

# Initial Report and Recommendations

Supplemental Sales Tax Oversight Commission (SSTOC)

9/8/21



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# **Initial Report and Recommendations to the Orinda City Council**

## **City of Orinda Supplemental Sales Tax Oversight Commission**

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### **I. Executive Summary**

In early 2021, the Orinda City Council appointed residents to the Supplemental Sales Tax Oversight Commission (SSTOC), and determined that the SSTOC's primary objective with respect to revenue generated from the voter approved sales tax ("Measure R") is to make recommendations and provide advice to the City Council and City staff regarding the planned expenditures for priority programs, services and projects; and to review, monitor, and report on the expenditures incurred. During the SSTOC's initial meeting on March 10, 2021, the City's priorities for use of Measure R funds were identified as including: wildfire threats and reduction of fire fuel from public and private property; disaster planning and emergency response; coordination and delivery of Measure R funded programs; critical public storm drainage infrastructure; and, long term road repair and maintenance.

Since March 2021, the SSTOC has met monthly, in open, public meetings. During this time, several ad hoc temporary subcommittees were established to research and report back to the full SSTOC on specific matters. Ad hoc committees included Communications, Wildfire Risk Reduction, Home Hardening, and Emergency Planning. On June 4, the SSTOC held a half-day open, public planning workshop to develop a work plan focused on wildfire risk reduction and emergency preparation, which featured informative presentations from several community partners, including MOFD Fire Chief Winnacker and Fire Marshall Isaacs, Lamorinda CERT, the Orinda Firewise Council, and Orinda Police Chief Cook. The workshop also included a presentation about the Wildfire Risk Mitigation Plan developed by the City of Los Gatos, as presented by its Assistant Town Manager Andrews. Links to the Workshop, meetings and related reports are included in Appendix A of this report.

This document constitutes the first report from the SSTOC to the City Council. It offers initial recommendations for immediate and long-term measures that can be employed by the City of Orinda to reduce wildfire risk generally, including on City, resident, and neighboring properties, and to better prepare for emergencies. These recommendations should be viewed as dynamic works-in-progress and should be modified and refined as they are informed by public input, continued research and study, and changing environmental, community, funding, and other circumstances.

In the following pages, we present and discuss two sets of recommendations summarized in the list below. The first set of recommendations focuses on near term (Fiscal Year 2021-2022) actions. The second set looks at the longer term (Fiscal Years 2022 - 2024).

**A. NEAR-TERM OR “IMMEDIATE” RECOMMENDATIONS (FY 21-22)**

1. Hire and train an additional dedicated City staff member to provide “boots on the ground” support for wildfire risk reduction, emergency preparedness, and home hardening efforts.
2. Provide roadside fuel reduction and vegetation management, particularly along evacuation routes.
3. Create a vegetation and structure inventory of City and residential properties in order to utilize novel computer modeling of fire in the Wildland Urban Interface.
4. Continue to clear city property to comply with MOFD Fire Code, and budget and plan for annual clearance.
5. Establish an extensive community education and motivational program regarding Wildfire Risk Reduction, Home Hardening, and Emergency Preparedness.
6. Define police and other emergency staff required to assist the public during evacuations and assure adequate staffing levels will be available.
7. Publicize the existing chipper program and explore implementation of a gridded program.
8. Explore alternate funding to incentivize residents to achieve fuel reduction, home hardening, and emergency preparedness.
9. Expand the pilot program for NO PARKING on red flag days.

**B. LONG-TERM OR MULTI-YEAR RECOMMENDATIONS (FY 21-24)**

1. Long-term strategic plan. The City should develop a matrix for success which includes periodic goals for residential compliance, a vegetation maintenance schedule and improved emergency preparedness.
2. Enhance relations with agencies with overlapping interests, such as EBMUD, PG&E, East Bay Regional Parks, and CalTrans.
3. Educate landscapers, nurseries, and garden centers regarding Orinda regulations, standards and best practices.
4. Continue to update City Ordinances to reflect MOFD’s continuing efforts to strengthen the Fire Code and Building Code.
5. Develop and implement a plan to help Orinda homeowners maintain affordable fire and hazard insurance.
6. Develop and adopt an environmental plan to address climate change locally.

In the remaining pages of this document, we begin by describing the processes that led up to the development of this set of recommendations. The report then discusses each of the recommendations in more detail, and, in most instances, provides specific suggestions on how the recommendation may be implemented.

***Finally, but importantly, this work, and the recommendations we are making, focuses on three key goals; wildfire risk reduction, saving property, and saving lives.***

While we recommend measures to reduce the risk of wildfires in or adjacent to Orinda, it is clear that we are all presently experiencing the devastating effects of climate change. We must recognize that wildfires are realistic possibilities in the stunning Wildland-Urban Interface (WUI), fire-fuel-heavy setting that is Orinda. We must recognize that in the unfortunate event of a wildfire, these recommendations—in particular educating and engaging homeowners to reduce fuel loads, harden their homes, and prepare for emergencies—aim to save not just property, but ultimately aim to save lives. It is not a question of if a wildfire will occur, but when it will occur. The sooner we apply all of our resources, the better we can reduce risk, saving property and lives.

## **II. OVERVIEW**

The recommendations introduced and described in this document are based on information gathered through a careful review of a significant number of reports, peer-reviewed papers, and public workshops regarding fire prevention, wildfire propagation, wildfire risks, and wildfire risk reduction in communities very much like Orinda. That information was supplemented by a careful review of documents from MOFD and CERT, as well as public comment from Orinda residents. Commission members also had direct discussions with MOFD, CERT, Orinda Police Department, and Orinda city staff, with wildfire research academics, and with other California city managers and staff who have addressed similar problems in their towns.

This document constitutes a combined report from three SSTOC Ad Hoc Subcommittees, on Wildfire Risk Reduction, Emergency Preparedness, and Home Hardening. The report offers initial recommendations for near-term and long-term measures that can be employed by the City of Orinda to reduce wildfire risk generally, including on City, resident, and neighboring properties. These recommendations should be viewed as dynamic works-in-progress and should be modified and refined as they are informed by additional public input, continued research and study, and changing environmental, community, and other circumstances.

