Office (ISO) Property Protection Class 1 fire department. We have received awards from the California Emergency Services Association for our work in community evacuation planning and drills. We are leading the way in developing and organizing our Community Emergency Response Teams as well as providing preparedness education to our community. With the above noted items, we want to go farther, increase our safety while maintaining the character of our community. The City of Mill Valley is a progressive leader in prevention and preparedness and will continue to lead the way.
On October 8, 2017 the Tubbs Fire started just outside of Calistoga, CA (Napa County). Under oppressive Red Flag wind conditions, the fire burned 36,807 acres through Mark-West Springs Canyon and into Santa Rosa City proper destroying 6,957 structures and killing 22 citizens. During the same time period, Marin County was under Red Flag conditions due to winds and low humidity. All of the elements for a catastrophic incident were present in Marin County short of an ignition source.

On October 31, 2017, the Mill Valley Emergency Preparedness Commission visited the Tubbs and Nuns Fires with a focus on:

1. Lessons learned
2. Community preparedness and community outreach
3. Prevention and mitigation

On November 15, 2017, the Mill Valley City Council toured the Tubbs and Nuns Fires with a focus on:
City Council Staff Report
City of Mill Valley Vegetation Management Program: An Improved Approach
February 5, 2018

1. Policy and programs
2. Emergency response and evacuation
3. Community risk reduction/mitigation
4. Recovery

Immediately following the visits, the City of Mill Valley hosted a Special Meeting that was well attended by the community. The focus of the meeting centered on lessons learned from the Sonoma/Napa Fire Siege, a re-affirmation of strategies such as defensible space to protect residential structures as well as general preparedness items.

During the winter of 2016, the City of Mill Valley was a participating agency in the development of the Marin County Community Wildfire Protection Plan (CWPP). The Marin County CWPP is a plan to help reduce wildfire hazards through a hazard and risk assessment, and forward leaning collaboration among diverse stakeholders. A science-based hazard and risk assessment tool, the CWPP used state of the art, high resolution topography and fuels information as well as historical weather data to identify and assess areas of concern throughout the county. In development, prioritization of areas occurred where wildfire threat is greatest. Hazard mitigation strategies were analyzed to address specific issues in the areas of greatest concern. The CWPP’s collaborative and integrated approach to hazard mitigation includes the following strategies:

- Pre-fire planning.
- Public education and outreach
to promote and implement fire adapted community practices.
- Vegetation management and fuel reduction at the county and community levels.
- Reducing structure ignitability by promoting and enforcing building codes,
  ordinances, and statutes.
- Provides a framework for future collaboration that can be used to identify,
prioritize, implement, and monitor hazard reduction activities throughout the county.
- CWPPs provide access to Federal and State grant funds.

Various elements of the CWPP add to the scientific horsepower necessary for bringing the proposed recommendations forward. See Attachment 3 to review in detail the components of the CWPP.
Recommendations:

The recommendations below are being advanced due to our changing wildfire environment and is based on lessons learned from the catastrophic Sonoma/Napa County fires. They are presented to both passively and actively improve the odds of survival for residential structures during a wildland fire, reduce/mitigate risks associated with community evacuation as well as provide education for the public and staff. Several of the recommendations are in concept and will require additional planning, budgeting and implementation.

Recommendation 1 – Building Codes, Standards and Structural ignitability:

Currently: In the Wildland Urban Interface (WUI) areas, home owners can change their external siding, windows and outside elements such as decks without improving the ignition resistance of the changes. Currently, new construction in the WUI is required to comply with modern ignition resistive construction. The above listed items are not exhaustive nor complete, but they represent the obvious ones based on our knowledge of vulnerabilities and the lessons recently learned.

Recommendation: Change the Municipal Code to require upgrades of areas under construction in the built environment. For instance, the homeowner changes windows out on their home, the City would require that the newly installed windows are compliant with WUI construction standards. The same is true for siding. If the homeowner is changing out the siding, the City would require that all new siding would be compliant with WUI construction standards. The ignition resistive improvements would be limited to the homeowner’s areas of work.

Outcome: A process that improves the ignition resistive featured of already built homes within the WUI areas. This code update passively improves the ignition resistance and WUI compliance of built homes. Depending on the scope of the project, we estimate a 10% - 20% increase in construction costs associated with this recommendation.