Between its inception on June 16, 2021, and its final reporting on August 11, the Wildfire Risk Reduction subcommittee met six times, including three meetings with Director Larry Theis, and two meetings with City Manager David Biggs. They also met with UC Berkeley Professor John Radke about assessing potential fire risk in the wild-land urban interface. Research included a study of wildfire risk reduction measures undertaken by many other jurisdictions in California, with particular attention to Los Gatos and Montecito. Research

and study also included review of existing MOFD and City Codes and Plans, including MOFD's Community Wildfire Protection Plan (CWPP).

The Emergency Preparedness subcommittee met a total of four times, including two meetings with Orinda Police and MOFD. Police Chief Cook joined the team for a meeting early on in the process. Later in the process, Chief Cook joined the team again, along with Dennis Rein from MOFD. In addition to these zoom meetings, committee member Alex Weinstein had a meeting with the co-founder of Zonehaven.

The Home Hardening Subcommittee met three times, including one meeting with City Manager Biggs. The subcommittee members researched home hardening recommendations from several sources including MOFD, Los Gatos, Montecito, Saratoga, and Firesafe groups from Contra Costa and Marin Counties. The subcommittee compiled select home hardening activities and rated and ranked the activities by homeowner investment and effort.

We consider it very important to note that recommendations are only effective if they are implemented in ways that achieve their objectives. These recommendations will be less impactful without some measurements to assess success and ensure accountability from all involved stakeholders. Other jurisdictions that have implemented similar recommendations have also implemented indicators to measure success. The City should develop metrics to measure the success of its Plan. Some suggested metrics are listed below. See the "Measures of Success" discussion at the link listed in Appendix A for more details on this topic.

### **III. RECOMMENDATIONS**

This report includes both near-term and long-term recommendations. Near-term recommendations are intended to be substantially completed and/or developed within the present fiscal year 2021-22. Long-term recommendations are intended to be substantially completed and/or developed over the next three fiscal years, beginning with fiscal year 2021-22 ("Year One") but continuing through fiscal year 2022-23 ("Year Two") and fiscal year 2023-24 ("Year Three").

We recognize that the implementation of these recommendations requires significant resources, and some would necessitate increased staff and/or funding. While Measure R funding brings much-needed revenue to the City, the mitigation efforts needed are expansive—perhaps to the point of appearing overwhelming—and likely cannot all be completed with existing funding. Thus, throughout these recommendations are suggestions to aggressively pursue grants and other additional funding where available.

We recognize that the City of Orinda has already accomplished much in the short time since the SSTOC was convened in early 2021. The City's chipper program is functioning, City property has largely been cleared to the approval of the MOFD Fire Chief, and consultants have been hired to seek grants for funding new programs. A firm was recently hired to execute a new City-wide Communications Plan, based in part on the recommendations from the SSTOC's Ad Hoc Communications subcommittee. Councilmembers, including our mayor, have been working with local student environmental groups. City staff developed a

flyer explaining the tree ordinance and permitting process. MOFD, along with support from CERT, has planned and executed virtual evacuation drills during Covid. We recognize and applaud these efforts, and ask that the City Council and City staff view these recommendations from the SSTOC as an opportunity to build upon existing achievements.

**A. NEAR-TERM OR “IMMEDIATE” PRIORITIES (FY 21-22)**

1. **Hire and train additional dedicated City staff member to engage in “boots on the ground” programmatic work related to education about wildfire risk reduction, emergency preparedness, and home hardening. In addition, this position will promote and expand the Firewise USA program in neighborhoods.**

Priority tasks will include:

- a. Expanded community outreach and education. Essentially, the task of mitigating wildfire risk requires a cultural change in Orinda which can only come about with consistent multi-platform messaging over time.
- b. Increased coordination with MOFD’s Fire Adapted Community Ambassador Program. Currently, this pilot program does not contain any outreach to the public. The staff could help match requests for assessments with volunteers as appropriate.
- c. Provide trim notices along roadways in accordance with Orinda Municipal Code (12.08.32) that will aid fuel reduction, and clear vegetation encroaching on roadways.
- d. Assist with the coordination of MOFD’s continued training of Department of Public Works and other City personnel to identify and report fire hazards when they are already out in the field. Note that there is a mechanism in place for anyone to report to MOFD potential weed-abatement hazards. Some of this is already happening through staff reports via email, but this additional, dedicated staff person could provide additional support and encouragement for those efforts.
- e. Partner with and provide support to community education efforts, such as inviting the Education and Outreach committee of the Orinda Firewise Council (OFC) to submit a budget for community education efforts. Serve as liaison between the OFC and the communications consultant.

While the recent hire of a new City position is likely to bolster key immediate efforts, including some “in progress” recommendations made below, the new staff member will not be able to meet even current immediate needs. At present, fire mitigation efforts require engagement from many staff personnel, but there is no singular staff exclusively dedicated to these efforts. We recommend the City allocate and/or seek additional funding to hire an entry-level or mid-level non-management staff personnel who will be dedicated to engaging in programmatic tasks including outreach, education, coordination, and implementation of recommendations related to wildfire risk reduction, emergency preparedness, and home hardening efforts. It is important that these efforts be undertaken by City staff rather than consultants, to foster long-

term relationships with residents, to instill knowledge of local occurrences, and to inspire trust and confidence in the City’s wildfire risk reduction planning.

This recommendation is informed in part by studies of other jurisdictions. After experiencing wildfires, the Montecito Fire Protection District created a dedicated Wildland Fire Specialist position which was solely dedicated to securing defensible space compliance in the community. This position was made permanent, full-time in 1997, and in 2016 Montecito increased this to two full time staff members dedicated to resident education and securing compliance with defensible space and was able to secure an approximately 80 percent compliance rate. Seeing the success of this model, Los Gatos in conjunction with its Fire District is seeking state funding for a similar program, in hopes of hiring two to three full time staff members.

It cannot be overstated that resident and homeowner compliance in fuel reduction and home hardening cannot be achieved without additional resources. Direct community outreach and assistance by long-term skilled staff has been found to be critical to securing compliance. According to NFPA Outthink Wildfire 5 Tenets Policy:

...messaging to homeowners is a necessary first step to reducing risk in the WUI. However, a skilled Workforce could help assess homes and implement mitigation measures on a wider scale. States should develop training and certification pathways to develop this workforce, which today is lacking. With professionals to turn to, taking action will be even easier for homeowners.

Furthermore, while acts like removing yard waste and clearing gutters may be relatively easy for many, policymakers must recognize that elderly people and those with disabilities may be less able to act on their own. Supporting this (Prevention) Workforce is one means to facilitate action among all residents.

Budget:

Estimated annual budget \$120,000/annually (salary and benefits) for one full time staff members + 3% increase each year.

Metrics:

- Staff hired.
- Number of people educated about home hardening and defensible space through individual meetings.
- Number of events coordinated, including in conjunction with Orinda Firewise Council.
- Number of trim notices issued and number of issuances resolved.

**2. Roadside fuel reduction and vegetation management, particularly along evacuation routes.**

Historically, in Orinda—as in many other California localities—road maintenance has been primarily concerned with transportation-based concerns. However, wildfire risk reduction and emergency preparedness both require a policy shift where California localities in WUI areas, including Orinda, must at least equally prioritize roadside fuel reduction and vegetation clearance as key components of wildfire risk reduction and emergency preparedness. This re-prioritization is central to saving property and lives, by reducing fuel loads, facilitating efficient access for first responders, and maximizing opportunities for safe, efficient evacuation.

Accordingly, we recommend the City explore development of a policy that would facilitate City clearance of the “municipal right-of-way” on resident properties along key arteries and collectors with an emphasis on evacuation routes.

We recommend City staff prioritize reducing fuel within the City right-of-way on public streets that serve as primary evacuation routes, secondary arterial routes and collector streets. Priority consideration should be given to those streets identified by MOFD, in High Fire Severity Zones, and serving a high number of Orinda residents.

We recognize that clearing vegetation within the City right-of-way is only a portion of the roadside vegetation that needs to be cleared in accordance with MOFD’s ordinance by December 2023. This should be an opportunity to educate property owners regarding the full extent of the work they need to do to reduce roadside fuel and vegetation.

Budget:

Recommend \$500,000 annually for five years.

Metrics:

- Number of property owners contacted regarding roadside vegetation management.
- Number of miles of right-of-way cleared.

**3. Create a vegetation and structure inventory of City and residential properties in order to utilize novel computer modeling of fire in the Wildland Urban Interface.**

Researchers have developed models of fire spread in wildland environments, and they have studied how structures ignite. Now researchers are working on models of how fire may spread within the WUI. We recommend the City explore the possibility to partner in this research.

UC Berkeley Professor John Radke has developed a program to do just this. Property owners take an inventory of their lots (types of vegetation and location, slope angle, number of structures and materials, etc.) and enter this information into the program, which can then simulate how fire will move through the lot as it is currently, as well as after taking various actions to create defensible space.

This will be a key tool to educate and encourage fuel reduction activity among property owners in Orinda. It will also aid MOFD in understanding which neighborhoods are better prepared for wildfire and how best to deploy resources in a fire event. It also allows the City to participate in cutting-edge research to aid in the development of fire models in the WUI that can be applied to not only California but other western regions.

Budget:

\$60,000 annually.

Metrics:

- Number of City properties entered in the program.
- Number of residential properties entered in the program.
- Number of business properties entered in the program.

**4. Continue to clear city property to comply with MOFD Fire Code, and budget and plan for annual clearance.**

Since the passage of Measure R, the City has expended resources to clear vegetation on several City properties and continues to make plans to clear additional properties. The City is exploring continuous and sustainable vegetation clearance, including cattle and/or goat grazing, for certain locations and is soliciting public input via a survey before implementing such measures. The City is currently working with MOFD's Fire Chief to verify compliance and understand what more should be done.

All city property requires periodic maintenance. We recommend the City develop a comprehensive, multi-year rotation plan with the appropriate budget. The plan should include annual vegetation removal (e.g., Orinda Oaks Park) for brush and grasses, and a schedule for those areas that require less frequent attention (e.g., tree maintenance) so that the properties and vegetation can be sorted into a multi-year rotation, possibly modeled on the Los Gatos or Tahoe-Donner six-year plans.

We encourage these efforts to take place year-round as appropriate with an eye towards maximizing efficiency and enhancing resident and neighborhood communication. When a particular project impacts a neighborhood, residents of that neighborhood should be informed and their input solicited in advance of the work beginning, as is happening with the neighborhood survey relating to grazing in Orinda Oaks Park.

Finally, residents should be informed about what has been done and what is planned. To the extent measure R funding is supporting clearance or any wildfire risk reduction efforts, this should be specifically communicated to residents broadly, including on social media beyond Nextdoor, as part of the City's anticipated newly expanded overall communication efforts.

Budget:

\$310,000 annually (in approved budget).

Metrics:

- Development of vegetation management plan.
- Percent of City property maintained annually.

**5. Extensive community education and motivational efforts regarding Wildfire Risk Reduction, Home Hardening, and Emergency Preparedness.**

While the SSTOC's ad hoc subcommittee on Communications report described a number of potential activities, we emphasize the following recommendations

- a. Develop a City resource webpage (see Communication recommendations).
- b. Assist with and/or coordinate educational events either virtual or in person. Events could include:
  - Fuel reduction and home hardening along the lines of the "Seven Saturdays" videos from PG&E, and could be done in collaboration with CERT and Firewise groups.
  - Neighborhood work sessions, possibly led by Firewise volunteers.
  - Information / action sessions by type of home hardening (e.g. Everything You Need to Know About Decks, Roofs, and Vents).
- c. Establish concerted and coordinated efforts to inform every residence in Orinda of existing evacuation plans and any new updates. Include Moraga and Lafayette residences, since they will use the same routes. Processes may include:
  - Direct mail
  - Recurring newspaper articles and advertising
  - E-mails and other electronic communications several times per year
  - Community Information and Emergency radio stationsWe recommend that representatives of the three cities, CERT, together with MOFD and ConFire meet and agree upon an Emergency-Preparedness plan and accountability. Resulting decisions should be communicated to all affected municipalities and organizations. Emergency-Preparedness communications should be implemented or coordinated by a single entity to ensure accountability. We are uncertain which entity can be given that responsibility, given the various jurisdictions involved.
- d. Conduct a community survey to develop a baseline understanding of residents' wildfire and emergency preparedness and reasons for action or inaction. The survey should be repeated every three years as one way to measure the results of education efforts.
- e. Engage with the Firewise community to spread the program and to leverage the reach and depth of this grass-roots movement.
- f. Encourage Home Hardening as a key component of the on-going communications and outreach efforts to be undertaken, including linking to existing resources like the PG&E's Seven Saturday videos, Diablo FireSafe Council, MOFD materials, and others.