Timeline: Staff would start the process necessary ordinance changes starting March/April 2018.
Recommendation 2 – Hazardous Fuel Reduction:

Currently: The Mill Valley Fire Department conducts vegetation inspections on over 5000 parcels covering 1800 acres within the WUI area. Our inspections center on the proper maintenance of existing trees, shrubs, grasses among several other items in an effort to reduce fire hazards, increase access and enhance evacuation efforts. Our current program does not call for the regulation of pyrophytic plantings/species such as bamboo, acacia, cypress and juniper. Nor does our current regulation prohibit residents from planting these varieties at or near their homes.

The City of Mill Valley provides budgets to enable the removal of Eucalyptus trees on public lands. The Department of Public works has identified, categorized and prioritized the removal of this particularly invasive and pyrophytic tree (see Attachment 1). Our removal program has focused on strategically removing trees in a prioritized way.

The City is already an aggressive supporter of wide area and ridge top fuel breaks with our adjacent land managers (Marin Municipal Water District, Marin County Open Space and Parks). Continued support of the judicious use of Integrated Pest Management (IPM) techniques, including the use of herbicides are necessary to reduce the progression of pyrophytic French Broom on Mount Tamalpais is recommended.

Recommendation: Change the City of Mill Valley's Municipal Code to regulate plantings within 5' of a residential structure in addition to the eradication of all Bamboo, Acacia, Cypress and Juniper species from within 15' of a residential structure located within the WUI area.

Develop a program to facilitate this recommendation
  o Timeline
  o Outreach strategy
  o Budget
  o Staffing
Establish a goal of removing 3-5 Eucalyptus per year from public properties.

Outcome: A substantial reduction of pyrophytic plantings directly adjacent to homes within the WUI improves the survivability of homes. This is accomplished by substantially reducing the most receptive fuel beds available to receive embers and propagate fire adjacent to the residences.

Timeline: Staff would start the process of necessary ordinance changes by March 2018. Staff would also develop program/budgets associated with the goals established in the recommendations.

Recommendation 3 – Evacuation Concepts:

Currently: The City of Mill Valley manages vegetation at the edge of pavement on all primary and secondary evacuation roads. This is accomplished by way of funds provided through the MST.

Access and egress routes such as found on Cascade Ave and W. Blithedale have large clusters of trees that delay emergency response due to the need to negotiate tree obstacles. The trees are growing larger every year, thus creating more challenges.

The age and design of current infrastructure creates challenges for modern day fire engines. The City Council supports the redesign of problem areas to improve response times. Recently, we completed such an improvement project at the intersection of Marion and Monte Vista with several more in design and development to include:

- Marion/Hazel
- Hazel/Rose
Recommendation: Expand/widen vegetation removal to include the entire City right of way along evacuation routes. Tree crown spacing would be increased to further disrupt the continuity of the canopy thus diminishing the opportunity for sustained crown fires. The recommendations would come to fruition by managing vegetation removal prescriptions along selected corridors key to access and evacuation.

Accelerate the design and construction of fire access and evacuation route enhancement projects with a goal to complete one project a year as funding/logistics allows. Evaluate and develop a community supported plan to mitigate trees that hinder access/egress on Cascade, W. Blithedale and other critical routes. This would be done in a manner that balances community desires while ensuring and retaining emergency access/egress.

Fire and Police departments throughout Marin County and within the City have substantial plans/frameworks to conduct community evacuations during an emergency. The City of Mill Valley has practiced these concepts for the last 12 years by hosting neighborhood evacuation drills. It is a recommendation that the Fire/Police department consolidate all community outreach materials into one comprehensive community wildfire evacuation informational pamphlet.

Outcome: Improved emergency response times and more effective evacuation routes will result by creating larger vegetation buffers on critical routes, thus enhancing our infrastructure capacity during an emergency response or evacuation.