- g. Monitor acceptance and understanding of the recently-developed flyer on relevant tree ordinances, and update as needed.
- h. Quantify and track monthly key metrics and show progress in a visible place.
  - “Dashboards” online or as billboard charts in Orinda, like ONE thermometer at Camino Pablo/Brookwood intersection
  - Neighborhood "badges" for effective participation

Education is a vital “carrot” that must be placed in front of every resident, in a variety of media and forms, year-round, so that every homeowner and resident understands the need for continuous maintenance. Education should be done with an eye towards making the true risk of a wildfire, fuel reduction, fire resistant landscaping, home hardening, evacuation best practices, and other related topics accessible if not known to every resident. There is no lack of information and the City should work with the materials readily available from CalFire and in consultation with the Firewise neighborhoods who have used specific materials successfully.

Neighborhood-based education could be conducted in a systematic way, and could be particularly effective in engaging residents to work together to achieve goals, with attention given to the very different demographic groups in Orinda. Examples of methods for effective outreach might include: neighborhood Zooms or backyard gatherings that include CERT; community meetings or town halls hosted at the four elementary schools, local churches or other venues; presentations to local clubs; and tabling at local events. Given CERT’s existing footprint within the community and expertise in Emergency Preparedness, it would benefit both entities to further coordinate efforts. These important outreach methods should be conducted as part of the City’s overall new Communication Plan, but ideally would be led and conducted by a dedicated staff who could then develop relationships with Firewise neighborhoods and residents City-wide.

One “shovel ready” education project that the City could implement now is to create a webpage on the City’s website that would include all resources and links relevant to wildfire risk reduction, home hardening, and emergency preparedness, in a simple, user-friendly format. Ideally, this would be created and publicized as soon as possible.

Email and electronic communication are more cost effective, when compared to mailers and newspapers, but we need to reach all demographics within our community. Many of our residents are older and may not be as comfortable using technology as their primary source of information.

Finally, as state and federal funding to support wildfire risk reduction, home hardening, and emergency preparedness efforts becomes available to residents who may have financial need, they need to be informed of these efforts and offered assistance, including by trained City staff or City-coordinated volunteers, to apply for these grants.

To increase compliance, information and resources should be readily accessible to all.

Budget:

Exclusive of the Emergency Preparedness topic: \$200,000 in FY22, \$100,000 in FY23.

We suspect that the annual communications costs could run into six figures for all three cities and adjacent areas. The City of Orinda should explore alternate funding sources, including grants.

Metrics:

- Hiring a communication staff member.
- Development of a website with defensible space, home hardening and evacuation information.
- Number of education events held.
- Develop and conduct surveys every three years to determine efficacy of programs.
- Appropriate engagement metrics.

**6. Define police and other emergency staff required to assist the public during evacuations, and assure adequate staffing levels will be available.**

We are concerned that if an evacuation must take place very quickly (15 minutes or less) the plan may not work, if the evacuation routes become gridlocked. We are unaware of whether there has been a specific traffic study of the likely bottlenecks. Such a study should be undertaken if it has not already been done. We recommend:

- a. Conduct an evacuation traffic study, to better define the evacuation plan and staffing requirements
  - Understand impacts if main roads become unusable.
  - Identify minimal time needed to evacuate a zone/area.
  - Establish where personnel may be necessary during an evacuation, given the diverse characteristics of our roadways.

If gridlock occurs, members of the public will likely try to find their own ways to the freeway. We believe that additional Police and other emergency service personnel who are familiar with the roads and topography of Orinda will be needed. It is not financially feasible or reasonable to permanently expand the police department by several full-time equivalent staff members to assist with an evacuation that may never arrive. Thus, we recommend that the Orinda Chief of Police explore the possibility of temporarily expanded police personnel (reserves, recalled retirees, personnel from adjacent jurisdictions, CERT etc.) when weather conditions indicate that an evacuation may be needed.

Additional police resources may be needed post-evacuation, as well.

Explore the current relationship with CERT, and establish whether they are able to be on standby during red flag warning days. Chief Cook has indicated that he will look into whether additional resources may be available on a temporary basis but we are unaware as to whether he has been able to do so.

- b. Call for regular evacuation drills, to ensure that current warning systems are adequate to operate under unfavorable conditions, such as limited time.
  - This can maintain a level of confidence that a growing number of community members:
    - Have their contact information registered with the County Community Warning System (CWS)
    - Understand the evacuation system (Zone evacuations)
    - Are prepared to leave home in a timely manner (Go bag etc.)
  - This can allow the various agencies to understand the challenges that face evacuations such as:
    - Do police have access to adequate staff to assist in evacuations?
    - Are road signage and special striping sufficient?
    - Do we have any traffic and bottleneck areas?
    - Any egress and ingress challenges that can be addressed?
- c. Ensure that needed staff will be available within the necessary time frame.

Given enough time it can be expected that additional police resources will be provided from neighboring communities, Contra Costa Sheriff's Office and the Highway Patrol. However, depending on the location and nature of the wildfire(s) and the time available we may not have adequate police or other emergency personnel at the beginning of the evacuation.

## **7. Publicize the existing chipper program and explore implementation of a gridded program.**

The City chipper has already served many residents and continues to be operational to residents or groups of residents who request appointments. As initial demand decreases, the City should continue to widely publicize the chipper's availability, including by utilizing communication methods stated in the SSTOC's Communication subcommittee report. The City should explore implementation of: (1) a planned, gridded program or well-publicized scheduled neighborhood clean-up days, to engage more residents to utilize the chipper as a resource; and/or (2) consider a hybrid program in which there is a gridded plan, but residents can also make requests to utilize the chipper on designated (otherwise unscheduled) days.

We recommend the City, in coordination with MOFD, develop a staffing plan for the chipper. If staff end up being City employees, these staff members may be utilized to address other vegetation management recommendations in this report.

### Budget:

\$239,700/ year + 3% annual increase (in approved budget).

Metrics:

- Number of residential lots associated with chipper events.
- Development of a gridded schedule for the chipper.

**8. Explore alternative funding approaches to incentivize residents to achieve fuel reduction, home hardening, and emergency preparedness.**

The City is presently utilizing grant writing services to explore opportunities for additional funding to implement these and other recommendations relating to wildfire risk reduction and emergency preparedness, so this recommendation is partially in progress. We encourage the City to expand these efforts and seek additional funding, either in partnership with MOFD or with other community-based local nonprofits (e.g. Diablo Fire Safe Council) to address implementation of efforts: (1) where residents may be provided “incentive” grants to engage in fuel reduction and home hardening efforts, thus incentivizing prompt fuel reduction on a whole property basis, home by home, and neighborhood by neighborhood; and, (2) for services and efforts that address climate change.

FEMA has recently put out a guide to build public private partnerships around emergency management and mitigation. “The guide provides recommendations and best practices for jurisdictions to establish and maintain a private-public partnership to help coordinate preparedness, mitigation, response and recovery planning. The guide will help both public and private sector emergency managers at all levels collaborate to increase community resilience.” This could provide a source of funding for overlapping areas of the SSTOC mission. We understand that the grant writing consultant has recently attended an informational webinar for this funding,

Specific examples of potential incentive programs might include:

- **Arrange for the City to buy key supplies in bulk**, such as ember-resistant vents, fire extinguishers, and rain barrels. These could be coordinated with the "hands-on" education events above. Participants could then take useful materials home - either free items, or items they could purchase (or order) at the events.
- **Determine whether the City can negotiate discounts for Orindans** with key contractors on key home hardening activities (roofing, windows, ember-resistant vent installation, vegetation clearing, tree services, junk clearing, and equipment rental). Consider partnering with MOFD to offer this service to others in the district.
- **Establish a grant program to help Orindans reduce fire loads on their property and/or harden their homes.** Some form of grants or low-interest loans could make it possible for lower-income Orinda citizens to address higher-cost

items, such as removing large dead or dying trees, replace fire-prone roofs or sets of large single-pane windows, etc.

Budget:

\$80,000/year for FY22 and FY23 (in approved budget).

Metrics:

- Number of grant proposals submitted.
- Number of grant proposals funded.
- Amount of money raised.
- Items distributed to homeowners in terms of number and/or value.

**9. Expand the pilot program for NO PARKING on red flag days.**

The program developed along El Toyonal should be extended to a handful of key priority streets, after conferring with MOFD staff on priority arteries and connectors. We recognize that this may be a lengthy and staff-intensive process, which may require considerable staff investigation time, the active solicitation of community input in affected communities, and continued education. This will also require consideration and discussion at several City Council meetings.

Like many of these recommendations, this will not be easy to achieve or implement, and may take time. However, we recommend this process begin soon, as it is critical to ensure that first responders have the maximum opportunity to address emergencies if and when they arise. Nonetheless, the ability for residents to evacuate and fire trucks to access Orinda's narrow roads is an absolute paramount priority.

Budget:

- To be determined by City Staff.

Metrics:

- Percent of streets in the WUI with no parking on Red Flag days.

**B. LONG-TERM OR MULTI-YEAR PRIORITIES (FY 21-24)**

Long-term recommendations continue to be developed. Some key recommendations are listed below.

**1. Long-term strategic plan. The City should develop a matrix for success which includes periodic goals for residential compliance, a vegetation maintenance schedule, and improved emergency preparedness.**

Enhance collaborations with agencies and abutting towns/cities to reduce risk, including to clear shared roadways and adjacent properties (Year Two). Partners may include Moraga, Lafayette, East Bay Regional Parks (esp. Tilden). Subjects of

partnerships can include fuel reduction and maintenance of abutting properties; coordination of evacuation plans and routes; how neighboring city governments may work cooperatively to encourage certain behaviors by both residents and other community partners.

**2. Enhance relations with agencies with overlapping interests, such as EBMUD, PG&E, EB Regional Parks, and CalTrans.**

This has already begun with EBMUD but should be extended to other agencies that have land abutting Orinda like PG&E, EB Regional Parks, CalTrans and others. This will be an ongoing task requiring patience, persistence and pressure to follow up on specific requests and demands that agencies fulfill their own protocols for fire prevention and meet the increasing demands for abatement, with more stringent requirements in the era of climate change. Participation in multi-agency groups like BARC and others will be helpful.

**3. Educate landscapers, nurseries, garden centers and landscapers regarding Orinda regulations and standards.**

The city could host a round table discussion with the manager/owners of local nurseries including McDonnell Nursery, Orchard in Lafayette as well as nurseries in the larger region that Orindans visit like Annie's Annuals, Navlet, and Sloat. The City can work with the California Landscape Contractors Association, among other organizations, to offer a continuing education class about Orinda's fire code, plant lists and firescaping principles. The City would also reach out to landscape architects and unlicensed landscapers. In addition, FireSafe Marin has a rich catalogue of fire-resistant educational materials. See Appendix A for useful links on these topics.

**4. Continue to update all City Ordinances to reflect MOFD's continuing efforts to strengthen the Fire Code and Building Code.**

In addition, the City should stay abreast of the current research that establishes best practices to establish a wildfire resilient community. For example, still unknown is the full extent of structure-to-structure fire spread; which home hardening actions are best; whether coatings are effective and if remote sprinklers are effective. Research continues in these areas as well. Steve Hawks, Staff Chief of Wildfire Planning & Engineering Division, Cal Fire, reported on this topic at the UC Wildfire Research Symposium. See Appendix A for links on this and other useful topics.