Timeline: With budget adjustments, enhanced clearing of vegetation and widening of crown spacing on selected street segments can begin promptly. Budget adjustments and additional program details would come back to the City Council April of 2018 to allow for work to occur prior to the 2018 wildfire season.
Recommendation 4 - Public Education:

Currently: The Mill Valley Fire Department conducts educational opportunities by way of several sources, mediums and platforms. We have contemporary educational content located on the City’s website. The Mill Valley Fire Department has developed several videos that focus on vegetation management and evacuation concepts for all residents. We provide various mailings and have developed a smart phone application that illustrates the processes home owners can undertake to improve their homes survivability. Finally, we offer/support several classes for residents throughout the year to include the Fire in Marin Class, the National Fire Protection Association’s Hazard Recognition in the Wildland Urban Interface class and Get Ready.

Recommendation: Mill Valley Fire and Police Department would jointly consolidate all educational materials associated with evacuation and vegetation management into one City of Mill Valley Evacuation information pamphlet. Separately, the Mill Valley Fire Department will continue to support the classes currently offered. We will develop new programs that focus on structural ignitability and residential survivability.

Continue with the plan of not hosting a neighborhood evacuation drill for 2018 in lieu of our effort to work directly with neighborhoods on preparedness, prevention, evacuation and home survival. This program will be a great first step towards neighborhood organizing, neighbors-helping-neighbors and evacuation concepts.

Outcome: Enhanced understanding of risks associated with wildfire throughout the community. Improved clarity surrounding the responsibilities of the home owner and that of the City.

Timeline: Completion of the Evacuation informational pamphlet draft will be presented to City Council early summer for a 2018 fire season rollout to the community. Neighborhood planning meetings are underway with a goal to complete all neighborhoods by April 2018.
Recommendation 5 – Communications:

Currently: The City of Mill Valley has a number of methods available to reach the affected community in an emergency. These methods include: Alert Marin, reverse 911, Wireless Emergency Alerts (WEA) neighborhood sirens, Facebook, Nixle, Twitter, email and City News web postings. We use the appropriate methods to notify residents of an actual emergency or provide information about an escalating situation such as Red Flag Warnings. During the Tubbs/Nuns fires a gap was identified due to the destruction of infrastructure such as cellular towers causing communication delays. The Mill Valley EOC does have a limited capability/supply of satellite phones with no satellite phones currently in the hands of our Battalion Chiefs, Police Sergeants or key administrative staff.

Recommendation: Provide satellite capable phones to field supervisors, chief officers and key response staff. Evaluate opportunities for voice command amplifiers to replace generic sirens in the canyons such as the Long Range Acoustic Devices (LRAD). The LRAD devices can act as sirens and have the capability of being modifiable and addressable.

The City of Mill Valley needs to continue our comprehensive promotion of Alert Marin, Twitter and Nixle communication tools.

Outcome: The outcome is an enhancement of our internal and external suite of tools necessary to reach all segments of our population prior to, during and immediately following an emergency.

Timeline: Enhancements to communications such as Alert Marin, Nixle, Twitter and Facebook are largely underway. Additional research and development is required to understand the application of the LRAD system within our community. We will have a better understanding of the feasibility by budget time 2018.

Recommendation 6 – Staff Training.

Currently: Staff training specific to working in the Emergency Operations Center (EOC) occurs approximately 2 times a year. Limited specialized training is attended throughout the year such as training specific to the Plans Section Chief or Logistics, both functions found within the EOC.
Recommendation: Provide, assign and encourage key staff to attend specific training to their assigned areas within the EOC.

Outcome: An enhanced knowledge and understanding relative to the operations of the EOC.

Timeline: Budget development begins immediately to support EOC educational opportunities. A full program and budget will be ready for evaluation during the budget process 2018.

In concept, the above listed recommendations have been reviewed by the Emergency Preparedness Commission. Additionally, the concepts have been reviewed and are supported by the Mill Valley Police Department, Building/Planning Department and the Department of Public Works.

CONCLUSION:
Immediately, following the Oakland fire and Mt. Vision fires, the City of Mill Valley took aggressive action to limit the risks to our community from the threat of wildfire. These actions were grounded in scientific evaluation and continue to be maintained to this day. Today, due to the lessons learned from the 2017 fire season, we are providing a number of recommendations that are again grounded in the science of the Marin County Community Wildfire Protection Plan. The above recommendations are in alignment with the Mill Valley Master plan as well as several of the City Council's core values:

- The health and safety of residents;
- A healthy natural environment with emphasis on conservation, open space, climate protection and sustainability;
- Operational excellence;

Fiscal Impact:
The fiscal impacts of each recommendation require a more in-depth evaluation and will be brought back to Council as each recommendation is selected and moves forward. Some of the items will have little fiscal impact on the City and can be covered in the maintenance and operations budget. It is anticipated that several of the recommendations will require position changes within the Fire and Public Works budgets. Those will specifically be brought back to you based on the times identified in the recommendations or during budget development.