The current California Building and Fire Code editions will be updated January 1, 2022, and the City and County will adopt them by July 1, 2022. Included in the changes will be new elements for new structures and alterations in WUI interfaces designated by the State as within Very-High Fire Hazard Severity Zones (VHFHSZ). The VHFHSZ is normally designated for State Responsibility Areas by Cal Fire, but leaves the designation to Cities in Local Responsibility Areas. The City of Orinda has a mix of Very High, High, Moderate and Low Fire Hazard Severity Zones. This

results in some lots within City limits that are not required to comply with the Building Code for WUI requirements for new or altered structures. However, Cities can define these areas as “VHFHSZ” or “WUI” areas through Zoning Ordinances or Building Code amendments. If implemented, the City could upgrade its resilience for new construction and existing building additions and alterations. The Planning Department and City Attorney should investigate how this is implemented.

The City should further enhance community resiliency by amending Zoning ordinances with respect to trees (such as allowing removal of “volunteers”), updated allowed/disallowed plant lists (in coordination with MOFD Fire Code), and building exterior materials lists.

It should be recognized that the Building Code affects a very small segment of the City’s built environment. The largest wildfire risk to City structures are existing buildings that are not “fire hardened” - that have ignitable and combustible exterior materials because they were originally built when wildfire risk was not widely recognized. Since the City cannot require upgrades to each existing structure that does not seek a building permit, the SSTOC has tabulated Home Hardening activities individual homeowners can undertake voluntarily (See Appendix C). The tabulation is sorted both by apparent costs to implement and by apparent effort required to implement the activity. For example, replacing foundation vents may be low-cost and low-effort, but replacing a wood shake roof with Class A roofing would be expensive and require a permit and a contractor. While it is unreasonable to expect homeowners to perform the listed activities within the year, through education and motivation campaigns discussed above City residents could accomplish many of these activities. Collectively, the modifications made to existing structures will compound the vegetation management activities to improve City wildfire resiliency.

**5. Develop and implement a plan to help Orinda homeowners maintain affordable fire and hazard insurance.**

We recommend the City share information, host webinars/public lectures regarding efforts being made to keep insurance companies from dropping residents living in WUI/high severity fire zones, and to identify and share insurers who give discounts for homes with specific, completed home hardening work, community work (e.g. Firewise) or other home hardening / community engagement activities. Finally, the City Council should explore the potential for relationships with trade organizations such as American Property Casualty Insurance Association.

**6. Develop and adopt an environmental plan to address climate change locally.**

Several other jurisdictions have adopted local environmental plans to address and mitigate the impact of climate change on a local level, which ultimately is preventative in reducing wildfire risk on a global level. The City should begin to study these other plans, to see what similar efforts may be appropriate to include into

an Orinda Environmental Plan. For example, the City, in collaboration with local high school students, has recently taken steps to address the use of more sustainable restaurant containers, and efforts like this should be applauded and continued. The City should seek advice from and collaboration with local environmental groups. State and federal funding may be available for a multitude of environmental-friendly projects, and the City's grant writers should actively explore such funding.

The Bay Area Regional Collaborative (BARC) is a consortium of four member agencies working to address issues of regional significance and recently has declared climate change their priority. Orinda is already an active participant. The City Council should communicate this work to the SSTOC and possibly invite a commissioner to the meetings.

We are at a critical inflection point with climate change and intelligent planning is needed now, to ensure our long term success as a community. The city should begin a study which should consider both the macro- and micro- view of sourcing energy. Our current source of electricity and gas comes from an aged system. PG&E continues to acknowledge that their wires are part of the cause of recent wildfires. And we know that when there is a public safety power shutoff (PSPS), the high voltage wires that run through Orinda are still active. For these reasons the City should conduct a study to determine the state of electrical wires in Orinda to understand which ones have been recently replaced, which ones need to be replaced, and the time-table for replacing all the wires.

As wires are replaced, it may be an opportunity for the community to consider undergrounding the wires. Costs and plans on how this can/should be done and should be communicated to residents. Recently, the City Council has worked with PG&E to underground the wires on San Pablo Road near El Toyonal after the transformer failed twice in two years, using the funds PG&E has set aside for our town.

Concurrently, the City should consider what is the safest, most reliable, cost-effective, and sustainable source of energy for the future. This goal is no more bold, in some ways, than planning to have every household in Orinda reduce the threat of wildfire on their property, and yet the City is planning to do just that. We urge the City Council to actively create a vision for a sustainable energy future. For example, Marin County is currently exploring the potential for microgrids in a partnership with the Department of Energy.

#### **IV. CONCLUSIONS**

The effects of climate change resulting in increased intensity of wildfires require not only a logistical response from the City of Orinda, but a need to propagate a cultural change with residents. For example, in order for residents to embrace and participate in reducing wildfire fuel on their property, they need to understand and accept that our properties must look a bit

different going forward. The old aesthetic of dense and combustible landscaping has now become dangerous and residents must learn a new aesthetic that adheres to wildfire resilient principles. In addition, property owners need to make modifications to structures to reduce their susceptibility to blowing embers and low-level fires near the structures. Finally, we must all prepare for the probability of wildfires and other disasters in our City through appropriate responses, such as evacuation drills and effective emergency communication systems.

This commission recognizes that Measure R is a bit different from past measures, which put the burden for execution on City staff and contractors hired by the City. The applications of Measure R funds we recommend here require extensive city-wide participation for us all to be successful. Our recommendations are designed to engage Orinda's residents to work in partnership with City staff to reduce wildfire fuel, harden structures, and prepare for upcoming emergencies. A core tenet of a wildfire resilient community is the understanding that residents are interdependent and have a shared responsibility to prepare for wildfires.

## APPENDIX A

### Useful links and references

**Initial report from the ad hoc subcommittee on Communications.** See May 12, 2021 Agenda Packet, pp. 46-48  
<http://orindaca.iqm2.com/Citizens/FileOpen.aspx?Type=1&ID=1875&Inline=True>.

#### **June 4, SSTOC Planning Workshop**

- Agenda Packet  
<http://orindaca.iqm2.com/Citizens/FileOpen.aspx?Type=1&ID=1887&Inline=True>
- Minutes  
<http://orindaca.iqm2.com/Citizens/FileOpen.aspx?Type=12&ID=1538&Inline=True>;
- Los Gatos Ad Hoc Wildfire Committee Report (developed by members of City Council, City staff, fire, and community members)  
<https://losgatosca.gov/DocumentCenter/View/26589/Ad-Hoc-Wildfire-Committee-Report>.

#### **MOFD Community Wildfire Protection Plan (CWPP)**

<https://www.mofd.org/home/showpublisheddocument/1679/637540983517430000>

#### **MOFD Wildfire Protection Strategic Plan**

<https://www.mofd.org/home/showpublisheddocument?id=526>.

Section 5.3, Recommendations - Community/District Preparedness, and  
Section 5.6.6 - Retrofitting an Existing Structure for Survivability

- Research shows that homes with a non-combustible roof and defensible space of at least 30 to 60 feet around the structure have an 85-95% chance of survival in a wildfire.
- Homes should preferably have a Class A- rated, fire-resistant roof cover or assembly, and preferably one that is self- extinguishing once a falling ember burns out.
- Roof shape also plays an important role. If the roof has a lot of ridges and valleys or roof segments that intersect with vertical walls, the house is more vulnerable to wildfire unless regularly maintained.
- Attic/roof and foundation vents are key entry points for embers and flames.

#### **PG&E "Seven Saturday" Videos; Episode 3; Three Affordable Things You Can Do to Harden Your Home**

<https://www.safetyactioncenter.pge.com/articles/89-episode-3-three-affordable-things-do-harden-home>

Episode 3 has three tasks that a homeowner with physical means can do on a weekend day. Weatherstrip doors, caulk siding gaps and upgrade vents (foundation,

eaves, gable, and rooftop). Note that upgrading vents may require hiring a contractor, particularly for the eaves, gable, and rooftop vents.

### **Montecito Vent Retrofit Grant Program**

<https://www.montecitofire.com/article/17635-vent-retrofit-grant-program>

Through this Montecito grant program, the applicant's parcel will be evaluated by the Montecito Fire Department. Priority is given to the homes determined most at risk of being adversely impacted by a future wildfire.

### **Los Gatos Wildfire Risk Reduction Efforts**

<https://www.losgatosca.gov/2642/Town-Wildfire-Risk-Reduction-Efforts>

This website gives links to various Los Gatos ordinances and regulations regarding wildfire risk reduction.

### **FireSafe Marin: Harden Your Home**

<https://www.firesafemarin.org/home-hardening>

This website is a good general information resource for home hardening and wildfire risk-reduction, in general.

### **Sunrise Fire Mitigation Grants Program**

<https://www.sunrisepowerlinkgrants.com/2021>

This website will be out of date soon, but may serve as a model for future grant programs.

### **Builder Online: Wildfire Resistant Exteriors**

<https://www.builderonline.com/building/structure-durability/wildfire-resistant-exterior>

This web page includes some detailed diagrams that homeowners could share with repair contractors or architects.

### **Saratoga**

<https://www.saratoga.ca.us/215/Fire-Prevention>

Website provides a good list of Saratoga City ordinances and regulations related to wildfire risk mitigation, some of which may serve as good models for Orinda.

### **Santa Barbara FireSafe Council**

<https://sbfiresafecouncil.org/community-wildfire-protection-plans/>

This web site provides links to the Community Wildfire Protection Plans for several cities near Santa Barbara.

### **Why Measures of Success are Needed**

<https://uckeepresearching.org/2021-uc-resilience-symposium-series/>

At the UC Wildfire Seminar on July 28, 2021, various presenters described important research that will help the city establish parameters for success. Jessica Moore, Deputy Secretary for Forest and Wildfire Resilience, California Natural Resources Agency, referred to current research that asks how much home hardening and defensible space work is enough to significantly protect a town. UC continues to conduct research in this area and the City and the SSTOC should continue to identify and follow this research. This number will help the City enormously to target the outreach and create functional goals for establishing adequate compliance.

**MOFD link to report potential weed-abatement hazards.** <https://www.mofd.org/our-district/fuels-mitigation-fire-prevention/hazardous-wildfire-fuels-reduction-program/exterior-hazard-violations-and-complaint-forms>.

### **Bay Area Regional Collaborative**

<https://barc.ca.gov/about-us/member-agencies>

### **FEMA informational webinar for public-private funding**

[https://www.fema.gov/sites/default/files/documents/fema\\_building-private-public-partnerships.pdf](https://www.fema.gov/sites/default/files/documents/fema_building-private-public-partnerships.pdf)

### **Marin County is currently exploring the potential for microgrids in a partnership with the Department of Energy.**

<https://www.energy.gov/sites/prod/files/SG%202010%20Peer%20Review%20-%20Marin%20County%20Renewables%2C%20David%20Cohen%2C%20Infotility.pdf>

### **Landscape architects and unlicensed landscapers.**

<https://www.clca.org>

### **FireSafe Marin has a rich catalogue of fire-resistant educational materials.**

<https://www.firesafemarin.org/fire-smart-yard>

**UC Wildfire Research Symposium** <https://uckeepresearching.org/2021-uc-resilience-symposium-series/>)

Ongoing efforts to strengthen Fire and Building codes for wildfire resilience.

## **APPENDIX B**

### **List of Acronyms**

APCIA	American Property Casualty Insurance Association
BARC	Bay Area Regional Collaborative
CERT	Community Emergency Response Training
CWPP	Community Wildfire Protection Plan
CWS	Contra Costa County Community Warning System
EBMUD	East Bay Municipal Utility District
FACA	Fire Adapted Community Ambassador
FTE	Full Time Equivalent
MOFD	Moraga Orinda Fire Department
NFPA	National Fire Protection Agency
PG&E	Pacific Gas and Electric
SSTOC	Supplemental Sales Tax Oversight Commission
VHFHZ	Very High Fire Hazard Zone
WUI	Wildland Urban Interface

## APPENDIX C

### Home Hardening Tasks

Home Hardening Tasks			Barriers to implementation	
Category	Activity	Description	Relative Investment \$ = Low \$\$ = Medium \$\$\$ = High	Effort: S=DIY (Simple) M=DIY w/ equipment or contractor (Medium) D= contractor (Difficult)
Address	Maintain 6 in. tall with contrasting background address numbers at street	Allows fire fighters to find house/driveway, esp. if Google maps/GIS is in error (Montecito)	\$	S
Decks	Under deck storage	Move material to an enclosed area away from structure (at a minimum on Red Flag Days)	\$	S
Doors	Weatherstrip	Close air gap openings around doors and windows (PGE). Verify combustion appliances, esp. gas water heater, have make up air.	\$	S
Roof	Clean roof and gutters	Routinely remove from roof, esp. valleys or near chimneys and skylights. For complex steep, roofs may consider hiring professional. See also gutter guards below.	\$	S
Storage	Do not store combustibles, like vehicles, playhouses/toys, outdoor furniture, pet houses, BBQ, etc. w/in 5ft Zone	Keep combustibles away from house (IBHS)	\$	S