MILL VALLEY FIRE DEPARTMENT

By the Numbers:
FY 2016/2017 $4,852,917
FY 2017/2018 $5,006,498
Revenue $93,938/$116,000
Number of Full Time Employees 23
VEGETATION MANAGEMENT FUND ALLOCATION (2015)

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<td>High voltage, road</td>
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<td>1</td>
<td>Crown Reduction</td>
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ATTACHMENT 1
Definitions:

FIRE HAZARD SEVERITY ZONES. Geographical areas designated in California Public Resources Codes Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code Sections 51175 through 51189. See California Fire Code Article 86. The California Code of Regulations, Title 14, Section 1280 entitles the maps of these geographical areas as “Maps of the Fire Hazard Severity Zones in the State Responsibility Area of California.”

IGNITION-RESISTANT CONSTRUCTION. Additional requirements for construction in urban-wildland interface areas based on extreme fire hazard.

LOCAL AGENCY VERY HIGH FIRE HAZARD SEVERITY ZONE. Area designated by a local agency upon the recommendation of the CDF Director pursuant to Government Code Sections 51177(c), 51178 and 51179 that is not a state responsibility area and where a local agency, city, county, city and county, or district is responsible for fire protection.

WILDFIRE. An uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property, or resources as defined in Public Resources Code Sections 4103 and 4104.

WILDLAND-URBAN INTERFACE FIRE AREA. A geographical area identified by the state as a “Fire Hazard Severity Zone” in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency as being at significant risk from wildfires.

Attachment 3.
LRAD Siren Coverage
Using existing siren locations

Legend
- Condominium Common Area
- Mobile Home Pad
- City
- Community
- Marin County Legal Boundary
- Other Bay Area County
- Ocean and Bay
- Parcel

Notes
This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

© Latitude Geographics Group Ltd.
### Mill Valley

**Description**

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### Command and Control Center

**LRAD Command and Control Interface**

- LRAD Setup Fee 4% of Equipment (includes initial configuration to hardware and software GUI)
- GENA.SYS SOFTWARE Annual License Fee (Cloud based)
- Additional Seat Licenses

**Optional Computer**

- Desk Top Computer, Win Monitor, Dell, Configured
- Monitor, Desk Top Computer, Dell
- Omnidirectional Microphone for Live/Public Announcement

### Installation

**Installation**

- Labour, Materials and Equipment to Provide the Following
- Commissioning and removal of existing alarm systems in (5) existing locations
- Install/Remove Equipment on (5) Existing Poles
- Complete All Electrical Connections
- Installation of PC Desk Top Computer at EOC

- Utility Locates
- Electrical Service
- Pole Disclaimer
- Traffic Control

**Start Up and Commissioning**

- Start Up and Commissioning by a Certified LRAD Factory Representative
- Includes One Combined Day of System Operation and Maintenance Training

### Optional Spare Parts

- Spares for DS-60XL System
  - Class D Amplifier with Power Supply 1 x 170W
  - 1 Unit LRAD DS-60XL
  - Single Board Computer
  - Satellite Activation: VHF1F3200 Unimed with Pole Mount

### Terms and Conditions

- California Sales tax at 8.25%
- LRAD Corporation General Terms and Conditions Apply to This Order
- See Attached

**30% Payment Prior to Shipment**

**Items will Ship X12-14 Weeks After Receipt of Order**

**Freight to Mill Valley, CA**

**TOTAL** $416,468.00

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*If you have any questions concerning this quotation contact Michael Shaneks, mshanks@LRAD.com.

LRAD Corporation, 16262 W. Bamanarlo Drive San Diego, CA 92127 Phone (858) 243-1614 Fax (858) 676-1120

THANK YOU FOR YOUR BUSINESS!"