### Home Hardening Tasks

### Barriers to implementation

Vents	Crawlspace vents	Attach screens (1/8 in. opening max.) or prepare solid covers to install on Red Flag days.	\$	S
Vents	Roof vents	- Attach screens (1/8 in. opening max.) or prepare solid covers to install on Red Flag days. Use caution when installing or removing covers on upper story vents. - Brand Guard vents (or CA-approved equal). Likely requires contractor.	\$	M
Fences	Remove combustible fences attached to house	Combustible fencing can lead to siding or eave ignition. Replace with wrought iron or metal fencing if needed (IBHS).	\$\$-	S-M
Decks	Enclosure	Better - screen in exposed area to prevent accumulation of debris Best - enclose with non-ignitable material	\$\$-	S-M
Roof	Gaps at edges or ridges or other openings in tile (clay) or metal roofs.	Install bird stops in gaps at edges or ridges. Plug any roof openings that are not functioning as vents; screen (1/8 in. opening max.) any openings that are vents.	\$\$-	M - D
Siding	Gaps in joints of siding panels or simple laps joint or plain bevel joint	Wood siding shingles and plain bevel lap joints are most vulnerable. Seal or caulk (PGE). May require contractor for elevated parts of walls.	\$\$-	M - D
Gutters	Gutter screens	Cover gutters to reduce debris build up. May require contractor for ladder/roof access.	\$\$	M - D
Chimneys	Spark Arrestors	Chimneys covered with a spark arrestor.	\$\$	D
Gas	Auto-shut off (earthquake) gas valves (manually turn off in fire evacuation)	New Construction – required by Code Existing Construction – recommended. Requires licensed plumber.	\$\$	D

### Home Hardening Tasks

### Barriers to implementation

Skylights	Construction	<p>-Do not install/replace plastic "bubble" skylights.                      -Remove vegetation and accumulated debris next to and around skylight.</p> <p>-Better – Non-ignitable, pre-made covers to protect from embers.                      -Best - Install "flat", dual-pane, tempered glass skylights.</p>	\$\$	D
Windows	Protect windows from the outside	<p>Screens, shutters or pre-made covers will protect window from embers, debris and some radiant heat exposure. Covers would be installed prior to evacuation. Least expensive alternative is 1/2 in. plywood but need to clear area of combustible material that could ignite plywood - not likely possible in evacuation. Some covers may require hiring a professional.</p>	\$\$-\$\$\$	M - D
Eaves	<p>Plug openings with durable caulk or install non-combustible covering over blocking to eliminate openings. Alternatively box in eaves. This method may require vents to remove excess moisture.</p>	<p>Replace with non-combustible material such as fiber cement products or exterior fire retardant treated plywood. Vinyl soffit material not recommended as it will deform and sag causing gaps. Likely requires a professional for design and installation.</p>	\$\$-\$\$\$	M
Decks	Construction	<p>Better - Replace deck boards with fire or ignition-resistant material.                      Best - Build/reframe deck structure in steel or heavy timber.</p>	\$\$-\$\$\$	D

### Home Hardening Tasks

### Barriers to implementation

Siding	Upgrade siding if the building is 15 feet or closer to adjacent properties or inadequate defensible space	<ul style="list-style-type: none"> <li>- Where lower level roof (first floor) meets upper wall or upper level roof (second floor), replace combustible siding with more fire resistant material and underlayment</li> <li>- Zoning/Design Review - "wood" look is in keeping with an Orinda's "rural" vernacular, and some non-combustible sidings can have a "wood" appearance.</li> </ul>	\$\$-\$\$\$	D
Electrical	Battery backup for outages	Backup for gated driveways (Saratoga, Montecito) & water systems (Saratoga) for fire fighter access. Likely requires professional.	\$\$\$	D
Foundation	Open crawlspaces and post and beam style foundations	Enclose foundation area with non-combustible skirting material. Be sure to address moisture management issues through drainage and ventilation. Remove combustible materials stored in the crawl space or under the building.	\$\$\$	D
Roof	Class A roof upgrade	<ul style="list-style-type: none"> <li>- Homes should preferably have a Class A-rated, fire-resistant roof cover or assembly, and preferably one that is self-extinguishing once a falling ember burns out.</li> <li>- Roof shape also plays an important role. If the roof has a lot of ridges and valleys or roof segments that intersect with vertical walls, the house is more vulnerable to wildfire unless regularly maintained.</li> <li>-Likely requires contractor.</li> </ul>	\$\$\$	D

### Home Hardening Tasks

### Barriers to implementation

Windows	Construction	<ul style="list-style-type: none"> <li>- Install dual pane windows (replace existing single-pane windows). Preferred are multi- pane, insulated glass with added benefit of greater energy conservation.</li> <li>- Multi-pane (double or triple), tempered glass is 4 times more resistant to breaking in wildfire. Cost increases are relative to the opening size.</li> <li>- Likely requires contractor to deal with siding and installation.</li> </ul>	\$\$\$	D
Eaves	Open eave construction or visible gaps between blocking and rafter tails.	<ul style="list-style-type: none"> <li>- Plug openings with durable caulk or install non-combustible covering over blocking to eliminate openings.</li> <li>- Alternatively box in eaves. This method may require vents to remove excess moisture.</li> <li>- Likely requires contractor</li> </ul>	Variable	Variable
Fire Hazard Zone	Designate City as LRA/VHFHZ	Zoning/Design Review – If entire City is designated a LRA/VHFHZ, then State WUI building codes apply to new construction and additions. Requires coordination with Contra Costa County building department.		
Driveways	Driveways must be over 20 ft. wide, and if greater than 150 ft. long, requires turnarounds	Allows fire apparatus access (Saratoga). Requires professional.		